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ABSTRACT

Documents announced with VT numbers only in the Volume 5 Number 3 issue (VT 015 982) of "Abstracts of Research and Related Materials in Vocational and Technical Education" (ARM) are included in this microfiche set. Microfiche availability for these documents is shown on the ARM resume as MF AVAILABLE IN VT-ERIC SET. The microfiche set is arranged in the following sequence: (1) a Vocational Technical (VT) number index to documents in the microfiche collection, (2) the subject and author indexes from ARM, and (3) the full text of documents listed in the VT number index. The texts are filmed continuously in VT number sequence. (CD)

Microfiche Collection of Clearinghouse Documents

Reported in Abstracts of Research Materials

in Vocational and Technical Education

(ARM)

Compiled and Indexed by The Center for
Vocational and Technical Education

Vol. 5 No. 3
1972

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VT 015 983

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INTRODUCTION

This collection of microfiche consists of the documents which are announced with VT numbers only in Abstracts of Research Materials in Vocational and Technical Education (ARM), Vol. 5 No. 3, 1972. Microfiche availability is shown in the resume as MF AVAILABLE IN VT-ERIC SET. The documents are grouped in VT number sequence and filmed continuously as a microfiche set. These documents are not available on microfiche as individual items, but are obtainable only through purchase of this set, or from agencies who have this set and have the capability of reproducing microfiche. The microfiche set includes the following sections:

1. Vocational Technical (VT) Number Index to Microfiche Collection of Clearinghouse Documents Reported in ARM, Vol. 5 No. 3, 1972.

2. Selected indexes from ARM, Vol. 5 No. 3, 1972.

   a. Subject and Identifier Index.
   b. Personal and Institutional Author Index.

   The documents identified in the indexes with an ERIC Document (ED) number are usually available as separate documents from the ERIC Document Reproduction Service (EDRS). Information about EDRS Service can be found in ARM or Research in Education (RIE).[1] Items not available through EDRS will include a source of availability. The page numbers shown in these indexes refer to the location of the abstracts in ARM, Vol. 5 No. 3, 1972.

3. The full text of documents listed in the Vocational Technical (VT) Number Index to Microfiche Collection of Clearinghouse Documents Reported in ARM, Vol. 5 No. 3, 1972.

[1] Research in Education is published 12 times a year. The first issue was no. 11, November 1966. Subscription: Domestic $21.00 a year; foreign $5.25 additional. Single copy: Domestic $1.75; Send a check or money order (no stamps) to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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CALIFORNIA STATE DEPT. OF REHABILITATION, SACRAMENTO. RESEARCH AND STATISTICS SECTION.
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DEPARTMENT OF DEFENSE, WASHINGTON, D.C. ASSISTANT SECRETARY OF DEFENSE (MANPOWER AND RESERVE AFFAIRS).
VT 014 090 684
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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, WASHINGTON, D.C. OFFICE OF ASSISTANT SECRETARY FOR HEALTH AND SCIENTIFIC AFFAIRS.
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DEPARTMENT OF LABOUR AND NATIONAL SERVICE, MELBOURNE (AUSTRALIA). WOMEN'S BUREAU.
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ABSTRACT - THE SUBJECT OF CHANGING THE YOUTH ORGANIZATION IN VOCATIONAL AGRICULTURE HAS BEEN A VOLATILE ISSUE FOR AT LEAST A DECADE, BUT THERE ARE SOME FUNDAMENTAL CHANGES WHICH NEED TO BE MADE IN OUR YOUTH ORGANIZATION AND AGRICULTURE EDUCATION GENERALLY. UNFORTUNATELY, THE THINGS WE HAVE LEARNED ABOUT AGRICULTURE IN THE PAST HAVE KEPT US FROM OBJECTIVELY EVALUATING THE PROPER ROLE OF AGRICULTURAL EDUCATION AND ITS YOUTH ORGANIZATION IN TODAY'S MODERN WORLD. AMONG THE NOTIONS WE SHOULD BURY IN ORDER TO BRING ABOUT CHANGE ARE: (1) RURAL LIFE IS SOMEHOW SUPERIOR TO ANY OTHER WAY OF LIVING, (2) PRODUCTION AGRICULTURE MUST CONTINUE TO OCCUPY CENTER STAGE IN AGRICULTURAL EDUCATION PROGRAMS, (3) ONLY RURAL PEOPLE ARE INTERESTED IN AGRICULTURAL CAREERS, (4) AGRICULTURAL EDUCATORS IN GENERAL HAVE BEEN REALLY COMMITTED TO HELPING THOSE STUDENTS WHO NEED THE MOST HELP, AND (5) AGRICULTURAL EDUCATION IS CHANGING RAPIDLY AND WILL CATCH UP WITH THE TIMES. WITH RESPECT TO YOUTH ORGANIZATIONS, WE SHOULD PLAY UP THE UNIQUENESS OF OUR YOUTH ORGANIZATION'S ROLE IN EXPANDING THE CAREER HORIZONS OF YOUTH. EMPHASIS SHOULD BE PLACED ON THE DEVELOPMENT OF COOPERATION, LEADERSHIP, AND CITIZENSHIP AS AN OUTGROWTH OF CAREER-ORIENTED ACTIVITIES. A SCHEME FOR YOUTH ORGANIZATIONS WHICH IS DESIGNED TO COORDINATE BROAD CAREER EXPLORATION AND DEVELOPMENT AMONG STUDENTS IS PROVIDED IN THIS PAPER. (SB)

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CHANGING THE YOUTH ORGANIZATION IN VOCATIONAL AGRICULTURAL EDUCATION[1]

Earl B. Russell[2]

The whole subject of changing the youth organization in vocational agriculture has been a volatile issue for at least a decade. Virtually everyone in our profession has at some time expressed some degree of concern over the activities, purposes, and role of the FFA in vocational agriculture.

Perhaps agricultural educators have spent more time discussing needed adjustments in the FFA with less results of actual changes being made than any other part of the agricultural education program. Granted, some changes have been made in the organization in recent years. Many leaders of the organization point with pride to adjustments made in the FFA program of activities, admission of girls, and the new FFA blazer for boys. Except for the admission of girls, however, changes have been rather meager.

Randy McCutcheon and I hope to share and discuss with you during this seminar some of our concerns relative to changing the FFA. Randy's perspective as a former national vice-president of the FFA should be of particular interest to you.

Roots of the Problem

Before going further let me stress that a major assumption underlying

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[1]This paper was presented in a seminar at Michigan State University, East Lansing, to agricultural education faculty and graduate students, staff members of the Michigan State University Institute of Agricultural Technology, and representatives of the Michigan State Department of Education on March 19, 1971.

[2]The author is a graduate student in the Department of Agricultural Education at Ohio State University, Columbus, and Research Associate at The Center for Vocational and Technical Education, Ohio State University. These remarks do not necessarily reflect the views of the Department or the Center.

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this presentation is that there are some fundamental changes which need to be made in our youth organization and agricultural education generally. For the moment I wish to take the position that the FFA is not in and of itself a major problem; rather, it is perhaps our most visible manifestation of some underlying outdated attitudes that we possess about agricultural education. I am sure most of you will agree that our attitudes and beliefs have a way of influencing the way we act. Those attitudes and beliefs tend to remain constant in spite of the overwhelming social change occurring around us each day. Herein lies the crux of the problem: The things we have learned about agricultural education in the past, either consciously or unconsciously, have kept us from objectively evaluating the proper role of agricultural education and its youth organization in today's modern world. We are blinded by our own experiences.

I would say to leaders setting out to reform agricultural education, and hopefully including our youth organization, that "ten idea funerals" are essential first. Certain commonly held, conservative notions about the nature of agricultural education must be buried. Ask yourself to what extent the FFA perpetuates these notions. The "funerals" essential to the reform of agricultural education are as follows:

1. Bury the notion of the perhaps never correct rural ethic that "rural life" is somehow superior to any other way of living.

   No empirical evidence exists to support this notion. Its continued presence in the thinking of some agricultural educators creates a subconscious attitude that agricultural education really has little to offer urban students. We need only to look at our dismal performance in urban areas

to see the possible effect of this notion. How often have you heard state and national FFA leaders refer to "rural" America as though agricultural education does not or should not exist in "urban" America?

2. Bury the notion that production agriculture must continue to occupy "center stage" in agricultural education programs.

Numerous studies show that careers in production agriculture are a minority of the total career spectrum in agriculture. Yet approximately 90 percent of the students enrolled in vocational agriculture nationally are still in production type programs. We have our priorities reversed. Unfortunately, the FFA name and activities help maintain this outmoded idea.

3. Bury the notion that a broad knowledge of production agriculture is basic to one's performance in most agricultural careers.

Although research is contradictory on this point, logic suggests that agricultural production is no more basic to the performance of most agricultural jobs than is, for example, ornamental horticulture or agricultural resources. Each classification of agricultural occupations should be supported by its own body of knowledge and practice. Increasingly, leaders in the broad agricultural industry are saying that a knowledge of business principles and practices is essential for success in agricultural careers.

4. Bury the notion that agricultural education no longer has a production agriculture (farmer) image.

The agricultural educator who believes in this notion is either naive or sadly out-of-touch with the majority of opinions of the general public and students. Particularly distressing is the fact that many agricultural educators are reluctant to make objective research studies on this issue, apparently for fear of what may be discovered. As long as the "FFA" letters represent our youth organization, efforts to change the image will be extremely disappointing.

5. Bury the notion that only rural people are interested in agricultural careers.

This does not mean that agricultural education programs now in existence are attractive to urban dwellers in large numbers. Only a few, far too few, agricultural education programs are in existence which attract urban students. The fallacy of the above notion is evident when we examine the home origins of college students enrolled in ornamental horticulture, landscape architecture, forestry, and veterinary medicine. A very large percentage of these students come from cities and not from farms.

6. Bury the notion that only a small proportion of agricultural careers are available to women and consequently enrollment of girls in agricultural education programs should remain low.

The present male-female proportion in agricultural careers in no way should be interpreted to mean the proportion of women

workers should remain low. Studies in technical education reveal that women are often superior to men in many technical areas. My use of the Walker Agricultural Interest Inventory with suburban eighth graders in Illinois revealed as many girls as boys were interested in plant and animal sciences.

7. Bury the notion that students who excell in vocational agriculture classes and youth organization activities do so BECAUSE of vocational agriculture.

Agricultural educators have been notoriously eager to claim credit for "producing" successful students. In a vast majority of these cases, however, the same students could have done equally as well in some other field of study. Our frequent confusion over this mistaken cause-effect relationship makes us appear somewhat immature in the eyes of other educators, particularly non-vocational educators.

8. Bury the notion that agricultural educators in general have been really committed to helping those students who need help most.

With rare exception, agricultural educators have concentrated their efforts on those students who could win the largest number of awards and activities. Such a system for teachers and students to receive recognition does more harm than good for the average and below-average students. The FFA clearly is not geared to serve these less capable students.

9. Bury the notion that a good public image of agricultural education will result quickly if we concentrate only on improving the "substance" of agricultural education.

The effect of such a notion on action is that we only "fight half the battle." Business and industry are constantly and effectively changing public opinion by changing names and labels, sometimes even without changing "substance." Agricultural educators who hold to the above notion are in effect saying we have a good product, so aggressive public relations is unnecessary. If the business and industry analogy is valid, aren't we very unrealistic with this notion? What does our chief public relations tool, the FFA, tell the public about the "substance" of agricultural education?

10. Bury the notion that agricultural education is changing rapidly and, given a few years, it will catch up with the times.

Persons holding onto this notion are probably out of touch with reality. Agricultural education has made some significant changes in the last ten years, but it is not changing as rapidly as the rest of society. Perhaps no other segment of education is more tradition-bound (tradition-strangled) than agricultural education. In spite of some encouraging trends, persons in vocational service areas other than agricultural education, as well as other educators, feel that agricultural education is exceedingly slow to change.

I hope you don't feel too depressed at this point, but please hold back your rotten tomatoes and eggs! I think these are fair criticisms

that we need to consider and resolve. If leaders hoping to change agricultural education and the FFA can successfully perform the "ten idea funerals" recommended here, some fresh, long overdue approaches to improvement may emerge. Too often in the past, leaders charged with changing agricultural education have been incapable of looking beyond their own limited experiences and seeing the potential and responsibility which exists for agricultural education.

Mason Williams, a popular contemporary musician, has stated that "Tradition is a good thing provided it doesn't last too long." Agricultural education should be very proud of the tradition it has established over the past half century in contributing to individual well-being and the national welfare. However, as the following story suggests, we may need to examine that tradition.[3]

TRADITION

> Processionary caterpillars feed upon pine needles. They move through the trees in a long procession, one leading the other following - each with his eyes half closed and his head snugly fitted against the rear extremity of his predecessor.
>
> Jean-Henri Fabre, the great French naturalist, after patiently experimenting with a group of these caterpillars, finally enticed them to the rim of a large flowerpot where he succeeded in getting the first one connected up with the last one, thus forming a complete circle which started around in a procession which had neither beginning nor end.
>
> The naturalist expected that after a while they would catch on to the joke - get tired of their useless march and start off in some new direction -- but not so.

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[3]See M.A. Cottrell, "Competencies Needed to Fill Available Jobs in Agriculture as Seen by a Feed, Seed, Fertilizer, and Garden Supplier," at the 44th Annual Conference, Agricultural Education, North Atlantic Region, Boston, Massachusetts, April 6-10, 1964.

> Through sheer force of habit, the living, creeping circle kept moving around the rim of the pot - around and around, keeping the same relentless pace for seven days and seven nights - and would doubtless have continued longer had it not been for sheer exhaustion and ultimate starvation.
>
> Incidentally, an ample supply of food was close at hand, and plainly visible, but it was outside the range of the circle, so they continued along the beaten path.
>
> They were following instinct - habit - custom - tradition - precedent - past experience - "standard practice" - or whatever you may choose to call it, but they were following it blindly.
>
> They mistook activity for accomplishments. They meant well, but they got no place.

Without question, agricultural educators today are as capable, dedicated, and sincere as they have ever been. We all "mean well" but are we getting any place?

I have been keenly interested in recent years in the sources of leadership in agricultural education. Michigan State University is one of four or five institutions which has consistently provided the sound leadership for guiding the destiny of agricultural education throughout the country. Because of your past performance, the high regard with which you are held by colleagues in other states, I am confident that you will play a major role in shaping the new destiny of agricultural education.

Role of the Youth Organization in A Changing Agricultural Education

A crucial need exists to examine and redefine the purposes and objectives of our youth organization. The curriculum in agricultural education has undergone considerable redirection because of the efforts of teacher educators, state supervisors, and teachers of vocational agri-

culture. The FFA simply has not followed suit. Thomas Gambino, Director of Career Development in the New Jersey State Department of Education, in reviewing the handbooks of several vocational youth organizations, raised this question about the FFA: "Are students who are interested in the many other occupations embraced within the 'agriculture' family possibly discouraged from doing so by the title and the aims of the FFA group?"[4]

In the March 1969 Agricultural Education Magazine I described in some detail the tremendous gap between the agricultural education curriculum in the school in which I taught and the FFA program. Evidence was cited there that in fact the FFA did discourage students from pursuing studies in agriculture. That article described the development of a new organization, named the Agricultural Careers Club of America (ACCA), which was more closely geared to student interests and our specialized agricultural education curriculum. I recommend that article for your reading pleasure if you have not seen it! Many people tell me the article makes especially good reading when they are sitting up late wanting something to do around midnight! More will be said about ACCA in a few moments.

In considering the role of our youth organization, we need to examine the uniqueness of vocational youth organizations generally from other youth organizations in schools. We typically advocate the merits of FFA as being for the development of cooperation, leadership, and citizen-

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[4] Thomas Gambino. "New Directions for Youth Organizations in Vocational Education." National Institute on the Role of Youth Organizations in Vocational Education. (Edited by James C. Vance and Ralph Bregman.) Trenton, N.J.: Division of Vocational Education, State Department of Education. August 1970. p. 162.

ship. Why do we promote as a fundamental basis for a vocational youth organization the same purposes that any other organization in a school would have? It seems we should more appropriately play up the uniqueness of our youth organization's role in expanding the career horizons of youth in the areas of agribusiness and natural resources. Emphasis should be placed on the development of cooperation, leadership, and citizenship as an outgrowth of career-oriented activities.

A fundamental role of the youth organization should also be that of placing great emphasis on helping those students who need help most. Currently, the FFA is geared to serving the most capable students, while the less capable are generally left behind. Gambino states, "Generally speaking, membership in our vocational youth organizations appears to assume too little a responsibility for building the interests of uninvolved students but rather is ready to serve the student who has already made a fairly specific career choice or who has demonstrated a strong interest by enrolling in a vocational education program."[5]

Changing the Youth Organization

Now let's get down to the "nitty gritty" of how we may go about changing the FFA. Permit me to use as a point of departure in this discussion the proposal I prepared for change in the FFA at the national level in June of 1969. That proposal was sent to the National FFA Board of Directors, National FFA Officers, NVATA Officers, state supervisors, teacher educators, and others. Seventy-five persons received the materials. My major objective in sending that proposal was to create

[5] Ibid.

debate on the FFA issue. In September 1970 I reported reactions to that proposal in the Agricultural Education Magazine. If you have seen that article you may remember that my attempt to create debate enjoyed some success! A major premise underlying that proposal was that unless we change the FFA completely and get rid of the FFA letters we will have a nearly impossible job of communicating any changes we make to the public.

Generally speaking, those persons who had official connections with the FFA organization strongly opposed my proposal, as expected. Many of them seriously misread the proposal as evidenced by their reactions. On the other hand, persons such as teacher educators who had no official ties with the FFA tended to respond very favorably toward the proposal. This finding is consistent with the way change so frequently occurs. John W. Gardner, former secretary of Health, Education, and Welfare, indicates that custom and standard practice within organizations cause new ideas and developments to originate from the "outside." He states,

> The land-grant colleges, a profoundly important educational innovation, did not spring from the inner circle of respectable higher education as it then existed--it represented an impulse from outside that charmed circle. Motels, the most significant development in this generation in innkeeping, were at first regarded with scorn by reputable hotel people.[6]

In short, if we in agricultural education want to change the FFA, we should expect it to be done by persons other than those who are now in charge of the organization. Because FFA leaders have so many vested interests in the organization, we can't expect them to be willing to change it. We should expect resistance. How may we go about effecting

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[6]John W. Gardner, Self-Renewal. New York: Harper Colophon Books, Harper and Row, Publishers. 1965. p. 46.

such a change on a national level? Generally speaking, people like you must try to get some kind of effort going to bring about changes.

Some Strategies

In a recent paper, Dr. William L. Hull, Chairman of the Change Process Program Area at The Center for Vocational and Technical Education at Ohio State University, discusses three strategies for change in education.[7] Let's take a quick look at those strategies and see if we can draw implications from them for how we may change our agricultural youth organization.

The first strategy that he discusses is that of rational information. This strategy is based upon the belief that when persons are presented with relevant information on a problem they will make rational choices based on that information. It is based on the assumption that when two ideas confront one another, the best one will win. We may apply this strategy as we solicit the support of fellow professionals in agricultural education who do not have a vested interest in the present FFA organization. In other words, persons who have no commitment to the status quo may be expected to make rational decisions and actions.

The second change strategy is that of personnel selection and reeducation. In our situation in agricultural education, we may then concentrate on the vocational agriculture teacher as the key ingredient in change. The teacher education program here at Michigan State, for example, is an ideal laboratory for preparing and "servicing" teachers in effectively revising youth organization programs in local schools. Perhaps you could organize those Michigan teachers of vocational agri-

[7]William L. Hull. "The Process of Planned Change." An article submitted for publication in the American Vocational Association 1971 Yearbook.

culture who are now conducting the many up-dated, specialty-type instructional programs throughout the state. These teachers could serve as a pool of "demonstration" teachers in conducting new youth activities.

The third strategy for change is that of authority. This strategy emphasizes the direct control of change by persons in positions of leadership. You may make a concerted effort to reward innovative behavior among teachers. You people in the State Department of Education may be able to apply such techniques as special assignments, recognitions, manipulation of the pay scale, or similar incentives.

Although the authority is not formal, state-level support for a change in our youth organization from a state as influential as Michigan on the national scene could exert considerable influence on the power structure to bring about change much more rapidly at the national level. For example, you could solicit the support of business and industry, and selected leaders in other states who would help you to force the issue of updating our organization. In short, you people have considerable power to bring about change if you will apply it collectively.

A Scheme for Something Bigger--Where the Change Could Fit

There has been considerable interest in recent years in the development of a comprehensive system of occupational or career education throughout all levels of public education. Dr. Sidney Marland, the new U.S. Commissioner of Education, has recently voiced a strong commitment to this concept in a recent address to secondary school principals. He states:

> . . . education's most serious failing is its self-induced, voluntary fragmentation, the strong tendency of education's several parts to separate from one

> another to divide the entire enterprise against itself....As a first step, I suggest that we dispose of the term vocational education, and adopt the term career education.[8]

Several persons have recognized that our present system of vocational youth organizations tends to limit the perspectives of students in making career choices. In effect, the separate organizations work against the very purpose for which they were established by encouraging student interest in one rather narrow occupational area. I have gathered ideas from a number of sources and propose a scheme for youth organizations designed to coordinate broad career exploration and development among students at every level in the public schools. (Refer to Figure 1.)

A Realistic Approach

At the elementary level I propose the establishment of Practical Arts Clubs of America (PACA) to promote among students activities related to broad occupational education. At the junior high level, Career Education Clubs of America (CECA) would focus on career exploration and development opportunities for youth. CECA would be very broad in scope but would begin to have students examine career alternatives. This CECA arrangement would extend into secondary school, particularly during the first two years. Membership in several occupational organizations would provide opportunities for students to pursue numerous areas of interest during the eleventh and twelfth grades. Students would be members of CECA and also members of as many subdivision organizations as desired.

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[8] Sidney P. Marland Jr. "Career Education Now." An address by the U.S. Commissioner of Education at the 1971 Convention of the National Association of Secondary School Principals, Sam Houston Coliseum, Houston, Texas, Saturday, January 23, 1971. p. 9.

A REALISTIC APPROACH TO YOUTH ORGANIZATIONS IN VOCATIONAL EDUCATION

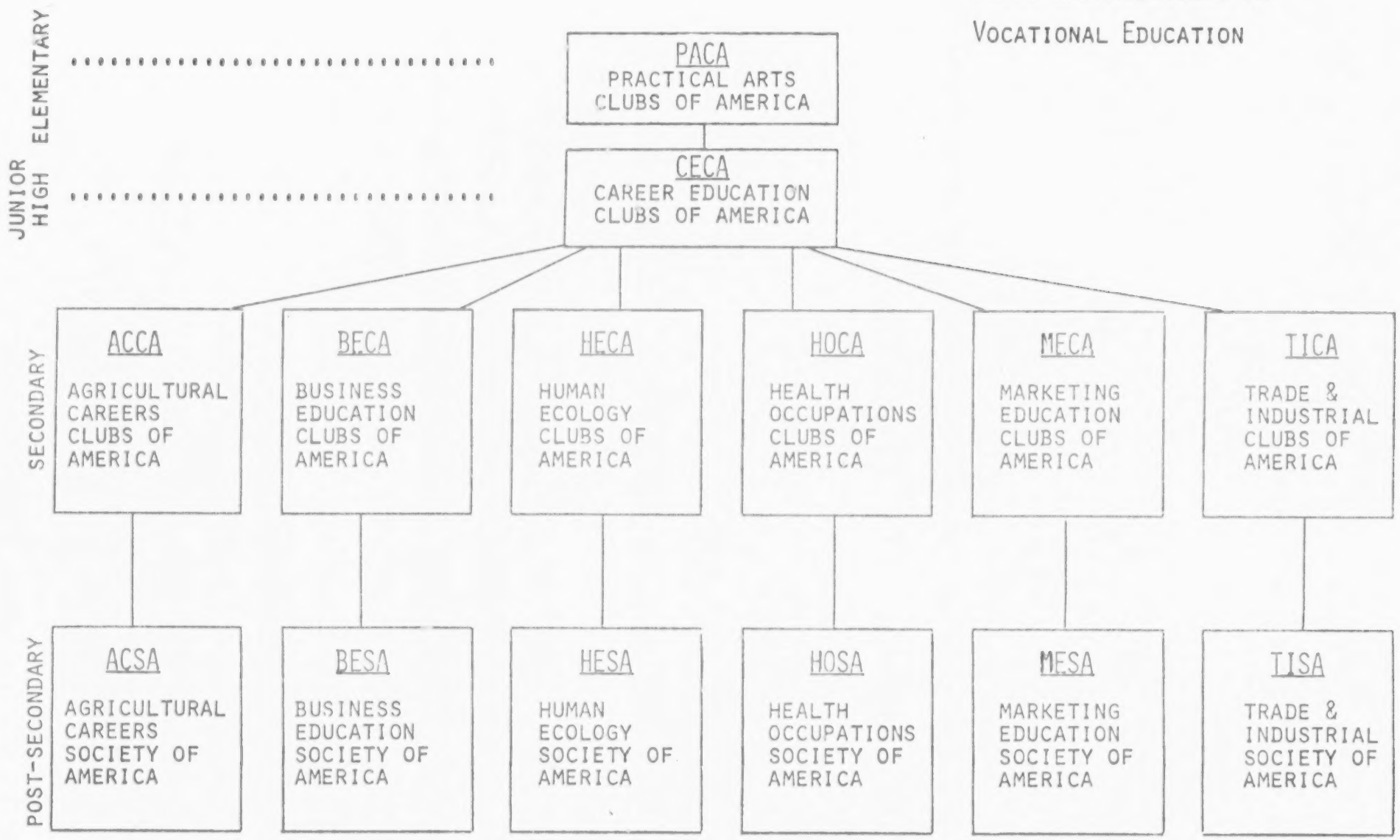

FIGURE I

Students would be encouraged to participate in several organizations at various times during this secondary school preparation. The renaming of each organization for the service areas is aimed at making those titles more descriptive to the public and also to immediately communicate to the public that some rather significant changes in vocational education are taking place in the public schools. Such an arrangement would give a totally fresh and, I believe, appealing look to career education.

In order to combine and coordinate the total career education of students, an extension of these service area organizations would be made at the post-secondary level. These organizations would become "societies" instead of "clubs" to indicate the greater degree of sophistication of students during that age period.

I propose this structural arrangement for your consideration in hopes that some action can be taken by an organized body at the state level to speed the rate of change in youth organizations. To the extent that we are successful in bringing about youth organization revision, I believe we will be concurrently successful in improving vocational education programs throughout.

Perhaps the most logical conclusion to this discourse would be my paraphrasing the conclusion drawn by Brickell in a state-level study of educational change.[9]

Our greatest barrier in moving into a new plan for improving our youth organization and agricultural education generally will be our loyalty to the inadequate organization and arrangements which exist today.

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[9]Henry M. Brickell. Organizing New York State for Educational Change. Albany, New York: The University of the State of New York, The State Education Department, 1961. p. 102.

If we recognize them as being the best we could imagine when we invented them, give them full credit for what they have accomplished, and then move on to something better, agricultural education can maintain its long-established leadership in vocational education.

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EMPLOYMENT OF WOMEN. FINAL REPORT.

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ABSTRACT - TRADE UNION REPRESENTATIVES FROM AUSTRIA, DENMARK, FINALND, IRELAND, ITALY, AND NORWAY ATTENDED A SEMINAR DESIGNED TO PROVIDE THEM WITH INFORMATION CONCERNING THE PROBLEMS INVOLVED IN EMPLOYMENT OF WOMEN TO HELP THEM IN DEFENDING THE INTEREST OF THIS SPECIAL GROUP OF WORKERS. MAJOR PAPERS INCLUDED: (1) "EXTENT OF WOMEN'S PARTICIPATION IN ECONOMIC PRODUCTION TODAY. INFLUENCES OF ECONOMIC FLUCTUATIONS OF WOMEN'S EMPLOYMENT AND UNEMPLOYMENT" BY R. KNUDSEN, (2) WOMEN'S ROLE IN MODERN SOCIETY FROM THE SOCIOLOGICAL AND ECONOMIC POINTS OF VIEW" BY E. SULLEROT, (3) "CHARACTERISTICS OF SUPPLY AND DEMAND FOR WOMEN WORKERS ON THE LABOUR MARKET" BY R. GUBBELS, (4) "EDUCATION AND VOCATIONAL TRAINING IN SCHOOLS OF VARIOUS LEVELS" BY N. SEEAR, (5) "WAGES: EQUAL PAY FOR MEN AND WOMEN" BY A. CODAZZI, (6) "SOCIAL AND FISCAL PROVISIONS AFFECTING THE EMPLOYMENT OF WOMEN" BY E. TOFFANIN, (7) "WORKING HOURS AND TIME SCHEDULES. THE 'TIME BUDGET' OF MARRIED WOMEN IN URBAN CENTERS" BY A. GIRARD, (8) "PART-TIME WORK" BY J. HALLAIRE, (9) "SERVICES DESIGNED TO HELP WOMEN COMBINE OCCUPATIONAL AND FAMILY RESPONSIBILITIES" BY M. GUTBERGER, AND (10) "SYNCHRONISATION AND HARMONISATION OF WORKING HOURS WITH THE OPENING AND CLOSING TIMES OF SOCIAL SERVICES, ADMINISTRATIVE OFFICES, ETC." BY V. KLEIN. (SB)

VT 013 833

INTERNATIONAL SEMINARS 1968-2

EMPLOYMENT OF WOMEN

Regional Trade Union Seminar

Paris, 26th-29th November 1968

FINAL REPORT

VT 013 833

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
Paris 1970

INTERNATIONAL SEMINARS 1968-2

EMPLOYMENT OF WOMEN

Regional Trade Union Seminar

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FINAL REPORT

U.S. DEPARTMENT OF HEALTH,
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The Organisation for Economic Co-operation and Development was set up under a Convention signed in Paris on 14th December 1960 by the Member countries of the Organisation for European Economic Co-operation and by Canada and the United States. This Convention provides that the OECD shall promote policies designed:

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The legal personality possessed by the Organisation for European Economic Co-operation continues in the OECD which came into being on 30th September 1961.

The members of OECD are Austria, Belgium, Canada, Denmark, Finland, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

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I

INTRODUCTION

The seminar on "Employment of Women" was organised by the Manpower and Social Affairs Directorate of OECD at the request of the Trade Union Advisory Committee.

Its purpose was to provide trade union representatives with a clear picture of all aspects of the problems involved in employment of women to help them in defending the interests of this special group of workers.

Two introductory papers by a statistical expert and a sociologist respectively outlined the extent of women's employment by country and sector, by age and by qualification; and the role of women in modern society from the sociological and economic points of view. Further papers dealt with preparation for employment, working conditions (wages and legislation), working hours and time schedules, including part time work; the social services available to working women and the synchronisation of working hours and these services. A final general report outlined the role of trade unionism with regard to women's employment. Reports on women's employment in each of the participating countries were also available.

The following countries took part in the seminar: Austria, Denmark, France, Ireland, Italy and Norway. Delegates from the Board of the World Confederation of Labour, the International Confederation of Free Trade Unions and the Trade Union Advisory Committee to OECD also attended, together with observers from the International Labour Office, the International Council of Women and UNESCO.

The present final report contains the text of all the papers prepared for the seminar, together with a resumé of the discussion by Mme Guélaud Léridon.

II

GENERAL REPORT

by

Madame F. Guélaud Léridon

INTRODUCTION

The best possible utilisation of a country's human resources is one of the essential aims of an active manpower policy. This requires the introduction of measures to further the employment or the continued employment of certain "special" groups who have greater trouble in becoming members of the labour force, such as older people, women, and rural workers who must adjust to industry and to urban environment.

The OECD Manpower and Social Affairs Committee has for several years been studying the problems which specifically apply to these various groups, in order to further their overall employment in the light of qualifications and aptitudes, and thus promote a more rapid expansion of the economy and higher standard of living everywhere. Women as a "group", and especially married women, have certainly become an important part of the labour force in all countries. This is clearly shown by the fact that the differences between the activity rates for women in the various countries are mainly accounted for by differences in the activity rates for married women. We later have occasion to revert to this question. But it is no less certain that women workers still encounter special difficulties in obtaining or holding a job, frequently owing to the lack of laws or regulations which enable them to combine their job and family responsibilities, even though these latter duties are now shared to an increasing extent by their husbands, who consequently are faced with a similar problem.

In an attempt to improve the situation of this particular category the OECD carried out a survey in 1964, in 20[1] Member countries, on working hours and time schedules for women workers with family responsibilities, in order to compare living conditions for such workers in the different countries and to discover how women can more easily combine their occupational and family duties. The results of this survey provided material for a highly significant

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(1) Japan and Finland were not at that time members of OECD.

and instructive analysis by Viola Klein[1], and quite clearly showed that in all countries this group of workers will never be able to use its potential to best capacity unless certain obstacles are overcome.

Other studies already published or in preparation by the OECD help towards a better knowledge of the special problems of women in employment and of certain measures proposed to try to solve these problems.[2]

The object of this seminar was to review the overall situation of female employment in the various European countries, without confining the study to women workers with family responsibilities. The reports and discussions of the seminar deal extensively with this group, since the difficulties they encounter become increasingly acute as their numbers grow. The seminar was intended to provide trade union representatives, whose duty is to defend the workers' interests, with a better understanding of the problems and of the measures likely to solve them, so that they might cause measures or schemes designed to improve the occupational status of women to be formulated and introduced in their countries. That an increasingly large fraction of the working population in each country in fact are still not fully integrated in the labour market is a situation which badly needs correction.

It is significant to note that discussions of women in employment increasingly involve the wider problem of women as members of the community. It was important therefore to preface this meeting with a few remarks on the place of women in our contemporary society. Have the separate roles of men and women evolved as the technical, demographic and cultural aspects have changed?

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(1) V. Klein. Women workers - Working hours and services, OECD, 1965.

(2) J. Hallaire. Part-time Work. OECD, 1968.
R. Gubbels. New job openings for women (in preparation).

N.B.
Seear - Programmes to facilitate women's return to the labour market after a break in employment (in preparation).

CHAPTER I

Conceptions regarding the role of women in society

The role of women in society of course admits of very different conceptions, depending on the individual country. Yet in the countries studied by the seminar, purposely limited to six (Austria, Denmark, France, Ireland, Italy and Norway), the situations are fairly similar. Perhaps mental attitudes have not evolved everywhere to the same extent, although it should hastily be added that the change everywhere has been slow, much slower than changes in living conditions. The result is an uneasy situation where traditions and attitudes are out of step with the new ways of life, notably for women, an increasing number of whom have an occupation outside the home.

Apportionment of masculine and feminine roles

The organisation of any community is based on a sharing of roles by its different members. The roles of men and of women throughout the history of every civilisation in particular have been sharply defined, but of course by the men, who exercise the political authority and organise society. In the traditional society the woman's role was naturally limited to the family. Since she was the bearer of children, she was fully occupied by her duties as a mother and homemaker.

In addition to childbearing, women were responsible for bringing up the children and for feeding and clothing the various members of the family. This was no small feat, since the traditional household may be described as both a production and a consumption unit. The housewife took the raw material and converted it into consumable products or objects, under precarious housing conditions and by means of rudimentary methods and tools. It was the housewife who made the bread, prepared and preserved food and drew water from the well. She not only looked after the clothing and household linen (washing, mending),but also had to make them, and even spin and weave the cloth.

The man's responsibility was to provide the household with the raw materials which were then converted by his wife. In an attempt to increase resources which were always inadequate, the man used his inventive powers to create new tools, new techniques. Man's superiority was thus admitted from the start, as his activity called

for physical strength, skill, initiative and carried certain risks. The woman's role was necessarily more unobtrusive and offered little scope for progress.

Although there have been profound changes in these traditional conditions, as we will see later, attitudes towards the role of men and women have evolved very little. The woman is still regarded as the cornerstone of the household and family, while the man's task is still to master nature and conquer the outside world, which of course are far grander occupations than such homely tasks as mending, washing or cooking; as E. Sullerot points out, "work away from home is their field of activity, work at home belongs to the woman".(1) The main obstacle in bringing about a change in these attitudes is that the woman's role is regarded as identical with her family role. There is an unconscious fear that to alter this concept might change or even destroy the family. It may be added that woman's role is always taken to mean that of wife and especially mother; the role of the unmarried woman is regarded as a temporary one, since in everyone's eyes she is a future married woman. Consequently the women who remain unmarried (and who after all amount to 8 to 10 per cent of the total number in each cohort of women) as well as those who are widowed or divorced are regarded as "marginal", although in France, for example, they make up more than one third of the total number of women over 20.

Thus any debate or discussion on the employment of women invariably centres on the problem of the married woman and more particularly the working mother. The discussion then assumes a passionate, emotional character. As the woman's work takes place to an increasing extent outside the home, it is promptly assumed that any growth in female employment will sooner or later lead to break up of the family.

Yet, even if responsibility for the life and stability of the home is largely left to the wife alone, her family and household tasks have certainly become much lighter, as we will see, leaving her with more free time each day, and to an even greater extent throughout life. Nor is it difficult to argue for a more equitable distribution of family responsibilities between man and woman which threatens no damage to the family.

Traditional mental attitudes hence persist whereas living

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(1) c.f. Report by E. Sullerot: Women's role in modern society from the sociological and economic points of view.

conditions have profoundly changed. The result is a feeling of guilt among women who strive to adjust to the new way of life in a society that still clings to the old patterns and ideas.

Demographic changes

Former concepts regarding roles we saw to be based on the existence of very large families where the whole of the mother's time was taken up in bearing and rearing children. The mortality rate was high and expectation of life was low, while the birthrate was also high. Thus only one out of two women reaching the age of marriage lived as long as 50 years. Those who reached 50 without being widowed had an average of 7 to 8 children.

Conditions are very different today - mortality and birthrates are considerably lower. Among women reaching marriageable age one out of two lives to the age of 77. The average number of children per marriage of completed fertility is in the neighbourhood of three. Finally, the average age at marriage tends to be lower and the intervals between births shorter.

The consequences of this development are fairly evident; the number of years in a woman's life taken up by motherhood is today very much reduced, accounting for only a fraction of her adult life. For a mother with three children, therefore, it may be assumed that but ten years of her life will be spent in bearing and caring for her children. The majority of women thus find themselves freed from the most time-consuming of their maternal duties by the age of about 35. They then have another forty years to live, including thirty years of potential working life.

At the same time the mother today relies increasingly on the community for the education of her children. More and more children are sent to kindergartens and nursery schools before the age of compulsory schooling; school attendance rates at the ages of four and five are very high in France and Belgium, for example; if they are lower in other countries this is due more to the shortage of facilities than to family opposition. Children of school age are entrusted to community care for the greater part of the day. Many children spend their holidays in holiday camps, recreation homes or group travel. While there is no wish to minimise the educational role of the family, it must be admitted that the mother's role in this respect has changed.

Changes in technical conditions

The extraordinary development of technology in the wake of scientific progress since the 19th century has helped to bring about radical changes in the situation of women. This in two ways.

New types and methods of work, made possible by new production techniques which no longer call for physical strength alone, now enable women to take up outside employment. Occupational tasks today increasingly require less physical strength and more occupational skill,(dexterity, concentration, attention to detail, etc.) or call for psychological qualities which women possess as much as men. Technical progress had made it possible not only to improve conditions of work but also to a large extent to diversify types of work, both for men and for women, though there is some reluctance to admit women into new occupations.

At the same time technical progress has been extended to the home, facilitating household tasks. The production side of women's work at home has gradually disappeared, leading to a devaluation of woman's role in the home. Industrialisation of the manufacturing process for most products has put an end to women's role as "producers". Today they buy what they used to make. The "consumer" role of the housewife has grown even faster than her producer role has declined, since household appliances, new food products, etc. have brought additional needs. Provided she has the means, the more time she has the more the housewife is apt to buy. She is therefore a better consumer than the woman who goes out to work. This is why advertising, for example, is almost always directed towards non-working women. Many women's journals also have a very ambiguous attitude towards female employment.

Today, many women rightly feel that by going out to work they can contribute to the well-being of their family. Thus they explain that they work to enable their children to continue their studies longer, to pay for better holidays for their family, or to buy household appliances or perhaps a car; while the husband continues to provide the household with the essentials, the woman uses her wage to buy a few extras. Essentials and extras are somewhat vague, highly subjective concepts, which in fact evolve as the standard of living improves. It is safe to say that consumers' desires will always increase more rapidly than the means for their satisfaction. It will thus be noted that in such particularly affluent societies as the United States or Sweden the employment of married women is developing rapidly.

Against this it may be argued that women do not necessarily work only to earn money and that some may well want to widen their horizon beyond the confines of the household, exercise their intellectual powers, etc. This is quite true, and in our opinion hasty conclusions should be avoided when looking at the findings of opinion polls to determine why women work. Replies are too heavily influenced by the usual clichés on the role and place of woman in the family and in society to be taken at their face value. And why does no one ever try to find out why men work?

Development of education for women

There is no doubt that the development of education for women in all countries does and increasingly will affect women's employment. Girls have increasing opportunities to pursue the same studies as boys. We shall see later that this is not yet true of all the countries represented and that certain differences still prevail in the school curricula leading to differences in the choices of occupation open to boys and girls, but some progress towards equality is being made.

Increased participation of girls in higher education is a very important development, but probably still too recent for all the consequences to be assessed. In France girls represent 43 per cent of total numbers in higher education; in Denmark, Sweden, and the United Kingdom the percentage is in the neighbourhood of 40 per cent; in Italy it is in the region of 35 per cent; in Norway and the Netherlands the percentage is substantially lower, barely over 20 per cent. While the pattern is not changing at the same rate in every country, it is everywhere apparent.

It is also important to note that the extent to which women are engaged in working life and continue their activity at ages when family responsibilities are heaviest largely depends on the level of education they have reached. In France, for example, in 1962 the activity rate for women between 30 and 34 holding a diploma at least equal to the "baccalauréat" was twice that for women of the same age with no diploma. In Belgium, the United States, Norway and Finland the higher the level of education, the higher the activity rate recorded.

Such a trend is only just beginning, and the effects will not be fully felt until 10 or 15 years have gone by. But today it seems somewhat absurd to give girls the same training opportunities as boys without giving them an equal chance to enter and progress in an occupation.

In all countries there is at present a definite contradiction between demographic, technical and cultural developments which, as we have seen, have profoundly changed women's lives, and the maintenance of the older attitudes of conscious or unconscious hostility towards women's employment outside the home. Thus the fact that a mother goes out to work is usually regarded as the cause of all family misfortunes: the rising divorce rate, juvenile delinquency, children's poor school records. Yet none of these accusations stands up under objective analysis. No link has ever been scientifically established between a mother's employment and the divorce rate or juvenile delinquency. On the other hand it is certain that if she has a job a woman need not find herself completely without resources should her home be broken up by widowhood or divorce.

This contradiction between the present patterns of existence and ideas inherited from the past causes an "uneasy feeling" among women, who now consider that attitudes are in need of urgent adjustment to the new situation. Such a mental change could then take concrete form by so re-organising patterns of daily community existence as to allow women freedom of choice, particularly as concerns their working life.

Contrary to an opinion widely held, there is no reason to believe that women's employment is a temporary phenomenon bound to disappear as soon as the general standard of living has risen sufficiently. Instead, it is in the most affluent countries that women's employment has most rapidly grown in recent years. But it is certain that at the present time the female labour force is regarded as a safety valve for the labour market: whether or not women are encouraged to take a job depends on the fluctuating needs of the economy. The result in all the Western countries is the failure to introduce any firm policy of social investment or to take any measures which can help women to combine their household, family and occupational activities.

Initiatives such as the OECD decision to organise this seminar should help to hasten the pace in changing the rigid, oversimple and ultimately unrealistic concepts which have been set, and so make it easier for women to be integrated in the working world and in society in general.

CHAPTER II

Statistics on female employment in various European countries

The varying situation of female employment in the European OECD countries, particularly those represented at the seminar, reflects different stages of economic development rather than divergent concepts with regard to women workers.

Data which are too general are not very revealing, since female employment is known to be strongly influenced by such demographic factors as age, marital status and family responsibilities. Before looking at the strictly occupational figures (activity, status, level of skill) for the female labour force, a closer examination of the demographic features seems called for. Unfortunately the statistics are seldom plentiful and can be obtained only from census data, which always take so long to process that the ultimate findings are already out of date. Other well known difficulties in comparing data for different countries are the varying definitions of occupations (particularly in the case of agricultural, marginal, casual or temporary workers) and the fact that as census results are based on statements by individuals they are apt to be inaccurate.

We have tried as far as possible to obtain statistics for some ten OECD European countries, so as to widen the scope of the seminar, which was limited to six countries.

(a) Demographic features of female employment

Overall activity rates for women over 15[1] vary fairly considerably from one country to another:

- over 40 per cent in Austria and Federal Germany;
- between 35 per cent and 40 per cent in France, Denmark and the United Kingdom;
- in the region of 30 per cent in Sweden and in Ireland;
- under 25 per cent in Italy, Belgium, the Netherlands and Norway.

These overall rates however conceal substantial differences in regard to age groups. For all countries (except Denmark and the Netherlands), female employment reaches its highest level between

(1) i.e. the percentage of women over 15 years of age gainfully employed.

20 and 24 years, drops between 25 and 34 years, and rises again a little after 35. While the general trend is the same, the range of variation is far from identical.

Thus among women between the ages of 20 and 24, less than one in two go out to work in Italy and Norway; the proportion is about one in two in Belgium and in the Netherlands; a little more than one in two in France, Sweden and Denmark, two out of three in the United Kingdom and Ireland and three out of four in Federal Germany and Austria.

Near the age of 35 less than one woman in five is still working in the Netherlands and Norway; in Italy, Belgium and the United Kingdom the ratio approaches three out of ten; and in Denmark, Sweden and France about one in three. The minimum percentage is again highest in Germany and Austria, where it is between 45 per cent and 55 per cent.

These variations clearly show the influence of family status on women's employment. Many women give up their jobs when they marry, and many more after the birth of their first child. But although in all countries employment for the married woman is looked upon with some disfavour, particularly in the case of a mother with young children, disapproval is more marked in some countries than in others: it is greatest in the Netherlands and Norway where less than one married woman in ten goes out to work. As a natural consequence little is done in these countries to provide school or welfare facilities which can help working women with family responsibilities. In Ireland and Sweden about one married woman in four goes out to work. The proportion in France, Germany and the United Kingdom reaches the substantially higher figure of about one in three.

Among unmarried, widowed or divorced women, who are usually obliged to work, activity rates vary much less from one country to another.

The employment of married women is still influenced to a large extent by attitudes towards the social role of men and women. These we mentioned as having remained very traditional but they are beginning slowly to evolve. An examination of the trend of activity rates for women over the last fifty or even twenty years shows that the countries where female employment has increased most are those where the number of married women entering into the labour force has increased most. Since the majority of unmarried, widowed or divorced women, for whom employment is a strict necessity, are already working, it is obviously the married group which constitutes the potential.

Table I

Female Activity Rates in General and by Age Group
(i.e.percentage of active women in each age group)

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	15 and over
Federal Germany 1961	79	72	50	44	46	45	42	37	32	21	41
Austria 1961	75	75	59	--	55 --	53	51	47	40	20	47
Belgium 1961	41	52	36	31	30	30	28	25	20	9	25
Netherlands 1960	61	53	22	16	15	16	17	16	14	9	23
France 1962	46	59	43	39	40	41	45	45	41	31	37
Northern Ireland 1961	54	67	39	24	19	19	-- 21 --		-- 22 --		30
Italy 1961	38	40	30	28	-- 27 --		-- 24 --		17	13	26
Denmark 1960	67	59	39	34	36	38	38	37	34	23	36
Norway 1960	43	48	26	19	19	20	22	25	27	23	24
Sweden 1960	45	57	42	36	35	36	37	36	32	21	33
United Kingdom 1961	73	67	42	33	-- 32 --		-- 34 --		31	17	35

Table II

Female Activity Rates by Marital Status
(i.e. percentage of active women according to civil status)

		Married	Unmarried	Widowed or Divorced
Federal Germany	1965	32	79	23
Denmark		30		
France	1962	32	54	30
Norway	1960	10	56	28
Sweden	1960	24	55	28
United Kingdom	1961	30	59	23
Ireland	1961	22	-------48---------	
Netherlands	1960	7	64	9

We have seen that married women have a stronger incentive to work today than they had in the past, and there is no reason to expect any reversal of the trend.

Activity rates for women by number of dependent children

Accurate figures unfortunately are not available from many countries. Observations must accordingly be limited to those few countries which provide the relevant statistics.

In Federal Germany the number of working women with families has increased considerably over the last ten years. Nine out of ten, however, have no more than two children (under 14).

In France in 1962, 47 per cent of married women with no dependent children (i.e. under 17) were gainfully employed; the rate for those with one dependent child was still 40 per cent, but fell to 26 per cent for those with two and 16 per cent for those with three or more. Omitting women working in agriculture, where the problems are different and relatively easier to solve, the activity rates become much lower. Thus among non-agricultural households, 37 per cent of married women with only one dependent child go out to work; the rate drops to 21 per cent for those with two dependent children and to 10 per cent for those with three or more.

In Denmark the rate for married women falls considerably after the birth of the first child, less for the second, and is almost negligible for women with three or more children.

In Norway in 1960, 17 per cent of married women without dependent children were gainfully employed; the rate was 10 per cent for those with only one dependent child and then fell off sharply as the size of the family increased.

It is obvious that in Western societies as now organised the presence of several children, especially young children, is a considerable obstacle to women's employment, nor is there any doubt that its development depends largely on how much responsibility the community takes for the children's education and recreation. Therefore a policy decision is called for, a question which will later be discussed.

(b) Occupational statistics

1. Breakdown by sectors of activity

The number of women as a proportion of the total labour force varies considerably from one country to another:

- about one quarter in the Netherlands, Norway, Italy, Belgium and Ireland;
- about one third in Sweden, the United Kingdom and France;
- between 37 per cent and 40 per cent in Austria and Federal Germany.

Table III

Female Employment by Major Sectors of Activity

		Primary	Secondary	Tertiary	All activities
Federal Germany	1961	20	34	46	100
Belgium	1961	5	29	66	100
Netherlands	1960	4	23	73	100
France	1962	19	28	53	100
Italy	1961	35	31	34	100
Denmark	1960	19	25	56	100
Norway	1960	22	19	59	100
Sweden	1961	8	25	67	100
United Kingdom	1961	1	37	62	100
Austria	1961	30	27	43	100
Ireland	1961	15	22	63	100

Table III bis

Percentage of Women Workers in the Labour Force of Each Sector

		Primary	Secondary	Tertiary	All activities
Federal Germany	1961	54	25	46	37
Belgium	1961	17	18	39	26
Netherlands	1960	8	12	35	22
France	1962	33	23	46	34
Italy	1961	29	20	38	25
Denmark	1960	25	21	50	28
Norway	1960	22	12	33	23
Sweden	1961	17	17	48	30
United Kingdom	1961	10	24	43	32
Austria	1961	53	27		40
Ireland	1961	11	26		26

While these variations may reflect existing differences, they may be accentuated by differences in census definitions. This is particularly true of the agricultural labour force. Women thus account for less than 11 per cent of farm labour in the United Kingdom, Ireland and the Netherlands, but for over 53 per cent in Austria and Federal Germany, clearly because definitions of women's employment in agriculture are more restrictive in some countries than in others.

To eliminate this source of error and work on figures which are more comparable, let us look at female labour outside agriculture in relation to the total non-agricultural work force.

Variations between countries will be found substantially smaller, i.e.:

- women account for about one quarter of the non-agricultural labour force in Norway, the Netherlands, Italy and Belgium;
- they represent about one third in Denmark, Sweden, France, the United Kingdom and Federal Germany.

Table IV

Proportion of Women Workers in the Non-Agricultural Labour Force

Federal Germany	Belgium	Denmark	France	Italy	Norway	Nether-lands	United Kingdom	Sweden
34%	27.5%	29%	34%	24%	23%	24%	33%	32%

In no country does the proportion of women in the industrial sector exceed 27 per cent of the total industrial labour force (cf. Table III bis). The ratio is particularly small in Norway and the Netherlands, where women account for only 12 per cent of the labour force in industry; it is average in Sweden, Belgium, Italy and Denmark, varying between 70 per cent and 21 per cent. Finally, it is in France, the United Kingdom, Federal Germany, Ireland and Austria that the largest proportion of women is found in industry, though it is hardly more than one fourth.

Finally, of the total number of women with an occupation outside agriculture,

- about one in four works in industry in Norway, the Netherlands and Sweden;
- the proportion is about one in three in Belgium, Denmark and France;
- in the United Kingdom, Austria and Federal Germany, about four women in ten are employed in industry; and
- in Italy nearly one woman in two works in industry, which probably explains why Italy is the only country where female employment has decreased in recent years, as women work mainly in branches where the level of employment is rapidly declining (clothing and textiles).

Within the industrial sector, the proportion of women employed varies considerably from one branch to another in all countries. Women are particularly numerous and constitute a large percentage of the labour force in the clothing, textiles, leather and food industries. There are also a large number of women in certain mechanical and electrical engineering industries, where their skill and attention to minute detail are particularly appreciated, as will later be shown.

It is worth noting that it is in the traditional branches (textiles, clothing, leather) that women workers are most numerous. As these are also the branches where employment has been on the wane

during the last ten years or so, women workers in industry remain particularly vulnerable.

In a few countries, such as France, Federal Germany and the Netherlands, the employment of women has increased rapidly in the last fifteen years in such rapidly expanding sectors as mechanical and electrical engineering or the chemical industry. But owing to the lateness of the trend women are still very much in the minority.

The sector which attracts most women and where the employment of women has increased most in recent years is services. Thus, among women employed in sectors other than agriculture the proportion in services amounts to:

- three out of four in Norway, the Netherlands and Sweden;
- some two out of three in Belgium, Denmark and France;
- nearly three out of five in Austria, the United Kingdom and Germany;
- only one in two in Italy.

Within the tertiary sector, which is a growth sector in all countries, domestic service is the only branch in which numbers are falling. Women account for a large proportion of the labour force in commerce, banking and insurance, social and health services, and all the administrative services. In the public sector, an increasingly large number of teachers are women.

2. Status of women workers

Most of the problems facing women workers in fact concern only a certain number, i.e. the wage earners working away from home and bound to a rigid timetable. For family workers and independent workers, greater flexibility is generally possible. The living and working conditions of women working for no pay on the family farm are very different from those of women employed in factories, shops or offices some distance from home.

The proportion of family workers is greatest in countries with the largest numbers of women workers(1) in agriculture; Austria (25 per cent), Italy (24 per cent) and Federal Germany (22 per cent). In France and Denmark the proportion is smaller (19 per cent and 14 per cent respectively). In Belgium, the Netherlands and Ireland only 8 per cent to 10 per cent of the female labour force are family

(1) Or at least those described as such.

Table V

Breakdown by Occupational Status of the Female Active Population

		Employers & Independent Workers	Family Workers	Wage-earners	All Categories
Federal Germany	1961	7	22	71	100
Austria	1961	11	25	64	100
Belgium	1961	19	9	72	100
Denmark	1967	5	14	81	100
France	1962	12	19	69	100
Ireland	1961	16	8	76	100
Italy	1965	16	24	60	100
Netherlands	1960	5	10	85	100
Norway	1960	8	1	91	100
Sweden	1960	5	4	91	100
United Kingdom	1961	5	3	92	100

workers. Finally, the proportion of family workers is remarkably small in Sweden (4 per cent), the United Kingdom (3 per cent) and Norway (1 per cent); in the latter country, however, a quite substantial proportion of the female labour force was employed in agriculture.

There is no doubt that the figures for family workers in each country depend largely on the definitions adopted for national censuses. With the exception of the agricultural sector, the largest numbers of family workers are found in commerce or in the hotel trade.

The proportion of employers and independent workers is substantially lower in the female active population(1) than in the male. The proportion is very low in Denmark, Sweden, the United Kingdom, the Netherlands, Federal Germany and Norway (5 per cent to 8 per cent of the total number of women workers). It is slightly higher in France and Austria (11 per cent and 12 per cent). Only in Ireland, Italy and Belgium is there a substantial proportion of female employers and independent workers. Most of the women in this category engage in some such tertiary activity as commerce, the hotel trade, liberal

(1) Or at least registered as such.

professions and personal services (hairdressing, laundry, dry cleaning).

The majority of women workers today have the status of wage-earners. Thus:

- in Italy, Austria and France, two out of three women workers are wage-earners;
- in Federal Germany, Belgium and Ireland, the proportion is about three out of four;
- in Denmark and the Netherlands, more than eight out of ten women are wage-earners;
- in Norway, Sweden and the United Kingdom, at least nine women workers out of ten are wage-earners.

As earlier pointed out, gainful employment implies strict working conditions, fixed hours and some steadiness of employment, which in the case of mothers of families raises special problems of child care. It is therefore significant to ascertain whether or not women gainfully employed account for any large proportion of the total female population over 15 in each country.

Table VI

Ratio of women wage-earners to the total female population over 15 years of age

Austria	Federal Germany	Belgium	Netherlands	France	Italy
25%	29%	18%	19%	25%	16%
Denmark	Norway	Sweden	United Kingdom	Ireland	
31%	22%	30%	32%	22%	

Table VI shows that the proportion is far from negligible in all the countries here considered.

- in Italy, Belgium and the Netherlands, where women are employed still on a relatively small scale, 16 per cent to 19 per cent of the women over 15 are gainfully employed;
- in Norway, Ireland, Austria and France, the ratio is some 25 per cent;
- in Federal Germany, Sweden, Denmark and the United Kingdom, almost one out of three adult women are gainfully employed.

It should also be noted that in all countries the number of women wage-earners has increased more quickly than that of working women in general. While the number of wage-earners has generally grown, the increase has often been more rapid for women workers than for men. This is mainly due to the reduction in the labour force in agriculture where numbers of family workers were seen to be considerable. Hence the problems of wage-earners will increasingly apply to the female labour force as a whole.

3. Levels of skill among women workers

In all countries women workers are less skilled than the men. We will have occasion to revert to this important problem when considering vocational training for girls and women.

It is still very rare to see women holding highly responsible posts in any sector.

There are few women in executive positions, and these are usually in the middle grades.

In the worker category, many women hold skilled or semi-skilled jobs, but far fewer are found at skilled or craftsman level.

In education, while the number of women is increasing, the rate is faster in primary than in secondary education, and in higher education women remain very much in the minority.

Certain branches of activity are becoming "more feminine" in that they require a lower level of skill owing to the introduction of more highly mechanised production methods.

If women workers are less skilled this is due mainly to the fact that girls have more difficulty than boys in acquiring vocational training, and because of the obstacles in their occupational life which lie in the way of promotion. There is also apt to be a certain lack of ambition on the part of girls and women, due to their whole upbringing which is directed towards marriage as the ultimate objective, and to the mental attitudes of a society which considers that a women is not made for leadership. Nor does it appear to stem from any deep-seated difference in male and female ability,which has never been scientifically proved to exist.

After speaking of the past and present, we should perhaps speak of the future. It is difficult to make any real forecasts with regard to the employment of women since there are many factors which may intervene and influence the trend, such as age at marriage, length of the period of maternity, vocational training, working hours, and

Table VII (Annex to Chapter II)

Distribution of Male and Female Workers
by Major Sectors of activity ('000)

	Primary sector	Secondary sector	Tertiary sector	All sectors	Including non-agricultural sectors
Federal Germany					
1961 Men	1,650	9,850	5,330	16,830	15,180
Women	1,932	3,304	4,550	9,886	7,854
Total	3,582	13,154	9,880	26,716	23,034
Belgium					
1961 Men	218	1,410	952	2,580	2,362
Women	43	270	620	933	890
Total	261	1,680	1,572	3,513	3,252
Denmark					
1960 Men	327	664	456	1,447	1,120
Women	105	140	315	560	455
Total	432	804	771	2,007	1,575
France					
1962 Men	2,582	5,756	4,132	12,470	9,885
Women	1,268	1,754	3,464	6,486	5,221
Total	3,850	7,510	7,596	18,956	15,106
Italy					
1961 Men	4,412	6,205	4,405	15,022	10,610
Women	1,762	1,578	1,734	5,074	3,312
Total	6,174	7,783	6,139	20,096	13,922
Norway					
1960 Men	260	450	375	1,085	825
Women	72	62	187	321	249
Total	332	512	562	1,406	1,074
Netherlands					
1960 Men	410	1,620	1,210	3,240	2,830
Women	34	227	667	928	894
Total	444	1,847	1,877	4,168	3,724
United Kingdom					
1961 Men	820	8,020	5,810	14,650	13,830
Women	91	2,592	4,362	7,045	6,954
Total	911	10,612	10,172	21,695	20,784
Sweden					
1960 Men	400	1,181	700	2,280	1,880
Women	82	235	648	965	883
Total	482	1,415	1,348	3,245	2,763

attitudes towards women's employment. While it is always possible to plan ahead on the assumption that present conditions will persist or recent trends continue, where women in employment are concerned there is no doubt that policy decisions are also called for.

Will the aim be to develop women's employment or at least make it possible for all wishing to work to do so by creating the necessary infrastructure? Or will the attitude continue to be one of more or less conscious hostility and women workers still be regarded as a reserve to be sought after in some cases because they can be paid less or are more suited for certain work which men do not want?

Following these two chapters, which may be regarded as preliminary sections filling in the psychological, social and statistical background and, therefore, as essential for a better understanding of the problems, the next chapters will be devoted to the actual theme of the seminar and the discussions between trade unionists concerning the special, often unsatisfactory, situation of women in employment, and the adjustments or improvements proposed by the participants.

CHAPTER III

Special conditions of women's employment

By "special conditions of women's employment" we mean all the legal or contractual provisions which can directly or indirectly influence the employment of women.

The inequality of opportunities or conditions of employment as between men and women may be due to various factors arising from:

- the social and fiscal legislation of each country;
- the organisation of vocational training;
- inequality between men's and women's wages.

a. Social and fiscal legislation(1)

Legal provisions have long been in force in all countries to protect women from excessively strenuous, dangerous jobs or overlong hours. These provisions therefore relate either to employment opportunities or to working conditions.

Special provisions were then introduced concerning maternity protection.

We will also be dealing here with the fiscal regulations which can influence the employment of women.

(1) Provisions concerning employment opportunities

At the present time there is no law which prevents an unmarried woman from taking up an occupation. From a legal standpoint almost all occupations are open to the unmarried woman, though this does not mean that women are found in all occupations since obstacles of a psychological nature remain.

With regard to the minimum working age, there is no discrimination between the sexes.

Some discrimination however persists in the matter of physical fitness for certain occupations or jobs. These are generally jobs which are regarded as strenuous, dangerous or unhealthy.

Every country's labour laws, for example, lay down the maximum limits for loads which can be carried by women. Work on certain machinery or calling for the use of certain machinery may also be prohibited for women.

Underground work is also prohibited for women in all the

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(1) In the drafting of this paragraph extensive use was made of the report by Mr. E. TOFFANIN.

countries with which we are here concerned.

Finally, certain work involving particularly harmful chemical products is generally prohibited for women under every country's regulations.

In the case of married women, however, there are discriminatory measures which further limit their employment. In some countries there are clauses stipulating that the work contract will be automatically terminated by marriage. Such a clause still exists in the Netherlands in certain sectors and, until quite recently, existed in government departments. This partly explains the very low rate of participation by married women in economic activity, which we have already noted. These clauses are not so much introduced for the purpose of protecting the family as to save the employer from bearing the additional burden of maternity protection.

Legally these marriage clauses are therefore indefensible and those which continue to be applied in a few countries are gradually disappearing. Yet while the employer may no longer dismiss a young woman on marriage grounds, he is still free to avoid taking on married women or any with young children, a practice still current in almost all countries.

(2) Provisions relating to conditions of employment

These are regulations concerning working hours, night work or the weekly rest period.

Generally speaking, the length of the legal working day or week is the same for men and women in every country. There may, however, be differences in the matter of overtime. In Germany, for example, women are allowed one hour of overtime work per day, whereas men are allowed two. In the Netherlands, women are allowed six hours of overtime per week and men twelve. In France, women may never work more than ten hours a day.

Furthermore, where working hours exceed a certain limit, the employer must allow women workers a break of a certain length. In Italy, women may not work for more than six hours at a stretch. In Belgium, the employer must allow a one-hour break for each eight hours of work. In the Netherlands, a half-hour break must be allowed for more than five and a half hours' work. In Germany women may not work more than four and a half hours without a break; twenty minutes for four and a half to six hours' work, thirty minutes for six to eight hours' work and forty-five minutes for eight to nine hours' work.

In most countries, including all those of the European Economic Community, there are also express legal provisions concerning women's daily rest: they must be allowed a minimum rest period of eleven consecutive hours per day, of which seven hours must fall between 10 p.m. and 6 a.m.

There are regulations in all countries governing nightwork, which as a rule is entirely prohibited for women, barring a few exceptions specific to each country. Under Article 2 of the International Labour Convention No.89, ratified by many countries, "night" is defined as a period of at least eleven consecutive hours, of which a fraction, as determined by the competent authority, must consist of at least seven consecutive hours between 10 p.m. and 7 a.m. In Germany and Belgium "night" is defined as the period from 8 p.m. to to 6 a.m.; in France, Italy and Luxembourg, from 10 p.m. to 5 a.m.; in the Netherlands, from 6 p.m. to 7 a.m.

While certain exceptions to this prohibition of nightwork for women are provided for in all countries, they are invariably limited.

Every wage-earner is entitled to a minimum of 24 consecutive hours' rest per week, which must be allowed on Sundays. Although exceptions are permitted for certain specific occupations, most are inapplicable to women.

(3) Provisions concerning maternity protection

All countries now have legal provisions which protect working mothers. The principal clauses are the following: protection against dismissal and continuance of employment during absences due to maternity, prohibition of certain work, entitlement to maternity leave for a certain period around the date of confinement, health protection and economic security for working women during this type of leave.

Procedures for applying these principles may vary from one country to another, but the principles remain the same. The following table summarises the provisions applicable in Community countries.

Although these measures, by helping the woman worker to carry out her maternal responsibilities, are fully justified socially both in her own and the general interest, the employment of women is nevertheless apt to be affected in that the law may discriminate between male and female workers especially if employers are compelled to bear most of the practical and financial consequences. We will have occasion to discuss this point in the following chapter.

TABLE VIII

Legislative provisions in the E.E.C. countries for maternity protection

	Protection against dismissal	Compulsory leave before confinement	Compulsory leave after confinement	Optional leave	
				before confinement	after confinement
Belgium	No dismissal during pregnancy nor before one month after maternity leave		8 weeks	Factory workers and employees: 6 weeks Government: 4 weeks Additional leave in the event of complications resulting from pregnancy or confinement.	
Federal Germany	No dismissal during pregnancy nor before 4 months after confinement	Domestic workers: 4 weeks Others: 6 weeks	8 weeks Premature birth: 12 weeks	Leave may be extended in case of incapacity for work or danger to health.	
France	No dismissal during pregnancy or maternity leave	8 weeks in all, including 6 weeks compulsory after confinement	8 weeks in all, including 6 weeks compulsory after confinement	6 weeks (including compulsory leave)	8 weeks (including compulsory leave) 3 weeks extra for complications
Italy	No dismissal during pregnancy nor before child's first birthday	Industry: 3 months Agriculture: 8 weeks Other activities: 6 weeks	8 weeks	Excused from work in case of complications on presentation of medical certificate and subject to verification by Inspector of Labour	6 consecutive months before child's first birthday
Netherlands			8 weeks any pre-natal leave may reduce post-natal leave by 2 weeks	6 weeks Extended for complications on presentation of medical certificate.	

(4) Tax regulations

Other legal provisions which can influence the employment of married women are the tax regulations in each country. This is true only of the married woman, since the single woman declares her income in the same way as the single man. In most countries (France, the Netherlands, Belgium, Denmark, etc.) husband and wife are however required to make a joint declaration and tax is assessed on their aggregate income. As the rate of tax is progressive for each income bracket, an unduly large proportion of the wife's income is eaten up, and the result may be a disincentive to work.

In some countries, however, such a joint assessment is tempered by various provisions offsetting extra costs arising from the wife's absence from home:

- in Belgium, the aggregate income of a married couple may be reduced by 40 per cent where the wife's occupation is different from that of the husband. The reduction must not be less than B.Frs. 19,000 nor more than B.Frs. 27,000;
- in the Netherlands, one third of the wife's income is exempt from tax (Fl. 500 per annum minimum and Fl. 2,000 maximum);
- in Germany, husband and wife may choose either a joint or separate form of assessment. Under the joint system the progressive character of the income tax is reduced by using the rate applicable to half the aggregate income.

It should be noted that in Denmark joint assessment of the husband and wife will be abolished from 1970, and replaced in all cases by a system of taxation at the source.

b. Educational and vocational training of girls and women

We have seen that in every country women workers are considerably less skilled than the men, which means either that vocational training for women is inadequate or that it is ill-adapted to the jobs available. Most countries unfortunately show a combination of both.

Although there is no longer any legal sort of discrimination in compulsory education for boys and girls, real differences often remain due either to existing infrastructure or to the distinction made by parents between their boys' and girls' education. Parents often take the choice of an occupation for their daughters less seriously, and rarely encourage their taking up of science or technology despite the wide employment opportunities in these fields.(1)

(1) Many of these points are developed further in the reports by Miss N. Seear and Mr. R. Gubbels.

At the level of primary education, which is now compulsory everywhere, there is no discrimination between boys and girls.

In secondary education, where there are generally as many girls as boys, differences of distribution may however be noted between the technical or modern stream and classical stream, or in the choice of subjects. In certain countries, moreover, the curricula are not strictly identical for boys and girls. In Germany, Switzerland, Denmark and Belgium, for example, the timetable for mathematics, physics, chemistry, and biology is shorter for girls, the rest of the schedule being taken up by dressmaking, domestic science, or child care instruction.

In higher education the differences in enrolments are more considerable.

Far fewer girls than boys enter higher education nearly everywhere, mainly because parents are less eager that their daughters should engage in lengthy studies. The whole education and training of boys is directed towards their future professional career, whereas for girls marriage all too often comes before the choice of a career.

Proportion of pupils admitted from secondary into higher education

	Belgium	Denmark	Italy	Norway	Nether-lands	United Kingdom	Sweden
Boys	64%	100%	81%	69%	78%	67%	86%
Girls	36%	64%	59%	30%	51%	48%	67%

Source: United Nations 1966. Admission of women to higher education.

Proportion of girls in higher education (1963)

Fed. Germany	Bel-gium	Den-mark	France	Italy	Nor-way	Nether-lands	United Kingdom	Sweden
24%	31%	35%	43%	32%	22%	25%	36%	32%

Source: United Nations 1966. Admission of women to higher education.

Since 1955 however a very marked and rapid change has taken place, and girls are entering higher education in increasing numbers. In France, the proportion of girls is already very near that of boys.

The fields of study chosen by boys and girls show differences similar to those already noted at secondary level, but which are

sharper. Fewer girls are found in the scientific and technical disciplines and more in law and the arts. It would seem that, again all too frequently, the goal of girls is general education rather than any specific training.

It is still very rare for girls to choose engineering subjects.

Vocational training. Where vocational training for skilled manual or office jobs is concerned, girls are at a definite disadvantage.

From the point of view of enrolments, fewer girls receive vocational training, while the range of courses provided is much more limited and these are often little related to employment opportunities. This is particularly apparent in the case of girls learning an industrial trade; the large majority are trained for the textile or clothing industries, in which the level of employment is everywhere rapidly declining. Yet these are traditionally regarded as the womens' trades and are still chosen by families in the belief that, whatever happens, the knowledge thus acquired will be useful to the girl when she marries. Very few young women are trained for the electrical, mechanical or chemical trades, in spite of the fact that they have all the necessary qualifications for sound instruction in these fields and that it is in these very branches that employment opportunities are increasing.

The current practice is for most girls to train for some "tertiary" activity, usually office work. This is in line with the trend of women's employment, which is increasingly concentrated, as we have seen, in the service sector. Yet it is well to avoid any too optimistic a view. While the statistics are not always highly detailed, much of the training received appears to consist of brief courses affording access only to semi-skilled jobs. Meanwhile the character of office jobs is changing rapidly, and new types of posts are being created requiring higher qualifications and carrying greater responsibility. These seem to be largely reserved for men, while women remain confined to routine tasks.

The inadequacy of vocational training for women is rightly stressed by the trade-unionists from all countries, and is particularly serious in that the whole of a woman's subsequent working life is affected, beginning with her capacity for employment.

Employment capacity. There is no doubt that vocational training as at present available for women limits their capacity for employment, first because it qualifies them for jobs which are little

skilled whereas the trend is towards more highly skilled trades, and secondly because the training provided is not equated to the needs of the economy.

One of the most unfortunate consequences of this failure to adjust training to employment is that many women find their way into trades for which they have not been trained and are therefore classed as unskilled labour, subject to all the disadvantages in the way of wages and opportunities for subsequent promotion. A very common example is that of the electronic industries, which since they need workers who are particularly neat, dexterous and attentive to detail, recruit girls who have learned dressmaking, a type of training that develops these same desirable qualities. These girls have not found outlets in the clothing industries as the numbers of trained workers far exceed requirements in this branch of industry.

Although inadequate vocational training is the main handicap for most women in seeking employment it is not the only one. Others are due to the preconceived idea that certain jobs are unsuited to women. A woman engineer, for example, finds it less easy to obtain work than a man and is systematically denied access to certain jobs.

There are also obstacles created by male workers, who are more or less consciously opposed to the admission of women to trades in which they alone have held sway. At the same time employers are reluctant to recruit women for certain jobs, as they worry about the psychological effects if one or more women are introduced into a workshop previously reserved for men. Finally, the majority of men and even women workers would rather work for a man than for a woman, which hampers the recruitment of women for certain managerial posts.

A further set of obstacles to women's employment is of a more technical kind. Some types of equipment or machinery are built to be used by men, which a woman, simply because of her different physical characteristics, would find difficult to handle.

Clearly all these social, psychological or technical obstacles would be fairly easy to remove if the will were present. This has been amply demonstrated by the efforts made to employ maximum numbers of women during manpower shortages, as in wartime. Women have then given convincing proof of their job capacity and of their ability to adjust to much more varied tasks than are their normal lot. Employers then take the trouble to devise machinery and equipment adapted for their use, but once the emergency has ended the men generally return to "their" jobs and the women to "theirs", that is

to housework or some menial "woman's" occupation.

c. Inequality of wages

It is always somewhat difficult to compare wages, since confrontations are possible only between values which are truly comparable. Since in most cases women do not do exactly the same work as men, it is always possible to justify a difference in wage.

Before considering the actual situation in each country it may be well to examine the legal situation.

The Common Market countries have ratified Article 119 of the Rome Treaty establishing the principle of equal remuneration for male and female workers, which was set out as follows in the Resolution of the Conference of EEC member States of 30th December, 1961:

> "The Member States will apply by 31 December 1961 in accordance with their national systems for the fixing of wages, the appropriate procedures to ensure a principle of equal remuneration for men and women workers such as may be upheld by the Courts. These procedures must lead to the practical implementation of that principle by 31st December, 1964 either by laws or regulations or, when such machinery exists and is adequate, by compulsory collective agreements."

While differences between men's and women's remuneration have certainly been reduced in all the Community countries, they continue to exist (except in the civil services) even though with every outward appearance of legality.

There is, in fact, an increasing tendency to resort to legal and contractual devices by which women's jobs are classified in lower categories and are consequently less well paid. When wage rates are fixed,for example, greater importance is always attached to muscular strength than to manual dexterity, capacity for concentration or stamina. The inevitable result is that women's wages are under valued. It is quite obvious that complete enforcement of the principle of equal pay first requires occupational classifications to be revised and jobs to be re-analysed.

In Germany, collective agreements have caused new categories of jobs to be introduced which are regarded as less demanding and consequently are not highly paid, the majority of them in fact being intended for women.

In Belgium, also, the alignment of male and female wage scales has caused jobs carried out mainly by women to be reclassified at

the lower levels of the wage structure.

In France the principle is applied as concerns the minimum wage guaranteed by each collective agreement, but discrimination remains possible in the case of wages above this minimum.

In countries not members of the European Community the degree of discrimination is generally even greater.

In Austria equal pay occurs only in certain sectors and always in respect of the minimum wage, which means that women are frequently paid less than men for similar work.

In Northern Ireland for most occupations the average wage for women is only slightly over half the average wage for men. While the latter frequently have slightly longer working hours, the difference remains excessive and has tended rather to increase in recent years. In office jobs unmarried women are less well paid than married women (20 per cent less).

Denmark has ratified Convention No.100 of the ILO on equality of remuneration for men and women for work of equal value; while in some trades the principle is strictly complied with, in many others where collective agreements provide for a minimum wage employers are reluctant to pay women supplementary allowances similar to those paid on a personal basis to men.

If the average woman's wage is substantially lower than the average man's wage the explanation is generally that women workers are less highly skilled. Yet the greater the proportion of women in a certain occupation the smaller the level of remuneration is apt to be in the whole of the branch, even in the case of occupations requiring a relatively high level of skill. When an occupation becomes a "woman's job" it is devalued. This is true, for example, of civil service jobs in France, particularly in education, or in the magistracy. The less "womanly" trades are generally also those best paid!

Various reasons are given to explain why women's wages are low:

- women workers are less highly skilled, which is true, but is no justification for failing to respect the principle "equal pay for equal work";
- the increased wage burden on employers in case of a woman who has a baby;
- instability and absenteeism of women workers.

We intend somewhat to dwell on this last point, as it is a criticism which prevails in all countries. While no doubt justified, it is a judgment which nevertheless calls for some qualification.

True, absenteeism is higher among women than among men, but the difference is shown to be by no means so great if the analysis is carried far enough to take such factors as age, family status, and the worker's level of skill into account. Surveys on this subject, notably in France, have compared the average number of absences of male and female workers, while specifying the latter's marital and family status. The results show that whereas women as a whole are absent from their work much more often than men, the difference is very slight in the case of unmarried women, while among the married women, the older their children the less frequently they are absent. This situation should hardly cause surprise since if a child is ill, for example, it is always the mother, not the father, who normally stays at home.(1)

Another extremely important finding of this survey is the considerable variation in the number of absences depending on levels of skill. Thus the greater the skill the lower the number of absences is apt to be, which is as true in the case of men workers as in that of women workers - the more interested a worker is in his job and the more responsibilities he has, the less likely he is to stay away. Among the more highly skilled women the family factor is less frequently a reason for absence.

These results are viewed as highly significant, and should be taken into consideration in any attempt to improve the situation of women workers.

As described in this and the previous chapter, the situation on the labour market for women workers enables the kind of work most often carried out by women to be outlined as follows (cf. report by R. Gubbels):

- It is unskilled or semi-skilled and mainly calls for great resilience and manual dexterity.
- It is fragmented and purely operative.
- It is poorly paid.
- It involves few responsibilities.

Is it possible to argue that the social measures taken to protect women's work and the various provisions we have analysed establishing differences between women and men in employment ultimately earmark women workers as a reserve labour force, one

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(1) Cf. V. Isambert: Les facteurs familiaux et professionnels de l'absentéisme féminin. Revue Francaise du Travail, January-March, 1959.

which can be engaged in times of full employment and laid off in times of underemployment? It would over simplify the case were a generally affirmative answer to be given, since this would falsely imply that a woman cannot find a job until all the men have been taken care of.

As we have seen, wherever employers recognise qualities specific to women workers, it is obvious that for certain jobs they will be given the preference, perhaps even exclusively whatever the general economic situation. Nor during economic recessions are women necessarily the first workers to be dismissed. They are most vulnerable only in so far as the recession more especially affects the sectors or branches where women are most numerous (textiles for example). The fact which then most threatens women is the lack of diversity in their occupational training.

Yet it is still true that when an employer can choose between a male and a female candidate for a post which calls for no specifically feminine qualities he will almost always pick the man, or otherwise the woman with the intention of paying her less. Besides being afraid that she will be unpunctual or absent for family reasons, the employer is also influenced in his choice by the whole cultural background we already had occasion to analyse when defining the distribution of roles between the sexes. According to this concept the man is the breadwinner, while the woman contributes an added gain which can serve to eke out the family income.

After this description of female employment in the majority of the OECD countries, one which may seem somewhat pessimistic but which we have tried to make as objective and complete as possible, we must now consider how the situation might be improved so as to achieve real equality between men and women in their working lives. The following chapter reflects mainly the opinion of the trade unionists at the seminar regarding possible solutions to the problem of women's employment.

CHAPTER IV

Measures likely to improve employment conditions for women

The first question is whether special arrangements to protect women workers do not in fact make conditions for their employment much worse. If all who champion employment for women insist on the principle of "equality", giving a woman the same right to work as a man, it is quite obvious that any measure taken on behalf of women workers as a group introduces an element of discrimination which limits that equality.

To strike a balance between equality and discrimination is no easy task. Since special measures for women are justified by the maternal role the woman must play, these measures have a social objective from which of course there is no thought of turning back. Yet certain improvements might perhaps be introduced, such in particular as to alleviate the problems which these measures can impose on employers.

Some measures, including the prohibition of certain work, may now however be less warranted than in the past. Nor finally do other disparities, such as inequality of remuneration or earlier retirment for women, any longer stand up to close analysis. Let us look at each of these points in somewhat greater detail.

Measures concerning maternity

These measures are fully justified, as we have seen, but it is often the employer who must bear the brunt of the relevant legislation (extra payments, the need to find replacement during some indefinite period, etc.). In dealing with this question it is necessary to bear in mind that the woman's maternal function is not only a biological one but a social function. If women stopped having children there would of course no longer be any community left and the problem of women's or men's employment would die a natural death.

Once maternity has been recognised as a social function, it seems fairly obvious that the financial burden should be borne by the community as a whole. Employers would still bear part of the burden, but rather as members of the community. Similarly, the welfare facilities needed by women workers with young children (a question we shall revert to) should be financed by the whole community. Among other things this would dispose of an argument all too often put forward by employers to justify discrimination against women workers generally.

Prohibition of certain work

Since efforts are made to provide better protection, tighter controls and more effective safety measures in the case of harmful or dangerous jobs performed by all workers, it may be asked whether special prohibitions with regard to certain types of work for women are still required. While the removal of these obstacles would perhaps do little to extend the range of women's jobs it would have the effect of reducing discrimination against women workers.

As concerns night work, the problem is more complex. Night work is admittedly harmful, but to men as well as women. In society as at present organised, where women bear most of the family responsibilities, women night workers would have to look after their house and children during the day. The extra exertion would be very bad for their health, which is why trade unions are reluctant to ask for this measure of protection to be abolished. Moreover, men employed on night work also are apt to engage in such other occupations during the day as odd jobs, gardening, etc., preventing them from taking necessary rest. It would therefore be preferable to prohibit night work for all, allowing for exceptions, which in fact exist already, in certain trades practised by women (night nursing, the entertainment or restaurant business) despite the frequently low wages paid.

Unjustified discrimination

We have already considered the inequality of wages, which runs counter to the legislation in an increasingly large number of countries. We should note, however, that the reasons usually given to justify this state of affairs would soon cease to apply, as explained in connection with the additional financial burden borne by the employer in the event of maternity leave and absenteeism. If this additional burden is borne by the community as a whole, the first argument falls to the ground. In discussing female absenteeism we saw that the more important a woman's job, the smaller the difference between male and female absentee rates. By developing vocational training for women and by increasing social welfare facilities for families it would be possible to reduce substantially not only female absenteeism but that of all workers who have family responsibilities.

Certain trade unions have sometimes claimed the right for women workers to retire earlier in life than men. This further discrimination seems quite unjustified and contrary to the interests of women

workers. As we have seen, from the age of about 40 to 45 women are freed from most of their family responsibilities and are thus ready to re-enter working life. Their regularity of attendance and job stability from that age are moreover admitted. There is no real reason therefore for insisting on early retirement for them.

There is general agreement among trade unionists, apart from certain measures concerning maternity protection, that special measures for women should be gradually abolished, and that efforts should be more directed towards improving general working and living conditions. This, as we shall see, would imply better vocational training, particularly for women, and the development of community facilities or other forms of welfare assistance.

(a) Vocational training[1]

The inadequacy of vocational training for women and the urgent efforts needed to improve this situation was a recurrent theme in all the national reports and many of the discussions between participants. It seems at present to be the common concern of all those who favour the employment of women and who seek to improve their situation. The essence of the problem is undoubtedly under-employment of skill capacity and from the economic point of view it is to be wondered why most countries let part of their potential resources lie fallow in this way.

From a legal point of view, it is quite clear that equality of rights for men and women implies an equal right to develop their abilities, and consequently the same educational opportunities for boys and girls, the same types of education - and in particular the same curricula (which we saw not yet to be the case in every country) - and the same chances for vocational training.

From an economic point of view it is evident that the capacities of everyone should be developed to the utmost. There is no need to prove the value of vocational training for women, since the average duration of women's working life is far from negligible. It has moreover been seen that many of the difficulties encountered by women workers and the main defects for which they might be criticised were far less significant in the case of skilled women workers.

The first essential step appears to be co-education. This would ensure the same curricula for boys and girls and would also have a

(1) The problems of vocational training for women have been dealt with in the reports by N. Seear and R. Gubbels.

psychological effect on girls, who would thus realise that their intellectual capabilities were no different from those of boys and that they could do as well as boys in all subjects. Co-education in vocational training centres would allow girls to be admitted to all types of training and no longer be confined within certain special fields regarded as "feminine" but affording no prospects for promotion.

Co-educational courses should be fairly easy to organise nor any longer meet with major obstacles in any country. But it must not be thought that this will automatically solve the problem of vocational training for women, since it is one linked with questions of attitude concerning women's proper role in society. Nor can mental attitudes be changed by enacting a few laws. Even in countries where co-education already exists the problems remain - girls persist in choosing lines of study or trades regarded as feminine and parents continue to attach less importance to the choice of a job for their daughters than for their sons. In France, a circular of 1967 pointed to the principle of equal rights of admission for boys and girls at all levels of technical and vocational education, thus warning against the rejection of any female candidate; unfortunately this had very little practical effect, either because establishments did not fulfil all the necessary conditions to become mixed (sanitary facilities, boarding arrangements, etc.) or because girls did not attempt to enrol owing to their misgivings about learning a trade so far monopolised by men, or more often through lack of information and guidance.

Information and guidance are in fact of primary importance if a change in mental attitudes is the goal and if the vocational training of girls is to be adapted to the needs of the economy. Parents as well as daughters must be better informed, and the family made aware of job opportunities, requirements for access and methods of training. Let us take the example of office employment which now attracts increasing numbers of girls. Many new jobs in this sector require considerable skills and generally go to the men. Hence, it is important, first, to draw up a list of new high-level jobs, secondly, that vocational training be similarly available for boys and girls, and thirdly that the latter should learn of the existence of these jobs and the types of training qualifying for them. There are also new jobs in the distributive sector (buying departments, market research, etc.).

The need therefore is for more vocational counsellors who

co-operate with the manpower services and follow the trend of manpower needs, particularly from a regional standpoint. Once informed of employment opportunities, of the qualifications needed (aptitudes and training) and of promotion prospects, girls could then choose their occupation freely. It no longer seems appropriate today to speak of specifically masculine and feminine aptitudes, apart from the muscular strength incidentally needed in increasingly fewer jobs. On the other hand, women's role as a wife and mother makes certain types of occupation more difficult to take up than others. Hence, when choosing an occupation girls should preferably be given a realistic idea of work patterns, not so as to discourage them but to enlighten them as much as possible, and spare them disappointment or difficulty at a later stage.

Today the problem of vocational training for girls is inseparable from that of the retraining and readjustment to working life of women planning a return to work after devoting some years to family responsibilities. During the last few years in most countries women who have finished bringing up their children, or at least their young children, have shown a marked tendency to return to work. We saw that at 35 or 40 years of age most women were freed from the greater share of their maternal responsibilities, that another potential 25 years of working life lay ahead, during which they became more reliable and stable and acquired a greater taste for work and sense of responsibility than at 20 to 25 years.

The fact however remains that these women find it very difficult to obtain employment. Many employers refuse to recruit a person over 35 or 40. The State is no exception, since it fixes an age limit for most of its competitive examinations. This bar may often be based on pension considerations, since a minimum number of years' service is required, but this obstacle should hardly be insuperable, and it would presumably be more realistic to amend certain regulations rather than waste such valuable potential labour, one all the more precious when these women have been thoroughly trained in their youth.

Other difficulties encountered by women seeking new employment are lack of information concerning the labour market and the scarce facilities for further or refresher training.

It has now been established with certainty that it is quite possible to acquire new knowledge after the age of 30 to 35, especially for those who have been soundly trained during adolescence. Since, of course, it is impossible to use the teaching methods and

timetables suited to young people between 16 and 20, special adult training courses must be provided. This problem of retraining is in fact part of the much wider problem of refresher training, which it is increasingly necessary to provide at intervals for all skilled workers. While the problem does not therefore specifically apply to women, particular arrangements should perhaps be made for this group. Ultimately the crucial point is whether or not women should be encouraged to return to work when many years of potential active life still lie before them and they represent a large part of the skilled labour which is invaluable to the economy.

Whatever fresh opportunities - which we consider to be of prime importance - are afforded for vocational training or retraining, parents who work will always have household and family responsibilities in addition to their jobs, and it therefore seems equally necessary to find ways and means to help them combine the two.

(b) Lightening of household and family duties

Technological progress has already lightened household tasks and the process should continue (more comfortable dwellings, development of household appliances, pre-cooked meals, etc.). Yet domestic and child-rearing tasks are still bound to take up much of the housewife's time. Surveys have been carried out in France by the Institut National d'Etudes Démographiques(1) on the time budget of housewives who go out to work and those who stay at home, and according to the number of children. They show that most mothers of families who also have jobs outside are overworked.

Hours spent each week(1) on household tasks and care of children, according to number of children (for working women)

No children	1 child	2 children	3 or more children
27.3	39.2	46.9	49.7

(1) In hours and tenths of an hour.

To the already considerable time spent by these women on household tasks must be added their working and commuting hours. This means that mothers with at least one dependent child spend as

(1) Cf. A. GIRARD: Le budget-temps de la femme mariée dans les agglomérations urbaines. Revue Population, 1958, No.4.

much time on household tasks and child care as required by a normal working week of paid employment, if not more.

Although it is true that mothers of families constitute only a minority of all women workers, it must be acknowledged that the large majority of these will at one time or another have to cope with a combination of household and occupational responsibilities. They must then decide whether to accept the consequent additional stress or to give up their occupation.

Moreover, household and family responsibilities are not limited to married women alone. Unmarried, widowed and divorced women also have a home to look after, and many have elderly or sick dependent relatives to care for or children to bring up.

All women will hence be affected by any measures taken to lighten their tasks in the home, while male workers will increasingly be concerned, since as modern life becomes more complex they will be called upon to share all kinds of responsibility with their wives.

1. Measures to ease family responsibilities

Measures to assist families as well as unmarried women who have to work while taking care of an elderly or sick relative are discussed under this heading.

Before we consider what facilities could be set up or improved, it is well to repeat that the mother's burden is all the heavier owing to the view still generally held that it is her job and hers alone to bring up and care for the children. Were it acknowledged that both parents should share this responsibility, which hardly seems an illogical approach, a giant step would have been made to alter the attitude of society. If the entire community were to take an interest in these problems solutions would of course be easier to find and to implement.

While all countries have drawn attention to the shortage of day nurseries for pre-school age children, the desirability of developing such establishments is apt to be disputed by doctors, psychologists and economists. To begin with it is very important that the mother should be near her child during the first few years of life. Next the cost of a crèche is so high that whether or not it is economic comes into question. It may be argued, as some trade-union representatives have done, that it would be better to give the mother an allowance enabling her to remain at home, rather than to finance costly establishments which will care for her young child when she has to go out to work.

It would however seem preferable not to look at the problem from the angle of profitability, as this appears to conflict with a woman's right to work, but agree instead that the welfare of the individual should remain the primary consideration. The economy is meant to save mankind, not mankind the economy. Humanely speaking, of course, a mother with young children should never be compelled to work for purely material reasons. This would imply taking steps to guarantee absolute freedom of choice, that is by providing an allowance for raising the child which largely compensates for the loss in earnings, and by enabling women to resume work after an interval of a few years should they so desire.

For a child over three the continual presence of its mother is no longer indispensable. In most countries it seems urgent to develop day nurseries and nursery schools for children who have not yet reached school age. France and Belgium alone seem somewhat favoured in this respect. The trouble is that the timetable may fail to coincide with working hours, a problem which again arises when the children enter primary school. Certain countries such as Austria and Germany, where education is virtually on a half-day basis, are faced with a particularly difficult situation in this respect. Recreational, sport or cultural facilities are needed to occupy the children out of school hours.

The development of school canteens would also vastly help, since there would be one less meal to prepare and working mothers could spend less time travelling back and forth. This would also make it possible to introduce the continuous working day on a more general basis (with less time off for the mid-day meal), enabling parents to return home earlier in the evening and divide their family responsibilities.

Another problem of working parents is looking after children during vacation periods or on days off from school. This would seem to call for more recreation and sports centres, open-air colonies, holiday camps, and the like.

All these social facilities, it may be mentioned, would be useful not only for working mothers but for all mothers, who could thus be relieved of some of their family duties.

There is an urgent need in all countries for home help or welfare services. Home helps would assist the mother of a family in case of illness, care for the sick child of a working mother, or look after old people dependent on unmarried women who must go out to work.

Although supervision of the children is the most taxing problem for working mothers, household tasks are a daily responsibility and often the cause of overwork. Various improvements would be possible to lighten these tasks, but there has been so little show of public interest that changes are slow in coming.

2. Measures to lighten household tasks

These measures can be of several types:

- improvement of housing conditions;
- development of community services;
- synchronisation of timetables.

- Improvement of housing conditions

In all the countries with which we are here concerned there are still too many decaying, overcrowded dwellings, lacking in modern conveniences and in which the housewife's life is one of unending drudgery. Well-appointed dwellings of adequate size, equipped with running water, bathroom, W.C., gas, electricity, and heating facilities would be considerably easier to clean and maintain.

Household appliances also make the housewife's work considerably easier. But if she has also acquired a thorough knowledge of domestic science while at school she will be better organised and so more efficient. Such wide-ranging courses in domestic science (cooking, child care, dietetics, but also including work organisation, budgeting, etc.) should in fact also be provided for boys so that tasks can be more equitably distributed among the various members of the family as a matter of course.

- The development of such services as home delivery, the collection of linen or clothes for washing or cleaning, of shoes for repair, etc. would greatly facilitate the work of the housewife. Women who go out to work should be able to leave these articles with a caretaker or a special collecting centre. In every apartment building or housing development a centre could also be provided for ironing, mending and similar tasks. The main factor which appears to be missing is initiative or imagination rather than the feasibility of any effective solution.

- Synchronisation of working hours with the business hours of administrative, social services, etc.[1] Every household is

(1) This question is examined further in the report by Mrs. Viola Klein

occasionally compelled to pay a visit to a bank, medical or welfare centre, school authority, or municipal office, etc. Usually these establishments keep the same hours as other offices or factories, so that it is difficult for a worker to call without being absent from work. A view which still prevails is that these are tasks for the housewife, which further add to the difficulties of the woman worker and to her absenteeism. Society is still organised along such traditional lines that each worker is regarded as part of a family unit which includes a full-time housewife capable of attending to any business which the wage-earner, tied to his factory or office job, has no time to handle.

This question has considerable social importance. Such tasks cause inconvenience, hardship, and added fatigue; it also means that many working hours are wasted. In the general welfare a better synchronisation of working hours in factories and offices with the timetables of services used by the public (shops, banks, insurance offices, social services, municipal offices, post offices) would thus seem to be urgently called for.

Where shops are concerned, a few countries schedule shopping hours which are slightly different from normal working hours. Food shops often open very early or close late in the evening so that workers can do their shopping before or after work. On certain evenings in the week some department stores or supermarkets remain open until 10 p.m.,for example.

In banks, post offices and other administrative departments which have dealings with the public, an additional obstacle to adjustment of the timetable is the generally shorter schedule than in factories. Employees in these services begin their working day later and finish at the same time as workers in factories or workshops. The timetable might however be staggered from 11 a.m. to 7 p.m., for example. It might also be possible for both banks and post offices to provide mobile offices stationed near factories or in business districts which workers could visit either during the mid-day break or after work.

So that consumer services can be better suited to workers' timetables, a number of participants proposed that in each country co-ordinating committees be set up which would include representatives from trade unions, employers' and consumers' organisations, and government departments. Although these joint committees would perhaps have only an advisory role, they would have the prime effect of ending the arbitrary division between "producers" and "consumers",

which suggests that there are two quite distinct categories of the population whose interests conflict, whereas the same persons are both (or at least in turn) producers and consumers.

3. Part-time work[1]

Many women, wishing to avoid the excessive burden of family and occupational responsibilities and anxious to find time for the occasional work mentioned above are now looking for part-time employment. Before analysing the advantages and disadvantages it should be noted that this kind of work exists at present in all countries, has developed considerably in recent years and especially attracts married women from among the various categories who cannot or prefer not to work full time. It is therefore a fact, one to be welcomed or deplored, but which cannot be ignored.

Part-time workers are however not always granted the same guarantees or advantages as full-time workers. There is no justification for this sort of discrimination, one which will not be eliminated until the trade unions, whose duty is to protect the interests of all workers, put their hand to the wheel. It is in France that the trade unions are most fiercely opposed to part-time work, fearing that it might lead to a devaluation of all women's employment. In certain other countries, on the other hand, where part-time work is developing rapidly, trade unions now show some concern for the interests of both full-time and part-time workers. In Norway, for example, a special board has been set up to study the special aspects of part-time work and fix rules for such wage-earners so that they may be suitably covered by collective agreements. These problems are also being examined by trade unions in Ireland, Denmark, Sweden, Austria, the United Kingdom and Germany.

In all countries legislation and statutory provisions or collective agreements have always been established for wage-earners employed throughout a "normal" working week. In view of the spontaneous development of part-time work it is now essential to revise this legal situation, so that workers' rights and guarantees are applicable to all, while of course none of the provisions should discriminate in favour of part-time workers to the detriment of full-time workers.

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(1) The question of part-time work is examined in the report by J. Hallaire.

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- The weekly working hours of the part-time worker should be clearly specified, and not subject to any change suggested by temporary requirements of the firm or the employee.

- The part-time worker's wage should be calculated in the same way as that of the full-time worker, by applying the same standards and the same scales commensurately with the duration and character of the work performed.

- In each country workers are moreover entitled to various guarantees under social security schemes. These guarantees mainly relate to health insurance and complementary health benefits, family allowances, industrial injury insurance, unemployment insurance, old age insurance and complementary pension benefits. Part-time workers in all countries are however deprived of some of these advantages or guarantees. In each country, therefore, current regulations should be revised so that where necessary they can be adapted to the special situation of part-time workers, regardless of how their weekly working hours are apportioned.

It should be clearly understood that these regulations concerning part-time work must not apply only to women. Such work should in no way be reserved for women, but should be given to any person who for special reasons at some period during life cannot work full time. Thus part-time work may therefore suit convalescents, physically handicapped or older persons and students as well as workers with family responsibilities.

Part-time work undoubtedly has its disadvantages, both for the employer (heavier social and administrative costs; job redesign), and for the employee (the same commuting expenses, while promotion is usually impossible); but it also offers advantages for both parties: the employer can recruit staff qualified for certain occupations where there is a shortage (medical or paramedical personnel, teachers, accountants, telephone operators, translators, etc.); while workers who cannot work full time are enabled to find a job. Women in particular (who are the subject of our report) can combine their family and occupational life without excessive strain. For those of a certain skill level (who, it is to be hoped, will increase in number) a part-time job during the few years when their family responsibilities make most demands upon them prevents their losing all contact with their occupation and by keeping abreast of any changes they can then resume full-time employment more easily.

At all events, part-time arrangements may be regarded as a temporary convenience, to be used only until working hours have

adequately been reduced. Though such a reduction is certainly highly desirable, the hard fact must be accepted that the 30-hour working week is a prospect which is still remote. It seems fair and worthwhile, therefore, to encourage temporary solutions which can satisfy immediate needs since part-time work seems in any event to be spreading.

CONCLUSION

While women account for a substantial proportion of the labour force in European countries, they are yet to be fully integrated in the working world. They are not represented equally in the various sectors of the economy; and while apt to be less skilled than men, when skilled they usually hold subordinate posts with little prospect of promotion; finally, their wages for identical work are generally lower than those of their male colleages.

Not only is the situation so abnormal as to conflict with the principle of equality between men and women set forth in the constitutions of most countries, but it also runs counter to an active manpower policy. To find a solution is a matter of increasing urgency.

The trade union organisations, perhaps because they have been so intent on defending the interests of all workers, have so far paid little attention to the less favourable situation of women in employment. The active interest shown by the trade unions in holding this OECD seminar on the employment of women shows that they now realise the role they must play in formulating an active policy which does not discriminate against women workers. The more active women members there are in the trade unions, the more effective and prompt union action can of course become.

But the trade unions cannot be expected to act alone, since it is the whole fabric and approach of society which must be renewed. Most of the obstacles to woman's effective integration seem to be of a cultural nature, or due to the out-dated ways of thinking which survive in a changing civilisation. The most urgent need therefore is to promote fresh mental approach, which means that the community as a whole must be more widely informed.

To begin with the people must be told more about the demographic, technical and cultural events which have so revolutionised everyone's way of life, particularly the women's, that the old ways of thought no longer have their place. The respective roles of men and women were entirely justified in the traditional form of society, where woman was kept busy with her maternal duties and responsibilities as a homemaker. Today this traditional concept applies only to a relatively short period of her life, and the time which a woman can devote to some outside occupation is substantially longer. Leaving aside the woman's role as a mother, masculine and feminine "roles" no longer answer to the precise definitions of the past. It is not

correct to say that man is the breadwinner and woman's place is in the home. Women have their part to play in a country's occupational and economic life just as men in family life. The roles of men and women should no longer be strictly delimited but responsibilities should be shared.

Such a change in mental outlook would make it considerably easier to seek and apply solutions so that women could be better integrated both in working and community life.

While the intention is not to develop some form of protectionism with regard to women, it must nevertheless be recognised that the maternal function necessarily places them in a special situation from an occupational standpoint. An essential task is therefore to discover which measures can best eliminate the drawbacks and thus not only promote the employment of women but the general welfare. It is particularly difficult for women with young children to combine an occupation and family life. The first necessity is that a mother be really free to choose whether or not to go on working. If she gives up her job temporarily, this would therefore suggest that financial assistance should be granted to make up for an often unavoidable loss of earnings. For those not wishing to stop work social facilities should be provided for the care of children. Those wishing to work part-time should also be given the requisite opportunity. This would mean wider acceptance of this type of work and the same safeguards as for full-time work.

All men and all women should be given the possibility of readjusting to working life after a break in employment. This implies the organisation of re-training as well as guidance facilities, providing an accurate picture of the labour market and enabling training to be better equated with employment opportunities.

The question of re-training for women is moreover but one aspect of a much wider problem, that of vocational training. Women will not be truly integrated in the working world unless they attach more importance to training. The inadequacy of vocational training for women is still due for the most part to cultural obstacles and society's concept of the feminine role. As mental attitudes change such obstacles will gradually disappear, yet it seems that vocational training is a matter which should urgently be stressed. Equality of rights between men and women also implies equality of rights as concerns the development of any and all capacities.

In all the Western countries today, there are signs of greater determination on the part of women, particularly married women, to

share in the economic life of their country. Their participation can but be a source of additional wealth, nor can any country today be presumed rich enough to leave it untapped. Measures to integrate women in working life thus ultimately call for a policy decision. Is participation by women in the economic life of the country to be encouraged or discouraged? Nor can any woman remain aloof from such a decision, since it will ultimately determine her role and place in society. Rather than leave the necessary overall reforms to "someone else" each woman should therefore feel personally responsible for the decision which is finally taken.

REPORTS PREPARED FOR THE SEMINAR

by the

RAPPORTEURS

A. INTRODUCTION

1. EXTENT OF WOMEN'S PARTICIPATION IN ECONOMIC PRODUCTION TODAY - INFLUENCE OF ECONOMIC FLUCTUATIONS ON WOMEN'S EMPLOYMENT AND UNEMPLOYMENT

by Mrs Rita KNUDSEN
Danish Statistical Service

1. Introduction

The percentage of women in the labour force has been increasing for some years in many countries. The background has been the shortage of labour caused by the boom and at the same time in some countries an unfavourable age distribution of the population. An increasing proportion of the population is composed of children and young people undergoing education or training and of old people, while the population of working age has decreased.

Women's increasing participation in gainful employment has been facilitated by the fall in infant mortality which means that a certain increase of the population will be maintained although there will be less pregnancies. In some countries families are smaller than they were some 10-15 years ago. Employment has been complicated for younger women by the fall in marriage-age and earlier childbirths. Investigations by sociologists of the reasons for which more women are taking up gainful employment show that the motives are not purely economic. From an economic and statistical point of view it seems obvious that a contributory reason for women's increasing industrial activity is that some of the tasks which were formerly carried out in the home (producing certain goods, services and care of children and old people) are now carried out by industry or public services. The change into a monetary economy has been quick during the last decades and at the same time women's work in the home has decreased. The change from the traditional women's work in the home to work in manufacturing and services has given gainful employment to many men

and women and there has been a surplus in national income. It is doubtful, however, whether the total surplus to the community has been so great as it would seem because a great deal of the functions previously performed by the housewife are now having to be carried out by industry or the social welfare system.

A woman working in her own home is "paid" in kind. The amount paid is determined by her efforts and the income of her husband. When she is doing the same functions outside her home, her pay is transformed into a money income which is determined by her efforts and the wage. The difference between payment in money or in kind, wages or the husband's income, has undoubtedly contributed to the increase in the economic activity of women in many countries.

2. Women in the labour force

Censuses and other investigations provide information about the labour force at a certain date. The figures which they give on women in the labour force must be considered as minimum figures as, for many reasons, some women workers are not counted at the censuses.

Anybody who is employed as wage-earner or salaried employee, or is seeking employment, and anybody who is self-employed will be counted as belonging to the labour force. A certain number of persons work as unpaid family-workers in family enterprises. These family-workers are difficult to count, and most of them are women. Women married to self-employed men often help their husbands. Even if the wife is not paid, is not protected by collective agreements and may have varying hours and kinds of work her efforts may be of great importance and she ought to be looked upon as belonging to the labour force. Also the date of the census, the questions asked and the methods of investigation have great influence on the results. As some women work only at certain periods of the year and are not considered as unemployed outside these periods, the best picture of women's employment and their attachment to the labour force will be given by studying the industrial occupation over a period, e.g. a year.

The results are more reliable if it is the women themselves who answer the questionnaires. In Denmark - and most likely in other countries too - it is usually the husband who fills in the questionnaires for all the household. There is a risk that the husband may consider his wife's role as a housewife more important than her industrial role and that he may omit to give information about her occupation outside the home, particularly if the wife works only part-time.

A little less than one third of the total labour force consists of women. The percentage of women in the labour force varies from one country to another, but is generally between 30 and 35 per cent. The percentage of women in the labour force in 13 European countries and in Canada and the United States is shown in Table 1.

The Netherlands has the lowest percentage of women in the labour force, 22, and Austria the highest, 40. Unfortunately the figures are not all for the same year and there may be more women employed today in the Netherlands than there were in 1960.

Women are unevenly represented in the labour force of each industry. There are very few women in mining, construction and public utilities and as a whole only a small part of the labour force in agriculture is composed of women. In some countries, e.g. Austria, West Germany and Greece, there are relatively many women in agriculture. In more than half of the countries over 50 per cent of those employed in the service industries are women. In Finland women constitute 70 per cent of the labour force in the service industries, and in Sweden the percentage is nearly as high, 64. Commerce also employs more women than industries as a whole, but in most countries the percentage of women in the labour force of commerce is lower than in the labour force of the services. On the other hand manufacturing is not a "women's trade" because as a rule there is a lower percentage of women in the labour force of manufacturing than in the total labour force.

Grouped by sectors, there is a larger percentage of women in industries outside agriculture and in industries outside manufacturing than in the total labour force of all industries. During recent years the percentage of women in the labour force has increased in many countries. Figures for the period 1956-1966 for some of the countries are shown in Table 2 and Figure 1.

From 1956 to 1966 the only country in which the percentage of women in the labour force has decreased is Italy. In West Germany and Denmark the percentages remained the same during this period, but in the remaining countries they increased. The alteration in composition of the labour force was greatest in Canada where in 1956 24 per cent and 1966 30 per cent of the labour force were women. The most important feature for the period however, was the increased proportion of married women in the labour force. In Canada where the greatest increase in the percentage of women in the labour force took place, the percentage of married women did not alter, but in West Germany and Denmark, where there was no increase in the percentage

of women in the labour force there was an increase in the percentage of married women. Also in the United States, Sweden and the United Kingdom there were relatively more women in the labour force at the end than at the beginning of the period.

Women as a percentage of the labour force

	In all industries (including agriculture)	In manufacturing	In industries excluding agriculture etc.
Canada (1967)	31	22	33
USA (1966)	35	27	36
Austria (1961)	40	35	37
Belgium (1966)	31	26	31
Denmark (1967)	37	28	38
Finland (1960)	39	37	42
France (1962)	33	31	36
W. Germany (1966)	36	31	34
Greece (1961)	33	32	24
Ireland (1961)	26	33	34
Italy	27	28	26
Netherlands (1960)	22	16	24
Norway (1960)	23	19	27
Sweden (1960)	30	22	33
UK (1961)	32	31	33

ILO Year Book of Labour Statistics 1967.

3. Distribution of gainfully employed women by industries

Some industries employ mostly men while others employ so many women that they may be called "women's trades". The percentage of women in the labour force in each industry was shown in Table 1, but the importance of each industry in the employment of women is best illustrated by showing the distribution of women workers according to industries. This distribution is given in Table 3. The majority of women work in the service industries, commerce and manufacturing. In certain countries, however, a considerable percentage are employed in agriculture. In Greece, two thirds of the gainfully employed women work in agriculture. The distribution of men and of women by industries is very different. In the countries

represented in the tables - with the exception of Greece - from 60 to 90 per cent of the active female population is employed in manufacturing, commerce and the service industries. But in these industries there are only from 40 to 65 per cent of the active men. Whether a country is considered as having an agricultural or a manufacturing economy depends among other things on the distribution of the labour force by industries. The distribution of women by industries, however, gives no indication of whether the country has an agricultural or a manufacturing economy, while this can be seen directly from the distribution of men by industries. In Finland, Greece, Ireland and Norway more than half of the male labour force is occupied in agriculture, forestry and fishing. Of the active female population 32 per cent work in agriculture in Finland, 15 per cent in Ireland and only 4 per cent in Norway. In Austria, Denmark, France, Italy and Sweden between 40 and 50 per cent of the men work in agriculture, but of the women respectively 30, 9, 19, 27 and 4 per cent are in agriculture. In Canada, the United States, Belgium, West Germany, the Netherlands and the United Kingdom about two thirds of the active men work in manufacturing,commerce and the service industries, while these industries occupy about 90 per cent of women.

Percentage of gainfully employed men and women in manufacturing, commerce and the services

	Men	Women
Canada	63	89
USA	68	92
Austria	53	65
Belgium	64	90
Denmark	61	85
Finland	39	63
France	53	75
W. Germany	68	80
Greece	35	29
Ireland	39	82
Italy	53	69
Netherlands	63	92
Norway	48	89
Sweden	58	90
UK	67	91

4. Professional status

Between 60 and 90 per cent of gainfully employed women are wage-earners or salaried employees. In a few countries, between 10 and 20 per cent of the women are self-employed, but in the remainder less than 10 per cent are self-employed. The majority of men are wage-earners and salaried employees but there are far more self-employed men than women. There are more women than men in the category of family workers, but the percentages vary greatly from one country to the other, from 1 per cent in Norway and the United Kingdom to 57 per cent in Greece. In most countries with relatively few men in agriculture there tend to be few women working as family workers. An exception is West Germany with only 7 per cent of men in agriculture and 22 per cent of women considered as family workers.

In Ireland, Norway and Sweden, however, there are relatively many men occupied in agriculture while few women work as family workers. These countries have large forestry and fishing industries. Wage-earners and salaried employees may be divided into groups by their training as skilled, semi-skilled and unskilled. In the industrial statistics, breakdowns of the employed are not given for all countries and the specifications must therefore be extracted from the national statistics of the countries.

In Denmark in 1960 women constituted 28 per cent of the total labour force but 45 per cent of the salaried employees, 30 per cent of the unskilled workers and only 6 per cent of the skilled workers. By 1967 the percentage of women in the labour force had grown to 37, and 49 per cent of the salaried employees, 39 per cent of the unskilled and 5 per cent of the skilled workers were women.

In the distribution by branches there tend to be characteristic differences between men and women. In Denmark 46 per cent of the total punch-card-staffs in 1960 were women, the same percentage as they represented in the total group of salaried employees. A distribution by status and functions shows that women are almost exclusively employed as "punchers" while the men are employed in operating machines, programming etc. Only 6 per cent of all skilled workers in Denmark in 1960 were women, but 76 per cent of all hairdressers and 73 per cent of all dental mechanics were women. Of the unskilled, 30 per cent were women, but these women were concentrated in certain trades mainly the tobacco and the clothing industries. Waiters in Denmark may be skilled or unskilled, but nearly all of the skilled are men and the majority of the unskilled are women. Breakdown statistics from other countries show the same tendencies as mentioned here for Denmark.

Just as women are concentrated in some industries, they are also concentrated by professional status and by branches. The increase in the absolute numbers and in the percentage of women in the labour force has been accompanied by a process of further concentration in industries other than agriculture, especially in the service industries.

In each industry women are assembled in special branches, "women's trades", and are mostly either salaried employees or unskilled workers.

The increased employment of women has given some women opportunities of promotion and of better paid work, but increased employment has not necessarily led to more equality on the labour market. Women are particularly employed as subordinates in low-paid jobs and in special industries. The labour market has always been separated into two traditional male- and female-sectors and only in some industries and branches is there a common market for both sexes. Development in recent years has tended to accentuate further separation. Equal education will perhaps give equal possibilities in some sectors, but a more differentiated use of women in gainful employment may not appear before a thorough change has taken place in the opinion of both employers and employed.

5. The incidence of women's employment

Between 20 and 35 per cent of all women are gainfully employed in the 15 countries. The percentage is lowest in the Netherlands, 16 in 1960, and highest in Austria, 36 in 1961. These percentages cannot be compared from one country to the other, as such an average is influenced as much by the distribution of population by age as by the number of labour force. On the other hand it is possible to compare the incidence of women's employment in the active age groups from about 15 to about 64.

In 9 of the 15 countries more than 35 per cent of women aged 15-64 are in the labour force and in 6 of these countries there are more than 40 per cent.

In Denmark the incidence of women's employment has increased in recent years from 28 per cent in 1960 to 32 per cent in 1965 but among women aged 15-64 the percentage has grown from 42 to 46 in 5 years.

The incidence of women's employment varies according to a rather large number of factors of which age, residence, education and family responsibilities are some of the most important.

(a) Age

There are more younger than older women in the labour force. The decrease from one age group to the next is seen in all 15 countries, see Table 5.

The incidence of the employment of women of the same age is different in the 15 countries but it is interesting that a rather high incidence in one age group does not necessarily mean a high incidence in the others.

The lowest employment incidence of the age group 15-19 years is 28 in the United States and the highest 79 in West Germany. The figures are influenced by the age at which children normally leave school. In Denmark children can leave when they are 14, but more than half continue until they are 15 or 16. The low school-leaving age - one of the lowest in Europe - is the reason why the incidence of employment of young women from 15 to 19 in Denmark is one of the highest in Europe.

With the exception of Denmark, the Netherlands and West Germany, the incidence of women's employment increases from age group 15-19 to age group 20-24. For the 20 to 24-year-old women it is very different from country to country and these differences are mainly caused by differences in marriage-age and in the participation of married women in the labour market.

The highest incidence of employment of the 20 to 24-year-old women is found in Austria, 41 per cent. For the 25 to 29-year-old women it is lower in all countries than for that of the age group 20-24, mainly because of childbirth and small children.

The decrease in the incidence of employment continues until women are about 50 years old. In some countries, the United States and Finland, the decrease stops earlier and in these countries there are more women of 30 to 49 years old than of 25 to 29 years old in the labour force. Generally the incidence of employment is higher for the 50-54 group than for the 30 to 49 group. The tables do not show whether women who go back to work are nearer to 40 than 50, as the age groups are too wide. Probably they go back to work when their last child begins school or is about 10 to 12 years old. In many countries women will then be in their early forties. In Denmark today a woman will be about 30 years old when her last child starts school and she will be about 35 when the child is 10-12 years old.

The incidence of women's employment has been increasing for some years in all age groups. This increase in age groups is to a certain degree a generation's phenomenon. When generations grow old,

the level will depend on the incidence of employment in that generation when it started work at the age of 15-19. When therefore generations with a higher incidence of employment than former generations grow older, the level in the higher age groups will also increase.

The percentage of gainfully employed women in the age group of 40 and over is influenced too by the length of the period from when the last child no longer depends on the care of the mother to the age of retirement. Earlier marriages and childbirths and less pregnancies mean that periods of heavy family responsibility are concentrated in the early phase of marriage and therefore the period when the woman's role is primarily a family one will be shorter. The period as mature women with no small children will be longer, and as the woman has fewer responsibilities she will have increased opportunities to return to or intensify her gainful employment. Figures of gainfully employed women over 35 show that women are increasingly realising these possibilities.

(b) Residence

In the industrialised countries the labour market participation of women is higher in urban than in rural areas where employment possibilities are limited. In the countryside most women work as family workers. The mechanisation of agriculture renders employment of outside assistance superfluous. In some cases this means that women now have to work more than previously with their husbands as family workers. In small countries with good communications such as Denmark, the distance from rural to urban districts is of decreasing importance and during recent years many women from small farms have sought employment in neighbouring districts.

(c) Education

Women with a professional or other higher vocational training have a higher rate of employment in industry than women without such a background. Investigations such as the research carried out by the Norwegian sociologist Hariet Holter, have shown that the higher a woman's vocational training the more likely she is to continue working after marriage or to return to her occupation. The husband's income may however be a more important factor than the education, and a lot of women without any special vocational training work to obtain a higher standard of living. An investigation carried out by the Danish National Institute of Social Research showed that the

incidence of employment in industry of married women without training and married women with advanced vocational training was the same. The incidence was highest among women with some professional training and lowest among women with no training or with a higher professional education. As women with a good vocational training are very often married to men with the same standard of education and with rather high incomes, the fact that so many of them still choose to work shows that they are really attracted to it.

The working lifetime of women with vocational training is longer than that of women with none, as trained women are more inclined to return to work than those without any training.

(d) Family responsibilities

After marriage, many young women end their gainful occupation. The figures for women's employment in industry by age groups show marked decreases at the marriageable age.

Rather more than one third of all married women in the United States, Denmark, West Germany and the United Kingdom are gainfully employed, and in Sweden there are about 45 per cent at work. The figures are somewhat higher among married women in the active population aged 20-64. In Denmark today more than 45 per cent of all women between 20 and 64 are working.

In the last 10-15 years the percentage of married women of all women in the age group 20 to 64 has increased in the countries the tables concern. In Norway, for instance, in 1950 66 per cent of the 20 to 64-year-old women were married but the percentage had increased to 75 in 1960. Table 6 shows the percentage of married women in the 20-64 age group. The increase in women's participation in the labour force has taken place in spite of the increasing percentage of married women.

The percentage of married women increased so much in Denmark between 1950 and 1960 in all active age groups that the proportion of women in the labour force could only be maintained by a considerable increase in the labour force participation of married women.

Some women give up their job on getting married but more often they do so when the first child is born. In many Danish families the first child is born within the first year of marriage and it is therefore difficult to say whether marriage or the first child is the reason for giving up the job.

In the investigation on married women's employment in Denmark mentioned previously it was found that, regardless of age, women without children have a higher rate of labour force participation than women with children. The rate for young married women without children is the same as that for the 15 to 19 age group. The percentage of economically active falls as the number of children increases but it is almost the same for women with 1 child and with 2 children. There is a great difference between the incidence of employment of women with 1 or 2 children and that of women with 3 children. The question is whether, after having the third child, women stop working outside the home - or whether it is the women who stay at home with no economic activity who have more than 2 children?

Of vital importance for the labour force participation of women is the rate of fertility, which is the number of children born per 1,000 women in a certain age group. Figures referring to births about 1930 and 1965 are shown in table 7.

The development from the beginning of the thirties to 1965 has shown, in 14 of the 15 countries, an increase of fertility in the younger and a decrease in the older age groups. Italy is an exception as fertility decreased in all age groups.

In the age groups under 25, fertility is highest in the United States and lowest in Italy but some countries have fertility rates very near to that of the United States. Some years ago fertility was highest in the age group 25-29, but the picture changed and in several countries the fertility today is highest in the age group 20-24. In half of the 15 countries the fertility of 20 to 24-year-old women is so high that 150-200 in every 1,000 are expected to have a child in a year. This means that nearly every woman is expected to have one child between the age of 20 and 25. The fertility of the 25 to 29-year-old women is nearly at the same level but there is a considerable fall from the age group 25-29 to the age group 30-34.

The largest fall in fertility since about 1930 occurred in the age group 40-44. Women in their forties have only half as many children as they did about 35 years ago. In some countries the fertility of the 34 to 39-year-old women has decreased to about two-thirds.

If the decrease in fertility of women over 30 continues, the labour force participation of women, and especially of women over 30, will probably continue to increase.

6. Influence of the business cycle on women's participation in economic activity

It is generally accepted that women are the "reserve" of the labour market and that manpower can be drawn from this reserve in prosperous times and when there is a recession women will leave the labour force again. This idea is so commonly accepted that it is quoted and used even in scientific research about women's employment. If women really do constitute such a reserve it means that they must be discharged before the men when declines set in. It is doubtful whether the phrase is true or not. There is much to indicate that if women are discharged before men, it is not because they are looked upon as a reserve but rather because they are more concentrated in industries, branches and professional status. The concentration itself is an element of risk. Moreover the "women's trades" may be just as sensitive to business cycles as the fields traditionally employing men.

Earlier in this report it is mentioned that the labour market cannot be looked upon as one but as two - one for women and one for men, and that only some fields are common for both sexes. It is therefore not probable that women would be discharged in favour of men. In a business decline it would also be absurd to discharge low-paid women in favour of men. The division of the labour market into two has been more marked in recent years and if formerly women were replaced by men, it is difficult to do so today. The more obvious the separation the more difficult it will be.

The cycles of economic life are traditionally measured on the "old" industries such as agriculture and manufacturing, while the service industries are looked upon as secondary industries. When a decline sets in, one of the first industries to be affected is construction and some branches of manufacturing where the majority of those employed are men. Soon after the start of a decline, or even when a decline is expected, the retail trade and the service industries will feel a certain recession. Because a majority of the gainfully employed women work in retail trade and service industries, a recession will affect a large percentage of the economically active women.

In the Western consumption communities even small declines in the business cycle will immediately affect the retail trade, especially the trade of durable commodities. The majority of women in manufacturing are employed in the production of consumer goods and the female labour force in a consumption community will therefore soon feel a recession in a weakening of the demand for women workers.

In the present recession after the boom which the Western world experienced in varying degrees in the beginning of the sixties, women as well as men have noticed the reduced demand. There is, however, no sign that men have replaced women and that the percentage of women in the labour force is declining. In Denmark the highest percentage of unemployment is at present among unskilled male workers. Women's unemployment has grown in three years from 1.2 per cent to 3.2 per cent (March 1965 and 1968) and from 0.5 per cent to 2.4 per cent (August 1965 and 1968).

The corresponding figures for male workers were 7.1 per cent to 11.9 per cent (March 1965 and 1968) and 1.2 per cent to 4.1 per cent (August 1965 and 1968).

To decide whether, how and to what extent women in the labour force are influenced by business cycles, it is necessary to have better information about women's unemployment. Unemployment figures in most countries give only a limited idea of this as they show the percentages of unemployed organised workers but a large number of women are not organised in trade unions. This is especially so because more women than men work as salaried employees and because many women have part-time work. When the non-organised women lose their employment, those who are married will be counted as housewives. If the statistics of unemployment registered the women who wished to be employed, one would undoubtedly get a better picture of the variations of the female labour force and its employment.

This opinion is moreover shared by many of the women who would seek employment if they knew they had a chance to get it. The conclusion of these considerations is that it is difficult to say anything about the influence of business cycles on the employment of women. It is most probable that the phrase that women are the reserve of the labour market is not true. The distribution of women by industrial occupation only partly follows the economic structure of the countries, and consequently changes in the business cycles will not automatically be reflected on women in the labour force. Women are employed in certain fields of the labour market and it is not likely that they will be replaced by more expensive manpower. When the business cycles hit the "women's trades" they will strike hard because women are concentrated in these trades and a recession will hit a large percentage of all working women. The sensitiveness of consumption to business cycles makes it probable that women will be hit at the same time as men by a recession.

7. Forecast for women's participation in economic production

In general it is very difficult to prepare a forecast on economic problems because the influence of each factor and their interaction cannot be measured either quantitatively or qualitatively. In the case of women's gainful employment there are so many uncertain factors that preparing a forecast is rather like guesswork. It is better to estimate the factors which are known to have an essential influence on women's industrial activity as for example frequency of marriage, fertility, pattern of life, education, business cycles and legislation.

(a) Frequency of marriage

The frequency of marriage has increased during recent years. It is possible that it will continue to do so, one of the reasons being the surplus of men in the coming generations of 20-year-old people. An even higher frequency of marriage than today will mean fewer women on the labour market or a moderation of the increase in women's industrial participation.

(b) Fertility

Fertility increased in the age groups under 30 and decreased for older women. This development seems to continue but the spreading of new anti-conceptional methods may completely change it. The number of liveborn children in Denmark in 1967 and 1968 is less than expected. Maybe because many Danish women have accepted and used the Pill. If the decrease in the birth rate is permanent, the influence on industrial activity is certain: an increasing percentage of married women will seek employment. If the present decrease in the birth rate on the other hand is only the consequence of family-planning, there will probably be a fall of the fertility of 20 to 24-year-old women and increased fertility in the older age groups. The labour force participation of women under 25 will then increase, while participation of women in the age group 25-29 may well decrease.

(c) Pattern of life

"Pattern of life" means in this context the pattern of periods with changing family responsibilities which are so important for women's labour force participation.

The period of education without family responsibilities becomes on the one hand longer, but on the other hand the period is shortened

because women marry and have children earlier in their life than before. Also the period with small children becomes shorter while the period as mature women with less family responsibilities becomes longer. This development means that more women will have the opportunity and the desire to be gainfully employed. An increasing number of women over 35 will probably return to work.

(d) Education

More young girls than before receive a professional or other vocational training. The labour force participation of women with a training is higher than of women without, and women with training are more likely to return to work. The improved education of girls will undoubtedly mean that as grown-up women in 10 years they will be employed in economic production to a larger extent than their mothers were.

(e) Business cycles

In the coming 10 years the market policy will have an immense influence on the business cycle. Former fluctuations can probably be avoided and the smaller variations restricted to shorter periods. Continuous growth may be the result, although perhaps less rapid than in many countries at the beginning of the sixties.

If the economic cycle can be kept within certain limits it is most probable that smaller fluctuations will have only a limited influence on the percentage of women in the labour force.

(f) Legislation

Women's opportunities for employment, and the extent to which they participate in the labour force may be greatly affected by politics. By giving subsidies to housewives, income-tax reliefs to husbands whose wives do not work outside their homes, and larger general children's allowances or other subsidies to children or mothers if the mother stays at home, it is possible to influence women's choice between staying at home or going out to work.

Nobody knows how all these factors will interact in the coming 10 years. However, if the legislation is rather neutral, if fluctuation of business cycles can be avoided, if more girls receive vocational training, if women's return to work is facilitated, and if they can have a free choice in the question of birth control - it is certain women's participation in economic production will increase in the coming 10 years. Countries which today have about 40 per cent of all 20 to 64-year-old women in the labour force may then have about 60 per cent and countries with about 30 per cent today may have about 50 per cent.

Table 1

Women in the labour force of each industry. Percentage of total labour force.

		Agriculture, forestry, fishing	Mining and quarrying	Manufacturing	Construction	Electricity, gas, water and sanitary services	Commerce	Transport and communication	Services	Activities not adequately described	Total
		1	2	3	4	5	6	7	8	9	10
Canada	(1967)	11	7	22	4	12	35	15	53	2	31
USA	(1966)	18	5	27	4	14	41	20	55	9	35
Austria	(1961)	53	7	35	6	10	51	13	58	45	40
Belgium	(1966)	25	1	26	3	6	42	8	52	18	31
Denmark	(1967)	25	.	28	5	..	45	21	64	19	37
Finland	(1960)	35	10	37	6	14	55	21	70	25	39
France	(1962)	33	3	31	4	13	43	19	55	13	33
W. Germany	(1966)	54	5	31	5	13	53	16	47	40	36
Greece	(1961)	40	7	32	0	7	15	4	35	46	33
Ireland	(1961)	11	2	33	1	6	33	12	57	20	26
Italy	(1966)	31	2	28	2	6	33	7	40	38	27
Netherlands	(1960)	9	2	16	1	4	33	7	44	12	22
Norway	(1960)	5	2	19	2	8	40	12	55	5	23
Sweden	(1960)	9	6	22	3	9	48	18	64	24	30
UK	(1966)	11	3	31	4	11	46	13	48	28	32

ILO: Year Book of Labour Statistics 1967.

Table 2

Civilian labour force. Distribution by sex. 1956-1966. %.

	Canada			USA			Belgium		
	M	F	of which married	M	F	of which married	M	F	of which married
1956 ...	76	24	..	68	32	17	70	30	..
1957 ...	76	24	..	68	32	18	70	30	..
1958 ...	75	25	..	67	33	18	69	31	..
1959 ...	74	26	..	67	33	18	69	31	..
1960 ...	73	27	..	67	33	18	69	31	..
1961 ...	72	28	..	66	34	19	68	32	..
1962 ...	72	28	..	66	34	19	68	32	..
1963 ...	72	28	..	66	34	20	68	32	..
1964 ...	71	29	15	66	34	20	68	32	..
1965 ...	71	29	15	65	35	20	68	32	..
1966 ...	70	30	16	64	36	21	68	32	..

	Denmark			W. Germany			Italy		
	M	F	of which married	M	F	of which married	M	F	of which married
1956 ...	65	35	..	63	37	16	..	..	..
1957 ...	65	35	..	63	37	15	..	..	..
1958 ...	65	35	..	62	38	16	..	..	..
1959 ...	65	35	..	62	38	16	69	31	..
1960 ...	65	35	..	62	38	17	70	30	..
1961 ...	65	35	..	62	38	17	70	30	..
1962 ...	65	35	17	62	38	18	70	30	..
1963 ...	65	35	17	63	37	18	71	29	..
1964 ...	65	35	17	63	37	18	72	28	14
1965 ...	65	35	18	63	37	18	72	28	14
1966 ...	63[1]	37[1]	21[1]	63	37	19	73	27	..

	Norway			Sweden			UK		
	M	F	of which married	M	F	of which married	M	F	of which married
1956 ...	70	30	..	..	..	..	66	34	..
1957 ...	70	30	..	..	..	..	66	34	..
1958 ...	70	30	..	..	..	..	66	34	..
1959 ...	70	30	..	..	..	..	66	34	..
1960 ...	70	30	..	65	35	..	66	34	..
1961 ...	70	30	..	65	35	19	65	35	18
1962 ...	69	31	..	64	36	20	65	35	18
1963 ...	69	31	..	64	36	21	65	35	18
1964 ...	69	31	..	64	36	21	65	35	19
1965 ...	69	31	..	64	36	21	65	35	19
1966 ...	69	31	..	63	37	22	64	36	20

OECD: Labour force statistics. 1956-1966. Paris 1968.

1) 1967.

Table 3

Economically active women distributed by industry, %.

		Agriculture, forestry, fishing	Mining and quarrying	Manufacturing	Construction	Electricity, gas, water and sanitary services	Commerce	Transport and communication	Services	Activities not adequately described	Total
		1	2	3	4	5	6	7	8	9	10
Canada	(1967)	3	0	17	1	0	23	4	49	3	100
USA	(1966)	3	0	20	1	0	27	3	45	1	100
Austria	(1961)	30	0	25	2	0	14	2	26	1	100
Belgium	(1966)	4	0	27	1	0	21	2	42	3	100
Denmark	(1967)	9	.	22	1	.	19	4	44	1	100
Finland	(1960)	32	0	20	1	0	17	3	27	0	100
France	(1962)	19	0	25	1	0	17	3	33	2	100
W.Germany	(1966)	15	0	32	1	0	21	3	28	0	100
Greece	(1961)	66	0	13	0	0	3	0	13	5	100
Ireland	(1961)	15	0	22	0	0	19	2	41	1	100
Italy	(1966)	27	0	30	1	0	17	1	22	2	100
Netherlands	(1960)	4	0	22	1	0	24	2	47	0	100
Norway	(1960)	4	0	21	1	0	23	6	45	0	100
Sweden	(1960)	4	0	26	1	0	22	4	43	0	100
UK	(1961)	1	0	33	1	1	22	3	36	3	100

ILO: Year Book of Labour Statistics 1967.

Table 4

Economically active men and women. Distribution by status. %.

		Employers and workers on own account		Salaried employees and wage earners		Family workers		Others and status unknown		Total	
		M	F	M	F	M	F	M	F	M	F
Canada	(1967)	17	9	83	90	.	.	0	1	100	100
USA	(1966)	13	6	83	86	1	3	3	5	100	100
Austria	(1961)	19	11	76	64	5	25	.	.	100	100
Belgium	(1961)	19	19	74	70	3	9	4	2	100	100
Denmark	(1967)	24	5	76	81	.	14	.	.	100	100
Finland	(1960)	26	9	66	65	8	26	.	.	100	100
France	(1962)	22	12	74	69	4	19	.	.	100	100
W. Germany	(1961)	15	7	82	71	3	22	0	0	100	100
Greece	(1961)	46	13	37	26	15	57	2	4	100	100
Ireland	(1961)	29	16	53	75	12	6	6	3	100	100
Italy	(1965)	27	16	66	59	6	23	1	2	100	100
Netherlands	(1960)	18	5	79	85	3	10	.	.	100	100
Norway	(1960)	23	8	74	91	3	1	.	.	100	100
Sweden	(1960)	18	5	80	91	2	4	.	.	100	100
UK	(1961)	9	4	87	92	1	1	3	3	100	100

ILO: Year Book of Labour Statistics. 1967.

Table 5

Economically active women as a percentage of total female population in age groups

		Under 15 years	15-19 years	20-24 years	25-29 years	30-49 years	50-54 years	55-59 years	60-64 years	65 years and older	Total	
											% of all women	% of women 15-64
Canada	(1961)	.	34	50	32	31	33	28	20	7	20	33
USA	(1960)	0	28	45	35	42	46	41	29	10	25	39
Austria	(1961)	2	75	75	59	54	47	40	20	7	36	53
Belgium	(1961)	1	41	52	36	30	25	20	9	4	20	30
Denmark	(1960)	1	67	59	39	37	37	34	23	7	28	42
Finland	(1960)	0	42	61	57	58	57	51	36	12	35	47
France	(1962)	0	36	62	46	41	46	43	34	11	28	42
W.Germany	(1961)	2	79	72	50	44	38	32	21	8	33	47
Greece	(1961)	5	47	52	44	37	33	27	21	10	28	39
Ireland	(1961)	1	54	67	39	21		23		15	20	32
Italy	(1961)	3	39	41	30	26[1]	23[2]	17	13	5	20	28
Nether-lands	(1960)	1	59	53	22	16	16	14	10	3	16	26
Norway	(1960)	.	42	48	26	20	25	27	23	8	18	25
Sweden	(1960)	0	47	57	42	36	36	32	22	5	26	38
UK	(1961)	.	72			42				5	29	45

ILO: Year Book of Labour Statistics. 1967.

1) 30-44 years.
2) 45-54 years.

Table 6

Married 20 to 64-year-old women as percentage of all 20 to 64-year-old women

		About 1950 to 1955	About 1960 to 1965
Canada	(1951 and 1961)	76	80
USA	(1956 and 1966)	79	80
Austria	(1961 and 1967)	65	68
Belgium	(1947 and 1961)	73	78
Denmark	(1956 and 1966)	75	76
Finland		..	..
France	(1955 and 1965)	72	76
W.Germany	(1950 and 1966)	65	73
Greece	(1951 and 1961)	63	69
Ireland	(1951 and 1961)	55	61
Italy	(1951 and 1961)	66	69
Netherlands	(1956 and 1966)	73	77
Norway	(1950 and 1960)	66	75
Sweden	(1950 and 1965)	71	75
UK	(1951 and 1961)	72	77

National Statistical Year Books of each country.

Table 7

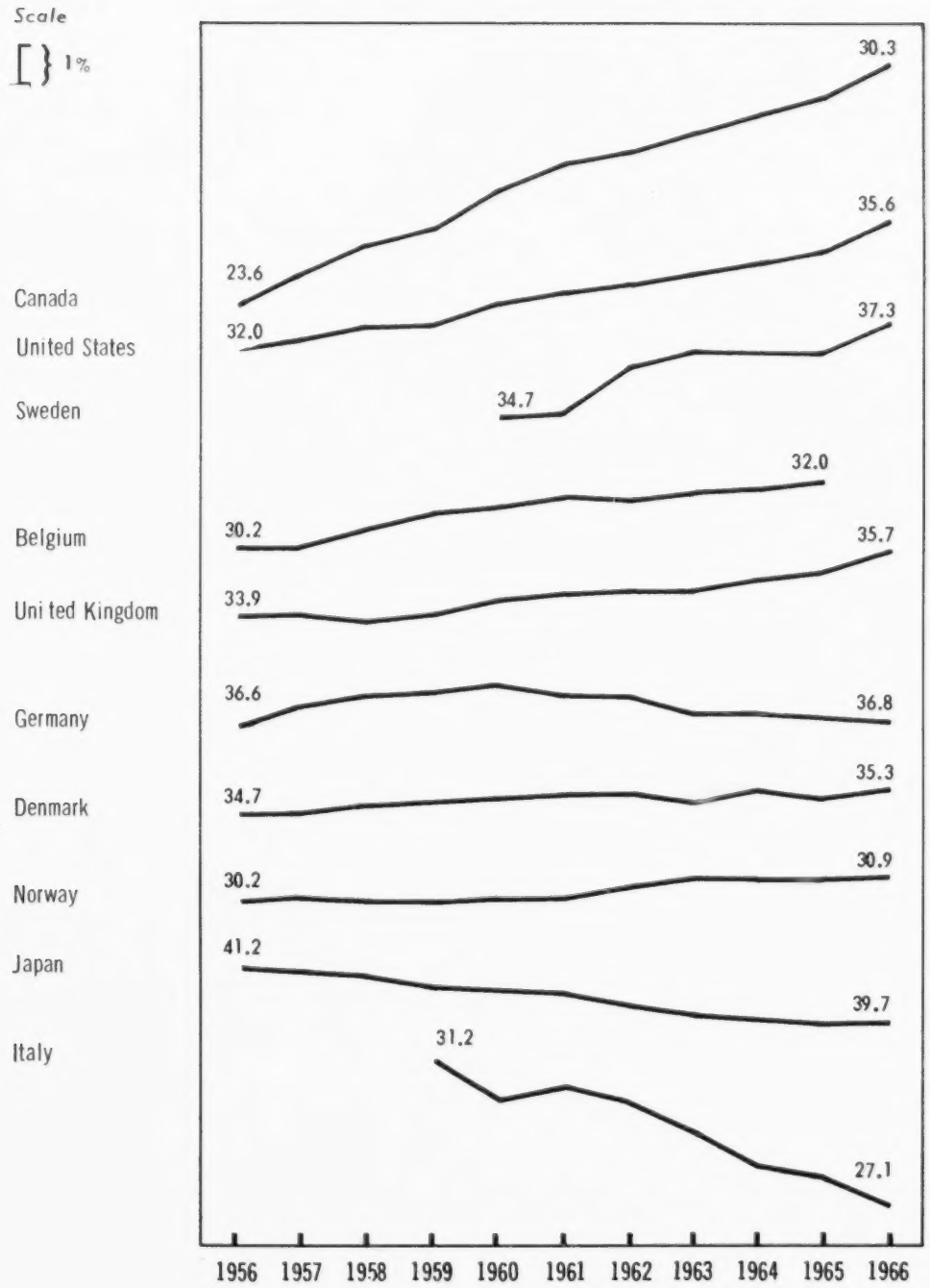
Live-born children pr.1000 women in age-groups

		15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years
Canada	1930/32	30	137	174	145	103	45	5
	1965	48	186	181	119	65	21	2
USA	1929/31	47	131	127	93	60	23	2
	1965	71	197	162	95	46	13	1
Austria	1965	57	159	154	100	50	16	1
Belgium	1939	19	108	124	89	53	19	2
	1964	29	168	172	104	51	15	1
Denmark	1931/35	23	102	122	95	61	24	2
	1965	47	176	163	87	38	9	1
Finland	1930/32	14	96	130	116	87	46	7
	1965	34	139	143	90	52	19	3
France	1930/32	31	130	129	88	52	18	2
	1965	28	176	180	108	53	16	2
W.Germany	1965	24	126	155	100	45	13	1
Greece	1965	26	120	148	99	44	11	1
Ireland	1961	9	107	215	208	151	57	4
Italy	1930/32	23	125	175	155	116	52	6
	1964	13	100	173	130	73	29	3
Netherlands	1930/31	12	92	166	153	112	52	5
	1965	21	140	207	138	73	24	2
Norway	1930/31	8	71	113	106	80	42	7
	1965	41	180	177	112	58	18	1
Sweden	1933/34	17	73	90	77	53	24	3
	1965	49	141	154	89	39	10	7
UK	1931	12	77	112	94	61	24	..
	1964	42	180	185	107	50	13	1

United Nations' Demographic Yearbook 1966 and National Statistical Yearbooks of each country.

Graph 1

WOMEN AS PERCENTAGE OF CIVILIAN EMPLOYMENT



OECD : Labour Force Statistics 1956-1966.

A. INTRODUCTION

2. WOMEN'S ROLE IN MODERN SOCIETY FROM THE SOCIOLOGICAL AND ECONOMIC POINTS OF VIEW

by Mrs Evelyne SULLEROT
(France)

Before we launch upon our work, we should be well advised to outline the general setting for the employment of women in our different countries. This is a bold venture, since conditions vary so widely from one country to another. It is, however, interesting to note that the generally accepted concepts of women's role in society, and their true place in the economic life of the country in question often bear little relation to each other. A few examples will give a better understanding of these disparities; the proportion of women in the work force is almost the same in the Netherlands and in Spain (22 per cent in the Netherlands, 23 per cent in Spain), while it is much higher for example in Federal Germany or France (33.5 per cent). And yet this does not mean that the general conception of women's role in society, the overall definition, accepted by public opinion, of "women's place" is the same in Spain and the Netherlands, far from it, any more than it is the same in France and in Germany. The Netherlands is at present experiencing lively public debate on sex education and the freedom and even the independence of women, which could never happen in Spain. There is therefore not necessarily a perfect correspondence between social conceptions of women's role and future and the part which women actually play in a country's production and economic life.

Everyone knows the old German saying about a woman's proper place - "Kinder, Küche, Kirche" - the children, the kitchen and the church - which would keep her strictly tied to her own home, and yet it is in Germany that the highest proportions of working women in Western Europe have been found for a long time past. Catholic Italy, which has always professed a very traditional concept of

women in the home and has even condemned the practice of women going out to work, has similarly experienced very high proportions of working women, twice as high as the United States, where a definitely more "modern" concept of the independence of women was contemporarily flourishing. Belgium today evidences wide disparities between the proportion of working women in Flanders and Wallonia (in Flanders 49 working women for 100 men, at Charleroi in Wallonia 21, at Huy 19!). Thus, it is in these Catholic Flemish districts, where the employment of women is often denounced as unethical, that a markedly higher proportion of women going out to work is found, while the more tolerant Wallonia includes regions where the rate of women's economic activity is among the lowest in Europe.

These very varied situations no doubt spring from economic realities much more than from the traditional concepts of women's proper role in each country. In the second part of this short paper we shall try to ascertain the influence of these economic factors on the employment of women. At the same time, it is not without value to dwell a little at this point on the general ideas underlying the concept, or rather the concepts, of women's role in our societies, since they largely influence the behaviour of men and women and create a state of mind, a feeling of guilt, of strain or passivity, which are by no means negligible. We shall attempt to describe this state of mind, its postulates and its certainties, as well as its contradictions and doubts.

1. Ideas about women's role even in our advanced societies still often follow a relatively rigid pattern. Even though we are living in societies based on change, these patterns cannot change rapidly, for the very reason that they seek to establish woman as the stabilising factor of society. She is the cornerstone of the family and far more than men the custodian of tradition; as Viola Klein and Alva Myrdal point out in one of their works, every man looks for his mother in his wife. This is true of individuals and it is also true of communities; woman is envisaged as the mediator with the past, whereas man, more or less confusedly, reserves for himself the role of mediating with the future and constructing modernity. The argument of nature is readily used to support the conviction that it is woman who ensures permanence in an evolving society. Regarded as being nearer to nature, more subject to nature and therefore to an immutable order, woman is implicitly responsible for conserving much more than for innovating. A woman who rejects all tradition and seeks to innovate is regarded as a much greater cause of scandal than a man would be.

This state of mind leads to deploring any change which might lead women to modify their role, since that means a modification of the family, which can only be regarded as disastrous. We perceive that the definition of the concept of women is merged with that of the "cornerstone of the home".

It is extremely difficult and even impossible, for example, to discuss women's questions without bringing in the children. For this reason women's questions are very rarely thoroughly studied, owing to the fact that for very many people women's questions are synonymous with family questions.

If one tries to rid oneself of all prejudice in this respect, it will be found that the desire to protect the stability of the family by advocating the stability of women's role remains ambiguous. In practice, certain economic necessities of our modern societies embarked on the production/consumption race also militate against the stability and harmonious well-being of the family and are yet keenly encouraged and recommended by the technocrats and mass media; one example is manpower mobility, which is bound to prejudice family life. Manpower mobility means that, following the father, the family has to remove, uproot itself, change its geographical setting, its climate, its environment, its friends, leave its relations, change the children's school, and all the more frequently the greater the mobility. Nevertheless, the resistance to mobility (which is found for example in France) is regarded as retrograde, contrary to general interest and never applauded as a safeguard of the family. On the other hand, any modification in the mother's role and particularly her possible activity away from home is unfailingly designated by unanimous public opinion as the cause of all family misfortunes.

Thus, in less than a month we have collected the following categorical statements from the French Press:

- The divorce rate is going up; it is the fault of women going out to work.
- More and more children are obliged to stay down; it is the fault of mothers going out to work.
- Juvenile delinquency is increasing; it is the fault of mothers going out to work.

Let us look rapidly at these diagnoses one by one. They are all wrong, as can easily be proved.

The divorce rate is not going up in France and in any event, if it was slightly lower before the last war, at that time the proportion of women going out to work was definitely higher than

it is today (France, like Italy, Belgium and Austria, has many fewer women at work today than in the first quarter of the present century). Secondly, a country comparison shows that the divorce rate is higher in certain countries where women work relatively little than in others where the proportion is relatively high.

Enquiries and studies in France, Great Britain and the United States have, on different occasions, shown that the children of working mothers generally do better at school than children whose mothers stay at home. These surveys have been published. They seem to have remained a dead letter for public opinion, which prefers to accuse the employment of women rather than to look for the real causes of the school difficulties of this increasing number of children.

A great deal could be said on juvenile delinquency, since, while it is true that offences against property. particularly minor offences, are increasing among young people, offences against the person, serious offences, are steadily falling. But it is enough to point out that even if juvenile delinquency is thought to be on the increase, it is quite illogical to assign as its primary cause a phenomenon which is on the wane, namely the employment of women.

These examples seem something of a caricature. But they could be multiplied to infinity. They form the background, darkened with latent guilt, of women's employment. In one country after another, one finds this hasty resort to the idea that a change in women's role, particularly by going out to work and the social betterment of women through work, can only bring ill upon the family.

This is because woman is never really regarded as an individual, a basic unit in a society governed by the principles laid down in our constitutions. She is regarded much more as a sub-unit, namely the family. This basic cell, the family, rather than one absolute chief - an idea which is increasingly obsolescent - should have a minister for foreign affairs, the husband, and a minister for home affairs, the wife.

And so we see that "woman's role" means almost exclusively "the role of the married woman" and even "the role of the mother", the spinster or the woman on her own being always regarded as a negligible exception who can improve her status as a woman only outside the norms. The changes which modern societies make in the family may remove or efface the father without incurring serious blame. But the role of the mother is markedly inflated compared with the concepts of the 19th and early 20th centuries. All these studies converge;

it is the mothers now who interview teachers, psychologists, vocational guidance experts. It is the mothers who mainly bring up the children, whereas for thousands of years their role was much more in the background and it was the father who kept a firm hand on the upbringing of the children. Conservative as they appear, these ideas on the preferential role of the mother in bringing up children are nevertheless relatively recent. Their main characteristics are that they are an obstacle to women going out to work and that they are broadcast and upheld by men.

The idea of women going out to work is in fact rejected by a sometimes overwhelming majority of men (82 per cent in the Netherlands, 56 per cent in France, etc.). Conversely, far fewer women are opposed to the employment of women. The conflict between men and women on this point seems very sharp; some surveys show differences of opinion ranging from 25 to 40 per cent. The arguments brought forward by men against the employment of women are generally "practical": "It's not practical", "It's not feasible". In reality they are ideological and for this reason they rarely envisage the changes in the organisation of daily social life which would make the employment of women more "practical".

It should be noted that this idea of the essential immutability of woman's role is particularly marked among the masses (for example in Italy and France, where the wealthier classes are readier to accept the idea of women's employment).

One important factor comes into this resistance to the employment of women: in our societies, women are usually employed away from home. But since the origin of settled civilisations of which we are the heirs, a dichotomy has been established by the act of men: work away from home is their field of activity, work at home belongs to the woman. The work of the farmer's wife, even if it is physically exhausting, even if it leaves her little time, too little time to look after her children, is nevertheless regarded as "natural" and "normal", while work which takes her away from home for a few hours a day is regarded as being against nature. In opinion surveys on the employment of women, for example, it was found that men in general accept the idea of home work for women whatever its nature. "It's a solution", they say. In marked contrast, women resent paid work at home which they accuse of "accumulating all the disadvantages"; fatigue and isolation, the impression of cloistered hard labour for life, the absence of external contacts and companionship, even greater difficulty in enforcing her rights, the children under

her feet, no break, no breathing space during the day. Those women who accept the idea of home work, or who actually do it, are those who are most influenced by traditional ideas and who feel most guilty at the idea of working away from home.

These women however are in a very small minority while these conceptions are very widespread among men; why? Quite evidently they are based on sex. The outside world is felt to be a danger for women. The idea that a woman who leaves home and works with other men is in danger is always implicit if not always avowed. It must not be forgotten that over centuries the history of women's work was always thought to be under the black shadow of prostitution. Far from regarding the acquisition of economic independence as the best cure for the temptation to prostitution, ancient societies regarded the woman who worked, and who therefore proclaimed her economic vulnerability, as "in danger of prostitution". The words of the Greek playwright Menander, "the respectable woman indoors, the worthless woman in the streets" still awaken profound echoes, not only among men, who are reassured by the fact that their wife never leaves the home, but also among many women who would have a feeling of guilt towards their husband if they went out to work, and unfortunately also among many women who are constrained to work, but who have a grave feeling of guilt at leaving home for several hours every day, even though their wages are essential to the well-being of the home.

2. These conceptions, largely inherited from the past, are confronted in most of our countries not so much by a new ideology as by a certain uneasiness. This is the same word which is used in all languages. Almost everywhere we can see a search for the definition of a new role for women.

There are many causes for this uneasiness. In the first place, the feeling that we are living in changing societies and that we must change with them.

But above all, the facts of life themselves have changed for women and these changes are bound to involve the need to adapt conceptual ideology to the new facts.

Even if we are witnessing a matriarchy of upbringing, even if the role of the mother is being emphasised everywhere, it remains nonetheless true that in fact the mother's role is constantly being whittled away in favour of the community, which takes over the responsibility of socialising and teaching the children. Children are increasingly being sent to nursery schools well before school

age (70 per cent to 90 per cent in Belgium and France) whereas a generation ago only working mothers in the lower ranks of society sent their children to the nursery schools. More and more children spend their holidays away from their parents, in holiday camps or colonies or group travel. The "good mother" is no longer the one who keeps her children at her apron strings until adolescence and sometimes well beyond, but quite on the contrary the one who chooses the best solutions for them so that they are "socialised" at the best time and in the best way.

And, above all, the traditional image of a woman shut up at home looking after her small children only takes account of a slice of woman's life which is far from being the longest.

At the beginning of the century the expectation of life of women in our countries was about 45. At present it is on average 75 or more. Thirty years longer to live. Thirty different years. For if the life of a man is a continuum, the life of a woman is sharply divided by her sex life and procreation. Now these extra thirty years do not add a day to a woman's "maternal" life. On the contrary they accentuate the relative shortness of this period in the course of a woman's life. Other factors also contribute to shorten the period of maternity. In the first place, there is the general factor that girls marry at an earlier average age. This earlier marriage age is even more marked in highly developed countries like the United States and Sweden, but it is appreciable everywhere. Infantile mortality has decreased in a spectacular manner everywhere. Women now keep nearly all the children whom they bring into the world and are more and more oriented towards family planning, avowed or not, and even more markedly in countries where contraceptive methods are legal. It is then found that there is a tendency to group births in the early years of marriage and afterwards to control (in the English meaning of the word) fertility. The result is that half or more married women and mothers now have their last child around the age of twenty-six or twenty-seven (far more than half in the United States). When this first child is in primary school the woman still has forty years of life ahead of her, more than half a lifetime. In brief, the period of her life devoted to procreation and bringing up small children is becoming proportionally less and less. It no longer represents more than a half or a third of a lifetime, as in the old days, but most frequently an eighth or even a tenth of a lifetime (eight or ten years out of seventy-five to eighty).

These demographic realities weigh heavily, even if they are not realised by everybody. Women are increasingly perceiving confusedly that the traditional concept of their role takes account only of a relatively short slice of their lifetime and tends to hamper them in planning a more continuous way of life, in a thinking more adapted to a long lifetime.

To this uneasiness due to slow, but powerful demographic upheaval, there must be added the uneasiness which arises from the constant devaluation of the economic role of woman in the home.

In the societies of the past, for example in the Middle Ages, woman's share in production was proportionally much more important than it is today. First because they produced much more; all textiles and clothing, a good part of agricultural products, almost all the food (salt food, brewing, etc.) often lighting (candle making) heating (it was the woman who stored the wood and fed the fires), not to mention housework and cooking. Secondly, because men at that time were much less productive and often devoted to war or religion. Women's production was on the handicraft scale in the home, the farm or the castle. But as men mechanised and industrialised the manufacture of most products, the productive role of women slipped away from them (milling, weaving, brewing, spinning, etc.). Nevertheless, women at home still showed an "economic return" on the handicraft scale if one may venture to use the term. Up to the end of the Second World War, if she made the clothes, and the preserves and the jam and did the washing, she had the feeling of being quite indispensable. In our days, public opinion lays constantly greater stress upon the need for her to stay at home, but without adding any economic justification; in practice a woman's economic role at home is shrinking like the sharkskin in the old story; she buys what she used to make, she is now only a consumer and a user and no longer a producer. Washing machines and vacuum cleaners, which have become common currency, are even a source of additional expenditure, compared with the work she used to do. It has even been calculated that the woman at home, when her budget allows, spends more than the working woman with the same budget. She produces practically nothing and her work makes no saving on more expensive ready-made equipment or products. On the contrary, fully absorbed in her role of consumer and buyer, she buys more than the working woman who has less time.

In the old days, her work and production were essential to the family. Nowadays, women perceive more and more clearly that if they really want to contribute to the welfare of their family the most

effective way is to go out and earn money. The money they earn may ensure the children's education, better medical attention or improved household equipment, more comfortable holidays, all things which the woman cannot obtain for her family merely by her activity as a housewife. It is particularly in the United States that the recognition that they have no economic value at home encourages women to go out and look for outside work to improve the family standard of living, a thing that was not formerly frequent in America, a country with a very low level of the employment of women.

In all our countries, 95 per cent or more of women when asked "why do you work?" answer "for the money it brings in".

They earmark this money, which is their economic contribution to the home, for a very special purpose; it is money for betterment (education, holidays, motor car, medical attention in countries where it is not free, etc.) whereas the money earned by the husband is treated as money for day-to-day survival. This is a profound change in women's role in the economic enterprise represented by the home. For centuries past, the contribution of the woman, her daily work, was designed to ensure survival, whereas the husband's activity determined the standard of living and the social future of the family. Today many married women who go out to work believe that in this way they are ensuring the social betterment of the family. They regard themselves as the agents of progress towards better things and the upgrading of their family on to a higher level. It is interesting to note that the very considerable changes in the number of working women since 1960 almost exclusively affect married women, who are more and more numerous in working life and women of over 30 generally, which accounts for the substantial demographic and economic changes in women's life of which we have already spoken.

Alongside this fairly new concept of the objects of the earnings of the husband and of the wife, more traditional patterns of family economy persist in the matter of expenditure. Particularly in the more popular classes (in any event in Germany, Italy, France and Belgium) the wife is responsible for the day to day household expenditure. The husband comes into the picture only to pay extraordinary or heavier expenditure, rent, car, insurance, etc. In the working classes, at any rate in the countries mentioned, the wife is absolute mistress of the budget. It is common for all the money earned by the husband and the older children to be handed over to her, and for her to give each of them their share of pocket money and then manage the expenditure. The surveys show that women are

regarded as more economic and less liable to temptation than men in these classes. This pattern, which is very common among the working classes is usually completely reversed in the middle classes, where the husband keeps all the money and merely gives it to his wife week by week or even day by day, if she does not work. If she goes out to work, the budget may be managed in common or each may keep their own earnings and prerogatives,but among the working classes, at any rate on the Continent, it is the woman who is usually "Chancellor of the Exchequer".

Thus, in the working classes, when the wife works there is often a reversal of the economic role of the husband and the wife, depending whether it is a question of income or expenditure. The wife generally thinks that she earns money for improvements and luxuries and administers the day-to-day expenditure, while her husband earns the money for daily survival and pays the extraordinary expenses.

But the economic role of the wife is not limited to bringing money into the home and spending it. While in some countries increasing numbers of women are going out to work (and the numbers in others are not falling, such as Great Britain, France, Belgium and Italy) women constitute an absolutely essential work force for the development of the economy. The idea has, however, frequently been expressed, in Italy and in Germany for example, at certain periods, that women's employment was a makeshift which should disappear as soon as the economic situation improved. This idea was very widespread in the 19th century. In Great Britain, for example, the employment of women in factories was regarded as a modern aberration which should be abolished. In France, Michelet echoed the idea in speaking of "the working woman, a word of ill omen". It was thought that if the reign of order and prosperity arrived, women's employment, a symptom of disease, would decline and disappear. Many men, especially among the working classes, still largely share this view. They are only too ready to assert that "when all goes well" or "if everything went well" first of all women would have no further need to work. This idea is quite unrealistic and even utopian and is imprinted with an obvious moralism. Furthermore it is definitely Malthusian; women are competitors, and if they were not present on the labour market there would be no more unemployment, which is an economically aberrant reasoning.

In practice, the sharpest lessons of the last fifteen years clearly go to show that the increased employment of women is a sign

rather of prosperity than of decadence. Countries such as the United States, which has one of the lowest rates of employment of women among the industrialised countries owing to its peculiar demographic situation (a high proportion of male immigrants of working age) have found the number of women at work increase so fast since the war as to double in fifteen years, contemporarily with an unprecedented economic boom. Prosperity means an increased demand for labour, which in its turn contributes to accentuate the increase in production and consumption. The same pattern can be seen in Germany; the employment of women is increasing hand in hand with the increase of prosperity. Prosperity sustains full employment and allows the integration of women in the economy in a more continuous and more deep-rooted manner than in periods of recession and unemployment. Contrary to the beliefs of the 19th century, which have left so many sequels behind them, a low rate of employment of women is not always a good sign. In Belgium, for example, it is the economic stagnation of the Walloon coalfields which explains why so few women are at work, while the prosperity of Flanders is reflected in the increased employment of women. (We must not be too quick to generalise; Italy and France have experienced a decline in the number of women at work, not because of an economic recession, but solely because those two countries have been continuously converting their agriculture, and the farmer's wife who changes over to the secondary or tertiary sector sometimes finds it difficult to continue at work, whereas she was classified as an active worker in agriculture).

Whereas public opinion often continues to regard the employment of women as an unhealthy sign, any attentive observer should take the opposite view. It is, however, evident that in our liberal democracies the integration of women in working life is still a fragile growth and under constant menace. At the first economic crisis, the first recession, the employment of women will be hard hit. The first to suffer will often be the part-timers. In any event, whereas our constitutions proclaim the right of women as well as of men to work without discrimination, the commonly accepted ideas will continue to regard women in practice as constituting a safety margin on the labour market: as times are good or bad the employment of women is expanded or compressed. Women form a reliable safety margin for the always difficult forecasts of the labour market. We know nowadays that our progressive societies cannot cut down the period of schooling for young people, but are doomed to lengthen it constantly. The earlier retirement age of men makes it impossible

to rely upon large masses of workers. There remains the mass of women. This modern concept of women's employment, however, while convenient to labour market planners is highly prejudicial to the women. It reflects a harsh truth: the underemployment of women does not frighten our societies in the same way as the underemployment of men, partly because women are regarded as contributing a "complementary wage" and partly because they are much less vocal in their claims. Full employment for women appears as an ideal duty, but also as a luxury. It is a luxury upon which people are happy to place a very high price, since it should be accompanied by a determined policy of social facilities to relieve women of part of their household duties or family obligations.

The widespread idea of "women's wage, complementary wage" underlies this concept of women as a safety margin on the labour market. It also leads to the policy of low or lower wages for women, which is quite general in all our countries. There is no country in which considerable differences are not found between the earnings of men and of women (on average women earn 60 to 70 per cent less than men) either because women are concentrated in traditionally poorly paid women's trades or because for equal work in the mixed jobs they are still penalised. Article 119 of the Treaty of Rome and Chapter 7 of the American Civil Rights have allowed some reaction against this state of affairs, but only partially. While in law woman's right to equal work and equal pay with men is recognised, in fact practice continues to treat them as complementary labour which must be satisfied with a complementary wage.

These ideas of the money value of women's work are eloquently reflected in the cleavages between men's trades and women's trades. The law which governs these cleavages is still the unwritten law that power, prestige and high wages go preferably to men, regardless of skills or talents. Broadly speaking, women get the small wages and the monotonous work, jobs which sometimes afford security but little power or prestige. The fact that education and training have little to do with the case is illustrated by the income of full-time workers employed throughout the year in the United States; coloured men are better paid than white women, although white women on average have two years' longer schooling than coloured men. Another example: the medical profession is relatively poorly paid in the U.S.S.R. where there are 76 per cent of women at all levels, including surgeons and hospital chiefs. In the United States the medical profession is prestigious and highly paid; it has 5 per cent

of women. This does not mean that American women are less intelligent than Soviet women. In Great Britain and in France, where women account for 22 to 27 per cent of the medical profession, they are mainly grouped in the least glamorous and poorest paid sectors of social medicine.

In conclusion, in spite of the enormous progress in the education and training of women, in spite of the efforts of lawyers and women's leaders, our societies still seem to have archaic and too inflexible concepts of the social and economic role of women. These ideas, sometimes superficial, sometimes unrealistic and even false, create great difficulty in looking no longer at "woman", an entity very difficult to define realistically, but at "women" in all their diversity, the diversity of their gifts, their vocations, their capacity, their family status, as well as the diversity in their ages which is so important.

Let us hope that these working days will help us to escape from this too rigid pattern and to replace these concepts of "woman", often over-simplified and moralistic rather than realistic, by more diversified, newer, more dynamic, more realistic, more logical, more democratic, as well as truer, concepts of all these women who are so different from each other.

B. PREPARATION FOR EMPLOYMENT

1. CHARACTERISTICS OF SUPPLY AND DEMAND FOR WOMEN WORKERS ON THE LABOUR MARKET

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1. Qualifications demanded and the types of applicant

It is no easy task to determine the qualifications demanded; the situation in these matters is always fluid, and varies both in time and space. The situation may differ from one country to another, for many reasons, ranging from the degree of technical development to social habits and prejudices. The qualifications demanded may also vary in time, since women workers occupy a very special place on the labour market. In most countries they are still largely marginal and constitute an "emergency reserve" to be called upon in periods of full employment or over-employment.

For the last ten years or so, as a result of full employment, the number of women workers has increased in most industrialised countries.

But if we started to head for a contraction in the volume of employment, if appreciable unemployment were to manifest itself, the employmen of women workers would no doubt decline substantially. There are very few people who find it natural that "women should work while men are idle". This is true both of employers and workers and of the women themselves.

These reservations must be kept well in mind and it must be recognised that they underlie all discussion of the subject: an economic crisis would reopen the whole issue.

With this premise, it can be said that, for some years past, the main characteristics of demand have been the following:

(a) An increase in volume: the demand for labour has been expanding almost permanently over the last ten years or so.

Thus, over the last decade (1951-1961) the proportion of women in the total work force has increased in all OECD countries, except France, Portugal and Turkey.

One of the essential features in this trend is the increase in the number of married women going out to work. In the old days, the working woman was essentially a woman on her own, unmarried, widowed, divorced or separated. Nowadays, a constantly increasing number of married women are found in the working world. In the United States, for example, they account for about 60 per cent of the female work force, and one-fifth of them have one or more children aged five or under.

Married women also form a majority of the female work force in Canada, France, the United Kingdom and Sweden.

(b) Greater insistence on trade skills. This is true of the whole work force, men as well as women. A job which was filled twenty years ago,without calling for trade certificates, would now be reserved for candidates who could prove a certain amount of theoretical knowledge. It is true to say that, except for pure labourers' jobs, the insistence on trade skills has increased very appreciably.

This trend is no doubt linked up with technical development and the perfection of production methods. This shift in the qualifications required of manpower in general has been less marked in the case of women, but it is nevertheless perceptible, and it is reflected in particular in the establishment of a certain number of training courses under the auspices either of the authorities, or of firms themselves.

Simultaneously, the implementation of an active manpower policy and full employment imply a fall in unemployment through maladjustment represented by the conjunction of unfilled manpower requirements of firms and a mass of workless without the required type or standard of skill.

Assuming that the industrialised countries experience no grave economic crisis, it can be expected that the reduction of unemployment through maladjustment will be the main social objective for the next few years.

It is along these lines that we must consider the fairly widespread idea that the future solution is a division of labour between

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men and women, the men specialising in the "blue collar" jobs and the women in the "white collar" jobs.

To some extent, this trend seems in line with the present position. There are obviously far more men in industrial jobs in the strict sense, while women are mainly employed in the tertiary sector, in offices, shops and the like.

It is impossible to exaggerate the disadvantages and dangers of a solution of this kind, which would introduce a factor of rigidity into the labour market. Furthermore, technical evolution, and the long term lightening of tasks which it entails, should throw open to constantly increasing numbers of women a certain number of industrial jobs from which they are at present virtually excluded. The objection will no doubt be raised against this view that the women themselves prefer "white collar" jobs in the tertiary sector. But this is largely the result of the marginal position accorded to them in industry. We shall revert to this point in the second part of this paper.

It is clear that the lack of vocational training among women, which condemns most of them to unskilled jobs and confines them to a certain number of trades, is precisely a barrier to that interchangeability which is so desirable.

If women have always constituted a reserve on the labour market, the whole nature of that reserve has changed, since it is increasingly the result of a cleavage in vocational training; women nowadays are no longer only economically marginal, they are also technically marginal.

2. The barriers to interchangeability

If, therefore, total interchangeability is the ideal to be aimed at, it is in the interest, not only of the women themselves, but also of the economy in general. The aim is that the division of labour in society should no longer coincide with the division of the sexes.

We must therefore inquire into the barriers to this evolution. This will lead us to consider in turn a certain number of factors of different kinds which contribute towards creating or maintaining the cleavage.

A. The physical barriers

The first objection which obviously leaps to the mind is the physical differences between men and women.

It is nevertheless important to make it clear that most of the studies undertaken in this field fail to show any essential difference between them from the point of view of work.

There are no grounds for attributing to either sex special aptitudes or characteristics which would make them a different economic unit. The only really unquestionable difference in aptitude relates to muscular strength.

Researches conducted by the International Labour Office indicate that the muscular strength of women is about 65 per cent of that of men.

It must nevertheless be clearly recognised that, in industrial societies, muscular strength is becoming less and less important, particularly because, in general, technical progress lightens the tasks and does away with the heavier jobs; the mechanical excavator has driven out the navvy.

A more serious obstacle is obviously the impediments arising from pregnancy and childbirth. And this means not only the stoppages of work involved - since men may also experience similar stoppages, for example for military reasons - but a certain number of counter-indications in the case of pregnant women, such as vibrations, toxic fumes and the like.

Less essential, though still real, are the various arrangements, particularly sanitary, resulting from the segregation of the sexes. If a manufacturer, for example, introduces women into a factory previously occupied by men only, he will have to provide separate conveniences in the form of lavatories, showers, cloakrooms and the like, which may involve considerable expense and, in some cases, may be enough to deter the engagement of women.

B. The legal barriers

For many years past we have witnessed the elaboration of a whole body of legislation designed to protect women workers and safeguard them from some of the particularly harmful consequences of working life.

The practical effect of this legislation is to bar women from a certain number of jobs. Examples are the legislation on nightwork or the prohibition of underground employment of women in mines. In the same category may be ranged a certain number of special provisions, which vary widely from one country to another, governing the employment of women in certain jobs. The most typical case is the driving of lorries and heavy vehicles, which is subject to regulations which are extremely variable in different countries.

The justification for these various protective measures is a highly controversial issue which hinges on the meaning to be attached, in this context, to the word "progress"; is progressive legislation that which protects women and by so doing introduces discrimination or is true progress to be found in absolute and complete equality subject to the special reservations noted above in the matter of pregnancy and childbirth?

Whatever the answer may be there seems little doubt that, in their day, the various protective enactments represented substantial progress.

Since then, however, it is clear that there has been an evolution and the line of approach for the future is now to strengthen protective measures for all workers, men and women alike.This will gradually make the special protection for women workers superfluous. It may be emphasised in this connection that Sweden, for example, has recently repealed its legislation prohibiting women from night work and underground work in the mines, and has replaced it with very strict regulations on these two types of work for all workers. It is, moreover, worth noting that,contrary to widespread opinion, the most troublesome shift is not the night shift but what is called the afternoon shift, which generally runs from about 2.00 p.m. to about 10.00 p.m. This is the most inconvenient shift because it rules out any possibility of social life and introduces the greatest upsets into family life.

But the objection will no doubt be raised that the prohibition of night work for women is also based on moral reasons and is designed to protect them against the "dangers" they may encounter both at work and on the way to and from work.

C. The technical barriers

A third category of barriers is connected with machine and tool design. Machines and tools are very generally designed and constructed to be handled by men and not by women. Many of the difficulties in transferring a job from a man to a woman arise out of this fact.

It is obviously difficult to put a woman behind a machine which has been designed to fit the size of a man's hand, a man's height and so forth.

These difficulties are obviously overcome in theory. The fact nevertheless remains that, in practice, they often have serious consequences.

D. Cultural and technical barriers

Among the factors which militate against interchangeability, a large place must be allotted to all those connected with habit and prejudices. Habits and prejudices which are all the harder to eradicate since they always purport to be based on reason and "experience".

Among these, pride of place must obviously be given to discrimination in the matter of vocational training. It is, for example, quite exceptional for parents to attach the same importance to the education of their daughters and of their sons. The girls are brought up and educated to be wives and housewives rather than for any professional occupation; even when they do follow a course of study, a great many of them are very naturally channelled to schools which offer quite negligible career possibilities, such as schools of dressmaking or domestic science and the like. Even when they go on to higher education, there is still a certain segregation; girls are, for example, extremely rare in the polytechnic faculties.

On the same plane may be placed the relative absence of social infrastructure which makes it so problematical for a mother to go out to work unless she has the benefit of quite exceptional circumstances (relations, neighbours, etc.).

This lack of social infrastructure, in addition to the practical difficulties it involves, also has moral and psychological consequences; a mother who is obliged to go out to work will often have a feeling of guilt because she is not giving her children the care and attention they are entitled to expect from her.

All these factors frequently lead to the abandonment, or at least the interruption, of work outside the home if some mishap upsets the precarious arrangements made for looking after the children, or as soon as family circumstances make the woman's wages less vital.

It is clear that this risk will always make the employer hesitate. He knows that everything may be upset until the woman reaches middle age when the children become independent and she can at last experience a certain occupational stability.

The barriers to interchangeability resulting from what may be called "the image of woman" or the idea of "womanliness" can be placed on the same footing.

In our society, only too often, a man does not regard himself as a real man, unless he is doing "a man's job". A woman is only "a real woman" if she is doing "a woman's job". These ideas flow from a purely man-made traditional image of woman.

The same can be said of the traditions which reserve a certain number of jobs for women or exclude them from certain others.

Examples are very numerous. It is only relatively recently that women have been admitted to plead at the bar or deal on the stock exchange. Even today, a woman engineer is an exception. Similarly, certain jobs and certain trades are still closed to women. A woman crane-driver is unheard of and, with one outstanding exception, we know of no shipbuilding yard in which women are accepted. And yet, during the War, we found women doing these jobs from which they are excluded and, when all is said and done, they did no worse than their male counterparts. And, furthermore, the work in no way lessened their attraction. But once the War was over, everything reverted to normal.

It may be noted, in passing, that in nearly all cases, these jobs which are deemed "unwomanly" are highly paid.

The prevailing conception continues to be that of the division of labour and of functions; the man is the breadwinner, the woman contributes "a little extra" which allows for some luxuries or tides over temporary difficulties, and this pattern is made to fit all women, even those who live on their own and have no other resource except that "little extra".

E. The sociological barriers

A last category of barriers is connected with social habits and behaviour. An example is the hostility of the male workers themselves, who will often be opposed to the transfer to women of jobs previously "reserved" for them.

To this must be added the fears or feeling of inferiority of the women themselves, who often acquiesce in this state of affairs.

Yet other factors come into play, and in a recent paper at the 62nd Congress of the American Sociological Association, the sociologist Cynthia Epstein clearly demonstrated the extremely complicated mechanism which results in maintaining the existing cleavage. An instance is what she calls the "protégé system" under which top management is generally co-opted; a man will train his assistants, initiate them into his work and brief them, to such an extent that, if one day the question of his succession arises, whoever has the power of appointment is in practice left with very little latitude; the decision has been ready-made for them. But in practice, and for many reasons, a department head, for example, would hesitate to take on a woman as his direct assistant. In the

first place because he can never be certain that she will not one day quit her job for family reasons, and secondly because working in such very close collaboration might raise psychological problems between a man and a woman, who may, moreover, each have their own marriage partner.

F. Family obstacles

Among the factors of discrimination, mention must also be made of a certain instability which may arise out of family circumstances; in general, a woman is constrained to work in the same region as her husband. If he is transferred away, or has to move, she has to give up her job and look for another. This is an additional factor in arousing a certain apprehension among employers and creating a definite reluctance to take on women workers.

3. The cleavage

This whole combination of factors leads in practice to a veritable cleavage. Women are restricted to a certain number of jobs and trades with common characteristics. It is perfectly possible to typify women's jobs and to define the work generally done by women as follows:

1. Women's work is unskilled or almost unskilled work, calling for:
   (a) great resilience;
   (b) manual dexterity, generally acquired in other trades.
2. Women's work is fragmented and purely operative.
3. Women's work is poorly paid.
4. Women's work involves no responsibilities.

It is important to emphasise at the outset that in practice manual dexterity is an element which is generally undervalued in all job evaluation systems.

Muscular strength, in contrast, is always highly prized. The out-and-out application of the principle"equal pay for equal work" inevitably means a revision of trade classifications. But it must be borne well in mind that modern technical evolution is calculated to lessen the role of physical strength while dexterity and concentration are becoming more and more important. In this sense, it could be said that industrial work is tending to become more and more "women's work". It should also be emphasised that another reason for low pay is the exclusion, already referred to, of any work

involving responsibility, either for material, or for the work of others. Thus, for example, in the clothing industry, traditionally a favoured sector for women workers, with some exceptions, it is men who are cutters, thus assuming great responsibility for the material. The women are merely makers-up, "apprentices" or "improvers".

All this boils down to the fact that, in practice, segregation is the rule. The statistics, moreover, bear this out; in nearly every trade where they are represented, women are in the majority.

4. Some concrete cases

A certain evolution is, however, beginning to take shape. Investigation brings to light a certain number of transfers, which we shall first list and then analyse.

(a) Motor repair and maintenance

Women service station attendants have been fairly common for some years. What is less common, but is nevertheless found, is the employment of women for garage work proper, both the maintenance and repair of vehicles.

(b) Driving buses, taxis, truck-lifts and travelling cranes

Another sphere in which women workers are tending to take a considerable place is everything to do with vehicle driving. An example is the truck-lifts used to transport goods and supplies inside a factory. In several countries a fairly large number of women are beginning to be employed on this work. A similar case is that of travelling cranes; women operators are found, especially in Sweden and France. On the other hand, there are no women crane-drivers proper.

(c) Arc welding

This job was commonly done by women during the War, but the old practice was resumed after the War. A certain tendency can be noted to bring women back to this work, especially in Sweden, Japan and Canada.

(d) Women machinists in general

The woman machinist is, of course, nothing new, but the evolution which is taking place relates mainly to the type of work done. So far, women machinists have done purely repetitive work, calling for nothing but simple manual dexterity.

Women are now sometimes found assigned to creative work, such as working to plans. There are, however, two limitations on this evolution; first of all, women are excluded from work which involves lifting heavy objects. Secondly, they are excluded from work on the machine itself; a woman machinist is only very rarely authorised, at any rate officially, to adjust and maintain her own machine. But this is often a decisive criterion in trade qualifications, as well as affecting wage rates.

(e) Working to plan

Wiring, assembly, welding, moulding, etc. have traditionally been women's work, but so far the work done has been purely repetitive work. Women are now sometimes entrusted with working to plans.

(f) Operating automated processes

Examples are found of women controlling automated processes. In Sweden there is a chemical plant and an automatic rolling mill entirely operated by women.

(g) Police, surveillance, etc.

Women in posts of authority, marked, for example by a uniform and, where appropriate, the use of weapons, have hitherto been limited to very special jobs, such as Customs searchers, vice squads, etc. The situation is tending to change in this respect and armed women surveillance officers, women detectives and women traffic police are becoming relatively numerous.

(h) A last, and very important, example is that of programmers. The increasingly intensive use of electronics in the form of computers, ordinators, electronic brains, etc. has meant the creation of new jobs, among which women have carved themselves an appreciable place. This is not a question of punched card operators, whose work is similar to shorthand typing, but various jobs of a mathematical character involved in the operation of the equipment.

This is a very important development since these jobs are quite foreign to the conventional definition of women's work, especially in the matter of remuneration.

5. New job openings

The typology set out above, corresponding to the conventional characteristics of women's work, is therefore in the process of evolution. This evolution has, moreover, impressed public opinion, since it is manifest in everyday life in the form of women taxi-

drivers, tram drivers, policemen and so forth. But the visible character of the evolution under way might induce an error of judgment as to its true scope and character. It is therefore important to emphasise that in practice this evolution has two aspects. There is, first of all, a transfer to women of traditionally masculine activities, or in other words, as the result of a certain number of factors, in the forefront of which we must place technical progress, there are jobs whose characteristics have changed and which have evolved so as to conform to the type outlined above. This case is relatively frequent. The most typical case is the job which used to be done by highly skilled workers, but which is considerably simplified by the introduction of new apparatus. It thereby loses its "masculine" characteristics and thus quite naturally becomes open to women. In other words, it becomes "a woman's job".

In this case, it can be said that the line of cleavage shifts but does not disappear.

A traditionally masculine job becomes a woman's job; this does not necessarily mean any fundamental evolution in the matter of cleavage. Nor can it be regarded as a feminine "conquest". In practice, nothing fundamental is changed by an evolution of this kind. Simultaneously, however, a much more profound, but also much slower, evolution is also taking place towards the disappearance of the cleavage, or to use a word which is not yet in established usage, but which is evocative, in the direction of "mixity". In this case, and in this case only, we can talk of a fundamental evolution. It exists, but we must recognise quite clearly that it is infinitely less clear-cut and less decisive than might be imagined. One woman cosmonaut does not mean that the condition of women as a whole has evolved.

Nevertheless, tenuous as it is, this evolution unquestionably exists and we can see women doing totally new jobs which were formerly closed to them.

This evolution is the result of various factors, the first of which, already referred to, is technical progress, which normally lightens the task and thus breaks down the main physical barrier to the "mixity" of jobs. In any event, this phenomenon is well known, and there is no need to dwell on it further.

On the contrary, it would be much better to emphasise that what is believed to be a quite general rule, is nevertheless subject to a certain number of exceptions. It may happen that technical progress makes a job heavier. In the textile industry, for example, certain

entirely new machines are fitted with reels which are so heavy that they cannot be handled by the women who traditionally did this work. As a result, jobs previously done by women have had to be transferred to men. Similarly, in general, the perfecting and improving of tools sometimes means an increase in their weight. An example recently noted is that of multiple head screwdrivers, which have become so heavy that most women workers have had to be replaced. No doubt all these are only exceptions, but it is as well to bear clearly in mind that the lightening of jobs by technical progress is no more than a general rule which may be subject to a certain number of exceptions.

Another factor which has contributed towards creating new job openings for women has been the labour shortage in recent years. This is obviously the decisive factor: the business chief who needs labour to meet his commitments to his customers will override tradition, prejudice or any other similar consideration. The labour shortage has unquestionably been the driving force behind the evolution in countries where it has been particularly marked, such as Sweden and Japan. It is, moreover, significant to note the strange similarity in this respect between countries which are otherwise so different; not only are the jobs transferred substantially the same, but in addition, when business chiefs are questioned about their projects, the experiments contemplated are also largely similar. This convergence of evolution is obviously not merely due to hazard. It is partly the result of identical technical evolution (sometimes, even, the equipment is purely and simply standardised internationally). Account must also very probably be taken of contacts within the world of employers, exchange of experience, etc.

But another factor, of a more sociological character, has contributed towards the launching of interpenetration; outlooks are changing. Women, especially among the younger women, no longer find it quite natural that some jobs should be reserved for men. A minority among them are beginning to recognise their capabilities. Men, for their part, are slowly beginning to accept the evolution.

Furthermore, the well-known phenomenon of middle-aged women going back to work has also played its part. It is common knowledge that, for some years past, there has been a very marked tendency for women who have passed the age of child-bearing to return to work. The presence of these middle-aged women on the labour market has a great many consequences, especially in our present context. In practice they have generally very little geographical mobility, their life is organised, their home well established, the husband in a

steady job. For this reason, if they want work, they must adapt themselves to the local openings. Where appropriate, they will therefore be candidates even for jobs which are not "women's jobs", if only they are open.

Experience in fact shows that there is a substantial proportion of middle-aged women among the cases of transfer.

All the factors summarised above constitute what might be called the components of sociological determinism, or in other words, they will all take effect, in the absence of any external influence. They represent "the force of events".

If, as is probable, the rate of technical progress continues and if, at the same time, the rate of economic development is maintained (or in other words, if we succeed in staving off unemployment), it can be said that the evolution, which is still only in its first infancy, will gain momentum. But we must not burke the fact that this evolution will be slow, extremely slow. The question whether this slowness is acceptable and whether a gradual painless evolution is preferable to a rapid evolution, which by its very speed involves numerous upheavals, is essentially a question of policy. It is therefore outside the competence of the economist and the sociologist, who can do no more than formulate it, and analyse its components and its applications. But in the last analysis, the decision will depend on an option, and that option will depend on the overall view which is taken of society. We reiterate that this means that the problem is a political one.

This being said, it is clear that if a rapid evolution is desired, it would be illusory to rely purely and simply upon social and economic determinism. A rapid evolution calls for measures of compulsion such as those recently taken in the United States, where the Civil Rights Act prohibits outright any discrimination based on sex and forbids employers to exclude women from any job whatsoever.

B. PREPARATION FOR EMPLOYMENT

2. EDUCATION AND VOCATIONAL TRAINING IN SCHOOLS OF VARIOUS LEVELS

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As previous papers have shown, in all countries women are employed in retail distribution, in public and private services, in manufacturing industry and in commerce. It has also been made clear that the vast majority of women in paid employment are restricted in all these fields to semi-skilled and unskilled jobs. This is not because women inherently lack ability; of that there is no evidence at all. In part it is due to the customs and prejudices of a man-made and man-controlled world; but there is also truth in the common assertion that women lack the education and training necessary for higher level work. It is the purpose of this paper to explore this situation, and to pinpoint the areas where change is most needed.

The unskilled and semi-skilled grades to which women are so largely confined are characterised by low pay and insecurity. In the technical and economic conditions of recent decades there have nevertheless been many periods when there has been an unsatisfied demand for women in the labour market, and very large numbers of women with little or no education and training have been able to obtain work. But the demand for the type of work normally performed by women is undergoing rapid and drastic change. Manpower forecasts[1] indicate a growing demand for services, as prosperity increases, and there is no sign of any curtailment of labour in retail distribution. Clerical work and manufacturing industry, on the other hand, are

(1) The Pattern of the Future. Ministry of Labour Manpower Studies, No.1. (H.M.S.O.1964).

undergoing technical changes which must radically alter labour requirements. So far, in most countries, automation in the office has slowed down the rate of increase in the number of clerical workers but has not led to any actual reduction in numbers. It is not unreasonable to assume, however, that as office automation develops and efficiency in the use of automatic equipment increases, the total numbers of clerical workers will fall. In manufacturing industry the position for the future is already clear. The next decade in highly industrialised countries will see a swing away from manual work to technical white collar jobs, a marked decline in the demand for unskilled and semi-skilled workers and a marked increase in the demand for people with technical knowledge and skills or capable of acquiring them. The level and type of education and training which enable a woman to hold down a job, albeit a low level job, at the present time, will not be adequate for many of the demands of tomorrow.

To understand the relation between education, training and jobs it is necessary to examine the education and training which girls are at present receiving, to consider to what extent it is in fact levels of education and training which determine the scope and level of women's employment today, and to discuss what changes are needed if girls are to be adequately prepared for the labour market of the 1970's and 1980's.

In all industrialised countries there is a statutory minimum school leaving age. To assess the education girls are receiving it is necessary to know the range and level of girls' studies during the period of compulsory schooling, the proportion of girls who continue at school after the statutory school leaving date and what use they make of these additional years of schooling, the proportion of girls who take university or other higher or further education courses, the subjects studied, and the results achieved.

Secondary education obviously varies in different countries. A comprehensive survey is not possible here, but illustrations can be given from particular countries to provide the basis for comparison and further investigation.

In Great Britain(1) 339,000 boys and 323,000 girls reached statutory school leaving age in 1966. In the same year 68,890 boys and 60,950 girls passed the General Certificate of Education examination in five or more subjects. After this stage, work is

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(1) Statistics of Education (H.M.S.O.1966).

undertaken in sixth forms for Advanced Level examinations. Here the difference between boys and girls begins to become marked. In 1965-1966 there were 134,221 boys taking sixth form courses, but only 95,201 girls.

The discrepancy between boys and girls becomes even more striking at university level. In the same year - 1965-1966 - there were 98,348 boys studying for first degree courses in the universities, but only 37,080 girls.

The same pattern is found with some variations in other countries. A study for example in the Canton of Geneva in 1965[1] showed that in the age group 19 to 20, 21 per cent of all young persons were in full-time education but only 13 per cent were girls. At the other end of the scale 35 per cent of girls obtained no formal qualifications compared with only 12 per cent of boys.

Whatever may be true of the past there is widespread agreement that in the future there will be a rapidly increasing number of jobs for which some knowledge of mathematics and science will be necessary. Here the figures show a marked discrepancy between the number of boys and girls taking these subjects. At the university level in 1967[2] in the United Kingdom first year students admitted to Pure Science departments (including mathematics) numbered 10,962 men and 3,534 women. The discrepancy in admission to engineering and technology departments in 1967 was even greater, the figures being 8,892 men and only 144 women.[3]

Even those girls who take science are sometimes handicapped. In the United Kingdom for example in 1961[4] in local education authority schools the amount spent per pupil studying science was 13s.6d. for boys compared with 11s.6d. for girls. In the independent school sector the discrepancy rose: the rate for boys being 27s.3d. against only 12s. for girls. These figures are an interesting reflection of public opinion. It is not only that public authorities are less concerned about a science education for girls than for boys. Affluent parents also, it seems, are not concerned to secure the scientific education for their daughters which they regard as essential for their sons.

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(1) Janjic, Employment and Conditions of Work of Women in Switzerland (ILO.1967).

(2) The Universities Central Council on Admissions, Fifth Report, 1966-1967.

(3) The Universities Central Council on Admissions, Fifth Report, 1966-1967.

(4) Jacky Gillott, In Her Own Right (ed. Harrap, 1968).

Great Britain is not, once again, the only country in which such discrimination in science and mathematics teaching is found. In Switzerland[1] girls are not taught arithmetic and mathematics to the same standard as boys, and in fourteen cantons girls spend less time than boys on science.

One reason for the relative neglect of science by girls appears to be their lack of information regarding the career opportunities open to girls with appropriate training in mathematics and science. In a study[2] in sixth forms in Great Britain in 1964 mathematics was ranked as one of the most popular subjects to study, but many of the girls interviewed said they thought that teaching was the only career open to girls with mathematics qualifications and they had for this reason decided to switch to some other subject. Commenting on interviews carried out in the course of this study with 290 sixth form girls, the investigator, Mrs. V. Roberts wrote: "There was some difficulty experienced, even by girls who were interested, in finding out about science careers. They maintained that careers advice in sufficient detail was not always available to them, and that advisers were not always well informed". Traditional attitudes die hard and a strong lead from the top backed by administrative action is needed to speed up the rate of change. Such a lead was in fact taken in October 1967 by the French Minister for National Education when he sent a circular to all heads of schools pointing out the need for girls to switch to new types of technical employment and for technical and professional training opportunities to be available to both boys and girls without any discrimination on grounds of sex.[3]

At the core of any attempt to provide more adequate preparation for girls for employment lies the need for the girls themselves to be well informed on job opportunities and job requirements. Despite prolonged efforts to improve vocational guidance services for both boys and girls it still seems that in many countries the provision of the right information at the right time remains a baffling problem. With the widening choice of subjects to be studied in

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(1) Janjic, Employment and Conditions of Work of Women in Switzerland (I.L.O.1967).

(2) Seear, Roberts & Brook, A Career for Women in Industry, (Oliver & Boyd, 1964).

(3) Le Travail des Femmes en France (Notes et Etudes Documentaires, 12th November, 1967. No.3336).

secondary schools, a girl and her advisers need information on the studies appropriate to particular careers at every stage at which school subjects are chosen or rejected, and this can start as early as twelve years old. The Swedish work on vocational guidance in schools is of considerable interest in this connection.

Basic education is clearly of the first importance if girls and women at work are to make full use of their capacities. Education is, however, only the essential foundation which must be supplemented by appropriate professional and technical training. If girls are at a disadvantage in the educational field their position with regard to training is even more unfavourable. Although for example the competence of women doctors has long been established, and in Russia the majority of doctors are in fact women, it still appears to be more difficult for a girl than for a boy to gain entry to medical school. It is not uncommon to find for instance that in some of the leading hospitals in the United Kingdom, 20 per cent or less of the medical students are women.

In the higher levels of industrial management women are conspicuous by their absence and if current figures of women in management training courses are any indication, no great change is pending.

It is not only in the management grades that women are not employed. Increasingly industry relies on scientists and technologists and there is a chronic shortage of personnel in these categories. Yet in the United Kingdom in 1966[1] there were 9,630 male scientists and technologists in training in industry but only 110 women. In terms of numbers employed, and possibly also in terms of the total effect on the economy, it is of even greater interest to examine the position of women in the vitally important and rapidly expanding group of technical jobs below the level of technologist, jobs which are essential if the technologist is to be used effectively and with economy. Draughtsmen hold a key position in industrial achievement and expansion. In Great Britain they have been in short supply ever since the second world war, yet in 1966[1] there were 17,450 boys who were apprentice draughtsmen but only 350 girls. It is interesting however that in a number of other European countries the situation has changed. In Germany, Denmark and Sweden there are now very large numbers of draughtswomen. The position with regard to grades classified by the then Ministry of Labour as "other

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(1) Ministry of Labour Gazette, January 1967.

technicians" again illustrates the failure to adapt women's employment to changes in the labour market. In this category in 1966[1] there were 12,150 boy apprentices and only 160 girls. It cannot be too strongly emphasised that it is in these categories that job opportunities in the future will lie, and that failure to produce an adequate supply of properly trained people for these posts will seriously hinder economic development. However good the scientists and technologists, their ideas cannot be translated into production without the support of an army of draughtsmen and technicians.

The demand for manual workers is declining in relation to the demand for white collar workers. Within the manual worker grades the proportion of semi-skilled and unskilled is declining in relation to the skilled. This point is of particular importance to women who are heavily concentrated in the unskilled and semi-skilled categories. If there are to be opportunities for women, and if effective use is to be made of womanpower, the opportunities for girls to train for skilled manual work become increasingly important. Yet in 1966[1] in Great Britain 271,650 boys were apprenticed to skilled trades compared with only 5,430 girls. Even these figures present an unduly favourable picture of the situation in the future since the girl apprentices are heavily concentrated in the textile and clothing industries in which total numbers are falling. In engineering and other expanding industries the proportion of girls in training for skilled work is far lower than these overall apprenticeship figures might suggest. In all types of electrical and engineering industry there were in Great Britain in 1966[1], 183,240 boy apprentices but only 220 girl apprentices, while in chemical and allied industries there were 4,790 boy apprentices and no girls at all. And these are growth industries: industries with an important future.

The conditions for apprenticeship have always been a matter of major concern for trade unions. Some leading trade unionists have for long been aware of the need to extend opportunities for apprenticeship to girls. As long ago as 1957 Sir William (then Mr.) Carron of the A.E.U. in Great Britain pointed out in a public speech that girls were eligible for apprenticeship. This does not appear, however, to have been supported by any sustained effort to encourage girls to come forward for such training, confident that they would be accepted and assisted by the "brothers".

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(1) Ministry of Labour Gazette, January 1967.

This state of affairs is certainly not peculiar to Great Britain. Indeed, outside the Communist countries it appears to be the rule rather than the exception. In Switzerland, for example, though in theory there is no discrimination between boys and girls in training opportunities, apprenticeship regulations make it clear that certain trades are appropriate for boys and certain other trades for girls. And there is no doubt that such distinctions reflect and are supported by public opinion. There are, however, some small signs that this is beginning to break down, with girls in Switzerland appearing as machine designers and compositors. In 1965 some form of apprenticeship was entered into by 35 per cent of Swiss girls compared with 68 per cent of boys.(1)

Of recent years the whole approach to training has been under vigorous scrutiny. Most western countries have legislated to secure improvement in the extent and quality of industrial training. Moments of change have often proved for women to be moments of opportunity and many women hoped and are still hoping that the new thinking and policies following this legislation would include a new approach to training for girls and women. In Great Britain a discouraging warning was signalled to women when the first Industrial Training Boards set up under the 1964 Industrial Training Act contained not one woman. This exclusion of women has not continued, though with over thirty Training Boards the number of women on them is still a very small fraction of the total personnel. More discouraging still has been the finding of a survey of the work of the Industrial Training Boards in relation to women, undertaken by Miss E. Chipchase, Secretary of the Women's Advisory Committee of the Trades Union Congress, and presented to the Women's Trade Union Conference in Folkestone in 1968. From this detailed study(2) it was distressingly clear that so far the Boards in their work have paid little or no attention to the problem of training girls and women, and opportunities for women have not expanded with the general expansion of training activities.

Both within manufacturing industry and in other types of enterprise very large numbers of girls and women are engaged in clerical

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(1) Janjic, Employment and Conditions of Work of Women in Switzerland, (ILO. 1967)

(2) Industrial Training for Women and Girls. Supplementary Report of the T.U.C. Women's Advisory Committee to the 38th Annual Conference of Representatives of Unions Catering for Women Workers (1968).

work. In Great Britain nearly 40 per cent of all girl school leavers enter some form of clerical employment. There appear to be no figures available which distinguish between the different levels of skill covered by the general term "clerical work". There are, however, many indications which suggest that a high percentage of such work requires less than six months' training and is virtually semi-skilled. In a recent study(1) in medium-sized offices in Great Britain it was found that only 8 per cent of existing staff were in fact receiving any training. Clerical work is an area in which automation has already led to drastic changes and in which further changes will certainly take place. Because of the heavy concentration of women in this type of employment the future character of office work is of the greatest importance for women. So far, the introduction of automation appears to have slowed up the rate of increase of clerical workers, but not to have caused a drop in their total numbers. Since adjustments to the introduction of office automation are frequently slow, and progress is hampered by unanticipated obstacles, it is not easy to know what the ultimate effect will be on the total future demand for clerical labour. It is however obvious that the nature of office jobs is undergoing radical alteration. New jobs of responsibility and interest requiring considerable skill, knowledge and training, and commanding relatively high levels of pay, have emerged and will no doubt continue to emerge. At the other end of the scale there are also a large number of jobs of a completely repetitive type. As frequently happens when totally new kinds of work appear, women have made some impact in the data processing field. There is also some evidence, however, that the traditional pattern is being repeated whereby in most cases the more responsible of the new jobs are performed by men, albeit with a substantial reinforcement of women, while to an overwhelming extent the routine lower level work is undertaken by women. It is important that at this stage in the office revolution a deliberate attempt should be made to identify the higher level jobs which are emerging; to make certain that training opportunities for these jobs are available for girls; and to see that girls are fully informed of both the jobs and the type of study and training necessary to obtain them.

Distribution and services of varying kinds remain the two most important areas of work for women. There is no sign that the demand in the distributive trades will slacken, while the demand for services

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(1) Ministry of Labour Gazette. (September 1966).

at all levels will undoubtedly increase.

In distribution, in certain types of merchandise, women have been able to penetrate managerial ranks as buyers and in marketing and advertising. The vast majority of women however remain in the lower ranks of distributive work and as training in the many facets of the distributive trade expands it is essential to make sure that women share in it and in the opportunities for advancement which it brings.

Services, public and private at all levels, absorb very large numbers of women. Education, health and social services have long been established fields for the large scale employment of women who have in certain sections provided most if not all the personnel employed. In the professional grades in these services training schemes have been in force for many years and current developments are concerned not with making available opportunities from which women were previously barred, but in adapting established schemes to meet contemporary needs. Women are however under-represented in the administrative side of the service sector. In the top sector of the British Civil Service, the administrative grade, only 8 per cent of the total personnel are women. Even so, it is far less unusual for a woman to hold a senior position in the public service than in private industry. With the growth not only in the United States but also throughout Europe of business schools, used by both private and public employers, the chance that women of ability will reach the highest administrative levels will not grow but be diminished unless a deliberate effort is made to increase the small number of women who at present attend such courses.

Throughout all history many women have earned their living by performing personal services for other people. Though the form of the service changes, the demand for them grows, and many women will be absorbed into this field. In an attempt both to improve the quality of the service and to raise the status of the worker, formal training schemes have been introduced. Some of these are extremely popular. Indeed, in Great Britain no less than half of the mere 6 per cent of girl school leavers who receive any form of full apprenticeship are trained as hairdressers and beauticians. The attempt to raise the level of domestic work through training such as that provided for a number of years (but now discontinued) by the Institute of House Workers of Great Britain has not so far had much effect on the attitude of girls towards work of this type. This is a matter which will need further consideration if full use is to be made in

the future of married women seeking full-time paid employment, and able and willing to pay for responsible and skilled help in their homes.

The many problems connected with the married women seeking re-entry into employment are both complex and important. It is clear that in many, if not all, industrialised countries women are planning their lives to include two phases of employment. Almost all single girls enter employment on leaving school or college and a high proportion continue to work until the arrival of the first child. A period of years is then spent at home, though a small minority continue to work often on a part-time basis even while their children are under school age. More typically, the woman stays at home until the last child goes to school. It is at this point, or soon after that she takes employment, either full-time of part-time, though the availability of part-time work and public attitudes towards it differ considerably from place to place.

Such, at any rate, has been the pattern in recent years. There are signs however that an increasing number of women are continuing to work until the second child arrives and that an increasing number of the better-educated and professionally trained younger married women do not intend to make any break in employment for family reasons. They appear to be confident that they can cope with both family and work.

Far from being a matter of subsidiary importance the re-employment of the married woman is already a question arousing widespread interest and is likely to grow in significance. This is particularly true in countries such as Great Britain where with a surplus of males below the age of 40, single women are a declining race, and where as a result of family planning the average woman has had her last child by the time she is 30 or even younger. Already 54 per cent of all the female working population in Great Britain is married.

This problem has to be seen from the point of view of the women themselves, of their employers, and of the society of which they form a part. With smaller families and with the restriction of childbearing to the early years of married life, a married woman finds herself in her late thirties with her children at school and family demands on her time decreasing. She is at the height of her mental and physical powers, with many years of life ahead of her in a world in which standards of living are constantly rising. A second pay packet seems the obvious way for the family to share in the apparent prosperity of the times. She wants work but she can survive without it, is

determined to meet the needs of the family which she accepts as her first responsibility. What kind of work can she obtain, under what conditions, and with what results?

These questions are also important for her prospective employer. As more women marry and the marriage age continues to fall, while in some countries, and ultimately presumably, in all, the school leaving age rises, it becomes increasingly difficult for employers to find the girls and women they need. Perforce the employer turns increasingly to married women, sometimes with considerable reluctance as he recognises that family demands will often mean absence from work and he has been led to believe that the married woman, with a husband to support her if she chooses to stop working, is unlikely to be a dependable employee.

Given these attitudes it is not surprising to find that a very large proportion of women re-entering employment slip into any little job they can find, conveniently near to home and preferably with flexible hours of work. In such jobs pay is low and the level of work makes little demand on the woman's ability. Contrary to popular belief there are a number of studies(1) which show that the wastage rates among married woman are not always higher than among single women. Both absence and turnover rates tend to fall as the level of skill and responsibility in work rises. Nonetheless, the nature and circumstances of most women's employment are such that in any domestic emergency the married woman may well feel it is not worth her while to make strenuous efforts to continue a job for which the net return to her is low and where the level of work arouses no strong interest or compelling sense of responsibility.

In individual cases little harm may be done either to the woman or to the employer. But the sum total of such cases adds up to a very ineffective use of a nation's womanpower.

This is, in fact, a wasteful situation from the point of view of all the interested parties. It has developed in this way because most people, including it seems very many of the women involved, regard women workers of this type as a marginal element in the labour force. This may once have been a tenable point of view but, as in a number of countries the proportion of married women in the labour force is rising, this attitude is no longer appropriate. In fact, of that part of a woman's life which is spent in employment much

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(1) Dr. Viola Klein, Britain's Married Women Workers. (Routledge & Kegan Paul, 1965).

the longer and more important phase will in future be the second period when she returns as a married woman. The employer needs to recognise that the section of the female labour force on which in future he must rely is the section made up of married women. For the nation womanpower means, increasingly, married womanpower.

This being so, it becomes a matter of some urgency to find ways in which the present situation can be improved. As for girls at school, so for the older woman seeking employment, the first requirement is adequate information. Even when at work many people know very little of employment possibilities beyond the immediate area in which they themselves are engaged. After five to ten years at home a woman's knowledge of employment possibilities may well be limited to her recollections of a job now out of date, the chance comments of her husband and neighbours, and the television. Some help is available at the offices of the Ministry of Labour, but there is no need for a woman to approach the Ministry to find employment and in practice the vast majority of them do not do so. If it is true that many school leavers still fail to get the advice they need, the complex problems involved in guiding the older woman on her return journey to work have scarcely been defined, let alone solved. The importance of improved vocational guidance for the re-entry woman is becoming more widely recognised. In Denmark the Ministry of Labour organises a two weeks induction programme to enable older women to learn more about the possibilities and problems of employment. In Sweden before a woman returns to work she may be referred for two days vocational guidance by specially trained vocational guidance officers.

Under-utilisation in relation to potential capacity is at the heart of the womanpower question and this applies with even greater force to the re-entrant. Advice is the necessary first step; the second is the availability of appropriate training. In discussions of this question it is becoming customary to stress the importance of refresher or retraining courses. The woman, it is urged, needs help to get up to date, building on the knowledge and skills acquired in her earlier years of employment. There are of course many cases in which this is the answer, and many professional organisations and employers have made provision to meet this need, though not always in ways most appropriate to the circumstances of the older person. But refresher courses in fact only touch the fringe of the problem. As has been shown, the vast majority of girls receive no training and acquire no skills. Given what we know of the distribution of

abilities, there must among them be a very large number of women whose potential has never been tapped and is very often unknown, even to the woman herself. It is for such women that a proper vocational guidance service, with time and equipment for testing, is clearly called for. For them what is needed is not refresher courses, since there is nothing to refresh, nor is it the nearest little job round the corner. What is needed is training from scratch to enable the woman to build a new career based on the abilities and interests she now realises she has. Even where a woman has had a previous training it may well be that it is more appropriate for her to start anew. The choice of a seventeen-year-old girl may well differ radically from that of the same person twenty years later. If tastes have not changed, circumstances may dictate a totally fresh plan. Restricted mobility is probably the biggest limitation of the married woman in search of employment and it is not uncommon for a woman to find that her old job, though it still holds her interest, is quite impractical in her existing conditions. So for all these women the chance to train for something of which they have no previous experience is what is needed. In some places and occupations encouraging starts have been made in courses specially designed for the older woman. Special day colleges for teacher training have been in existence for some years. The nursing profession has adapted its training requirements. Training for the older woman in Institutional Management has opened up suitable channels previously barred. In the United States special courses have been devised, sometimes more educational than vocational in emphasis, to help the older woman to get back into employment.

It is becoming increasingly plain that these courses should be designed expressly for the older person whose needs they are intended to meet. A generation ago many people would have insisted that the training of the older woman was not possible since old dogs it was thought could not learn new tricks. Thanks to the research(1) undertaken into the training needs of older workers it is now quite clear that this is a myth and older people are fully capable of absorbing training. It has also been found that training methods appropriate to the teaching of the young and of the middle-aged are not the same. Learning continues in middle age but by different means, and the training courses for the returning women must recognise this. It is not merely a matter of techniques of teaching. In part it is an

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(1) R.M. Belbin, Training Methods. (OECD 1965).

emotional problem, a question of confidence. There is, it seems, no doubt that many women, during the years of demanding physical activity and prolonged contact with small children, lose confidence in their ability to cope with an adult job in an adult world. In this frame of mind difficulties are exaggerated and worrying about worrying becomes a certain receipt for defeat. To cope with these fears may be the first and most essential task of the training programme.

In addition to the special psychological problems to be recognised in planning training for the older woman, the practical difficulties she encounters must also be considered. The sooner she can start training the better and schemes to enable her to begin working under supervision and to a plan while she is still at home might do much to encourage and assist her. In a survey(1) published in 1962 by the Women's Bureau of the United States Department of Labour it was found that older women returning to college were critical of both the content and method of teaching in the courses they attended, which had been designed for youngsters fresh from school. It seems obvious that if the university and college authorities recognise that these older women are likely to be a major part of the female student population they will have to shape courses in which the content and the manner of teaching and the practical arrangements for student attendance are devised specially for the mature student. A fair amount is already being done in the United States, as, for example, at Sarah Lawrence College (New York) which started a programme on a part-time basis for adult women who had interrupted their college education. A counselling programme and refresher courses prior to starting on their degree work were included.

In addition to training provided by educational authorities and professional bodies, a growing volume of training is being carried on at all levels in industry in all developed industrial countries. It has become clear that the rate of technical change is so great that few people can acquire the skills and knowledge needed for a life-time by the age of twenty-one. Training courses for older people to keep them informed of new concepts and methods are seen to be essential in dynamic organisations. Since this is accepted for male employees it should not be difficult for companies to absorb women returning to employment, using or adapting these already

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(1) 15 Years After College. A study of Alumni of the Class of 1945. Bulletin 283. Women's Bureau United States Department of Labour, 1962.

established internal training programmes to give to women as to men the up-to-date knowledge they require. At present this is rarely done but, given an acceptance of the need to train women, in present circumstances the mechanisms for providing training present little difficulty. Some internal schemes designed specially for older women are of particular interest. In PUB, the Swedish co-operative retail store in Stockholm, a training programme has been developed with conspicuous success for part-time women workers aged 50-55.

This clear need to give the older woman adequate training underlines the importance of the basic education given to the girl in her schooldays. Studies of the learning processes of older people show that learning is a habit, and, in the main, the longer a person continues learning the longer the habit and ability to learn will continue. If a girl leaves school at the earliest possible moment and is not exposed to the learning process again until her late thirties or early forties when she wishes to return to work then training may be arduous, if not impossible both for her and for her trainer. But if she absorbs the most thorough education of which she is capable in her youth, and if vigorous steps are taken to help her during the years she is at home to keep her learning abilities untarnished then there is no reason to fear that she will be unable to absorb the training needed for a carefully chosen second phase career.

Training is essential if women are to gain access to the jobs in which in the future they will be needed. It is also an indirect means of overcoming the obstacles to the more effective employment of women. Current levels of pay for very many women are such that it is difficult to see why, in financial terms, it is worth the while of many married women to go out to work at all. Certainly, after travel and other essential work expenses are met, what is left is not sufficient to enable many women substantially to ease their domestic burden. So in most cases, assisted only by minor mechanical aids and such help as the family may give, the working wife adds the demands of work to the demands of home. Strain is common and if the double load cannot be carried it is the job that is abandoned. But to a large extent the pay is low because the level of skill and responsibility are also low. Training makes possible more interesting and better paid work, which in turn makes the very considerable effort involved worthwhile, and makes possible also a more substantial reduction of domestic tasks. In this way too the growing needs of the employer for a larger supply of trained employees could be met and

the country would be tapping its womanpower reserve, the biggest remaining reserve of manpower. At present the amount done to assist the re-entrant is slight and at best inadequate. In the many countries which have passed some form of Training Act it should not be difficult, given sufficient pressure of public opinion, to ensure special training provisions to redress the balance so long heavily weighted against women.

None of the schemes suggested in this paper are difficult to implement, given the will. What is of profound interest is the absence of will. Neither Governments, nor employers, nor trade unions, nor men, nor women have pressed with any determination for change in a situation which invites women to start at the bottom of the ladder and to stay there. If change is to be effective it is necessary to understand why for so long the demand for change has been muted.

The reluctance of trade unions and professional bodies to press for better opportunities for women is not perhaps in the short-term altogether surprising. If women are free to compete with men the scarcity value of workers in certain occupations and trades is reduced, and with it their bargaining strength. Exclusiveness can be highly profitable. As one young executive put it, "We do not need to be convinced that women can do these jobs; we are all too afraid they can".

The indifference of employers to the improved utilisation of womanpower is harder to explain. It might have been thought that the acute shortage of many categories of trained personnel would have made employers ardent to employ women. With few exceptions this has not been the case. Some obstacle has been presented so far as manual grades have been concerned by protective legislation limiting the hours and conditions of work of women. In practice, the difference such restrictions make, apart from the prohibition of nightwork for women, is often negligible, and in any case such legislation does not apply to women in executive positions where their exclusion is most marked. Recent proposals to require safe and healthy working conditions for all employees, male and female, rather than special regulations for women, may further reduce the weight of this objection to women's employment.(1)

So far as Governments are concerned, there is some evidence that the facts of the manpower situation have from time to time

(1) Women Workers in a Changing World, (ILO 1963).

caused them to draw attention to the under-utilisation of womanpower. The United States has had the President's Committee on the Status of Women and in Great Britain in its abortive National Plan of 1965 it was emphasised that married women remain one of the few untapped resources of labour. From time to time there has been public exhortation, but exhortation scarcely matched by action. Perhaps it is not surprising that so little drive for change has come from official bodies. There has been so little insistence on the need for change from ordinary men and women. The reasons for this are no doubt partly social, partly psychological. In many men there is a deep-rooted dislike, perhaps fear, of women in authority, especially in authority over men. At the same time women, anxious to make the best of a world plainly not geared to their needs, seem to accept the status quo, accommodating themselves as comfortably as possible to a world designed apparently by men for men. Yet in times of war, or in countries where society's expectations of women are very different from those of the West, women have responded to totally different demands, have absorbed the necessary training and have attacked with success jobs traditionally done by men. Today, technical change and perhaps a more rational approach to social practices and relationships is leading to a breakdown of the old assumptions regarding women's place in the world of work. In a confused picture one fact is clear: whatever new opportunities for women appear over the next decades, they will only be able to seize them if the problems of education and training are tackled first, and tackled quickly.

C. WORKING CONDITIONS FOR WOMEN

1. PROBLEMS OF EQUAL PAY FOR MEN AND WOMEN WORKERS

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I. Various forms of wage disparity between men and women workers existing before "parity" and their consequences

For a long time women workers, at least in some of the countries represented here, were considered as not being a real labour force entitled to stability of employment, to a wage objectively related to the job performed, and to a professional career, but as casual labour required or not according to the convenience of the entrepreneur, and employed for the period which suited him. For example, in Italy, by tradition and sometimes even by rules included in the works regulations, the so-called "marriage ban" was in force up to 1962, whereby an employer could dismiss a woman worker when she got married. In practice, therefore, women could only engage in employment up to the age of 21-25. Accordingly the disparity between men's wages and women's wages constantly operated to the detriment of women, not only because women received lower wages for equal work, but also because the disparity in many countries between the wage for young women (and young men) under 18-21 and the wage for adult working women acted to depress women's wages further, and finally, since the marriage ban was operative in practice, women seldom or never attained the seniority of their male colleagues.

It is necessary to emphasise that one effect of this lower wage for women was to make the woman worker feel less obliged to keep her job, since its loss did not mean giving up a high wage. When therefore she found, on balance, that it was possible to recover almost the equivalent by more careful direct administration of her household

and family, she might be tempted to choose or at least to accept the status of housewife.

We may therefore justifiably assert that there was a relation between wage disparity and instability of female employment, either because of the employer's tendency to make the maximum allowance for his "convenience" (e.g. by dismissing a woman worker when she moved from the juvenile into the adult category, or because the worker herself tended to yield a little easily to the employer's reasoning, finding her reward in regaining her family circle, particularly if she had a husband and children - a reward which was not just psychological, but economic (running her household more strictly, saving the expense of someone to look after the children, etc.).

But it is obvious that the economic and social development of a country is affected by the fact that part of the labour market is constantly in an inferior position, subject to discrimination either as regards wages or as regards the duration of the labour relation.

Neither can we forget the implications that wage disparities of all kinds may have had on the degree of trade union membership among the female labour force, which found itself being used as a strategic weapon in the employers' policy.

Accordingly, if we consider the prospects of social and economic development in international and say, European terms, we can clearly see the inter-action between the wage disparity prevailing between men and women in certain countries and to some extent eliminated in others, and the achievement of proper competitiveness of labour costs.

II. Instruments for securing equal pay for men and women workers

In some cases the right to equal pay was sanctioned by law and confirmed in trade union negotiations, in other cases it was established through practice.

Equal pay in the Civil Service is the rule in almost all countries.

In Denmark there seems to be no specific law, but trade union action confirms the right to equal pay from time to time. In Ireland the problem is being dealt with. In Norway as from 1961 equal pay has been in force in many sectors but not all, while Austria and France were among the first European countries to recognise the right to equal pay for men and women.

In Italy the right to parity of remuneration has been endorsed in the Italian Constitution (Art.37) since 1946, but in 1960, when the first contractual agreements were drawn up, it was accorded only to a few elite (trade union leaders and leaders of women's associations) since, even with the specific provision in the Constitution, the custom of wage differentiation by sex was ingrained in the rank and file of the workers.

Today, eight years after the abolition of wage discrimination by sex, the right is deeply rooted in the conscience of the Italian working woman. More progress has therefore been made from 1960 to 1968 than from 1948 (entry into force of the Constitution) to 1960, since the "right" has passed from the legal stage into practical application.

The reason for the delay in endorsing and implementing wage parity is moreover to be attributed, as clearly illustrated in the previous papers, to tradition and to the underlying ideology that a woman's right to work is, so to speak, a secondary right, her primary function being that of wife and mother; whereas a man's right to employment has long been recognised as pre-eminent even in comparison with his family responsibilities.

The question therefore arises: to what extent is it necessary to incorporate in labour-management agreements the principle already endorsed in legislation?

In Italy, for instance, the legislative provision was given effect only in government and para-governmental employment, while in all other sectors (industry, agriculture, services) it was not applied and recourse to contractual agreements therefore became necessary. Yet it is true that, at least in the countries of the European Economic Community, it was once again a legal provision (Art.119 of the Treaty instituting the Common Market) which expedited the implementation of the right to parity.

This provision reacted on the behaviour of employers, as entrepreneurs in areas where "disparity" prevailed were obliged to eliminate the differentiation between women's wages and men's wages and moreover, pressure was exerted by employers in areas of absolute or relative "parity", tending to obtain greater equilibrium of labour costs within the EEC.

However, legislation may be a dangerous instrument for solving the problem of equal pay, if only because of its intrinsic rigidity and automatic application, but also because in countries without "full employment" it may engender in entrepreneurs a psychosis

against the employment of women. For the same reason we can also see clearly the negative nature of the trade union tactics of using the possibility of legislation to exert pressure on the entrepreneurs. Moreover, the problem of equal pay for men and women workers as a question of wages policy can find its logical solution only in the natural institution for dealing with such matters, viz. the trade unions, and through the typical institutional instrument of the unions, viz. collective agreements, for various reasons which are fairly easy to distinguish.

Recourse to legislation by the trade union to protect interests of which it is the natural representative is admittedly not unknown or even unusual. Nor is there in principle any precise line of demarcation between matters to be regulated by legislation and matters to be controlled by collective agreement. However, a transfer of trade union initiative to Parliament must have specific justification and in any case must not interfere with existing or potential negotiations.

Moreover, recent experience - at least in Italy - has shown clearly that legislation proposals used as a means of pressure during trade union negotiations not only fail to strengthen the workers' bargaining power, but offer the other side a formal pretext for blocking any solution to the problems and therefore, instead of being a dynamic instrument, merely serve to maintain the status quo.

Furthermore, recourse to legislation without any specific valid justification may be construed as a renunciation by the trade union of its own prerogatives. This is an extremely negative attitude and if it is practised precisely in connection with the claims of women workers it will merely make women slow to join the trade unions.

III. Present situation as regards equal pay for men and women workers: existing limits

A. Present situation

In general where efforts have been made to establish wage parity, it has been achieved, inasmuch as the same remuneration has been fixed for men and women workers in the same category.

In some countries (Italy, Sweden, etc.) parity has been achieved gradually, passing through various stages until the same wage-level is reached as for a man in the same category.

In this sense it may be affirmed that at present parity has been achieved in many of the countries under review.

In order to assess the present situation, it is interesting, however, to know the starting point from which the various countries have moved or are moving towards "parity". For example, one of the countries which has encountered major difficulties is Italy where the situation was complicated by the fact that there were two different categories by sex for both clerical and manual workers.

ITALY: CLASSIFICATION AND WAGE COEFFICIENTS
IN THE MANUAL WORKER CATEGORY

MEN		WOMEN	
	Wage Coefficients		Wage Coefficients
Specialised worker	125.4		
Skilled worker	112.6	Cat.1 worker	95.0
Specialised operative	106.6	Cat.2 worker	90.0
Unskilled operative	100.0	Cat.3 worker	84.0

Up to 1960 Italian women workers were accordingly subject to two types of discrimination: normative (different classification) and remunerative. Such discrimination was intolerable, for the woman who was doing work comparable to the job of a skilled worker received a lower wage than an unskilled operative performing only marginal functions in the production process.

On 16th July 1960 the first agreement on equal pay was drawn up between the Confederation of employers in the industrial sector and the workers' Confederations.

As a result of the agreement 1,300,000 women workers in the industrial sector have seen the disparities between their pay and that of men in the corresponding category gradually reduced until complete parity was reached. The most important change introduced under the agreement was the single job classification (until the abolition of the distinction between women's jobs, men's jobs and mixed jobs), whereby the Italian system was finally co-ordinated with the system prevailing in most of Europe.

The old system of wage formation skilfully based on discrimination by sex and age within the labour market was undermined by the provisions of Article 1 and Article 4 of the inter-union agreement: Article 1 prescribes a single classification of personnel and

coefficients for determining the new wage levels, while Article 4 provides that minimum wages for women workers who are minors shall be determined by "applying the same increases" provided for adults in the same category and that "the organisations shall meet in order to establish a more rational basis for the wages of minors" in general.

The dynamics introduced by the inter-union agreement for the industrial sector developed through the category negotiations which resulted in the various productive categories in a reduction of the range of occupational grades from the 7 provided in the inter-union agreement to 5 in the industry contracts.

The inter-union agreement in industry was followed with similar results by agreements in the commercial services sector. In the agricultural sector, however, the agreement reached at the level of the agricultural Confederation has not had satisfactory practical results for all categories, inasmuch as provision is still made for distinctions between women's jobs and men's jobs.

B. Existing limits in the present situation

The following are observed in nearly all countries:

- down-grading of women workers, insofar as jobs performed by women, both in the clerical and manual worker sectors, are classified in lower grades;
- the practical impossibility for women to obtain advancement in their professional career;
- disparity in industrial wages (payment by results; bonuses);
- disparity between men and women in indirect wages (pensions);
- compulsory occupational mobility for women between the ages of 16 and 25;
- propensity on the part of the employer to encourage women with family responsibilities to give up their jobs.

Moreover, at least in some countries, there is a substantial difference between wages in productive sectors with a predominantly female labour force and those with a mixed (M. and F.) or exclusively male labour force.

Before considering the above points briefly, it should be noted that the process of equalisation is being hampered by the employers' tendency to re-establish motives of "convenience" for the employment of women, after equal pay measures had removed part of the convenience

arising from the lower cost of employing women rather than men.

In turn, this tendency of the employers is rooted in the old entrepreneurial logic that the "labour cost" sector is the one which should "naturally" bear the brunt of reducing production costs.

The trade union attempt to renew the collective agreements ran into difficulty from the outset in almost all countries which had endorsed the right of women workers to equal pay either in legislation or in contractual agreements, precisely because of the determination of the employers' organisations to attribute a lower value to the jobs classified as women's duties in the situation prior to wage parity.

In this way women found that in practice, despite the right acquired and elsewhere recognised following the whole course of a professional career, the difficulty of obtaining advancement was confirmed.

From Table 1 it may be noted that, as regards Italy, in the period 1958-1964 the presence of women in the higher grades of skill was declining rather than increasing, even in the sectors with a predominantly female labour force.

To this discrimination was added in certain cases a real wage disparity in the works wage components - bonuses, payment by results, etc. - calculated with different methods or measurements for women as opposed to men.

In some countries differences are recorded between indirect wages awarded to men and to women workers. In Italy, for example, social security legislation does not in itself give rise to discrimination based on sex, but - as a result of existing wage differences - the indirect wage is lower in sectors where the direct wage is lower, as in the case of sectors with a high proportion of women employees. Moreover, the smaller pension awarded to women is also affected by the pension age limit, which is fixed at 55 to 60 for women and 60 to 65 for men.

Another factor in the present situation is to be attributed to the mobility of the female labour force between the ages of 16 and 20-25, owing to the determination of the employer to have an efficient labour force and to avoid the costs involved in women workers' maternity and especially the higher rate of absenteeism among women with family responsibilities. (Graphs 2, 3, 4, 5, 6, 7). It is necessary, however, to remember that those who have the possibility of using their own skills in the job performed and who

feel they have good chances of advancement are less frequently absent from work; this applies also to those who are satisfied with the wage they receive or the possibilities of obtaining wage increases. It is therefore obvious in the first place that the size of the wage she receives gives a woman little incentive for "taking a job" implying continuity of service.

Accordingly the "low wage" or better, the "unequal wage", with reference to the value of the job performed, is one of the factors in female absenteeism.

The other cause is to be sought in the fact that, by custom and owing to the lack of adequate social institutions, women continue to be burdened with special functions of welfare and organisation of family life.

And it should also be added that the woman herself chooses that she should stay away from work rather than her husband because, as a woman's wage is lower than a man's, unpaid or part-paid absence weighs less heavily on the family budget in the case of the woman than of the man.

The employer reacts, as already indicated, to this state of affairs by having recourse to the frequent replacement of female labour, in order to secure the greater efficiency and attendance which he can get from a girl of 16 to 20.

And for the same reason the employer encourages mothers to give up working (Graphs 8-9).

The less obvious aspect of the tendency to assign different values to men's and women's work and at the same time the more complex aspect is the difference existing, at least in many countries, between wage levels in categories with a predominantly male labour force and those in predominantly female occupations.

As an example we may consider the situation in Italy:

SECTOR	Wage(1) of unskilled operative in area O(2) (1967)	SECTOR	Wage(1) of unskilled operative in area O(2) (1967)
Ready-made clothing	283.65	Graphic arts	418.32
Cotton	295.65	Oil	382.57
Confectionery	352.46	Pasta and flour products	366.84

(1) Wage (basic), contingency, short-time adjustment.

(2) Area O: Milan - Turin.

As may be seen, in the sectors with a large female labour force (ready-made clothing, cotton) and in those with a mixed labour force, (confectionery) the pay of an unskilled operative in area O is considerably lower than that of an unskilled operative in sectors employing men only or with a high degree of male employment. It seems unlikely that the reason for this phenomenon is to be sought purely in the differences between the productive levels in each sector. Yet the economic structure of the sectors in question is different and the relationship existing in each sector between constant capital and variable capital varies; this reply does not, however, seem satisfactory, at least for the sector of ready-made clothing, which has expanded remarkably in recent years but where wages have not moved very much (see following table).

SECTOR	Wage of unskilled operative in area O. (1956)	Wage of unskilled operative in area O. 31.12.66	Difference
Ready-made clothing	163.95	283.65	+
Cotton	155.35	295.20	+
Mining	171.60	361.20	+
Confectionery	161.75	352.46	+
Oil	188.70	382.57	+
Electricity	210.00	496.60	+

It should be remembered therefore that other factors of a "historical" nature deriving from an evaluation of women's earnings based on the concept of integration of the family budget also help to determine the large wage differentials between the various categories.

IV. Problems arising in connection with equal pay and policy assumptions for the evaluation of work performed by women

Accordingly, if the limits of the present situation as described in Section III are real, the main problems arising in connection with equal pay may be said to be the following:

(1) Objective evaluation of the work performed by women in order to obtain a more equitable classification of the jobs and functions performed;

(2) Promotion of policies of support for the employment of women and their occupational mobility in accordance with the requirements of economic and technical development and not exclusively linked to the profit of the employer;

(3) Reduction of the causes conducive to women's absenteeism;

(4) Equal treatment under the accident insurance and social security system.

These problems must be solved in the light of the basic problem of the stability and expansion of female employment.

1. Objective evaluation of the work performed by women

In the early stages of negotiations on equal pay for men and women workers, it seemed that the best solution to the problem might be either to assign the same wage to the same contractual category or to pay the so-called rate for the job. It was then found in daily practice that the question was only partly, or only formally, solved in this manner because of the possibility of assigning the job done by a woman worker to the lower grades of the occupational hierarchy and also because of the possibility of re-establishing wage differentials in the rates paid by the works (payment by results, bonuses, incentives, etc.).

Accordingly it was found that the objective of "equal pay for equal skill" must be pursued in the more general context of a policy tending to encourage the upgrading of women's jobs, for instance by reducing the number of occupational categories.

As regards the elimination of the wage differentials re-established at works level by different criteria for the award of bonuses, payment by results, etc. the opinion was confirmed that the workers' trade unions should pay greater attention to this problem, for example by obtaining the inclusion in collective agreements of a provision sanctioning the application of the right to parity for all earnings-related items. But the prime necessity seems to be a trade union attitude which regards output bonuses increasingly as instruments of control and participation in the advantages of the firm's technical and organisational progress, and therefore supports the idea of bonus rates unrelated to contractual wages and based on new parameters more likely to achieve rapid and effective progress towards equal pay between the sexes and between age groups.

One observation may be made with regard to the second way of obtaining parity, viz. paying the rate for the job; here the jobs

are not classified in categories but in more numerous wage groups established on the basis of an analytical evaluation of the various job components.

This method, widely adopted in some countries, has been challenged by the workers' trade unions in some cases for various reasons and also because of the difficulty the unions find in carrying out systematic, up-to-date negotiations for job evaluation at the level of individual firms or groups of similar firms which calls for experts on the subject.

The dangers of a unilateral job evaluation are obvious.

These arguments for a more objective recognition of the value of women's services must however now be reviewed in the light of a new fact.

The opinion is gaining ground that the criteria hitherto used for measuring and therefore establishing the value of work (job, function) must be reconsidered in view of the changes brought about in human work by automation and new technologies.

This is obviously a wider question than that of women's work and covers the whole field of labour in general, although it is true that the traditional distinction between men's and women's work is the first to disappear as a result of the effect of technical development and modern work organisation.

There is no doubt that with the aim of integrating women workers fully in the production process, free from prejudices and calculations of convenience, the path to follow is for women workers as a group to urge the whole trade union movement to undertake specific studies to establish the new job components and determine the methods of measuring modern job values.

In short, the representations of the women's movement, which have little force if they are put forward in the traditional terms of sectoral claims for a criterion of justice, will become substantially more positive when their aims encompass more advanced bargaining platforms common to the whole workers' movement. In this case, as stated, the common platform should consist of the objective to make methods of job evaluation and therefore of wage assessment more compatible with the transformation of industry and the organisational and technical process, through trade union action in two phases - technical and contractual. And the assumption of job evaluation policies free from traditional criteria (worker's sex, age, unpleasant conditions, physical fatigue, etc.) is encouraged not only by the changed conditions and the intrinsic change in

modern labour, but also by the advantage which the whole working class can derive from a more adequate occupational classification and therefore a more adequate wage structure.

In fact the lower wage for women has a negative effect not only within the limits of the sex differentials, but as a force containing and even depressing men's wages and wages in general. This tendency will be more marked insofar as men and women workers become interchangeable as a result of automation and therefore compete with each other. In a modern view of the economic process the study of the problem of lower wages for women may therefore be considered as one aspect of the wider problem of the establishment of a general wages policy, no longer acting as a compressive factor but as a stimulus for economic development.

An expert discussion on the employment of women in present-day society should serve to show the difference between the alternative of the old, yet continually resurgent traditional feminism with its overtones of emotion and protest, and the alternative of claims which, based on scientific investigation and an evaluation of the evolutionary trends of the productive forces, indicate the trade union bodies through which the working class as a whole can interpret, anticipate, and therefore control the current process of transformation.

In the present situation the form and validity of the recognition given to women's work is based more on an exact analysis of the evolutionary tendencies in the labour structure in general than on the priority invocation of a "civil and legal" imperative.

In the application of the rules for equal pay for men and women we have in fact observed the limits of a policy of revaluation of women's work in terms of strict equality: i.e. an attempt which in substance and in method continues to maintain the occupational value assigned to the job performed by a man as a reference parameter for the classification of the job performed by a woman.

On the other hand, to get away from a strictly equalitarian view involves not only achieving equality of opportunity and remuneration between men and women at all levels and in all firms, but also promoting a series of activities anticipating the full integration of women in employment in conformity with the trend of the productive forces and the economic development of modern society. It is not yet possible to foresee what these activities should be, but they will emerge when we make up our minds to adopt an employment policy that does not take it for granted that the problem of women's employment must necessarily be solved by following the same course as for men.

Hitherto the policy followed with regard to the employment of women has been limited to the usual claims - women specialised workers, women supervisors, etc. - whereas we ought to define policies to meet the evolution of the productive forces and the rapidly changing aspects of modern capitalism, in order to discover "new paths" of the internal development of the labour force.

It does not seem therefore that the claims of women workers should take the form of a simple comparison and equalisation between the sexes; they can and should rather aim at anticipating and urging the establishment of new jobs and occupations in a society in evolution under the dynamic impulse of a process of technical and social transformation.

2. Occupational advancement of women

If we accept a non-sectoral approach, so to speak, as a means of solving the problems of female employment, it is clear that we also accept the assumption of the advancement of women workers, which is not necessarily related to vocational training facilities specifically designed for women.

Consideration of the basic components of modern work has already led to the conclusion that it is principally human "training", by means of an appropriate number of years at school with completely modernised curricula, that can make men as well as women capable of "enlivening" their work performance. In the face of increasing technological development it is in fact necessary for the worker to be able to "master" his own activity and the environment in which he performs it, even if his participation in the production activity is sometimes extremely fragmentary.

Accordingly, under this heading too the women's movement has a special duty, i.e. to urge the whole trade union organisation and all competent bodies to review educational policy in such a way as to offer boys and girls schools capable of training the "workers" of our time, of developing the psychophysical attitudes required of the modern worker in a continually evolving technical world.

The claim put forward by the trade unions in some countries, such as Italy, for the raising of the school-leaving age to 18 seems a first step for those countries where compulsory school attendance is still on a fairly low level.

But if compulsory schooling, raised to 18, is modelled on the curricula of the traditional schools which bear no relation to the facts of production techniques and industrial relations, even the

raising of the school-leaving age in itself will not be effective.

As indicated, what is needed is a school which can offer a genuinely human training and can develop the psychophysical attitudes of the individual - a school which is also "flexible" enough to respond promptly to the changes in labour demand and supply in increasingly open markets, such as prevail at present.

It is obvious that, especially in view of the degree of occupational mobility prevailing in a modern society, the school must be supplemented by vocational training facilities designed to reclassify, retrain, and reintegrate manpower which has become redundant in certain productive processes. And it may also be assumed that the position of women workers, which is still one of intrinsic weakness, mainly for ethical and ideological reasons, calls for the introduction of such facilities for women first and foremost.

It seems advisable, however, to draw attention to the danger of a proposal subordinating any evaluation of women's work to women's vocational training, for two reasons:

- firstly, because it is not unusual for women possessing exactly the same vocational training as men to find that their degree of training is still not recognised in practice;
- secondly, because vocational training facilities especially designed for women might have little practical result if they did not form part of an organic plan for new occupations and new jobs which are and will be created by the transformation of productive activities and social organisation.

The trade union claims for reclassification and retraining facilities specially for women will however be justified in an increasing number of cases in which women with family responsibilities enter or re-enter productive employment after the years devoted to child-bearing, and looking after their young children.

3. Removal of the causes underlying female absenteeism

A clear professional conscience implies regular attendance at work and, on the other hand, regular participation in active employment creates deeper professional commitment, from which the worker derives greater satisfaction and the firm an improvement in productivity. It is therefore natural that the trade union should study how to help to create conditions likely to reduce the rate of absenteeism.

Since one of the causes of absenteeism is the dissatisfaction generated by the failure to provide equal recognition for the value of work performed, there is no doubt that trade union action to revalue wages is designed to stimulate professional commitment and improve attendance at work.

In the case of women workers, however, account should also be taken of causes outside the control of the worker herself and unrelated to conditions in the firm, which help to raise the rate of female absenteeism: namely, the lack of welfare services to help the family. A job evaluation policy in respect of women cannot be dissociated from the aim of reducing that part of the additional cost of female labour which is due to absenteeism, aiming above all at:

(a) creating a network of family services which will relieve the working woman of the double function she has to perform at present;

(b) reorganising the hours of certain community services (shops, public offices, medical and health centres, schools, etc.) so as to make access to them for personal and family reasons easier for women (and also men).

A policy on these lines would in short mean creating the conditions or prerequisites for women to have access to productive activity in greater freedom and "participation".

4. Equality between men and women in respect of all wage components

Of course, a policy for the revaluation of women's work should aim at achieving "equal pay" in those sectors and wage "components" where differential treatment still exists for example, it is a question of achieving parity in actual wages, obtaining the abolition of the distinction between men and women workers in agriculture, and of requesting parity of pensions. In this connection it is emphasised that in some countries, as in Italy, the maintenance of a different pensionable age for men and women may affect the total integration of women into the employment market (and therefore the possibility of promoting the revaluation of their wages and "professional status") especially since other causes often interrupt a woman's economic activity, e.g. maternity and infancy of the children.

5. Equal pay and expansion of employment

We have already emphasised the tendency of the employer to reconstitute, in his dealings with the female labour force, at least part of the relative advantage of employing women on which he used to rely for so long, especially affecting the occupational classification, the de facto wage and the dismissal-recruitment machinery.

It may justifiably be asked to what extent this conception of the relationship with the female labour force on the employer's side could affect the stability and expansion of female employment. As was recently noted by the Women's National Conference promoted by the international CISL and held in Dusseldorf in October 1968, there are certain characteristics common to female employment in many countries.

Mention has already been made of some of these characteristics, such as the "downgrading" of work or underemployment and the age-related high turnover rate in female labour. Here we should like to draw attention to three other phenomena:

- the decline in the employment of women;
- the "real" character of female "non-activity" in relation to the new availability of housewives for outside work:
- and again: "is there some relation between equal pay and the expansion of female employment?"

There is no doubt that in Italy, for instance, some of the achievements designed to implement at least the essential aspects of wage parity have been followed by a decline in female employment. (See Table 2).

It is, however, true that the introduction of equal pay began in Italy in a period of "economic expansion" which was followed by the "so-called "recession" when a decline in employment in general began to appear; one may therefore justifiably express doubts regarding the connection between the phenomenon of female unemployment and the introduction of equal pay.

Nevertheless the decline in the employment of women was heavier than that recorded in the same period for men. Moreover, the number of women in employment continued to decline even in the succeeding phase of national economic expansion.

While the problem has assumed special dimensions in Italy where the employment of women still involves ethical and ideological as well as economic considerations, it is also true that difficulties have been encountered practically everywhere in achieving a real

quantitative and qualitative expansion of female employment.

The assumptions to be postulated for an adequate wages policy in its reactions on employment might be summarised as follows:

A. Elasticity of demand for manpower substitution (in this instance, substitution of men for women workers) operates in relation to its cost;

B. Demand for women workers (based on their psychophysiological characteristics) expands once a certain degree of mechanisation has been reached. When modern capitalism achieves a new, more advanced technological phase, it prepares the conditions for removing women from the centre of industrial production while tending to create the conditions for attracting them to employment in the tertiary sector.

C. Wage and employment levels and structure are formed on the basis of the relationships between political and trade union forces.

D. Wage and employment levels and structures are determined on the initiative of capital on the basis of more complex considerations than the desire for immediate maximum profit, i.e. the conservation of a certain degree of power.

It is obvious that whatever the nature of the wages-employment relationship, the trade union cannot in any case refrain from pushing ahead with the policy of the revaluation of women's work and wages. But the union may develop this policy in different ways according to its approach to the economic study of the problem of the wages-employment relationship.

A few conclusions may be drawn from this.

- If it is considered that the demand for women workers is extremely elastic in relation to their cost then, in order to obtain a correct wage evaluation and stability of employment for women, it will be necessary to insist on the elimination of the "additional" costs arising, as indicated, from the rate of absenteeism and, at least in Italy, from certain social burdens devolving on the entrepreneur and the community (e.g. in Italy protection of working mothers).

A policy of higher wages accordingly presupposes at the same time a policy to obtain family services, a social security policy or at least the fiscalisation of the social burdens on the entrepreneur.

- If it is accepted that the wage component (raising women's wages until they reach the correct remuneration for the job performed) is not the supreme dynamic of employment, but that the qualitative and quantitative changes in the employment of women are to be attributed to the rapid technological development of the productive systems, it is obvious that a series of policies will be of vital importance:

(a) policies designed to develop vocational retraining and reclassification in support of occupational mobility;

(b) policies designed to anticipate, in vocational guidance, the employment prospects offered by a society in which consumer pressures, creation and dissemination of new needs and the organisation of leisure create new jobs and occupations;

(c) in this context the trade union policy of negotiating with public and private capital on the sectoral and territorial control of investment naturally becomes of particular importance. In fact, trade union intervention in investment policies might give the workers the necessary guarantees that technological development of production is not costing too high a price;

(d) The utility of a policy of a general reduction in working hours for the same wage should be assessed in the same way. In this connection it may be said that opinions are less enthusiastic about working "part-time" mainly because of the fear lest this solution should hold up the overall reduction of working hours for everyone and at the same time, in the case of women workers, should imprison them in a subordinate position within the productive process.

- There is no doubt that postulate C is confirmed generally, since, in whatever situation, the bargaining power of the unions plays a primary part in the formation of wage levels and structures.

The putting into effect of the policy of trade union membership for women (training of the rank and file and training of women leaders) is therefore a permanent objective to support the bargaining strength of the unions at the time of renewing the classification structure and the occupational and remunerative position of women in the undertakings.

- The problem is undoubtedly more complex where (postulate D) capital exerts a conditioning effect on social and political development through a given wages policy.

There is little doubt that the underpayment and downgrading of women, the instability of female employment, and the same traditional way in which the supply of women workers is formed, have acted to support the conditioning of social development by capital.

At this point we reach the question of the relation between labour, management and government and are therefore beyond our terms of reference. It merely suffices, in conclusion, to affirm that a policy of revaluation of women's wages - in its two aspects of a fair wage and a fair job classification - involves not only the position of women in undertakings but the whole range of economic, social and political relations.

Table 1

Sex differentials in some sectors of industry
(Reprocessing of the data supplied by the Ministry of Labour)
30.9.1958 to 31.10.1964

		Spec. workers	Skilled workers	Spec. operatives un-skilled workers	Un-skilled operatives	Appren-tices	Others
Mining & Quarrying	M	+ 6.6	+ 4.9	+ 0.8	-10.4	- 1.9	+ 0.6
	F	- 0.2	- 4.8	+ 5.1	+ 3.2	- 0.3	- 3.0
Mines		+ 5.4	+ 4.6	+ 1.1	-10.1	- 1.8	+ 0.8
		- 0.3	- 6.5	+ 5.1	+ 4.2	+ 2.9	- 5.4
Mining Concessions		+15.8	+ 8.6	- 5.0	-15.4	- 3.0	- 1.0
		-	+33.3	-10.3	+10.8	-27.9	- 5.9
Food Manufac-turing indus-tries	M	+ 8.1	+ 0.9	- 4.3	- 3.7	- 0.9	- 0.1
	F	+ 0.6	- 5.5	+ 3.6	+ 2.0	- 0.1	+ 0.4
Canning and Preserving		+ 9.0	+ 4.6	- 2.8	- 9.3	- 2.1	+ 0.2
		+ 3.6	- 0.8	- 4.1	+ 1.3	+ 0.1	- 0.1
Confectionery		+ 5.9	- 4.1	+ 0.5	- 0.4	- 2.1	+ 0.2
		- 3.3	-20.3	+18.5	+ 9.9	- 6.1	+ 1.3
Sugar Manufacturing		+ 5.6	+ 1.7	- 3.0	- 1.8	- 2.3	- 0.1
		- 3.4	-25.0	+34,5	-11.4	- 5.8	+11.1
Pasta Manufacturing		+ 5.0	-2.0	- 4.9	+ 1.7	+ 1.8	- 1.6
		- 4.8	- 9.1	- 7.9	+15.1	+ 7.2	- 0.5
Clothing	M	- 1.7	+ 1.1	- 0.4	+ 1.3	+ 0.1	- 0.4
	F	- 3.0	+ 2.1	+ 2.2	+ 2.2	- 3.6	+ 0.1
Footwear		- 1.5	+ 1.0	- 0.4	+ 1.4	-	- 0.5
		- 3.9	+ 2.6	+ 3.1	+ 2.1	- 4.7	- 0.2
Hat-making		+ 1.3	- 0.8	- 0.8	- 0.1	+ 0.2	+ 0.2
		- 2.3	+ 0.9	- 5.6	+ 1.8	+ 2.4	+ 2.8
Textiles	M	+ 2.4	- 1.5	- 0.4	-	- 0.3	- 0.2
	F	+ 1.1	- 0.5	- 1.0	+ 0.3	+ 0.5	- 0.4
Silk: treatment		+ 9.3	-35.3	+ 2.2	+22.5	+ 2.0	- 0.7
		+ 5.2	-20.0	- 1.3	+18.2	- 2.1	+ 0.
Twisting		+ 4.9	+ 7.0	- 6.8	- 4.9	- 1.0	+ 0.8
		+ 0.9	+ 9.1	- 3.9	- 0.7	- 4.7	- 0.7
Weaving		+17.4	-15.4	+ 0.2	- 0.5	- 0.8	- 0.2
		+ 4.2	- 1.7	+ 1.3	+ 0.3	- 1.3	- 2.8
Cotton		+ 0.6	- 0.7	+ 0.9	-	- 0.2	- 0.6
		+ 1.6	- 1.6	-	- 0.1	+ 0.3	- 0.2
Wool		+ 1.4	- 0.2	- 1.1	+ 0.4	- 0.6	+ 0.1
		+ 1.3	- 0.9	- 0.1	-	- 0.4	+ 0.1

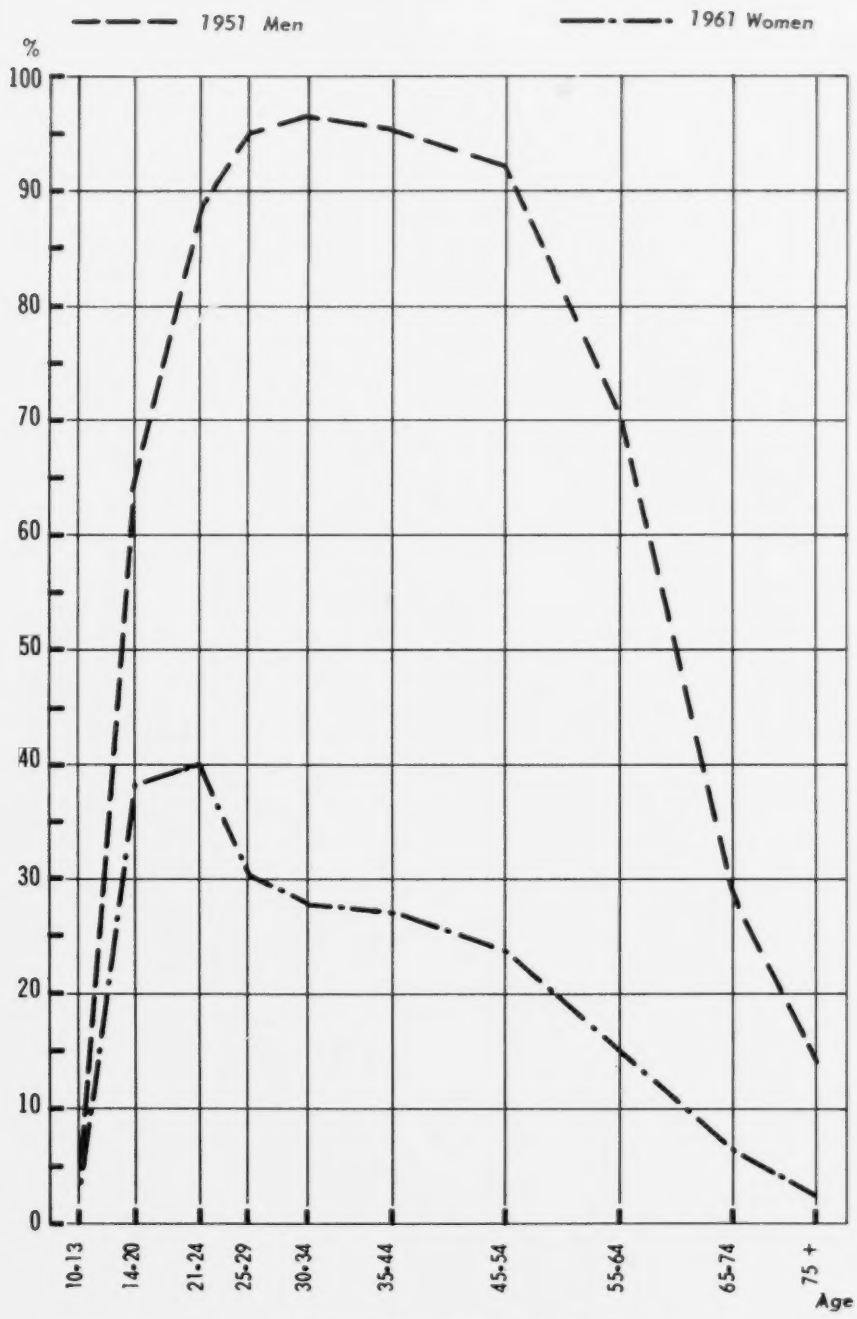
		Spec. workers	Skilled workers	Spec. operatives unskilled workers	Unskilled operatives	Apprentices	Others
Man-made fibres		+ 4.1	+ 2.1	- 4.6	- 1.4	- 0.2	-
		+ 3.7	+ 6.2	-15.6	+ 6.8	- 0.1	- 1.0
Knitwear		+ 3.6	+ 1.4	- 1.5	- 4.9	+ 2.9	- 1.5
		+ 1.3	+ 2.8	- 3.9	- 0.1	-	- 0.1
Hosiery		-13.6	+17.9	- 2.7	+ 2.4	- 3.7	- 0.3
		+ 0.3	+ 4.3	- 1.8	- 0.1	- 2.1	- 0.6
Flax & hemp		+ 3.3	- 3.2	- 0.4	+ 0.9	- 0.5	- 0.1
		- 0.1	+ 0.2	+ 0.3	- 0.5	+ 0.1	-
Jute		- 1.4	+ 1.4	- 1.9	+ 3.0	- 0.8	- 0.3
		- 2.7	+ 1.7	+ 1.1	+ 2.4	- 1.0	- 1.5
Timber	M	+ 5.8	+ 3.5	- 5.0	+ 1.0	- 4.6	- 0.7
	F	- 2.0	+ 4.7	- 2.4	+ 4.7	- 3.3	- 1.7
Mechanical sawmilling		+ 5.8	+ 3.5	- 5.0	+ 1.0	- 4.6	- 0.7
		- 2.0	+ 4.7	- 2.4	+ 4.7	- 3.3	- 1.7
Timber manufacturing							
Timber							
Paper and paperboard	M	+ 7.0	+ 2.0	- 4.6	- 3.8	- 0.7	+ 0.1
	F	+ 0.1	- 8.1	- 3.1	+11.7	- 0.7	+ 0.1
Mech. manuf. wood, paper and board							
Graphic arts	M	+ 1.3	- 1.9	- 019	+ 2.1	+ 0.1	- 0.7
	F	- 1.6	- 3.1	+ 1.5	+ 3.2	+ 1.1	- 1.1
Leather and tanning	M	+ 5.0	- 1.0	- 2.0	- 0.6	- 0.4	- 1.0
	F	- 1.4	+ 0.5	- 7.1	+ 7.3	+ 0.2	+ 0.5
Rubber	M	- 3.6	+ 5.9	- 0.4	- 0.9	- 0.1	- 0.9
	F	- 6.0	- 6.2	+ 7.8	+ 2.5	+ 2.0	- 0.1
Chemical manuf.	M	+ 0.3	- 1.3	- 2.0	- 1.9	+ 5.4	- 0.5
	F	- 0.4	-13.4	- 5.5	+20.5	+ 0.2	- 1.4
Chemical & pharm. products							
Non-metallic mineral manuf.	M	+7.9	+ 5.8	- 2.0	- 7.4	- 2.7	- 1.6
	F	- 0.5	+ 6.4	- 0.5	- 1.6	- 0.6	- 3.2

		Spec. workers	Skilled workers	Spec. operatives unskilled workers	Unskilled operatives	Apprentices	Others
Sandstone & refractories	M	+ 9.9	+5.1	- 7.0	- 4.8	- 0.3	- 2.9
	F	+ 5.6	- 0.4	+17.9	- 8.6	- 0.2	-14.3
Laterite furnaces	M	+ 8.6	+ 9.1	- 0.1	-11.6	- 4.3	- 1.7
	F	- 0.5	- 1.5	- 3.1	+12.1	- 3.7	- 3.3
Glass manufacturing		+ 0.5	- 1.0	+ 2.7	+ 0.1	- 1.9	- 1.4
		+ 0.4	- 6.1	+ 3.5	- 0.1	+ 6.2	- 3.9
Ceramics		+ 8.9	+ 2.3	- 4.7	- 3.6	- 1.6	- 1.3
		- 3.2	+ 6.1	- 0.5	+ 3.6	- 3.8	- 2.2
Cement manufacturing		+ 9.5	+ 0.8	- 5.7	- 2.0	- 1.2	- 1.4
		+ 1.3	+13.3	-20.2	+13.1	+ 0.9	- 8.4
Plaster & lime kilns & mills		+ 8.9	+ 8.7	- 5.9	- 8.9	- 2.5	- 0.3
		- 5.5	+25.5	-42.6	+20.4	- 1.4	+ 3.6
Metall.manufacturing	M	+ 6.1	+10.6	+ 2.3	+ 0.1	- 0.1	-19.0
	F	- 0.4	- 3.6	+ 5.8	+ 6.3	+ 1.4	- 9.5
Iron & steel		+ 7.0	+11.9	+ 3.8	-	-	-22.7
		+ 0.1	- 6.6	+22.4	+ 4.2	+ 1.0	-21.1
Non-ferrous manufacturing		+ 1.3	+ 4.4	- 5.8	+ 0.9	- 0.6	- 0.2
		- 0.9	- 2.0	- 5.0	+ 8.0	+ 1.6	- 1.7
Metal working	M	+ 0.9	- 0.1	+ 1.7	- 1.2	- 0.7	- 0.6
	F	- 1.6	- 6.8	- 8.3	+17.7	- 0.1	- 0.9
Secondary smelting		+ 1.1	- 1.8	+ 7.7	- 4.1	- 2.5	- 0.4
		- 3.5	-15.2	- 1.5	+12.9	+ 2.1	+ 5.2
Misc.		+ 0.9	-	+ 1.1	- 0.9	- 0.5	- 0.6
		- 1.5	- 6.5	- 8.6	+17.9	- 0.1	- 1.2
Electrical machines & appliances	M	- 1.5	- 2.3	+ 5.0	- 0.2	- 0.6	- 0.4
	F	- 4.5	-11.9	-11.0	+25.5	+ 3.0	- 1.1
Transport equipment	M	- 0.3	- 6.2	+ 8.4	- 0.6	- 0.8	- 0.5
	F	- 1.6	- 7.7	- 5.3	+20.8	- 0.5	- 5.7
Shipbuilding		+ 2.7	+ 3.4	- 4.2	- 0.7	- 1.1	- 0.1
		- 3.5	- 8.2	+ 9.4	-11.7	- 1.3	+15.3
Railway equip. manuf.& repair		+ 9.2	- 6.4	- 0.9	- 0.3	- 0.5	- 1.1
		+ 2.6	- 7.8	+17.6	+ 6.4	-	-18.8
Automobile & aircraft manuf.		- 3.6	- 6.8	+12.1	- 0.4	- 0.6	- 0.7
		- 2.3	- 9.3	-14.2	+26.2	+ 0.4	- 0.8
Bicycle manuf.		+ 3.8	+ 4.2	+ 3.3	- 1.8	- 9.0	- 0.5
		+ 0.6	- 5.3	+18.4	+ 9.8	- 2.5	-21.0

		Spec. workers	Skilled workers	Spec. operatives un-skilled workers	Un-skilled operatives	Apprentices	Others
Miscellaneous manufacturing	M	- 2.3	+ 5.0	+ 4.9	+ 4.0	- 5.9	- 5.7
	F	-19.6	-19.1	+15.3	+25.2	-	- 1.8
Record manufacturing		+ 5.3	- 4.5	+11.3	- 3.0	+ 0.5	- 9.6
		-14.8	-27.9	+34.8	+30.7	+ 3.9	+ 0.6
Film prod., developing, printing		- 3.8	+ 7.3	+ 3.0	+ 5.9	- 7.6	- 4.8
		-13.9	- 5.9	+ 1.4	+21.8	- 1.2	- 2.2
Electricity generation & supply	M	+ 4.3	- 0.6	+ 0.4	- 2.3	- 1.2	- 0.6
	F	-	- 0.1	+ 2.1	+ 5.0	+ 0.3	- 7.3
GRAND TOTAL	M	+ 3.2	+ 0.9	+ 1.1	- 2.4	- 0.7	- 2.1
	F	- 0.5	- 5.6	- 0.1	+ 6.0	+ 0.4	- 0.2

Graph 2

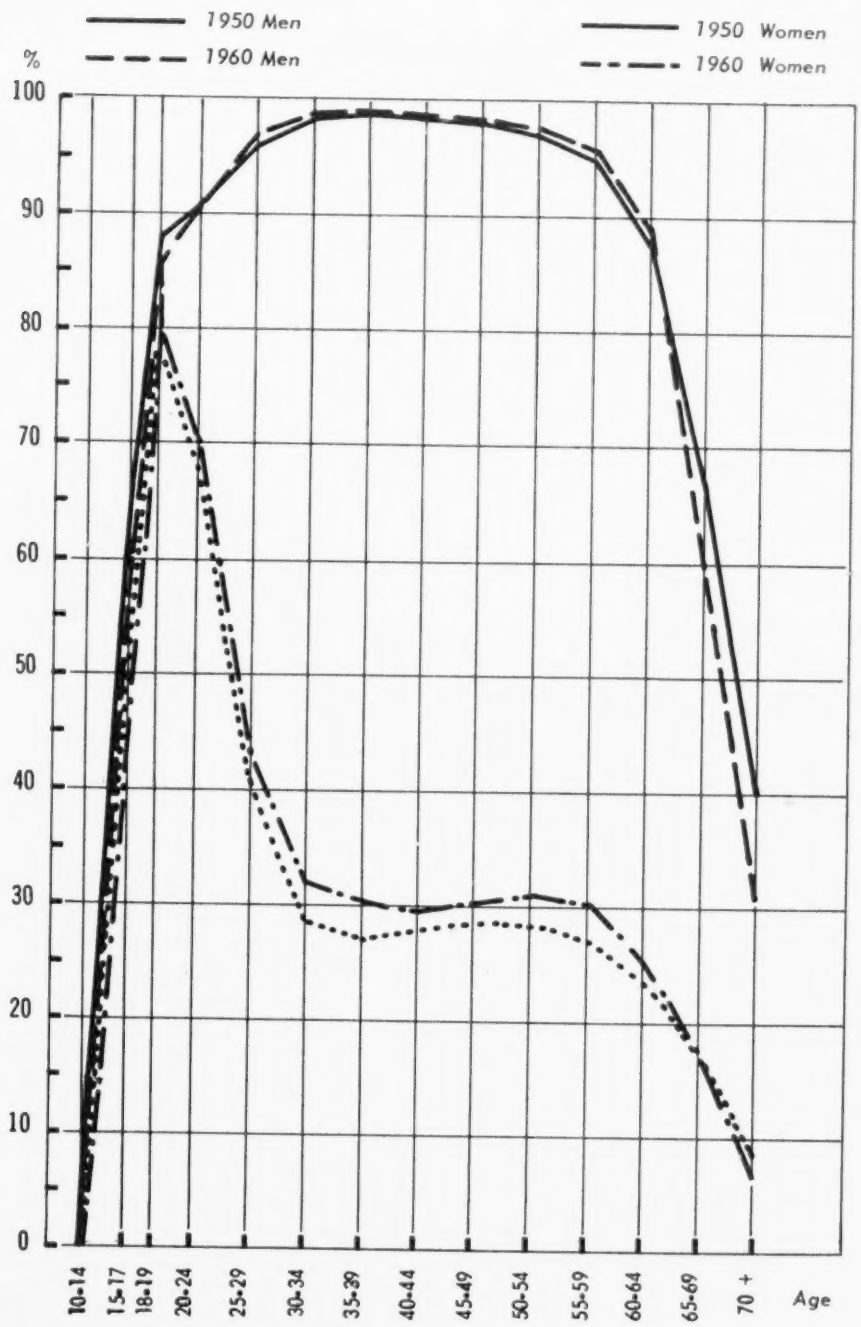
ITALY : ACTIVITY RATES BY AGE (1961)



Source : Demographic Yearbook, UNO 1956 and 1964.

Graph 3

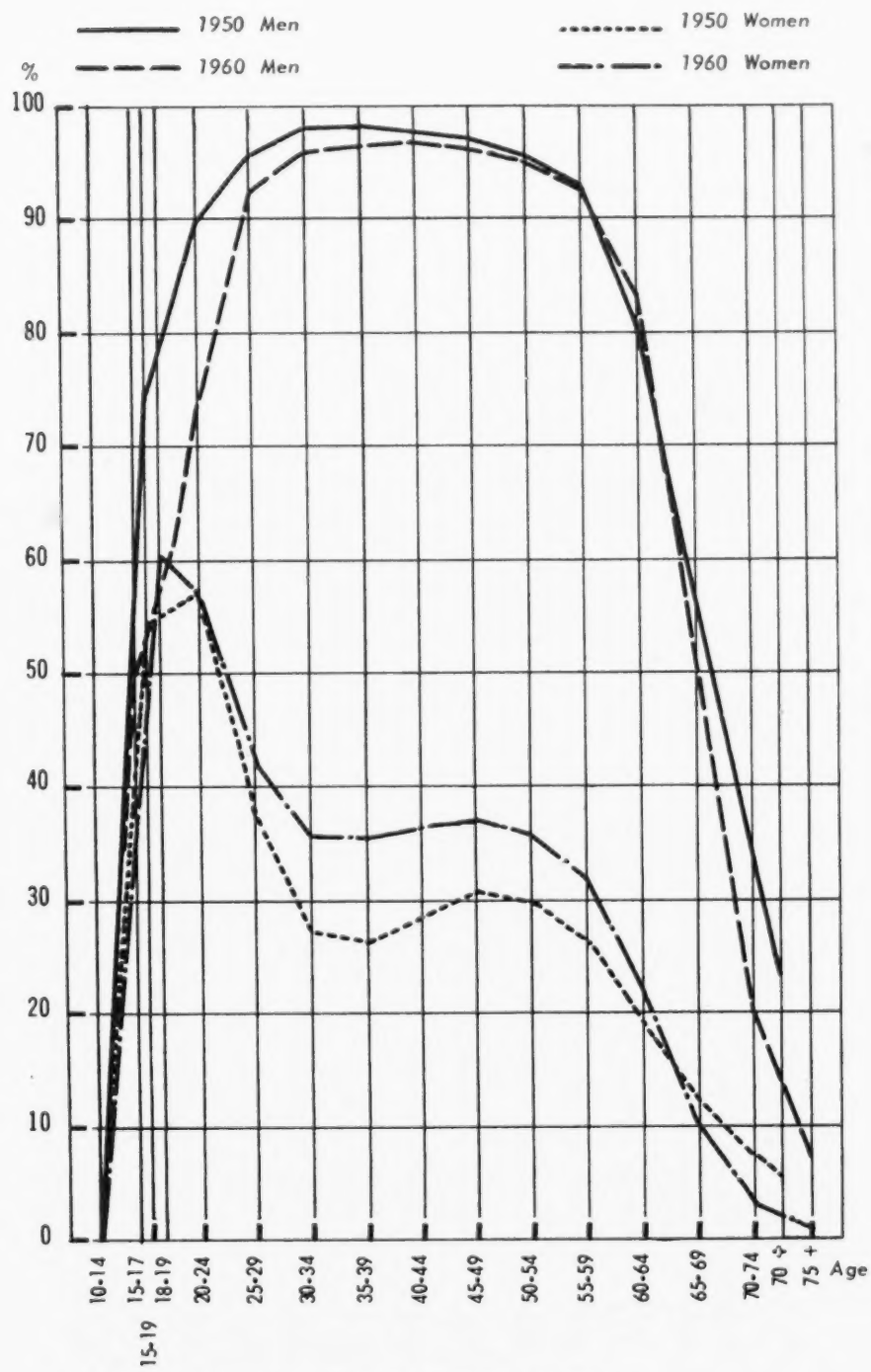
SWITZERLAND ACTIVITY RATES BY AGE (1950 - 1960)



Source : Demographic Yearbook UNO 1956 and 1964.

Graph 4

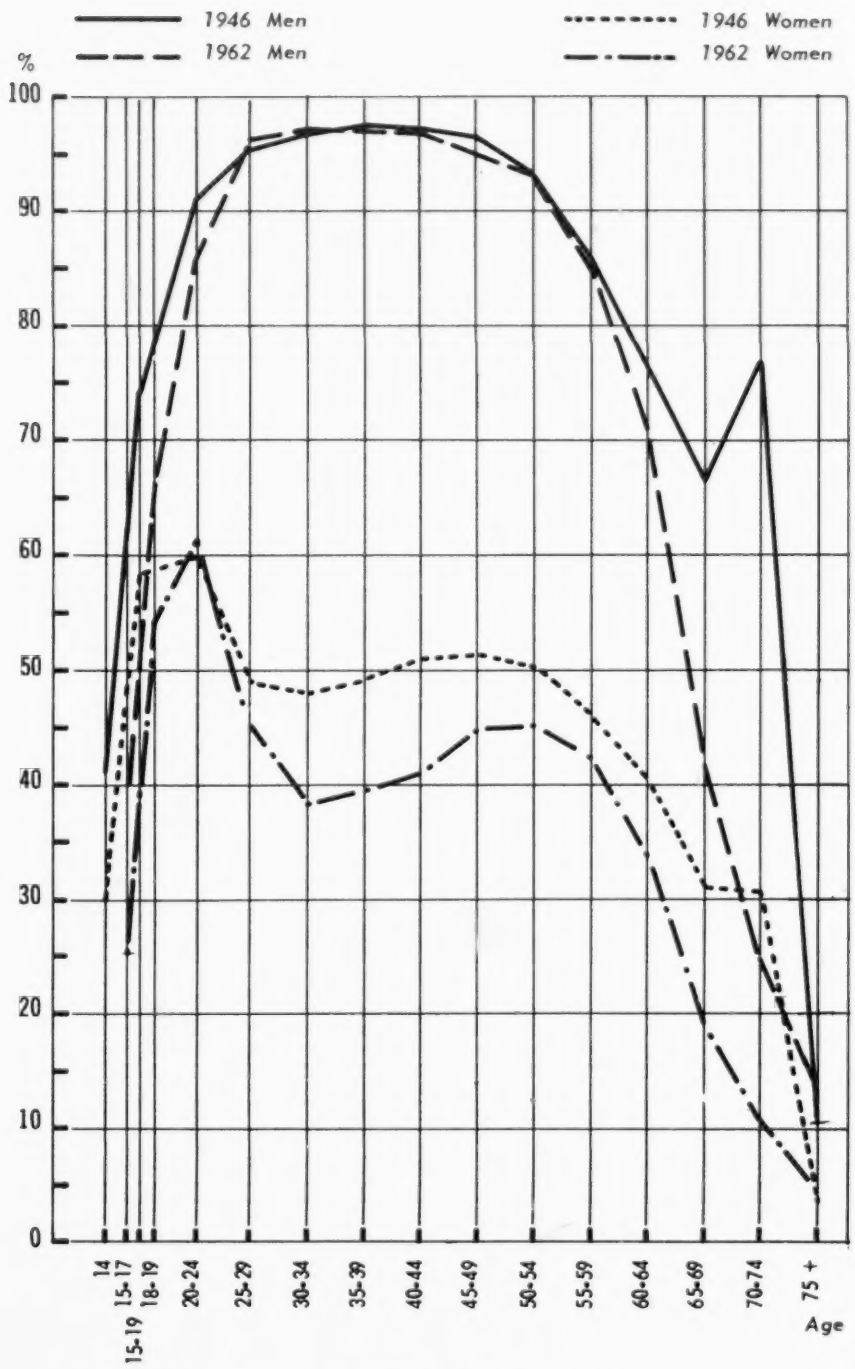
SWEDEN : ACTIVITY RATES BY AGE (1950 - 1960)



Source : Demographic Yearbook UNO 1956 and 1964.

Graph 5

FRANCE : ACTIVITY RATES BY AGE (1946 - 1962)



Source : Demographic Yearbook UNO 1956 and 1964.

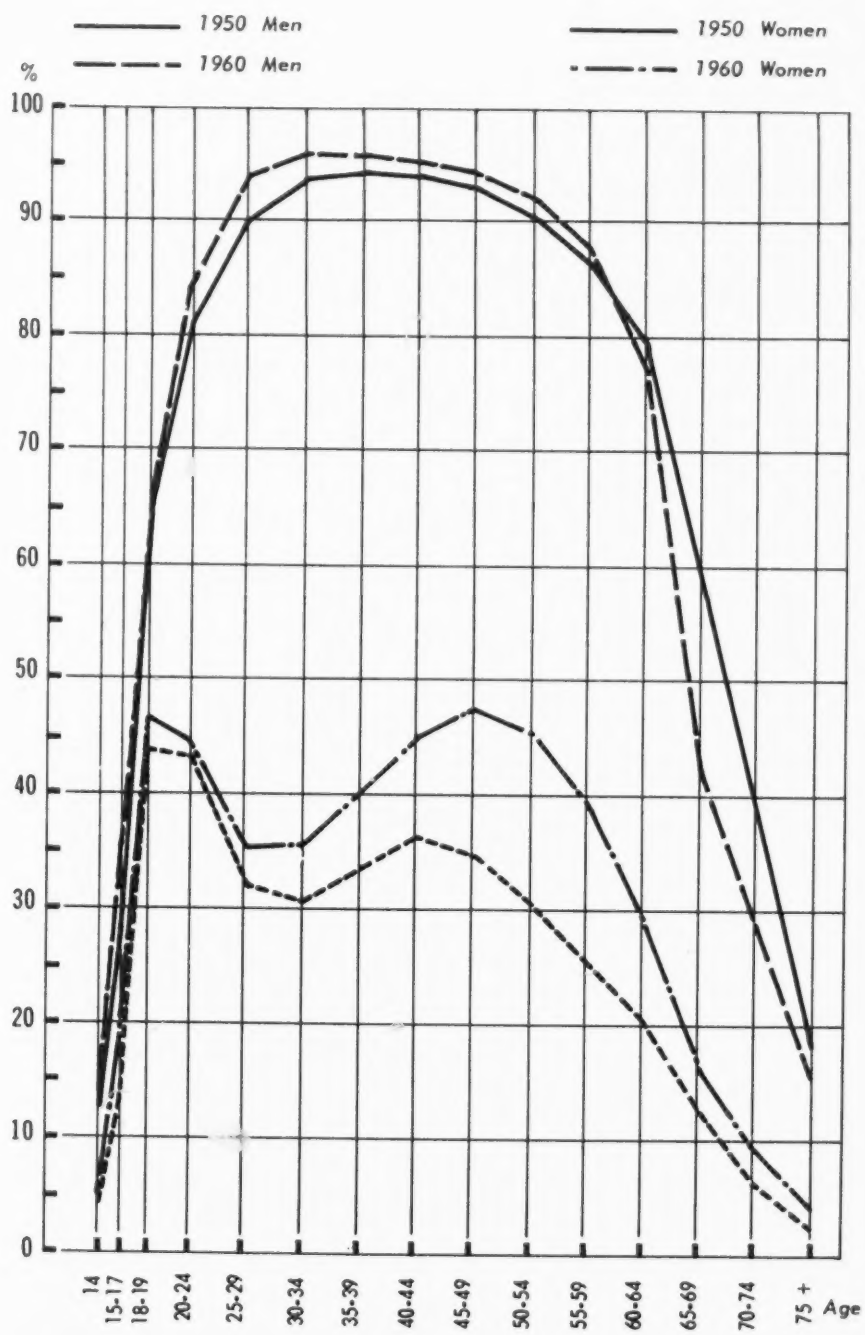
Graph 6

GERMANY : ACTIVITY RATES BY AGE (1950 - 1961)

Source : Demographic Yearbook UNO 1956 and 1964.

Graph 7

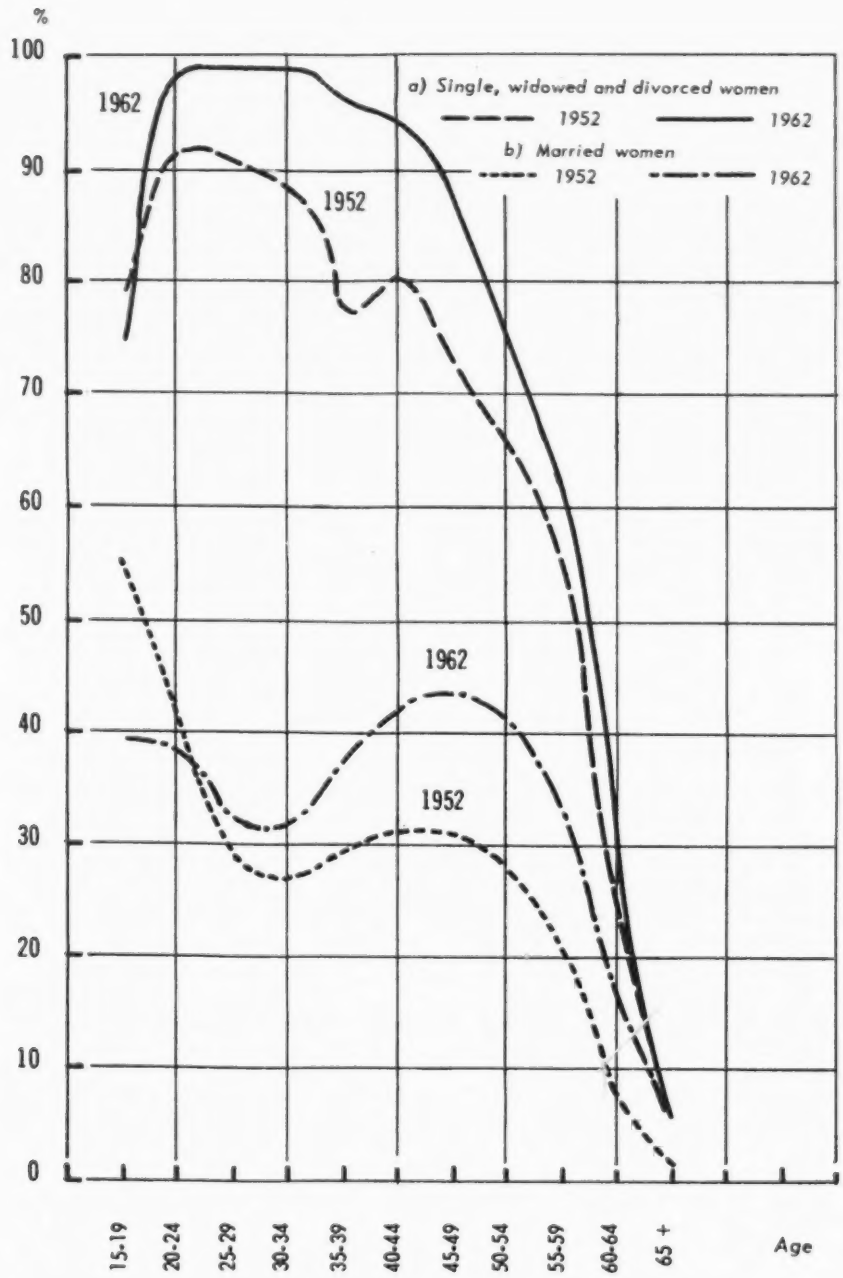
UNITED STATES : ACTIVITY RATES BY AGE (1950 - 1960)



Source : Demographic Yearbook, UNO 1956 and 1964.

Graph 8

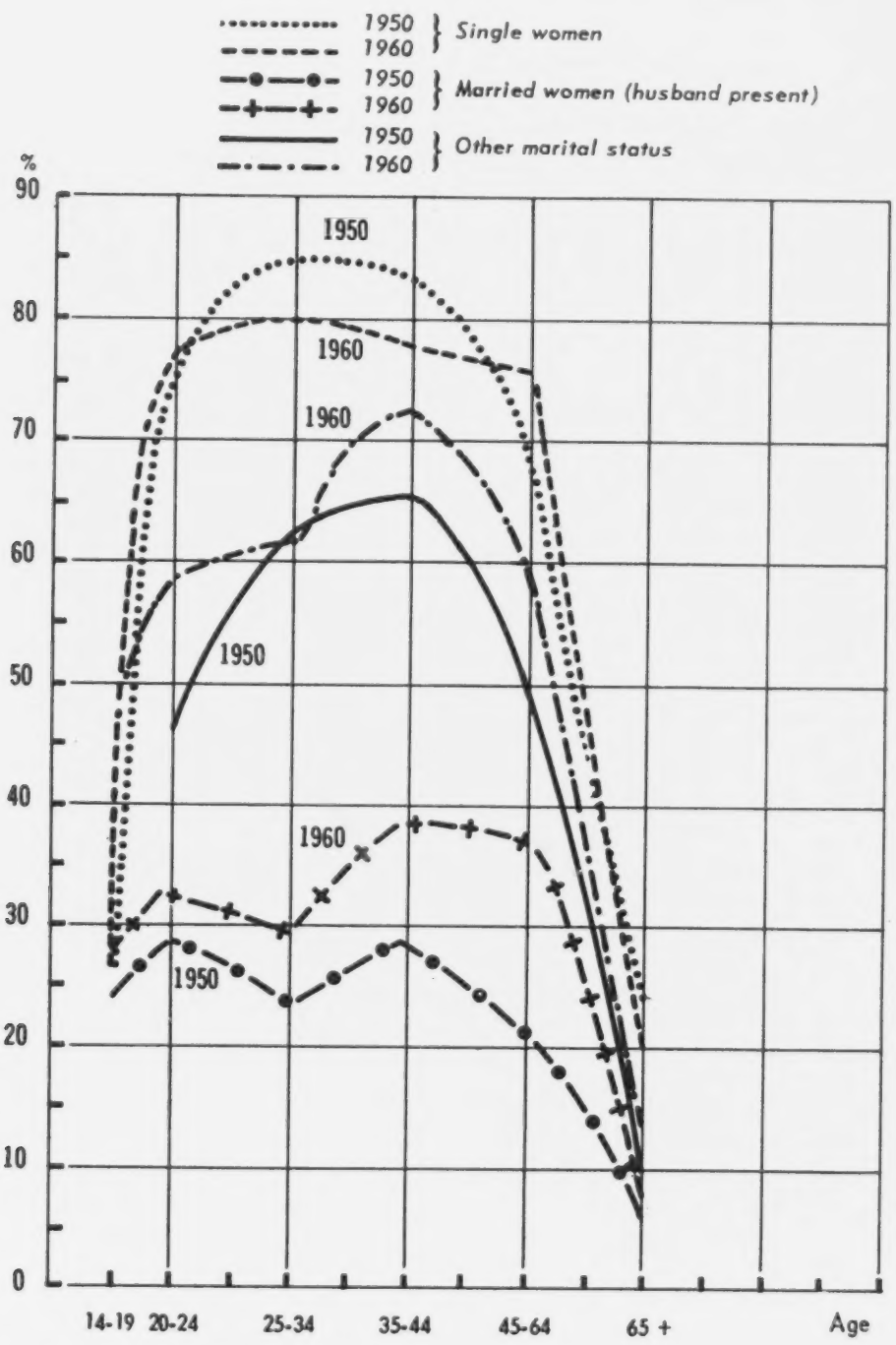
UNITED KINGDOM : ACTIVITY RATES BY AGE (1952 - 1962)



Source : Ministry of Labour Gazette, Oct. 1963.

Graph 9

UNITED STATES : ACTIVITY RATES BY AGE (1950 - 1960)



Source : Viola Klein, Women Workers, OECD 1965.

Table 2

ITALY: "Dependent" employed (managers, clerical and assimilated manual workers) by branch of economic activity and sex from 1959 to 1966

Year	Agri-culture	Industry	Commerce	Transport Communi-cations	Other	Total
Thousand persons						
Men						
1959	1238	4370	554	588	1537	8287
1960	1300	4589	558	607	1580	8634
1961	1224	4774	579	644	1602	8823
1962	1216	5023	587	665	1569	9060
1963	1166	5222	611	691	1597	9287
1964	1092	5263	614	770	1626	9365
1965	1105	5101	619	755	1575	9155
1966	1048	5018	604	765	1650	9085
Women						
1959	424	1323	247	53	1073	3120
1960	433	1360	261	51	1081	3186
1961	478	1434	271	55	1087	3325
1962	536	1426	276	59	1093	3390
1963	535	1445	293	61	1081	3415
1964	443	1349	288	73	1102	3255
1965	420	1268	293	71	1092	3144
1966	387	1265	276	67	1086	3081
Index numbers: 1959 = 100						
Men						
1959	100.0	100.0	100.0	100.0	100.0	100.0
1960	105.0	105.0	100.7	103.2	102.8	104.2
1961	98.9	109.2	104.5	109.5	104.2	106.5
1962	98.2	114.9	106.0	113.1	102.1	109.3
1963	94.2	119.5	110.3	117.5	103.9	112.1
1964	88.2	120.4	110.8	131.0	105.8	113.0
1965	89.3	116.7	111.7	128.4	102.5	110.5
1966	84.7	114.8	109.0	130.1	107.4	109.6
Women						
1959	100.0	100.0	100.0	100.0	100.0	100.0
1960	102.1	102.8	105.7	96.2	100.7	102.1
1961	112.7	108.4	109.7	103.8	101.3	106.6
1962	126.4	107.8	111.7	111.3	101.9	108.7
1963	126.2	109.2	118.6	115.1	100.7	109.5
1964	104.5	102.0	116.6	137.7	102.7	104.3
1965	99.1	95.8	118.6	134.0	101.8	100.8
1966	91.3	95.6	111.7	126.4	101.2	98.8
"Femininity" ratio: women per 100 men						
1959	34.2	30.3	44.6	9.0	69.8	37.6
1960	33.3	29.6	46.8	8.4	68.4	36.9
1961	39.1	30.0	46.8	8.5	67.9	37.7
1962	44.1	28.4	47.0	8.9	69.7	37.4
1963	45.9	27.7	48.0	8.8	67.7	36.8
1964	40.6	25.6	46.9	9.5	67.8	34.8
1965	38.0	24.9	47.3	9.4	69.3	34.3
1966	36.9	25.2	45.7	8.8	65.8	33.9

(Archibugi Franco: "Progresso económico e occupazione femminile", Centro Studi e Piani Economici, Rome).

C. WORKING CONDITIONS FOR WOMEN

2. SOCIAL AND FISCAL PROVISIONS AFFECTING THE EMPLOYMENT OF WOMEN

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Introduction

In the social context of the European countries, women still have a certain freedom of choice between staying at home and going out to work; the argument is still commonly heard that a women's proper place is in her own home while, on the other side, there are many people who urge that it should at least be recognised that the ever-increasing integration of women in the working world is a valid contribution towards meeting a need and helping in the development of individual personalities. The Governments of the Member States of the European Community have adopted a more or less neutral attitude on this issue by taking action to facilitate, so far as possible, this freedom of choice.

This is not the occasion to adopt an attitude towards this issue; it is no part of our task here to determine whether women should be encouraged or discouraged from going out to work; our present purpose is to see which of the enactments currently in force are calculated to have a direct or indirect influence on the employment of women.

It should be made clear at the outset that the following pages do not aim at providing statistical proof of the influence of any specific enactment; they merely review, by way of illustration rather than exhaustively, a whole series of enactments which seem calculated to affect the volume of the employment of women. Some aspects will be merely touched upon, while others will be disregarded altogether in this paper because they will be more fully dealt with in other reports.

General considerations

The inquiry which follows will lead us to the successive consideration of enactments, some of which are based on the criterion of discrimination, others on a criterion of equality. The former are derived from the requirement that working conditions must be such as to protect the woman's health and enable her to adapt herself to her essential family duties; the latter from the principle which no one now challenges that a working woman has the same rights as a working man. The search for a satisfactory equilibrium between the two criteria is the main preoccupation of all those who are concerned with the various aspects of the employment of women, whether legislators or trade unionists, sociologists or economists. Everyone in fact recognises that the two criteria condition each other; discrimination sets limits to equality and equality sets limits to discrimination. In this connection, a distinguished expert on the employment of women, Mrs. Riva Sanseverino, has said that discrimination is valid at the cost of equality if, and only if, it is designed to safeguard interests of a marked social character, such as the physical and moral welfare of the woman, and above all maternity; but on the other hand where discrimination is not objectively justified by the protection of social interests, then it is and should be subordinate to the criterion of equality which, in its turn, should prevail at the cost of discrimination.

For the special purposes of the present report we shall try to see here what enactments, whether based on discrimination or equality, are likely to affect the real integration of women in the working world in subordinate jobs.

The desirability of legislation to protect women workers is sometimes challenged on the ground that what are called "safeguarding" provisions amount in substance to a handicap against the working woman, for whom they are additional factors in limiting her employment possibilities and reducing her wage rates. Although this assertion cannot be accepted, it cannot be denied that it contains a modicum of truth; cyclical difficulties, business reconstruction by mergers or concentrations, or technical progress may sometimes lead to women workers being turned off first, because of the heavier social burden on the employers as a result of the discriminatory provisions; the same thing may, however, also happen as a result of equality, and particularly of equal pay, which may sometimes impel employers, faced with equal pay obligations, to prefer to take on male workers.

We shall not group our considerations according to the criteria of discrimination or equality but, from the point of view of the subjective and objective possibilities of the integration of women in the working world, we shall consider successively, according to subject matter, the various statutory, regulatory or administrative provisions likely to affect the employment in subordinate jobs of single or married women.

1. The right to work, and to follow specific occupations

With regard to the right to work, the principle of equality is in general force in the Member States of the Community under the general principles of their Constitutions, sometimes given concrete form in statutory provisions or regulations. Like all rules, this one also has its exceptions, most of which affect married women. These exceptions are mostly based on the principles of private law which, in some countries, treat a married woman as under partial civil incapacity, which may affect her right to work.

In Belgium a married woman cannot hold a job without her husband's permission. In Luxembourg the partial incapacity recognised under the Civil Code creates certain problems in connection with the employment of women in jobs in which they may have to perform legal acts which require the husband's consent. Experience shows that this state of affairs creates no difficulties in practice, but it could be said that, in theory, there is an effective obstacle to the employment of women which could only be removed by means of an appropriate amendment to the legal rules on the civil incapacity of married women.

Still on the subject of women's right to work, it is worth noting certain conditions in Belgium which amount in practice to effective discrimination against women and which mainly relate to the public service; quite recently, for example, the announcement of the recruitment of administrative staff for the Ministry of Finance expressly excluded women from these jobs. This was taken up in Parliament and written questions were asked both nationally and at international level.

With regard to specific occupations and jobs, a system of effective discrimination exists in practically all the Community countries, designed to protect the working woman, not so much financially, but personally and with regard to her personality. The various protective enactments in fact relate to the obligations which the employer assumes towards his own employees pursuant to an

immediate link with the State, personifying the general interest. Such discriminatory systems often have an essentially public character and infringement of their provisions is generally punishable by penal sanctions. Looked at as a whole, they represent without any doubt objective and subjective obstacles to the inclusion of women in the work force, and specifically in subordinate jobs; in spite of this, and precisely because they are designed in the public interest, these systems are certainly not destined to disappear, but at the most to be readjusted in the light of technical progress in the working world.

While, in regard to the minimum working age, there is no discrimination between the sexes in the Community countries, some discrimination is nevertheless found in regard to physical fitness for certain occupations or jobs. In substance these are the jobs which are now generally grouped under the name of "dangerous, heavy and unhealthy jobs" which are almost everywhere forbidden to women. A number of problems of legislative policy have recently arisen in connection with these discriminatory enactments, precisely on the point of the objective limits which they impose on the entry of women into the labour market. Sometimes the rules are ancient ones which have now had their day - in France they date back to 1914 and have since been repeatedly amended, and in Italy to an Act of 1934. They were made at a time when production technique was still relatively backward and great demands were still made on human physical strength. The progressive introduction of the machine as a substitute for physical fatigue and the enormous progress made in systems of protection against dangerous or noxious trades mean that it may be legitimately asked whether it is not now beginning to be desirable to introduce reforms which might well be reflected in a reasonable reduction of the limitations which, admittedly in the protection of the general interests, appreciably restrict the possibilities of the employment of women. In other words, it would perhaps be opportune to create and make effective, through continuous strict supervision, an organic health and safety system which would guarantee in general that working conditions were suitable and safe for all workers regardless of sex, thus reducing to a minimum the discriminatory provisions against the employment of women.

2. Working hours, breaks and night repose

A survey of the legal enactments which may influence the employment of women must also take account of working hours, in the

widest and most general sense of the term. It is common knowledge that differences in the treatment of men and women are bound to raise production problems within the firm.

Legal working hours in the Member States are the same for men and women.

	Belgium	Germany	France	Italy	Luxembourg	Netherlands
Hours per day	8	8		8	8	8½
Per week	45		40	48	Opera- 48 tives Office 44 staff	48

Differences are found in the degree of elasticity or derogation from the normal rules in the matter of overtime; in Germany, for example, men can be employed on preparatory or complementary work up to 10 hours a day, while women may only do one hour's overtime a day; with regard to the time of attendance, the limit of 10 hours applies only to women. In the Netherlands men may work 12 hours overtime a week on preparatory or complementary work, and women only 6 hours; there is also a maximum limit of 11 hours a day for women.

Where daily working hours exceed a certain limit, women must be given a break of a certain length. In Italy women may not work for more than 6 hours without a break, or in Germany for more than 4½ consecutive hours. In Germany also, women who work from 4½ to 6 hours must have a break of twenty minutes, from 6 to 8 hours, half an hour, for 9 hours, three quarters of an hour and in excess of 9 hours, one hour, with the possibility of exceptions in the case of early closing on the eve of a public holiday.

In most Member States there are also express legal provisions for a daily rest period for women, which must be at least 11 hours a day, of which 7 hours must, in France, Belgium, Italy and the Netherlands, fall between 10 p.m. and 6 a.m.

The rules for nightwork also have certain special provisions for women. "Night" is defined as the period between 8 p.m. and 6 a.m. in Germany and Belgium, between 10 p.m. and 5 a.m. in France, Italy and Luxembourg and between 6 p.m. and 7 a.m. in the Netherlands. Most nightwork rules relate to women.

In Belgium, night work is, in principle, forbidden for all workers; the statutory exceptions relate mainly to men (loading and unloading, perishable goods, fuel and power, newspapers, ship repair

COMPARATIVE TABLE OF LEGISLATION IN MEMBER STATES ON DAILY REST PERIOD AND BREAKS (1)

Country	DAILY REST PERIOD		BREAKS	
	Rule	Exceptions	Rule	Exceptions
Belgium	Women must be allowed a daily rest period of 11 consecutive hours, including the period from 10 p.m. to 5 a.m. (11 p.m. to 6 a.m. in exceptional circumstances, by Royal Decree)	In the case of women employed in seasonal industries or industries handling perishable material the Crown may reduce the rest period to 10 hours for certain persons: the authorisation is limited to 60 days in any one year. Other exceptions are allowed for the hotel and restaurant industry, provided that the minimum of 11 hours is observed	For women: 1 hour for 8 hours actual work: 1¼ hours for 8-9 hours: 1½ hours for more than 9 hours	
Germany (F.R.)	For all workers, the working day must be followed by an uninterrupted rest period of at least 11 hours, or, in public premises generally, hotel and transport industry 10 hours. Operatives must not work after 5 p.m. on Saturdays, or the eve of public holidays; this limitation does not apply to certain branches of industry, such as transport and hotels	On proof of urgent need, the Inspector of Labour may allow exceptions	Men: a break of at least ½ hour or two breaks of ¼ hour must be allowed for work in excess of 6 hours. Women: 4½-6 hours, 20 minutes: 6-8 hours, 45 minutes: more than 9 hours, 60 minutes. Women must in no case work more than 4½ consecutive hours without a break	The Inspector of Labour may sanction other arrangements. The regulations do not apply to temporary work which must be started without delay, or in case of urgency. If the working hours are between 8 and 8½ the break may be reduced to ½ hour to allow early closing on Saturday or the eve of a public holiday

(1) Extract from comparative tables on working hours in the Member states of the Community (doc. V/52/67 - V/1540/68)

Country	DAILY REST PERIOD		BREAKS	
	Rule	Exceptions	Rule	Exceptions
France	Women must have a minimum rest of 11 hours between two consecutive working days		Certain Statutory Orders made under the Act of 25th June,1936, provide for breaks	
Italy	Women must have a rest of at least 11 consecutive hours including the period between 10 p.m. and 5 a.m.		Women: 6-8 hours, 1 hour: Over 8 hours,1½ hours	Collective agreements, or, in the absence of collective agreements, the Inspector of Labour may fix the break at 1 hour for work over 8 hours
Luxembourg	No legislation		No legislation	
Netherlands	Men and women: work is not normally allowed between 6 p.m. and 7 a.m. Women must have at least 12 consecutive hours rest including the period from 10 p.m. to 6.a.m.	The Decree on working hours provides for certain exceptions. Others may be allowed by special authorisation	All workers must have a break of ½ hour after not more than 4½ hours work, where the hours of work exceed 5½. Breaks of less than 15 minutes must be paid	The Inspector of Labour may sanction different arrangements

(1) Extract from the comparative tables of working hours in Member States of the Community (Doc.V/52/67 - V/1540/68).

and maintenance, seasonal work, continuous working). In the case of women, however, the night's rest may be reduced to 10 hours on sixty days in any one year in seasonal trades and those handling perishable goods.

In the Netherlands exceptions may be made for workers over eighteen; women must, however, have a minimum rest period between 10 p.m. and 6 a.m.

In Germany, nightwork for women (other than shift work) is allowed only in case of urgency, in certain specific sectors and in premises subject to exceptional heat during the summer. The exceptions may continue for two weeks but must not exceed forty days in the year; in every case there must be an unbroken rest period of 10 hours a day. The Minister of Labour may authorise nightwork for women for technical and production reasons or in the general interests of the economy.

In France, nightwork for women is permissible, on simple notification to the Inspector of Labour, in the case of emergency or force majeure, on work of national defence and in the food industries handling perishable materials; the prior authorisation of the Inspector of Labour is, however, needed in excess of fifteen nights a year.

In Italy the prohibition of nightwork for women does not apply in case of force majeure. The Minister may authorise nightwork in the exceptional circumstances specified by law.

In Luxembourg women may not work between 10 p.m. and 5 a.m.

The following Table sets out in comparative form the nightwork regulations in force in the various countries.

Among legal provisions on working hours in the broad sense, it is also worth noting the grant to women workers in Germany of days off for domestic work. Although the importance of this concession has gradually diminished with the course of time, owing to the contractual reduction of working hours, the system is still in force in four Länder, Bremen, Hamburg, Lower Saxony and Rhineland-North Westphalia. The arrangement generally is that women workers with family responsibilities are entitled to one day off with pay every month where weekly working hours exceed a certain figure.

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COMPARATIVE TABLE OF NIGHT-WORK REGULATIONS IN MEMBER STATES (1)

Country	Definition of night-work	Prohibition of night-work
Belgium	8 p.m.-6 a.m.	Night-work is, in principle forbidden for all workers, men and women. There are some automatic statutory exceptions for men. Special exceptions may also be granted by Royal Decree for seasonal establishments, preparatory and complementary work, etc.
Germany	8 p.m.-6 a.m.	Night-work is, in principle, forbidden for women. In specific sectors, such as transport and hotels, women may be employed up to 11 p.m. In case of necessity exceptions may be allowed on the prior authorisation of the Inspector of Labour in specific cases (e.g. emergency, technical production reasons or the general interests of the economy).
France	10 p.m.-5 a.m.	Night-work in industry is normally forbidden for women and young people. Exceptions are allowed in the event of accidental stoppage of work, force majeure, and in certain specified food industries handling perishable materials.
Italy	10 p.m.-5 a.m.	Night-work is normally forbidden for women of all ages and young people. This prohibition does not apply to continuous working in the industries specifically listed in the Acts, or in the case of force majeure preventing the normal running of the works.
Luxembourg	10 p.m.-5 a.m. or 6 a.m. according to category	Night-work is in general forbidden for women
Netherlands	Work is not normally allowed between 6 p.m. and 7 a.m.	Night-work is normally forbidden for women of all ages and young people. The Government may make general provisions allowing men to do certain specific jobs at night where this is essential for technical reasons, but only on specified conditions.

(1) Extract from the comparative tables of working hours in the Member States of the Community (doc. V/52/67 - V/1540/68).

It is unquestionable that the various provisions discussed in this paragraph are calculated to exert a certain influence on the employment of women, not so much from the point of view of the tendency of the women themselves as of the willingness of the employers to engage labour subject to differing timetables according to sex. On the subject of the prohibition of night-work, in particular, there are some people - especially in certain women's organisations - who wonder how far this is still justified from the point of view of social medicine, and what physiological reasons, in the interests of public health, militate against the employment of women at night. Once again, we refrain from adopting an attitude on this point, but on the question which more directly concerns us here, we would point out objectively that the prohibition of night work may prejudice the employment of women in sectors where continuous working is the rule and where work is organised in three shifts, rotating in turn throughout the 24 hours of the day.

In many countries, and especially in Italy, a decline has been noted in recent years in the employment of women in a sector which seemed traditionally reserved for them, namely textiles; among the various causes for this, one which has been singled out is precisely the fact that women cannot be employed on shift work, periodically rotating through what are generally regarded as the night hours.

3. Sunday work

The rules for Sunday work may also have some importance for our present purposes. The exceptions allowed in almost all Member States to the prohibition of Sunday work often do not apply to women.

In Belgium girls under 21 are not excepted from the prohibition of Sunday work. Sunday work by girls between 16 and 21 may, however, be authorised by Royal Decree for work which will not allow interruption or delay.

In Germany the exceptions to the prohibition of Sunday work normally apply to women as well as men, but women with dependent children under 14 may be exempted from Sunday work.

In France, also, the exceptions may apply to women, other than those relating to handling work, urgent work and surveillance.

In Italy, Sunday work is in general permissible for women in the same way as men, although the desire to make the weekly rest-day fall, so far as possible, on Sunday, seems to be stronger for women than for men.

In Luxembourg and the Netherlands, on the contrary, Sunday work is strictly forbidden for women, although some exceptions are allowed, in Luxembourg for women of 21 and above, and in Belgium mainly in the commercial and services sector.

It would be possible to debate at length whether and how far rules for Sunday work affect the employment of women. There are those who maintain that differentiation between men and women is justified on moral and religious grounds only where the woman has young dependent children, and this line has been followed in Germany. In any other case, preferential treatment for women amounts to prejudicing their chances of employment.

4. Maternity protection

So far as the maternity protection rules are designed for the immediate safeguard of an obvious general interest, there may, at first sight, be some doubt whether it is appropriate to look at them in the light of their possible repercussions on the employment of women. This doubt should be immediately dispelled. There can be no question of the desirability of maternity protection standards, or of arguing about the optimum level of protection in order to avoid prejudicing employment. The question rather is to ascertain how far the highest, most effective and most extensive standards of protection can be consistent with the requirements of a modern social policy designed to safeguard the level of employment.

Maternity protection standards in the Community countries have been the subject of a general and gradual reform, which can broadly be described as relatively recent. The most recent provisions are those in Belgium where a Royal Decree, made under special powers, came into force in Autumn, 1967.

The underlying principles of all maternity protection are the continuance of employment for all purposes during absence through maternity, protection against dismissal, maternity leave, daily breaks, and economic security and health protection for the working woman during the period of maternity. The following Table sets out in comparative form the main maternity protection standards in force under the Labour laws of Member States.

A comparative study of health protection and social security provisions is hardly possible within the limits of the present paper and of no great relevance for our present purposes. There is, however, one problem which is of special importance from the point of view of the constant concern to safeguard the level of employment, namely,

finance. It is common knowledge that, in most countries, maternity protection is a heavy burden on employers; it is only in Italy that the recent measures to share the burden have, at least partially, relieved employers of obligations which deterred them from employing women. But what used to be and still is partially true for Italy, is still more true for the other Community countries. On this point, if working mothers are to be accorded the maximum protection without prejudicing their chances of employment, the basic principle must be generally accepted and implemented that the protection which, by definition, is the duty of society as a whole, should be financed by the community; employers should therefore no longer contribute as the users of female labour, but as members of the community to which everyone belongs.

5. The marriage clause

A particular example of the way in which protective measures, when they impose burdens on the employers beyond certain limits, may react to the disadvantage of those whom they are designed to protect, is afforded by the "marriage clause" by which single women agree that the contract of service will be automatically terminated by their marriage, or undertake to resign in such event. The marriage clause originated not so much in over-protective legislation for working mothers as in the fact that, in some countries, the burden of maternity protection falls wholly or partially on employers. In these circumstances it is understandable, even if it is not socially justifiable, that some employers are unwilling to incur the risk of employing too expensive labour.

In the case of Italy, the question, as mentioned above, has been partly solved by an Act of 1963, applicable to women in private and public employment, spreading the cost of economic assistance which, formerly borne entirely by employers, particularly encouraged the application of the marriage clause, especially for clerical staff. On this occasion the legislature, with the general intention of ensuring that the married state was no obstacle to the entry or continuance of women as subordinate workers in the production process, declared null and void all marriage clauses included in individual contracts, collective agreements or regulations, and invalidated dismissal on the grounds of marriage. An Act of this kind, however, could not fail to evoke some reservations, accompanied by a renewed fear of the contraction of the employment of women, closely connected, as is well known, with the fluctuations of the labour market.

MATERNITY PROTECTION RULES IN FORCE IN MEMBER STATES OF THE COMMUNITY(1)

Country	Scope	Compulsory leave		Optional leave		Nursing break	1. Nursery 2. Creche	Protection against dismissal	Prohibited work
		Before birth	After birth	Before birth	After birth				
Belgium	Excludes home-workers and, in part, domestic service and agriculture		8 weeks	Factory and office workers 6 weeks: State employees 4 weeks: Additional leave for complications		State employees, maximum: 3 months		No dismissal during pregnancy up to 1 month after post-natal leave	As for women in general no overtime during pregnancy
Germany	General	Homeworkers: 4 weeks. Others: 6 weeks. May be expressly waived by the woman	8 weeks For a premature birth: 12 weeks	Power to extend leave in case of incapacity or danger		One daily break of 90 minutes	1. Optional: where there is a nursery 2 breaks a day of 45 minutes each. 2. Decision of Inspector of Labour in each case	No dismissal during pregnancy up to 4 months after birth	Dangerous, heavy, and unhealthy work, night work, Sundays and holidays
France	Excludes, homeworkers, domestic service	8 weeks before and after	6 weeks compulsory after	6 weeks including compulsory	8 weeks including compulsory. 3 weeks extra for complications	2 breaks a day of ½ hour each	1 and 2 optional by decision of Inspector of Labour: if so, nursing breaks reduced to 20 minutes	In event of dismissal severe penalties on employer and compensation to woman	As for women in general no overtime during pregnancy
Italy	General	Industry, 3 months, Agriculture 8 weeks. Other activities, 6 weeks. Advanced 6 weeks when working conditions are unhealthy	8 weeks	Excused work in case of complications on medical certificate and verification by Inspector of Labour	6 months consecutive, before the child's first birthday	2 breaks of 1 hour each	1. Factories with not less than 30 married women under 50. 2. Inter-factory creche; nursing breaks reduced to ½ hour each	No dismissal during compulsory or optional absence from work or during pregnancy up to the child's first birthday	Dangerous, heavy and unhealthy work. As for women in general
Luxembourg	Excludes: (a) agriculture (b) homework (c) domestic service		6 weeks	6 weeks Extended for complications		2 half-hour breaks		No dismissal during 6 weeks before or 6 weeks after birth. 3 months in case of complications	As for women in general
Netherlands	Excludes (a) homework (b) domestic service		8 weeks. Any pre-natal leave may reduce post-natal leave by 2 weeks	6 weeks Extended for complications		Provided for, but length not fixed	Dependent on circumstances		As for women in general

(1) Table, brought up to date, taken from "La protezione delle madri lavoratrici nei sei paesi della Comunità", Series "Politica sociale", No. 13 - 1966.

In France, the marriage clause, binding a woman to give up work at the time of her marriage, conflicts with the principle of equal rights enshrined in the Constitution. The French courts consider such a clause as contrary to public policy and contra bonos mores and treat it as null and void. On the other hand, still in France, a judicial decision is often cited in this connection, finding that a marriage clause in the contract of an air hostess was objectively justified, since the duties of such a post are hardly compatible with normal family life and, in the specific case, the clause was warranted by the legitimate interests of the airline.

In Germany, the Labour Tribunals have refused to recognise the marriage clause.

In Belgium and the Netherlands, in the absence of any legal ruling on the subject, the Courts uphold the marriage clause and dismissal on the grounds of marriage, provided that the clause is not contrary to public policy or contra bonos mores, and that the dismissal is warranted in the legitimate interests of the firm. This state of affairs, generally recognised in these two countries, creates difficulties for working women or those who wish to work. The National Council of Labour in Belgium has expressed itself in favour of prohibiting the inclusion of the marriage clause in labour contracts. It should be noted that there are certain collective agreements in the Netherlands which expressly recognise the right of dismissal in the event of marriage.

Along the same line of thought, it may be noted that in practice, in nearly all countries, some employers avoid, as far as possible taking on married women and, even more, women with young children.

6. Equal pay

The statutory or contractual rules existing in all the Community countries to implement the principle of equal pay for men and women should not be objectively regarded as likely to influence the employment of women, even though some people maintain that an employer faced with the obligation of equal pay, generally prefers to take on men rather than women, especially for operative work. There is, however, one aspect which may be regarded as a consequence of the practical implementation of the principle of equality, upon which it is perhaps worth dwelling. In all the Community countries, in recent years, women's wages have progressively been catching up with those of men. At the same time we have witnessed the gradual resort to legal and contractual devices combined with the downgrading

of women's work, which, in the last analysis, affects pay. In Germany, for example, since the decisions of the Labour Tribunal holding that equal wages are the corollary of the general principle of equal rights enshrined in Article 3 of the Constitution, all collective agreements have done away with direct discrimination between men and women workers, but at the same time have singled out certain categories of light jobs which, in substance, are less well paid than general manual labour and in which the majority of women are found.

Another example which might be cited is Belgium, where the "elimination of sex" from wage scales has been accompanied by the grading of jobs usually held by women at the bottom of the scales.

The conditions existing in Germany and Belgium are found in practically all the Community countries and go hand in hand with the implementation of the principle of equal pay.

In this connection, therefore, there is a problem which will not be gone into more deeply here, because it is dealt with more fully by other speakers, but which should also be noted here since it arises as a consequence of the implementation of the principle of equal pay and may constitute not so much of an objective, as of a subjective obstacle to the employment of women, since it might act as a disincentive to women to accept paid employment.

7. The single wage allowance in France

Among the provisions which, in one way or another, form obstacles to the employment of women, special importance may be attached to the "single wage" allowance in France. This is the subject of considerable discussion on the relative situation of women who go out to work and those who stay at home.

The object of the allowance was not so much to discourage mothers from working as to give them a free choice between devoting themselves solely to their family obligations and going out to work. In practice, the proportion of the single wage allowance to total family allowances has not kept pace with the rising cost of living and it would be difficult to assert today that the allowance is enough to compensate for the loss of earnings by a mother who chooses to stay at home. It is, moreover, not awarded to mothers who find themselves obliged to work owing to the insufficiency of the breadwinner's earnings, while it is awarded to families who have only one income, even if its amount exceeds that of a family where husband and wife are both working.

THE LEGAL POSITION AS TO EQUAL PAY IN MEMBER COUNTRIES

Belgium	Germany	France	Italy	Luxembourg	Netherlands
Royal Decree, 24th October, 1967; subjective right to equal pay, enforceable in the Courts	(1) Federal Constitution, art.3 equality of rights for men and women (2) Numerous Länder Constitution, expressly specify the right to equal pay: Bavaria, art. 168; Berlin art.6; Bremen, art. 53; Hesse, art.33; Rhineland-North Westphalia, art. 24; Rhineland-Palatinate, art.56; Saar, art.12. (3) Numerous decisions of the Labour Tribunals (4) Act of 11th October, 1952 on business organisation (BVG) establishes the principle of non-discrimination	(1) SMIG (Guaranteed Industrial Minimum Wage) equal for men and women (2) Preamble to the Constitution: equal rights for men and women (3) Act of 11th February, 1950; collective agreements capable of extension must include clauses fixing the method of implementing the principle of equal pay for equal work	(1) Constitution: art.37, equal pay for equal work (2) Constitution: art.3, art. 51, principle of non-discrimination (3) Numerous Court decisions	(1) Grand Ducal Decree, 22nd April, 1963: statutory minimum wage, equal for men and women (2) Act of 22nd June, 1963, established the principle of non-discrimination in the public sector (3) Grand Ducal Decree, 25th June, 1965: minimum wage for skilled workers, equal for men and women (4) Act of 12th June, 1965 on collective agreements, art.4: ways and means of implementing equal pay	Compulsory minimum weekly wage, equal for men and women (Bill introduced 22nd April, 1968)

The problem has been a topical one since 1964, when it was raised in the Higher Council on Family Allowances following opinions expressed in a number of competent quarters. Since then, the question has periodically come into the limelight without any satisfactory solution being found.

For the moment, without going into the merits of the various aspects of the problem, we confine ourselves to noting that the present system has the disadvantage of no longer fulfilling the purpose for which it was introduced, of allowing women a free choice between home and work, but rather tends to discourage married women from working, on pain of losing the allowance and at the same time incurring tax liabilities which are likely to make serious inroads on the fruits of their labour.

8. Tax treatment

Tax treatment may also have a decisive influence on the employment of women; where the Treasury lays unduly heavy hands on the second income of the household by the progressive taxation of the combined income, the wife, who usually contributes this second income, finds her contribution sadly diminished, which naturally puts a brake on her propensity to work. In some countries some adjustments have been made to prevent the wife's contribution from being over-taxed and to ensure that tax treatment is no obstacle to the free entry of women into the working world.

The tax treatment of the income of married women varies in the different Community countries, both in the case of wages, independent earned income or unearned income. The fact that husband and wife live together under the same roof is decisive for the purposes of tax treatment; if they live together, their incomes are aggregated.

In Belgium, the aggregation of earned incomes is relaxed by a special rebate on the wife's earned income, designed by the Legislature to offset the extra costs arising from the wife's absence from home.

The aggregate income is reduced by 40 per cent:

- of the aggregate earned income where the wife's occupation is different from the husband's;
- of that part of the share profits or gain attributable to the spouse where he or she helps the taxpayer with his or her work and has no independent occupation.

The rebate must not be less than 19,000 or more than B.Frs.27,000 and cannot exceed the amount of the wife's taxable earnings.

In Germany, husband and wife have the option between joint or separate assessment. If they choose joint assessment, the progressive character of the income tax is reduced by the application of the rate applicable to half the aggregate income.

In France the "family quotient" system applies. Under this system the family incomes are first aggregated and then divided by a quotient in which the husband and wife count as units and dependent children as half units. Tax is assessed at the rate applicable to the amount of each share of the family income. This system avoids the application of an unduly high rate and is the more advantageous the bigger the family.

In Italy, the schedular system in force involves the separate taxation of various categories of income and the incomes of the husband and wife are therefore not aggregated. They are, however, aggregated for the purposes of the supplementary tax and the family tax and no rebate is allowed for these two taxes, and the progressive rate is therefore applied in full.

In Luxembourg the standard rate for the "households" category is applied without modification to the aggregate income of husband and wife, treated as a sole taxpayer.

In the Netherlands, one third of the wife's income, amounting to not less than 500 or more than Fl.2,000 per annum is exempt from tax. For the remainder, the incomes of the husband and wife are aggregated and taxed at the progressive rate.

SUMMARY TABLE OF TAX TREATMENT OF EARNED INCOME

	Special treatment for married women	Right to separate assessment	Special treatment for families
Belgium	+		
Germany	+	+	
France	-		+
Italy	-		
Luxembourg	-		+
Netherlands	+		

9. Social security

Social security schemes may also involve factors which influence the employment of women.

With regard to retirement age, for example, the fact that women age faster than men has been accepted in some countries as justification for an earlier retirement age for women. In the Community countries the age limit for the acquisition of pension rights is generally fixed at 65. In Belgium and Italy the retirement age for women is five years earlier. If the method of calculating the amount of pension is also taken into account, additional grounds may be found for arguing that this discourages women from taking subordinate jobs. In Italy, in fact, account is taken both of the number of years of contributing and the amount of contributions; in Belgium the pension is calculated on a reference wage according to the length of contribution period.

The result is that in these two countries a woman's pension, owing to her shorter working life, is lower than a man's. The by no means negligible fact that, in Belgium and Italy, as well as in other countries, wage discrimination against women still exists, also affects the amount of pensions.

The following table (1) sets out in comparative form the method of calculating pensions in the Community countries.

This shows that, in all countries, with the sole exception of the Netherlands, the method of calculation is likely to affect the amount of a woman's pension and may therefore be an indirect discouragement to work, if only so far as many women, especially single women, are induced to go out to work in the hopes of an adequate pension in their old age. Still on the subject of pensions, in the Netherlands, where pensions are payable to the whole population, the pension rights of a married woman vest only when her husband reaches the statutory age limit (65), regardless of contributions paid; in other words a woman in the Netherlands acquires a pension whether she works or not, but if she works or has an independent income she is obliged to contribute.

In another sphere of social security, namely sickness insurance, where the husband works, the wife is automatically insured for benefits in kind, for which, if she works herself, she is required to contribute. Similarly, in the case of family allowances, the working woman pays contributions for benefits which, in most cases, she does not receive.

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(1) From comparative tables (EEC-ECSC) 5th edition.

CALCULATION OF PENSIONS IN THE COMMUNITY COUNTRIES (1)

Belgium	Germany	France	Italy	Luxembourg	Netherlands
Single men or husbands with no dependent wife: 1/45 x 60% x S x n Husbands with dependent wives: 1/45 x 75% x S x n	1.5% x n x S x c	S x 20% x $\frac{n}{30}$	1.625% x S x n	The pension consists of a fixed component and an increment on the fixed component. Fixed component: L.Fr.15,000 per annum (index number= 100; index at 1st July,1968 = 157.5) Increment: 1/6 of total wages (adjusted according to index number and wage trends)	Annual amount: single persons: 1/50 of Fl.3,372 per year of insurance Married persons: 1/50 of Fl.4,794 per year of insurance
n = number of years of paid employment S = gross annual wages since 1st January,1955 (notional calculation for earlier years)	n = number of years insurance S = general basic wage, i.e. average gross taxable wage of all insured persons during the three calendar years preceding the year of calculating the pension C = average individual coefficient of the annual ratio between pensioner's wage and general basic wage	S = most favourable average annual wage for the 10 years preceding pension n = number of years of contributorship from 15 to 30. For 5 to 15 years contributorship, return = 10% of half total contributions paid (employers and employees)	S = average annual wage subject to contributions for the last three years n = number of years of contribution (maximum = 40)		

(1) From comparative tables (EEC-ECSC) 5th edition.

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With regard to unemployment, in Belgium[1] the benefit for a woman is lower than for a man, while in Luxembourg, a wife whose husband is still in work is not entitled to benefit.

Conclusions

The foregoing pages present a sample survey of the statutory provisions or regulations existing in Member States of the Community which may have a direct influence on the employment of women. No attempt has been made to draw general conclusions; some of the circumstances recorded are connected with questions of social policy in the strict sense, while others flow directly from the options made by the different national policies.

In conclusion, we confine ourselves to noting the medium term economic policy programme for 1966-1970, adopted by the Council of Ministers of the Community in April, 1967, one paragraph of which deals with the possibility of tapping new manpower resources by the increased employment of women, mainly by doing away with the obstacles imposed by tax legislation and social security schemes to the employment of married women in particular.

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(1) The Brussels Unemployment Appeals Board recently ordered the O.N.S.S. (National Social Security Fund) to pay a young working girl the same benefit as would be paid to a young man of the same age.

C. WORKING CONDITIONS FOR WOMEN

3. WORKING HOURS AND TIME SCHEDULES

THE TIME BUDGET OF MARRIED WOMEN IN URBAN CENTRES

by M. Alain GIRARD
(France)

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(October-December). Quarterly Review of the
Institut National d'Etudes Démographiques,
23, Avenue Franklin D. Roosevelt, Paris, 8e./

In modern society, women's work raises special problems of great importance. Although technical and social progress had led to a reduction in men's working hours and to a certain extent has made their work easier, it is not the same in the case of women who often fulfil the dual role of housewife and working woman. Even if their hours in paid employment are also reduced they must still perform household tasks which technical progress has not yet succeeded in making much lighter. Responsibility for bringing up the children falls almost entirely on them, and, short of making society itself responsible for bringing up the children, a solution which no society is seriously considering today, it is on the mothers that the heaviest burden must lie.

Approaching the problem from another angle, namely the present employment situation in France, the shortage of labour resulting from trends in populations down to the present raises the question as to whether, for a time at least, there may not be an increased demand for female labour. The labour force in fact is likely to stay at the same level or even decrease slightly in the next few years, until the post-war bulge reaches employment age. Will the introduction of part-time work, for example, enable more women to take paid jobs?

A study by the Institut national de la statistique et des études economiques (National Institute of Statistics and Economics), in the framework of their regular employment surveys, should shortly provide information on this subject.

For all these reasons, the I.N.E.D. has on several occasions examined the question of paid employment for women.(1)

Furthermore, a study covering both their domestic and occupational working hours was made as far back as 1948(2) and since the data collected for it relate to almost 12 years' ago, it seemed important to have another look at the problem. The main objective is to assess the number of hours worked by married women both in their homes and jobs and to find out how much additional time they devote to one or more children in the home. It is useful to know how much a child's upbringing costs society in hours of work of various kinds.

Living and working conditions differ very much as between town and country, and the first survey was limited to urban centres of over 5,000 inhabitants. This report is also limited to urban centres, but a similar study is being made of country areas. Since the seasonal factor may have a strong influence, the first stage of the survey carried out in the spring of 1958 will only be published later when the new study carried out in the autumn has been completed.

THE SURVEY

Sampling: It was decided to make a sample survey, but because of the nature of the problem a certain number of adjustments were necessary.

Observations were made throughout the whole country, their frequency depending on the number of inhabitants in the various regions, taking into account both geographical distribution and distribution according to size of urban district.

Using data from the 1954 census, 1,020 persons in all were examined. Their geographical distribution was as follows:

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(1) Jean DARIC "L'Activité Professionnelle des Femmes en France", Cahier No.5 of "Travaux et Documents", I.N.E.D., Paris, 1947. "Le Travail des Femmes: Professions, Métiers, Situations Sociales et Salaires", Population, 1955, No.4, pp.675-690.

(2) Jean STOETZEL, "L'Etude du Budget-Temps de la Femme dans les Agglomérations Urbaines", Population, 1948, No.1, pp.47-62.

Region	No.	%
North West	159	16
North East	228	22
South West	139	14
South East	213	21
Paris (Seine, Seine et Oise, Seine et Marne)	281	27
	1,020	100

In Urban Districts		
Towns of from 5,000 to 20,000 inhabitants	378	37
Towns of from 20,000 to 100,000 inhabitants	314	31
Towns of more than 100,000 inhabitants	193	19
Paris	135	13
	1,020	100

The survey was carried out by 104 investigators in 84 urban districts, and the field documents were collected in March 1958.

The only precaution taken when choosing the period for this investigation was to ensure that it did not coincide with the school holidays.

Furthermore, since the aim was to discover the pattern of an average day's work, the observations had to be spread fairly evenly over the different days of the week. Their distribution in this respect was as follows:

Day of the week	No.	%
Monday	167	16
Tuesday	147	14
Wednesday	150	15
Thursday	134	13
Friday	144	14
Saturday	140	14
Sunday	138	14
	1,020	100

Other decisions were taken regarding the age of the women studied, how many children they had, and their social and occupational background.

So that the dispersion would not be too great and to eliminate as far as possible from the figures children still living at home

who could already look after themselves, only women under the age of 47 were included in the study.

For purposes of comparison, childless married women were also included in the enquiry in roughly equal numbers as women with one, two, and three or more children. The object was to obtain groups of equivalent size for each of the four categories of family size.

The instructions given to investigators concerning socio-occupational categories were not intended to produce representative sampling in this respect, but to ensure that enough women in each category were studied for comparisons based on environmental background to be made.

The breakdown according to these various categories will be given further on, but it must be said at once that it would be mistaken to consider some of the results as typical, and that it will be better to avoid making premature generalisations on certain points.

The method of observation: In the previous enquiry on time budgets of women, two methods were used to obtain data. One was to ask the persons concerned to note down each evening for one week the time spent on various occupations, a list of which was given to them. The other, which proved to be much more accurate and which has been used for the present study, was to give them a time-sheet covering a full 24-hour day.

The time-sheet is divided into five-minute periods, and is filled in by the women themselves for the stipulated day of the week. Whatever their nature, the various occupations are entered opposite the exact time at which they are carried out. In no case, therefore, is there any need to remember or make a subjective assessment of the times spent in work. The I.N.E.D. classified and calculated the duration of each occupation on each time-sheet by taking the difference between the times of starting two successive jobs. This method made it possible to piece together very accurately the time table on the days observed.

Further, accompanying each time-sheet was a questionnaire filled in by the investigators showing the composition of the family, its occupational background, the kind of house they lived in and its amenities, the household equipment, where relevant any job done by the mother outside her home, and details of any domestic or family help.

A letter was finally sent to those who agreed to take part in

the experiment assuring them that complete anonymity would be preserved. They were also asked to be entirely frank, that is to record how they spent their time without in any way changing the order, nature or duration of the occupations carried out on the day under observation. The investigators gave them all the necessary verbal instructions and when they went back to fetch the completed form made sure that the explanations had been properly understood. Sometimes, with the help of the person concerned, they made additions to some items of information which were too brief. In spite of all these precautions a few time-sheets had to be eliminated so that only those which were sufficiently precise were kept.

Special difficulties are involved in an enquiry of this kind. It gives extra work to persons who are often very busy; it means that they themselves have to write down the information instead of replying to questions. Consequently, it was essential to make sure that they were willing to co-operate.

The evidence of the investigators tallies, and it seems that the correctly filled-in forms reflect the women's work adequately. If there is occasional distortion, it is generally in the sense of the work performed being slightly over-estimated. It is also true that the women who were willing to take part in such an enquiry are a selected group. They tend on the whole to be women who carry out their work with very great care and responsibility.

Finally, the high standard of the answers collected, and the consistency of the information they provided confirm that the survey was carried out in conditions which were as satisfactory as possible.

THE SAMPLE OBSERVED

The social and occupational background and the women's occupations: Table 1 gives distribution of households according to husband's and wife's occupation.

Married women in well-off households are less likely than others to take up paid employment. The group most likely to be in paid employment are the wives of men in craft trades and retail businesses, in which cases their work can be done on the spot, either in the husband's business or in his workshop.

There is generally a correlation between the husband's and wife's occupation when the wife is also employed. However, when the husband is an industrial worker the wife is often an office worker. This observation bears out a well-known fact, that while the percentage of women workers has been almost stationary for a century, except

Table I

Occupational background and wife's occupation

Wife's occupation	Husband's occupation					Total	
	Industrial operative	Craft trades and retail business	Clerical worker and junior public servant	Middle management	Senior management and professions		
	%	%	%	%	%	No.	%
Industrial operative	24	2	13	4	2	114	11
Craft, trades and retail business	2	46	2	1	3	99	10
Clerical worker and junior public servant	17	7	25	22	5	161	16
Middle management	3	5	4	22	9	75	7
Senior management and professions	1	1	1	3	13	31	3
Without occupation	53	39	55	48	68	540	53
	100	100	100	100	100	-	-
Total (No.	320	175	210	158	157	1,020	-
Total (%	31	17	20	16	16	-	100
Average number of children	2.0	1.9	1.9	1.9	2.2		

Table II

Distribution of children according to the wife's occupation

Number of children	Wives without occupation	Wives in employment	Overall total	
Number	540	480	1,020	
	%	%	%	%
0	11.5	33.1	21.6	22
1	19.8	31.3	25.2	25
2	31.3	21.0	26.5	26
3	21.3	7.5	14.8)	
4	9.1	4.8	7.1)	
5	4.3	1.7	3.0)	27
6	1.7	0.6	1.2)	
7	0.5	0.0	0.3)	
8	0.5	0.0	0.3)	
	100.0	100.0	100.0	100.0
Average number of children	2.34	1.27	1.99	

in agriculture, there has been an internal shift from secondary to tertiary occupations.

In the five occupational groups defined according to the husband's occupation, the number and distribution of the children are substantially the same. This observation could in no way apply to the population as a whole, because it resulted from the way the survey itself was planned. The investigators had to choose the persons to be observed on the basis of two independent criteria: the number of children in the family and the head of family's occupation. In fact, the distribution of the number of children according to the various environments was found to be appreciably the same, just as the observations on the different days of the week were found to be equally distributed between the various social environments.

The main variable with regard to the wife's occupational activity is the number of children. In all social groups the more children they have the less frequently they go out to work.

Table II gives the overall distribution of the number of children for all households and for those where the wife goes out to work and for those where she does not. The average number of children is 1.27 in the case of women in paid employment and 2.34 for those who devote themselves entirely to their home. The former represent 47 per cent of the sample and the second 53 per cent.

Irrespective of the level of the women's work in the different environments, women with children are much less likely to take up paid employment. (Table III).

Table III

Percentage of wives working, by number of children and husband's occupation

	0 children %	1 child %	2 children %	3 children and more %	Overall total %
Industrial operative	78	59	30	23	47
Craft trades & retail businesses	72	65	60	47	61
Clerical worker & junior public servant	68	58	38	15	45
Middle management	80	64	40	24	52
Senior management and professions	50	41	25	24	32

The time the wives spend in paid employment also varies according to the number of children. This will be dealt with in the following chapter.

Parents' age. Number and age of children: The parents' ages in the households observed are given in Table IV. It shows an average difference of about three years between husbands and wives which more or less corresponds with French households as a whole. Table V gives the number and distribution by age of the children in the households. The average number of children per family is 1.9, and the distribution by age covers a wide range from birth to 20 years and over, but seven out of ten children are between four and fifteen years (Table V). On the other hand the number of very young children under three years old, and the total number of children, are closely related to whether the wife is working or not. The work involved in bringing up these children will be studied further on.

Housing and household equipment: In the overwhelming majority of cases, i.e. 85 per cent of the households investigated, the only persons living in the home are the two parents and their children. In the fifteen remaining cases there are others, mostly a grandmother, but sometimes a grandmother and grandfather, when the two generations live together. The number of persons in the household outside the family does not change significantly with social status.

On the other hand, the social status makes very substantial differences as far as housing and household equipment are concerned.

The average number of persons per family is appreciably the same irrespective of status, but living space becomes smaller the lower down the social scale one goes, although workers in craft trades and retail business are slightly better off in this respect than clerical workers and junior public servants (Table VII, Part 1).

Comparison of the number of persons with the number of habitable rooms provides an index of the density of habitation in each dwelling. The norms employed are the same as those used by I.N.S.E.E. for the 1954 census. Dwellings with at least three persons in one room, four persons in two rooms, or six persons in three rooms, etc., that is to say those where the number of persons is over two per room are described as "critical overcrowding". Two people living in one room, three people in two rooms, or five people in three rooms, etc., is termed "admissible temporary overcrowding".

Table IV

Parents' age

Parents' age	Men %	Women %
Under 24	3	8
25 to 29	14	18
30 to 34	19	23
35 to 39	24	26
40 to 44	18	17
45 and over	22	8
	100	100
Average age in years	38.1	34.9

Table V

Number and distribution by age of children

	No.	%
Under 6 months	51	3
1 year	79	4
2 years	122	7
3 years	95	5
4,5,6 years	311	17
7,8,9 years	343	19
10,11,12 years	366	21
13,14,15 years	217	12
16,17,18 years	130	7
19,20,21 years	62	3
22 years & over	31	2
Total	1,807	100
Average age in years	9.0	

Table VI

Number and distribution of very young children

Number of children under 3 years	Overall total		Women without occupation	Women in occupation
	No.	%	%	%
0	743	73	66	81
1	216	21	26	16
2	52	6	8	3
3	9			
Total	1,020	100	100	100
Average number of children	0.34		0.44	0.23

Using these definitions, the 1954 census shows that a quarter of the French urban population is in a state of "admissible temporary overcrowding" or "critical overcrowding". In the sample observed, the percentage living under these conditions amounts to almost 50 per cent for industrial operatives and 30 per cent for junior clerical workers and junior public servants. The housing shortage is at present so severe that it even affects a substantial percentage (16 per cent) of managerial staff and professional workers. (See Table VII, Part 2).

Generally speaking, there are more labour-saving appliances also in the higher income group families. Whereas about one quarter of the industrial operatives' households have a refrigerator or washing machine, and one third a vacuum cleaner, six out of ten senior managerial and professional households have both refrigerator and washing machine and eight out of ten a cleaner. Craft trades and retail business households are at about the same level as clerical workers and junior public servants.

In households which do not have both a refrigerator and washing machine, there are more washing machines in the lower income group but more refrigerators in the higher income group (Table VIII).

Linked to this, and also because of the domestic help in households in the higher income group, one of the tasks, namely the washing of clothes, the importance of which will be seen in the following chapter, is done entirely at home in most cases (about two-thirds) except, however, among the middle management groups who more often send some of their washing out. Cases where no washing

Table VII

Living conditions

Number of rooms	Industrial operatives %	Clerical workers and junior public servants %	Craft trades and retail business %	Middle management %	Senior management and professions %	
1 without kitchen	5	0	0	2	1	
1 with kitchen	10	6	5	4	2	
2 without kitchen	4	2	1	2	0	
2 with kitchen	25	20	16	18	11	
3	34	31	21	27	18	
4	14	26	32	26	21	
5	7	10	18	17	19	
6 and over	1	5	7	4	28	
	100	100	100	100	100	
						France as a whole (1)
Critical overcrowding	29.2	12.0	12.3	12.7	8.2	12.4
Admissible temporary overcrowding	17.7	17.3	11.1	10.9	8.3	13.5
Normal density or underoccupied	53.1	70.7	76.6	76.4	83.5	74.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

(1) All urban districts according to the 1954 census. I.N.S.E.E. Bulletin hebdomadaire de statistique, 21st April, 1956.

Table VIII

Household equipment and laundering

	Industrial operatives %	Clerical workers and junior public servants %	Craft trades and retail business %	Middle management %	Senior management %
Possessing:					
Vacuum cleaner	34	52	52	44	80
Refrigerator	23	34	48	42	63
Washing machine	28	38	38	45	59
Laundering done:					
Entirely at home	66	65	64	50	59
Partly at home	28	27	27	40	31
Entirely outside the home	6	8	9	10	10
Total	100	100	100	100	100

is done at home do not exceed 6 to 10 per cent of the total number (Table VIII).

Domestic and family help: There is no paid domestic help in nine out of ten of the industrial operative households. For the rest, there is at most a woman cleaner or a person who comes to do the washing or rough work. On the other hand, two-thirds of the senior management and professional households have domestic help, and a fifth of these have at least a general servant.

Domestic help is slightly more frequent as the number of children increases. Two out of ten families in the sample as a whole have no help when they are childless as against three out of ten when there are two or more children.

The time put in by cleaners varies from six to thirty hours or more according to the family. The average time according to the number of children for the families as a whole, given below, is obtained by adding this total to the time put in by general helps assessed at 50 hours per week. The hours go up regularly as the families increase to two children (Table X).

Table IX

Paid domestic help according to socio-occupational status and number of children

	None	1 cleaner	1 general servant	1 general servant + 1 cleaner	Total
	%	%	%	%	%
Husband's Occupation:					
Industrial operative	91	8	1	0	100
Clerical worker and junior public servant	88	12	0	0	100
Craft trades and retail business	62	31	6	1	100
Middle management	68	27	4	1	100
Senior management and professions	34	44	12	10	100
Number of children:					
0	80	17	1	2	100
1	77	18	5	0	100
2	70	24	4	2	100
3 and more	69	24	4	3	100

Table X

Average weekly duration in hours of domestic help provided

	General servant	Cleaner	Overall
0 children	1.6	2.1	3.7
1 child	2.5	2.3	4.8
2 children	3.2	4.0	7.2
3 and more	3.7	3.5	7.2

About three families out of ten benefit from unpaid help from members of the family. This is mostly provided by the mother, the mother-in-law and, at the bottom of the list, the husband, and is not greatly affected by status considerations.

Table XI

Help from family according to socio-occupational status

	Industrial operatives %	Craft trades and retail business %	Clerical workers and junior public servants %	Middle management %	Senior management %	Total %
None	72	71	59	72	72	70
Help from:						
Mother, mother-in-law	10	13	14	11	15	12
Husband	8	6	14	10	4	9
Eldest daughter	2	2	3	1	3	2
Other children	2	3	3	3	2	2
Other persons	1	3	1	1	1	1
Several persons	5	2	6	2	3	4
Total	100	100	100	100	100	100

On an average there is more help from the family when there are children than in childless homes. As it is given mostly by a grandmother this help is very substantial when the grandmother lives with the family, but as this is somewhat rare the average help comes to about one hour per day for the families as a whole.

The figures for help from the family are broken down by task. They are highest for minding children especially when there is only one child (Table XII).

All these data on housing space, household equipment and domestic help or help from the family should be borne in mind when considering the results of the survey given in the next chapter. They also show how much housework is done in the different families according to the number of children, taking into account the work done by the mother and any help she may have.

Table XII

Weekly duration in hours of help from family according to task and number of children

	0 children	1 child	2 children	3 and more
Housework	0.9	1.1	0.8	1.0
Cooking	1.6	1.2	1.1	0.9
Washing-up	0.6	0.7	0.5	0.7
Shopping	0.7	0.9	0.6	0.8
Laundering	0.3	0.5	0.3	0.2
Minding children	-	3.3	2.1	1.8
Care of children	-	0.8	0.5	0.3
Total	4.1	8.5	5.9	5.7

THE SURVEY'S FINDINGS

Table XIII gives the basic results of the survey. It shows an average for the women as a whole according to the number of children, and gives a separate breakdown of those who go out to work and those who stay at home. By definition an average day is neither a working day nor a day of leisure, but it corresponds more nearly to a working day, since there is only one Sunday every seven days.

The breakdown is made under several broad headings:

- domestic work as a whole;
- added work connected with children;
- activity not connected with the household including travelling to place of work;
- sleeping or, more precisely, time spent in bed, the duration being calculated from the moment of going to bed to the time of getting up;
- all other activities, i.e. leisure and entertainment, washing, dressing and personal care, meals, possible religious attendance or help given to the husband in his work.

The headings "domestic work" and "care of children" have been broken down into more detailed sub-headings:

Table

Breakdown of time spent on various occupatic

In hours anc

	Overall			
	0 children	1 child	2 children	3 and more
Number of cases	221	257	270	272
Housework	1.2	1.4	1.8	1.8
Marketing	0.6	0.6	0.6	0.6
Shopping	0.1	0.1	0.1	0.1
Cooking	1.2	1.5	1.6	1.7
Washing up	0.6	0.7	0.7	0.7
Laundering	0.3	0.4	0.5	0.6
Ironing	0.2	0.3	0.5	0.4
Sewing,mending	0.7	0.8	1.1	1.2
Gardening	0.1	ε	0.1	ε
Total(1)	5.0	5.8	7.0	7.1
Care of children	-	1.1	1.4	2.0
Minding and walks	-	0.3	0.4	0.4
School lessons	-	0.1	0.2	0.3
Taking to school	-	0.1	0.1	0.1
Medical care	ε	ε	0.1	0.1
Total(2)	ε	1.6	2.2	2.9
Total(1)+(2)	5.0	7.4	9.2	10.0
Assisting husband	0.1	0.1	0.1	0.1
Religious attendance	0.1	0.1	0.1	0.1
Home entertainments and leisure	1.2	1.0	1.0	1.1
Outside entertainments	1.2	0.6	0.6	0.6
Washing, dressing and personal care	0.7	0.6	0.6	0.5
Meals	1.7	1.7	1.7	1.8
Sleeping	8.8	8.8	8.7	8.5
Total	13.8	12.9	12.8	12.7
Occupation and travelling to work	5.2	3.7	2.0	1.3
General total	24.0	24.0	24.0	24.0
Getting up time	7h15	7h10	7h05	7h00
Time of going to bed	22h25	22h20	22h20	22h30

II

an average day by number of children

nths of hours

Women with occupation				Women without occupation			
children	1 child	2 children	3 and more	0 children	1 child	2 children	3 and more
159	150	101	70	62	107	169	202
1.0	1.1	1.3	1.2	1.7	1.9	2.0	2.1
0.4	0.5	0.5	0.5	0.9	0.8	0.7	0.7
0.1	ε	0.1	0.1	0.1	0.1	0.1	0.1
1.0	1.2	1.3	1.4	1.8	1.9	1.9	1.8
0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.8
0.3	0.4	0.4	0.5	0.6	0.5	0.6	0.6
0.2	0.3	0.3	0.2	0.3	0.4	0.5	0.4
0.4	0.5	0.6	1.0	1.6	1.2	1.3	1.3
ε	ε	0.1	ε	0.1	ε	0.1	ε
3.9	4.5	5.2	5.5	7.8	7.6	8.0	7.8
-	0.7	1.0	1.0	-	1.6	1.7	2.3
-	0.2	0.3	0.1	-	0.5	0.5	0.4
-	0.1	0.1	0.2	-	0.1	0.2	0.3
-	0.1	0.1	0.1	-	0.1	0.2	0.2
ε	ε	ε	0.1	ε	0.1	0.1	0.1
ε	1.1	1.5	1.6	ε	2.4	2.7	3.3
3.9	5.6	6.7	7.1	7.8	10.0	10.7	11.1
0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1
0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1
0.9	0.7	0.7	0.7	2.0	1.5	1.2	1.2
0.9	0.5	0.5	0.6	2.1	0.7	0.7	0.6
0.6	0.6	0.6	0.5	0.9	0.6	0.6	0.6
1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.8
8.7	8.4	8.2	8.1	9.1	9.2	8.8	8.5
12.9	12.0	12.0	12.0	16.2	14.0	13.3	12.9
7.2	6.4	5.3	4.9	-	-	-	-
24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
7h05	6h55	6h55	6h45	7h35	7h25	7h15	7h05
22h25	22h20	22h25	22h40	22h30	22h15	22h20	22h25

1. Domestic work: The actual housework; shopping, mainly for food; longer shopping excursions for clothes, furniture or various equipment; cooking, i.e. preparing meals; washing-up; washing and ironing; sewing, i.e. all the tasks of mending, knitting, care of clothes, etc.; and, finally, an item which is possibly seldom found in towns, gardening.

2. Child care: The actual care of children, mostly very young children, minding children at home or taking them out for walks, supervising homework and lessons, possibly taking them to school, and finally medical care which although not solely confined to children, is much more frequent when there are children.

Analysis of the time-sheets filled in by the persons observed made it possible to calculate the average time of rising and going to bed in each of the categories defined.

Average day: The first outstanding fact revealed by careful study of Table XIII concerns paid employment. Not only does the wife go out to work less frequently but, as has already been noted, her hours become shorter as her family responsibilities increase. Outside work roughly takes up an average of from seven hours per day, in the case of women without children, to five hours for women with three or more children, i.e. from 50 to 34 hours per week including travelling time between home and place of work (see Table XIII).

The breakdown of time spent in paid employment,including travelling, as revealed by the time-sheets calls for some comments (Table XIV).

Women in employment work full-time, but as the whole range of occupations is represented, from retail businesses to cleaning, an appreciable percentage do less than six hours per working day. These percentages rise substantially as the number of children increases.

Furthermore, when questioned as to how long they worked a week, the percentage of women replying "the period varies" increases with the number of children, i.e. 5 per cent, 10 per cent, 15 per cent and 19 per cent respectively. This "variable period" was found on analysis to come to far less than 40 hours.

The fact of engaging in paid employment has a considerable influence on the way a woman organises her day. But whether she is working or not, the time she spends on the main items remains the same. The longest time is spent on the actual housework and care of the children. But childless women, or mothers with one child, spend

Table XIV

Breakdown of time spent in paid employment per average day including travelling, by number of children

	0 children	1 child	2 children	3 and more
Number(1)	141	124	81	55
	%	%	%	%
Less than 6 hours	17	23	36	37
6 hours	6	4	7	9
7 hours	6	6	7	11
8 hours	16	14	19	13
9 hours	18	29	15	13
10 hours and over	37	24	16	17
	100	100	100	100
Average duration in hours	7.2	6.4	5.3	4.9

(1) The differences between these figures and those for each category of women engaging in paid employment are accounted for by women observed on Sundays or days when they do not go out to work.

more time on their paid employment than on housework. The opposite happens in the case of mothers with two or more children.

The pressure on wives who go out to work is shown in several ways. They clearly have much less time for leisure and entertainment in the daytime both at home and outside, and in addition they have a little less time to sleep or to stay in bed. As the effect of the number of children makes itself felt, mothers of three or more children without occupation have less time for sleep, and resemble in this respect women without children who go out to work. But women who do not go out to work, and who are childless or have only one child, sleep on an average one hour more than women who work and who have two or more children.

Only childless women not engaging in paid employment have appreciably more time for leisure or entertainment, particularly outside the home. They alone seem to be clearly favoured compared with all the others, and this will be confirmed further on.

On an average, the time of going to bed is much the same for all the categories of women, but as a result of the varying pressure of work the time of getting up becomes earlier as family responsibilities increase. Given an equal number of children, women who go out to work on an average always get up earlier by half an hour or more.

Another basic fact is that the time taken to do all the domestic work increases with the number of children, except for a few items which are the least time-consuming and stay unchanged, such as marketing, shopping, washing-up and taking the children to school.

The tasks which absorb the most time and which take longer as the number of children increases are, in descending order of importance:

- the actual housework;
- cooking;
- sewing;
- laundering and ironing.

If laundering and ironing, which are considered to be heavy work, do not take up more time it is because they are not daily jobs and also because a substantial part of this work is done outside the home or by servants.

As regards the work caused by children, it is the actual care of them which takes the most time.

Table XIII gives averages only. A study of the distributions shows that the biggest dispersion is on relaxation, leisure and entertainment and, of the domestic activities, on actual housework, which is one of the easiest items to cut down. Compared with the women who did no housework on the day under observation, and who number about a quarter or a fifth according to the number of children, the others are distributed in very similar proportions from half hour to half hour, varying from those who did not do even half an hour's housework to those who spent two and a half hours or more on it.

Variations according to the day of the week: The breakdown by different days of the week of the activities of women who go out to work and those not engaging in paid employment (Table XV) confirms the foregoing analysis. It also shows the accuracy of the method used, since for groups which are necessarily limited in number and alike in structure the special character of the individual day has an impact on the averages. Thus the busiest days for paid employment are Tuesday, Wednesday and Friday with 7.3 hours, 7.4 hours and 7.3 hours respectively. But on Monday only 7 hours are worked, because this is a workless day in some sectors. On Thursday, when the children are not at school, the total hours are 6.7 hours, on Saturday, which is a holiday in some sectors, 5.9 hours, and on Sunday 0.7 hours because a few women have to work on that day.

Religion with attendance at Mass is almost entirely confined to Sunday, i.e. 0.5 hours for women who do not go out to work and 0.4 hours for those who do.

The women go to bed later on Saturday, at 22 hours 50 and 22 hours 40, whether they work or not; and they get up later on Sunday at 7 hours 40 and 7 hours 45.

Relaxation takes up from 7 to 8 hours on Sunday, but domestic work on that day still amounts to 7.6 hours for women without occupation and 6.2 hours for those who go out to work. That is to say the former work three hours less and the latter over an hour more than on other days. Women in paid employment also spend more time on domestic jobs on Saturday and Sunday than on other days. On every day except Sunday domestic work and the care of children take up about 10½ hours for women who are at home and about 5 hours, that is to say, half as long, for those who work.

Very young children: It has been seen that women who have one or more very young children under three years of age are among those who most rarely engage in paid employment.

For all the categories together the extra work which women with at least one very young child have to do amounts to about an additional two and a half hours more by day compared with women without children, i.e. about three hours are spent in child care properly so-called.

Table XVI gives these data, comparing the average day's main activities of women having at least one very young child with those of women without any very young children.

Family's social and occupational background: The women's working time, whether domestic or occupational, varies again according to the family's social and occupational background as defined by the husband's occupation. Wives in the industrial operative or office worker and junior public servant groups do the longest hours. But the least hours are worked by wives in the upper income group from middle and senior management and professional environments. These go out to work less often and more frequently have paid help.

Not counting sleeping time they enjoy about three hours more relaxation or leisure per day than wives of operatives or office workers, as is shown in Table XVII.

Time spent on children: These variations, however significant and important they might be according to environment or the number of very young children in the family, must not be allowed to obscure the basic fact that domestic work increases with the number of children.

Table XV

Breakdown of time by day of the week

	Monday	Tuesday	Wednes-day	Thurs-day	Friday	Satur-day	Sunday
	Women in paid employment						
Number	76	65	82	65	69	63	60
Domestic work	4.4	4.4	4.4	4.4	4.1	5.5	4.9
Care of children	1.1	0.6	0.8	0.8	0.8	0.9	1.3
Overall	5.5	5.0	5.2	5.2	4.9	6.4	6.2
Meals, leisure, entertainment and other	3.0	3.2	3.0	3.4	3.4	3.8	7.8
Sleep	8.5	8.5	8.4	8.7	8.4	7.9	9.3
Occupation	7.0	7.3	7.4	6.7	7.3	5.9	0.7
Total	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Getting up time	7h00	7h00	6h45	7h05	6h45	6h50	7h40
Time of going to bed	22h20	22h25	22h20	22h20	22h15	22h50	22h20
	Women not engaging in paid employment						
Number	91	82	68	69	75	77	78
Domestic work	8.8	8.4	8.2	8.3	8.1	8.2	5.0
Care of children	2.7	2.6	2.3	2.6	2.5	2.5	2.6
Overall	11.5	11.0	10.5	10.9	10.6	10.7	7.6
Meals, leisure, entertainment and other	3.9	4.3	4.5	4.4	4.4	4.9	7.2
Sleep	8.6	8.7	9.0	8.7	9.0	8.4	9.2
Occupation	-	-	-	-	-	-	-
Total	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Getting up time	7h05	7h10	7h10	7h20	7h15	7h10	7h45
Time of going to bed	22h15	22h20	22h10	22h25	22h10	22h40	22h30

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Table XVI

Average day of women who have at least one very young child

	Women with at least one very young child	Others
Number	277	743
Domestic work	6.1	6.4
Care of children	3.8	1.1
Overall	9.9	7.5
Meals, leisure, entertainment and other	3.8	4.8
Sleep	8.6	8.7
Occupation	1.7	3.0
Total	24.0	24.0
Getting up time	7h05	7h05
Time of going to bed	22h30	22h25

Table XVII

Average day by socio-occupational background of family

	Industrial operatives	Office workers and junior public servants	Craft trades and retail business	Management and professions
Number	320	210	175	315
Domestic work	6.7	6.5	5.9	5.5
Care of children	1.8	1.8	1.4	1.2
Overall	8.5	8.3	7.3	6.7
Meals, leisure, entertainment and other	3.8	3.8	4.7	6.8
Sleep	8.7	8.8	8.4	8.6
Occupation	3.0	3.1	3.6	1.9
Total	24.0	24.0	24.0	24.0
Getting up time	7h00	7h10	7h00	7h20
Time of going to bed	22h15	22h20	22h35	22h40

If the children are a greater financial burden as they increase in number they are also an added burden in terms of physical work, which mostly falls on the mother.

On the basis of the data collected, the time spent weekly on domestic work by women without children, whether they go out to work or not, comes to about 35 hours[1]. But this period increases by 18 hours for one child, 30 hours for two children and 36 hours, that is to say almost twice as much, for three and more children (Table XVIII).

But the help given by members of the family or by paid servants should be added to the housewife's working time shown above, so that the weekly figures for domestic work come to about 42 hours for a family without children, 66 hours for a family with one child, 78 hours for two children and 83 hours for three or more children.

A child therefore represents about 23 hours extra work in the home compared with a household without children; two children represent 35 hours and three and more children 41 hours. The progression therefore seems less after the third child, when a kind of ceiling is reached. The mother's working time, for obvious reasons, cannot go beyond a certain limit, but domestic work is also limited for financial or other reasons such as the shortage of domestic staff since the end of the war.

Consequently, although as every family budget study shows, less money is spent per person as the number of children increases, expenditure in time and domestic work also decreases. There is nothing in the survey to indicate to what extent the children suffer from this reduction in working time. But this is an additional factor which might partly explain why the average intelligence of children decreases slightly in the different environments as the size of the family increases.[2]

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(1) The number of hours worked each week is obtained by multiplying an average day by seven which equals the aggregate of the work done during the seven days. If when multiplied by seven the figures in the subsequent tables sometimes differ slightly from the figures in the previous tables, this is due to rounding off.

(2) See "Le niveau intellectuel des enfants d'âge scolaire", 2 vol., 1950 and 1954. (Cahiers Nos.13 and 23 of "Travaux et Documents", I.N.E.D.).

Table XVIII

Total weekly hours of domestic work

	0 children	1 child	2 children	3 and more
Housewife:				
Domestic work	34.7	41.0	48.9	50.3
Care of children	-	11.5	15.7	20.0
Total	34.7	52.5	64.6	70.3
Increase according to number of children	-	17.8	29.9	35.6
Other persons:				
Help from family	4.1	8.5	5.9	5.7
General servant	1.6	2.5	3.2	3.5
Cleaner	2.1	2.3	4.0	3.7
Total	7.8	13.3	13.1	12.9
General total	42.5	65.8	77.7	83.2
Increase according to number of children	-	23.3	35.2	40.7

Weekly working hours of women with and without paid employment: The total working hours each week of women with and without paid employment is given in Table XIX.

Table XIX

Weekly working hours of women with and without paid employment

	Women engaging in paid employment			Women without paid employment
	Domestic work	Paid employment	Total	Domestic work
0 children	27.2	50.1	77.3	54.3
1 child	39.1	44.5	83.6	71.2
2 children	46.6	36.9	83.5	75.5
3 and more	49.7	34.3	84.0	77.5

The weekly hours worked by women in paid employment, as shown in Table XIV, include travelling time. This was not always indicated on the time-sheets, but further details were requested in the attached questionnaire. Travelling time may be estimated at 3.5 hours per week for women without children or with one child, 3 hours for women with two children and 2.9 hours for those who have three or more children. The actual time the women spent on their job would be reduced by this amount as well as the overall totals which would be as follows:

0 children	73h8
1 child	80h1
2 children	80h5
3 and more	81h1

These figures tell their own story. As has already been noted the childless women who do not go out to work, and whose weekly domestic work can reach a maximum of 54 hours, are apparently the only privileged categories.

All the other categories work between 71 and 81 hours, and even 84 hours weekly if the travelling time of the women who go out to work is included.

Domestic activities increase with the number of children, particularly in the case of working women who are under a still greater burden than those who devote themselves entirely to their home.

But the total increase in working hours is relatively small. For working women it is practically non-existent, reaching a ceiling as soon as they have a child. For the number of hours in a day or week cannot increase, and it is not possible to go beyond a certain ceiling.

To read this data correctly, it must be remembered that the time a woman spends in paid employment rapidly grows less the more children she has. In other words, only a minority of the female working population as a whole work the total of 80 hours, or 83 hours according to whether travelling time is taken into account or not.

COMPARISON WITH THE 1947 SURVEY AND OVERALL PICTURE

It is not easy to compare these figures with those of the 1947 survey.

Two different methods were used simultaneously for the earlier survey made eleven years ago. One was the same as in the present survey, and the other consisted in asking the selected women to note

every evening for a week the time they had spent on their various jobs. A form was given them containing a prepared list of these occupations. The information obtained by this method was less accurate and resulted in estimates which were higher than the data recorded on the time-sheets. The overall figures, especially those for the hours worked weekly, were obtained by comparing the data collected by the two methods and making a kind of average which could have introduced an arbitrary element.

Bearing in mind this important point, the overall figures for 1947 and 1958 are compared in Tables XX and XXI.

It would seem that women spend a little less time on domestic work today than they did just after the war, especially if they are childless or have only one child. But in 1947 an anomaly appeared in the total hours worked by childless women with an occupation. The hours seemed to be shorter than those worked by mothers in the same category (Table XX).

Table XX

Total hours spent on domestic work per week

(1947 and 1958 surveys)

		0 children	1 child	2 children	3 or more
Housewives	(1947	47.0	63.0	68.0	74.0
	(1958	34.7	52.5	64.6	70.3
Others	(1947	13.8	15.7	21.2	26.0
	(1958	7.8	13.3	13.1	12.9
Total	(1947	60.8	78.7	89.2	100.0
	(1958	42.5	65.8	77.7	83.2
Increase	(1947	-	17.9	28.4	39.2
	(1958	-	23.3	35.2	40.7

The families investigated in 1947 had domestic help rather more frequently, with the exception of the industrial operative families where one out of ten had help. Consequently, the total number of hours spent on domestic work was probably slightly longer in 1947. On the other hand, the hours of paid work are much the same today in all households with children, however numerous the children. The increase in working hours because of children is appreciably the same for very large families, but is slightly less for those with one or two children (Table XX).

Table XXI

Weekly working hours of women with and without an outside job

(1947 and 1958 surveys)

	Women in paid employment		Women without paid employment	
	1947(1)	1958(1)	1947	1958
0 children	84.6	77.3	56.0	54.3
1 child	82.1	83.6	73.5	71.2
2 children	81.4	83.5	72.8	75.5
3 or more	83.5	84.0	77.7	77.5

(1) Travelling included.

But apart from the anomaly referred to, the total number of hours which women spend on domestic and professional work according to the number of children is much the same today as it was in 1947.

Bearing in mind the very high degree of accuracy of the present survey, it may be concluded that things have not changed appreciably over the intervening period, although since there are now more women with two, three and more children in the whole population compared with 1947, the average woman's working hours have probably increased slightly.

A detailed comparison, on the other hand, shows little difference in the various selected categories. Only the time spent on "housework" and "sewing, knitting and care of clothes" has decreased. In particular, laundering does not take up less time (Table XXII).

Table XXII

Average daily time spent on housework, sewing and laundering in 1947 and 1958

	Housework		Sewing		Laundering	
	1947	1958	1947	1958	1947	1958
0 children	1.9	1.2	1.3	0.7	0.2	0.3
1 child	1.9	1.4	1.5	0.8	0.5	0.4
2 children	1.9	1.8	1.6	1.1	0.4	0.5
3 and more	2.0	1.8	1.6	1.2	0.6	0.6

The effect of the economic situation after the war, when there was a shortage in clothing, is apparent in these slight variations. On the other hand, the development of household equipment has made certain jobs easier, particularly laundering, but even so, it takes up the same time. In short, the amount and kind of housework have not changed appreciably.

The basic fact remains that the task of married women assessed in working hours is still very heavy especially when they engage in the two activities of looking after the home and going out to work.

The burden is much lighter for childless women who devote themselves entirely to their home. It is very heavy for the mother after the first child, and increases subsequently with the number of children. Even then, however, it still falls short of the working hours of women with an occupation.

The present investigation gives no indication of the intensity of the work, or how difficult it may be. If there is household equipment, particularly a washing machine or refrigerator, the wife's life is made easier, although the different household jobs take up the same time.

But the upkeep of a home and the bringing up of children take up a great deal of time in being with them and minding them, even if this is not hard work. Consequently a mother who has a paid outside job as well is very short of time, at least until her children are reared and if she has no paid or regular domestic help. How to reconcile a job with the responsibilities of motherhood is still a problem in contemporary society.

In any case, as several surveys have shown, the great majority of mothers prefer not to go out to work. Of those who do, some work from choice and often perform a higher function in the social hierarchy, which no doubt gives them a certain satisfaction and freedom. Others, on the contrary, work for reasons of financial necessity, and these are in the worst position.(1) Apart from the cost to the community, nurseries or infant schools are especially useful for these women but are really only a second-best solution. Is the introduction of part-time work a much-debated matter - likely to change the situation? Above all, will it raise the level of female employment in a country like France, where it is very high in relation

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(1) See in particular "Enquete sur l'action sociale des caisses d'allocations familiales et le salaire unique", in Population, 1958, 1, and in Informations Sociales, March 1958.

to other countries with a comparably developed economy. It has been seen, moreover, that in some environments a mother clearly spends less time on an outside job the more children she has.

There were grounds for expecting rather different results from the survey. The situation in 1947 was very difficult for housewives because of the shortages. Household equipment just after the war was far from being what it has since become. In spite of that, married women's working hours do not seem to have decreased. At the most, some tasks appear to be less hard, although the survey gives no estimate of the intensity of the work. But the amount of time in a day or in a week is fixed like the density of a gas; only the pressure varies. The number of hours worked by married women, however intense the work may be, are still high. The social and psychological factors contributing to the problem of women's work do not in any case seem to have changed appreciably during the last few years.

C. WORKING CONDITIONS FOR WOMEN

A. PART-TIME WORK

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I. Definition of part-time work

Before beginning to study any question it is essential in the first place to define it clearly so as to avoid confusion. This is particularly true of manpower as, in many countries, the official statistics on manpower employment and working hours show ambiguities which have to be emphasized.

We shall adopt the definition of part-time work given by the International Labour Office and approved by all trade union organisations, i.e.: "Regular, voluntary work carried out during working hours distinctly shorter than normal".

(1) It must be regular work. One of the essential elements of part-time employment is stability. Part-time work differs from casual employment, that is to say intermittent work lasting a few days, weeks or months. By definition, casual employment is limited in time; this is not the case for part-time work. When a casual worker signs on he knows that his job will be ephemeral whether he works full-time or part-time, i.e. only for a few hours a day or a few days in the week: the length of the job is limited in time.

Students who seek paid work during vacations, mothers who look for a job for three months while a relative looks after their children, pensioners who do odd jobs for three or four hours a day for a few weeks, are so many examples of casual work which imply a provisional element.

The stable character of part-time employment also enables us to eliminate seasonal employment from the scope of our study. It may be

objected that seasonal employment is also stable and that the dates for signing on and off are predictable. However, the problems involved in seasonal employment are different and more like those involved in casual employment. At all events, it never has the permanent character which we have assigned to part-time employment.

(2) The shorter duration of work is voluntary, i.e. it is not the result of economic circumstances but corresponds to the wishes of the worker. When cyclical ups and downs cause a firm to work short time, the workers concerned are not part-time workers: they are full-time workers whose working hours have been cut, fortuitously and provisionally, below average.

(3) The working hours must be appreciably below average. This is the third essential point in our definition although it is still somewhat vague: "shorter than normal working hours" does not fix any upper or lower limit.

II. Extent of part-time work for women

In the countries of Western Europe, part-time work is most widespread in the United Kingdom. The 1961 census showed that in a working population of 25,000,000, there were about 2,000,000 part-time workers, mainly married women, representing approximately 8 per cent of the total, and this percentage has certainly been exceeded since then. These 2,000,000 part-time wage-earners were divided approximately into 1,000,000 wage-earners in the distributive trades, 500,000 in the tertiary sector and 450,000 in industry (453,000 according to a survey in June 1967, i.e. 17 per cent of the female labour force in industry)[1]. It should be added that these figures do not include women workers with "concessions" who work schedules of between 35 and 40 hours a week, since they are classified as full-time workers.

In Germany in 1966, the total number of clerical and other women workers working part-time was 1,212,000 representing 18.2 per cent of the total number of women wage-earners. Those considered as part-time workers were persons who, during the reference week had worked, either because they wished to do so or because of the nature of the activity, for more than 5 hours but less than 36 hours. It is therefore possible that this figure of 1,212,000 has been slightly increased, as a proportion of the women counted as part-time wage-earners were doing part-time work on a casual basis.

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(1) Revue du Travail, October 1967, No.10. Brussels.

It might be added that in Germany, the industrial sector recruits a large number of candidates for part-time work, 36 per cent of the total wage-earners working part-time, compared with only 23 per cent in trade (office work 39 per cent). These statistics date back to 1966 when there was a manpower shortage in Germany. For the last two years the trend has changed and it would be interesting to know the percentage of part-time workers in relation to the total number of wage-earners. It is probable, if account is taken of the trends which have been apparent since the end of 1966 - beginning of 1967 - that in the industrial sector a number of part-time jobs have disappeared, but on the contrary that the percentage of part-time jobs in office work and trade has increased.

In August 1965, the Swedish Ministry of Labour conducted a survey which gave the following results:

- Of 220,839 women covered by the survey, 28,794 were part-timers, i.e. 13 per cent of the total number of women gainfully employed. The percentage varies according to the social and occupational group:

		work part-time
- retail trades	of 21,942 women gainfully employed	28.4 per cent
- hospital work	of 51,460 " "	12.1 " "
- office work	of 12,670 " "	16.0 " "
- chemical industries	of 7,557 " "	12.7 " "
- textile industries	of 31,594 " "	10.3 " "

We might add that over the last three years, thanks in particular to the efforts made by the Swedish Government and the trade union organisations in the sector of adult vocational training, the number of women recruited in part-time jobs has again increased. Out of 100 women who had attended vocational training courses, a recent survey shows that 54 per cent are engaged in full-time jobs, and 42 per cent in part-time jobs (4 per cent were out of work at the time of the survey).

We have referred to the rise in the system of part-time work in three European countries where it has developed under pressure of a market for which all the available manpower is needed. On the other hand, both in France and in Belgium, where traditional manpower resources were not exhausted, part-time work has not developed greatly. Thus, in Belgium, part-time workers are only found in the

tertiary sector (6.5 per cent of the total labour force). In France, in some clearly defined geographical sectors, we find industrial firms using part-time labour as a result of the local manpower shortage, but these are exceptional cases. In the tertiary sector, there are nearly 600,000 wage-earners working 15 to 30 hours a week, but in the great majority of cases these are casual workers and there are no valid statistics for estimating the number of part-time wage-earners. The number of these is by no means negligible in the distributive trades or in certain office work, but it is impossible to put forward even an approximate figure.

III. Guarantees to be provided

In all the European countries, even where the part-time system has developed and concerns millions of workers, legislation has not always been adapted to this category of wage-earner. In all the countries, legislative measures in the form of statutory and contractual provisions, have been studied and enacted for the benefit of wage-earners working "normal" weekly hours. A revision of this legal framework is essential from two points of view.

(1) If it is admitted that part-time wage-earners are workers like the others, all the measures taken in the course of years and for almost a century for providing wage-earners with certain guarantees and rights and at the same time defining their obligations, should be applicable to all workers. As stated by the representatives of the big trade union organisations in Sweden, Germany and the United Kingdom, they would be failing in their duty if they took no further interest in the lot of these part-time workers. They must not be, nor should they remain - even if they are a very tiny minority - a "separate category".

(2) It may be that certain statutory provisions in force represent an advantage for part-time workers as compared with full-time workers. This might have dangerous results, for, in no case, should a system be favourable or unfavourable to one category with the result that the part-time worker exerts unfavourable pressure on the full-time worker. Is not this the case when a part-time wage-earner in the United Kingdom is exempt from social security contributions, insofar as the risks are covered by the spouse's contribution? Would this not be the case if a married woman in France could continue to receive a single wage allowance while working part-time? In this case, she would be tempted to accept a lower hourly wage than that

normally paid to her full-time counterpart, since she would have both a wage and an allowance apart from her job.

What guarantees should be provided for part-time workers?

In the first place, care should be taken not to consider part-time work as purely for women and to plan regulations according to the specific aspirations and obligations of women. It is true that nowadays in all countries where part-time work has developed, nearly all the candidates are women and, in particular, married women, but this is primarily a question of principle. At a time when, in all European countries, the trade union organisations are trying to obtain equal pay for equal work by males and females, it would be absurd to create a legal framework for work designed exclusively for women on the pretext that part-time work concerns them more than men.

Moreover, we think that any future policy for the employment of elderly workers, as recommended by the OECD or by the Laroque Commission in France, should include the system of part-time employment. That is why, even at the present stage, a charter for part-time work should be planned for all sections of the population - men and women, young and old, workers, clerical workers, executives - who, at some stage in their lives may no longer be able to work full-time but may wish to continue work during shorter hours.

On various occasions we have referred to a "legal framework" of part-time employment or else a part-time "charter". We do not in actual fact consider it desirable to define a "part-time charter" but merely to examine for each country, in its legislation, statutory provisions, collective agreements, those texts which are prejudicial to the part-time worker or grant him exorbitant advantages, and make the requisite adjustments so as to give the part-time worker the same guarantees and rights as a full-time worker, taking account of his shorter working hours.

But should we not go further and mention also the institutional or statutory obstacles which, in certain countries, are so many obstacles to the development of part-time work. When as a result of the progressive rate of income tax, the second wage earned by the spouse working part-time is reduced by almost 50 per cent even in the most favourable circumstances, this effectively constitutes an obstacle to the development of part-time work. In France the so-called "single wage" allowance granted to non-working mothers only detracts from any interest they might have in going back to work on a part-time basis.

Other obstacles concern the employer whenever certain provisions add to the burden of taxation or specific levies on the firm, not in accordance with the amount of the wages paid, but in relation to the presence of the wage-earners, whatever the working hours. This was the case in the United Kingdom for the Selective Employment Tax before the reform of September 1967 when the employer had to pay a tax for each wage-earner of the tertiary sector whatever the actual working hours. In France and Germany, the method of calculating social security contributions to be paid by the employer results in penalising the firm employing part-time wage-earners, in particular highly skilled ones. Until something is done to remove the disadvantages resulting from these obstacles, the development of part-time work will be conditioned more by cyclical ups and downs than by a policy of harmonisation. It is nevertheless certain that whatever the obstacles may be, the system at present concerns hundreds of thousands of workers in certain countries, tens of thousands in others. From now on, they should benefit from the same guarantees as the other workers. We will now sum up the main guarantees to which they should be entitled.

Contractual safeguards

Within the collective agreements, some overall general principles should be established defining the place of part-time work. These principles would refer to:

(a) Job security

We have already stressed that an essential characteristic of part-time employment is its stability. The same guarantees and security of tenure as full-time employment should, therefore, apply. Grounds for dismissal and means of recourse should be the same in both cases.

But while job guarantees are invoked in favour of the part-timer, the full-timer should not be overlooked when the firm introduces this system, otherwise a feeling of insecurity among all the full-timers may arise. Thus in Canada and Belgium agreements between employers' representatives and trade unions fix the percentage of part-timers employed in certain firms.

(b) Wages

The part-timer should receive the same pay as the full-timer for equal work, whatever the form of pay (time rates, piece rates, job rates, output bonus, productivity bonus, profit-sharing, etc.).

Unless it is desired to make a separate wage category, all the components of full-time pay should be applied to the part-timer on the same standards and the same scales, proportionately to the time worked in the firm and the job done.

(c) Guaranteed weekly working hours

The number of hours worked and their distribution over a week or a fortnight is of capital importance for the part-timer. He has opted for part-time and not for full-time employment precisely because the time he can devote to a job is limited. A balance must be sought between his different activities or, in the case of an elderly person, between activity and leisure, and this balance is based on various factors which cannot be modified impromptu and unilaterally.

This principle signifies that undertakings cannot call upon part-timers to change into full-timers to satisfy their temporary labour needs. Part-time employment should not be considered as an element of "flexibility" which enables a firm to adjust its manpower needs to production requirements day by day.

(d) Participation in the life of the undertaking

Since part-timers do not form a distinct category within a firm, they have or should have the same rights and duties as the full-timer with regard to the life of the firm. In particular, they should be entitled to vote and be eligible for election to all bodies in the firm, whose responsibilities vary from country to country.

This problem of participation in the life of the undertaking is related to that of participation in trade unions. The unions have to make every effort to enrol the part-timer and to interest him in trade union life. With this end in view various trade union federations in Sweden and the United Kingdom have laid down a special contribution scale for this category.

Statutory safeguards

These guarantees mainly concern the risks covered by the social security schemes in force in each country. These schemes which are very complicated concern:

- family allowances;
- health insurance and supplementary schemes;
- industrial injury insurance;
- unemployment insurance;
- old-age insurance and complementary pension schemes.

The anomalies penalising the part-time worker in each country cannot be studied here. We shall only refer to examples taken in Belgium in connection with unemployment insurance: under current legislation unemployment benefit is only granted to workers who have worked at least seven hours a day. Thus, the part-time worker who has worked two days a week at the rate of eight hours a day, may claim unemployment benefit whereas another part-time worker working five hours a day for six days a week is not entitled to benefits.

In each country, therefore, a critical examination should be made of current regulations so as to adapt them, if necessary, to the special situation of the part-time worker however he apportions his weekly working hours.

IV. Part-time work for women, its place in the future

Before considering the place of part-time work for women in the future, attention should be drawn to some of its major disadvantages and limitations.

Among the numerous disadvantages which some people see in the system of part-time work but which cannot stand up to an objective examination, there is one which is irrefutable: part-time work excludes any possibility of promotion. During a survey conducted in various countries where part-time work is desired and encouraged by all elements of the population and where this system affects hundreds of thousands of workers, we have never met with a single exception: workers in this category have to abandon all hope of promotion.

This is due to the fact that more often than not promotion means a post of "responsibility" in the management, or again of "supervision". But the part-time worker who, by definition, is not present the whole time cannot be entrusted with a supervisory function. This does not mean that he will not be perfectly able to perform numerous jobs calling for highly skilled work. In many countries nurses', doctors', educational and scientific research jobs are given to part-time workers. But once he has been recruited at a level which may sometimes be very high in the wage structure, the worker concerned has no chance of promotion (over and above the advantages granted to seniority). He will only receive promotion if he gives up part-time work and becomes a full-time worker. As regards the limits to part-time work, it should be pointed out here that in actual fact it can only be of interest, as a general rule, to wage-earners who have already acquired a certain occupational skill and have already had a job.

The fact is that to an increasing extent - whether traditionally filled by women or traditionally reserved to men - the job calls for a minimum of occupational skill. This skill is only obtained by means of an effort on the part of the worker concerned and a protracted effort over several months. There are very few women who, never having worked and having no vocational training, will be ready to make the necessary effort at a later age unless this effort is justified by the concern - or the necessity - to take up a full-time job.

Moreover, whether this adult vocational training is financed by the parties concerned, by the firms or again by the public bodies, it represents a certain investment which cannot yield a return in a subsequent part-time job.

The only exception noted in this respect is the example of Sweden where vocational training courses organised by the public bodies for women of 40 to 50 who had received no training have caused nearly half of these women to take up part-time work.

Another limit to the extension of part-time work is the absence or shortage of social services providing accommodation for children while their mothers are at work (crèches - kindergartens - infant schools, etc.). Whether they are full-time or part-time workers, the problem is still the same for mothers with young children. The shortage of crèches or day nurseries often means that they cannot keep or take up any job, even if they work less hours a day than the average. In certain cases, the problem may be easier to solve, but in actual fact the difficulty of principle will remain the same, whatever the daily working hours of the job.

Taking account of its drawbacks and limits, what position will part-time employment occupy in the future? Will it be regarded as a passing accident? In Germany, Denmark and Sweden, representatives of industrial employers share this view. It seems to them that the appeal to part-time workers to take up part-time work has made it possible to restore a temporarily disturbed equilibrium. Once this equilibrium is restored the married woman will stop working.

Part-time work is perhaps only a temporary palliative step towards full-time work. "The intensification of full-time work, that is true progress".(1) An idea frequently expressed, particularly in Sweden, is that measures should be taken to do away with this system and enable everybody to work full-time.

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(1) Gubbels - "La citoyenneté économique de la femme".

On the other hand, it is conceivable that part-time employment, which now mainly affects married women, will continue to exist in various branches and sectors where it is adapted to the requirements of employment as well as in certain industries where the manual dexterity of women is irreplaceable. Thus, the present ratio of full-time workers to part-time workers might be said to represent a stable equilibrium already reached in certain countries like the United States and will be found in the other developed countries in the years to come. This view is shared by almost all trade union and employers' representatives in the United Kingdom.

Several factors, which we shall summarise briefly, are likely to influence the place of part-time employment in the future:

(1) Demographic trends

Until about 1950 women workers in all the countries of Western Europe were mainly recruited among unmarried women, widows and divorcees. During the last fifteen years, two factors have revolutionised the labour market for women: few women remain unmarried; secondly the marriage age is decreasing. As a result, while the proportion of active women to total active population remains relatively stable, the percentage of active married women has greatly increased and they are now in the majority.

Active married women as a percentage of total active women

United Kingdom ...	1953 ...	3,250,000	active married women
	1963 ...	4,320,000	active married women
prospects ...	1970 ...	5,170,000	active married women
Sweden	1961 ...	44%	active married women
	1966 ...	more than 50%	active married women
Denmark.....	1960 ...	45.7%	active married women
	1965 ...	48.5%	active married women
prospects...	1970 ...	54.3%	active married women
Belgium	1961 ...	52.8%	active married women
France	1962 ...	53%	active married women

Another factor may also come into play. Until recent years, married women tried to space out their pregnancies with the result that work was interrupted over a period of from 15 to 20 years. Nowadays thanks to birth control, it seems that the girl marries younger than formerly and tries to have the number of children she wants as quickly as possible.

(2) Economic trends

Although growth calls for sustained investment and effort of imagination, it also calls for an expanding volume of manpower. Automation and higher productivity permit a reduction in the labour force, but the needs of a steadily growing economy require both hands and brains in ever growing numbers. The manpower shortage is one of the bottlenecks in growth and indeed has precipitated the adoption of the system of part-time employment in various countries.

The problem raised by manpower is firstly one of numbers. When the standard of living rises, there is an increasingly limited supply of manpower because of the prolonged period of education on the one hand and the reduction of the working week on the other. Part-time work may therefore become a means of recruiting additional manpower for which special schedules of hours are needed to attract it to the labour market.

The problem also has a qualitative aspect. It is important to have a labour force of a quality which matches the needs of an increasingly specialised economy. Part-time employment is one way of recruiting into the labour force women who are already professionally trained, but who have too much to do at home to be able to work 40 hours a week or more. Thus R. Gubbels notes that in Belgium there are almost 220,000 women graduates who are now at home but might be attracted on to the labour market by part-time employment.

(3) Technical trends

We are now experiencing - without always being aware of it - a veritable revolution compared with the industrial revolution of the 19th century, "the tertiary revolution".[1] In all industrial countries the proportion of wage-earners working in the commerce and services sectors is growing steadily. The annual growth rate ranges from around 1.2 per cent in the United States to 2.4 per cent in France and Germany. A recent study[2] extrapolates up to 1980 the probable trend of the percentage of the labour force employed in the tertiary sector as compared with the total active population:

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(1) Maurice Lengellé - La révolution tertiaire, Paris 1966.

(2) Maurice Lengellé - Growth of the commerce and service sector, OECD, 1966.

	1960 %	1970 %	1980 %
Denmark	27.3	31.7	37.5
France	28.6	34.6	44.3
Germany	34.0	38.2	44.5
Sweden	35.5	40.9	46.8
Canada	40.0	-	-
United States	43.3	-	-

But, although the transition from primary to secondary production has had far-reaching consequences in all industrial countries, the consequences of access to a tertiary economy are no less important, especially with regard to the pattern of employment. Thus, all studies emphasise the predominance of jobs held by women in the tertiary sector (51.2 per cent of the total labour force against 33.6 per cent in the secondary sector). Although women are legally entitled to fill most industrial jobs on the same terms as men, experience nevertheless proves that they are far more attracted towards jobs in the tertiary sector.

Thus, the technical trend in all developed countries is towards the creation of new jobs which, by their very nature, are those where the part-time system today has flourished and developed in priority.

(4) Psycho-social trends

Other reports will deal with the changes in the conception of woman's place in modern societies from the sociological and economic point of view.(1) We shall merely say here that the solution of part-time employment has inter alia the advantage of enabling the married woman, in certain circumstances and cases, at a certain period of her life, to reconcile two roles: the family role, basis of our western civilisations and the occupational role which, in addition, provides her with a source of equilibrium and enrichment.

CONCLUSION

Part-time employment is a factor in economic progress

Whenever the part-time solution attracts candidates with a vocational training to the labour market, it contributes towards

(1) Report by Mrs. Evelyne Sullerot.

the growth of the economy. In any case, it is clear that any measure which makes it possible, in a given country, to increase the labour force of the total population is a factor of economic progress. This is indeed the goal of the United Kingdom, Sweden or the United States, which are trying to attract inactive groups into the labour market by adopting part-time working schedules. This argument was put forward by a British trade union representative at an international seminar organised by the OECD in May 1966: "If we were limited purely to people who could work full-time ... the standard of living we enjoy would be much lower than it is today".

Part-time employment is a factor in social progress

Part-time employment may also be a factor of social progress, provided of course that it is surrounded with guarantees as for full-time work, whenever it enables a population group to achieve its aspirations. If for some the system appears as an optimum which may give them equilibrium, is it social progress to condemn it and persist in maintaining those concerned in a "separate category"?

Moreover, the "occupational advancement" of women cannot be measured in a country by the number of women holding degrees and diplomas, but by the number of skilled jobs they hold. If the part-time system enables a certain number of them to keep or be reintegrated in a job which allows them to utilise and maintain their training, surely this constitutes a real factor of social progress?

A fundamental consideration, in short, is not how many people are affected by the system of part-time work, but to give each individual the possibility of choosing freely. Governments should make the necessary arrangements, employers the indispensable effort of adaptation, trade unions demand the essential safeguards for both full-time and part-time workers: all of them will be failing in their duty if they reject out of hand a system which might offer the optimum solution for a minority - however small - of the population.

D. SOCIAL SERVICES

1. SERVICES DESIGNED TO HELP WOMEN TO COMBINE OCCUPATIONAL AND FAMILY RESPONSIBILITIES

by Mrs. Maria GUTBERGER,
Chairman of the Women's Section,
Austrian Federation of Trade Unions

A mother who goes out to work contributes by her activity towards the growth of the national product. At the same time, her role as educator of her children is also in the interest of the community. Society is therefore under an obligation to provide all facilities enabling working mothers to assure a healthy and harmonious development for their children.

A number of services are provided to ease the family responsibility of working women. The number and nature of these services vary from country to country. There should be a certain element of harmonisation of all the following measures in order to provide a uniform basis for all OECD Member countries:

A. Social and welfare services
such as day nurseries, day homes, home helps, school meals, etc.

B. Labour legislation measures
such as safety arrangements on the job, maternity protection measures, etc.

A. 1. Maternity leave

Maternity leave has been made an integral part of the "Law on Maternity Protection" in Austria. It was recognised, both from the medical and psychological point of view, that it is essential for the development of a baby to stay as close to its mother as possible. Thus every working mother may - while retaining her post - remain at home with the baby during its first year of life and be entitled to financial assistance from the Social Security.

Approximately 80 per cent of gainfully employed mothers who have babies take advantage of the maternity leave.

2. Crèches for babies from the age of 6 weeks up to one year

Crèches are available for babies on all weekdays from morning until evening. To maintain a normal mother/child relationship, however, the children remain with their mothers during the nights and at weekends. There are too few crèches and they are too widely dispersed. This means a considerable waste of time for mothers who are already pressed for time because of their jobs, and travel in the public transport system creates wear and tear as well as health hazards for the child.

3. Tiny tots crèches and toddlers' centres

During the last few years a subdivision of tiny tot crèches and toddlers' centres has taken place. This system proved to be of real help for the pedagogical tasks at hand:

(a) Tiny tot crèches for the one to two year olds

The one to two year olds should not be exposed to too large a community too early. They are therefore absorbed into the tiny tot crèches where conditions are made to resemble family life, thus gradually developing the child's social ties.

(b) Toddlers' centres

They care for the two to three year olds and constitute a kind of pre-nursery school. The nursery teacher acts as a mother for the children, she creates a maternal atmosphere without, however, destroying the relationship between the child and its real mother.

4. Kindergartens for the 3 to 6 year olds

The kindergarten is designed not just as a place where children can be left, but as a complement to family life as much as possible. Kindergartens should provide a fundamental contribution towards the development of the individual child's character. While everything is done to create a family atmosphere, homogeneous groups must however be built up to train the children to life in a community, which cannot be done by a working mother with an only child.

5. Nursery schools in factories and firms

The merits of the above are controversial. Nursery schools in factories and firms have their advantages as well as drawbacks. No doubt they are a great relief to the working mother in view of the scarcity of such facilities. There are only a few such nurseries, i.e. in larger concerns such as in industry, department stores, social security institutes, etc. The idea of establishing nurseries in factories is viewed with a great deal of scepticism by the management. In fact, management only reverts to it when there is a scarcity of labour and the offer of social services such as a nursery might attract a good number of female workers.

The argument against factory-nurseries from the employee's point of view is the often lengthy trip that the mothers are forced to make with their babies (often in tramways at rush hours). A further disadvantage is that the environment and atmosphere of most factories are hardly suitable for children.

In Italy a decree prescribes that any firm employing at least 30 married women of child-bearing age, has to set up a day nursery with suitable technical and sanitary equipment where children are supervised during their mother's working hours. Babies and tiny tots up to three years have to be admitted. The observance of the hygienic and sanitary regulations is checked by the labour inspectorate. An employer who contributes to the installation and the running of nursery homes supervised by qualified personnel may be exempt from constructing a nursery on his premises provided his female employees are able to utilise the nursery home to which he contributes.

6. Summer nursery schools

During the summer months the children, together with their nursery teachers leave the city by bus in the morning, travel to nurseries on the outskirts of town and return home again in the evening. The running of the nurseries is simply transferred to the open air.

This system has given excellent results in preventing many possible illnesses.

7. Special nurseries and schools

Mentally and physically handicapped children need more attention from their mothers than normal ones. Working mothers are not as a rule able to face such an additional strain. In the interests of both the mother and the handicapped child, the only solution is to send the child to a special nursery.

Several countries, such as France and Austria, already have this type of nursery.

8. Problems of staffing and premises

(a) Constructing a nursery is no great problem; it is far harder to keep it running and staff it with properly qualified and trained personnel. To ease the labour market additional helpers could be employed to do all the supplementary tasks not requiring a trained nursery teacher. To look after more than 1,000 children, 100 nursery teachers are required.

(b) The shortage of space is so acute in the cities that in some areas it is quite impossible to set up any new nurseries.

9. Family day-homes

In Norway a new form of child supervision is being tried out - the so-called "Family day-homes". Here, housewives, often having children themselves, are paid to look after the children of working parents. Family day-homes are organised by the town councils of Oslo and Trondheim but private arrangements also exist.

A similar project has also been started by the Vienna municipality to try and interest mothers in supervising other people's children. However, there is as yet no adequate information available whether this additional method of child supervision has proved successful.

Such a solution could prove an answer to some of the problems raised in point 8 (concerning the difficulties of building additional infant centres).

10. Play centres

Play centres for school children are one of the best solutions for alleviating the lot of the working mother. Not only can the mother be assured that her child is well taken care of outside school hours but she also knows that the childrens' homework for school will be properly supervised. She can thus devote more time to the personal problems and desires of her child.

In Austria, institutions for children up to 14 years of age are in the main supported by the town councils and also, to a lesser extent, by family associations and denominational groups.

According to the last Austrian census in 1961, out of a total 624,000 children of working mothers (independent, dependent and agricultural helpers) there were 84,000 in nursery schools, 15,000 in play centres, 2,000 in toddlers' centres and 1,000 in crèches.

As far as children of pre-school age are concerned, the municipality of Vienna takes the lead with its 740 nursery groups caring for approximately 20,500 children.

In Denmark municipalities are legally obliged to see that there are sufficient day nurseries and other similar socio-pedagogical institutions available for their inhabitants. Such day places are not necessarily only for children of working mothers even though the latter are making extensive use of them.

Day accommodation is of various kinds. For infants from 0-2 (and even 3) years of age - open all day. On 1st July, 1967, there were 153 such places caring for 5,750 children. Children from 2 (or 3) to 7 years - all day or half-day; 950 institutions accommodating 41,000 children.

For school-age children: places available after school - 200 institutions looking after over 11,000 children. For adolescents between 14-18 years there are some 650 institutions open in the evenings.

In France the education of children under the age of 6 is generally the responsibility of their parents. Mothers who are employed either hire someone individually who supervises their child at home at the mother's expense or she sends them to some communal institution for which the State is responsible or, more frequently, the local councils or private organisations.

There are two types of institutions supervising children below the age of 6. Those coming under the jurisdiction of the Ministry for Social Affairs which are run according to the Act on the Protection of Mother and Child of 2nd November, 1945. To these belong the crèches for children up to three years not living with their families and for whom no other family can be found (retarded and socially difficult cases are primarily in this category), needing day and night supervision. Further there exist crèches for normal children up to the age of 3, open during the (daytime) working hours of the mother. At present there are 4 crèches per 10,000 inhabitants or 3 crèches for every 1,000 occupied mothers respectively. In

addition there are kindergartens and nurseries for normal children between the age of 3 and 6 during the day and child "depots" where the child may stay once in a while for a short time.

Another group of institutions comes under the jurisdiction of the Ministry for Education, i.e. pre-schools and nursery classes belonging to the system of primary schools as well as departments for infants in primary school classes. These institutions absorb approximately 2 million children.

In Italy children between 3-6 are admitted to "Nursery schools" designed as a complement to their upbringing in the family. These schools are organised and supervised by the local councils (around 6,000), partly by religious corporations (over 4,000) and private organisations (over 8,000). The schools are under the organised supervision of the school and health authorities. During the 1965-66 school year an attendance of approximately 120,000 children was recorded with over one half taking school lunches.

In Norway there are children's day-nurseries administered by the Ministry for Family and Consumer Affairs. Although these institutions are rapidly expanding, demand is increasing so fast that they can make only a modest contribution. There are about 10,000 places available in day-nurseries throughout the country, about half of them in Oslo. Only a limited number of married women can therefore use these institutions for their children while working outside their home.

11. Day home schools

The day home schools are a combination of school and educational club. They provide an ideal day-time supervision for the children of a working mother. Homework is supervised there and the children take part in organised play and sports. The children are, as far as possible, kept away from the dangers of traffic on the streets.

In France this form of full day education is compulsory. In other countries, i.e. in Austria, the system is rare. An increase in day home schools is therefore in urgent demand.

12. Meals for school children

Children should be able to have a hot lunch after their lessons if required, either at school or in the kindergarten. This is always provided in the Scandinavian countries, and only in some cases in other countries.

School milk: this is to be given to the children during breaks between lessons.

13. School patrol service

To protect children from traffic accidents in towns as well as on the highways, a school patrol service should be provided for pupils who have to cross streets where traffic is heavy.

14. Childrens' waiting rooms in railway stations

All major railway stations ought to have heated waiting rooms where school children who have to spend long periods awaiting their connections could do their homework under the supervision of a teacher. Such a system has existed for many years in railway stations near school centres in the Federal State of Carinthia (Austria) and has shown excellent results.

15. School bus services

A school bus service in rural districts would make it possible for children to attend higher educational institutions in rural districts.

16. Play grounds

The increasing encroachment of the cities on open spaces, industrialisation and the growing number of cars all serve to reduce the amount of open spaces a child needs. A child whose mother works is particularly handicapped since the mother cannot spare the time to take it to the play grounds which may be quite a long way away. The provision of play grounds for children of all ages, properly equipped for play and leisure time activities, is therefore an absolute necessity.

17. Marriage Counselling

(a) The strain under which a working wife finds herself results at times in a domestic crisis. This calls for the existence of institutions able to advise and aid parents and children on legal, psychological, psychiatric and social service questions. Marriage councils must also be able to advise on birth control.

(b) Councils for mothers and expectant mothers are needed to look after the medical supervision of mother and child (health control, vaccinations, etc.). These offices should also be competent to issue and act upon the so-called "Maternity cards" containing the pregnancy history and all medical dispositions prescribed by the physician.

In Vienna and several other Austrian cities, mothers receive a free bundle of nappies if they submit to a Wassermann test some time during pregnancy.

18. Home help

The home helps look after sick children (or ailing relatives) of working mothers or, if the mother is sick or incapacitated, look after her children. They are also required to look after old people in emergencies.

In spite of the expansion in recent years there are still not sufficient home help institutions in Austria. Staffing and financing problems prevent them from keeping pace with realistic requirements. The aim is therefore to establish communal home help services as part of the public social service as is the practice already in Sweden and other Scandinavian countries.

19. Help for the aged

Looking after aged parents is as much of a problem for a working woman as the supervision of children. Institutions are needed which will for example prepare meals which can, in the case of invalids, be delivered to the home. Public services should be extended to include cleaning in homes, shopping and providing social services when required.

Moreover, homes for old-age pensioners need constructing.

B. LABOUR LEGISLATION BENEFITS

1. Contractual or legal provisions for short-term absence for the working mother with a medical certificate which proves that a child is ill, or for any other sudden family emergency.

2. Shorter working hours, and a five day week are of fundamental importance in reducing the burden of responsibilities of the working mother.

3. In Austria an employee who has served a certain length of time is entitled, when he leaves, to a specified payment from his employer. Certain agreements also provide for such payments to women who resign because they are going to have a baby.

D. SOCIAL SERVICES

2. SYNCHRONISATION AND HARMONISATION OF WORKING HOURS WITH THE OPENING AND CLOSING OF SOCIAL SERVICES, ADMINISTRATIVE OFFICES, ETC.

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INTRODUCTION

For the purposes of this paper - as indeed of the conference it is intended to serve - it has been assumed that

(i) it is in the economic interest of any country to enrol as large a proportion of its adult, able-bodied population as possible in its work force and to use their abilities to best advantage without discrimination of sex; and

(ii) a large, and steadily increasing, number of women with domestic responsibilities wish to work gainfully outside their homes.

The first of these assumptions is part and parcel of the 'active manpower policy' to which the Member countries of OECD are committed. The principle that economic growth depends on full utilisation of all manpower resources is not affected by the slight recession experienced at present in some of them. On the contrary, recent experience has underlined its validity, for wherever full employment has been reduced, economic growth has, at least temporarily, come to a halt.

The second assumption is borne out by the increasing employment of married women in all industrial countries, which is proportionally far in excess of the growth of the female labour force as a whole. In many of the technologically advanced nations married women outnumber all other categories of female workers put together.

To state this fact does not imply that married women are the only workers with family responsibilities. Indeed, many single women in full-time employment are looking after old or ailing parents or other dependants;[1] many widows, divorced or deserted wives have to take care of their children as well as to support them; and, due to their traditional role as homemakers, even women living on their own are more likely than men to run their own homes, to do their own domestic chores and to cater for themselves and others. If it is true, therefore, that many, if not most, women workers (and some men, too) have domestic duties to fulfil besides their gainful employment, the same applies a fortiori to working wives.

Both because women still represent an only partially tapped resource of labour, and because many women with family responsibilities (for a variety of reasons which need not be gone into here) either wish to, or have to, seek gainful employment, the question of what public support they need in their endeavour to meet their dual commitment is one of expediency as well as humanity.

I

Social investigations as well as political pressures aimed at relieving the lot of women workers with home responsibilities usually, and naturally, focus their attention on one particular aspect of the syndrome. The range of these facets is well represented by the contributions to this symposium. One by one, each paper pinpoints one field which presents special difficulties, or in which improvements ought to be made. Each deals with a more or less well-defined problem area; the nature of the particular problem can thus be clearly circumscribed and documented; and in each case the agencies on whom influence will have to be brought to bear, and the 'adversary' from whom concessions will have to be wrung, have shape and substance.

This is not so in the case of the present paper which, if it were to treat its subject comprehensively, would amount to nothing less than a blueprint for the harmonisation of two essential sectors of human experience, work and private life.

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(1) A large-scale study of women's employment, carried out in 1965 by the Government Social Survey in Britain (published in March, 1968) showed that 10 per cent of all working women (including single, married, widowed and divorced) were responsible for looking after elderly or infirm people; among part-time workers the proportion was as high as 15 per cent.

The co-ordination of these two spheres has hitherto proved so intractable a problem because it involves adjustments in many disparate parts of the social organisation, all of which impinge in one way or another on the mosaic of the citizen's daily existence. There are innumerable points of possible or actual friction. The general tendency has been to regard each of them individually as a separate nuisance - an irritation to be shrugged off, or to be accepted as one of the inevitable 'facts of life' - rather than to consider their cumulative effect as one comprehensive social problem.

It is, however, a problem of considerable social importance, not only in terms of the amount of frustration and inconvenience caused, and the number of working hours lost, but also because the difficulty of synchronising a regular working week with the abiding demands in the domestic sphere is a major factor in determining whether a woman with family responsibilities is able to take on employment at all, and whether she can take a full-time rather than a part-time job.

By removing production away from home and workshop to factory and mine, industrialisation has split the centre of gravity of man's life in two. Ever since, one part of his existence has revolved around his work and the other around his private life - i.e. his home, family and leisure pursuits - in two separate orbits. Their separation has been underlined and magnified by the geographical segregation of residential from working areas and the increasing distance between the two, made possible by improved means of transport.

The social model on which this system is based, assumes a division of labour between the sexes, with the breadwinning activities the concern of men and the care of home and family, and the availability for diverse "odd jobs", the domain of women.

Reality never completely corresponded to this model, for at all times many women had to win their daily bread, and many men to undertake some domestic tasks. It is much more out of focus today. With one-third of the labour force consisting of women (in most of the advanced countries) and with shorter working hours giving men more leisure-time to spend at home, the distinction between respective male and female spheres of action has become blurred.

Yet in most of the practical arrangements affecting the private lives of its citizens society has not yet caught up with this change. Our social organisation is still based on the traditional model, assuming that each worker is part of a family unit which includes a

full-time housewife at home who can take charge of all the necessities of life for which working men and women, tied to bench or desk, have no time to spare.

To some extent, the existing arrangements and their underlying assumption help to perpetuate the old division between the sexes (for instance, by making women the main purchasers of consumer goods) which in so many other respects has become quite illusory. Many a technological improvement is not even attempted because reliance is placed on the 'woman back home' thereby, in vicious circle style, helping to keep her there. (To take one example: It would probably not be beyond the ingenuity of men to devise means by which the consumption of electricity and gas in each household is centrally registered in the same way in which the use of the telephone is. At present, meter-readers still call from door to door and, as it is increasingly difficult to find housewives at home during the orthodox working hours, have to start early in the morning or work late at night in order to get their jobs done).

Another point which must be mentioned in the present context is the vast growth of administration in modern societies. While the amount of housework has been reduced by household gadgets, factory production of food and clothes, the existence of uncrushable and nearly indestructible textiles, etc., the involvement of each citizen in an administrative network has greatly increased. Visits to banks, insurance offices, health and welfare centres, housing managements, school authorities, etc., are events occurring more or less frequently, but on each occasion with some urgency, and can only be attended to either by the worker taking time off or by his 'stand-in', the housewife.

Besides, <u>somebody</u> has to take shoes or a watch to be repaired, clothes to be dry-cleaned; <u>someone</u> has to be at home when parcels are delivered, when the plumber or electrician calls for repairs, when the television set or other appliances need servicing.

All these are occasional, not regular, happenings and they do not amount to a full-time occupation; but they cause considerable frustration to the man or woman in full-time employment who has nobody to whom he can delegate these responsibilities; and, trivial as each individual instance may appear, their sum total has sufficient weight to make many women in search of employment feel they cannot attempt more than a part-time job.

This is, I think, clearly evidenced by the results of the "Survey of Women's Employment" quoted earlier (cf.Footnote 1). This

investigation, which was carried out in Britain on behalf of the Ministry of Labour between July and October, 1965, with a national sample of 10,000 households, showed that over half (52.6 per cent) of Britain's female population aged 16-64 were 'economically active'. Forty-five per cent of the married women in this age group were in gainful employment - an unprecedentedly high proportion, I believe. However, about one half of them worked only part-time, that is, less than 30 hours per week.

Asked whether they had any particular reason for only working part-time, responsibility for children was the most frequent cause, mentioned by nearly four in ten part-time workers; but three in ten said they "do not want to work long hours" (without specifying further details) and nearly as many gave "other domestic duties" as the reason for working only part-time. Nearly six in ten said they would not consider working more than 30 hours a week "in any circumstances". In her analysis of the survey results the author of the Report comes to the conclusion that "the provision of suitable work would induce only a comparatively small proportion of part-timers to work full-time".

It is the contention of this paper that it is not so much the amount of regular housework as the difficulty of timing the 'odd jobs' incidental to domestic responsibilities which restricts many married women to part-time employment, with all the many disadvantages this entails in terms of inferior work, job insecurity, minimal prospects of promotion, disproportionate amounts of time and money spent on transport, reduced insurance and welfare benefits, etc. And it is this same difficulty which is a needless burden to numerous working men and women who have no dependent female to whom they can transfer the responsibility for domestic tasks.

The services so far alluded to fall, roughly, into three categories:

(1) Purchases of household commodities (including food, clothes, domestic equipment and furniture, medicines and cosmetics; bookings of holiday travel might also be mentioned under this heading);

(2) Maintenance (This category embraces a variety of repair services as well as dry-cleaning and laundrettes; it also includes such items of personal maintenance as hairdressing).

(3) Administrative Services (Health, housing and welfare offices, local government administrations and labour exchanges).

The first two classes represent commercial services, largely in the hands of 'free enterprise' in all participating Member countries; the third consists mainly, if not exclusively, of public services.

All three are needed in varying degrees by all working men and women with domestic responsibilities.

(4) A fourth category concerns only workers responsible for the care of young children. It comprises such services as crèches, nurseries, schools, school meals, after-school facilities and school holiday provisions.

The existence of all, or most, of these services - and their availability in sufficient numbers - is the subject of another Report and will not be dealt with here. The question relevant in the present context is merely whether such services as exist are sufficiently co-ordinated with the working hours of employed mothers and, if not, what should be done to make them so.

II

Before discussing whether or not in the participating countries some, at least, of the above services are adjusted to the needs of workers with domestic responsibilities, two points have to be made.

Firstly, as the following Table shows, there are considerable differences in the extent of female employment between various countries. While in Denmark and France women constitute well over one-third of the civilian labour force and in Austria as much as 41 per cent (although 'unpaid family workers' are included in this percentage), in Italy and Norway they are 28 per cent and in Ireland barely 27 per cent.

Table 1

Women as percentage of the civilian labour force

Austria	(1961)	40.8%
Denmark	(1962)	35.4
France	(1962)	34.2
Ireland	(1961)	26.7
Italy	(1962)	28.2
Norway	(1962)	28.1

Source: OECD Manpower Statistics.

Secondly, there are wide differences in the degree of industrialisation between these countries (and also between different areas of each country). Table 2 gives a rough indication of this.

Table 2

PROPORTION OF THE CIVILIAN LABOUR FORCE EMPLOYED IN AGRICULTURE (INCLUDING FORESTRY, HUNTING AND FISHING)

Austria	(1961)	23.2%
Denmark	(1962)	19.1
France	(1962)	20.7
Ireland	(1962)	35.1
Italy	(1962)	28.0
Norway	(1962)	21.6

Source: OECD Manpower Statistics.

In each case the agricultural labour force includes well over one-third 'unpaid family workers'(1) - mostly women - except in Italy where the proportion is slightly less (31.6 per cent), and Austria where it is 47 per cent.

The conditions of life and work of a woman working as an unpaid helper on a family farm are obviously vastly different from those of a woman working in factories, shops and offices in large or medium-sized towns.

Many of the problems discussed here are a function of size: the size of cities which gives rise to long journeys to work and often involves considerable distances between shopping and living areas, and between schools and homes; the size of factories and offices which makes it difficult or impossible for individual workers to take time off during regular working hours when needed; and the size of shops (e.g. department and chain stores) whose opening and closing hours are strictly regulated by statutory powers - in contrast to the much more flexible village store run by the owner and his family. Finally, it is possible without cynicism to say that the problem of synchronisation cannot arise in the countryside because many of the services simply do not exist; a different modus vivendi develops there to cope with needs which cannot be met locally; and the needs themselves are in many ways different. The 'split in the centre of gravity of man's life', mentioned earlier, affects the rural population to a much lesser extent than the town-dweller.

(1) Excluding Denmark which, according to the data at my disposal, does not discriminate between different categories of civilian occupations (employee, employer, self-employed, etc.) hence it does not allow an estimate of the proportion of 'unpaid family helpers' in its relatively small agricultural sector.

Since we are dealing with an essentially urban problem, the availability of the amenities enumerated above (Section 1, points 1-4) will, to some extent, be commensurate with the degree of industrialisation and urbanisation of a country. To some extent, but not entirely; the development of educational and welfare services, for instance, will also depend on the climate of opinion prevailing in a given country and the extent to which if finds expression in political decisions.

Services in categories (1) and (2) - i.e. in the private sector - are, in varying degrees of sophistication, available everywhere; facilities in categories (3) and (4) - i.e. the largely public sector - are less responsive to consumer demand (most of them being outside the market economy) and are therefore much less universal.

III

The food trade, meeting men's most basic and universal need, has made more efforts than most to adapt its time-table to the requirements of the working population. Methods of adjustment vary from early opening hours of shops (e.g. at 6.30 a.m. in Austria) and late closing times - in some places daily, in others once or twice a week - to mobile stores. Flexibility has been promoted by the fact that a considerable proportion of this trade has been traditionally, and still is to this day, in the hands of small individual tradesmen with no employees other than the members of their families.

The French practice of keeping food shops and even some markets open on Sundays, and closed on Mondays instead, obviously is a great help in reducing the rush of weekend shopping by spreading it over two days; it particularly meets the needs of workers who are not free on Saturday mornings.

Home deliveries are not nearly as widespread as they might be, partly because the housewife wants to go into the shop to see what is available before making her choice, and partly because times of delivery are uncertain and there cannot always be someone at home to accept the goods and pay the bills. Credit may be given to a regular and reliable customer but this, naturally, is restricted.

In countries where people live in blocks of flats with resident porters - as is a widespread custom in Austria and France - this problem can more easily be solved than in countries where most people live in family houses; reliance on the kindness of neighbours must

not, evidently become habitual if neighbourly relations are not to suffer.

The provision of midday meals in factory and office canteens - or, where they are not available, the supply of luncheon vouchers - reduces the amount of shopping and cooking to be done at home; and no public service has done more to relieve the housewife's burden than the provision of cheap school meals - available, however, only in a few countries, France among them.

Purchases of commodities other than food present a greater problem. With the spreading of the five-day week to most countries there has been a tendency to reduce the midday-break; and, faced with the alternative of either an extensive lunch-hour and going home late, or reducing the midday-break to a minimum in return for an earlier end of the working day, most women prefer the latter.

This leaves very little, if any, time for midday shopping. Purchases therefore have mostly to be left to the Saturday which is already crowded with household shopping and domestic chores. Moreover, as this is the only weekday when working people are free, streets and shops are filled to capacity, which makes shopping expeditions an ordeal to be avoided if at all possible.

Some attempts have been made by department stores (e.g. in Denmark and France) to extend their closing time on one or two evenings a week by giving their sales staff a corresponding time off in the morning or on another day, and/or by employing part-time relief personnel. Similarly, some hairdressers have managed to keep their shops open on two nights a week by giving part of their assistants a half-day off in rotation.

However, restrictive legislation, existing everywhere to protect the interests of shopkeepers and their sales personnel alike, is being rather rigidly enforced and has prevented the retail trade from keeping in step with the changing needs of its customers. Addressing a hardware trades conference recently the director of the British Consumer Council appealed to her audience: "You, yourselves, are not in favour of flexibility. This shows a real lack of regard for the consumer interest and I urge traders, banks and Post Office employees to look at things as they do when they are consumers".

As far as banks, post offices and other branches of the administration dealing with the public are concerned, a major difficulty in synchronising their office hours with consumer demands (that is, with the needs of customers who are tied to a working schedule) lies in the fact that the statutory working week of office workers and

public servants is shorter than that of 'blue-collar' workers; and although they may start work an hour later in the morning, they finish more or less at the same time as employees of factories and shops.

Finally, child care arrangements. Crèches and day nurseries - where they exist - have been set up primarily with the working mother in mind. They are, therefore, as a rule, fairly flexible in their timing and ready to adjust to the mothers' work schedules. Schools, however, are guided entirely by scholastic principles as interpreted by educationalists in the light of a country's past traditions, current knowledge and estimated future needs. To be influenced in their syllabus or time-table by the convenience of parents would be contrary to the whole ethos governing the educational system.

This system is, furthermore, extraordinarily resistant to change. Whether children are kept at school all day or during the mornings only, whether or not their homework is supervised by teachers in the classroom, whether sports activities are part of their curriculum or left to the pupils own initiative and spare-time interests, are matters influenced by national tradition differing from one country to another. Any proposed alteration to the prevailing system would need convincing proof, before being considered, that it is in the intrinsic interest of education. The working hours of a minority of mothers are not, for this reason, capable of affecting the existing school arrangements.

However, the plight of children coming home from school while both parents are out at work has received much - and exaggerated - public attention. The general tenor of criticism has tended to put the blame for this state of affairs on the mothers - as if their going out to work were a frivolity or self-indulgence. There is, however, ample evidence to suggest that the small number of mothers in full-time employment who perforce leave their school-age children unattended have no alternative but to earn a living.

The problem of harmonising time schedules of working mothers and their children of school age then consists in:

(a) the provision of after-school care in the shape of day homes 'classes gardiennes', supervised playgrounds and youth centres, and (b) vacation facilities.

The need for both is now widely recognised but the former, in particular, is everywhere in very short supply. They are among the institutions which normally fall within the competence of local

authorities - and for which there is usually neither enough money nor skilled personnel available. (To encourage the building of day-care centres, the Norwegian Government, since January 1966, grants municipalities subsidies of one-third of their building costs).

In contrast, holiday colonies, organised or subsidised by local authorities, social welfare institutions, trade unions, employers, or church organisations, are fairly widespread, especially in France and Italy, and will take care of school children during a part of their summer vacations. For the rest of their holidays, while they live at home, very few recreational facilities exist in urban centres where younger children could be left under adult supervision during daytime while parents are at work.

The technical problems of synchronising the numerous elements of such a vast and complex social system are immense, certainly, but they do not seem insoluble, provided there is a will to do so. Some of these difficulties are organisational - for instance, the dove-tailing of different and apparently independent parts of the economic system; the co-ordination of various sections of the bureaucratic machinery or of different parts of an industry without loss of productivity.

In addition to these inherent problems of planning, there are various positive obstacles to effective co-ordination to overcome. These may roughly be summarised under the headings of:

(1) practical difficulties
(2) statutory limitations, and
(3) traditional attitudes.

Of these, the last is the most difficult to tackle.

Among the most serious practical obstacles are (a) shortages of labour, especially in skilled occupations (this would, for instance, apply to the provision of day nurseries and the after-school care of children) and (b) the cost of some of the desirable extra services. This limiting factor will have to be weighed carefully against the potential benefits to be derived from them.

Statutory limitations affect particularly the opening and closing times of shops. A change in this respect will undoubtedly be strongly resisted both by tradesmen and their employees. While the former will be opposed to the introduction of shift work or the employment of relief personnel, with the increased running costs this would entail, the latter will, naturally, abhor any extension of their working hours. This point may be illustrated by an example taken from a letter published in the Socialist monthly ARBEIT UND

WIRTSCHAFT (Vienna, March 1966). In this, a woman official of the Retail Trade Section of the Austrian Trade Union Federation argues against longer opening hours of food shops by pointing out that two-thirds of all sales employees are women, the proportion in the food trade being even higher; that any extension of working hours would be intolerable, especially as many women employees have considerable journeys to and from work and families to look after in the evenings; and that pay and working conditions in the food trade (including as they do late hours and Saturday work) are so unattractive that many of the best employees have left to seek better jobs elsewhere. The letter ends with an appeal to women workers in other fields not to demand the later closing of food stores out of solidarity with their colleagues in the trade.

There are so many traditional attitudes which obstruct a synchronisation of services in the interests of the working population with home responsibilities that only a few outstanding examples can be given here by way of illustration. Two of them are implied in the letter summarised in the preceding paragraph.

One of these is the arbitrary division of the population into producers and consumers. Useful though it may be as an analytical tool, this classification is a purely mental concept - an abstraction which does not correspond to reality. In actual fact, the producer of one commodity is a consumer of many. Vice versa, consumers are in one part of their lives producers, or purveyors, of goods or services. The habitual discrimination between consumers and producers has turned a distinction between two types of activity into one between two categories of people. Between them a conflict of interests is assumed to exist and a certain amount of hostility is generated. Thereby the fact tends to be overlooked that it is the same people who in one capacity are consumers and in another producers, or workers. It is not as yet fully understood that making concessions to consumer interests does not mean pandering to the whims of an idle class but serves the mutual benefit of a working-and-consuming population.

The other traditional attitude implied in the above letter is the assumption that the normal worker is a full-time worker whose hours are measured in certain fixed quantities - say, a 45 hour week - spread more or less over the same period of time for everybody. There is no obvious reason, however, why working hours should not be staggered in such a way that, for instance, employees in offices dealing with the public would start and end their day two hours later than their colleagues in other departments (e.g. 11h - 19h

and 9h - 17h, respectively), or why a similar staggering of working hours should not take place between the sales staff of one shop, preferably in rotation. (Apart from the benefit that would accrue to the public in terms of access to offices and shops at the end of their working day, there would be a considerable incidental advantage in an easing of the transport problem).

Finally, the traditional attitude which forms the most serious obstacle to the introduction of a more rational adjustment of services to the needs of the 'working-and-consuming' population has already been mentioned in an earlier part of this paper (page 246). It is the survival of an anachronistic concept of the division of labour between the sexes, which takes for granted the availability of full-time housewives for all tasks not directly related to bread-winning activities. This division of functions - as has been said earlier - has become obsolete with the gainful employment of all single and a large proportion of married women.

Allied with this attitude, which ignores the fact that many housewives are also workers, is the fear of any innovation which might in any way disturb this preconceived idea. Measures which might help married women workers are therefore not adopted lest they encourage more married women to go out to work.

V

The problem of synchronisation can be approached from both ends: either from the side of the employers of labour or from the suppliers of services. The former would involve greater flexibility in working hours, more extensive use of shift and part-time work and more ample provision of services for the convenience of workers, such as canteens and restaurants, self-service shops - and, possibly, laundrettes, dry-cleaners and child care centres - etc. within easy reach of offices and factories.

However, since the working consumer's needs are manifold and varied, and since only the largest firms would be able to provide the most essential services on their premises; and as, moreover, most workers live at a considerable distance from their workplace - which makes it inconvenient for them to do their shopping near their work or to bring their children along - the adjustment of consumer services (i.e. shops, administrative offices, etc.) to the time schedule of the working population seems the more practicable solution. In fits and starts this is already happening on a small

scale, depending on the enterprise of individual shopkeepers, hairdressers, providers of automatic laundrettes or suppliers of a few other services. (It is a widespread custom of medical practitioners, e.g. to have surgery hours at the end of the working day. It is difficult to see why dentists, oculists, welfare offices or labour exchanges could not arrange some of their consulting hours similarly).

However, a more systematic approach on a larger scale is needed if substantial parts of the working population are to benefit.

It is desirable therefore to set up in each country Co-ordinating Councils, that is, central organisations on the lines of consumer councils, or of the (British) Prices and Incomes Board.(1)

The specific function of such committees, on which the trade unions, employers and consumer organisations and the Ministry of Labour should be represented, should be the study of and advice on the best ways of adjusting the time schedules of services to those of the working population needing them.

Such a body would be consultative rather than coercive, and its powers would of necessity be limited. Nevertheless, its authority and influence could be considerable since it would represent a widespread interest and would be seen to be impartial.

If the problem of synchronisation is to be taken as seriously as it deserves, and as is necessary in a society with full-employment, nothing short of a Co-ordinating Council will suffice to tackle the complex task satisfactorily.

Meanwhile, and in the absence of such a general co-ordinating body, piecemeal adjustments are possible and can, of course, gradually be extended.

In addition to exerting pressure for the better synchronisation of existing services to the time schedules of the working population and for the creation of better facilities to help workers with family responsibilities to cope more adequately with their dual tasks, citizens also can do a good deal by organising self-help. This would apply, e.g. to mutual child-care arrangements, the organisation of supervised playgrounds, youth clubs or holiday camps. Such schemes have been created in some localities by the individual initiative of a few working women; given encouragement and help, similar schemes could no doubt be created in larger number.

(1) The precise form of these bodies need not concern us at this stage and might vary as between one country and another. (In France, e.g. it might be a sub-section of the 'Commissariat général du Plan d'équipement et de la productivité'.)

VI

The Trade Unions have an important part to play, both in the implementation of measures for the better harmonisation of the working and private sectors of workers' lives and for the mental re-orientation which will have to precede it.

Their contribution lies in three fields:

Firstly, in what may broadly be called the 'educational' sphere, namely, the alerting of public opinion in general, and of their members in particular, to the need for a more rationally adjusted system of working and 'service' hours in the sense proposed above. This would include a breaking down of the artificial distinction between consumers' and workers' interests; and it should also include a relaxation of the unions' attitude to part-time employment by clearly distinguishing '<u>relief' workers</u> in the service sector - where additional staff may be necessary to reduce stress during special periods of increased activity and to allow an extension of service hours without overtaxing the normal personnel - from other types of part-time work which may compete or interfere with normal full-time work.

Secondly, trade unions have an important part to play as pressure groups, both in the industrial and political fields, to bring the desired changes into effect.

Thirdly, trade unions can play an active role in helping to introduce practical measures which would assist workers with family responsibilities. The organisation of holiday camps and day-care centres which has been undertaken by unions in some areas has already been mentioned; these and similar services could and should be greatly extended as a help the workers' organisations can provide for their members. Through their connections with workers' co-operatives the unions could also use their influence to bring self-service stores, mobile canteens and groceries, and other consumer services into easy reach of factories and offices.

This is, therefore, a wide open field for action. Success will depend almost entirely on how seriously the problem of synchronisation is taken.

E. GENERAL REPORT ON

TRADE UNIONISM AND THE EMPLOYMENT OF WOMEN

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INTRODUCTION

Men and women workers are organised in the same trade unions without distinction of sex. Even where, for historical or trade reasons, women have organised themselves, they have not broken away from their national "trade union movement".

Trade unionism defends the living conditions of all wage-earners. This is its "raison d'être", and it excludes any judgment on the motivations and reasons why men and women work.

Whatever factors may have influenced its attitude towards the employment of women, the trade union movement has never departed from its role of representing and defending workers without any discrimination whatsoever.

It upholds the fundamental principle of the right of everybody to work.

It recognises the importance of the economic potential represented by women workers.

It is conscious of the irreversible character of the employment of women, and the possibility of extending this employment to other activities.

Any discussion of trade unionism and the employment of women involves prior consideration of the general employment situation in the national economy.

Trade union attitudes may differ with different forms of society and different political systems.

There are two major conceptions of employment policy, one which regards it as a result, and the other, following Keynes, which regards it as an objective.

Trade unionism, irrespective of the problems raised by population growth, finds itself faced with the situation of increasing competition.

The increased freedom of trade resulting from the Kennedy Round, makes full employment in various European countries more and more uncertain, and it is this which the trade unions are fighting.

The trade union attitude towards the employment of women

The employment of women must thus be placed in an overall context.

The employment of women because of its stop-gap character is very dependent on both economic expansion and recession.

In a period of recession, the employment of women may be challenged, especially in sectors of activity where they are newcomers.

Whereas in a period of expansion, when women represent a potential labour reserve, governments and employers may even introduce various incentives to induce women to work.

Moreover the stop-gap nature of their employment makes women workers more vulnerable to the clever employer who can find in both cases opportunities for exploiting or reducing the value of female labour for his own advantage.

The Recommendation of the Manpower and Social Affairs Committee, approved by the Council of OECD, rightly states that:

> "the corollary of an active manpower policy is the optimum use of human resources to speed up economic growth and raise the standards of living, while satisfying the desire of individuals to make a personal contribution to the national economy."

In the case of women, there is no doubt, even if it is not always explicit, that judgments on the employment of women are concerned with and are governed by behaviour and outlook.

It is unacceptable that a value judgment should be passed on a woman's decision whether to go out to work or not, or that this decision should be influenced or subsequently challenged on the basis of "images" which sociology teaches us to reject, and which cause profound uneasiness among a certain number of married women who go out to work.

On the whole, the trade union movement has, in the past, made the best of the existing state of affairs and has played its part

mainly as a "protector" and "defender". It has seldom or never followed an active policy of promoting the employment of women, remaining under the influence of this traditional concept of woman's place in society.

In some countries workers' organisations may have been led to promote the employment of women for ideological or economic reasons.

In recent years, however, the pressure from active women trade union members together with the headway made in everybody's thinking by the concept of equal rights, have led trade union movement to recognise:

- the right of women to work
- the irreversible character of the employment of women
- the contribution which it makes to economic life.

It will therefore now endeavour to impose its idea of "the full right to work" for women as well as for men, as opposed to the idea, too frequently found, that women workers are no more than auxiliary labour.

It must be recognised that an ever growing number of married women are going out to work. Nevertheless, quite a large proportion of women workers are women who are "on their own" and for whom the so-called problem of the "legitimacy" of working does not exist.

It is on the basis of these practical facts that the trade union movement is conscious that the apparently favourable measures which are nevertheless special to women workers, in practice represent very grave dangers for all women workers and for the employment of women.

This means that the trade unions must adopt a positive attitude towards the employment of women and must embody in their economic and social policy elements which will permit the harmonious integration of women in economic life.

While it was necessary, in the past, to protect working women against exploitation by employers, or even against themselves, it is now increasingly found that there is a refusal to extend this "protection" of women, in the interests of women workers themselves and of wage-earners as a whole.

Furthermore, these protective measures, which only very partially solve the difficulties encountered by women, and which salve some people's consciences, hold up the overall reforms which are essential to improve living conditions for all workers.

This does not mean that the trade unions want to go into reverse, or to disassociate themselves from the protection of the health and welfare of one category of workers. The question here is to avoid creating fresh occasions for discrimination between workers. On the contrary, the trade union movement desires to obtain the maximum protection for all workers.

Motherhood

A special chapter should be devoted to motherhood, and the problems which it raises should be distinguished from the other problems of working women. Motherhood, while it is a biological function peculiar to women, is also a social function and must be recognised as such.

Woman's function of motherhood must be protected, both for working women, the wives of working men and all other women.

The trade unions are familiar with the impact of motherhood on employment.

For the working woman, however, measures for the protection of motherhood should not be the cause of discrimination against her nor be treated as privileges accorded to her.

The recognition of motherhood as a social function makes it the responsibility of society as a whole.

This means a change of outlook in the direction of the acceptance of responsibility by the community, with all the consequences involved from the point of view of finance and the provision of the necessary facilities.

The aim of the trade unions is to do away with the argument of the employers who are constantly emphasising the additional social cost of maternity which they attribute to women workers as a whole.

They are giving the fullest attention to the application of the statutory maternity leave, guarantees against dismissal during such leave and the safeguarding of employment under procedures to be objectively assessed.

The paramount trade union claim is for the payment of full wages during statutory maternity leave, either by the social security fund, or, according to country and conditions, by compensation agencies independent of and external to the working environment.

This trade union attitude has been recognised as essential by the European Economic Community which has adopted the same line in its Recommendation to Member States on the Protection of Maternity.

THE TRADE UNIONS AND THE FIGHT AGAINST DISCRIMINATION

There is still too much discrimination against women who go out to work.

We shall limit ourselves in this Report to the most important forms of discrimination.

Trade union action in this field is essentially designed to do away with discrimination

- in wages
- in education and vocational training
- in access to employment, new openings and senior appointments.

Equal pay for equal work

In the matter of equal pay for men and women, trade union action has helped to narrow the very considerable gap which existed at the outset.

Public opinion is, however, tempted to think, on looking at the international legal instruments and national declarations which exist, that inequality is a thing of the past.

The importance of the position calls for the consideration

- of the nature of the instruments
- and of the system of wage-fixing and its application.

I.L.O. Convention No.100, on equal pay for equal work, is binding only on countries whose governments have ratified it. In those countries, the government must give practical effect to equal pay for government employees and civil servants.

If the government of a country itself fixes a guaranteed minimum industrial wage, it should be the same for men and women.

Article 119 of the Treaty of Rome, on equal pay for equal work, is itself a government matter, since it directly binds the six signatory countries of the European Economic Community.

Some countries have made a point of enshrining the principle of equality in their constitutions, or of confirming by legislation the effect of I.L.O. Convention No.100, where they have confirmed it.

But where wages are free and are freely established by discussion between industries, branches, or even firms, on the basis of disparities which exist, the determination found among employers, in certain cases, to discriminate between workers doing the same work, means that women workers, in particular, are victimised.

Does this mean that the trade unions are not sufficiently vigilant? Is it not rather the fact that, in individual cases, women workers do not always have the necessary knowledge to react?

Trade union action, in various countries, is more specially directed, through increased trade union power, towards conferring the right on works councils and committees to be fully informed of all wages actually paid in the establishment, and the way they are fixed, including payment by results, so that the shop stewards can detect any discrimination which may exist and if necessary, in specific cases, can call into play any external legal machinery established by the country's social legislation.

In practice, discrimination against women much more commonly takes the form of the systematic downgrading of jobs which are more specially filled by women. In most countries the trade unions are asking for a review of job classifications.

The development of techniques and technical methods are generally doing away with the need for "physical strength" and new criteria will sooner or later have to be recognised.

If the inequality of women is to be eliminated, there must be a change of outlook with regard to women's work, followed by solidarity among all workers.

The strike at Herstal, in Belgium, has shown the possibility and value of solidarity.

Started by women as a protest against unequal wages, it forced the men to adopt an attitude and led to all the trade unions undertaking the defence of a specific claim.

Equality of education and vocational training

Boys and girls should have the same educational opportunities, conditions and curricula. Young girls and women should have access to vocational training and guidance on the same terms and conditions as men and youths.

While educational and vocational training programmes should be identical for boys and girls, it is essential that they should be "mixed" at all stages, so that the conditions for equal chances are established from the outset of life.

The same principles of equality should apply to refresher courses and continuing education in the light of technological development and the needs of society.

In the case of refresher courses, the concentration of opinion on the sole problem of women who have left work and want to go back,

is a distortion of the question which has already arisen and will increasingly arise for all workers. The speed of technical evolution involves continuing education for everyone, and the necessary facilities should be available to all, men and women alike.

Equality in upgrading and access to new openings

Access to skills and upgrading should be open to women in the same way as men in every sphere and on the same conditions.

Special care must also be taken to ensure that excessive protection does not hamper access to new occupational openings.

GENERAL CLAIMS

It goes without saying that the general aims of the trade union movement relating to the improvement of living and working conditions, are the same for all workers of either sex.

This applies to such claims as:

- higher wages
- shorter hours
- protection against excessive pace of work
- improved health and safety conditions
- security of employment
- refresher courses and continuing education
- holidays with pay
- pensions, etc.

In many countries shorter hours form the major trade union claim. The attempt to make this a specific claim for women not only fails to solve the problems raised, but also prejudices the employment and upgrading of women workers and retards the improvement of living conditions in a modern society.

The trade unions objectively recognise the need sometimes to adopt special work formulas for social reasons or because of the specific characteristics of certain jobs, but this applies to men as much as to women.

They recognise adjustments of working hours not confined to one sex but made under overall decisions and with the agreement of the personnel, in establishments and firms.

But, with the same objectivity, they protest against the development of, or the desire to generalise, part-time work for women.

It is the duty of the trade unions to safeguard the general interests of women workers and not to be a party to anything which

prejudices employment, distorts the knowledge of the economic state of a country or even masks unemployment.

In the matter of social protection and health, attention has already been repeatedly called to the danger of "over-protecting women". The trade union movement nevertheless hesitates to give its agreement to the relaxation of certain measures which apply only to women, or even to certain categories of women (industrial nightwork, underground work).

As long as there are different wage scales for men and women, there might, for example, be reason to fear that nightwork by women in industry might, in the last analysis, merely amount to cheap labour for the employer rather than additional possibilities of employment for women. Finally, so long as the organisation of society and of the family leaves it solely to women to look after the home, the children, the old people and so forth, the trade unions believe it necessary to protect them against the very great fatigue caused by certain jobs.

With regard to nightwork, the trade unions recognise that its prohibition for women represents a handicap.

It considers that the approach to this problem may differ according to differing national conditions and legislation.

It is nevertheless very clear that nightwork is recognised to be equally harmful for men and for women.

With regard to retirement, the trade union concern in many countries seems in practice to be to bring the age forward for everyone.

It is in fact becoming increasingly common for a number of women, in the second part of their lives, when they are freed from young children and certain family responsibilities, to want to go back to work. The value of the stability and regularity which they represent must be emphasised. It must also be recognised that women live longer than men.

When it is remembered that the possibilities of upgrading count much more at the end of a career than at the beginning, these are all factors which make it difficult to claim early retirement for women.

In countries where special treatment exists, the aim should much rather be harmonisation for the benefit of all wage-earners.

The trade unions, on the contrary, consider that trade union action should be pursued for the early retirement of workers, without discrimination of sex, in jobs or trades recognised as particularly

arduous, or where it is medically established that the physical condition of a worker at the end of his working life justifies the advancement of the statutory retirement age by a few years.

In the long term, therefore, the disappearance of special measures for women must be contemplated, in favour of protection for all workers.

THE TRADE UNIONS AND SOCIAL POLICY

The trade unions consider that improved working conditions are indissolubly linked with the transformation of living conditions for everybody.

Their aims have thus been adapted to the evolution of modern society and, though with a certain time lag, to the employment of women, whether single, married or mothers.

The social policy advocated by the trade unions increasingly aims at meeting the needs of families whose parents go out to work, by the provision of adequate social facilities in the form of crèches, nursery schools, day nurseries, social services and functional housing, and measures such as the adjustment of working hours and transport.

Some trade union organisations have gone even further and recognise the right of the couple to decide freely all matters concerning their private life, such as setting up home, having children or not and choosing the moment when they are psychologically, physically and materially ready for them.

This individual responsibility in no way detracts from that of society as a whole to provide a social and family policy which makes provision for children.

Social facilities in harmony with the modern age are a fundamental condition for fair access to employment and for a change of outlook in favour of the betterment of women.

Improved housing, rationally equipped, and community services are essential in order to lighten household chores.

Child welfare services, day nurseries and social services are calculated to lighten the burden of family responsibilities which falls upon the workers.

The organisation of leisure and facilities for self-education and the full flourishing of the human personality, are also among the aims of the trade union movement.

These aims must all take their place in a general health, housing and education policy for which the trade union movement will never cease to fight. Such a policy should now recognise the reality of

the employment of women, who should therefore be associated with its formulation.

TRADE UNION WAYS AND MEANS

The trade unions have various ways and means of achieving their aims of integrating women in the working world, as well as enormous possibilities of increasing their effectiveness by making full use of the knowledge, experience and abilities of their women members.

Independently of the trial of strength which affects the results achieved in joint management-labour bodies, it must be recognised that trade unionists, who are usually more particularly concerned with occupational and even corporative advantages, need to be clear-sighted, well informed and convinced of the attitude adopted by their organisation towards the employment of women.

In order to eradicate discrimination, action must be taken in the firms, with the shop-floor militants and among the working women themselves, who must be alerted to the problems and given the means of formulating them.

In parallel, to make such action more effective, trade union membership among women must be intensified, especially in the non-industrial sectors, where there is often no trade union tradition, since it is essential to mobilise the maximum strength.

In speaking of the intensification of women's trade union membership, it must be recognised, first and foremost, that observing all due proportions, and in comparison with the percentage of women workers, the number of women trade union members, in most countries, contrary to what one often hears, is far from negligible. This does not rule out the fact that information and education activities are always necessary to persuade working women, as well as working men, to join a trade union organisation.

The question of women in trade union life hinges more specially on whether they are fully integrated into the taking of responsibilities, the power of direction and the formulation of the union's social and economic policy.

Women must therefore be integrated at every level of trade union structures, including the social and economic policy-making level, and they must be integrated on an equal footing and not merely for "women's questions" or "family questions", even if that means modifying structures, rules or the traditional means of access to these levels.

Finally, care must be taken to ensure that women, and particularly trade unionists, representing the working women, are members of the national and international bodies which formulate social, economic and education policies.

While it cannot be said that there is deliberate discrimination by men, the practical result very often is the membership of one lone woman, which often salves everybody's conscience.

Since working women, like working men, have to deal with general questions, women must increasingly be the mouthpiece of their fellow workers, and must be vigilant to ensure that the lines followed, or the decisions taken, for example in the matter of employment and vocational training, on the social and economic plane, have no adverse effect on some category of workers or even on all women workers.

Independently of full integration, are we then to take it that working women should content themselves with limited representation on the directing bodies, particularly the top ones, and that this should apply to scattered minorities?

It is to remedy this state of affairs that commissions, committees and councils of women workers already exist in the trade union organisations and at confederation level, convinced as they are that their task is to labour for their own disappearance.

Indeed, if women meet to express a point of view on labour questions affecting them in particular, with the aim of doing away with all discrimination against themselves, it is, in the last analysis, in order that the whole organisation shall take charge of the problems which face them so that the solutions to be recommended shall be integrated in general social and economic policy.

The trade union movement, in support of its claims and its action of integration, should give women the training to enable them to assume responsibilities at every level of national or international trade union organisation. Such training should take account of the needs and problems of women at work.

The movement should also undertake information and education action on the problems of women at work and on the betterment of women, among its members and leaders, but also among public opinion.

CONCLUSIONS

The time has passed when the trade unions could be content to write a few claims of principle into their programme and adopt some pious resolution on equal pay. Once they have fully recognised that

women at work are an integral part of the labour force, that their contribution is essential to life and economic development, the trade unions have set themselves the task of solving the problems of women as well as those of all other workers. This is true, in particular, of the International Confederation of Free Trade Unions and the International Confederation of Christian Trade Unions, which have followed a very active policy in this field in recent years. It is also true of a number of organisations which are members of these two Confederations and trade unions in OECD Member countries. Studies, seminars, conferences, resolutions and charters all bear witness to the evolution which has taken place.

Historically, women have always fought side by side with men for better working and living conditions. It is up to them to recognise their own strength and to make their presence felt in trade union and economic life in a spirit of complete solidarity with all workers.

IV

COUNTRY REPORTS

by

TRADE UNION REPRESENTATIVES

COUNTRY REPORTS

AUSTRIA

THE EMPLOYMENT OF WOMEN
PRESENT SITUATION AND PROSPECTS

by Dr. Edith KREBS
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In order to understand the present situation of female employment in Austria, a certain number of historical and sociological circumstances must be borne in mind. In the first place it should be noted that for a long time Austria has been able to boast a high percentage of female employment; for instance, the 1910 census showed that 40 per cent of all employed persons were women. This figure comprised self-employed women as well as wage-earners and family helpers. Female employment is consequently a long-established phenomenon in Austria, but it is also a problem which has not yet found an entirely satisfactory solution. Despite this fact, a large proportion of the population regard the employment of married women, and especially mothers - and here we speak chiefly of women other than self-employed - as a purely temporary necessary evil which does not affect the principle that the world of labour is one reserved for men. This quite unrealistic picture is promoted by the press, especially the women's journals, as well as films and advertisements, in a manner which frequently borders on the irresponsible. A realistic appreciation of the situation is to be found chiefly among the economic and social partners, where the employers benefit from the international trend towards increased female employment since they are always seeking for more labour. The workers' representatives, on the other hand, are striving to press forward their demands for better training of women, equal pay for equal work, better protection for working women and mothers, and better opportunities for a professional career.

The overemphasis laid for years past on the picture of the woman as mother has led in practice to the situation that, despite the economic situation of many families and indeed of most young women, the employment of women, today as several decades ago, is regarded mainly as a transition stage between school and marriage and/or motherhood. The result is that very often little time and money are invested in vocational training. Above all, however, it has the psychologically very powerful effect that many women regard gainful employment as an unendurable compulsion compared with the ideal goal of exclusive occupation in the home, so that there is a notable discrepancy between wishful thinking and reality. In the light of the foregoing the generally small number of women in medium and higher positions becomes understandable, though it may be regarded as a definitely retrograde step. On the other hand, it must be admitted that an increasing percentage of parents are striving for better training of their daughters, as we shall see later on; and that the continuation in their profession of highly qualified and outstanding women is generally regarded with approval as normal.

By and large it may be said that we have, on the one hand, socially advanced trends towards the promotion of female employment, as regards qualifications, protection, etc., as part of undeniably existing trends towards gaining for women a genuine equal partnership in society, in the family and in the economy. On the other hand, there remain very powerful conservative forces which have succeeded, for example, in preventing any improvement in the legal status of married women and unmarried mothers, and still contrive, with remarkable success, to defend the higher position in industry and administration against any female invasion.

The inferior social status of women and the slight recognition accorded to a woman's professional work and her activity as housewife and mother is most clearly reflected in the small number of female members of the highest administrative bodies. Of the 165 members of the Austrian National Parliament today, only eight are women: in a Cabinet of 54 members there are eight women. The Vienna Municipal Council, frequently quoted as a model among other municipal councils on account of its high proportion of female members, in fact numbers only 15 women Councillors out of 100. Female representation on other provincial and municipal Councils is far lower.

Nevertheless, trends in the education of girls offer some hope of a better development in the social and professional status of Austrian women. Thus, in 1963-64 the proportion of girls in the various levels of education was as follows:

Primary schools	49.1 per cent
Senior primary schools	51.8 per cent
Higher and intermediate secondary schools (general)	38.0 per cent
Higher and intermediate secondary schools (vocational)	49.3 per cent
High schools	25.8 per cent

The upward trend in female education is illustrated by the following figures: of the professionally employed women in 1951, 9,396 had completed their higher education and 49,760 their secondary education; in 1961 the corresponding figures were 14,113 and 58,366.

The following table illustrates this slow but steady improvement, broken down into a number of professional occupations:

Professional women with higher education
(Selected occupations)

Profession	Number of women			Percentage of women employed		
	1934	1951	1961	1934	1951	1961
Total women graduates	.	9,396	14,113	.	12	16
of which:						
Doctors	665	1,710	2,176	9	16	18
Dentists	138	212	376	13	24	25
Veterinarians	3	12	27	-	1	2
Pharmacists	314	915	1,298	19	42	51
High-school teachers	24	107	124	3	11	9
Lawyers	166	148	197	3	5	7
Magistrates, public prosecutors	-	12	32	-	1	2
Notaries	-	1	4	-	-	-
Secondary-school teachers	.	1,835	2,625	.	31	35

The existing occupational and social structure of women graduates in professions reveals that the great majority, namely 10,172, are wage-earners; only 3,071 are self-employed and 870 work with members of their family. It follows that in the year 1961 one in 50

of the self-employed women, one in 80 of the wage-earners and one in 4,000 family helpers had completed their higher education.

Among the professions we find the women typically concentrated in a very few professions: of the self-employed university graduates one in two is a doctor, dentist or pharmacist. Out of 100 women who passed out of high school we find in 1961 18.6 as secondary-school teachers, 18.1 as doctors or dentists, 16.1 in commercial or office work and 9.2 as pharmacists. The higher ranks of the administration offer good opportunities to women graduates, even though in this field to date the top posts are almost completely denied them.

All the evidence shows that a very slow but nevertheless successful female invasion of the academic professions is taking place. The proportion of women students in the student body rose from 22.7 per cent in 1956-57 to 25.5 per cent in 1964-65. It is also apparent from a study of the courses selected that certain subjects (medicine, German history, etc.) are traditionally preferred by women students but that a slow widening of the subjects studied by women is taking place - a development greatly to be welcomed and promoted.

Before going into detail on the occupational distribution of women manual and clerical workers, let us take a look at some figures of the female population in Austria and the female labour force as a whole. According to the census taken in 1961, the total number of women in Austria was 3,777,407, of whom roughly 1,360,000 (i.e. 36 per cent) were in employment. The number of women in employment, as well as those drawing pensions, rose considerably between 1951 and 1961, while the number of housewives with no outside employment fell correspondingly. Looking over the figures of working women in four censuses, we find that the gainful employment of women in Austria has remained about the same.

Of all actively employed persons women represented in 1910 40 per cent, in 1934 38 per cent, in 1951 39 per cent and in 1961 40 per cent. In 1967 the figure for wage-earning workers over the whole country was 37.4 per cent, but in Vienna, which traditionally employs a high proportion of female labour, the figure was 43.7 per cent. In this latter year the proportion of women among the actively employed wage-earners was 36.8 per cent, whereas women represented 59.6 per cent of all registered unemployed. In 1961, 64 per cent of all working women were wage-earners, 25 per cent were family helpers, (chiefly in agriculture and forestry) and 11 per cent were self-employed.

We now come to a survey of the types of employment which are chiefly interesting to women. In 1961, out of 100 women workers the percentage distribution between the various fields of activity was as follows:

Agriculture and forestry	29.9
Commerce	12.0
Iron and metal mining and working	6.0
Hotels, restaurants, bars, etc.	6.0
Clothing industries	5.9
Textile industries	4.7
Nursing, etc.	4.5
Public offices, public administration	3.8
Teaching, training, art and entertainment	3.5

Women employees (manual and clerical) are to be found chiefly in commerce (13.1 per cent of all women employed), iron and metal mining and working (8.8 per cent), clothing (8.0 per cent), textiles (7.2 per cent), hotels, restaurants and bars (6.4 per cent) and nursing (6.4 per cent). Women manual workers are to be found chiefly in the textile and clothing trades and in metal-working, where the figures per 100 women workers are: 11.5 per cent, 11.4 per cent and 10.5 per cent respectively. The greatest employer of women clerical workers is commerce, which accounts for one out of every four, followed by public administration. Of women in this class 22.6 per cent were employed in 1961 in commerce, 12.3 per cent in public administration, 11.5 per cent in various branches of nursing and 11.0 per cent in teaching and training, art and entertainment. Incidentally, commerce is likely in the near future to be of even greater importance for female labour, as the number of trainees in this branch has increased.

Female labour has, however, decreased chiefly in the branches of agriculture and forestry and domestic service. Thus the number of women in domestic service has fallen by 73 per cent, compared with 1934, and in agriculture by 29 per cent (28 per cent since 1951). We reproduce here a series of tables from the survey "Die Frau in Österreich" by Firnberg-Rutschka, showing the relative proportion of female labour employed in various branches of activity since 1934.

These figures reveal the great importance of women at work. Insofar as they are unmarried, married but childless, or married with grown-up children, the chief preoccupation must be whether, since they are on average the weakest employees physically, they are given the protection they need. The employment of mothers with children, however, presents a number of problems which remain to this day unsolved or imperfectly solved. Among the latter we count in Austria the question of accommodation for children under six years of age, stand-ins for sick mothers or the care of sick children whose mother is at work. There remain also the questions of co-ordinating the start of the school day and the working day and of the accommodation of school children throughout the day.

The importance of these problems can be seen from the numbers of women in employment with children. Thus, of the 1,359,886 working women in Austria (employed or unemployed), 1,003,483 had no children under 14 years living at home, 198,727 had one child under 14, 92,570 had two children under 14, 38,315 had three children under 14, 15,791 had four children under 14 and 11,000 had five or more children under 14.

The corresponding figures for Vienna were: 363,281 working women: 295,679 with no children under 14; 51,728 with one; 12,770 with two; 2,399 with three; 523 with four and 182 with five or more.

Prospects for the next ten years

According to the second forecast of the Council for Economic and Social Questions, the population of Austria will increase in the next three five-year periods (1965-70, 1970-75, 1975-80) at annual rates of 0.48 per cent, 0.44 per cent and 0.48 per cent respectively.

According to these forecasts, the male population of Austria will rise from 3,290,000 in 1961 to 3,378,100 by 1965, 3,471,700 by 1970, 3,562,300 by 1975 and 3,667,600 by 1980. The female population will rise from 3,772,800 in 1961 to 3,855,600 by 1965, 3,938,400 by 1970, 4,010,800 by 1975 and 4,090,500 by 1980. In the age groups from 0 to 29 the male population will exceed the female population, whereas in all age groups over 29 there is a marked surplus of women. The attached tables showing the age structure of the Austrian population[1] as well as the following table showing the breakdown of the population by age groups (forecasts for 1970 and 1980) make this clear:

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(1) See Annexes A and B.

Field of activity	Working women						
	1934	1951	Absolute figures	1961			
				1934	1951	As a percentage of all active	
				= 100		total	women
Forestry and agriculture	569,341	567,107	407,031	71	72	53.0	29.9
Mining	937	2,488	2,865	306	115	7.2	0.2
Electricity, gas and water supply	755	2,130	3,443	456	162	10.7	0.3
Cement and ceramics industries	5,692	11,011	13,849	234	126	22.7	1.0
Building and ancillary trades	5,701	9,131	13,719	241	150	5.4	1.0
Iron and steel and metal industries	24,665	48,287	81,396	330	169	20.1	6.0
Timber processing	5,703	9,231	15,306	268	166	14.0	1.1
Leather production and manufacture	2,408	3,355	4,733	197	141	43.2	0.4
Textiles	49,063	63,138	64,354	131	102	66.5	4.7
Clothing	92,313	73,183	80,553	87	110	68.8	5.9
Paper-making and processing	9,983	10,264	12,731	128	124	35.5	0.9
Graphic trades	6,336	7,217	9,154	144	127	34.5	0.7
Chemical production	10,372	13,693	22,262	215	163	36.6	1.6
Foodstuffs and confectionery	27,307	31,019	42,732	156	138	32.9	3.1
Hotels, restaurants, bars	53,293	51,899	81,958	154	158	69.7	6.0
Commerce	87,699	101,506	163,370	186	161	52.5	12.0
Transport	11,018	18,193	25,890	235	142	12.8	1.9
Banking and insurance	7,349	9,107	16,980	231	186	42.6	1.3
Cleaning	11,016	7,630	11,195	102	147	67.2	0.8
Aesthetics (massage, beauty treatment, etc.)	7,824	11,301	20,119	257	178	70.6	1.5
Nursing	27,370	44,678	61,606	225	138	68.9	4.5
Teaching, training, art and entertainment	36,013	42,308	47,540	132	112	51.9	3.5
Lawyers and commercial advisers (1)	4,532	32,329	41,554	917	129	69.3	3.1
Public administration	21,233	39,200	51,277	241	131	28.8	3.8
Domestic service	172,205	75,668	46,989	27	62	98.9	3.5
Not specified	39,105	14,179	17,280	44	122	45.2	1.3
Total	1,289,233	1,299,252	1,359,886	105	105	40.4	100.0

(1) For 1951 and 1961 this includes "estate agents".

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Field of activity	Women Employees						
	1961						
	1934	1951	Absolute figures	1934	1951	As a percentage of all active	
				= 100		total	women
Forestry and agriculture	133,605	96,463	47,255	35	49	39.0	5.5
Mining	931	2,480	2,858	307	115	7.2	0.3
Electricity, gas and water supply	747	2,118	3,429	459	162	10.7	0.4
Cement and ceramics industries	5,475	10,601	12,993	237	123	22.6	1.5
Building and ancillary trades	5,051	8,171	10,979	217	134	4.6	1.3
Iron and steel and metal industries	23,479	46,450	76,218	325	164	20.2	8.8
Timber processing	4,691	7,996	12,744	272	159	14.5	1.5
Leather production and manufacture	2,246	3,026	4,313	192	143	48.8	0.5
Textiles	47,341	61,186	61,940	131	101	67.2	7.2
Clothing	67,114	56,972	68,860	103	121	77.7	8.0
Paper-making and processing	9,779	10,034	12,443	127	124	35.5	1.4
Graphic trades	5,813	6,381	8,005	138	125	34.0	0.9
Chemical production	10,187	13,362	21,615	212	162	36.7	2.5
Foodstuffs and confectionery	24,109	24,647	33,287	138	135	31.9	3.8
Hotels, restaurants, bars	38,454	30,455	55,484	144	182	76.1	6.4
Commerce	48,692	61,252	113,765	234	186	53.4	13.1
Transport	10,236	17,188	23,464	229	137	12.4	2.7
Banking and insurance	7,160	8,809	16,649	233	189	42.4	1.9
Cleaning	7,559	6,234	9,868	131	158	68.1	1.1
Aesthetics (massage, beauty treatment, etc.)	6,375	8,685	16,100	253	185	81.7	1.9
Nursing	23,398	40,754	55,433	237	136	77.6	6.4
Teaching, training, art and entertainment	30,558	38,509	44,590	146	116	52.7	5.1
Lawyers and commercial advisers (1)	4,462	31,529	39,090	876	124	76.4	4.5
Public administration	21,233	39,200	51,277	241	131	28.8	5.9
Domestic service	158,294	75,668	46,989	30	62	98.9	5.4
Not specified	38,076	13,659	17,208	45	126	45.2	2.0
Total	735,065	721,829	866,856	118	120	36.3	100.0

(1) For 1951 and 1961 this includes "estate agents".

Breakdown of the population by broad age groups

%

Year	0-14	15-59	60 and over
1961	223	594	183
1965	231	575	194
1970	244	553	203
1975	246	548	206
1980	242	572	186

The second forecast shows that between 1965 and 1970 the active population will diminish by about 60,000, but between 1970 and 1980 there will be a recovery of some 300,000. It is further assumed that by 1980 there will be 250,000 more actively employed than today, this increase consisting of 100,000 men and 150,000 women. The proportion of women in employment is expected to reach its nadir in 1970 and thereafter to rise steadily.

The increase in the total number of gainfully employed will probably apply exclusively to the wage-earners. The number of self-employed persons in forestry and agriculture, in commerce and in the liberal professions is falling steadily, as is the number of family helpers (mostly women) in forestry and agriculture. Family helpers in commerce remain about the same. The development in the employment of women is shown in Annex C.

The proportion of women in employment varies from region to region, being at its highest in Vienna. Regional differences in the percentage in employment (men and women) can be seen in the following table:

Size of community (inhabitants)	Resident population	Gainfully employed on 21.3.1961	Percentage active
up to 500	457,708	234,741	51.3
501 " " 2,000	1,847,641	876,087	47.4
2,000 " " 5,000	1,232,898	557,890	45.3
5,001 " " 10,000	505,587	227,921	45.1
10,001 " " 20,000	329,092	146,721	44.6
20,001 " " 100,000	431,448	197,665	45.8
100,001 " " 1,000,000	641,867	308,193	48.0
1,000,000 and over	1,627,566	820,597	50.4
	7,073,807	3,369,815	47.6

Whereas, taking the country as a whole, the percentage of wage-earning women workers is 37 per cent, in Vienna the figure is over 40 per cent. Since, as we have already mentioned, the labour force available in Vienna will shrink during the next decade, because those born in years with a heavy birth rate will become due for pensions and the succeeding age groups are less numerous, this implies as always a certain opportunity for the women of Vienna to receive more and better offers of jobs.

In the training of girls there is a distinct trend towards training of higher quality. Thus between 1953 and 1963 the number of female apprentices was more than doubled (from 24,570 to 49,890), while over the same period the number of male apprentices rose by about 50 per cent (from 103,700 to 154,290). The fact remains, however, that of the 40,000 school leavers in 1963, 57 per cent of the boys, but only 33 per cent of the girls received any vocational training. After leaving school 1.5 per cent of the boys, but 5.2 per cent of the girls worked as unskilled labour. It does not appear possible, therefore, to achieve any serious reduction in the proportion of unskilled female labour in the foreseeable future.

The trend in the training of girls is plainly towards that of clerical workers, notably in commerce. Whereas in 1961, out of 100 female clerical workers 22.6 were in commerce, of the female apprentices 42.4 per cent were articled in this branch. Nearly one-fifth of these girls chose the clothing trade, over 12 per cent chose aesthetics, notably hairdressing. In the sphere of industry, there has been an increase in the number of women in the metal industry, the number having trebled since 1934. Other noteworthy increases are in timber processing and the chemical industry.

This increase in female employment is, however, chiefly to be seen in the various forms of service - in trade, catering, aesthetics, banking, insurance, nursing and public administration. Curiously enough, female employment also increased up to 1961 (the date of the last census) in two shrinking industries, namely textiles and clothing.

Unfortunately evidence is lacking to show that in future young women will increasingly embrace technical occupations. Recently published statistics show that of 1,014 pupils studying for mechanics, glaziers or opticians, there were only 16 girls; of 427 technical draughtsmen only 59 girls; and of 1,315 electro-technicians only 7 girls.

As a general rule the girls are taught the trades which are traditionally "suitable for women", often against their will and without regard to the few job openings available. Consequently, many

abandon the occupation for which they trained and take jobs in some other branch of industry as semi-skilled workers. A survey carried out by the Vienna Chamber of Workers in the city's metal works showed that of 1,350 semi-skilled female workers, 27.4 per cent had received full vocational training but had left their occupation because they did not like it or because the prospects were poor or for personal reasons.

The continued one-sidedness of female employment can be seen from the courses followed by girls in high schools (Figure 1). The outlook for highly-educated occupations is extremely favourable in view of the growing need for highly and very highly qualified staff, and leads us to hope that not only will the number of women students grow, both in numbers and percentage, but that they will enter fields other than those traditionally associated with women.

In those professions in which the greatest number of women have hitherto been employed, i.e. teaching, medicine, interpreting and translating, the prospects are to be found in the figures below. It should be noted that in 1980 55,000 more people with academic qualifications will be in employment than in 1961.

It is assumed that between 1961 and 1980 the increase in teachers in the higher schools (i.e. with teaching diplomas) will be 13,000, in doctors 1,500 and in interpreters and translators 500. These professions are recognised today as suitable for women, so that the girls completing their education during these years will have reasonable opportunities. The increase in qualified engineers is estimated at 16,500, in scientists (not teaching) 5,500 and high school teachers 5,000. These, however, offer less scope for women with higher education because even today, owing to the bias at home, at school and at college, the number of girls opting for technical professions or science is still small, and women can obtain appointments as high school teachers only with the greatest difficulty. Nevertheless, the additional demand for 13,000 teachers takes no account of the improved teacher-pupil ratio established in the new school legislation, nor of the prescribed introduction of a ninth school year in higher schools.

Apart from the academic professions, there exist more exact estimates of requirements for high school leavers, namely 21,400 each year from 1970 to 1974. It follows that girls, who form the majority in the schools of commerce and 100 per cent of the women's training colleges, will find certain openings in medium positions in firms (while the higher posts will still, as a rule, be filled by men, even if their training is the same or, indeed, inferior).

The most important measures for the advancement of working women, as proposed by the Austrian Federation of Trade Unions and the Austrian Chamber of Workers Council

At the Federal Women's Congress of the Austrian Federation of Trade Unions, held every four years, decisions are taken upon all measures to be taken during the ensuing period. These decisions are prepared, after provision of the necessary documentation, in the course of numerous discussions of the Chamber of Workers and the Federation of Trade Unions, as well as at the annual meetings of the Federal Women's Committee of the Austrian Federation of Trade Unions. They are thus available to the Women's Congress as a basis for its working programme for the next period.

The main points decided on at the last Congress were:

1. Extension of the Social Security System, notably:

   Implementation of the principles of the I.L.O. Convention No.100;
   Creation of a new law on working hours (40-hour week with equal pay);
   A grant to be made to all women leaving their job to have a child;
   Raising pensions for widows and orphans;
   Counting the statutory grace period (Karenzurlaub) part of the period of contributions which counts for entitlement to pensions under the General Law on Social Insurance;
   Extension and development of all arrangements for caring for infants and children of school age;
   Extension of arrangements for home help.

2. Labour market questions, notably:

   Revision of vocational training, in particular promotion of training for girls;
   Promotion of changes of occupation by financial grants and re-training and further training;
   Facilitating entry into professional life by efficient counselling, as well as re-training and further training, especially for those who, after a long period away from work, are again seeking employment;
   Creation of new jobs in areas of underemployment, paying special attention to opportunities for women;
   Further work on the question of part-time work, with reference to the protection provided by industrial and social legislation for part-time as well as full-time workers;

Greater observation and analysis of the labour market and the economy and constant adjustment of the informative and promotional activities of the appropriate authorities, in the light of changing occupational, technical and economic data, with particular attention to the special requirements of women.

3. Family questions, notably:

Comprehensive revision of the Law for Equalisation of Family Burdens, with simultaneous raising and acceleration of grants;
Provision of a Special Fund for Mothers with one or more children under three years of age.

4. Matrimonial and family legislation, notably:

Putting through in practice the principle of equal rights for both marriage partners;
Revision of the partner's right of inheritance;
Improving the status of single mothers and illegitimate children;
Removing the unfavourable position of the wife in legislation on property.

The above list does not exhaust all the improvements acknowledged as necessary for women, but rather affords a survey of what the women in the Trade Union movement regard today as urgent.

All these demands were not merely voted by the Women's Congress but are being insisted upon in talks with the appropriate ministries, in Parliamentary debates and in all meetings of bodies and organisations concerned with these matters.

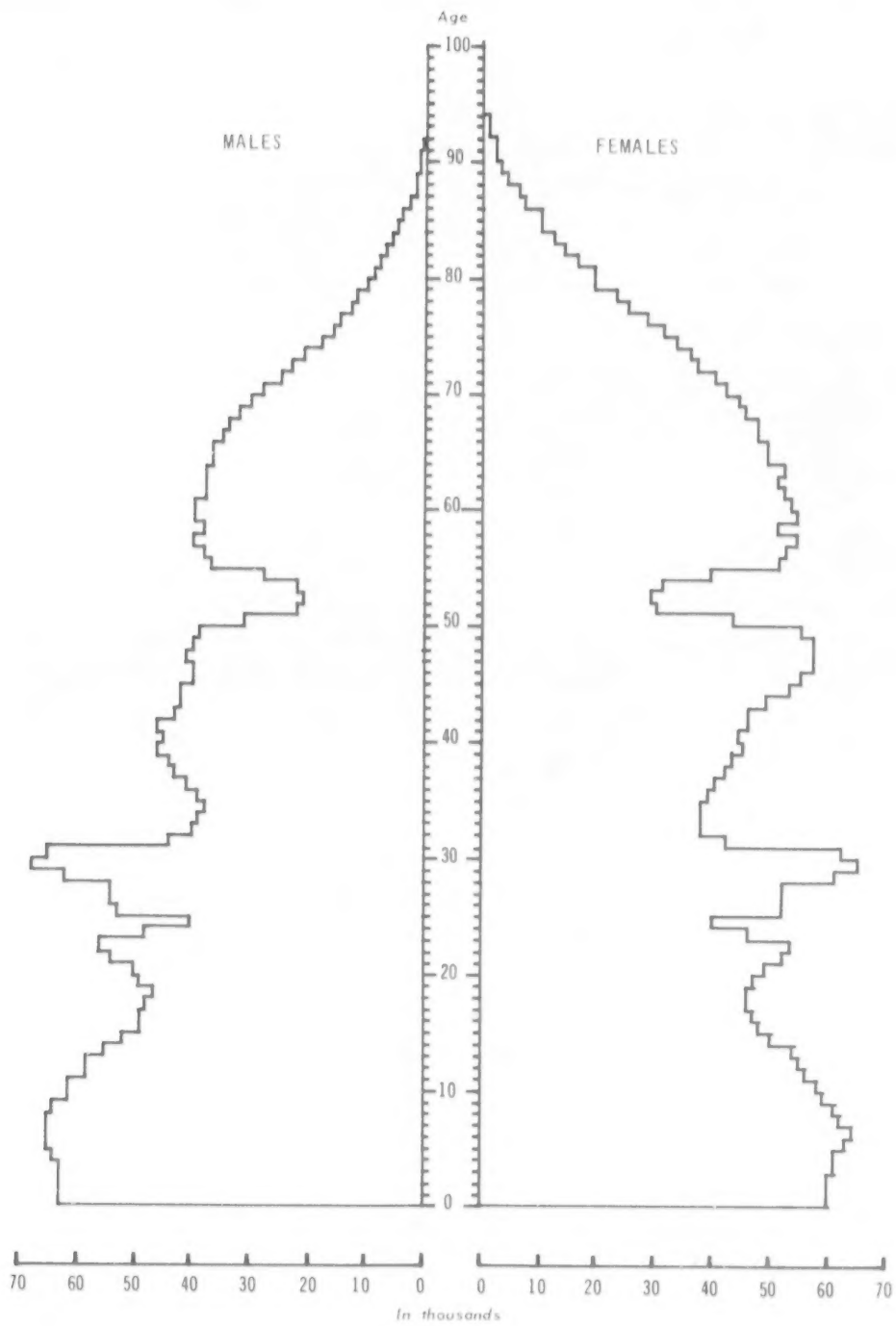
Bibliography

Firnberg-Rutschka, "Die Frau in Österreich";
Monthly Report of the Österr. Institut für Wirtschaftforschung;
Protokoll des V. Frauenkongresses des Österr. Gewerkschaftsbundes;
Wirtschafts- und Sozialbeirat: Zweite Vorausschätzung des Österreichischen Arbeitskräftepotentials.

Annex A

AGE STRUCTURE OF THE AUSTRIAN POPULATION

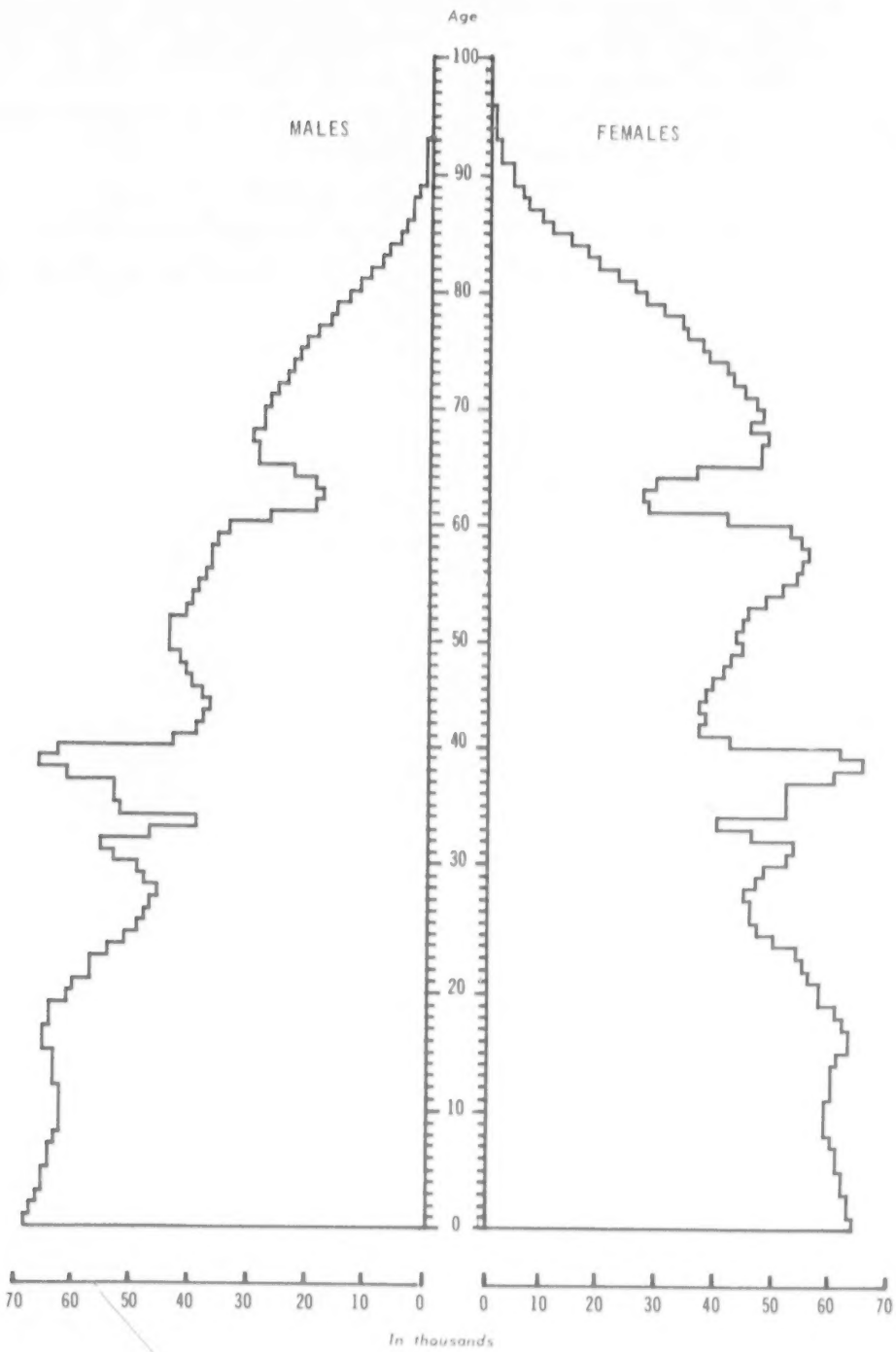
(Forecast for 1970)



Annex B

AGE STRUCTURE OF THE AUSTRIAN POPULATION

(Forecast for 1980)



NUMBER OF WORKERS (INCLUDING UNEMPLOYED)

Basic figures (in thousands)

(b) Women

Age group (in years)	Status	1965	1970	1975	1980
14-19	Wage earners	172.9	179.0	224.0	266.9
	Self-employed (industry or commerce)	0.1	0.1	0.1	0.1
	Family helpers(" " ")	3.7	3.5	3.3	3.1
	Self-employed (agriculture)	0.2	0.2	0.2	0.2
	Family helpers(")	20.4	15.8	15.7	14.7
	Liberal professions (self-employed and family helpers)	-	-	-	-
	Total active	197.3	198.6	243.3	285.0
	Population	287.8	283.6	331.3	369.4
20-29	Wage earners	253.6	257.7	243.7	269.3
	Self-employed (Industry or commerce)	4.5	4.9	4.6	5.1
	Family helpers(" " ")	12.5	13.4	12.5	13.6
	Self-employed (agriculture)	8.1	9.4	9.3	10.0
	Family helpers(")	45.3	36.2	28.1	26.1
	Liberal professions (self-employed and family helpers)	0.4	0.3	0.3	0.2
	Total active	324.4	321.9	298.5	324.3
	Population	503.4	523.0	472.5	505.3
30-49	Wage earners	334.9	365.4	376.5	394.3
	Self-employed (industry or commerce)	28.1	30.6	31.7	32.9
	Family helpers(" " ")	28.4	31.2	32.7	34.3
	Self-employed (agriculture)	34.6	37.8	38.7	37.7
	Family helpers(")	94.8	90.5	84.9	81.0
	Liberal professions (self-employed and family helpers)	4.0	3.9	3.8	3.7
	Total active	524.8	559.4	568.3	583.9
	Population	910.9	947.0	943.2	941.5
50-59	Wage earners	144.1	124.4	145.5	162.2
	Self-employed (industry or commerce)	22.2	19.5	21.8	27.0
	Family helpers(" " ")	13.1	11.7	13.3	16.7
	Self-employed (agriculture)	23.8	19.5	19.9	22.5
	Family helpers(")	48.1	34.7	33.3	35.0
	Liberal professions (self-employed and family helpers)	1.8	1.8	1.7	1.7
	Total active	253.1	211.6	235.5	265.1
	Population	540.7	434.8	443.3	500.7
60 and over	Wage earners	20.0	17.6	15.0	9.4
	Self-employed (industry or commerce)	14.0	13.1	11.9	9.7
	Family helpers(" " ")	5.1	4.9	4.5	3.8
	Self-employed (agriculture)	12.6	11.9	10.7	9.2
	Family helpers(")	26.9	25.6	25.2	21.1
	Liberal professions (self-employed and family helpers)	1.6	1.6	1.6	1.7
	Total active	80.2	74.7	68.9	54.9
	Population	841.6	915.5	967.9	918.5

Age group (in years)	Status	1965	1970	1975	1980
Total	Wage earners	925.5	944.1	1004.7	1102.1
	Self-employed (industry or commerce)	68.9	68.2	70.1	74.8
	Family helpers(" " ")	62.8	64.7	66.3	71.5
	Self-employed (agriculture)	79.3	78.8	78.8	79.6
	Family helpers(")	235.5	202.8	187.2	177.9
	Liberal professions (self-employed and family helpers)	7.8	7.6	7.4	7.3
	Total active	1379.8	1366.2	1414.5	1513.2
	Population	3084.4	3103.9	3158.2	3235.4
	Grand total	3855.6	3938.4	4010.8	4090.5

COUNTRY REPORTS

DENMARK

PROBLEMS IN CONNECTION WITH THE INCREASE IN EMPLOYMENT OF WOMEN

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I. The situation as regards employment of women

The following tables and comments are based on an extensive employment study undertaken in the Autumn of 1967.

1. Chief survey

The figures below show the principal active and inactive groups in the population, distributed between men and women and with a special sub-heading for married women.

It will be seen from the table that women constitute well over 35 per cent of the total labour force. Scarcely half the total number of women in the population are active in trade and industry. Out of the total number of 862,000 women active in trade and industry almost 500,000 are married. Just under 45 per cent of the total number of married women are active in trade and industry. It should, however, be added that a very great number of the married women active in trade and industry are in part-time employment, i.e. 40 per cent.

2. Self-employed persons

The following survey of self-employed persons shows the number of men and women in various sectors of the economy. The last line of the table shows married women as a percentage of the total number of women within this category.

Occupational distribution of population

	Men	Women	Married women included in the figures
In the labour force			
Independent in trades and professions	349,100	43,700	25,400
Employees in administration and public service	404,800	383,600	181,500
Skilled workers	305,100	15,100	5,200
Unskilled workers	419,300	262,700	165,600
Domestic workers	-	40,600	4,600
Helping wives	-	116,200	116,200
Total	1,478,300	861,900	498,500
Outside the labour force			
Housewives without gainful employment	-	612,800	612,800
Children and students living at home	57,000	68,500	-
Students not living at home and without gainful employment	40,000	26,700	-
Pensioners, etc.	143,700	184,900	-
Total	240,700	892,900	612,800
Total in and outside the labour force	1,719,000	1,754,800	1,111,300

	Men	Women
Agriculture, fishing industry, etc.	154,400	5,000
Manufacturing, etc.	50,100	5,600
Building and construction	31,400	300
Commerce and trade	63,300	14,900
Transport	17,600	500
Administration and liberal professions	17,700	5,400
Other service trades	14,600	12,000
Total	349,100	43,700

Married women as a percentage of total number of women: 58

It appears from the table that the largest number of self-employed women can be found within commerce and trade and within the group of other service trades. 58 per cent of the total number of self-employed women were married.

3. Helping wives

The gainfully employed women in this group are, of course, married to men in the same group of self-employed persons.

	Men	Women
Agriculture, fishing industry, etc.	-	61,100
Manufacturing, etc.	-	14,600
Building and construction	-	4,800
Commerce and trade	-	24,200
Transport	-	3,300
Administration, liberal professions	-	2,900
Other service trades	-	5,300
Total	-	116,200

Married women as a percentage of total number of women: 100

Dominant industries in this field are agriculture, the fishing industry, and commerce and trade.

4. Employees in administration and public service

	Men	Women
Agricultural trades	5,300	200
Public administration, defence	28,400	1,400
Teachers	33,000	36,700
Librarians, scientists, clergymen, etc.	5,900	3,300
Health service	9,400	62,000
Railway and postal services, etc.	44,500	2,800
Banks and savings banks	13,200	8,500
Editors, newspaper illustrators	2,800	1,000
Shipping	10,900	-
Air transport	1,300	700
Telephone operators	200	6,900
Office employees	83,700	157,000
Shop assistants, commercial employees	77,900	77,700
Engineers, architects, etc.	28,400	600
Other technical employees	53,300	18,000
Other employees	6,600	6,800
Total	404,800	383,600

Married women as percentage of total number of women: 47

The main occupations in which women are employed are: Office employees, shop assistants and commercial employees, health service, and education. There are, however, also a considerable number of women in the group "Other technical employees". - 47 per cent of the total number of women employed in "Administration and public service" are married.

5. Skilled workers

The following table shows the number of men and women skilled workers in various industries. Although only a comparatively small number of women are employed in this group the service trades, building, the leather industry, and the food and drink industry are the most important industries as far as women's employment is concerned. 24 per cent of the women workers in this group are married.

	Men	Women
Food and drink industry	27,600	1,200
Textile and clothing industry	2,600	800
Leather industry	2,400	1,400
Wood industry	24,400	200
Graphical industries	15,800	200
Glass and ceramic industries	1,200	200
Smiths, engineering workers, mechanics	116,700	300
Others in the metal industry	14,800	800
Building industry	87,400	1,700
Other trades (service)	12,200	8,300
Total	305,100	15,100

Married women as percentage of total number of women: 34

6. Unskilled workers

	Men	Women
Agriculture	63,500	9,100
Fishing industry	5,700	200
Sewing	-	30,400
Factory workers	120,900	85,700
Building industry	45,000	-
Seamen, stokers, etc.	9,900	300
Drivers, warehouse- and dock workers	97,600	5,100
Hotels and catering	1,700	13,000
Porters, firemen, scavengers	18,700	2,300
Cleaning staff	1,700	108,300
Other workers	54,600	8,300
Total	419,300	262,700

Married women as percentage of total number of women: 63

Domestic workers	-	40,600

Married women as percentage of total number of women: 11

The following industries employ a particularly large number of women: Cleaning staff, factory workers, sewing, hotels and catering. 63 per cent of all women employed within this group are married.

7. Frequency of employment among married women at various ages

Age	15-19	20-24	25-34	35-44	45-54	55-64	65-	Total
	Per cent							
Frequency of employment	37	48	46	53	54	36	10	45

8. Part-time employment

In recent years there has been a marked increase in Denmark in the number of persons in part-time employment, particularly as a consequence of the efforts made by the Government to attract manpower reserves to the labour market. These efforts include various courses for the benefit of housewives who have been away from the labour market for a number of years in order to prepare them for re-entry into the labour market after their children have grown up.

Thus it appears from a study recently published by "Denmark's Statistics" that more than 80,000 men, or 6 per cent have part-time employment, whereas 221,000, or 31 per cent of employed women work on a part-time basis. 180,000 out of the number of 221,000 women with part-time employment are married, which again corresponds to 48 per cent of the 378,000 married women on the labour market.

The Danish Unemployment Insurance Act does not allow full membership of unemployment insurance societies for persons with part-time employment. This has given rise to various problems. For instance, one of the effects of this provision in the Unemployment Act is that a great number of persons with part-time employment fail to join their respective trade unions; as they have no chance of being insured against unemployment they find their membership of a union less important. In this connection it should be pointed out that the Danish Unemployment insurance societies, which administer the provisions of unemployment legislation, are very closely related to the trade unions.

The trade union movement wishes to remedy this state of affairs and is trying to secure non-discrimination in the field of unemployment insurance for women who wish to take part-time employment.

9. Equal pay

The Danish Government has ratified the I.L.O. Convention No.100 (1961) on Equal Pay for Men and Women Workers for Work of Equal Value, and in some trades the principle of equal pay for men and women has been fully achieved by agreement. This applies first of all to persons employed in the public service, but also to the large number of

commercial and office employees in the private sector, and to slaughterhouse workers. In the private sector of the labour market there has been a considerable percentage reduction of the difference between men's and women's wages in recent years, and at present hourly earnings of unskilled women constitute about 82 per cent of average hourly earnings of unskilled men.

In the forthcoming negotiations on renewal of the collective agreements, starting towards the end of 1968, the trade union movement will make a further attempt to catch up in this respect.

Generally it may be said that even if, on the Danish labour market, the principle of equal pay for men and women has been adopted in many collective agreements it is sometimes difficult to obtain full and clear equalisation. In trades with minimum wages it still seems as if employers are disinclined to pay women workers personal supplements to the minimum wage rates to the same extent as they do in the case of men. In the question of promotion, there seems also to be a certain reservation as far as women are concerned, in particular as regards civil servants and salaried employees.

II. Measures recently adopted or now under consideration to prepare women for employment, facilitate their employment, and alleviate the difficulties arising out of their family situation

No particular effort is being made in the educational field to prepare women for employment. Educational efforts are of a general character and are not particularly aimed at facilitating the access of women to the labour market. The main exception is the measures taken for the benefit of mothers who are the only breadwinners.

As regards the possibilities of facilitating employment of women and of reducing the difficulties arising out of their family situation two initiatives of decisive importance should be mentioned here.

One is the introduction of taxation at the source and abolition of the joint taxation of husband and wife as from 1st January, 1970. Denmark has had, and will have until then, a rather peculiar system of taxation; for example, as from 1st July, 1968, a wage-earner pays taxes calculated on the basis of his income in the whole of the calendar year of 1967. Thus, during the period 1st July, 1968 - 30th June, 1969 he has to pay taxes on the basis of his income in 1967. Further, taxes are calculated on the basis of the joint total income of husband and wife.

As a consequence of this system of taxation a married couple, where the wife has given up her gainful employment in the course of 1967, will still in the middle of 1969 pay taxes on an income which

is much higher than the actual income of the family.

As stated, this tax system will be abolished as from 1st January, 1970, and this will create much greater possibilities for married women to take employment or withdraw from employment without tax consequences for the economy of the household.

The attitude of the trade union movement towards this reform is absolutely positive, since taxation at the source has for many years formed part of its programme. The introduction of taxation at the source was originally intended to take effect from 1st January, 1969, but the change of Government early this year caused a postponement.

The other initiative is a reform with regard to allowances to women wage-earners having to give up employment because of childbirth. Under the present regulations, which will remain in force until 1970, employers have to pay a certain amount during a period before and during a period after birth. It is obvious that employers have been able to make this regulation a pretext for placing women workers at low paid work, and because of this regulation employers may also have been less inclined to provide further training within the undertaking for their women workers. This problem is undoubtedly of essential importance as regards the full accomplishment of the principle of equal pay.

Simultaneously with the introduction of taxation at the source in 1970 the financing of allowances to women, who have to leave their employment for a period because of childbirth, will be transferred to the public administration.

The trade union movement considers this to be a positive innovation and believes that the envisaged legislation in this field may become a lever for the final achievement of equal pay for men and women.

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COUNTRY REPORTS

FRANCE

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Renewed interest has been shown in the employment of women in France in recent years, mainly owing to the shortage of manpower that has become evident over the last decade.

In this connection, statisticians have pointed out the extent to which employment of women has in fact declined since the beginning of the century, i.e. the proportion of working-women in the total population over 14 years of age dropped from 53 per cent in 1921 to 43 per cent in 1954.

The statistics therefore run counter to the current view that women are playing an increasing part in the economic life of the country and have a distinctly more important role in society than in the past. We must therefore look beyond the crude figures and see whether they might not be consistent with changes in the opposite direction - sometimes of a more qualitative nature - in women's attitude to gainful employment.

How many women are working?

First, it should be noted that between 1954 and 1962 the number of women in employment dropped slightly, as follows:(1)

from 6,535,000 to 6,489,000 (employed);
from 6,683,000 to 6,585,000 (including women temporarily unemployed).

Women account for 33.4 per cent of the active population.

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(1) I.N.S.E.E. - "Etudes et conjoncture", 1964.

Another method of calculation is to ascertain activity rates in terms of the percentage of gainfully employed women in the total female population; such activity rates for women of 15 years of age and over were as follows:

52.8 per cent in 1921;
43.8 per cent in 1954;
36.3 per cent in 1962.

The criteria previously used in taking a census of the women employed in agriculture varied considerably from year to year and, in an attempt to obviate this drawback, it is advisable to exclude this occupational category and calculate the activity rates of women in non-agricultural employment in relation to the total female population. These rates were as follows:

1921: 28.5 per cent;
1954: 27.8 per cent;
1962: 29.3 per cent.

Thus, women play an important part in French economic activity, since the overall activity rate in 1962 was 36.3 per cent and the rate for non-agricultural sectors was 29.3 per cent.

According to the I.N.S.E.E.(1) surveys in October 1962 and October 1964, the available active population increased by 0.6 per cent for men and 2.2 per cent for women. The unemployment figures were:

	Men	Women
October 1962:	130,000	123,000
October 1964:	129,000	124,000

Women represent one-third of the active population, but account for one-half of the total unemployment figures.

On the basis of unsatisfied job applications,(2) it may be ascertained that:

Average unemployment figures in 1967 were: 233,430 men and 139,030 women;

Unemployment figures in January 1968 were: 221,179 men and 195,092 women.

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(1) I.N.S.E.E.: "Institut National de la Statistique et des Etudes Economiques".

(2) Statistics published by the Ministry for Social Affairs and to which was applied the coefficient of 1.9 adopted by the Plan Commissariat.

What is the sector breakdown of women workers?

As indicated above, for some fifty years women have very consistently accounted for slightly more than one-third of the active population, but the proportions vary considerably within each sector and change from one census to the next:

In agriculture the percentage was falling in 1946 and 1962, but this is perhaps mainly due to changes in classification of this activity rather than an actual trend.

In industry the number of women fell in both absolute and relative terms, while those in the tertiary sector increased.

- 550,000 fewer women employed in the agricultural sector;
- 50,000 more women employed in industry;
- 460,000 more women employed in services.

However there were very important changes even within the industrial sector between 1906 and 1962.

In 1906, more than three-quarters of the women workers in industry were employed in textiles and clothing, but no more than two-thirds were employed in these industries in 1962.

The most marked increases were in the following industries:

- Metals and metalworking:	+ 379,000
- Chemicals	+ 84,000
- Food	+ 95,000

With regard to non-industrial occupations, many women are employed in the liberal professions and administrative services.

Women workers by sector of economic activity(1)

(in thousands)

		1921	1954	1962
Agriculture		3,957	1,825	1,271
Industry		1,906	1,704	1,754
Services		2,343	3,006	3,464
of which:	Transport		76	91
	Commerce		1,080	1,163
	Banks, Insurance		105	150
	Public and Private Services		1,193	1,582
	Domestic Service		552	478
Total		8,206	6,535	6,489

(1) Source: "La situation de la femme dans la société" by Mrs. Guélaud-Léridon, April 1965.

Percentage of women in each industrial sector

Activity	Percentage of women		
	1906	1954	1962
Coal mining and assimilated	2.7	2.1	2.1
Miscellaneous mining and quarrying	1.0	3.3	3.7
Petroleum and motor fuel	25.0	12.1	16.1
Water, Gas, Electricity	2.4	11.9	16.2
Metals and metalworking	4.2	15.1	17.7
Glass, ceramics, building materials	10.0	17.8	17.3
Building and public works	0.3	3.8	4.2
Chemicals, rubber	29.3	31.4	30.7
Food	18.0	30.9	31.5
Textiles	56.1	55.8	54.6
Clothing	89.3	80.8	80.4
Hides and skins	15.4	37.6	43.9
Woodworking and furniture	9.8	13.5	16.0
Paper and board	44.1	38.4	37.4
Printing and allied industries	20.7	31.8	32.7
Miscellaneous industries	35.8	44.3	46.0
Unspecified	33.3	21.9	24.4
Total	34.0	24.3	23.4

Source: "Evolution de la population active entre 1906 et 1954", Etudes Statistiques" 1956, No.3, and the 1962 Census.

Activity	Number ('000) (in 1954)	Percentage of women (in 1954)
Radio, cinema, theatre, etc.	22	47
Health	255	62.5
Administration (public or private)	183	39
Legal	34	21
Religious	56	54
Education (public and private)	262	62
Sport	4	32
Humanities, science, art	12	34
National defence	28	10
Total	856	

Source: "Le travail des femmes en France", Cahier No.42, published by I.N.E.D.

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In the above table Public Service personnel are classified under a number of activities, while the heading "Administration" includes private bodies. The 1956 Public Services census showed the exact number of women employed as civil servants.

Breakdown of Civil Servants[1] in 1956[2]

(in '000)

	Men	Women	Total
Government Services: Civil servants and officials	645.4	394.7	1,041.1
Government Services: Armed forces personnel	347.9	11.2	359.1
Departmental Services (including the Seine)	88.1	61.0	149.1
Communal Services	159.8	102.5	262.3
Total	1,241.2	569.4	1,800.6

(1) Established, non-established and unskilled workers.

(2) Source: "Le travail des femmes en France", Cahier No.42, I.N.E.D. Thus, one third of the government servants in 1956 were women, and there were 570,000 women in public services:

of whom: 182,000 in the Ministry of Education;

79,000 in the Ministry for Postal and Telecommunications Services;

48,000 in the Ministry of Finance.

Women are in the majority in the Ministries concerned with National Education, Ex-Service personnel, Labour, Public Health and, in fact, all the Ministries dealing more specifically with social matters.

What is the women's employment situation?

It is not enough to know how many women work; in order to identify all the complex problems raised by the employment of women in our society, it is also necessary to understand the situation of the woman worker.

The diversity of views on this matter sometimes depends on the variety of situations. Women industrial workers do not have the same problems as those in liberal professions: the problems of the married woman with children are not those of the unmarried woman: the unmarried woman does not have the same problems as the married woman without children: the single or widowed woman with children does not have the same problems as the married woman with or without children, nor as the unmarried woman, etc.

This simple list of differences, which is also valid for the male labour force, indicates the extent to which the women's situation in the employment world is conditioned by the concept of her role in society in terms of her position in relation to the family and the social organisation entailed by it.

(i) Age

First, the female labour force has a quite individual age structure, since women's participation in economic activity varies considerably with age; the activity rates are very high from 20 to 24 years of age (60.5 per cent), de line between 25 and 29 (46.4 per cent) and reach the lowest level from 35 to 39.

An increase has currently been noted, however, in the activity rate for women between 30 and 50 years of age, when some return to work after raising their children.

This phenomenon has three feasible explanations, although it is impossible to determine the exact role played by each:

- More women reaching the age when they have raised their children have already had an occupation which they left in order to devote themselves to their family and are therefore capable of returning to work;
- More women are continuing to work while raising their children;
- There is a change in the birth distribution according to the mother's age and the intervals between births.

Comparative activity rates recorded in the October 1962 and 1964 surveys(1)

Age on 1st January of following year	Women		Active population(2) at the October 1964 survey
	October 1962	October 1964	
14 years of age	12.3	9.3	41,400
15-19 years of age	44.4	43.2	868,480
20-24 years of age	61.4	60.5	761,200
25-29 years of age	46.3	46.4	687,160
30-34 years of age	40.4	43.6	711,500
35-39 years of age	42.3	42.2	684,920
40-44 years of age	42.8	45.2	776,140
45-49 years of age	48.0	45.6	426,360
50-54 years of age	48.1	48.3	717,200
55-59 years of age	44.0	44.5	679,140
60-64 years of age	35.2	34.5	474,020
65-69 years of age	19.1	16.7	209,480
70-74 years of age	9.8	11.0	114,420
75 years of age and over	3.5	3.6	53,640
Total			7,205,060

(1) Source: "Etudes et Conjoncture", March 1968, published by I.N.S.E.E.

(2) Age distribution of the female labour force.

(ii) Level of education

Women in employment have a much higher level of education than those without an occupation, which obviously tends to demonstrate that the higher her level of education the more a woman is anxious to go on working.

Activity rates of women in 1954 according to level of education[1]

Type of qualification	Total number of women between 15 and 65 (in '000)	Percentage of women employed
General education:		
No qualification	7,929	41.4
Primary school certificate 1st level (C.E.P.)	5,293	51.3
Primary school certificate 2nd level (Brevet and B.E.P.C.)	608	59.7
Baccalaureat and Primary school certificate 3rd level (Brevet supérieur)	327	64.6
Higher education:		
Uncompleted	15	64.7
Completed: Law	11	55.5
Humanities	21.7	77.4
Science and engineering	9.5	75
Others	34.4	61.6
Technical education:		
Proficiency certificate (C.A.P.)	230	67.2
Various technical training certificates (Brevets)	112	68.1
Medical and social assistants' diplomas	108	82.4
Technical training not leading to a diploma	201	15.0

(1) Source: "Le travail des femmes en France", Cahier No.42, published by I.N.E.D.

The trend is even clearer in the case of women in the 25-29 age group; gainfully employed women in this category at 1st January, 1963, were classified as follows:

Non-student female population aged 25 to 29 and type of certificate of general education obtained(1)

Age at 1st January, 1963	C.E.P.	B.E.P.C. Brev.Elem.	Baccalauréat and Brev.Sup.	Higher education-at qualifications	Un-specified	Total
25-29 years of age:						
Total	545,360	119,800	64,200	29,400	699,400	1,458,160
Gainfully employed	256,620	77,700	48,140	23,560	258,700	644,720
Activity rate	47.1	64.9	74.9	80.1	37.0	45.6

(1) Source: "Etudes et Conjoncture", December 1964, published by I.N.S.E.E.

This fact concerning the level of education is important, since it is clear that the increase in school attendance will lead to higher activity rates for women.

The more responsibilities women have, the more inclined they are to keep their occupation outside the home.

At present, the total number of women with no qualifications is higher than that of men, but this does not hold for the age groups up to 34 years.

However, some comments are called for:

- More men than women have technical diplomas;
- Men are more inclined than women to enter an articled apprenticeship instead of school training;
- In the 25-29 age group, the highest diploma held by 3.6 per cent of the men is equivalent to the Baccalauréat (1st or 2nd part), compared with 4.4 per cent for women. However, 7.4 per cent of the men hold certificates that are at least equivalent to the 1st Baccalauréat, compared with 6.4 per cent of the women; this is due to the well-known fact that girls cut short their studies before completion more frequently than boys, particularly at advanced levels;
- Above the age of 19, the enrolment rates at educational establishments are lower among women than men.

(iii) Occupations

Some occupations attract a high proportion of women, whereas the proportion is very low in others, particularly highly-skilled, scientific and technical occupations. At present, the greatest handicap of the female labour force is lack of qualifications and no prospects of promotion.

It is interesting to examine this aspect of the problem with reference to the breakdown of the female labour force by socio-occupational categories.

The labour force employed in 1964 by socio-occupational category

Category	Total labour force	Total wage earners: Men and women	Wage earners Men	Wage earners Women
Farmers	2,959,400			
Hired agricultural workers	654,460	654,460	578,340	76,120
Employers (Industry)	764,420			
Employers (Commerce)	1,446,940			
Liberal professions and higher executives	890,600	736,780	615,560	121,220
Medium-level executives	1,749,260	1,714,140	1,058,840	655,300
Clerical workers	2,452,020	2,452,020	974,000	1,478,020
Manual workers	7,322,160	7,322,160	5,706,740	1,615,420
Service staff,etc.	1,149,200	1,117,840	213,820	904,020
Others	569,920	401,820	390,580	11,240
Total	19,958,380	14,399,220	9,537,880	4,861,340

Source: "Etudes et Conjoncture", March 1968, published by I.N.S.E.E.

It is important to determine the distribution of women workers by levels of skill within certain socio-occupational categories (see following table):

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Distribution of women workers by levels of skill in certain industries in 1961[1]

(per thousand women in each industry)

	Manufacturing industries combined (2)	Mechanical and electrical engineering industries			Chemicals	Food, Beverages, etc.	Textiles	Clothing
		Combined	Electrical engineering	General mechanical engineering				
Executives:								
Administrative and commercial	5.7	6.1	4.7	8	13.8	6.5	2.8	6.2
Engineers	0.8	1.7	2.1	0.9	3.7	0.3	0.1	0.1
Others	2.5	2.2	1.2	2.1	6.0	2.2	1.1	3.2
Supervisors	12	7	8	5.5	30.5	13.7	8.7	13.5
Technicians and designer/draughtsmen	6	14	20	5.5	26.5	1.3	2.3	2.5
Clerical:								
Secretaries-typists	88	150	97	121	146	106.5	42	30
Office machine operators	9	14	8	12	20	17	5	3
Book-keepers	17	27	22	20	29	24	6	9
Saleswomen	8	1	2	2	15	13	3	17
Others	69	11	9	84	142	63	37	40
Manual:								
Skilled	103	27	53	16.5	59.5	18	163	170
Semi-skilled	372	527	602	577	234	101	432	362
Unskilled	236	87	53	113	259	594	202	227
Apprentices(3)	70	27	34	33	15	42	93	124
	999.0							

(1) Source: "Le travail des femmes en France", Cahier No.42, published by I.N.E.D.
(2) Excluding building.
(3) Including women manual workers under 18 years old.

Breakdown according to levels of skill
of manual workers in certain industries in 1961[1]

(per 1,000 workers - men or women)

		Mechanical and electrical engineering, of which:		Chemicals	Food, Beverages etc.	Textiles	Clothing	Manufacturing industries combined
		Combined	Electrical engineering					
M.1 (Labourer 1)	Men	25	23	66	167	124	152	68
	Women	80	46	225	507	120	166	177
M.2 (Labourer 2)	Men	62	46	141	234	126	67	116
	Women	51	26	232	280	106	93	126
O.S. 1 (semi-skilled worker 1)	Men	118	126	199	204	208	238	159
	Women	392	366	296	108	332	294	302
O.S. 2 (semi-skilled worker 2)	Men	271	281	116	104	138	114	204
	Women	398	445	116	26	154	111	174
P.1 (skilled worker 1)	Men	194	220	217	128	178	181	177
	Women	34	66	70	15	129	120	90
P.2 (skilled worker 2)	Men	177	169	161	72	91	95	140
	Women	6	5	26	6	42	49	30
P.3 (skilled worker 3)	Men	108	94	90	59	66	86	90
	Women	-	-	8	3	12	26	12
Apprentices and workers under 18 years old	Men	45	41	11	32	68	67	47
	Women	40	46	26	55	105	142	90

(1) Source: "Le travail des femmes en France", Cahier No.42, published by I.N.E.D. According to these statistics, about half the male manual workers and three-quarters of the women were unskilled.

Generally speaking, there is a far smaller proportion of women than men among the skilled workers; this is largely tied up with the question of training facilities.

Thus, 27 per mil of women and 162 per mil of men are executives, supervisors or technicians.

192 per mil of women and 82 per mil of men are clerical workers;

781 per mil of women and 756 per mil of men are manual workers.

There are also very marked differences with regard to the levels of skill of men and women within the manual workers' category.

(iv) Education and vocational training

In theory, as already indicated, the same facilities are offered to girls and boys; in principle, all the "grandes écoles" (major State colleges) are open to women[1] but there are still very few at the "grandes écoles" of engineering.

Enrolments in each Faculty in 1960[1]

	30th June, 1960		
	Men	Women	% of women
Law	20,720	8,675	29.5
Science	43,115	20,305	32
Humanities	21,670	31,025	57.5
Medicine	20,800	7,655	27
Pharmacy	3,065	4,670	60
Total	109,370	72,330	40

(1) Source: "Le travail des femmes en France", Cahier No.42, published by I.N.E.D.

(1) However, there are still a small number of establishments closed to women: the Military and Merchant Marine Colleges and various Ecoles Nationales Supérieures (Mining, Geology at Nancy, Ceramics) or Ecoles Nationales: (Rural Engineering, Waters and Forests).

Breakdown of secondary-level pupils at 30th September, 1961 (1)(2)

	Classical and modern lycées	Technical and assimilated lycées(3)	General secondary school (C.E.G.) (4)	Technical secondary schools (C.E.T.) (5)	Total secondary
Boys	394,930	134,086	286,956	133,765	949,737
Girls	416,752	65,680	341,624	85,358	909,414
Total	811,682	199,766	628,580	219,123	1,859,151

(1) Source: "Le travail des femmes en France", Cahier No.42, published by I.N.E.D.

(2) Excluding pupils taking correspondence courses.

(3) Former national technical schools;

+ former national vocational training schools;
+ former technical colleges + technical sections of lycées;
+ former technical colleges + technical sections of classical and modern lycées + trade schools.

(4) Former continuation classes.

(5) Former apprenticeship centres.

School attendance rates and apprenticeship rates in 1962(1)

	Boys		Girls	
	School attendance	Apprenticeship	School attendance	Apprenticeship
15 years of age	68.3	14.1	75.3	4.5
16 years of age	54.5	20.9	65.1	6.2
17 years of age	48.0	21.2	55.6	5.9
18 years of age	35.0	11.4	41.4	3.3
19 years of age	25.9	4.5	29.3	1.4
15-19 years of age	49.1	15.1	56.9	4.5

(1) Source: "Etudes et Conjoncture", December 1964 - published by I.N.S.E.E.

There is a slightly smaller proportion of girls than boys in technical and vocational education; girls are mainly trained for office work and dressmaking.

Breakdown of pupils in technical and vocational education in 1959-1960(1)

Public education			Private education		
Boys	Girls	Total	Boys	Girls	Total
61%	39%	100%	34%	66%	100%
250,828	158,933	409,761	49,154	97,444	146,598

(1) Source: CERDET vocational training statistics.

The girls are at a serious disadvantage so far as the type of training is concerned, since only 69,760 (27 per cent) of the 256,000 in technical education are learning an industrial trade and 60,600 (87 per cent) of these are learning a dressmaking trade.

This pattern of vocational training for young women does not correspond with the structure of employment for women in industry. Training is therefore ill-adapted to the requirements of the labour market, and a large number of young women learning a dressmaking trade are unable to find employment in this declining industry. They can, however, find jobs in other industries where the skills, dexterity, carefulness and attention to detail developed by their training are highly valued but, since they do not have the appropriate certificate of proficiency, they are classified as semi-skilled workers.

	School year 1959-1960(1)							
	Private education				Public education			
	Boys		Girls		Boys		Girls	
	Enrolments	%	Enrolments	%	Enrolments	%	Enrolments	%
Mechanical engineers	17,267	44.4			95,268	49.6	45	0.1
Electrical, radio and Electronics engineers	5,742	15.0	37	0.2	16,880	8.8	771	1.5
Chemists	267	0.7	784	4.1	1,009	0.5	989	2.0
Textile workers, dressmaking trades, hatmaking	482	1.2	17,559	91.7	699	0.4	43,075	85.1
Designer/Draughtsmen	1,083	2.8	303	1.6	2,409	1.3	747	1.5
Technical assistants and technicians	1,063	2.7	1,089	5.7	4,791	2.5	1,339	2.6
Industrial trades combined	38,919	100.0	19,137	100.0	192,301	100.0	50,629	100.0
Office workers	7,248		29,971		15,664		78,443	
Health and social services	5		6,548		96		3,222	
Grand total	49,154		97,444		250,828		158,933	

(1) Source: "Le travail des femmes en France", Cahier No.42, published by I.N.E.D.

(v) Family situation of women workers

The marital status of women is often a determining factor with regard to their employment: the activity rate of single women is far higher than that of married women:

Activity rates of women according to their marital status(1)
(Women aged 15 and over)

Marital status	Total	Employed	Activity rate
Unmarried:			
1954	4,030,408	2,386,794	59.1
1962	4,078,020	2,186,300	53.6
% variation		- 8.4	
Married:			
1954	9,995,418	3,265,806	32.7
1962	10,803,080	3,502,760	32.5
% variation		+ 7.2	
Widowed:			
1954	2,955,808	817,756	27.6
1962	2,962,540	662,560	22.4
% variation		- 19	
Divorced:			
1954	336,011	212,382	63.2
1962	370,740	233,640	63.0
% variation		+ 11	
Total:			
1954	17,371,060	6,682,738	38.5
1962	18,214,380	6,585,260	36.2
% variation		- 1.5	

(1) Source: "Etudes et Conjoncture", December 1964, published by I.N.S.E.E.

Structure of the female labour force according to marital status(1)

	1954	1962
Unmarried	35.7	33.2
Married	48.9	53.2
Widowed	12.2	10.1
Divorced	3.2	3.5
Total	100.0	100.0

(1) Source: "Etudes et Conjoncture", December 1964, published by I.N.S.E.E.

The total number of women employed dropped slightly between 1954 and 1962, to a varying extent according to marital status:

- the overall decline in the activity of unmarried women is due both to the increase in school attendance and the more general application of pension schemes;
- the slight decline in the activity rate of married women embraces two opposing trends: a higher activity rate among young women and a decline after the age of 35;
- fewer widows are employed ...
- the activity rate of divorced women of all ages is rising steeply.

More than half the number of working women are married, one-third are unmarried and one-sixth are widows or divorced.

Structure of the female labour force according to age and marital status(1)

Age group	Percentage breakdown 1962	
	Married	Unmarried Widowed, Divorced
15-19 years of age	6.8	93.2
20-24 years of age	40.5	59.5
25-34 years of age	68.2	31.8
35-44 years of age	71.5	28.5
45-54 years of age	65.6	34.4
55-64 years of age	51.6	48.4
65 and over	28.2	71.8
All ages	53.2	46.8

(1) Source: "Le travail des femmes en France, Cahier No.42, published by I.N.E.D.

The number of children is another important factor influencing the activity rates of women.

Forty-two per cent of women under 60 years of age, who are married or heads of household, are gainfully employed but activity rates vary according to the number of children, as follows:[1]

55 per cent of women with no children under 17 years of age are in employment;
41 per cent of those with one child under 17 are in employment;
27 per cent of those with two children under 17 are in employment;
17 per cent of those with three or more children under 17 are in employment.

This decline is observed in all categories (married, widowed, unmarried, divorced), but the activity rate for single women is considerably higher than for married women.

Activity rates of women under 60 years of age, according to their marital status and the number of children under 17 years of age (a)

	Number of children				Total
	None	One	Two	Three	
	(employment figures in thousands; activity rate as a percentage)				
Unmarried(b)					
- Employed	1,042.2	36.4	6.4	3.7	1,088.7
Activity rate	65.7	75.1	49.0	26.0	67.7
Married					
- Employed	1,551.3	885.8	434.1	275.6	3,146.9
Activity rate	47.5	40.4	26.1	16.5	35.8
Widowed(b)					
- Employed	262.3	50.9	19.7	12.7	345.6
Activity rate	60.4	63.1	56.0	39.0	59.3
Divorced(b)					
- Employed	141.4	36.8	15.3	7.9	201.4
Activity rate	76.9	79.0	72.0	15.0	74.7
Total					
- Employed	2,997.3	1,009.9	475.4	300.0	4,782.6
Activity rate	54.8	42.6	27.4	17.3	42.3

(a) Source: "La situation de la femme dans la société", by Mme. GUELAUD-LERIDON of I.N.E.D.

(b) These figures cover only unmarried, widowed or divorced women who are"heads of household".

(1) Statistics: "La situation de la femme dans la société", Mme GUELAUD-LERIDON.

Among the 4,782,600 employed women aged between 15 and 60 who are married or heads of household:

- 62.7 per cent have no children under 17 years of age;
- 21.1 per cent have one child under 17 years of age;
- 9.9 per cent have two children under 17 years of age;
- 6.3 per cent have three or more children under 17 years of age.

62.7 per cent of working women have no children, and 37.3 per cent have at least one child under 17 years of age.

However, attention should be drawn to the figures relating to married women from non-agricultural households (in 1962):

Activity rates for married women from non-agricultural households according to the number of children under 17 years of age (in 1962)(1)

	Number of children				Overall
	None	One	Two	Three or more	
Activity rate	32.2	36.9	21.3	10.2	28.1
Percentage of women wage-earners in relation to the total female labour force	78.2	80.8	74.4	66.3	78.1

(1) Source: "La situation de la femme dans la société, by Mme.GUELAUD-LERIDON, April 1965.

Thus, the activity rates for women from non-agricultural households are as follows:

- 21 per cent for women with two children under 17 years of age;
- 10 per cent for women with at least three children under 17 years of age.

Two points should be noted here - on the one hand, irrespective of the number of children, there is an increase in the activity rates of wage-earning married women and, secondly, this increase is particularly high in the case of women with one dependent child.

In December 1964 "Etudes et Conjoncture" clearly showed that married women, even those with dependent children, have not failed to be affected by the upward trend in the number of wage-earners in the labour force; it is noted, moreover, that the highest increase among the activity rates is recorded for the women with most children.

(vi) Activity rates of married women according to husband's occupation

The data in this connection are quite complicated; however, they enable us to establish that activity rates are lowest among the wives of manual workers and senior executives in contrast to women whose husbands are employed at intermediate levels. The past trend in this respect cannot be ascertained, since the question concerning the husband's occupation was asked for the first time in the 1962 census. However, it is interesting to note that the wives of unskilled labourers are relatively seldom in paid employment, but that the proportion increases as the level of the husband's occupation rises to semi-skilled worker, skilled worker, clerical worker or medium-level executive, and falls again for the wives of senior executives. The statistics accordingly reveal an important sociological factor:

Activity rates of wives according to the socio-occupational category of their husbands (1)

Husband's socio-occupational category	Wives employed	Total wives	Activity rate
Farmers	767,040	1,292,280	59.4
Hired agricultural workers	64,800	369,720	17.5
Total agricultural	831,840	1,660,900	50.1
Employers (industry and commerce)	427,100	1,059,940	40.3
Liberal professions (higher executives	122,460	537,300	22.8
Medium-level executives	263,180	707,760	37.2
Clerical workers	274,840	724,960	37.9
Manual workers	1,032,600	3,598,120	28.7
Service staff, etc.	53,320	131,540	40.5
Other categories	52,140	267,600	19.5

(1) Source: "Etudes et Conjoncture", December 1964, published by I.N.S.E.E.

(vii) Prospects over the next ten years

Within the context of the Vth Plan, employment figures for women have been forecast in France in terms of a spontaneous expansion.

There are, in fact, a number of factors indicating the future expansion of the female labour force, and three of them are particularly important:

- technical progress: leads to an increase in certain jobs not requiring physical strength and thus enables more women to take up gainful employment, while also making housework easier and so allowing it to be reconciled with an outside occupation;
- demographic factors: the longer life span leaves a mother with 20 or 25 years in an outside occupation after raising her children; the number of children has also been reduced to an average of two or three;
- progress in education for girls: it is estimated that in 1975 there will be 1,250,000 women holding the baccalauréat compared with 1,514,000 men; this development is extremely important since, as indicated previously, the higher the level of education, the higher is the activity rate for women.

On the basis of this spontaneous development, it has been estimated under the Vth Plan that the present number of women employed will be increased by 100,000.

A working assumption, which was not adopted, involved increasing the activity rate of women substantially by means of certain incentives; on this basis, it was estimated that the number of women employed could be increased by 500,000, i.e. five times more than in the assumption adopted.

The incentives might in that case have been concerned with the development of community services, vocational training and tax concessions.

Views of the trade unions on the measures that have been, or are to be, taken in order to facilitate the employment of women:

The French trade unions can but note the absence of measures to encourage the employment of women. The choice made under the Vth Plan was the easy one, tending to allow the female labour force to expand spontaneously without taking the measures necessary to prepare women for an occupation in a rational manner and lighten the tasks of working women.

There have been no valid measures relating to vocational training, except perhaps a Ministry of Education circular, No. IV 67.370 of 1st September, 1967, recalling the principle of equal access for girls and boys to all levels of technical and vocational education and pointing out that no female applicant can be refused except in cases where the relevant training would lead to occupations closed to women under the existing regulations.

However, this statement clearly remains merely one of principle, in view of the fact that there are not enough technical and vocational establishments to satisfy all applications from young men and, furthermore, that existing establishments do not have the necessary facilities to become co-educational, i.e. boarding and sanitary facilities, etc.

So far as French community services are concerned, it is enough to say that in 1965 day nurseries could accommodate 19,700 children for the 6,000,000 women employed and that the Vth Plan provided for 200 new nurseries, i.e. accommodating 10,000 additional children, so that there will be accommodation for 29-30,000 when this Plan has been fully implemented.

Since it has been considered desirable to have one nursery per 20,000 inhabitants in order to be adequately equipped,(1) a population of 50 million would need 2,550 nurseries, i.e. accommodation for 127,500 children.

In France, it is not even a question of getting the Public Authorities to take measures to facilitate an increase in the employment of women, since no measures have yet been taken to alleviate the tasks of women currently employed, or to help those who will

(1) This is merely an order of magnitude; requirements may vary considerably according to population density, employment possibilities, socio-occupational categories and individual habits (cf. Marie-Louise TOURMIER:"L'aide aux mères qui travaillent"- Esprit, May 1961.

find themselves in employment in a few years time without the introduction of any form of incentive; on the contrary, existing legislation and certain measures under consideration would seem to tend to favour women deciding to stay at home: special allowance paid to married women at home ("salaire unique"), taxation facilities, etc.

COUNTRY REPORTS

IRELAND

PART I - NORTHERN IRELAND

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1. General Trade Union Attitudes

In our opinion, the problems and interests of women as workers are generally indistinguishable from those of men. These problems must be approached in the same manner and solved in the same framework of trade union organisation, joint consultation, collective bargaining and legislation.

This approach is based on the belief that all workers should have equal opportunities to develop their capacities and to participate in economic and social life; that all workers should be equally protected from untoward actions and from the hazards of their employment.

We also recognise that many women workers face special problems because of heavy home and domestic responsibilities, and that these problems and difficulties of women workers need serious consideration with a view to finding practical and realistic solutions.

Any consideration of the position of working women must take as its starting point that female employment can no longer be considered as of a temporary character. The growth of industry and the introduction of new techniques widen opportunities of employment and careers hitherto considered unsuitable for women and brings them into all kinds of jobs at almost all levels of the occupational structure.

Women have become an essential part in manufacturing work of all kinds and in commercial and service occupations; they have gained

access to the professions and to technical work; they are now more readily accepted into management and responsible jobs in all fields. The old distinctions between "men's work" and "women's work" are breaking down but there are still far too many jobs specifically designated as "women's work", implying that it is '<u>second-rate</u>' employment.

With the rising living standards and development of the social services, more people are being employed outside the manufacturing sector of the economy, i.e. in government, local government, hospitals, schools, commerce and personal services. This trend in employment is steadily growing.

2. The Current and Future Pattern of Female Employment in Northern Ireland

In 1967 the female population of Northern Ireland was estimated to be 764,000. Of the total female population, it is estimated that 548,700 were of working age, that is aged 15 or over, of whom about 295,000 were married. Of the total female population of working age 198,000, or 36 per cent were insured for the purposes of employment. In other words, they were either self-employed or in employment or were registered as unemployed. This percentage is known as the female activity rate. At the most recent count taken in August 1968 there were 9,213 women unemployed in Northern Ireland, giving a percentage rate of 4.7 per cent. Over half of these unemployed women were married, although under 40 per cent of all female employees are married. The number of self-employed women is quite small at about 4,000. These are the basic economic facts about female employment in Northern Ireland:

(1) Female population in Northern Ireland 1967 764,000
(2) Female population of working age, aged 15 and over 548,700
(254,300 single, widowed and divorced)
(294,400 married)
(3) Total female working population 198,000
(122,000 single, widowed and divorced)
(76,000 married)

3. Female Activity Rates

Female employees at mid-year 1967 expressed as a percentage of the female population aged 15 and over:

WALES	30.5%	NORTHERN IRELAND	35.4%
SCOTLAND	40.3%	UNITED KINGDOM	40.4%

(In this table the activity rate is defined as the proportion of females aged 15 and over who are insured employees).

The picture is complicated because agriculture is relatively a larger sector of the economy in Northern Ireland. It is clear that high unemployment in Northern Ireland has the effect of depressing the female activity rate and resulting in under-employment.

4. Industrial Distribution of Employment

In June 1967, about 74,000 women were employed in manufacturing industry. Of these, the great majority were in the textile (25,700) and clothing and footwear (21,600) industries. A small number were employed in the engineering industry (8,600) but employment of women in this industry has been growing very rapidly in the last few years. Numbers in the textile industry have fallen in recent years, mainly due to productivity increases within the industry; the clothing industry has however recorded a modest increase in its female labour force since 1959. About 10,800 women were employed in the food, drink and tobacco group, mainly in the tobacco industry. More women were employed however in the service industries than in manufacturing. In professional and in the scientific services, which include nursing and teaching, 41,300 women were employed, while there were 26,700 female employees in retail and wholesale distribution and 26,500 in miscellaneous services, which include catering and domestic service. Between 1959 and 1967 the total percentage growth in employment in professional and scientific services was exceptionally rapid (about 40 per cent) while miscellaneous services registered a steady rate of growth (28 per cent) and distribution increased its female labour force by 14 per cent.

Estimated numbers of female employees in employment - June 1967

(thousands)

TOTAL	183.3
Agriculture, forestry and fishing	.6
Mining and quarrying	.1
Construction	1.4
Shipbuilding and marine engineering	.4
Other engineering	7.3
Vehicles	.9
Textiles	25.7
Clothing and footwear	21.6
Food, drink and tobacco	10.8
Other manufacturing industries	6.7
Total manufacturing industries	73.4
Gas, electricity and water	.6
Transport, communication and storage	3.0
Distributive trades	26.7
Public administration	9.7
Professional services	41.3
All other services	26.5
Total in service industries	107.8

5. Percentage increases in female employment by industry 1959/66

Engineering	113.0%
Professional and scientific services	38.41%
Public administration	26.0%
Distribution	14.0%
All other services	12.7%
Food, drink and tobacco	7.5%
Clothing	6.4%
Decrease:	
Textiles	21.7%

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6. Estimates of Future Female Employment in Northern Ireland

The Northern Ireland Economic Council, together with the Economic Section of the Cabinet and the Central Employment and Training Advisory Committee have undertaken an inquiry into the future employment position for females in the Province. The estimates have been based on (i) the future supply of female workers using current activity rates; (ii) the future demand position of the possible requirements of female workers in industry and commerce; (iii) these demand and supply forecasts are analysed with the possible future activity rates and employment levels, and allowance must be made for margins of error.

7. Estimates of the Future Supply of Women Workers

The estimated number of females available for work, aged 15 and over, will depend upon the rate at which the female population increases, taking into account the level of net migration from Northern Ireland.

The rate of natural increase in the female population can be defined, but the net migration for females is more problematical because it depends upon so many things, such as the demand for female workers in Northern Ireland and the rest of the United Kingdom, where single women are concerned, and the level of male migration, where married women are concerned.

It is assumed that the level of net migration continues to fall as it has done in the recent past, giving an average net outflow of 7,000 males and females each year between 1964 and 1970, and of 5,500 each year between 1971 and 1981. In consequence the numbers of females aged 15 and over in 1971 and 1981 are estimated to be 570,000 and 620,000 respectively compared with 542,000 in 1964.

To arrive at the working population (that is all those women over 15 who are at work or who are actively seeking work) requires an assumption about the level of activity rates (or the proportion of the total female population aged 15 and over, who will be at work or actively seeking work). The problem here is that the activity rate is clearly dependent upon demand, especially where married females are concerned, and it cannot therefore be considered completely independently. At this stage in formulating the estimates, the assumption has been made that activity rates will remain unchanged except in so far as they are lowered by an increase in the numbers over the age of 15 remaining in full-time education. On this basis the female working population would be projected as follows:

	1964	1971	1981
Female population aged 15 and over	542,000	570,000	620,000
Activity rate (total working population)	34.8	34.0	32.0
Working population (females)	189,000	194,000	204,000
	+5,000	+10,000	

8. Estimates of the Future Demand for Women Workers

This is a particularly difficult projection as the level of demand for female employment will in part be dependent upon the rate and type of new industry starting up in Northern Ireland which is, of course, an unknown quantity and does not lend itself easily to projection on the basis of past trends.

In the period June 1959 - June 1967, female employment in manufacturing industry declined by over 6,600. This was mainly due to the reduction in the numbers employed by the textile sector.

However, between 1964 and 1967, female employment in manufacturing began to grow again at the rate of 1,000 per annum. Further reductions in employment may take place in some industries, but for this exercise the most recent rate has been taken for the period 1964-71. For 1971-1981 the rate has been raised fairly arbitrarily to 1,500 per annum.

The change in the number of females in civil employment (i.e. employees and self-employed and excluding unemployed) might be as follows:

	1964	1971	1981
Change	+28,000	+39,000	
Civil employment	181,000	209,000	248,000

9. Estimates of the Future Supply/Demand Position

The estimated surplus demand for female labour must obviously be expected to have an impact on the women's activity rate. Assuming that this increases by 1981 to something approaching the 1964 rate for the rest of Great Britain (i.e. 39.5 per cent as against 40.7 per cent), it can be seen that the change in the working population, given the assumption on net migration, might be related to the change in civil employment as follows:

	1964	1971	1981
Working population (female)	189,000	214,000	248,000
Civil employment	181,000	209,000	245,000
Wholly unemployed	8,000	5,000	3,000

10. Implications of the Estimates

The implications of these predictions may be summarised as follows:

In the future there should be a relatively steady increase in the demand for female labour and there will be no permanent return to the situation of relative surplus which prevailed up until recent years. This implies firstly that the region must make best use of its existing female labour force. This will mean using the talents of school-leavers to the full, through full use of the last years at school and effective vocational guidance, setting up proper selection and training arrangements, attempting to reduce turnover and absenteeism, and looking at all possible ways of increasing productivity. An equally important consequence of this forecast is that a determined effort must be made by Northern Ireland employers of female labour to attract more married women out to work. Such an effort involves a wide variety of social and economic problems.

11. Education, Training, Qualification, etc.

Because of the functions and the changing role of women within a modern industrial community, their position in the labour force requires to be examined under five distinct features. This does not mean there are not problems common to all women, but that some problems must be met by taking specific action and by providing special measures.

The five distinct features to be examined are:

(a) Girls entering employment;
(b) Women who continue in employment throughout their working life with or without domestic responsibilities;
(c) Women who marry but continue in employment, with absence for childbirth;
(d) Women who return to employment after having reared their family;
(e) Women who are employed part-time, with or without domestic responsibilities.

12. Education

In Northern Ireland there are about 12,000 girls in the annual age group aged 14. Of these about 7,000 leave school at the age of 15, a further 2,000 at the age of 16 and a further 1,000 by the age of 17. About three-quarters of all girls leave school before they are seventeen.

For the majority of school-leavers, the age of leaving school is at present fifteen. By 1970, however, the Ministry of Education is committed to raising the statutory school-leaving age to sixteen. The decision to raise the school-leaving age has provoked much thought on the curricula which children should follow in their last years in school. The Newsom Committee in its Report arrived at the conclusion that schools should provide a choice of programme, including a range of courses broadly related to occupational interests. As a Committee we feel that it is right that the vocational impulse should be harnessed and that the last two years at school should form a general preparation for adult life. While acknowledging the narrow conditioning for industry, we are convinced that vocational education can also be a liberal education. When the school-leaving age is raised, it will become essential to extend the vocational aspect of education in the last years at school. The necessary corollary to such a policy is clearly the provision of adequate vocational guidance through the Youth Employment Service. We would not wish education to become over-vocational. The education given in the secondary schools should still be of a general nature, but we feel that there is scope for the introduction of courses with a vocational bias as an important part of general education.

13. Girls entering Employment

Education and training are key factors to future happiness and success of women in both employment and family life. Every effort must be made for girls to have facilities for educational opportunity suited to their individual aptitudes and ability. This should cover the fields of secondary, technical, and grammar school stages, and also university and professional openings.

Training of women can be broadly divided into three compartments. There are apprenticeship schemes covering skilled crafts in certain industries; there are training schemes, of shorter duration than apprenticeship, which normally involve only job instruction; and there is retraining which primarily applies to women returning to industry after an absence of some years.

Apprenticeship schemes for girls are rare and comparatively few girls on leaving school receive systematic training lasting a year or more. Apart from certain professional, commercial and scientific occupations very little is done to equip girls for their jobs. A teenage girl employee is still regarded as filling in time until she leaves to marry and raise a family. There is every reason to ensure that the training a girl gets in the early stages of her working life is effective and purposeful, and enables her to make the best use of the time she is in employment before marriage; also, that such training will provide a solid foundation for retraining, which is particularly important for those girls who marry and return to work when their domestic responsibilities permit. Top priority should be given to the Youth Employment Service facilities in the preparation and guidance of girls for employment and careers.

14. Academic Qualifications and Entry to Employment

While lack of vacancies may restrict girls in their choice of occupation, an insistence by employers on certain set qualifications for particular jobs may raise a further artificial barrier. There is a tendency among some employers to insist upon an arbitrary educational standard as the minimum qualification for occupations which are of a routine nature and could be filled by suitably trained girls with appropriate aptitudes, who do not possess the academic qualifications which the employer at present demands. This unnecessary insistence on excessive academic qualifications is not only harmful to the girl, who cannot obtain a job for which she is perfectly apt and suitable, it is more harmful to the girl who actually obtains the job.

15. First Occupations of Girls Leaving School

The choice of job can therefore be circumscribed by lack of vacancies, by insistence on inflated qualifications, by lack of geographical mobility, but about ten thousand girls actually do find jobs each year. Statistics are available which show the first occupations of girls leaving school. These are unfortunately of limited value, as they often include girls who are merely taking temporary employment before settling for nursing or some other occupation where an entrance age limit is imposed. They do not tally closely with the total distribution of female employment. These statistics are shown overleaf. The figures indicate that about a quarter of all girls

entering employment, entered clerical employment. Only a small proportion entered jobs involving an apprenticeship, or training for professional qualification or training which lasted for a year or more. Over 50 per cent commenced their first employment at the age of 15 and went straight to other employment which did not necessarily involve training. Among manufacturing industries, the clothing and footwear industry took the largest proportion, almost a quarter of the girls entering employment. The textile industry took about one-seventh and the only other manufacturing industries which girls entered in any significant numbers were engineering and tobacco. The largest single group of girls, over 25 per cent, went to the distributive trades, but large numbers also went to miscellaneous services, which would include catering, and to the professional and scientific services, which would include nursing, teaching and many clerical occupations. Smaller numbers, mainly clerical workers, were employed in insurance, banking and finance and in public administration.

Girls leaving school, therefore, mainly enter manufacturing industry, especially clothing and textiles, the distributive trades, clerical and commercial employment, and certain service trades.

The fifth Annual Report of the Northern Ireland Youth Employment Service Board - 1966/67, states "the disparity between the proportion of girls entering employment not offering planned training is 61.7 per cent in Northern Ireland, as against only 37.8 per cent in Great Britain". The table set out on the following page indicates the lack of suitable opportunities for trained employment available to girls.

We believe that there exists extreme prejudice and obstacles to the training of women. Since the end of the last war, bias exists on the part of girls and parents against factory employment. This has arisen because in the past working conditions in many textile and clothing factories were not good; wages tended to be low and the image of the mill was unsalutary. The situation has changed now with the introduction by a majority of firms of new machinery, improved working conditions and, in general, a more enlightened attitude by employers. The pay of workers in manufacturing industry has also improved and a girl working in a factory can now earn as much and in many cases more than one working in an office.

Change and diversification of industry in Northern Ireland have created a wider range of employment for women. This is particularly so in the field of light engineering where increasing numbers of women are employed in firms manufacturing radios, television, computers, etc. Women compete on equal terms with men in the

comparatively new field of employment opened up by the increasing use of computers, i.e. as systems analysts and programmers. Computer machine operating is to all intents and purposes an exclusively female employment.

We believe there is evidence to sustain the allegation of discrimination against women in engineering industry in so far as educational training and apprenticeship is concerned, and in banking where separate pay scales and a separate promotion system apply to women.

	Northern Ireland		Great Britain	
	Boys %	Girls %	Boys %	Girls %
Apprenticeship to skilled occupation	36.9	4.1	42.4	6.7
Employment leading to a recognised professional qualification	0.6	1.6	1.3	1.7
Clerical employment not covered by above	5.0	24.3	9.1	40.1
Employment involving training of at least eight weeks not covered by above	6.7	13.1	8.3	13.7
Other employment, e.g. unskilled/routine	50.8	61.7	34.1	37.8
Age at entry into employment				
..... 15	76.8	70.8	68.7	70.0
16	17.0	15.4	23.8	21.3
17	6.2	13.7	7.5	8.7

16. The Need for Induction and Planned Systematic Training

As a general principle there is a need for all girls on starting work to receive a period of induction and of planned systematic vocational training. Some girls, for example those leaving school at the statutory school-leaving age to enter jobs of a routine nature, may require only a very short period of induction and training; others, already equipped with university degrees or diplomas, may need a further lengthy period of training in order to qualify for certain professions. Between these two extremes will be the majority of girls; operatives in manufacturing industry who can usually be trained in a matter of two or three months; commercial workers who can usually be trained in less than a year; clerical workers, who often require

months of training but very rarely receive any formal training at all; and nurses, who require three years training to become state registered nurses and two years training to become state enrolled nurses. The current training position varies widely between the clerical worker, who is unlikely to receive any formal training, and the nurse whose training syllabuses are laid down by the Joint Nursing and Midwives Council and whose ability is tested by examination.

We would wish to emphasise the degree of importance which we attribute to planned and systematic training. In some professions, such as nursing, training has always been considered essential and new techniques and methods are constantly being adopted; in clerical employment and in the distributive trades, systematic training is virtually non existent. In manufacturing industry, systematic operator training has been introduced in a few firms but it is far from universal. Planned training, using careful job analysis, is the basis of the training revolution which has been taking place in recent years. It shortens the period of training, enables the trainee to reach full efficiency and full earnings level at the earliest possible moment, reduces labour turnover during training, increases the employer's profits and gives enhanced job satisfaction to the trainee. These arguments apply equally to all types of training whether for men or for women, but the introduction of training methods, which reduce training periods, are especially important where the employment of young women is involved. With the raising of the school-leaving age and with the steadily falling age of marriage and family formation, the working life of the young woman before she starts a family is gradually being reduced.

17. Training of Nurses

There are about 10,000 nurses employed by the Hospitals Authority in Northern Ireland. This is an important factor in the context of female professional employment in the Province. In order to maintain this complement some 900 nurses have to be recruited for training each year. Essentially, there are two types of training; training to become a state registered nurse which takes three years and training to become a state enrolled nurse which is more practical in content and take two years.

In the future, there may be a need for a smaller number of highly trained registered nurses, and a larger number of enrolled nurses. It may be appropriate therefore that the academic qualifications for entry to training for the register should tend to rise,

Industrial and Occupational Analysis of Young Persons (Girls) entering Employment - 1955

	Apprenticeship to skilled occupation (i)	Employment leading to recognised professional qualifications (ii)	Entering clerical employment (iii)	Employment with training (of a year or more) not covered by (i) (iii) (iv)	Employment with training (of less than 1 year) not covered by (i) (iii) (v)	Entering other employment (vi)	GRAND TOTAL
1. Agriculture etc.			16			17	33
2. Mining			5			1	6
3. Food, Drink & Tobacco	27		58	2	5	265	357
4. Chemicals			3				3
5. Metal Manuf.			2			1	3
6. Eng. & Elect.	13	3	60		12	83	171
7. Shipbuilding	1		14				15
8. Vehicles	1		16	1	2	6	26
9. Metal goods			13		9		22
10. Textiles	36	2	196	12	161	857	1,264
11. Leather Goods			1		1	10	12
12. Clothing etc.	31	1	66	28	245	1,655	2,026
13. Bricks, Pottery	1	1	16	1	1	4	24
14. Furniture, etc.	8		9		2	10	29
15. Paper, Printing	14	1	40		1	102	158
16. Other Manuf.	1		17			27	45
17. Construction	1	1	78	1		6	87
18. Gas, Elect., etc.			7			4	11
19. Transport			78		1	12	91
20. Dist. Trades	31	4	663	13	10	1,700	2,421
21. Insurance, Banking	1		152	2		11	166
22. Professional	75	98	213	23	7	137	553
23. Misc. Services	141	4	161	123	4	561	994
24. Public Administration	8		232			29	269
TOTAL	390	115	2,106	206	461	5,498	8,776

and that entry to state enrolled nurse training should not be governed exclusively by academic qualifications.

18. Training for Medical Auxiliary Occupations

There is a growing demand for the employment of females in the special departments in the hospitals; as medical and psychiatric social workers, radiographers, physiotherapists, dieticians, speech therapists, occupational therapists and other medical auxiliary categories. All of these occupations require relatively high academic qualifications and the social workers require a university degree or diploma in social studies, or the new Certificate in Social work.

19. Teacher Training

Most teacher training for girls is done in the Teachers' Training Colleges at Stranmillis and St. Mary's. In the academic year 1964/65, 179 women graduated from Queen's University in economics, law and arts; of these 97 went either direct to teaching or took a further course of teacher training. The output of Stranmillis and St. Mary's is about 350 women teachers a year. The teacher training colleges such as the Ulster College of Physical Education, the College of Art and the Ulster College of Domestic Science add to the specialised teacher supply and this will be concentrated as the plans for the new Ulster College materialise. Increased numbers of teachers may of course be needed as the average size of classes is reduced and when the school-leaving age is raised. The picture again is one of demand tending to outstrip supply.

20. Employment of Women Graduates

There is a special problem with regard to female graduates in Northern Ireland. Over half the women graduates in arts, economics and law go to teaching. Virtually none go to industry, and the numbers that enter the professions are also comparatively small. The Table overleaf shows the jobs obtained by female graduates. A few go for secretarial training, a few to social work, and some remain at university to undertake higher degree work, but the general pattern is one of restricted opportunity. This is of course also true of male graduates. We would suggest to some of the larger firms in the traditional female employing industries that they should consider how they might make use of the ability of the most academically gifted female workers. We feel that the choice for female graduates should be wider and their ability could be used to advantage by

industry, commerce, statutory bodies, local and Central Government, as well as by the education authorities.

Occupations taken up by female students who qualified for a primary degree in December, 1964 and June, 1965

	Numbers	% of total
Higher Degree studies etc.	34	14.7
Employment Overseas	1	0.4
Teacher Training	62	26.8
Secretariat Training	4	1.7
Training in Social Work	12	5.2
Training in Librarianship	4	1.7
Other Specialised Courses	3	1.4
Town Planning Studies	3	1.4
Civil Service	6	2.8
Voluntary Service Overseas	1	0.4
Teaching	55	23.8
Temporary Teaching Abroad	10	4.3
Manufacturing Industry	8	3.5
Youth Employment Service	4	1.7
Legal Training	1	0.4
Pharmacy Apprenticeship	1	0.4
Journalism, Entertainment, etc.	1	0.4
Local Government & Hospital Authority	8	3.5
Others	13	5.6
	231	100.0

21. Length of the School-Leaver's Working Life

On completion of training, the school-leaver can expect only a comparatively short working life before marriage. Statistics indicate the age of marriage has been falling steadily in Northern Ireland. In 1964, the average age of marriage for girls (24.6 years) was actually lower in Northern Ireland than it was in England and Wales 25.0 years. The trend is still for the marriage age to fall.

Although the average age of marriage is slightly lower in Northern Ireland than in England and Wales, fewer girls marry before the age of 21. Only about 30 per cent marry before 21 in Northern Ireland as against 40 per cent in England and Wales and in Scotland. The proportion of girls marrying below the age of 21 is however rising rapidly, and there would seem no reason why the proportion

will not rise to the level prevailing in Britain. Such statistics indicate that the working life of a girl before marriage will, on average, last about eight years, from 16 to 24, but a large proportion, perhaps up to half, will only work for about five years or less before marriage. Marriage does not, of course, mean an abrupt end to the working life. The majority of girls will continue work after marriage, at least until a family is started. Many women continue to work even when they have a young family.

22. Women who continue in Employment throughout the Working Life with and without Domestic Responsibilities

Many women continue in employment throughout their working life irrespective of marital status. It is important therefore that there should be adequate opportunities provided by the Government and by private industry to ensure that women are enabled to obtain retraining and to acquire new skills. It will be necessary for some statutory central organisation to keep under close review the impact of technological changes on women's employment opportunities and on the training needs with a view to adopting training openings and training programmes to meet the prospective requirements of women workers. It is held that women workers are at a disadvantage in regard to some "fringe benefits" and in the application of some aspects of taxation and statutory welfare schemes. It may be necessary for employers and trade unionists to examine collective agreements and for statutory machinery to ensure that pension, superannuation, sickness, service holiday entitlements and other fringe benefits are not any less favourable for women workers than those agreed for men in comparable employment; also that there is recognised and accepted in practice, ample opportunities for promotion on the same basis.

23. Women who Marry but Continue in Employment with Absence of Childbirth

For the majority of women the question of whether they want to take up gainful employment does not arise. Some women, even within our welfare schemes, find it necessary to return to work soon after childbirth. At present the Factories Legislation prohibits women from employment for four weeks after childbirth. The National Insurance Maternity Benefit Scheme provides medical benefits and for payments for a period of 18 weeks, 11 weeks before confinement.

In Northern Ireland, where unemployment is high and earnings are generally much lower, in many instances, the pressure on mothers to return to work soon after childbirth is considered to be greater than in other parts of the United Kingdom. There is scope in Northern Ireland for improved statutory provisions. It appears that there are objective and subjective circumstances where we must attempt to protect working mothers, not so much against exploitation, but against themselves. In private and public employment it must be ensured that a mother on return to work is given: (i) employment under suitable working conditions, (ii) appropriate time off for medical attention, (iii) seniority and service entitlements which are not jeopardised, (iv) recognised maternity leave which does not interfere with normal holiday entitlements.

The demand is often heard that no women with children should go out to work, but this clearly does not take into account the mother who is on her own, or the woman whose husband is unable to work through illness or other reasons.

A recent private inquiry into family incomes in Northern Ireland revealed that many mothers are forced to take up employment because of economic necessity and a sense of family responsibilities.

There are also women working in factories and offices who are not compelled to work for economic reasons. Personal freedom of choice must always be respected. It is very praiseworthy that parents should voluntarily give up personal leisure and comforts so their children may have better educational opportunities and higher living standards in the home.

In areas where employment is offered to married women with young children it is essential that adequate facilities for child welfare with efficient trained staff are available; i.e. nursery schools; nursery classes; day nurseries; play-centres; playground parks.

In putting forward views about the provision of nursery schools we wish to state that we consider nursery education as an integral part of the public education system, apart from the importance of the availability of these schools to the children of working mothers.

Other matters which require consideration, but must be related to the local factors and working conditions, are: the organisation of public transport; the harmonisation of working hours and hours of schools and child care facilities; arrangements for the purchase of essential day-to-day household commodities; arrangements for shopping; and the availability of some household aid services such as launderettes, dry-cleaning, etc.

24. Women who return to employment after having reared their family

It is obvious that a woman returning even to the same type of employment will benefit from a "rehabilitation period" after a probable absence of 10 years or more. The fact that the tempo and techniques of production, the introduction of new methods and systems of working into manufacturing and service industries are changing rapidly, will require new approaches.

These new entrants will require to learn new skills and acquire new attitudes. They can be helped considerably by a management that is sympathetic to the needs, and has an understanding of the measures requiring to be introduced.

Every firm, industry or service will have to examine the method best suited to its particular needs, but each refresher or retraining course should consist essentially of:

(i) a planned programme of induction, with basic skill training and experience on the job (such an induction period should be properly negotiated with the trade unions and provide for new-comers to reach agreed maximum performance and agreed maximum earnings in the shortest possible time);

(ii) adequate arrangements for selection and supervision of trainees;

(iii) the maintenance and development of good human relations, these to be recognised not only at the induction period but during the retraining period and the subsequent integration of the workers into the enterprise;

(iv) a periodical subjective analysis of the training programme.

25. Women in Part-time Employment

There is no doubt that in keeping with the general trend elsewhere there has been a considerable growth in the part-time employment of women in the Province. As would be expected the overwhelming majority of part-time women workers are married; one source states 82 per cent married, 12 per cent widowed or divorced; 6 per cent single. The occupations normally providing part-time employment are:

(a) charwoman, domestic, cleaner;
(b) waitress, kitchen and other catering and hotel staff;
(c) shop assistants, cashiers, and hairdressers;
(d) textile and clothing;
(e) laundries, launderettes and dry-cleaners;

(f) book-keeping, receptionist, typists, and telephone operators;

(g) nursing, welfare work and home help.

It will be apparent that the employment of women on a part-time basis is now so important that the problems it creates need closer attention from all quarters. There is no doubt that many married women will wish to work part-time in future. In some parts of the Province women may be working on a part-time basis because suitable full-time employment is not available for them. A woman engaged on part-time work is expected to maintain the same standards of performance as her colleagues in full-time employment; on the other hand, she may lose some of the benefits which normally accompany a job although she may have to spend just as much on travelling to and from work.

From the trade union point of view there are many problems which demand urgent attention. These problems and difficulties are not insurmountable if employers and trade unions can regularise that the status of part-time employees is covered by agreements and ensure that rates of pay, pension rights, paid holidays, opportunities for advancement and the same period of notice as full-time workers, are considered and do not conflict or prejudice the position of other employees.

26. Equal Pay

In most occupations in Northern Ireland women get little more than half the men's average wage. It is true that men often work longer hours than women and overtime payments therefore inflate their earnings. Even so, the difference in pay between men and women is far too large and, during the past few years, the tendency has been for the gap to widen rather than decrease; this has been due to the effects of percentage increases.

Trade unions are well aware of this problem. Their main aim is to secure complete recognition of the principle of the rate for the job based upon its value and not upon the sex of the worker. But progress is slow and unions are anxious to ensure that the general level of women's wages is raised.

At the present time less than 8 per cent of women at work in Northern Ireland get equal pay. The majority of them are employed in Government and local government service, and in some professional services.

27. Earnings

In Northern Ireland the average weekly earnings of men 21 years of age and over in Manufacturing Industries were - April, 1960 - £12.1s.1d. - October, 1967 - £19.3s.4d.

During the same period the average weekly earnings of women age 21 and over in Manufacturing Industries were - April, 1960 - £5.1s.3d - October, 1967 - £9.8s.7d.

The following table indicates the changes and trends in the earnings of female workers in Northern Ireland at April 1960 and October 1967.

Average Weekly Earnings of Manual Workers:
Females aged 21 and over

	April 1960		October 1967	
	s.	d.	s.	d.
Food, Drink and Tobacco	149.	6.	214.	4.
Engineering	157.	8.	235.	4.
Vehicles	144.	4.	184.	6.
Textiles	111.	10.	168.	5.
Clothing and footwear	120.	6.	182.	6.
Printing and publishing	137.	11.	188.	1.
All Manufacturing	121.	8.	188.	7.
Laundries	113.	7.	149.	5.
All Industries	121.	6.	178.	11.

28. Miscellaneous Matters

The Northern Ireland Women's Advisory Committee recognise that there is a need for a study in depth into many of the apparent issues and problems arising from the employment and training of women. Particular attention should be given to the real issues, and not the imaginary ones, that arise from the following:

(i) Turnover of labour;
(ii) Absenteeism;
(iii) Shift work;
(iv) Promotion;
(v) Marriage bar;
(vi) Transport and shopping facilities;
(vii) Social Benefits, National Insurance and taxation; and,
(viii) Statutory legislation relating to employment of women.

29. Trade Union Views

The Irish Congress of Trade Unions recognises the special need for trade union organisation and activities concerning women workers. In 1960 Women's Advisory Committees consisting of representatives of unions catering for women workers, were established in Northern Ireland and in the Republic. In 1966 a special Committee was set up by the Executive Council to deal with questions of equal pay and of women's remuneration in general, and in particular, on means of securing the implementation of the principle of equal pay and the improvement of the position of women in employment.

At the Annual Delegate Conference of the I.C.T.U. held in 1967 the following motion was adopted:

"Congress calls for the initiation of a positive programme for the application of the principle of equal pay for work of equal value and to this end calls on the Government to ratify International Labour Convention No.100 adopted in 1951".

30. Trade Union Membership in Northern Ireland

Comprehensive figures of the numbers of women members in trade unions in Northern Ireland are not available. From the returns made by registered trade unions to the Registrar of Friendly Societies and from trade union sources, it is ascertained that about 63,000 women are members of trade unions in the Province; or about one-fourth of the trade union membership. The number of women employees in Northern Ireland is 198,000. The proportion organised in trade unions is therefore about 25 per cent. The corresponding figure for men is nearly 60 per cent. Although the comparative organisational strength of women workers is weaker than that of men, there has been a considerable increase in the total women's membership over the past 10 years.

It has been said that the failure of women to organise in large numbers in trade unions in pursuit of their own interests is often regarded as further evidence of their lack of concern for their working lives. However, trade unions have always seen the protection and assistance of workers as their primary responsibility, and particularly the protection and assistance of those least able to help themselves. Today, trade unions in Northern Ireland are increasingly concerned, not only with the interests of their own members, but with the general problems arising from the wages and working conditions of women. Trade union organisation is therefore seen as paramount in obtaining and maintaining the desired objectives for women workers.

One reason for this perhaps is the unwarranted hostility and the resistance of some employers to trade union organisation among women workers.

31. Trade Union Representation

The Northern Ireland Committee of the Irish Congress of Trade Unions has sought to advance the conditions under which women are employed in the Province through representations to the Government and by representatives on various bodies concerned with the employment of women.

Some of these bodies on which the trade union representatives seek to exert their influence regarding questions relating to the employment and training of women are:

(a) The Northern Ireland Economic Council;
(b) The various Training Boards established under the Industrial Training Act;
(c) The Central Employment and Training Advisory Committee;
(d) The Committee of Enquiry on Employment and Training of Women;
(e) The Youth Employment Service;
(f) Wage Councils;
(g) Various Joint Industrial Councils.

32. Recommendations

The Northern Ireland Committee - I.C.T.U., has three representatives on the Committee of Enquiry on the Employment and Training of Women in Northern Ireland. In a memorandum to the Committee of Enquiry, the N.I.C. and the N.I.W.A.C. submitted the following recommendations, that:

(i) the Northern Ireland Government, together with Local Authorities and Employers should provide for the development of Nursery Schools, Nursery Classes, Day Nursery-Care Centres, Play-Centres, and Park facilities;

(ii) suitable arrangements be made for teachers responsible for career guidance to attend at least twice annually the meetings of the local Youth Employment Service Committees;

(iii) the Youth Employment Service organise throughout the Province a series of public meetings about their role;

(iv) the Government undertake to provide suitable and adequate adult vocational guidance and employment placement services;

(v) the Government undertake a "follow up" of the N.I.E.C. Manpower Report; and include a survey and report on part-time working for males and females;

(vi) to advise the Ministry on the employment, training and other related matters, the Minister of Health and Social Services establish a Women's Advisory Committee consisting of duly appointed representatives from both sides of industry, and to include representatives of education, Training Boards and Welfare Authorities.

(vii) the Northern Ireland Training Council consider the present lack of adequate training and re-training programmes for women workers and the number of training instructresses available for "on the job" and "off the job" training.

(viii) the Northern Ireland Training Research Committee inquire about research projects at present undertaken in Britain in connection with "Women in Employment" with a view to examining the relevancy of these research projects to the position in Northern Ireland, or alternatively, sponsor a separate research project on this subject.

33. General Remarks

The Northern Ireland trade union movement recognises that adjustments in social policies are urgently needed.

There is also a great need to have available reliable information on the problems of women and work. In particular we need more detailed studies of the use being made of the growing numbers of women being employed throughout the various sectors of industry, commerce and Government services.

We also believe there is an urgent need for an enquiry by trade unions into the role and organisational needs of women within the trade union movement. The Northern Ireland Committee of the Irish Congress of Trade Unions has sought to develop the interest of women by encouraging their participation and by organising educational courses.

The progress of women is undoubtedly hampered by public opinion, based on subjective conditions and on the tacit acceptance of the problems of high unemployment in Northern Ireland. A change in public opinion is an essential condition if any real advance is to be made.

This would involve social and psychological factors of considerable importance and more research and education in this field is needed. However, we have no doubt, that if such a change could be brought about, the improvement in the range and quality of women's work might well be dramatic.

PART II - IRELAND (26 COUNTIES)

34. Current Pattern of Women's Employment in Ireland (26 counties)

Women represent about one-fourth of the working population. In 1966 there were 281,000 women returned in the census as being in gainful employment out of a total for men and women of 1,066,000.

The distribution of women workers over the main sectors of the economy in 1966 was as follows:

Agriculture	33,100
Industry	63,100
Distribution	49,700
Professions	56,200
Public administration	9,400
Domestic service	22,600
Catering	13,100
Other services	33,400
Total	280,600

Virtually all the women engaged in agriculture were either farmers themselves or relations of farmers assisting on the farm. There is a significant number of women shopkeepers included in the figure for distribution. Otherwise the women at work in the various sectors are employees.

For every 100 women at work in 1966, 12 were engaged in agriculture, 22 in industry, 8 in domestic service and 58 in other services. Thus two-thirds of working women are in the services sector and over one-fifth in the industrial sector. Within the services sector women workers are heavily concentrated in distribution, professions (mainly in education and health services), domestic service and catering.

Women industrial workers are in the main limited to a relatively narrow range of industries. Of the 63,100 women at work in industry, 18,300 were engaged in the clothing industry, 11,800 in textiles, 10,600 in food industries, 5,900 in engineering industries and 3,800

in the printing industry. Thus almost half of all women industrial workers are in the clothing and textile industries.

Of the 56,200 women shown under the head "professions", 24,900 were engaged in the health services and 19,800 in education.

The principal "other services" in which women were engaged were insurance and banking (5,600), postal communications, etc.(4,900), entertainment (4,700), hairdressing (4,600) and laundries (3,800).

35. Occupations of Women Workers

The numbers of women at work in the principal occupations as returned at the 1966 census are shown below.

Occupations of Women at Work, 1966

Factory operatives (other than packers)	41,400
Clerks	37,500
Farm work	32,700
Shop assistants	24,300
Maids	22,900
Typists	17,400
Nurses	13,800
Nuns	13,400
Teachers	11,800
Packers	7,500
Housekeepers	6,100
Waitresses	5,200
Hairdressers	4,500
Charwomen	2,500
Laundry workers	2,200
Cooks	2,100
Telephone operators	1,800
Barmaids	1,800
Kitchen hands	1,200

It will be noted that there were 41,000 female factory operatives (other than packers). The next largest category of women workers was clerks who numbered 37,500. In addition there were 17,400 typists so that about 55,000 working women - almost one-fourth of all women employees - may be classified as office workers. Apart from women engaged in farm work (32,700) the next largest concentration of women workers were shop assistants (24,300), domestic servants, etc. (22,900), nurses (13,800), nuns (13,400) and teachers (11,800).

36. Trend in Employment of Women Workers since 1946

The number of women at work fell by 40,700 or 13 per cent between 1946 and 1966. This reduction however is more than accounted for by a drop of 48,100 (59 per cent) in the number in agriculture (farmers and relatives assisting). In addition there was a reduction of 42,800 (65 per cent) in the number of domestic servants.

The number of women employees other than domestic servants rose from 148,600 in 1946 to 207,000 in 1966 or by 39 per cent.

Whereas in 1946, agriculture and domestic service employed 46 per cent of all working women, the proportion in 1966 was only 20 per cent.

The increase in the number of women engaged in manufacturing industries (which rose from 47,100 to 63,100 or by 34 per cent) over the past twenty years has been mainly in the textiles, engineering and food industries. The number employed in distribution rose slightly from 45,600 to 49,700. On the other hand there was a substantial rise from 41,900 to 56,200 in the number engaged in "professions", an increase of 34 per cent. (Health services accounted for a large part of the increase, the numbers rising from 15,800 to 24,900 or by 58 per cent). There were also significant increases in the number of women at work in public administration, insurance and banking, catering and hairdressing.

The proportion of women in the labour force has remained constant at about one-fourth over a very long period. It was 26 per cent in 1946 and 1966.

Whereas in 1946 about 25 per cent of women at work were engaged in agriculture the proportion in 1966 was 12 per cent. In the case of domestic service the proportion fell from 20 per cent to 8 per cent. On the other hand the number in industry rose from 15 per cent to 22 per cent, in professions from 13 per cent to 20 per cent, in distribution from 14 per cent to 18 per cent and in other services from 13 per cent to 20 per cent.

Over the five years 1961 to 1966 the principal changes in women's employment were the reduction in the numbers engaged in agriculture and domestic service and an increase of 9 per cent in the number at work in other sectors.

37. Importance of Women in Work Force

Women constitute one-third of all employees (230,000 out of 702,000). The proportion of women in the employee labour force however varies greatly from sector to sector. In some major sectors,

notably agriculture and construction, there are virtually no women employees. In other sectors, for example domestic service, almost all the employees are women.

Out of 189,000 employees at work in 1966 in manufacturing industries, 62,000 or one-third were women. The proportion again varied greatly as between different industries. The highest proportion of women was in the clothing industry where two out of three employees were women. In the textile industry half were women. The proportion in printing was one-third and in electrical machinery and appliances it was well over one-third. In the food industries and in the chemical products industries over one-fourth of the workers were women. Among individual industries, women constituted more than half the labour force in biscuits, sugar confectionery, food canning and preserving, hosiery, clothing, footwear.

The proportions of all employees that women employees represented in 1966 were as follows for the main service employments: domestic service (89 per cent), health services (77 per cent), laundries (69 per cent), catering (66 per cent), education (61 per cent), hairdressing (56 per cent), entertainment (45 per cent), insurance and banking (36 per cent), distribution (35 per cent), public administration other than Defence and Garda Siochana (33 per cent). The vital importance of women in many fields of economic activity will be evident from these figures.

Women constitute 30 per cent of all factory operatives other than packers (41,000 out of 129,000). They constitute almost two-thirds of all office staffs (55,000 out of 89,000) and almost three-fifths of all shop assistants (24,300 out of 42,500).

38. Female Participation Rate

Out of the 821,000 women aged 15 to 64 years in 1966, 289,000 were classified as being in gainful occupations whether they were at work or out of work. The participation rate for women was accordingly 35.2. It has remained pretty stable over the last forty years and is low by comparison with most developed countries.

39. Employment of Married Women

Up-to-date statistics on the employment of married women are not available. The latest figures relate to 1961. In that year there were 24,300 married women and 33,100 widows at work in gainful occupations. However, the great majority of both married women and widows who were at work were either employers, self-employed or relatives

assisting. There were only 14,800 married women employees and 7,200 employees who were widows. Of the 24,300 married women in gainful occupation in 1961, 3,700 were teachers; 2,900 were shopkeepers; 2,700 were farmers; 1,300 were maids; 1,300 were clothing workers; 1,900 were engaged in other industries; 1,100 were clerks; 1,000 were shop assistants; 800 were charwomen; 700 were nurses and 500 were typists. The breakdown of the 32,800 widows at work in 1961 was as follows: farmers (20,600), shopkeepers (2,900), charwomen (1,300), clerks (1,100), industrial workers (1,000), maids (1,000), teachers (500), Of the 287,000 women gainfully occupied in 1961, married women (24,300) accounted for 8 per cent and widows (33,100) for a further 12 per cent.

It will be obvious from the foregoing figures that the participation rate of married women is low. However, the results of the 1966 census (not yet available) will no doubt show a substantial increase in the number of married women employees. Recent surveys carried out in urban areas indicate that there is a growing demand for work for married women both by employers and women themselves. This change may be further accelerated by the extension of free post-primary education, earlier marriage, the growing desire of women to continue in the labour force after marriage whether for economic or personal reasons. There is also a gradual change of opinion in Irish society which to date has not tended to encourage married women to engage in work outside the home. Legislation, in general, does not prevent married women from working but the lack of facilities such as nursery schools, crèches and home help together with some provisions of the taxation code act as a deterrent to married women seeking employment outside the home.

40. Future Employment Prospects

In its report on full employment published in 1967 the National Industrial Economic Council made projections of the increase in employment required to ensure full employment by 1981 on certain assumptions. On this basis the labour force could be expected to increase from 1,108,000 in 1966 to 1,144,000 in 1976. The number of women in the labour force could be expected to increase over the same period from 288,000 to 306,000, an increase of 18,000 or 6 per cent over the ten years. This modest increase in women's employment over the next ten years is based on the assumption that the female participation rate will remain at 35 per cent. This may seem an extreme assumption but it must be remembered that the age at marriage is relatively high, and the marriage-rate relatively low.

On this projection, the proportion of women in the labour force will remain more or less unchanged over the next ten years. It may be assumed, however, that married women will represent a gradually increasing proportion of the female labour force. At a rough guess the number of married women at work by 1976 could be 50,000 or 16 per cent of the female labour force as compared with 24,000 (8 per cent) in 1961.

41. Manpower Measures

There have been no legislative measures adopted recently which would have a direct bearing on the employment situation of women. However some manpower measures recently introduced which apply to men and women workers are relevant. Among these are:

(a) the Redundancy Payments Act which came into operation at the beginning of 1968. This provides for a lump-sum payment and weekly redundancy payments to be paid to redundant workers who have had at least four years' service with their employer. The lump-sum payable is a half week's pay for each year of service up to age 41 years and one week's pay for each year of service after age 41 years subject to a maximum of twenty weeks' pay. The weekly payments are payable after two weeks of unemployment up to a maximum of 13 weeks. The rate of weekly payment is half the pre-redundancy pay to which is added unemployment insurance benefit.

(b) The Industrial Training Act set up the National Training Authority with the function of providing for the training of persons for industrial and commercial activities. The authority is also responsible for retraining of redundant workers.

(c) The Placement and Guidance Service of the Department of Labour is being reorganised.

42. Trade Union Membership

There are about 90,000 women trade unionists in the Republic representing about one-fourth of all trade unionists, men and women. On a rough estimation about two-fifths of all women employees are organised in trade unions.

43. Women's earnings

Official statistics of the earnings of women workers are available for industry only. The latest official figures relate to October 1965 but estimates based on official figures have been compiled by the Research Service of the Irish Congress of Trade Unions and published in Trade Union Information (April 1968). The average weekly earnings of women workers (18 years and over) in manufacturing industries in September 1967 are estimated at £8.5s.0d. The average hours worked were 40,0. At the same date the average weekly earnings of men (18 years and over) in manufacturing industries were estimated at £16.4s.0d. and the average hours worked 45.4. On an hourly basis the average earnings of women worked out at 4s.1d. and of men 7s.2d. Thus women's hourly earnings were only 57 per cent of men's. This compares with 54 per cent in 1938, 57 per cent in 1955 and 58 per cent in 1960. There has therefore been very little progress made in reducing the gap between men's and women's earnings in industry since before the war.

44. Other Matters

Much of the comment made in the section of this report dealing with Northern Ireland applies in similar measure to the Republic. This applies especially to paragraphs 1 (General Trade Union Attitudes), 11-16 (Education, Training, Qualification, etc.), 22-24 (Women who Continue in Employment throughout the Working Life), 25 (Women in Part-time Employment), 26 (Equal Pay), 33 (General Remarks).

COUNTRY REPORT

ITALY

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1. Historical Analysis

The trend of women's employment in Italy has followed a curve closely correlated to the social and economic evolution of the nation, and three stages can be distinguished in it, alternating successively between Northern Italy and the South.

The first stage, which may be defined as one of agricultural development, is characterised by the employment of large numbers of women workers, and includes also ancillary activities such as animal husbandry and preparing produce for sale.

In due course the drift from the land affected women too, and then began the period we have distinguished as the second stage, in which the increased demand for manpower resulting from the country's growing industrialisation is met by a rise in women's employment. However, in this first contact with the world of industry, female labour was channelled into specific jobs and into particular sectors such as textiles in which technical progress, by freeing the work from the limiting factor of muscular strength, made it possible to employ women workers, who often attained higher rates of output than their masculine counterparts in specific jobs.

After this initial phase of industrialisation we enter the third stage, which is with us still, in which advanced technologies, mechanisation and automation make it possible to employ women in practically all sectors of economic activity, even those traditionally reserved for men. Furthermore, the progressive expansion of the tertiary sector, and of employment in jobs connected with adminis-

tration and marketing as compared with direct production, demands an increasing percentage of women workers.

In this stage, however, as women's employment has spread throughout the various sectors of production, it has undergone a marked gradual contraction especially during this second post-war period, reaching a peak in recent years.

Between 1961 and 1967, in fact, the female labour force declined by 1 million units or 16.4 per cent, as against a virtual stagnation of men's employment (65,000 units or 0.5 per cent - see Table 1).

The scale of the phenomenon has caused concern to the government services, which last March, on an initiative of the Ministry for the Budget and Planning, following pressure from the trade unions, convened a tripartite conference of government, employers and trade unions to investigate the matter of women's employment and propose possible solutions. The facts and figures quoted in this paper are extracted from the proceedings of this conference, so their objectivity can be relied on.

2. Analysis by Sectors

The drop of 1 million units in the female labour force between 1961 and 1967 varied in scale of impact from one economic sector to the other (Table 1). In agriculture it amounted to 730,000 units or 34.6 per cent compared with a drop of 921,000 units or 22.5 per cent in the case of men.

The specific rates of women's employment in this sector form a unimodal curve, with a peak displaced towards the higher age groups (45-49 years). As could be expected in the so-called drift away from agriculture, this mainly takes the form of a dwindling intake of young workers into the sector, together with, to some extent, women leaving the sector on reaching upper limits of age or for natural causes such as incapacity and death.

In the industrial sector from 1961 to 1967 the numbers of women workers occupied fell by 312,000 units or 16.5 per cent, compared with an increase in masculine employment of 448,000 units or 7.8 per cent.

In this sector too the curve of specific rates of women employed by age group is markedly unimodal, reaching a sharp peak corresponding (unlike that in the agricultural sector) to the lower age group (20 years), and declining steeply in the later groups, where marriages and births tend to be most frequent up to about 30-34 years, and thereafter dwindling more slowly from one group to the next.

Table 1

Women Employed per Branch of Economic Activity

(thousands)

Sector	1961	1962	1963	1964	1965	1966	1967
Agriculture	2,110	2,014	1,780	1,634	1,566	1,419	1,380
Industry	1,891	1,820	1,813	1,708	1,613	1,564	1,579
Trade	852	869	861	865	868	850	879
Transport and communications	59	64	67	76	74	70	68
Others	1,173	1,172	1,157	1,185	1,176	1,175	1,179
Total	6,085	5,939	5,678	5,468	5,297	5,078	5,085

In the tertiary sector, on the contrary, the numbers of women employed have risen by 42,000 units or 2.0 per cent, as against a rise in the numbers of men of 408,000 or 9.6 per cent. In these activities, while the trend in women's employment is the opposite of that in the other two sectors considered previously, there is still also a relative worsening compared with the employment of men.

As regards rates of activity in this sector, we see an alteration of the curve, beginning already in 1961 but growing more marked in recent times, from unimodal to bimodal. In fact, after an initial peak in the lower age groups (20-24 years) and a slight drop until about 30-34 years, the curve begins to rise again to a second peak at about 45 years, after which it drops steeply.

3. Analysis of Causes

The reasons for the decline in the employment of women are clearly to be found in a set of circumstances that have combined together or accumulated as time has gone on.

To analyse them all in detail would take us too far, so we shall confine ourselves to the major causes, summarised below:

(a) Modifications of sectoral structure in industry appear likely to have exerted some influence, especially in the past, though in recent times it has been substantially lessened. The figures of employment by category of industrial activity recorded by the Ministry of Labour show that around the 50s this factor played some

part in reducing numbers in sectors of predominantly female employment, especially in the various sub-sectors of the textile industry. These downward trends were partly offset, afterwards, by marked expansion in sectors employing a high percentage of women, such as clothing and footwear, artificial textile fibres, etc.

(b) The limited opportunities of vocational training and re-training open to women under conditions of growing demand for specialised labour would however seem to be a distinctly relevant cause. The Ministry of Labour figures of industrial employment by groups of skilled trades clearly bring out an increase over time in the proportion of skilled and specialised workers to the labour force as a whole.

But this increase applies only to men, and for women there is, on the contrary, a decrease.

(c) The intensive and rapid turnover of women workers is a well known fact. The turnover rates for industrial operatives, again according to Ministry of Labour figures, are higher for women than for men in practically all branches. This may be regarded as a cause of a drop in women's employment in that not all the women laid off or dismissed, or leaving their jobs for whatever reasons, are replaced by other women: they are partly replaced by men.

It should be remembered that women often quit their jobs for family reasons, especially getting married or having children, and do not come back (or not immediately) on to the labour market. Once the children are sufficiently grown up, the woman worker finds difficulty in resuming her place in the active population in the industrial sector, both for the reasons mentioned above and because of her age.

Consequently, her place is taken by younger women, or in some cases men.

This accounts for the curve of rates of women's employment by age group previously referred to, and is one of the reasons for the declining percentage of women occupied, especially in more highly skilled jobs.

(d) The general shortage of jobs, the frequent lack of vocational skills and some traditional obstacles to work for women outside the home which still persist in some districts of Southern Italy, are further causes particularly operative in the more backward parts of the country.

The general shortage of vacancies mainly impinges on women's employment because in a general way men are more determined and persistent in seeking jobs, whereas female labour is also more dependent on the volume of demand because women tend to be more reluctant to sign on at the labour exchange. In other words, it may be said that supply and demand are, in the case of women workers, mutually restrictive in tendency (see Table 2). While this is fairly common in the present labour situation in Italy, it applies in particular to the conditions of job shortage in the above mentioned areas.

Table 2

Numbers of Women Seeking Employment

(thousands)

Sector	1961	1962	1963	1964	1965	1966	1967
Unemployed seeking employment	109	91	70	77	102	99	107
Seeking first job	113	110	86	96	101	112	121
Total	222	201	156	173	203	211	228

Another phenomenon to which due regard should be given is that caused by switches from one occupation to another, whose reasons are to be looked for in failure to engage women workers on completion of their apprenticeship.

(e) Notwithstanding a substantial increase in the length of school-life for girls, the proportion of the school population lost in the transition from compulsory schooling to secondary educational establishments is still very high.

The largest intake of young women into secondary educational establishments is still into teachers' training colleges and schools, followed by the arts and science departments of grammar schools, commercial technical colleges and for business training, vocational schools of commerce, with - a long way after - women's technical colleges and vocational training establishments.

As regards the university population, there is a big influx of women into the Faculties reserved for qualified teachers, and those of Arts, Philosophy, Economics and Commerce.

A survey of the field shows clearly the relative lowering of standards for women in the higher reaches of the educational system.

In fact, in the upper intermediate standards, girl students are practically non-existent in the industrial technical colleges, but are concentrated in those types of school mainly oriented towards the tertiary sector.

The same phenomenon recurs in university education (Faculties reserved for qualified teachers, and those of Arts, Philosophy, Economics and Commerce).

The same statistics for pupils attending vocational training courses, while they are not capable of detailed analysis, clearly highlight the concentration of women attending particular kinds of courses.

The supply of female labour would therefore appear to be markedly influenced by certain social traditions, which channel it mainly towards particular branches of studies, despite the fact that the demand in the industrial sector is increasingly oriented towards different categories of trained manpower.

(f) Finally, if to all these causes we add the existing legal and contractual disparities between men and women and the scarcity or non-existence of social structures, ranging from day nurseries to kindergartens and often obliging the woman worker who has a child to choose between bringing up her family and going out to work, we shall have a practically full picture of the factors contributing to the drop in women's employment in Italy.

4. Future Prospects

Let us now see what forecasts can be made for the future of women's employment in Italy. An analysis by major economic sectors shows that:

- as regards the prospects for employment in agriculture there can be no doubt that the downward trend which has for decades past been a feature of this sector will continue over the next few years as well. This is due to psychological and sociological factors which affect young women more acutely, and add their influence to that of the economic and social factors affecting both sexes, such as low farm incomes, larger school attendance and the consequent raising of educational standards in the rural populations. Such factors increasingly furnish young women with an incentive for giving up farmwork, while from another angle there are practically no young women entering rural families from other sectors by way of matrimony. For these reasons, according to a generally accepted estimate, the

order of magnitude for the drop in numbers of women employed in agriculture over the next five years will certainly be in excess of 400,000 units;

- regarding the outlook for women's employment in industry, if the current downward trend in the numbers of women employed in the various traditional sectors of industry continues during the next few years, the problem of a future expansion of female employment is likely to depend on an increase in numbers employed particularly in those industries where the percentage of women is at present small, and also, on whether more jobs are offered in advanced sectors (electronics, certain chemical branches, etc.) where a high proportion of women is to be presumed possible. In this connection we would underline the growing importance in coming years of technological developments and the adoption by firms of advanced organisational techniques, noting that the objective of greater efficiency in the machinery of production does not conflict with that of employment in general and women's employment in particular;

- finally, as regards the outlook for women's employment in the tertiary sector, the heterogeneous nature of the latter precludes making any concrete or objective estimates.

However, it may be conjectured that women will inevitably have to resort to this sector as a refuge in the country's current social and economic situation, chiefly because of two broad considerations:

(a) scholastic options, as has already been mentioned, have the effect of mainly channelling women towards employment in the services sector;

(b) less competition from male labour, to whom employment in this sector is unattractive for various reasons, more especially lower wage-scales and longer working hours.

To sum up, then, the prospects for employment of women in Italy are far from rosy. Over against the agricultural sector which releases, and will for several years go on releasing women workers on a large scale, we have the industrial sector which, unless trends alter, will go on absorbing female labour marginally only, and the tertiary sector affording random possibilities of intake, which are not however conducive to the qualification and personalisation of feminine labour.

Thus the evolutionary trend in women's employment in Italy is clear: a slow uphill battle against economic, social and traditional

obstacles which hold back progress and above all cause it to move by fits and starts even though the broadly progressive character of the underlying trend is in our view indubitable, and attested above all by the qualitative aspects of the changes taking place rather than by the quantitative rate of development, which is definitely negative.

The upshot of all this is that the trend needs to be altered, and trade union efforts are being directed towards that end.

5. Trade Union Proposals for a Solution

The Italian trade unions have proposed grappling with the problem of women's employment at the roots. A first step was taken with the tripartite conference mentioned earlier, which served to bring home to the government services their responsibilities in the matter and to propose whatever remedial actions were regarded as the most urgent. Other steps are to be taken shortly.

This makes it clear that the overriding need is to lift women's employment up from the currently accepted concept of marginalism to which it is confined despite indubitable trade union gains and despite the evolutionary trend in Italian society.

Then we shall have to overcome the dichotomy of male and female labour, which even today, are considered as antithetical to one another, as if the employment of women were bound to leave less room for men.

The Government is being pressed to plan, and lose no time in wielding, all the instruments of economic and social policy calculated to increase and foster women's participation in the country's productive activity. In this direction emphasis is laid on the need to offer incentives for training and re-training women, for modifying standards and customs limiting age of intake and retirement for women workers, for bringing educational policy into line with modern occupational requirements, for offering incentives for selective investments likely to encourage the employment of women, for reforming the legislative and contractual lag with which women's employment still has to contend.

On a more directly social plane, action has been called for to:

- promote protective legislation for working mothers, either because motherhood and its accompanying social obligations appear likely to govern directly women's propensity and availability for work, or because it implies health considerations for the welfare of

the mother and baby, or because, as things are, such protective measures risk causing discrimination against the workers. It is therefore necessary to eliminate rapidly the deficiencies and inefficiencies in the present system, mainly governed by the Act of 26th August, 1950, No.860, as subsequently amended.

- reform the general provisions for family allowances, getting away from the present character of inadequate supplementary payments for family responsibilities, in order to make such kinds of benefit more effective and more realistic in relation to family needs. It is also necessary to eliminate the existing inequalities between the sexes - whereas the husband in every case draws the allowance for his wife who is not gainfully employed, the opposite is only possible for the wife subject to particular conditions.

- solve problems concerning treatment for pension purposes, which are of two different kinds: the first concerns the existing disparities between men and women within the same category; the second the defects and contradictions in the pension system in general. Some of the first kind of problem will eventually find a suitable solution within the wider context of the reform of pensions and compulsory insurance now being put through in Italy, while there will remain to be settled questions of reversionary rights and of pensionable age. There is in fact no plausible reason for not applying reversionary rights, within the limits and according to the procedure laid down for the male workers, to women's pensions as well.

- promote the management and organisation of the various social services (priority being given to day-nurseries) by local authorities, regional authorities, groups of communes and individual communes, with direct and responsible participation by the most interested categories, e.g. trade unions, family associations, etc.

- speed up definition of the executive programmes for building the 3,800 new day nurseries provided for in the Five Year Plan.

- enable actions to be undertaken in the sector of these day nurseries by means of a full infrastructure of the latest and most up-to-date teaching and psychological equipment, and making timely preparations for training suitably skilled and specialised personnel for child welfare.

- promote new building estates fully financed by the State or consortia of building co-operatives to try out new types of housing including, besides crèches, and depending on the scale of the scheme:

(1) a kindergarten;

(2) compulsory elementary schools (with possibilities for providing refresher courses in situ and compulsory classes after school hours);

(3) a decentralised unit at the day infirmary for giving assistance over the whole range of working hours for sick people and incapacitated old people;

(4) premises for unspecified public assistance;

(5) green spaces equipped and supervised, for use as children's playgrounds.

CONCLUSION

The conclusions of this brief report are self-evident. Women's employment in Italy still has a long way to go, and a highly important task awaits the trade unions.

We need to go on promoting further progress, because work by women in modern society is no longer enclosed within the narrow alternatives of factory work and looking after the home, but rather signifies giving woman her place in the wider context of the structure of contemporary society.

In our incontrovertibly economic age, woman is called upon to fulfil functions demanding the indivisible solidarity of our fundamental responsibilities.

It has in fact been aptly said that nowadays no liberation of humanity can be genuine unless it contributes to promoting the setting free of the whole of mankind.

COUNTRY REPORT

NORWAY

EXTENT OF WOMEN'S PARTICIPATION IN ECONOMIC PRODUCTION TODAY, BY COUNTRIES AND SECTORS, ACCORDING TO LEVEL OF EDUCATION AND QUALIFICATIONS, AND FAMILY SITUATION

by Miss Liv Buck
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Forecasts for the Next Ten Years

In Norway a comparatively small proportion of married women are employed outside their homes. This appears from a study which was made a few years ago. The study covered married women in employment between the age of 34 and 54 - broadly speaking a group who did not have small children below school age.

There were 350,000 women of this age, 25,000 of whom had a job, while 50,000/60,000 assisted their husbands in their work. Thus there were 270,000 married women left for potential employment. 90,000 of these women were living in towns where it should be easier to find jobs.

As a census is taken in Norway only every ten years this report has to be based on the last census taken in 1960. According to this census there were 835,000 married women in 1960. Of these only 80,000, or about 9.5 per cent, had a main job outside their homes, whereas 755,000 were not in gainful employment. According to estimates, the number of women with a main job outside their home will increase to about 14 per cent in 1970.

It is true that from 1950 to 1960 the number of married women in gainful employment had doubled, but for most women in our country marriage means a decisive break in employment. Today, as fifty years ago, women are brought up to prepare themselves for the role of housewife.

On the other hand, many of these women are educated and trained for occupations where there is a great shortage of labour. We are in need of teachers, nurses, home helps, social workers, child care workers, etc. One would think that a great part of the women who educate and train themselves for an occupation would be interested in continuing in their job, if possible, even after having children. Unfortunately, we know very little about this question, as the Norwegian authorities have not taken much interest in studying the wishes and needs - other than housework - of married women.

A parliamentary report on labour market policies is being prepared at the moment which stated that jobs should be created according to the needs of women, and one should seek to remove the practical obstacles facing women with family responsibilities who wish to take up gainful employment, etc.

As mentioned before, the number of working women has risen with the increase in population, but at the same time the percentage of working women in the total working population has decreased.

In 1875 women constituted 29.1 per cent of the total working population.
In 1930 this percentage had fallen to 27.
In 1950 " " " " " 24.
In 1960 " " " " " 23.

By the term "working" or the term "gainful employment" is meant persons who draw an income from their work. Persons who are doing unpaid housework are not included.

In other words up to 1960 there has been a steady decrease of women in employment, which most people would not believe when seeing the vast number of women on their way to and from work. This is connected with many factors, including the low employment rate among married women.

At the last census in Norway (1960) there were 3,591,234 inhabitants. 1,789,406 were men. 1,801,828 were women. 1,349,740 were women above the age of 15. Of these 834,225 were married, 136,655 were widows, while 27,922 were divorced or separated from their husbands. 80 per cent of the women in the age group between 25 and 29 were married. 86 per cent in the age group between 30 and 39 were married. In 1950 the respective figures were 65 per cent and 78 per cent. Of the women above the age of 15 barely 24 per cent were in gainful employment in 1960. The rate of employment was 55.7 per cent for unmarried women and 9.5 per cent for married women. It seems, however, that the employment rate rose somewhat in the period

from 1960 to 1967, but the figures which may be comparable with the figures of the 1960 census, will not be available until 1970. It is likely, however, that there will be an increase in the rate of employment as the present groups of older women are being replaced by younger women with better education and training and a different attitude to employment.

In the period from 1960-1970 it is estimated that the number of women workers will increase by 47,000. The corresponding figure for male workers will be about 65,000. In 1970 the total rate of employment for women will probably be somewhat higher than in 1960.

While women in 1960 performed about 29.5 per cent of the total number of jobs performed in a year, this percentage was 30.3 in 1967. In 1960 the total employment numbered 1,475,900 jobs. In 1967 the figure was approximately 1,552,500 - a rise of about 76,600 from 1960 to 1967.

As will be noted, the increase is not particularly high, but it implies, nevertheless, that women's part in the increase in employment taken as a percentage of the jobs per year performed by women, is almost twice that of men.

There is reason to believe that this increase has taken place mainly among married women, as these account for an increasing part of the female population.

In 1960 there were 182,000 married women in Norway below the age of fifty with the youngest child below the age of seven. There were 146,200 women with the youngest child of the age from 7-14. These two groups made up more than one third of female labour.

In 1960 6.6 per cent of all married women with children at home had an occupation outside their home. The percentage with a job was highest among women with one child, where it was 10 per cent. It declined with the increasing number of children.

17 per cent of married women without children at home were in gainful employment.

It may be noted that the employment rate declined with the increasing age of married women, and it is particularly the many older women in the group with no children at home which contributes to the low rate of employment.

In 1960 about 83 per cent of all personal services were performed by women. About 53 per cent of employees in public and private services were women. In financial institutions and estate agencies about 40 per cent were women and in commerce the figure was about the same. In manufacturing women accounted for barely 19 per cent of all employees.

In 1960 about 4 per cent of the women were in paid employment in agriculture, 21 per cent were in manufacturing, 19.5 per cent were in personal services, 25 per cent were in public and private services, and 23 per cent were in business.

I have stated previously that in 1960 there were approximately 80,000 women with a full time occupation outside their homes. For these women the full time occupations were office work, manufacturing, service and sales work.

Regarding education, the figures of the census showed that 32 per cent of all women above the age of 15 were educated beyond the elementary school level. There was a great difference, however, between the rural districts and the towns. In the rural districts 30 per cent of the women had education beyond the elementary level, whereas the corresponding figure for the towns was 35 per cent. 14.5 per cent of all women above the age of 15 had completed continuation school or people's high school. 9.2 per cent had completed secondary education (middle-school). 3.6 per cent had passed the matriculation. 0.3 per cent held university degrees or degrees from schools of university level.

A characteristic of women's education is that it generally stops at the lower level. Women are less inclined to go in for special education but prefer special training in the occupations that are traditionally conceived as being suitable for women.

In 1963, 39.1 per cent of the students in technical and vocational schools were women. 56.4 per cent of the students of general teachers' training colleges were women. At the special teachers' training colleges 71 per cent of the students were women. At the schools for health services and social work 94.5 per cent of the students were women.

Women constituted only 16.5 per cent of the students at craft and industrial schools where they were found almost exclusively within the traditional women's occupations such as ready-to-wear manufacturing, hairdressing, housework and various occupations connected with domestic service, such as home helps, cooks, etc.

There were very few women at the technical schools in agriculture, and still fewer women at the other technical schools.

Only 22.4 per cent of the students at universities and other schools at university level were women, and they were studying within a narrow range of subjects.

44 per cent of the philologists were women.

64.3 per cent of the pharmacologists were women.

36 per cent of the psychologists were women.

12.3 per cent of the medical students were women.

Only a few women were found at the Norwegian University Commercial College and the Norwegian University Agricultural College.

At the Norwegian University Technical College there were only 4.3 per cent of women students and they usually studied architecture or chemistry.

In general women in Norway have a poorer education than men. Furthermore women belong to a particularly vulnerable group, as they are either unskilled or their vocational training is limited to a few fields. They are easily hit by fairly modest rationalisation, for example, within textiles, commerce and offices, or the other so-called women's occupations. They educate themselves for the occupations in which women have been engaged in the past and rarely aim at superior positions, but are content to remain as subordinate staff. We find women in the industries, commerce and offices, health services, education, but rarely in superior positions, and practically never in top positions.

There are few women in highly qualified jobs in industry. Thus, within the electro-technical industry there were 3 women only out of 467 engineers. There were 2 women out of 1,041 technicians and draughtsmen.

In the public administration, out of 1,766 consultants and professional secretaries only 253 were women. Out of 333 medical directors, 3 were women, and there were 389 women doctors out of a total of 3,470. Of 1,502 lawyers 25 were women. Of 422 theatre directors and actors 174 were women. 111 out of 631 singers and musicians were women. On the other hand, women accounted for approximately 50 per cent of the teachers at elementary and continuation schools, whereas only 58 of the 1,071 heads of schools were women.

It is a fact, furthermore, that an increasing number of women are getting married and they marry younger than before. Whereas in 1936-40 the average age for a woman's first marriage was 26.4, it was 22.5 in 1965. In 1900 46.7 per cent of all women above the age of 15 were married. In 1930 the corresponding figure was 45.5 per cent. In 1960 it was 61.8 per cent.

The number of children per family has decreased and is still decreasing. In 1930 the number of babies per 1,000 married women was approximately 160. In 1960 it was approximately 134. In 1920

the average number of children per marriage of more than thirty years duration was 5.7. In 1950 it was 3.3. In 1960 it was 2.5.

In 1920, 72 per cent of all married couples had more than three children. The corresponding figure for 1960 was 24 per cent. 11 per cent of all married couples had no children, and more than 45 per cent had one child or two children.

As a result of early marriages and small families the period when a woman is tied to child care is usually finished before she is 40. She still has approximately 30 years left before she is due to retire, 70 years being the official age of retirement in Norway. For thirty years, or about half of their lives, women will not have enough to occupy them in their homes. In other words, there will be a large group of women who would wish to change from work at home to outside employment. They would like to go into the labour market and the question is: will they find employment if they so wish?

To a considerable degree women's chances of employment will be determined by the general demand for labour. They will also be determined by the degree to which they are offered jobs which are suitable for women in practical and other ways.

In Norway - especially in the areas with a scattered population - women have little chance of obtaining employment. As a rule, in those places the industries usually employ men only. In areas dominated by textiles, ready-to-wear manufacturing and food industries, with administration in need of office staffs, there is naturally a high percentage of female labour, but this percentage is low in places dominated by steel and engineering industries.

The problems in Sweden and Norway are fairly similar with regard to chances of employment. In Sweden it is estimated that about 100,000 women would like to have a job if they could get one. Unfortunately, we have no concrete figures for Norway, but the position is pretty much the same.

If in an area there is heavy industry dominated by male labour and at the same time there is a considerable surplus of women in the labour market one should seek to use more female labour in the heavy industries. In cases where women have been placed in occupations which in the past were reserved for men, they have proved extremely suitable for such jobs.

In Norway today the shortage of child care institutions is the biggest obstacle to the participation of large groups of younger women in employment. To ensure that children are taken care of in the best possible way in day nurseries, kindergartens and nursery

schools is not only of interest to women, but is a problem for society and the family. It is important to adapt opening and closing hours of such institutions to working hours. In Oslo, for example, all day nurseries closed for two weeks during the summer 1968. This created problems for many mothers, but the whole question, including morning opening hours, will now be considered on a broad basis.

In Norway today approximately 430,000 children are below the age of seven. It is estimated that about 25 per cent of these children i.e. about 107,000 would need to attend a child care institution. About 9,053 out of 430,000 children - 21 per thousand - are today placed in such an institution. Child care institutions are best developed in the two municipalities which cater for 89 per cent of all places. Thus, in Oslo, the coverage is 11 per cent. According to statistics, 4,810 applicants were refused in the Autumn 1965. But there are no figures giving the number of people who do not apply because they know how difficult it is to get in. A study made in one of the "satellite cities" of Oslo showed that 90 per cent of the housewives in this suburb wished to have their children placed in child care institutions.

Regarding the shortage of child care institutions the employers might contribute somewhat more than they do at present in order to have more kindergartens and day nurseries. They might contribute financially and in such a way obtain some places in the child care institutions.

I would like to mention here that in July 1968 a proposal to sell places in day nurseries to public and private undertakings was submitted to the Oslo local authorities. A number of firms have approached the local authorities expressing their interest in establishing and building kindergartens for the children of their employees. Such an arrangement would benefit the employees whose homes in most cases are scattered all over the town area. They might then avoid such disadvantages as the transport of their children. According to the above-mentioned proposal which was adopted by the Oslo local authorities, both public and private firms in Oslo have been given permission to buy up to 100 places in the day nursery institutions of the Oslo municipality. Each firm may buy up to 10 places, at a price of 15,000 N. kroner per place. The income from the sale of places will be used for the further development of day child care institutions in addition to the normal development of such institutions.

I would also mention another example of efforts of firms to meet the shortage of day child care places in Oslo. One of the larger

factories in Oslo has offered to establish a day nursery in one of the free rooms of their premises. The firm would be prepared to undertake the installation of fittings and fixtures, and take care of heating and external maintenance. The premises were offered to the Oslo local authorities free of charge. In return the firm would wish to have seven places for children in the age group 1-7. Payment for these children should take place on the same lines as at the other day nurseries. This day nursery will be inaugurated in the Autumn 1968.

Part-time employment is practised to a certain extent in Norway. The main problem has been the supply of jobs. Industries are not geared to this form of work, and employers, both in private and public undertakings have taken very little interest in this matter.

It has been difficult to ascertain the extent of women's interest in part-time employment. There has been a good supply of unskilled labour, whereas the supply of qualified part-time workers for certain sectors has been rather small. Generally speaking, the interest in part-time employment of women both on the part of employers and employees has been determined mainly by the situation on the labour market. Employers often look upon the employment of part-time workers as an emergency measure. There are, of course, exceptions, and it seems that the retail trade and department stores are making use to an increasing extent of part-time employees. In this connection I may mention that in 1962 an evening course was organised in Oslo for housewives and other women who wished to take up part-time employment. Five short courses with a total of 150 participants were held, but there were three times as many applicants. The greatest demand for part-time employment has been in the Oslo area, as here within certain sectors, particularly in commerce and offices, it has been difficult to obtain sufficient qualified full-time female labour.

Part-time employment is practised differently within the different sectors. In the textile industry some firms operate with so-called housewife-shifts in the afternoon. In ready-to-wear manufacturing women work on shorter shifts in the afternoon after the end of normal working hours. Within the retail trade, the food trade in particular, women have been employed part-time to a great extent for 3-4 hours in the afternoon, or 2-3 full days a week. With the rationalisation and modernisation of the retail trades more women are now sought for part-time employment. There is a tendency to limit the number of full-time employees as much as possible and to use part-time workers as shop assistants at peak periods during the day or the week.

There has been a certain shortage of qualified part-time employees in Oslo. Shops and stores require much of this category of labour, and they are interested mainly in persons who know the job well enough to be able to perform it immediately upon entering employment. The lack of skills may often be a serious obstacle for adult women who want to take up employment. Great emphasis is therefore placed on the participation of women in the vocational training courses for adults organised by the Norwegian labour exchange service. There has been a growing interest among women in these courses. Through them it has been possible to some extent to train women for occupations which are traditionally considered as male occupations. However, the bulk of women taking part in these courses train themselves for the traditional women's occupations inside the services and manufacturing industries.

I would like to add that all newly recruited officials of the labour exchange service are informed at their service school of questions concerning the employment of female labour. Special emphasis is placed on the problems arising in connection with women who have been away from working life for some time, especially married women. These information courses will continue until they have covered all directors of the labour exchange offices throughout the country.

It is estimated that in the period 1960-1970 the total working population in Norway will increase by more than 110,000 persons, 47,000 of whom will be women. It is furthermore estimated that the employment rate of married women will increase on a similar scale as in the previous decade:

from	5.4	per cent	in	1950
"	9.5	"	"	" 1960
to	14.5	"	'	" 1970

This implies an increase of 50,000 married women in employment, while there will be a decrease for non-married and ex-married women of 3,000.

Thus, according to our forecasts, it is clear that the greatest resources are found among married women.

<u>Trade Union views concerning the chief measures recently adopted or now under consideration to prepare women for employment, facilitate their employment, and alleviate the difficulties arising out of the family situation of the women concerned</u>

The central task of the Norwegian Federation of Trade Unions is still to secure equal rights for women in the broadest sense, both in their admittance to employment and in competition for advanced jobs.

Theoretically, women in Norway have equal rights with men in education and employment. Women meet with few legal obstacles, but despite this they are found within the educational system only up to a certain level. Our modern society will place ever increasing requirements on skills and professional qualifications. More than ever before we shall need all abilities that may be trained and developed. We know also that our country, perhaps more than any other, is becoming more dependent on a highly trained and qualified labour force in order to compete with other countries and maintain, and preferably raise, our living standards. Labour is our most valuable asset which should be made use of in the way that best serves our community.

Married women without any outside job constitute the only labour force resource which may be mobilised today in order to carry out the immense tasks facing our industries and society. In other words, the need for part-time employment will increase in the years to come.

In the light of this development the Norwegian Federation of Trade Unions, LO, set up a committee in 1964 to study and report on special trade union aspects of part-time employment. This committee came to the conclusion that the best solution would be to bring the question within the field of collective bargaining. This opinion was shared by the LO Administration and the whole matter was brought up under the negotiations for new collective agreements in 1968.

The aim of this work was to give part-time workers a proper status and bring their conditions of work into the right shape as determined by collective agreement. Also persons doing part-time work should know what they are entitled to and what management under normal conditions may ask of them. Clear agreements will no doubt make the way for more jobs which may be performed on a part-time basis. The parties in industry will formalise part-time employment as something which is normal and necessary in a modern society as long as we have normal working hours which make it impossible for tens of thousands of people to undertake full-time employment. This group of employees has now been given due protection by collective agreement.

In the past their wage rates were rather variable. The same applied to holidays, free time and other fringe benefits. Part-time workers are now covered by regular legislation and collective agreements, and it is estimated that the LO action for this group of employees will be very important.

Furthermore, the LO Women's Committee believes that it is necessary to increase action to establish more and better child care institutions, such as day nurseries and leisure time homes. In a representation to the Government, the LO Women's Committee has requested that this work be given high priority. This development should be intensified by subsidising the local authorities.

The LO also keeps an eye on employment possibilities for women in connection with regional development. As mentioned before, we have comparatively large manpower reserves in parts of the country. It is important to contribute towards creating new and profitable undertakings in these places. Here it is not necessary to take measures to increase women's share in the number of employed persons. On the other hand, in other parts of the country where there is a pressure on the labour market, special measures are needed. In such places industries should be more varied with a large number of undertakings which are suitable for women. There is also the method of finding employment for women within the industries already existing in these areas. In other words to do away with prejudices.

Among the other problems we are working on is the question of taxation. It is hoped that the work of our public authorities will lead to favourable results which in the near future will stimulate job activities among those groups of the population who have a positive attitude towards employment.

Women should prepare themselves for employment, and adult training of women should be intensified. New types of courses should be found: more attempts should be made to persuade women to apply for the courses in the occupations which have not traditionally been held by women.

Refresher courses should be organised for trained persons who have been away from employment for some time, especially for nurses, teachers and office staffs. Such courses should be held throughout the year. This is also a matter with which the LO is very much concerned.

Furthermore, the LO is concerned with providing women who have been away from employment for some years with advice and guidance by vocational guidance officials of the labour exchange when applying for jobs. A special person has been appointed in the Oslo local government service to handle only applicants for part-time employment. In the Autumn 1967 an official was appointed by the Labour Directorate to deal specially with questions concerning women in employment.

Furthermore, the initiative has been taken to establish a contact committee to facilitate the co-ordination and exchange of information on questions of importance to women's participation in employment. Both employers' and workers' organisations are represented on this committee together with officials of the public authorities, ministries and other governmental institutions.

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INTERNATIONAL SEMINAR PUBLICATIONS

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Supplement to the Final Report (1964)

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Paris 22nd-25th October, 1963
Final Report (1964)
Supplement to the Final Report (1964)

1963-3 International Joint Seminar on Geographical and Occupational Mobility,
Castelfusano 19th-22nd November, 1963
Final Report (1964)
Supplement to the Final Report (1964)

1963-4 International Joint Seminar on Adaptation of Rural and Foreign Workers
Wiesbaden 10th-13th December, 1963
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Brussels 14th-17th April, 1964
Final Report (1965)
Supplement to the Final Report (1964)

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London 30th September - 2nd October, 1964
Final Report (1965)
Supplement to Final Report (1965)

1964-3 North American Joint Conference on the Requirements of Automated Jobs

Washington 8th-10th December, 1964

Final Report and Supplement (1966)

1965-1 International Management Seminar on the Public Employment Services and Management

Madrid 23rd-26th March 1965

Final Report (1966)

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1965-4 Regional Seminar on the Employment of Older Workers

Heidelberg 7th-9th December, 1965

Final Report (1966)

1965-5 Papers and Material for a Trade Union Seminar on the Role of Trade Unionism in Independent Developing Countries (1967)

1965-6 Scandinavian Regional Seminar on Active Manpower Policy

Oslo, 23rd-24th November, 1965

Final Report (1967)

1966-1 European Conference on Manpower Aspects of Automation and Technical Change

Zurich, 1st-4th February, 1966

Final Report (1966)

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Paris, 21st-22nd September, 1966

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Supplement to the Final Report (1966)

1966-4 International Management Seminar on Emigrant Workers returning to their Home Country

Athens 18th-21st October, 1966

Final Report (1967)

Supplement to the Final Report (1967)

1966-5 International Conference on the Adjustment of Workers to Technical Change at Plant Level

Amsterdam 15th-18th November, 1966

Final Report (1967)

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1967-1 Regional Trade Union Seminar on the Role of Trade Unions in Housing

Hamburg 17th-19th January,1967

Final Report (1967)

Supplement to the Final Report (1967)

1967-4 International Conference on Employment Stabilisation in a Growth Economy

Munich 24th-27th October, 1967

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DENTAL AUXILIARY UTILIZATION AND EDUCATION IN LATIN AMERICA. RESULTS OF TWO RESEARCH STUDIES.

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ABSTRACT - TO ASSIST IN PLANNING PROGRAMS FOR DEVELOPMENT AND UTILIZATION OF DENTAL AUXILIARY MANPOWER, TWO QUESTIONNAIRE SURVEYS WERE CONDUCTED IN 24 LATIN AMERICAN COUNTRIES TO IDENTIFY EXISTING AND PLANNED DENTAL AUXILIARY PROGRAMS AND ASSEMBLE INFORMATION ON THE EDUCATION PROGRAMS AND UTILIZATION OF EXISTING AUXILIARIES. DATA FOR THE UTILIZATION SURVEY WERE COLLECTED FROM PERSONS WHO HAD ACCESS TO ANY OFFICIAL INFORMATION CONCERNING DENTAL AUXILIARIES AND/OR WERE WELL-INFORMED REGARDING UTILIZATION OF AUXILIARIES IN THEIR COUNTRIES, WHILE DATA FOR THE EDUCATION SURVEY WERE SECURED FROM THE STAFF OF 27 AUXILIARY EDUCATION PROGRAMS. SURVEY FINDINGS REVEALED THAT FIVE TYPES OF DENTAL AUXILIARIES EXIST, INCLUDING LABORATORY TECHNICIAN, ASSISTANT, ASSISTANT WITH EXPANDED FUNCTIONS, HYGIENIST, AND NURSE. HOWEVER, THERE HAS BEEN LITTLE INNOVATION IN THE UTILIZATION OF THESE HEALTH PERSONNEL, AND THERE IS NO STANDARDIZATION OF AUXILIARY TITLES OR FUNCTIONS THEY PERFORM. THEIR ECONOMIC AND SOCIAL LEVELS ARE GENERALLY VERY LOW, WHICH CAN PROVIDE LITTLE INCENTIVE TO ENTER THIS HEALTH FIELD. IN TERMS OF EDUCATIONAL PROGRAMS, FOUR TYPES ARE REPORTED FOR THE LABORATORY TECHNICIAN, ASSISTANT, HYGIENIST, AND NURSE. MOST OF THE PROGRAMS HAVE BEEN FOUNDED SINCE 1960, BUT IN GENERAL, THE ADMINISTRATION OF THESE PROGRAMS IS WEAK AND LACK STRENGTH IN FACULTY RESOURCES. THESE AND OTHER DETAILED FINDINGS ARE REPORTED. (SB)

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dental auxiliary utilization and education in latin america

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DENTAL AUXILIARY UTILIZATION AND EDUCATION IN LATIN AMERICA

RESULTS OF TWO RESEARCH STUDIES CONDUCTED BY THE PAN AMERICAN HEALTH ORGANIZATION

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1970

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PREFACE

Dentistry has not escaped the traditional tendency of the health professions to use auxiliary personnel for certain specific functions, thereby enabling dentists to devote themselves to problems of greater importance or concern. The study by Dr. Stephen J. Garza, which was sponsored by our Organization, shows that, although the importance of this contribution is acknowledged, there are different opinions about the appropriate responsibilities of the various types of auxiliary workers, the training they should be given, the organization of services, and salaries.

"The general conclusion of this study is that the few courses available in Latin America for the training of auxiliary dental personnel do not meet the Region's needs. New programs will have to be established as soon as possible and the administrative and educational aspects of present courses must be strengthened."[1]

The most widespread dental diseases in the Americas continue to increase as the population grows, but there is no parallel increase in the number of dentists trained and the availability of the supplies and equipment they need. In addition, dentists whose training included the study of complex subjects should devote themselves to the normal and pathological functions of mastication and not solely to the care of the teeth and the treatment of their lesions; that is an additional reason for the use of auxiliary workers trained specifically to carry out functions under the supervision of a dentist.

We hope that this publication will lead governments and universities to study this critical question to the end of preventing and curing diseases which, besides affecting health, mar one's personal appearance and thereby undermine self-esteem and social relations.

Abraham Horwitz
Director

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NUMBER OF DENTAL SCHOOLS AND COUNTRY POPULATIONS IN THE AMERICAS

COUNTRY	POPULATION 1967*	SCHOOLS
TOTAL	472,116,000	156
Argentina	23,031,000	6
Barbados	248,000	0
Bolivia	3,801,000	4
Brazil	85,655,000	43
Canada	20,441,000	9
Colombia	19,215,000	4
Costa Rica	1,594,000	1
Cuba	8,033,000	2
Chile	8,927,000	3
Ecuador	5,508,000	3
El Salvador	3,147,000	1
United States	197,836,000	55
Guatemala	4,717,000	1
Guyana	679,000	0
Haiti	4,577,000	1
Honduras	2,445,000	1
Jamaica	1,888,000	0
Mexico	45,671,000	11
Nicaragua	1,777,000	1
Panama	1,329,000	0
Paraguay	2,161,000	1
Peru	12,385,000	3
Dominican Republic	3,889,000	2
Trinidad and Tobago	1,027,000	0
Uruguay	2,783,000	1
Venezuela	9,352,000	3

*Sources: United Nations, Monthly Bulletin of Statistics, February 1968; United Nations, Demographic Yearbook, 1966; United Nations, Population and Vital Statistics Reports, Statistical Papers, Series A, Vol. XIX, No. 4, October 1967.

SCHOOLS OF DENTISTRY IN THE AMERICAS AND DENTAL AUXILIARY EDUCATION PROGRAMS IN LATIN AMERICA

Introduction

The Problem in Latin America

A number of factors clearly indicate there is an acute problem of dental health in Latin America. For example, dental disease in this Region is characterized by a high prevalence of caries and periodontal disease (1-5). The incidence of malocclusion, cleft lip and palate, and oral cancer have not been assessed, but there are reasons to believe that these conditions also create serious public health problems. Dental manpower in the 24 Latin American countries is limited, with approximately 65,000* dentists to care for over 250 million people. Further, there is a maldistribution of these dentists from one country to another, as well as within countries (6-7). In spite of this shortage, there appears to be no large-scale effort to increase the number of dental graduates in the Region. Predictably, professional dental treatment now reaches only a small group of the "elite" (8). The population explosion in Latin America (9) would seem to be a major deterrent to any immediate improvement in this situation.

Other aspects of the dental health problem include limited implementation of fluoridation, increasing demands for dental services, lack of adequate publicly and privately sponsored dental programs, poor coordination of existing programs, and the widespread illegal practice of dentistry (10). As far as dental education is concerned, many dental schools are reported to have limited numbers of faculty, inadequate physical facilities, and few programs of advanced education for professors. There also is an overemphasis on the technical aspects of dental education and little understanding, by faculty or students, as to their community responsibility (10).

The Utilization of Dental Auxiliaries

In many countries, dental auxiliaries have been employed, in a variety of ways, to increase dental productivity. In the United States, for example, dentists still provide most intraoral services, but their practice has become more efficient by delegating many other duties to auxiliary personnel. On the other hand, in New Zealand, Great Britain, New Guinea, Ceylon, Malaysia, and Indonesia, auxiliaries similar to the "dental nurse" provide a range of intraoral therapeutic services. Reports concerning these auxiliaries (11-16), as well as a number of investigations (17-20), have clearly documented the ability of non-professionals to provide clinical dental services.

There is little doubt that use of auxiliary personnel is necessary for maximum extension of health services to those in need (21), and that effective utilization of auxiliaries also permits more efficient delivery of health services. With the acute dental health problems facing Latin America, it is not

*Estimated by respondents who participated in this study.

surprising, therefore, that a number of reports (8, 22, 23) have identified the education and utilization of dental auxiliaries as a critical health need in the Region.

The Pan American Health Organization and its Secretariat, the Pan American Sanitary Bureau - which is also the Regional Office for the Americas of the World Health Organization - are committed to promote the development of auxiliary health manpower. It is essential that PAHO activities in this field be based on knowledge of the current status of auxiliary utilization and the available auxiliary educational resources in Latin America. However, reliable information in this field has not been available. Therefore, in order to assess insofar as possible the current status of dental auxiliary utilization and education in Latin America, the Pan American Sanitary Bureau in 1968 conducted the two surveys which are the subject of this report.

Objectives and Methodology of the Surveys

Two questionnaire surveys, exploratory in nature, were conducted in the 24 Latin countries, one a survey of dental auxiliary utilization and the other of auxiliary education. The surveys had as objectives 1) identification of existing and planned dental auxiliary education programs, 2) assembly of information on these programs (e.g., types of auxiliaries educated and their functions, program administration, finances, faculty, curriculum), and 3) assembly of information on existing auxiliaries in Latin America (e.g., types, functions, employment by dentists, economic and social levels).

The information to be gathered by the two exploratory surveys was intended to serve several purposes: 1) to assist in planning programs for development and utilization of dental auxiliary manpower, 2) to provide a baseline to help measure success of these programs, 3) to serve as a base for additional, in-depth studies as indicated, 4) to prepare this Report on the status of dental auxiliary utilization and education in Latin America, and 5) to prepare the first Directory of Latin American Dental Auxiliary Education Programs.

The Utilization Survey: One or more persons in each of the 24 countries were selected as questionnaire recipients. In the larger countries, several recipients were selected, to provide coverage of different geographic and population areas.

Each of these recipients was selected on the basis of 1) having access to any official information that might be available concerning dental auxiliaries and/or 2) as being well-informed regarding utilization of auxiliaries in his country. Approximately two-thirds of the recipients were chiefs of dental divisions of ministries of health, or deans or professors in schools of dentistry. The remainder were, for the most part, dental officers of state health departments, officials of national dental associations, and dentists teaching in schools of medicine or public health.

Fifty-five questionnaires were distributed through the six PAHO Zone Offices (each Zone has responsibility for several countries) and the Offices of the 24 PAHO Country Representatives. Of the total of 55 recipients, 53 completed and returned the questionnaires.

The Education Survey: The initial step in conducting this survey was to identify existing dental auxiliary education programs in the 24 Latin American countries. This was accomplished in two ways. First, prior to the survey, letters were sent to the national ministries of health and the schools of dentistry in Latin America, requesting names and addresses of programs existing in each country. Second, a feedback mechanism was built into both the utilization and the education questionnaires requesting this same information. A total of 27 programs were identified in these two ways.

The education questionnaires were sent to these programs through the same channels as the utilization questionnaires, through the PAHO Zone Offices and those of the 24 Country Representatives. All 27 auxiliary education programs completed and returned the questionnaires.

The experience of PAHO staff indicated that a number of different titles for the same type of auxiliary would be found in the 24 countries. In order to minimize the confusion, and to facilitate a general categorization of the auxiliaries described, a classification system was developed, based on functions performed by the auxiliary.

The criteria for this system were:

Type I - Performs only dental laboratory work.

Type II - May or may not perform the functions of Type I. In addition, performs receptionist and/or housekeeping duties (e.g., makes appointments, sterilizes instruments, cleans the office), but does no chairside assisting and provides no services for patients directly in the mouth.

Type III - May or may not perform the functions of Type II. In addition, assists the dentist at chairside (e.g., passes instruments, mixes dental materials), but provides no services for patients directly in the mouth.

Type IV - May or may not perform the functions of Type III. In addition, provides one or more services for patients directly in the mouth (e.g., cleans teeth, applies topical caries preventive agents to teeth), but provides no surgical, operative, or restorative clinical services for the patient.

Type V - May or not perform the functions of Type IV. In addition, provides surgical, operative, and/or restorative clinical services directly for the patient.

One additional criterion was added to this classification during the data analysis phase of the study. It was found that some auxiliaries who devote most of their time to Type III functions occasionally perform the direct services described in Type IV. To ensure a more accurate classification, only those auxiliaries who devoted 50 per cent or more of their time to direct patient services were included in Type IV.

It should be noted that monetary figures given in national currencies by the respondents have been converted into the equivalents of United States dollars at official rates of exchange at the time of the surveys. It is recognized, however, that monetary purchasing power can vary considerably from one area to another, and this should be considered in interpretation of the data.

Summary of Findings

Survey of Dental Auxiliary Utilization

The Latin American countries report the existence of five types of dental auxiliaries who may be generally classified as follows:

1. Dental laboratory technician (Type I)
2. Dental assistant (Type III)
3. Dental assistant with expanded functions (Type III who occasionally provides direct services)
4. Dental hygienist (Type IV)
5. Dental nurse (Type V)

Throughout Latin America, there is, indeed, a confusing array of titles given to most of these types of auxiliaries. Dental laboratory technicians, for example, are reported by 13 different titles and dental assistants by eight titles in the various countries.

Eighteen, or three-fourths of the Latin countries, report the presence of dental laboratory technicians, while 15 countries report dental assistants. Assistants with expanded functions are found in 13 countries, and dental hygienists are reported in eight countries. Two countries, Colombia and Paraguay, report auxiliaries similar to the dental nurse. Two additional countries, Cuba and Jamaica, report plans for education and use of a similar type of auxiliary.

It was reported that dental hygienists and auxiliaries similar to the dental nurse are few in number. With the other auxiliaries, however, it was not possible to assess numbers working in the Latin countries.

Most dentists in Latin America reportedly utilize the services of dental laboratory technicians. Only a small proportion of dentists, however, utilize the dental assistant or the assistant with expanded functions. Indeed, the five countries having 74 per cent of Latin America's dentists report that only few of their dentists actually employ these auxiliaries.

Even dentists who do use these assistants do not utilize them to their full potential. For example, several countries report that dental assistants are most frequently employed only on a half-time basis. Also, a number of respondents report that assistants spend much of their time in non-chairside assisting tasks, reducing their effectiveness in increasing dentist productivity.

The economic and social levels of dental auxiliaries generally appear to be extremely low. For example, income of almost all auxiliaries is less than that of a typist. Laboratory technicians are the exception to the rule in a few countries, reportedly earning more than both typists and graduate nurses. Also, the social status of dental auxiliaries is similar to that of a nurse's aide. Dental laboratory technicians in several countries again comprise most of the exceptions, having a somewhat higher status.

Requirements for registration of auxiliaries are inconsistent. Even in the countries where these requirements exist, many auxiliaries do not comply with them. Perhaps this is one reason there is very little official information available throughout Latin America on the various types of auxiliaries.

In summary, dental auxiliaries in Latin America generally correspond to types that have existed for years, and there has been little innovation in the utilization of these health personnel. There is no standardization of auxiliary titles or the functions they perform. Dental office auxiliaries (e.g., assistants, hygienists) are used by few dentists and then are often utilized to less than full potential. Their economic and social levels are generally very low, which can provide little incentive to enter this health field. In short, this study indicates a most unfavorable picture of the utilization of dental auxiliaries and their situation in Latin America.

The detailed findings of the Survey of Dental Auxiliary Utilization are described in the following section of this report.

Survey of Dental Auxiliary Education

Four types of dental auxiliary education programs are reported in Latin America: 1) dental laboratory technician, 2) dental assistant, 3) dental hygienist, 4) dental nurse. Twenty-seven of these programs were reported in 12 Latin countries at the time this study was conducted. Five programs were for laboratory technicians, eleven for dental assistants, seven for hygienists, and four for dental nurses. The total of twenty program sponsors consisted of seven dental schools, seven National Government agencies, two State (provincial) agencies, two dental associations, one medical school, and one school of public health. These programs and their sponsors are listed in the Directory of Dental Auxiliary Education Programs in Latin America, published by the Pan American Health Organization in November 1968.

Most auxiliary programs are of recent origin, twenty having been founded since the beginning of 1960. The small number of auxiliary education programs and their recent founding support the contention that most auxiliaries working in Latin America have received only on-the-job training (23). Dental laboratory technicians, for example, are reported in 18 countries, yet education programs for these auxiliaries exist in only five countries.

Administration of these programs, in general, is weak. For example, although a dentist serves as director for all 27 programs, most directors work only on a half-time or part-time basis. Also, important administrative responsibilities concerning auxiliary education frequently do not rest with the programs themselves, but rather are carried out by the program sponsors or elsewhere.

Because many auxiliary programs function as a part of their sponsor's ongoing program operation, an accurate assessment of resources invested in dental auxiliary education was not possible. However, 16 programs did report that their direct expenditures were generally low. In 1967, the 16 programs expended a total of only $90,000. For 9 of the 16, direct expenditures were less than $4,000 each. In addition, some programs received financial and other assistance from outside sources, such as the W. K. Kellogg Foundation, the Rockefeller Foundation, and agencies of two National Governments. The total amount of this assistance was approximately $19,000.

The adequacy of the physical facilities utilized by the auxiliary education programs cannot be judged on the basis of the preliminary information gathered in the study. Some programs, however, have obviously inadequate resources, such as the two programs that have one dental unit per 19 students and 49 students respectively.

Dental auxiliary programs, in general, lack strength in faculty resources. Although the majority of total faculty members are dentists, most work only half-time or part-time with the auxiliary program or its sponsor. Even more limited use is made of other teaching personnel such as physicians, university professors, and dental auxiliaries themselves.

The length and content of educational programs for all four types of auxiliary vary considerably. Two programs for dental laboratory technicians, for example, differ in length by over 135 academic weeks. There also are marked differences in the amount of instruction provided in the basic sciences, dental sciences, and clinical instruction. Two dental hygiene programs, for example, differ by 840 hours in the amount of clinic instruction they provide. These differences indicate that some programs are providing insufficient instruction and/or that some may be providing an excess. Only one-third of the auxiliary programs have a curriculum committee, which may reflect lack of curriculum planning and continuity of curriculum development in many programs.

Dental laboratory technicians are taught to perform only laboratory functions such as constructing gold restorations and fabricating prosthetic appliances. Dental nurses, in general, are instructed primarily in restoring and extracting teeth. Hygienists, however, are taught a variety of duties that include direct services such as prophylaxis and topical fluoride application, as well as chairside assisting, clerical, and housekeeping duties.

Dental assistants are also taught a variety of chairside, clerical, and housekeeping duties. Surprisingly, three of the seven hygienist programs teach only handpiece prophylaxis. They do not teach their students to remove oral calculus, which raises the question as to whether graduates of these schools are properly classified as hygienists, particularly as they are described by the WHO Expert Committee on Auxiliary Dental Personnel.

Admission requirements vary considerably, even in programs for the same type of auxiliary. The total number of graduates reported by the auxiliary programs in 1967 were 52 dental laboratory technicians, 300 dental assistants, 93 dental hygienists, and five dental nurses.

Very few of the existing programs report any major changes planned in their teaching programs, administrative structures or policies, or physical facilities. However, ten countries reported plans for establishing 17 new dental auxiliary schools by 1970. These planned programs are listed in the Directory of Dental Auxiliary Education Programs in Latin America.

Detailed findings of the Survey of Dental Auxiliary Education are described in the following Section of this report.

In conclusion, the few existing dental auxiliary education programs in Latin America cannot begin to meet the Region's dental auxiliary manpower needs. Additional programs must be established and existing programs strengthened in such areas as administration, finance, faculty, and the educational program.

There is a clear and urgent need for a hemispheric program to promote the development and utilization of dental auxiliary manpower. International organizations and agencies as well as foundations with international concerns, national governments, and dental professional groups must assume leadership in promoting and supporting such hemispheric efforts.

Detailed Findings

Dental Auxiliary Utilization Survey

The types of dental auxiliaries that are found in Latin America are the dental laboratory technician, the dental assistant, a dental assistant who at times performs expanded functions, the dental hygienist, and the dental nurse (Table 1). The 24 Latin countries varied, as might be expected, as to how many of these types are utilized. Six countries, for example, indicate utilization of only one of the five types of auxiliary. Three countries, on the other hand, report four types of auxiliaries, eight countries report three types, and seven indicate utilization of two types.

Dental laboratory technicians are most frequently found, by country, working in 18 of the 24 Latin nations. Dental assistants are reported in 15 countries, assistants with expanded functions in 13 countries, and dental hygienists in 8 countries. Auxiliaries similar to the dental nurse, who prepare and restore teeth and, in most cases, extract teeth, are found in two countries. In addition, two other countries reported plans for educating and utilizing dental nurses.

Detailed survey findings concerning each type of dental auxiliary are described below.

Dental Laboratory Technicians

Dental laboratory technicians, or Type I auxiliaries as described previously, are reported in 18 Latin countries (Table 2). These technicians are similar to those described in the Report of the World Health Organization Expert Committee on Auxiliary Dental Personnel (24). Their functions in each country include advanced laboratory work, such as fabricating dental appliances and constructing gold restorations. They are reported by 13 distinct titles or names, although they are all essentially the same type of auxiliary.

Most dentists in Latin America apparently utilize the services of these technicians. All 18 countries, which have 98 per cent of Latin America's dentists, report that at least a majority of dentists in each country use their services.

Seven of eight countries providing information report that over 95 per cent of their technicians are men. In the other country, women comprise a sizeable proportion (one-third) of the laboratory technician working force.

TABLE 1

UTILIZATION OF DENTAL AUXILIARIES, BY TYPE OF AUXILIARY AND COUNTRY

JANUARY 1968

Region and Country	Laboratory Technician		Dental Assistant		Assistant with Expanded Functions		Dental Hygienist		Dental Nurse		Total Types of Auxiliary in the Country
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
South America											
Argentina	x		x		x		x			x	4
Bolivia	x		x		x			x		x	3
Brazil	x		x		x		x			x	4
Chile	x		x		x			x		x	3
Colombia	x			x	x		x		x		4
Ecuador	x		x			x		x		x	2
Guyana		x	x			x		x		x	1
Paraguay		x		x		x		x	x		1
Peru	x			x	x			x		x	2
Uruguay	x		x		x			x		x	3
Venezuela	x			x	x			x		x	2
Central America & Mexico											
Costa Rica	x			x	x			x		x	2
El Salvador	x		x			x		x		x	2
Guatemala	x		x			x	x			x	3
Honduras	x			x	x		x			x	3
Mexico	x			x	x		x			x	3
Nicaragua	x		x			x	x			x	3
Panama	x		x			x	x			x	3
Caribbean Area											
Barbados		x		x	x			x		x	1
Cuba	x			x	x			x	(a)		2
Dominican Republic		x	x			x		x		x	1
Haiti		x	x			x		x		x	1
Jamaica	x		x			x		x	(a)		2
Trinidad & Tobago		x	x			x		x		x	1

(a) Respondent reported plans for education of auxiliaries similar to the dental nurse.

In 10 of the 13 countries providing information, laboratory technology provides full-time employment. Respondents in El Salvador, Mexico, and Panama, however, indicate that half-time employment is more frequent. In South America, full-time work for laboratory technicians usually means a 40-hour work week. In countries outside this area, 44 or more hours per week is the rule. This is longer than professional personnel generally have to work, but is comparable to working hours for other health auxiliaries.

Supervision of dental laboratory technicians varies. Ten of 16 countries providing this information indicate that most technicians either work independently or are supervised by non-dentists. Six countries report that a majority of these auxiliaries are supervised directly by dentists. A possible trend toward more dentist supervision was observed in Central America. These auxiliaries are employed in Government programs in only eight countries. Two of these, however, indicate large percentages of technicians, 100 per cent and 40 per cent respectively, working for the Government.

Average monthly earnings of laboratory technicians ranged from US$28 to US$278 in eleven informant countries, and only three countries reported incomes of US$200 or more per month (Table 2). Only five of the 11 countries indicate that technicians earn as much as or more than graduate nurses. In six countries, on the other hand, nurses earned from 20 per cent more to four times as much as technicians.

The social status of the dental laboratory technician varies somewhat from one country to another. Seven of the 14 countries providing this information indicate the technician's social status to be lower than a graduate nurse, while seven other countries report a social status similar to the nurse.

Registration requirements for dental laboratory technicians are reported in 11 countries, eight of which are in South America. Only two countries, however, indicate that a majority or more of technicians so obliged actually register. Three other countries report that few register, while respondents in three additional informant countries differed in their responses, possibly reflecting regional differences.

Dental Assistants

Fifteen, or about three-fifths, of the Latin American countries report the utilization of dental assistants or Type III auxiliaries described previously (Table 3). These assistants are similar to those described in the Report of the World Health Organization Expert Committee on Auxiliary Dental Personnel. They perform chairside assisting duties in all countries. Their additional functions vary from one country and area to another and can include secretarial, receptionist, housekeeping, and dental laboratory duties. They provide no direct patient services such as prophylaxis or topical fluoride application. They are reported by eight different titles, even as "dental hygienists," although they provide no direct services for patients.

TABLE 2

SELECTED CHARACTERISTICS OF DENTAL LABORATORY TECHNICIANS, BY COUNTRY

JANUARY 1968

Region and Country	Most Frequently Employed		Average Monthly Income (U.S. Dollars)	Comparison to Nurses		Is Registration Required?		Do a Majority Comply with Registration?	
	Full Time	Half Time		Average Income	Social Status	Yes	No	Yes	No
South America									
Argentina	x		120.00	Higher	Same	x		(b)	
Bolivia	(a)		(a)	(a)	Same	x			x
Brazil	x		129.00	Lower	Lower	x		(b)	
Chile	x		259.00	Higher	Same	x		(b)	
Colombia	x		(a)	(a)	Lower		x	-	-
Ecuador	(a)		28.00	Lower	(a)	x			x
Peru	x		78.00	Lower	Same	x			x
Uruguay	x		(a)	(a)	(a)	x		(a)	
Venezuela	(a)		(a)	(a)	Lower	x		x	
Central America & Mexico									
Costa Rica	x		151.00	Lower	(a)	(a)		-	-
El Salvador		x	80.00	Lower	Lower		x	-	-
Guatemala	(a)		(a)	(a)	Lower		x	-	-
Honduras	x		(a)	(a)	Lower	x		x	
Mexico		x	144.00	Same	Lower		x	-	-
Nicaragua	(a)		60.00	Lower	Same		x	-	-
Panama		x	(a)	(a)	(a)	x		(a)	
Caribbean Area									
Cuba	x		200.00	Same	Same	x		(a)	
Jamaica	x		278.00	Same	Same		x	-	-

(a) Information not reported
(b) Respondents differed in opinion

TABLE 3

SELECTED CHARACTERISTICS OF DENTAL ASSISTANTS

JANUARY 1968

Region and Country	Most Frequently Employed		Average Monthly Income (U.S. Dollars)	Average Income Compared to Nurses	Social Status Compared to Nurse's Aide	Is Registration Required?		Do a Majority Comply with Registration?	
	Full Time	Half Time				Yes	No	Yes	No
South America									
Argentina		x	57.00	Lower	Same	(a)		(b)	
Bolivia		x	(b)	(b)	Same		x	-	-
Brazil		x	37.00	Lower	Same		x	-	-
Chile	(b)		(b)	(b)	Same		x	-	-
Ecuador	(b)		44.00	Lower	(b)		x	-	-
Guyana	x		(b)	(b)	(b)		x	-	-
Uruguay		x	37.00	(b)	(b)	x		(b)	
Central America									
El Salvador	x		40.00	Lower	Same		x	-	-
Guatemala	x		100.00	Lower	Same		x	-	-
Nicaragua	x		30.00	Lower	Same		x	-	-
Panama		x	80.00	(b)	(b)		x	-	-
Caribbean Area									
Dominican Republic		x	(b)	(b)	Same		x	-	-
Haiti	x		18.00	Lower	Same		x	-	-
Jamaica	x		192.00	Same	(b)		x	-	-
Trinidad & Tobago	x		75.00	(b)	Same		x	-	-

(a) Respondents differed in opinion
(b) Information not reported

Utilization of chairside assistants by the dental profession appears to be quite limited. Four countries, having 67.6 per cent of Latin America's dentists, report that only a few dentists employ these auxiliaries. Although nine countries report that a majority of their dentists use these auxiliaries, these countries account for only 10.5 per cent of the dentists of Latin America. A number of respondents from five countries also reported that these auxiliaries spend 50 per cent or less of their time in chairside assisting, reducing their potential for increasing dentist productivity and indicating inefficient utilization.

Twelve countries providing information indicate that virtually all dental assistants are women. In four of five informant South American countries, they are employed more frequently on a half-time basis. In Central America and the Caribbean, however, full-time employment is the rule in six of the eight reporting countries. Full-time employment for dental assistants throughout Latin America generally means 45 or less hours per week. They work longer hours in only three countries, as high as 50 hours per week in one instance. Virtually all these auxiliaries are reported to work under the direct supervision of a dentist. Dental chairside assistants work in government programs in 12 countries, although their numbers are not reported.

Average earnings of dental assistants are generally low, ranging from US$18 to US$192 per month in 11 countries providing this information (Table 3). Only two countries report these auxiliaries earn US$100 or more per month. Both graduate nurses and typists usually earn considerably more than assistants. In six informant countries, a typist's income ranges between 50 per cent more to over two and a half times as much as the assistant's income. Seven of eight informant countries report that nurses earn from 25 per cent more to nine times as much as these auxiliaries.

The dental assistant's social status parallels her low income level. All ten countries providing information indicate a social status for assistants equivalent to that of nurses' aides.

Only one country reported that registration of dental assistants is required, and respondents in one country differed in opinion. No information was available in either country as to what proportion so obliged actually register.

Dental Assistants with Expanded Functions

In 13 Latin American countries, dental assistants, in addition to their chairside assisting, clerical, housekeeping, and other duties, provide some direct intraoral services for patients (Table 4). In all 13 countries, these auxiliaries apply topical fluorides and take X-rays. Nine countries report they clean teeth with a dental handpiece, and in five countries they remove oral calculus. Patient services, however, account for a relatively small amount of this auxiliary's time. In ten countries, this auxiliary

TABLE 4

SELECTED CHARACTERISTICS OF DENTAL ASSISTANTS WITH EXPANDED FUNCTIONS

JANUARY 1968

Region and Country	Most Frequently Employed		Average Monthly Income (U.S. Dollars)	Average Income Compared to Nurses	Social Status Compared to Nurse's Aide	Is Registration Required?		Do a Majority Comply with Registration?	
	Full Time	Half Time				Yes	No	Yes	No
South America									
Argentina		x	57.00	Lower	Same	x		x	
Bolivia		x	42.00	Lower	Same		x	-	-
Brazil		x	74.00	Lower	Same		x	-	-
Chile	x		53.00	Lower	Same		x	-	-
Colombia	x		38.00	Lower	Lower		x	-	-
Peru	x		39.00	Lower	Same		x	-	-
Uruguay	(a)		(a)	(a)	(a)	x		(a)	
Venezuela	(a)		178.00	Lower	Same	x		x	
Central America & Mexico									
Costa Rica	x		(a)	(a)	Lower	x		x	
Honduras	x		(a)	(a)	Lower	x		x	
Mexico	x		80.00	Lower	Lower		x	-	-
Caribbean Area									
Barbados	x		(a)	(a)	Lower	x		(a)	
Cuba	x		100.00	Lower	Same	x		x	

(a) Information not reported

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devotes 15 per cent or less of working time to patient services, while estimates in the two other countries reached a high of only 30 per cent. One country did not provide this information. Chairside assisting occupies a far greater proportion of time, over 50 per cent in nine, or three-fourths, of the twelve countries. These auxiliaries are reported by eight different titles, including in several instances "dental hygienist," even though they provide only limited patient services.

Utilization by dentists of assistants with expanded functions also appears very limited. Four countries, having 76.9 per cent of Latin America's dentists, report that only a few of their dentists utilize these auxiliaries. Although six countries indicate that at least a majority of their dentists employ these auxiliaries, these countries account for less than nine per cent of the dentists in Latin America.

Almost all dental assistants who perform expanded functions are reported to be women. Their employment patterns show some differences from one area to another. Full-time work is more frequent in Central America, the Caribbean, and Mexico. In South America, however, full-time is the rule in three countries that provided information and half-time is more frequent in three others. A full-time work week ranges in length from 30 to 50 hours. The majority of respondents (70 per cent), however, report a 40- to 45-hour full-time week. Virtually all these auxiliaries are reported to work under direct supervision of a dentist. They are utilized in government programs in twelve countries, although numbers were not reported.

Income of these auxiliaries ranges from $38 to $178 per month in the nine countries providing this information. In six of the nine countries, their income is less than $75 per month. Graduate nurses earn more than these auxiliaries in all nine countries, and in five of these, nurses earn at least twice as much. Typists also have higher incomes than these auxiliaries in six of the seven countries providing comparable information.

The social status of these auxiliaries is generally low. Seven countries indicate that assistants with expanded functions are similar to nurses' aides in social status, while five countries reported a social status lower than the nurses' aide.

Registration requirements for these auxiliaries exist in seven countries, and five of the seven indicate that a majority of those who are required to register actually do so.

Dental Hygienists

Only eight of the 24 Latin countries report the utilization of dental hygienists or Type IV auxiliaries (Table 5). The hygienists, in general, are similar to those described in the World Health Organization Expert Committee Report mentioned previously. All eight countries report that the hygienist performs topical fluoride applications and cleans teeth with a handpiece. In only five of the eight, however, does this auxiliary remove oral calculus,

TABLE 5

SELECTED CHARACTERISTICS OF DENTAL HYGIENISTS, BY COUNTRY

JANUARY 1968

Region and Country	Most Frequently Employed		Average monthly Income (U.S. Dollars)	Average Income Compared to Nurses	Social Status Compared to Nurse's Aide	Is Registration Required?		Do a Majority Comply with Registration?	
	Full Time	Half Time				Yes	No	Yes	No
South America									
Argentina	x		57.00	Lower	Same		x	-	-
Brazil	x		92.00	Lower	Same	x		x	
Colombia	x		51.00	Lower	Lower		x	-	-
Central America & Mexico									
Guatemala		x	(a)	(a)	Same		x	-	-
Honduras	x		(a)	(a)	Same	x		x	
Mexico	x		80.00	Lower	Lower		x	-	-
Nicaragua	x		60.00	Lower	Same		x	-	-
Panama	x		(a)	(a)	(a)		x	-	-

(a) Information not reported

raising the question as to whether some of these auxiliaries are properly classified as hygienists, as described by the WHO Expert Committee. Other functions include dental health education in four countries and chairside assisting in three.

In contrast to the dental assistants with expanded functions, who also provide some clinical services, hygienists in all eight countries devote at least 50 per cent of their time to direct clinical services such as prophylaxis and topical fluoride application. In fact, in seven of eight countries, direct patient services account for 75 per cent or more of the hygienists' work. Their titles are relatively consistent, as in most cases they are called either dental hygienists or dental hygiene auxiliaries.

All eight countries indicate that the supply of hygienists is quite limited. This is supported by the findings of the survey of dental auxiliary education, which show that schools for hygienists are few in number and are of relatively recent origin.

The field of dental hygiene also appears to be limited to women, as indicated by six countries providing this information. These auxiliaries are utilized most frequently on a full-time basis in seven of the eight countries. Utilization of some hygienists in Government programs is reported in seven countries, although their numbers were not reported.

Full-time hygienists work from 30 to 50 hours per week in the six countries providing this information, although over three-fifths of the respondents reported work weeks of from 40 to 45 hours. All eight countries report that dental hygienists are supervised directly by a dentist.

The five countries that provided information on hygienists' earnings reported a low income range, from $51 to $92 per month. Graduate nurses earn more in all five countries and, in four of them, earn at least twice as much as the hygienists. Typists also generally earn more, from 25 per cent more to twice as much as the hygienists in the four countries providing this information.

Hygienists are no better off in terms of social status than other dental auxiliaries. Five countries indicate they are at a social level similar to a nurse's aide, while two countries reported social status lower than the aide.

Registration requirements for these auxiliaries are reported in only two countries, and both countries indicate that a majority of those hygienists required to register actually do so.

Figure 2. Training of Dental Assistants, School of Dentistry, University of Costa Rica. (Type III Auxiliary)

Figure 3. "Dental Operator" providing services for child patient, School of Dentistry, University of Antioquia, Medellín, Colombia. (Type V Auxiliary)

Figure 4. "Dental Operator" providing services for adult patient, School of Dentistry, University of Antioquia, Medellín, Colombia. (Type V Auxiliary)

Figure 5. School for "Qualified Dental Workers," Paraguay. (Type V Auxiliary)

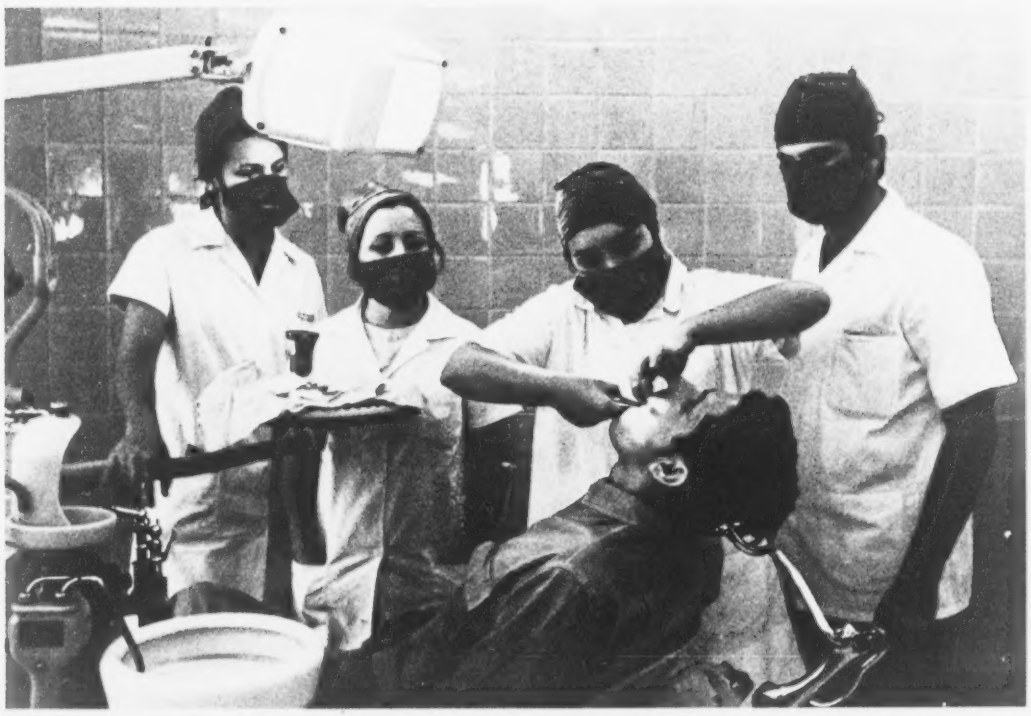

Figure 6. Third and fourth semester students of the School of Stomatology Technicians (Cuba) provide patient services in the Dental School and in twenty-six public clinics. (Type V Auxiliary)

Figure 7. Teaching clinic for "Stomatology Technicians," Cuba. (Type V Auxiliary)

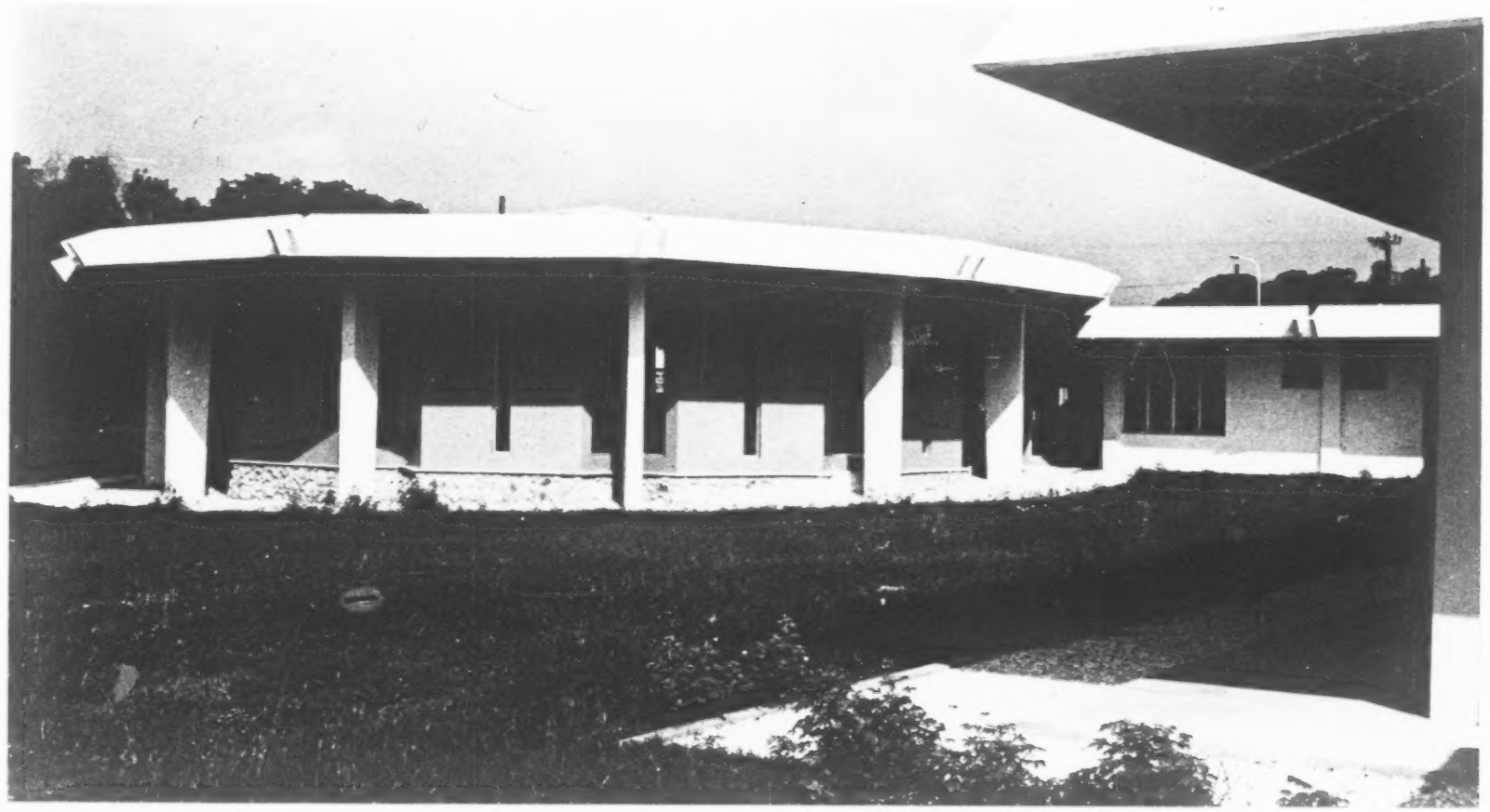

Figure 8. School for Dental Auxiliaries (Dental Nurses), Kingston, Jamaica. (Type V Auxiliary)

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Dental Nurses

At the time this survey was conducted, two countries, Colombia and Paraguay, reported the existence of dental auxiliaries similar to the dental nurse as described by the World Health Organization Expert Committee on Auxiliary Dental Personnel. These are, in effect, auxiliaries who provide therapeutic dental services, including preparation and restoration of teeth, and other functions which, in some other countries, can be performed only by dentists. In addition to these two countries, Cuba reported the initiation of an educational program in 1967 for a similar type of auxiliary. Jamaica also reported plans for a school for dental nurses, to be established with assistance from UNICEF and the Pan American Health Organization. Information concerning these auxiliaries was provided by respondents in Colombia, Paraguay, and Cuba.

Colombia - In Colombia, auxiliaries who provide restorative and surgical services have been utilized for only a few years. They are known by two titles "school dental auxiliary" and "dental operator."

An educational program for the school dental auxiliary was initiated by one of the country's medical schools in 1965, while a program for the dental operators was started by a school of dentistry in 1967. Very few graduates were reported at the time of the utilization survey, and all were providing dental services in programs affiliated with the two sponsoring institutions.

The functions of these auxiliaries include preparation and restoration of teeth, removal of calculus, handpiece prophylaxis, topical fluoride application, and dental health education. Only the school dental auxiliaries, however, administer local anesthetics and extract teeth. Both the school dental auxiliaries and the dental operators reportedly devote about 80 per cent of their time to restorative and other direct patient services.

These auxiliaries are all women who work full time for the sponsoring institution. The school dental auxiliaries provide dental services in a health center sponsored by the medical school and the National Ministry of Health. The dental operators, on the other hand, provide services for dental school patients, freeing dental students of many routine clinical operations, yet providing for completion of the dental services needed by the patients. All these auxiliaries reportedly work 40 to 44 hours per week, under the direct supervision of a dentist.

The respondents report that the school dental auxiliaries and the dental operators earn around $63 per month, about as much as a typist, but less than half the earnings of a graduate nurse.

None of the respondents indicated that there were legal requirements for registration of these auxiliaries.

Paraguay - Since 1927, the Armed Forces of Paraguay have conducted an educational program for "qualified dental workers" to provide dental services, under dentist supervision, for military personnel. An undetermined number of these auxiliaries, after leaving military service, are reported to have continued dental practice independently among the civilian population. In this respect, those providing dental services for civilians may be more similar to the "dental licentiate" than to the dental nurse as described by the World Health Organization Expert Committee. There were not enough identifiable differences in functions or characteristics of work, however, to warrant a separate discussion of those auxiliaries who are in civilian practice.

Dental services provided by the qualified dental workers include preparation and restoration of teeth, administration of local anesthetics, extraction of teeth, prosthetic services, and, in some instances, endodontics. Some of these auxiliaries reportedly devote as much as 50 per cent of their time to laboratory work, indicating that they may provide a great deal of prosthetic services.

Information on numbers of these auxiliaries either in the military or in civilian life was not provided. It can be surmised, however, that their numbers may be considerable, as the military educational program has reportedly been in continuous operation since 1927.

As might be expected in a military program, all of the qualified dental workers are men. Information on their income was not available. However, they reportedly are of average social status, equivalent to that of a graduate nurse.

It was reported that there are legal requirements for registration of these auxiliaries; however, it was indicated that few of them actually comply.

Cuba - Cuba began an educational program for "stomatology technicians" in January 1967. The functions of these technicians reportedly will include preparation and restoration of teeth, administration of local anesthetics, tooth extraction, removal of calculus, handpiece prophylaxis, and topical fluoride application. It is estimated that about 80 per cent of this auxiliary's time will be devoted to restorative and surgical patient services.

It is reported that all stomatology technicians will be women and all will be employed full time in Government programs following graduation. They will provide dental services under the direct supervision of a dentist and will work approximately 44 hours per week. It was anticipated that average earnings of a graduate nurse might exceed those of the stomatology technician by about 17 per cent. It also was reported that these auxiliaries will be subject to registration requirements.

Three hundred and forty students were reported admitted to the first class in 1967.

Detailed Findings

Dental Auxiliary Education Survey

Formal education programs for four types of dental auxiliaries are reported in Latin America. These are 1) dental laboratory technician, 2) dental assistant, 3) dental hygienist, and 4) dental nurse.

A total of 27 educational programs for these four types of auxiliaries were identified in 12 Latin American countries by the education survey. Five were programs for dental laboratory technicians, eleven for dental chairside assistants, seven for dental hygienists, and four for dental nurses. Table 6 presents the number of programs identified by country and type of program.

Four of the 27 programs, two for hygienists and two for dental nurses, reported either cessation or considerable reduction of activity at the time of the survey. Two hygienist programs reported complete cessation of operation in 1967, one because funds had not been authorized and the other because of lack of continued demand from local dentists for dental hygienists. One program for dental nurses indicated temporary cessation of activity in 1967 for evaluation purposes, while another dental nurse program reported admitting no new students that year. Information from these four programs is included in this report, however, because it does represent recent activity in the field of dental auxiliary education and because the potential for resuming operation was evident in each case. References to these programs will be made when any findings described are attributable to them.

Auxiliary Program Sponsors

A total of only 20 organizations, institutions, and agencies sponsor dental auxiliary education programs. These include only seven of the nearly 90 Latin American dental schools and agencies of only seven of the 24 National Governments. Two State agencies, two dental associations, one medical school, and one school of public health also are program sponsors. Only five of these groups sponsor more than one auxiliary program. The programs for dental hygienists and dental nurses are of recent origin, as only one hygienist program and one dental nurse program existed prior to 1961.

Titles of Auxiliary Graduates

The titles conferred by three types of programs are very similar. These are 1) dental technician or dental mechanic, 2) dental assistant, and 3) dental hygienist or dental hygiene auxiliary. However, auxiliaries similar to the dental nurse are given different titles by the four programs. These titles include "school dental auxiliary," "dental operator," "stomatology technician," and "qualified dental worker." For the purposes of this report, they will be referred to as dental nurses because of their similarity to this auxiliary as described in the World Health Organization Expert Committee Report.

TABLE 6

NUMBER OF RESPONDENTS IN DENTAL AUXILIARY EDUCATION SURVEY,

BY TYPE OF PROGRAM AND COUNTRY

JANUARY 1968

Region and Country	Total Programs	Dental Laboratory Technician	Dental Assistant	Dental Hygienist	Dental Nurse
TOTAL, ALL COUNTRIES	27	5	11	7	4
South America					
Argentina	4	1	2	1	-
Brazil	3	-	1	2	-
Chile	1	1	-	-	-
Colombia	6	1	1	2	2
Paraguay	1	-	-	-	1
Peru	1	1	-	-	-
Uruguay	3	1	1	1	-
Venezuela	2	-	2	-	-
Central America & Mexico					
Costa Rica	1	-	1	-	-
El Salvador	1	-	1	-	-
Mexico	2	-	1	1	-
Caribbean Area					
Cuba	2	-	1	-	1

Administration of the Programs

A dentist serves as director of each of the 27 programs; however, most directors work only on a part-time basis. In the 25 programs providing this information, eight directors devote less than ten hours per week to the auxiliary program, while another seven directors devote between ten and 19 hours per week. Only six schools have directors who spend 30 or more hours a week with the auxiliary program.

Frequently, responsibilities for administration and education in the programs do not lie with the programs themselves but rather with their sponsors or elsewhere. For example, of the 21 programs providing information, eight report no responsibility for student admission and graduation. Of 23 programs providing information, only eight are responsible for paying staff salaries. In addition, only seven program directors, of 22 reporting programs, have responsibility for developing and submitting the program budget.

Finances

Many programs could not indicate their total financial investment in auxiliary education because, frequently, program costs (e.g., personnel, facilities) are included in the general operating budget of the sponsor. However, 16 programs provided information on their direct expenditures for 1967, the year of operation immediately prior to the survey.

That year, the sixteen programs and their sponsors spent between $612 and $15,000 for auxiliary education. Expenditures for nine of the 16 programs was under $4,000 each, while expenditures for five programs was over $10,000 each. The total amount of money spent by the 16 programs was approximately $90,000. In addition, the respondents reported that foundations and outside government agencies had provided financial or other support. The W. K. Kellogg Foundation supported two dental assistant programs and one for dental hygienists. The Rockefeller Foundation supported one school for dental nurses. The Government of one Latin American country and an agency of the United States Government each assisted one program for dental nurses. The respondents reported that the total value of this assistance was approximately $19,100 and that the Kellogg Foundation was the largest single outside contributor.

Physical Facilities and Resources

The 20 auxiliary program sponsors identified 21 distinct facilities or sets of facilities that are utilized for the 27 auxiliary education programs. Although 14 or two-thirds of these facilities are located in only one or two buildings, two dental assistant programs reported that their teaching facilities each include over 20 locations, mostly health centers, schools, and hospitals.

Eighteen of the facilities reported accessibility to classrooms, while 15 reported access to laboratory facilities. The adequacy of these cannot be assessed because of the many factors involved, such as size of the rooms, type of desks and other equipment present, number of students using the room, and availability of the room to the auxiliary program.

No dental laboratory technician program reported using dental units and chairs in auxiliary education. Of 15 facilities for other types of auxiliaries that provided information, nine have ten or less dental units available for auxiliary students. Only one dental hygienist program reported using private dental offices for clinical instruction.

The adequacy of these clinical facilities cannot be assessed solely on the basis of numbers. Quality of the equipment, availability to the auxiliary program, number of students utilizing the equipment, and other factors enter the picture. However, marked differences in some programs can be seen by comparing the ratios of units available per student in the graduating class. Of 13 facilities providing this information, seven report one or more dental units available for each student in the graduating class. On the other hand, six facilities have more students in the graduating class than number of units, including one facility with 19 students per unit and another with 49 students per unit.

Eight auxiliary education programs, including five of the 11 dental assistant programs, did not report any available library resources. In 11 other programs, students have access to university libraries. In the eight remaining programs they utilize only small collections of books belonging to individuals, organizations, or agencies.

Faculty

Dentists comprise the largest number of dental auxiliary instructors, as 22 auxiliary programs report a total of 193 faculty dentists (Table 7). However, only 49, or about one-fourth, are employed full-time or half-time with the auxiliary programs or their sponsors.

Faculty members teaching in auxiliary education programs fall into one of four categories of employment status:

1) Exclusive Dedication: All work is devoted to the employer, and no outside work is generally allowed.

2) Full Time: A majority of working hours usually are devoted to the employer, and outside work generally is permitted.

3) Half Time: One-half or less of normal working hours are devoted to the employer, and outside work is customary.

4) Part Time: Only a relatively small number of working hours usually are devoted to the employer.

TABLE 7

NUMBER OF FACULTY EMPLOYED IN AUXILIARY EDUCATION PROGRAMS, BY EMPLOYMENT STATUS, TYPE OF PROGRAM, AND PROFESSIONAL CATEGORY

January 1968

Employment Status[1]	Total, All Programs		TYPE OF PROGRAM							
			Laboratory Technician		Dental Assistant		Dental Hygiene		Dental Nurse	
	Dentists	Other Faculty	Dentists	Other Faculty	Dentists	Other Faculty	Dentists	Other Faculty	Dentists	Other Faculty
TOTAL	193 (a)	80	11 (b)	13 (b)	86 (b)	15 (b)	81	29	15	23
Full Time[2]	20	15	2	9	1	3	15	3	2	-
Half Time	29	20	-	-	8	4	11	6	10	10
Part Time	86	38	7	-	21	5	55	20	3	13

(1) Employment Status with the Auxiliary Program and/or the Program Sponsor.
(2) Includes Exclusive Dedication and Full Time categories of employment.
(a) Two of the 27 programs did not report numbers of faculty.
(b) Some programs did not report employment status for all faculty.

However, the required number of weekly working hours varies for each category from one program to another. Exclusive dedication ranges between 28 and 40 hours required per week, full time between 24 and 39 hours, half time between 14 and 24 hours, and part time staff work from 2 to 15 hours per week. It should be pointed out, however, that auxiliary program faculty do not necessarily work only in auxiliary education during these hours. They also can have responsibilities related to other programs of the sponsoring groups.

Eleven dental auxiliary programs report a total of 27 physicians on their teaching staffs, and 16 or about 60 per cent of these instruct in dental nursing schools. Twenty-two university professors other than dentists and physicians also teach in 11 auxiliary programs, while 31 dental auxiliaries provide instruction in ten programs.

Only nine auxiliary education programs provided comparable information on faculty salaries. They reported that half-time dentists earned minimum salaries that ranged between $57 and $333 per month. In four programs the minimum half-time salary was below $150 per month, while in three programs it was over $250. These programs indicated that similar salaries are paid to dentists, physicians, and other university-level professors. Instructors who themselves are dental auxiliaries, on the other hand, are paid considerably less than dentists in the seven programs reporting comparable information.

Educational Program

The length of educational programs for the four types of auxiliaries is shown in Table 8. Marked differences in programs, even for the same type of auxiliary, are observable. One laboratory technician program, for example, is approximately four times as long as another. The same is true for two dental nurse programs.

Thirteen programs provided information on their hours of instruction devoted to the basic sciences, dental sciences, and other subjects and to clinical instruction. Marked differences are also seen in total teaching hours, as well as proportion of time spent in these four areas, even in programs for the same type of auxiliary (Table 9). For example, hours of instruction in the basic sciences for dental hygienists vary from 19 in one program to 526 in another. Total clinical instruction time for hygienists ranges from 100 to 942 hours in two programs. Percentages of time in clinical instruction in dental assistant programs vary from 0.0 per cent to 60 per cent. For dental hygienists, clinical instruction occupies from 26.5 per cent to 57.1 per cent in the various programs. Such wide variations seem to indicate quite clearly that some programs are providing an excess of instruction in general and in specific areas, and/or that some programs are not providing sufficient instruction.

TABLE 8

LENGTH OF EDUCATIONAL PROGRAM
FOR DENTAL AUXILIARIES BY TYPE OF PROGRAM[1]

JANUARY 1968

Course Length (Weeks)	TYPE OF PROGRAM			
	Laboratory Technician	Dental Assistant	Dental Hygienist	Dental Nurse
0-9	-	-	1	-
10-19	-	1	1	-
20-29	-	3	-	-
30-39	-	4	3	-
40-49	1	1	-	1
50-59	-	-	-	-
60-69	-	-	-	-
70-79	1	-	2	-
80-89	-	-	-	1
90-99	-	-	-	1
100-109	2	-	-	-
110-169	-	-	-	-
170+	1	-	-	1

[1] Two programs did not provide this information.

TABLE 9

PER CENT OF TOTAL TEACHING HOURS DEVOTED TO BASIC SCIENCES, DENTAL SCIENCES, CLINICAL INSTRUCTION, AND OTHER SUBJECTS IN THIRTEEN DENTAL AUXILIARY EDUCATION PROGRAMS, BY TYPE OF PROGRAM

JANUARY 1968

Types of Program (a) by Program Code	Total		Basic (b) Sciences (Per Cent)	Dental (c) Sciences (Per Cent)	Clinical(d) Instruction (Per Cent)	Other (e) Courses (Per Cent)
	Hours	Per Cent				
Dental Assistant						
8	500	100.0%	20.0	44.0	32.0	4.0
10	840	100.0%	7.6	40.0	38.1	14.3
11	634	100.0%	10.4	32.9	31.5	25.2
12	660	100.0%	10.0	23.3	60.0	6.7
16	352	100.0%	19.9	68.2	-	11.9
Dental Hygienist						
17	2,450	100.0%	21.5	4.9	38.4	35.2
18	860	100.0%	17.9	42.8	33.3	6.0
19	478	100.0%	19.5	36.5	31.4	12.6
20	1,360	100.0%	6.7	41.1	26.5	25.7
21	1,150	100.0%	11.6	25.8	37.9	24.7
22	175	100.0%	10.9	11.4	57.1	20.6
Dental Nurse						
24	2,559	100.0%	9.2	43.9	46.9	-
25	1,172	100.0%	16.0	28.6	55.4	-

(a) Each program is assigned a code number for the purposes of this study.
(b) Basic Sciences include Anatomy, Chemistry, Histology, Microbiology, Pathology, Pharmacology, Physiology, etc.
(c) Dental Sciences include Crown and Bridge, Dental Lab Techniques, Dental Materials, Principles of Dental Assisting, Principles of Dental Hygiene, Dental Health Education, Dental Radiology, Endodontics, Operative Dentistry, Oral Diagnosis, Oral Surgery, Orthodontics, Pedodontics, Periodontics, Preventive Dentistry, Prosthetics, etc.
(d) Clinical work includes Assisting at Chairside, Prophylaxis, Taking X-Rays, Performing Topical Fluoride Applications, and other direct patient services including Operative and Surgical services.
(e) Others include Languages, Religion, Philosophy, History, courses related to Public Health (Study of the Community, Epidemiology, Biostatistics, etc.)

Some, but not all, auxiliary programs identified some specific areas of curriculum content. These included seven programs for assistants, six for hygienists, and three for dental nurses. For dental assistants, dental practice administration and public health are taught by five programs. Anatomy, oral radiology, and use of dental equipment are each included in four programs, and three programs teach dental ethics and dental health education.

For dental hygienists, dental health education and public health are taught by six programs, oral pathology and microbiology by five programs, and anatomy, biochemistry, and dental anatomy by four programs. Psychology is taught in three hygienist programs, while ethics and sociology are included in two programs.

For dental nurses, operative dentistry is included in all three reporting programs. Anatomy, physiology, oral pathology, and public health each are taught in two programs. Microbiology, pathology, dental anatomy, oral surgery, practice administration, and first aid each are included in one program.

Only nine or one-third of the 27 dental auxiliary education programs report the existence of a curriculum committee. This situation gives rise to a number of questions such as how well planned are the auxiliary curricula and what are the assurances of continued development of the teaching programs.

Functions of Dental Auxiliaries

Students in the five dental laboratory technician schools learn functions similar to those outlined by the World Health Organization Expert Committee on Auxiliary Dental Personnel (24). All five programs report that students are taught to pour models, make bite trays, construct gold restorations, and fabricate prosthetic or orthodontic appliances. None of the schools teach students to perform duties of assistants, hygienists, or dental nurses.

The 11 dental assistant programs also instruct students in functions similar to those outlined by the World Health Organization Expert Committee. In all schools, these include chairside assisting duties such as applying water and suction, passing dental instruments, and mixing dental materials. The 11 programs also teach students to perform receptionist and housekeeping tasks, such as receiving patients, making appointments, and sterilizing instruments. Seven assistant programs teach students to perform some dental laboratory tasks, but only three of these include advanced laboratory functions such as constructing gold restorations.

The seven dental hygiene programs all teach students to clean teeth with a dental handpiece and to apply topical fluorides. However, only four of these schools instruct students in the removal of oral calculus, which raises the question as to whether these auxiliaries are properly classified

as hygienists as described by the World Health Organization Expert Committee. Six of the seven programs provide instruction in chairside assisting and/or other office duties, while only one program teaches advanced dental laboratory work.

All four dental nurse programs teach students to prepare and restore teeth and to remove oral calculus. Three of the four schools also instruct students in the administration of local anesthetic and the extraction of teeth. Only two schools teach the application of topical fluorides, and advanced dental laboratory work is taught by one school.

Admissions

Four programs did not admit any new students in 1967. These were the two discontinued hygiene schools and the two dental nurse programs that had, until that time, produced the only dental nurse graduates. In 18 other programs providing information, six, or one-third, admitted 12 or less students that year. Eight programs admitted over 25 new students, and three schools reported unlimited enrollment. It is interesting to note that the school for "stomatology technicians" in Cuba, established in 1967, admitted 340 students to its first class.

Admission requirements vary considerably, even in educational programs for the same type of auxiliary. Required years of prior schooling, for example, range from two to 11 years, both in assistant and hygienist programs. Twenty programs require a personal interview, while 16 stipulate an entrance examination. Only women are accepted by nine programs for assistants, three for hygienists, and three for dental nurses.

Graduates

The total reported numbers of dental auxiliary graduates in the 24 Latin American countries for 1966 and 1967 are extremely small (Table 10). For 1967, these numbered only 52 laboratory technicians, 300 dental assistants, 93 dental hygienists, and five dental nurses. There is no question that the few auxiliaries reported graduating each year in Latin America are far from sufficient to meet the dental auxiliary manpower needs of the Region.

Future Plans for Dental Auxiliary Education

Despite the many program weaknesses pointed out by this survey, the 27 auxiliary programs reported few planned major changes. Four programs each report planning or implementing a reorganization of the curriculum, and two schools indicate plans for additional training for faculty members. Plans for the following other activities each were reported by one auxiliary program: 1) initiation of continuing education courses for auxiliaries, 2) improvement of teaching methods, and 3) increased teamwork with dental students.

TABLE 10

NUMBER OF GRADUATES OF DENTAL AUXILIARY EDUCATION PROGRAMS
IN 1966 AND 1967, BY COUNTRY AND TYPE OF PROGRAM

Region and Country	Total		Laboratory Technician		Dental Assistant		Dental Hygienist		Dental Nurse	
	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967
TOTAL, ALL COUNTRIES	256	450	52	52	94	300	105	93	5	5
South America										
Argentina	14	5	(a)	(a)	7(b)	4(b)	7	-	-	-
Brazil	52	57	-	-	-	26	52	31	-	-
Chile	11	11	11	11	-	-	-	-	-	-
Colombia	62	66	41	41	10	5	11	17	-	3(c)
Paraguay	5	2	-	-	-	-	-	-	5	2
Peru	-	-	-	(c)	-	-	-	-	-	-
Uruguay	(a)	55	-	(c)	(a)	46	(a)	10	-	-
Venezuela	48	49	-	-	48	49	-	-	-	-
Central America & Mexico										
Costa Rica	-	10	-	-	-	10	-	-	-	-
El Salvador	-	(a)	-	-	-	(a)	-	-	-	-
Mexico	41	38	-	-	6	3	35	35	-	-
Caribbean Area										
Cuba	23	157	-	-	23	157	-	-	-	(c)

(a) No information reported.
(b) Incomplete information reported.
(c) One or more programs in these countries had not graduated their first class at the time of the survey.

Ten countries reported plans for the initiation of new auxiliary education programs. But these ten included only one country that previously did not report any auxiliary schools. Seventeen new auxiliary programs were reported planned, including five for laboratory technicians, eight for dental assistants, two for hygienists, and two for dental nurses. Dental schools reportedly will sponsor seven programs, Ministries of Health four, and State agencies five programs. One other school will be sponsored by a school of public health. No additional information concerning these programs was provided.

A list of these planned programs is included in the Pan American Health Organization Directory of Dental Auxiliary Education Programs in Latin America.*

Acknowledgment

The Pan American Sanitary Bureau wishes to express its appreciation for the cooperation of the Ministries of Health of the Latin American countries, the dental schools and the dental associations, as well as those individual dentists who provided the information for this study.

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BIBLIOGRAPHY

1. Interdepartmental Committee on Nutrition for National Defense. Ecuador nutrition survey. Washington, U.S. Government Printing Office, July 1960.

2. _____ Colombia nutrition survey. Washington, U.S. Government Printing Office, December 1961.

3. _____ Uruguay nutrition survey. Washington, U.S. Government Printing Office, May 1963.

4. Jiménez A. Report to the Pan American Health Organization on a consultative visit to the School of Dentistry, National University of Paraguay. January, 1967, 15 p. mimeo (not generally available).

5. Russell, A. L. Dental disease in Latin America. J. Am. Col. Dent., 30:41-51, March 1963.

6. Health conditions in the Americas 1961-1964. Scientific Publication No. 138. Washington, Pan American Health Organization, August 1964.

7. Restrepo, D. Latin America. Presented at the Conference on Public Dental Health Services: World Wide. San Francisco, Nov. 1964.

8. Restrepo, O. J. La transformación de la odontología. Rev. ALAFO 2:7-13, Jan. 1967.

9. A world program for health manpower. Association of American Medical Colleges. Evanston, Illinois, 1965. VIII, 119 p.

10. Restrepo, D. Dental activities of the Pan American Sanitary Bureau. J. Am. Col. Dent., 35:333-342, October 1968.

11. Public dental health in New Zealand. Wellington, Government Printer, 1964.

12. Walsh, J. P. La enfermera dental. J. Am. Col. Dent. 32:62-69. 1965

13. Fulton, J. T. Experiment in dental care. World Health Organization Monograph Series No. 4. Geneva, World Health Organization, 1951.

14. Final report on the experimental scheme for the training and employment of dental auxiliaries. London, General Dental Council, 1966.

15. Schamschula, R. G. and D. E. Barmes. Dental Education in Papua, New Guinea, Part I. The concept. Australian Dent. J., 11:73-80, April 1966.

16. Barmes, D. E., and R. G. Schamschula. Dental education in Papua, New Guinea, Part II. Integrated dental officer and dental nurse courses. Australian Dent. J. 12:34-41, Feb. 1967.

17. Ludwick, W. E., E. O. Schnoebelen, and D. J. Knoedler. Greater utilization of dental technicians. II. Report of clinical tests. Great Lakes, Illinois, U.S. Naval Training Center, 1964.

18. Abramowitz, J. Expanded functions for dental assistants: a preliminary study. J. Am. Dent. Ass. 72:386-90. Feb. 1966.

19. Hammons, P. E. and H. C. Jamison. Expanded functions for dental auxiliaries. J. Am. Dent. Ass. 75:658-72. Sept. 1967.

20. Annual report of the director, 1967. Official Document No. 86. Washington, Pan American Health Organization, August 1968.

21. Health planning background document based on summary reports received from countries and other material. Prepared by Sir John Charles, M.D. Technical Discussions, Eighteenth World Health Assembly, Geneva, World Health Organization, 1965.

22. Durocher, Roy T. Auxiliary personnel - American dentistry at a crossroad? J. Am. Col. Dent., 34:133-45, July 1967.

23. Dental auxiliary utilization and training in Latin America. Reference document prepared for the III Latin American Seminar on Dental Education, Petrópolis, Brazil, Nov. 28 - Dec. 2, 1966. Washington, Dental Health Unit, Pan American Sanitary Bureau, Oct. 1966, 2 p. mimeo (not generally available).

24. Expert committee on auxiliary dental personnel report. Technical Report Series No. 163. Geneva, World Health Organization, 1959.

VT 013 875
PINCHES, ROBERT R., AND OTHERS
FROM SCHOOL TO WORK; FEDERAL SERVICES TO HELP COMMUNITIES PLAN WITH YOUTH.

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DESCRIPTORS - COMMUNITY PROGRAMS; *YOUTH PROBLEMS; FEDERAL AID; *FEDERAL PROGRAMS; *EMPLOYMENT PROBLEMS; *VOCATIONAL ADJUSTMENT; VOCATIONAL COUNSELING

ABSTRACT - THIS BOOKLET DESCRIBES HOW FEDERAL AGENCIES CAN HELP LOCAL COMMUNITIES MEET THE PROBLEMS OF YOUTH IN THEIR TRANSITION FROM SCHOOL TO WORK. INCLUDED FOR EACH AGENCY ARE: (1) KINDS OF HELP OFFERED, (2) WHO TO CONTACT, AND (3) HEADQUARTERS OFFICE (BOTH NATIONAL AND STATE OR REGIONAL). (BH)

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from SCHOOL TO WORK

Federal Services To Help Communities Plan With Youth

PA-602 FEDERAL EXTENSION SERVICE • U.S. DEPARTMENT OF AGRICULTURE

WHY COMMUNITIES NEED TO PLAN

A greatly increased number of young people will be reaching maturity in the next decade. They are the most important resource in our Nation today. Their contribution to society will be closely correlated with their preparation for challenging occupations.

This unprecedented influx of young people into our labor force points up the vast need to help them choose, prepare for, and find jobs. Solving the occupational problems of our young people is the responsibility of all Americans.

This booklet describes how Federal agencies can help local communities meet the problems of youth in their transition from school to work.

Community leaders and planning committees, both rural and urban, should feel free to ask for assistance from many sources: representatives of Federal, State, and local governments; directors of public and private organizations; leaders of industry, agriculture, and labor; and private citizens.

This booklet has been prepared by the Subcommittee on Transition from School to Work, of the Interdepartmental Committee on Children and Youth. Members of this subcommittee are listed on the back cover.

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WHERE YOU CAN GET HELP IN PLANNING

Kinds of Help	*Who to Contact*	*Headquarters Office*	
		State and/or Regional	*National*
U.S. DEPARTMENT OF AGRICULTURE			
The Cooperative Extension Service			
(1) Conducts informal education programs in career exploration for youth and their parents; (2) assists in organizing resource development committees to give attention to youth employment and training as a part of human resource development; (3) helps people, in rural areas particularly, understand the counseling resources available through high schools, colleges, employment services, civic groups, and other agencies; (4) helps key community leaders review local educational and training opportunities for youth.	County extension offices (usually in county seat town).	Cooperative Extension Service. State land-grant universities.	Federal Extension Service, U.S. Department of Agriculture, Washington, D.C. 20250.

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Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Agricultural Research Service			
The Agricultural Research Service conducts fundamental, applied, and developmental research in the production, utilization, and marketing of agricultural products. The research covers most of the biological and physical sciences, also several branches of engineering. Peak workloads during the summer months offer excellent opportunities. High school graduates and college students are employed throughout the country under student trainee and student assistant programs which provide an excellent insight and inspiration to young people to pursue challenging and rewarding careers in research.	Write to regional or national offices.	Eastern Administrative Division, Agricultural Research Service, Federal Center Building, Hyattsville, Md. 20782. Southern Administrative Division, Federal Office Building, Room T–12001, 701 Loyola Avenue, New Orleans, La. 70150.	Agricultural Research Service. U.S. Department of Agriculture, Washington, D.C. 20250.

Agricultural Stabilization and Conservation Service

Has responsibility for the administration of programs for stabilizing supplies and prices received by farmers for agricultural commodities. ASC county offices are responsible for checking acreages devoted to the production of certain commodities, storage of commodities acquired through price support programs, cost-share assistance to farmers in installing conservation practices. Some of these activities require temporary employees. Candidates with knowledge of local agriculture preferred. Positions are filled by applicants selected by the local county office. Positions at the State or national level are filled by the offices listed in columns 3 and 4.	2,945 county offices usually located at the county seat.	50 State offices and an office of comparable scope in Puerto Rico. Offices serving more than one State in: Asheville, N.C.; Evanston, Ill.; Kansas City, Mo.; Minneapolis, Minn.; New Orleans, La.; New York City; Salt Lake City, Utah.	Agricultural Stabilization and Conservation Service, U.S. Department of Agriculture, Washington, D.C. 20250

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Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Cooperative State Research Service			
This Service administers Federal-grant funds and provides technical assistance and coordination in support of research at the State agricultural experiment stations. Some of this research is concerned with studies of: education and vocational goals of rural youth; factors affecting youth migration; use made of youth programs and services by rural families; and educational needs of beginning farmers. Related research is on population characteristics and migration; manpower; employment patterns and preferences; and on adjustment and rural areas development.	State experiment station director of land-grant university.	Agricultural experiment stations. State land-grant universities.	Cooperative State Research Service, U.S. Department of Agriculture, Washington, D.C. 20250.

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Conducts national and regional programs of economic research on the characteristics of, and income and employment opportunities in, rural areas, on the problems of rural economic development, and on social and economic characteristics of the rural labor force. Research findings are reported in State agricultural experiment station and Extension publications, in U.S. Government publications and in journal articles. Staff members provide consultation on research, and present findings at State, regional, or national meetings of organizations interested in employment opportunities for rural people and in rural area economic development.	National office.	National office.	Economic Development Division, Economic Research Service, U.S. Department of Agriculture, Washington, D.C. 20250.

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Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Farmers Home Administration			
Provides loan and technical assistance in farm and financial management to young farmers. Extends credit to buy and improve farms; buy farm equipment, livestock, and fertilizer; and pay farm operating expenses. Credit is provided only when applicants are unable to obtain financing from other sources at reasonable rates and terms. Agricultural college students may be employed as summer trainees after passing civil service farm management supervisor trainee examination. When they graduate, trainees are assigned as FHA farm management supervisors.	1,600 county offices (usually in county seat towns).	42 State offices including Puerto Rico.	Farmers Home Administration, U.S. Department of Agriculture, Washington, D.C. 20250.

Forest Service

Manages national forest lands, conducts wild land management research, and assists private and State forest land managers. Opportunities exist for youths to make real contributions to public service, and to learn skills and self-responsibility. At the local level, youths are hired for technical, clerical, skilled, and unskilled work, on a full-time or seasonal basis. Typical jobs are forestry aid, typist, equipment operator, and laborer.	Research stations, research project headquarters, national forest headquarters, and ranger district headquarters.	Missoula, Mont.; Denver, Colo.; Albuquerque, N. Mex.; Ogden, Utah; San Francisco, Calif.; Portland, Oreg.; Upper Darby, Pa.; Atlanta, Ga.; Milwaukee, Wis.; Juneau, Alaska.; Columbus, Ohio; Madison, Wis.; Rio Piedras, P.R.; St. Paul, Minn.; Berkeley, Calif.; Fort Collins, Colo.; Asheville, N.C.; New Orleans, La.	Forest Service, U.S. Department of Agriculture, Washington, D.C. 20250.

Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Rural Areas Development			
The rural areas development program provides for the consideration of economic and social problems by a committee of local leaders assisted by the Federal agencies, State agencies, and other groups in position to provide technical assistance and services. Requests for assistance can be presented to the rural areas development leadership committee, and, through the technical action panel of the Federal, State, and local agencies, assistance can be given in finding solutions.	The rural areas development committee, the county agent, and technical action panels made up of USDA employees in the county—Farmers Home Administration, Agricultural Stabilization and Conservation Service, the Soil Conservation Service, and where there are National Forests, the Forest Service.	.....	Federal Extension Service, Farmers Home Administration, Rural Community Development Service and other agencies of the U.S. Department of Agriculture, Washington, D.C. 20250.

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Soil Conservation Service				
Furnishes technical assistance to land-users who are cooperators in national soil and water conservation programs through organized soil and water conservation districts. Students in agriculture, engineering, or related fields may be employed after passing the civil service student trainee examination. Persons employed do summer field work and attend classes during the school session. Student trainees are employed in soil conservation, soil science, engineering, range conservation, and cartography.	Initial contacts can be made through work units or area offices which are usually located in county seat towns.	50 State offices including Puerto Rico. These are normally in capital city or at the land-grant university.	Soil Conservation Service, U.S. Department of Agriculture, Washington, D.C. 20250.	

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Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE			
Office of Education **Division of Manpower Development and Training**			
Matches people and jobs by providing grants on a project-by-project basis to train unemployed and underemployed persons in order to get them back into the job market or upgrade their skills. All manpower training in classrooms (as distinguished from on-the-job training which is supervised by the Department of Labor) is delegated to the Office of Education, HEW, through its 9 regional offices, State educational agencies, and public or private local training institutions.	Local school officials or State or U.S. Employment Service offices.	State Director of Vocational Education, State Department of Education. Regional Representative, Office of Education, HEW Regional Offices: Boston; New York; Charlottesville, Va.; Atlanta; Chicago; Kansas City, Mo.; Dallas; Denver; San Francisco; and	Division of Manpower Development and Training, Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20202.

Office of Education **Division of Vocational and Technical Education** Cooperates with the States to administer programs of vocational and technical education for those who have entered or are preparing to enter the fields of technology, agriculture, office and business, distribution, home economics, trades and industry, and health. Training is provided for persons in all communities who are in high school, have completed or discontinued their formal education and are preparing to enter the labor market, need retraining, or have special educational needs.	Local superintendent of schools or local director of vocational education.	State director of Vocational Education, State department of Education. Regional Representative, Office of Education, HEW regional offices: Boston; New York; Charlottesville, Va.; Atlanta; Chicago; Kansas City, Mo.; Dallas; Denver; San Francisco; and Seattle.	Division of Vocational and Technical Education, Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20202.

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Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Office of Education **Guidance and Personnel Services Branch**			
Gives assistance in the field of guidance, counseling, and testing to State departments of education, colleges, and universities, and to local schools through State departments of education. These services include: supervision of Title V–A, NDEA; consultation to administrators of Title III, ESEA, MDTA, and other legislation providing counselin service ; dissemination of occupational information; coordination of guidance services with educational, public, and private organizations, and other Federal agencies.	County Superintendent of Schools office; counselor or principal in each local secondary schoo.	State Director of Guidance in State Department of Education; U.S. Commissioner of Education representative in HEW offices: Boston; New York; Charlottesville, Va.; Atlanta; Chicago; Kansas City, Mo.; Dallas; Denver; and San Francisco.	Guidance and Personnel Services Branch, Office of Education, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20202.

Office of Education **Office of Programs for the Disadvantaged**			
Primary function is to coordinate all Federal programs concerned with educating the disadvantaged to assure effective concerted effort with minimum duplication and gaps. Organizes meetings and conferences on behalf of disadvantaged groups to tell them of Federal programs and learn their special educational needs and problems. Maintains an information center to collect, organize, and disseminate basic data on pertinent legislation, programs, and funding of Federal educational programs for the disadvantaged.	National office.	National office.	Office of Programs for the Disadvantaged, Office of Education, U.S. Department of Health, Education, and Welfare, 400 Maryland Avenue SW., Washington, D.C. 20202.

Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Rehabilitation Services Administration			
The State-Federal program of vocational rehabilitation is on a grant-in-aid basis. State agencies provide the following direct services to help eligible physically or mentally handicapped people obtain suitable employment: (1) medical examinations to determine extent of disability and employment potential; (2) medical services to remove or reduce the disabling condition; (3) vocational training; (4) counseling and job placement; (5) selected services to equip the individual to meet special job requirements; and (6) followup to insure satisfactory job placement. The Federal office administers: (1) grant programs to develop new and effective methods	Directors of State vocational rehabilitation agencies in the 50 States, District of Columbia, Puerto Rico, Guam, and the Virgin Islands. Local offices are in larger cities, with itinerant staff covering less populous areas.	Directors of State vocational rehabilitation agencies. Regional representatives of the Rehabilitation Services Administration are located at HEW regional offices in Boston; New York; Charlottesville, Va.; Atlanta; Chicago; Kansas City, Mo.; Dallas; Denver; and San Francisco.	Rehabilitation Services Administration, Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20201.

and expand vocational rehabilitation activities; (2) grants to plan, construct, and initially staff rehabilitation facilities and sheltered workshops, and to improve workshops; (3) grants to provide training services within sheltered workshops; (4) a research and demonstration grant program; (5) training grants to expand teaching facilities and scholarship aid for professional rehabilitation personnel; and (6) grants for comprehensive vocational rehabilitation planning within each State.

Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Welfare Administration **Bureau of Family Services**			
Administers grants to States under the Social Security Act for Aid and Services to Needy Families with Children (known as AFDC—Aid to Families with Dependent Children). For eligible children up to 18 years of age and to age 21 providing the child is attending a school, college, university, or course of vocational or technical training designed to fit him for gainful employment. This program offers: (1) money to meet daily living needs; (2) medical care; and (3) social services to improve home and family life, and help children achieve self-sufficiency as adults. Plans for each child receiving AFDC are directed to	County or local welfare agency.	State department of public welfare. Bureau of Family Services representative, HEW regional offices in Boston; New York City; Charlottesville, Va.; Atlanta; Chicago; Kansas City, Mo.; Denver; Dallas; and San Francisco.	Director, Bureau of Family Services, Welfare Administration, U.S Department of Health, Education, and Welfare, Washington, D.C. 20201.

helping him overcome any problems that may hinder growth into self-reliant adulthood. Coordinated maximum use of education, constructive work experience, training, counseling and guidance is emphasized.

Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Welfare Administration Children's Bureau			
Work requires a sound body and mind. Through grants and technical assistance, the Children's Bureau helps States develop services and facilities for child health and welfare, including supplemental care of children in their own homes, homemaker services, day care, foster care, adoption, comprehensive health care for school and preschoolage children, special services for children with physical, mental, and emotional handicaps, and protective services for neglected and abused children. Also provides technical aid and consultation in developing programs to prevent, control, and treat juvenile delinquency.	County or local public child welfare agency, or public welfare agency administering child welfare services (located at county seats and/or major cities). Local city, county, or district health departments.	State child welfare department, State department of health, State crippled children's agency. Children's Bureau representatives in: Boston; New York; Charlottesville, Va.; Atlanta; Chicago; Kansas City, Mo.; Dallas; Denver and San Francisco.	Children's Bureau, Welfare Administration, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20201.

Before starting his first job, a worker should get a social security card from his nearest social security office. It is important that all earnings during his working life be reported under the right account number because disability, survivor, and retirement benefits are based on these earnings.

Payments can also be made to students whose parents are receiving social security retirement or disability payments, or have died.

More than 700 social security district and branch offices, and between 3,000 and 4,000 contact stations in additional communities.

Social Security Administration regional offices in Boston; New York; Charlottesville, Va.; Atlanta; Chicago; Kansas City, Mo.; Dallas; and San Francisco.

Commissioner, Social Security Administration, U.S. Department of Health, Education, and Welfare, Baltimore, Md. 21235.

Kinds of Help	Who to Contact	Headquarters Office: State and/or Regional	Headquarters Office: National
U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT			
Housing Assistance Administration			
Helps local agencies work with public and private agencies to develop facilities, programs, and services to help children and youth help themselves out of poverty through education and training. Housing authorities make it easier for local public and private community agencies to serve low-income public housing residents by providing on-site space for such services and encouraging their use. Local housing authorities also encourage public housing residents to use services and facilities available elsewhere in the neighborhood but not on the project site.	Local Housing Authorities which own and operate federally-aided low-rent public housing in more than 2,800 communities.	Regional offices of Housing and Urban Development in: New York, N.Y.; Philadelphia, Pa.; Atlanta, Ga.; Chicago, Ill.; Fort Worth, Tex.; San Francisco, Calif.; San Juan, P.R.	Community Services Branch, Housing Assistance Administration, 904 Longfellow Building, 1741 Rhode Island Avenue NW., Washington, D.C. 20413.

DEPARTMENT OF THE INTERIOR

Bureau of Indian Affairs
Branch of Employment Assistance

Counseling for youth is available on employment, vocational training, community adjustment and housing, recreation, budgeting, and transportation, through the agency, area, and field employment assistance offices. Special programs are available for orientation on employment with assistance in obtaining placement, as well as vocational guidance leading to employment for Indian youth. Limited subsistence grants on the basis of need are available to assist the Indian youth in pursuing training and obtaining employment. Refers youth to local manpower training programs cooperatively developed under MDTA with State employment services and State vocational education offices.	60 agency offices in 18 States.	*Area Offices* Aberdeen, S. Dak.; Albuquerque, N. Mex.; Anadarko, Okla.; Billings, Mont.; Juneau, Alaska; Minneapolis, Minn.; Muskogee, Okla.; Phoenix, Ariz.; Portland, Oreg.; Sacramento, Calif.; Window Rock, Ariz.; Cherokee Agency, Cherokee, N.C.; Seminole Agency, Hollywood, Fla.	Department of the Interior, Bureau of Indian Affairs, Branch of Employment Assistance, Washington, D.C. 20242.

Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Bureau of Indian Affairs—Continued			
Branch of Employment Assistance—Continued			
		Field Employment Assistance Offices	
		Chicago, Ill.; Cleveland, Ohio; Dallas, Tex.; Denver, Colo.; Los Angeles, Calif.; Minneapolis, Minn.; Oakland, Calif.; Oklahoma City, Okla.; San Jose, Calif.; Tulsa, Okla.	

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Bureau of Indian Affairs **Division of Education**			
Operates a Federal school system for eligible Indian students. The program in this system provides exploratory vocational experiences through practical arts courses in grades 9 and above; terminal education programs including vocational preparation for overage students not likely to finish high school; and 2-year post-high-school vocational programs. Vocational and personal guidance and counselling services are provided students enrolled in these programs.	68 agency offices in 18 States.	Aberdeen, S. Dak.; Albuquerque, N. Mex.; Anadarko, Okla.; Billings, Mont.; Juneau, Alaska; Minneapolis, Minn.; Muskogee, Okla.; Phoenix, Ariz.; Portland, Oreg.; Sacramento, Calif.; Window Rock, Ariz.; Cherokee Agency, Cherokee, N.C.; Miccosukee Agency, Homestead, Fla.; Seminole Agency, Hollywood, Fla.	Department of the Interior, Bureau of Indian Affairs, Division of Education, 1951 Constitution Avenue NW., Washington, D.C. 20242.

Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
U.S. DEPARTMENT OF LABOR			
Bureau of Labor Statistics			
Publishes Occupational Outlook Handbook, Occupational Outlook Quarterly, monthly reports on the labor force, employment, and earnings, and a series of special reports on student employment, employment of high school graduates and dropouts, labor force projections, and work experience of the population. Monthly Labor Review articles are available as reprints. Other special reports show income, education, and unemployment in neighborhoods in selected cities.	See cols. 3 and 4.	Six regional offices in Boston, New York City, Atlanta, Chicago, Kansas City, and San Francisco.	Bureau of Labor Statistics, U.S. Department of Labor, Washington, D.C. 20212.
Advises State and local planning groups on sources and use of statistical data on youth employment and provides speakers on manpower trends.			

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Bureau of Apprenticeship and Training			
Promotes apprenticeship and training programs in industry through contacts with labor and management and advises on the establishment of on-the-job training programs for the skilled trades, consistent with applicable labor laws and standards. Reviews and counsels on training program standards and agreements subject to registration by the Department of Labor and the States and extends technical guidance on request to national and local apprenticeship and training committees of employers and unions. In cooperation with industry committees, works with local public school guidance counselors, vocational schools, and employment offices in providing information on apprenticeship and training for students, arranging for the development of related technical courses for apprentices and journeymen, and preemployment testing and counseling of apprenticeship and training applicants.	165 field offices of the Bureau in all States and major cities.	Regional offices in Boston; New York City; Atlanta; Chambersburg, Pa.; Dallas; Kansas City, Mo.; Cleveland; Chicago; Denver; Seattle; and San Francisco.	Bureau of Apprenticeship and Training, Manpower Administration, U.S. Department of Labor, Washington, D.C. 20210.

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Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Bureau of Apprenticeship and Training—Continued			
Develops, services, provides funds and administers on-the-job training programs and projects under the Manpower Development and Training Act with employers, labor organizations, associations, local governments, and civic and service organizations, to develop marketable skills for the unemployed and underemployed.			
Bureau of Employment Security			
Through over 2,100 local offices of State employment security agencies, affiliated with the Bureau of Employment Security, employment services are available—counseling, occupational and aptitude testing, referral to jobs (either farm or nonfarm), or referral for oc-	Nearest local public employment office or Youth Opportunity Center if one serves your area. (If you do not know where	Central office of the state employment security agency, usually in the State capital. Regional offices of the	Bureau of Employment Security, Manpower Administration, U.S. Department of Labor, Washington, D.C. 20210.

cupational or basic educational training including MDTA—and claims are taken for unemployment insurance.

Youth Opportunity Centers exist in major metropolitan areas, with at least 1 in each of the 50 States. These Centers are local offices of State employment security agencies for youth, including the disadvantaged, aged 16 through 21. Local public employment offices cooperate with Office of Economic Opportunity programs and screen applicants for the Job Corps and the Neighborhood Youth Corps.

Occupational and other employment and unemployment information useful for vocational guidance is available through local public employment offices.

Rural and remote areas in many States are served by the State employment security agency through mobile teams of counseling, testing, and job placement personnel.

the local office is located, look in the telephone directory, ask your postmaster, or write to the State employment security agency for the address of the nearest local office.)

Bureau of Employment Security located in Boston; New York City; Chambersburg, Pa.; Atlanta; Cleveland; Chicago; Kansas City, Mo.; Dallas; Denver; San Francisco; and Seattle.

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Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Bureau of Labor Standards			
Develops and promotes regulatory and advisory standards on suitable occupations, hours and times of work, and other working conditions, including safety, and supervisory practices to protect and improve the health, education, and well-being of young workers. Administers but does not enforce regulatory standards under the child labor provisions of the Fair Labor Standards Act for employment of 14- and 15-year-olds and 16- and 17-year-olds, including employment in agriculture.	See cols. 3 and 4.	Regional offices in Atlanta; Chicago; Dallas; Kansas City, Mo.; and San Francisco.	Bureau of Labor Standards, U.S. Department of Labor, Washington, D.C. 20210.

Offers consultative and technical services; prepares publications on regulatory and advisory standards.

Carries on research activities to support the development and promotion of this program.

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Kinds of Help	Who to Contact	Headquarters Office: State and/or Regional	Headquarters Office: National
Bureau of Work Programs			
Administers locally initiated Neighborhood Youth Corps work-experience and training projects to increase the employability of unemployed low-income young men and women or help them stay in or return to school. Three types: in-school programs for students of 9th to 12th grade age; summer vacation job opportunity programs; and programs for out-of-school youth aged 16 through 21. Provides technical aid and up to 90 percent of a project's cost. Community Action Agencies are preferred as project sponsors where they demonstrate their desire and capability. How-	7 regional field directors. (See column 3.)	Regional Director, Bureau of Work Programs: 341 9th Avenue, New York City 10001; 1111 20th Street NW., Washington, D.C. 20036; 1371 Peachtree Street NE., Atlanta 30309; 219 South Dearborn Street, Chicago 60604; 411 North Akard	Bureau of Work Programs, Manpower Administration, U.S. Department of Labor, 1726 M Street NW., Washington, D.C. 20210.

ever, any group—other than a political party—that meets established standards is eligible.

Sponsors Special Impact, an urban program for both adults and youngsters 16 years and over. They will be employed on special projects to improve the low-income neighborhood in which they live. They will gain work experience by renovating houses and apartments, improving health facilities, creating vest-pocket parks, and developing playgrounds.

Street, Dallas 75201; 911 Walnut Street, Kansas City, Mo. 64106; 450 Golden Gate Avenue, San Francisco 94102.

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Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Office of Manpower Policy, Evaluation, and Research			
Conducts manpower research or arranges for its conduct through contracts or grants. Establishes experimental and demonstration manpower programs, through contracts or grants, to serve disadvantaged persons; evaluates techniques used for application to other training programs. Develops plans and recommendations for a comprehensive manpower program; and evaluates manpower programs and progress.	See cols. 3 and 4.	Department of Labor Regional Information Offices in Boston; New York; Chambersburg, Pa.; Philadelphia; Atlanta; Miami; Birmingham; Nashville; Cleveland; Detroit; Chicago; Kansas City, Mo.; Dallas; Los Angeles; San Francisco; Seattle.	Office of Manpower Policy, Evaluation, and Research, Manpower Administration U.S. Department of Labor, Washington, D.C. 20210.

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Women's Bureau

The Bureau analyzes and provides information on occupations, fields of employment, education and training, and prepares materials of a general guidance nature for girls and women. Its publications are directed to high school girls, college women, mature women, counselors, women's organizations and policy makers concerned with the employment and training of women. Information is provided in Women's Bureau publications, other U.S. Government publications, professional and other journals, and public service media.

Consultation is furnished by the Bureau to both Government and nongovernment agencies. Speakers are provided for national and regional meetings, and conventions of youth organizations, vocational counselors, women's organizations and other interested groups.

Regional offices in: Atlanta, Boston, Chicago, Dallas, and San Francisco.

Atlanta, Boston, Chicago, Dallas, and San Francisco.

Women's Bureau, U.S. Department of Labor, Washington, D.C. 20210.

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Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
Wage and Hour and Public Contracts Divisions			
Protects covered workers by enforcing the minimum wage, overtime, and child labor provisions of the Fair Labor Standards and the Public Contracts Acts, the minimum wage requirements of the Service Contract Act, and the equal pay standard of the FLSA. The safety and health provisions of the SCA and the PCA are administered by the Bureau of Labor Standards.	100 field offices in major cities.	Birmingham, Ala.; San Francisco, Calif.; Dallas, Tex.; Kansas City, Mo.; Boston, Mass.; Chambersburg, Pa.; Chicago, Ill.; Nashville, Tenn.; New York, N.Y.; and Atlanta, Ga.	Wage and Hour and Public Contracts Divisions, U.S. Department of Labor, Washington, D.C. 20210.
Answers inquiries, provides explanatory materials, and advises employers and workers about their rights under these acts. Works closely with high schools, vocational schools, and sheltered workshops in administering special provisions of the FLSA applying to student-learners, apprentices, and handicapped workers. Provides speakers on request.			

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OFFICE OF ECONOMIC OPPORTUNITY

Job Corps

Provides residential centers for out-of-work, out-of-school young men and women, 16 through 21 years of age, who lack the education and skills necessary to obtain jobs. At men's urban centers, women's urban centers, or men's conservation centers, corpsmen participate in programs of basic education, development of responsible citizenship attitudes, skill training, and constructive work experience, averaging 9 months and not exceeding 2 years. After graduation, corpsmen are helped to find jobs, return to school, or enter the Armed Forces.

Your local poverty board, nearest regional OEO office, or any State Employment office.

In most communities, male applicants are interviewed by the Youth Opportunity Center or the State Employment Service. Female applicants are interviewed by Women in Community Service, Inc.

Regional Office, Office of Economic Opportunity: 40 East 41st Street, New York, N.Y. 10017; 623 South Wabash Avenue, Chicago, Ill. 60605; 100 McAllister Street, San Francisco, Calif. 94102; 101 Marietta Street, Atlanta, Ga. 30303; 215 West Pershing Road, Kansas City, Mo. 64108; 314 West 11th Street, Austin, Tex. 78701; 1730 K Street NW., Washington, D.C. 20506.

Job Corps, Office of Economic Opportunity, Washington, D.C. 20506.

Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
VISTA (Volunteers in Service to America)			
The Volunteers in Service to America program gives adults, 18 years and older, a chance to join the fight on poverty for at least a year. Volunteers work with migrant laborers, on Indian reservations, in urban and rural CAP programs, in urban and rural centers, in slum areas, and in institutions for the mentally ill and mentally retarded. Volunteers organize remedial and adult education, health, recreation, and other community action efforts. They offer service, training, information, and other help to the poor.	Your local poverty board or write to regional office nearest your local community.	VISTA Regional Office, Office of Economic Opportunity: 40 East 41st Street, New York, N.Y. 10017; 623 South Wabash Avenue, Chicago, Ill. 60605; 100 McAllister Street, San Francisco, Calif. 94102; 101 Marietta Street, Atlanta, Ga. 30303; 215 West Pershing Road,	VISTA, Office of Economic Opportunity, Washington, D.C. 20506.

Kansas City, Mo. 64108; 314 West 11th Street, Austin, Tex. 78701; 1730 K Street NW., Washington, D.C. 20506.

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Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
VETERANS ADMINISTRATION			
Department of Veterans Benefits			
Provides educational assistance for veterans who served 181 days on active duty, any part of which is served after Jan. 31, 1955. An eligible veteran may receive allowances for himself and his dependents for up to 36 months of full-time or equivalent part-time schooling.	Full information and application blanks may be obtained at any Veterans Administration office.	57 VA regional offices usually located in the larger cities including Juneau, Honolulu, San Juan, and Manila.	
Provides money to help educate children of deceased or totally disabled veterans whose death or disability was service-connected. Generally, the children must be between the ages of 18 and 23. The length of training may be up to 36 months of full-time or equivalent part-time schooling.			

Pays for tuition and necessary books and supplies, and provides a subsistence allowance and vocational counseling for certain disabled veterans in service after Sept. 15, 1940, who need vocational rehabilitation training to restore employability lost due to a service-connected handicap. Conditions for eligibility largely depend upon the veteran's period of service and degree of disability. The length of training depends on the vocation chosen but generally is not more than 48 months.

Kinds of Help	Who to Contact	Headquarters Office	
		State and/or Regional	National
SELECTIVE SERVICE SYSTEM			
Registers all young men upon reaching their 18th birthday. Each year large numbers of young men are found, upon examination by the Armed Forces, to be not acceptable for service. These men are then counseled by representatives of the Departments of Labor and Health, Education, and Welfare at the Armed Forces Examining and Entrance Stations regarding job opportunities and remedial steps to correct their physical or mental deficiencies.	4,000 local boards throughout the country.	State Director and staff in each of the 50 States and Puerto Rico, Guam, Virgin Islands, the Canal Zone, District of Columbia, and New York City.	National Headquarters Selective Service System, 1724 F Street NW., Washington, D.C. 20435.

All Federal programs listed in this booklet are available to all without regard to race, creed, color, sex, or national origin.

Cooperative Extension Work: U.S. Department of Agriculture and State Land-Grant Universities Cooperating

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THE SUBCOMMITTEE

The Subcommittee on Transition from School to Work of the Interdepartmental Committee on Children and Youth is responsible for and, in cooperation with other Federal agencies, prepared this publication. The subcommittee members include:

U.S. Department of Agriculture
- Robert R. Pinches, Federal Extension Service, Chairman, Subcommittee on Transition from School to Work
- Jack G. Heintzelman, Forest Service

U.S. Department of Health, Education, and Welfare
- Lane Ash, Vocational and Technical Education, Office of Education
- Rosemary George, Compensatory Education, Office of Education
- Harold J. Reed, Guidance and Personnel, Office of Education
- Frank Sievers, Guidance and Counseling, Office of Education
- Bettina Weary, Plans and Supplementary Centers, Office of Education
- Barbara H. Kemp, Vocational and Technical Education, Office of Education
- Barbara C. Coughlan, Welfare Administration
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- Will Wolstein, Children's Bureau
- Thomas J. Prather, Children's Bureau
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- Helen Hamer, Bureau of Family Services
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- Erdman Palmore, Social Security Administration
- Mary E. Blake, Executive Secretary, Interdepartmental Committee on Children and Youth

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- Evelyn Murray, Bureau of Employment Security
- Jane G. Perry, Bureau of Labor Standards

U.S. Department of the Interior
- James E. Freelon, Bureau of Indian Affairs

Office of Economic Opportunity
- Gwendolyn A. Bullock, Community Action Program
- Stephney Keyser, Job Corps

VT 013 880
BARNEY, JACQUELINE D.
EVALUATION OF TEACHING THROUGH UTILIZATION OF VIDEOTAPES: PRESERVICE AND INSERVICE.

DELAWARE UNIV., NEWARK. COLL. OF HOME ECONOMICS.
DELAWARE DEPT. OF PUBLIC INSTRUCTION, DOVER. DIV. OF OCCUPATIONAL RESEARCH
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 71 59P.

DESCRIPTORS - *HOME ECONOMICS EDUCATION; *TEACHER EDUCATION; PRESERVICE EDUCATION; INSERVICE TEACHER EDUCATION; *TEACHING TECHNIQUES; *VIDEO TAPE RECORDINGS; MICROTEACHING; RELEVANCE (EDUCATION); HOME ECONOMICS TEACHERS; STUDENT TEACHERS; EDUCATIONAL RESEARCH; TEACHER EVALUATION

ABSTRACT - TO INCREASE THE EFFICIENCY, RELEVANCY, AND EFFECTIVENESS OF PRESERVICE AND INSERVICE HOME ECONOMICS TEACHER EDUCATION, A 1-YEAR PROJECT WAS PLANNED TO INCORPORATE VIDEOTAPE INTO FIVE EXISTING TEACHER EDUCATION COURSES OR PROGRAMS. HOWEVER, DELAYS IN RELEASE OF FUNDS AND ACQUISITION OF APPROPRIATE EQUIPMENT NECESSITATED ADJUSTMENTS IN THE PROJECT SCHEDULE, AND AS A RESULT, THE VIDEOTAPING PROGRAM WAS IMPLEMENTED IN ONLY THREE OF THE COURSES. THE USE OF THE VIDEOTAPES FOR THE THREE COURSES CONSISTED OF: (1) A 1-SEMESTER MICROTEACHING EXPERIENCE IN WHICH 36 STUDENTS, DIVIDED INTO GROUPS OF NINE, PLANNED, TAUGHT, AND RECEIVED FEEDBACK FOR A 15-MINUTE VIDEOTAPED MICROLESSON, (2) LIMITED MODELING FOR 24 STUDENT TEACHERS AND THEIR SUPERVISORS IN WHICH STUDENTS TAUGHT AND RECEIVED FEEDBACK FOR VIDEOTAPED LESSONS, AND (3) A MINICOURSE IN WHICH PRACTICING TEACHERS, GRADUATE STUDENTS, AND OTHER EDUCATIONAL PERSONNEL RECEIVED INSTRUCTION REGARDING THE USE OF VIDEOTAPES. EVALUATION REVEALED THAT THE OBJECTIVES WERE ACHIEVED IN THE THREE COURSES, AND UTILIZATION OF VIDEOTAPES IS EXPECTED TO CONTINUE AS AN INTEGRAL PART OF PRESERVICE AND INSERVICE TEACHER EDUCATION PROGRAMS. MATERIALS USED DURING THE MINICOURSE AND THE PROGRAM EVALUATION DEVICE ARE APPENDED. (SB)

VT 013 880

AUG 27 1971

DELAWARE DEPARTMENT OF PUBLIC INSTRUCTION

OCCUPATIONAL RESEARCH SECTION

PROJECT REPORT

College of Home Economics, University of Delaware
(Agency receiving funds)

Evaluation of Teaching Through Utilization of Videotapes: Preservice and Inservice
(Descriptive title of program)

Project Number	# 90-576-C-70-1
Program Starting Date	September 1970
Program Ending Date	September 1971
Duration of Program	One year Continuation as part of existing home economics education program
Total Funds Granted	$6,875
State (Univ. of Del.) funds matching above request	$2,675

Jacqueline D. Barney
(Signature of Investigator & Reporter)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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EVALUATION OF TEACHING THROUGH UTILIZATION OF VIDEOTAPES:
PRESERVICE AND INSERVICE

ABSTRACT OF PROJECT REPORT

Utilization of videotapes is an effort to improve preservice and inservice home economics teacher education. Planned use is maximal, varied, sequential and comprehensive through its incorporation into existing courses and programs at five levels:

Level	Course or Program	
I	HEE 380	Materials and Approaches course
II	HEE 381	Curriculum course
III	ED 400	Student Teaching program
IV	HEE 466	Special Problems program with Newark Housing Authority providing experience with disadvantaged families
V	Inservice programs	

The proposed videotaping program required the acquisition and maximal use of equipment; comprehensive planning and operation of program in terms of scope, content and sequence; effective means of evaluation; and compilation and analysis of evaluation results. The operational framework, initial materials and evaluative means were devised the summer of 1970. Funds were granted for the program in the fall of 1970. Due to the fact that funds were released late in the fall and necessary equipment was purchased and received at the beginning of the second academic semester, implementation of the program planned for September 1970 was delayed and accordingly altered.

Through the use of university equipment which lacked many of the desired features and was available only on a limited basis, initial steps were taken to introduce the program to and enlist the cooperation of student teaching centers (cooperating teachers and administrative personnel) and to partially implement the program at Levels III and V. Various student teachers were able to benefit from the videotaping experience and described it as invaluable to all teachers as part of their preservice and inservice education.

Upon acquisition and receipt of the equipment to be used expressly for the purposes of this program, further implementation was possible during the spring semester. Preservice education students enrolled in HEE 381 Curriculum participated in microteaching experiences (Level II). Evaluation results indicated the college students developed (1) teaching competences, (2) feelings of confidence regarding the assumption of teachers' roles, (3) an awareness of secondary school students' needs and attitudes and (4) realistic concepts of the total educational system and its operation. During the spring semester, minicourses were conducted for the faculties of the Newark School District and the College of Home Economics at the University of Delaware (Level V). The results of the minicourses were evident in the faculty members' immediate use of videotapes for evaluative and instructional purposes and anticipated future use.

Success in achieving the objectives of the videotaping program at Levels II, III and V indicate the need, value and promise of continuing and expanding the program. Utilization of videotapes is expected to continue as an integral part of and provide continuous improvement in preservice and inservice home economics teacher education at the University of Delaware.

EVALUATION OF TEACHING THROUGH UTILIZATION OF VIDEOTAPES:
PRESERVICE AND INSERVICE

PROJECT REPORT

Statement of Problem: Utilization of videotapes is an effort to increase the efficiency, relevancy and effectiveness of preservice and inservice home economics teacher education. Planned use is maximal, varied, sequential and comprehensive through its incorporation into five existing teacher education courses and programs. Adequate funds and the acquisition of appropriate equipment to implement the plans were delayed. Implementation therefore was partial and altered, coinciding with the university calendar and the home economics education curriculum, to achieve the goal and objectives of the proposed program and to determine and facilitate continuation and/or expansion of the videotaping program as an integral part of teacher education.

Goal: To improve preservice and inservice teacher education in the College of Home Economics at the University of Delaware.

Objectives:

1. To enable sophomore students with varied professional interests to develop some teaching competences through actual experience and/or evaluative analysis and to gain self direction in their academic and vocational pursuits.

2. To provide the opportunity to simultaneously study and apply theoretical foundations and skills of teaching and, thereby, fully develop the individual's ability to effectively perceive and function in the teacher's role.

3. To refine teaching competences of preservice teachers; promote more effective interaction among preservice teacher, inservice cooperating teacher and university supervisor; and further the education of inservice home economics teachers.

4. To provide students with an observational record of the conditions and behavior of the disadvantaged in their homes and promote the development of expertise in working with such families.

5. To encourage self-evaluation and improvement among practicing and/or cooperating teachers.

6. To evaluate the program at each level and submit a report to the State Department of Public Instruction, Occupational Research Section, upon completion of the first year of operation.

Planned Procedures: In order to achieve the above objectives, the original plan was to incorporate the use of videotapes into existing preservice and inservice courses or programs at five sequential levels (corresponding to Objectives 1 - 5). Evaluative results are compiled and analyzed in this report in fulfillment of Objective 6. The original plan was....

1. As part of HEE 380 Materials and Approaches course (Level I), to conduct "microteaching cycle and feedback system" experience with limited number of students (dependent upon interest and class size).

2. As part of HEE 381 Curriculum course (Level II), to conduct "microteaching cycle and feedback system" experience with all class members.

3. As part of ED 400 Student Teaching program (Level III), to videotape segments of actual classroom interaction (preservice and inservice teachers) and employ feedback system with

   a. Preservice teacher, inservice teacher and/or university supervisor.
   b. Preservice teachers (seminar class) and university instructor - form of perceptual modeling.

4. As part of HEE 466 Special Problems program with the Newark Housing Authority (Level IV), to videotape family-consultant interaction and employ feedback system with

   a. Individual student consultant and instructor form of microteaching referred to as microconsulting.
   b. HEE 466 class members and instructor - form of perceptual modeling.

5. As part of inservice programs (Level V), to conduct "minicourses" or workshops - form of perceptual modeling.

6. To compile and analyze evaluation results for each level at the completion of program's first year of operation.

In brief, the planned use of videotapes is illustrated in the following chart:

Level	Course or Program	Predominant Use
I	HEE 380 Materials and Approaches	Microteaching
II	HEE 381 Curriculum	Microteaching
III	ED 400 Student Teaching	Modeling
IV	HEE 466 Special Problem: Disadv.	Microconsulting
V	Inservice Programs	Minicourse

Each use was unique and appropriate to the sequence level and, accordingly, was treated as an entity in its planned operation and evaluation. In compliance with current research findings, all uses were characterized by minimal basic elements necessary for effectiveness:

1. Desired competences or skills identified in observable behavioral terms prior to taping and/or observation.

2. Feedback system of observations and analyses with supervision.

3. Use of evaluative analyses devices and self-evaluation as appropriate.

Adjusted Procedures: The delay in the release of funds and the acquisition of appropriate equipment prohibited full implementation as planned for September 1970 and necessitated continuous alterations of the original operational plans. Through the use of university equipment which lacked many of the desired features and was available only on a limited basis, the home economics education staff was able to partially implement the program in the fall and further implement it during the spring semester. The continuous revision of operational procedures and the use of university equipment caused problems in (1) scheduling,

(2) making thorough and comprehensive arrangements with appropriate personnel for taping and viewing and (3) including the minimal basic elements in all videotaping experiences. In spite of the detrimental effect of these problems on the total scope and operation of the program, flexibility was maintained to satisfactorily effect the plan at three levels during the first year's operation. As a result, directives to resolve or diminish such problems and a sound foundation for continuation and improvement of the program were established.

Adjustments in the original plans were made considering the primary purpose of the program, the university calendar, the schedules of personnel and students involved, availability of equipment, the feasibility of including the minimal basic elements in all videotaping experiences and the need for a sound foundation to continue the program. The videotaping program was instituted during the fall semester in a piecemeal manner and more fully implemented in the spring of 1971 when the desired equipment arrived. In brief, the program's first year of operation is illustrated in the following chart:

Level	Course or Program	Use of V-Tapes	Participants
I	HEE 380 Materials and Approaches	none	0
II	HEE 381 Curriculum	Microteaching	36
III	ED 400 Student Teaching	Limited modeling	24
IV	HEE 466 Special Problem: Disadv.	none	0
V	Inservice Programs	Minicourse	30

Common to and an integral part of all uses of the videotapes was a feedback system of observations and evaluative analyses with supervision. In addition, evaluation data regarding the total videotaping program's effectiveness was secured, compiled and reviewed in the following forms:

1. Evaluative analysis devices
2. Verbal and/or written evaluations by students and instructors
3. Anecdotal reports by students and instructors

Since each level was treated as an entity in its operation and evaluation, the procedures and results specific to each level are described accordingly.

LEVEL I

The size of the HEE 380 Materials and Approaches classes during the fall and spring semesters and the lack of the desired equipment posed insurmountable problems. Participation of class members even on a limited basis was not feasible during the videotaping program's inception. Inadequate coordination and availability of personnel and equipment to comprehensively structure and direct the videotaping experience appropriate to this level was the greatest hindrance. Such an experience, however, can enable sophomore students to develop some teaching competences and to gain self direction in their academic and vocational pursuits. This possible contribution to the improvement of preservice teacher education, therefore, warrants serious consideration and effort for instituting this aspect of the videotaping program in the future.

LEVEL II

As part of the HEE 381 Curriculum course, a complete microteaching experience was conducted for all class members during the spring semester. This experience

was designed to include the minimal basic elements through the cooperation of the Home Economics Education and the Christiana Junior High School personnel in Newark, Delaware. Primary responsibility for the program's operation at this level lay with Mrs. Jacqueline D. Barney, the instructor of the college course, and Mrs. Karen Cook, the junior high school home economics teacher.

Procedures: The entire HEE 381 class of 36 students, grouped into teams of 9, participated in the complete microteaching cycle:

1. Preparation regarding
   a. Operational procedures
   b. Identification of desired teaching competences in observable behavioral terms
   c. Planning of 15-minute microlesson consisting of a single concept

2. First teach at the University of Delaware
   a. To peers (other team members) in HEE 381
   b. Taping of microlesson

3. Feedback analysis
   a. With supervisor, Mrs. Barney
   b. Self-evaluation
   c. Use of evaluative device (see Appendix A, device index #1B)

4. Second teach at Christiana Junior High School
   a. To 5 randomly selected male and/or female junior high school students
   b. Taping of microlesson

5. Feedback analysis
   a. With supervisor, Mrs. Barney
   b. Self-evaluation
   c. Use of evaluative device (see Appendix A, device index #1B)
   d. Students' evaluation of videotaping program (see Appendix C)

The microteaching teams were scheduled for their videotaping experiences during the latter half of the course and the spring semester, so the equipment could be used to tape student teachers during the first half of the semester (Level III). Completing the steps of the microteaching cycle in sequence was mandatory and accomplished in all 36 cases. The timing between steps 2 and 3 and steps 4 and 5 and the location of playback (university or junior high school) varied, however, according to the schedules and convenience of those involved in each microteaching experience and the availability of equipment. Since previous research findings indicate immediacy of feedback has no effect on student gain, this variable procedure was justified. Upon completion of the microteaching experiences, evaluation data for Level II were compiled and analyzed.

Results: The videotaping program was evaluated by the 36 participants at this level. Additional data were secured through anecdotal reports and a review of the feedback analysis forms completed for each HEE 381 student (see Appendix A, device index #1B). The ranges of responses on the program evaluation forms (see Appendix C) are indicated in Tables I, II and III.

The microteaching situations and the taped behaviors are described in Table I. The responses to items #1-5 are descriptive ratings determined by placement,

on a five-point scale, between two adjectives. The adjectives to the left (1-2 pole) are the desired results or conditions, and the adjectives on the 4-5 pole are less desirable. The significance level for the percentage of responses is arbitrarily established at 50 percent. Examination of the percentages of responses and the means in Table I reveals that descriptive ratings on all items are significantly weighted in the direction of the desired results or conditions (1-2 pole). The microteaching situations and taped teaching, therefore, were significantly realistic and comprehensive. The taped behaviors of teachers and students were considered significantly representative rather than reflecting reactions to the camera. Viewing the taped behavior was particularly meaningful to the HEE 381 students.

In spite of the fact that 55.17 percent of the responses fell within the 1-2 pole, students tended to rate the teaching situation (item #1) as being somewhat unrealistic or unnatural. This finding verifies the fact that microteaching provides only simulations of actual teaching situations and includes all aspects of teaching on a small scale ("micro"). Microteaching serves as an introduction and supplement to, not a replacement or exact replica of, actual teaching or student teaching. The means and distributions of responses to items #4 and #5 are also interesting. Students tended to regard the taped behaviors (item #4) as being somewhat representative. The distribution of responses indicates, however, that true or total representation is incomplete. This finding can be attributed to the nature and purpose of microteaching experiences as previously mentioned. Some students reported that they were nervous and that their microteaching experience did not accurately reflect their capabilities. These reports could also account for the variation in responses to item #4. The value of observing the tapes is noted in the overwhelmingly favorable responses to item #5. This finding supports the conclusion that the purposes of the microteaching experiences and the videotaping program at this level were achieved.

Responses to items #6-13 indicate students' preferences regarding the structure of the feedback analysis. Since microteaching was students' first and only exposure to videotaping, they were instructed to reply only to those items which applied to them or they felt capable of answering. Many students reported they had no preference or no basis for a preference, and others indicated they preferred both (combination) of the choices in these items. These factors account for the percentage of responses in the N.R. or N.P. category, particularly for item #6. The significance level for percentage of responses is arbitrarily established at 50 percent.

Examination of Table II reveals students' strong preferences. A significant number of students preferred a longitudinal study of a teacher's behavior as opposed to a single observation (item #7). The participants recommended more taping experiences (beyond first and second teach) for HEE 381 students if possible in the future. Feedback analysis met minimum requirements -- analysis with supervisor and use of evaluative device -- and also included informal discussion. The distribution of responses to item #9 indicates significant preference for both structured and informal discussion. An overwhelming majority of students preferred the analysis of their tapes be conducted with others, especially their supervisor (items #10 and #11). This preference seems to support previous research findings that students tend to gain more from feedback analyses with supervision. Playbacks were immediate and with a small group as opposed to a large group. Responses to items #12 and #13 may, therefore, be

TABLE I

Description of Taped Teaching

Range and Mean of Responses

	Percentage of Responses						Mean
	N.R.	1	2	3	4	5	
1. Teaching situation		realistic----------				unnatural	
	0.00	13.79	41.38	34.48	3.45	6.90	2.48
2. Reaction to camera		oblivious----------		aware----------		extreme	
a. Teacher	3.45	27.59	34.48	27.59	6.90	0.00	2.14
b. Student	6.90	27.59	17.24	34.48	10.34	3.45	2.41
3. Taped teaching		comprehensive----------				fragmented	
	10.34	37.93	27.59	17.24	6.90	0.00	1.92
4. Taped behavior		representative----------				unusual	
a. Teacher	6.90	31.03	31.03	31.03	0.00	0.00	2.00
b. Student	10.34	20.69	31.03	34.48	3.45	0.00	2.23
c. Interaction	10.34	31.03	27.59	31.03	0.00	0.00	2.00
5. Behavior as viewed		meaningful----------				irrelevant	
a. Teacher	17.24	55.17	17.24	6.90	3.45	0.00	1.33
b. Student	17.24	41.38	24.14	6.90	6.90	0.00	1.88
c. Interaction	24.14	41.38	20.69	13.79	0.00	0.00	1.64

N.R. = no response

Mean = calculated on basis of total responses;
N.R. category not considered

TABLE II

Structure of Feedback Analysis : Degree of Preference

Percentage of Responses

		%age Pref.	N.R. N.P.	%age Pref.		
6	self-tape	51.72	48.28	0.00	model tape	6
7	single tape/ one teacher	6.90	17.24	75.86	several tapes/ same teacher	7
8	same teacher	48.28	10.34	41.38	different tchrs.	8
9	structured playback	55.17	17.24	27.59	unstructured discussion	9
10	analysis by self alone	17.24	10.34	72.41	analysis with others	10
11	analysis with supervisor	72.41	13.79	13.79	analysis with peers	11
12	analysis with small group	82.76	10.34	6.90	analysis with large group	12
13	immediate feedback	72.41	13.79	13.79	delayed feedback	13

N.R.
N.P. = no response; no preference

interpreted as supportive of these practices and/or indicative of the lack of bases for comparison. These findings lead the reporter to recommend continuation of the feedback analysis as conducted this year.

Table III indicates the degree to which students felt they achieved desired behaviors or developed teaching competences. Responses are qualitative ratings made on a four-point scale ranging from "not accomplished" (0 response) to "excellent" (3 response). The significance level for the percentage of responses is arbitrarily established at 50 percent.

Examination of the means in Table III reveals that students tended to rate their achievement of all desired behaviors as average (2 response) or excellent (3 response). The percentages of responses also indicate significantly high levels of achievement on all items. Responses to item #19 indicate students particularly valued the microteaching experience as a means of recognizing and evaluating individual mannerisms and idiosyncrasies prevalent in their teaching behaviors. Distributions of responses to items #23 and #24 indicate students gained significant degrees of self-confidence as a result of the microteaching experiences. Item #27 is weak; it was intended to determine the degree of skill in providing consultant services at Level IV and, at Level II, was interpreted ambiguously. HEE 381 students seemed to be identifying the skill they demonstrated in feedback analysis sessions. The behavioral results of the videotaping program reported by the participants are significantly positive.

Students viewed the total microteaching experience as beneficial in spite of minor limitations. Descriptive comments which repeatedly appeared on the evaluation forms include:

"... unequalled opportunity to objectively see and hear myself as others do."

"... really helped me to understand myself better."

"I have increased confidence in my teaching abilities."

"... gained self-confidence in teaching as well as the actual 'doing' of a lesson."

"... provided chance to be in a more realistic setting."

"... marvelous opportunity to put theory into practice."

"... first experience with live kids."

"Facing junior high school students enabled me to judge and improve my ability to interact."

"... first teaching situation in actual school setting."

"... invaluable in pointing out limitations and strengths and in promoting self-improvement."

"... opportunity to be exposed to student teaching situation."

"... pointed out that how you feel isn't always related or successfully communicated to others."

TABLE III

Resultant Student Behavior : Degree of Accomplishment

Range and Mean of Responses

	Percentage of Responses					Mean
	N.R.	Not Accom-plished	Poor	Ave.	Ex-cellent	
14. Identify value of skills	0.00	0.00	3.45	27.59	68.97	2.66
15. Effectively evaluate skills	3.45	0.00	0.00	41.38	55.17	2.57
16. Identify specific competences	0.00	3.45	3.45	44.83	48.28	2.38
17. Develop specific competences	3.45	6.90	0.00	62.07	27.59	2.14
18. Improve own teaching	0.00	0.00	0.00	37.93	62.07	2.62
19. Recognize individual idiosyncrasies	0.00	0.00	0.00	3.45	96.55	2.97
20. Objectively analyze teaching situation	0.00	10.34	6.90	55.17	27.59	2.00
21. Use different means of communication	3.45	0.00	3.45	44.83	48.28	2.46
22. Correct objectional behavior	3.45	0.00	3.45	51.17	41.38	2.39
23. Gain self confidence	0.00	0.00	3.45	72.41	24.14	2.21
24. Feel capable of facing group	0.00	3.45	0.00	62.07	34.48	2.28
25. Can readily assume teacher role	0.00	3.45	3.45	72.41	20.69	2.10
26. Effectively give direction	0.00	3.45	0.00	55.17	41.38	2.34
27. Function effectively in conference	10.34	10.34	0.00	58.62	20.69	2.00
28. Improve self	10.34	0.00	0.00	41.38	48.28	2.54

N.R. = no response
Mean = calculated on basis of total responses;
N.R. category not considered

Participants recognized various limitations of the videotaping program at this level. Many criticized the simulated nature of the microteaching situation. They identified the lack of an opportunity to "get to know" the junior high school students as being a drawback. The situations were reportedly "staged" and "mock set-ups" and thereby unrealistic. At the same time, students realized this situation was unavoidable and intentional and stated that "its use as an educational experience was not hampered." Students tended to decry the limited teaching time, number of tapings, number of junior high school students taught, and length of feedback analysis sessions. Such reactions can be interpreted as favorable. They are evidence of enthusiasm for and anxious anticipation of gaining "real" teaching experience, which may have resulted from microteaching. Previously reported findings indicate students accomplished the objectives of the program and considered the experience invaluable. In addition, a review and comparison of evaluative analysis devices (see Appendix A, device index #1B) completed for individual's first and second teach provides evidence that progress and improvement in the development of teaching competences was made by all participants. Student criticism may result from the fact that they desire "more of a good thing."

On the basis of students' written suggestions and anecdotal reports, the following recommendations are made:

1. The microteaching experience, with at least the scope and depth of this year's program, should be continued as part of the HEE 381 Curriculum course.

2. The number of tapings and the number or length of feedback analysis sessions per tape should be increased if appropriate and feasible.

3. Suggested means of expanding the scope and depth of the microteaching experience should be considered for future implementation:

   a. Microteaching in individual's assigned student teaching center.
   b. Larger group analyses of tapes.
   c. Perceptual modeling as part of preparation for or feedback analysis in the microteaching experience.
   d. Behaviors of teacher and students taped through the use of two cameras and interaction more comprehensively and objectively analyzed.

4. Experience in using videotapes for instructional purposes may be provided at this level and thereby improve preservice teacher education.

5. Previous videotaping experiences (e.g. in HEE 380) would promote greater sequential and progressive use at Level II.

6. Personnel operating equipment should be more readily available, so the supervisor is free to coordinate and supervise the total experience. Personnel with full responsibility for the scheduling, maintenance, transportation and operation of equipment are needed.

LEVEL III

As part of the ED 400 Student Teaching program, taping experiences were provided on a limited basis during the fall and spring semesters. The college supervisors arranged and conducted the experience for their respective student teachers as appropriate and possible.

Procedures: The personnel of student teaching centers were contacted to enlist their support and cooperation. Cooperating teachers were briefed on the purposes and operation of the videotaping program at this level. Time and convenience of supervisors and availability of equipment limited the number of student teachers participating to 24, the number of taping experiences per student and the degree to which the requirements for each experience were met. As a result, the design and frequency of taping experiences was somewhat variable. Through the training and cooperation of college supervisors, however, all the experiences were designed and conducted to include the minimal basic elements. The taping experience for each student consisted of:

1. Preparation of student and cooperating teacher regarding
   a. Operational procedures
   b. Identification of desired teaching competences in observable behavioral terms.

2. Taping of actual teaching
   a. In student teaching center classroom
   b. Total lesson on demonstration
   c. Minimum: one segment of teaching

3. Feedback analysis
   a. With supervisor and/or cooperating teacher
   b. Self-evaluation
   c. Use of evaluative devices as appropriate (see Appendix A, device index).

4. Additional tapings and feedback analysis (optional)
   a. Same or different type of lessons and/or students
   b. Comparison with previously taped performance

The experience was considered of primary importance. Continuous effort was put forth to extend the experience to more students more times. Due to this fact, the variation among experiences and the limited number of participants, evaluative information at this level was gained through anecdotal reports from student teachers, cooperating teachers, college supervisors, and other involved personnel.

Results: The use of videotapes at this level benefitted the home economics teacher education program and the 1970-71 participants. The 24 student teachers, their respective cooperating teachers and supervisors agreed that seeing oneself in action and objectively evaluating one's own behavior are invaluable experiences in preservice and inservice teacher education. A number of participants recognized the value of periodic tapings (longitudinal study) to provide a basis for comparison and to determine progress in the development of teaching competences. Student teachers often commented,

"What a revealing experience!"

"If only we had more of this!"

"I'd love to have done this sooner...in HEE 380 or 381...and then again... now."

Many student teachers identified their desire and the need to share tapes with one another and with future student teachers (cross-sectional study). This suggested use of videotapes, a form of perceptual modeling, was originally planned at this level. The shortened semester and lack of time for adequate planning and coordination prohibited implementation this year. Providing this type of perceptual modeling experience as part of a regular student teachers' seminar may be in the offing next year and is strongly recommended. One caution prevails, however, in any modeling experience. Observers should implicitly understand that the model behavior is provided as a means of analyzing principles of behavior and not as behavior to emulate or duplicate in a particular situation.

According to reports, effective interaction among preservice teachers, inservice cooperating teachers and university supervisors was promoted through the use of videotapes at this level. The feedback analyses in most cases were accomplished through enhanced communication during, and provided increased objectivity in, the three-way conferences (student teacher, cooperating teacher and college supervisor). Cooperating teachers seemed particularly excited and verbal regarding the videotaping experience as a means of self-evaluation and improvement. On the basis of limited use this year and the obvious results, they noted the benefit of the experience to themselves as well as their student teachers. They also recommended more structured and comprehensive experiences in order to realize the full potential of videotaping in preservice and inservice teacher education.

A degree of operational difficulties were anticipated, encountered and satisfactorily overcome. Such difficulties were present in other levels but were particularly prevalent in Level III. For example, student teachers, cooperating teachers and high school students demonstrated various reactions to the videotaping process, especially if this was their first exposure to the equipment and/or this type of experience. Some student teachers and high school students were "camera-hams," exhibited "camera-shyness" or seemed extremely curious. In a few isolated cases, videotaping seemed to be threatening, distracting or overwhelming. As a result, taped behavior tended to be unrealistic or unnatural. This problem was alleviated or overcome by one or a combination of the following practices:

1. Adequately preparing taped subjects and school personnel in advance.

2. Setting up equipment before high school students entered the room or period began.

3. Arranging and operating equipment to be as unobtrusive as possible (e.g. monitor screen turned off until needed, equipment away from traffic areas).

4. Playing tape of students to students either before or after taping student teacher.

5. Repeating experience as many times as possible.

Transporting equipment to and within the student teaching centers was a problem, especially during the fall semester when the cumbersome university equipment

was used. The new equipment available in the spring had greater portability, but was heavy for carrying any distance or to another floor. It is appropriate to note here that the purchased equipment has certain features, such as being somewhat portable, for the specific purposes of the videotaping program. Whereas equipment with even greater portability could have been selected, it lacked other desired features (e.g. facilities for immediate playback during taping sessions and "stop-action" viewing) that are part of the purchased equipment. The problem of transporting was occasionally alleviated with the use of a university station wagon and the assistance of high school and university personnel. Ideal solutions warranting attention require the acquisition of:

1. a mobile unit expressly for videotaping program,
2. an operator with primary responsibility for maintenance, operation and transportation of equipment and/or
3. cooperative efforts providing use of high school videotaping equipment where and when available.

During the 1970-71 academic year, videotaping experiences were conducted for the home economics student teachers at Alexis I. DuPont Senior High School, A.I. DuPont Middle School, Dover High School and Christiana Junior High School. These experiences, controlled and supervised by the respective public school personnel, were primarily for instructional rather than self-evaluative purposes. Control and supervision by the university supervisor and primary emphasis on self-evaluation are recommended in the above mentioned cooperative efforts (3).

The general consensus of opinion was that any encumbrances or drawbacks were minor and far outweighed by the advantages of the videotaping experience. Continuation and expansion of the program were not only favored, but ardently encouraged by the participants at this level.

LEVEL IV

The nature of the HEE 466 Special Problems program with the Newark Housing Authority and the circumstances prevalent during the 1970-71 academic year prohibited the use of videotapes at Level IV. The HEE 466 program was conducted during the second halves of the fall and spring semesters for seniors who completed their student teaching during the first half of each semester. Each HEE 466 student functioned as a consultant to individual families and a teacher of a group session in private residences of the housing authority. Establishing and maintaining effective rapport between the student and the disadvantaged families was crucial and one of the major purposes of the HEE 466 program. The following circumstances led to the decision to forego the use of videotapes at this level:

1. Problems in the usual operation of the HEE 466 program, created by the shortened semesters this year, would have been compounded by videotaping.

2. The visitation schedules of each student varied; residents were usually unreliable in keeping appointments. As a result, scheduling the videotaping equipment and the personnel to operate it was not practicable.

3. The videotaping equipment would be an obstruction in private residences with any number of people present, especially in the fall when the cumbersome university equipment was used.

4. Considering the current attitudes of residents and the general circumstances, the college supervisor and students believed the use of videotapes would be detrimental to the rapport between students and families, thereby, defeating one of the major purposes of the HEE 466 program.

The educational value of videotaping consultant and/or teaching sessions with the disadvantaged is still undisputed, despite the fact that the practice was judged inappropriate and impractical for the HEE 466 program this year. In the past, audiotapes of the housing authority activities have been used successfully in the course. Evaluative analysis devices for developing consulting competences (critique forms for conferences) were designed at Ohio State University for use with videotapes. These devices were adapted and successfully employed this year by HEE 466 students (with no videotapes). All indications are that videotapes can be used innovatively and effectively to promote the development of competences in working with the disadvantaged or special students of all types. The promise and possibility of such use needs to be considered and investigated thoroughly. Implementing the videotaping program at Level IV, as part of the HEE 466 program, may continue to be inappropriate and impractical. Changes in the HEE 466 program's purpose and operation may be forthcoming, however, or other means (courses or programs) to achieve the same end through the use of videotapes may be developed. Future implementation of the videotaping program and achievement of the objectives at Level IV demand the attention of the home economics education staff.

LEVEL V

As part of the home economics education inservice program, instruction regarding the use of videotapes was provided for practicing teachers, selected graduate students and other educational personnel. The purpose of such instruction was to encourage self-evaluation and improvement among Delaware's teachers.

Procedures: Instruction regarding the use of videotapes was both informal and formal. Informal instruction was gained by home economics teachers and various other secondary school personnel through their involvement in the implementation of Levels II and III. At regular inservice meetings held at the University of Delaware, home economics cooperating teachers and state supervisors were informed of the total videotaping program plans and purposes. Three minicourses were conducted during the spring semester to provide formal instruction for:

1. Newark School District inservice teachers
2. College of Home Economics faculty members
3. College of Home Economics selected students and instructional aids personnel

Each minicourse included theory and actual practice in using videotapes for instructional and evaluative purposes (see Appendices A and B).

Results: Anecdotal reports and the reporter's observations indicated participation in and effectiveness of the informal instruction at this level was maximal. As a result of their exposure to this videotaping program, many secondary staff members developed keen interest in and initiated the use of videotapes within their respective schools. Thirty teachers, selected students and educational personnel benefitted from the minicourses. More than 50 percent of the College of Home Economics faculty participated and reportedly are enthusiastic and capable of conducting videotaping experiences. The fact that all participants

have used videotapes for instructional and/or evaluative purposes and plan continued and expanded use is evidence of the videotaping program's success at this level. Participants repeatedly expressed interest in further instruction and encouraged the reporter to provide more workshops and minicourses for all Delaware inservice teachers during the summers and/or future academic years.

The results of the total videotaping program as implemented this year are significantly positive. Success in achieving the objectives of the program at Levels II, III and V indicate the need, value and promise of continuing and expanding the program. Recommendations regarding continuation and expansion are made per level in the preceding pages. Utilization of videotapes is expected to continue as an integral part of and provide continuous improvement in preservice and inservice home economics teacher education at the University of Delaware.

APPENDIX A

"THOSE WHO CAN ... TEACH!"
Evaluation of Teaching Competences
Feedback Analysis Devices

University of Delaware
College of Home Economics
Home Economics Education

" Those who can ..... TEACH ! "

Minicourse: Evaluation of Teaching
Instructor: Jacqueline D. Barney

"Those who can ..... Teach !

Minicourse: Evaluation of Teaching

Instructor: Jacqueline D. Barney

JACK-OF-ALL-TRADES ?

A teacher performs many roles and utilizes many skills simultaneously - - - from counseling individual students to promoting good relations among peers, superiors and the public. Classroom teaching may be considered the "focal point"

1. to which other roles contribute,
2. from which other role dimensions emanate and
3. upon which other functions depend.

TEACHING - - - MY BAILIWICK ?

Indeed, the individual teacher is concerned primarily with his performance in the classroom teaching role - - - his effectiveness and success in terms of obvious student gain and the satisfaction subsequently gained by the teacher. The individual teacher continually strives to provide relevant content, meaningful experiences and adequate guidance for students. He makes every effort possible to carefully and comprehensively plan, implement and evaluate. The task is not an easy one, particularly within a complex and rapidly changing society. To keep abreast of current conditions and function effectively, the teacher is forced to be flexible, adapt, adjust - - - in other words, to CONTINUOUSLY EVALUATE AND IMPROVE HIS TEACHING.

DOES THE SHOE FIT ?

Evaluation of teaching is a continuous and self-perpetuating process for every conscientious teacher. The teacher may find himself critically analyzing and subsequently changing his teaching every day or every minute to meet the demands of particular situations and the needs of students. Teachers may discover they evaluate themselves informally and even unconsciously. Teachers who function as a team may find they continually seek and/or receive evaluative input from each other. Still others may direct change in their teaching on the basis of student feedback or informal discussion with fellow teachers.

Some problems are often encountered in evaluation of teaching:

1. Involvement in the many roles of teaching makes demands upon time and energy that might "preferably or best" be spent on evaluating and improving one's teaching. "Establish and maintain priorities!"
2. Due to the facts (a) that evaluation is not structured or consciously completed or (b) that one is so close to the situation, a realistic and objective perspective is difficult to maintain. "Distinguish the forest from the trees!"

3. Various sources (students, peers, administration, consultants) may be utilized to obtain objectivity and additional input, but the structure and means to follow through effectively are lacking. Evaluative input by others can be quite helpful and constructive (rather than threatening or destructive) if secured, offered and used appropriately.

HELP ?

The following suggestions and forms are provided to maximize the individual teacher's efforts in evaluating his teaching and to assist the teacher in avoiding and/or solving the above problems.

I. Accept the following premises:

   A. A teacher simultaneously performs many tasks or demonstrates various competences in classroom teaching.
   B. Clearly identifying specific competences to be demonstrated is prerequisite to effective evaluation.
   C. Although competences may be employed simultaneously, accuracy and objectivity in observation and evaluation are increased by focusing attention on one at a time.

II. Select teaching competence(s) to be analyzed and evaluated on the basis of:

   A. Recognized or anticipated need
   B. Appropriate learning activities (e.g. demonstration or lab)
   C. Interest or curiosity (e.g. general teaching competences to discover specific competence needing attention).

III. Determine sources of evaluative input (observers), inform of selected competence(s) and distribute forms to be used;

A. Students
B. Peers or team members
C. Consultants
D. Administration or superiors
E. Self

IV. (Observers) Become very familiar with elements of selected competence (items on form):

A. Prior to teaching (demonstrating competence) that is to be observed
B. Prior to using form in observation

V. (Observers) Observe and use forms in appropriate manner:

A. Quantitative observation
   1. Tally of behavior frequency within controlled time span
   2. Classification of frequency (frequently, rarely)
B. Qualitative observation
   1. Occurrence and description of behavior (interaction high-order questioning)
   2. Ranking of behavior (excellent, poor)

A. During whole or segment of class
B. At end of single class, unit or year
C. Audio and/or visual tape recording of classroom teaching

VI. (Individual teacher alone or with other observers) Analyze evaluation results:

A. Critical examination of individual or group observations
B. Comparison of observations
C. Identification of competences or elements
   1. Strong ones
   2. Those needing attention

VII. Repeat observations of teaching (V) and subsequent analysis (VI) as many times as desired.

RESULTS ?

The individual teacher will undoubtedly benefit from more structured and thorough evaluation of his teaching, whether he evaluates independently (self-evaluation) or seeks input from others. He may discover strengths and weaknesses. He may confirm previous suspicions or convictions regarding his effectiveness. At any rate, insight and direction are gained by the teacher. He certainly cannot lose! When he gains, his students reap the benefits too!

...."And that's what it's all about, isn't it?"

Evaluation of Teaching

FORMS

Index No.	Competences
1	General teaching competences
2	Set induction
3	Closure
4	Variation of stimulus situation
5	Oral questioning
6	Observation of student verbal response
7	Reinforcement skill
8	Demonstration
9	Illustrating and use of examples
10	Lecture and use of A-V aids
11	Laboratory lessons
12	Teacher behavior in controlling student behavior
13	Interaction analysis of content
14	Interaction analysis of pupil involvement
15	Interaction analysis plus non-verbal dimensions

Evaluative Analysis

16

17

When compiling and analyzing evaluation results from one time to another, the questions on these two forms may offer directives for analyzing and improving one's teaching. They may also help to determine the value of the entire evaluation experience, especially if used as pre- and post-tests.

TEACHER-COURSE EVALUATION

DIRECTIONS: To help your instructor improve his/her teaching effectiveness, please answer the following, being sure to consider each question carefully.

	n/a Excellent-Poor	Comments
I. This instructor demonstrates teaching competence through:		
A. accomplishment of clearly stated objectives	0...1...2...3...4	
B. exposure to recent and current literature	0...1...2...3...4	
C. thorough and up-to-date knowledge of the subject	0...1...2...3...4	
D. planned class periods	0...1...2...3...4	
E. appropriate use of instructional resources (e.g. films, charts, models, field trips, speakers, practicum)	0...1...2...3...4	
F. extends knowledge beyond the textbook	0...1...2...3...4	
G. stimulates independent learning	0...1...2...3...4	
H. encourages critical thinking	0...1...2...3...4	
I. use of appropriate and comprehensive means of evaluating student progress	0...1...2...3...4	
J. sufficient feedback on student progress (e.g. grades, comments, conferences)	0...1...2...3...4	
K. enthusiasm for the subject	0...1...2...3...4	
II. Student-teacher interaction is characterized by:		
A. freedom to ask questions	0...1...2...3...4	
B. acceptance of new and divergent ideas	0...1...2...3...4	
C. mutual respect	0...1...2...3...4	
D. willingness to give individual assistance	0...1...2...3...4	

COMMENTS IN GENERAL - FAVORABLE AND/OR UNFAVORABLE

Source: University of Delaware, College of Home Economics

Teacher's Name

CRITIQUE FORM
TEACHING A COMPLETE LESSON

	HOW WELL ACCOMPLISHED					
	DID NOT ACCOMPLISH	VERY POOR	POOR	AVERAGE	GOOD	EXCELLENT
Did the teacher in the Introduction (SET):						
1. Relate the lesson to the students past knowledge or experience?	0	1	2	3	4	5
2. State specifically what the objective/s were in terms of student behavior and why the objective/s were important to the students?	0	1	2	3	4	5
3. State how the students might achieve the objectives and when they would know that they had achieved them?	0	1	2	3	4	5
Did the teacher in the Presentation:						
4. Talk to the students and not to the instructional materials?	0	1	2	3	4	5
5. Present each idea or step in a logical sequence?	0	1	2	3	4	5
6. Present only one idea, or method of doing an operation, at a time?	0	1	2	3	4	5
7. Present the information or skill with ease?	0	1	2	3	4	5
Did the teacher in the Application:						
8. Observe the students practicing and provide encouragement, correction or additional information?	0	1	2	3	4	5

CRITIQUE FORM
TEACHING A COMPLETE LESSON (cont.)

Teacher's Name _____

	HOW WELL ACCOMPLHISHED					
	DID NOT ACCOMPLISH	VERY POOR	POOR	AVERAGE	GOOD	EXCELLENT
Did the teacher in the Summary (Closure):						
9. Provide an opportunity for the students to show how well they had learned?	0	1	2	3	4	5
10. Have the students summarize the key points rather than doing it himself?	0	1	2	3	4	5
11. Clarify any key points not clarified by the students?	0	1	2	3	4	5
Did the teacher in the lesson:						
12. Use instructional materials that enhanced the lesson?	0	1	2	3	4	5
13. Provide an opportunity for students response and/or participation?	0	1	2	3	4	5
14. Vary the pace and methods of conducting the lesson?	0	1	2	3	4	5
15. React favorably to students' questions, answers, and comments?	0	1	2	3	4	5

Assessment of Micro-Teaching and Video Recording in Vocational and Technical Education, The Center for Vocational and Technical Education, the Ohio State University, 1900 Kenny Road, Columbus, Ohio.

Project 44 - 10/69

Teacher's Name

CRITIQUE FORM
INTRODUCING A LESSON (SET)

The introduction phases of a lesson "sets the state" for student participation in the activity which is to follow. The introduction should help inspire students to accomplish the objectives of the lesson.

The following items will be used to evaluate the teacher's introduction of the lesson.
CIRCLE THE APPROPRIATE NUMBER.....

HOW WELL ACCOMPLISHED

Did the teacher in the introduction:	DID NOT ACCOMPLISH	VERY POOR	POOR	AVERAGE	GOOD	EXCELLENT
1. State specifically what the objective/s of the lesson were in terms of student behavior?	0	1	2	3	4	5
2. State why the objective/s were important in terms of student needs?	0	1	2	3	4	5
3. State how the students might proceed in accomplishing the objective/s?	0	1	2	3	4	5
4. State how the students would know when they had achieved the objective/s?	0	1	2	3	4	5
5. Relate the lesson to the students' prior knowledge and/or experience?	0	1	2	3	4	5
6. React favorably toward the students' questions, answers, and comments?	0	1	2	3	4	5
7. Provide opportunity for students to respond and to participate?	0	1	2	3	4	5
8. Express enthusiasm in the lesson?	0	1	2	3	4	5
9. Use instructional aids?	0	1	2	3	4	5

Assessment of Micro-Teaching and Video Recording in Vocational and Technical Education, the Center for Vocational and Technical Education, the Ohio State University, 1900 Kenny Road, Columbus, Ohio.

TEACHER _____ SUBJECT AREA _____
OBSERVER _____
TEACH _____ RETEACH _____

PRE-INSTRUCTIONAL PROCEDURES (SET)	WEAK	BELOW AVERAGE	AVERAGE	STRONG	SUPERIOR	OUTSTANDING	TRULY EXCEPTIONAL
INTEREST							
1. The teacher's method of introducing the lesson was in itself interesting.	1	2	3	4	5	6	7
2. The teacher's method of introducing the lesson helped you become interested in the main part of the lesson.	1	2	3	4	5	6	7
COGNITIVE LINK							
3. The relationship or connection between the introduction and the body of the lesson were clear.	1	2	3	4	5	6	7
UNDERSTANDING							
4. The teacher gave the students some guides or cues in the introduction which were helpful in understanding the lesson.	1	2	3	4	5	6	7
MEMORY (RETENTION)							
5. The teacher's introduction will help you remember the material presented in the body of the lesson.	1	2	3	4	5	6	7

COMMENTS:

Source: Stanford University, School of Education

TEACHER _____ SUBJECT _____
OBSERVER _____
TEACH _____ RETEACH _____

CLOSURE	WEAK	BELOW AVERAGE	AVERAGE	STRONG	SUPERIOR	OUTSTANDING	TRULY EXCEPTIONAL
1. The teacher provided consolidation of concepts and ideas which were covered before moving to subsequent learnings.	1	2	3	4	5	6	7
2. The teacher reviewed the major points and ideas throughout the lesson.	1	2	3	4	5	6	7
3. The teacher made connections between previously known material, currently presented material, and future learnings.	1	2	3	4	5	6	7
4. The teacher allowed students the opportunity to demonstrate what they have learned, e.g., provide for pupil summary or provide for pupil practice of new learning.	1	2	3	4	5	6	7
5. The teacher, or students, summarized the class discussion including the major points which were covered by the teacher and class.	1	2	3	4	5	6	7

COMMENTS:

Source: Stanford University, School of Education

TEACHER _____ SUBJECT AREA _____
OBSERVER _____
TEACH _____ RETEACH _____

VARIATION OF STIMULUS SITUATION

	WEAK	BELOW AVERAGE	AVERAGE	STRONG	SUPERIOR	OUTSTANDING	TRULY EXCEPTIONAL
TEACHER MOVEMENTS 1. At various times during the lesson, the teacher was noted in the left, right, forward, and back of the teaching space.	1	2	3	4	5	6	7
TEACHER GESTURES 2. The teacher used gestures (hand, body, and head) to help convey extra meaning in the presentation of the lesson.	1	2	3	4	5	6	7
FOCUSING 3. When the teacher wanted to emphasize a point, it was clearly stressed through the use of gestures (e.g. pointing, banging on the board, etc.) or through the use of verbal expressions (e.g. "Listen closely," "Watch this, " etc.) or by combining both gestural and verbal acts.	1	2	3	4	5	6	7
INTERACTIONS 4. The teacher varied the kind of participation required of the students. That is, students could be directly called on, group questions were asked, student-student interchange could occur, students could role-play, go to the board, etc. The teacher is to mix these various techniques.	1	2	3	4	5	6	7
PAUSING 5. The teacher gave the students time to think or get ready for new ideas by using silence. That is, all teacher activity ceases for short time periods.	1	2	3	4	5	6	7
ORAL-VISUAL SWITCHING 6. The teacher uses visual material (words on blackboard, objects, pictures, etc.) in such a way that the student must look to get the information. That is, the teacher doesn't say what the object of word is but refers to it in the lesson, making the student look, not listen to what is going on.	1	2	3	4	5	6	7

Source: Stanford University, School of Education

Teacher's Name

CRITIQUE FORM
ORAL QUESTIONING

A question is an act or instance of asking. Oral questioning promotes mental activity on the part of the student by providing an opportunity for them to be actively involved in the lesson.

The effective use of questioning by the teacher increases the student's freedom of action, affords the student more opportunities to express ideas, and makes the student less dependent on the teacher.

CIRCLE THE APPROPRIATE NUMBER.....

HOW WELL ACCOMPLISHED

When using questions during the lesson, did the teacher:	DID NOT ACCOMPLISH	VERY POOR	POOR	AVERAGE	GOOD	EXCELLENT
1. Use questions to draw information from the students?	0	1	2	3	4	5
2. Ask a question, pause to give the students time to think about the question, then call on one student?	0	1	2	3	4	5
3. After calling on a student, provide an opportunity for him to think about the question before requiring him to respond?	0	1	2	3	4	5
4. Present the questions in a logical order?	0	1	2	3	4	5
5. Make an effort to keep from repeating the students' answers?	0	1	2	3	4	5
6. Direct his questions so that each student was given an equal opportunity to participate?	0	1	2	3	4	5
7. React favorably to answers given by students?	0	1	2	3	4	5
8. Ask questions which required more than "yes" and "no" answers?	0	1	2	3	4	5

Teacher's Name

CRITIQUE FORM
ORAL QUESTIONING (continued)

	HOW WELL ACCOMPLISHED					
	DID NOT ACCOMPLISH	VERY POOR	POOR	AVERAGE	GOOD	EXCELLENT
9. Ask questions which the students could relate to their past experience?	0	1	2	3	4	5
10. State the question in clear and concise terms?	0	1	2	3	4	5
11. Require the students to expand and/or clarify their first answers or answers of other students?	0	1	2	3	4	5

Assessment of Micro-Teaching and Video Recording in Vocation and Technical Education, The Center for Vocational and Technical Education, The Ohio State University, 1900 Kenny Road, Columbus, Ohio.

Project 44 - 10/69

THE OBSERVATION OF STUDENT VERBAL RESPONSE

Teachers by their behavior bring out a variety of student verbal responses which may be categorized by the following system. Each category has an abbreviation or initial in parentheses. These initials may be jotted down by the observer as she sees evidence of responses occurring within a certain category. It is suggested that a comment accompany each initial which will give specific information to be used in the conference following the teaching experience.

Cognitive-Memory (C-M) Ideas reproduced as in

Recapitulation (quoting, repetition, recounting, review)
Fact Stating
Clarification of Meaning

Convergent Thinking (CT) Reasoning based on given or remembered data, as in

Logical Conclusion
Explanation

Evaluative Thinking (ET) Value based judgements as in

Unstructured Ratings
Structured Estimates or Choices
Qualified Judgements

Divergent Thinking (DT) Initiative, spontaneity, fluency, originality, flexibility, etc., as in

Elaboration
Divergent Association
Implications
Synthesis

Adapted from Mary Jane Aschner "The Analysis of Verbal Interaction in the Classroom," p. 53 in Theory and Research in Teaching, edited by Arno Bellack. T.C. Columbia, 1963.

TEACHER _____ SUBJECT AREA _____
OBSERVER _____
TEACH _____ RETEACH _____

REINFORCEMENT SKILL

	WEAK	BELOW AVERAGE	AVERAGE	STRONG	SUPERIOR	OUTSTANDING	TRULY EXCEPTIONAL
POSITIVE TEACHER COMMENTS							
1. When a student answered a question correctly or asked a good question, the teacher rewarded him by such words as "Fine," "Excellent," "Good," "Terrific," etc.	1	2	3	4	5	6	7
POSITIVE TEACHER GESTURES							
2. The teacher encourages the students' comments and answers by nonverbal cues such as smiling, nodding his head, writing the student's answer on the blackboard, etc.	1	2	3	4	5	6	7
NEGATIVE TEACHER COMMENTS							
3. The teacher rarely or never discouraged students by use of such comments as "No!" "Wrong!" "That's not it," "Of course not!" or otherwise verbally expressing negative feeling.	1	2	3	4	5	6	7
NEGATIVE TEACHER GESTURES							
4. The teacher rarely or never discouraged students by use of such nonverbal actions as frowning, scowling, expressions of annoyance, impatience, etc.	1	2	3	4	5	6	7
ENTHUSIASM							
5. The teacher's response to the students' questions and comments was enthusiastic.	1	2	3	4	5	6	7

COMMENTS:

Source: Stanford University, School of Education

Teacher's Name

CRITIQUE FORM
DEMONSTRATING A MANIPULATIVE SKILL

In helping the student learn an occupation, the teacher will be presenting new manipulative skills through a method of teaching known as the demonstration. If the teacher has given a good demonstration and the students have been good observers and listeners, the students should be ready to attempt to perform the manipulative skill safely and step-by-step.

The following items will be used to evaluate the teacher's demonstration.
CIRCLE THE APPROPRIATE NUMBER.....

HOW WELL ACCOMPLISHED

Did the teacher in the demonstration:	DID NOT ACCOMPLISH	VERY POOR	POOR	AVERAGE	GOOD	EXCELLENT
1. Have all equipment, tools, and materials ready for use?	0	1	2	3	4	5
2. Talk to the students and not to the tools and materials?	0	1	2	3	4	5
3. Present each step of the procedure, task, skill or operation in a logical sequence?	0	1	2	3	4	5
4. Briefly state what step was to be performed, and then perform it?	0	1	2	3	4	5
5. Position himself and the students so that each step was easily observed?	0	1	2	3	4	5
6. Present only one method of doing the operation or task while stressing the key points so that the task could be completed safely and efficiently?	0	1	2	3	4	5
7. Perform the manipulative skill with ease.	0	1	2	3	4	5

TEACHER_____ SUBJECT FIELD_____
OBSERVER_____
TEACH_____ RETEACH_____

ILLUSTRATING AND USE OF EXAMPLES

	WEAK	BELOW AVERAGE	AVERAGE	STRONG	SUPERIOR	OUTSTANDING	TRULY EXCEPTIONAL
1. The teacher, in his explanation, started with examples and followed with more complex examples, if appropriate, to illustrate his point.	1	2	3	4	5	6	7
2. The teacher used examples which were relevant to the students' past knowledge and experiences.	1	2	3	4	5	6	7
3. The teacher directly related or connected the specific examples with the main ideas or points of the lesson.	1	2	3	4	5	6	7
4. The teacher checked to see if the students understood the main points of the lesson by asking the students to give examples illustrating these points.	1	2	3	4	5	6	7

COMMENTS:

Source: Stanford University, School of Education

LECTURE AND USE OF A-V AIDS

	WEAK	BELOW AVERAGE	AVERAGE	STRONG	SUPERIOR	OUTSTANDING	TRULY EXCELLENT
A-V EFFECTIVENESS							
1. The A-V aid the teacher used helped clarify and emphasize the main ideas of the lecture.	1	2	3	4	5	6	7
CHANGING STIMULUS SITUATION							
2. Throughout the lecture the teacher varied the stimulus situation, e.g. used gestures, pausing techniques, focused students' attention on important points, and moved about during the lecture.	1	2	3	4	5	6	7
CLARITY							
3. The teacher explained ideas and/or presented material in language that was understandable to the student.	1	2	3	4	5	6	7
INSTRUCTIONAL MODE							
4. The lecture method used by the teacher was the best means of attaining the instructional goals.	1	2	3	4	5	6	7
ORGANIZATION							
5. The teacher allotted adequate time for and clearly explained:							
a. the purposes of the lecture (SET)	1	2	3	4	5	6	7
b. the main content of the lecture and	1	2	3	4	5	6	7
c. summarized the main points which were presented in the lecture.	1	2	3	4	5	6	7

Source: Stanford University, School of Education

LABORATORY LESSONS

This evaluation device may be used before, during, and after class.

Are plans prepared to allow for various levels of ability?

Is the laboratory lesson planned far enough in advance to give the students time to be clear about their assignments?

Is every student clear on what the goals are - why the class is having this lab experience?

Is the activity focused upon basic understanding, not just busy work?

Is there subject matter to be learned and is this emphasized rather than just the product being prepared?

Is the activity life-like?

Is an opportunity provided for class members to work out problems which are particularly interesting to them?

Are similarities and differences of new and formerly learned techniques and facts related to today's lesson?

Does the group use the basic steps of problem-solving in planning and carrying out the laboratory experience?

Do students see other situations in which they can apply the understandings gained in today's activity?

Is the amount of time spent in today's activity justified by the results in learning?

Is there an attempt to make use of what has been learned in other fields to clarify or enrich learning in home economics?

Is an opportunity provided for girls to work in groups comparable in size to those they will deal with in out-of-school situations?

Is an opportunity provided for some choice in activity?

Are members of the class given an opportunity to work out plans independently after receiving general instructions?

Are most of the materials and equipment used in the laboratory within the possible economic range of the class members?

Is the teacher alert to the possibilities of substituting materials and improvising equipment if such will be more practical?

Teacher's Name

DIMENSION: CONTROLLING CLASSROOM PUPIL BEHAVIOR

The behavior of teachers to elicit task-oriented pupil behavior, stop non-task oriented pupil behavior and/or reward task-oriented pupil behavior Task-oriented pupil behavior is defined as the attending and participatory behaviors of pupils determined essential to the learning task

TEACHER BEHAVIORS: The Teacher

1. Continuously assesses the attending and participatory behavior of each pupil

2. Directs pupils (independently and together) in a self-appraisal of their task-oriented behavior.

3. Discriminately implements the following controlling behaviors in terms of individual and pupil needs and the influence of the non-task oriented behavior on other students and the project effect of the control technique (ripple effect):

Distance Behaviors - a direct attempt by the teacher to stop the non-task oriented behavior.

a. Point out the deviant behavior.
b. Address the pupil.
c. Remove a distraction.
d. Make a statement to desist.
e. Exhibit non-verbal disapproval.
f. Approach the deviant.

Prompted Reward Behavior - inducing desirable behavior followed by reinforcement of that behavior and ignoring deviant behavior.

a. Reinforce a student's instructional response.
b. Reinforce a response of non-deviant.
c. Reinforce a response of the redirected question to non-deviant.
d. Reinforce the desired behavior.
e. Administer a general reward to the class.

Withholding Sanctions - ignoring non-task oriented behavior when the teacher is aware that it has occurred.

a. Ignore the deviant behavior.

CONTROLLING CLASSROOM PUPIL BEHAVIOR (cont.)

b. Direct a content-related question to the deviant.
c. Direct a question to a non-deviant.
d. Incorporate the deviant into an instructional point.
e. Redirect a question to a non-deviant.
f. Request positive behavior.
g. Positively sanction behavior that might be constructed as deviant.
h. Ask a non-content question.

Teacher Education Task Force - University of Maryland
David B. Young - 1968

CATEGORIES FOR INTERACTION ANALYSIS OF CONTENT

(both teacher and pupils behavior)
(viewed in terms of all categories)

FUNDAMENTALS

1. Structure:
   Examination of "old" knowledge as an end in itself, as in a review; or a clearcut break during development of a new relation or during application of new or old concepts.

2. Techniques:
   While techniques already mastered are in constant use, this category is only to be used when the effect of the behavior is the use or the "how" of old knowledge as an end in itself, such as in a drill or review, or as a clearcut break during development of a new relation or during application of new or old concepts, i.e. a shift in the concern from the new relation or from the particular concepts being applied to preoccupation with the procedures involved.

RELATIONS

3. Deductive:
   The formal proof of a new concept

4. Inductive:
   The informal examination or discovery of a new concept

5. Statement:
   The statement of a new concept

APPLICATIONS

6. Specific subject matter:
   The use of, or practice with, new or old concepts in problems of specific subject matter.

7. Other:
   The use or place of new or old concepts of specific subject matter in other subjects or in discussion of the historical development of subject matter area.

Source: Muriel Wright "Interaction Analysis in the Minnesota National Laboratory Mathematics Field Study" AERA abstract, 1967.

CATEGORIES FOR INTERACTION ANALYSIS OF PUPIL INVOLVEMENT

TEACHER

1. Clarifying, encouraging, summarizing:
Remarks which recognize student, his participation and ideas by incorporating them into classroom interaction.

2. Contacting, checking:
Remarks, usually question, which invite limited participation: asking for information, simple next steps or checking student understanding.

3. Confronting, seeking:
Remarks, usually questions, which invite extensive participation: classifying information, a series of steps, a single step requiring selection and organization of material.

4. Soft or hard challenging, jolting:
Remarks absurd, controversial or questions of comprehensive nature or completely undirected to invite significant participation: in noting relationships, application, in making grand leaps in system development.

5. Informing, lecturing:
Remarks, expository, to provide information or solve problems; also rhetorical questions. These may be continued into a "lecture" period or be met in rapid discussion. Reading answers.

6. Directing:
Remarks assigning particular tasks related to the lesson: homework assignment, a method of recording data, a type of material to use.

PUPIL

7. Receptive, passive:
Remarks by student under direction limited to one-step answers, or trivial agreement, or question initiated without readiness to treat it himself. Reading book or answers.

8. Independent, active:
Remarks by student either as invited and moving more than one step ahead, or a single powerful step, or without invitation to raise a question being willing to treat it himself.

9. Curious, creative:
Remarks by student in which present topic related to other areas of mathematics or to applied fields, to more fundamental concepts, or to a wider family of topics. A fresh topic related to present topic.

10. Silence, confusion, organization:
Behaviors concerned with lesson which cannot be classified 1--9.

Source: Flanders and Wright, AERA abstract, 1967.

INTERACTION ANALYSIS CATEGORIES PLUS NON-VERBAL DIMENSIONS

INDIRECT - DIRECT (VERBAL)	ENCOURAGING - RESTRICTING (NON-VERBAL)
1. Accepts student feeling.	----------
2. Praises or Encourages.	Congruent - Incongruent
3. Uses student idea.	Implement - Perfunctory
4. Asks questions.	Personal - Impersonal
5. Lectures - Gives information.	Responsive - Unresponsive
6. Gives directions	Involve - Dismiss
7. Criticizes or Justifies Authority	Firm - Harsh
8. Student talk (response).	Receptive - Inattentive
9. Student talk (initiated).	Receptive - Inattentive
10. Silence or Confusion.	Comfort - Distress

Encouraging behaviors recorded with a /

Restricting behaviors recorded with a -

ANALYSIS OF EVALUATIONS

Instructions: Complete questions 1 and 2 prior to your first teach.
Complete questions 3 and 4 prior to the reteach.
Complete question 5 after your reteach.

TAKE THIS SHEET WITH YOU TO YOUR SUPERVISORY CONFERENCE THAT YOU SCHEDULE WITH YOUR SUPERVISORS.

1. What is the purpose of your lesson? _____

2. How do you intend to accomplish your purpose? _____

3. How successful was the lesson? (Cite positive and negative examples, if appropriate) _____

4. What changes do you intend to make for the reteach lesson? _____

5. How effective were the changes which you made from the first lesson or teach? _____

Source: Stanford University, School of Education

EVALUATION OF VIDEOTAPING EXPERIENCE

MY EXPERIENCE INCLUDES: *Check circles that apply

Videotaping self.....0
Microteaching.....0
Playback of self tape.....0
Observation and analysis of model tape.....0
Sequence of tapes and playbacks.....0
Feedback analysis with self.....0
cooperating teacher.....0
supervisor.....0
peers.....0

VIDEOTAPING

*Describe taped teaching in general by circling appropriate number.

1. Teaching/learning situation.....realistic 1..2..3..4..5 unnatural

2. Subject(s) reaction to camera.....oblivious .. aware .. extreme
   a. teacher..... 1..2..3..4..5
   b. student..... 1..2..3..4..5

3. Taped segment or teaching....comprehensive. 1..2..3..4..5 fragmented

4. Taped behavior.....representative ..... unusual
   a. teacher..... 1..2..3..4..5
   b. student..... 1..2..3..4..5
   c. interaction..... 1..2..3..4..5

5. Behavior as viewed by observer...meaningful ..... irrelevant
   a. teacher..... 1..2..3..4..5
   b. student..... 1..2..3..4..5
   c. interaction..... 1..2..3..4..5

OBSERVATION AND FEEDBACK ANALYSIS

*Check the appropriate circle for each of the following to indicate which you PREFER or found MORE helpful.

6. 0 .. self tape versus model tape.....0

7. 0 .. single tape of one teacher versus comparing several tapes of same teacher.....0

8. 0 .. comparing tapes of same teacher versus comparing tapes of different teachers.....0

9. 0 .. structured playback with devices versus unstructured discussion.....0

10. 0 .. observing tape by yourself versus analysis with others.....0

11. 0 .. analysis with supervisors versus analysis with peers.....0

12. 0 .. analysis with small group versus analysis with large group.....0

13. 0 .. immediate feedback versus delayed feedback.....0

*Identify the preceding item by number (#6-13) if you wish to comment or qualify a particular choice.

	Did Not Accomplish	Poor	Average	Excellent
14. Identify value and need for teaching and communication skills.....	0	1	2	3
15. Effectively evaluate teaching and communication skills.	0	1	2	3
16. Identify specific competences	0	1	2	3
17. Develop specific competences.	0	1	2	3
18. Improve own teaching.....	0	1	2	3
19. Recognize and evaluate individual mannerisms and idiosyncrasies.....	0	1	2	3
20. Objectively analyze total teaching situation.....	0	1	2	3
21. Realize and use different means of a. communication b. stimulation c. control.....	0	1	2	3
22. Recognize and correct objectional individual characteristics or behavior.....	0	1	2	3
23. Feel confident about my abilities to teach or communicate.....	0	1	2	3

	Did Not Accomplish	Poor	Average	Excellent
24. Feel capable of approaching or facing any group.....	0	1	2	3
25. Can readily assume the role of a teacher or consultant.....	0	1	2	3
26. Effectively give direction to promote learning.....	0	1	2	3
27. Function effectively in conference situation.....	0	1	2	3
28. Recognize and improve individual strengths and limitations.....	0	1	2	3

*Respond freely to the following questions:

29. How was the videotaping experience particularly helpful to you?

30. In what ways was the experience detrimental or limiting?

31. How could the use of videotapes be improved or expanded? (suggestions and recommendations)

Source: University of Delaware, College of Home Economics
Home Economics Education.

APPENDIX B

"DON'T TELL ME ... SHOW ME!"
Use of Videotapes

University of Delaware
College of Home Economics
Home Economics Education

" Don't tell me ..... SHOW ME ! "

Minicourse: Use of Television Tapes
Instructor: Jacqueline D. Barney

"Don't tell me ..... SHOW ME !"
Minicourse: Use of Television Tapes
Instructor: Jacqueline D. Barney

TAKE A LOOK!

The uses of television in education are limited only by one's imagination. ETV programs are scheduled for student viewing in or out of school. Some schools have facilities not only to receive broadcasts from national or local networks, but also to develop and transmit their own live programs from studios to sets in their own district classrooms (closed circuit television). Television tapes, which have been used in sports broadcasting for years (instant replay), are currently receiving wide acclaim in educational circles.

THINK ABOUT IT!

Television tapes are audial and/or visual recordings of action and behavior. The equipment necessary to record and play back includes:

1. Recorder/playback unit
2. Camera
3. Microphone
4. Television monitor or screen

Depending upon the specific features of available equipment, television tapes possess unique characteristics that are not afforded by other recordings of action and behavior (aduiotapes, photos, slides, filmstrips, and movies). Consider what these characteristics are for a moment! Many are self-evident, but more become obvious through use and experimentation! List them ..... then add, as more are discovered!!!

CHARACTERISTIC OF TELEVISION TAPE Possible with?	Audio tape	Photo FS Slide	Movie
1. Visual <u>and</u> audial			X
2. Action and interaction	verbal		X
3. "Stop-action"		X	
4. Immediate or near environment (own students, self)	X	X	silent home
5. Copy or duplicate	X	X	X
6. Erase and reuse	X		
7. Correct in process of recording	X		
8. Delayed correction	X		
9. Dub in sound (later or additional)	?		
10. Immediate playback or viewing	X	polar-oid	
11. Delayed and repeated playback or viewing	X	X	X
12. Splice and edit	X		?
13. Observation of self	X	X	X
14. Recording of and from regular (VHF) television program			
15.			
16.			
17.			
18.			
19.			
etc.			

IN TEACHING/LEARNING/ADMINISTRATING?

Television tapes may serve a wide variety of purposes in education, for administrators, teachers and students. Here are some ideas for specific uses!

...Tapes of an individual in action can be submitted in place of or in addition to a job interview.

...Explanation of present or future curricular plans may be enhanced through the use of tapes at PTA, faculty or community meetings.

...Orientation to facilities and procedures may be presented to new students and personnel on a tape.

...A series of one particular activity over time or different situations at one time can be taped for comparative analyses - - - in curricular planning, teaching and evaluation.

...Taped television programs or classes can be broadcast and shared with other classes or groups at convenient times.

...A teacher may privately evaluate his own teaching and request others evaluate classroom interaction even though they cannot be present during class.

...Tapes of special programs or events may be viewed by absentees and posterity.

...Role-play or exemplary model can be preserved and presented on a tape (perceptual modeling).

...Tapes can be used to individualize instruction (like programmed and computer-assisted instruction).

...Candid shots of "real" situations may provide material for individual or group analyses or discussions.

...A student may use immediate playback of his taped behavior to evaluate and perfect a skill (self-teach) - - - for example, in laboratory, speech or gym classes.

...A teacher or teacher team may accurately evaluate student's progress by viewing tape of
a. oral exam
b. practical application or skill demonstration
c. class interaction and participation

...Showing student a taped segment of his disruptive behavior may prompt him to note how immature, foolish or inconsiderate he was; to exercise self-discipline; and to improve his attitudes and behavior. (Of course, it may act as a reinforcement depending upon the taped behavioral situation, the manner in which tape is used and the student's perception of tape and self.)

And many more!!!

TRY IT!

Using and experimenting with television tapes enable one to confirm expectations and discover new uses, benefits and limitations. "You learn by doing, so get cracking!!!"

The following guidelines, hints and helps are provided for the new venture:

1. Identify how you can use television tapes or what you would like to try.

2. Consider the possible outcomes for you and students.

3. Establish the specific purpose of use. Is the aim ...
   a. to evaluate teaching or to promote student's self-evaluation and self-teaching?
   b. to inform and clarify or to comparatively analyze?

*4. In view of specific purpose, develop means for comprehensive use (viewing) of tape, such as ...
   a. observational data or record of frequency
   b. evaluative criteria, rating or ranking
   c. bases or questions for analysis and discussion

*NOTE:

This item is particularly essential for the maximum use and benefit by teachers and students alike. Adequate, appropriate and specific directives are necessary for effective and successful demonstration, observation, analysis, evaluation, and self-teaching or discovery-learning. The two KEYS are:
1. to provide this direction for oneself and students prior to taping and viewing, so everyone knows where he is going and what he is developing and/or evaluating; and
2. to describe and delineate the component parts or elements of the competence (to be demonstrated, taped, observed, analyzed, evaluated and perfected) in observable behavioral terms.

5. Be selective, organized and concise in choosing, planning and presenting activities to be recorded. Brief shots and condensed activities (micro-lessons) that are complete (from start to finish) are most appropriate. Length of tapes (usually 30 or 60 minutes) and time for playback must be considered.

6. Become aware of the operation, features and limitations of available equipment.

7. Expect and allow for initial anxieties and reactions to taping process and equipment. It is a novelty at first; camera "hams" and "shyness" are usually present. Hidden cameras would be ideal, but may not be possible and certainly are not required for success.

8. Remember taping is to be a supplementary and beneficial experience. Plan and follow through accordingly. If the experience tends to be self-defeating, overwhelming, an interference, a threat or an invasion of privacy ... especially with extended use or after novelty has worn off ...
   a. revamp plans,
   b. use differently,
   c. discontinue use, or
   d. replace with more appropriate and effective methods and resources.

Now is the time! Use television tapes in education! Try it! Adopt this philosophy and practice for yourself and your students ...

" Don't tell me ..... SHOW ME ! "

APPENDIX C

Program Evaluation Device

EVALUATION OF VIDEOTAPING EXPERIENCE

MY EXPERIENCE INCLUDED:
*Check circles that apply.

Videotaping self 0
Microteaching 0
Playback of self tape 0
Observation and analysis of model tape 0
Sequence of tapes and playbacks 0
Feedback analysis with self 0
cooperating teacher 0
supervisor 0
peers 0

VIDEOTAPING

*Describe taped teaching in general by circling appropriate number.

1. Teaching/learning situation ..... realistic 1..2..3..4..5 unnatural

2. Subject(s) reaction to camera ..... oblivious .... aware ... extreme
   a. teacher ..... 1..2..3..4..5
   b. student ..... 1..2..3..4..5

3. Taped segment or teaching ..... comprehensive 1..2..3..4..5 fragmented

4. Taped behavior representative ..... unusual
   a. teacher ..... 1..2..3..4..5
   b. student ..... 1..2..3..4..5
   c. interaction ..... 1..2..3..4..5

5. Behavior as viewed by observer meaningful ..... irrelevant
   a. teacher ..... 1..2..3..4..5
   b. student ..... 1..2..3..4..5
   c. interaction ..... 1..2..3..4..5

OBSERVATION AND FEEDBACK ANALYSIS

*Check the appropriate circle for each of the following to indicate which you PREFER or found MORE helpful.

6. 0.. self tape versus model tape 0

7. 0.. single tape of one teacher versus comparing several tapes of same teacher 0

8. 0.. comparing tapes of same teacher versus comparing tapes of different teachers 0

9. 0.. structured playback with devices versus unstructured discussion ..0

10. 0.. observing tape by yourself versus analysis with others 0

11. 0.. analysis with supervisors versus analysis with peers 0

12. 0.. analysis with small group versus analysis with large group 0

13. 0.. immediate feedback versus delayed feedback 0

*Identify the preceding item by number (#6-13) if you wish to comment or qualify a particular choice.

	did not accomplish	poor	average	excellent
14. Identify value and need for teaching and communication skills	0	1	2	3
15. Effectively evaluate teaching and communication skills	0	1	2	3
16. Identify specific competences	0	1	2	3
17. Develop specific competences	0	1	2	3
18. Improve own teaching	0	1	2	3
19. Recognize and evaluate individual mannerisms and idiosyncrasies	0	1	2	3
20. Objectively analyze total teaching situation	0	1	2	3
21. Realize and use different means of a. communication b. stimulation c. control	0	1	2	3
22. Recognize and correct objectional individual characteristics or behavior	0	1	2	3
23. Feel confident about my abilities to teach or communicate	0	1	2	3
24. Feel capable of approaching or facing any group	0	1	2	3
25. Can readily assume the role of a teacher or consultant	0	1	2	3
26. Effectively give direction to promote learning	0	1	2	3

	did not accomplish	poor	average	excellent
27. Function effectively in conference situation	0	1	2	3
28. Recognize and improve individual strengths and limitations	0	1	2	3

*Respond freely to the following questions:

29. How was the videotaping experience particularly helpful to you?

30. In what ways was the experience detrimental or limiting?

31. How could the use of videotapes be improved or expanded? (suggestions and recommendations)

VT 013 885
TRAINING FOR AGRICULTURE; A REPORT ON STAGE III OF THE INVESTIGATION.

BERKSHIRE COLL. OF AGRICULTURE, (GREAT BRITAIN).
MF AVAILABLE IN VT-ERIC SET.
J565/HWB/DHP
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DESCRIPTORS - *AGRICULTURAL EDUCATION; *FARMERS; FARM LABOR; EMPLOYMENT PROGRAMS; SURVEYS; INTERVIEWS; *AGRICULTURAL LABORERS; FARM OCCUPATIONS; *EMPLOYER ATTITUDES; *EMPLOYEE ATTITUDES
IDENTIFIERS - GREAT BRITAIN

ABSTRACT - THIS REPORT EXPLORES THE LAST STAGE OF A THREE-PART STUDY ON THE NEEDS AND ATTITUDES OF FARMERS AND FARM WORKERS IN GREAT BRITAIN AS RELATED TO AGRICULTURAL TRAINING. DATA COLLECTED FROM THE TWO EARLIER STAGES INDICATED THAT, IN GENERAL, ATTITUDES OF FARMERS TOWARD TRAINING FOR THEIR WORKERS WAS INDIFFERENT IF NOT UNSATISFACTORY, AND IN SOME CASES EVEN HOSTILE. THE MAJOR OBJECTIVES OF THIS THIRD STAGE OF THE PROJECT WERE TO DELVE FURTHER INTO THE ATTITUDES OF THE FARM WORKERS AS COMPARED TO THOSE OF THE FARM OWNERS, AS WELL AS TO ELABORATE ON THE EARLIER FINDINGS. ONE-HUNDRED-FIFTY FARMERS AND 68 FARM WORKERS WERE INTERVIEWED, THE FARMERS DRAWN FROM A SAMPLE OF OVER 1,000 WHO TOOK PART IN STAGE TWO OF THE STUDY, AND THE WORKERS DRAWN FROM ROUGHLY HALF THE 150 FARMS COVERED. FINDINGS INDICATE THAT FARMERS, GENERALLY, RELIED MORE ON CHARACTER TRAITS THAN ON TECHNICAL SKILLS IN THEIR WORKERS, AND CONSEQUENTLY, WHILE NOT HOSTILE, WERE LARGELY INDIFFERENT TO THE PROSPECT OF TECHNICAL TRAINING FOR WORKERS. MOST OF THE WORKERS INTERVIEWED HAD CONSIDERED THE IDEA OF TAKING SOME FORMAL TRAINING, BUT WERE NOT MUCH DISPOSED TO UNLESS THEIR EMPLOYERS SUGGESTED IT. THE OVERALL ATTITUDE IN BOTH GROUPS WAS THAT TRAINING WAS LARGELY IRRELEVANT TO THE WORK DONE. (AW)

VT 013 885

J565/HWB/DHP

May 1970

TRAINING FOR AGRICULTURE

A REPORT ON STAGE 111 OF THE INVESTIGATION

Produce Studies Limited

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J565/HWB/DHP

May 1970

TRAINING FOR AGRICULTURE

A REPORT ON STAGE 111 OF THE INVESTIGATION

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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INTRODUCTION

1. This project originated about three years ago when the Southern Regional Council for Further Education became uneasily aware of the absence of any systematic attempt to chart the needs and attitudes of either farmers or farm workers in relation to agricultural training. While there were many reports from 'experts' and leaders in the field (including farmers) there was little objective evidence from what one might term 'typical' employers and employees. It was this gap in knowledge that the investigation into Training for Agriculture was designed to bridge.

2. The Southern Regional Council invited members of the staff of the Centre for Training in Agricultural Education at Reading University to consider this problem. From the proposals they submitted it appeared that the resources of a professional organisation would be needed at various stages. Produce Studies Ltd., an organisation specialising in investigations concerning agriculture and horticulture, was invited to become involved in the project.

3. From the ensuing discussions, a three-stage study evolved:

Stage I was seen as essentially an exploratory study, deliberately designed on a restricted scale to examine the principal components of attitudes to training and to pick out the areas in relation to training that most merited further study. This was reported on in July 1967.

Stage II was designed to collect the main statistical data about the population of farms and farm workers in the areas and to get an assessment of the proportions of farmers who could be broadly classified as favourable,

neutral or hostile to the idea of training. To keep the cost of this stage within reasonable bounds it was conducted by post: over 1,000 farmers took part in the study and the main results were reported in January 1968.

Stage III was originally conceived to follow fairly hard on the heels of Stage II. A smaller sample of Stage II informants would be personally interviewed, in some detail, so that the basic attitudes expressed about training could be understood. Moreover, the study would be on a sufficient scale to enable us to examine the data with some measure of confidence in its reliability. A sample of about 150 farmers and 75 workers on these farms was envisaged.

The conduct of Stage III was delayed, principally because the whole subject of agricultural training became a matter for considerable controversy and it was felt that it was inadvisable for a study of attitudes towards training, which had long-term implications, to be undertaken at a time when tempers and passions were roused about matters that had very little to do with the basic principles behind training. For this reason the study was delayed until the subject became less controversial. Further delay subsequently arose over administrative matters relating to the securing of grant aid and the final stage did not begin until late autumn 1969. Interviewing took place between then and the end of January 1970 and this report is primarily concerned in discussing the findings.

4. It should, perhaps, be added that before the project began the Agricultural Training Board came into being, became associated with the project, and indeed provided financial aid.

SETTING THE SCENE

5. Since some time has elapsed between the first and last stages of this project it may be helpful if, before we discuss the results of Stage III in detail, we set out the principle findings from the earlier studies.

6. The first, exploratory, stage suggested that there was evidence of indifference and even some hostility among farmers to the idea of training for their workers. This appeared to be due to the following main factors:-

(a) the conviction that farming demands experience, rather than 'learning'.

(b) misconceptions about the term 'training' and in particular a tendency to equate 'learning' and 'education' with 'training'.

(c) the conviction, held particularly by many small farmers, that specialist skills were not relevant. Indeed, the fear was expressed that a worker, trained at the small farmer's expense (in time and inconvenience if not in money terms) would move on to larger farms where training could be more profitably employed.

(d) the high cost of training to the farmer.

(e) doubts about the 'trainability' of many farm workers.

(f) considerable doubts about the capacity of the training bodies to provide training that has much practical value.

7. There was also some evidence that farmers underestimated the interest of their workers in receiving formal training and tended to be more hostile towards training than were their workers.

8. The second, postal survey stage collected information from 1,086 farmers who gave details about 2,746 present and 521 former employees. This gave statistical data about the ages and education of the farmers and their workers, staff turnover, training courses attended, etc. It also produced the following findings:

a) if on the basis of a fairly crude assessment of their attitudes to training, one classified farmers into three groups, those broadly in favour of training, those who are neutral and those who are hostile: -

about 54% are 'favourably' disposed,
about 31% are 'neutral' and
about 15% are 'hostile'.

b) just over half of all farmers said they would 'encourage' a young man to get trained so long as they were reimbursed for his wages while he was receiving training.

c) it would, however, be a long time before there is much significant improvement in farmers' attitudes to training if one simply waits for the proportion of 'educated' farmers to grow.

d) favourable attitudes are associated with younger, agriculturally better educated farmers and with farmers with more employees than average.

e) fewer than one worker in eight had been on any kind of training course while with their present employers.

f) two out of every five workers who leave their job on a farm move to another industry and that the 18 - 20 age group was critical in this respect.

g) over half the workers on informants' farms were described as being unlikely to benefit from training.

9. Thus attitudes to training appeared to be unsatisfactory and there was a clear need to understand more about what lies behind them so that attempts to change them can stem from an appreciation of the size and nature of the obstacles to making progress.

10. <u>This brings us to the objectives that were set for Stage 111</u>. There were four principal tasks set: -

i) to test, and elaborate on, some of the hypotheses about attitudes to training that emerged from the earlier studies.

ii) to refine our understanding of the nature and origins of farmers' and workers' attitudes to training and, where attitudes are unfavourable, to discover what can be done to alter them.

iii) since, for the reasons given earlier, over two years has elapsed between Stage 11 and 111, Stage 111 would also examine generally <u>present</u> attitudes to training, bearing in mind the changes that have taken place in the pattern of farming and in attitudes towards training.

iv) on the earlier work the emphasis was on <u>farmers'</u> attitudes to training. While the employee had not been neglected, there tended to be an assumption that the stimulus (or lack of it) would be generated among farmers. Stage 111 had the objective of looking, on a larger scale, at <u>farm workers'</u> attitudes, to relate these to those

expressed by their employers and to ascertain the extent to which there was room for workers' initiative to be brought to bear upon their employers.

11. This, then was the general background to the third stage of the study. We next discuss its findings in more detail before trying to integrate them into an overall account of the results and implications of all three studies.

STAGE 111 : A DETAILED REPORT

SECTION A: METHOD

12. The sample for Stage 111 was drawn from farmers who co-operated on Stage 11 (the postal survey). From the 1,000 odd completed questionnaires we selected a subsample designed to represent different geographical areas within the region but, more importantly, farmers with different characteristics in respect of number of employees, their own 'education' and the preliminary assessment arrived at from an analysis of the postal survey questionnaires of the farmers' attitudes to education.

13. Altogether we selected the names and addresses of 235 farmers who took part in the postal survey. However, letters were sent to only 214 of these since preliminary investigation suggested that 21 of these were not on the telephone. In the event, interviews were achieved with 153 farmers (72%).* The principal reasons for failure to complete an interview were: -

Outright refusal:	30 - 14%
Qualified refusal (too busy at present):	10 - 5%
No longer farming, deceased, too ill, moved:	12 - 6%
No reply, unable to contact:	9 - 4%

If we exclude those farmers who we were unable, physically, to interview or get in touch with, then the proportion of successful interviews was 78%.

* We had, however, to reject three of these interviews at the analysis stage. Two were not completed (due to hostility towards being interviewed and deafness) and one was taken with a new tenant.

14. Apart from the farmers interviewed, some 72 farm workers employed on the farms also took part in the survey.

15. It is difficult to draw exact comparisons between the response rate in this survey and that from other surveys, partly because we were drawing on people who had already taken part in a survey and partly because we did not need to pursue farmers who were difficult to contact. However, an effective response rate of about four-fifths of the interviews attempted is reasonably high, certainly by normal survey standards. We can, therefore, be confident that the farmers interviewed are pretty representative of the original sample. Certainly, almost all the farmers who were interviewed were very receptive to the idea of being able to talk about training and the interviews themselves went very well.

16. We do, of course, have one means of comparing the interview sample with the postal sample. When we analysed the postal survey we derived three characteristics: attitude towards training; whether or not the farmer who, even in a loose sense, himself 'qualified' and the number of employees. Compared below is the achieved interview sample with the original postal survey sample from which it was drawn: -

	Postal Survey	Interview Survey
	%	%
Attitude to training.		
(expressed at original interview)		
Favourable	54	60
Neutral	31	27
Unfavourable	15	13
	100	100
Qualifications/training		
Present	30	26
Absent	70	74
	100	100
No. of workers		
1 - 3	72	72
4 or more	28	28
	100	100

17. Thus, the achieved interview sample corresponded fairly closely to its original source: it slightly over-represented farmers originally classified as having a favourable attitude to training and slightly under-represented 'qualified' farmers, but the differences are not marked and, since qualified farmers tend to be more favourably disposed to training than other farmers, the net effect on attitudes is likely to be quite small.

SECTION B : THE INTERVIEW

18. In form, the interview was semi-structured. That is, questions were arranged under a number of topic headings and used to start and keep discussion going. However, except for certain basically factual questions or questions designed to summarise attitudes, the answers were recorded verbatim and the respondent encouraged to talk around the subject as much as he chose. This means that the analyses lack the statistical tidiness that is commonly associated with survey research but gain in both depth and detail.

19. For the farmer interviews we discussed their general requirements of their labour force - the personal qualities they look for in a worker, the basic abilities that are expected and the general quality of labour. We spent some time discussing the particular issue of training versus experience before going on to deal with the question of the farmer's knowledge of and attitude towards training. Finally, we became quite specific, discussing particular workers (past and present) and their responsiveness to training.

20. The farm worker interviews were similarly organised, but the subjects were not identical. We began by asking about how the worker came into the industry, how he got his first job and how he reacted to it. We then discussed any experience he may have had about training before dealing, in some detail, with his present job - what he liked and disliked about it. We examined the influence of other people (and especially his wife, if he was married) on his job and finally discussed his perception of farming as a career and his hopes for the future.

SECTION C : THE RESULTS OF THE FARMER SURVEY.

1. SUMMARY OF ATTITUDES TO TRAINING

21. The postal survey that we conducted suggested that just over half the farmers in the area have what could be described as broadly 'favourable' attitudes towards training, and that most of the remainder were 'neutral' rather than openly 'hostile' to the training. In the second interview we were, of course, able to investigate farmers' attitudes in rather more detail and to reassess their attitudes on the basis of more sophisticated information.

22. In fact, the second survey enabled us to make a somewhat finer distinction about attitudes to training as well. We were able to consider the farmers' responses to a whole range of questions about training: questions relating to jobs that he regarded training to be an important or unimportant ingredient; to 'formal' versus 'informal,-on the farm' training; to the trainability of experienced men; to his knowledge of facilities and to his practices about sending men on training courses. From an (admittedly subjective) assessment of all this information we were able to grade farmers in terms of their attitude to training along a scale which seemed, on analysis, to split the 'population' of farmers into four main categories: -

1. Those farmers who are favourably disposed to the notion of training for all their staff; who appear knowledgeable about the facilities and have either used or express a willingness to use the facilities available. In short, farmers who appear to have what one might call a 'highly enlightened' attitude to training.

2. Farmers who are, like category 1, similarly well-disposed to the notion of training but who are, perhaps, slightly less enlightened, slightly less knowledgeable or have more reservations about training. Nevertheless, farmers who do not need to be 'sold' the basic ideas about training.

3. Farmers who are not hostile to the idea of training but who seem to be more lukewarm in their attitude, to know little about the facilities or somewhat disinterested in using them.

4. Farmers who express hostility to the notion of training: those who contend that a man can learn all he needs on the farm, that training is dangerous (i.e. the man will get ideas above his station) or irrelevant.

23. It will be apparent to the reader that we are here in the realm of comparative statistics; the assessments made have no totally objective existence. Their usefulness lies in their ability to distinguish between one group and another and to give some - admittedly rough-and-ready - indication of the relative incidence of each in the general population of farmers. It will also be clear that we have substituted four groups for the three distinguished in our original survey.

24. On the basis of the more 'sophisticated' analysis made possible by the second study, in our 150 sample: -

47%	were classified as 'highly enlightened' in their attitudes towards training.
29%	were classified as 'fairly enlightened'.
13%	were classified as 'neutral'.
11%	were classified as 'hostile'.
100%	

Comparison with the original sample suggests that the passage of time between the surveys and, more probably, the fuller discussion of the implications of training has tended to suggest that farmers are more rather than less favourably disposed towards the concept of training than the original work suggested: -

	Re-interview Assessment	Original Assessment
	%	%
Favourable	76	60
Neutral	13	27
Hostile	11	13
	100	100

25. Clearly, the most dramatic shift has been from 'neutral' towards 'favourable' attitudes - suggesting that, when farmers are given an opportunity of discussing training in some detail, they are more favourably disposed than one might, perhaps, be led to expect from an 'off the cuff', superficial assessment.

26. Of course, net changes of the kind we have examined could conceal substantial changes in assessments of individual cases: suggesting both that there is basic instability in farmers' attitudes and that the small reinterview survey sample may not fully reflect attitudes in general. More detailed analysis suggests that this is not so - at least so far as the great majority of farmers is concerned. For example, taking the 91 farmers who were originally classified as favourably disposed to training, on reinterview: -

> 90% of them were reclassified as favourably disposed,
> 6% were reclassified as neutral and only
> 4% moved from 'favourable' to 'hostile' grading.

If, however, we take the minority who were originally classified as 'hostile', there is evidence that this characteristic is more difficult to define or, basically, a less stable attitude. For of the 20 farmers originally classified as hostile: -

only 30% were reclassified in this same category while
20% moved up into the neutral category and
50% moved into the 'favourable' group.

Again, of the 40 originally classified as neutral (where there was room for movement up or down the 'scale') -

28% stayed neutral,
58% moved up the scale, and
15% moved down the scale.

27. Thus, the original classification was better at picking out those who are 'favourably' disposed to training than those who were neutral or unfavourably disposed. However, the evidence is that the original evaluation was a reasonably good predictor (i.e. there is stability, at least in favourable attitudes) and that, if it erred at all, it was on the conservative (or pessimistic) side.

28. The original survey suggested that favourable attitudes to training are associated with some kind of formal qualifications or training received by the farmer and with the number of employees. Thus: -

	Qualifications		No. of workers	
	Qualified	Not qualified	1 - 3	4 or more
Attitude to training	%	%	%	%
Favourable	67	48	51	63
Neutral	27	32	30	31
Unfavourable	6	20	19	6
	100	100	100	100

29. The reinterview survey confirms these indications but suggests a little more emphatically that neutral or negative attitudes to training are more strongly associated with whether or not the farmer has qualifications or training than with the size of his labour force. (The analysis below distinguishes the four groups that we arrived at after scrutiny of the reinterview questionnaires):

	Qualifications		No. of workers	
	Qualified	Not qualified	1 - 3	4 or more
(Base)	(39)	(111)	(42)	(108)
Attitude to training	%	%	%	%
Highly enlightened	62	42	49	43
Favourable	26	30	27	36
Neutral	10	14	14	12
Unfavourable	2	13	11	9
	100	100	100	100

Note: this is based in the number of workers employed at the original interview. In fact, between 1967 and 1970 some farms moved from one employment category to another. However, 135 of the 150 did not change: 2 moved down (from 4+ to 1 - 3 employees) and 3 moved up (from 1 - 3 to 4+). These are not significant enough to influence our basic analysis.

30. The summary analysis we have undertaken is, of course, based on an examination (subjective though it may be) of the whole of the transcripts of each interview. However, at one point in the interview (after we'd talked a good deal about training) we invited the farmer to classify himself as being definitely for training, definitely against training or between the two. (This was, of course, only one of the answers we considered on our own classification. What is, perhaps, interesting is that we classified slightly more farmers as at

least reasonably enlightened than regarded themselves as favourably disposed to training but more as hostile than the farmers themselves did: -

		Our classification	Farmers' own
		%	%
Highly enlightened)	Definitely for	47	62
Fairly enlightened)	training	29	
Between the two		13	34
Definitely against training		11	4
		100	100

31. There was, in fact, a fair degree of internal consistency at the extremes: i.e. only one farmer who, in his own opinion was definitely in favour of training was classified by us as appearing to be hostile and only one who said he was against training was classified by us as being mildly in favour (judging from the overall tenor of his answers). It was, of course, the middle category that produced the greatest amount of conflict. The 34% of farmers who saw themselves as being neither for nor against training, we classified as follows: -

	%
Highly enlightened	1
Fairly enlightened	14
Neutral	13
Hostile	7
	34

That is, we agreed with about a third of them, and felt that rather more were mildly enlightened than were hostile.

32. Thus, to summarise this section: if we take a continuum and try to classify farmers in terms of their general attitudes towards the idea of training ('Training', not necessarily formal training) while we may disagree on individual cases or with the farmers' own assessments of themselves, we shall certainly find most farmers expressing views that suggest that they 'favour' training and a pretty high proportion (perhaps 40 - 50%) who appear to hold 'enlightened' opinions about training. Downright hostility to training appears to be confined to a quite small proportion of farmers - probably not more than one in ten.

33. In a later section we shall elaborate upon the way in which general attitudes to training are qualified, but before doing so, it seems important to relate general attitudes to the nature of the farms themselves, to the perception farmers have of the kind of workers they need and to formal training courses available.

2. THE CHARACTERISTICS OF THE FARMS.

34. Compared with the earlier survey we have to record a small increase in average acreage among our reinterview sample: -

Crops and grass	1970 %	1967 %
under 100 acres	19	25
100 - 299	37	42
300 - 499	25	17
500+	19	16
	100	100

35. Acreage apart, however, 23% reported a change in their basic cropping pattern since 1967. These were not usually major changes - commonly it was a slight increase in total acreage or a redistribution between crops and grass, occasionally the dropping or experimentation with a particular crop (e.g. field beans). However, exactly half the farmers reported a change in their livestock pattern. Most commonly affected was cattle: one farmer in six reported an increase and one in twelve a decrease in the size of his dairy herd (or its elimination). Some (about 8%) reported a reduction in poultry. Other minor movements were reported - a few reported more beef cattle, more or fewer pigs, etc.

36. There were, also, small net changes in employment reported by our farmers - between them they employed 16 fewer workers, quite a small change. 44 farms had reduced their labour force since 1967, 15 had increased it.

37. These changes do not, however, seem to have had a significantly different effect on farmers with different attitudes to training. For example, looking at crop and livestock changes among the four groups of farmers we find: -

	% who have changed:	
	cropping pattern	livestock pattern
All farmers in sample.	23	50
Farmers whose attitudes to training are:		
Highly enlightened (Group 1)	21	50
Favourable (Group 2)	25	52
Neutral (Group 3) & Hostile (Group 4)	23	44

38. However, when we look at employment we find that while 'highly enlightened' farmers suffered no net loss in their labour force (although 42 of them reduced their staff and only 16 increased it, these 16 added in as many men as the other 42 lost) there was a net decline in the other three categories (26 farmers reduced their workforce, 5 increased it, with a net loss of 18 men). This is almost certainly a reflection of the larger acreage size of farm among the farmers who are 'enlightened' in their attitude to training: -

		Size of farm		
	Total Sample	Group 1	Group 2	Groups 3 & 4
(base)	(150)	(71)	(44)	(35)
Acreage	%	%	%	%
under 100	19	14	16	32
100 - 299	37	33	50	31
300 - 499	25	33	20	14
500 +	19	20	14	23
	100	100	100	100

39. An interesting feature of this analysis is that the 'hostile' farmers tend to be disproportionately represented among those with very small acreages and also among those with quite large acreages. Looked at another way, the 23% of farmers who are 'hostile' to training appear to make up: -

Just under 60% of all farmers with less than 100 acres.
Just under 30% of all farmers with 100 - 299 acres.
About 20% of all farmers with 300 - 499 acres.
Over 40% of all farmers with over 500 acres.

3. PROBLEMS OF RECRUITING WORKERS

40. The general consensus seems to be that most farmers find it fairly difficult to get the kind of men they want these days, but that they are, on balance, satisfied with the men they do get. Judging from the comments they made, our impression is that about a third of farmers find it reasonably easy to get staff, while two thirds experience some difficulty - probably about a quarter have considerable difficulty in getting staff. An interesting feature of the analysis is that practically all the farmers who said they had no great difficulty in recruiting good staff were drawn from the categories we have classified as 'favourably' disposed to training - though, of course, a number of them also find it difficult to find good men.

41. Any classification of farmers is, of course, somewhat arbitrary, but based on the comments they made we would estimate that: -

> Of the farmers who are highly enlightened in their attitude to training roughly 4 in 10 find it reasonably easy to find staff.
>
> Of the farmers who are favourably disposed the proportion is between 3 and 4 in 10, while
>
> Of the farmers who are less well-disposed, the proportion drops to between 1 and 2 farmers in 10.

Thus, even the majority of 'enlightened' farmers recognise the fact that recruitment is a problem.

42. In general the difficulties of recruitment appear to be the familiar ones - of competition from other industries, of less arduous work and of the demands of farming on 'free' time.

Fairly typical comments were: -

> "Men go to other jobs in the district..... R.A.F. dump, truck driving etc... . . . .younger people aren't so interested in livestock because it's a seven-day week. It's a job to find people interested in poultry to-day."

> ". . . . .it is a bit of a job to find a good new worker. We are so near to Basingstoke and they want such a colossal wage above the agricultural wage - they want £3 or £4 over it."

There were, too, occasional overtones about farm work appealing only to the socially-undesirable; the slow of mind or the uncompetitive:

> ". . . . the riff-raff are liable to come to farms because they can't do anything else."

> "Older ones are better than younger ones. ...they only want to earn more money".

> "You can't afford to pay a man a decent wage for a decent job".

44. And there was the occasional Blimpish comment (this, in fact, did come from a retired colonel): -

> "The emphasis throughout the country at the moment is money. It is the socialist dogma. There is no loyalty to anyone and no loyalty to the country as a whole. I've spent most of my life fighting for a thing we once had - an empire! . . . . . .I had a long-haired chap once and I got the clippers at his harr.... . . .

His wife didn't wear mini-skirts but pelmets.... ..
I showed her how to cook properly .... because she
really needed a big man.

45 However, there were a large number of fairly realistic assessments of the problems and a recognition that the 'way of life' element in recruiting farm workers is of diminishing importance and that good staff can only be attracted by competitive wages and good conditions of employment.

46. One other interesting characteristic of the answers given by farmers was the tendency for many of them to regard themselves as 'fortunate' in having good workers - as if it had little or no relationship to their recruitment policy or their treatment of their employees. Thus there were several comments such as: -

I suppose I'm lucky really. I've got two really good men.... ....

4. THE TYPE OF MAN REQUIRED.

47. Leading on from problems of getting workers, we considered the attributes that farmers see themselves needing in their staff. We discussed this in two parts: the type of man the farmer would ideally require if employees could be 'made to measure' and the reality - the type of man they actually employ.

48. In the questionnaire, the informant was asked about his present workers before he was asked about ideal characteristics, but in drawing comparisons it is, perhaps better to reverse the order. Farmers talked of worker qualities in terms of two main dimensions: character traits (such as honesty and reliability) and job skills (such as specialist knowledge or basic ability).

Of course, the two are not mutually exclusive - the quality of reliability, for example, is a factor in a man's basic work skill. In the main, however, farmers' spontaneous answers related more to the possession of personal character traits than to specifically job-orientated skills though, of course, many of these have a fairly direct bearing on job performance.

49. Set out below is an, admitted somewhat subjective, analysis of the answers given into four main categories - we've distinguished answers that related primarily to personality characteristics from those that related primarily to job skills. In the middle, however, are answers that suggest a bearing of a personality trait (e.g. flexilility) upon a man's approach to his job and on the end are answers that cannot be classified into any of the other three categories: -

Clearly personality	%
Honesty	27
Character	23
Steadiness	21
Free from wife's influence	10
Nice chap	5
Like country life	5
Married	5
Healthy	5
Cheerful	5
Local lad	5
Quiet type	3
Alert	3
No beard, long hair	2

Personality/job	%
Interest in work	27
Love of animals	17
Cleanliness/tidiness	11
Good references	11
Intelligence	10
Flexibility	10
Not a clock watcher	9
Ability to get on with others	7
Settled in agriculture	5
Inexperienced but keen	5
Responsible in emergency	4
Persistence	4
Disciplined approach	4
Commonsense	3
Willing to learn	3

Clearly job	%	Unclassifiable	%
All rounder	20	Age group specified	14
Experience	19	Not necessary to be country person	6
Hard worker	14		
Qualifications	4		
Good timekeeping	4		
Mechanical ability	1		

46. Pursuing the subject further, we dealt with a more restricted range of attributes more formally - inviting farmers to classify eight attributes in terms of their importance. Obviously, the answers they gave varied - especially in terms of job-orientated skills - with the requirements of the farm's enterprise patterns. A stockman is a little out of place on a 600 acre cereal farm in East Anglia and a tractor driver would be superfluous on a specialist intensive pig or poultry unit.

47. However, of two broad classes of job skills - an aptitude for livestock and mechanical ability - the former clearly emerged as the more important (this was a theme that recurred throughout this section of the survey). Of our sample of 150 farmers over 80% regarded ability with livestock as 'very important' (the comparable proportion for mechanical aptitude was 40%). Perhaps somewhat disturbing, when taken in conjunction with their spontaneous comments, is the relatively low priority accorded to abilities that are normally prized in employees. Only 35% regarded a lively mind as very important, 23% regarded ambition with the same favour and 20% placed a great deal of emphasis upon a taste for responsibility. The more pedestrian virtues of steadiness, reliability attracted much more favour - over 60% regarded these as very important.

48. Aptitude for livestock seemed to be the factor which was the hardest to 'learn' at a college or other training institution,

and the most difficult factor to find nowadays. Employees, especially the younger ones, were often regarded as not being prepared to do all the routine work involved with livestock and particularly if it entailed working a seven day week. It needed years of experience and possibly an instinctive 'way' with animals. This difference between the older and younger generations featured very prominently and will be dealt with in more detail in a later section.

49. Now a comparison must be made between the fictional and the factual employee. Perhaps surprisingly, the very large majority of informants were either 'very' or 'fairly' satisfied with their workers. 74% expressed one of these sentiments. Only two said they 'were not at all happy' and eight 'not very satisfied'. The figures did not seem to depend very much on farm size though it did drop a little with the 5 - 6 man farms, this is of course, quite understandable.

50. We come to one of the most critical points especially in relation to the interests of our client, that of the generation gap. This is perhaps the most difficult subject of all to deal with - it embraces many aspects of previous experience and the character and general prejudices of the farmer concerned. When asked a straight question about any preferences for older or younger workers - 35% did not consider age a critical factor and only 17% preferred younger men. When asked to describe the differences between the two generations of workers, the older generation were invariably thought to be more dedicated, reliable and less slap-dash. On the other hand, the younger ones were, in quite a large number of cases, said to be more able and better at skilled and specialised jobs, particularly where machinery was concerned than their older counterparts - if they had sufficient enthusiasm and interest in the job. The older men were very reluctant to change their ways and adapt to modern methods.

51. In much of the comparisons between young and old we found ourselves dealing with a special case of the general problem of the character of farmers' requirements. The failings of the young are not only seen as basic personality deficiencies - unreliability, clock watching, etc - they also possess ambition. And often the desire to 'get on', to take more responsibility, the unwillingness to persist with repetitive work is seen as a handicap - especially by small farmers who see the time approaching when ambition will drive a man to a larger unit. In some cases, older farmers saw their ambition as a lack of 'loyalty' - and spoke of the desire to maximise earnings in terms that made it clear that they considered these young men to be, at best, shortsighted.

52. At the same time, it was clear that there was a good deal of sympathy, understanding and appreciation of the virtues of young farm workers. This was marked, often, among younger farmers - especially those with some qualifications - and, in spite of the problems that they create, farmers with smaller farms appeared to be more appreciative of the qualities of the young. Presumably on the larger farms it is not so easy to keep an eye on them. In fact, on the farms normally employing 5 - 6 men, no-one expressed any preference towards younger workers.

5. FACTORS THAT CONDITION GENERAL ATTITUDES TO TRAINING

53. We have suggested that farmers tend, on the whole, to view the concept of training favourably. It is now necessary to both qualify and elaborate on this broad general opinion by relating it to the way in which training is seen to fit into the needs of the farmer of his worker, its relationship to 'experience' and the form that he believes training should take.

a) Training and Experience

54. We spent some time talking to farmers about the relative importance of 'training' and 'experience' so far as diffeent jobs about the farm are concerned. Clearly, we are not dealing with mutually-exclusive jobs - many farmers nominated the same jobs as needing a combination of the two. However, significant differences in emphasis did emerge. A brief statistical analysis indicates one dimension along which the differences lie - by and large things about the farm that have to do with machinery demand training, things that have to do with animals require experience: -

	Jobs needing	
	Training	Experience
	%	%
Farm machinery	58	3
Animal care	23	54
Milking	16	14
Ploughing, combining	13	12
Spraying	3	1
Hedging, ditching, fencing	-	4
Other specific jobs (e.g. shearing, baling, muck spreading)	1	4
All or most jobs	18	29
No jobs	11	7

55. The other dimension comes through best in the manner in which the questions were answered (though there is a hint in the above analysis). It is that, by and large, training is seen as a preparatory activity for certain jobs, but for the jobs that are really central to the operation of the farm, it is experience that really counts. Moreover, there is a distinction between 'formal' and, often associated with this, 'book' or 'theoretical' training, which is viewed with a good deal of suspicion and informal, on-the-job training provided

by the farmer himself and perceived as being much more relevant. While farmers will concede that there is a role for 'formal' instruction on tractor maintenance, they are less ready to recognise the importance of formal training in matters relating to the basic functioning of the farm:

"I think that night classes for combines, baling are of value. . . . . .it takes the worry off my shoulders, anyway . . . . stockmanship, you have got to have this instinct for animals to know when they are just not right. An animal can be bad today and dead tomorrow. With crops you don't have to recognise problems so quickly."

"A certain amount of training is needed for every job - but you will not get this kind of training from books, you need practical experience to make sure that you can apply your knowledge. . . "

"Training is necessary for milking, but it can all be done on the farm. . . . . experience is the only way to learn all farm operations. . . . . short term courses I regard as experience (!) as long as practical. . . . . books alone are no good."

"Animal husbandry is most important job for which training is necessary on my farm but that can never be taught by the Training Board. . . . . 98% of the jobs on this farm one can do with just experience." (This juxtaposition of apparently contradictory statements was not uncommon).

56. There were farmers with a more progressive attitude to the role of <u>formal</u> training, though they were in a minority. Their views found expression along these lines: -

"Training in dairying is absolutely vital - in techniques of successful milking and in teaching the worker how to spot trouble, like mastitis or in forecasting accurately when a cow will be calving. . . . . a dairyman should be farm institute trained (This emphasis on the importance of training in the care of livestock was quite rare). You've got too much at stake these days to put yourself in the hands of untrained men. . . . . ."

57. Surprisingly, perhaps, there was very little evidence of farmers stressing the importance of training as a means of ensuring more efficient use of a scarce and expensive labour force. The argument that the premium for trained labour over unskilled labour is so small in relation to the extra productivity of the trained man that it is well worth paying, was not directly expressed by any of our respondents.

58. If we look at the responses to these questions in terms of farmers' general attitudes to training we find that the main differences between farmers who have generally favourable attitudes to training and those whose attitudes are neutral or unfavourable relates to the importance of training in the general care of animals. There is much more of a consensus that the care of a farm machinery needs training: -

	Importance of training for	
	Animal care	Care of farm machinery
General attitude to training	%	%
Highly favourable (Group 1)	25	64
Favourable (Group 2)	27	59
Neutral & Unfavourable (Group 3)	11	43

Of course, almost by definition, practically all the farmers who held the view that no farm jobs needed training were in Group 3 (A third of the members of Group 3 rejected the idea that any jobs needed special training.)

b) Further Training

59. The importance of training for men who are already experienced was discussed. There was a majority of about three to one who felt that he could do so. Those who supported the thesis most often made the point that the industry is changing rapidly and that it is very easy, even for an experienced man, to get out of date. In very broad terms views on the importance of further training were expressed as follows: -

In favour	%
To keep up with change	30
Deepens knowledge	13
Broadens knowledge	9
Other favourable comments	29
	81

Against	
Unsettling	19
Other unfavourable comments	11
	30

(Some made more than one comment)

60. Those who were broadly in favour of giving further training to experienced men often, however, both amplified and qualified their opinions. Several made the point that, since agriculture is rapidly changing, the experienced man needs to be kept up to date and that - to make full use of his experience - the courses should themselves be advanced: -
Some expressed a desire for certain types of courses - invariably to do with farm machinery, welding and other courses. Most, however, qualified their comments with the point that the ability to benefit from training depends on the man himself -

and the fear that an older man may be too set in his ways to benefit from training - he may have already acquired habits that are hard to break:

"An experienced man would have his own ideas and might not easily fall in with new ideas. There could be problems here and I am not really sure of the answer. A young man could be O.K. Over the age of 30 it could get difficult."

"I think you can benefit from day release up to 35. Over this the average man begins to think he doesn't want to accept other people's ideas. He begins to get too set in his ways - probably goes against training"

"Yes (a man can benefit from training) but he can be on a farm too long. A man of his want to a shearing demo., said if he had gone 15 years ago he would have been much better at it. He has got into the wrong way of things."

61. There were, too, occasional comments that additional training should not be limited to workers, that the farmer himself could benefit too: -

"... even I could learn. I have been to evening classes at agricultural college. I found them quite useful.... refresher courses are quite good" (This was a farmer with 1,000 acres and 12 employees!)

"... even a farmer himself can benefit and should make every effort to do so." (A smaller man, with 350 acres and only one man.)

62. Those opposed to the notion that experienced men can benefit from training fell into two main camps. Most seemed to be only fairly hostile, rather they were indifferent. They

wouldn't object if the men took the initiative and it didn't interfere with the farm's routine (i.e. if he went in his own time) but they didn't see any particular benefit.

> No I don't (think a man benefits). If they have got the time I suppose it's O.K. - in the evenings. But most farmers can't afford the time to let their workers off on courses. This farmer had earlier expressed the view that 'It's only the gentlemen farmers with a bit of money who don't know much about farming who have their workers trained'. (He had 150 acres and one worker)

63. Fewer were downright hostile to the idea, claiming that they could teach a man all he knows, that the only way of learning is by doing, that training 'unsettles' a man or that farming ability is almost a divine gift: -

> It's a waste of time. An experienced man is born and brought up with it. He has forgotten more than half these novices will learn at farm institutes and colleges ... He has it as second nature. It is a damned waste of money to train an experienced man . (Another small farmer with 140 acres and currently without a worker, though he normally employs one man).

6. THE TRAINING FACILITIES THEMSELVES

64. Clearly, a major influence on attitudes towards formal training could be the way in which farmers see the role and usefulness of the facilities themselves. Thus we devoted some time to considering what farmers know about and believed about the training establishments available to their workers. We discussed a range of matters relating to the establishments and, occasionally farmers themselves raised the subject. Thus, we did not ourselves refer to the Training Board - however about one farmer in ten himself made a reference, one that was

invariably critical. The criticisms themselves will be familiar to the Board: it's irrelevance; the fact that it's purely an additional overhead that the farmer has to pay for, with the odd innuendo that it's a means of finding jobs for underemployed bureaucrats. (These criticisms were incidentally expressed by people with enlightened as well as with hostile attitudes to training). However, there was very little evidence that farmers associated the activities of the Board with those of local institutes and we summarise below both awareness and attitudes to the local facilities themselves.

a) AWARENESS OF TRAINING ESTABLISHMENTS

65. Close on forty different training establishments were mentioned when we asked farmers to nominate places where a man can get trained. Most commonly mentioned were: -

	Mentioned	Sent Worker	Visited	Know Staff
	No.	No.	No.	No.
Banbury Tech. College	7	5	4	3
Basingstoke Tech. College	8	4	4	1
Berk. College of Educ.	7	2	2	1
Chippenham Tech. College	21	7	7	4
Cirencester	10	2	4	2
Kingston Maurwood, Dorset College of Agric.	31	16	25	18
Lackham, Wilts. F.I.	42	4	23	13
Lacombe Tech. College	12	2	8	7
Sparsholt, Hants. College of Agric.	27	9	16	13
Salisbury Tech. College	17	5	9	4
Swindon Tech. College	8	3	2	1
Trowbridge Tech. College	7	1	-	2
Witney Tech. College	7	1	2	2

66. There was evidence that awareness of training facilities correlated with a favourable attitude to training. Thus the farmers in Group 1 mentioned an average of almost two institutes each, those in Groups 3 & 4, only the somewhat improbable number of one-and-a-half: -

	Average mentions per farmer
Group 1	1.9
Group 2	1.7
Groups 3 & 4	1.5

However, even among Groups 3 & 4, awareness and contact with the institutes was at a reasonable level. Only 5 of the 35 farmers in Groups 3 & 4 could not nominate a single institute that gives training and 7 more, while able to give the name(s) of farm institutes had neither sent anyone there, visited any institute nor know any of the staff.

b) AWARENESS OF COURSES

67. We asked farmers if they know what kind of courses were available at farm institutes: -

Courses available at institutes		%
Farm machinery courses (baling, combines, tractors)	31	
Engineering, welding, electrics etc.	21	
		52
Livestock husbandry	22	
Dairying	12	
Poultry	7	
Other livestock	1	
		42

Courses available at institutes		%
General agricultural courses	15	
Cropping, soil structure, spraying	10	
		25
Records, bookkeeping	8	
Farm management	10	
		18
'All kinds'		34
Don't know what is available		17

68. The above analysis suggests that it is courses relating to the use of farm equipment that come most readily to mind, with animal husbandry coming a fairly close second. Except for the 34% who claimed that 'all kinds' of courses were available (an answer that could conceal ignorance as much as it may reveal knowledge) awareness of other forms of farm training seems to have penetrated among only a smallish minority.

69. The institutes nominated appear to be the places that farmers would be most likely to turn to if they need to find out about courses; there were, however, scattered references to other sources - e.g. the N.A.A.S., manufacturers, newspapers and magazines. Only one farmer in eight specifically said he wouldn't know where to go for advice on courses that are run.

c) SATISFACTION WITH COURSES

70. Most farmers discussed the courses - they were invited to comment on the satisfactoriness of the courses (their range and context) and of the instructors. Roughly one third of the farmers said they couldn't really judge these issues, they had no direct or recent experience and were unwilling to rely on other people's say-so. Among those who did express

opinions, however a broad summary suggests that downright dissatisfaction with what is currently on offer is at a very low level: -

	Range of Courses	Content of Courses	Instructors
(No. of farmers expressing opinions)	(92) %	(79) %	(74) %
Very satisfied	58	59	65
Fairly satisfied	37	28	25
Just satisfied	-	8	25
Dissatisfied	5	5	5
	100	100	100

71. Although given an opportunity of suggesting ways and means of improving the quality of training courses, two out of three farmers had nothing to offer. And, among the suggestions that were made, a large proportion were very general in nature - or somewhat unrealistic:

16 farmers wanted "more practical work"
3 expected the institute to be able to confine their instruction to men who intend to stay in agriculture
4 wanted less "silly scribbling"

Among the somewhat more constructive suggestions were requests to:

i) Ally suitable courses with practical demonstrations on the farm (3)
ii) Train more men in the home area or under conditions similar to the home area (5)
iii) Keep the courses at a level that did not overestimate the ability of the workers to keep up (7)

iv) Devote more attention to specific subjects (e.g. land drainage, modern dairying methods, sheep farming) (4)

d) AWARENESS OF WHAT HAPPENS ON A COURSE

72. Of the farmers to whom we put the question "What do you think actually happens when a man goes on a course?" the majority expressed the view that it consisted of an exposition of theory linked to practical demonstrations. Comments of the following kind were made by some 70 - 75% of the farmers who expressed a view: -

"They get instructed in basic theory and then are shown the theory in the field"

"A lot of practical work as well as theory"

"Think they generally try to get a bit of practical training in. . . . theory by itself is not worth a damn."

"Both theory and practical work there, but I wouldn't be sure."

73. Most of the rest of the farmers said they just didn't know what went on - and the odd farmer expressed views that suggested a modest amount of confusion in his own mind: -

"I think there is probably a lot of messing about if they are away for eight hours. I doubt if they get very much practical work in. . . . but I think what they get is enough."

74. Again, apart from those who admitted ignorance about what goes on, there were few highly critical comments - a mere handful of farmers, for example, said that they were pretty sure it was far too theoretical.

e) GENERAL AWARENESS OF COURSES

75. After looking at the replies given by farmers when discussing workers, we attempted to classify farmers - purely subjectively of course - into one of four categories; categories that related to the farmer's apparent state of knowledge about training courses.

76. In our total sample, only 7 farmers (about 5%) were classified as 'very knowledgeable'. That is, they knew of institutes, could nominate courses run, appeared to be fairly familiar with what went on, and so on. A further 47 farmers (just under a third) seemed to be fairly knowledgeable - they at least knew about courses, they may have sent men on them, they may know about the scope and content or at least know the tutors, etc. 70 farmers (just under a half) had no more than a slight knowledge of the courses available (they could, perhaps, nominate institutes but appeared to know little more). 27 farmers (just under a fifth) had no knowledge at all of training courses other, perhaps, than knowing the name of a single institute.

77. Hardly surprisingly, knowledgeability about formal training courses correlates with basic attitudes to training: -

	Attitudes to training		
	Very Favourable (Group 1)	Fairly Favourable (Group 2)	Neutral/ Hostile (Group 3)
(Base)	(71)	(44)	(35)
Knowledgeability about training courses.			
Very knowledgeable	8	-	3
Fairly knowledgeable	44	27	11
Slight or no knowledge	48	73	86
	100	100	100

78. To summarise: Most farmers can nominate one or two institutes in their area that offer training. A fair proportion have sent one of their workers, visited the institute or know the staff. However, probably no more than a third have any reasonable level of awareness of what goes on at a farm institute or a similar course, certainly not enough to make a reasoned appraisal of its relevance to their needs. An interesting feature of the answers was the relatively low level of hostile comment about the courses and the instruction given - it was at a far lower level than the proportion of farmers we have classified as 'hostile' to training - especially formal training - might suggest. It seems feasible therefore, that hostility to training among farmers is not generally derived from criticisms of the range or quality of the formal courses given. It appears to have much more to do with their convictions about the relevance of training to jobs about the farm or to the trainability of their men.

f) USE MADE OF COURSES

79. Our 150 farmers employed, between them, 400 workers - i.e. an average of 2.7 workers per farm. The age distribution of the workers was as follows: -

	All Farmers	Farmers classified as being in Group 1	Groups 2 - 4
	%	%	%
Age of worker			
Under 20	13	14	13
21 - 25	15	17	14
26 - 30	7	8	7
31 - 44	31	34	27
45 & over.	34	27	40
	100	100	100
Average no. of workers per farm	2.7	3.0	2.3

80 So far as workers under 30 are concerned, then, there is very little difference in their age distribution between working on farms where the farmer has an 'enlightened' or 'less enlightened' attitude to training. The significant difference affects workers over 45, who are disproportionately common on farms whose farmer has somewhat less-enlightened views about training. However, the more 'enlightened' farmer is likely to employ more men than the less enlightened farmer. Hence, in terms of numbers of men in each age group - especially men under 45 - the incidence of men employed on their farms will be higher. Thus, while Group 1 farmers comprise 47% of all farmers: -

Of all workers aged under 20,	57%	were employed on farms whose farmer fell into Group 1.
Of all workers aged 21 - 25,	59%	" "
Of all workers aged 26 - 30,	59%	" "
Of all workers aged 31 - 44,	60%	" "
Of all workers aged 45 and over,	44%	" "

81. Of the men under 30, some 30% had been on day courses while with their present employer. The age distribution of this 30% was made up as below: -

	%
Under 20	13
21 - 25	13
26 - 30	4
	30

82. In terms of types of courses, of those attending <u>any</u> course:

57% went to a <u>day release</u> course
27% went to a residential course
24% went to evening courses
22% went to a one day demonstration
8% went to a one week course
8% went to other kinds of courses

(Note that the base for percentaging is small, so that too much should not be made of the differences shown; percentages add to over 100 because several went to more than one kind of course.)

83. In terms of the nature of the course: -

48% took a 'general agricultural course
32% took a machinery course
15% took a dairying course
9% took an animal husbandry course
19% took other courses (grassland, cereals, farm accounts, etc.)

84. So far as providing impetus for attendance at courses is concerned:

In four cases out of ten according to the farmer's own assessment, it came from the worker.

In three cases in ten it was at the farmer's suggestion

and in the remaining cases it was about evenly divided between joint farmer/worker discussion and to the initiative of other bodies (e.g. the local college, local feed firms, machinery manufacturers etc.)

85. In the vast majority of the (admittedly small number of cases), the farmers believed that both they and the worker benefitted. In fact, in only about 10% of cases did the farmer claim no benefit to himself and/or the worker. While farmers did not see the benefit as producing a direct financial return, most of their replies indicated positive benefit. For the worker this was seen as improving his interest in his job and, for the farmer having a more interested worker meant improving the efficiency with which he did his job - and of reducing the amount of supervision

required. In a handful of cases the benefit was seen as even less direct - the training performed a 'mind-broadening' function rather than one that had any direct bearing on job performance: -

	Worker Benefit	Farmer Benefit
	%	%
More interest in job/more efficient/ needs less supervision	75	75
Lower costs, higher profit	-	5
Broadens outlook	14	9
No benefit	11	11

86. So far as the subsequent use of the worker was concerned, just over half the farmers said they didn't, in fact, use the man any differently, though many qualified this by saying that the man was better at doing the same jobs. In roughly a third of cases the man was given more responsibility and in the remainder of cases he could be used for a wider range of jobs: -

Subsequent use of worker	%
No different use made, but worker more efficient	30
Worker given more responsibility	28
Worker more flexible	16
Used same way as before	25
	100

87. Just under half the farmers who had sent men on training courses said that it did give rise to problems, though for many these were relatively minor matters - usually relating to

the problem of giving time off. Other problems raised (none by more than four farmers) were:

worker opposition to being trained
the risk of losing the worker to a better paid job
that it makes the man dissatisfied with his lot;
inflates his ego.
the financial problem of 'finding the money'

88. Finally, in addition to sending men on formal training courses, a fair proportion of farmers had arranged for organised instruction on the farm: -

14% of the men under 30 had attended an instruction course on the farm arranged by a feed firm or manufacturer.

14% had attended a 'formal' instruction course given by the farmer himself or by one of his senior men

3% had attended a farm demonstration or Young Farmers course. (The total figure is 25% due to some duplication in on-farm courses.)

89. Looking, in summary, at all training (on or off the farm):

8% of the under 30's had received both off- and on-farm 'formal' training

22% had received formal off-farm training, but no 'formal' on-farm training

17% had received 'formal' on-farm training

47% had received some kind of formal training.

g) REASONS FOR NOT TRAINING THE UNDER 30'S

90. As we have noted, only 30% of the workers under 30 in the sample had been on a formal day course while with their present employer. We also asked farmers therefore, whether or not they believed their workers under 30 were worth training. Where farmers had not sent men on formal training courses, over half said 'No'. (Just under half the farmers who had sent men on courses also said 'No', but in most cases this reflected the conviction that the men were now adequately trained)

91. The principal reasons given for clinging to the belief that workers were not worth training were: -

	%
Knows all he needs to know	48
Worker not interested	18
Not intelligent enough, illiterate	21
Learns on the farm	17
Too inflexible	3
Does not believe in training men	3
No time during working day	1

92. We still have over a quarter of the 'under 30' workforce which have not been on formal, off-farm training courses but whose employers believe they would benefit by training. Most expressed a willingness to pay more, even more expected benefits to themselves (in terms of efficiency, less supervision etc.) and to the man (more job satisfaction.) In these cases the barriers seem to be partly inertia (on both parties side) and, partly a lack of interest on the part of the worker and (of less importance, at any rate in the context of the interview) practical difficulties of sending the man on a course.

7. PERCEPTION OF TRAINING

93. At numerous points in the interview farmers had - and took - the opportunity to discuss how they saw training. From what they had to say, it is important to distinguish the concept of training from the means by which training is administered. We have seen, in an earlier section, that a large majority of farmers approve of the concept of training. However, when they talk about what they mean by training, it is clear that many have in mind more a continuing, if informal, process of 'on farm' tuition from the farmer himself - interspersed, if necessary, with the occasional short course of instruction at an institute, than any highly systematic and sustained programme of tuition. Thus views similar to that expressed by a small dairy farmer with one employee were quite commonly expressed: -

> "You are always learning. You need training all your life. . . . it's very difficult in agriculture. You can have too much training - you learn a lot of facts that are irrelevant to your farm. You must sort out the important from the unimportant to adapt to your individual farm. (How do men get right kind of experience?) Being with them and showing them. Leave them to make their own mistakes and hope they aren't too serious . . . . . (between the two in attitude to training; asked why, said): day release courses don't have much effect, though probably useful as social centre for youmg people."

This response came from a larger farmer, with 400 acres: -

> "If he was very young you might want to get him trained. It all depends on how much you know yourself. If you know it all, you can teach him yourself. (Jobs that need training?) I wouldn't think there were apart, perhaps if you wanted a mechanic. . . . . they have learnt under me and I have learned

from them!

And from another small dairy farmer: -

> 'Although I have never been on a course myself I consider training to be a very good thing. I like to train a man myself but accept that a certain amount of theoretical knowledge is necessary.'

94. ...There were, of course, very many farmers indeed, numerically the largest single group, who saw training as occupying a much more central role. Thus, from a 430 acre farmer with four men: -

> 'My men have been to various day release courses.... ploughing matches very useful. ... with new techniques increasing year by year there's much more progress today than ever before and you want a man that can keep ahead in his job.

95. However, it is not solely a matter of acreage that influences farmers perception of the need for training - the following quotations come from a small (120 acre) dairy farmer with one man: -

> 'People think that a farmhand has no sense but today he has to be a reasonably clever man; he has to be the master of many jobs. He definitely needs training because farming has changed. The whole job is more scientific.. .... but the individual farmer still has to train a man a bit to his own way of doing things.. ... any youngster would benefit from at least a day's training a week if there is a suitable place for him to go. But it must be related to practical work. It is not possible to have too much training because it makes for keeness.'

96. However, apart from a small minority opposed to the principle of formal training, there was a general consensus that some kind of formal training is desirable; the differences between farmers related to

a) its importance: for some, as we have noted, it was seen as of basic importance, a necessary structure upon which to build. For others it was seen more as a useful, but not essential, complement in the process of learning by experience.

b) its timing: for some farmers training was seen as being a preliminary to getting down to practical farm work; for others it was regarded as being necessary to get the basic feel of things first.

c) the responsiveness of workers to training: many farmers made the point that 'it all depends on the man'. Though only a few expressed strong doubts about the responsiveness of their men to training; except, perhaps, for a fringe consisting of the young and disinterested, and the older and rather set in their ways. On the other hand, even among the enthusiasts for training, the view that an untrainable man wasn't worth having on the farm was rarely explicitly stated.

d) its relationship to learning by experience: the need to relate training to practical work on the farm (preferably the farmer's own farm) came through very strongly. The fear was frequently expressed that training can become too far removed from practical application. In this respect there was a good deal of support for 'refresher' courses, not only to relate 'theory' and practical experience but also to bring men up to date with new developments. 'Training' was also perceived as being more critical in

relationship to the care of things mechanical about the farm; experience as being of much more importance when it comes to husbandry - especially animal husbandry.

97. The following extracts from interviews illustrate these differences in emphasis.

<u>From a 400 acre Dorset farmer with four workers:</u>

<u>Importance</u>

If a farm is fairly modern... ... all the new things that come along you can learn it all by practical knowledge but if on an average sized farm you may try to send off your own staff to these day release courses. It helps them and gives them a better outlook about things.

<u>Timing</u>

Never send someone to learn about a combine until he knows something about it and knows what to look for by practical experience. . . .

<u>Training/experience</u>

Machinery pay off (of training) is obvious. Stockwise I wouldn't say so.. .. .(stockman) can learn most from farmer himself or the vet.

<u>Responsiveness of worker</u>: <u>Timimg</u>: <u>Experience</u>:

If I had a young lad and he showed keenness I would arrange for him to go on a day release course in my time..... my head tractor driver does one course each year in his own time and I pay for the course.. . .all courses tend to be a bit theoretical if you haven't had sufficient practical training to start with.

<u>Responsiveness</u>:

You have not to be for training these days - you owe it to the men."

From a 300 acre Oxfordshire farmer with two men

Importance:

"Training always helps for any job, there is no boubt about that. The trouble is, after they have been trained, they all want the top jobs. (Jobs needing training?)

Training/experience

The workings of milking machinery and to understand all the workings of machinery on the farm (Experience?) They can pick up the veterinary side of things as they go along . . . if a cow is off colour you get to know how to recognise such things. . . with training you can keep up with times, older men are a bit apt to get a bit behind the times. . . I sometimes wonder if they get enough practice in their jobs they are teaching.

Responsiveness of worker

You want them away when they are young . . . . (What sort of man?) The keen men who takes an interest in his job."

From a 280 acre Wiltshire farmer with one man

Importance

"I am not against training, but it must be complementary to practical training. . . .

Responsiveness

Some men you could not teach at all . . . . .

Experience

They may come back from a course knowing more than you do, which could be frustrating when you kmow that your way of doing things suits your farm in practice rather than their knowledge gained theoretically."

Another Wiltshire farmer with 270 acres and two men

Training/experience

Training is necessary for milking, but it can all be done in the farm. . . pays us to train a man our own way, rather than take a trained man. Experience is the only way to learn all farm operations . . . short term courses I regard as experience as long as practical training is involved, books alone are no good.

Timing: Importance: Responsiveness

Courses, in our circumstances are not of much good - too busy during day. . . . . essential to have men trained as we are getting to the stage where there are not enough men. A little theory goes a long way. Would only have an experienced man for my purpose but if I had to start a new chap from scratch, would prefer he had a little theory at least. But must be a chap who was extremely interested, otherwise would go and not learn.

8. REASONS FOR LEAVING FARMS

98. Roughly 45% of farms had lost at least one worker under 30 in the two years preceding the interview - between them they had lost about 70 men. (The same farms had lost only 46 men over 30 in the same perids). The principal reasons given - by the farmers - were: (For comparison, the reasons for the over 30's are also quoted) -

	Under 30	Over 30
	%	%
Personal reasons	33	57
Incompetent, unreliable	21	9
More money offered	13	2
Left for formal training	11	-
Redundant	11	9
Better job elsewhere	10	15
Retirement	-	9

99. Roughly half the under 30's appeared to go to other farms most of the balance went out of farming:

Where did worker go?	%
Other farm	46
Out of industry	38
College	11
Don't know	4
	100

SECTION D : THE RESULTS OF THE FARM WORKER SURVEY

1. Introduction

100. On just under half the farms in our sample (72, to be precise) we interviewed one of the farmer's employees. Interviewers were asked to contact an employee under 30 and in 68 of the 72 cases were able to conduct a satisfactory interview (in the remaining four instances the interview had to be terminated prematurely or the worker was subsequently found to be outside the appropriate age group). As already explained, the interview was informal in nature; it dealt with subjects such as the way in which the worker entered agriculture, what he likes and dislikes about his job, what training (if any) he has received and how he feels about training and how he regards his future. Thus, our objective was to be able to describe the general characteristics of the workers who are the immediate 'prospects' for training and to relate their attitudes to those of their employers.

2. The Worker's Background

101. It is still broadly true that the great majority of young farm workers have a background of country, and even specifically of farm life. Nine out of every ten workers we talked to had previous experience of country life and only two of these nine had not worked on a farm before. Thus comments like these were fairly typical: -

> My grandmother had a small farm and during the school holidays we were sent up there half the time.

> I was born into farming - my father was a dairyman. Most of the boys in the country spent their spare time on the farm and I automatically went on to a farm.

> Lived on a farm all my life.

> Father has been in cows all his life and I suppose I just followed him.

102. Moreover, the great majority of workers are in farming because they want to be there. In no more than ten out of our 68 interviews was there evidence that the worker had just drifted into farming, evidence such as: -

> There weren't no more jobs going. My mum asked me if I would like it. I used to do a bread round.. I got the sack from the round because of a misunderstanding with the foreman's son.

> I just sort of drifted into it. Nothing was ever really said, I never really thought of doing much else.

> I wasn't any good at anything else, to tell the truth!

103. Much more common was the self-motivated, who had often, admittedly, a family tradition of farming but who had consciously chosen it as a career: -

> I was born and bred into farming. ...my father he works here and my grandfather before that.....the farmer asked me 'Do you want to come and work for me?' I made up my own mind.....

> Traditional occupation in my family. I enjoy it more than anything else.....

> "Father is a farmer, so it's inbred."

> Came straight from school - always wanted to be in the country, so joined this farm.

104 In fact, the triple threads of family tradition, being brought up in the country and of having a strong basic interest in farming as a way of life were predominant in the answers. And 61 of the 68, when asked specifically whether or not they were attracted by the idea of farm work, replied in the affirmative. 60% of the sample had not even considered any other career and many of those that had done so gave answers that were rural -orientated (e.g. forestry, agricultural engineering, etc.).

105. Parental influe ce seems to have been, by and large, either favourable or neutral. Only half a dozen workers said their parents had expressed fears about farm work as a career, warning of the disadvantages. In 48% of cases the father was either a farmer or farm worker himself. The influence of contemporaries at school appears to have been relatively unimportant. In about a third of cases schoolfriends had gone into farming and in about a fifth of cases schoolfriends had advised against going into farm work. However, there was little evidence that either influence had made a profound effect. About two out of every three had come into farming straight from school - those who did not were divided into boys who had gone first to some other job (the great majority) and a handful who had gone first to agricultural college. 25 of the 68 workers we interviewed were married. In the majority of cases their wives were also country women and had themselves experience of farming (15 out of 25): none of them admitted to having a wife who was unhappy at living in the country. Moreover, 23 of the 25 wives were behind their husband's choice of job - they thought, at any rate according to their husbands, that it was the right job for their menfolk to be in. And in only two cases were problems experienced in finding accommodation.

106. It seems clear, therefore that marital disturbances (other than those that are a characteristic of all marriages) have little or no bearing upon any inherent job dissatisfaction that the younger agricultural worker nay feel - indeed, with such a large proportion of wives apparently happy with their menfolk's lot, wives may well exert a stabilising influence.

107. There is fairly clear evidence that the workers we spoke to are happy with their jobs. All but half- a-dozen said they were 'glad' that they went into farming. As we have noted, a large proportion have farm or, at least, country backgrounds and theysee the advantages of being in farming largely in terms of it fitting into their general environment.

Advantages of country life/farm life	%
Always lived there, used to it	37
Peace, quiet, no traffic	37
Near the family	27
Freedom, privacy	11
Like social life	5
Other advantages	8
No special advantages	16

(Several gave more than one reason)

The principal disadvantage - by far - was seen as the length of the working day: -

Disadvantage of country life/farm life	%
Too long a working day, week, no leisure	57
Very tied up by stock	14
Have to get up too early	6
Danger of getting in a rut	6
Others (tied cottage, no extra pay for overtime, etc.)	13
No special disadvantages	8

3. The First Job

108. We asked the workers what sort of jobs about the farm appealed to them, when they got their first job. Their answers, of course, are clearly influenced by the nature of the farming in the area, but they do show a strong preference for dealing with animals. Of those who had a preference, over four in five were attracted by the idea of working with animals (generally, but not always, dairy cattle); most of the rest liked the idea of working with farm machinery.

109. Hardly surprisingly, in view of their backgrounds and family connections with farming, a large proportion of our informants got their first job because of family or personal connections:

Relation's own farm	18%
Relation employed there	12%
Personal recommendation	11%
Farmer was friend of family	8%

Personal initiative showed through more clearly in other cases:

Asked to join farm	26%
Answered advertisement	9%

The remainder got their first job through a variety of channels, none of any great consequence - they worked there as a boy; they 'just fell into it', they got it through the Y.M.C.A., the Young Farmer's Club, Labour Exchange, etc. But, as the above analysis shows, it was mostly a matter of personal, and often family, contact.

4. Job Changing.

110. Six out of ten of the workers we interviewed had, at some stage, changed their jobs within agriculture at some time or another and some (though only a minority) had made more than one change. Since most of them began work on the farm straight from school and thus there is an average work - experience in farming of around 5 - 7 years, this ratio does not appear unduly high. In many cases, too, movement was the consequence of circumstances, rather than a desire for change on the part of the worker - there were half a dozen redundancies, a couple who had had to move when their fathers changed jobs, three whose jobs were only temporary, in any case No single factor appeared to dominate in prompting change though where the worker himself

appears to have been the prime mover, three main reasons were most commonly given: -

> personal reasons (including, apart from romantic associations, simple matters of personal differences with the farmer or other workers)
>
> a desire for more responsibility or the opportunity to gain experience
>
> and a specific desire to earn more money. (This cropped up less often than either of the other two reasons).

Only a couple specifically complained about working on an unsatisfactory farm.

5. Early Instruction

111. Practically all of the young worker's early instruction is 'picked up' informally, from day to day contact with the farmer and with other workers. Only a couple of workers had, at this stage, formal farm institute training; if they did not get instruction from the farmer or other workers, they just had to pick things up the best they could - this form of 'learning' appeared to be the means by which about a third of the workers received their early instruction. However, while this may appear a somewhat haphazard means of acquiring training, it is worth tempering such a judgment by bearing in mind that a high proportion of farm workers have a measure of familiarity with farm life before they begin their first job. The following extracts illustrate the various ways in which early 'training' began: -

> I knew how to drive a tractor and milk cows before I left school. Employer showed me how to plough.'

"Obviously the ins and outs of various jobs I learnt from the chaps. Bigger things I learned from Dad."

"There was another dairyman on the farm when I started who taught me how to do things."

"Virtually left to get on with things myself... learnt most from one other fellow on the farm. No once else helped at all."

"Mostly you had to find out yourself."

112. Hardly surprisingly, in view of the principal sources of instruction, the great majority of workers attributed the bulk of their training to their employers and to other farm workers. The worker who said "I rely on using what knowledge I have gained at courses I have been on" was not just rare, he was unique.

113. Roughly half the workers we spoke to claimed to have had no particular anxieties about their ability to do the jobs they were called on to perform when they started to work on a farm and of those who admitted to having problems these were often prefaced with the comment "Problem? Nothing in particular. Except I found milking (or ploughing or some other job) a bit difficult at first." The jobs that did cause problems were: -

	% referring to jobs 'difficult to begin with'
Milking	12
Animal health	9
Ploughing	6
Spraying	4

plus one or two who had problems with hedgecutting, food allocation,

haymaking with a pitchfork, drilling, baling and accounting
A selection of comments is given below: -

"Feeding . . most farmers buy in bulk to feed a set number of animals. If left to do this myself I have to make sure it will work out. Experience teaches this. Setting a drill for mangolds and grass seed is also a problem. . . . Spraying would also be a worry or, perhaps, more of a test. You can't cover it up once it is done - a very skilled job."

"Milking and being in charge of animals on your own. You have got to keep an eye on it. And spreading fertiliser, I don't drive a straight line."

"Disease recognition."

"Milking was the most difficult job, I never used to enjoy it. But once I realised what I was doing and why, I began to enjoy it."

"Most difficult was determining when cows had finished milking."

"I was initially unsure about checking diseases in animals i.e. mastitis and milk fever. I was not sure of the correct remedies. . . . also I could only deal with small breakdowns in machinery. . . . a major breakdown is beyond me."

"Spraying. This job has so much responsibility attached to it because if you make a mistake in application a whole crop can be lost."

And, finally, the respondent who used to worry about whether I was doing the job well enough to satisfy the farmer and then I found that it is impossible to satisfy a farmer, I don't think you will ever find a satisfied farmer."

6. Experience of training courses.

114. In our sample were 33 workers who had been on training courses - just under half of the workers we interviewed. Thus, there probably is some over representation of young men with some kind of training, since among the 150 farms' employees under 30, only some 30% had, according to the farmer, been on a course in the past 3 years. (The questions were not identical, so exact comparison is not possible.)

115. Between them, the 33 respondents had attended a variety of courses. Most common were - general agricultural course (11); courses in farm mechanisation (5); school leaver's courses (4); courses in dairying (4); hedge cutting (4); soil management (3); The most common kind of course was day release, though a number had attended full time diploma courses. Virtually all the courses were seen, by those who attended, as being a combination of theory and practice, though a handful of informants said there was mostly theory. All but six of the thirty three said they found the courses they attended 'very' worthwhile and three of these six only qualified the 'very' to 'fairly'. The great majority expressed high opinions of their instructors, with an occasional qualification. Criticism of the quality of instruction was, however, rare.

116. The benefit of training was seen primarily in terms of improving the worker's efficiency, confidence and knowledge of his job; enabling them to accept more responsibility and be more flexible. There were no references to a direct pecuniary benefit from training and few who talked in terms of its effect on equipping them to get a better job elsewhere (a fear that, as we have seen, some farmers have), This does not, of course, mean that these considerations are not present in the farm worker's mind - it does, however, suggest that the main motivation in attending courses is basic interest in his present job.

117. Because of the special interest of the client in reactions to training courses we reproduce below a selection of comments from workers: -

"Been on demonstrations and lectures organised by M.M.B. at Chippenham Tech. - a dairy farmer comes and lectures every two months . . . learn a lot from these lectures, also been to Lackham, organised by County Education Officer . . . been three times this year. Invaluable knowledge gained. . . at these meetings there were 20 or 30 farmers and at question time much knowledge is gained."

"Went to evening classes in Trowbridge - stockmanship, accounting, we ding, etc. and to Lacombe, several weeks course in general agriculture. Lacombe wasn't worth going to, it wasn't very good, thorgh evening classes were good. Got most out of Trowbridge."

"General course at Kingston Marwood. Dorchester. Just started second year. Its worth going to.... .you learn all about the little things you might otherwise miss by picking things up on a farm."

Nine months N.C.D. course in dairying. Not really worth going to. Seemed all right at the time but, looking back, there is very little I want to know in everyday work. Instructors very good... . ..

"Took City and Guilds 270, also evening courses - sometimes three evenings a week followed by proficiency tests held at Dorchester - did day release while on two year practical at Wimborne and Poole. Would like to do a welding course next. Cannot do it all by experience."

"Stage 1 in crops, machinery and dairy (NDA course). Started on Stage 2 but no time on this farm.. . ...

livestock side worth going to - but other subjects didn't interest me. You learn a lot of the theory side but I don't think you can call yourself a dairyman - you need experience on the farm, too.

General farm (day release) course at Salisbury. Definitely worth going to... but not a great deal about crops. Stockmsnship: I learnt plenty I didn't know before, especially diseases and how to cope with them.

Brinsbury C.of A. (N.C.A. in Agricu ture) - 75% theory but well worth going on. Instructors were fairly well trained. However, I felt I knew more than they did on some subjects - got a paper qualification out of it, that's all.

N.D.A. Shuttleworth... poor facilities... lecturers weren't top class..... wouldn't do it again. Machinery side was poor - not enough emphasis on livestock but they were trying to turn out managers,

Berks. C. of A., N.C.A. course... ...the best year of my life - no complaints. Any youngster going into farming just couldn't do without it.

Used to go to Witney from school. They taught you how to drive tractors but I knew anyway... instructors spoke to you as if you were children..... if you live on a farm you don't have to be taught so many things.

7. Job satisfaction and the role of training.

118. The value of training has, of course, to be judged in relation to the day to day conduct of the worker's job: for this reason we put several questions to them about their job: what tasks are involved; how confident the worker feels about them; what sort of jobs he'd like to do, and so on. This led

us, fairly naturally, into discussing what relevance training had in fulfilling the worker's needs of his job.

119. To fill in some factual background, the young farm workers we spoke to appeared to do most of the jobs that were undertaken on the farm. In fact, when asked what they did, about a third said they did most things on the farm, without feeling any need to specify beyond that point. Of those who did spell out their main jobs; -

Half were involved in milking; the same proportion undertook ploughing.

About a quarter had specific dealings with young stock.

Anything from one in eight to one in twelve (with such a small sample, it would be misleading to be too precise) undertook -

hedging
dealing with pigs
looking after poultry
dairy management
haymaking
arable work
corn bagging & drying
general machinery maintenance
farm bookkeeping
farm management

120. On the whole, the jobs that are enjoyed are those that have to do with driving or using machinery or dealing with stock. Thus, a third of workers said they specially enjoyed tractor driving, or combining, or ploughing, etc. About the same proportion expressed pleasure from dealing with stock.

121. Four in ten workers rejected the idea that there were jobs about the farm that they did not like and no single task was disliked by more than one worker in ten - and top of this list was 'mucking out'. A handful said they didn't much care for milking; two or three had a dislike for hedging and ditching, feeding pigs, ploughing and a number of other farm tasks. Objections to the jobs disliked were based solely on two grounds: their dullness and their physical unpleasantness. Moreover, although workers would occasionally confess to feeling a little less than fully confident about their work (though this was, itself a pretty infrequent occurrence); specific jobs about which unease was felt were mentioned very rarely indeed - there were a couple of references to the difficulty of recognising diseases in animals and one who said that he found record keeping a bit of a problem.

122. While roughly two thirds of our informants said that there weren't any jobs in particular that they would like to do but which they don't do at the moment, the remainder did produce a list. No single job featured more then half a dozen times and most only once or twice: -

Would like to do

Work on tractors, combines	(6 mentions)
Milking	(4 ")
Arable farming	(3 ")
Engineering	(2 ")
Work with pigs, poultry	(1 ")
Sheep	(1 ")
Farm management, accounting	(1 ")

123. Typically, these young men have considered getting training so that they would be better equipped to do the jobs, but not very seriously. Some have plans to take a course later on (in a few cases these seem definite, in others one suspects

that it is no more than a pipe dream); some plead lack of time or opportunity. Some expect that the passage of time will give them the opportunity of doing the job. No single reason was given with any great regularity -

	No. who gave reason
No opportunity to use training	6
No time	6
Hope to pick up without needing training	6
Plans to take course later	6
Put off until another time	4
Cannot take course for family reasons	3
Don't like book work	3

(Other odd reasons were given, none cropped up more than twice. Several people gave more than one reason.)

124. Among the young men who have considered getting training to improve their skills, the majority expressed a willingness to attend courses irrespective of whether they were held in the farmer's or their own time - though, naturally, there was a greater willingness to utilise their employer's time: -

Would attend in:	%
Own time	53
Employer's time	62

Moreover, of those who said they would be prepared to attend in their employer's time, only three informants said that they'd be a bit nervous about asking for time off.

125. The main reasons given for not wanting to go on training courses were pretty much the same as those quoted as resistances to training before: a general lack of interest, the view that it would be irrelevant, lack of time and (among a few workers) a lack of interest in book work.

126. Given below is a selection of comments on attitudes to the idea of getting training for jobs that workers feel they'd like to do.

From an informant, aged 24, who'd not been on any courses but 'wouldn't mind doing a bit of ploughing and drilling': -

Hadn't thought much about getting training. I suppose I would pick it up myself, wouldn't I? There is usually a piece in the Farmer and Stockbreeder and they will always send you a booklet. If employer told me to go (on a course) I would have to, I suppose, but I wouldn't really want to. I think it would be a waste of time, really. I had enough school when I was there. (Go in own time?) I wouldn't mind going in my own time, though. (A surprising comment, in view of his general opposition to training)

From a 19 year old tractor driver and relief milker with 3 months service with his present employer

(Jobs like to do?) Applying fertiliser, spraying. Couldn't work out what I need at present time. Have never thought about a course as have reckoned that the man I'm working for will teach me in time. Would go in employer's time, it would be in both our interests. Would go in own time, but I don't get uch time. I'd go in an evening if it was at a reasonable time. Wouldn't feel nervous about asking farmer for time off to go on course.

From a 25 year old assistant manager of a 780 acre farm in Dorset, who has been on courses:

Would like to go on welding course at Farm Institute and on maintenance course at Fords.... thought of training and will try to get in on one next year. Was too late this year - full up. Would go in own or farmer's time. No worries about asking

to go on course."

From a 27 year old, with 4 years on the present 150 acre dairy farm, with no formal training

"No jobs I'd like to do that don't do at present. Not thought of training. If employer suggested it, fair enough. If he wanted me to go, it is like another job in his time. Would have a go at anything he suggested. Wouldn't go in own time. You need your own free time, there's little enough of it as it is."

127. It seems unlikely that lack of knowledge of where to go to get training is much, if any, of an inhibiting factor. All but a handful said that they know where to go to if they felt a need to get training. Most of them said that they'd contact the local farm institute or technical college and ask them for information. A handful said they'd ask their employer and a few others referred to other sources (MMB advisors, local education authorities, manufacturers, etc.). And, given the interest in attending, most did not expect to run into practical difficulties. Lack of time and transport were each quoted by a handful of workers, and there were one or two other problems (e.g. the need for a grant). But it seems that these difficulties would affect only a quite small minority of men.

128. Thus we have a composite picture of young farm workers who are reasonably satisfied with their job proficiency; they can nominate some jobs about the farm that either they feel a little uneasy about or about which they would like to know more. Most have given the idea of getting training some consideration, though a significant minority have rejected the idea as irrelevent to their needs. The consideration given to training seems to have been, on the whole, fairly casual. Given the stimulus (e.g. a suggestion from their boss) they would

probably attend courses and the majority would not find very serious obstacles in their way. Equally, however, except for a minority who appear to have a positive desire for more training the more typical attitude seems to be one of 'favourably disposed indifference'. They approve of the idea but seem unlikely to do anything about it themselves.

8. The future.

129. We put a question to farm workers that invited them to talk about their own futures as they saw them - especially in relation to what they would like to be doing in, say, five years' time. We got a very wide range of answers, since different people chose to answer the question in different ways. However, one thing stands out very clearly: only a small proportion have a desire to get out of agriculture. By far the most common answer (given by about one worker in three) was that they wanted to stay in farming; most of the others who answered in job ambition terms talked about progressing in farming: to own or manage a farm.

What do you want to be doing in five years' time?	%
Continue farming	30
Farm on own account	19
Manage a farm	14
Go into agricultural engineering	14
Expand present operations	6
Emigrate, get different job outside agriculture	9
Other answers (personal ambitions etc.)	10

130. Most (about 60%) did not see any major problems in their path: those that did see difficulties spoke in terms of: -

lack of money	17 mentions
lack of knowledge	5
housing problems	3
and having to wait (for exam results; to complete training; for children to grow up)	5

131. As a final question to gauge their committment to agriculture, we asked all our young farm workers whether or not they felt that they were in farming for life. All but a dozen (in percentage terms, 82%) said yes, they did think they were in for life. We have carefully looked at these dozen since it is obviously important for the future of agriculture to ensure that it does not lose an undue proportion of workers that it ought to try to keep.

132. First, there is no clear pattern about the dozen's reasons for thinking they may not stay in agriculture. Only in a couple of cases was there evidence of going into agriculture largely by accident or being 'pushed in' (as was the case of an ex-approved school boy who was waiting to take over his father's radio and T.V. repair business). Most had a farm background; their ages ranged from 16 to 29 (though half of them were under 20) and there was no evidence of a dislike of farm work. Four of the twelve had been on courses and in only one case was there evidence of a distaste for formal training. The attraction of better money in other jobs was obviously a pull for three of the twelve, but not for the others. Frustrated ambition was a main factor in another case. Perhaps the most common factor (though this did not apply to all of the informants) appeared to be a passivity in their approach to their jobs - a lack of committment rather than any positive dislike of what they were doing.

133. Finally, we tried to classify our dozen possible 'leavers'

into two categories: those who would represent a real loss to the industry, whose interest in and attitude towards their job suggested a high degree of involvement and some ability and those whose loss would not be felt. On this, subjective, classification we concluded that five of the twelve would be a real loss to the industry - i.e. that, of the 68 informants, roughly 7% might leave an industry that would be better if it could retain them. This seems to us to be an encouragingly low proportion - certainly lower than the rate of loss that seems likely to be forced on the industry by redundancy and other pressures over the next few years.

SECTION E : SUMMARY & COMMENTARY

1. Summary

134. In this follow-up study, conducted in late '69 - early '70, we have interviewed 150 farmers and 68 workers, all within the Southern Regional Council's area. The farmers were drawn from a sample of over 1,000 who took part in a postal survey, on the same subject, late in 1967. The workers were employees, drawn from roughly half the 150 farms covered by the later survey.

The Men Who are Employed

135. We took two looks at the men who are employed in farming: from the point of view of the man who employs them and by talking directly to some of the men themselves.

136. Farmers, when they are looking for workers seem, on the whole, to value character traits (admittedly, often traits that relate to job proficiency) rather than particular technical skills. While comparison between older and younger workers generally favoured the older man (who had, or was seen to have, the personal qualities of honesty, steadiness etc. in rather fuller measure than their younger counterparts) the balance was by no means entirely on the side of the older man. A substantial minority of farmers regarded younger men as brighter, more adept at acquiring new skills and more flexible. Moreover, while farmers complained of difficulties of getting workers, their conplaints were not so strongly voiced as one might expect and most farmers - though they attributed their success largely to good fortune rather than their own skill - seemed to be reasonably satisfied with the men they had.

137. When we talked to farm workers we were impressed with the forces that work for stability in the agricultural industry. There was a good deal of evidence of the 'way of life' element in their choice of job, of strong roots in the country and with farming and of a large measure of job satisfaction. There were, of course, a minority whose approach to their job suggested a lack of motivation and attitudes towards work

that one might find in young men employed in comparable manual work in other industries. But most farm workers appear to like their jobs and to want to stay in them. We suspect that many farmers do not fully appreciate the good fortune they have in possessing a labour force which, on the whole, has a genuine interest in the jobs it is doing.

138. An important characteristic of the farm labour force is that most young men, when they begin their first job on the farm, have a general background of country living and in many cases, family tradition and personal experience of farm life and work. They do not, therefore, start their new job 'cold' in quite the same way as a young man who starts his first job as an apprentice pipe fitter or trainee bank clerk with little, if any, prior knowledge of what the job entails.

Attitude to Training Among Farmers

139. The earlier survey was designed more to describe the characteristics of the farms and their workforce than to investigate, in any great detail, farmers' attitudes to training. However, it did enable a broad assessmant to be made. This suggested that:

60% of farmers held views which were broadly 'favourable' in relation to the idea of training their workers.

27% held 'neutral' views

13% were 'hostile' to training.

140. Our subsequent study, which benefitted from a much more detailed appraisal of farmers' attitudes (which may, in any event, have changed with the passage of time) produces even More sanguine estimates of the extent to which farmers are well disposed at any rate to the principle of training. Our 1970 study suggested that: -

76% of farmers are 'favourably' disposed to training

13% are neutral and only

11% are hostile

141. The proportion of farmers favourably disposed to trainong was so large that we were able to subdivide it even further

into two broad groups - comprising farmers who were 'highly enlightened' in their attitude to training and those that, while in favour, were more lukewarm. This suggested that: -

47% of farmers fell into the 'enlightened' and
29% fell into the 'lukewarm' category.
76%

142. When, however, one gets into discussing farmers' perception of the role of training - and, of course, examining the extent to which they get their men to make use of the facilities available to them - the enlightened attitudes expressed often become somewhat modified.

143. First, there are reservations about which jobs are susceptible to the influence of training. By and large specific techniques (especially in relation to the care of machinery) can be taught; however the ability to diagnose a complex situation (e.g. the responses of animals) demands experience more than training. Though there was general agreement that even experienced men can benefit from further training.

144. Secondly, there are reservations about the nature of the training. It must be practical, i.e. applicable to the individual farm. While it would be an exaggeration to claim that all, or even most farmers are overtly suspicious of the notion of 'cramming too much book learning' into the heads of their workers, there was evidence that farmers are concerned about the need for training that has a direct application to their needs - and somewhat stronger then lingering traces of a suspicion that 'too much theory' is of little use to the farmer or the worker.

145. Thirdly, training needs are determined by the ability of the worker to respond to training. Doubts about this factor seemed to be most common. They cropped up in individual comments and also came out clearly when farmers were asked directly whether or not they thought their men under 30 would benefit from training; more than half replied in the negative. Moreover, only a handful of farmers said that a man who wasn't trained would be of no value to them.

Awareness of Training Facilities

146. The great majority of farmers 'know of' institutes where their workers can get training. In a very broad way, they know what kind of courses are available. They believe that, on the whole, the courses are satisfactory - a belief that is shared by the great majority of the men who have been on the courses, who responded favourably to them. But only a small minority of farmers - probably fewer than one in ten - is really knowledgeable about what happens on training courses. And roughly half the farmers we spoke to seemed to know very little, except perhaps the names of one or two institutes: certainly, they would be ill qualified to give any detailed advice about training to their workers. Here one might conclude that the communication task of training bodies is not so much to persuade farmers that training is a good idea - this, they are now prepared to accept. It is in educating them about the use of the facilities and convincing them of the relevance of training in the context of their own farming operations.

Use Made of the Facilities

147. While most farmers are prepared to give lip service, often enthusiastic lip service, to the principle of training, they are much less willing to back their words with deeds. Thus, only three out of ten workers under 30 employed on the farms we studied had been on some kind of formal, off-the-farm course since he began work on that farm. (When we questioned farm workers, just under half had been on courses, but here the question related to their entire work experience and, in any case, our sample may have over-represented 'trained' men.) Moreover, the interviews with both farmers and workers suggests that the initiative comes at least as often from the worker as from the farmer: indeed, in four out to ten cases the farmer himself admitted that the initiative came largely or wholly from the worker.

148. Failure to make use of training facilities appears to derive in the main, from one main cause: a lack of conviction (shared by farmer and worker) that training is relevant to the man's job. It does not generally appear to derive from hostility to the idea of training (indeed, as an abstract

concept training is viewed with mild approval); nor is there much evidence of the training itself being regarded as of poor quality. There is little evidence that the belief of the farmer in the need for his worker to be trained is frustrated by the worker's lack of interest or that the worker's desire to attend training courses is frustrated by his employer's opposition. Mainly, failure to attend courses seems to be due to two factors: one is that neither worker nor farmer believes that there is any real need for the worker to be trained. The conviction that the worker can pick up all he needs to know on the farm dies hard. The other is irrelevance in a more passive form: training may be of marginal value but, in the absence of a direct stimulus from the farmer, the worker just won't get around to it.

2. Commentary

149. This section is not in any sense part of the report, but a subjective interpretation of the findings. It seeks to answer questions like - what in these findings should we be worried about? What should we do about it? Where are the opportunities? What are the implications for policy? Not only is this section consciously subjective, it also presents a consciously 'outside' view, in that, familiar though we are with the questionnaires and with the farmers who answered them, our knowledge of training and training policy is no more than that of interested amateurs.

Farmer's Attitudes

150. Our findings about attitudes to training are distinctly more favourable than were those of our work two years or so ago. It would be encouraging to think of this improved attitude deriving from the Board's own work over the period, and it may well be that familiarity has, in this instance at least, bred acceptance. Certainly, farmers really talked surprisingly little about the Board and its supposed iniquities; less happily perhaps, they did not talk much about the Board's staff and the Board's activities either, although there was plenty of time in a long and discursive interview to do so. One may perhaps conclude that the Board itself is no longer an issue in farmers' minds, an issue which stands in the way

of the development of what we have called an 'enlightened' attitude to training itself. This seems to us satisfactory; the Board probably deserves - and indeed needs - a period of relative anonymity. Most farmers seem to know where to turn to for information, and indeed the Institutes seem to us to come out of this investigation well. The absence of any consciousness of the Board and its role is probably not interfering with anyone acquiring training who wants to.

151. The change in attitude to training itself has been in the form of neutral attitudes becoming favourable; there is still the same hard core of active hostility, but even in this investigation where we probed rather more deeply than last time, we could only find about 10% of farmers in the hostile category. It would, one suspects, be difficult to have worked for the Board over the years without developing some kind of sensitivity to criticism, so it may be worth commenting that in our view the hard core need not be a matter of concern.

152. One of the incidentally more illuminating findings is that the 'hostiles' have quite significantly more difficulty in <u>getting</u> staff than those with more enlightened views. It would of course, be too simple to read into this a direct cause and effect, and conclude that an enlightened attitude to training reduces one's problems in getting labour (the interviews with workers would disprove this anyway). What it means is that a favourable attitude to training is only one manifestation of an understanding of workers and their problems, which will be evident throughout the farmers' relationship with them - even probably including such things as the way they talk to them. Even so, the finding is encouraging. It would at least seem that the 'hostiles' probably get the workers they deserve.

153. There is, however, one aspect of the farmers' attitude to his staff we find a little disconcerting. Here again it is one of our 'incidental' findings which leads us to identify it. There is a high level of satisfaction with the present workers, which a certain number of people attributed to 'luck'. One really cannot conceive of an industrialist expressing his 'good fortune' on having a satisfactory staff - he would without much doubt, attribute his 'luck' to an enlightened staff

policy.

154. The number of farmers using this phrase about 'luck' was, of course, small, but it suggested to us that farmers had perhaps a notably unselfconscious attitude to such relations. The word 'unselfconscious' is far from precise in this context, but what we mean is that any employer normally has, over and above any direct human relationship he may have with his staff, an awareness that his responsibility to his organisation as a whole may require him to think consciously about this relationship, to plan the relationship in a sense, so that the organisations needs are met. We looked elsewhere for evidence that farmers do not act in this way.

155. There is perhaps, some such evidence in the characteristics which farmers look for in selecting staff. Personal qualities tend to outweigh job-orientated qualities - it would again be surprising to find in any other relatively high technology industry that 'steadiness' was prized by twice as many employers as was intelligence, that good character was twice as important as flexibility - or, rather more bizarrely, to find that short hair was exactly half as important as qualifications. One gets th impression that farmers are looking for staff of a type which they, as individuals, would like to employ, rather than for staff which they, as businessmen, ought to be employing. Furthermore, as we shall show below, to talk of many farmers positively selecting the staff they want from a range of applicants is misleading; in very many cases the choice is automatic because the new employee is a friend or relative either of the farmer or of one of his existing staff.

156. We find some further support in our own experience outside the context of this survey. To many farmers their large suppliers have no real corporate existence, and insofar as they have an attitude to a large organisation it is heavily coloured by their personal relationship with the representative who calls on them. Their attitude to the NFU will derive at least as much from what they think of their group secretary (whom they know) as it does from the speeches of the President (whom they do not know personally). In other words, they tend to work on the assumption that what matters is a simple and unselfconscious

person to person relationship.

157. In a human sense they are quite right; historically our good labour relations in the industry derive from just such direct, straightforward, man to man relationships. Yet we suspect that there is excessive unselfconsciousness, a feeling that an employer to employee relationship does not demand any conscious analysis or planning on the part of the employer. This is natural enough in an industry of small businesses - although one might ask how much longer is agriculture going to remain such an industry?

158. More directly relevant however is that an unselfconsciousness in staff relations inhibits training. We expressed in our first report a good deal of sympathy with the farmer who was unenthusiastic about training - with a tightly organised staff of only a man and a boy, if the boy does get trained on a combine he cannot be <u>used</u> on the combine, so what is the point? One perfectly good 'point' is that the worker would often enjoy his job better if he understood what was going on around him, an enjoyment which could manifest itself not simply in the specific activity of combining in which he was trained. Again increased job satisfaction can derive from the 'theory' which farmers view with such distaste. In fact when asked whether <u>experienced</u> men could benefit from training hardly any farmer answered in terms of job satisfaction, but when we talked to farmers whose workers had been on courses about the nature of any benefit, answers in terms of increased job satisfaction and the incidental benefits this provided were quite common.

159. This is no doubt desperately familiar territory to the professional educator. Our point, however, is that our work suggests that to 'sell' training to farmers on a story of direct economic return (which is how they look at it) will probably be very difficult. A more rewarding approach would seem to be to bring home to them that staff relations are something to be thought about consciously, that the direct return is not the only return, in short, that the man who has contented staff is not just lucky, but farsighted.

160. At many stages of course, our latest investigation tended to confirm our earlier work. We showed this time that familiarity

with the processes (and indeed with the institutions) of education and training was the biggest single factor in producing an 'enlightened' attitude. The admittedly small number of comments from farmers (they were, however, spontaneous) that '. . . .even I would benefit' from refresher courses is interesting. It seems to us on the evidence of our two investigations wrong for the Board's responsibility to be so heavily slanted towards training workers. Involvement in refresher courses for farmers could well be the most useful medium of all for encouraging more training of employees.

161. Our broad conclusions from the farmer interviews is that attitudes are improving and, in the light of recent history at least, the present pattern can be regarded as very satisfactory. The major problem is not so much, it seems to us, to refute any deeply and widely held misconceptions about training as to increase enthusiasm. The biggest obstacle is not hostility but apathy - 'I suppose it's a good thing really'. The ground seems potentially fertile - fortunately workers under 30 who presumably have the biggest training potential are a good deal more commonly found working for 'enlightened' farmers than for unenlightened and hostile farmers. A measure of the need for a more active attitude among farmers is the fact that the idea of training originates more often from the employee than from the employer, and that as much as a quarter of the under 30 workforce so far without any off-farm training are said by their employers to be of a calibre to benefit from it.

The Workers

162. The workers interviews also provided some encouraging material. The notion of a significant proportion of the agricultural labour force being people incompetent to do other jobs, destined inevitably for farming by reason of their own inadequacies is shown to be without foundation. The major influence is family background; 'given where I come from' many seemed to be saying, 'it was inevitable' - but the unevitability was accepted contentedly in the majority of cases (4 out of 5 said they were 'attracted' by the idea of farm life) To say that they had weighed up a range of possibilities and actively selected agriculture is going too far - very few had even considered other jobs.

One would probably find a similar pattern in any area where a single industry dominates - coal mining or textiles for example - and where the whole context of a youth's childhood means that he has to be especially strongly motivated to break out of the 'inevitable' pattern. Nearly all the wives have been subjected to the same natural social pressures and on our evidence, accept it as readily. In the event, some 80% of the under 30's reckon that, as they see it at present, they are in farming for life.

163. This same relaxed acceptance of a known social and physical environment came out in their answers about what the advantages of working in the country and on a farm are - familiarity, near the family, peace, privacy; answers which would probably be echoed by most of their employers too. Half of the workers started their career in farming by using the established local relative or friend network, or by following up contacts made when helping out during school holidays.

164. What sort of labour force is this kind of process likely to produce? On the whole one must describe it as well integrated, with perhaps a danger of placidity. Indeed this is, in general the kind of labour force farmers in fact want for it will be recalled that employers in general did not vote characteristics like initiative or liveliness of mind at all highly compared with the soberer qualities of steadiness and honesty. On the face of it therefore one would suppose that a feature of the agricultural labour force might be a relative absence of people with any very strong <u>motivation</u>. Indeed there was some support for this view in the fact that job changes <u>within</u> agriculture - an important reservation - were mainly the result of external circumstances - redundancy or a boss one did not like - than of a positive decision relating to the nature of the work done or a wish to progress a career.

165. This 'unmotivated' theme is one we shall have to qualify somewhat in a later paragraph, but on the evidence it can stand as a broad generalisation. It is however first worth considering whether it can also be regarded as a defect, something about which one should be deeply concerned.

166. At a first sight of course the answers must be 'Yes - it is something to worry about. Our industry must attract its fair share of the highly motivated type, keen to better himself and contributing to the industry by doing so'. We are ourselves however slightly sceptical of this conclusion. For one thing, it assumes that other, more favoured industries contain armies of dynamically motivated workers, which is certainly not true. For another, one must ask oneself if, should an ambitious and highly motivated young man ask whether agriculture offered the opportunities he was seeking, one would honestly be able to say that it did? His chances of actually farming himself would be nil; farm managers, whose level of personal responsibility for decisions is often a good deal more limited than their counterparts in other industries, come from a different educational stream - and we are probably training more than we need anyway. Where does the ambitious young man go to? There are plenty of factory managers who started on the shop floor, and supermarket managers who started behind a counter, but the shutters on farm worker's career seem to clang down rather early. Add to this the fragmentation into such small businesses, and the prospects of satisfying ambition seem poor.

167. Of course ambition and job competence are not necessarily correlated, and ambition and job satisfaction are possibly even negatively correlated. We have of course no absolute measure of competence in our survey, the only indication being that 75% of employers go as far as to say they have 'very' satisfactory workers. Job satisfaction among workers again seems at a high level - nine out of ten are 'glad' they made the choice of career they did. To be noted too is the fact that adverse comments on the way of life seemed fairly muted, and to concentrate rather more on long hours than on low pay and poor prospects. But perhaps the most encouraging aspects of all were the reaction of those men who had attended some kind of formal training course (which was generally very favourable to the experience) and the fact that over half would be prepared to go on training courses even if they were not given time off. The urge to do so may not be a strong one, but the willingness was there. Nor was there any sign of apprehensiveness

about raising the subject with the employer, or of not knowing where to go for information. Just as with the farmers themselves, there is plenty of potential for training - but it is just the sort of thing that in practice somehow one does not get round to.

168. This most recent survey picked up one point which was suggested by our very first small scale pilot study - that the predominantly country and farm background of recruits to agriculture is both an advantage and an impediment. Any farmer can have a very high expectation that if he turns a new recruit loose onto the more routine jobs without any training and instruction, the youth will make a fair fist of it because jobs of this kind have been a part of his life as long as he can remember; if he hasn't done them himself, then his father or brother have. Farmers' attitudes to training would no doubt be significantly altered if they had a higher proportion of genuine novices. Indeed the recruits themselves showed no marked lack of confidence in their own ability to 'pick things up' as they went along, and indeed one in three have been left more or less entirely on their own to do just that.

169. One further point is relevant here - the extent to which the informal instruction received by the young workers came from older workers rather than directly from employers, implying the considerable importance of the work done to teach such people how to pass on their acquired knowledge to others. There was too an interesting sign of conflict of opinion between workers and their employees on the proper subject area for training. Farmers widely accepted the need for training in mechanical skills, but were much more reluctant to admit that training in anything to do with stock could be relevant. Workers on the other hand seemed to put rather more emphasis on stock. For example, twice as many reported initial problems with milking or with animal health as with ploughing and spraying. A number of those who had been on courses said they learned a lot about stockmanship. It is a legitimate conclusion from the answers that stock as stock are a subject of interest to workers, but stock as representing a series of dull and physically unpleasant jobs are not. There could well be a good case for training in stockmanship so that the chores inevitably associated with stock are relieved by the

opportunity for a sympathetic understanding of the animals themselves. This is just the kind of point which farmers, with their severely limited 'practical' concept of training, fail to understand. One may also perhaps wonder (this is pure hypothesis, for there is no evidence) whether or not there may be other factors at work too. It is possibly in the stockmanship area that farmer and employee will come up against each other most - after all, on a small farm the owner will do some milkings and the worker some; similarly with feeding. In other words, the fear that 'he may know more than me' could be at its strongest with stock.

170. We are therefore showing a pattern of contented workers and employers on the whole satisfied with the service they are getting. Why then, it may be asked, are we consistently losing workers from the industry? It seems to us that the answer is more likely to lie in the absence of a positive motivation to be in agriculture rather than in some of the factors which are commonly quoted. Pay did not crop up all that often in our conversations, wives did not seem particularly restive in country life, tied cottages and accommodation problems were not a major topic. They were happy enough, even glad they had accepted the 'inevitable' career their background suggested; but when the inevitable is no longer inevitable, when something else crops up as it probably will at some time or other, then there is no very strong influence at work to keep them in farming. It would seem to us that we come back here once again to the question of job satisfaction, and the value that training can be in enriching a man's daily life by deepening his understanding of what is going on around him, then one will go at least some way towards providing the missing motivation.

171. This therefore must be the major theme of our own reactions to the report - that the very narrow, 'practical' arguments for training are likely to be less effective, and effective over a more restricted range. Whatever the turnover statistics say, the young agricultural worker does not seem discontented; it is just that he has no very good reason for doing what he is doing.

172. On the whole therefore all impression was that, given a raising of the temperature of interest, the labour force was well suited to the industry as it is at the moment. What did worry us, however, was the thought that all the young men we spoke to will still be working in the year 2005. The labour force which is adequate to a small business industry in 1970 may well not be adequate for the dramatically different structure of ownership and enterprise pattern that we shall almost certainly see well before then. Much larger units, perhaps even very large units indeed, will be farmed under one management. There will inevitably be a more hierarchical structure of responsibility, pressures on costs and efficiency, greater specialisation within jobs and probably greater mobility between jobs and a less direct personal relationship between employer and employee - in short a move in the direction of the form of organisation apparent in other industries. We have considerable doubts as to whether the rather casual system of self-selection for agriculture, the relative absense of strongly motivated people will not provide major problems. We are not thinking here so much of adapting to a rapidly changing technology; difficult though no doubt that will be, it is a problem soluble by training. What concerns us more is the ability of many of these young farm workers to adapt to the changed conditions and social context of work. Perhaps one can best summarise this by saying it will be the problem of translating a rural labour force into an industrial labour force.

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ABSTRACT - TO PREPARE STUDENTS FOR ENTRY LEVEL EMPLOYMENT IN THE FIELD OF FLORAL DESIGN, 28 GIRLS WHO HAD HAD PREVIOUS EXPERIENCE IN A COURSE WHERE MANUAL DEXTERITY WAS SHOWN WERE SELECTED TO ATTEND AN 80-MINUTE FLORAL DESIGN CLASS 2 DAYS A WEEK. TOPICS COVERED DURING THE CLASS INCLUDED: (1) PRINCIPLES OF DESIGN, (2) BASIC TERMS AND SKILLS, (3) MAKING CORSAGES AND TYPES OF CORSAGES, (4) ARRANGEMENTS FOR VASES AND OTHER CONTAINERS, (5) BRIDAL AND FUNERAL ARRANGEMENTS, (6) WRAPPING POTTED PLANTS, AND (7) CARE OF FLOWERS. EVALUATIONS BY STUDENTS, STAFF, AND THE INSTRUCTOR REVEALED THAT THE PROGRAM WAS WORTHWHILE AND SHOULD BE CONTINUED. IT WAS RECOMMENDED THAT: (1) FUTURE CLASSES BE SMALL, HELD EACH DAY, AND OFFERED FOR CREDIT, (2) SELECTION OF STUDENTS BE BASED MAINLY ON THEIR DESIRE TO PARTICIPATE, AND (3) A PLACEMENT PROGRAM BE INSTITUTED FOR THOSE WHO SHOW INTEREST AND POTENTIAL FOR FLORAL WORK. A FINANCIAL REPORT AND EVALUATION QUESTIONNAIRES ARE INCLUDED. (SB)

VT 013 898

FLORAL DESIGN PROGRAM

July, 1971

VT013898

Published By:
Research Coordinating Unit
State Educational Building
Santa Fe, New Mexico 87501

FLORAL DESIGN PROGRAM

By

Mrs. Janie B. Gregg
Acting Principal
Foothill High School
Girls' Welfare Home

July, 1971

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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ACKNOWLEDGEMENTS

Foothill High School of the Girls' Welfare Home in Albuquerque owes the Department of Vocational Education a big 'Thank you' for the Mini-grant which was used to pilot a Floral Design course. Without it we would still be scratching our heads and wondering whether or not it would work.

Also a very big 'Thank you' goes to Ada Ropar who was the instructor in this course. Ada, who is a professional floral designer, gave much of her time, energy, and heart in executing this program. Were it not for her experience, guidance, and patience this program would not have been as fruitful as it was.

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PURPOSE AND OBJECTIVES

Since the residents of Foothill High School come from all parts of the state, it is necessary to provide vocational training that can be used state wide. The employment possibilities in floral work appear good all over the state - particularly because this is an area normally overlooked by vocational programs or employment training institutions.

In the absence of any guidelines for a Floral Design Course of instruction in Vocational Education, Foothill High School felt the most beneficial use of the 'Mini-grant' for Spring 1971 would be a pilot program in this area. There were many questions to be answered which could only be answered through an exploratory course.

The basic problem to be solved was how to best incorporate the Floral Design Course into the regular vocational program. Also, how to involve or relate other courses of study such as Home Economics, Greenhouse, and Arts and Crafts to the Floral Design Program. Of major concern, of course, was the adaptability of the students to this type of instruction.

The main objective of the Floral Design Program was to prepare the students to enter a field otherwise closed to them because of lack of knowledge and skills of the field. To accomplish this purpose specific objectives were set forth.

1. To impart general knowledge and understanding of fresh flowers, and how to handle and preserve them.
2. To develop skills related to designing floral creations - handling floral materials and tools.
3. To awaken and develop creative talent in making floral designs.
4. To instill safety habits and attitudes.
5. To develop cooperative work habits and attitudes.

6. To impart to the students the realization that the field of floral design or floral work is open to them.

PROGRAM ORGANIZATION

The Floral Design Class was scheduled to meet twice a week with each class lasting 80 minutes in duration. There were two separate sections of Floral Design. At times the class days were rearranged to coordinate with special projects or assignments.

The main qualification for taking this course was, in the words of the instructor, "interest, a willingness to try and the student's full attention in class". The students selected for this course had had previous experience in a course where manual dexterity was shown, necessary to creating professional floral arrangements, but paramount was their interest in the subject.

For efficiency of scheduling the students were mainly drawn from regularly scheduled Home Economics and Arts and Crafts Classes. However, also included were students not scheduled in these classes but particularly interested in the Floral Design Project. For those students taking part in Floral Design and Home Economics or Arts and Crafts credit was given as part of regular class work for Home Economics or Arts and Crafts. Twenty-eight girls (from 14-18) were exposed to the course, (two-thirds of these girls do not anticipate continuing their education). However, due to particular situations arising at our institution not all of the students completed the course. Ten out of the total followed the course to completion. Six of these were given certificates by the instructor indicating that she felt they were capable of working in a floral shop.

COURSE OUTLINE

The course outline will be presented in regular outline form.

I. Introduction: Principles of Design

II. Basic Terms

- A. Professional names of flowers and foliage
- B. Tools and materials
- C. Containers and accessories

III. Basic skills

- A. Wiring and taping of flowers
- B. Remaking flowers (breaking large flowers down)
- C. Ribbon making

IV. Making corsages and types of corsages

- A. Shoulder
- B. Wrist or waist
- C. Hair
- D. Bed
- E. Boutonnieres

V. Arrangements for vases and other containers

- A. Using fresh flowers
- B. Using dry materials
- C. Using artificial flowers
- D. Using accessories

VI. Bridal Arrangements

- A. Bouquets
- B. Table arrangements

VII. Funeral Arrangements

A. Wreaths

B. Coffin arrangements

VIII. Wrapping Potted Plants

IX. Care of Flowers

A. From seed to cutting

B. After cutting

INVOLVEMENT OF OTHER PROGRAMS AND PEOPLES

This pilot program was aided greatly by the incorporation of other groups. The class itself was held in the Home Economics Kitchen Laboratory with the Home Economics teachers assisting in the first orientation classes. By using the laboratory, the problem of creating a special laboratory with running water, good lighting, sturdy wood work tables, clean up facilities and adequate storage was eliminated.

The Arts and Crafts classes provided vases (made especially for Floral Design) and other accessories. The Arts and Crafts instructor also helped in supervision of classes.

The Greenhouse on our grounds was an immeasurable aid. With it available, the students were able to follow the growth of flowers and learn to cut flowers themselves. Many fresh flowers used in the course came from the Greenhouse. (Some of the students in the Floral Design course had actually planted and nursed the flowers used.)

The "Progress Womens Club" of Albuquerque assisted in this program by donating materials for floral arrangements to be used at a luncheon. It was an inspiration and incentive to the students to know that the arrangements they made actually went to a profession club's luncheon.

Any function or opportunity available was seized to prepare and provide arrangements for: such as Governor's Dinner; Junior-Senior Prom; luncheons on grounds; and individual arrangements to staff members who were ill.

Involving other areas such as classes, professional groups and current functions, not only enriched the program itself but provided for more personal involvement and satisfaction for the students themselves. As is true with other vocational programs - involvement is necessary to present a true picture of working and living.

EVALUATIONS

By Students

Seventeen of the girls who took part in the Floral Design Course filled out a questionnaire on the course (see appendix for a copy of the questionnaire). The majority (almost unanimous) felt that the course was worthwhile and that they would be able to put its priciples to good use. Half of these students felt that they would be interested in working in a floral shop and also felt they were capable to do so. The remaining half were all confident that they could use their new knowledge at home.

Of the girls polled, only three stated they had previous knowledge of floral arranging. Half stated that they did not think they could make attractive arrangements - before the course. At the end all but two felt confident that they could and would make attractive arrangements.

All but one student stated they enjoyed the course and that one admitted she was proud of the designs she made in class. The majority of girls seemed to enjoy working with fresh flowers most of all. Overall, the consensus of the girls' feelings was that it was enjoyable and good for them.

By Staff

Twenty-three staff members (teachers and cottage workers) were polled as to the effectiveness and benefits of this program and whether or not it should be continued. (A copy of the questionnaire will be found in the appendix). The results were mainly positive - very little negative reaction at all.

No one was unaware of the program - a statement that points to genuine interest and involvement of the students. Also everyone agreed that the students participating in Floral Design Course expressed enthusiasm and pride in their work. This enthusiasm generated interest from many students not participating in the course: a significant number of students would like to take the course next year if it is offered again.

Seventeen staff members reported that students involved in Floral Design expressed an interest in following up in floral work in the future; of course these reports were probably overlapping on specific girls. Very important to this institution was the fact that seventeen staff members stated that progress in positive behavior and attitude was noticed in students participating in Floral Design and that that progress could (at least in part) be attributed to the Floral Design Course.

Everyone polled felt the program should be continued for one or more reasons. Three reasons which most frequently appeared were: (1) this program provided excellent vocational training; (2) Floral Design provided tremendous therapeutic value - in keeping hands busy and creative, also in pride of accomplishment; and (3) this program helped to develop esthetic appreciation in the students participating.

The following quotes were taken from staff questionnaires:

"I feel that it was most important in creating an interest first of all in thinking of a career. It is a vocation which without any previous experience the girls find interesting and rewarding because it is not as difficult as they expected it to be."

"It is a vocational area which uses the creativeness of the person. The girls usually exhibited a sense of accomplishment. Also this is one area in which a semester course will possibly qualify them for a job and then they can further advance themselves on the job."

"Excellent and valuable training for girls. Gives experience in making beautiful things - a rare thing for most."

"The purpose of the Floral Design Program, I feel, is to offer a readily usable, practical, and enjoyable learning situation in meeting the needs of students. Participation in this field stimulates thought and achievements resulting in education for home and family life with the possibilities, too, of earning money".

By Instructor

To Members of the Mini-Grant:

Since few of the girls in class had been privileged to have much beauty in their lives, working with flowers was real joy. Most were surprised and

delighted to discover that they could take something beautiful in their hands and improve upon it.

In the beginning two of the girls with lower IQ's merely sat staring into space; however, it wasn't long until they too were taking an interest and working with zest.

I feel that, of the girls, six could become adequate designers, working in a shop which turns out average type work, or acting as assistants to top designers in shops of excellent quality.

Four other girls proved to have a great deal of natural talent, in fact, they could easily become very good designers. Since there is always a shortage of designers these four would always have a job regardless of where they may live. Within the class of skilled workers the pay is very high.

I am convinced that this course was a rewarding experience for both teacher and students.

Yours very sincerely,

Ada M. Ropar

FINANCIAL REPORT

The financial picture is tight as shown below. The $500 Mini-grant almost covered the total expenditures.

Instructors Salary	$200.00
Instructors Benefits	13.00
Materials for containers	79.67
Flowers	88.00
Other Floral Supplies	150.65
Total	$531.32

SUMMARY

In summarizing the efforts and experiences of this pilot program in Floral Design - it has been well worth the time, money, and energy put into it. Not only have answers come forth for the original questions of 'how to do it' and 'how to incorporate it' into the regular program, also unknowns have developed (as they always do) and been absolved. Perhaps the important lesson program has been the positive reaction and enthusiastic reception the course received from the students.

Some suggestions and changes that might be executed are:

1. Small classes, 6-8 pupils a session
2. Regular classes set up everyday - not be a part of another class.
3. Selection of students be based mainly on their sincere desire to participate in class. Suggest students actively observe the class several times before they enroll.
4. Credit should be given for course itself.
5. More opportunities for the students to exhibit their creations.
6. Placement program for those who show interest and potential for floral work.

It is too early to state any real vocational fulfillment from this program; however, it is evident from having observed the classes that a number of the students could work in a florist shop. One girl in particular has the talent and potential to become a 'floral designer', the instructor feels.

The information and experience gleaned from this program will enable Foothill High School (and perhaps other institutions) to carry on a successful vocational program in floral work in the future.

February 17, 1971

Dear Mrs. Ropar and Girls

How can we ever thank you enough for the lovely corsages that you made for our past presidents yesterday. They were the most beautiful that I have ever seen and they were certainly the talk of everyone there.

I announced, before the entire audience, that you had made them for us and the ladies were all so very thrilled. It is such a pleasure to have a part in furthering your education and we hope to have even more of a part in the future.

May God bless you all richly.

Sincerely yours,

Mrs. Chas. D. Crawford
President, Progress Woman's Club

STAFF QUESTIONNAIRE

Concerning Floral Design Program

(1) Were you aware of the Floral Design program?

(2) Of the students involved in Floral Design, that you had contact with, did any express enthusiasm and pride in their work? Elaborate please.

(3) Did any of the students involved in Floral Design express an interest in following up in floral work in the future? yes_____ no_____ How many?___

(4) Did you notice any progress in any student involved in Floral Design that might be attributed to the Floral Design program? Please explain.

(5) Was interest generated to other students not taking the course? yes____ no___

(6) Did some students express a desire to take the course (presently not taking it)? yes____ no_____

(7) Do you feel this program should be continued? _____Please explain.

(If more room is needed to answer questions, please use the bottom the reverse side of this page.)

FLORAL DESIGN PROGRAM

Students' Questionnaire

Name _____

(1). How old are you? _____. And what grade are you in? _____.

(2). Do you plan to graduate from High School? _____.

(3). Do you plan to go to college or work after High School? _____.

(4). When you began the class, did you think that you would be able to make flower arrangements or corsages? _____.

(5). Before being in floral design class, did you know anything about making floral arrangements? _____.

(6). Did you enjoy the floral design program? _____.

(7). Do you feel that you learned a lot from it? _____.

(8). Would you like to work in a floral shop? _____.

(9). Do you feel that you learned enough in floral design class to work in a floral shop? _____.

(10). What part of the floral design class did you enjoy the most? _____.

(11). Were you proud of the arrangements you made in class? _____.

(12). Will you be able to make arrangements for yourself at home? _____.

(13). Do you think this course was worthwhile? _____.

VT 013 899
EDINGTON, EVERETT D.
INSTITUTE ON VOCATIONAL EDUCATION FOR THE SMALL RURAL HIGH SCHOOL.

NEW MEXICO STATE UNIV., SANTA FE.
NEW MEXICO OCCUPATIONAL RESEARCH AND DEVELOPMENT COORDINATING UNIT, SANTA FE
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PUB DATE - JUL71 18P.

DESCRIPTORS - *VOCATIONAL EDUCATION; *EDUCATIONAL CHANGE; RURAL EDUCATION; *RURAL SCHOOLS; *WORKSHOPS; *ADMINISTRATIVE PROBLEMS; EDUCATIONAL PROBLEMS; STUDENT NEEDS; EDUCATIONAL NEEDS; EDUCATIONAL FINANCE; STUDENT PLACEMENT; INSTRUCTIONAL STAFF

ABSTRACT - TO ACQUAINT SCHOOL ADMINISTRATORS IN SMALL RURAL SCHOOLS WITH THE DIFFERENT ALTERNATIVES IN VOCATIONAL EDUCATION WHICH A SMALL SCHOOL MAY UNDERTAKE, 12 ADMINISTRATORS, TEACHERS, AND SCHOOL BOARD MEMBERS ATTENDED TWO WORKSHOPS, EACH EMPHASIZING VOCATIONAL EDUCATION PROBLEMS ENCOUNTERED IN RURAL SCHOOLS AND WAYS TO BRING ABOUT CHANGE. QUESTIONNAIRES COMPLETED BY PARTICIPANTS DURING THE WORKSHOPS REVEALED THAT: (1) THE STATE DEPARTMENT OF EDUCATION AND NEW MEXICO STATE UNIVERSITY ARE NOT PROVIDING ADEQUATE LEADERSHIP AND THAT BETTER COMMUNICATION AND UNDERSTANDING BY BOTH WOULD HELP PROVIDE MORE LEADERSHIP AND (2) ADMINISTRATIVE PROBLEMS ENCOUNTERED INCLUDE PROVIDING PROGRAMS TO MEET BOTH THE NEEDS OF THE STUDENTS AND THE SCHOOLS, NEED FOR BETTER FINANCING, ADEQUATE STAFFING, STUDENT PLACEMENT, AND MEETING CERTIFICATION REQUIREMENTS. WORKSHOP MATERIALS ARE APPENDED. (SB)

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INSTITUTE ON VOCATIONAL EDUCATION FOR THE SMALL RURAL HIGH SCHOOL

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INSTITUTE ON VOCATIONAL EDUCATION FOR THE SMALL RURAL HIGH SCHOOL

Everett D. Edington
New Mexico State University

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Introduction

The Department of Educational Administration at New Mexico State University conducted two workshops on vocational education for the small rural high school. Invited to these workshops were administrators, teachers, counselors, and school board members. The workshops were held in Deming and Tularosa during April, 1971. The major purpose of the workshops were to acquaint school administrators in small schools of the different alternatives in vocational education which a small school may undertake. The major assumption behind the project was that small schools have both limited enrollments and resources, making it impossible for them to have full scale vocational education programs as the larger schools have.

The workshops were three hours in duration. The first two hours were spent on discussing vocational education problems of the small rural school and types of programs which may be implemented to help meet the needs of today's students. The last hour of the workshop was concerned with how the administrators could work with other personnel in the school in bringing about the needed change. Two references were given to each of the participants. The first was "Review and Synthesis of Research in Vocational Education in Rural Areas" which was produced by the ERIC Clearinghouse on Vocational and Technical Education. The second reference was "Cooperative Occupational Education in Small Schools" which is a non-published document being developed by the U.S. Office of Education.

The persons attending the two workshops are as follows:

Deming Workshop

Kenneth Guinn	Counselor from Truth or Consequences
Morris Scott	High School Principal from Truth or Consequences
Emmett Shockley	Superintendent of Schools at Deming
Wade Fredrickson	New Mexico State Department of Education

Tularosa Workshop

Glenn Daves	Superintendent of Schools at Tularosa
Mike Dorame	High School Principal from Tularosa
Alfred J. Garcia	Counselor from Tularosa
Louis Porter	Work-Study Coordinator from Tularosa
John Salvo	Junior High School Principal from Tularosa
Ray Smith	Superintendent of Schools at Magdelena
Jan St. John	Home Economics Teacher from Tularosa
Roscoe Vaughan	Vocation-Agriculture Teacher from Cloudcroft
Norman Vetter	High School Principal from Magdelena
Jack Youngblood	Administrative Assistant at Tularosa

EVALUATION

RURAL-VOCATIONAL EDUCATION WORKSHOPS

A questionnaire was handed out to all participants asking them to evaluate the Vocational Education Workshop. A copy of that questionnaire is found in the Appendix of the Study. The results of this evaluation questionnaire are reported in this section.

TABLE 1

I. Is New Mexico State University providing adequate leadership to rural schools in the administration of vocational education?

	Number Responding	Yes	No	No Response
Superintendent	3		3	
Principal	3	2	1	
Vocational Teacher	4	1	2	1
Counselor	2	1	1	
Total	12	4	7	1

In looking at the responses to question No. 1 on the issue of whether New Mexico State University is providing adequate leadership to rural schools in the administration of vocational education, it appears that the superintendents are unanimous in their opinion that the University is not providing adequate leadership. The attitude of the principals, vocational teachers and counselors was about evenly divided between yes and no.

TABLE 2

How may New Mexico State University provide adequate leadership to rural schools in the administration of vocational education?

	Supt.	Principal	Voc. Teacher	Counselor	Total
1. Better Communication especially of consultants and listening to problems	3		1		4
2. By providing more counselors				1	1
3. Providing new and workable vocational programs to schools		1			1
4. Showing more general leadership - exercising more authority			1	1	2
5. Are giving good service		1			1
6. No response		1	2		3

In attempting to ascertain how New Mexico State University could improve its role in providing more adequate leadership in the administration of vocational education, the superintendents were in total agreement that they wanted better communication with New Mexico State University. They especially mentioned more visits, especially by consultants, and a more sympathetic attitude of the University in listening and being more aware of their problems. One counselor felt that there should be more counselors; one principal felt that New Mexico State University was giving good service. One vocational teacher and one

counselor felt that New Mexico State University should show more general leadership by exercising more authority. One principal and two vocational teachers each made no response. From the responses, the conclusion could be drawn that the role of the University in providing adequate leadership could be improved by improving the process of communications with the school districts.

TABLE 3

Is the State Department of Education providing adequate leadership to rural schools in the administration of vocational education?

	Number Responding	Yes	No	No Response
Superintendent	3		3	
Principal	3	1	1	1
Vocational Teacher	4	2	2	
Counselor	2	1	1	
Total	12	4	7	1

In response to the question of whether the State Department of Education provides adequate leadership to rural schools in the administration of vocational education, the overall totals were identical to the responses for question No. 1. The superintendents were in unanimous agreement that the State Department was not providing adequate leadership with the responses of the principals, vocational teachers, and counselors about evenly divided.

TABLE 4

How may the State Department of Education provide adequate leadership to rural schools in the administration of vocational education?

	Supt.	Principal	Voc. Teacher	Counselor	Total
1. Better communication especially of consultants and listening to problems	2				2
2. Need a better understanding of school problems			2	1	3
3. Need to exercise more authority	1		2		3
4. Are giving better service		1			1
5. No response		2		1	3

Concerning the ways the State Department of Education can provide adequate leadership to rural schools in the administration of vocational education, the responses fell primarily into the following areas: (1) Better communication especially worthwhile visits and listening to the needs and problems of the small schools was emphasized by two superintendents; (2) Need a better understanding of school problems was voiced by two vocational teachers and one counselor; (3) The need to exercise more authority was mentioned by one superintendent and two vocational teachers; (4) One principal felt that the leadership of the State Department was improving; (5) Two principals and one counselor made no response.

Inferences: It may be inferred from the responses that the superintendents are primarily concerned with improved communication. The majority of the responders felt that a better understanding of school problems was needed and that the State Department needed to exercise more authority in solving them. The individuals, however, who felt this way were almost entirely vocational teachers and counselors and not principals or superintendents.

TABLE 5

In response to the value of the workshop to them, the following remarks were indicated.

	Worthwhile	Of Some Value	Worthless	No Response
Superintendent	2	1		
Principal	2	1		
Vocational Teacher	2	1		1
Counselor	1	1		
Total	7	4	0	1

An overwhelming majority of the entire group felt that the workshop was worthwhile while almost the entire group felt that it was of some value.

TABLE 6

What are the three major administrative problems for vocational education in the smaller districts?

	Supt.	Prin-cipal	Voc. Teacher	Counselor	Total
1. Financing	1	1	3	1	6

TABLE 6
Cont'd

	Supt.	Principal	Voc. Teacher	Counselor	Total
2. Better equipment and facilities	2				2
3. New and better programs to meet small schools needs	2	3	2	2	9
4. Adequate personnel and staffing	2	1		1	4
5. Student placement in jobs	1	2		1	4
6. Meeting and identifying problems in terms of student needs			2		2
7. Meeting state certification and graduation requirements		1	1		2

In stating what they felt to be the three major administrative problems for vocational education in the smaller districts, the responses by any one group were very evenly distributed, i.e., no one group felt that any one problem was of particular importance.

However, as a group, the need for new and better vocational programs to meet both the needs of the students and the schools was overwhelmingly cited. The need for better financing was cited as second with vocational teachers stressing this point. The problem of adequate staffing was mentioned next and

as expected the superintendents and principals responded most heavily in this area. The need for placing students in positions was mentioned next. A surprising point that was revealed was that not one vocational teacher felt this to be a problem but was cited by superintendents, principals, and counselors. Finally, meeting and identifying problems in terms of student needs and meeting state certification requirements were problems that were mentioned.

TABLE 7

Do you anticipate that you will have any need to use ERIC System?

	Yes	No	Don't Know
Superintendent	2		1
Principal	2	1	
Vocational Teacher	3		1
Counselor	2		
Total	9	1	2

In indicating that they will have a need to use the ERIC System in obtaining information, the majority of the group felt they would use the system. Some doubts were expressed over its future use because of the lack of availability and generally being unfamiliar with the system.

TABLE 8

What additional value could the Department of Educational Administration at New Mexico State University be to small school administrators?

	Supt.	Principal	Voc. Teacher	Counselor	Total
1. Administer research in cooperation with small school districts		1	1		2
2. Need to work closer with schools in providing better prepared teachers and administrators		1		1	2
3. Need to do more work on new programs for small schools and provide workshops in organization and finance. Overall leadership	2	1	2		5
4. Are helping a lot	1				1
5. No response			1	1	2

In response to how the Department of Educational Administration at New Mexico State University could be of value to small school administrators, the majority were interested in new programs to fit their needs and research in developing these programs. The group was also very interested in improving and updating their skills and abilities through workshops. A need was also cited for better prepared teachers and administrators. One superintendent felt that New Mexico State University was doing a fine job.

APPENDIX

NEW MEXICO STATE UNIVERSITY

College of Education Department of Educational Administration

March 31, 1971

To: School Administrators in Southern New Mexico

From: Everett D. Edington, Head of Department

Subject: Seminar on Vocational Education in the Small High School

The Department of Educational Administration at New Mexico State University in cooperation with the State Department of Education is conducting a seminar on the implementation of vocational education programs in the small high school. The seminar will be held in two locations: The first on April 28, 1971 in Deming and the second on April 30 in Tulerosa.

The meeting will go from 10:00 a.m. until 12:00 noon with a lunch break from 12:00 until 1:00 p.m. Meetings will continue from 1:30 p.m. until approximately 2:30 p.m.

Three areas will be emphasized during the seminar: (1). Vocational Education-Innovations in the Small High School--Everett D. Edington, Head of Department, (2). Financing Vocational Education in the Small High School--Dr. Lloyd G. Cooper, Professor of Educational Administration, (3). Working with Faculty to Help them Accept Change--Dr. Alfred P. Wilson, Assistant Professor of Educational Administration.

School superintendents, board members, principals and vocational teachers are invited to participate. In the past, the majority of our vocational education programs have all been built around urban school needs. There are a number of innovations being conducted in rural high schools that are in the implementation of vocational education. We hope this initial seminar will enable us to look at better means for providing vocational education for rural high school students in Southern New Mexico.

Return the enclosed form as soon as possible so that we will have some idea of the number of people attending. A more detailed program will be sent to those returning the forms at a later date.

EDE:mp

NEW MEXICO STATE UNIVERSITY

College of Education Department of Educational Administration

March 26, 1971

INSTITUTE ON VOCATIONAL EDUCATION

FOR THE SMALL RURAL HIGH SCHOOL

The following numbers of individuals will be attending from _____
name of school

	#		#
Superintendent	_____	Principal	_____
Board member	_____	Vocational teacher	_____

other _____

We are attending the institute at:

Deming_____ Tulerosa_____

Signature, _____
Superintendent of Schools

NEW MEXICO STATE UNIVERSITY

College of Education | Department of Educational Administration

April 22, 1971

To: Administrators and Teachers attending the Vocational Education workshop in Deming

From: Everett D. Edington
Head of Department

Reference: Vocational Education in the Small High School, Workshop April 28, 1971

We appreciate very much your interest in the workshop being held in Deming concerning Vocational Education in the Small High School. We hope to keep this as informal as possible. The discussions will center around problems which you have in the area of vocational Education. However, we do plan on going a step further and discuss problems others are having and what is being done to solve them.

The meeting will be held in the Board Room of the Administrative Offices for the Deming Public Schools at 501 West Florida, Deming, New Mexico and will begin at 10:30 a.m. on April 28. Mr. Wade Fredrickson, Assistant Director of Vocational Education in the State Department of Education, will be in attendance. This will give us an opportunity to discuss problems directly with him.

Again, we are looking forward to seeing you on the 28th.

EDE:jkg

NEW MEXICO STATE UNIVERSITY

EVALUATION

RURAL - VOCATIONAL EDUCATION WORKSHOPS

Position: Superintendent _____
Principal _____
Voc. Teacher _____
Other Teacher _____
School Board Member _____
Other _____

1. The universities in New Mexico provide adequate leadership to rural schools in the administration of vocational education:
   Yes_____
   No_____
   How may this be improved:_____
   _____

2. The State Department of Education provides adequate leadership to rural schools in the administration of vocational education:
   Yes_____
   No_____
   How may this be improved:_____
   _____

3. This workshop has proved to be:

   Worthwhile _____
   Of some value _____
   Worthless _____

4. What are the three major administration problems for vocational education in the smaller districts:

   a.

   b.

   c.

5. Do you anticipate that you will have any need to use the ERIC System in obtaining information?

6. What additional value could the Department of Educational Administration at New Mexico State University be to small school administrators?

VT 013 900
DORFMAN, MARK H.
INTRODUCTION TO AVIATION TECHNOLOGY AND
AVIATION-RELATED OCCUPATIONS.

FORT SUMNER MUNICIPAL SCHOOLS, N. MEX.
NEW MEXICO OCCUPATIONAL RESEARCH AND
DEVELOPMENT COORDINATING UNIT, SANTA FE
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - JUL71 29P.

DESCRIPTORS - *AVIATION TECHNOLOGY;
*TECHNICAL EDUCATION; *PROGRAM DESCRIPTIONS;
*PILOT PROJECTS; AVIATION VOCABULARY;
EDUCATIONAL RESEARCH; AIRCRAFT PILOTS; GRADE
10; AND GRADE 11

ABSTRACT - A TOTAL OF 15 MALE STUDENTS IN THE
10TH AND 11TH GRADES WERE SELECTED TO ATTEND
A 15-WEEK AVIATION INSTRUCTIONAL PROGRAM. THE
COURSE OF STUDY EMPHASIZED: (1) PRE-FLIGHT
CONCEPTS, (2) INSTRUMENTS AND SYSTEMS, (3)
WEIGHT AND BALANCE, (4) BASIC METEOROLOGY,
(5) BASIC FLIGHT COMPUTER, (6) BASIC
NAVIGATION, (7) RADIO COMMUNICATIONS, (8)
BASIC RADIO NAVIGATION, (9) PRIVATE PILOT
FEDERAL AVIATION REGULATIONS, AND (10) THE
FEDERAL AVIATION ADMINISTRATION. IT WAS
RECOMMENDED THAT THE COURSE BE EXTENDED TO AT
LEAST ONE FULL SEMESTER SO THAT STUDENTS WILL
HAVE SUFFICIENT TIME TO QUALIFY FOR THE
PRIVATE PILOT WRITTEN EXAMINATION. STUDENTS
ALSO EXPRESSED THE DESIRE THAT A SIMILAR
COURSE BE OFFERED AS AN ACADEMIC ELECTIVE IN
THE REGULAR SCHOOL PROGRAM. IF SUCH A COURSE
WERE TO BE OFFERED, IT SHOULD BE DEVELOPED
THROUGH AN INTERDISCIPLINARY EFFORT. SEVERAL
PROJECT MATERIALS INCLUDING PHOTOGRAPHS,
PROJECT PROPOSAL, PROGRESS REPORT, AND
OPERATIONAL MATERIALS ARE APPENDED. (SB)

VT 013 900

INTRODUCTION TO AVIATION TECHNOLOGY AND AVIATION–RELATED OCCUPATIONS

Published By:
New Mexico Research Coordinating Unit
State Department of Education
Santa Fe, New Mexico 87501

July, 1971

VT013900

INTRODUCTION TO AVIATION TECHNOLOGY AND AVIATION-RELATED OCCUPATIONS

Mark H. Dorfman
Director of Guidance
Fort Sumner Municipal Schools
Fort Sumner, New Mexico 88119

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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Published by
Research Coordinating Unit - Mini-Gran
Mrs. Hilda Majors, Director
Santa Fe, New Mexico 87501

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Introduction to Aviation Technology

and Aviation-Related Occupations

I. Background Information and Rationale

After World War II, not only were aircraft in abundant surplus because of a massive military effort, but there existed an enormous manpower pool of highly trained and experienced pilots, mechanics, and aviation technologists. Civil aviation as a growth industry was suffering from lack of direction and purpose and therefore was not in a position to absorb the qualified veteran pilots and aircraft mechanics. Jobs were a scarcity.

Civil aviation would shortly experience phenomenal growth, engendered by rapid technological change and vociferous public demand for fast means of travel that could be satisfied only through air transportation. By 1968 revenue passenger miles flown by the airlines exceeded the 100 billion mark, which more than tripled the mileage flown only ten years earlier. Also, in 1968, 152 million commercial passengers were transported; again, this figure tripled the number of ten years ago.

By 1980, U. S. airlines will be flying 379 billion revenue passenger miles and carry 470 million in domestic and international flights. Civil aviation has reached a new zenith and qualified pilots, mechanics, and other aviation personnel (F.A.A., airlines business and management, technicians, engineers, etc.) have never been in greater demand.

General aviation includes all civil aviation exclusive of government operations and the commercial airlines. Business flying, charter, and other types of general aviation have also reached unprecedented growth levels.

Since 1950 airline pilots and mechanics have been among the fastest growing occupations in this society. The rate of technological progress in aviation has accelerated and the introduction of "jumbo" and "stretched" jets and new VTOL (vertical take-off and landing) and STOL (short take-off and landing) planes for local service is expected to result in still greater need for these highly trained professional workers.

EMPLOYMENT OUTLOOK FOR PILOTS AND MECHANICS, 1968-77

Occupation and civil aviation sector	Estimated employment 1967	Employment Requirements 1977	Net Growth total 1968-77	Average annual requirements 1968-77
Pilots, total	60,100	109,700	49,600	6,000
Air Carriers	33,100	51,100	18,000	2,300
General Aviation	25,000	55,700	30,700	3,600
Government[1]	2,000	2,900	900	100
Mechanics, total	103,500	163,900	60,400	7,500
Air Carriers	52,000	70,000	18,000	2,500
General aviation	50,400	92,800	42,400	5,000
Government[1]	1,100	1,100	-	(2)

I Excludes all civilian pilots and mechanics employed by the U. S. Department as well as military personnel.

2 Less than 50.

II The Problem

It is readily agreed by educators and students that educational "relevance" is not the paramount feature of contemporary secondary level schooling. It is also common knowledge that small rural high schools are so limited by budgetary, personnel and programmatic restrictions that, many of the students in these schools are not qualified by virtue of "temperament" or "academic inclination" for the more traditional course offerings. Thus, we often find an existing "mismatch" between student interests (or non-interests) and tradition and historically bound curricula which are unyielding, resistant to change and most often unresponsive to the learning needs of a large segment of the student population.

Aviation is by its very "nature" an exciting, captivating, highly motivating discipline for study. The history of mans' efforts to achieve aerial capabilities is thoroughly enmeshed with our political, economic and cultural past and future. Its romantic and adventurous lure and didactic reality pose natural challenges for young people.

The study of aviation embraces and thoroughly integrates the disciplines of language and communication, mathematics, science, geography, business, etc., into a comprehensive body of material. It develops and maintains the "relevance" that is so eagerly sought for in our school programs.

III The Project

During the month of January 1971, it was announced to the student body at Fort Sumner High School that a program in Aviation Technology would commence during the following month and the fifteen qualified Sophomores and Juniors would be selected to participate in the course. The criteria for selection were not announced, as the researcher was extremely curious as to the magnitude of response from the student body. It was specifically stated that;

1. only sincerely interested students should apply.
2. the class would meet after school hours in the evening for an average of four (4) hours per week.
3. texts and study materials would be issued.
4. course requirements would include a minimum of four (4) hours per week of home study.
5. participation in field trips to aviation facilities would be required.

The initial response was exhilarating. Seventy-eight (78) boys and girls indicated that they desired to partake of the experience. It is interesting to note that although the original notice specifically limited the enrollment to 10th and 11th grades, many (34) students from the Junior High School believed that they should be eligible, (I believe that they are correct).

After a most difficult screening and selection period (see stated criteria appendix) fifteen male students were notified that they had been selected.

Due to the frenzy existing due to the impending regional and district tournaments (of which Fort Sumner High School would definitely be part!!) it was determined that the project would begin on March 4, 1971, and continue to meet regularly on Monday and Thursday evenings.

We commenced formal operations on Thursday evening at 6:30 P.M., March 4, 1971, and continued to meet regularly until May 24, 1971.

I feel that it should be included that a number of faculty members had indicated their wish to be included but that budget considerations (in terms of study texts and equipment) would not permit formal participation. However, there was one staff member who did not accept this limitation and "teamed up" with a student in order to be able to share materials. She was in serious attendance throughout the total course.

IV The Course of Study

1. Pre-flight concepts

a. Facts concerning lift, drag, weight, and thrust are introduced. Lift and the effect of wing flaps on lift and total drag is clarified in simple terms. Aircraft weight and loading is explained. This is followed by an explanation of the operation of the four-cylinder air-cooled engine. A summation relates lift, gravity, thrust, and drag to the airplane and its structure.

b. Presentation of the definition of the three axes of freedom. How is movement around the axis accomplished by the aircraft. Control movements and instrument indications are demonstrated in sequence. The vacuum, electrical, pilot, static and stall warning systems are considered.

c. The controls relating to the fuel system are examined and the carburator's functions, and the formation and prevention of carburator ice is discussed. The landing gear, brake system and nose-wheel and its operation are explained. A complete pre-flight inspection of the aircraft is simulated.

2. Instruments and Systems

a. The RPM gauge, manifold pressure gauge, and the oil pressure gauge systems are described in basic terms. Gauge indications are related to aircraft engine operation and normal operating practices. Principles of operation are pointed out in detail. Detailed descriptions of the cylinder head temperature gauge, oil temperature gauge, fuel pressure gauge, and ammeter systems are presented. In addition, the flap position instrument,

fuel quanity gauge and the outside air temperature gauge systems are described in relation to aircraft installations. Basic principles governing the operation of each system are noted.

b. Presentation of the basic operation of the flight instruments starts with a discussion of the airspeed indicator system and the pitot static installation in an aircraft. The altimeter is examined next with a detailed description of its operation. The vertical speed indicator and its relationship to the static system is described. A full description of its operation and function follows an examination of the working parts of the instrument. The magnetic compass is then discussed and its sensing element is described.

c. The electrically-driven turn-and-slip indicator and the directional gyro are examined. The actions and reactions of both instruments are discussed in relation to aircraft motion and direction of flight.

The artificial horizon is considered the most important flight instrument. Here, the air-driven gyro horizon is examined for horizon indications and its internal mechanism. The final item discussed is the vacuum systems used to drive the air-driven gyro instruments.

3. Weight and Balance

a. Subjects presented are gross weight and load factor. Load factors in flight and on the ground are discussed in detail. Gross weight specifications of the airframe manufacture are

discussed in relation to load factors encountered in flight. The importance of gross weight is summarized. The center of gravity of the aircraft is defined and the need for proper position of the C.G. is pointed out. The terms Mean Aerodynamic Chord and Datum are defined. The importance of proper loading resulting in a proper and safe C.G. position is emphasized.

b. The computation method of determining aircraft weight and balance is illustrated and described in detail. A basic example is presented to illustrate the mechanics of the computation method and establish a firm understanding of moments and the balance point, using typical aircraft. The computation method is summarized at the completion of the problem.

c. The graph method of performing weight and balance checks is described and detailed. The use of this method to determine changes in aircraft loading to meet safe loading requirements is illustrated. A typical weight and balance check is also detailed using the table methods. An overload condition is adjusted using the table method. Load adjustors are briefly discussed since they are designed for individual aircraft.

4. Basic Meteorology

a. This section begins with an introduction to the weather bureau by describing its function and equipment. The daily weather map and the associated station model is described in detail. Each symbol of the station model is identified and examined. After a discussion of symbols, basic types of clouds, thunderstorm development, and air mass movements are illustrated and explained. Pressure systems and the development of frontal systems are related to precipitation and flying conditions.

b. Air movement and its effects are discussed. Density altitude and its effects on aircraft performance, icing conditions in clouds, and turbulence near heavier aircraft are illustrated and described. Recognition of the basic types of fronts and the weather connected with frontal pattern is covered. The barametric pressure altimeter is analyzed and its use outlined. Weather information sources and interpretation conclude this section.

c. Interpretation of data as it appears in teletyped sequence reports and forecasts is covered. Observation methods and equipment are discussed and described. Special reports and the Notam code are examined. Examples of sequence reports, winds aloft forecasts, and terminal forecasts are illustrated, deciphered, and clarified.

5. Basic Flight Computer

a. The flight computer is introduced with a detailed description of the scales on the calculator side. Examples of time and distance problems are presented in detailed steps. Time and distance exercises are included as a review. Problems on fuel consumption and the solutions are presented in logical order.

b. Review problems involving time, distance, and fuel consumption precede an introduction to true airspeed calculations. True airspeed computation is dealt with in detail through review and example problems.

c. The wind side of the flight computer is introduced with a description and the function of its various parts. A wind problem is detailed to produce wind angle and ground speed answers. A problem utilizing both sides of the computer is then detailed as a complete review.

6. Basic Navigation

a. Sectional and WAC Charts are explained. Sectional charts are given a detailed emphasis. Topographical symbols are explained and illustrated.

b. A description of AIM and how to use it is followed by a thorough example of how to plan a VFR flight using all available "tools" and information. Planning of a VFR flight using the computer and a sectional chart is illustrated and described in depth.

c. The student is referred to AIM for airport information and radio frequencies. The flight is started and pertinent navigation items are detailed. In-flight practical navigation situations are presented, such as navigating around an isolated thunderstorm.

7. Radio Communications

a. Beginning with radio license requirements, Section A presents an introduction to aircraft radio communications. Good operating practices and accepted techniques in the use of communications equipment are shown. The characteristics and limitations of the frequency bands assigned to aircraft communication and navigation are given. Communication facilities available to the pilot are explained. Aeronautical charts and the Airman's Information Manual are used to illustrate symbol meanings and listings of facilities.

b. This section covers a typical VFR flight from a controlled airport to another airport, illustrating and reproducing communications from departure to arrival. An enroute position report, a flight service station contact for weather information, and the routine

communications with ground stations are all given. The use of radio navigation aids is included. The flight terminates realistically with the landing sequence and contacts with approach control, the tower, and ground control.

8. Basic Radio Navigation

a. The theory of operation of the VHF omni ground station is presented in basic terms. This permits a good understanding of how the courses are formed and provides basis for the next logical step of providing understanding of how the aircraft receiver uses these VOR signals to provide information to the pilot. The ease of VOR omni navigation is illustrated.

b. A review of omni procedures is presented in an imaginary flight. The automatic direction finding capability of the Low/Medium Frequency receiver is illustrated in several examples to emphasize its capabilities.

9. Private Pilot Federal Aviation Regulations

a. This section covers information pertaining to the student and private pilot ratings. It includes descriptions of requirements for solo flight and flight area requirements as they appear in the Federal Aviation Regulations. Federal Aviation Regulations covering requirements for a private pilot applicant are detailed. In addition, Federal Aviation Regulations pertaining to civil aircraft and the appropriate certificates are presented.

b. Pilot responsibilities are quoted and commented upon. Communications requirements, operating restrictions and rules for safe operation of an aircraft, and light signals in aircraft traffic control on the ground and in the air are covered. A discussion

concerning control zones is presented. Visual flight rules pertaining to weather minimums and certain restrictions are included.

10. <u>The Federal Aviation Administration</u>

    a. historical background and current organization

    b. certificating responsibilities and procedures

    c. airways and navigational systems

    d. air traffic controls

    e. airport functions

    f. communication

    g. research and development

    h. occupational opportunity

V The Field Trip

On April 21, 1971, the class left Fort Sumner for what developed into two of the most gratifying and exciting days most of the students had ever experienced.

We arrived at E.N.M.U. - R Campus at about 9:00 A.M. and were heartily welcomed by Mr. Gerald Cady, Chief Airframe and Powerplant Instructor at the vocational-technical school. He had negotiated prior arrangements for a full tour of the training facility and thus, the morning was spent conversing and visiting with students and instructors from the areas of auto-mechanics, welding body and fender, refrigeration and electronics. Many of our students expressed that they had not envisioned such excellent post-high school training opportunities as being available to them.

The remainder of the first day was spent on site in the huge hanger which serves as the laboratory facility for those enrolled in the F.A.A. certified A and P program. Initially Mr. Cady conducted an orientation session for our students which served to answer many of the "hows, whys, and where's" of aviation training. He then conducted a "look, smell, touch" walk-a-round which allowed the students their first "real life" contact with small aircraft, propellors, jet engines, fabric and dope, aneroid barometers and all the other pleasant mechanical things that "aviation life" is concerned with. The afternoon was structured so that our students "worked" with the college students in small project groups concerned with wood laminations and fabric stretching (as well as tall-tale stretching). The day culminated with a question and answer session.

The second day was to bring further adventure. This was the day to fly! The wind was gusting to 40 m.p.h. but our heroes were undaunted. Armed with signed parental release slips (which permitted them to fly with a Certified Flight Instructor) we bravely approached Airlane Aviation (where prior arrangements had been made). The next three hours are most difficult to describe. Each student had an opportunity to fly around Roswell in a light-twin engine aircraft. The faces were lighted as I had never seen them in school, the eyes were generating fresh ideas and these "low achieving" students had just discovered a new dimension to living.

We spent the final phase of the trip in the F.A.A. control tower. In this setting the boys observed airline control operations, learned about work opportunities and training requirements for this aspect of aviation employment.

VI Cost of the Trip

E.N.M.U. - Roswell provided excellent lodging and meals (one night, four meals) at a cost of $6.60 for each participant.

VII Recommendations

1. All participating students and the instructor believe that the duration of the course should be extended to at least one full semester. There was not sufficient time to qualify each student for the private pilot written examination.
2. All participating students expressed the desire that a similar course be offered as an academic elective in the regular school program.
3. If such a course were to be offered, it could be best developed through an inter-disciplinary effort (industrial arts, vocational shop, English, math, and social science).
4. Air-age education should commence at the elementary school level. Cessna and Piper aircraft companies offer low-cost training packages for personnel who have little if any background in this area.
5. The course should be available on a co-educational basis.
6. The New Mexico State Department of Education might work closely with the New Mexico Aviation Agency in order to encourage individual school districts to develop exemplary programs in aviation education.

A P P E N D I C E S

APPENDIX A

Project Photos

"Fort Summer Up and Away ..."

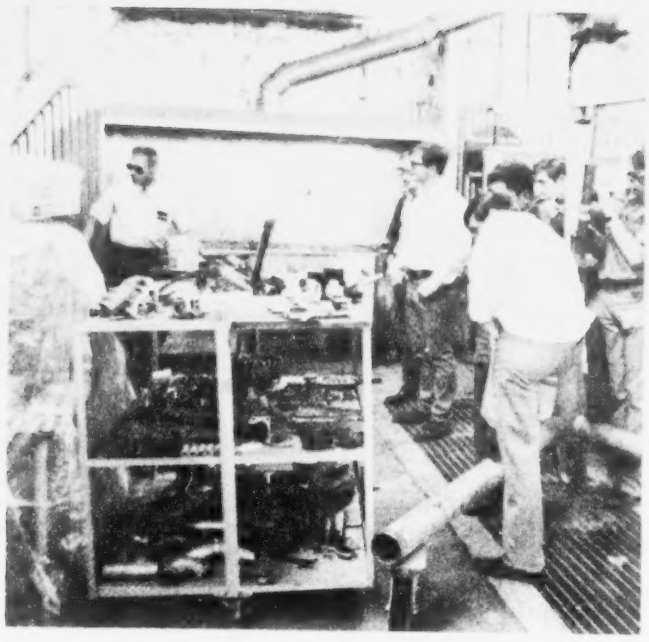
"And to check the compression ..."

"Wow"

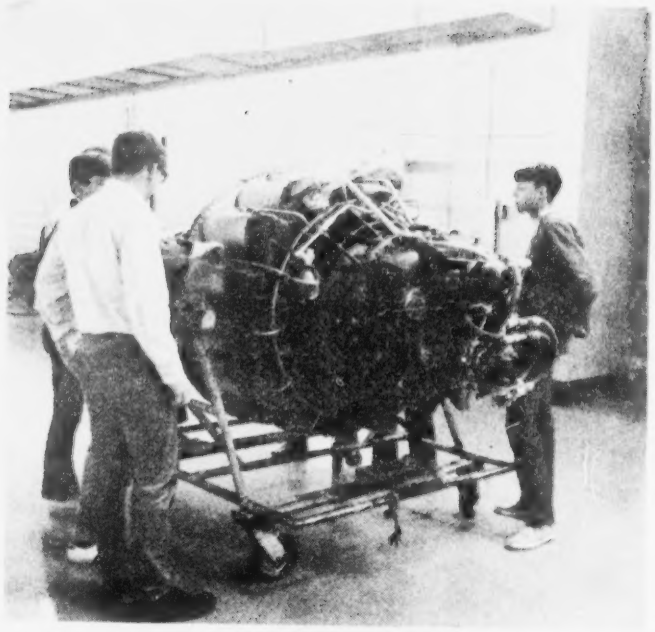
"In order to pre-flight, we ..."

APPENDIX A

Project Photos



"You mean this junk flies?"



"Bet it really roars!"

"What would you do if ..."

"Top of the World"

APPENDIX A

Project Photos

"Dreaming"

"Any birds in there?"

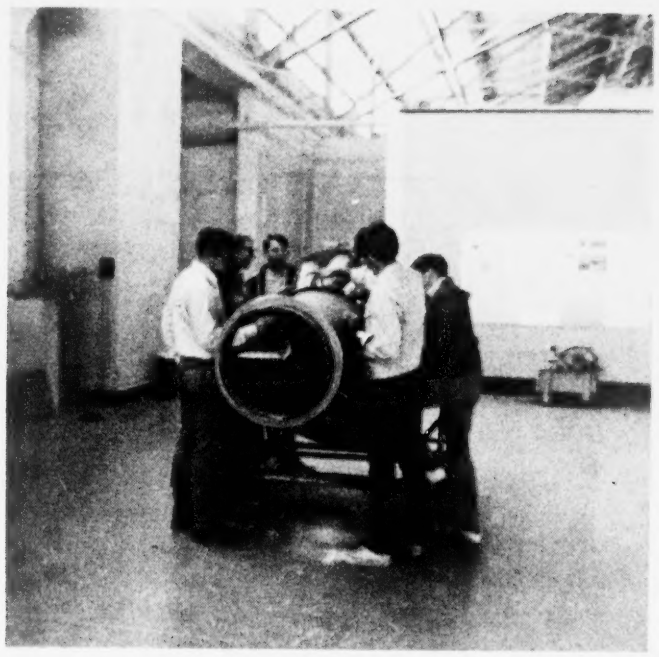
"Kick that tire"

"So-o-o-o smooth"

APPENDIX A

Project Photos

"Boy it was gusty"



"So this is a Jet"

"Didn't know they flew these old crates anymore"

"Heaven is in the right seat"

APPENDIX B

MINI-GRANT PROPOSAL FORM

Please type Deadline: December 24, 1970 Complete All Blanks

Proposed Title of Project: INTRODUCTION TO AVIATION TECHNOLOGY AND AVIATION RELATED OCCUPATIONS

FROM: Mark H. Dorfman — Name
Director of Guidance — Title

Fort Sumner High School — School
Guidance — Department

P. O. Box 387 — Street Address
Fort Sumner — City
88119 — Zip Code

355-2231 — Telephone

BRIEF DESCRIPTION:

This project will focus on high school boys who are currently sophomores and juniors. The project group (15) will be selected from a pool of students who manifest:

1. Expressed interest but not necessarily much experience in mechanical areas (cars, small engines, boats, etc.)
2. Curiosity about the fields of Aviation and Aerospace Technology.
3. Specific desire to attain knowledge of these areas through exposure and study.
4. Moderate aptitude in fundamental mathematical skills.
5. An interest in concurrently pursuing study in the ground school phase of pilot training. Successful completion of this unit would qualify students to take the F.A.A. written examination.

The program would be operationally defined as:

1. Field observation and contact

   a. ENMU program in Airframe and Powerplant education would be utilized to expose students to concepts of post high school technical training, leading to proficiency and certification in a field with exciting opportunities and an excellent employment outlook.
   b. Extended contact with F.A.A. personnel through observation of control tower and navigation facilities in Roswell and Albuquerque leading to a thorough familiarization with training and employment procedures in the Federal Airways System.

c. Visits to small fixed-base aircraft operations (Piper, Cessna, Beech, etc.) to understand differential functions of this massive industry.
d. Contact with major airlines personnel (scheduling, reservations, etc.)
e. Contact with airport personnel.

2. School based career exploration in Aviation

a. Monographs
b. Occupational Outlook Quarterly and Handbook.
c. Aviation magazines
d. Local pilots
e. Possibly utilize the novel Airport, Arthur Haley and the T.V. Series San Francisco Airport to generate ideas and involvement.

3. Ground School - Private Pilot

a. Theory of flight
b. Aircraft systems and instrumentation
c. Navigation
d. Weather systems
e. Communications
f. Regulations
g. Preparations for F.A.A. written examination.

DURATION OF PROJECT: Starting Date - 2/1/71 Ending Date - 5/28/71

BUDGET:	Funds Requested From RCU	Local or Other Support Funds
Personnel:		Part of vocational guidance to be developed and conducted by Guidance Counselor
Materials or Supplies:	$450.00	
Travel and Per Diem:		$125.00
Communications and Services:		$ 25.00
Other costs: Typing (maximum $15)		$ 15.00
Photographic procedures & supplies	$ 25.00	
TOTAL COSTS	$475.00	$165.00

APPENDIX C

TO: Hilda Majors, Director
Research Coordinating Unit

FROM: Mark H. Dorfman, Researcher

RE: Progress Report, Mini Grant

DATE: April 19, 1971

To date the Introduction to Aviation Technology and Aviation-Related Occupations has been involved in the following activities:

1. Enrollment of fifteen (15) students (three (3) have been attending spasmodically).
2. Completion of nine (9) two-hour workshop sessions.
3. Purchase of materials for the course.
4. Scheduling two-day field trip April 21, 22 to E.N.M.U.
   a. A & P Program
   b. FAA facilities
   c. Fixed-base operations with flying experience scheduled for each student.
   d. Airport personnel
5. Plans are to terminate the project on May 27, 1971, with ten (10) additional two (2) hour workshops still scheduled.

APPENDIX D

FORT SUMNER HIGH SCHOOL
Fort Sumner, New Mexico

April 16, 1971

Dear Parent:

The Aviation Class in which your son has been participating will take a field trip on April 21-22.

This trip will provide a dimension to the course which should contribute significantly to his understanding of the field of aviation.

The bus will depart from the high school to ENMU - Roswell Campus - at about 7:30 a.m. on Wednesday, April 21. We will remain on the campus overnight with a return to Fort Sumner scheduled at about 4:00 p.m., Thursday, April 22.

Included in the program will be the opportunity to fly with an FAA licensed flight instructor.

The total cost of room and board for the duration of the trip will be $6.60.

Sincerely,

Mark H. Dorfman

_____

Parent Signature

APPENDIX E

OPERATIONAL MATERIALS AND SOURCES OF SUPPLY

TITLE - Sanderson Audio-Visual Library of Aviation

Source Sanderson Films Inc., Aviation Visual Aids
P. O. Box 13121, Wichita, Kansas 67213

TITLE - Private Pilot, Complete Programmed Course

Source Aero Products Research, Inc.
11811 Teale Street, Culver City, California 90230

TITLE - Federal Aviation Regulations, Airmans Information Manual and Basic Reference Book

Source Aero Products Research, Inc.
11811 Teale Street, Culver City, California 90230

TITLE - E6-3B Wind-Triangle Computer
APR Time-Speed-Distance Computer
Nav-Chart NP-13 plotter

Source Aero Products Research Inc.
11811 Teale Street, Culver City, California 90230

TITLE - Air Facts

Source Air Facts Inc.
70 Nassau Street
Princeton, New Jersey 08540

TITLE - Private Pilot

Source Private Pilot
Subscription Division
153-01 Tenth Avenue
Flushing, New York 11357

TITLE - Private Pilots Handbook of Aeronautical Knowledge

Source Superintendent of Document's
U. S. Government Printing Office
Washington, D. C. 20402

TITLE - F.A.A., What It Is, What It Does

Source Superintendent of Document's
U. S. Government Printing Office
Washington, D. C. 20402

TITLE - List of F.A.A. Publications

Source Superintendent of Documents
Government Printing Office
Washington, D. C. 20402

VT 013 916
ROGERS T.; NICHOLSON C.
FINAL EVALUATION OF THE P.E.I. NEWSTART
COMPREHENSIVE MANPOWER DEVELOPMENT SYSTEM.

PRINCE EDWARD ISLAND NEWSTART, INC.,
MONTAGUE.
CANADIAN DEPT. OF REGIONAL ECONOMIC
EXPANSION, OTTAWA (ONTARIO)
MF AVAILABLE IN VT-ERIC SET.
REP-3
PUB DATE - AUG71 32P.

DESCRIPTORS - ADULT VOCATIONAL EDUCATION;
*PROGRAM EVALUATION; ADULT BASIC EDUCATION;
*EMPLOYMENT PROGRAMS; *FOREIGN COUNTRIES;
UNEMPLOYED; CULTURALLY DISADVANTAGED;
EVALUATION METHODS; *VOCATIONAL FOLLOWUP;
*MANPOWER DEVELOPMENT
IDENTIFIERS - *CANADA

ABSTRACT - THIS REPORT EVALUATES A
COMPREHENSIVE MANPOWER PROGRAM DESIGNED TO
PROVIDE DISADVANTAGED ADULTS WITH THE
ACADEMIC, VOCATIONAL, AND SOCIAL SKILL
NECESSARY FOR EMPLOYMENT. IN ORDER TO PREDICT
SUCCESS IN THE PROGRAM AS WELL AS IN
EMPLOYMENT, MULTIPLE REGRESSION ANALYSIS WAS
USED TO COMPARE THE INFLUENCES OF 21
VARIABLES ON THE SUCCESS OF 121 PREVIOUS
PARTICIPANTS. VARIABLES WERE IDENTIFIED WHICH
CAN PREDICT TO SOME EXTENT, TRAINING TIME,
POST-TRAINING SCORES IN LANGUAGE AND
MATHEMATICS, AND EMPLOYMENT. NO PREDICTION
WAS POSSIBLE FOR RELATED EMPLOYMENT,
COUNSELING TIME, OR RATING SCALE TOTAL. (BH)

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canada NEWSTART program

PRINCE EDWARD ISLAND NEWSTART INC

FINAL EVALUATION OF THE P. E.I. NEWSTART COMPREHENSIVE MANPOWER DEVELOPMENT SYSTEM

REPORT No 3

BY T. ROGERS

AND C. NICHOLSON

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P.E.I. NEWSTART
COMPREHENSIVE MANPOWER DEVELOPMENT SYSTEM

Report No. 3

T. Rogers
and
C. Nicholson

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Prince Edward Island NewStart Incorporated
Montague
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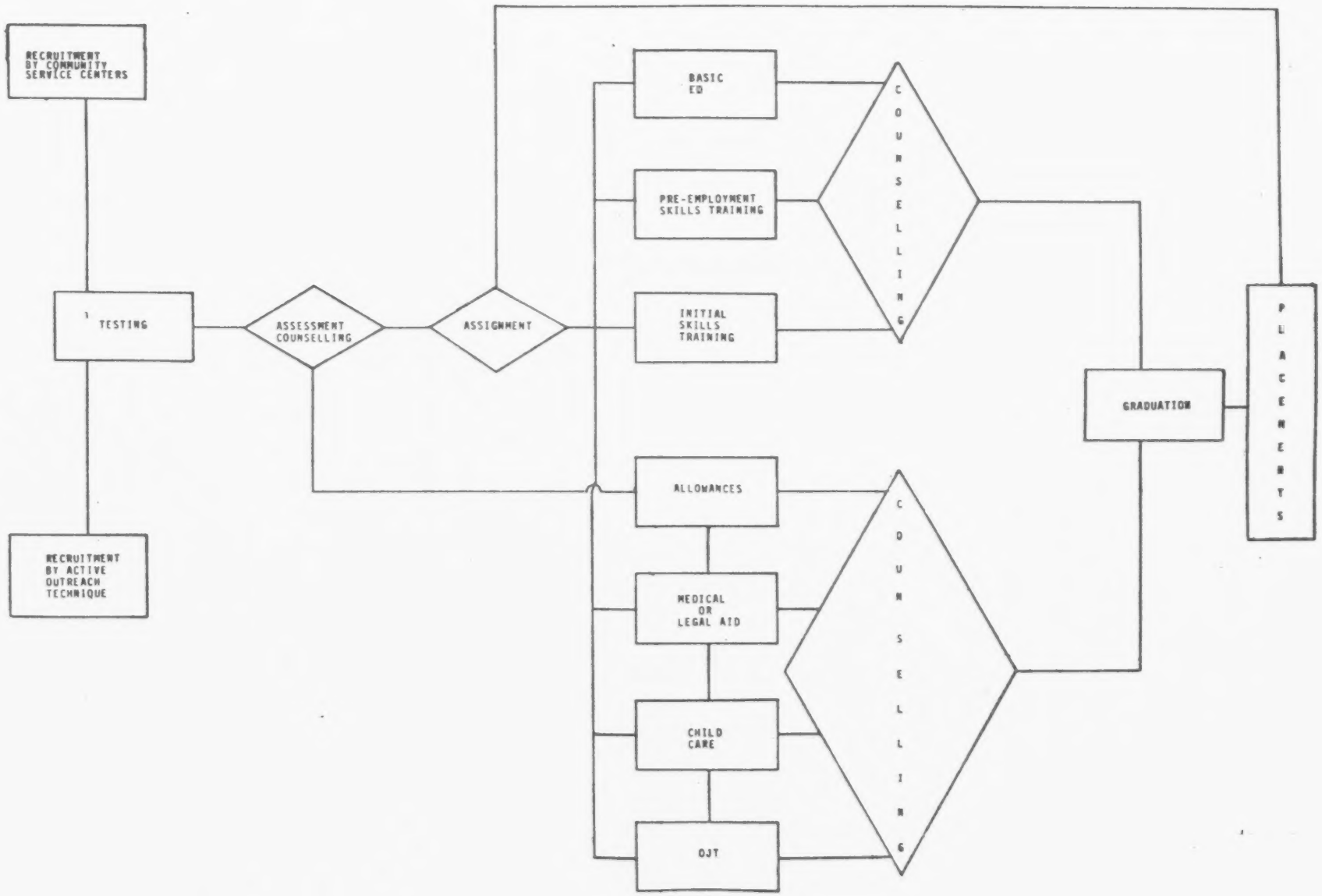
INTRODUCTION

For the past one and one-half years the facilities, time, and staff of Prince Edward Island NewStart have been concentrated on the development, implementation, and evaluation of a program aimed at providing disadvantaged adults with skills of an academic, vocational and social nature in order that they may more readily be prepared to locate and pursue suitable employment. Job acquisition has been the focal point of this activity since this economic advancement is seen as the prime prerequisite for meaningful personal and social development.

The philosophy that underlay the evolution of the program was that a global approach to the problems of the disadvantaged was needed in order that accomplishments be observed and measured. The company, as a whole, attempted to convert its independent functions into a single plan, since, previous to this project, most segments (basic education, vocational training and so on) were operating independently of each other. It was felt, therefore, that an inclusive program was desirable to fulfill the needs of the individuals with whom we were dealing. Thus the Comprehensive Manpower Development System was conceived and implemented. An extensive account of the rationale and organizational features of the system may be found in the company's 1970-1971 Plan of Operation (P.E.I. NewStart, 1970).

Specifically, the plan called for the capability of a training system to accept and train for employment any individual, male or female, of any academic standing, from illiterate to high school, who was seen by the company as being unable to gain employment due to lack of academic, vocational, or social skills. In effect, this meant a willingness on the part of the organization to assist any individuals who were unemployed.

Procedures were established for the flow of individuals into and out of the training at any point. Early in the project, a committee was instigated to assess the level and time of entry for each individual and to assist in the orderly flow of that person through the training sequence and finally to help in attaining a job for that person. The function and qualitative evaluation of that group may be found in Haire (1971). Diagramatically, the operation of the system is shown in Figure 1. Obviously, the plan called for a high degree of flexibility and communication between all the groups and particular individuals involved.



Manpower Development System Flow Chart

MANPOWER RESEARCH

With the advent of the United States "War on Poverty" came many projects having as their formal objective the training of disadvantaged people for employment. Under the Manpower Development and Training Act (MDTA), the American people poured many millions of dollars into a concerted but sometimes splintered attack on the problems of the poor. In Canada, one of the first acts was to establish provincial bodies with an autonomous charter and with the broad objective of conducting research into the methods and techniques of training disadvantaged adults for suitable employment. The corporations would be referred to as NewStart Incorporated and as the name suggests, the purpose was to provide a starting point for a new attack on poverty. In all, six provinces took advantage of the federal funds available.

Each company had a life expectancy of five years, thus the Comprehensive Manpower Development System was this Corporation's final project within that time limit.

The idea for the system flowed from several sources including the Company's personnel themselves, consultants to the Company, and the previous experience of individuals in the area of human resource development either through personal contact or the literature available on the subject.

The Economic Council of Canada (1968, Ch.6) questioned the methods being utilized to combat poverty and suggested (p. 127) the following:

> A full-scale war on poverty should embrace all of the four basic categories of anti-poverty programs ...: manpower programs, individual improvement programs, community betterment programs, and income maintenance programs. Experience has shown that these categories are interrelated and mutually supporting.

In an attempt to coordinate these four areas into the CMDS, a combination of several programs was effected. Individual improvement programs were seen as part of the manpower training system, the community services program (P.E.I. New-Start, 1970) was seen as community action programs and the adult Occupational Training Act (OTA) of 1967 as fulfilling the income maintenance role.

In terms of specific approaches, the plan relied heavily on the Rural Education Disadvantaged Youth program (Fuller and Phipps, 1967); Operation Mainstream (Pine and Horne, 1968); Farm Family Project (U.S. Office of Manpower Policy, 1968; Sommerfeld and Fatzinger, 1967). These along with many other reports and discussions helped to serve as guidelines. Generally the kind of action research, pursued by corporations similar to NewStart, is such that methodological limitations have produced ambigious results. It is felt that any attempt to clarify and resolve these issues is useful to the whole area of manpower training and evaluation.

THE PROBLEM AND ITS CONDITIONS

The major effort of the evaluative process has been in terms of predicting success both within the different programs and within the employment sphere. The aim of this activity was to identify the variable or group of variables which would, alone or in combination, best predict the incoming trainees' chances of success after intervention on the company's part (in this case, the manpower training system and its inherent activities).

During the first twelve months of the CMDS program, two attempts were made to provide continuous evaluation within these two general areas. The results of these studies are contained in Rogers and Nicholson (1970) and Rogers (1971b). This report will deal with identical criteria of success; specifically, these are:

A. Employment Area:

1. Employed in any area of work
2. Employed in an area related to the person's training at NewStart.

B. Program Area:

1. Time spent in counselling
2. Time spent in training
3. Post-training scores in mathematics
4. Post-training scores in language
5. Total rating on a teacher evaluation form.

In other words, this evaluation is concerned with finding the degree to which it is possible to forecast or predict outcomes in these seven areas. In terms of the attempts made

prior to this report, the findings within the employment area were ambiguous, i.e., not replicated, while prediction within the program areas was, in most cases, consistent. A summary of the results from the two studies is given in Table 1.

TABLE 1

RESULTS OF FIRST TWO STUDEIS COMPARING MULTIPLE R

Problem	Criterion	R_1	R_2
1	Employment	.80	.56
2	Related Employment	.83	.60
3	Counselling Time	**	.45
4	Training Time	.96	.87
5	Post-Language	.92	.79
6	Post-Mathematics	.92	.86
7	Total Rating	.87	.58

In short, three of these initial results could be considered consistent while a larger drop in the multiple correlation is noticed in the others then that which would normally be expected (see Uhl and Eisenberg, 1970).

In terms of the variables to be utilized in the study, some twenty-one, inclusive of criteria, were finally chosen. The information system of the Company and its role in the evaluative process is described elsewhere (Rogers, 1971a); the dependent and independent variables were selected from all those available. It was, however, not desirable to utilize all variables in each problem since the objective of the process was to pre-

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** This criterion was not predicted in the initial analysis.

dict future events and thus those variates which would not be known at the particular time were not employed, that is, in terms of predicting post-training language scores, only those measures available at the beginning of the training would be potential predictors (pre-training language scores would be known; post-training math scores would not be).

Specifically the variables included in the study are given in Table 2 along with their breakdown and variable code designation.

TABLE 2

VARIABLES UTILIZED

1.	1 if trainee is employed; 0 if otherwise.	X_1
2.	1 if trainee is employed in related area; 0 otherwise.	X_2
3.	Age: 1 if between 17-20 years 2 if between 21-24 years 3 if between 25-28 years 4 if between 29-32 years 5 if between 33-35 years 6 if 36 years or over.	X_3
4.	Sex: 1 if male 0 if female	X_4
5.	Marital Status: 1 if married 0 if single	X_5
6.	Dependents: 0 if not dependents 1 if 1 dependent 2 if 2 dependents 3 if 3 dependents 4 if 4 dependents 5 if 5 dependents 6 if 6 or more dependents.	X_6

7. Employment Status Prior To Training:

1 if employed 0 months of last 24 X_7
2 if employed 1-6 months of last 24
3 if employed 7-12 months of last 24
4 if employed 13-18 months of last 24
5 if employed 19-23 months of last 24
6 if employed 24 months.

8. Travel to Training Centre:

1 if 1-5 miles from training centre X_8
2 if 6-10 miles
3 if 11-15 miles
4 if 16-29 miles
5 if 21-25 miles
6 if 26-30 miles
7 if 31 or more miles.

9. Program Component:

0 if direct placement X_9
1 if basic education
2 if basic education and pre-employment skills training
3 if initial skills training
4 if pre-employment skills training and initial skills training
5 if basic education and initial skills training
6 if basic education, pre-employment skills training, and initial skills training.

10. 1 if placed in further training after NewStart; X_{10}
0 if otherwise.

11. 1 if placed permanently in employment by NewStart; X_{11}
0 if otherwise.

12. Mobility: 1 if travelling 0-9 miles to work X_{12}
2 if travelling 10-19 miles to work
3 if travelling 20-29 miles to work
4 if travelling 30-39 miles to work
5 if travelling 40-50 miles to work
6 if travelling 50 miles or more to work

13. Counselling Time During Training: X_{13}

0 if 0 hours
1 if 1 hour
2 if 2 hours

3 if 3 hours
4 if 4 hours
5 if 5 hours
6 if 6 hours
7 if 7 hours
8 if 8 hours
9 if 9 hours or more.

14. Training Time:

1 if less than 10 days
2 if less than 20 days
3 if less than 30 days
4 if less than 40 days
5 if less than 50 days
6 if less than 60 days
7 if less than 70 days
8 if 80 days or more. X_{14}

15. Pre-Score on Language Subtests X_{15}

16. Post-Score on Language Subtests X_{16}

17. Pre-Score on Math Subtests X_{17}

18. Post-Score on Math Subtests X_{18}

19. Pre-Score on I.Q. X_{19}

20. Post-Score on I.Q. X_{20}

21. Total Score on Rating Scale X_{21}

In the discussion of each problem, the criterion variable and the potential predictors will be specified.

THE POPULATION FOR THE STUDY

The group to be included in this study consisted of all those individuals (N=121) who were in contact with the manpower system from the time of its inception to the point of termination of the program. The following is a summary of available data:

A. Demographic Characteristics

1. Average age = 22.5 years
2. Males = 60%; females = 40%
3. Married = 53%
4. Average number of dependents = 1.3
5. Average length of employment prior to training = 9 months of last 24
6. Average distance from training centre = 18 miles.

B. Tested Characteristics

1. Average pre-training language score = 6.5 grade levels
2. Average post-training language score = 7.5 grade levels
3. Average pre-training mathematics score = 6.9 grade levels
4. Average post-training language score = 8.0 grade levels
5. Average pre-training intelligence score = 78.1
6. Average post-training intelligence score = 84.7
7. Average score on teacher rating = 74.6

C. Program Characteristics

1. (a) 4 people were directly placed
   (b) 8 people were enrolled in basic education programs
   (c) 31 people were enrolled in basic education and pre-employment skills training combination
   (d) 11 people were enrolled in only initial skills training
   (e) 3 people were enrolled in initial skills training and pre-employment skills training

(f) 18 people were enrolled in basic education and initial skills training.

(g) 46 people were enrolled in basic education, pre-employment skills and initial skills.

2. Average number of counselling hours = 3.0

3. Average number of training days = 65 days.

D. Post-Training Characteristics

1. Number of people employed = 74%

2. Number of people employed in related area = 19%

3. Number of people placed in further training by NewStart = 12%

4. Number of people placed permanently by NewStart assistance = 26%

5. Number of miles travelled to work (average) = 17

Some note should be made concerning the term "population" (in contrast to "sample") which has been used. It is felt that, empirically, there is no justification for designating this group as a sample of the disadvantaged. Needless to say, the group represents one or more segments of this general populace; however, on the assumption that there are sub-groups of disadvantaged, studies here have not clearly defined just what characteristics are typical of particular strata of this general population. Although two studies have been completed which attempt to define the attributes of the different sub-groups within the NewStart population (Rogers, 1971b, Rogers et.al., 1971); however, these results have not been generalized to the total population. On reviewing these results, it seems most plausable to conclude that the majority of trainees represented the middle and upper levels of the disadvantaged population, while there was little representation of the "hard-core" disadvantaged.

METHODOLOGY

The problem being considered involves the prediction of a single criterion from a set of predictors, i.e., multiple prediction. Horst (1968, Ch. 22) considers several methods of statistical forecasting; the method chosen for this particular study was multiple linear regression. This technique derives a weight for each predictor which optimizes its predictive effectiveness, that is, the correlations between variables are utilized in such a manner so that ultimately, and if required, each independent variable is assigned a regression coefficient (weight) and the set of independent variables together have a maximum correlation with the criterion. In this study, a step-wise procedure was used in which predictors were added to the set on the basis that each additional variable produces the greatest rise in the multiple correlation coefficient.

The results of this analysis yield several points of information. The first and most important is the multiple correlation coefficient (R) which may be interpreted as an index of forecasting efficiency which is derived from the correlation such that $E = 100\ (1 - \ 1-R^2)$. This index is defined as the percentage reduction in errors of prediction by reason of correlation between two variables (Guilford, 1965, P. 378) - in this case the criterion and the set of predictor variables. Secondly, the results will yield regression weights for those variables which best predict the criterion. They indicate the amount of increase in the criterion for every unit increase in the predictor. Coefficients are not indicators of the relative importance of each variable. This is due to the fact that predictor measures are not usually independent for a particular sample (Horst, 1968, P. 354). It follows that

the variables have common variance components, i.e., they are correlated. Only if they were uncorrelated could the weights be taken as indices of importance for each variable.

Another point which should be noted is the negative regression weight. They are as qualified as positive weights in prediction. They suppress variance in other predictors that is not common to the criterion, thus effecting a rise in the multiple correlation. Thus, they are referred to as suppressor variables.

Lastly, the analysis yields a constant for each problem. This is a regression coefficient that must be added to the equation to ensure that the mean of the predictions will equal the mean of the obtained values (Guilford, 1965, pp. 367-368). The final equation for predicting them takes the form for any person:

$$Y_i' = a + b_1X_{1i} + b_2X_{2i} + \ldots b_nX_{ni}$$

where Y_i' = predicted score for individual i

a = constant

b = regression weight

and X_{1i} = score of individual i on variable X_1.

Sources of information, other than those quoted, include Bottenberg and Ward (1963) and Kelly et.al. (1969).

VALIDATION

In the area of regression analysis, validation of results has been a constant problem (see Mosier, 1951). Generally it is desirable that some cross-validation or replication procedure be utilized to ensure the stability of the prediction equation across samples. Many researchers have experienced the plight of Sommerfeld and Fatzinger (1967) who found the original correlation to be .439 and the cross-validation correlation to be - .06.

In order to overcome some of these problems, the following steps were taken here:

(1) The 121 individuals were divided randomly into two samples (N_1 = 61; N_2 = 60)

(2) Analyses were carried out separately on both groups.

(3) Analysis was performed on the total group

(4) Results from the first group (N_1 = 61) were used to predict results in the second group (N_2 = 60) and these correlations comparied, i.e., multiple correlations from Group 1 was compared to the resultant correlation from Group 2. This method represents one type of cross-validation (Mosier, 1951).

It was hoped that these results would identify the most effecient predictors.

RESULTS

The analyses of the seven problems involved in the study are dealt with separately. The criteria fall into two overall groups, namely, employment and program achievement.

A. EMPLOYMENT CRITERIA

1. Any Employment. The first problem dealt with the prediction of employment. All variables, except related employment, were seen as potential predictors.

The results of the analysis are given in Table 3.

TABLE 3

RESULTS FOR PROBLEM 1

	Sample 1	Sample 2	Total	Cross
R	.51	.64	.45	.52
E	15%	24%	12%	16%
Number of Variables in Predictor Set	3	4	2	3

In deciding the validity of the acceptance of these correlation coefficients, several conditions were deemed important for the tentative adoption of the results. First, all coefficients should be within a specified range (operationally .20 was decided upon). If this requirement was met, the equation for the total group was selected as the final one. If the range in the coefficients was greater than .20, results from Group 1 and the cross-validation group were examined. If they were similar, the equation for Group 1 was selected. If they were not in agreement, the solution was considered to be unacceptable, i.e., not valid.

For problem one, then, the equation for the total group was accepted as the one for possible future usage. The multiple R was .45; E = 12%; and the equation is as follows:

$$Y_1' = .406 + .298(X_4) + .086(X_{12})$$

where Y_1' = predicted score for criterion one (employment)

.406 = constant

X_4 = sex

X_{12} = mobility

From this equation, then, it may be stated that those people who were male and who would travel longer distances to work have the greater chance for employment. The implication herein is that work was only available outside of one's immediate community.

2. Related Employment. This problem was focused on predicting an individual's employment in an area related to his training at NewStart. All variables were used in this analysis. The results are given in Table 4.

TABLE 4

RESULTS FOR PROBLEM 2

	Sample 1	Sample 2	Total	Cross
R	.70	.42	.50	.42
E	28%	9%	15%	9%
Number of Variables in Equation	4	2	2	4

Through the conditions set out in the first problem, it was decided that the results for this criterion could not be judged valid. For information purposes the equation having the greatest R (Sample 1) was as follows:

$$Y_2' = .097 + .357(X_{10}) - .051(X_8) + .510(X_{11}) + .070(X_{12})$$

where Y_2' = predicted score or related employment

.097 = constant

X_{10} = further training after NewStart

X_8 = miles travelled to training centre

X_{11} = NewStart help in being placed permanently

X_{12} = miles travelled to work.

This problem was of utmost importance to the system since it would indicate the degree of success in placing people in new kinds of jobs. In the employment criterion (problem 1) no distinction could be made between people returning to old positions (fishing, farming) and those who found a new type of employment.

B. PROGRAM ACHIEVEMENT

3. Language Achievement. This problem dealth with the accuracy of predicting post-training language scores from a knowledge of demographic data and pre-training scores on various test. The results are given below.

TABLE 5

RESULTS FOR PROBLEM 3

	Sample 1	Sample 2	Total	Cross
R	.92	.82	.89	.82
E	58%	42%	54%	42%
Number of Variables in Equation	1	1	1	1

As was expected in this case, the pre-training language score was the better predictor by itself and the addition of other variables did not add significantly to its effectiveness. The equation was:

$$Y_3' = 1.919 + .852(X_{15})$$

where Y_3' = predicted post-training language score

1.919 = constant

X_{15} = pre-training language score.

4. Mathematics Achievement. As in the previous case, all demographic and pre-training test scores were utilized in an attempt to forecast the final mathematics scores of trainees. Again, the results were not surprising, as shown in Table 6.

TABLE 6

RESULTS FOR PROBLEM 4

	Sample 1	Sample 2	Total	Cross
R	.89	.81	.85	.77
E	54%	41%	45%	38%
Number of Variables in Equation	1	2	1	1

From the total group the equation would be:

$$Y_4' = 2.442 + 803(X_{17})$$

where Y_4' = predicted score on post-training mathematics test

2.442 = constant

X_{17} = score on pre-training mathematics test.

Obviously, considering these two problems, one can be accurate in predicting post scores on these two tests given a knowledge of the trainees' pre-scores.

5. Number of Counselling Hours. For the total group of trainees, the average time spent in counselling sessions was 3.0 hours. Within the context of this program, some methods of predicting this time was desirable. All demographic and pre-training scores along with program variables were utilized. The results are given in Table 7.

TABLE 7

RESULTS FOR PROBLEM 5

	Sample 1	Sample 2	Total	Cross
R	.34	.27	.22	.21
E	8%	6%	4%	4%
Number of Variables in Equation	4	1	1	4

A unique situation was encountered here to the extent that the one predictor variable for Sample 2 and the total was not included for sample one and therefore the cross-validation. Also there was a reduction in the correlation from .34 to .21 in the cross-validation - although this could partly be expected (Uhl and Eisenberg, 1970). For these reasons, the results were interpreted as being invalid. The equation from Sample 1 (largest R) was as follows:

$$Y_5' = .931 + .268(X_6) + .225(X_9) - .299(X_{15}) + .039(X_{19})$$

where Y_5' = predicted number of counselling hours

.931 = constant

X_6 = number of dependents

X_9 = program component

X_{15} = pre-training score on language test

and X_{19} = pre-score on intelligence test.

6. Training Time. The average number of training days was 65 with a standard deviation of 17 days. This problem attempted to identify those variables which best predict the length of time any trainee would be in any of the various programs. As potential predictors, all demographic and pre-training test scores along with program variables were utilized. The results are given in Table 8.

TABLE 8

RESULTS FOR PROBLEM 6

	Sample 1	Sample 2	Total	Cross
R	.53	.62	.51	.45
E	16%	22%	15%	12%
Number of Variables in Equation	2	3	2	2

The equation from the total group is as follows:

$$Y_6' = 6.53 + .433(X_9) - .166(X_{17})$$

where Y_6' = predicted days of training time

6.53 = constant

X_9 = program component

X_{17} = pre-training mathematics score.

Intuitively, the variable program component is logical here since the more program components in which one is enrolled, the longer the training time. The mathematics score acts as a suppressor variable in such a way that the higher the score, the less time in training.

7. Rating Scale Score. At the end of the training period, instructors rated each student on the Behavioral Rating Scale in Work Evaluation (Bashaw and Anderson, 1967). This problem was designed as an attempt to predict from the demographic, pre-training test scores, and program variables the total ratings on this scale. The results are given in Table 9.

TABLE 9

RESULTS FOR PROBLEM 7

	Sample 1	Sample 2	Total	Cross
R	.36	.35	.20	.04
E	8%	8%	5%	5%
Number of variables in Equation	2	2	1	2

Since the range of correlations exceeds .20 and the cross validation is not similar to the validation group (.36 against .04) the results of this problem cannot be considered valid. Although the multiple correlation for Sample 2 is very close to that of sample 1, the predictor variables are not the same ones.

OVERVIEW OF RESULTS

The summary of results is given in Table 11. The status of the problem refers to the validity of the solution based on the foregoing analysis. Four of the seven solutions are seen as being usable in any future program of this kind although, of course, continuous re-evaluation of the results is needed.

TABLE 10

SUMMARY OF RESULTS

Problem	Criterion	Status	R
1	Employment	Yes	.45
2	Related Employment	No	
3	Post-Training Language	Yes	.89
4	Post-Training Mathematics	Yes	.85
5	Counselling Time	No	
6	Training Time	Yes	.51
7	Rating Scale Total	No	

The results of these regression analyses are at the same time encouraging and dissuasive. On the one hand, the ability to replicate results to a good degree across samples would indicate that this kind of analysis is worthwhile. On the other, the degree of effectiveness in predicting the several criteria is lower than that which would be deemed desirable. With the exception of forecasting the post-training scores in both language and mathematics, the maximum predictive validity would be in the amount of training time (R = .51). This multiple correlation allows us to predict 15 per cent better than if no information were available.

The criterion in which most interest was involved, employed in related work, was not able to be predicted. This would have to be the major hindrance of the total analysis. Since the mandate of the Corporation was to train and retrain individuals who were unemployed or underemployed on entering training, and although, after training, 74 per cent of the group was employed and 19 per cent were working in a job related to their training at NewStart, no validity could be established for any of the different independent variables that were seen as potential predictors. Some further investigation and addition to this system of other variables would seem to be one alternative approach.

A further point concerns the interaction between employment and the functioning of the placement department of this Corporation. Specifically, it was only with active job identification by the staff of this department, i.e., through on-the-job training contacts with employers and contracts for training with the provincial government, were individuals able to obtain jobs which were related to their training. These facts clearly indicated the inter-dependency of employment success and a responsible placement activity.

CONCLUSION

It would seem relevant at this point to review some final impressions of the Comprehensive Manpower Development System as a global approach to training unemployed or underemployed people. Initially, it should be understood that we accept and endorse the dichotomy between the two groups of poor, one being comprised of those people who cannot be expected to earn incomes and that group with remedial disadvantages who, due to lack of social, educational, and employment-oriented skills, are not in the labor force (cf. Economic Council of Canada, 1969, Ch. 7). The latter group has been referred to generally as "competitively disadvantaged" (P.E.I. NewStart, 1970).

We feel also the need to reiterate the adage that a country's greatest asset lies in its people. Along with this Canada should be ready to support justified academic, vocational and technical education programs to assist in giving each citizen the advantage of being able to choose between occupational alternatives. There is a direct relationship between educational and industrial enterprizes. As Kraft (1970, p. 425) points out:

> Modern industry relies upon a level of skill and competence which is supplied through technical education at various levels; and educational systems need the active support of industry if they are to supply these levels of skills and competence.

Wolfbein (1971) has attempted to draw together the various particulars that he deems necessary for an overall program in the area of training disadvantaged individuals. Specifically, he refers to seven strategies (pp. 62-75).

(1) Matching resources with needs - provision of money to carry out eduction programs.

(2) Expanding co-operative education - combining on-the-job programs with formal education.

(3) Individualizing the format - accepting and teaching according to the diversity of each trainee's characteristics.

(4) Eliminating tests - tests, if used, should not screen out people but be employed "to help in continuous assessment of the best possible terminal points related to entry jobs..."

(5) Opening opportunities for continuous education - a complex of educational programs should be available if the individual wishes to avail of them.

(6) Providing supportive services - this would include counselling, health care, human relations training and so on.

(7) Securing better teachers - the active seeking of well-qualified and motivated young people to work effectively with disadvantaged students.

From the P.E.I. NewStart point of view, it would seem that all of these strategies were considered and built-in to the CMDS program. However, as Wolfbein (p. 60) points out, there are some basic conditions that must be present before vocational and technical education can be successful, one of which is:

> an active economic policy nationally involving a commitment to employ all fiscal and monetary instruments to ensure a level and rate of economic growth that in turn will ensure the needed job opportunities for all who seek them.

The converse has been true in Canada for the past two years and it is only now that attempts are being made to reverse

this trend. The rate of unemployment for the year and one-half during which the CMDS program was operating was 6.9 for the province of Prince Edward Island, substantially higher than in previous years (range: 2.7 to 12.1). In nine of the fourteen months from April of 1970 to May of 1971, the unemployment rate was equal to or greater than five per cent of the labour force. That figure does not include those individuals enrolled in manpower training courses such as CMDS.

Lastly, we feel that evaluation of on-going programs is not only desirable but indeed mandatory. Without constant observation and measurement about the effects of programs, we see little usefulness of these programs. There is a need to know what and how programs are affecting people. The Economic Council of Canada (1968, p. 131) states:

> Compassion (for the poor) there must certainly be, but also a very hard-headed and up-to-date preoccupation with the measurement and evaluation of results. Far from being inconsistent, the two are indispensable elements of a sense of commitment that means to get somewhere.

REFERENCES

Bashaw, W.L., and H.E. Anderson, Anderson-Bashaw Behavioral Rating Scale. 1967.

Bottenberg, R.A. and J.H. Ward, Jr., Applied Multiple Linear Regression. Technical Documentary Report PRL-TDR-63-6. Lackland Air Force Base, Texas: 6570 Personnel Research Laboratory, March, 1963.

Economic Council of Canada. Fifth Annual Review. The Challenge of Growth and Change, Ottawa: Queen's Printer, September, 1968.

Economic Council of Canada, Sixth Annual Review. Perspective 1975. Ottawa: Queen's Printer, September, 1969.

Fuller, C.R., and Phipps, L.J. Development of Human Resources Through a Vocationally Oriented Program for Disadvantaged Families in Depressed Rural Areas. College of Education, University of Illinois. (ERIC Documents ED022968 and ED023529), Urbana, Ill., 1967.

Guilford, J.P. Fundamental Statistics in Psychology and Education, New York, McGraw Hill, 1965.

Haire, Basil. The Role of Assessment and Counselling in a Comprehensive Manpower Development System. Montague: P.E.I. NewStart Inc., 1971

Horst, P. Psychological Measurement and Prediction, Belmont, California: Wadsworth Publishing Company, 1968.

Kelly, Francis J., Donald L. Beggs, Keith A. McNeil, Tony Eichelberger and Judy Lyon. Multiple Regression Approach, Carbondale, Ill: Southern Illinous University Press, 1969.

Kraft, Richard H.P. "Manpower Planning and its Role in the Age of Automation". Review of Educational Research, 1970, 40.

Mosier, Charles I. "Symposium: The Need and Means of Cross Validation". Educational and Psychological Measurement, 1951, 11, p. 5-11.

P.E.I. NewStart Inc., Plan of Operations 1970-1971, Montague, Prince Edward Island: P.E.I. NewStart Inc., 1970.

Pine, G. E. and Horne, P. J. Operation Mainstream: Report to the New England Centre for Continuing Education (June 1967 to June 1968). Durham, California, 1968.

Rogers, Thomas M., Information System of P.E.I. NewStart, Montague, P.E.I.: P.E.I. NewStart Inc., 1971a.

Rogers, Thomas M., Interim Analysis of the P.E.I. NewStart Manpower Development System, Report No. 2, Montague, Prince Edward Island: P.E.I. NewStart, 1971b.

Rogers, Thomas M. and Carol Nicholson. Interim Analysis of the P.E.I. NewStart Manpower Development System, Report No. 1, Montague, Prince Edward Island: P.E.I. NewStart Inc., 1970.

Rogers, Thomas M., Carol Nicholson and Basil Haire, Factor Analysis of the Variables Associated with the Comprehensive Manpower Development System. Montague, P.E.I.: P.E.I. NewStart Inc., 1971

Sommerfeld, Donald and Frank A. Fatzinger, "The Prediction of Trainee Success in a Manpower Development and Training Program", Educational and Psychological Measurement, 1967, 27.

Tweeten, L.G. Rural Poverty: Incidence, Causes and Cures. Oklahoma Agricultural Experimental Station, Project H-1175, Department of Agricultural Economics, Stillwater, 1968.

Uhl, Norman and Terry Eisenberg. "Predicting Shrinkage in the Multiple Correlation Coefficient". Educational and Psychological Measurement, 1970, 30.

U.S. Office of Manpower Policy, Evaluation and Research: Farm Family Project. Report from January 1, 1968 to April 1, 1968. Montpelie, Vt., 1968.

Wolfbeins, Seymour L., "Seven Strategies for Success in Vocational Education", Functional Education for Disadvantaged Youth, ed. Sterling M. McCurrin, New York: Committee for Economic Development, 1971.

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ABSTRACT - ESSENTIAL TO THE PLANNING OF A NEW BUILDING FOR A SCHOOL OF NURSING AS PART OF A 4-SCHOOL HEALTH SCIENCES PROJECT IS INTERDISCIPLINARY COOPERATION AND UNIVERSITY ADMINISTRATIVE COMMITMENT TO THE CONCEPT OF THE HEALTH SCIENCES AS A COMPLEX OF INTERRELATED DISCIPLINES. TO COORDINATE PLANNING AND FACILITATE DECISION-MAKING, THREE TYPES OF ORGANIZATIONAL STRUCTURES WERE FORMED, INCLUDING: (1) A COORDINATING COUNCIL, WHICH WAS A POLICY MAKING GROUP COMPOSED OF UNIVERSITY ADMINISTRATIVE PERSONNEL AND DEANS OF EACH OF THE FOUR PROFESSIONAL SCHOOLS-DENTISTRY, NURSING, MEDICINE, AND PHARMACY, (2) A TASK FORCE, WHICH WAS A DECISION-MAKING GROUP REPRESENTATIVE OF THE USERS OF THE BUILDING, AND (3) A SPACE PLANNING COMMITTEE FOR EACH SCHOOL. THIS PUBLICATION DISCUSSES THE ACTIVITIES OF THESE THREE GROUPS IN PLANNING A HEALTH SCIENCES BUILDING THAT WOULD REMEDY EXISTING INADEQUACIES IN SPACE, PROVIDE FOR A MARKED INCREASE IN STUDENT BODY SIZE, AND PROMOTE IMPROVEMENTS IN FACILITIES FOR TEACHING AND LEARNING. (SB)

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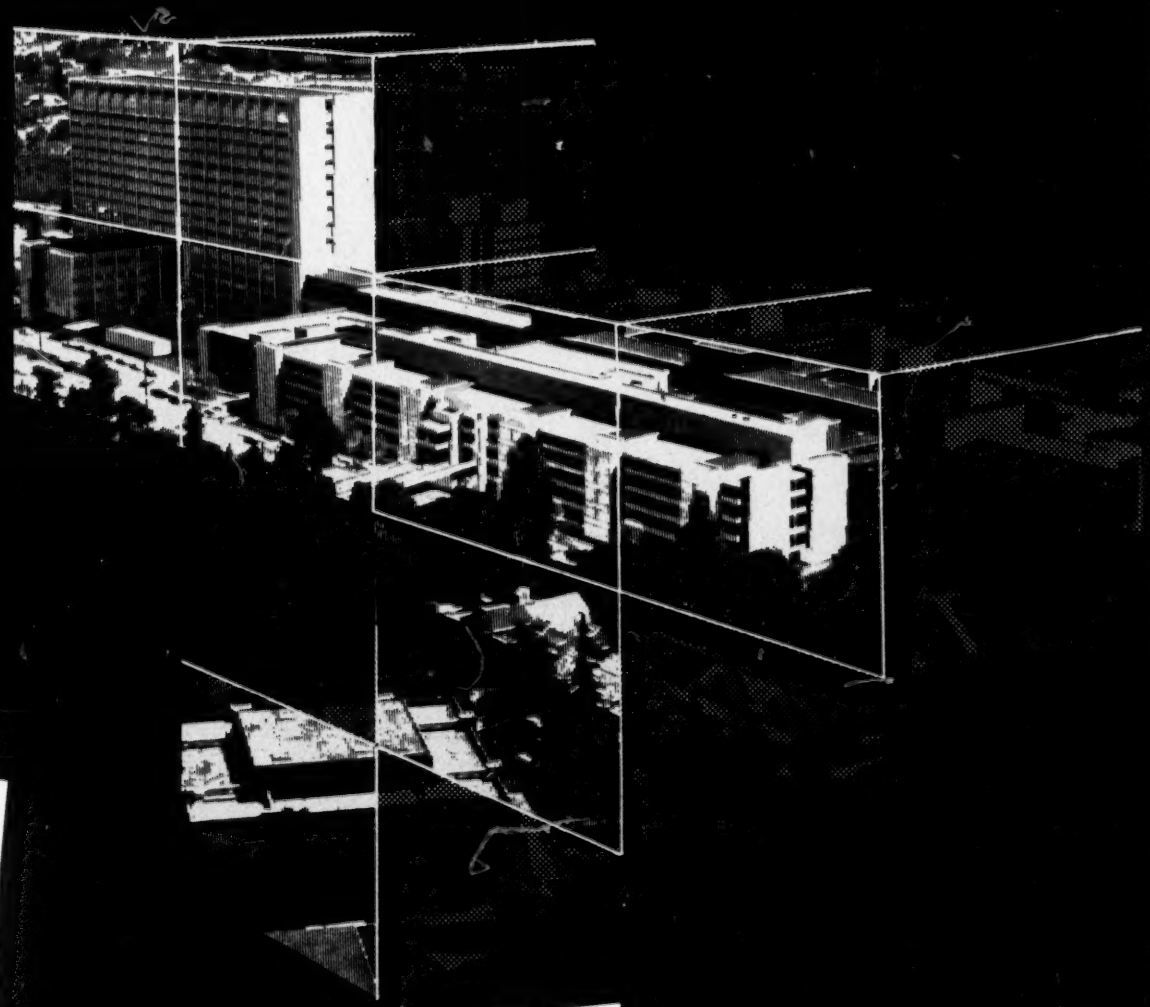

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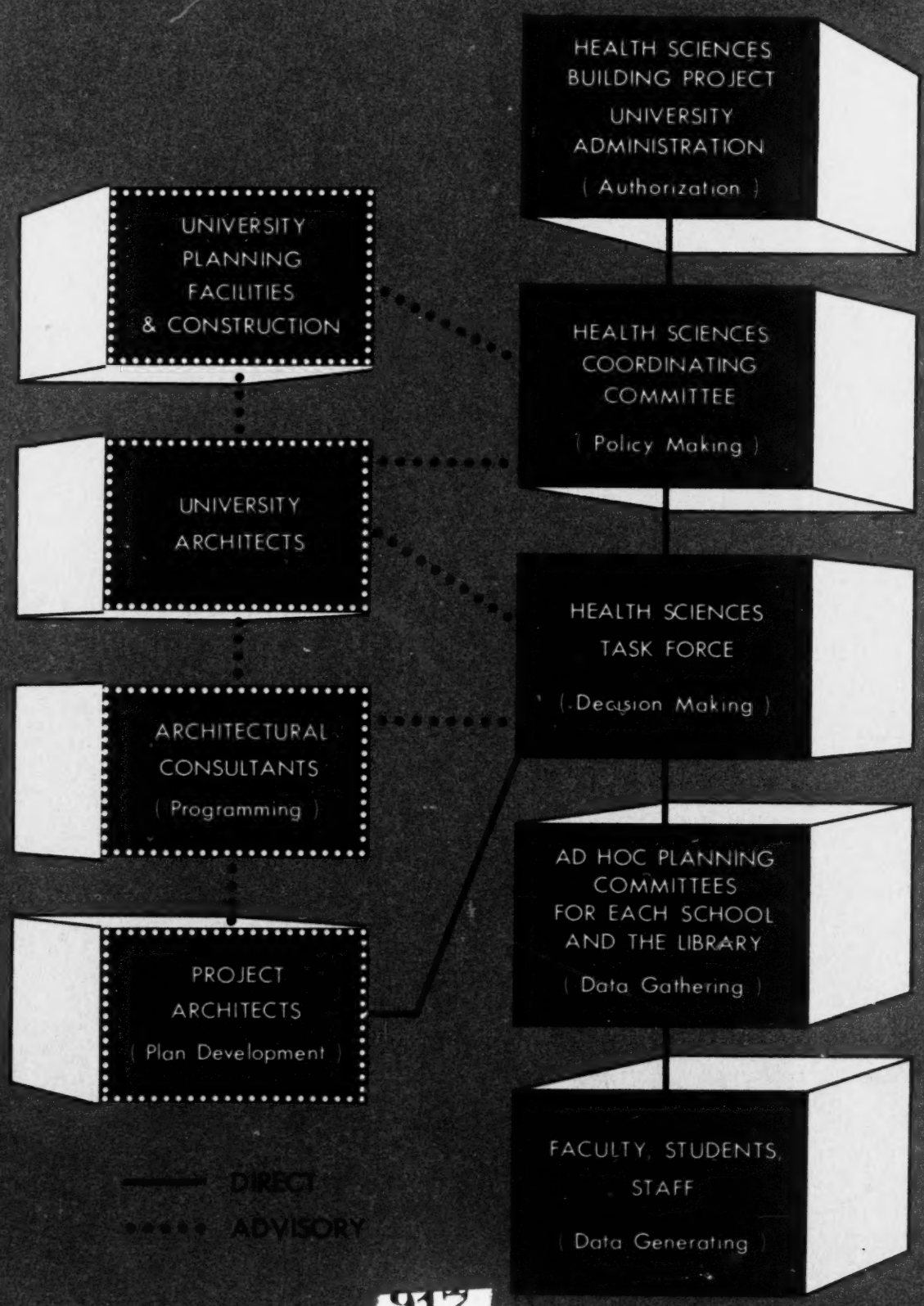

COOPERATIVE PLANNING *for a* SCHOOL *of* NURSING *within a Health Science Complex*

by

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Foreword

In the area of health care, a variety of different approaches to educating personnel for the health professions has emerged in response to pressures both from within and from outside the professions. A number of publications have dealt with the steps in planning a building for a school of nursing. This monograph reports on the experiences of one school involved in joint planning for a building shared by three educationally autonomous but administratively coordinated schools in a university health sciences complex.

To make this project possible, Federal matching funds were sought by each of the four schools that comprise the health sciences in this University. Consultative assistance to the School of Nursing was provided by the Division of Nursing and the Division of Physician and Health Professions Education, Bureau of Health Manpower Education, National Institutes of Health. Federal matching funds, made possible through the Nurse Training Act of 1964 as amended by the Health Manpower Act of 1968, were used to supplement the School of Nursing's participation in this project.

Formal planning for the nursing facility began in 1965. The application for Federal funds was submitted in 1968, and the grant award was made to the University in 1969. Construction began early in

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1970, and it is anticipated that the facility will be ready for occupancy by the autumn of 1972.

The monograph, although reporting one school's experiences, provides insight into both possibilities and complexities involved in multidisciplinary planning.

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Introduction

The purpose of this paper is to describe what happened when a group of persons from diverse backgrounds in health related professions was drawn together by a common goal. The goal was an addition to a health sciences building that would remedy many existing inadequacies in space, provide for a marked increase in the size of the student bodies in the Schools of Dentistry, Medicine, Nursing, and Pharmacy, and promote the realization of personal and corporate efforts by faculties in these fields for improvements in facilities for teaching and learning. Dreams, hopes, plans, and reality had to be brought together so that the final product could become a functional interdisciplinary unit capable of accommodating Dentistry, Medicine (including the basic medical sciences), Nursing, Pharmacy, and the Health Sciences Library.

The Health Sciences Concept

The concept of the health sciences as an area of knowledge and study similar to the life sciences, the behavioral sciences, the natural sciences, or humanities—a group of closely related sciences sharing a common object of study but each with its own perspective—is an ideal to be realized at some future time. Even the concept of the health sciences as a complex of health related schools on the campus of

American universities has emerged slowly and sporadically during the present century. The development of the complex has usually been contingent on the development of a medical school and a university hospital, even though other health related professional schools or the basic medical sciences may have actually preceded the medical school on the campus. In the literature on medical education and medical history, the term "health sciences" may refer to an aggregate of health related schools in one area of the campus, physically related but administratively and educationally autonomous; to a group of administratively coordinated and educationally autonomous health related professional schools; or, less frequently, as synonymous with "medical center." In the latter case, the School of Medicine may have preceded other schools on the campus and have encouraged the development of the basic medical sciences and nursing as departments in the medical school.

The Health Sciences Concept at the University of Washington

The development of the health sciences concept at this institution has been gradual, but it has always been an administrative ideal in the University, strongly encouraged and supported at each administrative level from the president to the department

head. The University also has a long history of strong departments in the basic medical sciences that have provided instruction to students in each of the health related professions as they have been established and also to other students in the University.

The School of Nursing is the oldest of the original health sciences professions on campus,[1] tracing its origins as a school back to 1920 and becoming an autonomous school in 1945. The School of Dentistry and the School of Medicine were established as autonomous schools in 1946. In 1947, the three health related professional schools, the basic medical sciences that were administratively organized under the School of Medicine, and the Health Sciences Library moved into the existing Health Sciences Building. The adjacent University Hospital was added several years later.

The Board of Health Sciences, comprised of the Deans of the schools of the three health related professions, coordinates the activities of the schools in areas of mutual administrative concern. The School of Pharmacy and the School of Social Work have developed physically separated from the Health Sciences Building but are increasingly becoming identified as health related disciplines, the Deans of these two schools having recently been invited to become part of the Board of Health Sciences.

[1] The School of Pharmacy, developed at the turn of the century, actually predated the Schools of Dentistry, Nursing, and Medicine.

Like faculty in other schools in the health sciences, the School of Nursing had become accustomed to working within a physical structure that barely met basic needs for shelter and lacked many of the characteristics of an environment capable of fostering ideas for improving teaching and learning. The utilization of space in the existing building had been stretched to the breaking point. Office utilization in the School of Nursing in 1964-65 was estimated at three times that considered optimal. Additional seats had been crowded into the front and rear of classrooms; conference, library, and other types of support space were grossly inadequate. Finally, in 1965, apartment houses and residences in the adjacent area were pressed into service to relieve some of the congestion and overcrowding. Limitations in the laboratory spaces in the basic medical sciences eventually set firm limits on the number of students who could be taught. Enrollments in the School of Nursing were limited to the number of students for whom laboratory spaces were available.

These circumstances presented a challenge to plan realistically in anticipating the needs of the future, rather than to attempt to remedy the glaring defects of an overcrowded structure. A new building would not only have to accommodate a projected minimal 20 percent increase in enrollments and the faculty and staff attendant on such an increase in enrollment, it would also have to accommodate the anticipated advances in curricula and teaching in the four schools

in the health sciences complex. A project of the magnitude envisaged clearly could not be accomplished with the University funds budgeted for capital improvements. Even with the funds that could reasonably be expected by special appropriation from the State legislature, it was apparent that Federal matching funds would be required to finance the project.

Developing the machinery to determine both existing and projected needs of the four schools and to secure the required State and Federal funds constituted a major undertaking, but only part of the challenge. The planners had to learn to think not only of one professional school but of several, all striving toward the goal of educating persons capable of contributing to the expansion and improvement of health care services, but all within the limits of space and funds that could be secured. These factors intensified the challenge and increased the hurdles that had to be surmounted.

Planning for a school of nursing as an academically autonomous school, administratively coordinated within a health sciences complex, then, was the task before us. This type of planning differs from the planning for an autonomous school which builds independently, *not* so much in the steps in planning as in the time required for planning and coordinating human efforts.

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Planning a School of Nursing Building Within a Health Sciences Concept

Plans for the development of expanded facilities for the School of Nursing had been a dream of the Dean of Nursing for many years. Careful study of trends in enrollment in the University over a number of years had enabled the Dean to project the size of the nursing school enrollment with extraordinary accuracy. In 1961, she formally submitted to the President of the University a summary outlining the goals of the school, pointing out the deficiences in existing space and anticipating the need for improved and expanded physical facilities. She also appointed a faculty member to analyze existing and projected needs of faculty for space in detail. The critical importance of a thorough knowledge of what exists, plus an ability to reasonably anticipate and prepare for the future, becomes more apparent when one considers that 4 years elapsed between the time of the first formal presentation of space needs and projected budget to the President and the passage of a bond issue by the voters in 1965. Another 3 years elapsed from the passage of the bond issue to the application for Federal funding. Construction began in early 1970, and in all probability, the building will not be completed until the fall of 1972; thus 11 years will have elapsed from the initial steps of the planning to beginning occupancy of the building.

In anticipation of favorable action on the bond issue by the voters, the legislature appropriated funds so that planning could begin as soon as possible. In a project of this magnitude, escalating costs are a matter of great importance, and the University was concerned with measures to reduce time and increase efficiency in the programming of needs and development of schematic drawings. At the same time, there was a conviction that the "users" of the building must have an opportunity to participate in the decision making in the critical phases of planning. Consequently, architectural consultants and architects were hired, and organizational structures to facilitate planning and decision making were created. An Associate Dean in Medicine was appointed Chairman of the Health Sciences Building Project. Three major types of organizational structures were created to coordinate planning and facilitate decision making:

1. The Health Sciences Coordinating Council. This was a policy-making group comprised of representatives from the President's office, the University Architect's office, and the Deans of each of the four professional schools.[2]
2. The Health Sciences Task Force. This was a decision-making group representative of the "users" of the building (the four professional schools, the basic medical sciences, the clinical

[2] Social Work was not included in this project.

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sciences in Medicine and Dentistry, the Health Sciences Library) and the University Architect's office. Each school representative was given a temporary appointment as Assistant Dean for Space Planning, released from half of his or her teaching responsibilities, and given extra remuneration for the additional responsibilities undertaken.

3. Ad Hoc Space Planning Committee in each school. The committees were appointed by the Chairman of the Board of Health Sciences upon recommendation of the respective deans.

In the School of Nursing, the Chairman of the Ad Hoc Space Planning Committee was also Assistant Dean for Space Planning. One faculty member was assigned on a part-time basis to serve on this committee to work with the Assistant Dean and serve as an alternate for her. Four additional faculty were appointed to the committee to represent each of the clinical departments in nursing. The Dean of Nursing was an ex officio member.

Surveying Needs and Goals

The first task of the Ad Hoc Space Planning Committee was to review and revise the preliminary study of needs for space carried out 4 years previously. In this endeavor, the committee carefully studied all existing space, including temporary space in renovated houses and apartments nearby. Then they began

a study of reports on health needs, patterns in nursing education, plans for the development of health agencies, and trends in population growth and economic development in the local community, the State, and the Northwest. This knowledge of health needs and potential resources was considered in respect to the role of the University in the State and the philosophy of the School of Nursing.

The committee members surveyed their respective departments by questionnaire and follow-up interviews with each faculty member to elicit views on educational needs, the trends envisaged in each nursing specialty, and personal goals as far as particular areas of interest were concerned. Each department head and administrative officer in the School was interviewed in respect to goals and plans for her department or administrative area. Key members of the secretarial staff were also interviewed for an estimation of their projected needs for space and facilities. These data were summarized by each departmental representative.

The ad hoc committee as a whole studied the reports from each survey and channeled this information to the Assistant Dean. Information from the Task Force in turn came back through the Assistant Dean to the ad hoc committee and to the faculty.

Decisions of the President of the University, the University's Architectural Commission, Department of Facilities and Planning, and the Department of

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Business and Finance played a critical part in determining the relationship of this project to overall development of the University. These decisions determined the general nature of the project, the extent of the University's ability to fund the project, the building site, and general limitations in regard to architectural design of the building. The Chairman of the Health Sciences Building Project played a pivotal role in representing the needs and interests of the health sciences in negotiating these decisions, and yet providing the leadership necessary to keep the project coordinated with the goals of the University. To provide the coordination described, the Chairman of the Health Sciences Building Project chaired both the Health Sciences Coordinating Council and the Health Sciences Task Force. Academic rank, charisma, and organizational ability were essential attributes of the individual who filled this role, not only because of the size and complexity of the project but also because of the power (personal and formal) possessed by the individuals at each administrative level among whom he was expected to exert leadership.

Establishing Guidelines

Firm guidelines were established by the chairman of the project in collaboration with the three levels of administrative groups involved. These were:

- To program a building that would allow an increase of from 4,000 to 6,000 students in

Dentistry, Medicine, Nursing, Pharmacy, and allied health fields.

- To plan this building as an addition to an existing health sciences complex, making best use of remodeled existing space, with a firm obligation to stay within the established budget ceiling.
- To preserve the established health sciences concept of shared facilities and services. (This included deciding which of the new facilities would be the domain of individual schools and which would be shared.)
- To anticipate new curricula in the various schools and make adequate provision for technological advances in education.
- To develop the library so that it could serve the planned increase in enrollment *and* serve as a Regional Medical Library for five adjoining States.
- To take advantage of various Federal matching funds programs available, satisfying the requirements of six review groups under four different grant programs.[3]

The first major task of the Task Force was to validate characteristics of the existing complex, including faculty/student ratios and student teaching space ratios. This information was relayed to each

[3] White, L., Jr., and Donald Hiscox. "Audiscan Presentation: Role of the Task Force in Architectural Planning," 1968. Unpublished narration script, pp. 3-5.

of the schools. Each department head was asked to project an estimate of space requirements based on expected growth in his department. The 1 million net square feet of floor space estimated by the department heads in response to this request was completely beyond the realm of possibility. The problem was sent to the Coordinating Council. Guidelines from the Coordinating Council established that the new building should be essentially a teaching increment. Therefore, projected space increases for each department would hold grant-supported research space constant and project space on the basis of faculty required to accommodate increases in student enrollment only.

A major accomplishment of the Task Force was to establish consensus that, insofar as possible, all teaching space would be designed to permit maximum utilization and maximum adaptation to curricular change and technological advances.

Planning Space Needs

A minimum amount of proprietary teaching space was alloted to each school to be developed by the school to meet its unique requirements. In the School of Nursing, this space was used to develop nursing laboratories and independent study carrels. Nursing faculty felt that a lack of these types of teaching space

posed major obstacles to improvement in teaching and curriculum.

Trial computer runs of present curricular offerings of the schools in the health sciences suggested that computer-assisted central scheduling of core classrooms and basic science teaching laboratories could provide increased efficiency of these areas, providing that flexible teaching space could be developed. Throughout the building, efforts were made to keep at a minimum any architectural structures that would be difficult to alter. Wherever possible, types of space requiring more or less fixed structures were "stacked." Thus, classrooms with tiered flooring were placed one over the other in one section of the building; teaching laboratories were similarly placed in another. Movable equipment, rather than fixed equipment, was planned in the laboratories wherever this could be done without jeopardizing function. The small classrooms were constructed with flat floors and room dividers to provide for more flexible teaching space.

In using this concept, individual Task Force members were frequently reminded that there are limits to the advantages of planned flexibility. It is at least theoretically possible to build in so much flexibility that one loses function; consequently, some retrenchment occurred, especially in areas where large numbers of students had to be accommodated in classrooms. In these instances, consideration of sight-lines, acoustics, traffic flow, and probable teaching modes was given priority.

The Contributions of the Task Force

Working within the policies determined by the Coordinating Council, the Task Force directed its efforts to matters of mutual concern to the schools: collecting and analyzing data on needs of each school, establishing formulas for proportioning available space, providing for optimal physical relationships among departments, developing common teaching and support space, and exploring ways and means of obtaining maximum teaching space from funds available. Consultative assistance from each of the funding agencies was available to members of the Task Force to provide guidance in the planning prerequisite to the application for Federal funds.[4]

The Task Force provided an important channel for rapid feedback from both faculty and the Coordinating Council. Each Task Force member, as a grass roots participant in the teaching-learning enterprise carried on in his school, was aware of needs and desires of his school. Through the Task Force meetings,

[4] In the 3 years prior to the site visit, several contacts had been made with the Nurse Education Facilities Branch, formerly of the Division of Educational and Research Facilities, and now of the Division of Nursing, Bureau of Health Manpower Education. The Chief of the Branch had made a consultation visit very early in the planning stage; members of the Task Force had visited the national office once and had also received considerable assistance through telephone and written correspondence as questions arose throughout the planning period. Assistance was also received from the national office in respect to planning an agenda for the site visit.

each member became more aware of the needs and problems of other schools, as well as overall needs of the health sciences. Thus, while decision making remained with the "users" of the building, each decision had to be considered within the context of the common goals of the health sciences, as well as the goals of the respective school.

Informal discussions between Task Force members and faculty helped to keep faculty in touch with the project. In addition, the Task Force sponsored a series of Open House meetings for all of the faculty in the health sciences. At these meetings, there were briefings on current progress and problems; models of the projected building and current drawings were provided for academic "sidewalk inspection."

Within the Task Force, the role and contribution of the Assistant Dean for Space Planning from the School of Nursing was significant. As a female representative of a largely female group in an otherwise male group, a representative of the largest number of students (mostly undergraduates) and the largest group of graduate students, and as a representative of the only school allocated office space in the new building, she encountered many petty, but very human, problems that had to be resolved at each step of the way. If there had not been a strong tradition of cooperation between the schools, administrative officers firmly dedicated to the health sciences concept, autonomy in educational matters, and independent financial support to bring to the enterprise, the task would have been

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impossible. The ideal of a health sciences unit as a truly interdisciplinary area of knowledge within the University provided a powerful incentive and an enticing goal. Nevertheless, given the acuteness of needs, the limitations of finances, and the frailties of human nature, the project was most fortunate to have had administrative support, school autonomy, and independent sources of Federal financial aid.

The Site Visit

A visit to the site of the proposed building project by members of an appropriate reviewing committee is normally carried out in all Federally funded building projects in order to document, clarify, and expand the information contained in the application for funds. The site visit was a turning point in the development of the project. Not only was it the test of 2½ years of a joint effort, it was also a peak experience for the Task Force. Prior to the site visit, the Task Force had three times come to the point of submitting the application to the funding agencies from whom financial help was being sought. Twice, the financial officers of the University found the project overbudgeted, and the Task Force went back to the planning table. The third time, the application was submitted, and plans for the site visit began immediately.

Since the launching of this building project depended on the ability of each of the schools in the health sciences to secure Federal matching funds for

its share in the building, the Coordinating Council requested that the site visit be conducted as a joint site visit. This provided an opportunity for a team from each of the agencies from which funds were being requested to visit the University, review the plans, inspect the proposed site, and meet with faculty, administrative officials, and community representatives at one time. The joint site visit enabled the University to conserve considerable time and energy, especially on the part of administrative officials, representatives from basic sciences, and Task Force members. The joint visit also provided the site visit teams from each of the funding agencies an opportunity to meet with each other to clarify plans on points of mutual concern, especially in relation to the adequacy of plans for space to be used jointly by the four schools.

The team for the joint site visit was chaired by the Director, Division of Educational and Research Facilities, Bureau of Health Professions Education and Manpower Training,[5] and consisted of five teams of site visitors—one for each of the participating schools and the library. The site visit team for the School of Nursing's application consisted of two nurse consultants who were members of the Review Com-

[5] On September 18, 1970, major components of the Division of Educational and Research Facilities and the Division of Physician Manpower were merged into a new Division of Physician and Health Professions Education; at the same time the Bureau of Health Professions Education and Manpower Training was renamed the Bureau of Health Manpower Education.

mittee on Construction of Nurse Training Facilities;[6] three staff members from the national office of the Nurse Education Facilities Branch, an architect from the regional office of the Division of Educational and Research Facilities; and one staff member from the Nurse Education Training Branch, Division of Nursing, Bureau of Health Professions Education and Manpower Training.[7]

It would be the responsibility of the nurse consultants to present a summary of the application, with a summary of their assessment of the need for the project; the project's strengths, weaknesses, and/or problems; and to make recommendations for action to the Review Committee on Construction of Nurse Training Facilities.

Although a favorable reaction was of critical concern to the School of Nursing, there was a realization that the site visit offered a unique opportunity and challenge to test the plans that had been developed. The site visitors were people from similar programs; they had been through the process of planning a building; they were sensitive to strengths and weaknesses that those close to the project might not be able to

[6] Each of the consultants was a nursing educator; each held an administrative position in a school of nursing offering similar types of nursing programs, but in different sections of the country; and each had been involved recently in planning for the construction of a nursing facility in the school where she was employed.

[7] The other agencies from which funds were requested and which were represented on the joint site visit were from other divisions of the Bureau of Health Professions Education and Manpower Training.

see. Faculty, administrative officers of the University and the School of Nursing, department heads from the basic medical sciences, and representatives of clinical agencies and health planning bodies in the community were called upon to help. The mobilization of effort for the site visit by each of the schools involved in the project provided a useful preliminary test of strength of the planning, clarified commitments, prompted practical scrutiny of obligations and responsibilities, and probed potential weaknesses in the project.

To function successfully on completion of the building, the project will depend on the coordination of efforts in each of these key areas: central administration, budget, community planning, clinical agencies, basic sciences, health sciences administration, nursing school administration, and faculty. It was therefore of critical importance to the University, as well as to the funding agencies, to be sure that key persons in each of these areas understood the proposed project.

The Master Building Committee

The Task Force's assignment was completed upon receipt of the approval of the grant application by the funding agencies. Consequently, it was disbanded, and a Master Building Committee was appointed. The main function of this committee was to resolve problems relevant to all of the schools that might arise in

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implementing the building plans. To help provide continuity in this phase of the project, the Chairman of the Task Force was appointed Chairman of the Master Building Committee. Each of the deans was asked to recommend a representative for appointment to this committee and to appoint a representative to each of the subcommittees to be appointed to implement plans in common teaching areas.

In the School of Nursing, the Assistant Dean for Space Planning and her alternate were appointed to the Master Building Committee. The Assistant Dean also became Chairman of the newly formed School of Nursing Building Committee. The School appointed a representative to the Subcommittee for the Core Classrooms and to the Subcommittee for the Basic Science Teaching Laboratories. Both the Master Building Committee and the School of Nursing Building Committee continue to work on problems that are uncovered as more definitive planning increases the need for specificity of information in the areas of design and equipment.

A major contribution to the efforts made to keep faculty interested and alert to developments in classroom planning was made by an Open House sponsored by members of the nursing faculty. This project featured miniature mockups of one of the 50-seat classrooms and a teaching laboratory, and exhibits and demonstrations of newer types of educational equipment. Experts in educational technology and in the practice of teaching discussed and demonstrated

trends in education, and representatives of the manufacturers of educational equipment were on hand to answer questions and guide faculty discussion.

Discussion

Planning a new building for a School of Nursing as part of a four-school health sciences project involves time, patience, fortitude, and perseverance. Whether it requires more or less of these ingredients when planning a new building for a nursing program that is part of another school or for a nursing program that is a relatively discrete functional entity is a moot question. The answer—if indeed there is one—is quite possibly irrelevant, since the direction one takes is in large measure dictated by the overall philosophy of the University. Without administrative commitment to the concept of the health sciences as a complex of interrelated disciplines comprising an area of knowledge in the University, it is doubtful that such an enterprise would evolve spontaneously at the present time, even though it makes good sense intellectually.

Among the influences militating against spontaneous movement toward truly interdisciplinary efforts are marked differences among the health professions in power, prestige, and level of scientific sophistication in practice. The contributions of each profession are variously recognized and valued. When financial resources and space are limited (as they almost always are), the organization of human

endeavors to promote the common goals, to balance out differences in power, to regulate and contain competition, and to maintain order become exceedingly important.

Whether by accident or design, the three-level organizational structure developed to allocate authority and designate responsibility functioned also as a system of successive shock absorbers, and promoted the coordination of efforts.

Without the whole-hearted commitment of the University's central administration, it would have been difficult for the individual faculty members who helped to resolve the detailed problems and frustrations of joint planning to sustain their efforts. Insulation from the problems of the conference table, the distractions of other projects, and the practical limitations of budget made it easier for the University to adhere to the health sciences ideal by insisting on:

- optimal utilization of the land site;
- realistic planning with funds in hand;
- development of a health sciences complex, rather than discrete buildings for Dentistry, medicine, Nursing, and Pharmacy.

At an intermediate level, the Coordinating Council was also firmly committed to the health sciences concept as administratively necessary and desirable; but it was also committed educationally to the accomplishment of the goals of the respective schools. Serious disruptions could have occurred at this level, if the daily grass roots problems of individuals and groups were not resolved at the Task Force level.

The Coordinating Council assumed responsibility for delineating policies that would implement the philosophy of the University. At the same time, it was able to support the decisions of the Assistant Deans as they worked together in the Task Force and with the faculties of their respective schools.

At the Task Force level, the Assistant Deans were largely responsible for making the decisions that would make the joint project work. Among the most obvious and important strengths of the School of Nursing were:

- a long history of effective collaboration with others;
- educational identity and autonomy;
- access to tax funds appropriated for expansion of the School of Nursing;
- the potential for securing matching funds from the Federal Government specifically for nursing education.

At this level, it was essential to have a clear picture of the goals of the school, to understand the needs of faculty for space, and to have effective channels for communicating with the faculty. The Ad Hoc Planning Committee in the School of Nursing and the faculty member assigned part time to assist with the project were essential factors in establishing and maintaining these lines of communication.

Repeated conferences by these persons with individual faculty and with small groups of faculty were necessary, not only to ascertain the needs and preferences of the faculty but also to help them understand

the potentials, as well as the limitations of the space being planned.

A system of communication that provides for the transmission of information required to carry out functions, but filters out unnecessary or irrelevant information is essential for a project such as this. The three distinct, but related, levels of decision making provided for some degree of filtering of communication. This lessened the wear and tear on individuals and perhaps favored decisions in the interest of overall goals. At times, the joint planning seemed slow, unwieldy, and costly. Compromises and sacrifices were inevitable. The anticipated outcomes are, however, richer than could have been achieved by one decision-making group or individual.

The role that bore the full brunt of the impact of the problems, both major and minor, was that of the Chairman of the Building Project. In addition to chairing the Coordinating Council and the Task Force, the Chairman was responsible for negotiations with the President, the Finance Office, the Architectural Commission, and each of the funding agencies concerned with the project. Direct access to communication at each level of responsibility made it possible for him to coordinate efforts, but it also permitted the full impact of unfiltered communication to bear on this role—a considerable source of strain.

A great deal more than free flowing space is needed for a truly interdisciplinary approach to the development of knowledge in the health professions. This project has been a significant step in the direction of accomplishment of this ideal.

BIBLIOGRAPHY

Cooper, John A. D., "The University and Its Medical Center," *The Journal of Medical Education,* 41:497-501, June 1966.

Evans, Lester D., *The Crisis in Medical Education,* Ann Arbor: The University of Michigan Press, 1964.

Ingles, Thelma, "The University Medical Center as a Setting for Nursing Education," *The Journal of Medical Education,* 37:411-420, May 1962.

Quinn, Mildred D., "You, Too, Can Have a New School," *Nursing Outlook,* 13:50-52, January 1965.

Riddick, Fostine G., "A Cooperative Approach to Construction," *Nursing Outlook,* 15:56-57, July 1967.

Weil, Thomas P. and Henry M. Parrish, "Development of a Coordinated Approach for the Training of Allied Health Personnel," *Journal of Medical Education,* 42:651-659, July 1967.

Unpublished Material

Gray, Florence, "History of the Graduate Programs of the School of Nursing of the University of Washington," University of Washington, Seattle, 1966 (typewritten).

Odegaard, Charles E., "A Description of the Role of the University in Modern Society Together with Encouragement to the Medical School to Turn Its Flirtation With the University Into a Full Blown Romance," address to the Boerhaave Conference, University of Leiden, December 1966 (mimeographed).

Olcott, Virginia, "University of Washington School of Nursing, 'The First 50 Years'," University of Washington, Seattle, 1968 (typewritten).

White, Lowell E. and Donald Hiscox, "Audiscan Presentation: Role of the Task Force in Architectural Planning," University of Washington, Seattle, 1968 (unpublished narration script, pp. 3-5).

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VT 013 949

ADAMS, RONALD D.; NEWTON, MARK

A SURVEY AND ANALYSIS OF VOCATIONAL AND PRE-VOCATIONAL EDUCATION IN SELECTED CORRECTIONAL INSTITUTIONS IN KENTUCKY.

WESTERN KENTUCKY UNIV., BOWLING GREEN. OFFICE OF EDUCATIONAL RESEARCH.
KENTUCKY STATE DEPT. OF EDUCATION, FRANKFORT. BUREAU OF VOCATIONAL EDUCATION
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IDENTIFIERS - *KENTUCKY

ABSTRACT - THIS SURVEY WAS UNDERTAKEN TO EVALUATE AND CONTRIBUTE TO THE IMPROVEMENT OF THE VOCATIONAL AND PREVOCATIONAL EDUCATION PROGRAMS OF THREE KENTUCKY CORRECTIONAL INSTITUTIONS. A SECONDARY OBJECTIVE, TO BE SATISFIED IN A SECOND PHASE OF THE PROJECT, WAS THE INSERVICE TRAINING OF TEACHERS AND RELATED PERSONNEL TO IMPROVE THE EDUCATIONAL ENVIRONMENT, ESPECIALLY AMONG THE DISADVANTAGED. AFTER INTERVIEWS WITH TEACHERS, ADMINISTRATORS, CASE WORKERS, CORRECTIONAL OFFICERS, AND INMATES, RECOMMENDATIONS WERE MADE IN THE AREAS OF PHILOSOPHY, VOCATIONAL AND PREVOCATIONAL EDUCATION NEEDS, COMMUNICATIONS, AND RESEARCH. A STUDY WAS RECOMMENDED TO DETERMINE THE MOST APPROPRIATE COURSES TO BE OFFERED, WITH VOCATIONAL FOLLOWUP TO EVALUATE PROGRAM EFFECTIVENESS. (BH)

VT 013 949

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Submitted to

BUREAU OF VOCATIONAL EDUCATION
FRANKFORT, KENTUCKY

by

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OFFICE OF EDUCATIONAL RESEARCH
COLLEGE OF EDUCATION
WESTERN KENTUCKY UNIVERSITY
BOWLING GREEN, KENTUCKY

JULY, 1971

VT013949

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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FOREWARD

This survey of vocational and pre-vocational education in selected correctional institutions in Kentucky is an example of the kind of cooperative atmosphere that exists in the Commonwealth. The project was a cooperative venture involving the Bureau of Vocational Education of the Department of Education, the Department of Corrections, and Western Kentucky University.

Survey research provides the basis for analysis and development of the educational system within the correctional institutions. The fact that the personal interview was the primary method utilized in collecting data is particularly noteworthy. Personnel interviewed included teachers, administrators, case workers, correctional officers, and inmates. In addition to this report of the study, the warden of each of the three correctional institutions was presented with an exit conference regarding the findings at the completion of the data collection phase.

Dr. Norman D. Ehresman
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CHAPTER I

PURPOSES AND OBJECTIVES

The Office of Educational Research, College of Education, Western Kentucky University, conducted a survey and analysis of vocational and pre-vocational education in three correctional institutions at the request of the Kentucky Department of Corrections. The study was funded by the Kentucky Bureau of Vocational Education, Department of Education, under the provision of Part A, Section 102 (b) of Public Law 90-576, the Vocational Amendments of 1968. The time alloted for the completion of the project was twelve months, beginning September 1, 1970 and ending August 31, 1971.

The major purpose was to contribute to the improvement of the vocational and pre-vocational education programs within three Kentucky correctional institutions by conducting a normative survey to ascertain the present effectiveness of the programs. A secondary purpose was to conduct inservice education for the instructional and related staff based on the survey findings.

The total project was conducted in two phases.

Phase one was the survey and analysis of vocational programs and phase two was the inservice education provided for instructor and related staff at the institutions. The first phase dealt with the analysis and evaluation of the vocational and pre-vocational education programs at the Kentucky State Penitentiary, Kentucky State Reformatory, and the Kentucky Correctional Institution for Women. The objectives of phase one were:

A. To assess the institutional approach to providing for the total educational needs of the incarcerated population.

B. To determine inmate needs and interests for and attitudes toward vocational and pre-vocational education.

C. To recommend, based upon A and B, program and policy alterations needed to effect an improved vocational and pre-vocational education program for the incarcerated population.

Phase two of this project was concerned with inservice training programs which were offered at participating institutions during the week of August 2 to August 6, 1971. The primary objective of phase two was to provide inservice training for teachers and related personnel. This inservice training was designed to assist in the improvement of an educational environment and to facilitate learning among the disadvantaged

incarcerated students. Findings from phase one of the project were used in planning for the inservice program conducted in the second phase. The program and schedule for each day of the inservice program at each institution is presented in Appendix A.

CHAPTER II

ORGANIZATION AND PLANNING

Dr. Norman D. Ehresman, Director of the Office of Educational Research and Dr. Wallace K. Nave, Director of the Office of Continuing Education, were the project coordinators. They were responsible for submitting the project proposal and the formulation of the initial overview. Dr. Ronald D. Adams, Assistant Professor of Educational Research was selected as project director, and was assisted by Mr. Mark Newton, Graduate Research Assistant. The following personnel were also involved in the conduct of the research.

Advisory Committee

Mr. Warren Hopkins, Training Officer, Department of Corrections.

Mr. Douglas McKinley, Coordinator, Vocational Guidance Services, Bureau of Vocational Education.

Mr. Joseph Pierce, Rehabilitation Supervisor RESTORE, Bureau of Rehabilitation Services.

Mr. Wilbur Smith, Assistant Director, Division of Elementary and Secondary Education, Bureau of Instruction.

Mr. Charles Wade, Associate Director of Program Planning, Development and Implementation, Bureau of Vocational Education.

Mrs. Christine Wallace, Division of Special Programs, Bureau of Vocational Education.

Independent Consultant:

Dr. Garland S. Wallard, Deputy Associate Commissioner for Education, Federal Bureau of Prisons, Washington, D. C.

Faculty Consultant:

Dr. Steven B. Schnacke, Assistant Professor of Counselor Education, Western Kentucky University.

Part-time Student Assistants:

Mr. Lee Fulton, College of Education, Department of Psychology.
Miss Sheila Bova, College of Education, Department of Counselor Education.
Mrs. Vonda Wilson, College of Education, Department of Elementary Education.

Project Secretaries:

Mrs. Barbara Goad
Mrs. Susan Power
Miss Cathy House

During the period September through January, 1970-1971, several meetings were held involving the project director, coordinators, Mr. Arthur Reynolds, Director of Educational and Special Services, State Department of Corrections, and other state level correctional officials. The primary activities during this period were staff orientation, review of similar projects, related literature, developing guidelines and operational procedures, and detailed discussions of the operational procedures of the project. During the same period, Dr. Adams and Mr. Reynolds visited Draper Prison at Elmore, Alabama to study the pre-vocational education system and gain background information for the study. In February 1971, Dr. Garland Wallard, Federal Bureau of Prisons, came to Western Kentucky University for three days of consultation with the research committee and other project personnel. A special coordination meeting was held on February 8, 1971 involving Dr. Wallard, Deputy Commissioner Baker, Mr. Reynolds, Dr. Ehresman, Dr. Adams, Dr. Nave, Mr. Newton, and Dr. Tate Page, Dean of the College of Education. Dr. Wallard assisted the research staff in developing an initial instrument, defining other data

collection techniques, and formulating procedure for initiating the project within the selected correctional institutions.

During the period February 15 to March 5, interview sheets and other devices for recording and collecting data were prepared. A tentative schedule was established and copies of the proposed instruments and the tentative visitation schedule were sent to each member of the project advisory committee for approval. Copies of the tentative visitation schedule were also sent to each of the correctional institutions for their information.

A random sample of inmate records from each institution was utilized to review recordings of past educational programs and to study the record keeping system in terms of educational data within the inmate record folders. The records used were those of inmates who were discharged during the calendar year 1970 and had been in either an academic or vocational school program.

A basic inventory form similar to but more detailed than the Department of Correction's Form PC IB (5-68), Basic Inventory Form, was developed by the project staff in cooperation with Mr. Arthur Reynolds. The purpose of this form was to provide a systematic procedure for the

collection of data from inmate records. Copies of the initial form and revised form are found in Appendix B.

It was decided during the project's planning stages that the interview and data collecting visits to the institutions would be conducted over a period of several weeks in order to gain a more comprehensive analysis of the vocational and pre-vocational programs. It was determined that extensive interviewing and observations would be the primary method of collecting data. The project director and his assistant, Mr. Newton, conducted all interviews as a team although student assistants were employed to record essential data from records maintained within the institutions. The research team's first visit was to the Kentucky State Reformatory on March 10, 1971 and the final interviews were conducted at the same institution on April 29, 1971.

The institutions involved in the project were, in their respective classifications, unique situations. This uniqueness was due largely to the system employed by the Kentucky Department of Corrections in assigning inmates to the various institutions. Inmates were assigned to institutions primarily on the basis of sex, age, and nature and number of offenses. Habitual male offenders and those having committed crimes of violence

were assigned to Kentucky State Penitentiary. Younger male offenders and those committing non-violent offenses were assigned to Kentucky State Reformatory. All women offenders were assigned to the Kentucky Correctional Institution for Women. This necessitated the construction of flexible instruments which could be used in all three institutions for data collection and interpretation.

To gain full understanding of this report the following terms, which will be used throughout, are identified and defined for the reader:

1. Pre-vocational education program (basic academic preparation designed to prepare inmates for vocational education) - Conventional elementary and secondary classes, i.e., English, arithmetic, etc.

2. Inmate release records - Institutional records of those inmates released in 1970 which were reviewed by the research team.

3. Mission statement - A written, published statement of purpose and philosophy of the institution itself.

4. Pre-release program - A comprehensive educational program offered to inmates who are nearing expiration of sentence or parole. The pre-release program should stress social skills, employment application training, job search techniques, driver's training, consumer-purchase education, etc.

5. Incentive system - A reward system for production or improvement.

6. Formal vocational training - Planned skill and knowledge development designed to prepare the inmate for employment after release.

7. Programmed instruction (PI) - A prearranged sequence of explanations and questions. A program for an academic or vocational course is a carefully planned progression of ideas, beginning with elementary concepts and working at individualized speeds, up to relatively complex theories and applications. Programmed instruction is based on a "small step" principle. Each item moves only a small distance beyond the items the student has already completed successfully.

8. Institutional need - Refers to utilization of inmates for institutional maintenance.

9. Dealing - Unauthorized relationships with inmates by staff members, i.e., making deals with inmates with reference to contraband, currency, etc.

10. Electives - Academic type courses which an inmate may choose to take. Electives usually refer to non-required subjects.

11. G.E.D. - General Educational Development test. A certificate equivalent to a standard high school diploma which is obtained through course work outside of the regular high school facilities is awarded upon successful completion of the G.E.D. test.

CHAPTER III

METHODS AND PROCEDURES

Similar methods and procedures for collecting data were followed at each institution. An introductory meeting was held with the warden and selected staff to explain the purpose of the project and to give a brief overview of the procedures to be used. Tentative interview schedules were arranged and administrative details of the study were discussed.

Initially, three two-day trips were scheduled to gather data at the Kentucky State Penitentiary. However, because of scheduling problems and the additional time required to review inmate records, five visits totaling seven days were required to collect the needed data. Table 1 gives the dates visited and general schedule of activity for each day.

Rescheduling of planned visits to the Kentucky State Reformatory was required because of conflicting activities at the institution and the additional time required for interviews. Twelve visits were required to collect the needed data. Table 2 gives the dates of visitation and the general schedule of activities for each day. Six days were required to obtain the

Table 1

Schedule of Data Collection Activities at the Kentucky State Penitentiary

Visit	Date	General Description of Activity
1	3/12	Introductory meeting
2	3/18	Interview: Administration; Review of Inmate Records Interview: Administration; Teachers
3	3/31	Interview: Teachers; Industry
4	4/1	Interview: Teachers; Case Workers
5	4/7	Interview: Teachers; Case Workers, *Correctional Officers
6	4/8	Interview: Correctional Officers, Inmates
7	4/19	Review Records; Exit Conference

*Evening Shift

Table 2

Schedule of Data Collection Activities at the Kentucky State Reformatory

Visit	Date	General Description of Activity
1	9/15/70	Initial orientation
2	3/10/71	Introductory Meeting
3	3/15/71	Interview: Administration; Review of Inmate Records
4	3/15/71	Interview: Administration; Industry; Principal (Academic)
5	3/24/71	Vocational Teachers
6	3/25/71	Vocational Teachers
7	4/14/71	Academic Teachers
8	4/15/71	Case Workers
9	4/16/71	Case Workers
10	4/21/71	Inmate Records
11	4/28/71	Correctional Officers
12	4/29/71	Exit Conference

needed data at the Kentucky Correctional Institution for Women. The dates and activities are given in Table 3. The number of visits, hours, and man hours required to collect data for the total project are summarized in Table 4.

To obtain a more comprehensive evaluation of the educational programs, four categories of staff personnel were selected to be interviewed. Basically, these categories were administrators, teachers, case workers, and correctional officers. In addition to interviews with staff personnel, a group interview was also held with selected inmates from the various educational classifications.

Kentucky State Penitentiary

The following is a list of the titles of staff personnel interviewed at the Kentucky State Penitentiary:

Administrators
- Warden
- Deputy warden for Custody
- Deputy warden for Treatment
- Deputy warden for Administration
- Superintendent of Industry

Educational Personnel
- Principal
- Academic Teachers (6)
- Vocational Teacher
- Librarian

Case Workers

Chief case worker
Case workers (4)

Correctional Officers

Captain in charge of yard
Captain in charge of administrative building
Yard officer
Clothing officer
School officer
Night shift officers (2)

Kentucky State Reformatory

The following is a list of personnel interviewed at the Kentucky State Reformatory:

Administrators

Warden
Associate warden for treatment
Associate warden for custody
Associate warden for administration
Superintendent of industry

Teachers

Academic principal
Vocational principal
Academic teachers (5)
Vocational teachers (8)

Case Workers

Chief case worker
Case workers (3)
Counselor (Voc. Rehab.)
Work evaluator (Voc. Rehab.)

Correctional Officers

Captain in charge of details
Vocational school officer
Academic school officer
Dormitory officer
Yard officer

Kentucky Correctional Institution for Women

The following is a list of personnel interviewed at the Kentucky Correctional Institution for Women:

Administrators
- Warden
- Director of Social Services
- Nurse
- Supervisor of Home Economics

Teachers
- Principal
- Teachers in night program (4)
- Vocational teacher (Business Ed.)

Correctional Officers
- Kitchen matron
- Second floor matron
- Basement matron

The administrative personnel were chosen to be interviewed because of their position and rank within the institution. All teachers and related personnel were interviewed to obtain a more comprehensive overview of the education program from the educational staff. All case workers were interviewed because of the nature of their services to the inmate population. The correctional officers interviewed were selected because of their frequent contact with inmates. However, information obtained from these officers may not be representative of the correctional staff, since the officers were not randomly selected by the investigators.

Table 3

Schedule of Data Collection Activities at the Kentucky Correctional Institution for Women

Visit	Date	General Description of Activity
1	3/11	Introductory Meeting Interview: Administrators; Inmate Records
2	3/15	Interview: Administrators; Principal
3	3/16	Interview: Teachers
4	3/17	Interview: Matrons; Inmates
5	4/22	Review Records
6	4/29	Presentation to Warden

Table 4

Number of Visits and Time Required for Data Collection in Three Correctional Institutions in Kentucky

Institution	No. of Visits	Hours Spent in Institution	Man Hours Spent in Institution
Kentucky State Reformatory	12	64.5	147.0
Kentucky State Penitentiary	7	37.5	80.0
Kentucky Correctional Institution for Women	6	22.0	57.5
Total	25	124.0	284.5

Structured Interview

The primary purpose of the structured interview was to obtain data as free from interviewer bias as possible. These data consisted of responses to specific questions; most of which were in a form that could be quantified. A copy of the interview sheets can be found in Appendix C.

Each interview was conducted on an individual basis in isolated surroundings, usually in the interviewee's work area. An average time of forty-five minutes was planned for each interview. However, this varied between thirty and ninety minutes with each interview held. The project director carried on all interviews and the graduate assistant recorded the responses.

Each interview was initiated by the interviewers introducing themselves and explaining the purpose and scope of the project. The interviewee was assured that his or her individual statements and responses would be kept in confidence. Each item on the interview sheet was then asked in order and the responses recorded. If an item was not understood it was restated and explained. At the completion of all the interview sessions, responses to each question were compiled and qualified.

An interview sheet was constructed for each category of staff personnel. Certain items were common to all sheets; while other items unique to a specific category of personnel interviewed were included on categorized schedules. A detailed discussion of the items and results is found in Chapter IV of this report.

Unstructured Interview

An unstructured interview was conducted with each interviewee as soon as the structured interview was completed. The purpose was to allow the interviewer and interviewee to explore pertinent areas not covered by the structured interview. At the conclusion of the structured interview each interviewee was asked if there was any item they would like to discuss further or if there was any other aspect they would care to discuss. At that time the interviewer was also allowed to ask informal questions about aspects of the educational program. In general this session was an informal discussion period which allowed the interviewer greater flexibility in obtaining additional information about the educational programs. Comments obtained in this session were complied, classified, and are reported in Chapter IV.

At the completion of each day of interviews the interview team recorded their impressions of each interview session on magnetic tape. These impressions were later transcribed and utilized in the writing of this report.

Inmate Group Interview

Inmates were interviewed at each of the institutions to obtain information regarding their views of the educational program. The interviews were informal and, in general, the interviewer asked questions only for points of clarification during the discussion. Inmates were informed that they were free to comment on any aspect of the educational program and that their individual comments would be held in confidence. Each session lasted approximately ninety minutes. Comments were compiled and recorded and summaries are located in Chapter IV of this report.

At the Kentucky State Penitentiary approximately five participants were randomly selected from each of the five academic levels within the school. The group interview session was held in an unused classroom with only the interview team and inmates present. The session began by the interviewers introducing themselves and briefly outlining the project. Inmates were allowed to comment on any aspect of the educational program.

FOREWARD

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Director of Educational Research

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CHAPTER I

PURPOSES AND OBJECTIVES

The Office of Educational Research, College of Education, Western Kentucky University, conducted a survey and analysis of vocational and pre-vocational education in three correctional institutions at the request of the Kentucky Department of Corrections. The study was funded by the Kentucky Bureau of Vocational Education, Department of Education, under the provision of Part A, Section 102 (b) of Public Law 90-576, the Vocational Amendments of 1968. The time alloted for the completion of the project was twelve months, beginning September 1, 1970 and ending August 31, 1971.

The major purpose was to contribute to the improvement of the vocational and pre-vocational education programs within three Kentucky correctional institutions by conducting a normative survey to ascertain the present effectiveness of the programs. A secondary purpose was to conduct inservice education for the instructional and related staff based on the survey findings.

The total project was conducted in two phases.

Phase one was the survey and analysis of vocational programs and phase two was the inservice education provided for instructor and related staff at the institutions. The first phase dealt with the analysis and evaluation of the vocational and pre-vocational education programs at the Kentucky State Penitentiary, Kentucky State Reformatory, and the Kentucky Correctional Institution for Women. The objectives of phase one were:

A. To assess the institutional approach to providing for the total educational needs of the incarcerated population.

B. To determine inmate needs and interests for and attitudes toward vocational and pre-vocational education.

C. To recommend, based upon A and B, program and policy alterations needed to effect an improved vocational and pre-vocational education program for the incarcerated population.

Phase two of this project was concerned with inservice training programs which were offered at participating institutions during the week of August 2 to August 6, 1971. The primary objective of phase two was to provide inservice training for teachers and related personnel. This inservice training was designed to assist in the improvement of an educational environment and to facilitate learning among the disadvantaged

incarcerated students. Findings from phase one of the project were used in planning for the inservice program conducted in the second phase. The program and schedule for each day of the inservice program at each institution is presented in Appendix A.

CHAPTER II

ORGANIZATION AND PLANNING

Dr. Norman D. Ehresman, Director of the Office of Educational Research and Dr. Wallace K. Nave, Director of the Office of Continuing Education, were the project coordinators. They were responsible for submitting the project proposal and the formulation of the initial overview. Dr. Ronald D. Adams, Assistant Professor of Educational Research was selected as project director, and was assisted by Mr. Mark Newton, Graduate Research Assistant. The following personnel were also involved in the conduct of the research.

Advisory Committee

Mr. Warren Hopkins, Training Officer, Department of Corrections.

Mr. Douglas McKinley, Coordinator, Vocational Guidance Services, Bureau of Vocational Education.

Mr. Joseph Pierce, Rehabilitation Supervisor RESTORE, Bureau of Rehabilitation Services.

Mr. Wilbur Smith, Assistant Director, Division of Elementary and Secondary Education, Bureau of Instruction.

Mr. Charles Wade, Associate Director of Program Planning, Development and Implementation, Bureau of Vocational Education.

Mrs. Christine Wallace, Division of Special Programs, Bureau of Vocational Education.

Independent Consultant:

Dr. Garland S. Wallard, Deputy Associate Commissioner for Education, Federal Bureau of Prisons, Washington, D. C.

Faculty Consultant:

Dr. Steven B. Schnacke, Assistant Professor of Counselor Education, Western Kentucky University.

Part-time Student Assistants:

Mr. Lee Fulton, College of Education, Department of Psychology.
Miss Sheila Bova, College of Education, Department of Counselor Education.
Mrs. Vonda Wilson, College of Education, Department of Elementary Education.

Project Secretaries:

Mrs. Barbara Goad
Mrs. Susan Power
Miss Cathy House

During the period September through January, 1970-1971, several meetings were held involving the project director, coordinators, Mr. Arthur Reynolds, Director of Educational and Special Services, State Department of Corrections, and other state level correctional officials. The primary activities during this period were staff orientation, review of similar projects, related literature, developing guidelines and operational procedures, and detailed discussions of the operational procedures of the project. During the same period, Dr. Adams and Mr. Reynolds visited Draper Prison at Elmore, Alabama to study the pre-vocational education system and gain background information for the study. In February 1971, Dr. Garland Wallard, Federal Bureau of Prisons, came to Western Kentucky University for three days of consultation with the research committee and other project personnel. A special coordination meeting was held on February 8, 1971 involving Dr. Wallard, Deputy Commissioner Baker, Mr. Reynolds, Dr. Ehresman, Dr. Adams, Dr. Nave, Mr. Newton, and Dr. Tate Page, Dean of the College of Education. Dr. Wallard assisted the research staff in developing an initial instrument, defining other data

collection techniques, and formulating procedure for initiating the project within the selected correctional institutions.

During the period February 15 to March 5, interview sheets and other devices for recording and collecting data were prepared. A tentative schedule was established and copies of the proposed instruments and the tentative visitation schedule were sent to each member of the project advisory committee for approval. Copies of the tentative visitation schedule were also sent to each of the correctional institutions for their information.

A random sample of inmate records from each institution was utilized to review recordings of past educational programs and to study the record keeping system in terms of educational data within the inmate record folders. The records used were those of inmates who were discharged during the calendar year 1970 and had been in either an academic or vocational school program.

A basic inventory form similar to but more detailed than the Department of Correction's Form PC IB (5-68), Basic Inventory Form, was developed by the project staff in cooperation with Mr. Arthur Reynolds. The purpose of this form was to provide a systematic procedure for the

collection of data from inmate records. Copies of the initial form and revised form are found in Appendix B.

It was decided during the project's planning stages that the interview and data collecting visits to the institutions would be conducted over a period of several weeks in order to gain a more comprehensive analysis of the vocational and pre-vocational programs. It was determined that extensive interviewing and observations would be the primary method of collecting data. The project director and his assistant, Mr. Newton, conducted all interviews as a team although student assistants were employed to record essential data from records maintained within the institutions. The research team's first visit was to the Kentucky State Reformatory on March 10, 1971 and the final interviews were conducted at the same institution on April 29, 1971.

The institutions involved in the project were, in their respective classifications, unique situations. This uniqueness was due largely to the system employed by the Kentucky Department of Corrections in assigning inmates to the various institutions. Inmates were assigned to institutions primarily on the basis of sex, age, and nature and number of offenses. Habitual male offenders and those having committed crimes of violence

were assigned to Kentucky State Penitentiary. Younger male offenders and those committing non-violent offenses were assigned to Kentucky State Reformatory. All women offenders were assigned to the Kentucky Correctional Institution for Women. This necessitated the construction of flexible instruments which could be used in all three institutions for data collection and interpretation.

To gain full understanding of this report the following terms, which will be used throughout, are identified and defined for the reader:

1. Pre-vocational education program (basic academic preparation designed to prepare inmates for vocational education) - Conventional elementary and secondary classes, i.e., English, arithmetic, etc.

2. Inmate release records - Institutional records of those inmates released in 1970 which were reviewed by the research team.

3. Mission statement - A written, published statement of purpose and philosophy of the institution itself.

4. Pre-release program - A comprehensive educational program offered to inmates who are nearing expiration of sentence or parole. The pre-release program should stress social skills, employment application training, job search techniques, driver's training, consumer-purchase education, etc.

5. Incentive system - A reward system for production or improvement.

6. Formal vocational training - Planned skill and knowledge development designed to prepare the inmate for employment after release.

7. Programmed instruction (PI) - A prearranged sequence of explanations and questions. A program for an academic or vocational course is a carefully planned progression of ideas, beginning with elementary concepts and working at individualized speeds, up to relatively complex theories and applications. Programmed instruction is based on a "small step" principle. Each item moves only a small distance beyond the items the student has already completed successfully.

8. Institutional need - Refers to utilization of inmates for institutional maintenance.

9. Dealing - Unauthorized relationships with inmates by staff members, i.e., making deals with inmates with reference to contraband, currency, etc.

10. Electives - Academic type courses which an inmate may choose to take. Electives usually refer to non-required subjects.

11. G.E.D. - General Educational Development test. A certificate equivalent to a standard high school diploma which is obtained through course work outside of the regular high school facilities is awarded upon successful completion of the G.E.D. test.

CHAPTER III

METHODS AND PROCEDURES

Similar methods and procedures for collecting data were followed at each institution. An introductory meeting was held with the warden and selected staff to explain the purpose of the project and to give a brief overview of the procedures to be used. Tentative interview schedules were arranged and administrative details of the study were discussed.

Initially, three two-day trips were scheduled to gather data at the Kentucky State Penitentiary. However, because of scheduling problems and the additional time required to review inmate records, five visits totaling seven days were required to collect the needed data. Table 1 gives the dates visited and general schedule of activity for each day.

Rescheduling of planned visits to the Kentucky State Reformatory was required because of conflicting activities at the institution and the additional time required for interviews. Twelve visits were required to collect the needed data. Table 2 gives the dates of visitation and the general schedule of activities for each day. Six days were required to obtain the

Table 1

Schedule of Data Collection Activities at the Kentucky State Penitentiary

Visit	Date	General Description of Activity
1	3/12	Introductory meeting
2	3/18	Interview: Administration; Review of Inmate Records Interview: Administration; Teachers
3	3/31	Interview: Teachers; Industry
4	4/1	Interview: Teachers; Case Workers
5	4/7	Interview: Teachers; Case Workers, *Correctional Officers
6	4/8	Interview: Correctional Officers, Inmates
7	4/19	Review Records; Exit Conference

*Evening Shift

Table 2

Schedule of Data Collection Activities at the Kentucky State Reformatory

Visit	Date	General Description of Activity
1	9/15/70	Initial orientation
2	3/10/71	Introductory Meeting
3	3/15/71	Interview: Administration; Review of Inmate Records
4	3/15/71	Interview: Administration; Industry; Principal (Academic)
5	3/24/71	Vocational Teachers
6	3/25/71	Vocational Teachers
7	4/14/71	Academic Teachers
8	4/15/71	Case Workers
9	4/16/71	Case Workers
10	4/21/71	Inmate Records
11	4/28/71	Correctional Officers
12	4/29/71	Exit Conference

needed data at the Kentucky Correctional Institution for Women. The dates and activities are given in Table 3. The number of visits, hours, and man hours required to collect data for the total project are summarized in Table 4.

To obtain a more comprehensive evaluation of the educational programs, four categories of staff personnel were selected to be interviewed. Basically, these categories were administrators, teachers, case workers, and correctional officers. In addition to interviews with staff personnel, a group interview was also held with selected inmates from the various educational classifications.

Kentucky State Penitentiary

The following is a list of the titles of staff personnel interviewed at the Kentucky State Penitentiary:

<u>Administrators</u>

- Warden
- Deputy warden for Custody
- Deputy warden for Treatment
- Deputy warden for Administration
- Superintendent of Industry

<u>Educational Personnel</u>

- Principal
- Academic Teachers (6)
- Vocational Teacher
- Librarian

Case Workers

Chief case worker
Case workers (4)

Correctional Officers

Captain in charge of yard
Captain in charge of administrative building
Yard officer
Clothing officer
School officer
Night shift officers (2)

Kentucky State Reformatory

The following is a list of personnel interviewed at the Kentucky State Reformatory:

Administrators

Warden
Associate warden for treatment
Associate warden for custody
Associate warden for administration
Superintendent of industry

Teachers

Academic principal
Vocational principal
Academic teachers (5)
Vocational teachers (8)

Case Workers

Chief case worker
Case workers (3)
Counselor (Voc. Rehab.)
Work evaluator (Voc. Rehab.)

Correctional Officers

Captain in charge of details
Vocational school officer
Academic school officer
Dormitory officer
Yard officer

Kentucky Correctional Institution for Women

The following is a list of personnel interviewed at the Kentucky Correctional Institution for Women:

Administrators
- Warden
- Director of Social Services
- Nurse
- Supervisor of Home Economics

Teachers
- Principal
- Teachers in night program (4)
- Vocational teacher (Business Ed.)

Correctional Officers
- Kitchen matron
- Second floor matron
- Basement matron

The administrative personnel were chosen to be interviewed because of their position and rank within the institution. All teachers and related personnel were interviewed to obtain a more comprehensive overview of the education program from the educational staff. All case workers were interviewed because of the nature of their services to the inmate population. The correctional officers interviewed were selected because of their frequent contact with inmates. However, information obtained from these officers may not be representative of the correctional staff, since the officers were not randomly selected by the investigators.

Table 3

Schedule of Data Collection Activities at the Kentucky Correctional Institution for Women

Visit	Date	General Description of Activity
1	3/11	Introductory Meeting Interview: Administrators; Inmate Records
2	3/15	Interview: Administrators; Principal
3	3/16	Interview: Teachers
4	3/17	Interview: Matrons; Inmates
5	4/22	Review Records
6	4/29	Presentation to Warden

Table 4

Number of Visits and Time Required for Data Collection in Three Correctional Institutions in Kentucky

Institution	No. of Visits	Hours Spent in Institution	Man Hours Spent in Institution
Kentucky State Reformatory	12	64.5	147.0
Kentucky State Penitentiary	7	37.5	80.0
Kentucky Correctional Institution for Women	6	22.0	57.5
Total	25	124.0	284.5

Structured Interview

The primary purpose of the structured interview was to obtain data as free from interviewer bias as possible. These data consisted of responses to specific questions; most of which were in a form that could be quantified. A copy of the interview sheets can be found in Appendix C.

Each interview was conducted on an individual basis in isolated surroundings, usually in the interviewee's work area. An average time of forty-five minutes was planned for each interview. However, this varied between thirty and ninety minutes with each interview held. The project director carried on all interviews and the graduate assistant recorded the responses.

Each interview was initiated by the interviewers introducing themselves and explaining the purpose and scope of the project. The interviewee was assured that his or her individual statements and responses would be kept in confidence. Each item on the interview sheet was then asked in order and the responses recorded. If an item was not understood it was restated and explained. At the completion of all the interview sessions, responses to each question were compiled and qualified.

An interview sheet was constructed for each category of staff personnel. Certain items were common to all sheets; while other items unique to a specific category of personnel interviewed were included on categorized schedules. A detailed discussion of the items and results is found in Chapter IV of this report.

Unstructured Interview

An unstructured interview was conducted with each interviewee as soon as the structured interview was completed. The purpose was to allow the interviewer and interviewee to explore pertinent areas not covered by the structured interview. At the conclusion of the structured interview each interviewee was asked if there was any item they would like to discuss further or if there was any other aspect they would care to discuss. At that time the interviewer was also allowed to ask informal questions about aspects of the educational program. In general this session was an informal discussion period which allowed the interviewer greater flexibility in obtaining additional information about the educational programs. Comments obtained in this session were complied, classified, and are reported in Chapter IV.

At the completion of each day of interviews the interview team recorded their impressions of each interview session on magnetic tape. These impressions were later transcribed and utilized in the writing of this report.

Inmate Group Interview

Inmates were interviewed at each of the institutions to obtain information regarding their views of the educational program. The interviews were informal and, in general, the interviewer asked questions only for points of clarification during the discussion. Inmates were informed that they were free to comment on any aspect of the educational program and that their individual comments would be held in confidence. Each session lasted approximately ninety minutes. Comments were compiled and recorded and summaries are located in Chapter IV of this report.

At the Kentucky State Penitentiary approximately five participants were randomly selected from each of the five academic levels within the school. The group interview session was held in an unused classroom with only the interview team and inmates present. The session began by the interviewers introducing themselves and briefly outlining the project. Inmates were allowed to comment on any aspect of the educational program.

Approximately twenty inmates were interviewed as a group at the Kentucky State Reformatory. Each vocational and academic teacher was asked to select one or two inmates from his class to be interviewed. The interview was held in a group conference room in the vocational education building. Procedures for the interview were similar to those used at Kentucky State Penitentiary.

Inmates at the Kentucky Correctional Institution for Women were interviewed on a voluntary basis. Initially there were approximately ten inmates in attendance. However, an estimated forty to forty-five inmates were present at the end of the interview. The interview was conducted in the library with only the research team and interviewees present. Procedures for the conduct of the interview were similar to those used at Kentucky State Penitentiary and Kentucky State Reformatory.

Review of Inmate Records

Inmate records were reviewed to determine how educational data were recorded and utilized and to ascertain, to the extent possible, the effectiveness of the educational programs. Records of all inmates who had participated in an educational program and had been released during the calendar year 1970 were selected to be reviewed.

In the initial planning, data from released records were to be gathered by the Office of the Director of Education and Special Services within the Department of Corrections. A form was provided requesting the desired information; however, because of lack of personnel and the amount of information requested, the investigators were advised that this service could not be provided, but the information could be obtained from institutional records by personnel provided by the project.

A list of inmate records by institutional identification number was requested and received from each of the three institutions. These included only those inmates released during the calendar year of 1970 who participated in an educational program. These lists served as the population of inmate records to be examined.

Seventy-four identification numbers of inmates released were received from the Kentucky State Penitentiary. Fifty-six records were judged to meet the criteria for the project and were selected for review. The school principal volunteered to obtain the information concerning the inmate educational data requested. He was furnished with sufficient data forms and he and his staff compiled the requested data. The remaining information was obtained from inmate release folders

in the records section of the institution. The project director and two part-time student assistants were utilized to gather this information.

The Kentucky State Reformatory provided a list of 204 identification numbers of released inmates that had participated in the academic program during 1970. A table of random numbers was used to select a random sample of forty records for review. Forty-nine identification numbers were received in the vocational area; however, upon review of the records only thirty-six appeared to have participated in the vocational program and were selected for review. The project director, project research assistant, and three student assistants were utilized to obtain information from the released forms.

Forty-eight identification numbers were received from the Kentucky Correctional Institution for Women. Thirty-four of these records had sufficient educational data to be reviewed.

Review of Inmate Assignment Sheets

Information was requested and obtained on inmate assignments to include the number of inmates assigned to a particular position and the length of the time per day they were assigned. This information was obtained to

indicate how many man-hours were being devoted to the various details, programs, and other assignments of the institution. A presentation of these data is found in Chapter IV of this report.

Exit Conferences

In each correctional institution after all interviews were held, the project director presented a brief summary of his findings in the form of an exit conference. This presentation consisted primarily of general data collected from the structured interviews, the unstructured interviews, inmate group interviews, and assignment sheets. Because all data and analyses were not completed at that time, no recommendations were made. Presentations were made to the wardens at the Kentucky State Penitentiary and the women's institution and to the Associate Warden for Treatment at Kentucky State Reformatory.

CHAPTER IV

FINDINGS

The purpose of this section is to present obtained data in as simple and concise a manner as possible to enable the reader to draw conclusions about the educational programs at the Kentucky State Penitentiary, the Kentucky State Reformatory, and the Kentucky Correctional Institution for Women. A summary of the findings is presented for each technique by institution. Where applicable, each technique is broken down into its individual components and the data reported in summary form for each personnel group. Further breakdown by individuals would not serve a useful purpose in this project and could possibly betray the confidence of individuals interviewed.

Structured Interview - Kentucky State Penitentiary

Each item included in the structured interview is presented under the appropriate personnel classification. A brief explanation follows those items that require further clarification. The "Response" column gives the responses made by the interviewee. The "Frequency" column gives the frequency of responses for each item.

Administrators:

Five administrators were interviewed to obtain information about the institution and its educational programs. The members of the administrative staff interviewed were: the warden, deputy warden for custody, deputy warden for treatment, deputy warden for administration, and superintendent of industry. Results of these interviews are presented as follows:

Question	Response	Frequency
1. How do inmates enter an educational program?	Aware	5
	Unaware	0
2. What is the role of the educational program in the overall framework of this institution? (This question was asked to determine the interviewee's opinion regarding the importance of the educational programs and to determine if he had a clear idea of the role education played in the total treatment aspect.)	Important	5
	Unimportant	0
	Clear	3
	Vague	2
3. Is there a written mission statement and/or goals and objectives for this institution? (This item was used to determine if there was a published mission statement, goals and objectives for the	Yes	1
	No	1
	Unknown	3

(Continued)

	institution. Further, it was an indicator of personnel awareness of the institution's mission, goals and objectives.)		
4.	How many times do you visit the educational programs per month? (Responses to this item were used to indicate importance and interest placed on the educational programs by the administration.)	One or more visits per month	3
		Less than once per month	2
5.	Are there predetermined educational goals for inmates? i.e., If an inmate is illiterate, is there a goal, such as, reading at the 3rd grade level? Should an inmate be able to perform certain vocational skills?	Yes	3
		No	0
		Unknown	2
6.	Are pre-release classes taught on such topics as: job-search techniques, consumer-purchase education, social skills?	Yes	3
		No	2
		Unknown	0
7.	Is there a plan for inservice or training for personnel in academic and vocational education?	Yes	4
		No	1
		Unknown	0
8.	Is there an incentive system for inmates to enroll and progress in educational programs? Explain.	Yes	2
		No	3
		Unknown	0

(Continued)

9.	Is there a plan for extra-departmental communications for discussion of inmate activities? (Here administrators were questioned as to specific communications between departments.)	Yes No	2 3
10.	What restrictions are there to inmate movement within the institution? (This item provided information concerning inmate control and indicated to some extent the philosophy of the institution.)	Many Some None	0 2 3
11.	What criteria is applied to prohibit an inmate from entering an educational program? (Interviewees were allowed to express any factors that they felt prohibited them from entering an educational program. The information was quantified in four major categories by the investigators.)	Age *Personal Situation Institutional Needs None	1 3 2 2
12.	Do you feel this institution is more security or treatment oriented? (This question was included to determine administrative opinions toward institutional philosophy.)	Security Treatment	4 1

*Personal situation was used to classify responses that dealt with physical and/or emotional problems.

Pre-Vocational and Vocational Education Personnel

The pre-vocational and vocational education personnel interviewed consisted of the principal, librarian, one vocational teacher, and six classroom teachers. Responses to certain items were the same for all educational personnel interviewed and are presented as a standard answer. In some cases, the responses do not total nine because certain questions were not applicable for all interviewees. Where the responses total more than nine, the interviewee was allowed to make more than one response. Also on some questions one classroom teacher had previous experience as a vocational teacher and answered both the academic and vocational sections.

Question	Response	Frequency
1. How many hours do you spend in an actual teaching situation per day?	0 hours	2
	3 hours	1
	4 hours	1
	5 hours	5
2. What is your average class size?	10 students	6
	13 students	1
	15-20 students	1
	Mean = 11.25	
3. How are the students scheduled for instruction?	Standard answer: Scheduled fifty minute class periods (academic) Approximately three hour blocks of time (vocational)	

(Continued)

4. How many visits does the warden make to the school per month? (This item was included to give an indication of how educational personnel viewed frequency of administrative visitation.)	One or more visits per month	2
	Less than one visit per month	7
5. Where within the institution does the warden visit most often? (This item was included to give an indication of where educational personnel feel the administration places the most emphasis. The interviewee was allowed to name more than one area.)	School	2
	Hospital	7
	3 cell house and death row	3
	Prison industries	1
	Unknown	2
6. To what degree do you feel your program is getting administrative support? (The interviewee asked to qualify his response as to strong, moderate, or weak.)	Strong	1
	Moderate	2
	Weak	7
7. How often do you converse with inmates outside of the classroom? (Responses to this item were asked to be qualified as frequently, seldom, none.)	Frequently	5
	Seldom	2
	None	3
8. Does the institution have a written mission statement and stated goals?	Yes	2
	No	5
	Unknown	3
9. Does the education program have stated goals and objectives? If so, explain. (Responses to this item were quantified by the interviewer as to the various headings presented.)	GED	2
	Outside preparation	1
	Vague	2
	Unknown	1
	No	3

(Continued)

10.	Are courses open ended or closed ended. (Open ended means an inmate can enter a program at any time during the year.)	Standard answer:	Open ended
11.	What is the number on the waiting lists in conjunction with closed ended training?	Standard answer: Non applicable - no waiting list	
12.	Are drop-out vacancies filled with those on the waiting list?	Non applicable	
13.	What is the procedure for dropping out of an educational program?	Familiar	8
		Unfamiliar	0
14.	What happens to the individual after he has dropped out of the educational program? i.e. What type of job assignment does he get? (This item was included to determine possible reasons for inmates not volunteering to attend educational programs.)	Desirable job assignments	1
		Undesirable job assignments	4
		Assignment unaffected	4
15.	What is the institution's call-out procedure?	Standard answer: Men can be called out of classes for various things.	
16.	What is the class attendance policy?	Standard answer: Mandatory	
17.	How do students enter the educational program?	Familiar	9
		Unfamiliar	0
18.	What criteria are applied to prohibit an inmate	Age	1
		*Personal situation	3
		Institutional needs	1
		None	4

* Personal situation was used to classify responses that dealt with physical and/or emotional problems.

(Continued)

	from entering the educational program? (Responses to this question were qualified by the interviewer into the presented classifications.)		
19.	Are there devices or techniques being used in an attempt to motivate students in the program? Explain. (No specific procedure, such as pay, was asked about at this time.)	Yes No Unknown	2 7 0
20.	Are there movement restrictions for inmates within the institution?	Many Some None	0 2 7
21.	Is there an effort made to relate what goes on in the academic classroom to what goes on in the vocational classroom?	Yes Some None	0 0 8
22.	How often does the principal observe your class?	Twice per month None	2 7
23.	Does the principal encourage teachers to join professional organizations?	Yes No	2 7
24.	Is there a pre-release class offered on such topics as job search techniques, job interview techniques, consumer purchase education, and social skills?	Yes No Unknown	0 7 2

(Continued)

25.	Are adequate provisions made for inservice training of teachers?	Adequate	0
		Inadequate	6
		None	3
26.	Do you feel this institution is more security or treatment oriented?	Security	8
		Treatment	1

The following questions were asked specifically to the academic teachers, librarian, and principal.

27.	Are you familiar with the vocational education program?	Yes	3
		No	3
		Vaguely	2
28.	What types of instructional materials do you use? (Interviewee was allowed to indicate all types of material he used.)	Textbooks	6
		PI	6
		Workbooks	4
		Other	1
29.	Are these materials up to date?	Yes	6
		No	2
30.	What place do you feel programmed instruction has in your educational program?	Major	7
		Some part	1
		No part	0
31.	Is there money available to purchase training aids and supplies	Yes	6
		No	2
		Unknown	0

The following questions were asked specifically to the vocational teachers.

(Continued)

32. Are you familiar with the academic educational program?	Yes No Vague	1 1 0
33. What is the status of your equipment?	Antiquated Functional	2 0
34. Is there money available to buy new equipment and materials?	Yes No	0 2
35. Are some tools considered "Hot Tools"? ("Hot Tools" were those tools that require special issue and supervision by the instructor.)	Yes No	1 1
36. Are there requirements for the completion of your program?	Yes No	0 2
37. Approximately how many students complete your program per year?	Standard answer	None
38. Is there a basic academic level that an inmate must attain before being admitted to your pgoram?	Yes No	10th grade for drafting 1

Case Workers

The following data were obtained from interviews held with the chief case worker and four case workers. These questions were specifically designed to gather information and attitudes concerning the educational program.

Question	Response	Frequency
1. Are you familiar with the academic and vocational education programs?	Familiar	4
	Unfamiliar	1
2. What programs are available to inmates in academic and vocational education?	Aware	5
	Unaware	0
3. How does an inmate enter an educational program?	Aware	5
	Unaware	0
4. How many times per month does the warden visit your area?	One or more times per month	2
	Less than once per month	3
5. How many hours per day do you spend in actual inmate counseling?	1-2 hours	4
	2-3 hours	1
	4-above	0
6. Do you feel your program receives administrative support?	Strong	0
	Moderate	3
	Weak	2
7. How many inmates are you responsible for counseling?	None	1
	250-350	4
8. Outside of the counseling situation, how often do you converse with inmates? (Responses to this item were asked to be qualified as frequently, seldom, none.)	Frequently	5
	Seldom	0
	None	0
9. What is the mission statement of the institution? What are the goals and objectives? (This item was used to determine if there was	Known	0
	Unknown	2
	None	3

	a stated mission statement, goals and/or objectives for the institution. Further, it was an indicator of personnel awareness of the institution's mission, goals, and objectives.)		
10.	What is the mission statement of the Case Management section? (Responses were classified as known if the interviewer seemed to have a clear purpose of the case management section. Conformity to a particular purpose or mission was not required.)	Known Unknown None	4 1 0
11.	What do you feel the role of the educational programs are in the total institutional program? (Responses to this question were used to determine the interviewee's opinion regarding the importance of the educational programs and to determine if he had a clear idea of the role education played in the total treatment aspect.)	Important Unimportant Clear Vague	4 1 3 2
12.	What do you feel the role of the Case Management section is in the total institutional program?	Important Unimportant Clear Vague	5 0 5 0

(Continued)

13. How much time is allocated for inmate progress discussions between educational personnel and case management personnel?	Much Little None	0 0 5
14. How effective do you feel the educational programs are?	Effective Moderately effective	0 4
15. Do you feel this institution is more security oriented or treatment oriented?	Security Treatment No response	4 0 1

Correctional Officers

The following data were obtained from interviews held with seven correctional officers. These questions were designed to gather data on knowledge and attitudes concerning the educational program.

Question	Response	Frequency
1. Are you familiar with the educational programs?	Familiar Unfamiliar	2 5
2. What programs in academic and vocational education are available to the inmates?	Aware Unaware	1 6
3. How does an inmate enter an educational program?	Aware Unaware	5 2

(Continued)

4.	How many times per month does the warden visit your area? (At least once per month was classified as frequently.)	One or more times per month	6
		Less than once per month	1
5.	Do you feel you have administeative support?	Strong	7
		Moderate	0
		Weak	0
6.	How often do you converse with inmates in other than an official capacity? (Responses to this item were asked to be qualified as frequently, seldom, none.)	Frequently	6
		Seldom	1
		None	0
7.	What is the mission statement of the institution? What are the goals and objectives? (This item was used to determine if there was a stated mission statement, goals and/or objectives for the institution. Further, it was an indicator of personnel awareness of the institution's mission, goals, and objectives.)	Known	0
		Unknown	5
		None	2
8.	What do you feel the role of the educational program is within the overall structure of the institution?	Important	7
		Unimportant	0
		Clear	0
		Vague	7
9.	What do you feel the role of the security officer is within the overall structure of the institution?	Important	7
		Unimportant	0
		Clear	6
		Vague	1

(Continued)

10.	How much time is allocated for discussion periods for institutional personnel to discuss inmate activities or progress?	Much	0
		Little	3
		None	4
11.	How effective do you feel the educational programs are?	Effective	4
		Moderately effective	2
		Ineffective	1
12.	Do you feel this institution is more security oriented or treatment oriented?	Security	3
		Treatment	4

Unstructured Interview -
Kentucky State Penitentiary

The following statements were recorded during the unstructurec interviews with the various staff members. The statements are grouped by the categories of staff personnel. The number of times that a statement or very similar statement was made is indicated in the frequency column.

Administrators

Statement	Frequency
1. The higher the IQ and educational background the better the institutional job.	3
2. There is a need for better extra-departmental communications.	3
3. There is a need for improved and more comprehensive pre-release training for serve-outs as well as for parolees.	3
4. Idleness of inmates is a major problem.	2
5. There is no time for visits to the educational areas except when touring with visitors.	2
6. There is a need for funds to upgrade and encourage teachers in professional activities. They should be allowed to join professional organizations and participate in educational trips.	2
7. Short range goals are needed and are more relevant to inmates with reference to educational programs.	1
8. There is a lack of understanding between treatment personnel and custodial personnel.	1
9. More inmates would be in the educational program if the institution had the money and facilities.	1
10. Institutional need effects other programs.	1
11. Maintenance accomplishes the same thing as vocational training.	1
12. There is a need for an incentive program to include pay in educational programs.	

(Continued)

13.	There is a lack of vocational training opportunities including facilities, programs. etc.	1
14.	There are not enough institutional jobs for a good treatment program.	1
15.	Education contributes to the treatment program.	1
16.	The institution does not have a mission statement. There is a real need for this and one which would be followed.	1
17.	The educational program is not absolutely, but just about, mandatory for some inmates.	1
18.	The educational programs are voluntary.	1
19.	There is a move from custody to treatment.	1
20.	If inmates are experienced in certain vocational areas, they are assigned to those areas within the institution.	1
21.	There is a test which precludes inmates from the educational program.	1
22.	The academic program has goals and objectives.	1

Educational Personnel

The statements in this section include those of the vocational teachers at Kentucky State Penitentiary as well as those of the academic teachers. These categories were not separated because of the small number of vocational teachers interviewed.

Statement	Frequency
1. There is poor rapport with the school principal.	5
2. Observation of the individual classes by the school principal is virtually non-existent.	5
3. Vocational education should be one of the most important programs in the institution; a program which includes certification upon completion and/or continued training after leaving the institution.	5
4. There is a need for many materials and supplies, including films, filmstrips and audio-visual aids, as well as vocational materials.	5
5. The school principal disapproves of programmed type instruction and wants 50 minute lectures in classes.	4
6. School drop-outs may be assigned to undesirable jobs.	4
7. There is a need for a revised standardized testing program with adequate norms; preferably the ABLE test.	4
8. Students need time to utilize the library facilities and the library should be open on weekends.	4
9. Communication within the institution is poor.	4
10. The school program is not as voluntary as is stated - sometimes it is the lesser of two evils in assignment classification.	3
11. There is a definite need for a good incentive program within the educational programs - the most effective incentive being money.	3

(Continued)

12.	There is a need for teachers to be considered as professional in their work and able to join professional organizations.	3
13.	Showmanship seems to be more important than inmate education.	3
14.	There is a need for staggered classes by inmate ability in each subject area.	3
15.	There is a need for a teacher trained specifically in elementary education or adult basic education.	3
16.	There is friction between the educational staff and the correctional officers.	3
17.	Programmed instruction should have an important place in the educational program.	3
18.	There is a need for curriculum improvement, expansion, and incorporation of electives.	3
19.	There is a need for programs for those whose ability will not permit them to receive a GED.	3
20.	There is a need for short range goals, i.e., granting of 8th grade diploma.	2
21.	Educational programs receive poor administrative support because the principal does not get along with the "people up front."	2
22.	There is a need to be able to converse with inmates about areas outside of the educational program without fear of being reprimanded for "dealing".	2
23.	The teachers need to be upgraded with reference to new teaching techniques, usage of materials, i.e., programmed instruction.	2
24.	Many correctional officers discourage inmates regarding the educational program.	2

(Continued)

25.	There is not enough interest shown in the inmates.	2
26.	Open ended classes make it hard to teach.	1
27.	The administration is not aware of what really goes on.	1
28.	There is a need for stated goals and objectives within educational programs.	1
29.	Inmate students are called from classes for institutional maintenance making the teaching situation difficult.	1
30.	Those inmates who receive their GED are not given preference concerning institutional jobs.	1
31.	We don't set an example for the inmate and he sees this.	1
32.	There is a need for a vocational program based upon inmate wants and available jobs on the outside, i.e. plastic's training.	1
33.	The administration has gone out of its way to support the educational program.	1
34.	There is too much familiarity with inmates.	1

Case Workers

1.	There needs to be more communication between departments.	3
2.	Educational programs do not involve enough inmates. We beat the bushes for students.	3
3.	There are no pre-release classes taught.	2
4.	We have too much paper work and too large of a case load to counsel effectively.	2
5.	There is resentment between treatment and custody.	2

(Continued)

6.	The biggest problem in this institution is the lack of a real vocational program.	1
7.	Pre-release classes need to be improved.	1
8.	There is a need for educational reports, GED records, explanations, etc. from and by the teachers to be placed in the inmates' records.	1
9.	There is a need for a job placement position within the institution.	1
10.	Inmates ought to be able to take elective classes without having to be a part of the entire educational program all day long.	1
11.	Inmates need to be tested for intelligence when they enter the institution.	1
12.	The inmates have a lack of meaningful goals.	1
13.	There is a need for better incentive programs.	1
14.	There is a need for curriculum changes.	1
15.	The school principal has problems communicating with other departments.	1
16.	The education department suffers from a lack of leadership.	1
17.	There is a need for attitude changes among staff in relation to their own job and in relation to the inmate.	1

Correctional Officers

1.	This institution needs vocational education programs, i.e., auto mechanics, diesel mechanics, electrician work and construction trades.	4

2.	The school is the best thing "on the hill."	3
3.	The educational programs are not as effective now as they used to be - probably because the inmates here now are older.	2
4.	There is a need for an increase in communications between departments.	2
5.	Security is not as tight as it should be; they are lenient considering we are dealing with prisoners.	2
6.	The younger men have a better chance of getting into the educational program than the older men.	1
7.	The school is not really voluntary.	1
8.	There is more animosity between custodial officers and case workers than between custodial officers and teachers.	1
9.	The educational staff cooperates well with the custodial staff.	1
10.	There is a need for a monetary incentive in the educational program.	1
11.	Idleness is the major problem in the institution.	1
12.	Actually we are getting stricter in terms of security, but the office thinks we are leaning more toward treatment.	1

Inmate Group Interview -
Kentucky State Penitentiary

Approximately twenty-five inmates, chosen from each academic level by the instructors, were interviewed as a group. They were free to make whatever comments they

wished about the educational program. Their comments were recorded and are presented in a summary statement form. The number of inmates making the same or similar comments could not be determined because of the group conditions under which they were obtained.

1. Some of the teachers teach too fast.

2. Eight cents per day is not enough pay. A man can't even buy cigarettes on eight cents per day.

3. After completion of the GED there is no place to go. There should be some higher level courses offered.

4. There is no library time available to students. Students should have time to use the library.

5. There is a need for courses for Black people. "Black History" would be a good course here.

6. Material on Black people is needed in the library.

7. Most teachers don't know how to deal with inmates. They have a guard-convict relationship.

8. Teachers threaten to write up students constantly.

9. The Social Studies teacher is the only good teacher we have.

10. Inmate teacher aides would help in this program.

11. Teachers do not seem to be interested in lower classes. (Groups 3, 4, and 5.)

12. Subjects are not covered as thoroughly as they should be.

13. Teachers are revolting against the principal and guards. This makes it difficult for students to learn.

14. Students can't write in workbooks. If caught writing in workbooks, students have to pay for them.

15. Only a choice few students are allowed to take the GED so they will be assured of passing it. This makes the program look good in Frankfort.

16. Students are told to "show up good" for visitors.

17. There are no physical recreation periods in school. A physical education class should be offered during school hours.

18. The library should be open on weekends.

19. If a student drops out of the educational program, he does not have a say in where he is assigned.

20. The school should offer subjects that an inmate would like to take, not just ones that will help him pass the GED.

21. Students should be allowed to attend a few classes without being a full time student.

22. The school is not voluntary. Some students were given a choice of going to school or being assigned to the coal pile.

23. The GED alone is not going to get the student a job on the outside. We need some trade to go along with the GED.

24. They (prison personnel) don't realize the inmates were sent here "as punishment, not for punishment."

25. Until they realize that inmates need treatment and not just custody, everyone is held back; teachers, inmates, etc.

26. The guards are not interested in students learning. All they care about is custody.

27. The thing we really need is some kind of trade training and to be treated like human beings.

Inmate Assignment Sheet -
Kentucky State Penitentiary

Inmate assignment sheets were obtained from the Office of the Deputy Warden for Custody. They contained various work areas, the quota prescribed for that area, the number of inmates assigned to the job, and the approximate hours of the day inmates were assigned to the job. Areas were placed in a particular classification based on the investigator's conception of the nature of the work done. Specifically the barbers, news office, sign shop, and radio-television were classified as administration because their function is service not vocational education. Examples of these assignment sheets are in Appendix D.

Data obtained from these assignment sheets are presented in Tables 5 through 10. Table 11 presents a summary of the data contained in Tables 5 through 10.

Table 5

Daily Inmate Assignments and Time Devoted to Administration Details at the Kentucky State Penitentiary

Area Assigned	Number Assigned	Hours	Man Hours
Canteen	2	10.5	21.0
Runners	6	7.0	42.0
Leather Stand	1	8.0	8.0
Communications Office	3	6.5	19.5
Chapel	7	5.5	38.5
Barbers (Admin)	2	10.5	21.0
Barbers (General)	8	6.5	52.0
Clothing House	3	5.4	16.2
Commissary	3	7.0	21.0
Receiver	3	6.0	18.0
News Office	2	6.5	13.0
Sign Shop	1	6.5	6.5
Radio TV	3	6.5	19.5
Cell House (#1) Walk Boys	7	5.5	38.5
Cell House (#2) Walk Boys	8	5.5	44.0
Cell House (#3) Walk Boys	8	5.5	44.0
Cell House (#4) Walk Boys	15	5.5	82.5
Cell House (#5) Walk Boys	25	5.5	137.5
Total	107	119.9	642.7

Table 6

Daily Inmate Assignments and Time Devoted to Maintenance and Janitorial Services at the Kentucky State Penitentiary

Area Assigned	Number Assigned	Hours	Man Hours
Janitors (Admin. Bldg.)	2	10.0	20.0
Construction	10	6.0	60.0
Front	8	8.5	68.0
House Boys	7	14.5	101.5
Laundry	24	6.5	156.0
Dry Cleaners	3	6.5	19.5
Wagon Gate	5	6.5	32.5
Yard	96	5.5	528.0
Cabinet Shop	12	6.5	78.0
Shoe Shop	2	6.5	13.0
Engr. Department (Out)	14	6.5	91.0
Engr. Department (In)	58	6.5	377.0
Yard Boys (Farm)	6	14.5	87.0
Total	247	104.5	1,631.5

Table 7

Daily Inmate Assignments and Time Devoted to Educational Programs at the Kentucky State Penitentiary

Area Assigned	Number Assigned	Hours	Man Hours
Academic:			
Staff	8	5.5	44.0
Pupils	82	5.5	451.0
Vocational:			
Staff	3	6.5	19.5
Drafting Class	9	6.5	58.5
Total	102	24.0	573.0

Table 8

Daily Inmate Assignments and Time Devoted to Industries at the Kentucky State Penitentiary

Area Assigned	Number Assigned	Hours	Man Hours
Furniture Plant	42	6.5	273.0
Garment Factory	89	6.5	578.5
IBM Pool	30	6.5	195.0
Total	161	19.5	1,046.5

Table 9

Daily Inmate Assignments and Time Devoted to Farm Details at the Kentucky State Penitentiary

Area Assigned	Number Assigned	Hours	Man Hours
Farm #1			
Regular 1	35	6.5	230.5
O.K.	35	6.5	230.5
Dairy	11	6.5	71.5
Dormitory	17	6.5	110.5
Farm #2	8	6.5	52.0
Total	106	32.5	695.0

Table 10

Daily Inmate Assignemts and Time Devoted to Other Details at the Kentucky State Penitentiary

Area Assigned	Number Assigned	Hours	Man Hours
Culinary:			
Inm. Din. Room	84	8.0	672.0
Off. Din. Room	8	8.0	64.0
Hospital:			
Staff	16	8.5	136.0
Patients	12	8.0	96.0
Death Row	17	6.0	102.0
Isolation	3	6.0	18.0
Quarantine	10	6.0	60.0
Safekeeping	3	6.0	18.0
Segregation	81	6.0	486.0
Trips	13	6.0	78.0
Court	12	6.0	72.0
Hospital	1	6.0	6.0
Total	250	80.5	1,808.0

Table 11

Number of Inmates Assigned and Amount of Time Allocated Per Day to Functional Areas at Kentucky State Penitentiary

Area Assigned	Number Assigned	Hours	Man Hours
Administration	107	119.9	642.7
Maintenance and Janitorial	247	104.50	1631.5
School	102	24.0	573.0
Industry	161	19.5	1046.50
Farm	106	32.50	695.00
Other	250	80.50	1808.00
Total	973	380.9	6396.7

Inmate Records - Kentucky State Penitentiary

Data were obtained from fifty-six inmate records at the Kentucky State Penitentiary. Some of the data were not available or could not be readily obtained from the inmate folders. This accounted for the difference in summary numbers for various questions. The following is a summary of these data:

Item	Classification	Frequency
1. What was the length of time inmates were incarcerated?		Mean = 30 months
2. Under what condition was the individual released?	Parole	32
	Expiration	24
3. How many inmates participated in vocational education programs?	None	
4. How many inmates participated in the academic programs?	All	
5. Into what age category did the individual fall?	16-23	31
	24-31	20
	32-40	4
	40 above	1
6. What was the inmate's race?	Caucasian	40
	Negroid	20
	Other	0
7. What was the inmate's religious preference?	Protestant	45
	Catholic	5
	Other	1
	None	4
8. What was the inmate's marital status?	Married	23
	Divorced	5
	Separated	1
	Single	27
9. How many children did the individual have?	None	36
	One	5
	Two	6
	Three	2
	Four	2
	Five	1

(Continued)

10. What initial achievement tests were administered to the inmate and what were the results in terms of grade level?	California Achievement Test The mean grade level = 7.3	
11. At what grade level was the individual placed for instructional purposes?	Mean grade level = 7.1	
12. What type of discharge, if any, did the individual have from military service?	None Honorable Dishonorable Other	42 4 1 7
13. Did the individual, enrolled in a vocational program, complete the program?	None enrolled	
14. What was the length of time spent in the vocational programs?	Non applicable	
15. What grade level did the individual achieve while at the institution?	Insufficient data	
16. How many times was the individual arrested?	Insufficient data	
17. What was the individual's age at the time of the first arrest?	Insufficient data	
18. What was the individual's behavior record while at the institution? (Mostly a subjective estimation based on reports within inmate's folder.)	Excellent Good Fair Poor	0 32 7 16

(Continued)

19.	Was the individual a parole violator?	Yes	19
		No	36
20.	Was the individual a recidivist?	Yes	19
		No	35
21.	How was employment obtained for the individual?	Government employment agency	0
		Private employment agency	16
22.	Where was the individual employed after release?	Home town	17
		Other	13
23.	In what size city was the individual employed after release?	Less than 5,000	8
		Greater than 5,000	18
24.	When released, how many individuals had the following in his possession?	Driver's license	27
		Social Security No.	38
		$25.00 or less	49
		More than $25.00	2
		Various test results	0

Structured Interview

Kentucky State Reformatory

Each item included in the structured interview is presented under the appropriate personnel classification. A brief explanation follows those items that require further clarification. The "Response" column gives the responses made by the interviewee. The "Frequency" column gives the frequency of responses for each item.

Administrators

Five administrators were interviewed to obtain information about the institution and its educational programs. The members of the administrative staff interviewed were the warden, associate warden for treatment, associate warden for custody, associate warden for administration and the superintendent of industry. Results of these interviews follow:

Question	Response	Frequency
1. How do inmates enter the academic and/or vocational education programs?	Academic	
	Aware	4
	Unaware	1
	Vocational	
	Aware	5
	Unaware	0

2.	What is the role of the educational program in the overall framework of this institution?	Important	4
		Unimportant	1
		Clear	2
		Vague	3
3.	Is there a written mission statement and/or goals and objectives for this institution?	Yes	1
		No	1
		Unknown	2
4.	How many times do you visit the educational programs per month?	One or more visits per month	3
		Less than once per month	2
5.	Are there predetermined educational goals for inmates? i.e., If an inmate is illiterate is there a goal, such as, reading at the third grade level? Should an inmate be able to perform certain vocational skills?	Yes	2
		No	0
		Unknown	2
6.	Are pre-release classes taught on such topics as: job-search techniques, consumer-purchase education, and social skills?	Yes	3
		No	2
		Unknown	0
7.	Is there a plan for inservice or continuing professional training for teachers in academic and vocational education?	Yes	5
		No	0
		Unknown	0
8.	Is there an incentive system for inmates to enroll and progress in educational programs?	Yes	0
		No	5
		Unknown	0

9.	Is there a plan for extra-departmental communications for discussion of inmate activities? (Here administrators were questioned as to specific communications between departments.)	Yes	0
		No	5
10.	What restrictions are there to inmate movement within the institution?	Many	0
		Some	2
		None	3
11.	What factors exist that prohibit an inmate from entering an educational program?	Age	0
		*Personal situation	1
		Institutional needs	0
		None	3

*Personal situation was used to classify responses that dealt with physical and/or emotional problems.

12.	Do you feel this institution is more security or treatment oriented?	Security	3
		Treatment	2

Vocational Education Personnel

The vocational education personnel interviewed consisted of the principal and eight vocational education teachers. Responses to certain items were the same for all personnel interviewed and are presented as a standard answer. In some cases, the responses do not total seven. This is because all questions were not applicable for all interviews, or responses were not obtained for those items. Where responses total more than seven, the interviewee was allowed to make more than one response.

Question	Response	Frequency
1. How many hours do you spend in an actual teaching situation per day?	0 hours	1
	3 hours	2
	6 hours	6
2. What is your average class size?	12 students	4
	13 students	1
	15 students	4
3. How are the students scheduled for instruction?	Standard answer: Approximately three hour blocks of time	
4. How many visits does the warden make to the school per month?	One or more visits per month	1
	Less than one visit per month	6
5. Where within the institution does the warden visit most often?	Dorms	1
	Unknown	7
	Security areas	1
6. To what degree do you feel your program is getting administrative support? (The interviewee was asked to respond as to strong, moderate, or weak.)	Strong	4
	Moderate	5
	Weak	0
7. How often do you converse with inmates outside of the classroom?	Frequently	8
	Seldom	0
	None	0
8. Does the institution have a written mission statement and stated goals?	Yes	4
	No	1
	Unknown	4
9. Does the education program have stated goals and objectives? If so, explain.	Yes	7
	No	2
	Unknown	0

10.	Are courses open ended or closed ended?	Open ended	8
		Closed ended	1
11.	Is there a waiting list for your particular course in vocational education?	Yes	6
		No	3
12.	Are drop-out vacancies filled with those on the waiting list?	Yes	7
		No	0
13.	What is the procedure for dropping out of an education program?	Familiar	8
		Unfamiliar	1
14.	What happens to the individual after he has dropped out of the educational program? i.e., What type of job assignment does he get?	Desirable job assignments	2
		Undesirable assignments	0
		Assignments unaffected	6
15.	What is the institution's call-out procedure?	Standard answer: Men canbe called out of classes for various things.	
16.	What is the class attendance policy?	Standard answer: Mandatory	
17.	How do students enter the educational program?	Standard answer: Voluntarily	
18.	What criteria are applied to prohibit an inmate from entering the educational program?	Ed. level	3
		Time	1
		Homosexual	1
		Discipline problem	1
		Test scores	1
		Unknown	1

19.	Are there devices or techniques being used in an attempt to motivate students in the program? Explain. (No specific procedure, such as pay, was asked about at this time.)	Verbal	3
		Incentive pay	8
		Jobs outside	1
20.	Are there movement restrictions for inmates within the institution?	Many	0
		Some	5
		None	4
21.	Is there an effort made to relate what goes on in the academic classroom to what goes on in the vocational classroom?	Yes	1
		Some	6
		None	2
22.	How often does the principal observe your class?	Twice per month	9
		Infrequently	0
23.	Does the principal encourage teachers to join professional organizations?	Yes	8
		No	0
24.	Is there a pre-release class offered on such topics as job search techniques, job interview techniques, consumer purchase education, and social skills?	Yes	6
		No	3
25.	Are adequate provisions made for inservice training of teachers?	Many	7
		Few	2
		None	0
26.	Do you feel this institution is more security or treatment oriented?	Security	5
		Treatment	4

(Note--Questions 27 through 31 were asked only of the academic teachers and are reported in a later section of this chapter.)

Specific questions for vocational education teachers.

32.	Are you familiar with the academic educational program?	Yes	1
		No	5
		Vague	3
33.	What is the status of your equipment?	Antiquated	0
		Functional	9
34.	Is there money available to buy new equipment and materials?	Yes	7
		No	2
35.	Are some tools considered "Hot Tools"? ("Hot Tools" were those tools that require special issue and supervision by the instructor.)	Yes	8
		No	1
36.	Are there requirements for the completion of your program?	Yes	9
		No	0
37.	Approximately how many students complete your program per year?	in 4 years 6 graduated	1
		in 5 years 14 graduated	1
		2-3%	1
		None	3
38.	Is there a basic academic level that an inmate must attain before being admitted to your program?	Yes	6
		No	3

Pre-Vocational Education Personnel

Pre-vocational education personnel interviewed consisted of the principal and five classroom teachers. Responses to certain items were the same for all personnel interviewed and

are presented as a standard answer. In some cases, the responses do not total six because certain questions were not applicable for all interviewees or because responses were not obtained for that item. Where responses total more than six the interviewee was allowed to make more than one response.

Question	Response	Frequency
1. How many hours do you spend in an actual teaching situation per day?	0 hours	1
	3 hours	1
	4 hours	1
	5 hours	0
	6 hours	3
2. What is your average class size?	20-40 students	1
	22 students	1
	25 students	1
	35 students	2
3. How are the students scheduled for instruction?	Standard answer: Three hour blocks of time	
4. How many visits does the warden make to the school per month?	One or more visits per month	0
	Less than one visit per month	5
5. Where within the institution does the warden visit most often?	Unknown	5
	All areas	1
6. To what degree do you feel your program is getting administrative support?	Strong	1
	Moderate	5
	Weak	0
7. How often do you converse with inmates outside of the classroom?	Frequently	6
	Seldom	0
	None	0

8.	Does the institution have a written mission statement and stated goals?	Yes No Unknown	1 3 2
9.	Does the education program have stated goals and objectives? If so, explain.	GED Outside preparation No	1 1 4
10.	Are courses open ended or closed ended. (Open ended means an inmate can enter a program at any time during the year.)	Standard answer: Open ended	
11.	What is the number on the waiting lists in conjunction with closed ended training?	Standard answer: Non applicable - no waiting list	
12.	Are drop-out vacancies filled with those on the waiting list?	Non applicable	
13.	What is the procedure for dropping out of an educational program?	Familiar Unfamiliar	6 0
14.	What happens to the individual after he has dropped out of the educational program. i.e., What type of job assignment does he get?	Desirable job assignments Undesirable job assignments Assignments unaffected	0 0 6
15.	What is the institution's call-out procedure?	Standard answer: Men can be called out of classes for various thing .	
16.	What is the class attendance policy?	Standard answer: Mandatory	

17.	How do students enter the educational program?	Familiar	3
		Unfamiliar	1
18.	What criteria are applied to prohibit an inmate from entering the educational program?	Institutional needs	1
		None	3
19.	Are there devices or techniques being used in an attempt to motivate students in the program? Explain. (No specific procedure, such as pay, was asked about at this time.)	Yes	3
		No	2
		Unknown	0
20.	What are movement restrictions for inmates within the institution?	Many	0
		Some	4
		None	1
21.	Is there an effort made to relate what goes on in the academic classroom to what goes in in the vocational classroom? How?	Yes	0
		Some	1
		None	5
22.	How often does the principal observe your class?	Twice per month	4
		Infrequently	2
23.	Does the principal encourage teachers to join progessional organizations?	Yes	4
		No	1
24.	Is there a pre-release class offered on such topics as job search techniques, job interview techniques, consumer purchase education, and social skills?	Driver's Education	4
		Outside lectures	1
		Other	2

25.	Are adequate provisions made for inservice training of teachers?	Many	1
		Few	5
		None	0
26.	Do you feel this institution is more security or treatment oriented?	Security	4
		Treatment	1
27.	Are you familiar with the vocational education program?	Yes	4
		No	1
		Vaguely	1
28.	What types of instructional material do you use?	Textbooks	4
		P.I.	2
		Workbooks	3
		Other	0
29.	Are these materials up to date?	Yes	5
		No	1
30.	What place do you feel programmed instruction has in your educational program?	Major	1
		Some part	4
		No part	1
31.	Is there money available to purchase training aids and supplies?	Yes	3
		No	2
		Unknown	1

Case Workers

The following data were obtained from interviews held with the chief case worker and five case workers. These questions were specifically designed to gather information and attitudes concerning the educational programs.

Question	Response	Frequency
1. Are you familiar with the academic and vocational educational programs?	Academic	
	Familiar	6
	Unfamiliar	0
	Vocational	
	Familiar	6
	Unfamiliar	0
2. What programs are available to inmates in academic and vocational education?	Aware	5
	Unaware	0
3. How does an inmate enter an educational program?	Aware	6
	Unaware	0
4. How many times per month does the warden visit your area?	One or more times per month	0
	Less than once per month	6
5. How many hours per day do you spend in actual inmate counseling?	1-2 hours	3
	2-3 hours	3
	4 above	0
6. Do you feel your program receives administrative support?	Strong	4
	Moderate	1
	Weak	1
7. How many inmates are you responsible for counseling?	None	1
	30-60	1
	150-300	3
8. Outside of the counseling situation, how often do you converse with inmates?	Frequently	5
	Seldom	0
	None	0
9. What is the mission statement of the institution? What are the goals and objectives?	Known	2
	Unknown	3
	None	0

10.	What is the mission statement of the Case Management section?	Known	4
		Unknown	2
		None	0
11.	What do you feel the role of the educational programs is in the total institution program?	Important	4
		Unimportant	2
		Clear	5
		Vague	1
12.	What do you feel the role of the Case Management section is in the total institutional program?	Important	5
		Unimportant	0
		Clear	2
		Vague	0
13.	How much time is allocated for inmate progress discussion between educational personnel and case management personnel?	Much	0
		Little	4
		None	2
14.	How effective do you feel the educational programs are?	Effective	0
		Moderately effective	3
		Ineffective	3
15.	Do you feel this institution is more security oriented or treatment oriented?	Security	4
		Treatment	2

Correctional Officers

The following data were obtained from interviews held with seven security personnel. These questions were designed to gather data on knowledge and attitudes concerning the educational program.

Question	Response	Frequency
1. Are you familiar with the educational programs?	Academic	
	Familiar	3
	Unfamiliar	2
	Vocational	
	Familiar	4
	Unfamiliar	1
2. What programs in academic and vocational education are available to the inmates?	Aware	4
	Unaware	1
3. How does an inmate enter an educational program?	Aware	4
	Unaware	1
4. How many times per month does the warden visit your area?	One or more times	2
	Less than once	1
	Unknown	2
5. Do you feel you have administrative support?	Strong	4
	Moderate	1
	Weak	0
6. How often do you converse with inmates in other than an official capacity?	Frequently	2
	Seldom	3
	None	0
7. What is the mission statement of the institution? What are the goals and objectives?	Known	2
	Unknown	3
	None	0
8. What do you feel the role of the educational program is within the overall structure of the institution?	Important	4
	Unimportant	0
		0
	Clear	5
	Vague	
9. What do you feel the role of the correctional officer is within the overall structure of the institution?	Important	4
	Unimportant	0
	Clear	4
	Vague	0

10.	How much time is allocated for discussion periods for institutional personnel to discuss inmate activities or progress?	Much	0
		Little	3
		None	2
11.	How effective do you feel the educational programs are?	Effective	2
		Moderately effective	1
		Ineffective	1
12.	Do you feel this institution is more security or treatment oriented?	Security	3
		Treatment	4

Unstructured Interview
Kentucky State Reformatory

The following statements were recorded during the unstructured interviews with the various staff members of the Kentucky State Reformatory. The statements are grouped by the categories of staff personnel. The number of times each statement was made is indicated in the frequency column.

Administrators

	Statement	Frequency
1.	The vocational program should be set up on six month completion basis. Presently the program is set up on an entirely unrealistic time basis.	3
2.	The pre-release program is not extensive enough. There's not one for serve-outs.	2
3.	There are no real extra-departmental communications.	2
4.	We have not been closely enough associated with the educational programs.	1

5.	The education programs don't seem to be an integral part of the total institution.	1
6.	Inmates are treated as juveniles in the educational program.	1
7.	Sometimes assignment to the school, kitchen, or laundry is utilized as punishment.	1
8.	Prison industry is solely production oriented; not treatment oriented in that the training adds to a useful skill outside. The skill learned is only good in this institution.	1
9.	A broadened incentive pay system would be beneficial.	1

Vocational Teachers

1.	There is little communication between various departmental staffs.	5
2.	There is some hostility between custodial and vocational staff in terms of the worth of vocational training.	5
3.	A broadened incentive system is needed within the education programs.	4
4.	Short-term training is needed.	4
5.	There is a need for the vocational department and the academic department to work together.	3
6.	There is a need for treatment and custody personnel to work together rather than against one another.	2
7.	Club activities and other call-out functions take too much away from the students' class time.	2
8.	There is a need for a half-way house program in residential areas for youthful offenders.	1
9.	There is a need for a representative from vocational education on the classification board.	1

10.	We utilize group therapy in our vocational education program.	1
11.	There is a need for an obsolete machinery schedule as machines become outdated funds are needed to purchase new machinery.	1
12.	There is a problem placing parolees into state vocational schools. Principals and counselors do not want inmates as students and give all types of excuses to keep them out of the programs.	1
13.	Institutional maintenance appears to be more important than trade training.	1
14.	Short-term training is not the answer to the training program; inmates need to be trained to be flexible.	1
15.	Vocational classes need the opportunity to take field trips to actual job sites where inmates can see their type of skill in use.	1

Pre-Vocational Teachers

1.	There is no pre-release program for serve-outs.	7
2.	There is a need for an increased incentive system, comparable to the tag plant.	5
3.	There is too little extra-departmental communications or interaction.	4
4.	There is a lack of understanding, awareness, and interest of the administration as to what our problems really are in the educational programs.	3
5.	There is a need for better materials for adult literacy programs.	3
6.	There is not the communication between the vocational and academic areas that there ought to be.	2
7.	There is a need for more civilian teachers and fewer inmate teachers.	2

8.	Our books are outdated and we need more.	2
9.	Open-ended programs are a problem, as students come and go all of the time.	2
10.	There is a discrepency as to whether teachers should "keep" or "teach" inmates.	2
11.	Physical facilities in the academic program are extremely poor.	2
12.	Programmed instruction would be beneficial if we had the materials.	2
13.	We lack the authority to handle or treat inmates as people. We have a tendency to take away a man's dignity, thus his constructiveness.	1
14.	Some custodial officers feel that our school ought not to be here.	1
15.	Most custodial officers are sympathetic toward education.	1
16.	Custody and education are at opposite ends.	1
17.	Most teacher personnel are working toward retirement.	1
18.	We now have an inadequate testing program.	1

Case Workers

1.	There is poor extra-departmental communication.	4
2.	Some vocational programs are unrealistic. Some of the programs are not feasible in relation to job opportunities and their qualifications on the outside.	4
3.	Vocational courses are too large and need to be shortened or other short-term training implemented.	4
4.	The vocational program is more effective than the academic program because the academic physical plant is pitiful.	3

5.	There is a need for better communication between case workers and correctional officers.	3
6.	The vocational program is more ineffective than effective.	2
7.	Case loads are too heavy for us to be effective case workers. Too much clerical work.	2
8.	Comprehensive pre-release programs are needed.	2
9.	There is conflict (jealousy over physical plant conditions) between case workers and vocational rehabilitation counselors.	2
10.	There is a need for an eight-hour work day for the inmates, which shows some relation to a work day on the outside.	1
11.	The annual institutional staff picnic does more for a good working relationship than anything in the institution.	1
12.	Need for vocational production orientation on minimum-wage scale.	1
13.	Relationship between case workers, vocational-rehabilitation counselors and custody personnel is good.	1
14.	Short-term goals are badly needed for the inmates.	1
15.	The athletic program has changed the institution for the better.	1
16.	There is a need for more of a racial balance on the staff.	1
17.	Ideally, correctional officers need to be involved in treatment.	1
18.	The vocational department and the academic department need to work together.	1
19.	The principal in the academic area has a hard time contending with some administrators.	1

20.	There is some jealousy between the administration and vocational rehabilitation as they are actually separate.	1
21.	The educational programs here need to be on a personal problem-solving basis.	1
22.	The institutional philosophy is that as long as no one knows exactly what is going on, the administration is happy. Don't rock the boat.	1

Correctional Officers

1.	The educational programs are possibly 40% effective.	1
2.	The vocational program needs to keep posted on job market trends on the outside.	1
3.	The academic programs have been declining steadily because of physical facilities.	1
4.	The academic program needs to be improved.	1
5.	Inmates in educational programs are possibly "written up" more than those not in an educational program because the inmates must deal with more persons in positions of authority. There may be an excess of "write ups."	1
6.	Dorm rooms are used as rewards or as an incentive.	1
7.	There is little communication between departments.	1
8.	Teachers and case workers do their jobs and we do ours. We speak and that's about it.	1

Inmate Group Interview
Kentucky State Reformatory

Approximately twenty-five inmates, chosen by the various vocational and academic instructors, were interviewed as a

group. Two inmates from each of the eight vocational areas were selected to participate in the interview. Two inmates from each of the five academic areas were also selected by their teachers to be interviewed.

The inmates were free to make whatever comments they wished about the educational programs. Their comments were recorded and are presented in summary statement form below.

1. "Training programs should be pushed more - especially vocational. Younger inmates should be pushed into program - age is the most important factor."

2. "I disagree, as I am young, I feel it has to be on a voluntary basis - you can't get anything out of any program if you are pushed into it."

3. "Some of the programs are too long and some aren't long enough. There needs to be something done here. People aren't in here long enough to complete many programs."

4. "Majority of guys don't ever get a job in the trade they are trained for."

5. "No way to get job within institution if you are still here following the completion of your trade training."

6. "Need for work release programs."

7. Open-ended training throws the teachers back - makes it hard on them.

8. "Academic school is raggedy." Materials not up to par--teachers are pretty slack. Physical facilities are poor in academic programs.

9. I go to night school, and have yet to get an assignment. They are just talk sessions.

10. "Some night teachers are here just for the check."

11. A few inmate teachers are good but most like to just talk.

12. How can an inmate have authority over another inmate -- in this inmate-teaching system?

13. Materials in academic areas (most tests and workbooks) are outdated and not relevant to the actual GED.

14. They teach what they taught 20 years ago--teaching is not modern and not really relevant to educational philosophies on the outside.

15. "There is a teacher who scares potential students away."

16. "Took me eight months to get into auto mechanics."

17. Waiting list is long and vacancies are available but they won't fill vacancies--they seem to wait for certain guys.

18. Parole consideration has a lot to do with whether or not you get assigned to a vocational trade or not. If you don't have long before parole you don't get training.

19. Sometimes they say you will get a parole set back so you can finish trade training--this scares a lot or guys away.

20. Academic school--morning school and afternoon school are same--so you sit through the same thing twice. Need widened curriculum and a way you can take just one course.

21. Photography, industrial electronics--two courses we need. Electricians we have as instructors don't last--they find better jobs.

22. One academic teacher has sent some to the hole on trumped up charges. He has said "you are here because you are dogs and I'll treat you like dogs."

23. Not enough theory in some vocational areas.

24. Don't like ABE programs for GED which is required for vocational people at night.

25. "Teaching staff at night is not good--can't get nothing out of it. They are just talk sessions."

26. Some teachers need to be fired.

27. In the academic deparment, we need qualified teachers, and teachers to supervise inmate teachers.

28. Some inmate instructors are forced to be instructors and don't like it.

29. "We need to be paid for what we do."

30. Need some relevant jobs within the institution so we can use our training.

31. "I was here a year before I knew what rehab was."

32. Must stay on yard 90 days before you can sign up for vocational school.

33. Custody and school have a conflict going and a lot of times this throws the inmate in the middle.

34. Custody gives ultimatums on weekends--like fix my colored TV or you go to the hole.

35. We have no say so as to what assignment we get from the Reclassification Board.

36. Need placement service for immediate employment following parole. You can get parole but have to wait four months to get out because of no jobs.

37. Average correctional officer would not recommend school--the only recommendation they give is for the hole.

38. Correctional officers have bad attitudes--there are many with nasty attitudes, especially in the dining room.

39. Guards discourage school and take advantage of inmates who work hard and try.

40. Guards don't talk to us as men. We cannot express our thoughts or opinions.

Inmate Assignment Sheet

An inmate assignment sheet was obtained from the associate superintendent for custody at the Kentucky State Reformatory (Appendix E). It contains various work areas and the number assigned to the job. The approximate number of hours inmates worked at their assignments per day was obtained verbally from the associate superintendent of custody. A summary of this data is compiled and is found in Tables 12 through 17. Assignments are placed in a particular classification based on the investigators' conception of the nature of the work done. These tables contain information on the number assigned to each job area, hours worked by inmates per day, and man hours per day, obtained by multiplying the hours worked by the number assigned. A summary table for each classification is presented in Table 18.

Table 12

Daily Inmate Assignments and Time Devoted to Administration Details at the Kentucky State Reformatory

Administration

Area Assigned	Number Assigned	Hours/ Day	Man Hours/ Day
Canteen	4	6	24
Clothing House	63	6	216
Chapel	1	6	6
Classification Office	3	6	18
Count Desk	4	8	3
Elevator Operators	7	6	42
Personnel Services	9	6	54
Stockade Gate	1	6	6
Records	6	6	36
Central State	6	7	42
Fire House	5	7	35
Frankfort	38	11	418
House Men	11	7	77
KCIW	5	11	55
KSR Min OK	12	7	84
Landscape	8	7	56
Mansion	12	8	96
Pineville	38	8	304
Training Office	1	7	7
Utility Detail	4	7	28
Barbers	17	6	102
Total	228	149	1,738

Table 13

Daily Inmate Assignments and Time Devoted to Maintenance and Janitorial Services at the Kentucky State Reformatory

Area Assigned	Number Assigned	Hours/ Day	Man Hours/ Day
Janitor Service 1	16	6	96
" " 2	6	6	36
" " 3	14	6	84
" " 4	25	6	150
" " 5	16	6	96
" " 6	15	6	90
" " 7	29	6	174
" " 8	7	6	42
" " 9	17	6	102
Janitor 2nd floor	2	6	12
Tower Janitor	4	6	24
Admin. Bldg. Janitor	6	6	36
Yard Detail A.M.	46	6	276
Yard Detail P.M.	48	6	208
Boiler House Days	2	6	12
Boiler House Eve.	4	6	24
No. 1 Carpenters	13	6	78
Glaziers	6	6	36
Welders	6	6	36
No.3 Electricians	5	6	30
No.4 Painters	6	6	36
No.5 Plumbers	5	6	30
Steamfitters	6	6	36
Sanitation	9	6	54
No.7 Carpenters	2	7	14
Constr. No.1	9	7	63
No.8 Constr. No.2	9	7	63
No.9 Disposal Plant	1	7	7
Water Plant	1	7	7
No.10 Electricians	6	7	42
No.11 Motor Pool	4	7	28
No.12 Plumbers	70	6	420
Front Office Janitors	38	7	266
Total	453	206	2,788

Table 14

Daily Inmate Assignments and Time Devoted to Educational Programs at the Kentucky State Reformatory

Area Assigned	Number Assigned	Hours/ Day	Man Hours/ Day
Aides	60	6	360
School Full Time	52	6	312
School A.M.	85	3	255
School P.M.	86	3	258
Auto Body	15	6	90
Auto Mechanic	14	6	84
Building Trades	15	6	90
Business Machines	14	6	84
Dental Clinic	8	6	48
Drafting	9	6	54
Residential Electricity	0	6	0
Upholstery	0	6	0
Meat Cutting	14	6	84
Printing	11	6	66
Radio and T.V.	9	6	54
Small Engine Repair	8	6	48
Welding	14	6	84
Total	414	90	1,967

Table 15

Daily Inmate Assignments and Time Devoted to Industries at the Kentucky State Reformatory

Area Assigned	Number Assigned	Hours/ Day	Man Hours/ Day
Accounting	3	7	21
Clerk-Supt.	1	7	7
Clothing Plant	42	7	294
Metal Plant	113	7	801
Soap Plant	19	7	133
Total	178	35	1,246

Table 16

Daily Inmate Assignments and Time Devoted to Farm Details at the Kentucky State Reformatory

Area Assigned	Number Assigned	Hours/ Day	Man Hours/ Day
Farm No.1	2	7	14
Farm No.2	11	7	77
Farm No.3	11	7	77
Farm No.4	13	7	91
Farm No.5	12	7	84
Farm No.6	10	7	70
Farm No.7	10	7	70
Farm No.8	12	7	84
Cannery	23	7	161
Cattle	8	7	56
Chickens	1	7	7
Dairy	17	8	136
Greenhouse	12	7	84
Hogs	9	7	63
Maintenance	5	7	35
Service	10	8	80
Total	166	114	1,189

Table 17

Daily Inmate Assignments and Time Devoted to Other Details at the Kentucky State Reformatory

Area Assigned	Number Assigned	Hours/ Day	Man Hours/ Day
Cell Block No.1	32	7	224
Cell Block No.2	25	7	175
Cell Block No.3	17	7	119
Cell Block No.4	22	7	154
Cell Block No.5	17	7	119
Cell Block No.6	16	7	112
Reception Unit No.1	41	7	287
Reception Unit No.2	33	7	231
Geriatrics	50	7	350
TB. Ward	6	7	42
General	-	6	
Athletics	30	6	180
Total	289	82	1,993

Table 18

Number of Inmates Assigned and Amount of Time Allocated Per Day to Functional Areas at the Kentucky State Reformatory

Area Assigned	Number Assigned	Hours/ Day	Man Hours/ Day
Administration	228	149	1,738
Maintenance & Janitorial	453	206	2,788
Educational Programs	414	90	1,967
Industries	178	35	1,246
Farm	166	114	1,189
Other	289	82	1,993
Total	1,728	676	10,421

Inmate Records - Kentucky State Reformatory

Data were obtained from seventy-six inmate records at the Kentucky State Reformatory. Some of the data were not available or could not be readily obtained from the inmate folders. This accounted for the difference in summary numbers for various questions. The following is a summary of these data:

Item	Classification	Frequency
1. What was the length of time inmates were incarcerated?	mean =	13 months
2. Under what condition was the individual released?	Parole	49
	Expiration	27
3. How many inmates participated in vocational education programs?	Formal vocational training	36
4. How many inmates participated in the academic program?	Academic	40
5. Into what age category did the individual fall?	16-23	54
	24-31	15
	32-40	5
	41 above	2
6. What was the inmate's race?	Caucasian	51
	Negroid	25
	Other	0

(Continued)

7. What was the inmate's religious preference?	Protestant	45
	Catholic	5
	Other	1
	None	4
8. What was the inmate's marital status?	Married	26
	Divorced	3
	Separated	3
	Single	42
9. How many children did the individual have?	None	49
	One	10
	Two	11
	Three	2
	Four	2
	Five	1
	Eight	1
10. What initial achievement test(s) was administered to the inmate and what was the mean grade level measured?	Standard Achievement Test Mean grade level = 6.4	
11. What grade level was the inmate placed for instruction?	Insufficient data	
12. What type of discharge, if any, did the individual have from military service?	No military service	54
	Honorable	15
	Dishonorable	4
	Other	3
13. Did the individual enrolled in a vocation program complete the program?	Yes	7
	No	29
14. What was the length of time spent in the vocational programs?	Mean = 6.4 months	
15. What grade level did the individual achieve while at the institution?	GED	5
	Insufficient data on other inmates.	

16.	How many times was the individual arrested?		Mean = 7.9
17.	What was the individual's age at the time of the first arrest?		Mean = 19 years
18.	What was the individual's behavior record while at the institution? (Mostly a subjective estimation based on reports within inmate's folder.)	Excellent	4
		Good	48
		Fair	13
		Poor	11
19.	Was the individual a parole violator?	Yes	19
		No	48
20.	Was the individual a recidivist?	Yes	15
		No	33
21.	How was employment obtained for the individual?	Government agency	4
		Private agency	5
		Family	16
		Friends	7
		Other	1
22.	Where was the individual employed after release?	Home town	44
		Other than home town.	11
23.	In what size city was the individual employed after release?	Greater than 5,000	45
		Less than 5,000	12
24.	When released, how many individuals had the following in their possession?	Driver's lincense	4
		Social Security Card	61
		$25.00 or less	29
		More than $25.00	31
		Various test results	0

Structured Interview - Kentucky Correctional Institution for Women

Each item included in the structured interview is presented under the appropriate personnel classification. A brief explanation follows those items that require further clarification. The "Response" column gives the responses made by the interviewees. The "Frequency" column gives the frequency of responses made for each item.

Administrators

Four administrators were interviewed to obtain information about the institution and its educational programs. The members of the administrative staff interviewed were the warden, director of social services, nurse, and supervisor of home economics. Results of this interview are presented below.

Question	Response	Frequency
1. How do inmates enter the academic and/or vocational education programs?	Academic	
	Aware	4
	Unaware	0
	Vocational	
	Aware	4
	Unaware	0

(Continued)

2. What is the role of the educational program in the overall framework of this institution?	Important	4
	Unimportant	0
	Clear	1
	Vague	3
3. Is there a written mission statement and/or goals and objectives for this institution?	Yes	2
	No	1
	Unknown	1
4. How many times do you visit the educational programs per month?	One or more visits per month.	2
	Less than once per month	2
5. Are there predetermined educational goals for inmates? i.e., If an inmate is illiterate is there a goal, such as reading at the 3rd grade level, or being able to perform certain vocational skills?	Yes	2
	No	2
	Unknown	0
6. Are pre-release classes taught on such topics as: job-search techniques, consumer-purchase education social skills?	Yes	2
	No	2
	Unknown	0
7. Is there a plan for inservice or training for personnel in academic and vocational education?	Yes	1
	No	3
	Unknown	0
8. Is there an incentive system for inmates to enroll and progress in educational programs? Explain.	Yes	1
	No	3
	Unknown	0

9.	Is there a plan for extra-departmental communications for discussion of inmate activities?	Yes	4
		No	0
10.	Are there restrictions to inmate movement within the institution?	Many	0
		Some	2
		None	2
11.	What criteria is applied to prohibit an inmate from entering an educational program?	Age	2
		Personal situation	0
		Institutional needs	0
		None	2
12.	Do you feel this institution is more security or treatment oriented?	Security	4
		Treatment	0

Educational Personnel

Educational personnel interviewed at the Kentucky Correctional Institution for Women were the principal, four part-time teachers, and the business education teacher. Responses to certain items were the same for all personnel interviewed and are presented as standard answers. In some cases the responses do not total five. This is because all questions were not applicable for all interviewees or responses were not obtained for these questions. Where responses total more than five, the interviewee was allowed to make more than one response.

Question	Response	Frequency
1. How many hours do you spend in an actual teaching situation per day?	0 hours	0
	3 hours	4
	4 hours	0
	6 hours	2
2. What is your average class size?	10 students	6
	13 students	1
	15-20 students	1
3. How are the students scheduled for instruction?	Standard answer of 45 minute period	
4. How many visits does the warden make to the school per month?	One or more visits per month	2
	Less than one visit per month	4
5. Where within the institution does the warden visit most often?	School	0
	Hospital	0
	Balanced	0
	Office counseling or interviewing	1
	Unknown	4
6. To what degree do you feel your program is getting administrative support?	Strong	4
	Moderate	1
	Weak	0
7. How often do you converse with inmates outside of the classroom?	Frequently	6
	Seldom	0
	None	0
8. Does the institution have a written mission statement and stated goals?	Yes	2
	No	0
	Unknown	4
9. Does the education program have stated goals and objectives? If so, explain.	GED	2
	Outside preparation	0
	Vague	0
	Unknown	2
	Yes	2
	No	0

(Continued)

10.	Are courses open ended or closed ended. (Open ended means an inmate can enter a program at any time during the year.)	Standard answer:	Open ended
11.	What is the number on the waiting lists in conjunction with closed ended training?	Standard answer: No waiting list except for typing	
12.	Are drop-out vacancies filled with those on the waiting list?	Non applicable	
13.	What is the procedure for dropping out of an educational program?	Familiar	6
		Unfamiliar	0
14.	What happens to the individual after he has dropped out of the educational program? i.e. What type of job assignment does he get?	Desirable job assignments	0
		Undesirable job assignments	0
		Assignment unaffected	1
		Unknown	4
15.	What is the institution's call-out procedure?	Standard answer: Women may be called out of classes for various things.	
16.	What is the class attendance policy?	Standard answer: Mandatory	
17.	How do students enter the educational program?	Familiar	5
		Unfamiliar	1
18.	What criteria are applied to prohibit an inmate from entering the educational program?	Age	1
		*Personal situation	2
		Institutional needs	0
		None	2
		Unknown	1

*Personal situation was used to classify responses that dealt with physical and/or emotional problems.

(Continued)

19.	Are there devices or techniques being used in an attempt to motivate students in the program? Explain.	Yes No Unknown	3 3 0
20.	Are there movement restrictions for inmates within the institution?	Many Some None	0 1 4
21.	Is there an effort made to relate what goes on in the academic classroom to what goes on in the vocational classroom? How?	Yes Some None	0 1 4
22.	How often does the principal observe your class?	Twice per month or more	1
		None	0
		Principal takes care of that at night	1
23.	Does the principal encourage teachers to join professional organizations?	Yes No Unknown	1 3 2
24.	Is there a pre-release class offered on such topics as job search techniques, job interview techniques, consumer purchase education, and social skills?	Yes No Unknown	1 2 3
25.	Are adequate provisions made for inservice training of teachers?	Adequate Inadequate None	1 1 0

26.	Is this institution treatment or security oriented?	Security Treatment	2 4
27.	Are you familiar with the vocational education program?	Yes No Vaguely	3 1 1
28.	What types of instructional materials do you use?	Textbooks PI Workbooks Other	0 0 5 0
29.	Are these materials up to date?	Yes No	4 1
30.	What place do you feel programmed instruction has in your educational program?	Major Some part No part	2 1 2
31.	Is there money available to purchase training aids and supplies?	Yes No Unknown	2 1 2

Correctional Matrons

The following data were obtained from interviews held with three correctional matrons. They were the kitchen matron, second floor matron and basement matron. These questions were designed to gather data on knowledge and attitudes concerning the educational program.

Question		Response	Frequency
1.	Are you familiar with the educational programs?	Familiar Unfamiliar	1 2

(Continued)

2.	What programs in academic and vocational education are available to the inmates?	Aware Unaware	2 1
3.	How does an inmate enter an educational program?	Aware Unaware	2 1
4.	How many times per month does the warden visit your area?	One or more times per month Less than once per month	2 1
5.	Do you feel you have administrative support?	Strong Moderate Weak	3 0 0
6.	How often do you converse with inmates in other than an official capacity?	Frequently Seldom None	3 0 0
7.	What is the mission statement of the institution? What are the goals and objectives? (This item was used to determine if there was a stated mission statement, goals and objectives for the institution.	Known Unknown None	1 1 1
8.	What do you feel the role of the educational program is within the overall structure of the institution?	Important Unimportant Clear Vague	2 0 0 3
9.	What do you feel the role of the security officer is within the overall structure of the institution?	Important Unimportant Clear Vague	3 0 2 1

(Continued)

10.	How much time is allocated for discussion periods for institutional personnel to discuss inmate activities or progress?	Much	0
		None	1
		Staff Meetings	2
11.	How effective do you feel the educational programs are?	Effective	2
		Moderately effective	1
		Ineffective	0
12.	Do you feel this institution is more security or treatment oriented?	Treatment	1
		Security	0
		Balanced	2

Unstructured Interviews - Kentucky Correctional Institution for Women

The following statements were recorded during the unstructured interviews with the various staff members of the Kentucky Correctional Institution for Women. The statements are grouped by categories of staff personnel. The number of times each statement was made is indicated in the frequency column.

Administrators

Statement	Frequency
1. An incentive program is needed.	2
2. There is a need for a vocational program involving nurses' aide training.	1

(Continued)

3.	All training in this institution is geared toward the inmate leaving.	1
4.	There is a need for programs to upgrade the professional status of institutional staff.	1
5.	Incentive programs are not realistic in terms of life, therefore, would not be meaningful.	1
6.	Structured pre-release classes are needed.	1
7.	Inservice training and/or upgrade training of staff is not worth the time it takes.	1
8.	Sewing machines need to be replaced.	1
9.	Sewing, food preparation, and waitress training are taught sporadically.	1
10.	Often residents' self-image is lowered when they are placed in conventional schoolroom situations.	1
11.	There is a great deal of deparmental integrity - no one steps into the others' area.	1

Educational Personnel

1.	We have a definite problem finding materials related to adults on an elementary level.	3
2.	There is not a set goal for the educational program as a whole.	1
3.	Inmates are not allowed to write in their workbooks.	1
4.	There is a deficiency in funding for supplies and teaching materials.	1
5.	Many inmates need professional help and they do not get it here.	1

Inmate Group Interview
Kentucky Correctional Institution for Women

Approximately forty-five inmates voluntarily attended a group interview held in the library of the Kentucky Correctional Institution for Women. Inmate comments were recorded and are presented here in summary statement form.

1. The GED program is disliked because it is mandatory.
2. Punishment is too severe for not attending classes.
3. Individualized instruction is needed.
4. The staff is not dedicated to a treatment program - the only dedication is to the paycheck.
5. Study time is very limited due to the time required for institutional work.
6. Inmates would be more alert and interested if classes were held during the day.
7. Three types of programs are desired: upholstery, key punch training, and nurses training.
8. Broader reading materials are needed.
9. College extension and/or correspondence courses are desired.
10. Continued training following release would be helpful.
11. Instructors are needed who care about the program - not instructors who need to moonlight or who need a job because they are approaching retirement.
12. There is a lack of realistic understanding.
13. Vocational programs which are relevant and realistic are the greatest need within the institution.

Inmate Assignment Sheet - Kentucky Correctional Institution for Women.

A work list and class schedules were obtained from the Office of the Warden at the Kentucky Correctional Institution for Women. They were used to determine, as closely as possible, the number of man hours spent in the various inmate assignments. The warden indicated verbally that each inmate worked approximately four hours per day at her particular assignment. These data are presented in Table 21. Tables 19 and 20 show the day time schedule for each class.

Table 19

Number of Inmates and Time Spent in Daytime Academic Education Classes Per Day at the Kentucky Correctional Institution for Women

Class	No. in class	Hours/day	Man Hours
Health	6	.75	4.5
Philosophy	4	.75	3.0
Math I	10	.75	7.5
Math II	8	.75	6.0
Reading & English (10:30-11:15)	8	.75	6.0
Reading & English (2:30- 3:15)	7	.75	5.2
Total	43	4.50	32.2

Table 20

Number of Inmates and Time Spent in Daytime Vocational Education Classes Per Day at the Kentucky Correctional Institution for Women

Class	No. in class	Hours/day	Man Hours
Office Practice	8	.75	6.0
Shorthand	7	.75	5.2
Typing	8	.75	6.0
Office machines	10	.75	7.5
Business English	13	.75	9.7
Beginning Typing	7	.75	5.2
Total	53	4.50	36.9

Table 21

Number of Inmates Assigned and Amount of Time Allocated Per Day to Functional Areas at the Kentucky Correctional Institution for Women

Area Assigned	Asgd.	Hours	Man Hours
Administration			
Beauty Shop	3	4	12
Business Managers Aid	1	4	4
Library	2	4	8
Hospital	2	4	8
Typist	1	4	4
Total	9		36
Food Services			
Kitchen	10	4	40
Waitress	6	4	24
Canteen	1	4	4
Total	17		68
Maintenance & Janitorial			
Dorm A	3	4	12
Dorm B	3	4	12
Staff House	2	4	8
Back Basement	1	4	4
Offices and Halls	1	4	4
Front Offices and Hall	1	4	4
Hall and Steps	1	4	4
Total	12		48
Industries			
Tag Plant	6	4	24
Sewing Room	7	4	28
Laundry	18	4	72
Total	31		124
School			
Academic students	From Table 19		32.2
Vocational students	From Table 20		39.6
Teachers' Aids	3	4	12
Total	3		83.8
Other			
Odd Jobs	1	4	4
Recreation Room	1	4	4
2nd Floor Runner & Cellblock	2	4	8
Piano	1	4	4
Total	7		20
Grand Total	76		379.8

Summary Data Obtained from Inmate Records
at the Kentucky Correctional
Institution for Women

Data were obtained from thirty-four inmate records at the Kentucky Correctional Institution for Women. Some of the data could not be readily obtained from the inmate folders. This accounted for the difference in summary numbers for various questions. The following is a summary of this data:

Item	Classification	Frequency
1. What was the length of time inmates were incarcerated?		Mean = 9 months
2. Under what condition was the individual released?	Parole	22
	Expiration	12
3. How many inmates participated in vocational education programs?	None	
4. How many inmates participated in the academic program?	All	
5. Into what age category did the individual fall?	16-23	15
	24-31	7
	32-40	7
	41 above	5
6. What was the inmate's race?	Caucasian	22
	Negroid	12
	Other	0

(Continued)

7. What was the inmate's religious preference?	Protestant	24
	Catholic	5
	Other	0
	None	2
8. What was the inmate's marital status?	Married	10
	Divorced	8
	Separated	2
	Widowed	4
	Single	9
	Common law	1
9. How many children did the individual have?	None	36
	One	5
	Two	6
	Three	2
	Four	2
	Five	1
10. What initial achievement test(s) was administered to the inmate and what was the mean grade level measured?	Standford Achievement Test Insufficient data	
11. What grade level was the inmate placed for instruction?	Insufficient data	
12. Did the individual have prior military service? If so, what type of discharge did he receive?	Standard answer: None	
13. Did the individual enrolled in a vocational program complete the program?	None enrolled	
14. What was the mean length of time spent in the vocational programs?	Non applicable	
15. What grade level did the individual obtain while at the institution?	GED Insufficient data for other grade levels	3

(Continued)

16. How many times was the individual arrested?		Mean = 3.3
17. What was the individual's age at the time of the first arrest?	Insufficient data	
18. What was the individual's behavior record while at the institution? (Mostly a subjective estimation based on reports within inmate's folder.)	Excellent	7
	Good	12
	Fair	6
	Poor	5
19. Was the individual a parole violator?	Yes	6
	No	28
20. Was the individual a recidivist?	Yes	5
	No	29
21. How was employment obtained for the individual?	Government Employment agency	11
	Private Employment agency	0
22. Where was the individual employed after release?	Home town	2
	Other than home town	8
23. In what size city was the individual employed after release?	Less than 5,000	6
	Greater than 5,000	22
24. When released, how many individuals had the following in their possession?	Driver's lincense	1
	Social Security Card	29
	$25.00 or less	19
	More than $25.00	4
	Various test results	0

CHAPTER V

RECOMMENDATIONS

The following recommendations for the improvement of inmate education are based primarily on the results of the investigation presented in Chapter IV of this report. These recommendations are also based on investigator impressions acquired during the 284.5 man hours spent in the institutions during the data gathering portion of this study. Recommendations with accompanying discussions where applicable are presented to help improve the total educational experience and opportunities of inmates incarcerated at each of the correctional institutions studied.

Recommendations are grouped under the following broad classifications: Institutional and School Philosophy, Vocational Education Needs, Pre-vocational Education Needs, Communications, and Research. Recommendations apply to each of the three institutions studied unless specifically stated otherwise.

Institutional and School Philosophy

Recommendation 1: An institutional philosophy to include mission statement, goals, and objectives be formalized,

written, and distributed to all institutional personnel. An effort should be made to assure that all personnel are exposed to and understand the philosophy.

Recommendation 2: In each institution, specific educational goals and objectives be formalized, written, and distributed to all institutional personnel.

Discussion: It is the investigators opinion that an educational program must have stated goals and objectives before meaningful evaluation of the effectiveness of that program can be made.

Vocational Education Needs

Recommendation 3: A study be conducted to determine the most appropriate vocational education programs for the inmates of the Kentucky State Penitentiary, the Kentucky State Reformatory, and the Kentucky Correctional Institution for Women. This study should include the following areas:

A. Types of jobs in which released individuals may acquire gainful employment.

B. Vocational courses that are consistent with the length of incarceration of the inmate.

C. Vocational programs that are consistent with standard set for other state vocational education schools.

D. Courses that are preferred by the inmates.

Discussion: While there is information available about job opportunities through various local and state placement services, these may not apply to individuals who have been incarcerated. Therefore, a need exists to determine what types of employment are available for this population. Analysis of the existing job market requirements, both training requirements and personnel that will be employed, is needed.

The analysis of inmate records yielded a mean length of incarceration of thirty months at the Kentucky State Penitentiary, thirteen months at the Kentucky State Reformatory, and nine months at the Kentucky Correctional Institution for Women. However, because of the reorganization of the inmate population, these may not be valid estimates for future planning. Thus, additional study is needed to determine what courses can be offered that will be feasible as to time incarcerated. It is the investigators' opinion that inmates should be able to complete a vocational education program prior to release and that these programs meet standards set by the Bureau of Vocational Education.

Since the vocational education programs are voluntary, inmate preferences should be considered in determining the

vocational education program. Those courses that appear to be most desired and are consistent with the above discussion should be given greater emphasis.

Recommendation 4: A vocational education program be implemented at the Kentucky State Penitentiary and the Kentucky Correctional Institution for Women based on the study outlined in Recommendation 3 of this section.

Discussion: There was a strong indication from both staff personnel and inmates that a more extensive vocational education program be implemented at these respective institutions. The study discussed in Reco mendation 3 of this section could serve as a basis for such a program.

Recommendation 5: The vocational education program at the Kentucky State Reformatory be re-evaluated in light of the study outlined in Recommendation 3 of this section.

Recommendation 6: The testing programs be revised and/or expanded to include all incoming inmates as well as those entering educational programs. These test results be made available for use by those directly concerned with the inmate.

Discussion: Through interviews with the educational and case management personnel, a need was determined for a

revision and/or expansion of the testing programs. Further, these test results should be available for utilization by teacher, case worker, and other related personnel. In the review of inmate records, few test results were recorded and readily available. At best an insufficient battery of tests was being administered at each institution except at the Kentucky State Reformatory. Here more extensive testing was being done and an especially good testing program was being conducted for those students entering the vocational educational program.

It is the investigators' opinion that a standardized testing program be set up for all the institutions studied, and the test results be readily accessible for utilization. This matter was referred to Dr. Stephen Schnacke, a tests and measurement specialist and a member of the graduate faculty in Counselor Education at Western Kentucky University. His recommendations for a testing program are presented in Appendix G.

Pre-vocational Education Needs

Recommendation 7: The curriculum and scheduling be modified to include the following:

a. Elective courses offered on the basis of inmate interests.

b. Individualized instruction through the use of programmed materials designed for adult basic education.

c. Inmates be allowed to attend classes on an elective basis without being assigned full-time to school.

d. College courses offered on the basis of inmate interest to include extension and/or correspondence courses.

e. Addition of a teacher specialized in adult basic education to the faculty of each institution.

f. All inmates be given pre-release classes prior to release.

g. The educational program at the Kentucky Correctional Institution for Women be elective and scheduled during regular working hours.

Discussion: It is the opinion of the investigators that it is not in the best interest of the inmate to limit the curriculum to just those studies that directly aid in the passing of the GED examination. The addition of one or more elective courses, based on inmate requests, may stimulate inmate motivation and interests in the educational programs. This opinion is supported through teacher and inmate comments during informal interview sessions.

It is the opinion of the investigators that an individualized instruction program similar to that developed

by the Draper Project, Draper Correctional Center, Elmore, Alabama, be implemented in the institutions studied. This program makes use of individualized programmed instruction materials that allows the student to enter at his achievement level and progress at his own rate. Inmate as well as faculty teachers can be utilized in this program. Further, it would be especially appropriate for use in open-ended courses. Since we are aware that the student many times has failed in the traditional approach to academic classwork, programmed instruction offers him a different approach. This type of instruction may not be appropriate for the illiterate classes and may not be desirable for some of the elective classes.

Detailed information on the Draper program may be obtained by writing:

The Draper Educational & Development Project
The Rehabilitation Research Foundation
P.O. Box 1107
Elmore, Alabama 36025

This information should be studied and a similar program (one modified to meet institutional needs) be implemented at each of the institutions.

Information obtained in Chapter IV of this report indicated that pre-release classes of sufficient depth and adequacy were not being held for inmates prior to

release. It is the opinion of the investigators that a study group be formed of institutional and department officials to determine and construct an effective and applicable pre-release course of study. This course of study should contain such areas as:

1) Job search techniques
2) Interview procedures
3) Application form completion
4) Citizenship training
5) Consumer purchasing
6) Personnel budgeting
7) Teaching of various social skills

Once determined, this series of classes should be mandatory for those leaving an institution.

Recommendation 8: Incentive and motivation techniques be implemented to increase the number of students enrolled in the educational programs and to promote student achievement after enrollment. To be included are the following:

a. Incentive pay based on amount of work accomplished.

b. Consideration for better institutional assignments after completion of educational programs.

c. Consideration of educational accomplishment by the parole board.

d. Short-range goals such as an eighth grade diploma and/or a literacy diploma.

Discussion: It is the investigators opinion that a pay incentive system would promote inmate enrollment in educational programs and motivate them to greater achievement. The base pay for all inmates within the institutions was eight cents per day. Many of the inmates that worked in prison industries received a greater amount; some as much as twenty dollars per month and many receiving fifteen cents per day. Students enrolled in educational programs received the base pay. If the educational program is to be a major factor in the treatment program, more emphasis should be placed there. Inmates indicated that many students left the educational programs because they could make more money at some other assignment.

The idea of education as a privilege has not seemed to motivate inmates in the prison environment, probably because they have had little previous educational success and because they have not seen the value of education. If inmates were paid a small amount more than the base pay, to be determined by work accomplished, there may be more inmates wanting to enter school and their achievement may be greater once enrolled. This concept is also in accord with good work habits - i.e., If a person works hard and accomplishes something, he gets paid for it.

Pay could be based on the completion of a series of

programmed materials or on the successful completion of tests. Much work has been done in this area by the Draper Manpower Development Project, Elmore, Alabama. It is recommended that a similar type incentive system (revised to meet specific institutional needs) be initiated in each institution studied. Detailed information can be obtained by writing to the address previously mentioned under Recommendation 7.

Other possible areas to promote incentive for voluntary student participation are (1) consideration of those students who complete an education program for better institutional assignments, and (2) to have their educational endeavors considered by the parole board. For the former to be effective it must be demonstrated that completion of the GED or a vocational education program, does carry with it a desirable institutional assignment. This must be emphasized to the inmates by deeds as well as verbally.

The latter can be accomplished by placing an educational progress sheet in the inmate folder. This sheet should contain the type of educational program in which the inmate was enrolled, initial test results, periodic test results, grade levels achieved, vocational areas completed, behavior record, teacher comments, and other pertinent information concerning the inmate's total

educational experience. Parole board members would be able to assess inmate progress in educational programs and include this in their consideration for inmate parole. Inmates should be told that participation in educational programs would be considered in their parole review.

Short range goals were advocated by many administrators and teachers. Goals such as a third or fourth grade diploma as well as the GED certificate could increase incentive among inmate students. This may be found to be in line with inmate goals and average length of stay of inmates.

Recommendation 9: Library availability and material be expanded at the Kentucky State Penitentiary to include:

A. A minimum of one and a half hours per day for student use.

B. A minimum of five hours per day on weekends for student use.

C. An updating of material to be undertaken jointly by the librarians, teaching staff, principal, and inmates.

D. Availability of more "Black" material.

Discussion: These recommendations are made primarily for the Kentucky State Penitentiary since interviews indicated that there was a need in this area. However, educational personnel at each institution should review their library facility to determine if it can be more efficiently utilized

and to update library materials.

Recommendation 10: The following areas should be considered for improvement:

A. Additional counselors and/or counselor aides be acquired to allow more counseling services for inmates.

B. Encouragement of and provisions for continuing teacher preparation by inservice training and funded graduate study.

Discussion: Responses obtained during interviews with case workers revealed that each case worker at the Kentucky State Penitentiary had between 250 and 350 current inmate case responsibilities and the case workers at the Kentucky State Reformatory had a case load of between 150 and 250. It was indicated that a minor portion of their work day was spent in the actual counseling of inmates. Too much paper work and too large a case load were given as the primary reasons for not being able to effectively provide counseling services for inmates.

It is the recommendation of the investigators that the case load for each counselor be reduced to no more than 150 by the addition of more qualified case workers, and that a number of case worker aides be employed to minimise the amount of paper work required from case management personnel. Reference to the effectiveness of this system

may be found in a study by E. L. V. Shelley in the 1967 July-August issue of the American Journal of Correction.

Communications

Recommendation 11: Intra-school communications be improved at the Kentucky State Penitentiary and the Kentucky State Reformatory, by the following:

A. Effort on the part of teachers and the principal to arrive at a common agreement on teaching methods, goals and objectives for the educational programs, and a general educational philosophy.

B. Effort on the part of teachers and principal to appreciate the role each has in the educational program, and to consider and respect each member of the educational staff as a professional educator.

C. Regularly scheduled school staff meetings where student progress, particular problems, administrative information, opinions, and other necessary topics may be discussed.

Recommendation 12: Communication between vocational and pre-vocational schools be improved at the Kentucky State Reformatory by the following:

A. Effort on the part of both vocational and pre-vocational teachers to become aware of what each is doing in order to better prepare students entering the vocational programs.

B. Effort on the part of both vocational and pre-vocational education teachers to discuss the progress of inmates enrolled in both programs.

Recommendation 13: Inter-institutional communications be improved between all departments within each institution. The following are suggested as possible means:

A. Development of appreciation of each department for the others through knowledge gained by inservice meetings, informal discussion, visitations, and other measures that will provide interaction between staff.

B. One or more social events for institutional personnel and families during the year to be held away from the institution.

Discussion: It is human nature to distrust and not support that which one does not know about or does not understand. The findings of this study indicate a lack of understanding and knowledge of the educational programs by various departments of the institution. Since case workers, correctional officers, industry supervisors and other personnel of the institution come in contact with inmates daily, this would be a desirable source for the promotion of educational programs.

Research

Recommendation 14: A systematic research program be initiated in cooperation with an educational research office outside the Department of Corrections to provide audit and feedback information.

Discussion: It is the opinion of the investigators that a systematic and continuous evaluation program should be organized by an outside agency.

The evaluation would serve two purposes:

1) It would provide information about the progress being made toward attaining educational objectives for use by the Department and by the institution.

2) It would stimulate interest in the educational program.

The interview schedule utilized in this study (Appendix C), may serve as a basis for data collection in additional studies. Further, the educational data form suggested in Recommendation 8 may provide a useful source of information.

Recommendation 15: A follow-up study be conducted on released personnel from each correctional institution in Kentucky.

Discussion: A study designed to determine the effectiveness of the academic and vocational educational programs should be conducted for each institution in Kentucky. This study should also be conducted under contract, by a state university or outside agency to provide answers to questions such as:

1) Is there a higher recidivism rate of those inmates that do not participate in an educational program than those that do?

2) What types of employment do most released inmates obtain? What is the average pay? How long do they remain employed after release?

3) What are the most severe types of problems faced by the inmate during the first year after release? What types of educational programs best prepare the inmate for returning to society and facing these problems?

4) For what reasons do ex-inmates become recidivists?

5) How many inmates are employed in areas for which they were trained in the penitentiary or reformatory.

Answers to questions such as these could become a basis for the development of programs within the institution that would provide the inmate with the competencies to return to society as a useful and productive citizen.

APPENDIX A

IN-SERVICE TEACHER EDUCATION PROGRAM

for the

KENTUCKY DEPARTMENT OF CORRECTIONS

Kentucky State Reformatory, LaGrange, Kentucky
August 3 - 4, 1971

Designed Especially for:
Vocational Teachers and Academic Teachers
from
Selected Correctional Institutions

Conducted by:
College of Education
Western Kentucky University
Bowling Green, Kentucky

Project Funded by:
Bureau of Vocational Education
Department of Education
Frankfort, Kentucky

PERSONNEL

Department of Corrections

Mr. John C. Taylor, Commissioner
Mr. Edward Baker, Deputy Commissioner
Mr. Arthur Reynolds, Director of Educational and Special Services

Bureau of Vocational Education

Dr. Carl Lamar Assistant Superintendent for Vocational Education
Mr. Charles Wade, Associate Director of Program Planning
Mrs. Christine W. Wallace, Director, Special Vocational Education Programs

In-Service Program Faculty

Dr. Ronald Adams, Office of Educational Research, W.K.U.
Mrs. Nancy Carter, Former Director ABE Project, Kentucky State College
Dr. John McKee, Director, Rehabilitation Researh Foundation Draper Correctional Center Elmore, Alabama
Dr. Wallace Nave, Director, Office of Continuing Education, W.K.U.
Mr. Mark Newton, Graduate Research Assistant, W.K.U.
Dr. Steven B. Schnacke, Assistant Professor of Counselor Education
Mr. Jerry Shuck, Assistant Superintendent, Louisville Public Schools

IN-SERVICE TEACHER EDUCATION PROGRAM

Kentucky State Reformatory, LaGrange, Kentucky

August 3 - 4, 1971

Tuesday, August 3

8:30 a.m. - Registration

9:00 a.m. - Welcome, Introduction, Overview of Program: Mr. Reynolds and Dr. Nave

9:15 a.m. - Individually Prescribed Instruction in the Vocational and Academic Areas of Correctional Education: Dr. McKee

12 Noon - Lunch

1:00 p.m. - I.P.I. Continued

4:00 p.m. - Adjourn

Wednesday, August 4

8:30 a.m. - The Role of A Total Testing Program: Dr. Schnacke

9:45 a.m. - Break

10:00 a.m. - Teaching Methodology for Vocational Teachers: Mr. Shuck

10:00 a.m. - Teaching Methodology for Academic Teachers: Mrs. Carter

12 Noon - Lunch

1:00 p.m. - Overview of Research Project: Dr. Adams

1:30 p.m. - Group Discussions: Dr. Adams, Mrs. Carter, Dr. Nave, Mr. Newton, Dr. Schnacke, Mr. Shuck

2:45 p.m. - Group Summaries and Program Evaluation: Dr. Adams and Reporters

3:45 p.m. - Adjourn

APPENDIX B

Office of Educational Research
Western Kentucky University

Data Concerning Released Personnel of Kentucky Correctional Institutions.

1. At what institution was the individual incarcerated?

   a. Kentucky State Penitentiary (Eddyville)
   b. Kentucky State Reformatory (La Grange)
   c. Kentucky Correctional Institution for Women (Pewee Valley)

2. Under what condition was the individual released?

   a. Parole
   b. Serve-out

3. In what type(s) of vocational training program(s) was the individual involved, if any?

   a. Formal vocational training (formal classroom situation)
   b. On the job training (skill taught in conjunction with some form of production)
   c. Informal vocational training (not assigned to a program, but is working in some area as a job only)
   d. None

4. In what area(s) of vocational training was the individual involved, if any? (Eg. auto mechanics, welding, barbering, etc.)

   _____

   _____

5. Did the individual participate in an academic educational program? (Grade levels 1-12)

   a. Yes
   b. No

6. Into what age category did the individual fall?

   a. 16-23
   b. 24-31
   c. 32-40
   d. 40-above

7. What was the individual's race?

   a. Caucasian
   b. Negroid
   c. Oriental
   d. Other

8. What was the religious preference of the individual?

   a. Protestant
   b. Catholic
   c. Other
   d. None

9. Was the individual's father living?

   a. Yes
   b. No
   c. Unknown to the individual

10. Was the individual's mother living?

   a. Yes
   b. No
   c. Unknown to the individual

11. What was the marital status of the individual's parents?

   a. Divorced
   b. Separated
   c. Widowed
   d. Other

12. What was the father's occupation?_____
_____

13. What was the mother's occupation?_____
_____

14. How many siblings did the individual have?_____

15. What was the individual's marital status?

   a. Married
   b. Divorced
   c. Separated
   d. Widowed
   e. Single
   f. Common law

16. Had the individual been married more than once?

    a. Yes
    b. No

17. How many children did the individual have?_____

18. What initial achievement tests were administered to the individual and what were the results of these tests in terms of grade level? (Submit additional sheet if necessary)

    Achievement Test(s) Total_____(grade level)
    Sub groups_____(grade level)
    _____
    _____
    _____

19. At what grade level was the individual placed for instruction purposes?_____

20. What test(s) was used to determine the individual's IQ and what were the results? (Submit additional sheet if necessary)

21. What preference and/or aptitude tests were administered? (Submit additional sheet if necessary)

22. What other preliminary tests were given and what were the results? (Submit additional sheet if necessary)

23. Did the individual have prior military service? If so, what type of discharge did he receive?

    a. No military service
    b. Honorable
    c. Dishonorable
    d. Hardship
    e. Medical
    f. Other

24. Did the individual complete a vocational education program?

    a. Yes
    b. No

25. What was the approximate length of time (in months) spent in the program?

    a. _____Months
    b. None

26. What was the approximate length of time spent in an academic education program?

    a. _____Months
    b. None

27. Was the individual administered an achievement test prior to release? If so, what were the results? (submit additional sheet if necessary)

    Total_____(grade level)
    Sub groups_____(grade level)
    _____
    _____
    _____

28. What grade level did the individual attain while at the institution?

    a. Received GED
    b. Achieved _____grade level
    c. None

29. How many times was the individual arrested? _____

30. What was the individual's age at the time of his first arrest? _____

31. For what offense(s) was the individual incarcerated? _____
_____

32 What was the individual's behavior record while at the institution?

a. Excellent
b. Good
c. Fair
d. Poor

33. Was the individual a parole violator?

a. Yes
b. No

34. Was the individual a recidivist?

a. Yes
b. No

35. What type of employment did the individual obtain after release?

_____

_____

36. How was employment obtained for the individual?

a. Government employment agency
b. Private employment agency
c. Family
d. Friends
e. Other (explain)

37. Where was the individual employed?

a. Home town
b. Other than home town

38. In what size city was the individual employed?

a. Less than 5,000
b. Greater than 5,000

39. When released, did the individual have the following in his possession?

a. Driver's license
b. Social Security Card
c. $25.00 or less
d. More than $25.00
e. Various test results

Office of Educational Research
Western Kentucky University

Revised Data Sheet Concerning Released Inmates
of Kentucky Correctional
Institutes

1. What was the length of time inmates were incarcerated?

_____

2. Under what condition was the individual released?

   A. Parole
   B. Expiration

3. How many inmates participated in vocational education programs? _____

_____

4. How many inmates participated in the academic program?

_____

5. Into what age category did the individual fall?

   A. 16-23
   B. 24-31
   C. 32-40
   D. 41 above

6. What was the inmate's race?

   A. Caucasian
   B. Negroid
   C. Other

7. What was the inmate's religious preference?

   A. Protestant
   B. Catholic
   C. Other
   D. None

8. What was the inmate's marital status?

   A. Married
   B. Divorced
   C. Separated
   D. Single

9. How many children did the individual have?

_____

10. What initial achievement test(s) was administered to the inmate and what was the mean grad level measured?

_____

11. What grade level was the inmate placed for instruction?

_____

12. What type of discharge, if any, did the individual have from military service?

A. No military service
B. Honorable
C. Dishonorable
D. Other

13. Did the individual enrolled in a vocation program complete the program?

A. Yes
B. No

14. What was the mean length of time spend in the vocational programs?

_____

15. What grade level did the individual achieve while at the institution?

_____

16. How many times was the individual arrested?

_____

17. What was the individual's age at the time of the first arrest?

_____

18. What was the individual's behavior record while at the institution?

A. Excellent
B. Good
C. Fair
D. Poor

19. Was the individual a parole violator?

A. Yes
B. No

20. Was the individual a recidivist?

A. Yes
B. No

21. How was employment obtained for the individual?

A. Government agency
B. Private agency
C. Family
D. Friends
E. Other

22. Where was the individual employed after release?

A. Home town
B. Other than home town

23. In what size city was the individual employed after release?

A. Greater than 5,000
B. Less than 5,000

24. When released, how many individuals had the following in his possession?

A. Driver's license
B. Social Security Number
C. $25.00 or less
D. More than $25.00
E. Various test results

APPENDIX C

Interview Schedule for Prison Administrators

Title:_____

1. How do inmates enter an educational program?

   a. Academic

   b. Vocational

   c. Industrial

2. What is the role of the educational programs in the total framework of the institution?

3. Is there a written mission statement and/or goals and objectives for this institution?

4. How many times do you visit the educational programs per month?

   a. Academic

   b. Vocational

5. Are there predetermined educational goals for inmates? (Ex. If an inmate is illiterate is there a goal, such as, reading at 3rd grade level? or being able to perform certain vocational skills?)

6. Are pre-release classes taught on such topics as: job-search techniques, consumer-purchase education, social skills?

7. Is there a plan for inservice or upgrade training for personnel in academic and vocational education? Other areas?

8. Is there an incentive system for inmates to enroll and progress in educational programs? Explain?

9. Is there a plan for inter-departmental communications for discussion of inmate activities?

10. What restrictions are there to inmate movement?

Interview Schedule for Academic and Formal Vocational Education Teachers

Area: Academic, Vocational

General Questions:

1. How many hours do you spend in an actual teaching situation per day?_____

2. What is your average class size?_____

3. How are the students scheduled for instruction?

   a. Blocks of time
   b. Scheduled classes
   c. Blocked/flexible

4. How many visits does the warden make to your class per month?
   _____

5. Where within the institution does the warden visit most often?
   _____

6. To what degree do you feel your program is getting administrative support?

   a. Strong
   b. Moderate
   c. Weak

7. How much do you converse with inmates outside of the classroom?

   a. Frequently
   b. Seldom
   c. None

8. Does the institution have a written mission statement and stated goals? If so, explain.

9. Does the education program have stated goals and objectives? If so, explain.

10. Are courses open ended or closed ended? (Eg. Can an inmate begin a program at any time?)

    a. Courses are open ended.
    b. Courses are closed ended.

*11. What is the number on the waiting lists in conjunction with closed ended training?_____

*12. Are drop-out vacancies filled with those on the waiting list?

13. What is the procedure for dropping out of the program?

*14. What happens to the individual after he has dropped the course?
_____
_____
_____
_____

15. What is the institution's call-out procedure?

    a. Can men go on sick call during training?_____
    b. Can men receive visitors during training?_____
    _____
    _____

16. What is the class attendance policy?_____
_____
_____

17. How do students enter the educational program?_____
_____
_____

18. What criterion is applied to prohibit an inmate from entering the education program? _____
_____
_____

19. Are there devices or techniques being used in an attempt to motivate students in the program? Explain._____
_____
_____

20. Are inmates restricted in movement? (Eg. do they have to have a pass or be accompanied by guards to go to the library or classrooms, etc)

21. Is there an effort made to relate what goes on in the academic classroom to what goes on in the vocational classroom? How?

22. How often does the principal observe your class?

23. Does the principal encourage teachers to join professional organizations? How? Which ones?

24. Is there a pre-release class offered on such topics as, job search techniques, job interview techniques, consumer purchase education, and social skills?

*25. What provisions are made for upgrading the training of teachers?

Specific Academic Education Questions

26. Are you familiar with the vocational educational programs?

27. What type of instructional materials are used?

    a. Text books
    b. Programed Instruction
    c. Work books
    d. Other- explain

28. Are these materials up to date?

    a. Yes
    b. No

29. What place do you feel programmed instruction has in your educational program?

_____

_____

30. Is there money available to purchase training aids and supplies?

    a. Yes
    b. No

Specific Formal Vocational Questions

31. Are you familiar with the academic educational program?

_____

_____

32. What is the status of your equipment?

    a. Antiquated
    b. Functional

33. Is there money available to buy new equipment and materials?

    a. Yes
    b. No

34. What tools are considered "hot tools"? (Eg. W hat tools are the students forbidden to use?)_____

_____

_____

_____

35. What are the requirements for the completion of your program?

_____

36. Approximately how many students complete your program per year?_____

37. Is there a basic academic level that an inmate must attain before being admitted to your program?_____

_____

---

38. Do you feel this institution is treatment or security oriented?

_____

_____

_____

Interview Schedule for Case Workers

1. Are you familiar with the academic and vocational education programs?

2. What programs are available to inmates in academic and vocational education?

3. How does an inmate enter an educational program?

4. How many times per month does the warden visit your section?

5. How many hours per day do you spend in actual inmate counseling?

6. Do you feel your program receives administrative support?

7. How many inmates are you responsible for counseling?

8. Outside of the counseling situation, how often do you converse with inmates.

   a. Frequently

   b. Seldom

   c. Never

9. What is the mission statement of the institution? Goals and objectives?

10. What is the mission statement of the case management section?

11. What do you feel the role of the educational programs are in the total institutional program?

12. What do you feel the role of the Case Management Section is in the total institutional program.

13. How much time is allocated for inmate progress discussions between educational personnel and case management personnel?

14. How effective do you feel the education programs are?

Interview Schedule for Custodial Officers

Rank:_____

1. Are you familiar with the educational programs?

   a. Academic

   b. Vocational

2. What programs in academic and vocational education are available to the inmates?

3. How does an inmate enter an educational program?

4. How many times per month does the warden visit your area?

*5. Do you feel you have administrative support?

6. How often do you converse with inmates in other than an official capacity?

7. What is the mission statement of the institution? What are the goals and objectives?

8. What do you feel the role of the educational program is within the overall structure of the institution?

9. What do you feel is the role of the custodial personnel in the overall structure of the institution?

*10. How much time is allocated for discussion periods for institutional personnel to discuss inmate activities?

11. How effective do you feel the educational programs are?

Interview Schedule for Prison Industry Staff

Position: _____

1. Do you give any type of instruction during the day? If so, what kind and for how long? _____
_____
_____
_____

2. Approximately how many inmates do you supervise per day?
_____

3. Are you familiar with the vocational education program? The academic education program?

   a. Aware a. Aware

   b. Unaware b. Unaware

4. How many visits does the warden make to your section per month?
_____

5. Where, within the institution does the warden visit most often?
_____
_____

6. To what degree do you feel your program is getting administrative support?

   a. Strong

   b. Moderate

   c. Weak

7. How often do you converse with inmates outside of your area?

   a. Frequently

   b. Seldom

   c. None

8. What is the attendance policy in your section? _____

9. How are personnel assigned to your program? _____

10. Are there prohibitory factors for personnel entering your program? If so, what are they? _____

11. Are inmates in your program allowed to attend academic or formal vocational education programs?

    a. Yes

    b. No

12. What tools are considered "hot tools" in your program? _____

13. Are there set levels of vocational or academic achievement required before inmates can enter your program? If so, what are they? _____

14. Is there a specific length of assignment for various industry assignments or duties? _____

15. Do the job assignments in your program require prior training? If so, is this training related to the institutions vocational education program? _____

16. Do you feel your program is effective in training inmates for related job skills on the outside? If so, how? _____

APPENDIX D

J. W. WINGO, Warden

KENTUCKY STATE PENITENTIARY

W. G. HERNDON, Supt.

ADM. BLDG.	QUOTA	ASGD.
Canteen	2	2-5:30 A.M.-4:00 P.M.
Janitors	4	4-6:30 A.M.-4:30 P.M.
Barbers	2	2-6:00 A.M.-4:30 P.M.
Runners	6	6-7:00 A.M.-10:30 A.M. 11:30 A.M.-3:00 P.M.
Leather Stand	1	1-7:00 A.M.-10:30 A.M. 11:30 A.M.-4:00 P.M.
Comm. Off.	3	3-7:30 A.M.-10:30 A.M. 11:30 A.M.-4:00 P.M.
Ath. Dept.	21	21-7:30 A.M.-10:30 A.M. 12:00 P.M.-2:30 P.M.
Chapel	7	7-7:30 A.M.-10:30 A.M. 12:00 P.M.-2:30 P.M.
Clothing House	3	3-7:30 A.M.-10:15 A.M. 12:00 P.M.-2:30 P.M.
Commissary	3	3-7:00 A.M.-11:00 A.M. 12:00 P.M.-3:00 P.M.
Construction	10	10-7:00 A.M.-10:00 A.M. 12:00 P.M.-3:00 P.M.
Culinary Inm. Din. Room	84	84-4:00 A.M.-11:00 A.M. 6:00 A.M.- 3:00 P.M. 10:00 A.M.-6:00 P.M.
Off. Din. Room	8	8-4:30 A.M.-12:30 P.M.

INMATES	QUOTA	ASGND.
Front Lawn	8	8-6:00 A.M.-10:30 A.M. 12:00 P.M.-4:00 P.M.
Hospital Staff Patients	16	16-2:30 P.M.-11:00 P.M. 12-11:00 - 7:00
House Boys	7	7-5:30 A.M.- 8:00 P.M.
Indistries Furn. Plant	42	42-7:30 A.M.-11:00 A.M. 12:00 P.M.-3:00 P.M.
Garment Factory	89	89-7:30 A.M.-11:00 A.M. 12:00 P.M.-3:00 P.M.
IBM Pool	30	30-7:30 A.M.-11:00 A.M. 12:00 P.M.-3:00 P.M.
Laundry	24	24-7:00 A.M.-10:30 A.M. 12:00 P.M.-3:00 P.M.
Dry Cleaners	3	3-7:00 A.M.-10:30 A.M. 12:00 P.M.-3:00 P.M.
Leather Shop	17	17-7:00 A.M.-11:00 A.M. 12:00 P.M.-3:00 P.M.
Receiver	3	3-7:30 A.M.-10:30 A.M. 12:00 P.M.-3:00 P.M.
Wagon Gate	5	5-7:00 A.M.-10:30 A.M. 12:00 P.M.-3:00 P.M.
Yard	96	96-7:30 A.M.-10:30 A.M. 12:00 P.M.-2:30 P.M.

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Education	QUOTA	ASGD.
Academic	90	90-8:00 A.M.-11:00 A.M. 12:00 P.M.-2:30 P.M.
Staff	8	8-8:00 A.M.-11:00 A.M. 12:00 P.M.-2:30 P.M.
Pupils	82	82-8:00 A.M.-11:00 A.M. 12:00 P.M.-2:30 P.M.
Vocational	60	60-7:00 A.M.-11:00 A.M. 12:00 P.M.-2:30 P.M.
Staff	3	3
Barber Shop	8	8
Cabinet Shop	12	12
News Office	2	2
Shoe Shop	4	4
Sign Shop	1	1
TV Radio	3	3
Drafting Class	9	9
Engr. Dept. Out	14	14-7:00 A.M.-11:00 A.M. 12:00 P.M.-2:30 P.M.
In	58	58-7:00 A.M.-11:00 A.M.
Farm No. 1		
Regular	35	35-7:00 A.M.-11:00 A.M. 12:00 P.M.-2:30 P.M.
O.K.	35	35- " "
Dairy	11	11-7:00 A.M.-11:00 A.M. 12:00 P.M.-2:30 P.M.
Dormitory	17	17- " "
Farm No. 2	8	8- " "
Yard Boys	6	6-5:30 A.M.- 8:00 P.M.

TRANSFER SHEET DATE

POPULATION
White
Colored

	QUOTA	ASGD.
1 CELL HOUSE	195	
Walk Boys	7	7-7:30 A.M.-10:30 A.M. 12:00 P.M.-2:30 P.M.
2 CELL HOUSE	162	
Walk Boys	8	8- " "
3 CELL HOUSE	172	
Walk Boys	8	8- " "
4 CELL HOUSE	222	
Walk Boys	15	15- " "
5 CELL HOUSE	563	
Walk Boys	25	25- " "
24 Hour O.K.'s		
Hospital		
Dormitory	106	106

NUMBER OF CELLS

1 CH	39	Singles	78	Doubles
2 CH	48	"	57	"
3 CH	172	"		
4 CH	28	"	97	"
5 CH	563	"		

Death Row	17	17
High Number	27902	27902
Isolation	3	3
Quarantine	10	10
Safekeeping	3	3
Segregation	81	81
Trips	13	13
Court	12	12
Hospital	1	1

PEAK OF POPULATION OCTOBER 27, 1939 - 1,569

[illegible]		
[illegible]		
Bus [illegible]		
[illegible]		
Commissary	[illegible]	[illegible]
Culinary		
Engineer	[illegible]	[illegible]
Farm No. 1	[illegible]	[illegible]
Farm No. 2		[illegible]
CLERK		[illegible]
CUSTODY		
Captains		
Lieutenant	[illegible]	
Officers	[illegible]	[illegible]
INDUSTRIES		[illegible]
PAROLE		
TREATMENT	[illegible]	
Ath. Dept.	[illegible]	[illegible]
Chapel	2	2
Clin. Ser.	[illegible]	[illegible]
Education	[illegible]	[illegible]
Hospital	7	7
Mail	4	4
Records Off.	[illegible]	[illegible]
		[illegible]

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APPENDIX E

KENTUCKY STATE REFORMATORY

DETAIL ASSIGNMENTS Date 4/19/71

ENGINEERING IN	Assigned
No. 1 Carpenters	13
Glaziers	6
Ice House	
General	
Welders	5
No. 2 Tool Room	13
No. 3 Electricians	11
No. 4 Painters	10
No. 5 Plumbers	23
Steamfitters	6
Boiler House - Days (1)	2
Boiler House - Eve (2)	2
Boiler House - Morn (3)	4
GENERAL IN	
Athletics	30
Barbers	17
Clothing House	36
Food Service	145
Dining Room A. M.	40
Dining Room P. M.	38
Hospital Aides - Days (1)	29
Hospital Aides - Eve (2)	2
Hospital Aides - Morn (3)	2
Janitor Service 1	16
Janitor Service 2	6
Janitor Service 3	14
Janitor Service 4	25
Janitor Service 5	16
Janitor Service 6	15
Janitor Service 7	29
Janitor Service 8	7
Janitor Service 9	17
Laundry	70
Yard Detail A.M.	46
Yard Detail P.M.	48
EDUCATION — ACADEMIC	
Aides	60
School Full Time	52
School A.M.	85
School P.M.	86
EDUCATIONAL — VOCATIONAL	
Auto Body	15
Auto Mech.	14
Building Trades	15
Business Machine	14
Dental Clinic	8
Drafting	9
Residential Electricity	
Upholstery	
Meat Cutting	14
Printing	11
Radio and T.V.	9
Small Engine Repair	8
Welding	14
SPECIAL IN	
Admin. Bldg. Jan.	6
Canteen (inmate)	4
Chapel	1
Classification Office	3
Count Desk	4
Elevator Operators	7
Janitor 2nd Floor	2
Personnel Services (Staff)	9
Stockade Gate	1
Records	6
Sanitation	9
Tower Janitors	4

ENGINEERING OUT	Assigned
No. 7 Carpenters	2
Constr. No. 1	9
No. 8 Constr. No. 2	9
No. 9 Disposal Plant	1
Water Plant	1
No. 10 Electricians	6
No. 11 Motor Pool	21
No. 12 Plumbers	4
AGRICULTURE	
Farm No. 1	2
Farm No. 2	11
Farm No. 3	11
Farm No. 4	13
Farm No. 5	12
Farm No. 6	10
Farm No. 7	10
Farm No. 8	12
Cannery	23
Cattle	8
Chickens	1
Dairy	17
Greenhouse	11
Hogs	12
Maintenance	9
Service	5
Tractor Drivers	10
INDUSTRIES	
Accounting	3
Clerk - Supt.	1
Clothing Plant	42
Metal Plant	113
Soap Plant	19
SPECIAL OUT	
Central State	6
Fire House	5
Front Office Janitors	8
Frankfort	38
House Men	11
K C I W	5
KSR Min OK	12
Landscape	8
Mansion	12
Pineville	38
Railroad Gate	
Training Office	1
Utility Detail	4
RESTRICTED	
Cell Block No. 1	32
Cell Block No. 2	25
Cell Block No. 3	17
Cell Block No. 4	22
Cell Block No. 5	17
Cell Block No. 6	16
Reception Unit No. 1	41
Reception Unit No. 2	33
Geriatrics	50
T. B. Ward	6
Hospital Patients	20
SPECIAL	
INDUST. CONST.	25

APPENDIX F

DAYTIME SCHEDULE

Mrs. Palmer

Health	8:30 - 9:15
Math I	9:30 - 10:15
Reading & English	10:30 - 11:15
	Noon
Philosophy	12:30 - 1:15
Math II	1:30 - 2:15
Reading & English	2:30 - 3:15
Recreation	3:30 - 4:00

Mrs. Cannon & Mrs. Robertson — Ceramics — 10:00

1. Georgie Hampton
2. Gertrude Parks
3. Mary Lou Flannery
4. Daisy Creech
5. Faye Lambert
6. June Queen
7. Brenda Shelton
8. Mary Jane Elkins
9. Elsie Martin
10. Susan Searcy
11. Susan Doran

One Day a Week

Health 8:30 - 9:15

1. Agnes Barnes
2. Sadie Pearson
3. Susan Searcy
4. Pat Smith
5. Joyce Spratt
6. Mary Woods

Philosophy 12:30 - 1:15

1. Carol Cross
2. Bonnie Jones
3. Sheila Langford
4. Netra Hume

Math I 9:30 - 10:15

1. Mattie Ray
2. Pat Smith
3. Debbie Jones
4. Lucille Hogan
5. Lee Blakely
6. Joyce Spratt
7. Linda Jolly
8. Frances Mason
9. Geneive Parker
10. Cecil Philips

Math II 1:30 - 2:15

1. Maggie Loveland
2. Mary Woods
3. Pat Jones
4. Bonnie Jones
5. Anna Outlaw
6. Jenny Baker
7. Marlene Williams
8. Shirley Crawford

Reading & English 10:30 - 11:15

1. Agnes Barnes
2. Virginia Perkins
3. Anna Outlaw
4. Joyce Spratt
5. Geneive Parker
6. Pat Smith
7. Cecil Philips
8. Frances Mason

Reading & English 2:30 - 3:15

1. Clara Burford
2. Lucille Hogan
3. Maggie Loveland
4. Wanda Perry
5. Lee Blakely
6. Jenny Baker
7. Scottie Stamper

DAYTIME SCHEDULE

Miss Nancy Terhune

B.O.E. 8:30 - 9:15 — Office Practice

1. Brenda Shelton
2. Jeanne Groves
3. Gertrude Parks
4. Elizabeth Yocum (Bookkeeping)
5. Nancy Whalin
6. Barbara J. Smith
7. Netra Hume
8. Patsy Dennison

Shorthand 9:30 - 10:15

1. Brenda Shelton
2. Jeanne Groves
3. Gertrude Parks
4. Mary Yocum
5. Nancy Whalin
6. Barbara J. Smith
7. Netra Hume

Typing 10:30 - 11:15

1. Brenda Shelton
2. Jeanne Groves
3. Barbara Mucker
4. Nancy Whalin
5. Barbara J. Smith
6. Netra Hume
7. Marlene Williams
8. Carol Cross

Office Machines 12:30 - 1:15

1. Brenda Shelton (2:30 - 3:15)
2. Susan Searcy
3. Gertrude Parks (10:30 - 11:15)
4. Janis Baird (10:30 - 11:00)
5. Nancy Whalin
6. Barbara J. Smith
7. Barbara Mucker
8. Marlene Williams
9. Patsy Dennison
10. Jeanne Groves (2:30 - 3:15)

Business English 1:30 - 2:15

1. Brenda Shelton
2. Jeanne Groves
3. Susan Searcy
4. Gertrude Parks
5. Janis Baird
6. Georgia Hampton
7. Susan Doran
8. Mary Yocum
9. Nancy Whalin
0. Barbara J. Smith
1. Carol Ann Cross
2. Barbara Mucker
3. Patsy Dennison

Beginning Typing 2:30 - 3:15

1. Susan Searcy
2. Janis Baird
3. Georgia Hampton
4. Susan Doran
5. Bonnie Jones
6. Robbie Watson
7. Patsy Dennison

DAYTIME SCHEDULE

Miss Coleman

Food Preparation	9:00 - 9:30
Waitress Training	9:30 - 10:30
Sewing	12:30 - 1:30
Sewing	2:30 - 3:30

Food Preparation 9:00 - 9:30

1. Chalondias Brewer
2. Georgia Hampton
3. Susan Doran
4. Dorothy Brewer
5. Tina Smith
6. Dorothy Chapman
7. Debbie Jones
8. Jeanne Boyd
9. Barbara Smoot

Waitress Training 9:30 - 10:00

1. Janis Baird
2. Pat Jones
3. Kay Lewis
4. Charlene Morris
5. Lynn Smith

Sewing 12:30 - 1:30

1. Tina Smith
2. Penny Jennings
3. Dorothy Brewer
4. Barbara Smoot
5. Judy Lewis
6. Pepper Adams
7. Robbie Watson

Sewing 2:30 - 3:30

1. Linda Jolly
2. Sadie Pearson
3. Joyce Spratt
4. Nancy Whalin
5. Willie Mae Cook
6. Sheila Langford
7. Pat Jones

WORK LIST - FEBRUARY 15, 1971

KITCHEN
1. Chalondias Brewer
2. Georgia Hampton
3. Susan Doran
4. Dorothy Brewer
5. Tina Smith
6. Dorothy Chapman
7. Debbie Jones
8. Jeannie Boyd
9. Barbara Smoot
10. Marlene Baker

WAITRESS
1. Janis Baird
2. Pat Jones
3. Kay Lewis
4. Barbara Rogers
5. Charlene Morris
6. Lynn Smith

DORM A
1. Susan Searcy
2. Joyce Spratt
3. Cecil Phillips

DORM B
1. Frances Mason
2. Genevieve Parker
3. Robbie Watson

STAFF HOUSE
1. Mary Woods
2. Daisy Creech

LIBRARY
1. Marlene Williams
2. Lee Blakly

CANTEEN
1. Mary Lou Flannery

HOSPITAL
1. Dorothy Graston
2. Willie Cook

BACK BASEMENT
1. Elsie Martin

TYPIST
1. Gertrude Parks

ODD JOBS
1. Linda Bowman

OFFICES & HALLS
1. Lucille Hogan

FRONT OFFICES & HALL
1. Juanita Bunton

RECREATION ROOM
1. Mattie Ray

BEAUTY SHOP
1. Pepper Adams
2. Margie Johnson
3. Barbara Mucker

LAUNDRY
1. June Queen
2. Penny Jennings
3. Mildred Covington
4. Faye Lambert
5. Darnell Stubblefield
6. Fannie Brown
7. Anna Outlaw
8. Sheila Langford
9. Sally Bunch
10. Pat Smith
11. Pat Moore
12. Jeannette Crutcher
13. Barbara Smith
14. Brenda Shelton
15. Netra Hume
16. Shirley Wilbanks
17. Betty Parker
18. Virginia Perkins

TAG PLANT
1. Nolena Knight
2. Clara Burford
3. Louise Flatt
4. Mary Jane Elkins
5. Agnes Barnes
6. Wanda Perry

SEWING ROOM
1. Bernice Moore
2. Juanita Pennington
3. Bonnie Jones
4. Sadie Pearson
5. Linda Jolly
6. Martha Johnson
7. Scottie Stamper

2nd FLOOR RUNNER & CELLBLOCK
1. Imogene Levinson
2. Blanche Grimes

TEACHER'S AIDS
1. Coleman - Carol Cross
2. Palmer - Kay Whaline
3. Trehune - Gloria Groves

BUSINESS MANAGER'S AID
1. Elizabeth Yochum

ENTRANCE - INSIDE & OUTSIDE
1. Maggie Loveland

PIANO
1. Patsy Dennison

HALL & STEPS
1. Helen House

NO JOB
1. Shirley Crawford
2. Mary Baker

APPENDIX G

WESTERN KENTUCKY UNIVERSITY

BOWLING GREEN KENTUCKY

t of Counselor Education

May 28, 1971

MEMORANDUM

TO: Dr. Ron Adams

FROM: Dr. Stephen Schnacke

RE: A Standardized Testing Program for State Prisons

After a very enlightening discussion with you and Mark Newton, I am in full agreement regarding the need for updating the testing programs in the three State Prisons with which you are working. Consequently, I offer the following recommendations concerning the testing programs at these Prisons:

1. Each institution employ one person, or reassign an existing employee, to be responsible for the overall testing program. This individual should possess a Masters Degree in the behavioral sciences (i.e., psychology or counseling). This staff member would be primarily responsible for securing test data on all inmates when they enter the institution. Further, this individual would be expected to coordinate the charting and filing of test data on each inmate, as well as coordinating the communication of information to those persons directly concerned with the particular inmate.

2. The institution employ or have available a consultant in psychology. This individual should possess advanced training and experience in psychology (masters and/or doctorate). The primary responsibility of this staff person would be to administer individual psychological tests to those inmates identified as having special problems during an initial screening battery. In addition, the psychologist should be available for consultation on routine staffings when requested.

3. An institutional form should be developed which would contain the results of testing performed on each inmate. This form may well contain other data of a relevant psychological and educational nature.

4. It is of paramount importance that the communication of test data and coordination of planning be instituted for each inmate. To facilitate this, it is recommended that a periodic staff conference procedure be established for each inmate. These conferences would include all prison staff involved with the particular inmate and represent all professional disciplines.

Regarding Specific Recommendations for Testing

1. Each inmate should receive a brief psycho-educational screening battery within 30-60 days upon entry into the institution. This battery should include:

   a. A brief achievement test.
   b. A non-verbal (performance-based) estimate of intelligence.
   c. A verbal estimate of intelligence.
   d. An assessment of vocational interest.
   e. Consideration should be given to some form of brief personality screening.

   Specifically, the following battery for screening is recommended:

Test	Approximate Time
1. Wide-Range Achievement test (all sections)	30 min.
2. Revised Beta Examination	30 min.
3. Peabody Picture Vocabulary test	15 min.
4. Kuder Preference Record (Vocational form CH)	45 min.
5. Rotter Incomplete Sentence Blank	30 min.

   All of these tests are readily available and easily administered and scored. The data, while "rough," will nevertheless provide a basis for program planning. In addition, the information from these tests may well identify those inmates which would require further testing. All of the above-mentioned tests, with the exception of the Peabody and the reading section of the Wide Range Achievement test may be group administered.

2. Those students who are being considered for the educational programs should receive a more comprehensive battery of the tests prior to and during their matriculating in the educational program.

   Based upon the grade placement scores obtained on the Wide Range Achievement test, a total California Achievement Test Battery should be administered. The California Achievement test is recommended for several reasons:

   a. This test has numerous parallel forms which will facilitate re-testing (i.e., forms W, X, Y, Z).
   b. The test may be analyzed from a diagnostic point of view. The data from the test can then be used to determine the starting point for each inmate-student in an individualized educational program.
   c. The California norms, while not specifically reflecting the type of prison climate found in Kentucky, will nevertheless

provide an adequate comparison of the general population. It is strongly recommended that correctional institution norms be developed for predictive purposes.

d. The California Battery is relatively inexpensive, well established as a valid and reliable instrument, and it may be machine or hand scored.

Retesting of students in the basic educational areas is recommended. Depending upon the length of time an inmate is in the educational program, repeated testing with all or part of the California Achievement Tests can be accomplished. However, a minimum period of 90 days for any retesting is desirable.

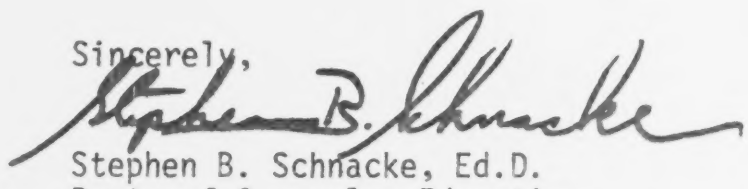
3. Aptitude testing of students in the pre-vocational and vocational programs can be performed through a variety of instruments. The following are recommended:

   a. General Aptitude Test Battery (GATB) for all inmates. This test may be useful and provide data which will be most meaningful.
   b. For inmates who are already high school graduates and possess potential for high level positions upon exit from the prison the Differential Aptitute Tests may be useful.
   c. Specific aptitude tests, useful for various purposes might include:

      1. Minnesota Clerical Test
      2. Bennett Mechanical Comprehension Test
      3. Crawford Small Parts Dexterity Test
      4. Purdue Pegboard
      5. Minnesota Spatial Relations Test

I hope this information will be helpful to the institutions studied in your report. If you have any further questions or if additional information is needed, please contact me.

Sincerely,



Stephen B. Schnacke, Ed.D.
Dept. of Counselor Education

SBS/msg

VT 013 950
WISCONSIN HOME ECONOMICS CONCEPTUAL STRUCTURE AND PLANNING GUIDE FOR SECONDARY SCHOOLS.

WISCONSIN STATE DEPT. OF EDUCATION, MADISON.
MF AVAILABLE IN VT-ERIC SET.
BULL-266
PUB DATE - 70 62P.

DESCRIPTORS - *HOME ECONOMICS EDUCATION; *STATE CURRICULUM GUIDES; *PROGRAM GUIDES; *PROGRAM PLANNING; PROGRAM DEVELOPMENT; *CONCEPTUAL SCHEMES; STUDENT NEEDS; EDUCATIONAL NEEDS; HUMAN DEVELOPMENT; FAMILY RELATIONSHIP; FAMILY RESOURCES; FAMILY MANAGEMENT; HOME MANAGEMENT; SECONDARY EDUCATION

ABSTRACT - TO REFOCUS AND RESTRUCTURE WISCONSIN'S HOME ECONOMICS PROGRAM FOR THE 1970'S, HOME ECONOMICS TEACHERS, TEACHER EDUCATORS, AND STATE SUPERVISORS DEVOTED SUMMER CONFERENCES, INSERVICE MEETINGS, AND WORKSHOPS TO PREPARING TEACHING UNITS AND INSTRUCTIONAL MATERIALS WHICH WERE FIELD TESTED, EVALUATED, AND REVISED BY SECONDARY TEACHERS AND SPECIAL CONSULTANTS. RESULTING FROM THESE ACTIVITIES IS THIS PLANNING GUIDE WHICH PROVIDES SELECTED CONCEPTS AND GENERALIZATIONS FOR USE IN PLANNING COURSE SEQUENCES AND LEARNING EXPERIENCES APPROPRIATE TO THE NEEDS OF HIGH SCHOOL STUDENTS. THE CONCEPTUAL STRUCTURE WHICH FORMS THE BASIS OF THIS GUIDE IS ORGANIZED AROUND THESE UNIFYING AREAS AND THEIR SUPPORTING SUBJECT MATTER AREAS: (1) HUMAN GROWTH AND DEVELOPMENT, (2) PERSONAL AND FAMILY RELATIONSHIPS, AND (3) MANAGEMENT OF PERSONAL AND FAMILY RESOURCES. SUGGESTED LEARNING AND EVALUATIVE EXPERIENCES KEYED TO GENERALIZATIONS ARE PROVIDED FOR MAJOR CONCEPTS AND OBJECTIVES AT BEGINNING, INTERMEDIATE, AND ADVANCED INSTRUCTIONAL LEVELS FOR EACH UNIFYING AREA. AN INTRODUCTORY SECTION DISCUSSES THE DEVELOPMENT OF THE GUIDE AND OFFERS IMPLEMENTATION STRATEGIES. (SB)

VT 013 950

WISCONSIN

HOME ECONOMICS

CONCEPTUAL STRUCTURE and PLANNING GUIDE

WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION
William C. Kahl, State Superintendent

1145

Wisconsin Home Economics Conceptual Structure and Planning Guide for Secondary Schools

1146

Wisconsin Department of Public Instruction
126 Langdon Street, Madison, Wisconsin 53702
William C. Kahl / State Superintendent

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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5000-49

Bulletin No. 266

Foreword

EARLY in the 1960's, concern for the effectiveness of the home economics curricula in Wisconsin became increasingly evident. Questions were raised regarding the relevance of the curricula to educational needs of students. To find answers to these questions, it became imperative to examine the development of the field of study from its inception to the present time in light of its purpose and objective — education for effective family living. Evidence revealed that trends in home economics education paralleled the needs of the times; that when the need was great for expertise in the manipulative skills of cooking and sewing, home economics met those needs; that when any other aspects of family living demanded special emphasis, the home economics curriculum was structured to focus on that consideration. Currently, technological and sociological changes as well as legislative mandates have required a fresh examination of the relationship of home economics to present trends.

Home economics teachers, teacher educators, and state supervisors devoted summer conferences, in-service meetings, summer sessions, workshops, and many committee meetings to the process of developing and organizing a refocus and restructure of home economics for the 1970's. During the process, teaching units and instructional materials based upon working papers were prepared, field tested, and evaluated. These pilot programs within the state provided direction for continuing development. Secondary home economics teachers in Wisconsin and special consultants continuously reviewed and revised materials. The result, which is a departure from the traditional curriculum guide, is presented in the *Wisconsin Home Economics Conceptual Structure and Planning Guide*. Instead of providing the customary resource units or teaching-learning units, ideas for organizing the study of home economics are given. The *Wisconsin Home Economics Conceptual Structure and Planning Guide* is an attempt to provide for local school districts selected concepts and generalizations which may be used for planning course sequence and learning experiences appropriate to the needs of the students. This *Conceptual Structure and Planning Guide* is not to be considered the *only* framework for planning, but it is the *one* way to provide for structuring programs suitable for any specific situation.

It is hoped that the *Wisconsin Home Economics Conceptual Structure and Planning Guide* will prompt all concerned to examine critically present curriculum materials. It is recommended to teachers and administrators for use in developing programs appropriate for local schools districts.

William C. Kahl
State Superintendent

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Acknowledgments

The Department of Public Instruction wishes to express gratitude to more than 300 Wisconsin secondary home economics teachers and to consultants who made invaluable contributions during the early development of the *Wisconsin Home Economics Conceptual Structure and Planning Guide.*

Special recognition is given to the committee of teachers and consultants which prepared, evaluated, and edited the materials for publication.

Further recognition is given to:

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Philosophy of Home Economics Education in Wisconsin

The basic philosophy of home economics education in Wisconsin reflects those goals of general education which strive to provide optimum opportunities for each student to realize his potential. The particular concern of home economics is education for family living. This education continuously seeks to promote the effectiveness of the individual as a member of family and society in the self-actualization process. The individual, the family, and the society exist in a dynamic relationship; change in any one is associated with change in the other two. The study of these interrelations is the core of home economics education. Home economics synthesizes knowledge drawn from its own research, from the physical, biological, social, and behavioral sciences, and from the arts and applies this knowledge in promoting the well-being of individuals and families in society.[1]

In support of this philosophy, the *Wisconsin Home Economics Conceptual Structure and Planning Guide* focuses on the integration of three unifying areas of family living: HUMAN GROWTH AND DEVELOPMENT, PERSONAL AND FAMILY RELATIONSHIPS, MANAGEMENT OF PERSONAL AND FAMILY RESOURCES. These unifying areas were chosen because of the belief that, regardless of conditions of the future, individuals will continue to be concerned with human growth and development as well as personal and family relationships, and that they will always have resources to manage.

Therefore, home economics education utilizes the unifying areas to prepare students for:

— *family living in a changing society*
— *gainful employment in occupations utilizing home economics knowledges and skills*
— *opportunities in home economics professions.*

Home economics education increases its effectiveness when it:

— *extends its offerings to all youth of both sexes*
— *considers individual abilities,* and *personal, family, and societal needs*
— *utilizes an interdisciplinary approach to provide a comprehensive background for effective living*
— *utilizes relevant experiences to stimulate critical thinking*
— *provides a learning environment which encourages self-direction.*

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Assumptions

In order that the *Wisconsin Home Economics Conceptual Structure and Planning Guide* may be used with understanding by teachers and administrators, the following inherent assumptions are stated:

1. A conceptual structure can provide a framework within which an appropriate and effective schema for learning by students may be designed.
2. More than one structure of concepts in the field of home economics can serve as a useful organization for learning.
3. Emphasis on development and use of concepts and generalizations by students does not minimize the need for learning facts and skills; rather, the ability to conceptualize and generalize requires the use of relevant facts and skills.
4. All levels of objectives in the cognitive domain can be attained in some form by most students any age level.[2]
5. Affective objectives can be achieved through education which is a life-long process.[3]

---

[1] New Directions — A Statement of Philosophy and Objectives. *Journal of Home Economics.* 51:8. October, 1959, pp. 679-694.

[2] Bloom, Benjamin S. and Associates: *Taxonomy of Educational Objectives Handbook I: Cognitive Domain.* New York. David McKay Company, Inc., 1956.

[3] Krathwohl, David R. and Bloom, Benjamin S. and Masia, Bertram B.: *Taxonomy of Educational Objectives Handbook II: Affective Domain.* New York. David McKay Company, Inc., 1964.

Home Economics Conceptual Structure

Home economics is considered an applied interdisciplinary field of study focusing on the family and its environment. Regardless of developments to be experienced by future generations, it is assumed that people will always reach for self-actualization, will maintain relationships, and will manage resources. From these premises, the *Wisconsin Home Economics Conceptual Structure and Planning Guide* was developed within three unifying areas: HUMAN GROWTH AND DEVELOPMENT, PERSONAL AND FAMILY RELATIONSHIPS, and MANAGEMENT OF PERSONAL AND FAMILY RESOURCES.

Figure 1 illustrates that the self-actualization process of an individual is supported through the three unifying areas within the family and the larger environment. (See p. 2)

Concepts[4] stated within the *Wisconsin Home Economics Conceptual Structure and Planning Guide* were identified through a review of literature and personal experiences by participants in the curriculum workshops. A concept is defined as a mental image of an idea, object, or a procedure. It may be specific or abstract depending on the individual and his experience. The concepts, selected for relevancy to the learner, significance in each unifying area, and sequential development, were organized at beginning, intermediate, and advanced levels. In a like manner, generalizations[5] related to the concepts were developed and submitted for judgment of validity to subject matter specialists. A generalization is defined as a statement which expresses an underlying truth, has an element of universality, and usually indicates relationships among concepts.

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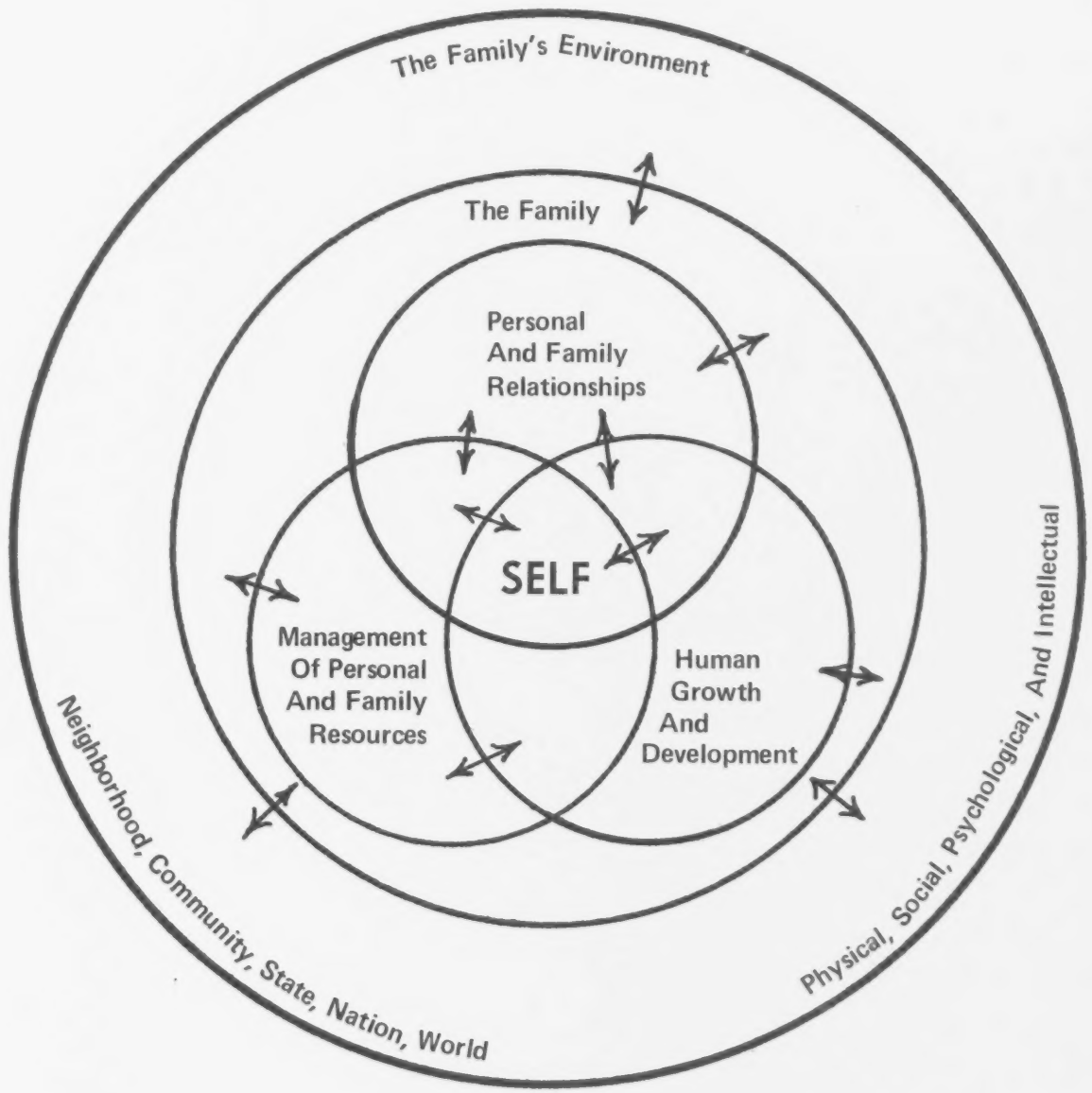
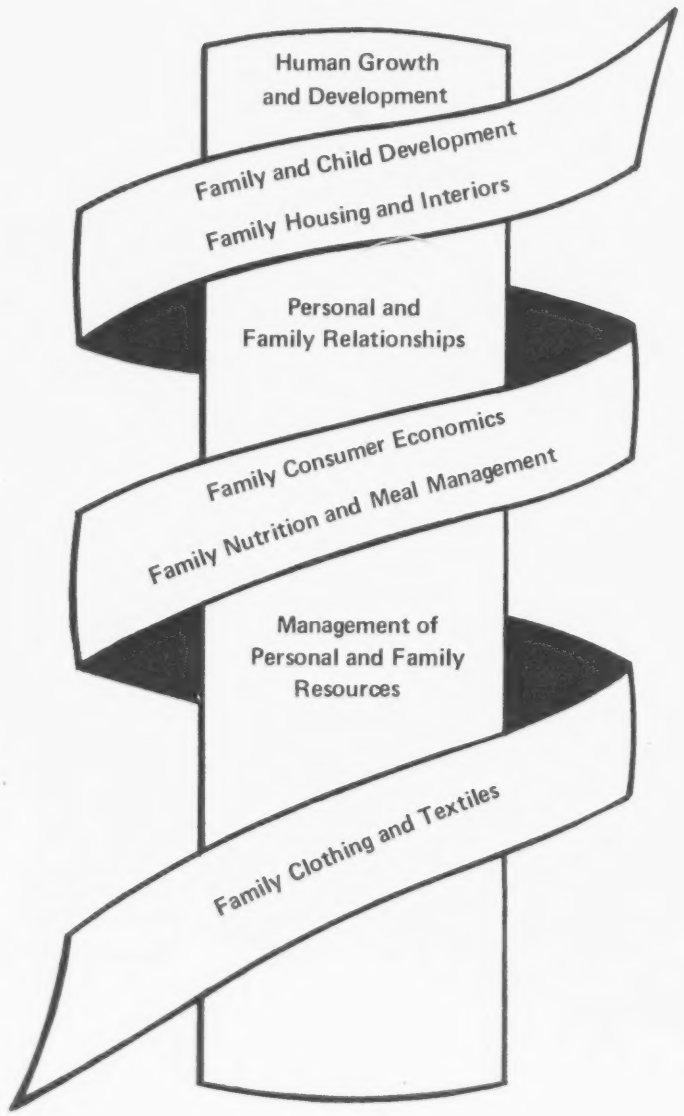
Figure 1. SELF-ACTUALIZATION PROCESS OF INDIVIDUALS THROUGH UNIFYING AREAS OF HOME ECONOMICS WITHIN THE FAMILY AND ITS ENVIRONMENT.



4, 5The above definitions and systems of stating concepts and generalizations are those used in *Concepts and Generalizations: Their Place in High School Home Economics Curriculum Development.* Washington, D. C.: American Home Economics Association, 1967, pp. 23-24.

In the process of organizing concepts and generalizations for the *Wisconsin Home Economics Conceptual Structure and Planning Guide*, the unifying areas were viewed as a core around which a substantive area (subject matter area) could be developed. Conversely, the substantive area could serve as the basis for the organization of relevant concepts and generalizations from one or more of the unifying areas. The interrelationships of substantive areas and the three unifying areas were visualized as shown in Figure 2.

Figure 2. INTERRELATION OF UNIFYING AREAS AND THE SUBSTANTIVE AREAS OF HOME ECONOMICS



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Selection of Objectives

In addition to selecting significant concepts and generalizations for the curriculum, the related levels of student thinking and feeling to be achieved were identified. These thinking and feeling behaviors were combined with identified concepts and were stated as objectives. The intellectual and affective behavioral changes which the students were expected to achieve in relation to the concepts utilized the terminology from the taxonomies of educational objectives.[6] Because a need exists for further development of the psychomotor domain, it was omitted from the *Wisconsin Home Economics Conceptual Structure and Planning Guide*. As new information on this doman becomes available, teachers are encouraged to incorporate it wherever possible.[7]

Developmental characteristics at the beginning, intermediate, and advanced stages of adolescence were the bases for selection of the levels of the behavioral objectives stated in the *Wisconsin Home Economics Conceptual Structure and Planning Guide*. It must be recognized by teachers that not all students will be able to perform at the selected levels of learning with equal competence.

The taxonomies of educational objectives in the cognitive and affective domains treat learning behaviors as on a continuum. In the cognitive domain, the behaviors progress from simple to complex thinking processes. While in the affective domain, degree of internalization is the organizing principle, e.g., behaviors are ordered from simple awareness of a phenomenon to making that phenomenon a part of one's self. In the summary of the two domains which follows, the bold face words illustrate these progressions in levels of behavior.

Summary of the classification of educational goals as taken from *Taxonomy of Educational Objectives Handbook I: Cognitive Domain* by Benjamin S. Bloom and Associates:[8]

1.0 **Knowledge** — ability to recall, to bring to mind the appropriate material
- 1.1 Knowledge of specifics
- 1.2 Knowledge of ways and means of dealing with specifics
- 1.3 Knowledge of the universals and abstractions in a field

[6]Bloom, Op. Cit.; Krathwohl, Op. Cit.

[7]Simpson, Elizabeth J., "The Classification of Educational Objectives, Psychomotor Domain," *Illinois Teacher of Home Economics*, 1966-67, Vol. X, No. 4, pp. 110-144.

[8]Bloom, Op. Cit.; Krathwohl, Op. Cit.

2.0 **Comprehension** — ability to apprehend what is being communicated and make use of the idea without relating it to other ideas or material or seeing fullest meaning
- 2.1 Translation
- 2.2 Interpretation
- 2.3 Extrapolation

3.0 **Application** — ability to use ideas, principles, theories in new, particular and concrete situations

4.0 **Analysis** — ability to break down a communication into constituent parts in order to make organization of the whole clear
- 4.1 Analysis of elements
- 4.2 Analysis of relationships
- 4.3 Analysis of organizational principles

5.0 **Synthesis** — ability to put together parts and elements into a unified organization or whole
- 5.1 Production of a unique communication
- 5.2 Production of a plan, or proposed set of operation
- 5.3 Derivation of a set of abstract relations

6.0 **Evaluation** — ability to judge the value of ideas, procedures, methods, etc. using appropriate criteria
- 6.1 Judgment in terms of internal evidence
- 6.2 Judgment in terms of external evidence

Summary of the classification of educational goals in the affective domain as taken from *Taxonomy of Educational Objectives Handbook II: Affective Domain* by Krathwohl, Bloom and Masia:[9]

1.0 **Receiving** — attending; becomes aware of an idea, process, or thing; is willing to notice a particular phenomenon
- 1.1 Awareness
- 1.2 Willingness to receive
- 1.3 Controlled or selected attention

2.0 **Responding** — makes response at first with compliance, later willingly and with satisfaction
- 2.1 Acquiescence in responding
- 2.2 Willingness to respond
- 2.3 Satisfaction in response

[9]Bloom, Op. Cit.; Krathwohl, Op. Cit.

3.0 **Valuing** — accepts worth of a thing, an idea, or a behavior; prefers it; consistent in responding; develops a commitment to it
- 3.1 Acceptance of a value
- 3.2 Preference for a value
- 3.3 Commitment

4.0 **Organization** — organizes values; determines interrelationships; adapts behavior to value system
- 4.1 Conceptualization of a value
- 4.2 Organization of a value system

5.0 **Characterization** — generalizes certain values into controlling tendencies with emphasis on internal consistency; later integrates these into a total philosophy of life or world view
- 5.1 Generalized set
- 5.2 Characterization

Learning and Evaluative Experiences

In the *Wisconsin Home Economics Conceptual Structure and Planning Guide*, the learning and evaluative experiences are considered part of a unified process through which students work to reach objectives. For every learning experience, an accompanying self-evaluative or teacher-evaluative experience is suggested. The behavior which denotes action by the learner is italicized.

Both the learning and evaluative experiences are stated in broad terms so that application may be made in a variety of learning situations and to different substantive areas of home economics. Teachers will need to develop details for using the experiences in unit and lesson plans to meet individual needs of students.

Resources

Instructional materials become obsolete quickly and availability to local schools varies greatly. Therefore, a list of resources is not included in the *Wisconsin Home Economics Conceptual Structure and Planning Guide*, nor are specific instructional materials identified for the learning experiences. Although a type of resource is suggested for some learning experiences, alternatives may very well be used. It is assumed that each teacher will be responsible for selecting, developing, and evaluating instructional materials appropriate to learning situations in the local school district.

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Organization of Unifying Areas

Each of the unifying areas is introduced with an overview in which the significance of that area for growth of students toward personal potential is delineated. The particular emphasis for study at the beginning, intermediate and advanced levels is identified and explained. The overview is followed by a chart showing the major concepts and objectives for the three levels.

The concepts are structured to build horizontally and vertically within and among unifying areas. Similarly, there is a vertical sequential development of concepts from the beginning through advanced level of each unifying area. The relationships between unifying areas and concepts are suggested by cross referencing, (See p. 10), which indicates the possibility of simultaneous development.

Preceding each level within a unifying area, the applicable segment of the overview chart is repeated. Each level of each unifying area includes major concepts, major objectives, supporting generalizations, and suggested learning and evaluative experiences.

Implementation

The *Wisconsin Home Economics Conceptual Structure and Planning Guide* serves as a framework within which to develop the total sequence of courses in any local school district. The flow chart, Figure 3, indicates that the three unifying areas are fundamental in all aspects and at all levels of a home economics program.

One way in which individuals responsible for the development of the home economics program in a school district may begin to plan is by studying the overview charts for each unifying area: HUMAN GROWTH AND DEVELOPMENT (p. 10), PERSONAL AND FAMILY RELATIONSHIPS (p. 29), and MANAGEMENT OF PERSONAL AND FAMILY RESOURCES (p. 45). Following such study, decisions should be made about placement and emphasis of concepts and generalizations in the various segments of the program. In making placement decisions, the patterns of courses taken by individual students is an important factor to consider. For example, the flow chart suggests that most students will begin their study in home economics with a comprehensive course. This course may be in any grade from sixth to ninth, depending on the local school district. The curriculum designed for such a course should include concepts and generalizations from each of the unifying areas and the substantive areas. Then, the sequent courses which students take build upon the concepts and generalizations identified in the beginning course. The patterns of courses taken by various students may be one of the bases for placement of concepts and generalizations in the comprehensive, specialized, and occupational courses which make up the home economics program.

Two illustrations may serve to stimulate teachers to ways of organizing teaching unit plans within the conceptual structure of the unifying areas. It is recommended that plans be developed step by step before implementation. Such planning need not limit flexibility in teaching. Extensive pre-planning increases the opportunity for satisfaction to both teachers and learners.

Implementation I

One suggested approach for using the *Wisconsin Home Economics Conceptual Structure and Planning Guide* to develop specific teaching unit plans is to begin with the selection of a unifying area (See Figure 4). Within this area, the level, beginning or intermediate or advanced, is chosen in view of learning needs of students in the course. After examining the major concepts and objectives which are identified in the selected unifying area and level, the teacher then chooses from the given generalizations those most appropriate for the specific learning situation. The number of generalizations and extent of their development into instructional plans are decisions which the teacher must make. Following this, it is necessary to select and/or develop supporting objectives, concepts, and generalizations in relation to the substantive (subject matter) area(s). A subject matter area serves as the vehicle to achieve the major concept of the unifying area. For example, family economics, or family meal management, or family housing and interiors may be used to guide learning toward the concepts and generalizations of the unifying area of MANAGEMENT OF PERSONAL AND FAMILY RESOURCES. The *Wisconsin Home Economics Conceptual Structure and Planning Guide* provides ideas for the direction of supportive learning and evaluative experiences which are to be expanded and detailed by the teacher.

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Figure 3: PATHS TO THE FUTURE THROUGH HOME ECONOMICS EDUCATION

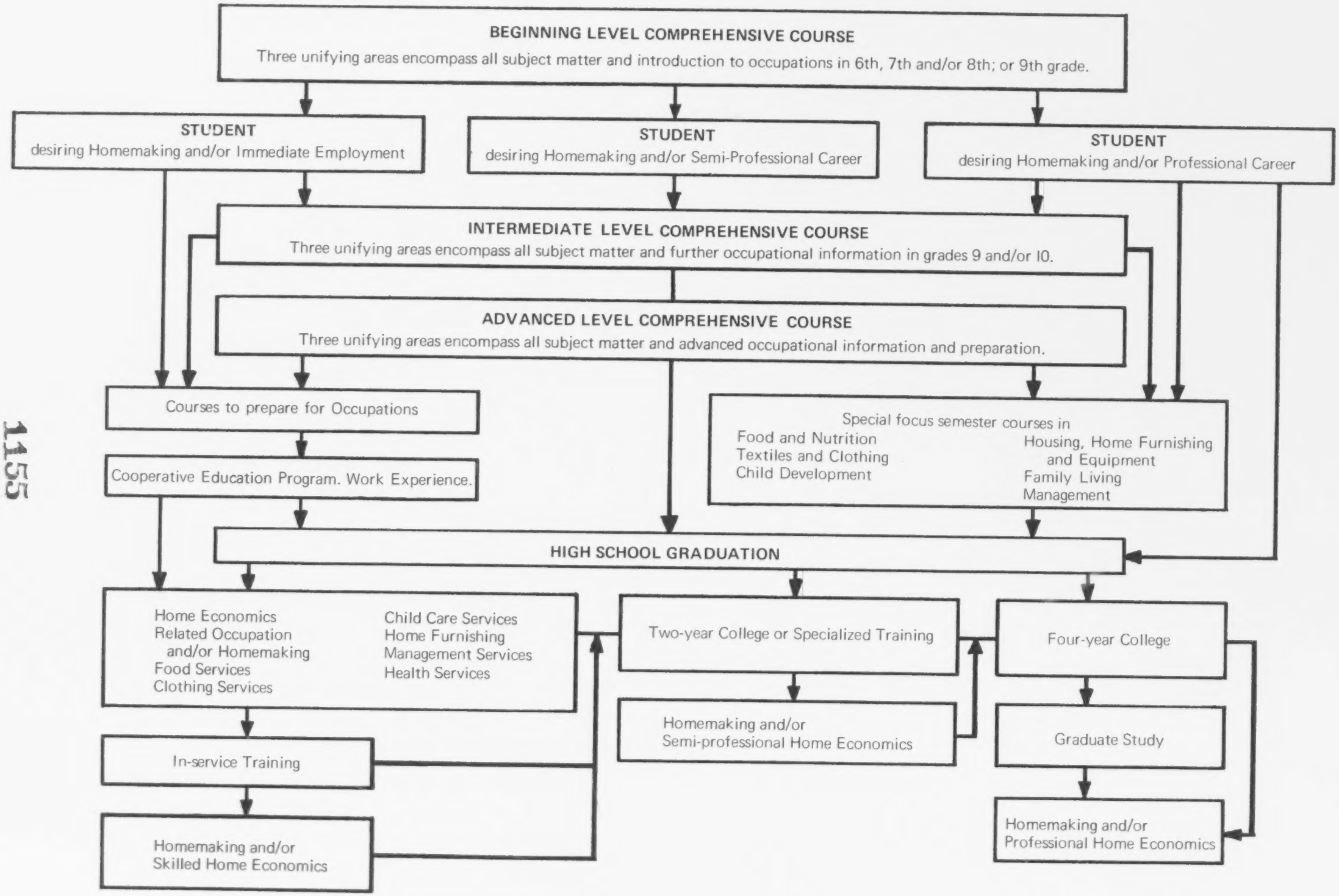

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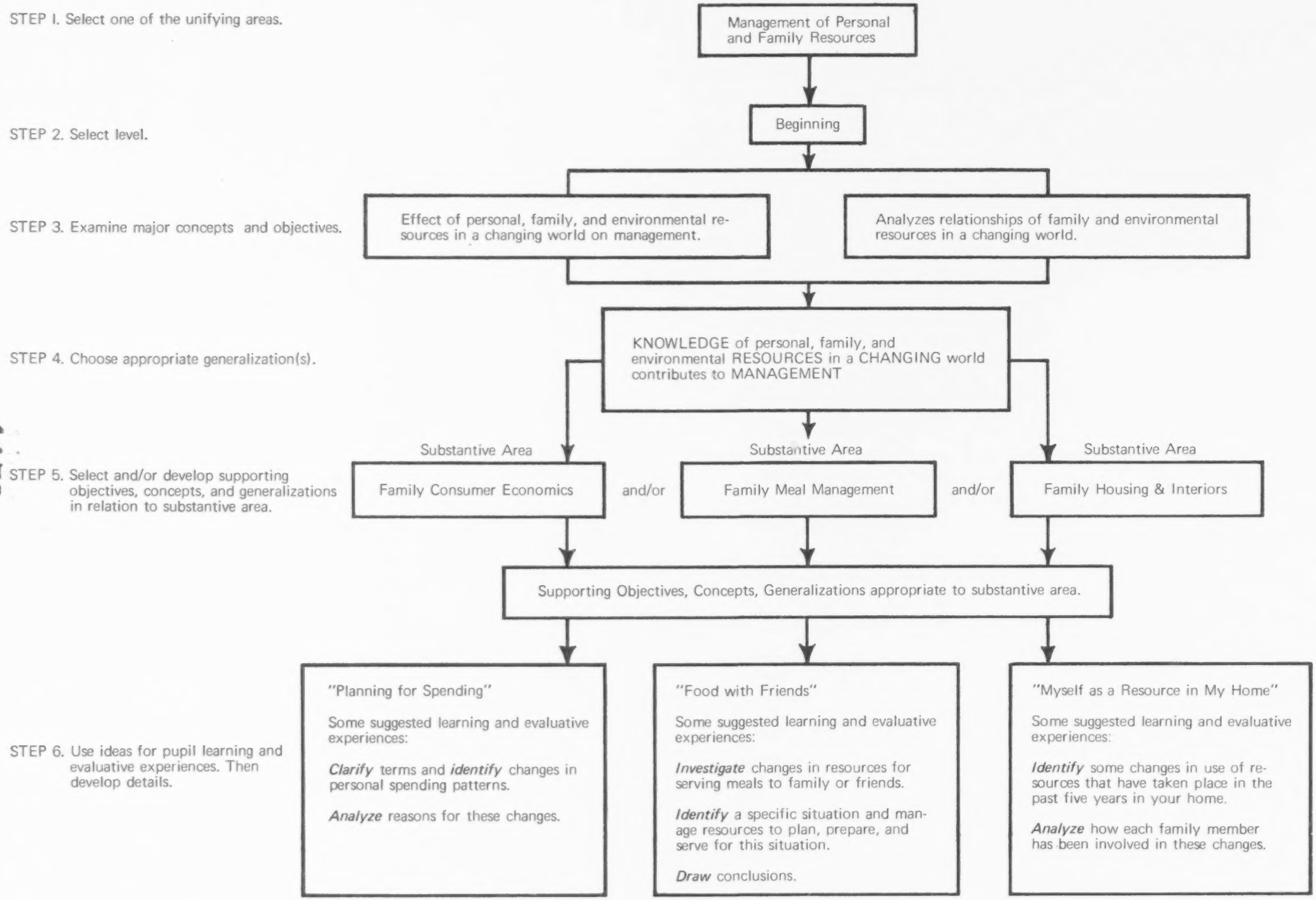
Figure 4: SUGGESTED IMPLEMENTATION I: UNIFYING AREA AS A STARTING POINT



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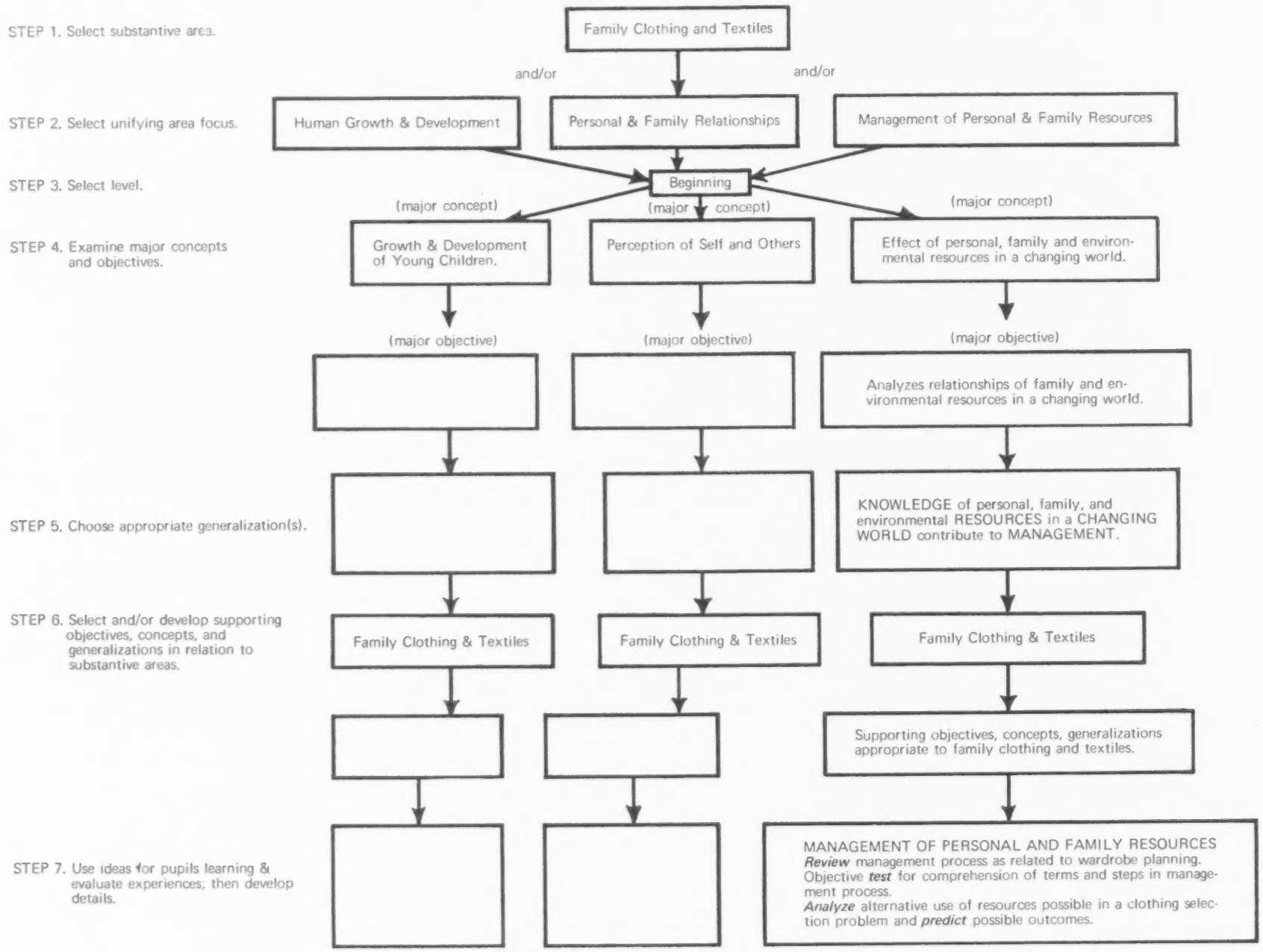
Implementation II

An alternative approach for the development of teaching unit plans is to begin with a substantive area, such as family clothing and textiles. (See Figure 5). The teacher chooses one or more of the unifying areas as the focus of the subject matter and identifies the level most suitable for the learners.

This indicates that the content serves as the means to achieve the concepts of the unifying area as well as the concepts of the subject matter. For example, a family clothing and textile unit designed in this way includes concepts of management in addition to those of clothing. From the unifying area(s) the teacher selects the concepts, objectives, and generalizations relevant to the specific learning situation and the subject matter area. Further extension of the generalizations into learning and evaluative experiences for the learners become the responsibility of the teacher.

Figure 5. SUGGESTED IMPLEMENTATION II: SUBSTANTIVE AREA AS A STARTING POINT



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Planning Guide

Human Growth and Development — Overview

The area of HUMAN GROWTH AND DEVELOPMENT is designed to aid students in understanding growth and development of self and others. In the process of gaining this understanding, students are encouraged to seek out relationships among factors which support or inhibit individuals in their efforts to realize developmental potentials.

Concepts selected as particularly significant for thought and behavior relative to growth and development are interwoven throughout the beginning, intermediate, and advanced levels. These concepts are:

— continuity, sequence, and individuality in growth and development

— heredity and environment as interrelated factors in growth and development

— sense of self as a significant factor in realizing potential

— role of work and play in growth and development through life

— career selection and preparation as a part of growth and development.

The emphases for the three levels as shown in Figure 6 are based on typical characteristics, concerns, and activities of learners at early, middle, and late adolescence.

The beginning level is concerned with the growth and development of children. The influence of heredity and environment on growth and development of individuals, particularly early adolescents, is also included. While physical, social, and psychological aspects of development are all considered, emphasis in this unifying area and at this level is on physical development. The other two aspects are examined in depth in PERSONAL AND FAMILY RELATIONSHIPS. Food, clothing, and housing are treated as environmental factors which contribute to human development. Work, play, and career exploration are examined for their significance to development at early adolescence.

The intermediate level is focused on a growing self-understanding in terms of social and psychological development and is concerned particularly with human interaction. There is a close relation between the intermediate levels of HUMAN GROWTH AND DEVELOPMENT and PERSONAL AND FAMILY RELATIONSHIPS; study of this level of both unifying areas will facilitate their use in planning.

The advanced level emphasizes the responsibility of families for all aspects of growth and development of individuals throughout the family life cycle.

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HUMAN GROWTH AND DEVELOPMENT
MAJOR CONCEPTS AND OBJECTIVES SELECTED FOR THREE LEVELS OF INSTRUCTION

BEGINNING LEVEL		INTERMEDIATE LEVEL		ADVANCED LEVEL	
Major Concepts	*Major Objectives	Major Concepts	*Major Objectives	Major Concepts	*Major Objectives
1. Relationship of growth patterns to development of children	Comprehends growth and development patterns of children. Cog. 2.0 Comprehension Aff. 2.0 Responding	Influence of growth patterns on development of adolescents	Comprehends growth and development patterns of adolescent. Cog. 2.0 Comprehension Aff. 2.0 Responding	Relationship of individual growth and development to the family life cycle	Analyzes basic human needs of individuals in the family life cycle. Cog. 4.0 Analysis Aff. 3.0 Valuing
2. Relationship of heredity to growth and development of individuals	Comprehends relationship of heredity to growth and development of self. Cog. 2.0 Comprehension Aff. 1.0 Receiving	Interrelationship of growth patterns and self (refer to Personal and Family Relationships, Intermediate Level, #2)	Analyzes growth patterns and sense of self. Cog. 4.0 Analysis Aff. 3.0 Valuing	Relationship of self to future generations	Evaluates relationship of self to future generations. Cog. 6.0 Evaluation Aff. 4.0 Organization
3. Relationship of environmental factors to growth and development of individuals	Applies knowledge of environmental factors to growth and development of self. Cog. 3.0 Application Aff. 2.0 Responding	Influence of the environment on adolescent growth and development	Analyzes influence of environment on adolescent growth and development. Cog. 4.0 Analysis Aff. 3.0 Valuing	Effect of environment on growth and development in the family life cycle	Evaluates responsibilities for creating an environment for growth and development in the family life cycle. Cog. 6.0 Evaluation Aff. 4.0 Organization
4. Effect of work and play on growth and development of individuals	Applies relationship of work and play to growth and development of self. Cog. 3.0 Application Aff. 2.0 Responding	Development of self through work and leisure	Applies patterns of work and leisure as a development of self. Cog. 3.0 Application Aff. 3.0 Valuing	Interrelationship of work and leisure in the family life cycle	Analyzes interrelationship of work and leisure in the family life cycle. Cog. 4.0 Analysis Aff. 3.0 Valuing
5. Relationship of occupational exploration to growth and development of individuals	Comprehends opportunities for growth and development through career exploration. Cog. 2.0 Comprehension Aff. 1.0 Receiving	Development of self through career choice	Analyzes home economics career opportunities in relation to individual development. Cog. 4.0 Analysis Aff. 2.0 Responding	Interrelationship of development and maturity to occupational competencies	Comprehends interrelationship of development and maturity to occupational competencies. Cog. 2.0 Comprehension Aff. 2.0 Responding

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4.
Although an affective objective is not indicated, the suggested learning and evaluative experiences are designed to involve students in both cognitive and affective behaviors at the levels stated.

HUMAN GROWTH AND DEVELOPMENT

Beginning Level

Major Concepts	*Major Objectives
1. Relationship of growth patterns to development of children	Comprehends growth and development patterns of children. Cog. 2.0 Comprehension Aff. 2.0 Responding
2. Relationship of heredity to growth and development of individuals	Comprehends relationship of heredity to growth and development of self. Cog. 2.0 Comprehension Aff. 1.0 Receiving
3. Relationship of environmental factors to growth and development of individuals	Applies knowledge of environmental factors to growth and development of self. Cog. 3.0 Application Aff. 2.0 Responding
4. Effect of work and play on growth and development of individuals	Applies relationship of work and play to growth and development of self. Cog. 3.0 Application Aff. 2.0 Responding
5. Relationship of occupational exploration to growth and development of individuals	Comprehends opportunities for growth and development through career exploration. Cog. 2.0 Comprehension Aff. 1.0 Receiving

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4. Although an affective objective is not identified, the suggested learning and evaluative experiences are designed to involve students in both cognitive and affective behaviors at the levels stated.

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HUMAN GROWTH AND DEVELOPMENT

Beginning Level

Major Concept: **Relationship of growth patterns to development of children.**

Major Objective: **Comprehends growth and development patterns of children.**
Cog. 2.0 Comprehension **Aff. 2.0 Responding**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Each individual differs from every other in his PATTERN and RATE of physical GROWTH and DEVELOPMENT*.	*Study* resources to *identify* commonalities and differences of social, emotional, physical, and mental growth and development of children.	Objective test for knowledge of commonalities and differences in growth and development of children.
	Discuss characteristics of children at each level of development. *Compare.*	*Summarize* common and different characteristics of children at various ages. *Draw* conclusions.
	Observe children of a specific age group at play to recognize differences in play to growth and development. *Discuss.*	Subjective evaluation of responses to assess understanding of pattern and rate of growth and development.
	Illustrate through use of toys or pictures of play equipment differences in stages of growth. *Explain.*	Evaluation of explanations for understanding of pattern and rate of growth and development.
Increased knowledge of GROWTH and DEVELOPMENT OF CHILDREN contributes to understanding SELF and OTHERS.	*Identify* principles of social, emotional, physical, and mental growth of children and *relate* to self.	*Write* an essay to *illustrate* the principles of pattern and rate of growth and development as related to self.

*In this and all succeeding generalizations, the concepts are capitalized.

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Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Contribution to GROWTH and DEVELOPMENT OF CHILDREN is everyone's RESPONSIBILITY.	*View* film which illustrates duties and responsibilities in caring for children. *Summarize.*	*Prepare* a list of responsibilities involved in caring for children.
	Examine the contribution of a community's resources to the growth and development of children; i.e., study trip to a day care center or children's section of public library which illustrates responsibilities in caring for children.	*Write* a summary of contribution of a community resource to the growth and development of children.
	Tell of specific experiences in child care situations that necessitate decisions pertaining to growth and development. *Identify* related responsibilities.	*Role play* situations illustrating responsibilities for development. *Draw* and *assess* conclusions.
	Discuss newspaper articles relating accidents which have happened to small children.	*Explain* or *demonstrate* practices concerned with keeping children safe.
	Practice reading children's stories. *Tape* a reading of children's stories. *Discuss.*	*Use* criteria to *determine* the effectiveness of presentation.
	Study resources and *discuss* ways and means of establishing rapport with children.	*Develop* a "Child Interest Kit" to *aid* in establishing rapport with children.
	Panel of mothers *discuss* growth and development of children in terms of responsibilities for their care.	*Write* a summary interpreting changes that occur in responsibilities contributing to growth and development of children.

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Major Objective: **Relationship of heredity to growth and development of individuals**

Major Concept: **Comprehends relationship of heredity to growth and development of self.**
Cog. 2.0 Comprehension Aff. 1.0 Receiving

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
HEREDITY FACTORS affect GROWTH and DEVELOPMENT.	*Use* reference materials to *differentiate* between heredity and environment. *Identify* inherited characteristics of family members. *Present* findings in a panel. *Summarize.*	Objective test for comprehension of hereditary factors affecting growth and development.
	Discuss inherited characteristics; e.g., hair, skin pigmentation, and body build.	*Relate* significant hereditary traits to self.

Major Objective: **Relationship of environmental factors to growth and development of individuals**

Major Concept: **Applies knowledge of environmental factors to growth and development of self.**
Cog. 3.0 Application Aff. 2.0 Responding

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
GROWTH and DEVELOPMENT PATTERNS are the result of both HEREDITY and ENVIRONMENTAL FACTORS.	*Examine* resources to *identify* environmental factors that influence growth and development.	*Identify* from pictures of people in environmental situations those factors which are environmental and those which are hereditary. *Draw* conclusions.
All LIFE is composed of and needs combinations of elements known as NUTRIENTS. FOOD is the usual SOURCE OF NUTRIENTS.	*Read* references to *determine* needs of the body for food.	Pre-test and re-test for knowledge of nutrition. *List* foods eaten over a period of time prior to and after studying food and nutrition. *Compare* changes in food habits.
	View a film on Daily Food Guide to *gain* knowledge.	*Plan* simple menus for the day. *Assess* according to Daily Food Guide.

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
NUTRITION, as one environmental factor, affects GROWTH and DEVELOPMENT.	*Examine* pictures illustrating nutritional environments for influences of nutrition on growth and development.	*Draw* conclusions about the relationship of nutrition to growth and development.
PSYCHOLOGICAL FACTORS influence NUTRITION.	*Discuss* psychological reasons for certain food habits, mores or customs.	*Write* a paragraph on personal food patterns showing how psychological factors affect nutrition.
Different CULTURAL FOOD PATTERNS can be used to meet NUTRITIONAL REQUIREMENTS.	*Compare* current food patterns of various cultural groups to Daily Food Guide to *determine* how nutritional requirements are met.	*Assess* for understanding of meeting nutritional requirements through different cultural food patterns.
CHOICE OF FOOD influences physical growth and development of the individual.	*Study* case histories to *relate* habits to nutritional condition.	*Explain* dietary changes needed in these studies for optimum growth and development.
Appropriate PREPARATION results in RETENTION OF NUTRIENTS. RETENTION OF NUTRIENTS in food contributes to better NUTRITION.	*Develop* a visual presentation to *illustrate* the relationship of choice of food to health and appearance.	*Record* own diet for three days and *compare* with Daily Food Guide. *Make* a plan, if necessary, to improve own diet. *Report* on success.
	Experiment with different ways of storing and preparing vegetables to *illustrate* the importance of care and preparation in relation to the retention of nutrients. *Discuss* results.	Objective test on principles for retention of nutrients in relation to food preparation.
	Throughout food preparation experiences *apply* principles related to retention of nutrients.	*Explain* reasons for using food preparation procedures.
CLOTHING facilitates adjustment of the human body to the ENVIRONMENT.	*Study* clothing-related resources and *discuss* reasons for various kinds of apparel in different climates and geographical locations.	*Construct* a fashion calendar to *show* types of clothing for different seasons or geographical areas.

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
CLOTHING NEEDS of an individual and SELECTION OF APPAREL are related to the STAGE OF DEVELOPMENT of that person.	*Study* resources and *discuss* reasons for various kinds and types of apparel in relation to growth.	*Construct* a clothing calendar to *show* types of clothing used by an individual throughout his life.
	Look at various types of clothing worn by class members and *decide* what physiological needs they fulfill.	*Write* a paragraph relating the use of clothing to the physical health of the body.
	Make a wardrobe survey of various age groups to *compare* differences with reference to needs.	*List* dress characteristics of an age group.
	Use a flannel board or other visual media to *illustrate* apparel effects on peer acceptance.	*Role play* to *demonstrate* acceptance of dress by peer group. *Draw* conclusions indicating the ways clothing needs are related to the stage of development.
The physical COMFORT OF CLOTHING is influenced by FABRIC, FINISH, CONSTRUCTION, and STYLE, and the SUITABILITY of these factors for various activities.	*Read* references to *determine* the factors that affect the comfort and suitability of clothing for various activities. *Discuss.*	*Identify* these factors in clothing worn by class members. *Indicate* comfort and suitability for various activities. *Explain* how these factors are related to human growth and development.
	Conduct experiments to *determine* the factors that affect the comfort and suitability of clothing for various activities. *Discuss.*	*Summarize* results of experiments. *Draw* implications for choice of clothing.
The PHYSICAL CONDITION of the human body influences the TYPE OF CLOTHING needed.	*Explore* size ranges and construction features of various articles of clothing to *discover* characteristics that fulfill the needs of physical growth.	*Explain* ways in which selection of clothing is related to personal growth and development.

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Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
HOUSING supports GROWTH and DEVELOPMENT when it contributes to meeting BASIC NEEDS of individuals.	*Use* library reading project to *discover* ways various types of homes meet the growth and developmental needs of individuals. *Discuss.*	Subjective evaluation of understanding as illustrated through discussion.
	Survey community to *identify* housing problems that may exist.	*Draw* conclusions as to influences of growth and development on these problems.
Various CULTURES meet HOUSING NEEDS in different ways.	*Develop* a bulletin board to *illustrate* homes of several cultures.	*Compare* for similarities and differences for the influence of housing on growth and development.
Characteristics of ENVIRONMENT, such as TEMPERATUTE, HUMIDITY, LIGHTING, NOISE, ODORS, FUMES, ORDERLINESS, and AESTHETIC QUALITIES, affect the physical WELL-BEING of individuals.	*Discuss* environmental factors related to housing which affect the physical well-being of the family.	*Explain* ways housing contributes to meeting physical needs of individuals.
	Explain how home factors, such as, care, safety, beauty, comfort, and convenience contribute to the physical growth and development of family members. *Summarize* by listing the responsibilities and contributions of family members to these factors.	Using teacher-prepared case study of family situation, *suggest* ways housing could be modified to meet physical needs of the family.

Major Concept: **Effect of work and play on growth and development of individuals**

Major Objective: **Applies relationship of work and play to growth and development of self.**
Cog. 3.0 Application Aff. 2.0 Responding

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
WORK and PLAY affect and are affected by GROWTH and DEVELOPMENT.	*Read* a short biographical sketch of a well-known personality; e.g., in politics, space program, entertainment. *Interpret* effects of work and play on the selected individual's growth and development.	Subjective evaluation of students' interpretations for accuracy and completeness.
	Record weekend work and play activities for self and for a pre-school child. *Compare* similarities and differences.	*Predict* the effect of these activities on growth and development.
EXPRESSION OF SELF is related to stage of growth and development and opportunities for WORK and PLAY provided by the environment.	*Observe* expressions of self by individuals at different stages of development through their work and play.	*Explain* the interrelationship of self-expression, work and play, and growth and development.
	Identify ways of expressing self through work and play in the family, community, or school environment.	*Develop* and *complete* project illustrating self-expression through the substantive areas of home economics; e.g., caring for children, selecting clothing, preparing food, caring for the house.

Major Concept: **Relationship of occupational exploration to growth and development of individuals**

Major Objective: **Comprehends opportunities for growth and development through career exploration.**
Cog. 2.0 Comprehension Aff. 1.0 Receiving

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Exploring the WORLD OF WORK in HOME ECONOMICS contributes to individual growth and development.	*Illustrate* through the use of pictures and/or drawings, occupations and careers to which home economics contributes.	*Write* an explanation of how one or more of these occupations could contribute to growth and development.
	Explore in detail a career from the previous list which is of special interest. *Draw* conclusions as to opportunities for own growth and development. *Report* to class.	*Identify* occupational requirements. *Compare* with own qualifications.

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HUMAN GROWTH AND DEVELOPMENT

Intermediate Level

Major Concepts	*Major Objectives
1. Influence of growth patterns on development of adolescents	Comprehends growth and development patterns of the adolescent. Cog. 2.0 Comprehension Aff. 2.0 Responding
2. Interrelationship of growth patterns and self (refer to Personal and Family Relationships, Intermediate Level, #2)	Analyzes growth patterns and sense of self. Cog. 4.0 Analysis Aff. 3.0 Valuing
3. Influence of the environment on adolescent growth and development	Analyzes influence of environment on adolescent growth and development. Cog. 4.0 Analysis Aff. 3.0 Valuing
4. Development of self through work and leisure	Applies patterns of work and leisure as a development of self. Cog. 3.0 Application Aff. 3.0 Valuing
5. Development of self through career choice	Analyzes home economics career opportunities in relation to individual development. Cog. 4.0 Analysis Aff. 2.0 Responding

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4. Although an affective objective is not identified, the suggested learning and evaluative experiences are designed to involve students in both cognitive and affective behaviors at the levels stated.

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HUMAN GROWTH AND DEVELOPMENT

Intermediate Level

Major Concept: **Influence of growth patterns on development of adolescents**

Major Objective: **Comprehends growth and development patterns of the adolescent.**
Cog. 2.0 Comprehension Aff. 2.0 Responding

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
DEVELOPMENT of an individual is CONTINUOUS and proceeds in an ORDERLY SEQUENCE with periods of acceleration and deceleration occurring in each phase of development.	*Study* resources to *identify* characteristics of social, emotional, physical, and mental growth and development of the adolescent. *Discuss* ways teenagers grow toward maturity during this period.	*Summarize* and *draw* conclusions as to own development toward maturity.
Each individual is UNIQUE in his pattern and rate of development.	*Compare* differences among adolescents in patterns and rates of development.	*Compare* these general characteristics of growth in adolescents to self and peers. *Draw* conclusions.

Major Concept: **Interrelationship of growth patterns and self (refer to Personal and Family Relationships, Intermediate Level, #2)**

Major Objective: **Analyzes growth patterns and sense of self.**
Cog. 4.0 Analysis Aff. 3.0 Valuing

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
The SENSE OF SELF grows gradually and continually.	*Describe* experiences to *illustrate* how sense of self changes as one grows from childhood to adulthood.	*Identify* influences on the development of sense of self. *State* generalization about the development of sense of self.
Interrelationship of growth and development with CONCEPT OF SELF influences behavior.	Using case studies *discuss* in buzz groups the interrelationship of growth pattern, sense of self, and behavior. *Use* a different case for each group.	*Present* skits which *illustrate* various behavior patterns of adolescents. *Relate* the behavior shown by the adolescent to the way he probably sees himself.
	Analyze own changes in concept of self in relation to growth and development.	*State* reasons for change.

Major Concept: **Influence of the environment on adolescent growth and development**

Major Objective: **Analyzes influence of environment on adolescent growth and development.**
Cog. 4.0 Analysis Aff. 3.0 Valuing

Suggested Learning Experiences	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Generalizations FAMILIES and COMMUNITIES share RESPONSIBILITY for GROWTH and DEVELOPMENT OF YOUTH.	*Explore* community to *discover* opportunities available to youth to aid in their growth and development.	*Explain* how these activities meet the developmental needs of young pople.
	Brainstorm the topic "Youth's responsibility for his own growth and development as a family and community member."	*Compare* differences in responsibilities of self, family, and community for adolescent growth and development.
	Examine codes of behavior as to influences on growth and development. *Discuss.*	*Write* an essay relating discussion to growth and development of self.
	Use panel of youths and adults to *discuss* complementary and conflicting needs of each for growth and development.	*Write* a short paper on the interrelationships of family and community contributions made to adolescent growth and development.
	Identify responsibilities for adolescent growth and development by means of a symposium representing several agencies of the law, alcoholic rehabilitation center, legislators, social services, education, student body, etc.	*Analyze* the role of the family and its influence on the adolescent in one area of special interest as presented by the symposium. *Draw* conclusions.
Adequacy of NUTRITIONAL PATTERNS influences human growth and development.	Individual reports to *identify* relationship of nutrition to health and growth of the individual emphasizing critical needs of adolescents.	*Evaluate* reports. *Draw* conclusions in relation to own nutritional needs.
An individual's ATTITUDES and HABITS relating to FOOD affect his GROWTH and DEVELOPMENT.	Following laboratory experiences, *discuss* reactions to less familiar foods and methods of preparation.	*List* difficulties involved in changing food practices. *Suggest* a process for learning to accept a new food. Subjective evaluation of student suggestions.

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Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
	Discuss reasons for establishment of certain attitudes toward food. *Relate* to customs and/or traditions. *Examine* the effect of attitudes on the adequacy of nutrition.	*Identify* how a family or personal food favorite has developed and the effect on growth and development.
CLOTHING NEEDS of an individual are related to GROWTH and DEVELOPMENT.	*Discuss* the influence of clothing on growth and development of the adolescent.	*Summarize. Project* possible effects on future growth and development.
An individual's CLOTHING HABITS are affected by SOCIOLOGICAL CHANGES.	*Study* resources to *discover* changes in dress. *Analyze* the relationship between social change and change in dress.	*Explore* in depth a selected change in dress. *Present* findings.
	Examine apparel to *determine* environmental factors affecting dress today.	*Identify* environmental factors that have influenced a current fashion trend.
	Discuss reasons for conformity or individuality in dress as related to concept of self and growth and development.	*Discuss* personal situations in which clothing contributes to social well-being. *State* generalizations about clothing and sociological change.
ADOLESCENT GROWTH and DEVELOPMENT is influenced by HOUSING.	*Illustrate* by use of visuals ways housing contributes to growth and development of adolescents.	*Use* role-playing or skit to *relate* principles of growth and development to housing needs of adolescents.
	Using the same house, room, or apartment, *analyze* different possible uses by individuals and the influences on growth and development.	*Draw* conclusions.

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Major Concept: **Development of self through work and leisure**

Major Objective: **Applies patterns of work and leisure as a development of self.**
Cog. 3.0 Application Aff. 3.0 Valuing

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
GROWTH and DEVELOPMENT of the ADOLESCENT and WORK and LEISURE are interrelated.	*Use* work and leisure patterns of teenagers to *identify* problems that might affect growth and development. *Discuss* interrelationship of work and leisure to growth and development.	*Suggest* changes in work and leisure patterns to promote growth and development.
LEISURE and WORK provide opportunities for SELF-EXPRESSION.	*Select* and *complete* a project for self-expression in one of the substantive areas of home economics; e.g., child development, home furnishings, food for family and friends, and selection and construction of clothing.	*Determine* satisfactions received from self-expression.

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Major Concept: **Development of self through career choice**

Major Objective: **Analyzes home economics career opportunities in relation to individual development.**
Cog. 4.0 Analysis Aff. 2.0 Responding

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Different HOME ECONOMICS related OCCUPATIONS require a wide range of INTERESTS and POTENTIALITIES.	*Take* tours of businesses where opportunities are available in home economics oriented occupations. *Discuss* differences in occupations, employer and employee characteristics.	*Draw* conclusions as to relationship between occupational opportunities and individual interests and potentialities.

HUMAN GROWTH AND DEVELOPMENT

Advanced Level

Major Concepts	*Major Objectives
1. Relationship of individual growth and development to family life cycle	Analyzes basic human needs of individuals in family life cycle. Cog. 4.0 Analysis Aff. 3.0 Valuing
2. Relationship of self to future generations	Evaluates relationship of self to future generations. Cog. 6.0 Evaluation Aff. 4.0 Organization
3. Effect of environment on growth and development in the family life cycle	Evaluates responsibilities for creating an environment for growth and development in the family life cycle. Cog. 6.0 Evaluation Aff. 4.0 Organization
4. Interrelationship of work and leisure in the family life cycle	Analyzes interrelationship of work and leisure in the family life cycle. Cog. 4.0 Analysis Aff. 3.0 Valuing
5. Interrelationship of development and maturity to occupational competencies	Comprehends interrelationship of development and maturity to occupational competencies. Cog. 2.0 Comprehension Aff. 2.0 Responding

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4. Although an affective objective is not identified, the suggested learning and evaluative experiences are designed to involve students in both cognitive and affective behaviors at the levels stated.

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HUMAN GROWTH AND DEVELOPMENT

Advanced Level

Major Concept: **Relationship of individual growth and development to family life cycle**
Major Objective: **Analyzes basic human needs of individuals in the family life cycle.**
Cog. 4.0 Analysis **Aff. 3.0 Valuing**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
GROWTH and DEVELOPMENT of each family member occurs throughout the FAMILY LIFE CYCLE.	*Use* resources depicting families from various cultures to *identify* stages of family life cycle.	*Compare* similarities and differences in stages of the family life cycle met in different cultures.
	Study resources or *observe* daily family living patterns that show activities contributing to growth and development of individual family members. *Identify* differences and contributions.	Using a different family living pattern, *compare* the extent to which the two families assisted its members to find satisfaction in growth and development.
	For the purpose of identifying and analyzing maturity, *observe* the behavior of people at each stage of the life cycle.	*Analyze* the behaviors for maturity. *Identify* the influencing factors.
	Illustrate and *discuss* situations which depict problems of growth and development which occur throughout the family life cycle.	*Draw* conclusions about how a family can anticipate and prepare for situations as they occur.
Providing OPTIMUM GROWTH opportunities for all family members requires MATURITY and ACCEPTANCE of this responsibility.	*Examine* authoritative resources to *identify* the responsibilities of the family in providing opportunities for optimum growth of all family members. *Explore* resources available to a family for providing these opportunities.	*Analyze* possible effects on growth and development of individuals in situations where the family does not accept this responsibility.

Major Concept: **Relationship of self to future generations**

Major Objective: **Evaluates relationship of self to future generations.**
Cog. 6.0 Evaluation **Aff. 4.0 Organization**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
HEREDITY and pre-natal environmental factors affect FUTURE GENERATIONS.	*Study* resources concerning hereditary and pre-natal environmental influences to *identify* ways in which these might affect future generations. *Select* from these areas a topic of interest for in-depth study.	Objective test for comprehension. *Evaluate* findings of study in relation to cognitive and affective responsibilities of an individual to future generations.

Major Concept: **Effect of environment on growth and development in the family life cycle**

Major Objective: **Evaluates responsibilities for creating an environment for growth and development in the family life cycle.**
Cog. 6.0 Evaluation **Aff. 4.0 Organization**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Creating an ENVIRONMENT for GROWTH and DEVELOPMENT of children is the RESPONSIBILITY OF PARENTS.	*Use* two contrasting family or community environmental situations to *illustrate* differences in opportunities for growth and development of children. *Analyze* responsibilities of families for social, emotional, physical, and intellectual growth and development of children.	*Compare* opportunities and *draw* conclusions in relation to growth and development of children. *Hypothesize* causal relationships between family environment and growth and development. Subjective evaluation of support students give for the hypothesis.
FOOD HABITS are related to GROWTH and DEVELOPMENT.	Through observations, surveys, and use of resource materials, *obtain* information concerning food habits at various stages in life cycle.	*Determine* how food habits at the stages of the life cycle influence growth and development.

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
NUTRITIONAL NEEDS for a variety of age levels can be met through a similar meal pattern.	*Plan* and *prepare* a meal for a family with members ranging in age from 1-80.	*Evaluate* the suitability of the meal for meeting the nutritional needs of family members.
SOCIAL and TECHNOLOGICAL changes influence FOOD HABITS.	*Examine* changing eating habits in relation to social influences; e.g., dieting, eating out, entertaining.	*Evaluate* effects of changing eating habits on growth and development of family members.
	Determine influence of technology on food patterns; e.g., food processing, food additives, packaging, synthetic foods, and marketing practices.	*Predict* the responsibilities of the family in relation to the effects of technological developments in the food industry.
FOOD has an impact on HUMAN GROWTH and DEVELOPMENT in the world.	*Compare* human growth and development in various countries in relation to food production and dietary habits.	*Draw* implications for human growth and development in the stages of the family life cycle.
VARIATIONS in CLOTHING exist within a CULTURE as well as among CULTURES.	*Compare* the relationship of clothing production and clothing practices in various cultures to human growth and development.	*Evaluate* the influence of a selected culture upon clothing practices as related to growth and development.
CLOTHING PATTERNS reflect CHANGES throughout the LIFE CYCLE.	*Compare* clothing practices of persons at various stages of the life cycle. *Discuss* similarities and differences.	Subjective evaluation of discussion for comprehension.
TECHNOLOGICAL CHANGES affecting CLOTHING are reflected in CONSUMPTION PATTERNS of families.	*Examine* new textiles on the market and *compare* to own family's change in clothing consumption practices.	*Evaluate* the influence of marketing and the fashion industry upon changes in clothing consumption.
HOUSING needs vary throughout the LIFE CYCLE.	*Discuss* to *identify* the needs and problems of housing for individuals in various life stages.	*Select* a growth and development problem within a family that is affected by housing. *Plan* and *evaluate* a solution to the problem; e.g., the elderly family member, a handicapped member.
SOCIETAL and TECHNOLOGICAL CHANGES affect FAMILY HOUSING.	*Illustrate* changes in types of housing and living conditions with emphasis on current trends in housing and housing problems within the American culture. *Discuss* trends and implications.	*Analyze* the factors related to these trends and the effects on growth and development.

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Major Concept: **Interrelationship of work and leisure in the family life cycle**

Major Objective: **Analyzes interrelationship of work and leisure in the family life cycle.**
Cog. 4.0 Analysis Aff. 3.0 Valuing

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
The STAGE of the FAMILY LIFE CYCLE affects WORK and LEISURE.	*Identify* probable variations in patterns of work and leisure within the family life cycle.	*Draw* conclusions.
CHANGING PATTERNS OF WORK and LEISURE in the society affect GROWTH and DEVELOPMENT throughout the family life cycle.	*Discuss* societal and technological changes as they effect trends in work and leisure.	*Identify* changes in work and leisure patterns in own family during the past five years. *Analyze* reasons for changes.
Shared FAMILY INTERESTS in WORK and LEISURE contribute to GROWTH and DEVELOPMENT.	*Illustrate* relationship of shared family interests in work and leisure to growth and development.	*Analyze* interrelationship of shared family interests in work and leisure to growth and development in the family life cycle.

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Major Concept: **Interrelationship of development and maturity to occupational competencies**

Major Objective: **Comprehends the interrelationship of development and maturity to occupational competencies.**
Cog. 2.0 Comprehension Aff. 2.0 Responding

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
MATURITY involves development of personal POTENTIAL toward OCCUPATIONAL COMPETENCIES.	*Identify* personal qualifications required by employers.	*Identify* characteristics of personal maturity which effect employability. *Indicate* areas for further personal growth.
	Identify occupational skills necessary for employment.	*Examine* the relationship of maturity to occupational competencies.

Personal and Family Relationships

Overview

The central idea of the unifying area, PERSONAL AND FAMILY RELATIONSHIPS, is that the interrelationships of an individual with family and society are a significant aspect in striving to realize potentials.

Major concepts selected as particularly important for learners to develop and use in growing interrelationships with families and society are interwoven throughout the beginning, intermediate, and advanced levels. These concepts are:

— influence of individual, family, and society on one another as a basic factor in human relationships
— significance of perceptions of self and others in human relationships
— significance of role perceptions in personal and family relationships.

The particular emphases at each of the three levels, as shown in Figure 7, are based on typical developmental needs and behaviors of learners at early, middle, and late adolescence.

At the beginning level, a family is viewed as a societal unit influenced by the cultures from which its members come and in which it exists, as well as by the unique characteristics of its members. Against this background, the relationship of perception of self and others to interaction with age-mates and family is examined. The ways in which individuals develop perceptions of roles of self and others are investigated. Finally, the assumption of roles in the family by teenagers is explored and related to the family's role in meeting basic human needs of individual members.

At the intermediate level the focus is on the family with adolescents as the interacting group. The influence of societal expectations on roles and responsibilities of teenagers and the effect of this on relationships within the family is emphasized with particular application to teenage dating. Familial and societal roles assumed by teenagers are examined for their influence on development of self-image and on interrelationships of teenagers with others. Following this, the effect of family, peer, and individual values and goals on personal behavior and on interrelationships of teenagers with their parents is explored.

At the advanced level, the primary emphasis is on the family life cycle, which includes the stages through which any family progresses from its inception to the end of its existence. First, the formation of a family is viewed in relation to personal and societal factors. Then, the evolution of role perceptions and values and goals throughout individual and family cycles is analyzed as is the reciprocal relationship of societal conditions and family relationships.

PERSONAL AND FAMILY RELATIONSHIPS
MAJOR CONCEPTS AND OBJECTIVES SELECTED FOR THREE LEVELS OF INSTRUCTION

BEGINNING LEVEL		INTERMEDIATE LEVEL		ADVANCED LEVEL	
Major Concepts	*Major Objectives	Major Concepts	*Major Objectives	Major Concepts	*Major Objectives
1. Influence of family structures and patterns	Comprehends family structures and patterns. Cog. 2.0 Comprehension Aff. 2.0 Responding	Interrelationship of adolescent culture and the family	Analyzes interrelationship of adolescent culture and the family. Cog. 4.0 Analysis Aff. 2.0 Responding	Relationship of personal and societal factors to formation of a family	Analyzes personal and societal factors involved in formation of a family. Cog. 4.0 Analysis Aff. 4.0 Organization
2. Relationship of perception of self to perception of others	Comprehends the relationship of perceptions of self to interaction with others. Cog. 2.0 Comprehension Aff. 2.0 Responding	Interrelationship of self and role perceptions within the family (refer to Human Growth and Development, Intermediate Level, #2)	Analyzes interrelationship of self and role perceptions within the family. Cog. 4.0 Analysis Aff. 3.0 Valuing	Interrelationship of role perceptions to values and goals throughout the family life cycle	Evaluates interrelationship of role perceptions to values and goals throughout the family life cycle. Cog. 6.0 Evaluation Aff. 4.0 Organization
3. Importance of roles and responsibilities of family members	Comprehends roles and responsibilities of family members. Cog. 2.0 Comprehension Aff. 2.0 Responding	Effects of interaction among family members on individual behavior	Evaluates effects of interaction among family members on individual behavior. Cog. 6.0 Evaluation Aff. 3.0 Valuing	Relationship of family and contiguous society	Analyzes relationship of family and contiguous society. Cog. 4.0 Analysis Aff. 3.0 Valuing

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4. Although an affective objective is not identified, the suggested learning and evaluative experiences are designed to involve students in both cognitive and affective behaviors at the levels stated.

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PERSONAL AND FAMILY RELATIONSHIPS

Beginning Level

Major Concepts	*Major Objectives
1. Influence of family structures and patterns	Comprehends family structures and patterns. Cog. 2.0 Comprehension Aff. 2.0 Responding
2. Relationship of perception of self to perception of others	Comprehends the relationship of preceptions of self to interaction with others. Cog. 2.0 Comprehension Aff. 2.0 Responding
3. Importance of roles and responsibilities of family members	Comprehends roles and responsibilities of family members. Cog. 2.0 Comprehension Aff. 2.0 Responding

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4. Although an affective objective is not identified, the suggested learning and evaluative experiences are designed to involve students in both cognitive and affective behaviors at the levels stated.

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PERSONAL AND FAMILY RELATIONSHIPS

Beginning Level

Major Concept: **Influence of family structures and patterns**

Major Objective: **Comprehends family structures and patterns.**
Cog. 2.0 Comprehension **Aff. 2.0 Responding**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
The FAMILY in America is the BASIC UNIT OF SOCIETY composed of persons united by MARRIAGE, BLOOD, ADOPTION, OR OTHER LEGAL PRACTICES.	*View* a film, *read* current magazine articles and/or case studies showing various family structures in America. From the descriptions of family structures, *develop* a definition of family.	Subjective observations of students' contributions to evaluate comprehension of the term family.
	Write a paper explaining how own family structure is related to the definition.	Evaluation of student's ability to relate definition of family to own situation.

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
FAMILY STRUCTURES and PATTERNS are influenced by the CULTURE.	*Utilize* resources which illustrate families in different cultures to *identify* differences in family structures and patterns.	Subjective observation of student's awareness of differences of influence of culture on family structures and patterns.
FAMILIES differ from one another within the same COMMUNITY and CULTURE.	Panel discussion to *identify* various types of cultural differences in the community. *Identify* background of cultural differences. *Explain* reasons for varying customs.	*Draw* conclusions from discussion.
	Develop bulletin boards or displays to *illustrate* specific cultural differences.	*Use* established criteria for group evaluation of how well the display illustrates cultural differences in families.
	Identify family patterns with reference to geographic locations within community. *Discuss* how cultural patterns change as a result of mobility. *Relate* personal experiences.	Evaluation of student participation for comprehension of cultural differences in families.
	Use family pictures and/or treasures to *show* cultural variances.	*Draw* conclusions relevant to family culture variances.
UNIQUENESS of family members accounts for a variation in FAMILIES.	*Develop* a collage depicting uniqueness of individual family members.	*Draw* conclusions regarding variations in families due to individual differences.

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Major Concept: **Relationship of perception of self to perception of others**

Major Objective: **Comprehends the relationship of perception of self to interaction with others.**
Cog. 2.0 Comprehension **Aff. 2.0 Responding**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
SELF-PERCEPTION affects INTERACTION with others.	*Examine* resources to *increase understanding* of meaning and importance of self-perception. *Discuss* factors which are involved in self-perception.	*Write* theme on "Who Am I?". Save until end of unit. *Write* a second theme "Who Am I?" and *compare* with first.
	Role play to *exemplify* different perceptions of self in interaction with others; e.g., family interaction, group interaction, person to person, etc.	*Draw* conclusions about the influence of self-perception on interaction with others.
PEER GROUP ATTITUDES, VALUES, and SELF-PERCEPTION influence INTERACTION with others.	*Examine* resources to *formulate* definitions of interests, attitudes, and values.	*Give* examples of each. *Compare.*
	Identify attitudes of individuals toward a variety of current issues. *Discuss* attitudes toward these issues.	*Discuss* ways in which these attitudes toward issues may influence interaction.
	Illustrate ways in which individuals communicate values and perceive values of others.	*Make* comparisons of values individuals think they communicate and what others perceive.
	List a value priority. *Keep* a record of personal use of time and energy to *identify* the values reflected in this use.	*Compare* values reflected in record to original value priority list.
	Interview various age groups to discover their values; e.g., pre-school, junior high school, senior high school, college, and adults.	*Compile* findings and *interpret* in terms of relationship to age.
	Examine the influence of the peer group on values and attitudes.	*Identify* conflicts that may result from differences in attitudes and values of self and others concerning teenage fads.
	Discuss factors which may influence adoption of values; e.g., laws, religion, education, family practices.	*List* and *discuss* peer group attitudes and values that have affected personal and family interaction.

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Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
	Discuss a family situation to *identify* roles, responsibilities, and interrelationship of family members.	*Use* a different situation to *analyze* effects of roles and responsibilities on interrelationship.
	Develop a bulletin board illustrating the relation of responsibilities and interaction of family members.	*State* the generalization illustrated by the bulletin board.
INTERRELATIONSHIP among family members is influenced by EXPECTATIONS of society.	*Discuss* societal expectations of family members.	*List* and *relate* expectations to self.
	Role play to *show* the influence of expectations of society on interrelationship within the family.	*Compare* effective and ineffective ways of dealing with societal expectations. *Discuss* effect each would have on family members and their interaction with others.
	Discuss the effect of expectations in different social classifications upon family members.	*Draw* conclusions concerning influences of social stratification upon family members.
DATING PRACTICES affect and are affected by ADOLESCENT CULTURE and FAMILY INTERACTION.	*Use* appropriate resources to *provide* background for discussion of psychological and physiological aspects of dating practices.	Quiz for understanding of psychological and physiological concepts related to dating.
	Use panel of parents and teenagers to *discuss* factors which influence attitudes toward dating practices.	*Compare* adolescent and adult attitudes toward dating.
	Examine resources to *determine* patterns of teenage dating in various communities or cultures. *Identify* the effect of dating patterns on behavior.	*Analyze* reasons for differences in behavior.
	Compare examples of adolescent and parent interaction as related to differing dating practices.	*Analyze* the relationship between dating practices and adolescent and parent interaction.

1186

Major Concept: Interrelationship of self and role perceptions within the family (refer to Human Growth and Development, Intermediate Level, #2)

Major Objective: Analyzes interrelationship of self and role perceptions within the family.
Cog. 4.0 Analysis Aff. 3.0 Valuing

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
FAMILY INTERRELATIONSHIP influences individual's SELF-IMAGE.	*Use* literature pertaining to development of individuals to *identify* influence of family on self-image.	*Identify* how satisfying of basic emotional needs influences self-image. *Explain* possible cause and effect relationships.
	Interpret the self-image of individuals from descriptions of their behavior.	*Draw* conclusions and *relate* self-image and behavior patterns to family interrelationships.
Individuals have both FAMILY ROLES and SOCIETAL ROLES. Both contribute to the development of SELF-IMAGE.	*Examine* case situations in which individuals have both family and societal roles. *Analyze* reasons for which roles were assumed.	*Draw* conclusions about the effect of roles assumed upon self-image.
	Compare roles assumed by individuals within the family to roles in society.	*Draw* conclusions concerning compatability of family and societal roles.
Interpretations of ROLES vary with situations and affect INTERACTION.	*Suggest* how interpretation of roles tends to set the climate for interaction; e.g., mother, teacher, mayor, president, clergyman.	*Role play* these examples of family and societal interactions.
	Identify behavioral characteristics of individuals who quickly and easily establish interaction with others. *Determine* relationship of these characteristics to role flexibility.	*Analyze* relationship of role interpretation to interaction.
Understanding of ROLES in GROUP RELATIONSHIPS influences SELF and ROLE PERCEPTION within a family.	*Cite* and *discuss* examples in which group relationships have affected self and role perception in the family.	*Compare* contrasting situations in which group relationships have influenced self-perception and roles in family.
	Participate in an activity with a new group. *Analyze* role assumed in group. *Compare* with roles customarily assumed in groups.	*Identify* whether or what changes in self-perception resulted from this experience.

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Major Concept: **Effects of interaction among family members on individual behavior**

Major Objective: **Evaluates effects of interaction among family members on individual behavior.**
Cog. 6.0 Evaluation Aff. 3.0 Valuing

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Family CUSTOMS and interaction influence INDIVIDUAL BEHAVIOR.	*Discuss* family customs as they affect individual behavior.	*Compare* to *identify* differences in family customs and resulting behavior patterns.
	Discuss illustrations that involve planning and sharing within families.	*Diagram* and *relate* interaction among family members.
	Describe a family interaction situation to *identify* influences on individual behavior.	*Evaluate* alternative methods of family interaction and influences on family members.
Family CULTURAL PATTERNS influence the formation of VALUES and GOALS.	*Discuss* influences of family cultural patterns on values and goals of individual family members.	*Evaluate* how these patterns may affect values and goals of individuals.
	Use resource person or persons to give their perception of differences in family cultural patterns.	*Write* on topic which relates how living for a while in a family and community different from his own can help a person become more aware of his own family cultural patterns, values, and goals.
	Compare different family and community cultural patterns. *Assume* an individual is in a situation in which commonly accepted practices are contrary to personal values and goals. *Identify* possible courses of action.	*Evaluate* the role of cultural patterns in value and goal formation.
PEER GROUP VALUES influence FAMILY INTERACTION.	*Take* a forced choice value test and *analyze* for individual and peer group values. *Give* same test to some other family member. *Compare* responses with own and peer group. *Identify* differences between peer group values and family values.	*Evaluate* the interrelationship of individual behavior, peer group values and family interaction.

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PERSONAL AND FAMILY RELATIONSHIPS

Advanced Level

Major Concepts	*Major Objectives
1. Relationship of personal and societal factors to formation of a family	Analyzes personal and societal factors involved in formation of a family. Cog. 4.0 Analysis Aff. 4.0 Organization
2. Interrelationship of role perceptions to values and goals throughout the family life cycle	Evaluates interrelationship of role perceptions to values and goals throughout the family life cycle. Cog. 6.0 Evaluation Aff. 4.0 Organization
3. Relationship of family and contiguous society	Analyzes relationship of family and contiguous society. Cog. 4.0 Analysis Aff. 3.0 Valuing

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4. Although an affective objective is not identified, the suggested learning and evaluative experiences are designed to involve students in both cognitive and affective behaviors at the levels stated.

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PERSONAL AND FAMILY RELATIONSHIPS

Advanced Level

Major Concept: **Relationship of personal and societal factors to formation of a family**

Major Objective: **Analyzes personal and societal factors involved in formation of a family.**
Cog. 4.0 Analysis Aff. 4.0 Organization

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
SOCIETY affects the FORMATION of a family.	*Compare* today's standards of mate selection with those of the past.	*Write* term paper which identifies changes in demands of society and/or cultures on mate selection.
	Investigate various sociological systems of mate selection.	*Contrast* reasons for each sociological system of mate selection.

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
	Use resources to *identify* societal attitudes toward mixed marriages.	*Draw* conclusions regarding the implications of societal attitudes for persons contemplating mixed marriages.
	Discuss relationship of personal goals and societal attitudes to be considered in mate selection. *Identify* personal goals for marriage.	*Write* an essay stating beliefs about readiness of adolescents for marriage from personal and societal points of view.
	Panel to *discuss* "Careers and marriage in life patterns of women — the expectations of society."	*Analyze* validity of ideas presented in the panel.
	Discuss legal requirements for marriage in our society and/or culture.	*State* beliefs about desirable requirements for formation of a family.
The success of marriage will be influenced by INTERPERSONAL RELATIONSHIPS.	*Discuss* adjustments prior to and during early years of marriage.	*Use* case studies *relating* adjustments to interpersonal relationships to *compare* differences.
	Identify and *examine* the various role expectations of husband and wife. *Discuss* how these role expectations affect interpersonal relationships.	*Write* essay discussing: "What are the causes of confusion in modern role perception?" or "Who's role seems to have changed the most in terms of traditional roles?".
	Identify relationship of role perception to interpersonal relationships in marriage.	*Draw* conclusions about the relationship of role perception to success in marriage.
	Research and *discuss* the importance of communication to interpersonal relationships within a marriage. By using various resources, *develop* guidelines for effective communication.	*Use* the guidelines to *analyze* a family situation as to communication factors within the family.

1190

Major Concept: **Interrelationship of role perceptions to values and goals throughout the family life cycle**

Major Objective: **Evaluates interrelationship of role perceptions to values and goals throughout the family life cycle.**
Cog. 6.0 Evaluation Aff. 4.0 Organization

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Individual and family ROLES change during the FAMILY LIFE CYCLE.	*Define* and *illustrate* family life cycle.	*Identify* stages of given families within family life cycle.
	Identify and *examine* roles of family members at various stages of family life cycle.	*Visit* selected homes of people at various stages of the family life cycle to *interview* homemaker and *compare* roles she perceives each family member is assuming.
VALUES and GOALS change during the FAMILY LIFE CYCLE.	*Define*: Values and goals.	Quiz on comprehension of values and goals.
	Analyze different value-oriented families to discover how their values influence behavior; e.g., "Things" oriented family "People" oriented family "Idea" oriented family "Activities" oriented family "Status" oriented family	*Evaluate* factors which may cause values and goals to change during the family life cycle.
	Predict the effect of each value orientation on behaviors at different stages in the family life cycle.	
	Predict influences of family goals and values when families move during different stages of the family cycle.	*Debate:* "Can moving to a sociologically different area change values and goals."
	Discuss value and goal changes as they develop through various family life stages.	*Analyze* own family in relation to values and goals in its present stage of life cycle.
The INTERRELATIONSHIP between ROLE PERCEPTION and VALUES and GOALS varies with the FAMILY LIFE CYCLE.	*Interview* young married couples to *identify* roles, values, and goals.	*Draw* conclusions about roles, values, and goals of young marrieds.
	Discuss how the addition of children change roles, values, and goals in a family.	*Survey* several "child stage" families to *compare* findings with results from discussion.

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Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
	Debate: The teenage stage of life cycle is the most important one from the standpoint of role perceptions and values and goals.	Tape debate to *analyze* in terms of validity of ideas.
	Use a case study of a typical family at the "launching stage" to *evaluate* adjustment of role perceptions, values, and goals.	*Select* another stage of the family life cycle and *identify* adjustments in role perception values, and goals likely to be needed.

Major Concept: **Relationship of family and contiguous society**

Major Objective: **Analyzes relationship of family and contiguous society.**
Cog. 4.0 Analysis Aff. 3.0 Valuing

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
There is a reciprocal RELATIONSHIP between FAMILY and SOCIETY.	*Divide* class into groups. *Investigate* (1) the family's relationship to society, (2) society's relationship to the family. *Discuss* findings.	*Analyze* a personal reciprocal relationship in the community. *Draw* conclusions.
FAMILY RELATIONSHIPS are more COMPLEX in SOCIETIES where there is rapid SOCIAL CHANGE.	*Trace* development of the complexities in society. *Analyze* ways in which these have compounded the complexities of family relationships in recent years. *Relate* evidence of families' abilities to cope with these changes.	*Predict* changes which will further compound family relationships. *Suggest* methods which families may use to cope with these changes within the next decade.
Rapid SOCIAL CHANGE places a STRAIN on COHESION within and between FAMILIES.	*Identify* sources of stress; e.g., technological advances, political strategy, and newly emerging or absorbed idealogies. *Analyze* these for effects on families.	*Write* an essay analyzing stress-producing factors which might result in strained relationships in a family situation.
Trends toward SOCIAL AGENCIES assuming some of the RESPONSIBILITIES traditionally performed by the FAMILY develop as a result of TECHNOLOGICAL and SOCIAL CHANGE.	*Identify* social agencies which have assumed some family responsibilities. *Investigate* need, purpose, function, organization, and availability of the services.	*Analyze* factors involved in a situation in which a family is considering utilization of a social institution.

Management of Personal and Family Resources

Overview

The focus in the unifying area of MANAGEMENT OF PERSONAL AND FAMILY RESOURCES is directed to the same centers of interest within the same frame of reference as the areas of HUMAN GROWTH AND DEVELOPMENT and PERSONAL AND FAMILY RELATIONSHIPS. The concepts which were selected as significant and relevant to the needs of young people at early, middle, and late adolescence are:

— personal, family, and environmental resources in a changing world

— decision making as it involves present and future life

— personal and family use of resources in terms of goal achievement.

The emphases for the three levels are shown in Figure 8.

The beginning level focuses on the achievement of insights into the concepts of management as they relate to the individual and the family. The effect on management of resources available to individuals and families in a changing world is considered. The involvement of decision making as a factor in management and its relationship to achievement of immediate and long-range goals are also concepts included at this level.

The intermediate level is directed to the effect of management practices on the individual, the family, and society. How personal decisions and acceptance of individual responsibility for management of resources are related to family interaction receives special attention. That a relationship between maturity and responsibility for management exists becomes self-evident as learning at this level progresses and is correlated with the other two unifying areas.

The advanced level identifies concepts stressing the interrelationships of management practices and family decisions during various stages of the family life cycle and the effect of these upon goal achievement and upon society.

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MANAGEMENT OF PERSONAL AND FAMILY RESOURCES

Intermediate Level

Major Concepts	*Major Objectives
1. Utilization of individual, family, and environmental resources	Analyzes use of resources in a changing society to the benefit of the individual, family, and community. Cog. 4.0 Analysis Aff. 2.0 Responding
2. Relationship of decision making to personal and family interaction	Evaluates the effect of personal decisions on family interaction. Cog. 6.0 Evaluation Aff. 3.0 Valuing
3. Effect of individual responsibility on management of resources	Analyzes personal responsibility in management of resources. Cog. 4.0 Analysis Aff. 3.0 Valuing

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4. Although an affective objective is not identified, the suggested learning and evaluative experiences are designed to involve students in both cognitive and affective behaviors at the levels stated.

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MANAGEMENT OF PERSONAL AND FAMILY RESOURCES

Intermediate Level

Major Concept: **Utilization of individual, family, and environmental resources**

Major Objective: **Analyzes use of resources in a changing society to the benefit of the individual, family, and community.**
Cog. 4.0 Analysis **Aff. 2.0 Responding**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
USE OF RESOURCES in a changing society affects the INDIVIDUAL, the FAMILY, and the SOCIETY.	*Record* use of time over a 24-hour period. *Compare* differences in use of time by class members. *Interview* parents and/or grandparents about a typical day in their teens to *illustrate* use of resources as society changes.	*Analyze* effect of differences in use of time on individual, family, and society.

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
	Organize a panel discussion on: "How Societal Changes Affect Use of Resources," to *identify* causes of change. Relate causes of change in family's use of resources and *predict* possible outcomes.	*Draw* conclusions. Subjective evaluation of responses to panel presentation.
	Plan meals for a family for a week. *Make* specific plans and direct activities for one of the meals. *Compare* experiences with other class members to *determine* differences in the use of time, money, and energy. *Illustrate* ways use of resources will affect possible outcomes.	*Use* laboratory check sheets, food score cards, check lists for serving food, and/or self-evaluation check lists on laboratory performances in relation to time, money, and energy.
	Discuss influences and possible consequences upon the family and society of alternative uses of resources for meal management.	*Draw* conclusions about alternative use of resources and their influences.
The way in which RESOURCES are utilized affects and is affected by the INDIVIDUAL, the FAMILY, and the COMMUNITY.	*Classify* expenditures from records of personal spending or from case studies. *Identify* personal buying habits and factors that influence them.	*Formulate* a plan for spending that will change money management and buying habits in order to more nearly attain goals.
	Investigate and *illustrate* ways of contributing talents to benefit the community.	*List* personal talents and analyze ways in which these are currently benefiting the community.
	Describe ways the community is using resources in behalf of teenagers and adults.	*Analyze* the effect these resources have on individuals and families.

1139

Major Concept: **Relationship of decision making to personal and family interaction**

Major Objective: **Evaluates effect of personal decisions on family interaction.**
Cog. 6.0 Evaluation **Aff. 3.0 Valuing**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Ability to evaluate INTERACTION of relevant FACTORS affects ultimate DECISION.	*Examine* advertisements for authenticity. *Formulate* criteria for evaluating advertisements.	*Create* an advertisement for an imaginary product. *Evaluate* advertisement according to established criteria. *Analyze* factors which may influence the buyer's decision to purchase.
	Examine display of similar type items; e.g., children's clothing, shoes, or socks, or cake mixes, or simple equipment. *Identify* characteristics of each. *Relate* each product to personal or family situations with varied resources, values, goals.	*Make* hypothetical or actual purchase. *Evaluate* purchase as to interaction factors affecting choice.
	Plan menus for a family situation; *select* food; *justify* choices. *Prepare* meal. *Evaluate* choices in terms of needs met and personal satisfaction in relation to values and goals.	*Prepare* new menus and plans featuring different utilization of personal and family resources. *Support* choices.
PERSONAL and FAMILY INTERACTION influences DECISION MAKING.	*Recall* some decisions made during a school day. *Identify* factors involved. *Illustrate* ways in which these decisions have influenced personal and family interaction.	*Create* a management problem and *select* a decision. *Draw* conclusions regarding decision making and personal or family interaction.
	Discuss a situation related to the management of time, money, energy, attitudes, abilities, and skills; e.g., family dollar distribution. *Identify* effect of resources of each individual family member on the management of the total family resources.	*Use* a new situation and *evaluate* decisions made and their effects upon the individual and the family.

1200

Major Concept: **Effect of individual responsibility on management of resources**

Major Objective: **Analyzes personal responsibility in management of resources.**
Cog. 4.0 Analysis Aff. 3.0 Valuing

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
MANAGEMENT of personal and family RESOURCES involves RESPONSIBILITY.	*Contrast* case situations which *illustrate* differences in acceptance of responsibility in management of resources.	*Analyze* influences of differences in acceptance of responsibility on management of personal and family resources.
RESPONSIBILITY for MANAGEMENT of family RESOURCES is affected by MATURITY.	*List* the responsibilities that family members of various ages and abilities might assume in management of family resources. *Identify* those responsibilities which all ages might share.	*Plan* and *complete* an experience centering around one of the responsibilities listed. *Include* management principles employed. *Evaluate* results and *report* to class.
	Discuss past experiences in the use of resources for achievement of family goals. *Identify* need for management.	*Analyze* situations to *determine* management principles used in these family experiences.

1201

MANAGEMENT OF PERSONAL AND FAMILY RESOURCES

Advanced Level

Major Concepts	*Major Objectives
1. Influence of family life cycle on management practices	Evaluates management practices influenced by the family life cycle. Cog. 6.0 Evaluation Aff. 4.0 Organization
2. Relationship of decision making in the family to society	Evaluates interrelationship of family decisions and society. Cog. 6.0 Evaluation Aff. 4.0 Organization
3. Effect of family life cycle on goal achievement	Analyzes effect of family life cycle upon goal achievement. Cog. 4.0 Analysis Aff. 4.0 Organization

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4. Although an affective objective is not identified, the suggested learning and evaluative experiences are designed to involve students in both cognitive and affective behaviors at the levels stated.

1202

MANAGEMENT OF PERSONAL AND FAMILY RESOURCES

Advanced Level

Major Concept: **Influence of family life cycle on management practices**

Major Objective: **Evaluates management practices influenced by family life cycle.**
Cog. 6.0 Evaluation **Aff. 4.0 Organization**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
AVAILABILITY of and DEMANDS upon RESOURCES vary with the stages of the FAMILY LIFE CYCLE.	*Contrast* availability and demands upon resources at various stages in life cycle.	Given a series of discrepencies existing in family resources and demands upon resources, *discuss* how an adaptation of resources could be made to meet demands at the various stages of the life cycle.
Use of MANAGEMENT PRACTICES varies with differences in FAMILIES and SITUATIONS.	Where differences exist between resources and demands upon resources, *synthesize* management practices which could compensate for these differences at various stages in family life cycle.	Given a series of variations existing between resources and demands within a family, *hypothesize* causes and *predict* management practices which would improve the situation.

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
	Illustrate different management practices used in different family situations.	*Hypothesize* cause and effects.
	Use previous learning experience to *determine* management practices common to all groups.	*Analyze* ways in which demands and resources influence management practices.
Development of FAMILY LIFE CYCLE and CHANGES in circumstances influence FAMILY PATTERNS of management.	*Participate* in a series of talks by resource persons who present aspects of developmental changes of individuals in life cycle: — physical changes — nurse, doctor — emotional changes — school psychologist, marriage counselor — philosophical changes — clergyman — financial changes — family counselor — family life cycle changes — person in "empty nest" stage	*Predict* changes in personal patterns of management which are likely to occur within the next twelve months.
	Through buzz group, *react* to points emphasized by speakers. Group reporters *summarize* reactions for class. *Determine* how management practices may be adapted in the various stages.	*Evaluate* management practices in relation to goal achievement at various stages of the family life cycle.
	Survey individuals to *determine* changes in personal or family practices. *Report* to class.	*Classify* changes in patterns of management in family life cycle.
Continuous EVALUATION and REVISION during the MANAGEMENT process affect use of RESOURCES for achievement of goals.	*Use* case studies to *identify* procedures in management process. *Analyze* in relation to outcomes.	*Establish* criteria to be used in evaluating management situations. *Use* case studies to *assess* management practices against these criteria.
	Predict outcomes if management practices continue without revision; e.g., employed mothers, non-employed mothers, employed adolescents, one-parent family.	*Complete* case study to *illustrate* revision in management process. *Evaluate* revision against previously established criteria.

1203

Major Concept: **Relationship of decision making in the family to society**

Major Objective: **Evaluates interrelationship of family decisions and society.**
Cog. 6.0 Evaluation **Aff. 4.0 Organization**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Management RESPONSIBILITIES of individuals and families are influenced by the DEMANDS and EXPECTATIONS of SOCIETY.	*Identify* societal changes found in current events as related to personal and family management responsibilities. *Analyze* for demands and expectations of society. *Project* possible effects on management responsibilities of the individual, family, and greater society.	*Suggest* ways to adjust management practices to societal situations. *Use* a selected number of these proposed solutions to *hypothesize* effects of each on society and the family.
DECISIONS are affected by the interaction of PERSONAL, FAMILY, and ENVIRONMENTAL RESOURCES which influence managerial BEHAVIOR.	*Employ* chalk board to *build* a spider web schema using as the center "Factors in Decision Making" and having the radiating lines as "Factors." As discussion develops, *connect* the lines in the web to *illustrate* the relationships among the factors.	*Draw* conclusions relative to the interaction of factors in decision making.
	Given a solution to a family problem, *synthesize* the decisions which might have been made and the factors which might have exerted influence.	*Divide* into groups. *Select* a family problem related to society; each student *contributes* one complicating factor. Using this complete problem to *plan* course of action for arriving at managerial behavior, *cite* all decisions. *Share* plans.
Individual and family DECISIONS and BEHAVIOR influence and are influenced by SOCIETY.	*Trace* the cyclical influence that family decisions have upon such things as: — consumer choices — consumer services — community agencies — leisure recreational agencies *Analyze* reasons for these influences. *Predict* changes that may occur in the future.	*Evaluate* the interrelationship of these decisions and society.

Major Concept: **Effect of family life cycle on goal achievement**

Major Objective: **Analyzes effect of family life cycle upon goal achievement.**
Cog. 4.0 Analysis Aff. 4.0 Organization

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Stages of FAMILY LIFE CYCLE influence GOAL SELECTION and GOAL ACHIEVEMENT.	*Role play* a family situation where each individual reveals both short and long-range goals. *Propose* location of goals in the family life cycle. *Make* composite for family goals. *Analyze* influence of individual goals on family goals.	*Use* any specific long-term family goal to *analyze* affect of the family life cycle on goal achievement.
MANAGEMENT by individuals and families at various stages in the FAMILY LIFE CYCLE reflects differences in VALUES, GOALS, RESOURCES, STANDARDS, and assessment of POTENTIAL.	*Explore* management of consumer problems by individuals and families at various stages of the family life cycle and the influence exerted by individuals and families in the market place. *Analyze* relationships which exist among individual and family — values — goals — resources — standards — assessment of potential and the choices made at various stages in family life cycle. *Apply* this analysis to management practices found among families.	*Plan* a number of individual and family consumer choices likely to be made in the next twelve months involving at least $50. *Consider* alternatives to these choices. *Indicate* effects that these choices will have on families.
	Investigate and *demonstrate* methods or techniques of home management. *Identify* values involved, practices affecting quality of management, and potential of resources used. *Relate* these management practices to goals which may vary throughout the family life cycle.	*State* generalizations regarding management practices and goal achievement in the family life cycle.

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STATE SURVEY OF HOME ECONOMICS

PROGRAMS IN ILLINOIS

Background of Study

The Vocational Education Act of 1963 and the Vocational Amendments of 1968 have provided an incentive for organizational changes in a number of curriculum areas. The Illinois bill, Public Law 797, requiring consumer education to be taught in all the schools of the state has also had an influence on home economics instruction. From casual observation, it seems evident that programs have been and are being changed in line with these new directives. However, factual information about the nature and extent of the changes has been lacking. The traditional specific services are no longer easily identifiable since the reorganization of the Illinois Division of Vocational and Technical Education, and data gathering for a particular subject area has become very difficult.

At their annual meeting in August, 1969, the vocational home economics teachers of the state expressed concern over the direction to be taken in home economics instruction and selected a steering committee to make a further study of the matter. The teachers were particularly concerned with the relationship between home economics as preparation for gainful employment and as preparation for home making, especially as the latter is mandated

under section F of the Vocational Amendments of 1968. They were also aware of the fact that the Illinois State Plan contains a directive for showing evidence of accomplishment, and that it would be difficult to do this without having some base line information. Thus, the present survey was authorized and has been conducted in cooperation with the Research and Development Unit of the Illinois Division of Vocational and Technical Education and the School of Graduate Studies and Research of Southern Illinois University at Carbondale, Illinois.

Since all public schools in the state have the potential for offering some type of home economics instruction under the Vocational Acts, it was proposed that this survey would not be limited to those schools where the departments were formerly classified as vocational. Information about the total program in home economics in Illinois schools seemed essential as a prerequisite for determining next steps and devising a systematic plan for evaluation.

Procedures

1. The 1969-70 Illinois State School Directory, published by the office of the State Superintendent of Public Instruction, was used to obtain two mailing lists:

   A. senior and 3 year junior high schools

   B. grade and middle schools which were identified in the directory as containing grades 6, 7 and 8

Each school on the lists was given a code number. There were 2039 numbers.

2. A detailed survey form (Appendix) was prepared and mailed to each of the 750 schools in group A. Stamped envelopes were included for returning the forms. Surveys were addressed to the teacher.

3. A short double postcard form (Appendix) was prepared and mailed to each of the 1289 schools in group B. These postcards were addressed to the principal.

4. A vigorous follow-up was conducted. As needed, schools, in group A were sent reminder postcards, duplicate survey forms, a second postcard reminder and finally, an abbreviated survey form. Explanations and reminders were given at the state and sectional meetings of the Illinois Vocational Home Economics Teachers Association and were published in the newsletter of the Illinois Home Economics Association. In addition, letters requesting additional information (on a return postcard) were sent to those

teachers who did not give complete information on the returned survey form.

Schools in group B were sent reminder postcards and duplicate postcards, if necessary.

5. One purpose of the survey was to prepare a teacher directory. The heads of the Educational Service Regions in the state were contacted for teacher names if a school in their region did not respond or did not include the teacher's name on the returned form.

6. Tabulation forms were prepared for the various items on the survey forms, and the data was transferred by hand to these tabulation sheets. The information was then summarized and organized for analysis.

7. A written report was prepared for publication.

A graduate assistant helped with the mailings, follow-up, preparation of forms and tabulation for this survey. The survey instrument was prepared for duplicating by the Professional and Curriculum Development Unit of the Division of Vocational and Technical Education and duplicated by the Stenographic Service of Southern Illinois University.

Results

Limitations on the Findings

The tabulation and analysis of the results of this survey have been unusually difficult. There were the usual problems with incomplete responses and discrepancies in figures, including obvious estimates instead of the actual counts that were requested. In addition, there were some respondents who apparently were not clear as to the distinctions among "useful" (non-reimbursed), gainful (including prevocational) and consumer homemaking programs, as these are-currently defined by the Illinois Division of Vocational and Technical Education. Some arbitrary decisions had to be made for recording purposes, and these may or may not be accurate. Specific difficulties will be commented on as each category of results is reported.

Some teachers did not seem to have been involved in decisions made about the nature of the school home economics programs. The need for continuing in-service education for all home economics teachers, as well as for administrators, seems quite evident.

Emphasis in this report will be given to general trends. Because of the difficulties in interpretation just referred to, specific details cannot be considered as definitive.

Percentage of Return

Group A - Senior High and Three Year Junior High Schools

Original listing	750	
Schools removed from listing	10	
Actual number for survey	740	
Schools not heard from	36	
Number of replies	704	95.1% return

Group B - Grade and Middle Schools Containing Grades 6, 7, 8

Original listing	1289 + 5 added	
	1294	
Schools removed from listing	19	
Actual number for survey	1275	
Schools not heard from	137	
Number of replies	1138	89.2% return

The original aim of at least a 90% return was met for Group A and almost for Group B.

Extent of Home Economics Offerings

Group A

Home economics courses of some type were offered in almost all these schools. Some of the thirty six schools which did not reply may not have had programs. However only two schools, Onarga and Springfield Vocational, are known to have no home economics. Four schools returned unsigned surveys. Schools for which no information at all was available included

Thornton Fractional South - Lansing

Thornton - Harvey

Lemont

Wilbur Trimpe J.H.S. - Bethalto

London Mills

Ellisville

Group B

Three hundred seventy-six or 32.8 per cent of the Group B schools responding to the survey reported home economics courses. These schools were usually those classified as junior highs or middle schools. Few schools in this group serving all eight grades reported offerings in home economics. Twenty schools reported that they were adding home economics courses to their programs during the 1971-72 school year, and several others said that they were planning such action, but did not set a definite date. In the limited space allowed on the postcard, some seventeen respondents expressed their conviction that such courses would be

Section 2

Items on p. 2 of the survey form

Courses in Preparation for Homemaking

This page asked respondents to list non-reimbursed (useful) home economics courses being taught during the 1970-71 school year. Information requested included the number of meetings per week, the length of the class period, the length of the course, the number of sections per year, and the course enrollment, divided by sex. A request asking respondents to check whether this was the first year that a particular course had been offered was generally ignored and/or misinterpreted, and has therefore not been considered for purposes of tabulation.

Junior High Classes

The first section of this page asked for information on 6th, 7th and 8th grade classes, since it is known that these are frequently taught by the high school home economics teacher in a small school. On the forms returned from the senior high schools (Code numbers 1-670 plus numbers 723 and 737) one teacher reported a 6th grade class, 73 stated that they had 7th grade classes and 121 that they taught 8th grade groups. In one school there was a combined 7th and 8th grade class.

The 78 junior highs which received long forms included a few middle and elementary grades (1-9). They reported home economics classes as follows:

Grades 5, 6, 7, 8	-	1 school
Grades 6, 7, 8	-	1 school
Grades 7, 8	-	6 schools
Grade 8	-	3 schools
Grades 8, 9	-	13 schools
Grades 7, 8, 9	-	35 schools
Grade 9	-	1 school
Total schools with junior high classes	-	60

The other 18 schools either did not report, did not give the level of classes, or had already been reported on a senior high form. Thus 255 or about 36% of the schools in Group A reported junior high level classes. This is a little larger percentage than the 32.8% of the 1 through 8 grade schools in Group B which reported having classes in home economics at the junior high level. It appears that a school which is in the same building with or close to a senior high school, particularly a small high school where the home economics teacher does not already have a heavy teaching load, is likely to offer these classes to 7th and 8th graders, especially to the 8th graders.

A total of 631 or about 34% of the 1848 schools (both Group A and Group B) which responded to the survey reported that they offered grade school home economics classes.

Information About Seventh and Eighth Grade Courses Reported by Schools in Group A

1. Seventh Grade

Not all schools provided the information requested about these courses. A summary of the data reported for 111 of the seventh grade classes is given below

Course Length	No. of Classes
Semester	53
Year	33
Twelve Weeks	10
Nine Weeks	11
Seven Weeks	1
Six Weeks	2
Two Weeks	1
Total	111

Meetings Per Wk.	No. of Classes
5	71
4	6
3	8
2 1/2	5
2	17
1	1
no response	3
Total	111

Class Period Length in Minutes	No. of Classes
100	1
80	3
70	1
65	1
60	5
56	2
55	18
54	1
53	2
52	2
50	2
47	2
46	2
45	27
44	2
42	6
41	1
40	23
35	2
30	1
no response	2
Total	111

It can be seen that most of these classes met daily, about half for a semester, one-fourth for a year, and the other fourth for shorter periods of time. The apparently great variation in the length of class periods can probably be-explained by a lack of uniformity in the method of reporting "passing time." It may be assumed that most of these seventh grade classes met for either 40, 45, or 50 minutes of actual class time.

Fifteen schools reported some home economics instruction for boys. In all but one case, this was given in separate classes.

The enrollment figures given for these classes seemed obvious estimates in some cases and were missing in others. Thus the total obtained by adding all figures given can be considered only as a rough estimate of the 7th grade home economics enrollment in schools from Group A. It was 10,826.

2. Eighth Grade

Course Length	No. of Classes
Semester	92
Year	84
Twelve Weeks	5
Nine Weeks	8
Seven Weeks	1
Six Weeks	3
*Other	11
No response	2
Total	206

Meetings Per Wk.	No. of Classes
5	129
4	9
3	23
2 1/2	8
2	9
1	1
other	9
No response	18
Total	206

*included 1-8 wk, 1-9-10 wks, 4-24 wks and 5-variable

Class Period Length in Minutes	No. of Classes
100	2
80	2
70	1
60	9
58	1
57	1
56	5
55	31
54	3
53	2
52	1
50	18
48	2
47	5
46	6
45	36
44	4
43	2
42	11
41	1
40	42
35	3
30	2
No response	16
Total	206

Course lengths reported for eighth grade showed somewhat more variation than those reported for seventh grade. Semester and year courses were about equal in number at this level. In some of these schools the girls had home economics for three-fourths of the school year and then were "exchanged" with boys classes for the remaining time. Eighteen schools in Group A reported classes for boys.

The pattern of meetings per week was similar to that reported for the seventh grade. It should be noted that only slightly more than half of these classes met daily. A class may meet throughout the year, but still have only a semester of actual instruction, and this is quite common at the junior high level.

Information About Junior High Courses Reported by Schools in Group B

Enrollment

In order to facilitate comparisons, information from the postcard survey will be reported at this point. The postcard forms (Appendix) asked only for the grade level, length of course, number of sections per year and total yearly enrollment, classified by sex. A few respondents gave information about the length of the class period or other explanatory data, but there was very limited space on the card. The problem with the accuracy of enrollment figures was noted, and as already mentioned, approximately fifty-seven cards contained information which had also been given on one of the Group A long forms.

A count of the 7th grade enrollment given on the postcards, excluding the fifty-seven duplicate reports, resulted in a figure of 19,242. This can be considered only as an approximation of the actual enrollment in home economics classes at the seventh grade level in elementary and middle schools during the 1970-71 school year. When this figure is added to the seventh grade enrollment reported by schools in Group A (10,826) the grand total is 30,068 .

Similar figures for eighth grade enrollment are:

enrollment reported by Group B schools	24,641
enrollment reported by Group A schools	14,152
Total reported enrollment	38,793

An estimate of the number of students enrolled at other grade levels was not attempted.

Grade Levels and Course Length

A rough count of the grade levels and course lengths listed on the postcards gave some indication of the extent to which home economics was being taught at the upper elementary levels. It should be remembered that only about thirty percent of the schools in Group B reported that they had home economics programs at all. Within that thirty percent, then (approximately 376 schools) home economics classes were reported as being held for pupils in grades 4 through 9. Four schools said that they had fourth grade classes, and twelve reported classes for fifth graders. Thirty-eight stated that they had boys classes, often as part of an exchange program and for a short time. A few

schools reported classes for combined grade levels and also team teaching arrangements with other subject areas. In one school the "lower IQ" students were offered home economics instead of science. The following table will give some indication of the number of classes reported taught for varying lengths of time at the three most common grade levels.

Course Length	Number of Classes at Each Grade Level		
	6th	7th	8th
Year	11	103	132
Semester	15	110	143
Other	25	69	78
No response	5	16	19
Total	56	298	372

It will be remembered that Group A schools also reported the largest number of junior high classes at the eighth grade level. Boys classes were likely to be at that level. The increase in middle schools seems to mean that home economics is being taught to children as early as fourth grade in some cases, though this trend still involves only a few students.

It should also be noted that classes meeting for a year or a semester did not necessarily meet daily. Several different arrangements were noted on the postcards by some respondents. This information was not asked for, and since only a few gave it, no attempt at tabulation was made.

III (Cont.)

Period Length	H. Ec I	H. Ec II	H. Ec III	H. Ec IV
56-59	32	21	12	6
55	180	128	78	43
51-54	14	10	5	4
50	40	29	20	10
46-49	11	2	1	0
45	16	9	5	4
41-44	6	4	3	1
40	13	10	6	2
Lecture-lab	41	24	14	5
No response	15	12	7	6
Total	416	287	173	87

IV Reported Enrollment	17,986	10,307	2,630	1,533

Part II Special Interest Courses

This section asked teachers to report on those classes which were devoted to the study of one home economics subject matter area only, and which were not being reimbursed under a special contract or local district plan. In addition to the confusion as to what constituted a special interest course (see previous section) there was some evident misunderstanding as to where to enter those subject matter courses which were being taught in preparation for gainful employment classes at higher levels, or even in other high schools. Some teachers recorded these classes in two places and decisions had to be made as to where they "really belonged." Undoubtedly, this was a source of error.

One interesting comparison here might be in the relative numbers of courses reported in each of the subject areas listed on the survey form.

They are arranged here in order by the number of classes reported.

Subject Area	No. of Classes Reported	Enrollment Reported
1. Clothing & Textiles	356	20,232
2. Foods & Nutrition	326	16,534
3. Family Living	298	12,749
4. Housing & Home Furnishings	187	5,458
5. Child Development	136	5,391

Subject Area	No. of Classes Reported	Enrollment Reported
6. Other Interest Courses	101	2,954
7. Consumer Education	69	2,015
8. Home Management	51	1,701
9. Family Health and Home Nursing	16	533

The tables following will give the data on meetings per week, length of class period, and length of course, for each subject area. As would be expected, most of these classes were scheduled for a semester, though they were sometimes arranged in pairs, so that a student could sign up for the two separate courses to make up a year of home economics.

I Course Length	Child Development	Clothing and Textiles	Consumer Education	Family Health or Home Nursing	Family Living or Family Relations	Food and Nutrition	Home Management	Housing & Home Furnishings
Year	16	86	15	1	107	75	6	18
Semester	113	243	46	11	180	220	41	158
Nine Wks	3	2	5	2	3	4	3	4
Sem or Yr.	0	4	0	0	1	5	0	1
Other	1	5	3	1	1	2	0	2
No response	3	16	0	1	6	20	1	4
Total	136	356	69	16	298	326	51	187

II Meetings Per Wk.	Child Development	Clothing and Textiles	Consumer Education	Family Health or Home Nursing	Family Living or Family Relations	Food and Nutrition	Home Management	Housing & Home Furnishings
Five	130	313	65	13	283	284	43	178
Four	1	4	1	0	2	5	0	2
Other	2	16	2	1	6	13	3	4
No response	3	23	1	2	7	24	5	3
Total	136	356	69	16	298	326	51	187

III Period Length	Child Development	Clothing and Textiles	Consumer Education	Family Health or Home Nursing	Family Living or Family Relations	Food and Nutrition	Home Management	Housing & Home Furnishings
90	1	3	0	0	0	1	0	0
81-89	0	0	0	0	0	0	0	1
80	3	7	0	0	2	8	0	3
71-79	0	2	0	0	1	1	0	1
70	0	3	2	0	1	4	0	0
61-69	1	2	0	0	1	3	1	1
60	2	10	1	0	8	11	1	3

III Period Length	Child Development	Clothing and Textiles	Consumer Education	Family Health or Home Nursing	Family Living or Family Relations	Food and Nutrition	Home Management	Housing & Home Furnishings
56-59	5	24	3	2	18	18	2	7
55	65	176	36	7	136	151	23	98
51-54	3	10	1	3	7	10	1	2
50	19	34	5	0	24	30	7	21
46-49	4	8	0	0	6	8	2	6
45	5	8	0	0	12	7	0	4
41-44	1	0	0	0	4	0	1	0
40	13	15	0	0	53	15	6	18
Lecture-lab	6	16	3	3	13	25	2	13
Other	0	14	0	0	1	8	0	0
No response	8	24	1	1	11	26	6	9
Total	136	356	69	16	298	326	51	187

Again, the pattern of approximately half the classes meeting for 55 minutes was evident. This was true, even for the foods classes. These did have a few more double period, or lecture-laboratory type schedules, but the difference was slight. Family living classes were reported to have more 40 and 45 minute periods than the other subject areas.

An inspection of the tabulation forms will show that many of the larger schools had several semesters of foods and clothing courses available. Some had as many as eight, so that a student could presumably take four years of foods or clothing. Tailoring, pattern drafting, "needlecraft," and special sewing courses for EMH students were given in some schools. Special foods courses included "Family Meals," "Creative Cooking," "College Preparatory Foods," and "Foreign Foods."

Eighteen foods courses for boys only were reported, as were 52 mixed foods classes. Seven boys were reported enrolled in regular clothing classes. Consumer education and family living were also commonly taken by boys. One hundred thirty-three, or about 44% of the family living courses reported boys enrolled and 37 or 53% of the consumer education classes contained both boys and girls. In fact, the only subject area which was not reported to enroll at least a few boys was that of Family Health and Home Nursing. There were only a few such classes reported.

A detailed breakdown of enrollment figures has not been made for this report, because as explained previously, they cannot be considered either complete or accurate.

Other Interest Courses

Teachers were invited to record here, any special "useful" home economics courses which did not fit under one of the other headings. In some cases, though, it seemed evident that the courses listed probably should have been recorded elsewhere. For

example, courses titled "Psychology for Living," "Everyday Living," and "Home Living" may have contained family living topics or content.

Some classes set up for gainful employment but not presently being reimbursed, were included in this category. Seventeen special classes for boys (usually called "Bachelor Living") were being offered. Four hundred and seventy five boys were reported as enrolled in these classes. Thirteen courses were identified as being planned especially for EMH students or other slow learners. Some of the courses listed as "Practical Home Ec," "Basic Home Ec," etc., may have also been for these students, but they were not specifically labeled as such. A few courses were being offered for the college bound, and several schools provided the chance for independent study. One small school offered a course which enrolled only boys and was titled "Human Ecology."

Section 3

Items on page 3 of the survey form.

This page requested information about courses taught under an approved local district plan, including the regular gainful employment courses identified by definite code numbers by the Division of Vocational and Technical Education, and also "pre-vocational" subject matter courses being taught as part of a sequential plan in preparation for entrance into the employment or work experience type class.

Interpretation of this section was apparently very difficult for teachers. Some did not seem to know whether the courses in their schools were reimbursed or not. Those courses which were obviously misplaced were moved to the proper section, but it was not always possible to tell exactly where they should have been recorded. The "pre-vocational" heading was especially confusing. In general, courses reported under this title were thought to belong under one of the others. Therefore, in tabulating, each was placed under a suitable category, and this section was eliminated. It was decided that this procedure would give a more accurate picture of the gainful employment courses in the state.

The number of reimbursed classes reported, by topic area, is given in the following table.

Course Title	Number of classes reported
1. Orientation	186
2. Food Preparation	182
3. Child Care	137
4. Clothing	124
5. Interrelated Coop	47
6. Other	44
7. Housing - Home Furnishings	44
8. Home and Industrial Mgt.	12
Total	776

Major Concept: **Importance of roles and responsibilities of family members**

Major Objective: **Comprehends roles and responsibilities of family members.**
Cog. 2.0 Comprehension **Aff. 2.0 Responding**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
UNDERSTANDING ROLES in the family influences CONTRIBUTIONS to the family.	*Discuss* traditional and contemporary roles of family members.	*Use* case studies of families and *indicate* whether roles of members are traditional or contemporary.
	Discuss to *determine* what factors contribute to an individual's understanding of any given role; e.g. 1. How does a girl learn to be a woman? 2. How does a boy learn to be a man?	*Relate* factors to own family situation.
	Use puppets or other communication media to *portray* different ideas about the roles of family members.	*Explain* what family members with different ideas about the role of each might contribute to the family.
TEENAGERS assume various ROLES within the family unit.	*Examine* case studies to *develop* an understanding of different family patterns and teenager's roles within these families. *Discuss* roles of teenagers.	*Summarize* the differences in roles assumed in families by teenagers.
	As a home experience, *assume* as many of the roles of a homemaker as possible; e.g. child sitter, cook, laundress, meal planner. *Arrive* at conclusions in terms of: (1) Importance of each role in the home, (2) Degree of family approval or disapproval for assumption of the roles, (3) Feeling of success in each role.	*Interpret* influence of the roles assumed on the family.
Acceptance of RESPONSIBILITY affects RELATIONSHIPS and ROLES within any group.	*Describe* roles assumed on a given day within the family and outside the family.	*Identify* and *compare* roles assumed by different class members.
	Discuss the way in which an individual accepts a responsibility and a group's expectation of how that individual influences relationships within the group. *Examine* influence of a person's acceptance of a responsibility on his role in the group.	*Draw* conclusions about assumption of responsibility, roles, and relationships.

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Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
The FAMILY is responsible for meeting the BASIC NEEDS of its members.	*Discuss* presentation depicting "How Thin Are You Slicing Your Responsibilities?" or "Is There Enough of You to Go Around?".	*Draw* conclusions as to possible effects upon self and others.
	Use resources to *gain* knowledge of basic needs; e.g., family TV series, case studies.	*List* basic human needs. Written quiz to evaluate knowledge.
	Discuss statement: "Basic needs are met in many ways."	*Identify* different ways in which a family contributes to meeting basic needs of individuals.
	Discuss use of housing, food, clothing to meet basic needs.	*Explain* how a family provides for basic physical needs.
	Discuss family responsibility in meeting its obligation for education of its members.	Observation of student participation for attitudes toward assuming responsibility for education.
	Use resources to *develop* an understanding of basic psychological needs; e.g., love, security, acceptance.	Quiz to evaluate knowledge of basic psychological needs.
	Use audio-visual aids to *illustrate* psychological needs. *Discuss* own perception of how person(s) felt in the situations illustrated.	*Write* a paragraph to *compare* own feelings in a similar experience.
The FAMILY is responsible for PERSONAL DEVELOPMENT of its members.	*Examine* resources to *determine* functions of families in contributing to personal development.	*Examine* a case study and *explain* how this family contributed to personal development of its members.
	Write a theme, "What My Family Means to Me and How It Functions." From the theme, *determine* what and how cultural patterns are transmitted through the family to develop its individual members.	*Assess* as to organization, insight, clarity, interpretation.

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MANAGEMENT OF PERSONAL AND FAMILY RESOURCES

MAJOR CONCEPTS AND OBJECTIVES SELECTED FOR THREE LEVELS OF INSTRUCTION

BEGINNING LEVEL		INTERMEDIATE LEVEL		ADVANCED LEVEL	
Major Concepts	*Major Objectives	Major Concepts	*Major Objectives	Major Concepts	*Major Objectives
1. Effect of personal, family, and environmental resources in a changing world on management	Analyzes relationships of personal, family, and environmental resources in a changing world. Cog. 4.0 Analysis Aff. 2.0 Responding	Utilization of individual, family, and environmental resources	Analyzes use of resources in a changing society to the benefit of the individual, family, and community. Cog. 4.0 Analysis Aff. 2.0 Responding	Influence of family life cycle on management practices	Evaluates management practices influenced by the family life cycle. Cog. 6.0 Evaluation Aff. 4.0 Organization
2. Relationship of decision making to values, goals, and maturity	Applies principles affecting decision making in the use of personal, family, and environmental resources. Cog. 3.0 Application Aff. 3.0 Valuing	Relationship of decision making to personal and family interaction	Evaluates the effect of personal decisions on family interaction. Cog. 6.0 Evaluation Aff. 3.0 Valuing	Relationship of decision making in the family to society	Evaluates interrelationship of family decisions and society. Cog. 6.0 Evaluation Aff. 4.0 Organization
3. Use of resources in the management process	Applies management principles in the use of personal and family resources. Cog. 3.0 Application Aff. 2.0 Responding	Effect of individual responsibility on management of resources	Analyzes personal responsibility in management of resources. Cog. 4.0 Analysis Aff. 3.0 Valuing	Effect of family life cycle on goal achievement	Anaylzes effect of family life cycle upon goal achievement Cog. 4.0 Analysis Aff. 4.0 Organization

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4. Although an affective objective is not identified, the suggested learning and evaluative experiences are both cognitive and affective behaviors at the levels stated.

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MANAGEMENT OF PERSONAL AND FAMILY RESOURCES

Beginning Level

Major Concepts	*Major Objectives
1. Effect of personal, family, and environmental resources in a changing world on management	Analyzes relationships of personal, family, and environmental resources in a changing world. Cog. 4.0 Analysis Aff. 2.0 Responding
2. Relationship of decision making to values, goals, and maturity	Applies principles affecting decision making in the use of personal, family, and environmental resources. Cog. 3.0 Application Aff. 3.0 Valuing
3. Use of resources in the management process	Applies management principles in the use of personal and family resources. Cog. 3.0 Application Aff. 2.0 Responding

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4. Although an affective objective is not identified, the suggested learning and evaluative experiences are designed to involve students in both cognitive and affective behaviors at the levels stated.

04195

MANAGEMENT OF PERSONAL AND FAMILY RESOURCES

Beginning Level

Major Concept: **Effect of personal, family, and environmental resources in a changing world on management**

Major Objective: **Analyzes relationships of personal, family, and environmental resources in a changing world.**
Cog. 4.0 Analysis **Aff. 2.0 Responding**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Knowledge of personal, family, and environmental RESOURCES in a CHANGING WORLD contributes to MANAGEMENT.	*Clarify* managerial and resource terms. *Identify* changes in resources during last five years. *Relate* these to management of resources.	Objective test of management and resource terms.

BIBLIOGRAPHY

Bloom, Benjamin S., Max D. Engelhart, Edward Furst, Walter H. Hill, and David R. Krathwohl, *Taxonomy of Educational Objectives, Handbook I, Cognitive Domain*, David McKay Company, Inc., New York, 1956.

Krathwohl, David R., Benjamin S. Bloom, and Bertram B. Masia, *Taxonomy of Educational Objectives, Handbook II, Affective Domain.* David McKay Company, Inc., New York, 1964.

"New Directions — A Statement of Philosophy and Objectives." *Journal of Home Economics*, 51:8. October, 1959, pp. 679-694.

Simpson, Elizabeth J., "The Classification of Educational Objectives, Psychomotor Domain," *Illinois Teacher of Home Economics*, 1966-1967. Vol. X, No. 4, pp. 110-144.

1206

VT 013 953
KEENAN, DOROTHY; SPILLMAN, JANIS
STATE SURVEY OF HOME ECONOMICS EDUCATION.
FINAL REPORT.

SOUTHERN ILLINOIS UNIV., CARBONDALE.
ILLINOIS STATE BOARD OF VOCATIONAL EDUCATION
AND REHABILITATION, SPRINGFIELD. VOCATIONAL
AND TECHNICAL EDUCATION DIV.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - JUL71 50P.

DESCRIPTORS - *HOME ECONOMICS EDUCATION;
*SCHOOL SURVEYS; *EDUCATIONAL RESEARCH;
*ELEMENTARY GRADES; *SECONDARY GRADES;
PROGRAM EVALUATION; STATE SURVEYS
IDENTIFIERS - ILLINOIS

ABSTRACT - QUESTIONNAIRES WERE MAILED TO
2,039 ILLINOIS PUBLIC SCHOOLS TO GATHER
QUANTITATIVE DATA ABOUT THE HOME ECONOMICS
PROGRAMS IN OPERATION DURING THE 1970-71
SCHOOL YEAR IN GRADES 6-12. RESPONSES FROM
1,842 SCHOOLS (704 JUNIOR AND SENIOR HIGH
SCHOOLS AND 1,138 ELEMENTARY AND MIDDLE
SCHOOLS) REVEALED THAT HOME ECONOMICS
INSTRUCTION WAS WIDELY AVAILABLE IN HIGH
SCHOOLS THROUGHOUT THE STATE. HOME ECONOMICS
COURSES WERE AVAILABLE AND USUALLY REQUIRED
OF GIRLS IN ABOUT A THIRD OF THE GRADES 6-8,
BUT A VERY SMALL NUMBER OF SCHOOLS OFFERED
HOME ECONOMICS IN GRADES 4-6. APPROXIMATELY
40 PERCENT OF THE JUNIOR AND SENIOR HIGH
SCHOOLS REPORTED THAT ONE OR MORE REIMBURSED
PROGRAMS WERE OFFERED, AND 55 PERCENT
REPORTED THAT ONLY NON-REIMBURSED PROGRAMS
WERE OFFERED. THE MOST POPULAR INTEREST
COURSE WAS CLOTHING, WITH FOODS, FAMILY
LIVING, AND HOME FURNISHINGS FOLLOWING IN
ORDER OF FREQUENCY. THESE AND OTHER FINDINGS
ARE REPORTED, AND THE SURVEY INSTRUMENT IS
APPENDED. (SB)

VT 013 953

desirable and that they wished it were possible to offer them. Space and money were mentioned several times as obstacles.

The enrollments given for the home economics courses in the Group B schools were so obviously estimates, particularly in the larger schools, that the figures given here must be considered as approximations only.

Home Economics Enrollment Reported

Group B - Grade and Middle Schools

61,125	girls
8,636	boys
69,761	Total

43 or 11% of the 376 schools reporting classes stated that boys were taught. A common arrangement was an exchange with the girls' classes for from 2-9 weeks. Only one or two schools stated that they had boys and girls together in the home economics classes.

Responses from Senior and Junior High Schools

Section I

Items on p. 1 of the survey form

Questions 1, 2, 3, 4

These questions asked for the school name, address, grades included, and total enrollment of the school and the home economics department.

The total home economics enrollment was requested, broken down by sex. Some schools indicated that records were not kept in this way. It is recognized that accurate enrollment figures are very hard to come by. Students move from school to school, and often drop or add courses during the year. The original plan of the survey was to record first semester enrollment. However, the measures necessary to increase the per cent of return carried the study over to the second semester. Some schools reported that first semester figures were not available until after the semester had been completed. Some schools were run on a trimester plan. And in some cases students were enrolled in more than one home economics course, and therefore were probably counted twice (or more) when the total enrollment figure was obtained by merely adding course enrollments.

The above reservations should be kept in mind when interpreting the following figures.

The information about number of sections was requested in an attempt to get some idea of the size of classes. However since these figures, as well as those for enrollment, seemed to be often estimates, this aspect of the data was not explored.

This concludes the report of the information obtained on the postcard survey of elementary and middle schools (Group B). The discussion of the data obtained on page 2 of the long form of the survey which was sent to junior and senior high schools (Group A) will now be resumed.

High School Classes

Part I. Composite Courses

The term "composite" obviously was not understood by many teachers. Some evidently interpreted it to mean any course at this level which enrolled the same students for the entire year, even though this course was made up of two separate "special interest" semesters. Some recorded the same course as both "composite" and "special interest," although these are, by definition, mutually exclusive categories. In some cases, these misinterpretations were recognizable, but there were undoubtedly others which could not be identified as easily. A general impression was that not as many "true" composite courses were being taught as were recorded.

A. Home Economics I

Four hundred sixteen courses identified as Home Economics I were reported as being taught in the 704 Group A schools who responded to this survey. Almost all of these classes met daily for the entire school year. The most common period length (43% reported it) was 55 minutes. However, 41 schools reported a "lecture-lab" pattern. About half of these had 3-40 minute periods and 2-80 minute lab periods each week. A few schools reported some type of modular scheduling.

The courses listed under "other" included eight related to health occupations, plus some other courses which may really have belonged under other headings, but were not easily identified.

A distribution of class numbers according to the grade levels served is given in the next table.

Grade Level	Orien-tation	Child Care	Clothing	Foods	Housing-H. Furn.	Hm. Mgt.	Other
7	3	0	0	0	0	0	0
7-8	1	0	0	0	0	0	0
8	15	0	1	0	0	0	0
8-9	1	0	1	1	0	0	1
9	82	2	4	6	3	0	3
9-10	32	4	5	12	0	1	0
9-10-11	2	1	1	1	0	0	0
9-10-11-12	4	1	6	5	2	0	0
10	28	15	15	20	3	4	3
10-11	3	6	7	8	3	0	3
10-11-12	3	20	22	24	7	1	5
11	0	14	8	18	2	0	3
11-12	0	53	31	57	14	3	14
12	1	11	5	11	4	3	9
10-12	0	8	1	1	1	0	0
No response	11	2	17	18	5	0	3
Total	186	137	124	182	44	12	44

Two hundred and sixty-two classes were reported as meeting for a semester, and almost exactly the same number met for the school year. The coop and orientation courses were usually scheduled for a year, the others for a semester. A very few courses met for shorter periods of time. Because of the fact that the "prevocational" courses were distributed among the various subject area courses, the classification of courses as cooperative and in-school was often missing and thus no summary of that data is being presented here.

Some boys were reported enrolled in each of these seven types of classes, with the largest number in food service, as one might expect.

Section 4

Items on p. 4 of the survey form.

On page 4, there was first an inquiry about consumer homemaking courses--those being reimbursed during the 1970-71 school year. One hundred and one were reported. The following grade levels were served by these classes:

9 - 7 classes

10 - 12 classes

11 - 3 classes

10-11 - 1 class

11-12 - 34 classes

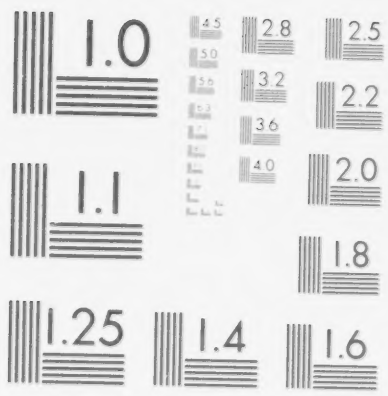
12 - 27 classes

3 or 4 grades - 9 classes

18 OF 133

ED

063 517



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
	Examine own responsibilities for development of other family members.	*Give* examples from own or other families ways family members aid in the development of one another.
SHARING of family RESPONSIBILITIES affects family RELATIONSHIPS.	*Use* resource person or literature pertaining to colonial families to *develop* an understanding of ways responsibilities were shared.	*List* and *compare* responsibilities family members shared in colonial America and contemporary America.
	Identify responsibilities which comprise "homemaking." *Identify* persons who could share these responsibilities.	*Select* one family responsibility and *identify* values to be gained from sharing responsibility.
	Keep a record of own responsibilities in the family for a period of time. *Discuss* how taking these responsibilities affected family relationships.	*Draw* conclusions relative to the effect of sharing family responsibilities on family relationships.
MATURITY influences the acceptance of ROLES and RESPONSIBILITIES.	*Compare* responsibilities carried by family members of different ages.	*Draw* conclusions about the relation of responsibility to maturity.
	Use case studies or TV sequences to *identify* other kinds of maturity which influence acceptance of roles and responsibilities.	Problem situation test to *evaluate* comprehension of influence of maturity on acceptance of roles and responsibilities.

PERSONAL AND FAMILY RELATIONSHIPS

Intermediate Level

Major Concepts	*Major Objectives
1. Interrelationship of adolescent culture and the family	Analyzes interrelationship of adolescent culture and the family. Cog. 4.0 Analysis Aff. 2.0 Responding
2. Interrelationship of self and role perceptions within the family (refer to Human Growth and Development, Intermediate Level, #2)	Analyzes interrelationship of self and role perceptions within the family. Cog. 4.0 Analysis Aff. 3.0 Valuing
3. Effects of interaction among family members on individual behavior	Evaluates effects of interaction among family members on individual behavior. Cog. 6.0 Evaluation Aff. 3.0 Valuing

*The numbers indicated refer to the categories of the cognitive and affective taxonomies as stated on pp. 3-4. Although an affective objective is not identified, the suggested learning and evaluative experiences are both cognitive and affective behaviors at the levels stated.

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PERSONAL AND FAMILY RELATIONSHIPS

Intermediate Level

Major Concept: **Interrelationship of adolescent culture and the family**

Major Objective: **Analyzes interrelationship of adolescent culture and the family.**
Cog. 4.0 Analysis Aff. 2.0 Responding

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Interpretation of ROLES and RESPONSIBILITIES influences INTERRELATIONSHIP within the family.	*Review* terms for understanding: — Roles — Responsibilities — Interrelationship — Interaction	Quiz on comprehension of terms.

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
	Analyze relationships of personal, family, and environmental resources to management through use of case study.	*Draw* conclusions regarding these interrelationships.
Available RESOURCES vary with the INDIVIDUAL CONDITIONS.	*Use* a situation involving the selection of a gift to *identify* individual resources; i.e., creative or natural abilities as related to the individual and conditions.	*Make* a decision concerning resource(s) which could be utilized in selected situation. *Give* reasons for choice.

Major Concept: **Relationship of decision making to values, goals, and maturity**
Major Objective: **Applies principles affecting decision making in the use of personal, family, and environmental resources.**
Cog. 3.0 Application **Aff. 3.0 Valuing**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
DECISION MAKING is involved in MANAGEMENT.	*Study* steps involved in decision making.	Objective test on comprehension of steps in decision making.
	Illustrate management of resources by use of case studies.	*Identify* process of decision making in these situations.
VALUES and GOALS of individuals and families are fundamental to DECISION MAKING.	*Discuss* relationship of values and goals to decision making.	Pretest for indications of students' current values and goals toward a typical adolescent problem.
	Use laboratory experiences involving management in selected substantive area to *identify* related values and goals in decision making.	*Compare* identified values and goals to personal values and goals.
VALUES and GOALS of individuals and families give direction to BEHAVIOR.	*Use* hypothetical case or film to *identify* ways values and goals of other cultures give direction to the same family activity; e.g. birthday celebration.	*Draw* conclusions which indicate the relationship of personal values and goals to decisions made in illustrated situations.

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Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
	Discuss and *demonstrate* choice making situations to help in understanding selectivity process; e.g., choice of friends, choice of activities in which to participate.	*Complete* the open-end statements: I select when . . . I select because . . .
PERSONAL VALUES guide the establishment of immediate and long-range GOALS.	*Discuss* problem: All management is related to finding answers to these three questions: (1) What I want (immediate and long-range goals)? (2) Why I want it (values)? (3) How I get it (management)?	*Explain* the relationship of values, long-range goals, and management.
GOALS change with MATURATION and SITUATIONS.	*Compare* changes in one of own goals. *Discuss* reasons for changes.	*Complete* open-end statements: Ten years from now I hope to . . . and why.

Major Concept: **Use of resources in the management process**

Major Objective: **Applies management principles in use of personal and family resources.**
Cog. 3.0 Application **Aff. 2.0 Responding**

Generalizations	Suggested Learning Experiences	Suggested Evaluative Experiences for Teacher and Students
Use of RESOURCES influences GOAL ACHIEVEMENT. Knowledge of ALTERNATIVES aids DECISION MAKING related to use of resources.	*Relate* alternatives in use of personal resources to probable achievement of a goal; e.g., a teenager may lack funds for an identified purchase. *Discuss* the values and decisions involved.	*Use* a tab item technique to evaluate personal use of resources to achieve a goal.
	Identify the alternatives within the management process through pictures or films illustrating management of resources.	*Select* one situation requiring management and *state* alternative use of resources. *List* possible effects on individuals and families.
	Prepare a schedule for one activity; e.g., grooming, helping with household chores. *Identify* effective management practices. *Complete* activity.	*Study* results of plan and activity. *Propose* possible improvements.
	Survey home economics department to *identify* environmental resources available to improve personal and group management practices.	*Propose* improvements to the department to facilitate personal and group management.

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STATE SURVEY OF HOME ECONOMICS EDUCATION

FINAL REPORT

RESEARCH AND DEVELOPMENT
PROJECT NO. RDC–A1–035

Funded Jointly by

State of Illinois
Board of Vocational Education & Rehabilitation
James W. Cook, Chairman
Division of Vocational and Technical Education
Michael J. Bakalis, Executive Officer
Sherwood Dees, Director
and
Southern Illinois University
Carbondale, Illinois
Robert Layer, Chancellor

VT013953

1208

STATE SURVEY OF HOME ECONOMICS EDUCATION

FINAL REPORT
RESEARCH AND DEVELOPMENT
PROJECT NO. RDC–A1–035

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July, 1971

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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STATE OF ILLINOIS
BOARD OF VOCATIONAL EDUCATION AND REHABILITATION
DIVISION OF VOCATIONAL AND TECHNICAL EDUCATION
RESEARCH AND DEVELOPMENT UNIT

Group A

Schools reporting home ec. enrollment

704 number

Home economics enrollment reported

104,316 girls

8,097 boys

112,403 Total

Questions 5 and 6

Question 5 asked:

Did this school have a vocational (reimbursed) home economics program prior to the adoption of the new Illinois State Plan in 1969?

The responses were:

Yes	470	or	66.6%
No	167	or	23.7%
Left Blank or used short form	57	or	8.1%

The total number of schools does not equal 704 because some schools reported for several schools on one form. This was the case especially in the suburban communities where one administrative unit runs two or more buildings.

Question 6 asked:

Does this school currently offer general non-vocational (non-reimbursed) home economics courses?

An important thing to find out in this survey was the proportion of state schools involved in each of the three types of home economics programs. This information has been brought together in the following table:

Type of Program	No. of Schools Reporting	%
Useful (non-reimbursed) only	390	55.3
Gainful (occupational) only	35	5.0
Consumer Homemaking only	0	0
Useful + Gainful	165	23.4
Useful + Consumer Homemaking	30	4.3
Gainful + Consumer Homemaking	18	2.5
All 3 Types in operation	30	4.3
Not reporting or not clear	36	5.2
Total	704	100.0

From this tabulation, it can be seen that approximately 40% of the state junior and senior high schools (outside of Chicago) were conducting one or more of the reimbursed programs during the 1970-71 school year. An inspection of the data indicated that some other schools had modified their courses to meet the requirements for these programs, but for one reason or another, had not received state approval as yet.

B. Home Economics II, III and IV

There was a sharp drop in the number of Home Economics II classes reported, about the same size decrease between Home Ec II and III, and a 50% decrease in Home Ec IV classes as compared to Home Ec III. This does not necessarily mean that the students dropped out of home economics. As will be seen in the next section, a number of special interest courses probably picked up some of these students. Also many juniors and seniors were enrolled in the gainful or occupational home economics courses.

The pattern of course length, period length and number of meetings per week remained the same throughout the four years. About half of the classes at each level met for a 55 minute period, five days a week, for the entire school year. In fact, ninety percent of these classes met five days a week for a year. The main variation, as at the junior high level, was in the period length and here, too, the distinction may lie more in the reporting than in the actuality. Most schools run on 40, 50 or 60 minute "hours," with some variation in the amount of time between classes.

Data for all four classes have been combined in the following tables.

Comparison of Data - High School Composite Courses

I	Course Length	Number of Classes at Each Level			
		H. Ec I	H. Ec II	H. Ec III	H. Ec IV
	Year	390	266	160	77
	Semester	17	12	8	6
	Nine Weeks	1	0	0	0
	Sem. or Yr.	2	3	1	0
	No response	6	6	4	4
	Total	416	287	173	87

II	Meetings Per Wk.	H. Ec I	H. Ec II	H. Ec III	H. Ec IV
	Five	401	279	168	83
	Four	6	2	3	0
	Other	6	4	1	1
	No response	3	2	1	3
	Total	416	287	173	87

III	Period Length	H. Ec I	H. Ec II	H. Ec III	H. Ec IV
	81-85	2	2	1	0
	80	12	9	5	3
	71-79	4	3	3	0
	70	3	2	3	0
	61-69	4	2	1	0
	60	23	20	9	3

Eight schools did not report a grade level for the consumer homemaking course being taught in the school. About half of these classes met for a semester and about half for a year. There were also a few 9 wks courses. Boys were reported enrolled in 47 of the classes, about 46%.

In response to item 36 on p. 4 of the survey form, a number of schools were mentioned as centers where students went to take an occupational training course after they had taken the preliminary subject matter course in their home high school. This practice did not appear to be common in the state at the present time, however,.

Summary figures for item 37 on p. 4 of the survey form are given below.

Practice	Yes	No	Don't Know	No Response
A. Occupational information or courses for grades 6, 7 and 8 are presently taught in this school by a home economics trained person.	76	388	35	205
B. In this school district, plans have been made for introducing orientation to the world of work in grades 1-8 with a home economics teacher involved in the planning and instruction.	51	355	70	228
C. A home economics teacher in this school is cooperating with some other vocational department by teaching part of a course, or by team teaching.	54	406	6	238

It may be concluded that there is some attempt being made to carry out each of these practices, but that they are certainly not widely carried on.

When teachers were asked, in item 38, whether there was any other type of program in their school which had not been covered by the previous survey responses, they mentioned several classes, such as family living, consumer education, management, and courses for EMH students, which could have been reported under the non-reimbursed course section of the survey. A few told of cooperatively taught courses, or courses in consumer education which were taught by teachers from other subject areas. One school reported a special course for pregnant students. A few adult classes in clothing construction and in foods were mentioned. Perhaps the adult program has largely been removed to the junior colleges.

Some schools were using teacher assistants or aides and preparing them in a special course. "Activity" or "mini" courses without grades or credit were reported by a few teachers, and some of these were also reported by the grade and junior high teachers.

Section 5

Items on p. 5 of the survey form.

A question about vocational youth clubs (item 39) was included. Four hundred and forty-one schools reported FHA chapters and there were 24 or more which had begun HERO chapters. Other schools had special clubs for food service or home ec clubs which were not affiliated with FHA.

The last question on the survey asked for any changes that were being planned for the home economics programs in the school for the 1971-1972 school year. Almost half the schools responded to this question and many plans were mentioned. Some schools (about 35-40) which did not already have a reimbursed program were planning to start one, and several were affiliating with an area vocational school. Some were planning to cooperate with nearby schools to make more offerings available. Some schools which already had gainful employment programs were planning to expand these--either to add the cooperative work experience phrase, or to branch off into other subject areas. New courses were being added, particularly in consumer education, bachelor living and boys' foods courses. Composite courses were being changed to interest courses, although two schools reported that they were reversing this process because of lack of interest in the semester courses.

Finally, several schools were going on modular scheduling, which would necessitate extensive changes in programming and more arrangements for individualized instruction.

The survey form was completed by asking for the names of the teachers in the school classified as

A. Full time instructors teaching non-reimbursed (useful) home economics courses

B. Full time instructors teaching reimbursed gainful employment or occupational preparation home economics courses

C. Full time instructors teaching some reimbursed and some non-reimbursed home economics courses

D. Part-time teachers.

The teacher directory obtained from this survey is being published as a separate document.

Summary

The purpose of the survey was to gather base line quantitative data about the home economics programs in operation during the school year 1970-71 in grades six through twelve in the public schools of Illinois, excluding the city of Chicago.

The Illinois State School Directory was used to identify 2039 schools for the survey, presumably all the downstate senior high schools, three year junior high schools, and those elementary or middle schools which enrolled students in the sixth, seventh and eighth grades. Nineteen schools were later removed from the listing because of duplication, consolidation, incorrect identification, etc. Five elementary schools were added.

Responses to a detailed survey form were received from 704 of the 740 junior and senior high schools and from 1138 of the 1281 elementary and middle schools. The overall response rate was 91%.

It was found that home economics instruction was widely available in high schools throughout the state. Only one regular high school, Onarga, in Iroquois county, is known to have no program. Home economics courses were available, and usually required of the girls, in about a third of the schools enrolling students in grades 6, 7 and 8. Approximately 11% of those elementary or middle schools which had home economics for girls, also offered it to boys, usually for a shorter period of time or as an "exchange" program. A very small number of schools offered home economics for pupils in grades 4 through 6.

Approximately 40% of the junior and senior high schools surveyed reported that one or more of the reimbursed "vocational" programs was being carried on during the 1970-71 school year. Fifty-five per cent of the schools reported that only non-reimbursed home economics was being taught. Approximately 40 of these schools indicated that they were planning to start a reimbursed program within the next year or two.

Fifty-nine per cent of the schools reported a non-reimbursed composite Home Economics I class. Composite courses decreased in number at the higher grade levels, with only 12% of the schools reporting a senior composite class.

The most popular interest course was Clothing, with 356 classes reported in that area. Courses in Foods, Family Living and Home Furnishings followed in that order of frequency.

In reimbursed programs, "Orientation" classes were most common, with 186 being reported. Courses in food preparation and child care were next in frequency, with clothing fourth in number of classes offered.

One hundred and one courses were reported as being offered under consumer homemaking contracts.

Many schools reported that changes in their programs were being considered for 1970-71.

Teachers had much difficulty in interpreting the survey questions. Several points on the form would need clarification if it were to be used again in a follow-up study. However, it seemed evident also that many teachers in the state were not familiar

with either the provisions of or the rationale behind the Vocational Education Acts, as these are currently being implemented in Illinois. In-service, as well as pre-service instruction in this area, seems an urgent need.

APPENDIX

Dear

Recent Federal legislation has provided an incentive for organizational changes in many high school curriculum areas, including home economics. As a result, there have been numerous modifications of home economics programs in the schools of the state. However, factual information about present programs is lacking. The steering committee of the Illinois Vocational Home Economics Teachers Association, in cooperation with the Research and Development Unit of the Illinois Division of Vocational and Technical Education, earnestly solicits your help in assessing the current status of home economics instruction in Illinois.

This form has been arranged to take a minimum of your time. Your cooperation in checking the facts to give an accurate response and in returning the material promptly will be greatly appreciated.

Sincerely,

Dorothy Keenan
for the IVHETA

HOME ECONOMICS PROGRAMS SURVEY

Please fill in the following:

1. School _____
   Name — District No.

2. School Address _____
   Box, Street, or Route — City — Zip Code

3. Grades included in this school: _____

4. Total School enrollment: _____ _____ _____
   Girls — Boys

   Total Home Economics Enrollment _____ _____ _____
   Girls — Boys

5. Did this school have a vocational (reimbursed) home economics program prior to the adoption of the new Illinois State Plan in 1969? _____ Yes _____ No

6. Does this school currently offer general non-vocational (non-reimbursed) home economics courses? _____ Yes _____ No

   If "yes", please give details in items 7 through 22 on Page 2.

   If "no", please continue with item 23 on Page 3.

COURSES IN PREPARATION FOR HOMEMAKING BEING OFFERED IN THIS SCHOOL DURING THE 1970-71 SCHOOL YEAR

Items 7-22 apply only to non-vocational (non-reimbursable) home economics courses being taught in 1970-71, (those not included under a special contract or Local District One and Five Year Plan for Vocational and Technical Education.) Reimbursable courses will be reported on other pages in the survey. Complete the table below by placing a check or writing in the information asked for.

Check if First Year Course Off'd.	School-Level	Meetings per wk					Length of Class Period	Length of Course—(sem., yr., or other)	No. of Sections per yr.	Total Enrollment	
		1	2	3	4	5				girls	boys
	Junior High or Middle School										
___ 7.	6th grade										
___ 8.	7th grade										
___ 9.	8th grade										
	High School Composite Courses										
___10.	Home Economics I										
___11.	Home Economics II										
___12.	Home Economics III										
___13.	Home Economics IV										
	High School Special Interest Courses										
___14.	Child Development										
___15.	Clothing and Textiles										
___16.	Consumer Education (See footnote 1)										
___17.	Family Health or Home Nursing										
___18.	Family Living or Family Relations										
___19.	Food & Nutrition										
___20.	Home Management										
___21.	Housing & Home Furnishings (Interior Decoration)										
___ 22.	Others (list)										
___											
___											

(Include above any wage earning type courses which are not covered by approved Local District Plan filed with the State Board of Vocational Education.)

[1] List only Consumer Education courses taught by Home Economics teachers, but not included in Local District Plan.

23. Does this school have an approved reimbursable local district Plan for vocational education for 1970-71, which includes home economics courses? ____ Yes ____ No

If "yes", please give details in items 24 through 33.

If "no", please continue with item 34.

HOME ECONOMICS COURSES TAUGHT IN THIS SCHOOL UNDER AN APPROVED PLAN

Home Economics Courses for Gainful Employment	High School Credit	Grade Level							No. of Sections Per Year	Total Enrollment		In-School	Co-op
		6	7	8	9	10	11	12		Girls	Boys		
24. Home Economics Occupations Exploratory Orientation Courses – 09.0200													
25. Child Care – 09.0201													
26. Clothing – 09.0202													
27. Food Preparation – 09.0203													
28. Housing and Home Furhishings – 09.0204													
29. Home and Industrial Management – 09.0205													
30. Interrelated Cooperative Courses													
31. Other Occupational Training Courses													

32. Are any Home Economic subject matter orientation courses being taught in this school in 1970-71 as part of a sequence in one of the wage earning Programs listed above? If yes, please give details below in Item 33.

33. Prevocational home economics courses being taught in this school:

Course Title	Grade Level	Meetings per wk.					Length of Period	Length of Course (sem., yr., or or other)	No. of Sections per yr.	Total Yearly Enrollment	
		1	2	3	4	5				Girls	Boys

34. Does this school have, for 1970-71, a special consumer homemaking contract covering consumer homemaking courses?
_____ Yes _____ No

If "yes", please give details in items 35, 36.

If "no", please continue with item 37.

35. Courses presently being taught in this school under a special consumer homemaking contract:

Course Title	Grade Level	Meetings per wk.					Length of Course—(sem., yr., or other)	No. of Sections per yr.	Total Enrollment	
		1	2	3	4	5			girls	boys

36. Are any of the courses listed in item 33 taken by students who will take the occupational training course in another high school or area vocational school? If so, please place a check by each such course and give the name of the school.

_____

37. Please check any of the following which are true in your school and give details, including enrollment, if any, in the space following item C.

Yes	No	Don't Know	
			A. Occupational information or courses for grades 6, 7, and 8 are presently taught in this school by a home economics trained person.
			B. In this school district, plans have been made for introducing orientation to the world of work in grades 1-8 with a home economics teacher involved in the planning and instruction.
			C. A home economics teacher in this school is cooperating with some other vocational department by teaching part of a course, or by team teaching (as for example, a unit in Orientation to the World of Work). What area and with what departments?

38. Is there any other type of home economics related course or program carried on in this school which has not been covered by the previous questions? If so, please describe and give the total enrollment of students during the past year.

39. Do you have vocational youth clubs activities in your school? _____ Yes _____ No

Organization	Yes	No	Membership	
			Girls	Boys
FHA				
HERO				
H. Ec. Club				
Other Vocational Youth Clubs				

40. What changes are being planned in the home economics programs in this school for the 1971 72?

41. We would like to prepare an accurate directory of state home economics teachers. Would you please give the names of the teachers in this school, placing each in the proper category?

A. Full-time instructor teaching non-reimbursed (useful) Home Economics courses	B. Full-time instructor teaching reimbursed Gainful Employment or Occupational Preparation Home Economics courses	C. Full-time instructor teaching some reimbursed and some non-reimbursed Home Economics courses	D. Part-time teachers (indicate whether teaching part time in category A, B, or C)

Please sign your name and position here: _____

_____, and return the entire form in the accompanying envelope.

Thank you very much for your cooperation.

Dear

A special committee of the Illinois Vocational Home Economics Teachers Association, in cooperation with the Research and Development Unit of the Illinois Division of Vocational and Technical Education, is conducting a survey to assess the current status of home economics instruction in the state. We know that some schools offer home economics to students in the upper elementary grades. Would you please, therefore, fill in and return the attached postcard?
Thank you for your cooperation.

Dorothy Keenan
Home Economics Education

Please check and fill in:

1. _____ A home economics course is not offered in this school.
2. _____ The following home economics course(s) are offered:

Grade Level	Length of course	No. of sections per year	Total Yearly Enrollment	
			Boys	Girls

Comments _____

Thank you for your cooperation.
Name and Position _____

School Name & Address _____

VT 013 955
STEVENSON, W.W., AND OTHERS
CYCLE THREE REPORT. OCCUPATIONAL TRAINING INFORMATION SYSTEM. SUPPLEMENT V: A FOLLOW-UP STUDY OF OKLAHOMA VOCATIONAL AND TECHNICAL EDUCATION GRADUATES AND DROPOUTS; 1968-1969 AND 1969-1970.

OKLAHOMA STATE DEPT. OF VOCATIONAL AND TECHNICAL EDUCATION, STILLWATER. DIV. OF RESEARCH, PLANNING, AND EVALUATION.
OKLAHOMA STATE DEPT. OF INDUSTRIAL DEVELOPMENT AND PARKS, OKLAHOMA CITY
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DESCRIPTORS - *FOLLOWUP STUDIES; *VOCATIONAL FOLLOWUP; *VOCATIONAL EDUCATION; *HIGH SCHOOL GRADUATES; DROPOUTS; *INFORMATION SYSTEMS; JOB PLACEMENT; TABLES (DATA)
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ABSTRACT - TO DETERMINE THE POST-TRAINING EXPERIENCE OF GRADUATES AND DROPOUTS OF VOCATIONAL AND TECHNICAL EDUCATION IN OKLAHOMA AND THE IMPLICATIONS FOR THE IMPROVEMENT OF VOCATIONAL EDUCATION, STUDENTS ENROLLED IN 1968-1969 AND 1969-1970 WERE FOLLOWED-UP. PROGRAM INSTRUCTORS WERE PROVIDED WITH FOLLOWUP CARDS TO BE COMPLETED FOR EACH STUDENT AT FIVE MONTHS AFTER GRADUATION, AND AGAIN 12 MONTHS LATER. BASED ON THE FINDING THAT LESS THAN HALF OF THE GRADUATES ATTEMPTED TO FIND TRAINING-RELATED EMPLOYMENT WITHIN FIVE MONTHS, THE NEED TO SELECT EMPLOYMENT-BOUND STUDENTS OVER THOSE HEADING FOR COLLEGE WAS STRESSED, AND COUNSELING TOWARD EMPLOYMENT OR FURTHER RELATED EDUCATION WAS RECOMMENDED. THE ESTABLISHMENT OF PLACEMENT PROCEDURES AND ADEQUATE FOLLOWUP AND THE UTILIZATION OF FOLLOWUP DATA IN PROGRAM PLANNING WERE RECOMMENDED. RELATED DOCUMENTS ARE AVAILABLE AS VT 012 820 (ARM FALL 1971), AND VT 012 928 AND VT 013 050 (BOTH IN ARM VOL. 5, NO. 1). (BH)

VT 013 955

CYCLE THREE REPORT

OCCUPATIONAL TRAINING INFORMATION SYSTEM AUGUST 31, 1971

Supplement V

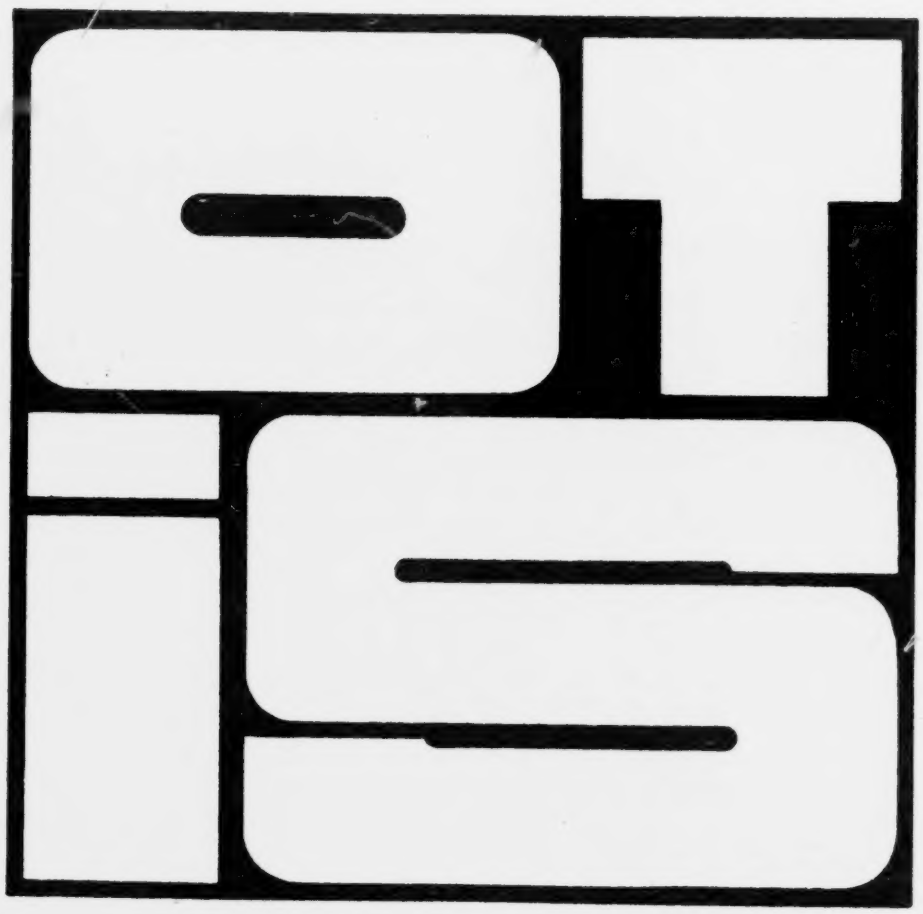
A follow-up study of Oklahoma vocational and technical education graduates and dropouts; 1968-1969 and 1969-1970

SPONSORING AGENCIES:

Oklahoma State Department of Vocational and Technical Education, Oklahoma Industrial Development and Parks Department, Ozarks Regional Commission, Governors Comprehensive Manpower Planning Staff.

COOPERATING AGENCIES:

Oklahoma Employment Security Commission, Manpower Research and Training Center of Oklahoma State University, Oklahoma Association of Private Schools, School of Occupational and Adult Education of Oklahoma State University, Research Foundation of Oklahoma State University.



AT013955

Division of Research, Planning, and Evaluation ■ Oklahoma State Department of Vocational and Technical Education

A FOLLOW-UP STUDY OF OKLAHOMA VOCATIONAL AND TECHNICAL EDUCATION GRADUATES AND DROPOUTS; 1968-1969 and 1969-1970

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Oklahoma State Department of Vocational and Technical Education

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CHAPTER I

BACKGROUND AND PROCEDURES

Introduction

The purpose of the training supported by the Oklahoma State Department of Vocational and Technical Education is to provide students with the knowledges and skills necessary to enter and succeed in the world of work. To evaluate the training it is necessary to examine the post-training experiences of program graduates in the labor market.

The Oklahoma State Department of Vocational and Technical Education has been conducting by-student follow-up surveys on graduates for the past six years, and this report presents the findings of the surveys for the past two years, conclusions based on the findings and recommendations based on the conclusions.

This chapter specifically presents (1) the purpose of the report, (2) deliminations of the report, and (3) the survey methods used to gather data for the report.

Purpose of the Report

The purpose of this report is to answer the question, "What has been the post-training experience of graduates and dropouts of vocational and technical education; what has been the experience of those who entered the world of work; and what implications does this experience have for the improvement of vocational and technical education in the future?"

Delimitations

The report is delimited by the following factors:

1. Home Economics Useful students are not included in the report as the purpose of this type of program is not to prepare workers for the world of work.

2. Follow-up data on adult students, MDTA students, and special schools students is not included in the report as the data either (a) was not available or (b) was published in other documents.

Survey Methods

During the enrollment periods in 1968-1969 and 1969-1970, students in vocational and technical programs in Oklahoma completed an enrollment form. In the 1968-1969 school year this enrollment form was identified as OTIS 2 while in the 1969-1970 school year, the enrollment form was identified as VE 6000. (NOTE: Both of these forms are presented in Occupational Training Information System - - Final Report, published by the Oklahoma State University Research Foundation in 1970.)

Five months after the students graduated, program instructors were given a follow-up card on each student who had enrolled. On the card was an inclusive list of ten possible post-training activities. (NOTE: For a sample of the follow-up cards, again see Occupational Training Information System - - Final Report.) Using his local knowledge and contacts, the teacher completed a follow-up card for each student by marking one of the ten responses.

One year from the first follow-up period, the students were followed-up a second time using the same techniques.

CHAPTER II

SURVEY RESULTS AND DIVISIONAL COMPARISONS

Introduction

This chapter presents the results of the survey described in Chapter I. Raw data and related percentages from the survey will be presented in Tables I through VI. In addition, follow-up data comparisons will be made with respect to the following three bases: (1) a comparison of 1969-1970 graduates (1st year follow-up) with 1969-1970 dropouts possessing marketable skills (1st year follow-up), (2) a comparison of 1968-1969 graduates (1st year follow-up) with 1969-1970 graduates (1st year follow-up), and (3) a comparison of first and second year follow-up data on 1968-1969 graduates. Bar graphs (Figures 1 through 24) will be used as a means of presenting the data comparisons. Finally, the data on the employment status of graduates who were available for placement is presented in bar graph form (Figures 25 through 32).

Explanation of Table and Bar Graphs

The abbreviations used in the tables and bar graphs are defined below. All other headings are self explanatory.

EMP REL (Employed Related)--This heading refers to those vocational-technical graduates or dropouts who are employed full-time in an occupation that is the same as or closely related to the occupation for which the training program is designed.

EMP UNR (Employed Unrelated)--This heading refers to those vocational-technical graduates or dropouts that are employed full-time in an occupation that is not closely related to the occupation for which the training program is designed.

EMP P-T (Employed Part-Time)--This heading refers to those vocational-technical graduates or dropouts that are currently employed on a part-time basis and not in school full-time irrespective of whether the particular job they are engaged in is related or unrelated to training.

UNEMP (Unemployed)--Unemployed, but in the labor force and not in school full-time.

SCH REL (School Related)--This column heading refers to those vocational-technical graduates or dropouts that have returned to school full-time and are engaged in course work or a program of study related to the training they received from their particular vocational-technical program.

SCH UNR (School Unrelated)--This heading refers to those vocational-technical graduates or dropouts that have returned to school full-time and are engaged in course work or a program of study unrelated to the training they received from their particular vocational-technical program.

MIL (Military)--This heading refers to those vocational-technical graduates or dropouts that are serving in the Armed Forces.

NOT L-F (Not in Labor Force)--This heading refers to those vocational-technical graduates or dropouts that are not in the labor force; that is, those not gainfully employed or seeking employment (e.g., a housewife).

UNK (unknown)--This heading refers to those vocational-technical graduates or dropouts which the survey respondents (i.e., teachers) were unable, due to insufficient information, to place in any of the other eight categories defined above.

Table I of this study presents first-year follow-up data on the 1969-1970 graduates by service division. As noted at the bottom of the table the data reported represents approximately sixty-eight percent of the total population of 1969-1970 graduates.

Table II, like Table I, is based on the survey results of the 1969-1970 follow-up. It reports the first-year follow-up data on 1969-1970 dropouts who had obtained marketable skills. As in Table I the data in this table represents approximately sixty-eight percent of the total population of 1969-1970 dropouts with marketable skills.

Table III presents the first-year follow-up data on 1968-1969 graduates. The data reported represents approximately eighty-four percent of the total population of 1968-1969 graduates.

Table IV covers the 1968-1969 graduates again but represents a second year follow-up on these individuals. The data reported represents fifty percent of the total population of 1968-1969 graduates.

Table V presents follow-up data on both the number and percent of graduates who were available for placement (entered the labor force) for the follow-up years 1968-1969 and 1969-1970. Column headings from left to right include: (1) the Program Division, (2) the total number of graduates, (3) the number and percent of total graduates available for placement, (4) the number and percent of total graduates available for placement broken down into the four status categories that comprise the total "available for placement" category, i.e. employed related, employed unrelated, employed part-time and unemployed.

The interpretation of Table VI headings is as follows. From left to right, the column titled "Program Title" lists those programs offered on which follow-up information was available. The column "Percent Available for Labor Force" refers to the combined percentages of those graduates or dropouts in the "Employed Related," "Employed Unrelated," "Employed Part-Time," and the "Unemployed" categories. The next four columns in the table, which are under the general heading "Of Those Available for Labor Force," designates what percent of the total number of program graduates available for the Labor Force fall in the "Employed Related," "Employed Unrelated," "Employed Part-Time," and "Unemployed" categories. The four columns under the broad heading "Unavailable for Labor Force" designates what percent of the total number of program

graduates fall into the "School Related," "School Unrelated," "Armed Forces," and "Not in Labor Force" categories. The final category listed in the table, "Status Unknown," designates what percent of the total number of program graduates could not, due to insufficient information, be placed in any of the previously mentioned eight categories.

TABLE I

FIRST-YEAR FOLLOW-UP DATA* ON 1969-1970 GRADUATES

PROGRAM DIVISION AND CODE	TOTAL GRADS	EMP REL	EMP UNR	EMP P-T	UN EMP	SCH-REL	SCH-UNR	MIL	NOT LF	UNK
AGRICULTURE--01	1920	468	101	39	34	628	403	155	12	80
Percent of Total Graduates		24	5	2	1	32	20	8	0	4
DISTRIBUTIVE ED.--04	898	294	32	11	14	191	193	50	72	41
Percent of Total Graduates		32	3	1	1	21	21	5	8	4
HEALTH--07	500	355	11	11	16	46	9	0	23	29
Percent of Total Graduates		71	2	2	3	9	1	0	4	5
HOME ECONOMICS--09	60	4	4	4	1	18	13	2	11	3
Percent of Total Graduates		6	6	6	1	30	21	3	18	5
BUSINESS & OFFICE--14	1071	370	52	15	49	299	121	11	135	19
Percent of Total Graduates		34	4	1	4	27	11	1	12	1
TECHNICAL-16	640	233	37	3	9	229	20	44	9	56
Percent of Total Graduates		36	5	0	1	35	3	6	1	8
TRADE & INDUSTRIAL--17	2065	783	196	23	43	322	250	212	88	148
Percent of Total Graduates		37	9	1	2	15	12	10	4	7
TOTALS	7154	2507	433	106	166	1733	1009	474	350	376
Percent of Total Graduates		35	6	1	2	24	14	7	5	5

* Data reported represents approximately 68 percent of the total population of 1969-1970 graduates, excluding Home Economics "Useful."

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TABLE II

FIRST-YEAR FOLLOW-UP DATA* ON 1969-1970 DROPOUTS WITH MARKETABLE SKILLS

PROGRAM DIVISION AND CODE	TOTAL DROPOUTS	EMP REL	EMP UNR	EMP P-T	UN EMP	SCH-REL	SCH-UNR	MIL	NOT L-F	UNK
AGRICULTURE--01	367	32	6	3	2	137	130	12	4	41
Percent of Total Dropouts		8	1	0	0	37	35	3	1	11
DISTRIBUTIVE ED.--04	53	11	2	4	0	7	8	2	11	8
Percent of Total Dropouts		20	3	7	0	13	15	3	20	15
HEALTH--07	67	15	5	0	1	2	2	2	7	33
Percent of Total Dropouts		22	7	0	1	2	2	2	10	49
HOME ECONOMICS--09	14	1	0	0	0	5	4	0	4	
Percent of Total Dropouts		7	0	0	0	35	28	0	28	0
BUSINESS & OFFICE--14	137	23	2	1	0	37	55	0	2	17
Percent of Total Dropouts		16	1	0	0	27	40	0	1	12
TECHNICAL--16	214	72	15	1	2	38	17	30	2	37
Percent of Total Dropouts		33	7	0	0	17	7	14	0	17
TRADE & INDUSTRIAL--17	375	67	27	4	5	58	82	32	29	71
Percent of Total Dropouts		17	7	1	1	15	21	8	7	18
TOTALS	1227	221	57	13	10	284	298	78	59	207
Percent of Total Dropouts		18	5	1	1	23	24	6	5	17

* Data reported represents approximately 68 percent of the total population of 1969-1970 dropouts with marketable skills, excluding Home Economics "Useful."

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TABLE III

FIRST-YEAR FOLLOW-UP DATA* ON 1968-1969 GRADUATES

PROGRAM DIVISION AND CODE	TOTAL GRADS	EMP REL	EMP UNR	EMP P-T	UN EMP	SCH-REL	SCH-UNR	MIL	NOT L-F	UNK
AGRICULTURE--01	2709	537	119	26	52	949	654	246	11	115
Percent of Total Graduates		20	4	1	2	35	24	9	0	4
DISTRIBUTIVE ED. --04	1229	321	55	11	30	366	251	63	66	66
Percent of Total Graduates		26	4	1	2	30	20	5	5	5
HEALTH--07	514	359	20	15	4	19	18	2	29	48
Percent of Total Graduates		70	4	3	0	4	4	0	6	9
HOME ECONOMICS--09	105	0	13	3	0	21	52	6	1	9
Percent of Total Graduates		0	8	3	0	20	50	6	1	9
BUSINESS & OFFICE--14	1199	352	76	9	53	373	145	12	131	48
Percent of Total Graduates		29	6	0	4	37	12	1	11	4
TECHNICAL--16	366	89	19	1	1	137	42	26	1	50
Percent of Total Graduates		24	5	0	0	37	11	7	0	14
TRADE & INDUSTRIAL--17	2724	904	284	30	46	522	365	311	105	157
Percent of Total Graduates		33	10	1	2	19	13	11	4	6
TOTALS	8846	2562	586	95	186	2387	1527	666	344	493
Percent of Total Graduates		29	7	1	2	27	17	8	4	5

*Data reported represents approximately 84 percent of the total population of 1968-1969 graduates, excluding Home Economics "Useful."

TABLE IV

SECOND-YEAR FOLLOW-UP DATA* ON 1968-1969 GRADUATES

PROGRAM DIVISION AND CODE	TOTAL GRADS	EMP REL	EMP UNR	EMP P-T	UN EMP	SCH-REL	SCH-UNR	MIL	NOT L-F	UNK
AGRICULTURE--01	1308	352	128	22	18	331	168	106	9	74
Percent of Total Graduates		26	9	1	1	25	12	15	0	5
DISTRIBUTIVE ED.--04	841	223	71	11	6	156	97	77	84	116
Percent of Total Graduates		26	8	1	0	18	11	9	9	13
HEALTH--07	402	306	1	13	2	14	4	1	21	40
Percent of Total Graduates		76	0	3	0	3	0	0	5	9
HOME ECONOMICS--09	32	5	2	0	0	2	8	0	10	5
Percent of Total Graduates		15	6	0	0	6	25	0	31	15
BUSINESS & OFFICE--14	924	399	59	10	21	206	46	14	143	35
Percent of Total Graduates		43	5	1	2	22	4	1	15	3
TECHNICAL--16	130	55	7	0	2	25	6	13	1	21
Percent of Total Graduates		42	5	0	1	19	4	10	0	16
TRADE & INDUSTRIAL--17	1581	487	195	23	13	215	133	304	120	91
Percent of Total Graduates		30	12	1	0	13	8	19	7	5
TOTALS	5218	1827	454	79	62	949	462	615	388	382
Percent of Total Graduates		35	9	2	1	18	9	12	7	7

* Data reported represents approximately 50 percent of the total population of 1968-1968 graduates, excluding Home Economics "Useful."

TABLE V

FOLLOW-UP DATA* ON GRADUATES AVAILABLE FOR PLACEMENT 1968-1970

PROGRAM DIVISION		TOTAL GRADUATES	AVAILABLE FOR PLACEMENT	NUMBER & PERCENT OF GRADUATES AVAILABLE FOR PLACEMENT			
				EMP REL	EMP UNR	EMP P-T	UN EMP
AGRICULTURE	No.	4629	1376	1005	220	65	86
	%	----	30	73	16	5	6
DISTRIBUTIVE ED.	No.	2127	768	615	87	22	44
	%	----	36	80	11	3	6
HEALTH	No.	1014	791	714	31	26	20
	%	----	78	90	4	3	3
HOME ECONOMICS	No.	165	29	4	17	7	1
	%	----	18	14	59	24	3
BUSINESS AND OFFICE	No.	2270	976	722	128	24	102
	%	----	43	74	13	3	10
TECHNICAL	No.	1006	392	322	56	4	10
	%	----	39	82	14	1	3
TRADE & INDUSTRIAL	No.	4789	2309	1687	480	53	89
	%	----	48	73	21	2	4
TOTALS	No.	16000	6641	5069	1019	201	352
	%	----	42	76	15	3	5

* Data derived from a combination of data from Tables I & III.

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
AGRICULTURE EDUCATION										
Agriculture Coop Training										
1969-70 Graduates	34	77	8	4	10	25	27	7	1	6
1969-70 Dropouts	13	80	0	0	20	18	62	0	0	8
1968-69 Graduates, 1st yr.	23	50	43	3	3	34	19	6	0	18
1968-69 Graduates, 2nd yr.	44	80	14	3	3	27	15	10	1	4
Agricultural Production										
1969-70 Graduates	34	73	17	6	5	34	20	9	1	3
1969-70 Dropouts	11	79	15	3	3	41	32	4	1	12
1968-69 Graduates, 1st yr.	27	71	20	5	5	36	20	12	1	4
1968-69 Graduates, 2nd yr.	39	66	26	4	4	26	13	16	1	6
Agricultural Mechanic										
1969-70 Graduates	32	71	15	10	4	30	25	5	1	7
*1969-70 Dropouts	21	40	20	40	0	25	42	0	4	8
1968-69 Graduates, 1st yr.	32	71	18	3	7	29	25	9	0	5
1968-69 Graduates, 2nd yr.	45	63	28	7	2	15	13	20	1	7

*Percents based on total sample of less than 30 students

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TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Ornamental Horticulture										
*1969-70 Graduates	20	100	0	0	0	20	0	20	0	40
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Agriculture, Other										
*1969-70 Graduates	14	100	0	0	0	43	29	0	0	14
*1969-70 Dropouts	0	0	0	0	0	50	0	50	0	0
1968-69 Graduates, 1st yr.	25	50	0	29	21	24	7	22	4	18
*1968-69 Graduates, 2nd yr.	29	100	0	0	0	43	0	0	14	14
TOTAL, AGRICULTURAL DIVISION										
1969-70 Graduates	33	73	16	6	5	33	21	8	1	4
1969-70 Dropouts	12	74	14	7	5	37	35	3	1	11
1968-69 Graduates, 1st yr.	27	69	21	5	5	35	20	11	1	6
1968-69 Graduates, 2nd yr.	40	68	25	4	3	25	13	16	1	6

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
DISTRIBUTIVE EDUCATION										
Advertising Services										
1969-70 Graduates	47	94	6	0	0	25	8	3	11	6
*1969-70 Dropouts	0	0	0	0	0	0	100	0	0	0
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.	(No occupational breakdown in D.E. available for 1968-1969 graduates)									
Apparel and Accessories										
1969-70 Graduates	27	79	11	11	0	17	33	2	14	7
*1969-70 Dropouts	20	100	0	0	0	20	0	0	40	20
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Automotive										
1969-70 Graduates	52	74	14	0	11	18	15	9	3	3
*1969-70 Dropouts	80	75	25	0	0	20	0	0	0	0
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Finance and Credit										
*1969-70 Graduates	31	88	13	0	0	19	35	4	12	0
*1969-70 Dropouts	100	0	0	100	0	0	0	0	0	0
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Floristry										
1969-70 Graduates	41	75	8	8	10	24	19	8	4	4
*1969-70 Dropouts	29	50	0	50	0	43	0	0	0	29
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Food Distribution										
1969-70 Graduates	39	85	12	3	0	16	21	6	12	6
*1969-70 Dropouts	29	50	0	50	0	43	0	0	0	29
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Food Services										
*1969-70 Graduates	40	100	0	0	0	0	40	0	20	0
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
General Merchandise										
1969-70 Graduates	39	87	8	3	3	24	21	2	12	1
1969-70 Dropouts	20	0	0	100	0	0	20	0	20	40
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Hardware and Related										
*1969-70 Graduates	60	78	22	0	0	7	27	7	0	0
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Home Furnishings										
*1969-70 Graduates	26	86	0	0	14	22	33	4	7	7
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

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TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Hotel and Lodging										
*1969-70 Graduates	58	100	0	0	0	0	17	8	17	0
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Industrial Marketing										
*1969-70 Graduates	29	100	0	0	0	43	0	0	0	29
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Insurance										
1969-70 Graduates	43	88	6	2	4	23	18	10	2	3
*1969-70 Dropouts	33	100	0	0	0	11	33	0	11	11
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										

*Percent based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
International Trade										
1969-70 Graduates	30	89	11	0	0	30	17	3	10	10
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Personal Services										
*1969-70 Graduates	42	60	40	0	0	42	8	8	0	0
*1969-70 Dropouts	100	100	0	0	0	0	0	0	0	0
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Petroleum										
*1969-70 Graduates	40	100	0	0	0	20	20	20	0	0
*1969-70 Dropouts	0	0	0	0	0	0	0	100	0	0
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

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TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Real Estate										
1969-70 Graduates	37	86	10	2	2	22	21	4	9	6
*1969-70 Dropouts	33	100	0	0	0	0	0	0	67	0
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Recreation and Tourism										
*1969-70 Graduates	23	100	0	0	0	31	31	0	15	0
*1969-70 Dropouts	0	0	0	0	0	0	0	0	0	100
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Transportation										
*1969-70 Graduates	29	100	0	0	0	21	36	0	7	7
*1969-70 Dropouts	100	0	100	0	0	0	0	0	0	0
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

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TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Distributive Education, Other										
1969-70 Graduates	36	78	6	11	6	18	26	6	8	6
*1969-70 Dropouts	17	100	0	0	0	0	33	0	33	17
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
TOTAL DISTRIBUTIVE EDUCATION										
1969-70 Graduates	39	84	9	3	4	21	21	6	8	5
1969-70 Dropouts	32	65	12	24	0	13	15	4	21	15
1968-69 Graduates, 1st yr.	31	77	16	3	4	32	22	5	3	6
1968-69 Graduates, 2nd yr.	37	72	23	4	2	19	12	9	10	14

*Percents based on total sample of less than 30 students

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TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
HEALTH EDUCATION										
Dental Assistant										
1969-70 Graduates	63	66	17	0	17	24	0	0	11	2
1969-70 Dropouts										
1968-69 Graduates, 1st yr.	61	76	20	0	4	9	16	2	4	9
*1968-69 Graduates, 2nd yr.	64	100	0	0	0	0	9	0	0	27
Nurse, A.D.										
*1969-70 Graduates	21	100	0	0	0	0	0	0	0	79
*1969-70 Dropouts	0	0	0	0	0	6	0	0	0	94
*1968-69 Graduates, 1st yr.	100	47	53	0	0	0	0	0	0	0
*1969-69 Graduates, 2nd yr.	57	88	0	13	0	7	0	0	7	29
Practical Nurse										
1969-70 Graduates	93	95	0	4	2	3	0	0	2	2
1969-70 Dropouts	43	70	25	0	5	0	2	2	15	37
1968-69 Graduates, 1st yr.	86	92	0	8	0	3	1	0	4	7
1968-69 Graduates, 2nd yr.	85	95	0	4	1	2	0	0	4	9

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Inhalation Therapy										
*1969-70 Graduates	90	100	0	0	0	0	10	0	0	0
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Medical Office Assistant										
1969-70 Graduates	67	83	8	0	10	22	7	0	3	2
*1969-70 Dropouts	25	100	0	0	0	25	25	25	0	0
1968-69 Graduates, 1st yr.	35	70	23	5	2	14	11	2	4	34
1968-69 Graduates, 2nd yr.	45	93	7	0	0	19	6	0	23	6
Health Occupation, Other										
1969-70 Graduates	25	50	30	0	20	28	10	0	25	13
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

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TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
TOTAL HEALTH DIVISION										
1969-70 Graduates	79	90	3	3	4	9	2	0	5	6
1969-70 Dropouts	31	71	24	0	5	3	3	3	10	50
1968-69 Graduates, 1st yr.	72	85	7	6	1	6	5	1	4	12
1968-69 Graduates, 2nd yr.	80	95	0	4	1	3	1	0	5	10

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
HOME ECONOMICS										
Child Care										
*1969-70 Graduates	24	75	0	0	25	53	6	0	18	0
1969-70 Dropouts										
*1968-69 Graduates, 1st yr	50	0	100	0	0	0	38	0	0	13
1968-69 Graduates, 2nd yr										
Clothing Production										
*1969-70 Graduates	14	33	67	0	0	23	50	0	9	5
*1969-70 Dropouts	0	0	0	0	0	100	0	0	0	0
*1968-69 Graduates, 1st yr	0	0	0	0	0	11	78	11	0	0
*1968-69 Graduates, 2nd yr	25	100	0	0	0	0	50	0	25	0
Food Production										
*1969-70 Graduates	13	0	100	0	0	20	7	13	33	13
*1969-70 Dropouts	0	0	0	0	0	0	0	0	100	0
1968-69 Graduates, 1st yr	12	0	25	75	0	24	38	12	0	15
*1968-69 Graduates, 2nd yr	24	67	33	0	0	8	20	0	32	16

*Percents based on totla sample of less than 30 students

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TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Home Furnishings										
*1969-70 Graduates	67	0	0	100	0	17	0	0	17	0
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Occupation Home Ec. Other										
1969-70 Graduates										
*1969-70 Dropouts	9	100	0	0	0	27	36	0	27	0
1968-69 Graduates, 1st yr.	9	0	100	0	0	26	57	2	2	4
*1968-69 Graduates, 2nd yr.	0	0	0	0	0	0	33	0	33	33
TOTAL GAINFUL HOME ECONOMICS										
1969-70 Graduates	22	31	31	31	8	30	22	3	18	5
*1969-70 Dropouts	7	100	0	0	0	36	29	0	29	0
1968-69 Graduates, 1st yr.	15	0	81	19	0	20	50	6	1	9
1968-69 Graduates, 2nd yr.	22	71	29	0	0	6	25	0	31	16

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
BUSINESS AND OFFICE										
Accounting										
*1969-70 Graduates	65	100	0	0	0	10	5	5	15	0
*1969-70 Dropouts	0	0	0	0	0	11	89	0	0	0
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Data Processing										
1969-70 Graduates	40	67	22	4	8	30	15	3	10	2
*1969-70 Dropouts	100	100	0	0	0	0	0	0	0	0
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.	57	83	4	13	0	40	0	2	0	0
General Office Clerk										
1969-70 Graduates	46	76	10	2	11	27	11	1	14	1
1969-70 Dropouts	21	82	18	0	0	46	21	0	0	12
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

1291

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Secretary										
1969-70 Graduates	47	79	6	4	10	27	10	0	12	3
1969-70 Dropouts	23	93	0	7	0	17	42	0	3	16
1968-69 Graduates, 1st yr.	12	13	76	12	0	49	20	1	11	6
1968-69 Graduates, 2nd yr.	53	84	9	2	5	21	5	1	17	4
Typist and Related										
*1969-70 Graduates	53	67	11	0	22	41	0	0	6	0
*1969-70 Dropouts	0	0	0	0	0	0	0	0	0	100
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Business and Office, Other										
*1969-70 Graduates	0	0	0	0	0	67	0	0	33	0
1969-70 Dropouts										
1968-69 Graduates, 1st yr.	20	28	71	0	0	33	13	3	3	28
1968-69 Graduates, 2nd yr.	48	76	20	0	4	23	8	3	12	6

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
TOTAL BUSINESS AND OFFICE										
1969-70 Graduates	45	76	11	3	10	28	11	1	13	2
1969-70 Dropouts	19	88	8	4	0	27	40	0	1	12
1968-69 Graduates, 1st yr.	13	17	75	8	0	46	19	1	10	10
1968-69 Graduates, 2nd yr.	52	83	10	2	4	22	5	2	15	4

1293

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
TECHNICAL EDUCATION										
Architect Technician										
1969-70 Graduates										
*1969-70 Dropouts	36	67	33	0	0	25	13	13	0	13
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Chemical Technician										
*1969-70 Graduates	23	100	0	0	0	64	0	14	0	0
*1969-70 Dropouts	0	0	0	0	0	50	0	50	0	0
1968-69 Graduates, 1st yr.										
*1968-69 Graduates, 2nd yr.	100	100	0	0	0	0	0	0	0	0
Civil Technician										
1969-70 Graduates										
1969-70 Dropouts										
*1968-69 Graduates, 1st yr.	0	0	0	0	0	64	36	0	0	0
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Electronics Technician										
*1969-70 Graduates	49	90	8	0	2	34	2	6	0	9
1969-70 Dropouts	51	74	21	0	5	16	8	22	0	3
1968-69 Graduates, 1st yr.	31	80	17	3	0	41	13	8	0	7
1968-69 Graduates, 2nd yr.	48	87	9	0	4	18	4	11	1	18
Mechanical Technician										
*1969-70 Graduates	40	100	0	0	0	30	0	10	0	20
*1969-70 Dropouts	50	100	0	0	0	17	17	0	0	17
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Metallurgical Technician										
*1969-70 Graduates	17	100	0	0	0	75	8	0	0	0
*1969-70 Dropouts	50	100	0	0	0	50	0	0	0	0
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

1285

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Drafting and Design Technician										
1969-70 Graduates	40	77	18	0	5	36	4	11	1	7
1969-70 Dropouts	38	83	10	2	2	18	6	18	2	19
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Ranch Operation Technician										
*1969-70 Graduates	100	100	0	0	0	0	0	0	0	0
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Computer Science Technician										
1969-70 Graduates	45	75	18	3	3	33	4	3	4	11
1969-70 Dropouts	45	74	26	0	0	16	10	2	0	27
1968-69 Graduates, 1st yr.	20	50	50	0	0	63	0	3	10	3
*1968-69 Graduates, 2nd yr.	73	75	25	0	0	9	9	0	0	9

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Forestry Technician										
*1969-70 Graduates	0	0	0	0	0	50	0	50	0	0
1969-70 Dropouts										
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										
Tech, Other										
1969-70 Graduates										
1969-70 Dropouts										
*1968-69 Graduates, 1st yr.	0	0	0	0	0	83	0	17	0	0
*1968-69 Graduates, 2nd yr.	17	100	0	0	0	67	0	17	0	0
TOTAL TECH										
1969-70 Graduates	44	83	13	1	3	36	3	7	1	9
1969-70 Dropouts	42	80	17	1	2	18	8	14	1	17
1968-69 Graduates, 1st yr.	27	78	19	3	0	45	12	8	1	6
1968-69 Graduates, 2nd yr.	49	86	11	0	3	19	5	10	1	16

*Percents based on total sample of less than 30 students

12971

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
TRADE AND INDUSTRIAL										
Air Conditioning										
1969-70 Graduates	72	81	15	4	0	11	8	3	2	5
*1969-70 Dropouts	0	0	0	0	0	33	67	0	0	0
1968-69 Graduates, 1st yr	66	57	35	9	0	6	6	14	0	9
*1968-69 Graduates, 2nd yr	38	67	33	0	0	13	0	38	0	13
Heating and Plumbing										
*1969-70 Graduates	50	33	67	0	0	0	17	0	0	33
*1969-70 Dropouts	0	0	0	0	0	0	0	0	0	100
1968-69 Graduates, 1st yr										
1968-69 Graduates, 2nd yr										
Appliance Repair										
*1969-70 Graduates	38	100	0	0	0	8	15	38	0	0
*1969-70 Dropouts	20	100	0	0	0	40	20	20	0	0
*1968-69 Graduates, 1st yr	50	50	50	0	0	44	6	0	0	0
*1968-69 Graduates, 2nd yr	50	83	17	0	0	25	0	0	0	25

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Body and Fender										
1969-70 Graduates	54	67	21	8	5	11	14	15	3	3
*1969-70 Dropouts	44	71	29	0	0	6	25	0	13	13
1968-69 Graduates, 1st yr.	43	58	40	3	0	11	21	16	0	9
1968-69 Graduates, 2nd yr.	40	61	33	6	0	4	20	29	2	4
Auto Mechanics										
1969-70 Graduates	57	73	23	1	3	13	11	13	0	6
1969-70 Dropouts	38	68	29	4	0	12	19	12	1	16
1968-69 Graduates, 1st yr.	50	69	28	3	0	19	12	13	0	6
1968-69 Graduates, 2nd yr.	49	61	33	2	4	8	10	27	1	5
Other Automotive Services										
*1969-70 Graduates	55	67	33	0	0	14	18	9	0	4
*1969-70 Dropouts	0	0	0	0	0	0	0	0	0	100
*1968-69 Graduates, 1st yr.	29	100	0	0	0	0	14	57	0	0
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

1299

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Aircraft Mechanic										
*1969-70 Graduates	25	67	33	0	0	38	4	17	0	17
*1969-70 Dropouts	0	0	0	0	0	0	0	75	0	25
1968-69 Graduates, 1st yr.	31	67	33	0	0	39	0	16	0	14
*1968-69 Graduates, 2nd yr.	41	44	44	11	0	9	0	32	0	18
Commercial Art										
1969-70 Graduates	38	76	14	5	5	31	16	5	2	7
*1969-70 Dropouts	33	100	0	0	0	67	0	0	0	0
1968-69 Graduates, 1st yr.	31	62	38	0	0	50	7	10	0	2
*1969-69 Graduates, 2nd yr.	27	83	17	0	0	50	9	0	9	5
Commercial Photography										
*1969-70 Graduates	6	100	0	0	0	6	65	6	6	12
*1969-70 Dropouts	0	0	0	0	0	0	100	0	0	0
*1968-69 Graduates, 1st yr.	59	30	50	20	0	6	24	6	0	6
*1968-69 Graduates, 2nd yr.	17	67	0	33	0	28	33	0	17	6

*Percents based on total sample of less than 30 students

1300

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Carpentry										
1969-70 Graduates	50	62	34	2	3	13	14	12	1	10
1969-70 Dropouts	25	67	33	0	0	19	31	10	4	10
1968-69 Graduates, 1st yr.	54	63	32	5	0	15	14	10	0	6
1968-69 Graduates, 2nd yr.	51	64	32	4	0	15	6	21	1	6
Electricity										
1969-70 Graduates	34	58	42	0	0	9	11	31	0	14
*1969-70 Dropouts	0	0	0	0	0	0	20	0	0	80
1968-69 Graduates, 1st yr.	42	47	53	0	0	22	8	8	0	19
*1968-69 Graduates, 2nd yr.	40	0	100	0	0	0	40	20	0	0
Diesel Mechanics										
1969-70 Graduates	60	78	11	0	11	10	13	13	0	3
*1969-70 Dropouts	10	100	0	0	0	30	20	10	0	30
*1968-69 Graduates, 1st yr.	40	50	50	0	0	20	16	16	0	8
*1968-69 Graduates, 2nd yr.	61	73	18	0	9	6	11	6	0	17

*Percents based on total sample of less than 30 students

1361

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Drafting										
1969-70 Graduates	32	65	29	3	3	38	13	11	1	5
*1969-70 Dropouts	25	100	0	0	0	33	42	0	0	0
1968-69 Graduates, 1st yr.	31	78	21	0	1	39	8	14	0	8
1968-69 Graduates, 2nd yr.	26	62	35	0	3	42	5	23	5	0
Electronics										
1969-70 Graduates	47	82	14	4	0	31	10	12	0	0
*1969-70 Dropouts	33	100	0	0	0	33	33	0	0	0
*1968-69 Graduates, 1st yr.	17	75	25	0	0	74	0	4	0	4
*1968-69 Graduates, 2nd yr.	8	100	0	0	0	50	0	33	8	0
Radio-TV Repair										
*1969-70 Graduates	28	40	60	0	0	44	11	11	6	0
*1969-70 Dropouts	0	0	0	0	0	100	0	0	0	0
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Graphic Arts										
1969-70 Graduates	61	67	20	3	10	10	12	6	10	0
*1969-70 Dropouts	28	40	40	0	20	22	17	6	6	22
1968-69 Graduates, 1st yr.	45	50	41	9	0	16	19	15	0	5
1968-69 Graduates, 2nd yr.	38	60	25	10	5	6	12	31	8	6
Machinist										
1969-70 Graduates	58	82	8	2	8	16	10	10	0	6
*1969-70 Dropouts	53	75	13	0	13	7	20	13	0	7
1968-69 Graduates, 1st yr.	52	83	17	0	0	20	4	20	0	3
1968-69 Graduates, 2nd yr.	45	81	19	0	0	21	0	33	2	0
Sheetmetal										
*1969-70 Graduates	62	100	0	0	0	23	15	0	0	0
*1969-70 Dropouts	100	100	0	0	0	0	0	0	0	0
1968-69 Graduates, 1st yr.	42	63	38	0	0	5	21	26	0	5
*1968-69 Graduates, 2nd yr.	45	80	20	0	0	0	9	36	0	9

*Percents based on total sample of less than 30 students

130 303

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Welder										
1969-70 Graduates	60	83	8	2	7	7	7	17	0	8
1969-70 Dropouts	21	73	18	10	0	13	40	10	8	8
1968-69 Graduates, 1st yr.	46	79	18	4	0	31	6	13	0	4
1968-69 Graduates, 2nd yr.	54	80	18	3	0	11	7	19	1	8
Cosmetology										
1969-70 Graduates	67	85	10	2	3	4	7	0	13	8
*1969-70 Dropouts	11	67	33	0	0	26	4	0	33	26
1968-69 Graduates, 1st yr.	70	80	16	2	1	14	7	0	1	7
1968-69 Graduates, 2nd yr.	59	69	21	9	1	1	5	1	23	12
Quality Foods										
1969-70 Graduates	47	85	4	0	11	7	12	7	22	5
*1969-70 Dropouts	43	0	0	33	67	0	0	0	0	57
1968-69 Graduates, 1st yr.										
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Small Engine Repair										
*1969-70 Graduates	100	0	0	0	100	0	0	0	0	0
1969-70 Dropouts										
*1968-69 Graduates, 1st yr.	13	0	100	0	0	13	25	0	0	50
1968-69 Graduates, 2nd yr.										
Tailoring										
*1969-70 Graduates	50	100	0	0	0	40	0	10	0	0
*1969-70 Dropouts	11	100	0	0	0	22	11	0	22	33
*1968-69 Graduates, 1st yr.	33	100	0	0	0	25	42	0	0	0
1968-69 Graduates, 2nd yr.										
Upholstery										
1969-70 Graduates	46	44	50	0	6	6	20	20	3	6
*1969-70 Dropouts	50	0	100	0	0	0	25	13	0	13
1968-69 Graduates, 1st yr.	27	63	38	0	0	13	17	33	0	10
1968-69 Graduates, 2nd yr.										

*Percents based on total sample of less than 30 students

TABLE VI

FOLLOW-UP DATA ON GRADUATES--BY PROGRAM

Program Title	Percent Available for Labor Force	Of Those Available for Labor Force				Unavailable for Labor Force				Percent Status Unknown
		Percent Employed Related	Percent Employed Unrelated	Percent Employed Part Time	Percent Unemployed	Percent in School Related	Percent in School Unrelated	Percent in Armed Forces	Percent not in Labor Force	
Cabinetmaking										
1969-70 Graduates	39	75	25	0	0	37	12	10	0	2
*1969-70 Dropouts	33	75	25	0	0	0	17	8	8	33
1968-69 Graduates, 1st yr.	45	80	20	0	0	30	6	15	0	3
1968-69 Graduates, 2nd yr.										
T. & I., Other										
1969-70 Graduates	38	80	11	2	6	20	14	8	9	11
1969-70 Dropouts	23	56	22	22	0	10	8	8	18	33
1968-69 Graduates, 1st yr.	46	90	9	1	0	19	21	12	0	3
1968-69 Graduates, 2nd yr.	43	75	23	1	1	13	10	13	16	5
TOTAL T. & I.										
1969-70 Graduates	51	75	19	2	4	16	12	10	4	7
1969-70 Dropouts	27	65	26	4	5	15	22	9	8	19
1968-69 Graduates, 1st yr.	47	73	24	3	0	22	12	12	0	6
1968-69 Graduates, 2nd yr.	45	68	27	3	2	14	8	19	8	6

*Percents based on total sample of less than 30 students

A COMPARISON OF 1969-1970 GRADUATES (1ST YEAR FOLLOW-UP) WITH 1969-1970 DROPOUTS POSSESSING MARKETABLE SKILLS (1ST YEAR FOLLOW-UP)

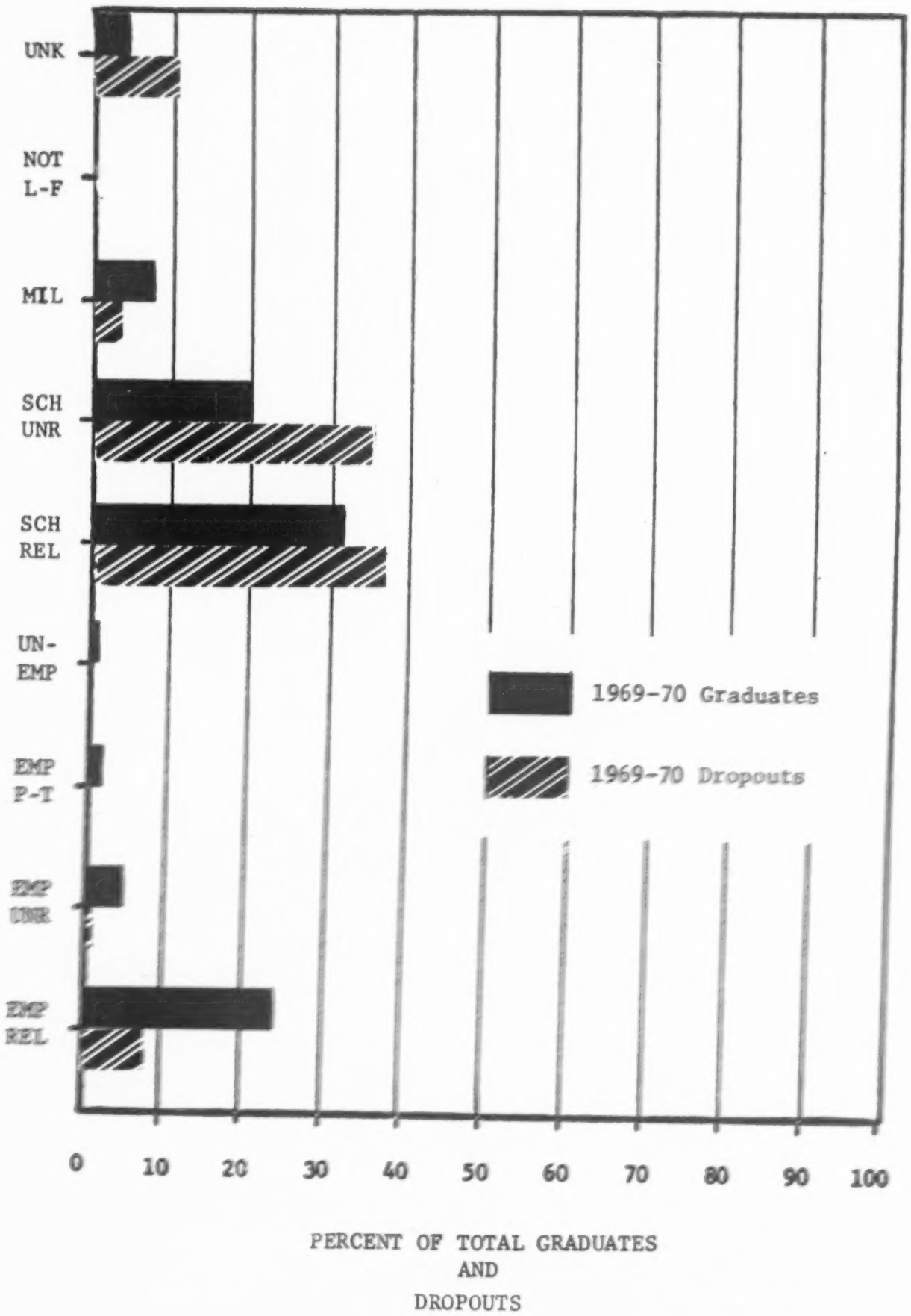

Figure 1 A Comparison of 1969-1970 Graduates (1st Year Follow-up) with 1969-1970 Dropouts (1st Year Follow-up) Possessing Marketable Skills -- Agriculture Division

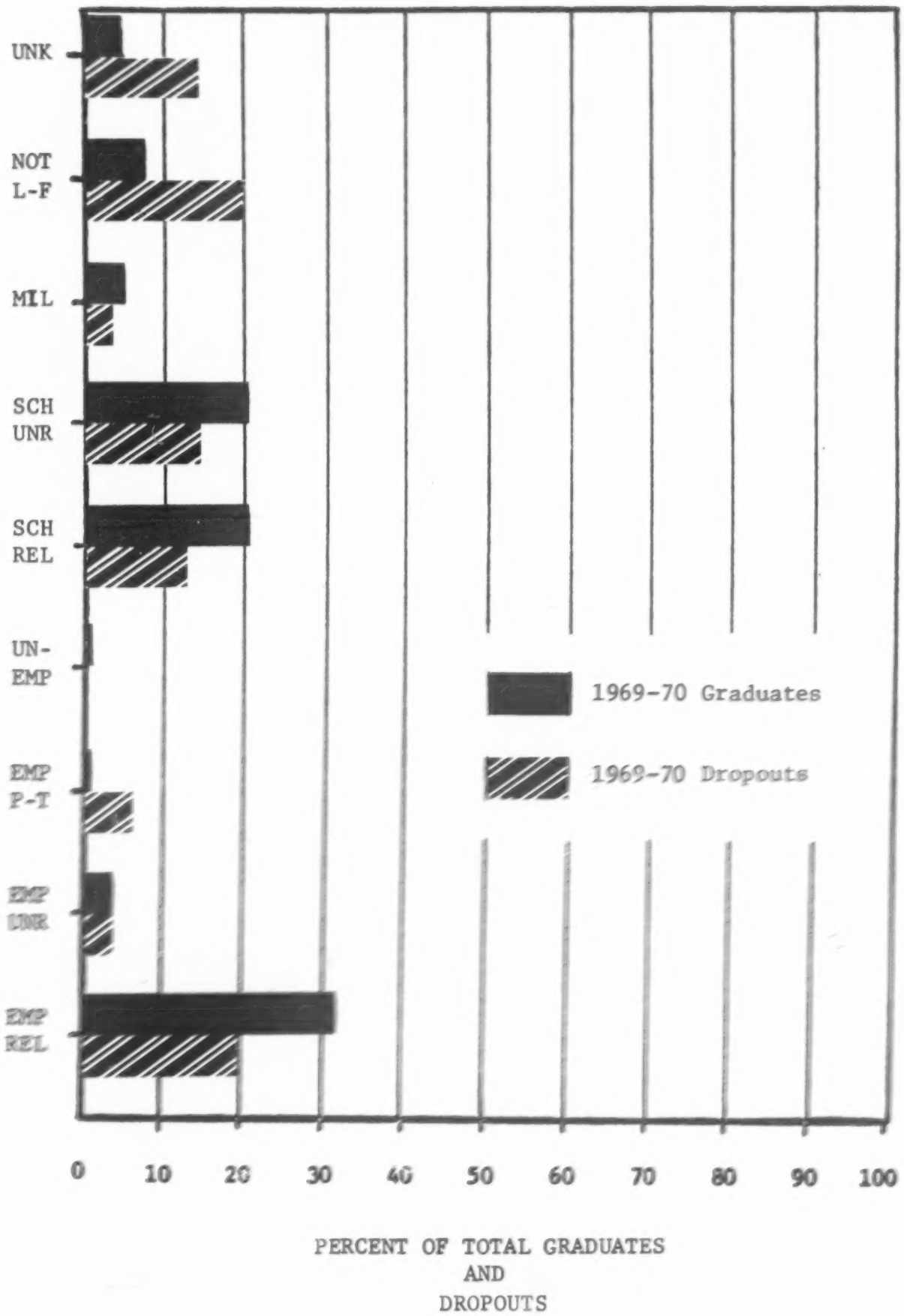

Figure 2 A Comparison of 1969-1970 Graduates (1st Year Follow-up) with 1969-1970 Dropouts (1st Year Follow-up) Possessing Marketable Skills -- Distributive Education Division

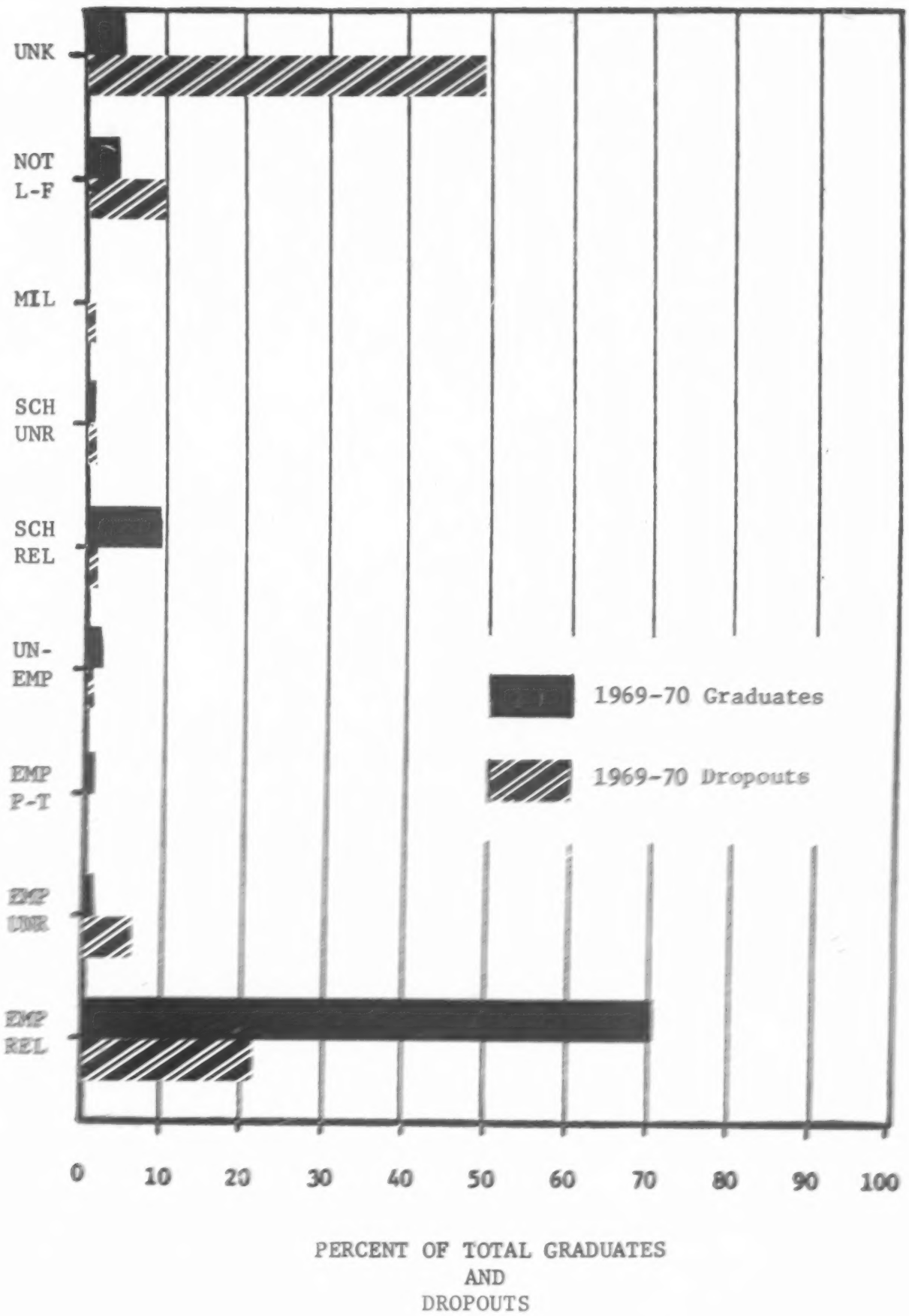

Figure 3 A Comparison of 1969-1970 Graduates (1st Year Follow-up) with 1969-1970 Dropouts (1st Year Follow-up) Possessing Marketable Skills -- Health Division

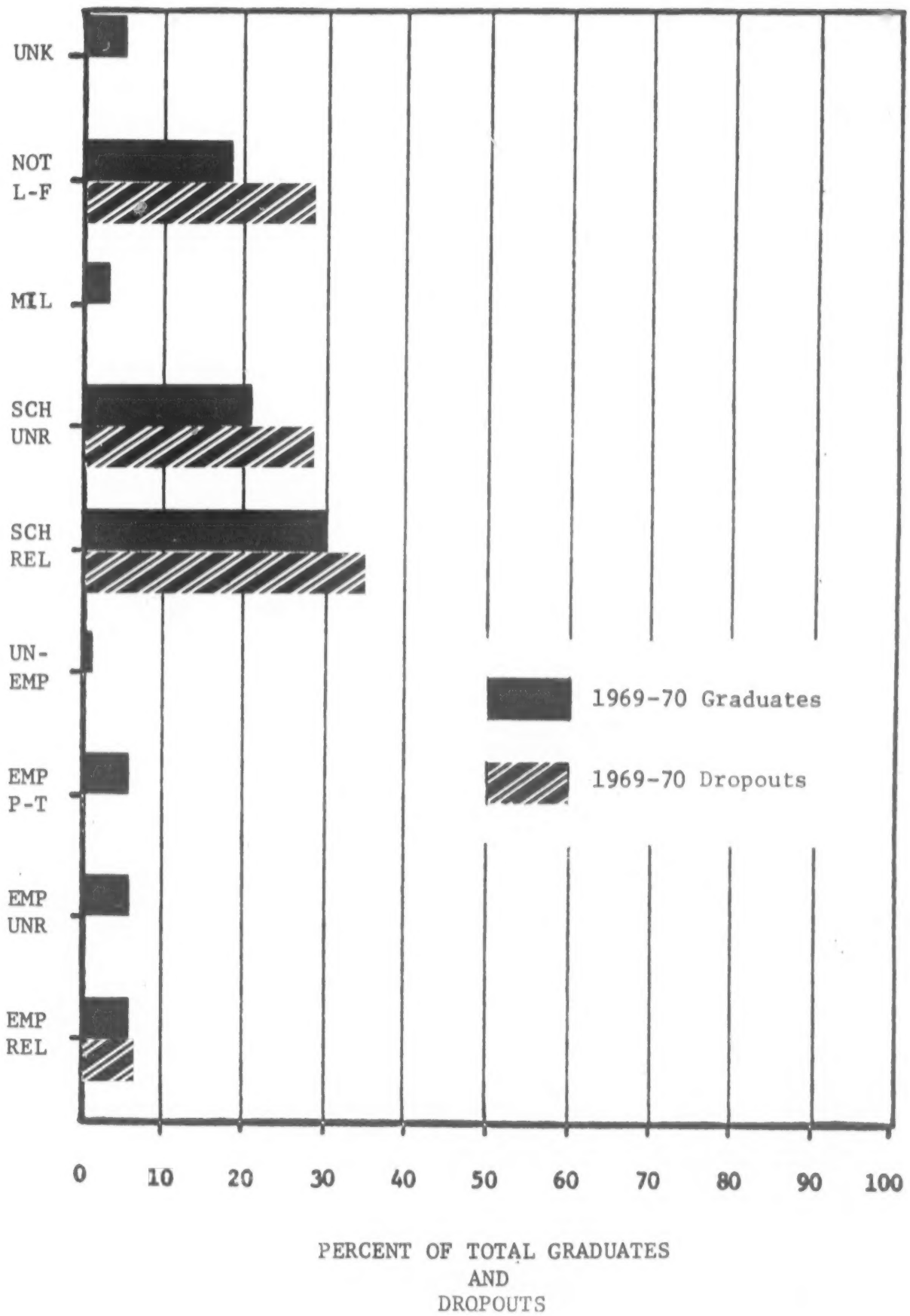

Figure 4 A Comparison of 1969-1970 Graduates (1st Year Follow-up) with 1969-1970 Dropouts (1st Year Follow-up) Possessing Marketable Skills -- Home Economics Division

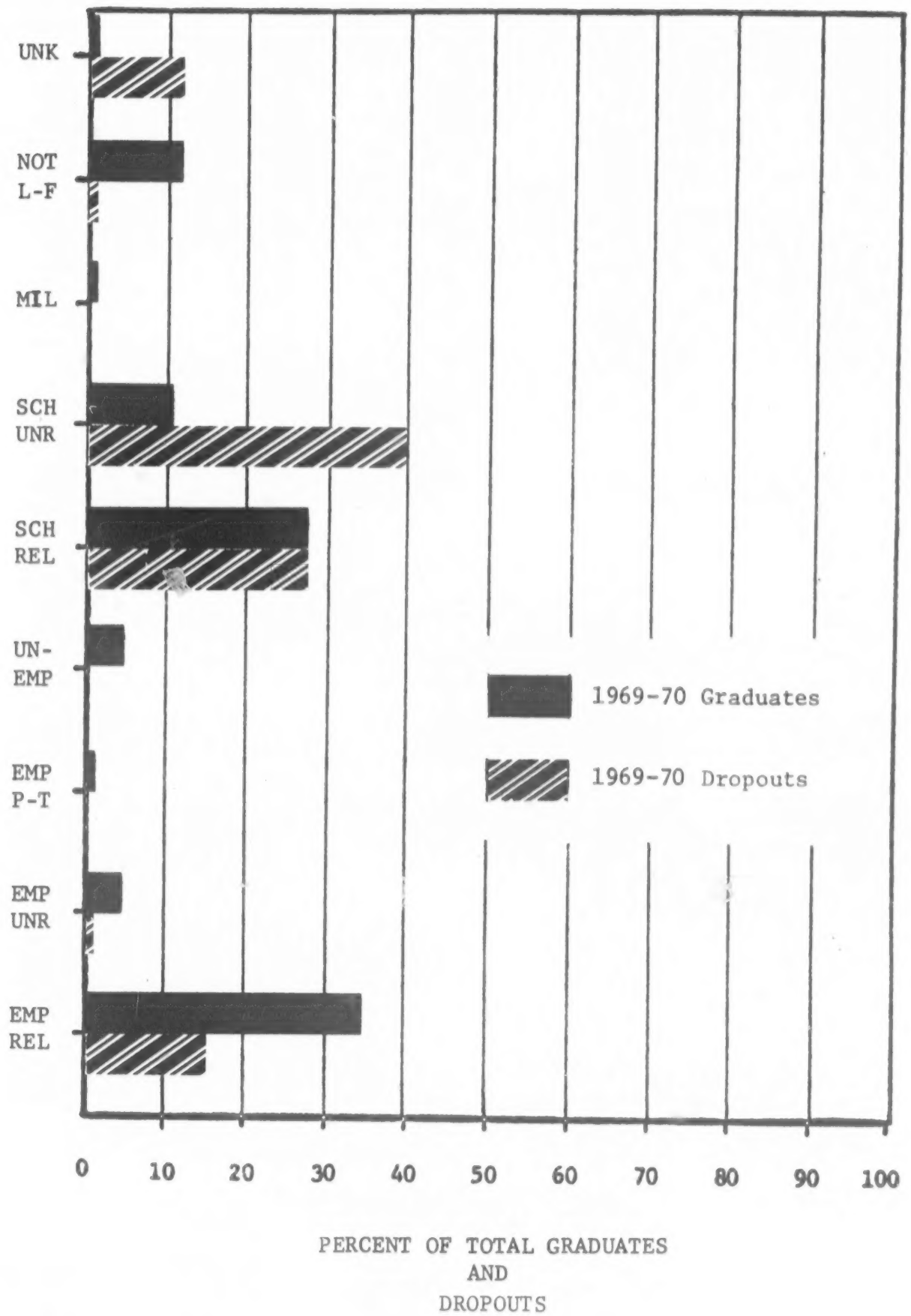

Figure 5 A Comparison of 1969-1970 Graduates (1st Year Follow-up) with 1969-1970 Dropouts (1st Year Follow-up) Possessing Marketable Skills -- Business and Office Division

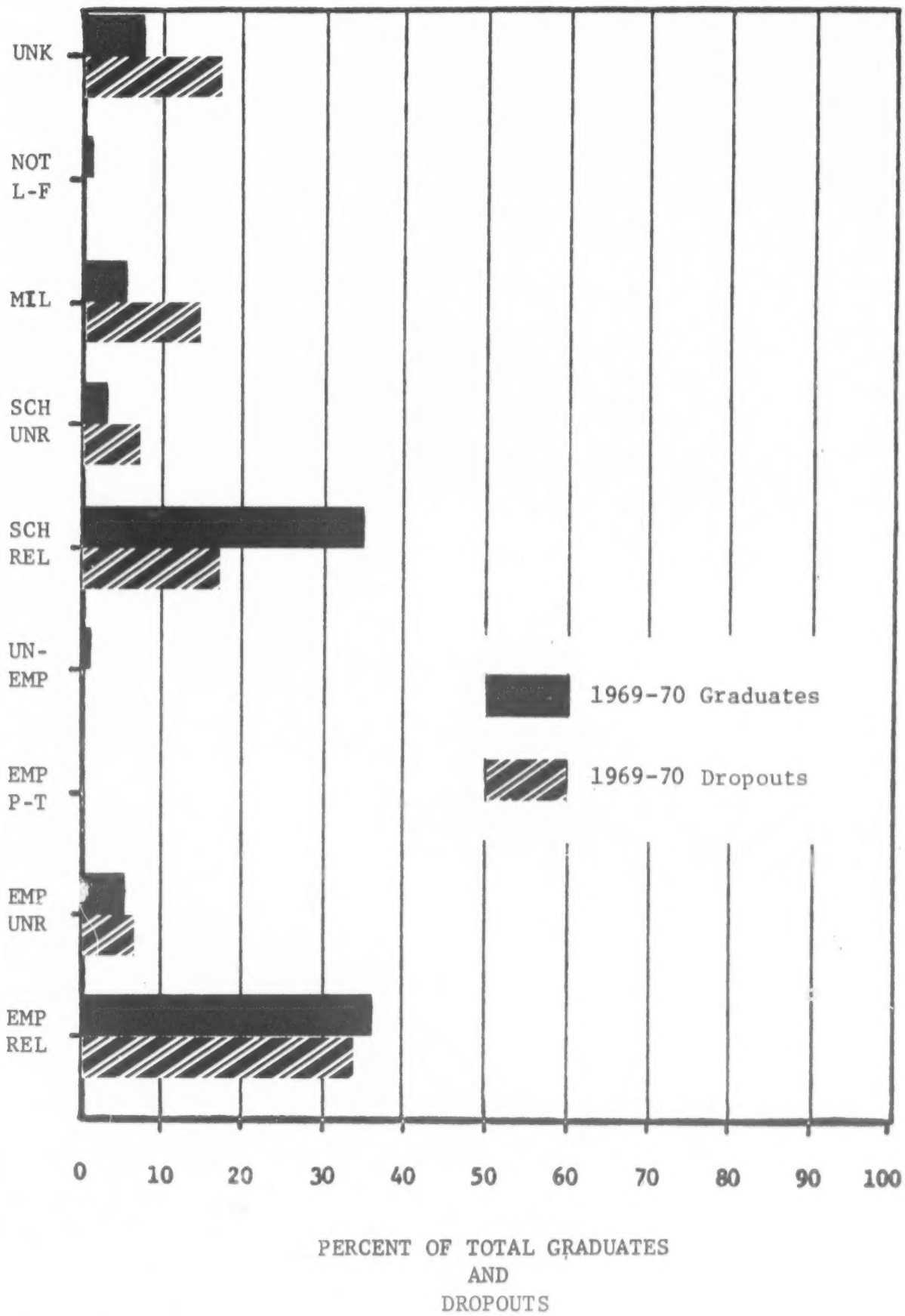

Figure 6 A Comparison of 1969-1970 Graduates (1st Year Follow-up) with 1969-1970 Dropouts (1st Year Follow-up) Possessing Marketable Skills -- Technical Division

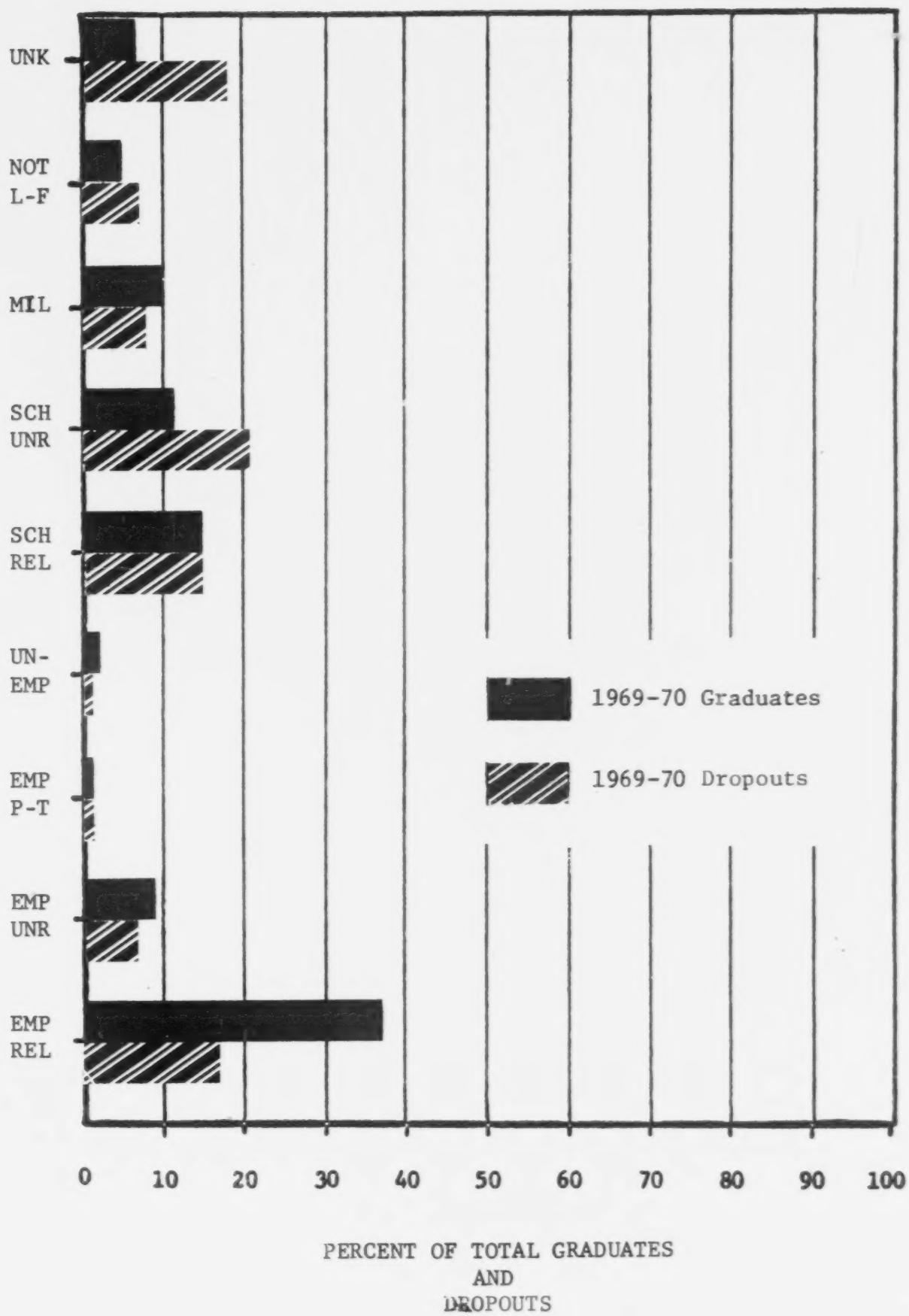

Figure 7 A Comparison of 1969-1970 Graduates (1st Year Follow-up) with 1969-1970 Dropouts (1st Year Follow-up) Possessing Marketable Skills -- Trade and Industrial Division

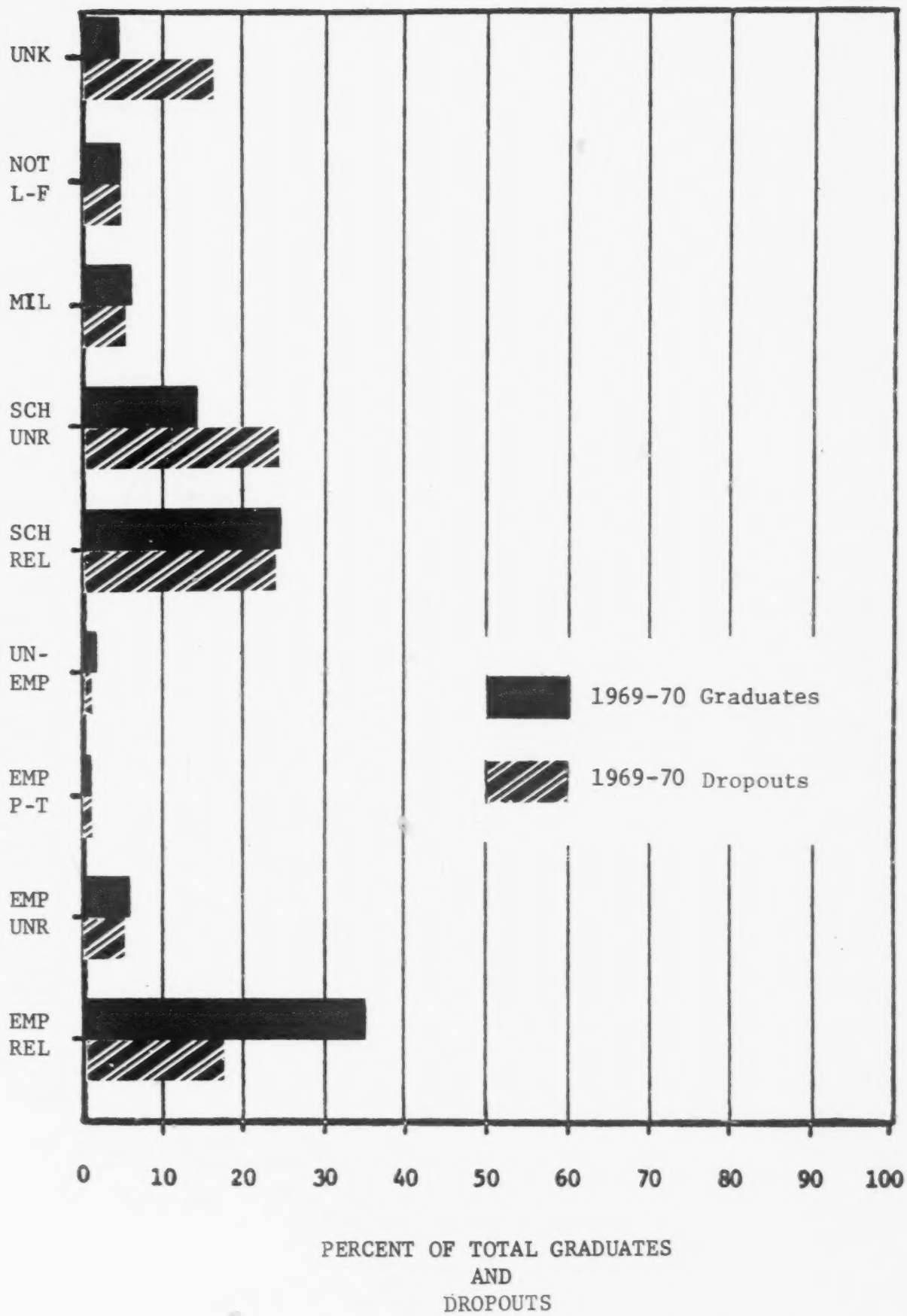

Figure 8 A Comparison of 1969-1970 Graduates (1st Year Follow-up) with 1969-1970 Dropouts (1st Year Follow-up) Possessing Marketable Skills -- All Divisions Combined

A COMPARISON OF 1968-1969 GRADUATES

(1ST YEAR FOLLOW-UP) WITH 1969-1970

GRADUATES (1ST YEAR FOLLOW-UP)

1316

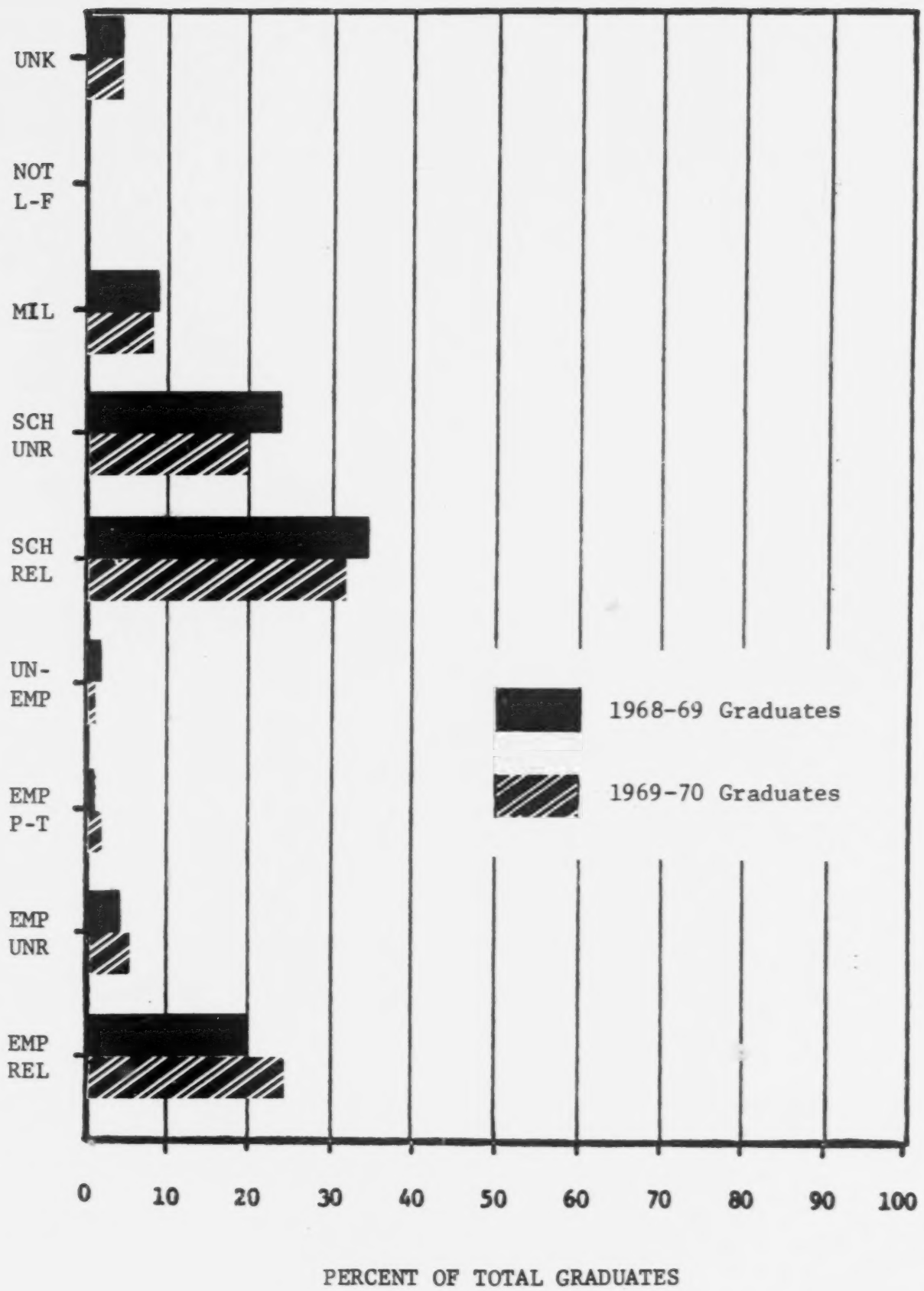

Figure 9 A Comparison of 1968-1969 Graduates (1st Year Follow-up) with 1969-1970 Graduates (1st Year Follow-up) -- Agriculture Division

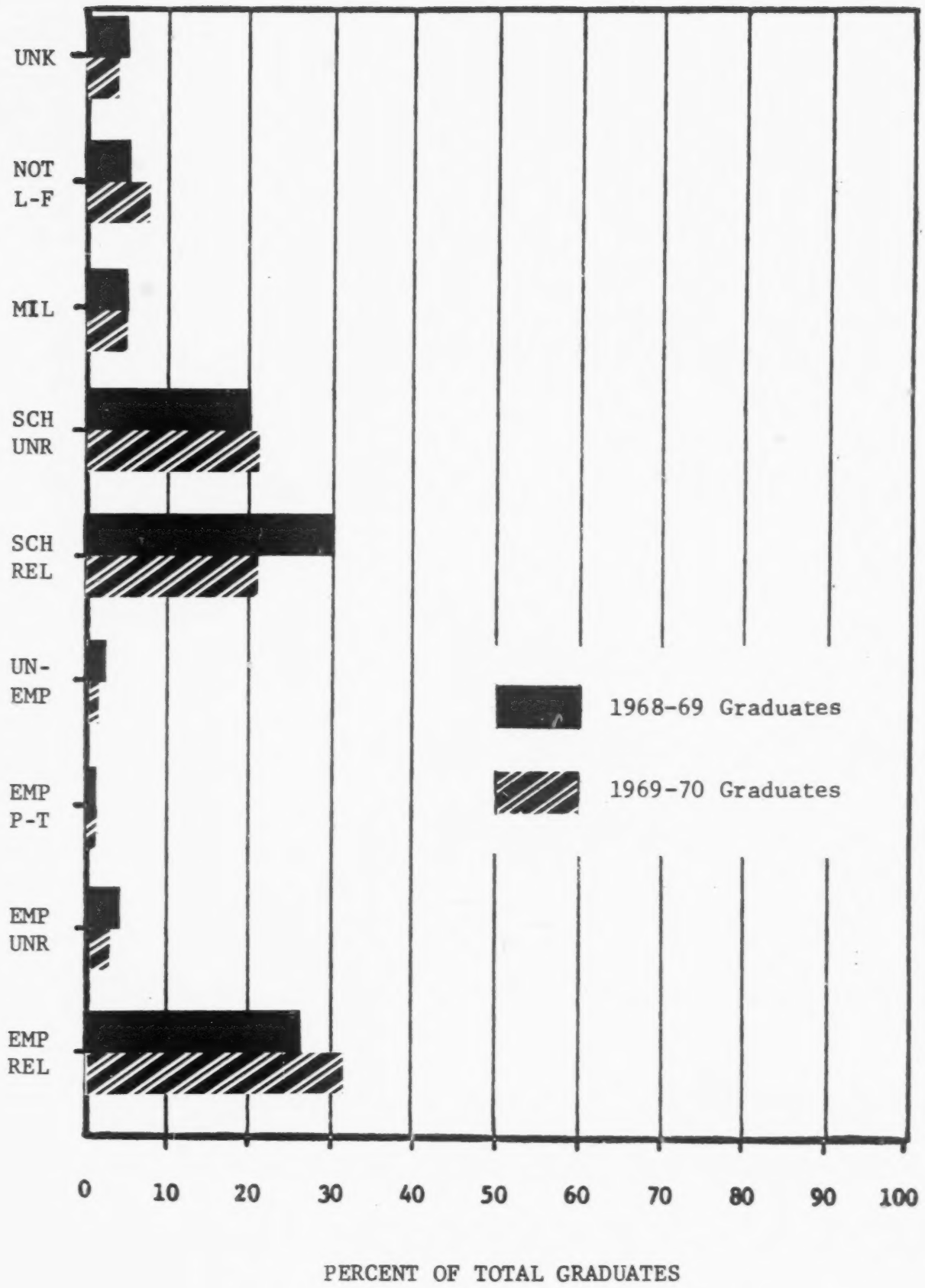

Figure 10 A Comparison of 1968-1969 Graduates (1st Year Follow-up) with 1969-1970 Graduates (1st Year Follow-up) -- Distributive Education Division

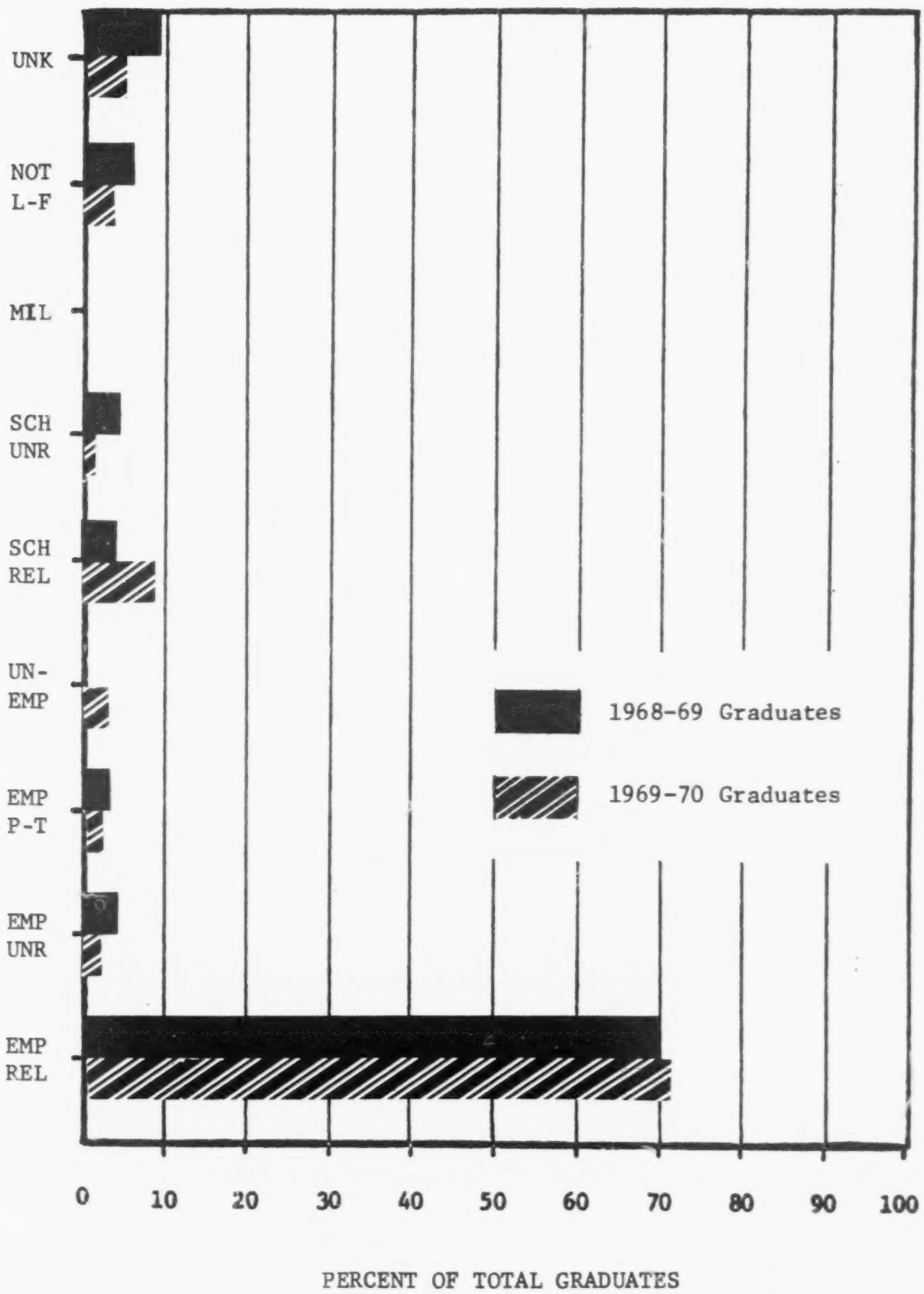

Figure 11 A Comparison of 1968-1969 Graduates (1st Year Follow-up) with 1969-1970 Graduates (1st Year Follow-up) -- Health Division

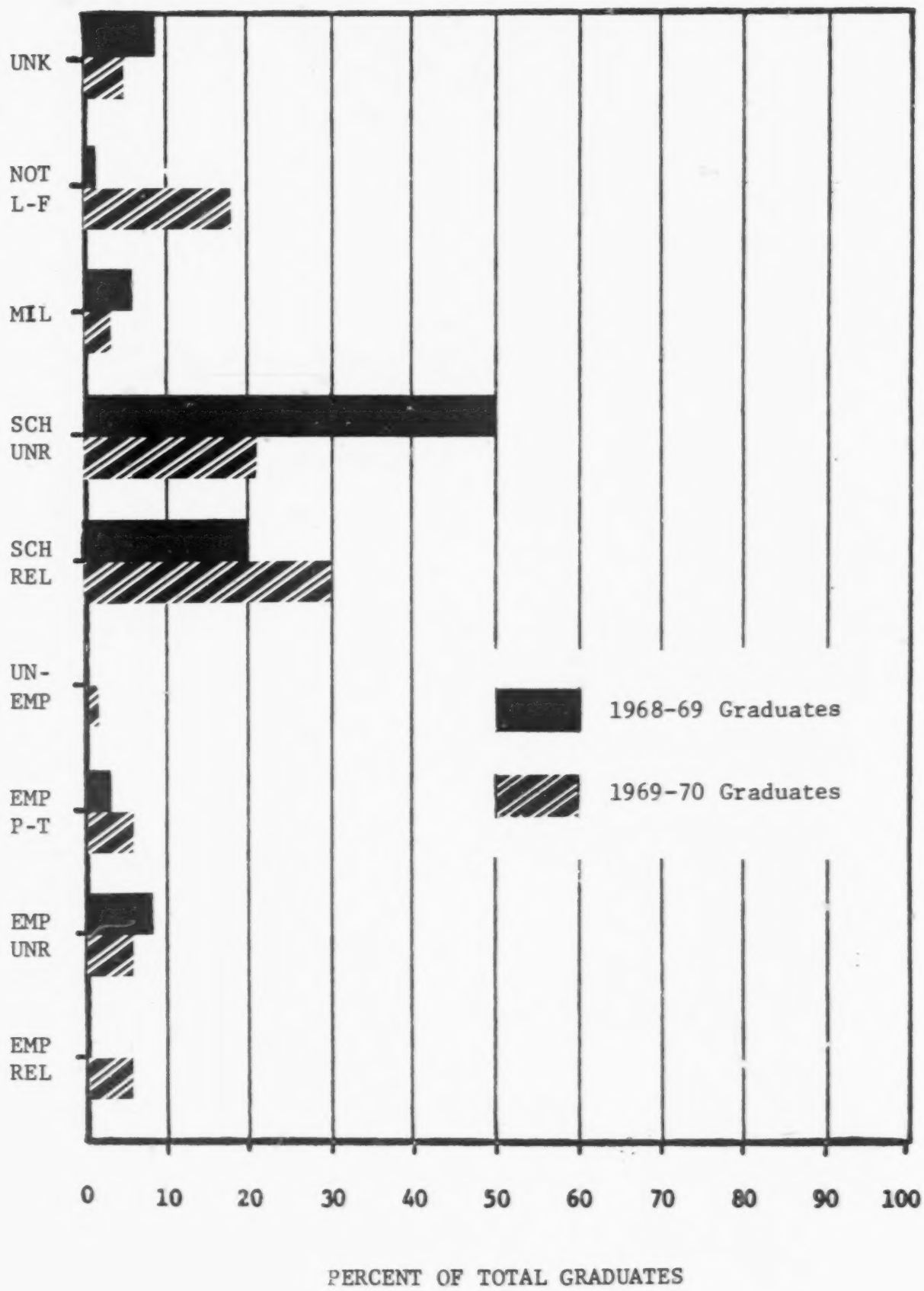

Figure 12 A Comparison of 1968-1969 Graduates (1st Year Follow-up) with 1969-1970 Graduates (1st Year Follow-up) -- Home Economics Division

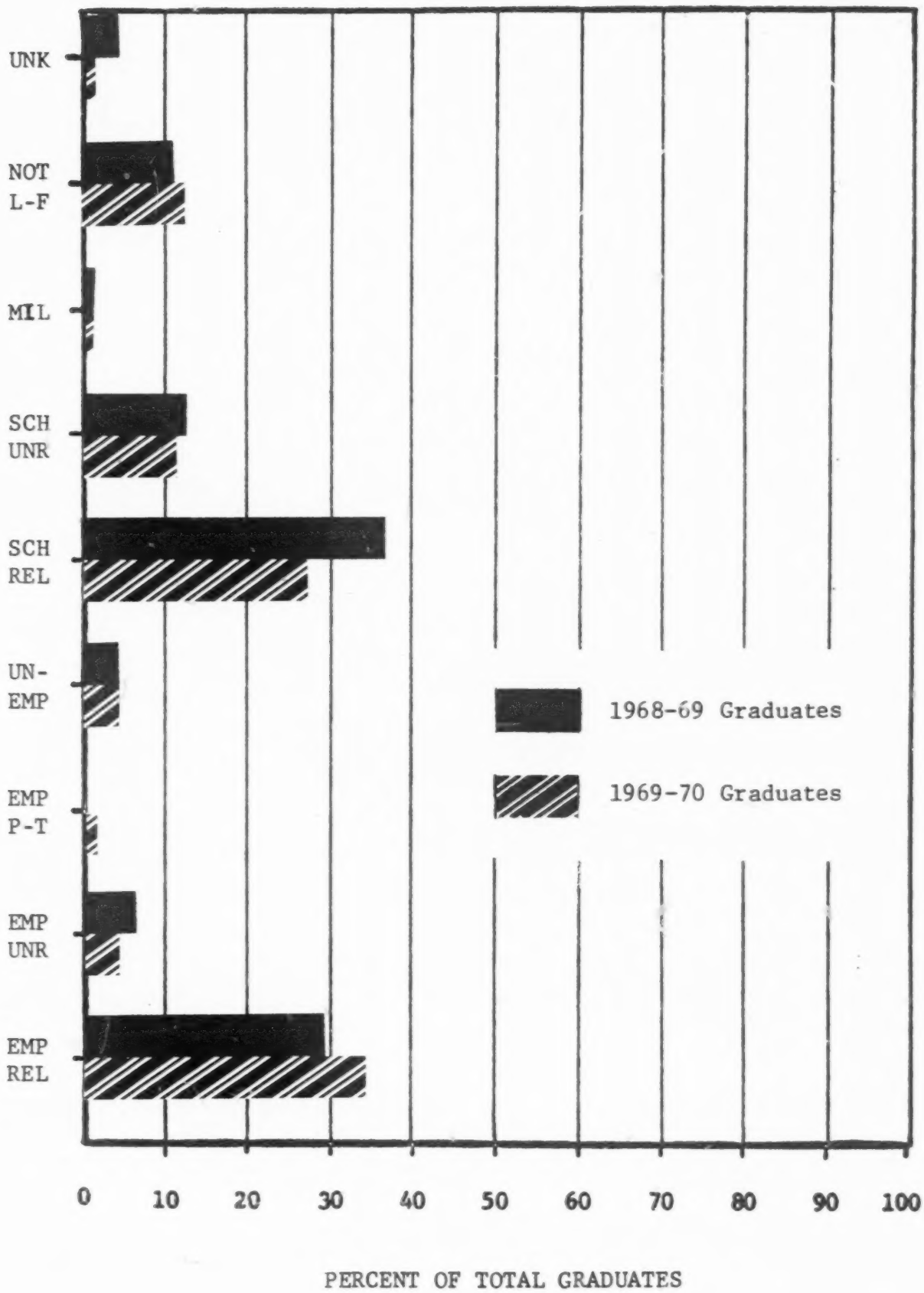

Figure 13 A Comparison of 1968-1969 Graduates (1st Year Follow-up) with 1969-1970 Graduates (1st Year Follow-up) -- Business and Office Division

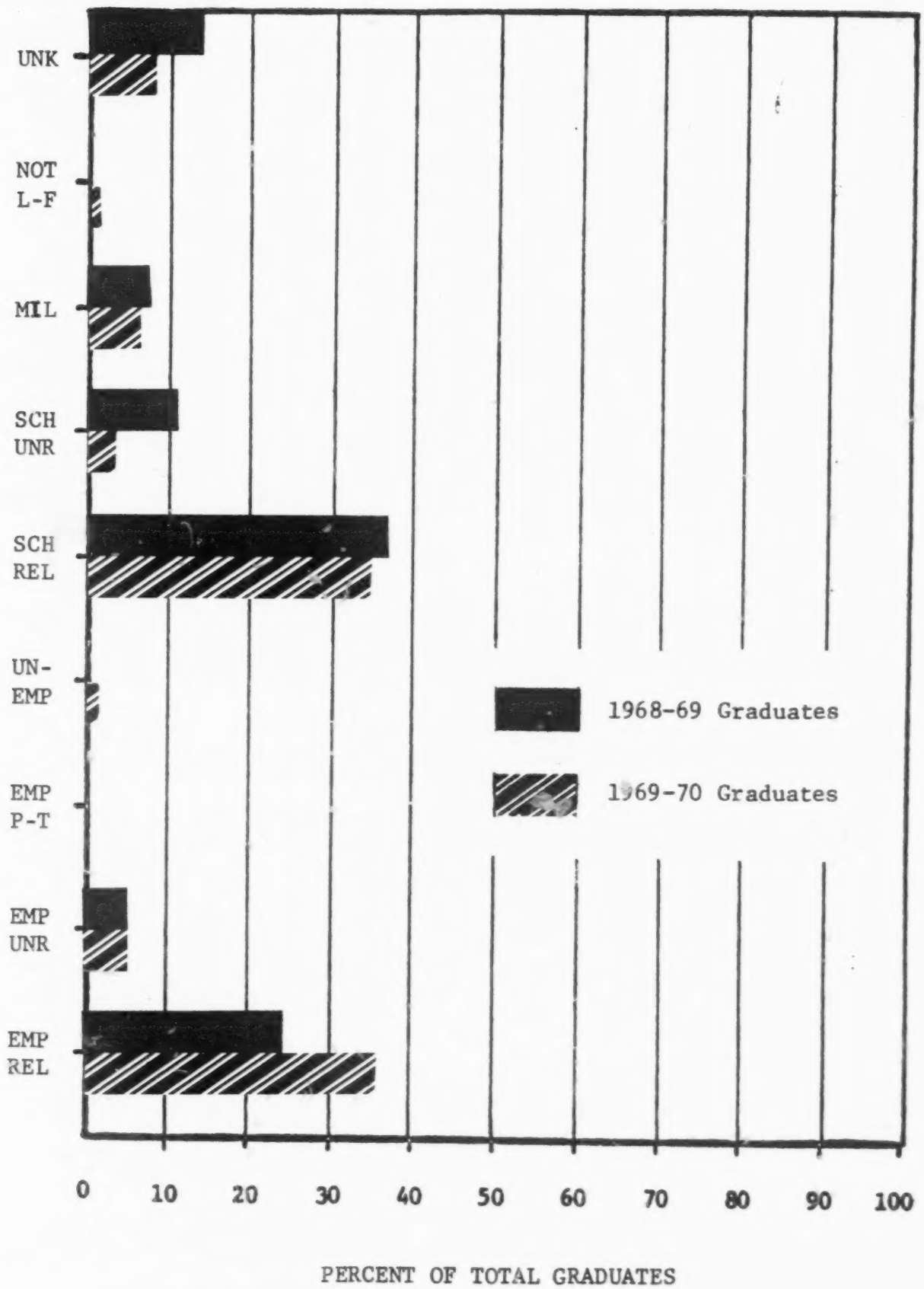

Figure 14 A Comparison of 1968-1969 Graduates (1st Year Follow-up) with 1969-1970 Graduates (1st Year Follow-up) -- Technical Division

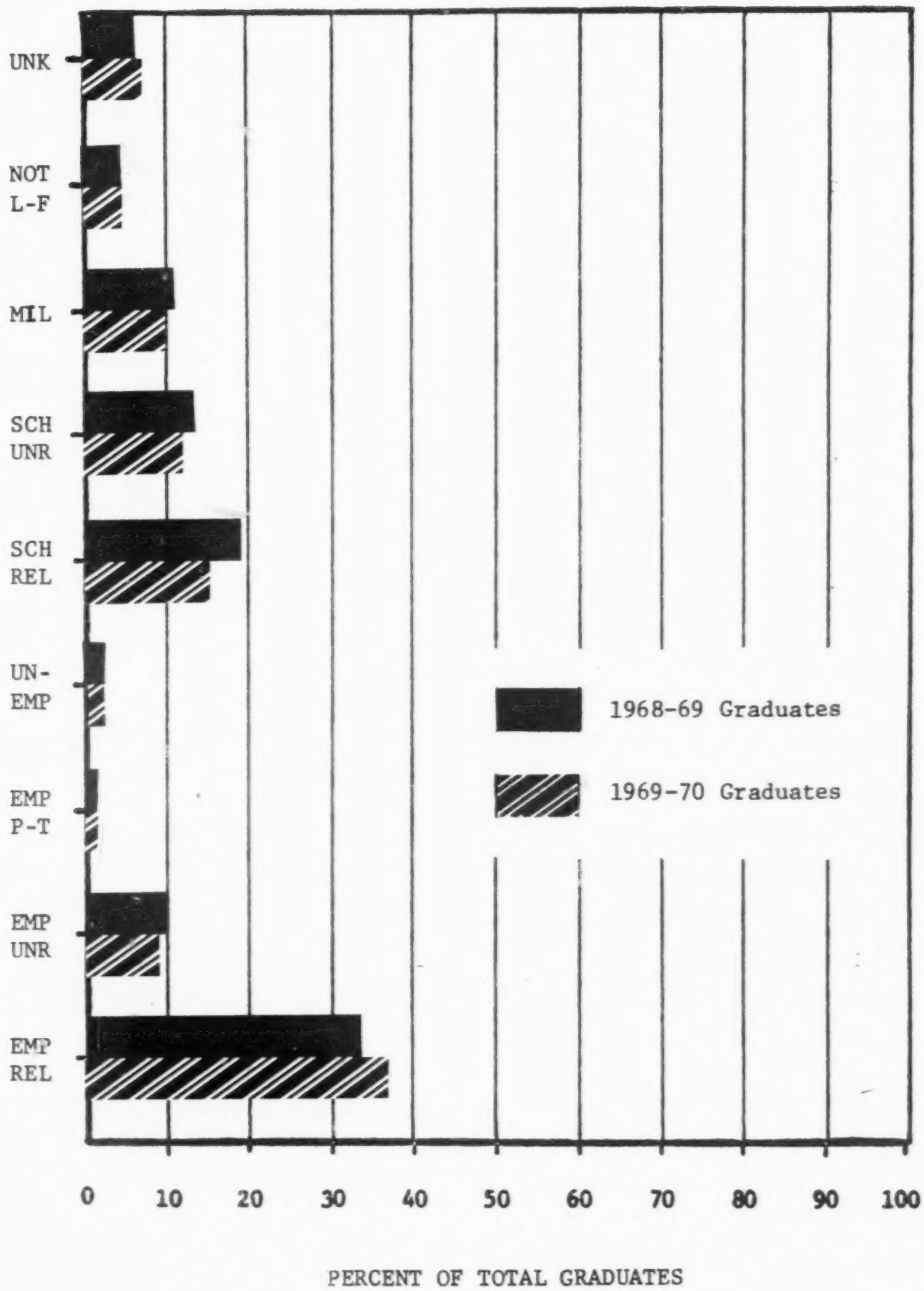

Figure 15 A Comparison of 1968-1969 Graduates (1st Year Follow-up) with 1969-1970 Graduates (1st Year Follow-up) -- Trade and Industrial Division

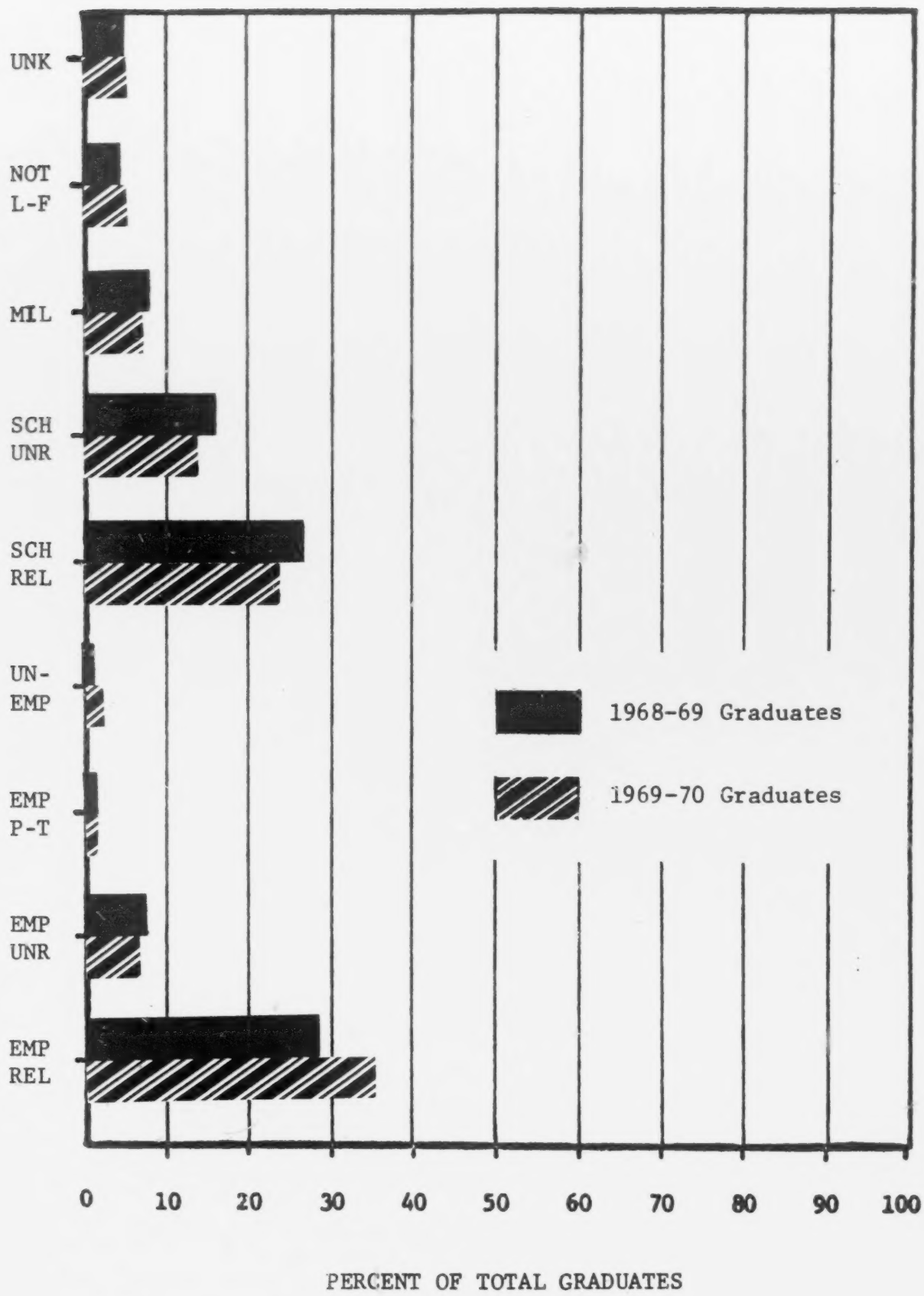

Figure 16 A Comparison of 1968-1969 Graduates (1st Year Follow-up) with 1969-1970 Graduates (1st Year Follow-up) -- All Divisions Combined

A COMPARISON OF FIRST AND SECOND YEAR FOLLOW-UP DATA ON 1968-1969 GRADUATES

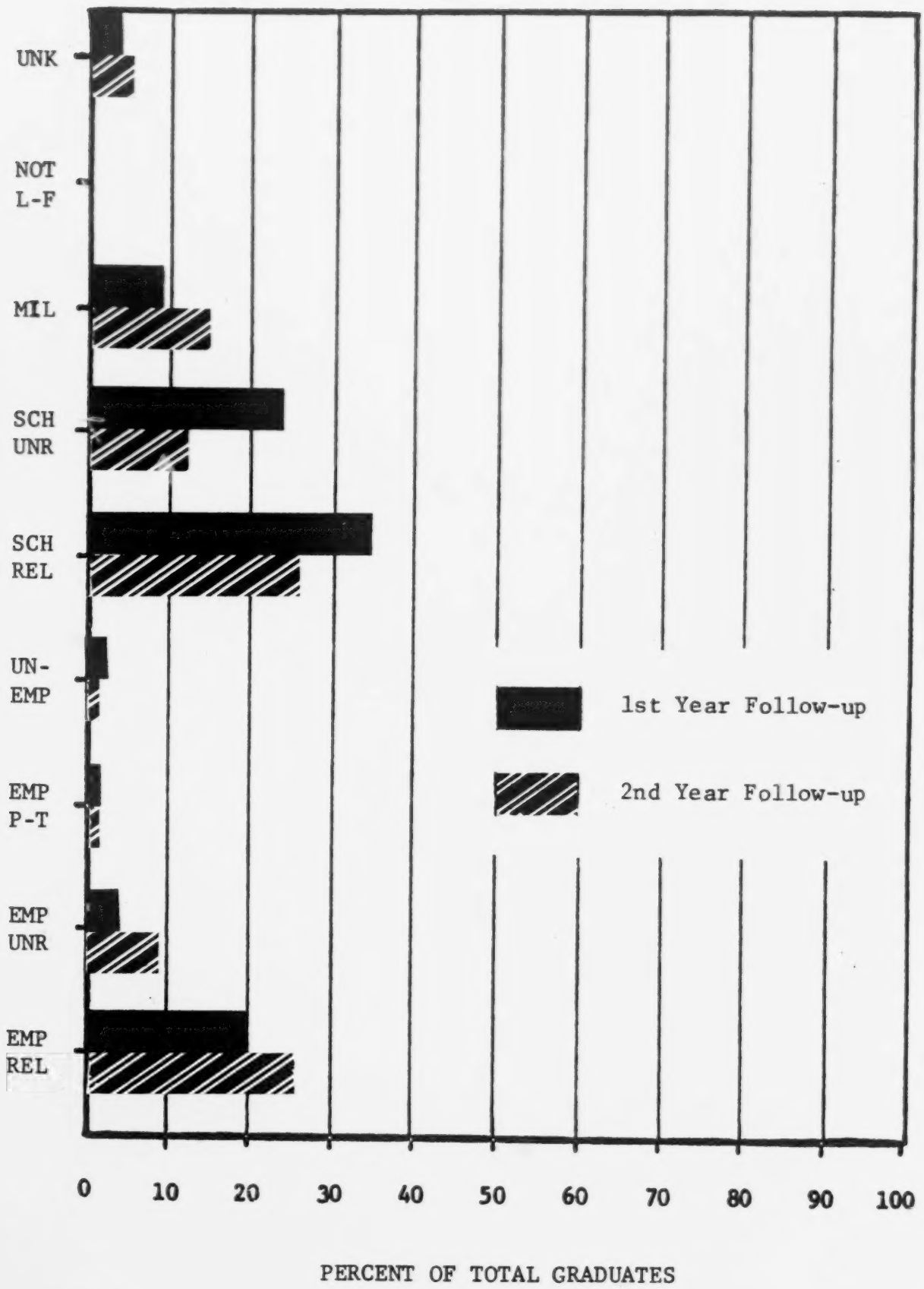

Figure 17 A Comparison of First and Second Year Follow-up Data on 1968-1969 Graduates -- Agriculture Division

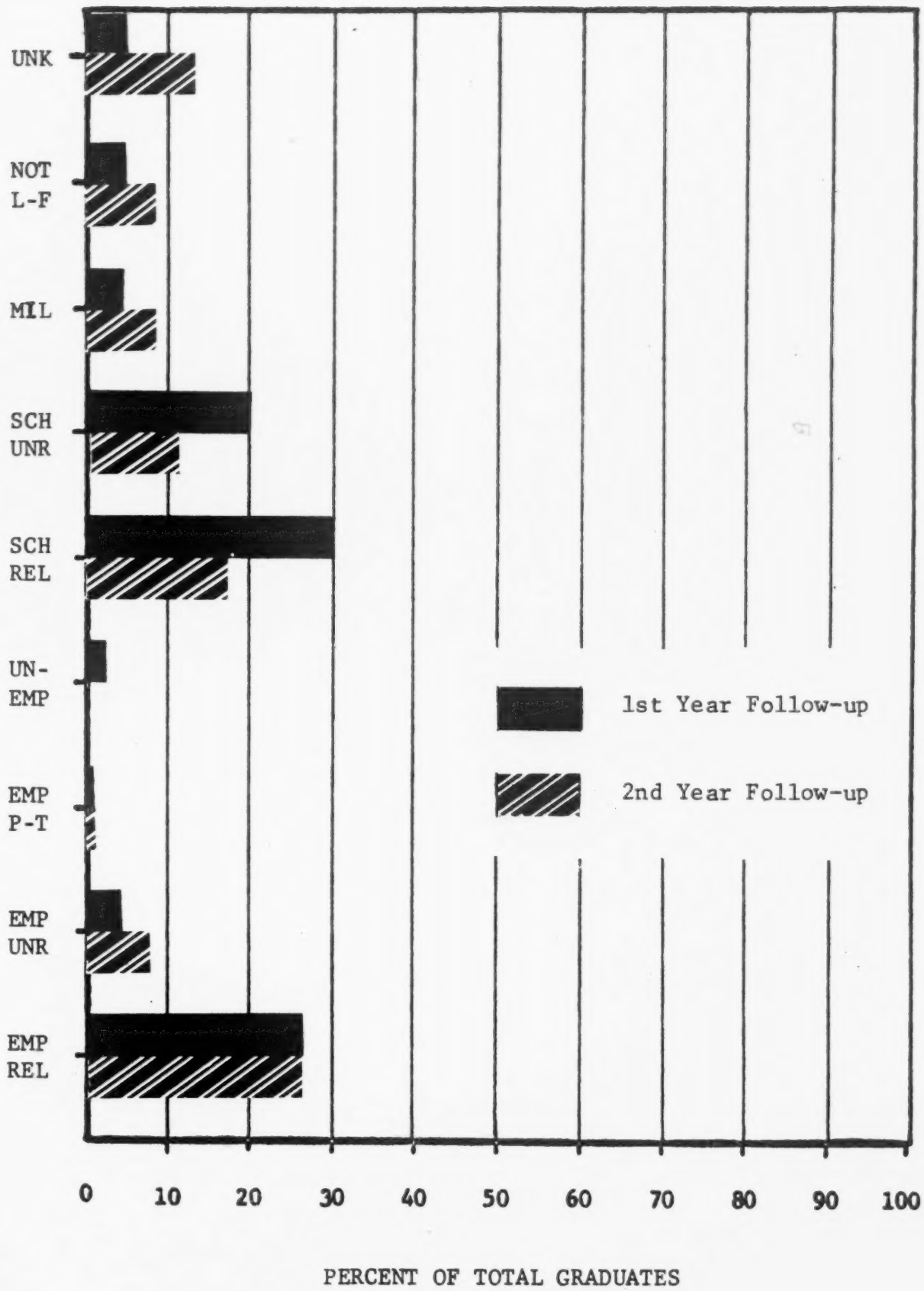

Figure 18 A Comparison of First and Second Year Follow-up Data on 1968-1969 Graduates -- Distributive Education Division

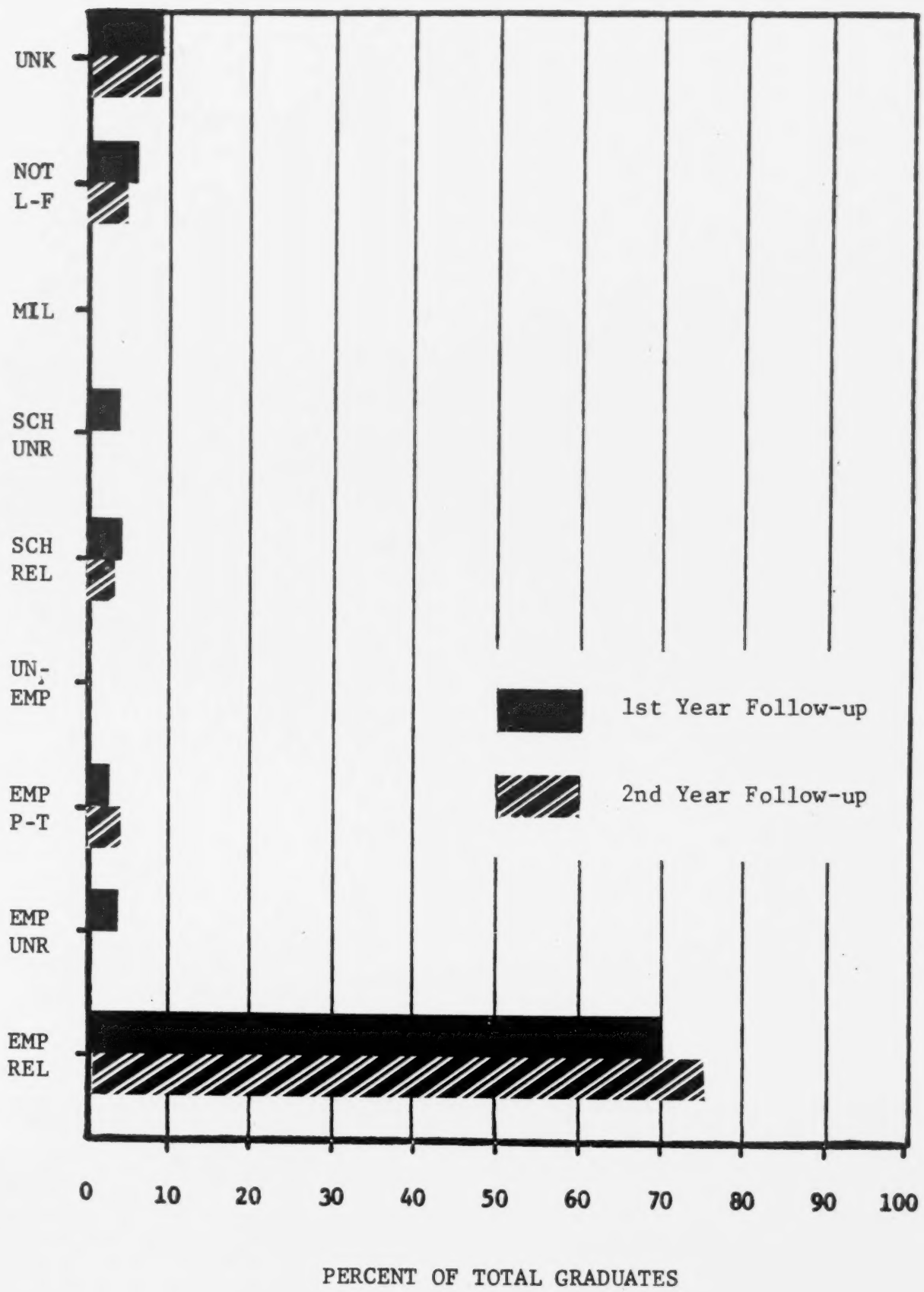

Figure 19 A Comparison of First and Second Year Follow-up Data on 1968-1969 Graduates -- Health Division

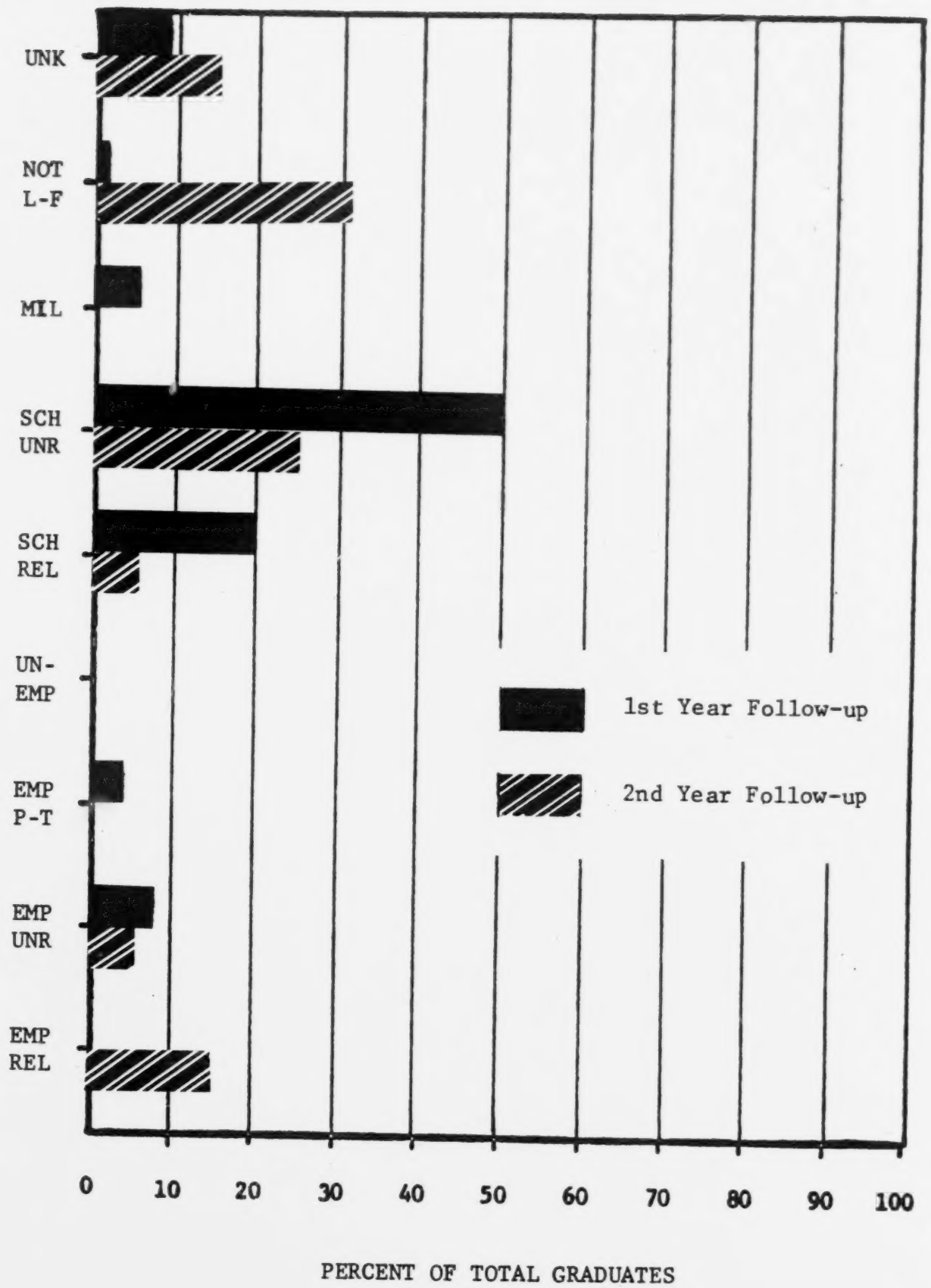

Figure 20 A Comparison of First and Second Year Follow-up Data on 1968-1969 Graduates -- Home Economics

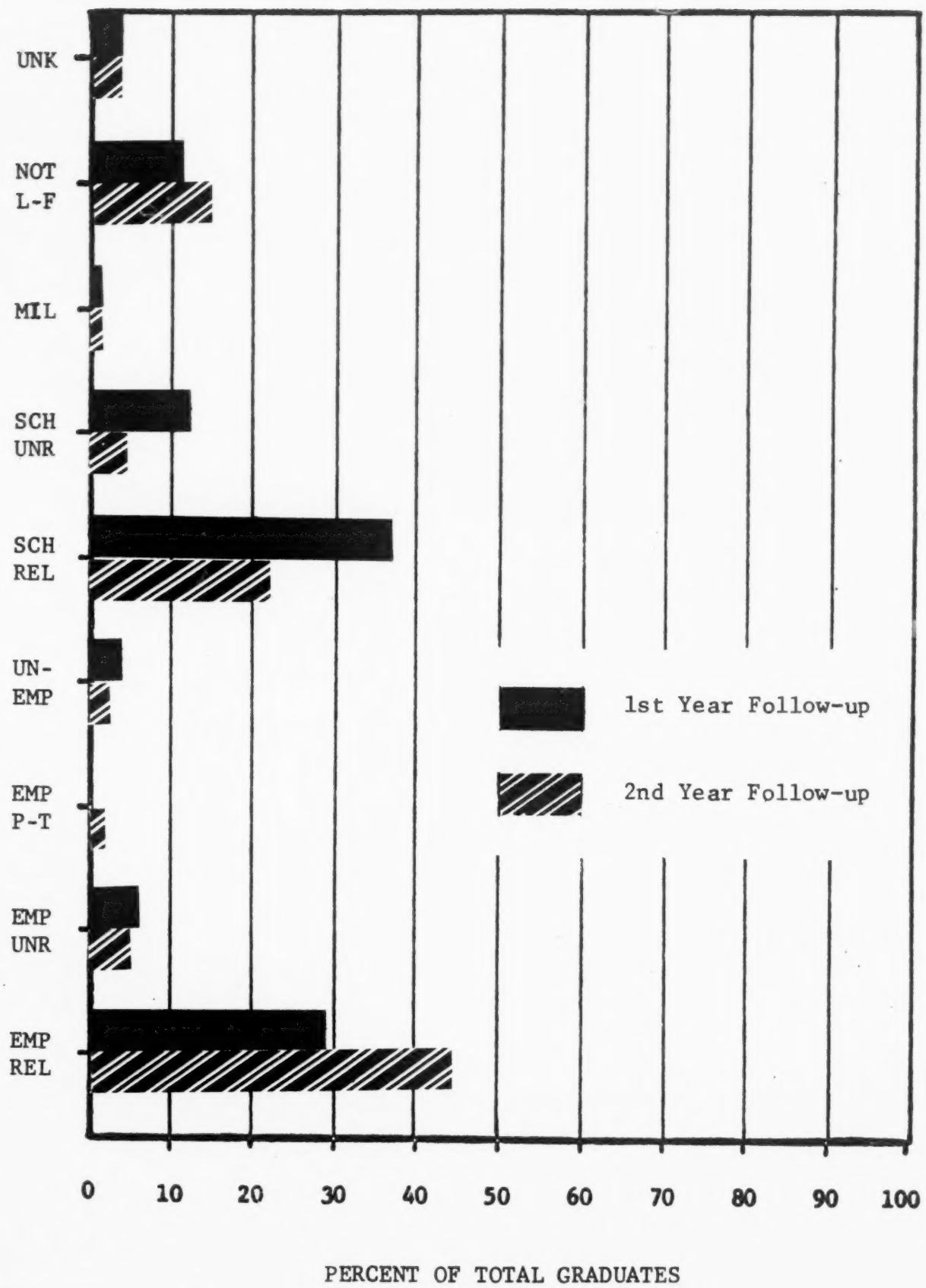

Figure 21 A Comparison of First and Second Year Follow-up Data on 1968-1969 Graduates -- Business and Office Division

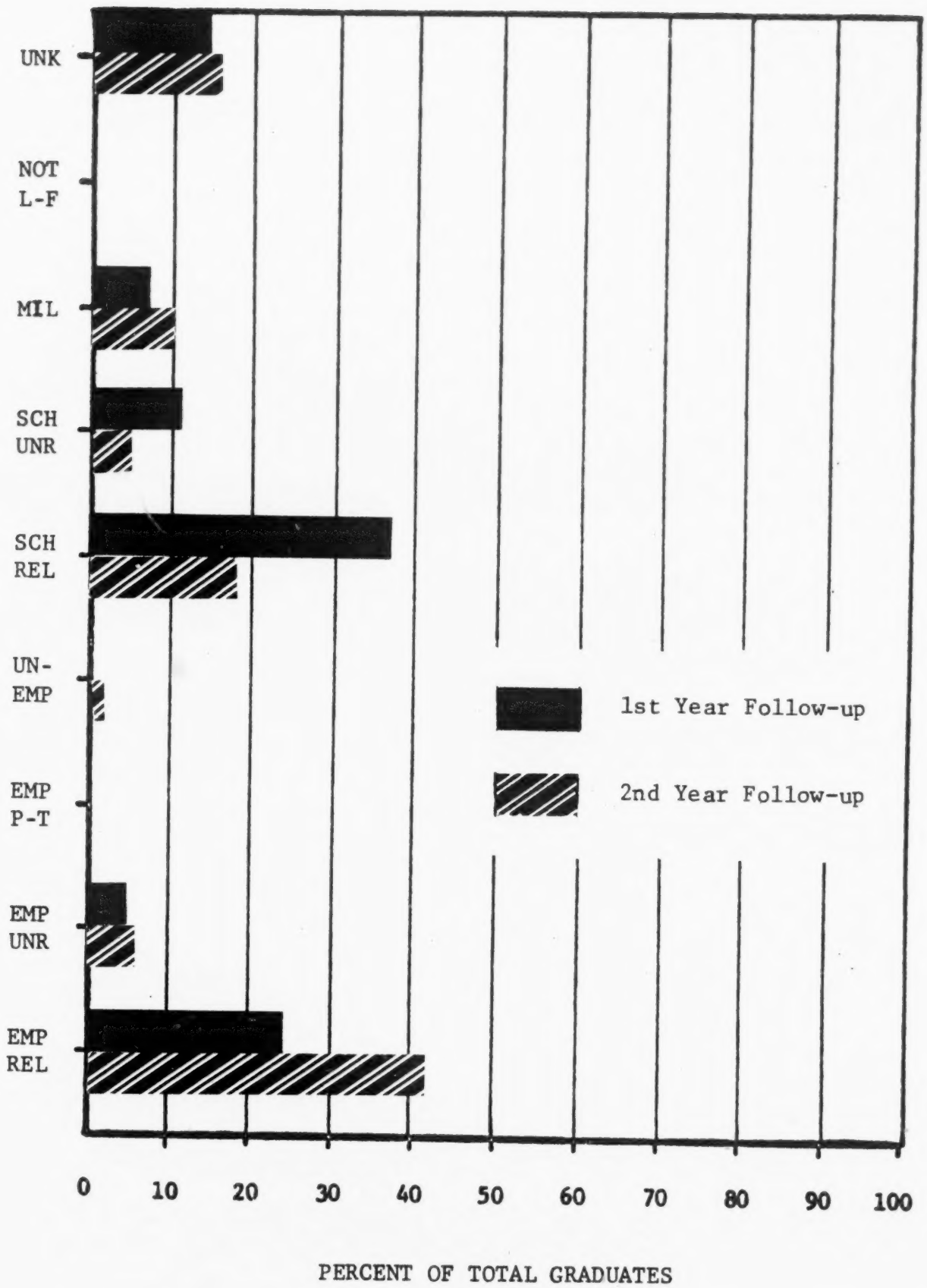

Figure 22 A Comparison of First and Second Year Follow-up Data on 1968-1969 Graduates -- Technical Division

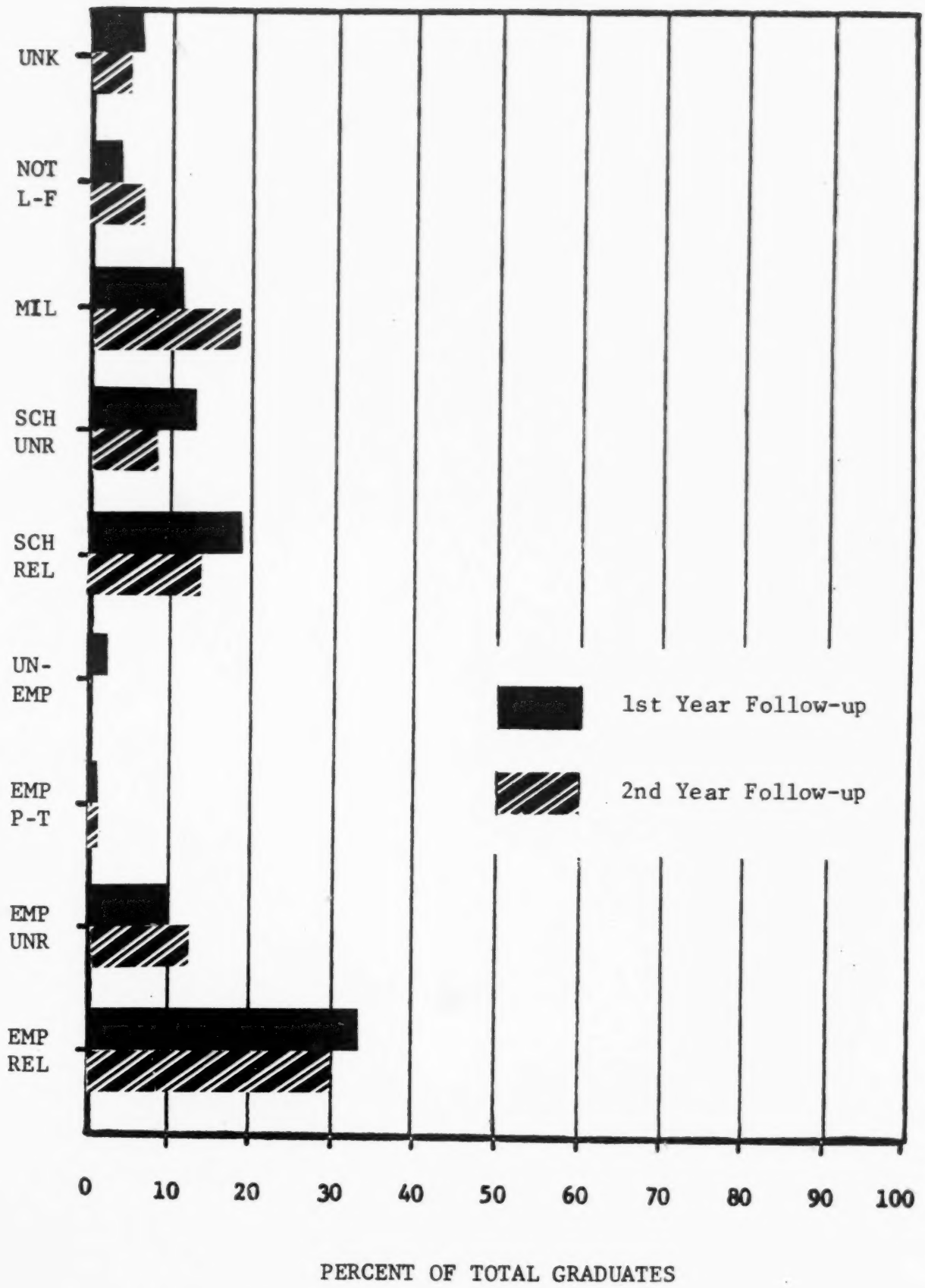

Figure 23 A Comparison of First and Second Year Follow-up Data on 1968-1969 Graduates -- Trade and Industrial Division

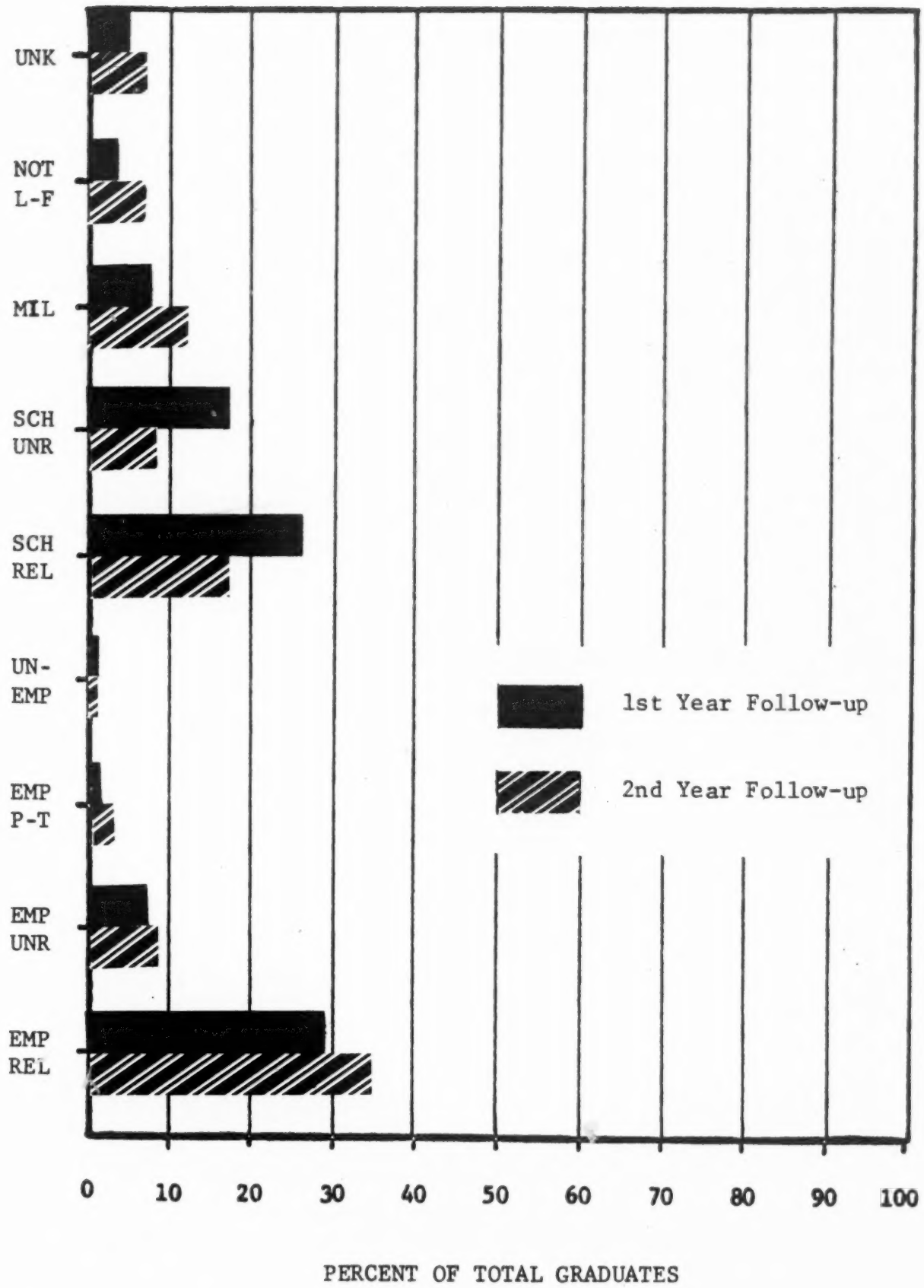

Figure 24 A Comparison of First and Second Year Follow-up Data on 1968-1969 Graduates -- All Divisions Combined

EMPLOYMENT STATUS

OF GRADUATES AVAILABLE

FOR PLACEMENT

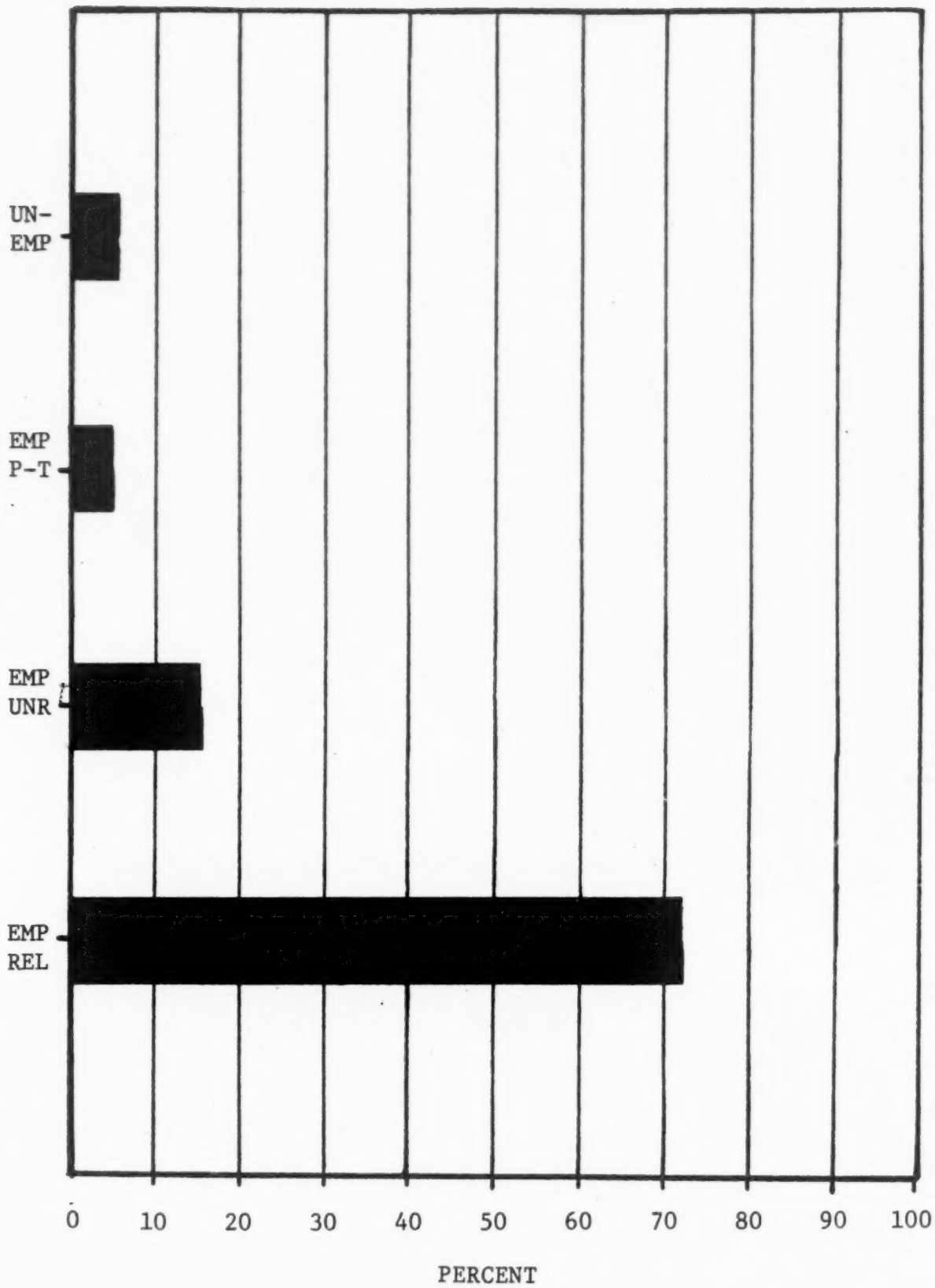

Figure 25 Employment Status of Graduates Available for Placement--Agriculture Division

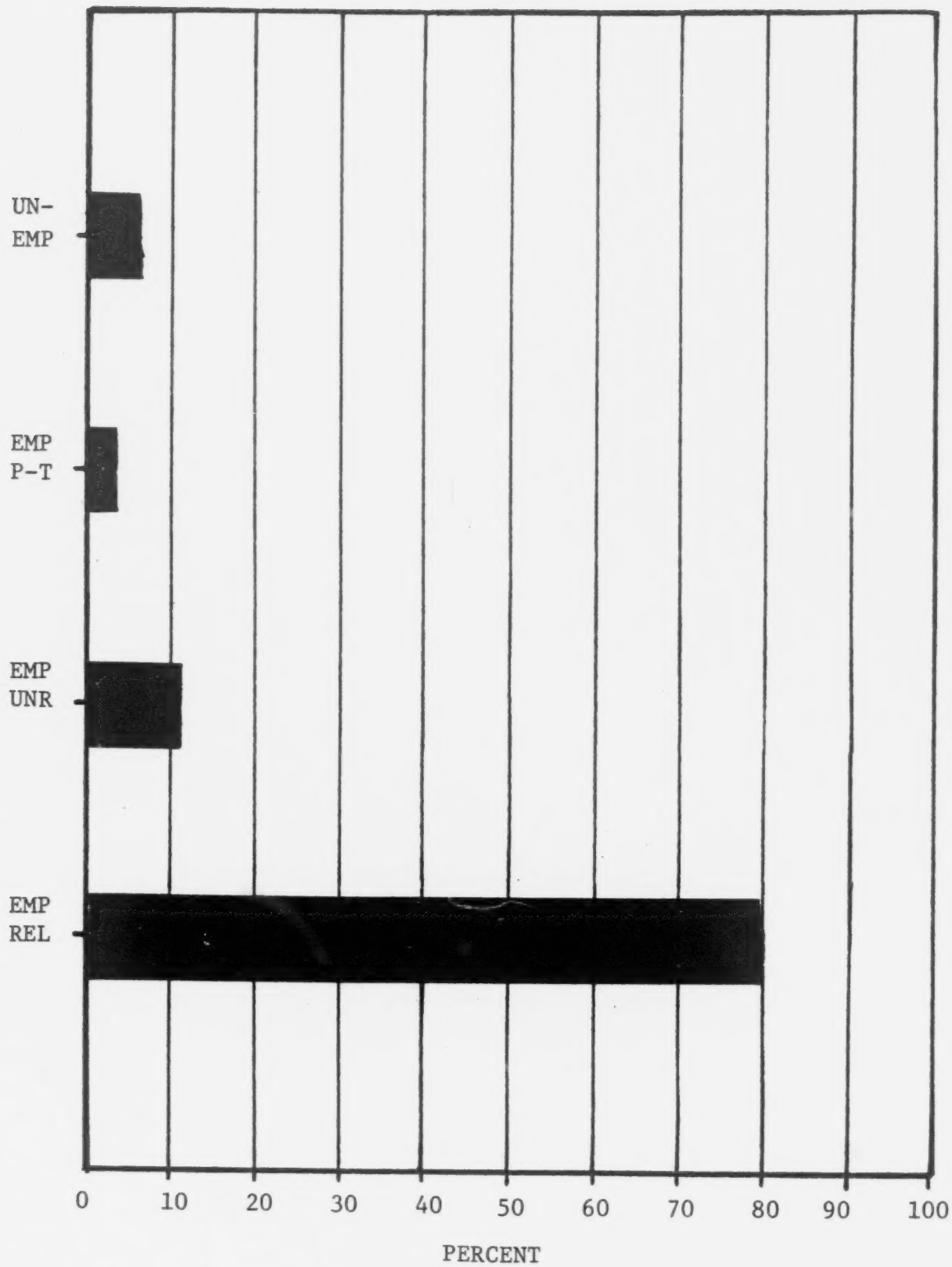

Figure 26 Employment Status of Graduates Available for Placement--Distributive Education Division

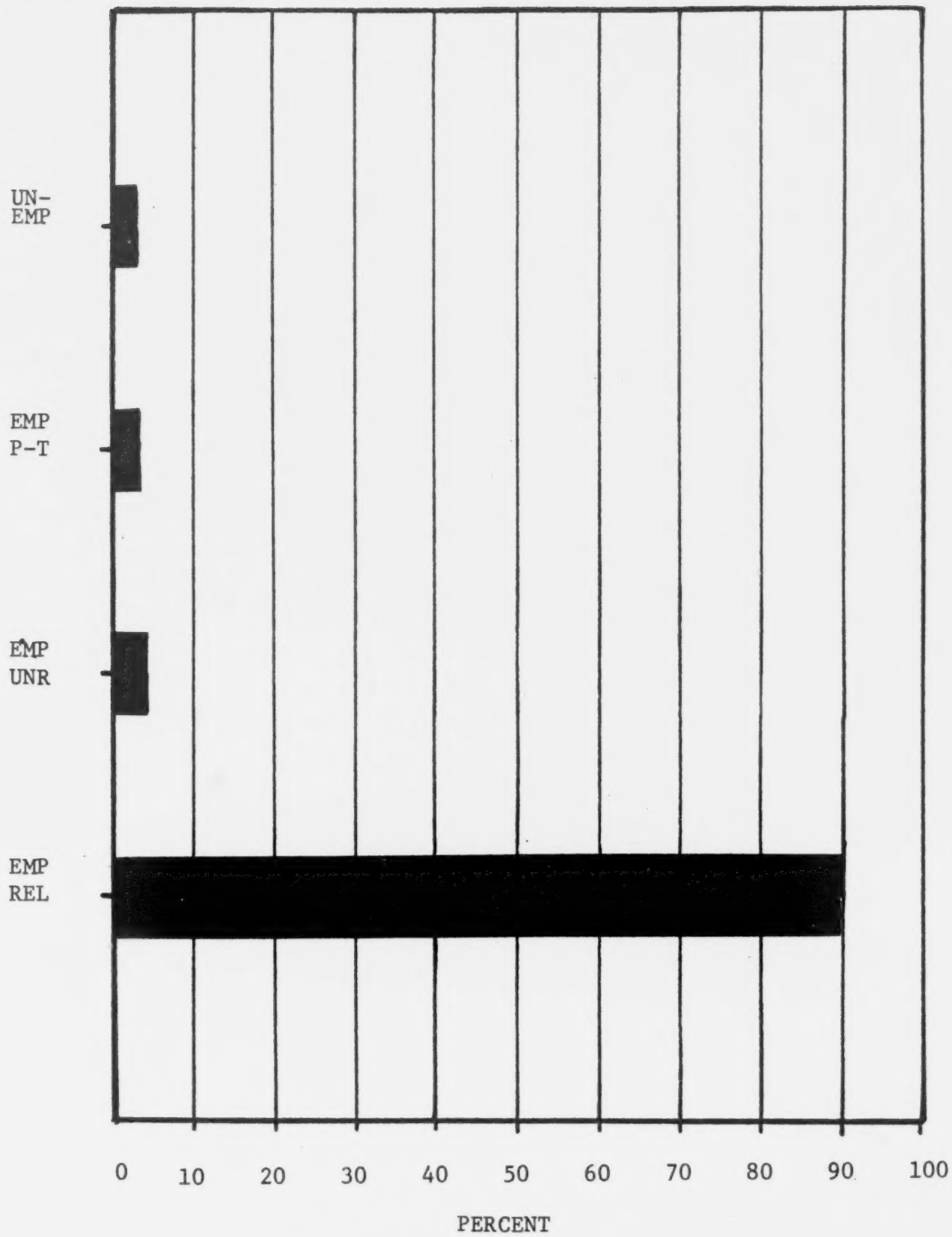

Figure 27 Employment Status of Graduates Available for Placement--Health Division

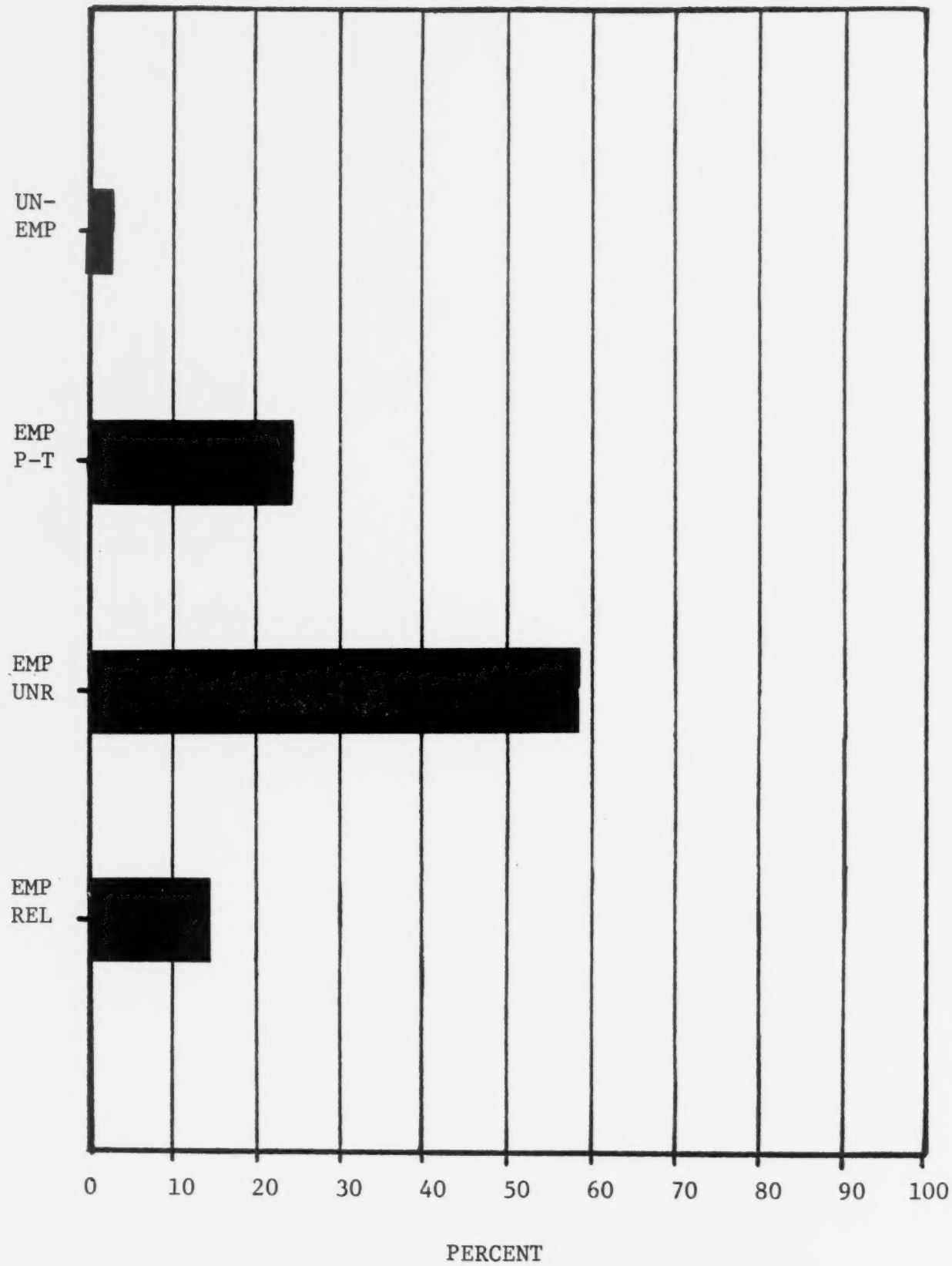

Figure 28 Employment Status of Graduates Available for Placement--Home Economics Division

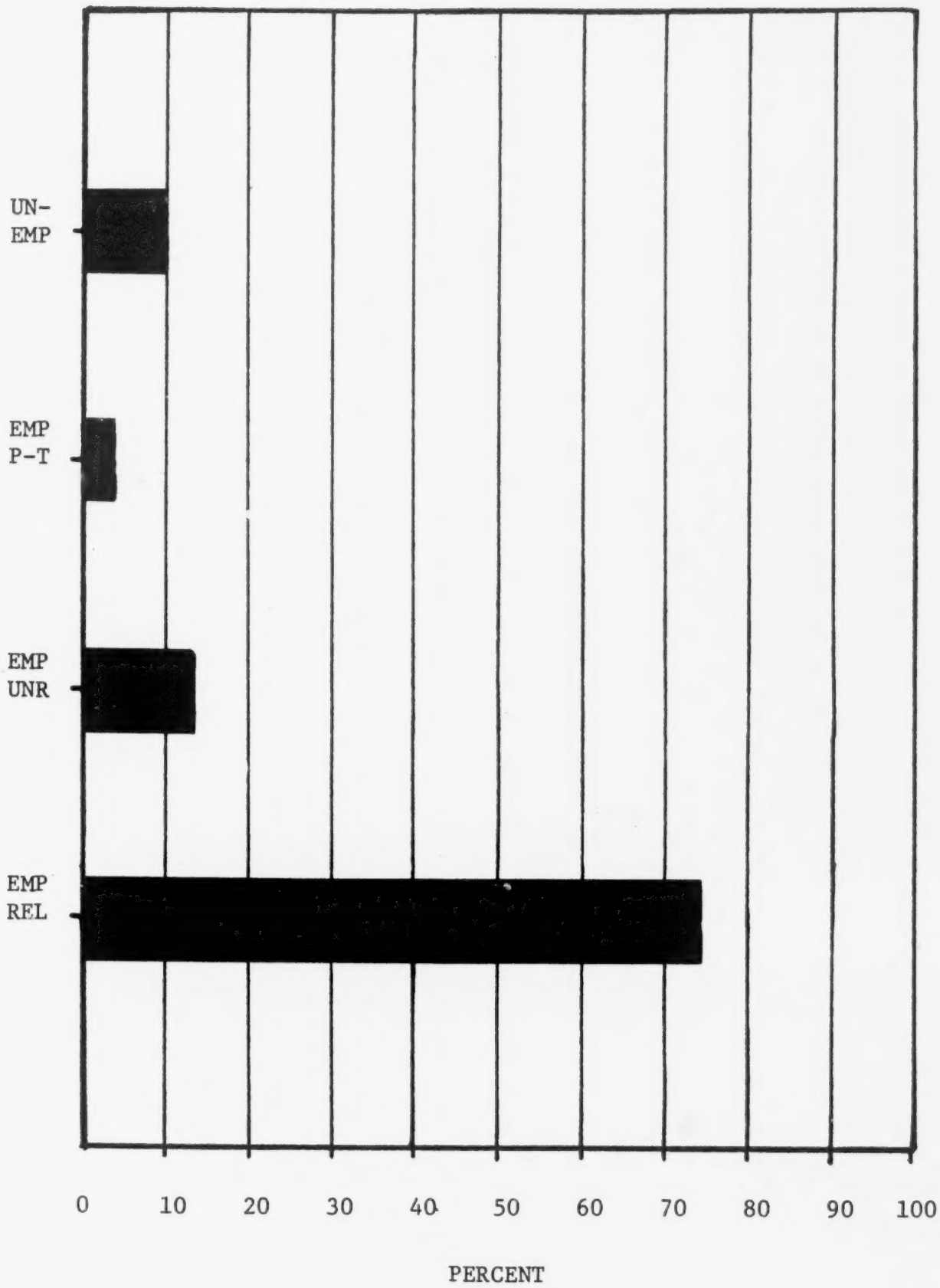

Figure 29 Employment Status of Graduates Available for Placement--Business and Office Division

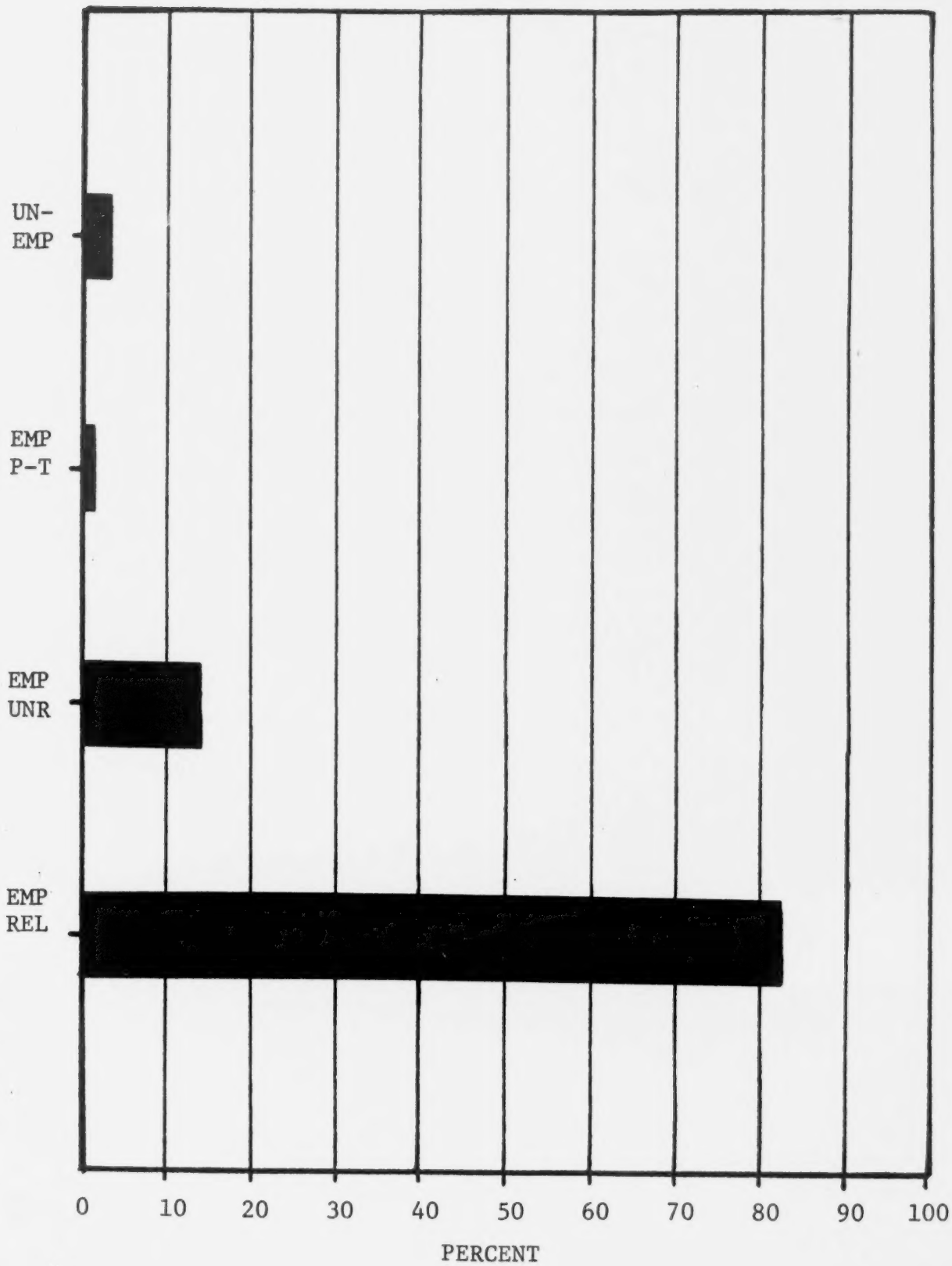

Figure 30 Employment Status of Graduates Available for Placement--Technical Division

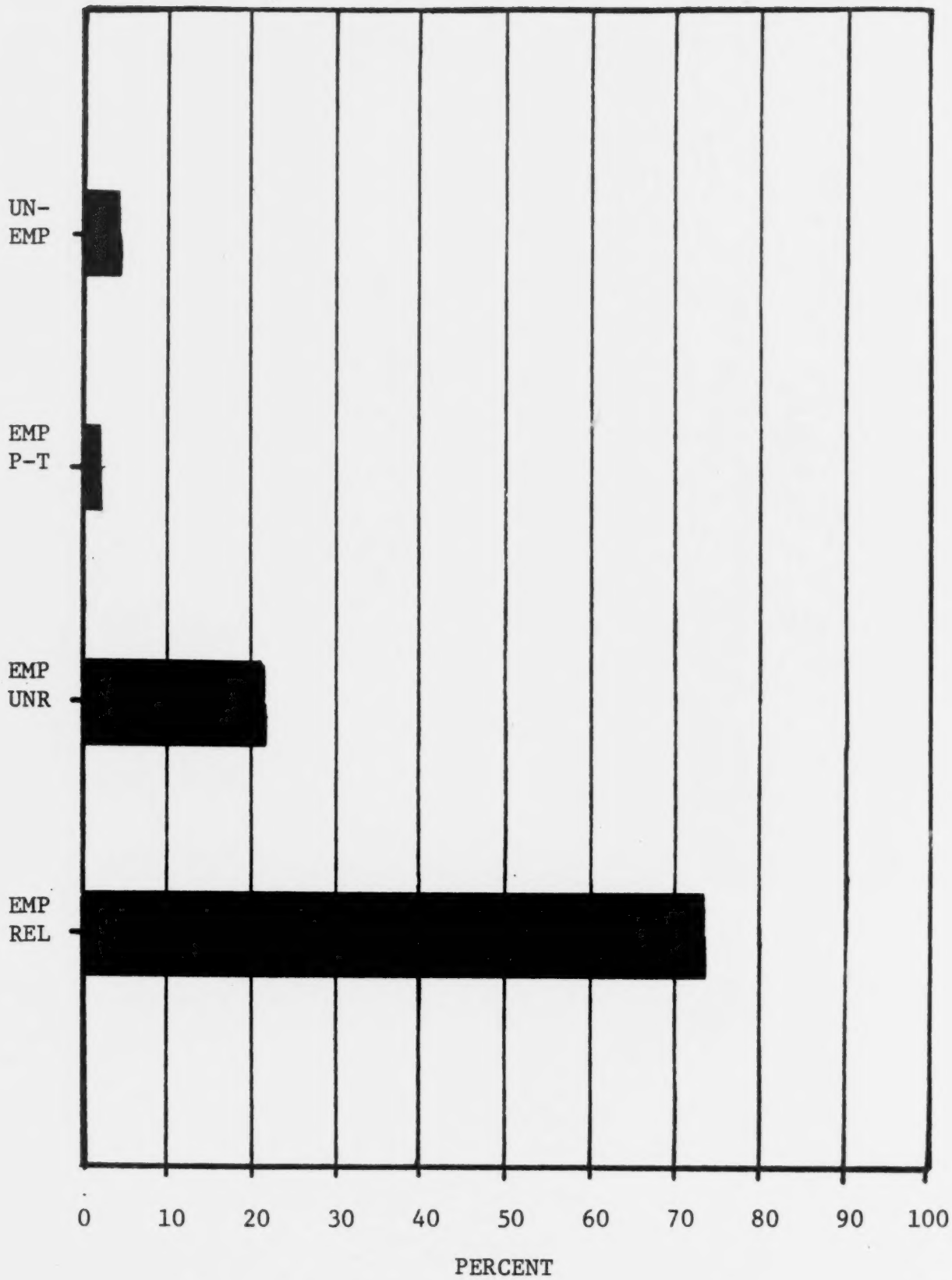

Figure 31 Employment Status of Graduates Available for Placement--Trade and Industrial Division

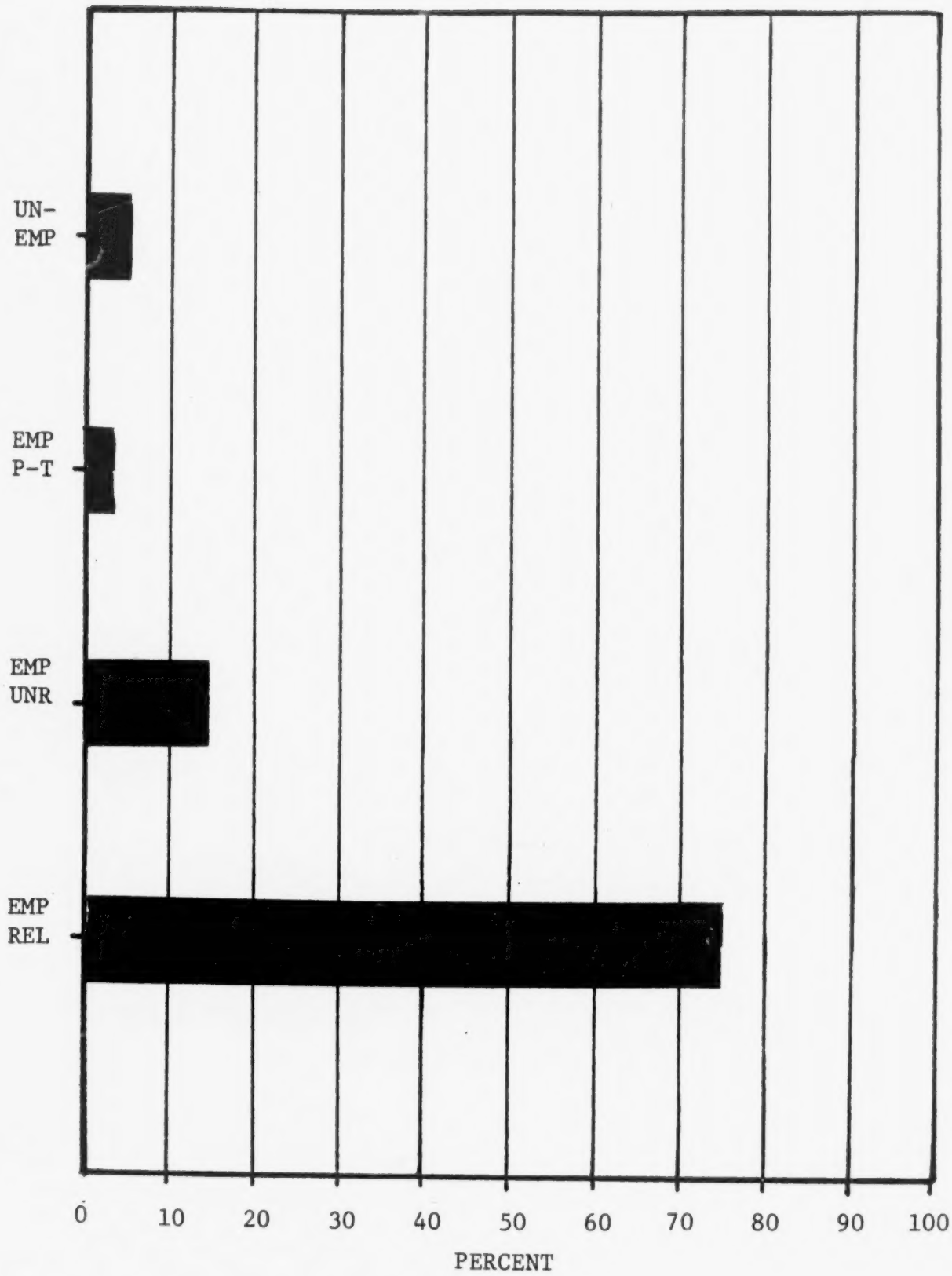

Figure 32 Employment Status of Graduates Available for Placement--All Divisions Combined

CHAPTER III

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents (1) major findings summarized from Chapter II, (2) conclusions drawn from these findings, and (3) recommendations based on the conclusions.

Findings

Major findings from the data presented in Chapter II include the following:

1. With the exception of graduates from the Health Division, the percent of graduates who are available for placement (those who enter the labor market) is less than half of the total number of graduates.

2. The percent of graduates who are continuing school decreases sharply within the one year period between the first follow-up and the second follow-up.

3. The percent of graduates who are available for placement increases sharply within the one year period between the first follow-up and the second follow-up.

4. The percent of graduates who were classified as "employed related" was greater than the percent of dropouts who had obtained a marketable skill and were classified as "employed related."

5. The percent of graduates classified as "unemployed" five months after graduation was strikingly less than the unemployment percentages normally associated with this age group.

6. Of those graduates entering the labor market, over seventy percent were classified as "employed related."

7. There is a great deal of variation between program types in terms of follow-up data.

Conclusions

Based on the above findings, the following conclusions are presented.

1. More than half of the graduates from vocational or technical programs do not attempt to use their training to find permanent employment within five months after completion of training. (NOTE: See Finding 1.) It would therefore seem that the most efficient way to increase the supply of trained manpower for the labor market would be to increase the percent of graduates who enter the labor market. In other words, it is more efficient to better utilize the trained manpower that is now being produced than to increase the number of trainees.

2. Many vocational or technical graduates enter advanced schooling but drop out within one year. (NOTE: See Findings 2 and 3.) They are delayed entrants into the labor market.

3. Completion of a vocational or technical program increases one's chance of being employed in the field for which the program is preparing workers. (NOTE: See Findings 4 and 6.)

4. Participation in a vocational and technical program decreases the chances of being unemployed. (NOTE: See Finding 5.)

5. Some vocational or technical training programs are more efficient than other programs in terms of producing workers for the labor market. (NOTE: See Finding 7)

Recommendations

The following recommendations are based on the above conclusions.

1. Efforts should be made to increase the percent of graduates who enter the labor force. This could be most practically accomplished by reducing the percent of graduates who continue their education in a field that is not related to their vocational or technical training. A college bound student should not be allowed to take a training slot if it prevents an employment bound student from receiving training. This implies the selection of students in greatest need of training for employment and the counseling of graduates toward employment or further education related to the vocational program from which they have completed.

2. The importance of placement and adequate follow-up efforts should be emphasized to vocational and technical teachers, both at the preservice and in-service levels.

3. Schools should be encouraged to establish placement procedures and to delegate responsibility for placement.

4. Follow-up data on specific program types should be carefully considered when planning vocational and technical program expansion or reduction.

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TEXAS LABOR LAWS; A GUIDE TO LAWS AFFECTING EMPLOYERS, EMPLOYEES, AND LABOR ORGANIZATIONS.

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ABSTRACT - THIS BRIEF GUIDE TO TEXAS LABOR LAWS IS INTENDED FOR STUDENTS, EMPLOYERS, EMPLOYEES, AND OTHER LAYMEN. INCLUDED ARE LAWS COVERING LABOR RELATIONS, WORKING CONDITIONS, HOURS, WAGES, UNEMPLOYMENT INSURANCE, AND WORKMEN'S COMPENSATION. (BH)

VT 013 958

TEXAS LABOR LAWS
A Guide to Laws Affecting Employers, Employees, and Labor Organizations

Joan McCrea

BUSINESS GUIDES NO.14

Bureau of Business Research
Graduate School of Business
The University of Texas at Austin

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TEXAS LABOR LAWS
A Guide to Laws Affecting Employers, Employees, and Labor Organizations

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The University of Texas at Austin

1971

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PUBLISHER'S FOREWORD

Labor law in the United States results directly from the shift of the American economy from an agricultural to an industrial polarization. With industrialization came the development of labor unions and the need for legal definitions, guidelines, and safeguards.

The legal status of labor unions has evolved from repressive common-law decisions of the nineteenth century, through sympathetic New Deal legislation of the 1930's, to a balanced-power philosophy as expressed in congressional acts of 1947 and 1959. Federal law encourages union organization and collective bargaining, while protecting the rights of individual workers and of the general public.

Consequent to passage of federal legislation the states enacted various laws modeled on the federal statutes. State law was severely limited, however, by the expansion of federal-law jurisdiction through a broadened interpretation of interstate commerce, which left to state coverage principally small retail-sales firms, service operations, and agriculture, which is usually excluded from federal labor laws.

Labor legislation has become so comprehensive yet so detailed, so multifarious yet so particularized, so universally applicable yet so inaccessible to nonlawyers, that workers and small employers need help in understanding how its provisions affect them.

Realizing this need, Dr. Joan McCrea, associate professor of economics at The University of Texas at Arlington, has prepared this brief guide to *Texas Labor Laws*. It is a very useful aid to workers, small employers, students, and other laymen who lack easy access to the laws which significantly affect workers, employers, and labor unions in Texas. The Bureau of Business Research is pleased to present this helpful handbook on Texas labor law as No. 14 in its Business Guide series.

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Texas Labor Laws was edited by Dr. Graham Blackstock; composition was done by Mrs. Jeanette Pryor and Mrs. Melinda Newton; Miss Penelope Lewis designed the cover and assisted with the typographical patterns; offset printing was done by Robert Dorsett and Daniel P. Rosas. Dr. Eugene W. Nelson, professor of business law at The University of Texas at Austin, read the manuscript and offered helpful suggestions for its improvement.

Stanley A. Arbingast
Director

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PREFACE

This brief guide to Texas labor laws is intended as an aid for students, workers, small employers, and other laymen who do not have ready access to the statutes affecting workers, employers, and unions. Additional information is always available from an office of the state or federal agency administering the law.

Attorney L. N. D. Wells, Jr., has provided very helpful assistance and critical comments, but he is not responsible for any errors of law or opinions which may remain. I am grateful to Mrs. Anita Force for her patient and efficient typing of the manuscript.

Joan McCrea

The University of Texas at Arlington
December 1970

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KEY TO LEGAL ANNOTATIONS

Att'y. Gen. Op. No. M-433 (1969)—M-433 refers to the 433rd opinion of Attorney General Crawford Martin.

Civ. App., 1958—The case was decided by the Civil Appeals Court in 1958.

Civ. App.—Galveston 1941—The case was decided by Court of Civil Appeals in Galveston in 1941.

Comm. App., 1922—The case was decided by the Commission of Appeals in 1922.

Cr. R.—*Texas Criminal Reports*, series of decisions of Court of Criminal Appeals. 151 Cr. R. 343 refers to volume 151, page 343.

H.B. 3951, L. 1963—House Bill 3951 passed by the Legislature in 1963.

16 LRRM 634—*Labor Relations Reference Manual*, Volume 16, page 634.

Op. Atty. Gen.—*Digest of Opinions of the Attorney General of Texas*, published annually, and numbered consecutively throughout the tenure of each office.

P.C. 1613—*Vernon's Annotated Penal Code of the State of Texas*, Article 1613.

R.C.S. Art. 5152—*Vernon's Revised Civil Statutes of the State of Texas*, Article 5152. Most of the civil statutes on labor are contained in Volume 15 of R.C.S., Articles 5144-5221.

S.W. and S.W. 2d—*Southwestern Reporter*, first series (1886 to 1927) and second series (1927 to date). Volume number

precedes, and page number follows initials of the publication.

148 T 434—*Texas Reports*, Volume 148, page 434.

323 V.S. 516—*United States Supreme Court Reports*, Volume 323, page 516.

TEXAS LABOR LAWS

A Guide to Laws Affecting Employers, Employees, and Labor Organizations

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1. LAWS RELATING TO LABOR RELATIONS

COLLECTIVE BARGAINING

The growth and development of labor unions is characteristic of the change from an agricultural to an industrial economy. The legal status of unions in the United States has changed from repressive common-law decisions of the nineteenth century, through positive encouragement of the New Deal legislation of the 1930's (epitomized in the National Labor Relations [Wagner] Act of 1935), to the policy of balanced power characterized by the Labor Management Relations (Taft-Hartley) Act of 1947 and the Labor Management Reporting and Disclosure (Landrum-Griffin) Act of 1959. The substance of federal law is that union organization and collective bargaining should be encouraged, but also that the rights of individual workers and of the general public should be protected.

The federal laws apply to employers and employees who are engaged in interstate commerce. The interpretation of interstate commerce has been so broadened during the past thirty years that not only all transportation and communication, but most manufacturing and distribution is covered under federal law. Many states enacted "Little Wagner Acts" and "Little Taft-Hartley Acts" as a consequence of the federal acts.

The area of jurisdiction of state labor laws is in small retail-sales establishments, in services, and in agriculture, which is generally excluded from federal labor laws.

Right To Organize

The right of workers to organize and form trade unions was established in Texas in 1899 (R.C.S. Art. 5152).

A later court decision clearly established the right of workers to organize. In *Sheehan* v. *Levy*, 238 S.W. 900 (Comm. App., 1922), the Supreme Court of Texas stated that the law authorizes:

> ". . . organizations such as labor unions, and give(s) them the right, within certain bounds, to act together to promote their general welfare. Not only does the law of Texas so permit, but other authorities hold that laboring people may organize for the purpose of promoting their common welfare, elevating their standard of skill, and advancing and maintaining their wages, fixing the hours of labor and the rate of wages paid, obtaining employment for their members."

The right to individual or collective bargaining for terms and conditions of employment is also guaranteed. The Texas Right To Work Act of 1947 provides as follows:

> Section 1. The inherent right of a person to work and bargain freely with his employer, individually or collectively, for terms and conditions of his employment shall not be denied or infringed by law, or by any organization of whatever nature.
>
> Section 2. No person shall be denied employment on account of membership or nonmembership in a labor union (R.C.S. Art. 5207a).

These rights, however, are not inevitable. No state law requires an employer to recognize or bargain with a union representing his employees. The law merely states that trade unions and

collective bargaining are not illegal, without requiring an employer to bargain with a union (*Flenoy* v. *Yarbrough*, 318 S.W. 2d 15 [Civ. App. 1958]).

Public Employees

Public employees have the right to organize, and may not be discriminated against because of belonging or not belonging to a union. In 1955 a fireman named Lunsford, who was active in organizing a local of the International Association of Fire Fighters in Bryan, was discharged on the same day he received his union membership card. He filed suit alleging violation of Section 2 of the Right To Work Law. The District Court dismissed his suit on the grounds that he was not a member of the union at the time of discharge. His appeal to the Waco Court of Civil Appeals was denied on the ground that he would have to be a full-fledged, duly obligated, and formal member of the union before he was protected against discriminatory discharge. The Texas Supreme Court overruled the lower courts (*Lunsford* v. *City of Bryan*, 297 S.W. 2d 115 [1957]), ruling that the Legislature intended to protect the right of membership in a union as well as the right of nonmembership. The City of Bryan settled out of court by paying the employee his lost wages. Elsewhere, a city ordinance prohibiting the formation of a union among city employees was held invalid (*Beverly* v. *City of Dallas*, 292 S.W. 2d 172 [Civ. App. 1956]).

The right of employees to collective bargaining does not extend to state and local government workers in Texas. The 1947 law prohibits state and local government officials from recognizing a labor organization as bargaining agent for public employees, and from entering into a collective-bargaining contract with a labor organization. Public employees may present grievances concerning wages, hours, and working conditions through a representative of their choosing; but the representative

cannot be recognized as a bargaining agent, and cannot be recognized at all if his organization claims the right to strike (R.C.S. Art. 5154e). The local union disclaimer of the national union's constitution or by-laws preserving the right to strike would be useless (*Dallas Independent School District* v. *American Federation of State, County, and Municipal Employees, Local 1442*, 330 S.W. 2d 702 [Civ. App. 1960]).

Strikes by public employees are outlawed under penalty of forfeiting all civil-service rights, re-employment rights, and any other rights or benefits. Membership in a union cannot be cause for denial of employment.

Boards of trustees are now authorized to consult with teachers on matters of educational policy and conditions of employment (R.C.S. Art. 5154c).

Right To Work Law

Federal law purposely left an important loophole for state determination with respect to the "union shop." The Taft-Hartley Act, of 1947, made the "closed shop" illegal by making it an unfair labor practice to require in a collective agreement that the employer hire only union members. An agreement to require the "union shop," whereby all employees must join the union, usually after a probationary period, was permitted. However, in an exception to the principle that federal law supersedes state law, the Act permitted state laws on the union shop to apply even to workers in interstate commerce. About half the states, including Texas, outlaw the union shop.

The Texas Right To Work Act of 1947 provides that every person has an inherent right to work and bargain freely with his employer, either individually or collectively, for terms and conditions of his employment. This right cannot be infringed by law or by any organization, even a labor union. Membership or nonmembership in a labor union cannot be used as a condition

of employment. Any contract which requires that employees shall or shall not be or remain members of a labor union, is illegal—"null and void and against public policy" (R.C.S. Art. 5207a). An Attorney General Opinion dated November 16, 1951, found that a hiring-hall provision in a union contract was permissible when it did not require an exclusive closed-shop arrangement.

The Union Security Act of 1951 provides for enforcement of the right-to-work law by making union-shop agreements a conspiracy in restraint of trade (R.C.S. Art. 7428-1). The "agency shop" contract, wherein nonunion employees are required to pay union dues as a fee for services of the union as their agent, was ruled unlawful by the attorney general of Texas in 1961 (Atty. Gen. Op. No. WW-1018 [1961]). However, the current usage of this type of union-security agreement has not been challenged.

Railroad and airline employees, who are covered under the Railway Labor Act rather than under the Federal Labor Management Relations Act, are not restricted by the Texas Right To Work Act. The Texas Court of Appeals held that the union-shop amendment to the Federal Railway Labor Act permitting a union shop contract superseded state laws (*International Association of Machinists* v. *Sandsberry*, 277 S.W. 2d 776 [Civ. App. 1955]).

Blacklisting

Blacklisting, defined as publicizing the name of a former employee so as to prevent his obtaining another job, has been prohibited since 1970 (P.C. 1613). This was a technique used to discourage union organization, since a man fired for union activity in one plant could be effectively barred from future employment. The law also prohibits discrimination against any applicant for employment because of his having participated in a

strike (P.C. 1613). However, it does not prohibit an employer from furnishing a written truthful statement of the reason for discharge. An employer is prohibited from discharging, disciplining, or blacklisting any employee for failure to do business at any store or place (P.C. 1620).

REGULATION OF UNION ACTIVITIES

Public policy toward labor unions has shifted through periods of antagonism, encouragement, and, finally, regulation. The Texas Union Regulation Act of 1943 anticipated many of the provisions of the federal Labor Management Reporting and Disclosure Act of 1959. It covers financial reporting, election procedures, and certain rights of individual union members.

Every labor union in the state must furnish to the secretary of state an annual report listing the name and address of the union, the names and addresses of its local officers, the name and address of the state and national union with which it is affiliated, and a statement of all property owned by the local union (R.C.S. Art. 5154a-3).

All union organizers operating in Texas are required to register with the secretary of state (R.C.S. Art. 5154a-5). This requirement was ruled a valid exercise of the police power of the state in 1945 by the U.S. Court of Civil Appeals (*AFL* v. *Mann*, 16 LRRM 634, 188 S.W. 2d 276). However, the U.S. Supreme Court ruled in 1945 that this provision was an unconstitutional violation of the right of free speech when applied to a national union official (*Thomas* v. *Collins*, 15 LRRM 777, 323 U.S. 516).

Unions are prohibited from collecting excessive initiation fees, dues, and assessments. They are permitted to collect dues or assessments for purposes which benefit the members, and to maintain funds or make investments for such beneficial programs. Unions may collect dues or assessments for old-age benefits, death and burial benefits; hospitalization, unemploy-

ment, health and accident, retirement, or other forms of mutual insurance; for lobbying, grievance committee, gifts, floral offerings, charitable purposes, strike funds, or any other legitimate practice. The main thrust of the law is against excessive initiation fees, since this could result in severe restriction of union membership (R.C.S. Art. 5154a-7). Labor unions are prohibited from making any financial contribution to any political party or to the campaign expenses of any person running for political office. This does not preclude the use of union funds for such nonpartisan activities as voter registration, worker education, and lobbying. Also, the unions may form separate political funds through voluntary member contributions, which may be used to endorse particular candidates (R.C.S. Art. 5154a).

Union-management contract clauses providing for dues check-off (automatic deduction from pay) must also provide for the written consent of individual employees (R.C.S. Art. 5154e).

Union officials are required to maintain accurate accounts of all receipts and expenditures of union funds, which any member of the union may inspect at all reasonable times (R.C.S. Art. 5154a-9).

Various sections of the Union Regulation Act of 1943 have been held invalid or unconstitutional: an annual financial statement of all union receipts and itemized expenditures, an annual election by secret ballot, and submission of copies of all collective-bargaining agreements to the secretary of state (*AFL* v. *Mann*, 16 LRRM 634, 188 S.W. 2d 176).

Other sections on financial reporting and limits on expulsion from a union have been superseded by the Labor Management Reporting and Disclosure Act of 1959.

Restraint of Trade

The Texas Anti-Trust Act forbids combinations to restrain trade, fix prices, lessen competition, or fix output or the

amount of work that may be done in preparing a product for sale. It is considered a conspiracy in restraint of trade when any two or more persons or associations agree to refuse to buy or sell to any other persons or groups; to agree to boycott or refuse to transport, receive, use, or work with any products of any other persons.

The provision against handling of goods does not apply to refusal to handle products of the immediate employer, unless this refusal is intended to induce the employer to boycott a third party. For example, the law prohibited the Carpenters' Union from picketing a restaurant whose owner was building a residence at a different location with nonunion labor (*Carpenters* v. *Ritter's Cafe,* 6 LRRM 1109, 138 S.W. 2d 828). The Texas Supreme Court has held unconstitutional that part of the Texas Union Regulation Act (R.C.S. Art. 5154f) which restricts the labor dispute to a controversy between an employer and a majority of his employees (*International Union of Operating Engineers* v. *Cox*, 23 LRRM 2527, 219 S.W. 2nd 787 [1949]).

STRIKES, PICKETING, AND SECONDARY BOYCOTTS

The Federal Anti-Injunction (Norris-La Guardia) Act of 1932 restricts the use of injunctions in labor disputes when interstate commerce is involved, and many other states have comparable laws. Texas, however, provides for suits to enjoin unlawful strikes or picketing (R.C.S. 1995-17a).

Strikes

The right to strike is upheld by law, if peaceable and lawful means are used to induce persons to refuse to work. However, one may not trespass on company property without the owner's consent (P.C. 1643). This right to strike does not apply to any

action taken by the union for the purpose of limiting the production, transportation, or consumption of goods. The Texas Supreme Court found it a violation for a union to prevent connecting carriers from handling freight from a carrier not under union contract (*Teamsters* v. *Best Motor Lines*, 27 LRRM 2457).

Unions are liable for damages resulting from losses incurred through strikes or picketing by their members if such picketing or strike is held to be breach of contract by the Court (R.C.S. 5154b). Unions can sue and be sued, whether or not they are incorporated, without making the individual members thereof parties to the suit. In such suits service of citation may be had against the president, secretary, or treasurer (R.C.S. Art. 6134); and if judgment is made against the association it becomes binding on the joint property of all members, but not upon their personal property (R.C.S. Art. 6136). If service of citation is issued against a member, execution may be had against the personal property of any member, if the joint property was insufficient to satisfy the claim (R.C.S. Art. 6137).

Strikebreakers

Any person or firm that employs an armed force of detectives or persons not residents of Texas as strikebreakers is liable to pay the state a fine of $25 to $1000 (R.C.S. Art. 5207).

Picketing

Picketing by a labor union or its members has been legalized with limited objectives of allowing striking employees, who have a bona-fide economic dispute with their employer, to discourage other employees from entering the place of business.

Peaceful picketing is permissible under constitutional provisions guaranteeing the right of speech, but it is also recognized that picketing involves an element of coercion. In *Tipton* v. *Hotel and Restaurant Employees, Local 808*, 149 S.W. 2d 1028 (Tex. Civ. App.—Galveston 1941) the Court of Civil Appeals held that "stranger picketing" (by nonemployees) is lawful.

The Picketing Regulation Act of 1947 forbids mass picketing, defined as more than two pickets within fifty feet of any entrance to the plant being picketed, or within fifty feet of any other pickets; or obstruction of entrance to the premises by their persons or by physical obstructions. It is also unlawful to insult, threaten, or intimidate another in his right to enter or leave the premises. Picketing is unlawful when it is accompanied by slander, libel, or public display of misrepresentation. It is unlawful to picket in violation of an existing labor agreement (R.C.S. Art. 515d-1 to 4).

A later act of 1955 forbids picketing of a firm or establishment by a union which does not represent a majority of the employees of the firm or establishment. A trial judge is authorized to order an election to determine whether a union represents a majority (R.C.S. Art. 5154g).

A law which prohibits picketing of the plant or property of any public utility (one furnishing electricity, gas, or water to the public) has not been tested, and is probably unconstitutional. The sabotaging or tampering with utility equipment in order to interfere with service is a felony punishable by two to five years in the state penitentiary (R.C.S. Art 1446a).

A city ordinance prohibiting picketing on city streets was found valid (*Ex parte Waltrip*, 151 Cr.R. 343, 207 S.W. 2d 872 [1948]). In another case the prohibition of picketing within one hundred feet of the spur tracks entering a struck firm was held to abridge the right of free speech.

Violent picketing is outlawed under the Texas Penal Code. The O'Daniel Act of 1941 made it a felony to use force or threats of force to prevent someone from working. The law was

amended in 1967 by reducing the offense to a misdemeanor and also by prohibiting the use of force to prevent peaceable picketing (P.C. 162lb, amended by H.B. 710, L. 1967).

Secondary Boycotts

Secondary strikes, picketing, and boycotts are unlawful in Texas. A secondary strike is a work stoppage where no labor dispute exists between the employer and his employees, and where the work stoppage results from a labor dispute to which such employees are not parties (R.C.S. Art. 5154f). Secondary picketing entails the establishment of pickets at the premises of an employer where no labor dispute exists between such employer and his employees. Secondary boycott includes any agreement or concerted action by two or more persons to cause damage to any firm for whom they are not employed by withholding patronage or labor, picketing, refusing to handle goods, forming a strike, attempting to prevent the free flow of commerce, or by any other means causing an employer with whom they have a labor dispute to cause damage to an employer who is not a party to such labor dispute (R.C.S. Art. 5154f).

LABOR ARBITRATION

A labor-arbitration statute enacted in 1895 provides for referral of any labor dispute to a Board of Arbitration, upon mutual consent of all parties. The Board consists of two arbitrators designated by the employer, two designated by the employees or union, and a fifth arbitrator designated by the other four. The decision of the Board is binding on both parties for one year. Compensation of the arbitrators is limited to $3 per day and traveling expenses of five cents per mile (R.C.S. Arts. 239-249).

Labor disputes of public interest are referred by the governor to the industrial commissioner. The commissioner holds hearings, reports his findings, and makes recommendations to the governor as to what action should be taken to settle the dispute (R.C.S. Arts. 5186-5190).

2. LAWS RELATING TO WAGES, HOURS, AND WORKING CONDITIONS

WAGES

Pay Days

Every employer (except a municipal water corporation) must pay his employees at least semimonthly and not more than sixteen days after the end of the pay period (R.C.S. Art. 5155). Employees of farms, factories, and stores must be paid weekly if employment is by the day or week, or monthly if employment is by the month (R.C.S. Art. 5485).

Employees who are absent, laid off, or discharged, or who quit work must be paid in full within six days from termination (R.C.S. Arts. 5156-5158).

The Texas Bureau of Labor Statistics may request the district attorney to prosecute an employer for violation of the law. The penalty of $50 for each refusal to pay the employee is paid to the state. Civil suits for amounts under $200 filed by employees against the employer may be handled in the Small Claims Court.

Wages on Construction of Public Works (R.C.S. Art. 5159a)

Laborers, workmen, and mechanics employed in the construction and repair of public works for the state of Texas or any of its political subdivisions must be paid not less than the general prevailing rate of pay for similar work in the same locality. This includes workers employed by contractors or subcontractors for public works. The prevailing rate of pay for legal holidays and overtime work will also be paid.

The public body awarding a contract specifies in the call for bids and in the contract what the prevailing wage shall be for each craft or type of worker needed. These bid calls and contracts are public documents and may be examined by any workman on the job, at the office of either the public body or the contractor.

If a contractor or subcontractor pays less than the prevailing wage the employee will first request that the wage be paid. If the correction has not been made within six days, he should file a written complaint with an agent of the public body awarding the contract, and report the matter to the nearest district office of the Texas Bureau of Labor Statistics.

Willful violation of this act, by contractor or public body, is a misdemeanor, punishable by fine of not more than $500 and imprisonment for not more than six months, or both. The contractor forfeits to the public body $10 for each workman for each day of pay less than the prevailing wage.

Scrip

When an employer pays in scrip, coupons, store orders, or any other token form, such scrip will be redeemable in money on demand by the employee (R.C.S. Art. 5159b).

Wage Assignment or Garnishment

An employee cannot assign his unearned wages to any person unless the employer is given written notice immediately after execution of the assignment (R.C.S. Art. 5159c).

The Texas Constitution provides that current wages for personal service cannot be subject to garnishment (Art. 16, Sec. 28).

Bond To Secure Wages

Contractor's bond for performance and payment for labor and materials is required on all public contracts. After completion and acceptance of the project all moneys due the contractor are held by the public agency until evidence is submitted by the contractor that all bills for labor and material have been paid in full. All claims for payments must be itemized and sworn to as required for mechanic's-lien claims, and filed with the county clerk within ninety days from delivery of material or performance of work (R.C.S. Art. 5160). If the bond is inadequate to pay all claims, judgment is given to each creditor pro rata of the amount of the recovery on the bond (R.C.S. Art. 5163).

Mechanic's Liens

The law provides that workers shall have a lien on the buildings and articles made by them for the value of their labor or materials furnished (Tex. Const. Art XVI, Sec. 37; R.C.S. Arts. 5452-5472). The lien must be filed within three months of the indebtedness (R.C.S. Art. 5453).

Farm, factory, office, and store employees may fix a lien against the business assets of the employer. It must be filed

within thirty days, and is effective for six months (R.C.S. Art. 5483). All wages are due weekly in lawful money for work performed by day or week (R.C.S. Art. 5485). Whenever an employer refuses to make payment the employee should prepare a statement in duplicate of the amount due, present one copy to the employer, and file another copy with the county clerk in the county where the work was performed. The lien is effective for six months, unless suit is brought to enforce the lien (R.C.S. Art. 5486).

Equal Pay

Women employed by the state must be paid at the same rate as men for the same kind, grade, and quantity of services. There shall be no distinction in compensation on the basis of sex (R.C.S. Arts. 4594-4595).

MINIMUM WAGES

The Federal Fair Labor Standards Act of 1938, as amended to 1966, establishes a minimum wage and overtime pay for work over forty hours a week. At first this federal law was limited to employees who worked directly in interstate commerce, but several amendments have gradually extended the coverage to most workers except in certain smaller enterprises. The Texas Minimum Wage Act became effective February 1, 1970. It covers many employees who are exempt from the federal law. Employees who are not covered under either law are chiefly those in small establishments, amusement enterprises, private domestic employment, and government employment. Agricultural workers are covered separately in both federal and state law.

Federal Fair Labor Standards Act

The Fair Labor Standards Act of 1938 (52 Stat. 1060), as amended to 1966 (80 Stat. 830), requires payment of at least $1.60 per hour beginning February 1, 1968, for all previously covered employees (Sec. 6a). One and one-half times the employee's regular pay rate for all hours worked in excess of forty in a workweek is also required (Sec. 7a).

Newly covered nonfarm employment must be paid at least $1.45 an hour as of February 1, 1970, and $1.60 an hour beginning February 1, 1971 (Sec. 7a). One and one-half times the regular rate of pay is required for all hours worked in excess of forty in a workweek.

Newly covered farm workers must be paid at least $1.30 per hour beginning February 1, 1969 (Sec. 6a). The overtime provisions do not apply to farm work.

Previously covered employees include workers in these categories: (1) employees individually engaged in interstate or foreign commerce—in transportation, communication, distribution, mail or phone communication—employees of banks and insurance companies that utilize interstate commerce, and employees who travel across state lines while working; (2) employees individually engaged in production of goods for interstate commerce—those who work in establishments which produce goods for interstate commerce, or in an industry essential to production of such goods; (3) all employees in certain large enterprises—retail or service establishments grossing $1 million or more and procuring at least $250,000 annually of goods for resale that move across state lines, all construction with an annual volume of $350,000 or more, gas stations with annual gross sales of $250,000 or more, transit operations grossing $1 million or more (Sec. 3s).

Newly covered employees beginning February 1, 1967, were workers in these categories: (1) establishments with annual gross sales of $250,000 to $1,000,000, (2) construction (regard-

less of dollar volume), (3) laundry or dry cleaning (regardless of dollar volume), and (4) hospitals (Sec. 3s).

Remaining exemptions from the federal minimum-wage and overtime provisions fall into two main groups: (1) employees of a retail or service establishment that makes most of its sales within the state and is not a covered enterprise (as listed above); (2) employees of seasonal amusement or recreational establishments, motion-picture theaters, small newspapers, small telephone companies; seamen employed on foreign vessels; fishermen; farm workers employed by a farmer who did not use more than 500 man days of farm labor in any calendar quarter (approximately eight full-time workers); employees of companies dealing with specific agricultural or horticultural commodities; workers in small forestry operations (Sec. 13a).

Exemption from only the overtime requirements applies to employees of hotels and restaurants, auto salesmen, transportation workers, workers in the fish industry, and broadcasting employees (Sec. 13b).

Texas Minimum Wage Act

The Texas Minimum Wage Act of 1970 provides that every employer must pay each employee at least $1.25 an hour after February 1, 1970, and at least $1.40 an hour after February 1, 1971. Exemptions are indicated below (R.C.S. Art. 5159d-5).

Tips, meals, and lodging. The minimum wage may include the amount of tips as determined by the employer, but tips cannot comprise more than 50 percent of the minimum-wage rate (that is, a restaurant owner must pay a waitress from $0.70 an hour to $1.40 an hour, according to how much *he* estimates her tips). Meals and lodging furnished to an employee may be included in the minimum wage, if their cost is stated separately on the employee's earnings statement (R.C.S. Art. 5159d-5).

Employees in agriculture. The state minimum wage for agricultural employees is $0.20 less than the federal minimum wage for agriculture (as provided in Fair Labor Standards Act of 1938, as amended) and not more than the minimum rate for other workers in Texas. Since the FLSA minimum wage in 1971 is $1.30, the state minimum rate is $1.10 per hour. For workers living on premises provided by the employer the minimum weekly salary is $30, in addition to the living quarters. A member of the employee's family living in the quarters may be employed at less than this wage without regard to the minimum-wage provisions (R.C.S. Art. 5159d-6).

Piece-rate workers (hand harvesters). The minimum wage for piece workers in agriculture becomes effective February 1, 1971, or as soon thereafter as the commissioner of agriculture has established the rate. The commissioner of agriculture determines a piece rate for each agricultural commodity commercially produced in substantial quantity in Texas, based on the output of a worker of average ability which would equal the minimum wage (that is, if the commissioner determines the average worker picks ten gallons of berries an hour, the piece rate will be set at $0.11 a gallon, to provide $1.10 an hour). The piece rate, not the hourly rate, will be the legal minimum. If no piece rate is set the minimum hourly rate for agricultural workers will apply (R.C.S. Art. 5159d-7).

Exemptions from the Texas state law. Several categories of employers are exempted from the requirements of the Texas law (R.C.S. Art. 5159d-4).

1. *Those covered by the Fair Labor Standards Act.* Any employer covered by provisions of the federal Fair Labor Standards Act of 1938, as amended, is exempt from the state law.

2. *Those employing fewer than a specified number.* Agricultural employers are exempt from the state minimum wage law if they used fewer than 300 days of agricultural labor in any calendar quarter during the preceding calendar year. All

other employers are exempt if they are exempt from the Texas Unemployment Compensation Act, which currently covers only those employers who have had four or more employees on each of twenty days within a current or preceding year. An amendment to the federal unemployment compensation law effective January 1, 1972, however, extends coverage to employers of one or more workers.

3. *Those in the livestock and dairy industries.* Employers engaged in the production of livestock or in dairy farming are excluded from this law.

4. *Other exemptions.* Employers are exempt from the state minimum-wage law with respect to employment of the following: (1) members of a religious order, persons under eighteen not a high-school or vocational-school graduate, persons under twenty enrolled in any school (does not apply to agricultural piece-rate workers); (2) outside salesmen on a commission basis; (3) switchboard operators of independent telephone companies with fewer than 750 stations; (4) domestic servants in a private home; (5) prison laborers; (6) workers in nonprofit organizations where the services are performed by unpaid volunteers, or where the employer-employee relationship does not exist; (7) persons employed by parents, children, brothers, sisters, guardians; (8) handicapped persons under twenty-one participating in a work-school program of vocational education; (9) employees of an amusement establishment if it operates less than seven months a year, or if its receipts for any six months in a year were less than one third of receipts for the other six months; (10) employees of the Boy Scouts and Girl Scouts of America; and (11) nonprofit camps.

5. *Disabled workers.* Persons whose productive capacity is impaired by disability or who are over sixty-five years of age may be employed at less than the minimum wage, but not less than 60 percent ($0.84, effective July 1, 1971). This does not apply to piece-rate workers in agriculture. The disability must be

verified by a medical certificate signed by a licensed physician (R.C.S. Art. 5159d-9).

6. *Sheltered workshop*. Nonprofit organizations, such as Goodwill Industries, which train and employ the handicapped under federal regulation are exempt (R.C.S. Art. 5159d-10).

Employer's statement. The employer must provide an earnings statement in writing at the end of each pay period. The statement must include name of the employee, rate of pay, total amount earned during pay period, deductions made from pay, net pay, total number of hours (or amount of work done if paid on a piece basis). The statement "medical certificate" or "agriculture" must be included where applicable (R.C.S. Art. 5159d-11).

Penalties. Furnishing a false earnings statement for the purposes of depriving an employee of minimum wages is a misdemeanor punishable by a fine of $100-$500 and/or by confinement in the county jail for five to thirty days. An employer who pays less than the appropriate minimum wage is liable to the employees affected in the amount of the unpaid wages plus an additional equal amount as liquidated damages, plus attorney's fee and court costs (R.C.S. Art. 5159d-12, 13).

HOURS OF WORK

Eight-Hour Day

The eight-hour day is considered a day's work, except in cases of emergency (R.C.S. Art. 5165).

Weekly hours of state office employees are set at forty (R.C.S. Art. 5165a).

Peace officers in cities of 50,000 or more are limited to an eight-hour day, and a "normal work week" typical of the community (R.C.S. Art. 5167a).

Women Employees (R.C.S. Art. 5172a)

Women are not allowed to work for more than nine hours a day, or fifty-four hours a week, where not otherwise specified.

Women cannot be employed for more than eleven hours a day or fifty-four hours a week in a laundry or cleaning establishment. Work in excess of nine hours a day must be paid at double the regular rate.

Women cannot be employed for more than ten hours a day or sixty hours a week in textile manufacturing. Work in excess of nine hours a day must be paid at double the regular rate.

Women employed in banks may not work longer than twelve hours a day or fifty-four hours a week.

Longer hours may be worked in case of extraordinary emergency, or for the protection of life and property. In such case the pay must be one and one-half times the regular rate for all work in excess of nine hours per day, if she works more than forty hours per week. The courts have held, however, that a contract covering female employment in a retail store for more than nine hours per day, with overtime pay, was illegal and unenforceable (*Montgomery Ward & Co.* v. *Lusk*, 52 S.W. 2d 1110 [Civ. App. 1932]). Another decision held that since the contract was unenforceable the employee could not collect the overtime pay (*Jones* v. *Hanna*, 264 S.W. 2d 133 [Civ. App. 1954]).

Workers in the following occupations are exempt from the above regulations, and may be employed any number of hours: executive, administrative, professional, or outside sales work; clerical, pharmaceutical, or technical work in an office, laboratory, or drafting room; mercantile establishments or telephone and telegraph companies in towns of less than 3,000; private nonprofit orphans' homes (superintendents, matrons, nurses, and attendants); the first processing, canning, or packing of perishable or seasonal fresh fruits or vegetables.

It is considered likely that state hours laws for women will be repealed or found unconstitutional, in view of conflicting federal laws prohibiting sex discrimination in employment.

VOTING TIME

An employee is entitled to time off for voting if he does not have sufficient time off for voting otherwise. Such time off may not be deducted from the employee's wages (Att. Gen. Op. No. V-1475, 1968). The employer may designate the time of day allotted for voting (Att. Gen. Op. No. 0-6242, 1944).

CHILD LABOR

Employment of Minors

Children of any age may work between June 1 and September 1, except where employment of children is prohibited (P.C. 1577). Employment of children under fifteen is prohibited in any factory, mill, workshop, laundry; in messenger service in towns of more than 15,000 population; and in industrial homework (P.C. 1573).

Employment of minors under seventeen is prohibited in any mine, quarry, or place where explosives are used (P.C. 1574). Minors under seventeen may not be employed in any immoral place, or in messenger and delivery service to any disorderly house (P.C. 1575).

Children of any age may be employed as nurse, maid, gardener, or other job for private houses and families. Children of any age may be employed at farm labor as members of the family on their own premises (P.C. 1578a).

Hours of Work

Children under fifteen may not work over eight hours a day or forty-eight hours a week in any occupation except as maids or gardeners for private houses and families, and at farm labor as members of the family on their own premises. Boys over fifteen may work unlimited hours, but girls are limited by the maximum hours for all females—nine hours a day or fifty-four hours a week. Children under fifteen may not work after 10 P.M. or before 5 A.M. except as maids, gardeners, or family farm labor (P.C. 1576).

The Texas Bureau of Labor Statistics is responsible for enforcement of the law. The commissioner of labor statistics or any of his deputies or inspectors has free access during working hours to all places where minors are employed. Parents or guardians who permit violation are subject to same penalties as the employer (P.C. 1578).

HEALTH, SAFETY, AND MORALS

Health

Measures must be taken in every establishment to provide a reasonable temperature and humidity for employees, and an atmosphere as free of odors and dust as is practicable. Floors must be swept daily, preferably during nonworking hours. When the floors are wet in the work process, a dry standing room should be provided (R.C.S. Arts. 5173-5175).

All entrance and exit doors must open outward; and handrails and lights must be provided on all stairways. This paragraph does *not* apply to any mercantile establishment employing fewer than eight women (R.C.S. Art. 5176).

Toilets must be provided in the proportion of one to every twenty-five men, and separate facilities, one to every twenty

women. The toilets must be enclosed, disinfected, ventilated, and lighted (R.C.S. Art. 5177).

Any work determined by the Board of Health to be injurious to the general public health is prohibited (P.C. 782a-2). Work by persons under fifteen years of age or by diseased persons living in unclean homes is prohibited (P.C. 782a-6).

Occupational Safety

An act of 1967 established the Division of Occupational Safety within the State Department of Health. The purpose of the act is to reduce accidents, disability of workers, and increases in insurance rates, by promoting the adoption of safety measures, protecting workers against unsafe working conditions, and encouraging correction of hazardous conditions.

A state safety engineer administers operation of the division, makes reports on accidents, and inspects plants.

The Board of Health can classify employers by accident frequency, and make and enforce safety rules (R.C.S. Art. 5182a).

Morals

It is unlawful for an employer to permit any conditions or practices calculated to injure the morals of women in any establishment employing five or more persons, all or part of whom are female (R.C.S. Art. 5178).

EMPLOYMENT AGENCIES (R.C.S. 5221a-6)

All private employment agencies must be licensed by the state. The only exceptions to the law are teacher agencies,

government agencies, those operated for the purpose of employing help for one's own business, farmers acting jointly in obtaining farm labor, charitable associations chartered under state law for the purpose of conducting a free employment agency, veterans' associations, labor unions, nurses' registry, farm labor, and part-time or temporary-help businesses.

Operators of employment agencies must apply for a license and pass an examination covering the laws and regulations relating to employment agencies, discrimination in employment, and other labor legislation. An applicant must be a U.S. citizen and a resident of Texas for at least one year, must possess good moral character, and must never have been convicted of an offense involving moral turpitude. Each applicant must make and file a bond of $5,000. Licenses are renewed annually.

Employment agencies licensed by the state are not permitted to:

1. Charge any fee except for furnishing employment obtained directly through the agency;
2. Split fees with an employer or his agent;
3. Charge a fee greater than authorized by the Texas Private Employment Agency Regulatory Board;
4. Make any false promise or misrepresentation;
5. Refer any applicant to a place where a strike or lockout exists without furnishing a written statement as to the existence of such strike or lockout.

The Board is authorized to furnish a schedule of permissible maximum fees which the employment agency can charge an applicant upon finding him a job, set according to the following schedule:

4 percent of the gross annual salary up to $5,000
5 percent of the gross annual salary up to $6,000
6 percent of the gross annual salary up to $7,000
7 percent of the gross annual salary over $7,000

The Labor Agency Law (R.C.S. Art. 5221a-5) applies to any person who obtains employment for common laborers or agricultural workers. Labor agents must be licensed by the state, upon application accompanied by affidavits of at least five creditable citizens who have resided in the county for at least three years to the effect that the applicant is of good moral character. The license costs $150 for each county in which the labor agent will operate. He must also furnish $5,000 bond. If the labor agent solicits workers to be employed outside the state he must pay an annual state occupation tax of $600, and a county occupation tax of $100-$300 according to county size.

The restrictions on the activities of a labor agent include these major provisions (R.C.S. Art. 5221a-5):

1. He may not charge more than $3.00 for obtaining employment for a common laborer or agricultural worker.
2. He must have a written order from an employer before he sends out an applicant.
3. He must inform the applicant when a prospective employer's company is on strike.

DISCRIMINATION IN EMPLOYMENT

Texas has no fair-employment-practice act to forbid discrimination in employment on the basis of age, sex, or race. The federal Civil Rights Act of 1964, Title VII, makes it unlawful for an employer to refuse to hire, or otherwise discriminate against any individual with respect to his compensation or conditions of employment because of an individual's race, color, religion, sex, or national origin. Employment agencies, labor organizations, and joint apprenticeship committees are also prohibited from practicing such discrimination. Title VII applies to employers or unions who have twenty-five or more employees

or members for twenty or more weeks a year. Government employers, Indian tribes, and private clubs are excluded.

A Texas law of 1963 discourages age discrimination in public employment by prohibiting any public agency from setting a minimum age over twenty-one or a maximum age under sixty-five, thus guaranteeing freedom from discrimination for persons between these ages. This law does not apply to firemen, law-enforcement officers, or colleges with established retirement programs (R.C.S. Art 6252-14).

A 1967 law prohibits job discrimination in employment by the state or its political subdivisions because of race, religion, color, or national origin. This prohibition on discriminatory action applies to employment, issuance of licenses or permits, use of public facilities, programs, benefits, and bids. A civil action for preventive relief may be instituted through the district attorney and/or county attorney (R.C.S. Art. 6252-16).

3. UNEMPLOYMENT INSURANCE

HISTORY AND PURPOSE

The concept of unemployment compensation was inaugurated as a depression measure when a system of national unemployment insurance was made a part of the Social Security Act of 1935. The purpose of the law is to provide minimum income and to sustain purchasing power during periods of temporary unemployment. It will keep the worker off relief and will slow the decline in total spending. The federal law was set up so that state legislation meeting certain federal criteria could waive 90 percent of the federal tax. All states complied quickly, but aside from the minimum standards set by federal law, there is a wide variety of benefits, contributions, coverage, and qualification. For example, maximum weekly unemployment-compensation rates range from $38 in Oklahoma to $114 in Connecticut.

The Texas Unemployment Compensation Act of 1936, as amended to 1967 (R.C.S. Art. 5221b), provides benefits to qualified unemployed workers at the rate of $15 to $45 per full week of total unemployment, for a maximum of twenty-six weeks. Payments are financed by employer contributions based on employee experience ratings.

ELIGIBILITY (R.C.S. Art. 5221b-2)

An unemployed individual is eligible to receive benefits when he meets several criteria:

1. He is employed by a firm subject to the Act because employing four or more persons (exempt firms noted below).
2. He has received benefit wage credits of at least $500 within his base period (four consecutive calendar quarters out of the five quarters preceding his benefit period); and he has total benefit wage credits in his base period of at least one and one-half times his highest quarter of benefit wage credits. (Example: Initial claim July 15, 1970. Base period is April 1, 1969, to March 31, 1970. Earnings in each of the four quarters are $1,300, $1,350, $1,325, $1,348. Highest quarter is $1,350, total of four quarters is greater than $2,025 [$1,350 X 1½].)
3. He has registered for work at an employment office, and has claimed benefits.
4. He is able to work, and is available for work.
5. He has had a waiting period of seven days of unemployment. After the fifth week of unemployment, he is eligible to receive benefits for the first week.

BENEFITS (R.C.S. Art. 5221b-1)

For each week of total unemployment each eligible individual receives one twenty-fifth of his earnings in the highest benefit quarter within a maximum of $45 and a minimum of $15 per week. To receive the maximum benefit the unemployed worker must have averaged at least $86.50 per week in his highest quarter. If he worked for forty hours per week at a

minimum wage of $1.60 an hour for thirteen weeks, he could receive $34 per week in benefits.

For weeks of partial unemployment each eligible individual receives approximately $5 more than the difference between his benefits and his earnings.

The duration of benefits is limited to twenty-six times the benefit amount, or 27 percent of wages during the base period, whichever is less. This ordinarily amounts to twenty-six weeks of maximum benefits, unless the worker has been unemployed from time to time during the benefit year, and so has earned less benefits.

DISQUALIFICATIONS (R.C.S. Art. 5221b-3)

An individual is disqualified for benefits, or penalized for a certain number of weeks (as determined by the Texas Employment Commission according to the circumstances in each case) for certain specified causes:

1. A voluntary quit may be cause for disqualification for any period of from one to twenty-six weeks.
2. A discharge for misconduct may be cause for disqualification for any period of from one to twenty-six weeks.
3. Failure to apply for suitable work, or to accept it, may result in disqualification for a period of from one to thirteen weeks. "Suitable work" takes into account the risk of the job, the employee's physical fitness, prior training, experience and prior earnings, length of unemployment and prospects for returning to his customary job, and the distance of the job from his residence. An individual may refuse, however, without penalty a position which offers otherwise suitable work if the position is vacant because of a labor dispute, if less than the prevailing wage is offered, or if the applicant would be required to join or resign from any labor union.

4. An individual is disqualified entirely when unemployment is due to a strike or lockout at his place of work, or at another plant of the same employer. This disqualification does not apply if he is not directly interested in the labor dispute and if he does not belong to a class of workers any of whom are participating in the labor dispute. Neither is he disqualified if he can show that he is not a member of the labor union involved and that he has made an unconditional offer to return to work at the place where he was last employed.
5. An individual is disqualified from receiving benefits for any benefit week in which he received wages in lieu of notice, vacation pay, disability compensation under Workmen's Compensation Law, or Old Age Benefits under the Social Security Act. Severance pay based on prior service does not disqualify the employee, nor does the Supplemental Unemployment Benefit payment provided in auto-union contracts.
6. Students are disqualified for any period of unemployment when the individual has left his most recent full-time work to attend school.

The weeks of disqualification under 1, 2, and 3 are deducted from the number of benefit periods of eligibility, but no more than half the periods may be deducted.

CONTRIBUTIONS

Each employer pays to the state a tax of 2.7 percent (plus 0.3 percent to the federal government) of wages paid by him, up to $3,000 for each individual. This rate of contribution is reduced by experience rating, according to a table which is based upon the Replenishment Ratio and the Employer's Benefit Ratio.

The Replenishment Ratio is equal to the total amount of benefits paid from the Texas Unemployment Compensation Fund during the preceding year, divided by the total amount of contributions to the accounts of all employers during the preceding year. The Employer's Benefit Ratio is the total of his chargebacks for three preceding years, divided by his total taxable wages for the same period. If total receipts and contributions are equal, and the employer has paid an average of 2.7 percent, his tax rate remains at 2.7 percent. His rate decreases as the Replenishment Ratio increases, and as his Benefit Ratio decreases (R.C.S. Art. 5221b-5).

EXEMPTIONS (R.C.S. Art. 5221b-17)

Employment in the following categories is excluded from provisions of the Texas Unemployment Compensation Act:

1. Firms employing fewer than four persons. However, an amendment to the federal Unemployment Compensation law effective January 1, 1972, will extend coverage to employers of one or more workers.
2. Firms where unemployment compensation is payable under an Unemployment Compensation System established under federal law (except where reciprocal rights have been provided)
3. Agricultural labor
4. Domestic service in a private home or in a college fraternity or sorority
5. Service by the immediate members of the employer's family
6. Service as an employee of religious, charitable, educational, or other tax-exempt organizations
7. Service as an employee of any government instrumentality (including foreign)

8. Service as an employee of voluntary employees' beneficiary associations
9. Service as a student nurse or hospital intern
10. Service as an insurance agent paid solely by commission
11. Service as a newsboy under the age of eighteen

ADMINISTRATION

The Texas Employment Commission is appointed by the governor to administer the Act. The three members, representing labor, management, and the public, are appointed for six years. The Texas State Employment Service is a division of the Commission, maintaining free public employment offices in sixty-nine cities, as of September 1, 1967 (R.C.S. Art. 5221b-8).

Texas has reciprocal arrangements with other states. The unemployed worker is thereby enabled to apply for benefits earned in one state after he has moved to another state. The amount and duration of benefits are determined by the state where he was previously employed (R C.S. Art. 5221b-15a).

4. WORKMEN'S COMPENSATION

ENACTMENT AND GENERAL PROVISIONS

The purpose of the Texas Workmen's Compensation Act is to provide prompt payment of benefits to an employee or his survivor for injury or death on the job, regardless of fault or cause of the injury.

Workmen's Compensation Insurance is compulsory in twenty-seven states and elective in the other twenty-three states. Texas has an elective law whereby the employer may decline coverage under the act, but may be sued without recourse to the usual common-law defenses of assumed risks of the job, the negligence of fellow servants, and contributory negligence of the employee. If the employer is a subscriber to the state workmen's compensation insurance, the employer or his beneficiary has a right to compensation under the law. Employees whose employer is not a subscriber are entitled to bring suit and may recover judgment against the employer for all damages resulting from injury on the job (R.C.S. Art. 8306).

The Workmen's Compensation Law was first enacted in 1917, amended to 1969. It is administered by a three-man Industrial Accident Board appointed by the governor. Employees file compensation claims with the Board, which hears cases and

makes awards. Cases may be appealed thereafter to the Court of Civil Appeals. The Board handles 12,000 to 14,000 claims a year. The majority of decisions are appealed, and subsequently settled out of court. A new pilot system in a few counties institutes a pretrial conference, which settles two thirds of the claims cases before they reach the Board.

The Texas Employer's Insurance Association was created under the law, which provides also that any insurance company may write Workmen's Compensation Insurance (R.C.S. Art. 8308).

COVERAGE

Thirty-five states provide coverage for all accidents and occupational diseases. The Texas law applies to accidental injury on the job and to the following occupational diseases (R.C.S. Art. 8306-20):

1. Poisoning: by aluminum trioxide, arsenic, benzol, beryllium, cadmium, carbon bisulphide, carbon dioxide, carbon monoxide, chlorine, cyanide, formaldehyde, halogenated hydrocarbons, hydrochloric acid, hydrofluoric acid, hydrogen sulfide, lead, manganese, mercury, methanol, methanol chloride, nitrous fumes, nitric acid, petroleum or petroleum products, phosphorus, selenium, sulfuric acid, sulfur dioxide, sulfur trioxide, telluminum, thallium, zinc
2. Anthrax
3. Blisters
4. Synovitis, tenosynovitis, or bursitis due to an occupation involving continual pressure
5. Chrome ulceration
6. Compressed-air illness
7. Dermatitis

8. Physical injury from exposure to X-rays
9. Diseased condition of the eyes due to electric arc and welding, and cataract in glass workers
10. Epitheliomatous cancer or ulceration of the skin or of the eye caused by tar, pitch, bitumen, mineral oil, or paraffin, or any compound, product, or residue of any of these substances
11. Glanders and other diseased conditions caused by handling any equine animal or the carcass of any such animal
12. Infectious or contagious disease contracted in the course of employment in or in immediate connection with a hospital or sanatorium
13. Nystagmus incurred in underground work
14. Asbestosis
15. Silicosis
16. Psittacosis

Compensation is allowed only when it is clear that the disease is due to the kind of work in which hazards of the disease actually exist, and that the disease is actually incurred in such employment (R.C.S. Art. 8306-25).

The following injuries are not covered as "injury sustained in the course of employment" (R.C.S. Art. 8309-1):

1. Injury caused by act of God
2. Injury caused by third person because of personal reasons and not as an employee
3. Injury received while intoxicated
4. Injury caused by employee's willful intention to injure himself or someone else

Compensation for hernia is allowed when a job-incurred injury results in hernia and when the hernia appears immediately following the injury. When the hernia is repaired by surgery the

employee is entitled to twenty-six weeks compensation in addition to medical bills, even if he returns to work within a shorter period. If the surgery is unsuccessful the employee is entitled to compensation for the duration of incapacity, but not in excess of 401 weeks (R.C.S. Art. 8306).

EXEMPTIONS

Employees not covered by the Workmen's Compensation Law are agricultural laborers, domestic servants, and railroad employees (who are covered under a separate law); but coverage may be extended to farm and domestic workers by endorsement. An employer must have at least three employees before he can become a subscriber (R.C.S. Art. 8306).

When an employer is a subscriber to the insurance association or carrier, the employees are limited to the compensation provided by the Workmen's Compensation Act. The employee or his survivors may sue the employer only in the following circumstances: (1) the employer is not a subscriber, (2) the employer is a subscriber, and the employee has declared within the first five days of coverage that he will decline coverage under Workmen's Compensation in order to reserve his rights under common law, and (3) the surviving heirs have been compensated under Workmen's Compensation and the employee's death was caused by the willful act or omission or gross negligence of the employer (suit for exemplary damages is allowable [R.C.S. Art. 8306]).

BENEFITS

The benefits paid to the injured employee under the Workmen's Compensation Act are intended to pay for the losses suffered by the work-related accident or illness. These include

direct payment of all related medical expenses, reimbursement for lost wages, and compensation for disabilities. No compensation will be paid for an injury which does not incapacitate the employee for at least a week. In any case, the company is expected to provide full medical benefits, all the medical aid, hospital and nursing care, chiropractor service, and medicines required at the time of the injury and as long thereafter as necessary to treat the injury. Liability for medical treatment of silicosis and asbestosis is limited to ninety-one days (R.C.S. Arts. 8306-6 and 7).

The employee must notify his employer within thirty days after injury or manifestation of occupational disease, and file his claim with the Industrial Accident Board within six months of the date of injury. If the company fails to furnish medical aid when needed after notice of the injury, the injured employee may obtain the medical care at the expense of the employer. At the time of the injury, or immediately thereafter, the employee has the right to call in any doctor to administer first aid at the expense of the company. All medical fees are subject to regulation of the Board. Medical treatment includes rehabilitation and fitting and training in the use of prosthetic appliances (R.C.S. Art. 8306-7).

If an employee is totally disabled for more than seven days the company must pay compensation benefits equal to 60 percent of his average weekly wage, within a maximum of $49 and a minimum of $12. Weekly benefits for total incapacity can continue up to 401 weeks after the date of injury. Compensation for partial disability is 60 percent of the difference between his former and his present earnings, to a maximum of $49 per week, for a period no greater than 300 weeks (R.C.S. Art. 8306-10 and 11).

Specific compensation is allowed for particular losses in lieu of all other payments. The following are total and permanent incapacity cases, compensable for 401 weeks (R.C.S. Art. 8306-11a):

1. Loss of sight of both eyes
2. Loss of both feet
3. Loss of both hands
4. Loss of one hand and one foot
5. Paralysis of both arms, both legs, or one arm and one leg
6. Incurable insanity or imbecility resulting from an injury

Benefits for other specific injuries are established at 60 percent of the weekly wage for the number of weeks indicated below (R.C.S. Art. 8306-12):

Loss of an eye and a foot—300 weeks
Loss of hearing (complete)—150 weeks
Loss of a thumb—60 weeks
Loss of an index finger—45 weeks
Loss of a second finger or a great toe—30 weeks
Loss of a third finger—21 weeks
Loss of a fourth finger—15 weeks
Loss of a hand—150 weeks
Loss of an arm or a leg—200 weeks
Loss of a foot—125 weeks
Loss of one eye—100 weeks

Lump-sum settlement may be authorized automatically on written request to the Industrial Accident Board for death or any incapacity, discounted at 4 percent. For example, the lump-sum payment for loss of one eye at the maximum weekly compensation rate would be $\frac{49 \times 100}{1.04} = \$4,718$. Death benefit would be a maximum of $\frac{49 \times 360}{1.04} = \$16,962$. Eligibility for compensation begins on the eighth day after the injury. The employee may not refuse a substitute job which he is able to perform (R.C.S. Art. 8306-11 and 15).

VOCATIONAL REHABILITATION

Employers must notify the Texas Workmen's Compensation Board of each injury covered under the law. The Board in turn will inform the injured employee of the services available to him under the Vocational Rehabilitation Division of the Texas Education Agency. This recommendation by the Board is made after consultation with the employee's doctor.

BENEFICIARIES

Death benefits to the legal beneficiaries amount to 60 percent of the employee's average weekly earnings to a maximum of $49, for a period of 360 weeks. In case death occurs as a result of the injury after a period for which disability compensation has been paid, the amounts paid are deducted from the death benefit. If the deceased employee left no widow or children the Texas Employers Insurance Association will pay funeral expenses not to exceed $500 (R.C.S. Art. 8306-8 and 9).

The beneficiaries of the death benefit may be any of the following relatives: husband or wife who have lived together at least three years before the employee died; minor children, parents and stepmother, without regard to dependency; dependent grandparents, children, brothers, and sisters. The amount of compensation is distributed among the beneficiaries according to the laws of descent and distribution in Texas. The compensation is not liable for the debts of the deceased or the beneficiaries, and is paid directly to the beneficiaries rather than to the estate of the deceased (R.C.S. Art. 8306-8).

FINANCING

Employers are required to pay all premiums for Workmen's Compensation Insurance, at rates approved by the State Board

of Insurance. It is illegal to collect from employees any part of the premium paid on any policy under this law (R.C.S. Art. 8306-12g).

SECOND INJURY FUND

If an employee who has suffered a previous injury incurs a subsequent injury which results in an incapacity to which both injuries have contributed, the Texas Employers Insurance Association is liable only for the second injury. The balance of compensation for the combined incapacity is paid out of a Second Injury Fund. The Fund is financed by requiring the Association to pay the Industrial Accident Board $4,000 for each case of death of an employee where there is no survivor entitled to compensation. These payments will continue so as to maintain a sum of $140,000 in the fund (R.C.S. Art. 8306-12c).

ATTORNEYS' FEES

Attorneys' fees are subject to approval of the Industrial Accident Board, and are limited to 25 percent of the total compensation plus reasonable expenses. Attorneys' fees regulated by the trial court are likewise set at a maximum of 25 percent of the amount recovered (R.C.S. Art. 8306-7c and d).

COVERAGE OF PUBLIC EMPLOYEES
(R.C.S. Art. 8309)

The Texas Constitution has been amended to authorize the Legislature to provide for Workmen's Compensation Insurance for state employees (Art. III, Sec. 59), county employees (Art. III, Sec. 60), and municipal employees (Art. III, Sec. 61). These

amendments were necessary because of the constitutional prohibition against spending public money to aid any individual. For county employees the Commissioner's Court may call an election to determine whether the county should adopt the state law on Workmen's Compensation. If the majority votes for the adoption of the Act, then all employees of the county are covered either by the county's self-insuring of its employees or by its purchase of Workmen's Compensation for its employees (R.C.S. Art. 8309c).

In counties having a population of 1,200,000 or more, all independent school districts therein are authorized but not required to provide Workman's Compensation Insurance for all employees (R.C.S. Art. 8309e-1).

Cities, towns, and villages are authorized but not required to provide Workmen's Compensation Insurance for their employees. Workmen's Compensation benefits may be provided for all of the employees, or for only some departments, or groups of employees (R.C.S. Art. 8309e).

At The University of Texas institutions "workmen" are insured for injury on the job. The following classes of employees are excluded: administrative staff, teaching and research staff not required to work with dangerous chemicals or machinery, office employees not required to regularly travel or work in a dangerous area, supervisory staff who do not work in a dangerous area or at manual labor, and personnel paid on a piece-work basis. The law requires a physical examination as a prerequisite to coverage. The Board of Regents of The University of Texas is authorized to require, as a condition of employment, that all employees except workmen acquire protection under an approved group life and accident insurance plan (R.C.S. Art. 8309d). Similar provisions were adopted for Texas Tech University (R.C.S. Art. 8309f).

Employees of institutions and agencies under the Board of Directors of Texas A&M are covered under Workmen's Compensation, with the exception of clerical and office employees not

required to travel or work away from their offices. The Board of Directors is authorized to require these clerical and office employees to acquire protection under an approved group life and accident insurance plan (R.C.S. Art. 8309b).

APPENDIXES

Appendix A
LABOR-AGENCY ADDRESSES

FEDERAL LABOR AGENCIES

United States Department of Labor
Department of Labor Building
Fourteenth Street and Constitution Avenue
Washington, D. C. 20230 Phone: (202) 393-2420

- Manpower Administration
- Labor-Management Services Administration
- Wage and Labor Standards
  - Bureau of Labor Standards
  - Women's Bureau
  - Wage and Hour and Public Contracts Divisions
- Bureau of International Labor Affairs
- Bureau of Labor Statistics

National Labor Relations Board
1717 Pennsylvania Avenue
Washington, D. C. 20570 Phone: (202) 393-3111

Department of Health, Education, and Welfare
330 Independence Avenue, S.W.
Washington, D. C. 20201 Phone: (202) 962-2247

- Social Security Administration
- Office of Education

National Institutes of Health
Health Services and Mental Health Administration
National Air Pollution Control Administration
Consumer Protection and Environmental Health Service
Food and Drug Administration
Environmental Control Administration

REGIONAL OFFICES IN TEXAS
(Federal Labor Agencies)

National Labor Relations Board
Room 8A24, Federal Office Building
819 Taylor Street
Fort Worth, Texas 76102 Phone: (817) 334-2921
and
6617 Federal Office Building
515 Rusk Street
Houston, Texas 77002 Phone: (713) 228-0611

U.S. Department of Labor
411 N. Akard St.
Dallas, Texas 75201 Phone: (214) 749-3931

U.S. Department of Health, Education, and Welfare
1114 Commerce
Dallas, Texas 75202 Phone: (214) 749-3396

STATE LABOR AGENCIES

The most important agencies charged with administering state labor laws are listed below. The main offices are located in the State Capitol, in Austin. They usually maintain local offices in the County Courthouse.

Commissioner of Agriculture
Texas Department of Agriculture
P.O. Drawer BB
Austin, Texas 78711 (agricultural minimum wages)

Commissioner of Labor Statistics
Texas Bureau of Labor Statistics
Capitol Station
Austin, Texas 78711 (state labor laws)

Executive Director
Industrial Accident Board
State Insurance Building
Austin, Texas 78711 (workmen's compensation)

Administrator
Texas Employment Commission
638 T.E.C. Building
Austin, Texas 78711 (unemployment compensation)

STATEWIDE LABOR–MANAGEMENT ORGANIZATIONS

Texas AFL-CIO (Texas Federation of Labor)
Box MM
Capitol Station
Austin, Texas 78711

Texas State Chamber of Commerce
Box 4304
Austin, Texas 78751

Texas Association of Employers
611-612 Three A Life Building
San Antonio, Texas 78205

Appendix B
SUMMARY OF THE NATIONAL LABOR RELATIONS ACT

The National Labor Relations Act guarantees and protects the right of workers to union organization and collective bargaining.

COVERED EMPLOYMENT

The law applies to employment in enterprises affecting interstate commerce. These standards are applied for eligibility:

$500,000 annual gross volume of business in retail trade, taxicabs, hotels, and motels
$250,000 annual gross volume of business in public utilities and transit systems
$200,000 annual gross volume of business in newspapers
$100,000 annual gross volume of business in office buildings, radio, television, telegraph, and telephone
$50,000 gross annual volume of nonretail business, outflow and inflow, and channels of interstate commerce

In addition, the Act specifically exempts the following from protection:

1. Employees who are under the Railway Labor Act
2. Government and Federal Reserve Bank employees

3. An individual employed by parent or spouse
4. Employees of nonprofit hospital
5. Domestic servants
6. Agricultural laborers
7. Independent contractors who depend on profits rather than wages for their commission
8. Supervisors (that is, those having authority to hire, discharge, discipline, direct, or adjust grievances if the exercise of authority requires independent judgment)

RIGHTS OF EMPLOYEES

Employees have the right to self-organization, to form or join labor unions, and to engage in other concerted activities; to bargain collectively; and also to refrain from these activities, unless a "union shop" is in effect. In order to guarantee these rights, the NLRB has authority to prohibit or remedy unfair labor practices under the Act, and to conduct elections to determine the representation of employees bargaining with their employer.

REPRESENTATION ELECTIONS

An employer is required to bargain with the representative selected by the majority of his employees in a unit appropriate for bargaining (that is, one plant, one employer, production and maintenance workers, or other unit grouping which reflects common worker interests).

One method of selecting a majority representative is through an election conducted by the NLRB, after a petition has been filed by the employees or an employer. A secret-ballot election is held, and the Board certifies the majority choice. The employees are given a choice of one or more unions, or no union.

UNFAIR LABOR PRACTICES OF EMPLOYERS

Employers are forbidden by law to engage in specified activities and procedures:

1. To coerce or threaten employees in the exercise of their rights under this law
2. To assist in organizing or operating a union
3. To discriminate in hiring on account of union membership or nonmembership (except where union-shop agreements are permitted) or because of employees' having filed charges under the Act
4. To refuse to bargain in good faith
5. To agree to hot-cargo contracts

UNFAIR LABOR PRACTICES OF UNIONS

Labor organizations are forbidden by law to engage in specified activities and procedures:

1. To restrain or coerce employees in their exercise of rights under the law
2. To attempt to cause discrimination for union activities
3. To refuse to bargain in good faith
4. To engage in secondary boycotts, sympathy strikes, jurisdictional disputes
5. To charge excessive or discriminatory initiation fees
6. To attempt to cause an employer to pay for goods or services not performed (that is, featherbedding)
7. To engage in organizational and recognition picketing
8. To agree to hot-cargo contracts

UNION SHOP

A union and an employer may sign an agreement requiring all employees to join the union, except in states (for example, Texas) where such agreements are forbidden by state law. The agreement must provide a thirty-day grace period (seven days in the construction industry). An employee may be discharged for lack of union membership only if he has failed to pay his union dues.

CONCILIATION OF LABOR DISPUTES

These steps are required for change or termination of a contract: (1) notification of the other party at least sixty days before the contract termination date; (2) an offer to meet with the other party; (3) notification of the Federal Mediation and Conciliation Service if no agreement has been reached within thirty days after the notice has been served, and (4) continuation without strike or lockout until sixty days after the notice was given or until the contract expires. Any employee who engages in a strike within the sixty-day period shall lose his status as an employee for the purpose of this Act (protection against employer unfair labor practices).

When a strike or lockout affecting a substantial part of an industry might imperil the national health or safety, the President of the United States may appoint a board of inquiry. Upon receiving their report of the dispute the President may direct the Attorney General to enjoin such strike or lockout. If the parties to the dispute have not settled their differences at the end of sixty days the board of inquiry shall report to the President the current position of each party and the employer's last offer. The NLRB will conduct a poll among employees within fifteen days on whether they wish to accept the final offer of settlement. The results of the poll are certified to the

Attorney General within five days. The injunction is discharged, and the President submits a report and recommendations to Congress.

POLITICAL CONTRIBUTIONS

It is unlawful for any labor organization to make a contribution or expenditure in connection with a presidential or congressional election, or in connection with any primary election or political convention held to select candidates for national office, or for any candidate, political committee, or other person to accept any such contribution.

ADMINISTRATION AND ENFORCEMENT

The National Labor Relations Board administers the Act. Petitions for elections and charges of unfair labor practices should be filed with the nearest regional office.

Appendix C

SUMMARY OF THE LABOR-MANAGEMENT REPORTING AND DISCLOSURE ACT

The purpose of the act is to eliminate or prevent practices by unions, employers, and labor-relations consultants which distort or defeat the policies of the Labor-Management Relations Act and the Railway Labor Act.

COVERED EMPLOYMENT

Employers are covered who are engaged in an industry which affects interstate commerce and which in addition (1) is an employer within the meaning of any federal law relating to employees or (2) deals with a union engaged in an industry affecting interstate commerce. Specifically excluded are the U.S. government, state governments, and political subdivisions of the states.

A labor organization is covered if (1) it is certified as representative of the employees under the National Labor Relation Act or the Railway Labor Act, or (2) it is a national or a local union representing or actively seeking to represent employees of an employer engaged in interstate commerce, or (3) it is a conference, committee, board, or council subordinate to a union covered under the law. State and local central bodies are excluded.

TITLE I—BILL OF RIGHTS

Every member of a union has certain rights and privileges:

1. Equal rights to nominate candidates for union office, vote in union elections and referendums, attend membership meetings, and participate in discussions and voting on union business, subject to reasonable rules in the union's constitution and by laws
2. Freedom of speech in and out of union meetings, subject to the union's reasonable rules
3. The levy of dues, fees, and assessments only by majority vote of members in a local union or delegates to a national union. Federations like the AFL-CIO are excluded.
4. Right to sue the union or its officers after exhausting reasonable hearing procedures within the union
5. Immunity to fine, suspension, or expulsion by a union, except for nonpayment of dues, without a full and fair hearing
6. Right under Title I to bring action in a U.S. district court
7. Right to receive, upon request, from his union local a copy of each collective bargaining agreement

TITLE II—REPORTING REQUIREMENTS

Labor organizations are required to file with the Secretary of Labor certain documents: (1) copies of their constitution and by-laws (as previously required under section 9 [f] [A] of the Taft-Hartley Act); (2) annual financial reports of receipts and disbursements, assets and liabilities, payments to each employee in excess of $10,000 per year, and loans made by the union. This information must be made available to all of their

members. Union officers must report "conflict of interest" transactions.

Employers must report annually to the Secretary of Labor any payments or loans to unions, and expenditures to employees or labor-relations consultants where the purpose is to interfere with the right of employees to organize and bargain collectively.

Labor-relations consultants must file reports of their agreements and reimbursements for activities where the object is to persuade workers in their exercise of the right to organize and to bargain collectively, or to furnish an employer with information concerning employee or union activities in connection with labor disputes.

The information contained in the above reports is public information. The Secretary of Labor may publish the information, or studies based thereon. He must furnish copies of reports upon request and with payment of the cost of the service; copies to state agencies carry no charge.

TITLE III—TRUSTEESHIPS

Trusteeships assumed over a subordinate labor organization must be reported to the Secretary of Labor semiannually, and may not continue for longer than eighteen months. The purpose of the trusteeship is limited to correct corruption or financial malpractice, to assure the performance of collective bargaining agreements, to restore democratic procedures, or otherwise to carry out the legitimate objects of the union.

TITLE IV—ELECTIONS

National unions must hold elections by secret ballot at least every five years, and officers of intermediate union bodies are to be elected by secret ballot at least every four years. Local

unions must elect officers at least every three years. Every candidate has the right to inspect but not to copy a list of all members of the local union. Similar privileges regarding distribution of campaign literature must be accorded all candidates. Neither union nor employee funds can be used to promote any candidate.

TITLE V—JUDICIARY SAFEGUARDS FOR LABOR ORGANIZATIONS

Union officers must hold the union's money and property solely for the benefit of the union and its members. All union officers must be bonded in an amount at least 10 percent of the funds he handles, but not less than $1,000 in a local union or $10,000 in a national union.

A union may not make loans to officers or employees in excess of $2,000.

No person may serve as a labor-relations consultant or union officer or employee (except clerical or custodial) if he is, or within the preceding five years has been, a member of the Communist Party, a convicted felon, or convicted violator of Title II or Title III.

REFERENCES

Flahive, Terrence P., and Ron M. Ogden. *Texas Workmen's Compensation Manual*. Austin: Flahive-Ogden Co., 1969.

Texas Almanac: 1970-71. Dallas: A. H. Belo Corporation, 1969.

Texas Bureau of Labor Statistics. *Laws of Texas Relating to Labor*. Austin: 1959 (o.p.).

Texas Employment Commission. *Texas Unemployment Compensation Act*. Austin: Texas Employment Commission, 1967.

Texas Manufacturers Association. *A Layman's Guide to Texas Labor Laws*. Houston: Texas Manufacturers Association, 1963.

Vernon's Civil Statutes of the State of Texas, Vol. 15 (Title 83, Labor, Arts. 5144-5221).

BUSINESS GUIDES
(Other available items)

No. 1. **Figuring for Merchandising Profit: A Guide to Retail Arithmetic.** By A. Hamilton Chute. 1950. 56 pp. $0.50. Makes available for retailers a concise manual of the important computations typically made in the management of a retail business. ISBN 87755-098-0

No. 12. **Texas Uniform Commercial Code: Practical Aspects on Secured Transactions.** By Gaylord A. Jentz. Revised 1967. 67 pp. $1.50. A guide to assist businessmen in understanding and making effective use of the provisions of Article 9, Uniform Commercial Code of Texas—Secured Transactions. ISBN 87755-099-9

No. 13. **Texas Family Law.** By Jack W. Ledbetter. Revised 1970. 137 pp. $2.50. A comprehensive explanation of the basic legal principles of marriage in Texas, including such areas as community property law, marital rights, contractual powers, family insurance, taxation, and descent and distribution. A new chapter has been added to reflect rapidly developing areas of family credit transactions and "truth-in-lending." ISBN 87755-100-6

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VT 013 975
WININGER, ROBERT A.; GROUTAGE, JACK
OVERHEAD COST STUDY OF VOCATIONAL EDUCATION.

UTAH STATE BOARD OF EDUCATION, SALT LAKE CITY
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - JUN71 29P.

DESCRIPTORS - *EDUCATIONAL FINANCE;
*OPERATING EXPENSES; *VOCATIONAL EDUCATION;
STATE AID; EXPENDITURES; COSTS
IDENTIFIERS - *UTAH

ABSTRACT - THE PURPOSE OF THIS STUDY WAS TO DETERMINE THE RELATIONSHIP BETWEEN THE DIRECT AND INDIRECT COSTS OF VOCATIONAL EDUCATION, IN ORDER TO DETERMINE THE ADEQUACY OF EXISTING STATE AID TO EDUCATION. PRESENT STATE AID COVERS DIRECT COSTS PLUS AN ADDED 20 PERCENT TO COVER INDIRECT COSTS. THE SCHOOLS SELECTED FOR COST ANALYSIS INCLUDED A JUNIOR COLLEGE, A TECHNICAL SCHOOL, A 4-YEAR COLLEGE, AND A SMALL, A MEDIUM, AND A LARGE HIGH SCHOOL. FINDING THE 20 PERCENT RATE TO BE INADEQUATE, THE STUDY RECOMMENDED THAT THE RATIO FOR EACH DISTRICT SHOULD BE DETERMINED INDIVIDUALLY, ACCORDING TO THE DISTRICT'S NEEDS. (BH)

VT 013 975

OVERHEAD COST STUDY

of

VOCATIONAL EDUCATION

RECEIVED
JUN 14 1971
NMSU
E.R.I.C.

by

Robert A. Wininger Ed. D.

Jack Groutage

June 1971

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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Prepared under contract with the Utah State Department of Education.

VT013975

SECTION I

Purpose of this study was to determine the relationship of the indirect cost of Vocational Education to the direct cost. This study was triggered by the state's desire to encourage Vocational Education through a series of specially funded projects. School districts involved in these projects were to determine the direct costs of such programs and then add 20 percent to cover indirect cost. This raised the question of the adequacy of the 20 percent to cover the indirect cost. Hence the need for such a study.

At present, the State of Utah through the State Board of Education reimburses school districts and post-secondary schools for certain vocational education programs. This reimbursement is based on the actual cost of operating the program (direct cost) plus 20 percent of that figure for other cost (indirect cost), plus capital outlay. There is a strong feeling among those connected with Vocational Education that 20 percent is an inadequate reimbursement for the indirect cost. The purpose of this study therefore was to determine the direct cost of Vocational Education and its relationship to indirect costs in selected Utah secondary and post-secondary schools.

DEFINITIONS

Certain terms must be defined in any study so that communication may occur. In this study it is particularly important since cost accounting appears to be a field alien to most school administrators.

Direct Cost (Expenditures): Direct cost is expenditures which can be directly applied to the teaching act. At the high schools only teacher

salaries, substitute teacher salaries teaching supplies and other direct teaching expenses were used as direct cost.

Direct costs at the post-secondary level were defined somewhat differently. In the post-secondary schools direct costs were those "departmental" costs for the various vocational education divisions. Equipment and other capital outlay were excluded. However, some other departmental expenses were included at this level that were not at the high school level. Since it would have been difficult to separate these expenditures consistently and the two levels are not compared it was felt that this inclusion was justifiable.

Steven L. Barclay (1971) in his report "School Accounting Practices for Occupational Education", listed the following as "Instructional Cost":

Salary of Instructor
Salaries of Instructor's Aides
Allowable Expenses of Instructors and Aides
Teaching Supplies
    Books, pamphlets, paper, etc.
    Consumable supplies used in the classroom.

He suggests that these are the direct costs of operating the classroom. These catagories directly parallel those used in the study.

Indirect Cost (Expenditures): Indirect costs are all of those expenditures which could not be justified as direct cost.

Overhead Cost: This study has been named "Overhead Cost Study of Vocational Education Programs". This is immediately misleading. Overhead most generally refers to those costs which are on-going expenses not connected with production. While this in some ways is descriptive of what this study is about it is not as descriptive as direct and indirect costs and was therefore not used in the study.

Vocational Education Programs: Vocational Education Programs were considered to be the following:

1. Agriculture
2. Distributive Education
3. Technical and Industrial
4. Health Occupations
5. Home Economics
6. Industrial Arts
   Home Economics and Industrial Arts are generally not considered Vocational Education. However they are included here as prescribed by the state contract.
7. Office Practice
   Office Practice does not include Beginning Typing or General Business Math. Both of these courses are considered to be General Education classes and not Vocational Education.

Maintenance and Operating Expenditure: Maintenance and Operating (M & O) expenditures are those which result from school operation. They do not include Capital Outlay or other special funds.

Capital Outlay: Capital Outlay is expenditures of funds for equipment and buildings as described in the Utah statutes. Capital Outlay was not considered in this study.

Average Daily Membership (ADM): Average Daily Membership was used to calculate the relationship between Vocational Education and the total program.

Full Time Equivalents: Full Time Equivalent (FTE) was used to describe the student unit at the post-secondary level. FTE is calculated by dividing the total number of hours generated in a school year (three quarters) by 45. Thus one FTE represents one average student for one year.

Costs and Expenditures: The terms Costs and Expenditures were used synonymously in this report.

PROCEDURE

It was agreed by the study directors that the sample of schools should include high schools of small, medium and large sizes. Also, the post-secondary schools would include a technical school, a junior college and a four year college. The following schools met these requirements:

Wayne School District
- Wayne High School

Logan School District
- Logan High School

Sevier School District
- South High School
- Richfield High School
- North High School

Utah Technical College at Salt Lake City

Snow College

Weber State College.

The study was actually conducted as two parallel studies one for high schools and one for post-high schools.

Each school was visited personally by the investigating team to gather information. The "state of the art" of school accounting made this procedure necessary. Each institution had a slight variation in its method of accounting requiring a personal inspection of records to determine if the same data was being gathered.

Maintenance and Operating (M & O) records of each school district and college were examined to determine direct and indirect expenditures for each school. In some cases it was necessary to distribute costs on a ratio of high school students to total students in the school district. The relationship of indirect to direct costs was then determined.

Following cost documentation for the schools, a ratio of vocational student hours to total student hours was used to arrive at vocational education expenditures for each area. Per-pupil costs were then calculated.

The remaining portion of this report will deal with an analysis of the findings, conclusions and recommendations.

SECTION II

ANALYSIS OF DATA

Data was collected and analyzed in two separate parts--high schools and post-high schools. No attempt was made to reconcile these two parts. The first part will deal with the high schools and the second with post-high school education. The final part will discuss conclusions that can be drawn from this data and state some recommendations.

Table I

Ratio of Vocational Education Student Hours
To Total Student Hours - High Schools

School	ADM	Multiple[1]	Total Student Hrs.	Voc. Ed. Student Hrs.	No. Days in Year	V.E. Student Hrs.	Ratio
Logan	970	1080	1,047,600	746	180	134,280	12.818%
Wayne	138	1080	149,040	325	180	58,500	39.251%
Sevier							
North	172	1080	185,760	224	180	40,320	21.705%
Rchfld.	437	1080	471,960	388	180	69,840	14.798%
South	167	1080	180,360	186	180	33,480	18.563%

1. Number of student hours per day (6) times the number of days in the school year (180).

HIGH SCHOOLS

Five high schools in three school districts were studied. They ranged in size from 138 ADM for Wayne High School to 970 ADM for Logan. There was also a range from very rural Wayne, North and South High Schools in Sevier--to small urban--Logan. These items proved to be very important to the analysis as will be described later.

Ratio of Vocational Education Students to Total Students.

Per-pupil cost was determined by comparing the number of Vocational Education students to total students. The per-pupil cost was requested as a part of this study. Obviously, there are few, if any, exclusively Vocational Education students. Actually students engage in a variety of classes which lead to their diplomas. It was therefore necessary to calculate what percentage of time students engaged in each type of class. This was done on a per-class-hour basis. (There were only traditional schedules in these schools). To find the number of total student hours, the ADM of each school was multiplied by the number of classes per day (six in the case of these schools) and the number of days in session (180). To find the Vocational Education hours each high school provided the number of class hours of Vocational Education time each day which was then multiplied by 180 days. The ratio of Vocational Education students to total was found by dividing the Vocational Education students by the total. (See Table I for results.)

An interesting thing about these results is that rurality and size seem to be a factor in the number of Vocational Education students. Wayne, North and South Highs in Sevier all have a larger percentage of Vocational Education students than the more urban Logan and Richfield highs.

Direct and Indirect Costs.

Direct and indirect cost development was based on definitions as given earlier. M & O expenditure summaries from which the figures on Table II were developed are included in the Appendix. It should be noted that the total high school expenditures were used for this comparison. This was done because the comparative ratio would be same as Vocational Education and the fact that Vocational Education cost figures were not generally available. The Vocational Education figures were based on a percentage of the total, thus their relationships would be the same.

There was a surprisingly high ratio of indirect costs to direct costs. (See Table II). The average was 80.47 percent. This average appears to be reasonably reliable since the range was fairly small (61.32 percent to 89.65 percent). It further appears that the State, at 20 percent, has been grossly under-paying school districts for their indirect costs.

Table III displays Vocational Education direct and indirect costs. As stated, this represents the same ratio of indirect to direct costs, Wayne being the only exception. The Wayne school district was able to develop actual Vocational Education cost figures. The result of this comparison of of direct and indirect costs for this district substantiates the procedure used in determining the cost for the other districts. The relationship of cost of the total school at Wayne was 61.32 percent (Table II). The ratio using actual figures was 61.96 percent.

Because the Wayne High school figures are actual, taken from school records, those for the other high schools are computed by means of the formula already explained in this publication.

If we accept the assumption that Logan and Sevier ratios are the same as Wayne, then it appears that actual costs -- were they available at these two larger schools -- would be somewhat higher than the normal program figures used to compute Logan and Sevier.

Table II

Relationship of Indirect Expenses to
Direct Expenses - High School

	Total Expenditures	Direct Expenditures	Indirect Expenditures	Ratio of Direct to Indirect
Logan	$602,865.08	$335,111.26	$267,753.82	79.89%
Wayne	200,445.47	124,247.68	76,197.79	61.32%
Sevier				
North	237,132.52	129,448.83	107,683.69	83.18%
Richfield	262,348.03	138,328.10	124,019.93	89.65%
South	232,705.52	123,660.72	109,044.80	88.18%
Sevier Total	732,186.07	391,437.65	340,748.42	87.05%
Total	$1,535,496.62	$850,796.59	$684,700.03	80.47%

Table II A

Comparison of Total Expenditures
To Vocational Education Expenditures
High Schools

	Total Expenditures	Voc. Ed. Expenditures	% of Total
Logan	$602,865.08	$ 77,275.24	12.818%
Sevier	732,186.07	133,193.04	18.191%
Wayne	200,445.47	88,621.07	44.210%
Total	$1,535,496 .62	$299,089.35	

Ratio of total Students to V.E. Students -- 39.251%

Table III

Vocational Education - Indirect Expenses
to Direct Expenses

	Direct Expense Total	% Voc. Ed.	Voc. Ed. Direct Exp.	Indirect Exp. Total	Voc. Ed. Ind. Exp.	Total V.E. Expense
Logan	$335,111.26	12.818%	$ 42,954.56	$267,753.82	$ 34,320.68	$ 77,275.24
Wayne	(124,247.68)	(1)	54,714.93	(76,197.79)	33,906.14	88,621.07
Sevier						
North	129,448.83	21.705%	28,096.87	107,683.69	23,372.74	51,469.61
Richfield	136,328.10	14.748%	20,173.83	124,019.93	18,352.47	38,526.30
South	123,660.72	18.563%	22,955.14	109,044.80	20,241.99	43,197.13
Sevier Total	$391,437.65		$ 71,225.84	$340,748.42	$ 61,967.20	$133,193.04
Total	$850,796.59		$168,895.33	$684,700.03	$130,194.02	$299,089.35

(1) Wayne school district was able to provide expense figures for Vocational Education, therefore no ratios were needed.

This makes our estimate low, therefore. But, because it is based on total costs of these high schools, the relationships are accurate if not conservative.

Table II A makes the comparison of the Vocational Education cost to total costs. Wayne school district provided the only meaningful comparison because it had the only actual Vocational Education costs. It is interesting to note that the comparison shows that 44.210 percent of the costs were spent on 39.251 percent of the students.

Per-Pupil Cost.

While the comparison of ratios of direct and indirect costs fulfilled the purpose of this study, per-pupil figures provide some interesting insights.

Table IV displays the Vocational Education per pupil cost for each school in the sample. The average cost per pupil hour was $.889. The range was $.552 to $1.515. It was noted earlier that the rurality and size of a school district appeared to have a considerable effect on the costs and complexity of Vocational Education. Table IV adds support to that conclusion. The two largest, most urban schools had the lowest per-pupil hour costs. The most rural had the highest costs.

Student Hours in Vocational Education.

Table V shows the distribution of Vocational Education students among the seven divisions. There were no Health Occupations courses at any of the sample schools.

Table IV

Cost Per Pupil Hour
for Vocational Education

District	Direct Expense	Direct Cost Per St. Hour	Indirect Expense	Indirect Cost Per St. Hour	Total Voc. Ed. Expense	Cost Per Student Hour
Logan	$ 42,954.56	$ .320	$ 34,320.68	$ .256	$ 77,275.24	$ .575
Wayne	54,714.93	.935	33,906.14	.580	88,621.07	1.515
Sevier						
North	28,096.87	.697	23,372.74	.580	51,469.61	1.277
Richfield	20,173.83	.289	18,352.47	.263	38,526.30	.552
South	22,955.14	.686	20,241.99	.605	43,197.13	1.290
Total	71,225.84	.496	61,967.20	.431	133,193.04	.927
Grand Total	$168,895.33	$ .502	$130,194.02	$ .387	$299,089.35	$ .889

Student Hours

	St. Hrs. Per Day X 180 = St. Hrs. Per Year
Logan	746	134,280
Wayne	325	58,500
Sevier		
North	224	40,320
Richfield	388	69,840
South	186	33,480
Total	798	143,640
Grand Total	1,869	336,420

Table V

Percentage of Total Student Hours
for Vocational Education

Total		Agriculture	Distributive Education	Tech. & Indust.	Home Ec.	Office Practice	Ind. Arts
12.816%	Logan		.859%	1.804%	3.075%	2.852%	4.226%
39.250%	Wayne Sevier	7.130%		12.200%	7.480%	12.440%	
21.704%	North	7.849%			3.973%	4.651%	5.233%
14.798%	Richfield	2.098%			2.860%	8.085%	1.754%
18.563%	South	5.389%			5.988%	1.497%	5.689%
17.139%	Tot. Sev.	4.084%			3.780%	5.906%	3.372%

1. None of the schools in the sample offered a course in Health as a vocation.

POST-SECONDARY SCHOOLS

The three schools chosen for the sample represented a spread of size, rurality and purpose. Snow College is a two year college mixing Liberal Arts Education with Vocational-Technical. It is small (total FTE = 689) and rural in location. Weber State College represents the large (6,617 FTE), urban Liberal Arts College. Utah Technical College of Salt Lake City is a specialty two year college. It specializes in training people in Vocational-Technical fields. It is of medium size (2060 FTE).

The factors of size, location and specialty again enter into these findings much as they did for the high schools.

Ratio of Vocational-Technical Students to Total Students.

Table VI shows the size dimension for Vocational Technical education for each of the schools. Both Liberal Arts schools had a small percentage of students in Vocational Technical education. Utah Technical, of course, is 100 percent in the area. The cost analysis later reflects on the size and specialty of these schools.

Direct and Indirect Costs.

The purpose of this study was to discover the relationship of the direct and indirect cost. Table VII displays those relationships. The average ratio of indirect to direct was 57.25 percent. This is somewhat smaller than the ratio found for the high schools (80.47 percent). This was probably due to the difference in definition of direct cost for post-secondary schools. Departmental costs were used to calculate the 57.25 percent figure. These costs included some indirect expenditures which were not separable. However, the 57.25 percent is still considerably higher than the 20 percent figure used by the State.

Table VI

Ratio of Vocational - Technical Student FTE's
to Total College

School	Vo-Tech FTE's	FTE Total College	Ratio
Snow College	71.57	689.00	10.38%
Weber State	932.05	6,617.00	14.08%
Utah Tech.	2,060.34	2,060.34	100.00%

Table VII

Ratio of Indirect to Direct Expenditures
for Vocational Education

	Snow	Weber	Utah Tech.	Total
Agriculture - Direct	10,403.90	12,445.00		22,848.90
Indirect	8,532.03	23,625.28		32,157.31
Total	18,935.93	36,070.28		55,006.21
Ratio	82.00%	189.83%		140.73%
Dist. Ed. - Direct		11,431.00	24,421.69	35,852.69
Indirect		16,108.15	8,999.01	25,107.16
Total		27,539.15	33,420.70	60,959.85
Ratio		140.91%	36.84%	70.02%
Tech. & Ind. - Direct	59,970.34	469,969.00	861,549.51	1,391,488.85
Indirect	18,550.61	267,395.22	504,095.65	790,041.48
Total	78,520.95	737,364.22	1,365,645.16	2,181,530.33
Ratio	30.93%	56.40%	58.51%	56.78%
Home Ec. - Direct		41,276.00		41,276.00
Indirect		44,080.07		44,080.07
Total		85,356.07		85,356.07
Ratio		106.79%		106.79%
Office Prac. - Direct	29,190.90	64,742.00	232,907.47	326,840.37
Indirect	7,488.00	51,034.70	147,840.83	206,363.53
Total	36,678.90	115,776.70	380,748.30	533,203.90
Ratio	25.65%	78.82%	63.47%	63.13%
Ind. Arts - Direct		90,805.00		90,805.00
Indirect		52,108.58		52,108.58
Total		142,913.58		142,913.58
Ratio		57.38%		57.38%
Health - Direct		181,576.00	183,651.74	365,227.74
Indirect		57,017.73	95,283.60	152,301.33
Total		238,593.73	278,935.34	517,529.07
Ratio		31.40%	51.88%	41.70%
Total - Direct	99,565.14	872,244.00	1,302,530.41	2,274,339.55
Indirect	34,570.64	511,369.73	756,219.09	1,302,159.46
Total	134,135.78	1,383,613.73	2,058,749.50	3,576,499.01
Ratio	34.72%	58.62%	58.06%	57.25%

Close examination of the figures on Table VII indicate a wide variation of ratios of direct and indirect costs. It should be noted that the smallest, most rural college has the lowest ratio. This was also true of the high schools. This could mean that they have higher per-pupil direct cost than the other schools or less administrative costs. Both are suspected to be true.

Expenditure Per FTE

While the per FTE costs do not specifically fulfill the purpose of this report, they do add some interesting facts. Table VIII displays the per FTE costs. The average cost per FTE was $1,167.28. The range was $2,366.38 to $838.85. The most expensive programs were at the smallest, most rural Liberal Arts College, while the least expensive was at the urban school which specialized, Utah Tech.

Weber State College offered the largest variety of programs and Snow the smallest. Some of the programs are obviously being operated at the expense of others at all colleges tested. Technical and Industrial education formed the largest part of each school's program.

Table VIII

Expenditures Per FTE

		Snow	Weber	Utah Tech.	Total
Agriculture -	FTE	17.67	43.00		60.67
	Total Exp.	18,935.93	36,070.28		55,006.21
	Exp. per FTE	$ 1,071.64	$ 838.85		$ 906.65
Dist. Ed. -	FTE		29.40	24.60	54.00
	Total Exp.		27,539.15	33,420.70	60,959.85
	Exp. per FTE		936.71	1,358.56	1,128.89
Tech. and Ind. -	FTE	38.40	487.46	1,373.08	1,898.94
	Total Exp.	78,520.95	737,364.22	1,365,645.16	2,181,530.33
	Exp. per FTE	2,044.82	1,512.67	994.59	1,148.81
Home Ec. -	FTE		80.33		80.33
	Total Exp.		85,356.07		85,356.07
	Exp. per FTE		1,062.57		1,062.57
Office Prac. -	FTE	15.50	93.04	402.93	511.47
	Total Exp.	36,678.90	115,776.70	380,748.30	533,203.90
	Exp. per FTE	2,366.38	1,244.37	944.94	1,042.49
Ind. Arts -	FTE		94.98		94.98
	Total Exp.		142,913.58		142,913.58
	Exp. per FTE		1,504.67		1,504.67
Health -	FTE		103.84	259.73	363.57
	Total Exp.		238,593.73	278,935.34	517,529.07
	Exp. Per FTE		2,297.70	1,073.95	1,423.46
Total	FTE	71.57	932.05	2,060.34	3,063.96
	Total Exp.	134,135.78	1,383,613.73	2,058,749.50	3,576,499.01
	Exp. per FTE	$ 1,874.19	$ 1,484.48	$ 999.23	$ 1,167.28

SUMMARY

Vocational Education programs are more popular and used more in the smaller, rural area high schools contacted during this study, and apparently are less popular and used less in larger high schools contacted in larger communities.

For example, as Table I shows, Logan is the largest high school studied, with 1,047,600 total student hours. And at Logan High School, the Vocational Education student hours totaled 134,280 during the 1969-70 academic year. This was 12.818 percent of the total number of student hours there.

Thus, the largest school studied had the smallest percentage of Vocational Education student hours.

On the other hand, the smallest high school studied was Wayne, at Bicknell. It totaled 149,040 student hours during the same academic year. Of these, 58,500 -- or 39.251 percent -- were Vocational Education.

The other schools studied carried out this trend.

Therefore, we can say that this study showed that Vocational Education programs apparently are more valued in the smaller, more rural Utah high schools.

Conversely (Table IV, Cost per Pupil-Hour for Vocational Education, High Schools), small schools cost more per pupil. Figures in this table show that the size of the high school has an inverse relationship to cost.

Largest school studied was Logan High, with the per-student-hour cost of $.575. In contrast, the smallest school was Wayne, with the highest cost, $1.515 per student hour. The ratio is almost three-to-one.

The trend is carried out with the intermediate schools studied. And, the total is $.889, which again supports the conclusion.

Thus, because smaller schools tend to have larger Vocational Education programs (Table I) per ADM, and because these programs also are more expensive, there appears to be little -- if any -- economic justification for small schools this size.

The primary purpose of this study was to determine the relationship of indirect expenses to direct expenses at representative Utah high schools. Table II illustrates this relationship.

As the righthand column shows, the ratio of indirect costs to direct costs at the five high schools studied ranges from the 61.32 percent low at Wayne to the 89.65 high at Richfield. Ratio for the total of the five schools is 80.47 percent.

The inverse ratio seen at the high schools, which shows the smaller schools and programs costing more per student, also is seen in the studies of post-secondary schools -- Utah Technical College at Salt Lake City, Weber State at Ogden and Snow College at Ephraim.

Tables VI, VII and VIII show that Weber State has more students in the Vocational-Technical area than does Snow College, but that Snow College spends more per FTE than does either Weber or Utah Tech. Of course, the technical college has all (100 percent in Table VI) of its FTEs in V-T.

On the other hand, Snow College (Table VII) has the lowest ratio of indirect V-T expenditures to direct V-T expenditures. Weber and Utah Tech ratios are very close. This probably is a result of the proportionally larger V-T programs at the two latter schools.

CONCLUSIONS

The following conclusions are apparent:

1. The 20 percent figure now being used by the State of Utah is obviously inadequate.

2. High school programs, because of these high ratios, obviously include unconsidered costs.

3. Because of the wide discrepancy between these figures and the 20 percent being used, it becomes apparent that school record keeping does notfacilitate decision making. Figures from the Utah post-secondary schools studied (Table VII) support this conclusion.

4. Thus, decisions made on incomplete data tend to compound toward incompetent school administration/operation.

5. Because this continues from year to year, the result is an increasingly deleterious effect leaning toward bankruptcy.

6. Two major conclusions may be drawn from comparisons in Table VII, Post-Secondary, expenditures per FTE.

First, as was found with the high schools, the smaller, rural college -- like the smaller, rural high school -- was more expensive per student.

Second, the per-student cost obviously is higher at Weber, which is a general college with a Vocational Technical program, than it is at Utah Tech, an exclusively Vo Tech college. Thus, it may be concluded secondly that specialization pays with lower per-student costs.

RECOMMENDATIONS

It is apparent from the findings of this study that several recommendations are in order.

1. The State formula for reimbursing school districts for Vocational Education should be modified. The current 20 percent of direct costs for indirect cost is inadequate. It is recommended here that a ratio (or formula) of indirect to direct expenditures, as defined in this report, be used for each school district. Thus school districts with particular administrative problems could receive funds in sufficient amounts to handle the extra programs.

2. Further study into the efficiency of schools should be made. As a spinoff of this report it was found that small schools cost more per pupil

(at least in Vocational Education) than do larger schools. A study, based on actual cost, should be made to determine the most efficient size for schools and programs.

3. It was further apparent from the study that educational administrators lack sufficient data to make rational decisions. Without adequate cost data for various program decisions for or against expansion must be based solely on subjective information. It would seem that the program that makes the most noise would get the most money. This is a poor basis for decision making. Cost data would be only one variable which could use further improvement. Obviously educators have not developed any adequate means to measure output. Until this is done rational decision making in education will remain most difficult.

4. Agriculture, Distributive Education and Trade & Industrial combine to comprise the bulk of programs at Snow College, Weber State College and Utah Technical College at Salt Lake City.

Because of the wide dispersion in the ratio (Table VI), from 10.38 percent at Snow to 100 percent at Utah Tech (which, of course, is all Vocational Education) -- the question immediately arises:

Does Weber State carry programs inordinately expensive, and are some of these costs borne by other programs? Further investigation should be made to discover the answer to this question.

##

APPENDIX

Logan School District
M & O Expenditure Summary

	High School	District
Administration	$ 20,945.23	$ 45,662.15
Instruction		
Direct Expenditures		
Teachers' Salaries	297,212.00	1,334,407.26
Substitute Teachers	1,596.00	7,546.50
Other for Instruction	2,405.00	27,205.98
Teaching Supplies	24,359.69	53,105.94
Other Inst. Exp.	9,538.57	20,794.78
Total Direct	335,111.26	1,443,060.46
Indirect Expenditures	91,980.06	285,530.91
Total Instruction Expenditures	427,091.32	1,728,591.37
Attendance Services	2,249.64	4,904.38
Health Services	2,416.64	5,268.45
Transportation	8,834.00	25,902.78
Operation of Plant	54,903.90	166,073.47
Maintenance of Plant	46,394.54	140,000.86
Fixed Charges	40,029.81	222,405.40
Total	$602,865.08	$2,338,808.86

Sevier School District
M & O Expenditures - Summary

	North High School	Richfield High School	South High School	Tech.	Total Dist.
Administration	$ 4,649.56	$ 5,792.25	$ 4,513.55	$ 2,509.26	$ 42,871.60
Instruction					
Direct Expense					
Teachers'Sal.	123,215.00	126,918.40	113,535.00	86,683.00	1,011,386.15
Substitute Teach.	979,50	1,470.00	922.00	154.50	7,982.50
Other for Inst.	1,128.37	1,232.19	585.37	2,596.50	5.353.15
Teacher Supplies	3,885.88	5,772.95	4,664.73	4,539.74	46,039.16
Other Inst. Exp.	240.08	2,934.56	3,953.62	680.65	13,455.41
Total Direct	$129,448.83	$138,328.10	$123,660.72	$94,654.39	$1,084,216.37
Indirect Expense	43,602.30	46,555.27	42,470.43	20,111.63	250,623.74
Total Inst. Exp.	$173,051.13	$184,883.37	$166,131.15	$114,766.01	$1,334,840.11
Health Services	669.69	1,749.86	720.46	234.13	6,761.54
Transportation	10,155.27	5,706.14	18,348.61	2,053.09	56,143.01
Operation of Plant	13,113.07	23,662.48	11,046.59	12,996.97	115,966.01
Maintenance Plant	13,841.61	13,712.65	10,692.50	9,129.76	85,111.29
Fixed Charges	21,653.19	26,841.28	21,252.66	13,322.83	191,946.50
Total	$237,132.52	$262,348.03	$232,705.52	$155,012.05	$1,833.640.06

Wayne School District
M & O Expenditures - Summary

	Voc. Ed.	High School	District
Administration	$ 3,023.58	$ 7,703.39	$ 25,182.70
Instructional Expense			
Direct Expense			
Teachers' Salary	25,286.00	79,675.00	233,483.69
Substitute Teachers	102.18	260.32	851.00
Other for Instruction	1,848.87	4,710.50	4,710.50
Other - Teachers	14,007.66	23,274.00	
Teacher Supplies	12,468.11	14,349.86	14,349.86
Other Inst. Expense	1,002.21	1,978.00	9,090.25
Indirect Expense	17,110.23	32,614.59	44,813.37
Health Services	227.60	579.86	1,895.58
Transportation	3,261.88	8,310.52	27,167.44
Operation of Plant	2,868.65	7,308.66	23,892.31
Maintenance of Plant	2,079.39	5,297.82	17,318.81
Fixed Charges	5,334.71	13,591.61	44,431.53
Adult Education		791.34	791.34
Total	$88,621.07	$200,445.47	$447,978.38

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COLON, ANTONIO FIGUEROA
TECHNICAL NOTES ON VOCATIONAL AND TECHNICAL EDUCATION.

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ABSTRACT - THIS COLLECTION OF PAPERS BY THE CHAIRMAN OF THE STATE ADVISORY COUNCIL PRESENTS CONCEPTS ON VOCATIONAL AND TECHNICAL EDUCATION IN PUERTO RICO. AREAS DISCUSSED INCLUDE THE PHILOSOPHY, HISTORY, AND STATUS OF VOCATIONAL EDUCATION IN PUERTO RICO, SCHOOL AND INDUSTRY COOPERATION, AND ROLE AND ACCOMPLISHMENTS OF THE ADVISORY COUNCIL. (AW)

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TECHNICAL NOTES

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THE ROLE OF THE STATE ADVISORY COUNCIL ON THE VOCATIONAL AND TECHNICAL EDUCATION PROGRAM OF THE COMMONWEALTH OF PUERTO RICO

Antonio Figueroa Colón, Chairman of the State Advisory Council on Vocational and Technical Education for the Commonwealth of Puerto Rico.

In Puerto Rico, as well as in the United States, the organization of advisory committees is nothing new. Many have been organized in our vocational schools. Some lasted a short time: many vanished after their initial meeting. Some made a permanent contribution to the advancement of vocational and technical education but others failed in doing so by attempting to intervene in running the programs, which was resented by the administrators.

How did this Advisory Council came into being? Former President Johnson, having been strongly criticized on the productivity of the vocational and technical programs of the Nation, thought that the best way to find a solution to this problem would be to call together a group of citizens to orient him as to which steps to take. The group he selected was so successful in its mission that Mr. Johnson incorporated into the Vocational Education Amendments Act of 1968 the creation of a National Advisory Council, whose main objective would be to advise the President and the Secretary of Health, Education and Welfare in all matters concerning vocational and technical education. This law also provides for the creation of a State Advisory Council in each state expecting to take advantage of the benefits of this law.

The members of the Advisory Council on the state level are appointed by the State Governor, or by the State Board in those states in which the members are elected by popular vote. The Council is composed of persons familiar with the vocational needs and with labor and management problems. By law the 21 members represent the community in general, organized labor, industry, commerce, economic development, regional colleges, higher learning institutions, technical institutes, human resources development training and the special programs designed for physically and mentally handicapped persons. Many have experience in vocational and technical education and training, others in general or academic education, but no member may be involved directly in the administration of the educational programs or in vocational and technical education or training programs, since the Council, in order to render an efficient evaluation of these programs, should work independently but in complete coordination with the administrative personnel of all programs.

The National Organization so strongly favors the independence of these State Advisory Councils that it has recommended the fiscal responsibility be given directly to the State Advisory Council, through the State Treasury. The Education and Labor Sub-committee of the U. S. House of Representatives emphasized, also, that the "State Councils should have the liberty to hire their own executive directors and any other personnel which they may deem necessary to perform their tasks."

In many states of the Nation, the vocational education training program administrators have been obstructing the normal development of the State Council functions. To eliminate this situation, the Office of

Education is urging a review of the operation of all the State Councils and "to require that State directors of vocational education be excluded from membership and that funds appropriated for the Councils go directly to the Councils from the Office of Education to be used at the sole discretion of the Councils for the employment of staff and for evaluations and research."

Fortunately, this "obstructionist" situation has not existed in the Commonwealth of Puerto Rico. The direction of the vocational and technical education program has maintained, from the beginning, complete administrative detachment from the Council and their attitude has been one of complete cooperation in the development of the activities of the Council. Our most important problem is that of eliminating the "red tape" in the use of funds to hire consultants and other qualified personnel to evaluate the programs.

Among the many duties and responsibilities of the Council the following are of utmost importance:

1. Advise the State board on the development of policy matters arising in the administration of the State plan, including the preparation of long range and annual program plans.
2. Evaluate vocational education programs, services and activities under the Vocational Act of 1968, and publish and distribute the results thereof. The Council will prepare (and submit through the State Board to the Commissioner and the National Council) an annual evaluation report accompanied by such additional comments of the State Board as the latter deems

appropriate, which evaluates the effectiveness of vocational programs, services offered and activities carried out in the year under review and recommends changes that are considered necessary in these programs, services and activities.

The first funcion, that is, to advise the State Board, is one of a permanent nature and is being fulfilled from the first day the Council was organized. In several meetings held with the administrators and the directors of the vocational programs as well as in an open meeting with public; the plans of operation have been discussed and received the Council's approval before being sent to the competent authorities in Washington. I am pleased to say that these plans were approved without delay by these authorities.

The Council's concern, as it was that of former President Johnson, is to deal not only with the quantity of the productivity of the vocational and technical programs but also with the quality of said productivity. In one of the first meetings of the Council I brought to its attention a statement made by a human resources development expert in a local magazine that studies show that "more than half of the students (from vocational schools) never get jobs in the trades for which they were trained." To the council members this statement turned out to be quite shocking since the administration claims that at least three-fourths of the graduates from vocational schools are employed in occupations or trades in which they received training. A study is being made to corroborate this so as to take remedial action. To measure the quality of productivity of the vocational and technical education programs a survey will be made, with the help of

industry, to determine whether the skills acquired by the students in these programs are of the quality demanded by industry. This is only one of the many studies we will conduct in order to make a complete evaluation of the programs, services, and activities of the vocational and technical education system in our Island.

To carry out the second function of the Council, which is the evaluation of the vocational and technical education system, a series of questionnaires have been prepared to be given to students, teachers and vocational program directors, skilled workers in industry and commerce, to managers, foremen and supervisors, and to the graduates of these programs. The answers given to these questions will reveal whether the training personnel has been oriented towards offering that type of vocational education and training needed by industry; whether the trainees have been exposed to the environment and conditions prevailing in industry; whether the training is coordinated with the needs of industry; whether the training personnel has visited the industrial establishments from time to time to observe new trends and techniques which should be developed in the trainees; whether the the school shops are provided with the tools and equipment used regularly by industry; and whether the jobs and responsibilities peculiar to the jobs have been studied and the training reflects or approximates as closely as possible the actual situation in the production of articles and services. The questionnaires will reveal also if specific objectives have been formulated and carried out in each course to meet the need for that training; if norms for the selection of students to fit each specific program have been adopted

and followed; if besides a sound and functional vocational guidance program the school has an efficient system of follow-up of graduates and drop-outs and thus measures the effectiveness of the program. Through the answers to these questions we will determine whether the teachers have been able to acquire new techniques of both production and instruction; whether the teachers have been visited by the supervisors with their most important objective being to improve instruction; if the teachers have provided in their daily classes for individual differences. We will obtain information also on whether studies have been conducted to determine the needs of industry for specific training and if specific courses have been organized for these purposes.

As you can see, we have very far-reaching objectives to meet in carrying out this evaluation. Various organizations specializing in this type of research in the United States have asked to be allowed to participate in our studies. So far we have had to reject these offers because we lack sufficient funds to cover expenses involved in such cooperation. Nevertheless, we recognize how important this survey is in improving the programs and we have proceeded to prepare the questionnaires to be used and submitted them to the proper committee for study and refinement. We expect to use the limited funds we have at our disposal to hire the field personnel we may need now. In the Council we have experienced personnel to conduct the survey. For the time being, I have been offering, at no cost to the Council, my services and experience in conducting similar surveys in Latin America.

We cannot foretell the results of this study as it has new modalities, new ways of approach never used before. Our vocational and technical education program has always been praised very much by experts in these fields. Compared with the programs I have studied in Latin America I can say, without doubt, that it is the best in spite of its limitations and the superabundance of these programs in other countries. Nevertheless, we should be on the alert to see that careful planning is carried out so as to avoid the pitfalls experienced by other countries where quantitative expansion has been the goal without the corresponding qualitative expansion. In Puerto Rico we are right now in the Golden Age of vocational education. Every citizen is demanding more vocational schools to meet occupational needs of the country. We have been avoiding strongly the penetration of humanistic studies when social reality calls for pragmatic education which helps adapt the individual to his own social environment. Contrary to other countries, we avoid giving our youth a purely humanistic education which would not guarantee means of earning a living in his own country and which tends only to produce worthless, snob high school graduates, without the knowledge basic to practical application and which leaves them socially disoriented.

The rapid industrialization of the country and the new technology have moved much faster than the slow rhythm at which we have been providing our youth with the tools needed to meet the demands of industry. That is why I repeat that we need not only quantity but also quality, that is, more vocational schools but more functional vocational schools; vocational programs whose existence springs directly from industry's need to use

the productivity of all vocational schools. It is a grave mistake to produce hundreds of skilled workers for jobs and occupations for which there is a surplus of trained workers. This will cause more frustrations in our youth who take such education and training. The shortage of skilled personnel is not efficiently taken care of by establishing more vocational schools; it is solved by the creation of new vocational schools or programs which meet the standards of quality capable of educating and training the workers needed now in today's new technologies. To accomplish this, we vocational educators need closer ties among industry, vocational education and the consumer, so that we can introduce in the courses of study those new techniques used by to-day's industries and discard those no longer used. More and better supervision for the improvement of teachers in service is a must if we want new teaching and production techniques to be introduced in our vocational and technical education programs. We should expect the teaching and administrative staff to be up to date in new techniques but they should be kept up to date also in adequate remuneration comparable to that received by this counterparts in industry.

Vocational and technical education administrators in Puerto Rico, aware of basic deficiencies in the program, ordered a study of the needs of industry so as to correct as much as possible these deficiencies. It seems that the study is so broad in scope that the results are not yet available. We should stress the fact that the vocational skill introduced into this year's course of study based on last year's research may be obsolete next year because of the ever-changing technology. Even so, we are on the

right track; a continuous revision is all that is necessary. I am sure this survey will lead the way to better and more functional programs.

In the analysis of various vocational education and training programs, the Council has noticed considerable duplication in developing many vocational training programs by government and private agencies. Often in creating a vocational training program in one agency, supposedly a new program, it turns out to be the repetition of an existing program but with a glamorous name and certain lures of new promises and more benefits. The result is abandoning the original programs in favor of the new program offering payment incentives. In order to put an end to this battle among agencies and departments and between "training" and "education", or more accurately between manpower training and vocational education, some consideration should be given to the creation of a central planning organization to control all the human resources development activities of the country, with representatives from management, labor and all agencies or departments having vocational or technical education programs or training. It should be emphasized that this new body will only have "coordinating" functions, that is to integrate and coordinate all the training and education efforts, leaving to the program-sponsoring agency the administration of its own programs.

On several occasions the Department of Education has contracted the services of various consultants, technicians and experts who have made several recommendations for improving vocational programs. One of these recommednations calls for the establishment in Puerto Rico of a

training system similar to the SENAI of Brazil, INCE of Venezuela, SENA of Colombia, and INA of Costa Rica and to similar organizations in Chile, Perú, Nicaragua and Ecuador. The principal characteristic of this organization is that the funds for the operation of its training programs come from a 1% or 2% tax levied on labor payrolls. I have visited these programs in Brazil, Colombia and Nicaragua. Their training programs are very modern, the equipment the latest, but here again, on a smaller scale, we see the duplication of efforts and the competition between training agencies and ministries. Industry cooperates 100% with these organizations, since it pays for the training of its workers by contributing 1% or 2% of their payrolls.

In the countries where this type of training agency has been organized it has taken many years to educate industry to accept its new responsibility. It would probably not be wise to implement a program of this type in Puerto Rico when so many contributions have been asked by the government from local industry and commerce, although it is possible local industry would contribute if we offer the vocational and technical education and training programs demanded by it to meet its needs.

As you may have observed, the role of the State Advisory Council on Vocational and Technical Education is to advise the vocational education administration so that the vocational schools can produce the qualified personnel needed by the government, industry, commerce and the community in general so as to build up a better Puerto Rico and thus happier Puerto Ricans. The Council is not a fault-finding agency, it is a cooperating agency. We meet every month to study the best possible ways by which we can achieve our main objective: The improvement of vocational and technical education and training in Puerto Rico.

LET'S TALK SHOP

By : A. Figueroa-Colón, Executive Director, Commonwealth of Puerto Rico Advisory Council on Vocational and Technical Education.

Today, people from all walks of life are demanding more and more vocational education for our youth, yet they do not know what is the substance of their demands. Professional educators are so anxious to make school experience more pragmatic that from some sectors the indictment is made that in order to please this overwhelming demand, vocational education is being watered down into cultural education.

To meet these demands, many approaches and techniques which are relatively new to our country have evolved in the last decade. Often these are alien to the experience of those who were academically or classically educated. It is little wonder that much misinformation and misunderstanding has arisen as to what constitutes vocational education and vocational training. This confusion has led me to write this paper on the general principles concerned with the formulation of adequate programs of vocational education.

Some Philosophical aspects of Vocational Education and Training

In considering the philosophical aspects of vocational education and vocational training two significant facts are clearly recognizable. First, man has to work if he is to be part of our form of society. By working he is able to provide for his needs and comfort. How effectively he can supply his wordly necessities depends on how well he has been trained to do the job for which he is best suited. It is through vocational training that he prepares himself for his job. Secondly, the perpetuation of society hinges on man's ability to perform useful services. Whenever an individual is unable to perform some service, he becomes a liability to society.

Vocational education actually is considered a part of general education. It is a very vital phase of the total education program for the complete development of youth. Whereas general education is primarily concerned with those activities and experiences essential for successful living, vocational education deals specifically with occupational preparation. However, it is not to be presumed that vocational education is confined entirely to mastery of skills and technical knowledge. In addition, the nature of society requires individuals who possess comprehensive understanding of social, civic and ethical responsibilities. Certainly, the worker must be able to do the job for which he is trained, but he must also appreciate the obligations to his community and his fellow workers. It is a well-established fact that most people lose their jobs, not because they lack the technical experience, but rather because they fail to understand how to get along with the people with whom they work.

Some years ago, the term "vocational education" was misinterpreted to mean only those forms of education or training absolutely essential for the performance of specialized occupational skills. Now, in the commonly accepted sense, vocational education on the secondary level includes any useful form of employment. This involves education in general, together with emphasis on preparation for entry into an occupational field. It also includes education and training for those employed persons who need further knowledge or added skills to keep pace with changing conditions and to retain employment already held. It may provide training for improvement or advancement in such employment; or for transfer from one field to another made necessary by technological changes.

It is sometimes implied that vocational education begins with the termination of the general education program. A course of instruction based on this premise is doomed to failure. Vocational education should begin when the individual is ready for employment, but running concurrently with such a program there need to be a functional "strand" of general education.

Some Concepts of Vocational Education and Training

The world of work presents many problems of concept and definition, most of which arise from tradition and are resolved by common usage. Some individuals have suggested that vocational education is the education or training of workers. This concept implies that any type of education or training in which a worker participates is vocational education. It undoubtedly had its origin in early apprenticeship programs in which all educational activities, both general and vocational, were under the supervision of the master craftsman. Individuals who hold this concept are inclined to be critical of pre-employment courses suggesting that the cost of vocational education should be paid by industry and business.

Another concept held by some individuals is that vocational education is education for manual work. This suggests that it is not concerned with work involving mental activity. This concept had its origin in the schools organized for the underprivileged children and has resulted in the present-day practice of placing mentally and socially handicapped students in vocational courses without regard to the learner's interest or ability.

Still another concept is that of education for production, which contrasts vocational education with liberal education. Vocational education is designed to make a person an efficient consumer. Nowadays these two concepts are fused together in the comprehensive high school so as to create a citizen-worker, who

is an efficient producer as well as an efficient consumer.

Changes in science and technology bring about striking changes in the ways in which occupations are conducted. It is usually considered that vocational, technical and professional education must be continued as long as workers are active. Many of the most vital and appropriate programs of acult education are those that assist full-time workers in adapting to changes, including changes from one occupation to another.

The pioneers in vocational education tended to emphasize a narrow, specialized type of vocational education, largely isolated from any other form of education. This emphasis may have been suited to those times, but times have changed. The modern vocational educator emphasizes the need for workers who have a broad and basic education, have the capacity for continued growth through a long working life. He deplores any arrangement which leads a worker into a "blind alley" or narrows his vision. He has given up the ideas that pre-employment education is all that is necessary and insted he has turned his attention to continuing education..

We are contemplating a fusing of vocational and general adult education for the benefit of all concerned.

The Content of Vocational Education and Training

In order to avoid misunderstanding as to the content of vocational education, we should consider the following points as essential :

(1) There should be student skills developed in all basic processes inherent in the occupation involved;

(2) There should be pupil experiences in the interpretation and use of factual information that is fundamental to the occupation;

(3) There should be experience in science, mathematics, drawing and other tool subjects related to the occupation;

(4) There should be learning experiences provided concerning the hazards, benefits, joys, and sorrows connected with the chosen occupation ;

(5) There should be learning experiences provided showing the relationship of the prospective occupation to management, labor and the professions ; and

(6) There should be learning experiences in general education indicating a place in life for fulfillment of life's needs to produce an enlightened citizen and worker.

DELINEATING FIELDS OF COMPETENCE IN OCCUPATIONAL TRAINING

By: A. Figueroa Colón, Executive Director, Commonwealth of Puerto Rico Advisory Council on Vocational and Technical Education

Industrial Arts Education compared with Vocational Industrial Education

The controversy between industrial arts education and industrial vocational education at times emanates from tradition, at times from ignorance of the subject, but most of the time from the pressing need given the limited resources, to develop a kind of training that will enable youth to enter industry. The confusion is as old as the terms themselves.

Let us trace the appearance of the terms in our vocational usages. The first form of organized industrial training in Europe and the United States appeared during the middle of the nineteenth century in the form of the "trade guilds" which were the basis for the apprenticeship training programs. During those days it was a responsibility of the trade masters to pass on the skills and secrets of their trades to their sons and the sons of their neighbors. Later, a system of training by working on a graduated series of exercices in wood and metal evolved in Russia. This spread widely in Europe and later in the United States. The main objective of this systematic method of training was the training of the hands, appropriately called manual training. From this, another system evolved with advanced and expanded aims and was called manual arts. In the late twenties of this century, with the new developments in industry, this term was changed to industrial arts, which is the present name of one of the current systems of training.

Let us discuss some concepts and definitions and the aims involved in these educational processes in order to give us a better understanding of the terms under

discussion. First, let us define "education" inasmuch as education is the substance of all the terms. For purposes of comparison, we can identify education, that is, general education, as the learning process that brings about a development of the intellectual, physical and emotional qualities of the emerging individual so that he may grow into a useful and intelligent citizen. It is designed to develop a functional understanding of essential elements of life and society which people must possess in order to live normal and happy lives.

In underlying concept and philosophy, the industrial arts field is broadly educational rather than narrowly industrial. It is that phase of general education in which the primary purpose is to familiarize students with the tools, products, processes and occupations of industry, as well as the social and economic phenomena of the technological world in which we live and work. It is pre-vocational education, that is, education which comes before vocational education. Emphasis is not given to occupational competency as it is in vocational industrial education.

Vocational industrial education, on the other hand, embraces all the experiences an individual needs to prepare himself for some specific industrial occupation. It deals with the knowledge, skills and attitudes that fit an individual wholly, or in a specific part, for a definite occupation or vocation.

We can see that while the aime of industrial arts education is to present to the individual a global knowledge of the various fields of activity in the world of work, the aim of vocational education is to fit the individual for useful employment in a specific field of activity in the world of work.

To accomplish its aims, the industrial arts program should establish certain essential conditions; likewise, there are conditions essential and particular to

vocational education programs. Let us make a comparison of such conditions.

As we stated before, in underlying concept and philosophy, industrial arts confines itself to giving the student a broad outlook of the world of work. To that end, the school provides a general shop intended for general observation, and learning in as many of the work activities as possible, but not for the acquisition of specific skills in a specific occupation. In industrial arts education the student mostly observes, in vocational education, the student mostly does. In the first, practice is offered by means of exercises; in the second, by means of real jobs. In the first, laboratory or light and portable equipment can be used for demonstration and practice purposes; in the second, heavy industrial equipment similar to that used by industry should be used for the development of skills needed to be proficient in the trade or occupation. In the first, a teacher with an adequate manual dexterity and knowledge of the industrial world of work could be used as a teacher; in the second, an instructor recruited from industry with a knowledge of the teaching process, and who is respected in the community as a master of his trade, is the appropriate person to train the student in a given specific occupation.

In industrial arts education, an academic atmosphere may prevail; in vocational education, an industrial atmosphere must prevail. The tools and equipment used in vocational education should be those used by industry; instruction should be offered by means of production of articles or services of a marketable quality; plant facilities should be functional and simple, and similar to those of industry.

So that a vocational education institution may be rated as such, it should meet the following criteria :

(1) The vocational education institution is centrally located to permit the

youngsters and adult workers to use its facilities in the morning, afternoon and evening.

(2) The training offered corresponds to the skills required to meet the needs of industry as determined by an industrial occupational survey.

(3) The courses of study are prepared with the advice of an advisory committee with equal representation of management, labor and the public or community interest.

(4) The instructors are considered by the community as "masters of their trades".

(5) The equipment and materials of instruction are similar in quality and quantity to that used by industry.

(6) The course content has been determined through a trade analysis.

(7) Individual instruction is the principal teaching method used so as to permit individual progress.

(8) Shop technology is offered and tied to shop practice.

(9) Related information and trades practice jobs respond to new techniques used in industry.

(10) Courses are flexible enough to permit introduction of new processes and revision of old concepts to adapt them to the new trends, and obsolete practicer or concepts removed from the course.

(11) Instruction is offered only to those individuals who can profit from it.

(12) A broad basic training period is given in the initial stage followed by a specialization period in the later stage of training.

(13) So as to bridge the gap between school and industry, students participate in on-the-job training (work experience) in later stages of training.

(14) Adequate vocational guidance is offered to prospective students to help them in the correct selection of a career.

(15) A complete placement and follow-up system is used for graduates and for those who terminate prior to graduation.

Vocational Education compared with Vocational Training

Many academicians confuse the terms industrial arts education with vocational industrial education; many vocational people confuse the terms "vocational education" and "vocational training" or consider both to have the same meaning. This is not so.

The term "vocational education" is an inclusive term which deals with knowledge, skills and attitudes that fit an individual not only for a definite occupation but also for his role as a citizen in his community. It is a type of education in which the student gets most of the basic general education needed to cope with real life situations, as well as the specific vocational training required for entry into an occupation. It is a type of education that teaches an individual to work and to live a full life as a citizen who contributes, through his craft, to the welfare of the society of which he is an active member. So, vocational education comprises two types of training.

Vocational training is, therefore, a part of vocational education. As such, it is designed to enable the client to acquire the knowledge, skills and attitudes needed for the efficient performance of his chosen occupation. This may consist of helping him to regain former skills or of assisting him to acquire new ones that are suited to his capabilities and interests.

Vocational training is generally offered in industry or in centers directly connected with industry in such training schemes as apprenticeship programs, accelerated training programs, "in-plant" training programs, or "on-the-job" and "training-within-industry" programs. While vocational education programs are designed for youth and are offered in vocational institutions for long periods of time, the vocational training programs are designed for matured workers and are offered "on-the-job" in industrial plants for relatively short periods of time. The main objective of the first is to have a reservoir of workers for future demands of industry while that of the second is to provide the skilled workers needed by industry at the moment. The training of the first group is more general in scope while that of the second group is more specific. The first group is not supposed to have had any occupational experience while the second group is supposed to have had some occupational experience in the industrial field in which that group is searching improvement.

SKILLED WORKERS OR SKILLED CITIZEN-WORKERS?

By: Antonio Figueroa-Colón, Executive Director
Commonwealth of P. R. Advisory Council on
Vocational and Technical Education

Much time has gone by since the establishment of the first vocational schools in Puerto Rico, in the year 1932, with the extension of benefits from the federal Vocational Organic Law and the opening of the School of Arts and Trades of the University of Puerto Rico but this may not be long enough to expect our human resources training institutions to improve to the level of the nation's vocational schools.

As a new educational enterprise, our vocational education system has had many ups and downs, due, many times, to the criteria of every new Secretary of Public Education selected to direct the public education system of the country.

On making an evaluation of the efforts made and the results obtained in the development of vocational programs, we must admit that great forward steps have been taken, placing them among the best in Latin-America. Some professional educators, from the academic as well as the vocational field, do not believe that there have been great accomplishments. I do believe there have been some, but also believe, like Mark Twain, that when asked if he believed the world was decaying answered - "No, but I do believe that our capacity to see our decay has greatly improved." I can say that our evaluation instruments have improved enough to demonstrate that we should not abide with the results of two or three decades ago; that we should always improve; and that we should break away from the old moulds and try new trends

in vocational education and training. We should forget the narrow concept the old pioneers had on vocational education at the beginning of this century and readjust the sixteen basic theorems of vocational education propelled by these pioneers to the changing world in which we live at present.

I am concerned of the concept some academic educators still have as to what should be expected from the product of our vocational programs. Should our vocational schools provide their students only with those skills that prepare them to earn a living or should they also prepare them to be capable socially responsible citizens in life?

Since their beginning in 1932, the vocational schools in Puerto Rico began to develop along the lines advocated by the pioneers from the beginning of the century. This brought about the inferior esteem the general educator had of the vocational students and teachers, and its inflexible program of studies which was 50% shop work, 25% related technical instruction and 25% related academic courses. We can thus see the concentrated manual skills training predominating in the curriculum; the so called academic courses being of secondary importance because the life of a manual laborer could not be identified with that of a citizen-worker, which is what an efficient vocational education program should produce. I want to emphasize vocational education, not vocational training.

There are still many who believe that vocational schools should concentrate their program of studies on the development of shop skills. Those who still hold to this thinking follow the narrow criteria of training for utilitarian occupational competency only. For these persons vocationalism is

distasteful because they have erroneously interpreted the real meaning of vocational education. They assume that the best worker is one who has been trained (not educated) to the minute for the specific task in which he will begin working to earn his living now, without thinking of what he will be tomorrow. And they wish to call this vocational education!

Vocational education involves much more than vocational training. The best worker is he who better understands the basic principles of his trade and the part this plays in the community which he will serve. He is the person who possesses a complete understanding of his work, along with a knowledge of the more elementary work techniques which prepare him to perform an occupation within his trade, today, or another, tomorrow, if there is no employment opportunity due to technological changes: he is the person who, with his vast preparation, can qualify for promotion to jobs with more responsibilities. He is the dynamic worker, the citizen-worker, who has received not only vocational training but vocational education as well. Both types of training are strictly vocational but the first has a narrow concept of design, the second has a profoundly broader concept.

Because of this, many employers reject many graduates from the old type vocational school. Employers prefer an academic high school graduate whom they can train in the occupation's specific skills. In yesterday's vocational schools only vocational training was offered. Everything related to the manual aspect of the occupation was offered, but the formation of the citizen was neglected.

As I have said on many occasions, it is a fact that many workers lose their jobs mostly because they do not know how to get along with their fellow-

workers rather than their lack of needed skills and techniques which prepare them to be producers of articles or services. That is why employers prefer the high school graduate who has been formed first as a citizen and then given specific occupational training. If there were an educational institution which could prepare both the producer and the citizen, the employer would prefer the graduate of such an institution.

That is the approach of the new vocational school, whether established in a vocational high school or in a comprehensive high school.

There is a wide-spread idea that the vocational high school has been absorbed by the academic high school; that the first is required to follow the traditional academic methods of training. This is true when the quality of the technical instruction related to each trade extends above the requisites and practical needs of the average industrial worker. It is true when the workshop instruction is accomplished through vast demonstrations of situations, many times unreal, instead of instruction based on real production as practiced in industry, thus diluting vocational education into academic education. It was in the traditional vocational school that the scant academic education being offered was diluted into vocational education, thus denying the cultural education to which every worker is entitled.

Years ago, vocational education was interpreted as meaning only those forms of education or training absolutely necessary for the accomplishment of certain specific or specialized occupational skills.

Vocational education must include any and all the technical and shop knowledge which may contribute to a satisfying occupational life. This involves

general education, added to a due emphasis in preparation to enter into the world of work with the skills needed to practive a given trade.

I want you to observe that I have said trade, not occupation. We teach trades in vocational education. Occupations are limited to the vocational training field. As I have said, we teach trades, the broad field of many closely related occupations, so that if the vocational school graduate does not get a job in an occupation of the trade he studied, or he looses his job because there are no employement opportunities in that occupation, he can still get a job in another of the many closely related occupations that make up the trade which he studied.

An affluent society requires that all its workers, at any time and place, constitute a productive and intelligent citizenry. To achieve this the individual needs as much academic as vocational education; he needs general education, an education tempered to his capability and which prepares him for a full life within his community. In other words we should have only one education, that which makes a person useful to society, not merely an intellectual as some neoclassicists as Hutchins and Adler wish. We think as Dewey did when he said: "Because knowledge has been acquired in connection with the needs on specific situations, men with little book capacity many times are more able to better use the scant knowledge they possess than men that, marked as learned, get lost in the entrails of their knowledge, because they have used memory instead of their minds to acquire it." We do not wish a verbalizing bookish education for our graduates; we wish a balanced education, an education that may include cultural subjects which may cultivate their intellect together with the knowledge and development of the skills that will make

him an useful producer to society.

For many, the answer to my question at the beginning of this analysis should be very obvious. Certainly we must prepare the individual not only to master the skills of his trade, but also to master the citizen's skills, in such a way that he can use his skills for his benefit and that of the community in which he lives. This is the best way to teach a person to earn a living. Citizen training is as much an important tool to earn a living as is career training. It is the only means, that I can think of, through which manual skills can achieve their goal.

THE GOLDEN AGE OF VOCATIONAL EDUCATION

By: A. Figueroa-Colón, Executive Director
Advisory Council on Vocational and Technical Education

Vocational Education has reached its Golden Age. Today everybody is asking for more vocational education for our youth, yet they do not know exactly what they are asking for. Most professional educators are anxious to make school experiences more practical. But in trying to accomplish this, and to fuse vocational education with liberal education principles, the first have been watered down into the second in such a way that very few of the true vocational principles are recognizable. Already there has been voiced the accusation that vocational education more and more everyday is being diluted into academic education to meet the overwhelming demand for more vocational education.

To meet these demands, relatively new approaches and techniques have developed in the last decade which are alien to the experiences of those that are academically and classically educated. This has caused much mistrust and misunderstanding as to what constitutes a real vocational and technical education program. This confusion has lead me to write this paper on general principles concerning the formulation of adequate vocational education programs.

A Good Vocational Education Program

Vocational education must be considered an integral part of general education; it is a vital part of the total education program for youth's development. While general education pertains to those activities and experiences essential to society, vocational education deals specifically with the occupational preparation of youth to meet that society's demands. However, it should not be presumed that vocational education is entirely confined to skills and technical knowledge. The nature of society

today requires individuals to possess an understanding of their social, civic and ethical responsibilities. Certainly, the worker must be able to do the job for which he was trained, but he must also know his obligations toward the community and his fellow workers. It is a well established fact that many workers lose their jobs, not because they lack the adequate technical experience, but because they fail to understand how to get along with their fellow workers. A good vocational education program should provide, not only for the development of occupational skills in the worker, but for an education that will make him a true citizen-worker.

Two Tendencies: Vocational Education and Liberal Education.

Years ago, in the pioneering years of vocational education, there was a very narrow concept of the goals of vocational education. It was interpreted as pertaining only to those forms of education or training absolutely essential for the performance of specialized occupational skills. Today, in a commonly accepted sense, vocational education offered at the secondary education level includes any avenue that leads to useful and productive employment. This involves education in general, together with a strong emphasis on the preparation of an individual for entering an occupational field which will make him, not only a skillful producer, but a knowledgeable consumer. In the pioneering days, there was a tendency to train an individual for production without giving the corresponding importance to his preparation for democratic participation. This was widely criticized and rightfully so, by the humanistic educators. As we have said before, the modern tendency is to train an individual not only to produce, but to live as well within a democratic community.

The concept that vocational education is education for production was held by many and brought about an opinion difference between vocational education and liberal education. As already stated, this concept implies that vocational education

has been designed to make an individual an efficient consumer. Nowadays these two concepts have been fused together into a more accepted concept, that vocational education has been designed to make the citizen-worker, who is an efficient producer as well as an efficient consumer, as conceived in comprehensive high school programs.

General Principles for Establishing a Good Vocational Program.

The fusion of vocational education with general education will benefit the labor force as well as all the country, provided that the following general principles for the creation of these dual purpose schools are established:

1. Schools should develop student skills in all basic processes inherent to the occupation involved.
2. Student experiences should be developed in the interpretation and use of fundamental and basic information of the occupation involved.
3. Student experiences should be developed in science, mathematics, drawing and other basic subjects related to the occupation.
4. Learning experiences should be provided for the student concerning hazards, benefits, joys, and sorrows connected with his chosen occupation.
5. Learning experiences should be provided which may enable the student to study his future occupation as it relates with management, labor, and the professions.
6. Learning experiences should be provided in general education to enable the student to take his place in life and to fulfill his citizen-worker aspirations.

7. Learning experiences should be provided in those skills in demand in the occupational world.
8. Programs and courses of study should be prepared by an efficient staff, who give strong consideration to the recommendations of Advisory Committees representative of management, labor, graduates and public interest.
9. Teachers of occupational skills should be considered "masters" of their occupation by their community.
10. Equipment, tools, materials used in the development of skills should be the same or similar, in quantity and quality, to those used by industry and commerce.
11. Courses of study content should be determined by occupational or task analysis that is continually revised to add new occupational techniques and technologies and eliminate those out of date.
12. An extensive initial training period should be offered, followed by specialization and training in industry in the last year.
13. Specific training should be offered only to those students who are interested and qualified to receive it.
14. An employment opportunity should be available for each graduate in the occupation for which he was trained.
15. Only those teaching methods that acknowledge individual differences should be used.
16. Each workshop practice should be on real tasks and projects

of immediate use and similar to or the same as the processes of industry and commerce.

17. Student admission should not be confined to those unable to attend a university. A good vocational education school should include among its clients a generation better endowed in mathematics and science, because they constitute the heart of the new technology.

If these general principles are not achieved, then we would have to admit that those voicing the rumor that "vocational education is being diluted into academic education more and more everyday" are right.

INDUSTRIAL VOCATIONAL EDUCATION AND MANUAL WORK

By: A. Figueroa-Colón, Executive Director
Advisory Council of Vocational and Technical Education

Some erroneous concepts about manual work -

Industrial education of today and tomorrow is very different to yesterday's. In the past, manual work education consisted of training in handicrafts where very little consideration was given to the time factor. Today, with the rapid changes introduced in industry, our preoccupation in this training goes much farther than just training the citizenry for manual work.

Furthermore, the citizenry believes that, on completion of his primary education, a young man is prepared to earn his living and that if he attends a secondary school he should only take courses in Humanities, which will make him a "worthy citizen". To-day many high school graduates, because of their high school preparation, consider it an insult if asked to do work which may soil their hands. This attitude toward manual work must change completely if we are to achieve some progress in the economy of the country.

In the past, the arts and trades schools have been considered as the dumping ground of the educational system where the students with deficient academic records in primary and pre-vocational schools are sent. In fact, this attitude does not recognize the evolution of modern industrial processes, where the labor force is required everyday to have more and more scientific knowledge and mental awareness. Knowledge of the technical aspects of our industry is needed as much as the manual skills in the industry of our modern economy. Though all workers are not required to possess the same technological knowledge, those who possess it to a greater extent have better opportunities of promotion.

The Dignity of Manual Work.

If we wish to accomplish greater goals in our economy, we should eliminate the poor attitude existing toward manual work not only among our citizenry but also among those in other countries of Hispanic origin. We should eliminate the erroneous concept that to do manual work is a dishonor. This is a challenge to our counsellors. We must restore in our culture a just appraisal of the dignity of manual work. Every teacher has an obligation to change this undesirable attitude toward all manual effort.

Due respect for all tasks that are useful to society, be it mental or manual, is established in all the constitutions of countries with advanced ideas.

The preamble of the United Nations Charter, formulated in San Francisco in 1948, reafirms the dignity and value of the human person, and equality of rights for men and women disregarding the occupational tasks to which they apply themselves.

Some cases worthy of imitation -

An attitude of recognition of the value and dignity of the manual laborer and of the work he produces can be developed through many activities of the school and counsellors. We must eliminate the stigma to despise that which is attributed to manual work. Counsellors can accomplish this by recognizing the contribution given to society by workers that have risen from humble positions to leadership in their enterprises where in many instances they began working as janitors or messengers. We can name cases like that of William I. Knudsen who, when he was General Motor's chairman, used to advise young people to do some manual work. He said: "If I were 21 years old I would be a mechanic. I would try to work in a gas station, or as an electrician or a plumber's apprentice, or as a clerk behind a counter, or as messenger. I would try to do something with my hands".

Besides Knudsen we should name a Keller of Chrysler Motors, a Grace of Bethlehem Steel, a Geist of Allis Chalmers. Both Henry Ford and Kettering, the inventor of the self-starter began as mechanics. During his youth, John D. Rockefeller was a humble clerk earning four dollars a week; and Bernard Baruch, the great millionaire advisor of presidents, began work as a simple clerk. The list of industrial directors that have stated their satisfaction in having spent part of their life in an industrial plant, who rolled up their sleeves and soiled their hands, is quite extensive.

"SCHOOL INVOLVEMENT IN THE COMMUNITY"

By: Antonio Figueroa-Colón, Executive Director
Advisory Council on Vocational and Technical Education

"Industry and business executives -- part and parcel of the power structure of our nation and our communities -- have demonstrated their commitment to America's system of public education by voluntarily offering their assistance to school officials to improve, expand and enrich our public school programs. If businessmen were school superintendents, they would fully utilize these volunteered services of business and industry. Can educators who are school superintendents, do less ?" - - - - - - - - - - - - Samuel M. Burt, author of "Industry and Vocational-Technical Education".

The above statement, made recently by Mr. Burt, is a reflection of community attitudes today, not only in continental America but also in Puerto Rico. A report of a survey made recently by the Education Commitee of the Puerto Rico Manufacturers' Association of our vocational schools attests to this. In that report the association enumerated a series of activities in which they would like to participate so as to improve the vocational schools of Puerto Rico.

"1. Initiate as soon as possible a program of close colaboration with the Secretary of Education and Vocational Schools.

2. Actively participate in all advisory councils at central and local levels.

3. Offer without cost supervisory personnel to help train the instructors of vocational schools.

4. Participate vigorously in a program by which the instructors are trained in the factories so that they will not only familiarize themselves with the modern technology but with work conditions as well.

5. Offer, where possible, their facilities for training students.

6. Donate equipment and instructional material."

Can you mention of any other community group which can "voluntarily offer its assistance to school officials to improve, expand and enrich a public school program? Those six recommended activities are the backbone of a strong, functioning vocational education program. I repeat Mr. Burt's statement: "If businessmen were school superintendents, they would fully utilize these volunteered services of business and industry." And finally I would repeat Mr. Burt's alluring question: "Can educators who are school superintendents do less?"

As you see our experience has indicated that business and industry are very willing to support the expansion and improvement of vocational education, in quantity but also in quality. Business and industry realize that their future rests with the education of our youth and that the jobs that they have to offer to-day require new skills and up-to-date technical knowledge which can be provided at less cost by the vocational schools. Business and industry have proven to be an effective force in the building of vocational education and they should be enlisted to support both the reorganization of the educational system to provide for effective educational and vocational training for all youth and to provide for the needed skills for the improvement of our economy.

The most significant involvement of the vocational school in the community is achieved by enrolling business and industry as co-partners in the education and training of to-day's and tomorrow's youth. As Mr. Walter F. Carey, U.S. Chamber of Commerce, says in his book "Useful Education for Tomorrow": "Perhaps the most important thing we have learned is that educators can't be expected to do the job alone. They must have the help and cooperation of the business community. What kind of help? First of all, the schools must know the kind of jobs to train their students for; what skills are needed in business and local industry, now and in the predictable future . . . . . If I were allowed to make just one recommendation for

the strengthening of our vocational training system, it would be that the advisory committees be expanded to every community in the nation....."

Educational organizations and institutions endorse this involvement. The U.S. Office of Education in its booklet "Effective Use of Advisory Committees" expressed that "educators need assistance in determining the many significant factors that affect training programs. They must have direct lines of communication with industry, which they seek to serve". And the American Vocational Association in its booklet "Vocational Advisory Committees" states that "vocational education, more than any other bype of education, needs close cooperation with the community. It trains workers for specific jobs and productive lives. It needs the periodic help and criticism of the real workaday world to be sure that its training courses are up-to-date and that its preparation for a lifework is useful". The Education Council of the Graphic Arts Industry in its booklet "A Manual for Use by Local Graphic Arts Industry-Education Advisory Committees" points out that "management's stake in developing an educational system for our industry is rooted in its need for a continuing supply of well trained manpower . . . . . Therefore, printing industry management can assure the meeting of its manpower and consumer education needs by initially supporting and participating in the educational program of the graphic arts industry in the schools".

Several educators of renown fame have long expressed support of the proposition that only through involvement and participation by industry in vocational education programs can the schools meet their obligations to industry, the community, the general public, and the students enrolled in these programs. Among them we have the great vocational education philosopher, Dr. Franklin J. Keller, ex-principal of the Metropolitan Vocational High School of New York and author of many books on vocational-technical education, who in his book "The Comprehensive

High School" pointed out that "a vocational school worthy of any reputation could no more be operated without such specialized help (the help of representatives of industry and labor) than a straight academic school could operate effectively without the counseling and upgrading demands of the colleges".

From observations I have made during my study missions in Central and South America, Europe, Africa and the United States I have come to the conclusion that the successful school is the one geared to the needs of the people of the area it serves. Good vocational education exists only where schools know the needs of industry and business and the needs of the citizens of the community and take active part in translating known needs into an action program.

The active participation in school affairs of citizens who understand the business community will do much to keep local school curricula in line with current needs. When this participation is lacking an academic unbalance may result in the preparation of a disproportionate number of youth and adults for occupational areas in which their chances of success are small.

Let me mention some instances school people have learned by some happy accident the value of utilizing knowledge of interested citizens for the benefit of the schools, the value of school involvement in the community.

Recently members of the Puerto Rico Advisory Council on Vocational and Technical Education visited a vocational school and were surprised not to find in the Progress Chart of the Plumbing and Pipe-fitting Shop any jobs dealing with the use of plastic or cooper tubing, nor any evidence that the students had used these modern materials in plumbing installations. The director of the school did not know of the situation. On the recommendation of the Advisory Council, steps were taken to call a meeting of the Plumbing Craft Committee to revise the course of study in Plumbing and add the new type jobs needed and delete the obsolete ones.

The Education Committee of the Puerto Rico Manufacturers' Association, mentioned at the beginning of this talk, visited another vocational school and reported that "much to our surprise they did not have a single book or literature of any kind for the students". The report continues: "The equipment is obsolete, some old refrigerators and two or three open type commercial compressors, but no industrial equipment". Action was taken at the Central Office to make a study of the books needed not only in this but other shops and to follow the recommendations of the Manufacturers' Association to acquire new equipment and discard that which was not proper for training.

This situation contrasts sharply with one I observed in one of the vocational institutes in the most wealthy South American republic . . I visited an electrical appliances school shop and the instructor very proudly showed me twenty new electric refrigerators, twenty new electric fans, twenty new radio sets, etc., all lined up against the walls of the shop. I could not resist this comment: "Is this an electric appliances retail store? This situation to me is just as bad as to have obsolete equipment for teaching purposes.

I quote the following from a vocational school visit report sent by the President of the Union Carbide Caribe Inc. (June 10, 1970):

1. "Occupational needs at the skilled and technical levels (sub-professional) for the petrochemical industry are not too well understood by various governmental and educational agencies." (Action was taken to initiate a publicity campaign on the needs of technical personnel for this industry).

2. "Good vocational schools teaching current practices in machine repair, electricity, instrumentation, etc., could produce a needed product. There is a vast knowledge gap between what is taught at the vocational schools and what is going on in modern industry." (A meeting of the vocational school director, the vocational industrial coordinator and the shop supervisor of the referenced industry was held to work with the respective craft committees so as to determine which were the current practices not included in the courses of study and revise them,

thus eliminate the gap of knowledge between what was being taught at the vocational school and the proper techniques used by industry.)

3. "We have found that the cooperative effort in training between UCCI (Union Carbide Caribe Incorporated) and various governmental agencies with UCCI designing the curriculum and doing lots of the training is producing a usable employee." (Taking this cooperative effort as a model the Trade and Industrial Education Section has been working on a plan to make these services available to other companies.)

4. "Its equipment is less than adequate and insufficient: Sixty percent of the equipment is out of order, not to say obsolete." (This is a statement very much repeated in all reports. Steps are being taken by the Central Office to replace the obsolete machinery and repair that equipment which needs reconditioning.)

5. "Some of the courses offered are tailored to fit the needs of industry. Others, like electricity, plumbing, carpentry, masonry, etc. are to be revised and fitted to the needs of industry now." (Emphasis should be given in the vocational school directors, industrial coordinators and instructors meetings of the need for tailoring the courses to fit the needs of industry if the vocational education program is to survive.)

6. "The techniques, curriculum, materials, etc., used in these courses are twenty years or more behind industry." (The Trade and Industrial Education Section is planning to send more teachers to take "on-the-job" training so as to up-to-date their skills during the summer and the first semester of the coming school year.)

7. "The school needs more coordination, guidance and technical orientation from industry." (The vocational school directors, through the industrial coordinators, are establishing a sound rapport with industry through organized visits to industrial shops, calling industrial representatives to talk to the teachers and students, inviting school graduates to explain their employment experiences to vocational students, acquisition of industrial equipment from industrial plants on donation on a loan basis, etc.)

8. "The equipment is modern, in beautiful condition, and the girls were turning out beautiful work. The problem is that the girls that are coming out of the course would never get a job or would never hold a job in industrial sweing . . . The extremely repetitive nature of production sewing is totally foreign to the existing course". (This has been a problem for many years. To

eliminate it, industrial sewing shops are being designed to follow the organizational pattern of the garment industry, girls are being taught on a garment piece basis and not on a complete garment project basis so that the firls may become proficient in the repetitive nature of production, training is given first in low speed production, then gradually on moderate speed production followed by an intensive industrial speed production on an in-plant training basis.)

9. "There is a general feeling that the students do not work in the trades for which they are trained." (We have confirmed that feeling through the follow-up studies conducted in several trades where employment of students has been as low as below fifty percent. The State Advisory Council has recommended studies to determine training needs in those occupations so as not to train more workers than needed.)

10. "Students probably require considerable additional training on whatever jobs they obtain." (If the industrial coordinator gets information from industry as to the specific jobs of a given occupation the "additional job training" could be eliminated. If the school officials get the job specifications given in the manpower study made by the Social Sciences Research Center of the University of Puerto Rico then training could be offered in the required job processes of a given occupation and this would eliminate the necessity for additional job training.)

11. "The faculty needs a thorough understanding of modern industrial techniques - - Some courses that are being offered do not serve the interests of industry and on occasions, even worst, neither of the students." (Again we have to cite the much repeated axiom: "Training should be geared to the needs of industry and the needs of each particular student should be geared to needs of each particular occupation. It is a case of matching students interests with occupational opportunities for employment." (This is the big task of the vocational counselor.)

Not only the ideas presented by manufacturers' associations, labor unions, business leaders associations and other civic groups which are involved in industry-school cooperation should be used by the schools in the improvement of their vocational programs; the findings of studies carried out by other organizations like the Social Sciences Research Center of the University of Puerto Rico and the findings of evaluations made by cooperative agencies like the State Advisory Council should be

Let us discuss how the school could get involved in the community by using the findings of the Manpower Study of the University of Puerto Rico.

The Puerto Rico Manufacturers' Association prepared a report on this study and this is what they say as to the employer's opinions of the vocational training programs:

> "Employers' criticism of school training programs were stated quite bluntly by about one-fourth of the employers participating in the survey more or less as follows: "there is need of more realistic programs in consonance with up-to-date technology as well as better equiping students with basic skills and proper work habits and attitudes".

A distinction, however, must be made between the vocational high school and the post-secondary technological institute. Employers, on the whole, expressed satisfaction with the graduates of post-secondary technological institutes, indicating they are well prepared and, generally, require little additional training to perform efficiently on the job. The main criticism of technological institutes pointed out is the number of courses offered is rather limited and that the training output is very much insufficient to meet needs.

What are the limitations of the regular and vocational high school training offerings, in the opinion of the employers? Among the most frequently mentioned are:

1. Graduates in many cases, are unfamiliar with the technology generally used in industry, as the equipment and other facilities used in the classrooms and shops are not up-to-date with the industrial technology in use;

2. Basic communications, science, and mathematics skills of graduates are rather deficient;

3. Poor work habits and attitudes in graduates; and

4. Lack of a feeling of assurance or confidence in graduates because of a poor foundation of basic skills, lack of experience, and unfamiliarity with the industrial work setting.

However, and in spite of these criticisms to existing programs, employers were

not unduly negative and pessimistic about vocational high school courses and their graduates. Many admitted that "once graduates familiarize with the industrial work setting and get some experience they are more efficient workers than the ones without formal training. Thus, many employers advocated for a revision of curricula to up-to-date it in consonance with the requirements of modern technology and for the establishment of closer cooperation between schools and industry as one effective way of dealing with the insufficiency and obsolescence of schools machinery and equiment facilities. The frequency with which employers pointed to the need of combining training in school with practical experience in a real modern work setting, and the success with which the distributive occupations program has dealt with this problem, point to an untapped potential for the vocational-technical education programs. However, if this potential is to be developed, existing laws and regulations bearing on the problem might have to be reviewed and understanding of the areas of responsibility which schools and industry must assume improved."

Let us discuss now the findings of the evaluation made by our State Advisory Council in Vocational and Technical Education and the impact if has had on school involvement in the community and, as a matter of course, in the improvement of vocational-technical education in Puerto Rico.

The most important function of the Council is the evaluation of the vocational and technical education programs. In order to obtain an objective approach to the evaluation, as the Council perceived it, the services of an outside contractor were solicited.

The findings of this study correlate in many respects with the Report of the Governor's Advisory Council for the Development of Government Programs. On page 4, this report establishes that "it is clear that the vocational program in Puerto Rico is inadequate either to satisfy the demand of industry for skilled manpower or to meet the demands of students for this type of education . . . . . The fundamental weakness of vocational education both in the United States and in Puerto Rico, is a tendency toward obsolescence. This tendency derives from the nature of the vocational program as an institution. The curriculum of the school is built into its equipment, which is exceedingly expensive. Schools, therefore, find it difficult to replace it, and it continues to serve as the basis for instruction long

> after it has become obsolete in the industries where the school graduates seek employment . . . . The obsolescence in equipment is reinforced by obsolescence of the teaching staff. Craftsmen entering the vocational school system lose contact with private industry, where new developments are occuring, and are protected by the job tenure offered in the schools from pressure to update their skills. The school system, moreover, has difficulty competing for instructors in skills most in demand and is forced to teach instead skills which, if not actually obsolete, are certainly, not those most in demand."

However, the Council was generally impressed with the total effort to date. Employers visited by the evaluation team were not unduly negative and pessimistic about vocational courses offered. Many admitted that "once graduates familiarize with the industrial work setting and get some experience they are more efficient workers than the ones without formal training". Yet, this observation was tempered with the realization that there is still a long way to go before filling the objectives to be served by vocational education.

The Council is primarily concerned with the large number of persons graduating from or leaving the secondary schools with neither the academic qualifications to continue their education nor the occupational skills needed to secure and hold adequate employment. The Council feels that the Commonwealth has the responsibility and the expertise to provide both the academic and the vocational education necessary to allow the choice of college, a job, or both to most of its youth, if certain challenges are recognized and met. One recognition should be that the vocational schools should get involved more and more in the community, especially with business and industry they are to serve. We believe that potential resources emerging from the over rapid economy are available and should be utilized for the expansion of vocational education.

If we want that the end product of our vocational education system be a worker competent in whatever task he chooses, aware of his social and civic responsibilities, and confident of his ability to face the future we should stress school involvement in the

Involvement is a two-way proposition, it is a give and take proposition. We have seen the various ways by which the community, represented by its leaders in business and industry have been evaluating our vocational programs and giving recommendations for their improvement. But this is the reaction of one side to the solution of the urgent problem we have of restructuring our educational system to meet the needs of the community it is to serve. We need the active participation of the other side to accept these recommendations and make them function, we need the school people to accept the challenge and put their brains to work in the benefit of those they are serving. Yet, many industrial, business and labor leaders claim that educators have neither provided the proper climate nor support for industry and business participation.

School involvement in the community is measured by the extent educators request and use the advice and cooperation of industrial and businessmen in the solution of their problems, be these physical or intellectual, psychological or sociological. The community can help the schools in all these fields. How can it cooperate with the school?

Very often educators reject the advice and cooperation of outsiders because these try to become involved in the administration of the program. In Puerto Rico, in the past, many advisory committees have been organized in our vocational schools. Some lasted a short time, many vanished after their initial meeting. Some made a permanent contribution to the advancement of vocational and technical education but others failed in doing so by attempting to intervene in running the programs, which was resented by the administrators. Formation of advisory committees is not intended to usurp the prerogatives of the administrators, but occasionally such fears are articulated. Administrators must be assured that, while the danger is present and some

advisory committees have tried to move in that direction, the barriers will be firmly placed. A recital of proposed guidelines should convince them that the administrative and legislative boundaries would not be crossed.

In some other occasions, the advisory committees do not represent a cross-section of the community. They are composed mostly of educators. This is the reverse of the situation I just described. "The advisory committee should be composed of community leaders with special concern for, and knowledge of the area's occupational life. These are in excellent positions to provide advice, but their value extends beyond this. It is necessary that educators be receptive to, and eager for, assistance that might take as many directions as combined imaginations can see - - and to make this known" as expressed by Lowell A. Burkett in his booklet about "The Advisory Committee and Vocational Education".

The Puerto Rico Advisory Council had the priviledge of having Mr. Samuel Burt address the group during one of its monthly meetings. Following are his remarks on the composition of the Council: "I went over the list of members of this Council, the jobs you hold, and I must in all truth say to you that this Council does not represent the total community of the Commonwealth. You are almost completely lacking in the most important facets of this community: labor, industry and commerce. Vocational-Technical Education can not improve, can not expand, can not meet the needs of the community unless there is a very high representation, a very high involvement of business, industrial and labor segments of the community".

But let me show you the reverse side of the medal. As Executive Director of the Advisory Council, I was invited by the Director of the Vocational Agriculture to attend a meeting called by the community of Palmarejo, Lajas. The purpose of the meeting was to initiate a farm mechanization program for the region. I was delighted to observe how an entire community was involved in the expansion and improvement of the vocational agriculture program by creating innovative patterns in this rural program. At this meeting, the educators were back stage; the principal actors were local farmers, farm machinery distributors, cooperating government agricultural officials, the mayor, the municipal councilmen, legislators, businessmen, etc. That group prepared the proposals to be sent to the Vocational Education Central Office, the budget,

made a study of needs, recommended the equipment to be bought, helped in the design of plant facilities, helped in the preparation of the curriculum, etc. A few months ago the Mechanization Center was inaugurated. It is blooming rapidly, getting the complete support of the community and offering the much needed farm mechanics to make it prosper. Here is a fitting example to prove my point that the Advisory Council, with representation from industry, commerce and labor can make a great contribution to the community and to the vocational education system.

Let us see how the principles of public school involvement in the community apply to the private vocational schools like the barber schools sponsored by the National Association of Private Barber Schools.

Flexible accomodation to the needs and demands of students and their prospective employers is the outstanding operative feature of private vocational schools, of which the private barber schools operating in Puerto Rico are a good example. Indeed, like any private business firm, the survival and growth of the schools have been possible only because the schools have successfully satisfied their "consumers". I wonder if we could make that same statement as to our public vocational schools. The fact is that the objective of private barber school owners and administrators is to prepare their students for employment. This objective is as defined as the schools' goal of making profits, which are, of course, necessary to stay "in business". The profit motive is tempered by the need to provide suitable training; hence the quest for profits serves to stimulate continuous changes in operation and instruction. I would like that this quest for profits could be translated to the public vocational schools in the ideal quest for recognition for a job well done to supply the much needed trained human resources. The administrators of private vocational schools are convinced that their schools cannot survive unless they

continue to revamp their programs. Public vocational school administrators should think likewise. Many private schools have instituted innovations which by now have become standard procedure in most public schools. Some of the practices, like operating schools day and night on a year-round basis, are unique to the proprietary schools. Why can't we operate the public vocational schools on the same basis? Other practices are being considered and even embraced as worthwhile "innovations" by public schools. A previous record for adapting to student and employer needs justifies the expectation of future innovations in the private schools.

State departments of education should encourage local school systems to undertake joint ventures with private vocational schools and they would profit most from them. The private vocational schools in addition to providing programs within certain broad occupational fields that are absent from public instruction, the private schools institute courses that seem to be unfeasible for the public school systems. Many private schools like the private barber schools, for example, have small student enrollments, moulded to the labor market. Inasmuch as they are completely involved with the community they are able to organize programs related to its needs. Sometimes they offer courses in occupations whose employment opportunities extend beyond a school's geographic location; the public schools are less likely to offer such courses.

Although the programs of the two types of institutions are presumably similar, differences still exist. For example, the private barber school instructors invariably teach only those mathematical and scientific principles which are directly related to and necessary for mastery of a specific job; the public school curriculum is more likely to include broader treatment of the subject. It so happens because private barber schools are market oriented; school officials are in constant contact with

employers and professional associations and thus are continually involved with the community. It is my most ardent hope that the public vocational would do [illegible]se so that it can provide the product and the services so much needed by the community.

"INDUSTRY-SCHOOL COOPERATION IN VOCATIONAL-TECHNICAL EDUCATION"

Paper read by: Mr. Hermand E. Monserrate, Member, Advisory Council on Vocational and Technical Education, at the American Vocational Association Convention, Puerto Rico Chapter, held on March 19, 1971.

"Prosperity, economic stability and the productive capacity of a nation are limited by a shortage of workers with sufficient skills to perform the demanding production, service and supervisory tasks necessary in an increasingly technological society."

It is the responsibility of our educational system to fully develop our human resources if we want the social and economic growth of Puerto Rico to continue. It is imperative to develop and maintain qualified occupational personnel, skilled as well as technical, to meet industry's urgent needs.

The development of an effective vocational and technical education that adequately prepares students to enter the occupational field greatly depends on the close relations that exist between school and industry. Though it is the responsibility of educational directors to direct matters related to the public school, it is industry which pays the greater part of the cost that makes possible the functioning of our educational system, and that is why cooperation and good relations between school and industry is of utmost importance. Such cooperation will contribute to the realization of an improved vocational and technical education program, be it institutional or of a cooperative nature.

The interdependency of industry and school has been acknowledged since the year 1917, when the Smith Hughes law was approved. The desirability of interesting and "involving" industry in vocational and technical programs has always been accepted by all those persons related to these programs, but the necessary dynamic and conscious leadership has not always been exerted to canalize and use the services, time, personnel and money that industry can offer.

School as well as industry both agree that our educational system can fully accomplish the responsibilities it has to the students, management, potential employers and the public only through a combined effort in every phase and level of vocational and technical education.

Are vocational and technical schools in Puerto Rico properly articulated with industry?

There is no doubt that some vocational as well as technical programs have been able to interest industry in this type of instruction, but as a general rule school directors have had neither the time nor the qualified personnel to maintain relations with industry and to induce its full participation in the organization and operation of these occupational programs.

The summary of answers given by the interviewed employers during the evaluation of the Vocational and Technical Education Program of Puerto Rico, conducted by "Education Systems Resources Corp." from Arlington, Virginia, on September 1970: "13 out of 15 cases show that there is no coordination between the vocational programs and industry. In one case, of the same evaluation, (page 53) management offered two scholarships for professional improvement to two vocational instructors of electricity and these were not considered by the school. In the recommendations made in this evaluation (page 106) attention is called to the fact that many important industries in Puerto Rico, if asked, are willing to fully cooperate with the vocational and technical education program of Puerto Rico."

On October 1st, 1970 the Education Committee of the Puerto Rico Manufacturer's Association made a study of the vocational and technical schools of the island to determine the deficiencies, if any, and recommend means of improvement. The results of this study show that there is very limited cooperation between school and industry. In one of the schools it was found that out of the thirteen courses

being taught only three offered training directly related to the jobs performed in industry (page 4). In many cases the school directors were aware of the lack of continuity between the vocational studies and the work experiences required by industry. In another of the schools it was found that the techniques, courses of studies and materials used in many courses are 20 years behind and that 60% of the equipment is "obsolete" (page 1).

It is demonstrated in a questionnaire sent to the members of the Manufacturers' Association in May, 1970, and which is a part of the same study, that, out of the 71 industrialists who answered, only one belonged to a Board or Advisory Committee. This shows the little representation industry has in the occupational education programs in Puerto Rico. Another deficiency found in our system by the industrialists is the lack of contact with the modern equipment used in industry (page 5) B (1).

Among the general observations of this study mention is made of the need for courses designed to prepare skilled and technical personnel for the petrochemical industries. Representatives of these industries inform that although these enterprises have existed for 10 or more years in Puerto Rico, especially in the southern zone, none of the vocational schools have established courses, even on a temporary basis, to fill employment opportunities in these industries.

The industrialists further inform that training in the areas needed by these industries has been possible with federal aid under the "Jobs 70" program using equipment and material facilities of these petrochemical industries, and should this federal program be discontinued these industries would lose their source of specialized personnel.

In a study made by the "Social Research Center" of the University of Puerto Rico in March, 1970 entitled "Present and Future Training Needs in Technical and Clerical Personnel in Puerto Rico" many of the employers interviewed expressed the following: "There is a need of more realistic programs in accord with modern

technology as well as the need to properly equip the students with the basic skills and adequate attitudes and work habits". According to this study, many industrialists ask for a complete revision of the courses of study to update them according to the requirements of modern technology. They also ask for a closer cooperation between school and industry as one of the more effective means to deal with the insufficiency and "obsolescence" of the machinery and the equipment facilities of the vocational schools.

On my quoting these studies there is no intention on my part to criticize the Vocational and Technical Education Program of Puerto Rico but I wish to remind the directors, supervisors, and teachers of these programs of the importance and the urgent need that exists to properly coordinate vocational and technical schools with the needs of industry if we do not want this type of instruction to change hands, as some wish and as we are beginning to see it in some cases. I know, because I have always followed closely the operation of the Vocational and Technical Education Program of Puerto Rico, of the efforts and dedication of the directors and teachers to improve and expand these programs. I am also aware of the difficulties they encounter, principally lack of funds, to improve and obtain adequate equipment and the material needed for the kind of training required by industry; and I also understand the difficulties they have encountered to establish a high quality technical-industrial education center that can properly train prospective instructors and offer in-service training.

More than 25 years ago, I was State Supervisor of the vocational schools of the Trades and Industry program and I still have pleasant recollections of the time when everyone cooperated in every phase of the vocational programs, shared the same interests and the same satisfaction in working wholeheartedly to organize and operate an efficient and deeply rooted vocational program.

Some of my colleagues of those days are still in higher positions or in jobs that deal with these programs in one way or another and that, together with new faces, continue working with the same interest, dedication and earnest desire to improve and strengthen the Vocational and Tecnical Education Program of Puerto Rico.

This is the interest I have always had and which moves me to address you.

What can we do to face this important problem of the lack of cooperation between school and industry?

I sincerely believe that the most important factor in a vocational and technical education program is an adequately trained teacher or instructor with a recent and vast industrial experience, who is technically competent and, at the same time, enthusiastic and dedicated to his profession. When industry recognizes the ability of a shop teacher or of a technician, there is no doubt that industry will be interested in his students; but if the school does not get involved with industry then industry will get involved with the school at least by proselytising its personnel.

When I speak of the teacher or instructor I do not wish to refer only to his professional preparation and his industrial experience but also to his personal qualities, professional integrity and his genuine desire to develop good working habits in his students. Industry today requires more than ever of its employees, besides knowledge and skills, good working habits. There is no doubt that in order to recruit and retain such a qualified staff salaries should be established on a competitive basis with those paid by private industry and other government agencies.

To facilitate industry's interest in the occupational programs, educators, industrialists and labor representatives have developed different methods or "instrumentalities" including legislative measures. There are among these, the advisory committees; craft committees; coordinators, industrial as well as

cooperative, Joint Apprenticeship and Training Committees of the Department of Labor, local apprenticeship committees in industrial enterprises, education committees from the Manufacturers' Association and the Chamber of Commerce and last, but not least, the Advisory Council of Vocational and Technical Education of the Commonwealth of Puerto Rico created on June 28, 1928, by the federal law of Vocational Education Amendments of 1968. This Council, whose primary responsibility is the evaluation of the vocational and technical education programs, also has to see that there is a proper coordination between the occupational programs and industry.

Even though the usual practice to attain the cooperation between industry and school is through the methods already mentioned, many vocational directors, the teachers and even the students can help in getting this cooperation in an informal way. The occupational program directors should evaluate these ideas, methods and techniques and utilize those which will most effectively achieve industry participation in the vocational and technical programs.

In all the recent studies made in Puerto Rico it is demonstrated that many industrialists are most willing to cooperate with vocational and technical education, not only offering their plant facilities and technical personnel but also donating equipment and educational material. If this is so, why don't the educational directors move their forces so as to achieve this much needed cooperation to improve the occupational program?

A basic concern in Vocational and Technical Education in Puerto Rico, which we must not lose sight of, is that if these occupational programs are to subsist or retain their identity they must function in a very close cooperation with industry. Only in this way, will the young and adults alike be provided with an effective education which includes occupational experiences, skilled as well as technical, that will prepare them to be conscious and responsible citizens with productive efficiency. Only thus will the Vocational and Technical Education Program have the complete endorsement of the people of Puerto Rico.

ACCOMPLISHMENTS OF THE COMMONWEALTH OF PUERTO RICO ADVISORY COUNCIL ON VOCATIONAL AND TECHNICAL EDUCATION

A. Figueroa-Colón, Executive Director

The goal of the Commonwealth Advisory Council is to help insure, by advising the Commonwealth Board for Vocational and Technical Education in the preparation of their programs and by evaluating, the effectiveness of vocational education. To accomplish this the Council held various meetings to discuss the preparation of the State Plans, which were approved by the Federal Commissioner of Education, and used the services of a consultant firm to evaluate the vocational programs. The report submitted by this firm was used as a basis for the Annual Evaluation Report which was sent to the Federal Commissioner of Education and to the National Advisory Council.

The Council made a scrutinous follow-up to the recommendations made in the evaluation report to see that these were considered in the development of the vocational education program of the Commonwealth.

Our most important accomplishment during this year is the gearing of the school program to the needs of the students, industry and commerce as evidenced by the observance of the recommendations made in our evaluation report. (1) We have been able to set the spark for developing and implementing a functional Education Information System; (2) the Department of Education is using a consultant firm to design and implement a system for acquiring accurate cost-effectiveness data; (3) the Vocational Education Division is increasing the number of teachers to take on-the-job training; (4) some major industries will "sponsor" the Arecibo Vocational High School in the sense of assuming a participative role in curriculum development; (5) more coordination is being established between academic and vocational courses; (6) a set aside of time for students in their senior year to actual observation and participation in industrial establishments; (7) an increase in the number of positions of Industrial Coordinators so as to provide more comprehensive and orderly coverage for cooperative work with adequate supervision; (8) the establishment of a TV program in Auto Air Conditioning with possibilities for expansion in other occupational areas; (9) the use of more "superior" academic school staff for the academic instruction of secondary vocational education students; (1) a study to re-examine the major occupational clusters from the point of view of establishing more appropriate balances and lengths of time between academic and occupational education.

The administrators of the Vocational Education Program have informed the Council that they are working hard so as to implement a system to expedite the process of equipment acquisition; to revitalize the functioning of advisory committees which may help in the selection of equipment and thus eliminate

the obsolete equipment prevailing in many school shops; to develop a capability for conversion of currently available manpower data; to design and implement a public information program to disseminate information about the availability of educational opportunities in human resources development; to establish a meaningful follow-up system of graduates so as to determine the results of the investment in the vocational education system; to make all "efforts to divorce the vocational education pay scale from the general education instructors" and set it on the basis of the law of supply and demand; and to increase the utilization of teachers' aides and team teaching so as to relieve the occupationally trained instructor from much of the clerical and administrative functions and thus provide him with sufficient time to visit and contact industry and commerce.

With the collaboration of the Administration of the Vocational-Technical Area we have been able to achieve the objectives of the 1968 Amendments and to better meet the community's needs for vocational and technical education by numerically expanding the existing program offerings so as to provide opportunity for more students and greater satisfaction of the quantitative needs of the Commonwealth, and by introducing, in addition to the above, new program content and curriculum offerings, related as closely and currently as possible to new and changing industrial and technological requirements.

From information gathered from visits made by an observation team composed of representatives from industry, the academic and the vocational divisions of the Department of Education and the Commonwealth Advisory Council we have observed that as a result of our recommendations a marked attitude has been developed on the part of the academic personnel as to the true image of vocational education.

The state law creating the Advisory Council was drafted in 1969, in a hurry, so as to be able to receive the federal funds appropriated to each state for its operation. No attention was given, at that time, to the independence to which it is entitled under the Amendments Law of 1968, so we have drafted some amendments to the original law giving the Council such independence and the authority to hire its technical personnel and consultant service. The bill is now under consideration of the Commonwealth Legislature, with many possibilities of enactment.

I repeat over again that our most important achievement, this year, is bringing about the coordination of the vocational system with industry to such an extent that it is offering its decided cooperation to secure a training system adaptable to the needs of the Commonwealth economy.

VT 013 989
WORKING AGE PARTICIPANTS; PERSONS NOT IN THE LABOR FORCE AND THEIR EMPLOYMENT PROBLEMS. POVERTY AREA PROFILES.

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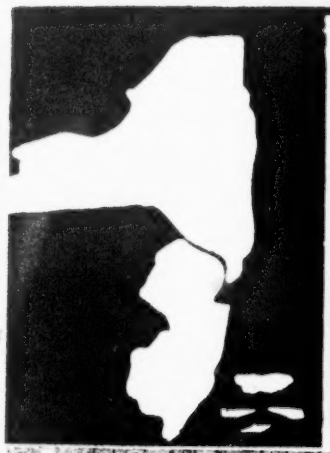
ABSTRACT - BASED ON DATA FROM THE URBAN EMPLOYMENT SURVEY IN NEW YORK CITY, THIS REPORT FOCUSES ON REASONS FOR NONPARTICIPATION IN THE LABOR FORCE AND BARRIERS TO LABOR MARKET ENTRY. AREAS COVERED IN THE SURVEY ARE THE POVERTY AREAS OF CENTRAL AND EAST HARLEM, THE SOUTH BRONX, AND THE BEDFORD-STUYVESANT SECTION OF BROOKLYN. THE MAJOR BARRIERS TO LABOR FORCE ENTRY WERE FAMILY RESPONSIBILITIES, SCHOOL ATTENDANCE, AND ILL HEALTH OR DISABILITY. (BH)

VT 013 989



REGIONAL REPORTS

NUMBER 22
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POVERTY AREA PROFILES

Working Age Nonparticipants

Persons not in the labor force and their employment problems

Bedford – Stuyvesant

Central Harlem

East Harlem

South Bronx

1510

U.S. DEPARTMENT OF LABOR
BUREAU OF LABOR STATISTICS
MIDDLE ATLANTIC REGIONAL OFFICE
341 NINTH AVENUE
NEW YORK, NEW YORK 10001

This report is the twenty-second in a series of Regional Reports presenting and analyzing data on various aspects of labor and the economy in the Middle Atlantic Region. Earlier reports in this series are:

No. 1 Profile 90: An analysis of Pockets of High Unemployment in New York City. August 1963*

No. 2 Wages 1963: Report on a Survey of Wages, Salaries, and Fringe Benefits for the Standard Metropolitan Statistical Area of New York, New York. October 1963*

No. 3 Jobs in the New York-Northeastern New Jersey Area. December 1964*

No. 4 Employment Statistics for the New York-Northeastern New Jersey Metropolitan Area, 1949-64. July 1965*

No. 5 Seasonally Adjusted Employment Statistics for the New York-Northeastern New Jersey Metropolitan Area, 1949-64. August 1965*

No. 6 1966 Major Collective Bargaining in the Middle Atlantic States. February 1966*

No. 7 Post World War II Price Trends in Rent and Housing in the New York Metropolitan Area. June 1967*

No. 8 Employment Statistics, 1958-66: A Compilation of Employment Statistics for the Middle Atlantic Region. June 1968*

No. 9 Labor Force Experience of the Puerto Rican Worker. June 1968.

No. 10 Changing Patterns of Employment,Income, and Living Standards in New York City. June 1968*

No. 11 Professional, Administrative, and Technical Pay in New York, 1968. March 1969*

No. 12 Charting the New York City Economy: A Graphic Summary of Recent Economic Trends. May 1969*

No. 13 Urban Studies Series: Poverty Area Profiles. The Working Age Population - Initial Findings. October 1969*

No. 14 Urban Studies Series: Poverty Area Profiles. Characteristics of the Unemployed. May 1970

No. 15 Professional, Administrative, and Technical Pay in New York, 1969. June 1970*

No. 16 Wages in the Virgin Islands, 1970. November 1970

No. 17 A Price Index of Operating Costs for Uncontrolled Apartment Houses in New York City. February 1971

No. 18 Professional, Administrative, and Technical Pay in New York, 1970. February 1971

No. 19 Poverty Area Profiles: The New York Puerto Rican: Patterns of Work Experience. May 1971

No. 20 Changing Patterns of Prices, Pay, Workers and Work on the New York Scene. May 1971

No. 21 Poverty Area Profiles: The Job Search of Ghetto Workers. June 1971

* Out of print. May be referred to at the Bureau's New York office.

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Working Age Nonparticipants

Persons not in the labor force and their employment problems

U.S. DEPARTMENT OF LABOR
J.D. Hodgson, Secretary

BUREAU OF LABOR STATISTICS
Geoffrey H. Moore, Commissioner

MIDDLE ATLANTIC REGIONAL OFFICE
Herbert Bienstock, Director

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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Preface

This is the fifth of a series of analytical reports on findings from the Urban Employment Survey. The survey was begun in July 1968, and was conducted for two years in major poverty areas of New York City. Those poverty areas include Central and East Harlem, the South Bronx and the Bedford-Stuyvesant section of Brooklyn.

The Urban Employment Survey was designed to develop information on employment, unemployment and work-related problems of the working-age population residing in the poverty areas of major metropolitan centers -- Atlanta, Chicago, Detroit, Houston, Los Angeles and New York. The survey was directed by the Bureau of Labor Statistics with the cooperation and financing of the Manpower Administration. Data collection and tabulation were carried out by the Bureau of the Census.

The initial results of the Urban Employment Survey in New York City for the July 1968-June 1969 period were presented in Regional Report Number 13. The characteristics of unemployed workers residing in the City's poverty areas were analyzed in Regional Report Number 14. Regional Report Number 19 dealt with Puerto Rican workers residing in the areas, and Number 21 examined how jobseekers residing in these areas go about looking for work. The present report focuses upon reasons for nonparticipation in the labor force and barriers to labor market entry.

The report was prepared in the Division of Program and Analysis under the direction of Samuel M. Ehrenhalt, Deputy Regional Director. It was written by Horst Brand, under the general supervision of Jesse Benjamin.

Herbert Bienstock
Regional Director

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POVERTY AREA PROFILES

WORKING-AGE NONPARTICIPANTS: PERSONS NOT IN THE LABOR FORCE AND THEIR EMPLOYMENT PROBLEMS

About two fifths of the 389,000 persons of working age who resided in Central and East Harlem, the South Bronx, and Bedford-Stuyvesant during the July 1968-June 1969 period (when the Urban Employment Survey was first conducted) were neither working nor looking for work. Who were they: Why were they not in the labor force? What was their relative income position? How many of them wanted a job, and what were the circumstances that inhibited them from looking? To what extent did the lack of enough day care centers for children of mothers out of the labor force, or of special arrangements for nonparticipants with health problems, prevent their looking for work? These questions arise from the concern with the income - and employment-related problems of poverty-area residents which has framed the data collection and analytical effort of the Urban Employment Survey.

Of the 170,000 persons who were not in the labor force during the survey year, 20,000 or one eighth were teenagers, most of whom reported going to school as the reason for not working or looking for work; and 40,000 or close to one fourth were persons of retirement age, 65 and over. The detailed data reported on here pertain to ill health and disability, and family responsibilities, as major reasons for nonparticipation. These reasons affected only an insignificant number of teenagers. Persons 65 and over mostly reported themselves as being retired. Therefore, the report focuses upon the 109,000 adults 20-64 years old -- 19,000 men and 90,000 women -- who did not work or look for work. In particular, the report deals with the personal and situational barriers to employment faced by those who wanted a job at the time they were interviewed but did not look for one.

Highlights

.... Compared with national averages, a large proportion of men in the prime working ages -- 25-54 -- were not in the labor force during the survey period. Twelve percent of all men 25-54 years old who resided in the City's major poverty areas were not working or looking for work, as against 4 percent of all men in this age bracket nationally.

.... Overall, the number of women in the prime working ages who were nonparticipants was proportionately about the same as in the Nation at large. There were, however, significant differences between Negro and Puerto Rican women, with little more than 4 out of every 10

Negro women in these age groups not in the labor force, as compared with seven out of every 10 Puerto Rican women.

.... New York City poverty-area men 20-64 who were not in the labor force were less likely to be married and living with their wives, and more likely to be single, separated or divorced than men in the labor force. Two fifths of the male nonparticipants were married and living with their wives, compared with more than three fifths for male workers. More than one-third of the nonparticipants were single, as against only one-fifth of all men in the labor force.

.... The marital status of poverty-area women who were not in the labor force did not differ much from that of poverty-area women who were, but varied significantly from that of nonparticipating women nationally. Half of all women residing in the City's poverty areas and not working or looking for work were married and living with their husbands; in the Nation, more than four fifths of the women who were not in the labor force were married and living with their husbands. Thirty-seven percent of the nonparticipants were married with husbands absent, or widowed or divorced -- well over three times the comparable national proportion. Thirteen percent in these poverty areas were single -- twice the national ratio. A relatively large proportion of the single women who were not in the labor force cared for children, and many of the separated or divorced or widowed women who were nonparticipants headed families and had child care responsibilities.

.... One fourth of all persons not in the labor force in the City's major poverty areas cited health problems as the primary reason for not working or looking for work. Nearly all were 25 years old or over, and two-thirds were women. Nearly all reported chronic conditions (lasting 12 months or more) and being under a physician's care. Three fifths reported organic ailments, such as heart or digestive disease; the remainder reported functional disabilities, such as hearing defects, missing limbs, and so forth.

.... Health problems were reported as the reason for nonparticipation by a larger proportion of the City's poverty-area population than nationally. Ten percent of all men, and 15 percent of all women in the 25-and over age group were reported as nonparticipants because of health problems, as against 4 percent and 9 percent for the comparable national population in 1968. Eleven percent of Negro men in the prime working ages -- 25-54 -- reported health problems as the reason for not working or looking for work; nationally, only 2 percent of all men in this age bracket were nonparticipants for reasons of health.

.... There were 49,000 women, 16 and over, who were out of the labor force primarily because of family responsibilities. The great majority of these women took care of one or more children. Their families tended to be larger than all families residing in the City's poverty areas or in the City generally. Thus, two fifths of them were in families with five or more persons, while little more than one-fifth of all

poverty-area families and only about one-sixth of all of the City's families were that large.

.... Less than half of all nonparticipating Negro women with child care responsibilities were married with husband present, as compared with two thirds of all Puerto Rican women with such responsibilities.

.... Nearly two-fifths of all nonparticipating women with child care responsibilities were heads of households. Most of this group had received welfare allowances at some time during the year.

.... Families headed by women drawing welfare allowances at some time during the year preceding the interview had a median income of $2,713. At this time, the annual equivalent of the basic welfare allowance of a mother with two preschool-age children was $2,631. Assuming such a mother had choice between staying at home and caring for her children, and going to work, she would need to have grossed $74 in weekly wages in order to earn what she would receive in welfare allowances, and to pay for work-related expenses (such as lunches, extra clothing, etc.) and tax deductions. It may be noted that for employed poverty-area women heading households and working full time, weekly gross earnings averaged $84 during the survey period; close to one-third of these women earned less than $75.

.... A relatively large number of poverty-area residents who were not in the labor force said they wanted a job, although they were impeded from looking by family responsibilities, health problems, going to school, or other reasons. A total of 46,000 persons -- more than one out of every four nonparticipants -- said they wanted or might want a job at the time of the interview. Half of all nonparticipating male teenagers, and two-fifths of all men 20-54 years old indicated that they wanted a job. Among women, the proportions were somewhat smaller.

.... Economic pressures were an evident factor causing a relatively large proportion of poverty-area nonparticipants to want employment. Well over two-fifths of the family heads among the nonparticipants who wanted a job reported annual family incomes of less than $2,500 during the year preceding the interview. More than two-thirds had less than $3,500 in income. These figures compare with one-fourth of all families in the City's poverty areas with annual income of less than $3,500.

.... About two-fifths of all persons who were not in the labor force because of health problems said they wanted or might want a job. Many said that they required special arrangements to enable them to work; in particular, they needed frequent rest periods, light work, or part-time work. The majority requiring special arrangements said they would be available for work immediately or within a month if such arrangements were made.

.... Nearly one half of all nonparticipating Negro women with child care responsibilities, and just under one quarter of their Puerto Rican counterparts, said they wanted or might want a job. Finding proper care for their children was clearly a problem. Three-quarters of the nonparticipating women who indicated that they had child care problems reported that no child care center was available in their neighborhoods; the majority of these women said they would use such a center, were it available. During the survey period, the capacity of the day care centers located in or near the poverty areas where the survey was conducted was less than the number of women who said they would use such facilities.

.... The employment qualifications of nonparticipants who wanted a job were relatively low. Men who were not in the labor force but wanted a job averaged little more than 8 years of education, and women just below 9 years -- compared with an average of more than 12 years of school completed by residents 25 and over in the New York metropolitan area. Only one-fifth of all nonparticipants who wanted a job reported having worked during the year preceding the interview; nearly a third had last worked 5 years or more ago; one-fifth (mostly teenagers) had never worked.

Reasons for nonparticipation

In order to determine the labor force status of respondents in the Urban Employment Survey, they were asked a series of questions, based on activity during the week preceding the interview -- such as working, looking for a job, etc. Those who were not in the labor force -- neither working nor looking for work -- were also asked whether they wanted a regular full- or part-time job and to state the reasons why they were not looking at that time.

A respondent may of course have had more than one reason for not being in the labor force. A housewife, for example, may have been unable to work outside the home because of ill health as well as because of family responsibilities. Where more than one reason for nonparticipation was cited, a respondent was also asked the main reason preventing participation in the labor force, and was classified accordingly.

In effect, nonparticipants were asked two sets of questions. One set -- also asked of all respondents in the monthly Current Population Survey -- was part of the determination of employment status. The concept underlying this set is that a clear distinction can be made between persons in and persons out of the labor force, and that this distinction is defined by the activity engaged in during most of the week preceding the interview. The other set -- also asked each month of one-fourth of all nonparticipants responding in the Current Population Survey -- probes the personal and situational reasons or barriers that prevent nonparticipants from seeking and finding employment. The replies

to these questions tend to be somewhat subjective, since they may involve, on the respondent's part, evaluations of his or her reasons for not being in the labor force. The differences in the objectives of the two sets of questions result in certain differences in the manner in which reasons for nonparticipation are classified. These classifications compare as follows (see also Table 1).

A. To determine activity of nonparticipants	B. To determine barriers preventing labor force entry
Keeping house - This group includes all those persons (mostly women) who report housekeeping as their major activity during the reference week.	Family responsibilities - This category is roughly synonymous with the "keeping house" group. However, it excludes those persons who, although having kept house during the reference week, cite an illness or disability as reasons for having left their last job or as an obstacle to seeking work currently, or who believe that it would be impossible for them to find a job. Hence, the proportion shown in the lower part of Table 1 for "family responsibilities" is less than that for "keeping house" in the upper part.
Attending school - This group includes all nonparticipants who reported going to school as their major activity during the reference week.	Attending school - In addition to all the nonparticipants who reported going to school as their major activity during the reference week, this group includes a small number of persons who were in a training program or waiting to start school. As a result, the proportion shown in the lower part of Table 1 as attending school is slightly higher than the proportion in the upper part.
Unable to work - This group includes only those persons who reported that they had a physical or mental ailment or disability which was expected to prevent them from working for at least six months.	Ill health or disability - This group includes all persons who attribute their nonparticipation in the labor force to ill health or disability, regardless of the intensity or expected duration of the condition afflicting them. The proportion of persons in this category shown in the lower part of Table 1 is therefore larger than that shown for "unable to work" in the upper part.

Table 1. Reasons for nonparticipation of persons 16 and over not in the labor force

A. To determine labor force status	Total	Men	Women
All persons not in labor force ...	170,000	42,900	127,200
Percent distribution	100	100	100
Keeping house	56	2	74
Attending school	11	22	7
Unable to work	15	28	10
Other reasons 1/	19	48	9
B. To determine reasons preventing labor market entry			
All persons not in labor force ...	170,100	42,900	127,200
Percent distribution	100	100	100
Family responsibilities	30	2/	39
Attending school	12	24	9
Ill health or disability	24	32	21
Retired or too old	28	38	25
Lack of qualifications 3/	1	1	1
Could not find job	2/	2/	3/
Other 4/	5	3	5

1/ Includes retired persons, persons too old to work, the voluntarily idle, and seasonal workers for whom the survey week fell in an "off" season and who were not reported as unemployed.
2/ Less than 0.5 percent.
3/ Includes lack of skill, experience, education, references or tools.
4/ Includes police record, don't want work at present, and other reasons.

A. To determine activity of nonparticipants (Continued)

Other reasons - This group includes all nonparticipants who were retired, too old or temporarily unable to work, the voluntarily idle, seasonal workers for whom the survey week fell in an "off" season and who were not reported as looking for work, and persons who did not look for work because they believed that no jobs were available in the area. Persons doing only incidental unpaid family work (less than 15 hours in the specified week) are also classifield as not in the labor force.

B. To determine barriers preventing labor force entry (Continued)

Retirement or old age - The nonparticipants placed in this category are part of those who fall within the "other reasons" category shown in the upper part of Table 1.

Lack of qualifications - This group includes nonparticipants who report that they lack the skills, experience, education, references or tools to obtain work.

Could not find job - This group includes nonparticipants who at some time prior to the four weeks preceding the interview looked for, but could not find work.

Other - This group includes persons who are nonparticipants because they do not want to work at present, or whose reasons for nonparticipation are not elsewhere classified.

All of the 170,000 nonparticipants who resided in the City's major poverty neighborhoods were asked whether they wanted or might want a job; 46,000 of them answered affirmatively. Among the remaining 124,000 nonparticipants those who were not retired or attending school were asked the further question whether they would want a job if the problem or responsibility that prevented their labor force entry did not exist. This question was answered affirmatively by 64,000 nonparticipants, and negatively by 5,000 (see Table 2).

Who were the nonparticipants?

Labor force participants

Of the total civilian noninstitutional population of 389,000 persons 16 and over who resided in the City's major poverty neighborhoods during the July 1968-June 1969 survey period, 163,000, or little more than two fifths were men; 226,000 were women. Three-quarters of the men were in the labor force. Well over two-fifths of the women who lived in these neighborhoods were in the labor force, roughly the same proportion as nationally. While labor force participation rates differed between Negro and Puerto Rican men, they varied more widely

Table 2. Persons not in the labor force, 16 and over, by whether they want or would want a job now

Major reasons for nonparticipation	Number of persons
Civilian noninstitutional population	388,900
Civilian labor force	218,700
Employed	203,900
Unemployed	14,800
Not in the labor force	170,100
Not in the labor force	170,100
Wants or might want a job, isn't looking	46,000
Health problems	15,800
Family responsibilities	15,200
Attending school	9,100
Other reasons	5,900
Would take a job but can't 1/	63,900
Health problems	23,800
Family responsibilities	34,200
Other reasons	5,900
Does not want job	60,200
Retired	44,300
Attending school	11,000
Would not take job 2/	4,900
Addendum:	
Unemployed and contingent labor force entrants 3/	124,700
Unemployed	14,800
Wants or might want job, isn't looking	46,000
Would take a job but can't 1/	63,900

1/ These persons answered "no" when asked if they wanted a regular job "now", but answered "yes" when asked if they would want a job if their particular problem did not exist.

2/ Except for those in school or retired, persons who reported that they did not want a job under any circumstances were not classified by major reason for nonparticipation.

3/ The total for "contingent labor force entrants" is overstated by the number of persons whose problem preventing their labor force entry cannot be solved.

between Negro and Puerto Rican women, with their respective rates averaging 50 percent and 29 percent during the survey period (see Table 3).

Table 3. Employment status of persons 16 and over

Employment status	Total 1/	Negro	Puerto Rican
Men			
Civilian noninstitutional population.	162,600	98,400	38,000
Civilian labor force	119,700	71,900	29,800
Participation rate	73.6	73.1	78.4
Employed	111,500	67,200	27,100
Unemployed	8,200	4,600	2,700
Unemployment rate	6.9	6.4	9.1
Not in labor force	42,900	26,500	8,200
Women			
Civilian noninstitutional population.	226,200	146,200	47,700
Civilian labor force	99,000	72,300	13,800
Participation rate	43.8	49.5	28.9
Employed	92,400	67,700	12,300
Unemployed	6,600	4,600	1,500
Unemployment rate	6.7	6.4	10.9
Not in labor force	127,200	73,900	33,900

1/ Includes Whites, other than Puerto Rican, not shown separately.

Nonparticipants in the population

More than two fifths of the population 16 and over residing in the City's major poverty areas were not in the labor force during the survey period. School attendance and retirement or old age were given as major reasons for nonparticipation by less than a fifth of the population; family responsibilities and ill health or disability were reported by close to one fourth. A small proportion cited lack of education, experience or skill as preventing them from entering the labor force. In this report, attention focuses on health problems and family responsibilities as major reasons for nonparticipation, and upon men and women 20-64 or 25-54 (the prime working-age group) who, but for these reasons, might have been in the labor force.

Men residing in the City's major poverty neighborhoods were more likely than men nationally to be out of the labor force because

of health problems. Thus, of the population of poverty-area men 25-44 years old, 10 percent were not in the labor force, compared with 3 percent for this age group nationally. Seven percent of all 25-44-year old men in these areas reported illness or disability as their reason for nonparticipation, as compared with 1 percent of men in the Nation generally who cited this reason (see Table 4). In the 45-54 group, nonparticipation because of health problems was still higher, and the proportion of ill or disabled men in this older group far exceeded the comparable national figure.

Table 4. Reasons for nonparticipation in the labor force, men 25-44 and 45-54, major New York City poverty areas, July 1968-June 1969, and United States, 1968 annual averages

	New York City poverty areas		United States	
	25-44	45-54	25-44	45-54
Civilian noninstitutional population	61,400	28,100	21,984,000	10,819,000
Percent distribution	100	100	100	100
In labor force	90	84	97	95
Not in labor force	10	16	3	5
In school	1	1/	1/	1/
Ill health or disability	7	14	1	3
All other reasons 2/	2	2	2	2

1/ Less than 0.5 percent.
2/ Includes family responsibilities, retirement, and other reasons.

While the proportion of poverty-area women who were not in the labor force was about in line with national patterns in terms of age, reasons for nonparticipation tended to differ considerably. Thus, 12 percent of the population of women 16 and over in the City's poverty areas cited ill health or disability as the primary reason for not working or looking for work, compared with 3 percent of all women nationwide. The proportion of poverty-area women 25-44 and 45 to 54 who were not in the labor force because of health problems was 10 percent and 19 percent -- significantly above the comparable national figures (see Table 5).

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Table 5. Reasons for nonparticipation in the labor force, women 25-44 and 45-54, major New York City poverty areas, July 1968-June 1969, and United States, 1968 annual averages

	New York City poverty areas		United States	
	25-44	45-54	25-44	45-54
Civilian noninstitutional population	84,400	38,900	23,965,000	11,715,000
Percent distribution ...	100	100	100	100
In labor force	48	55	46	54
Not in labor force	52	45	54	46
In school	1	1/	1	1/
Ill health or disability	10	19	2	4
Family responsibilities ...	36	22	50	41
All other reasons 2/..	5	1	1	1

1/ Less than 0.5 percent.
2/ Includes retirement.

Age distribution

The age distribution of men not in the labor force is normally weighted towards both ends of the working-age span, since the young and the old are much less likely to be in the labor force, or are less firmly attached to it, than men between 20 and 64. However, male nonparticipants 16-19 and 65 and over residing in the City's poverty areas accounted for a lower proportion of all men not in the labor force (55 percent) than male nonparticipants in these age groups nationally (70 percent).

Men 20-64 years old constituted more than two-fifths of all male nonparticipants in the City's poverty neighborhoods, whereas nationally less than one-third were in this age group. Moreover, a considerably higher proportion of male Negro nonparticipants were 20-64 years old (48 percent) than of nonparticipating Negro men in this age group nationally (36 percent) -- possibly reflecting the relatively high concentration of Negroes in the City's poverty areas who were not in the labor force because of illness or disability (see Table 6).

Table 6. Age distribution of persons 16 and over not in the labor force, major New York City poverty areas, July 1968-June 1969, and United States, 1969

Sex and age	New York City poverty areas 1968-69			United States 1969	
	Total 1/	Negro	Puerto Rican	Total	Negro
Men					
Total, 16 and over ...	42,900	26,500	8,200	12,677,000	1,513,000
Percent distribution..	100	100	100	100	100
16-19	23	23	37	24	31
20-24	6	7	6	9	8
25-44	15	18	9	6	10
45-54	10	11	11	5	7
55-64	13	11	20	11	11
65 and over	32	29	18	46	33
Women					
Total, 16 and over ...	127,200	73,900	33,900	40,924,000	3,955,000
Percent distribution..	100	100	100	100	100
16-19	8	9	10	10	16
20-24	9	9	12	9	11
25-44	35	33	48	31	31
45-54	14	15	12	13	12
55-64	13	14	9	13	12
65 and over	21	20	9	23	19

1/ Includes Whites, other than Puerto Rican, not shown separately.

Marital status

The marital status of nonparticipants differed in significant respects from that of persons in the labor force, as well as from their counterparts nationally. Only two-fifths of the out-of-the-labor-force men 20-64 years old were married, as against more than three-fifths of all male workers in this age group. The proportion of male nonparticipants who were separated, divorced, or widowed tended to be higher than that of men in the labor force, as did that of single men. Most male nonparticipants 20-64 were not in the labor force because of illness or disability.

Table 7. Marital and labor force status of men, 20-64

	In labor force	Not in labor force
Total	104,900	19,100
Percent distribution	100	100
Married, wife present ...	63	40
Married, wife absent	12	16
Widowed or divorced	5	9
Single (never married) ..	21	35

As regards the marital status of women, one would expect a relatively higher proportion of wives to be out of the labor force than of single women. This is indeed the pattern for both the City's poverty areas as well as for the Nation. However, when comparisons are limited to nonparticipating women in these areas with their counterparts nationally, significant differences emerge.

Only about half of all 20-64-year old nonparticipating women in the City's poverty areas were married and living with their husbands, compared to well over four-fifths nationally. The proportion of poverty-area women outside the labor force who were separated, divorced or widowed was more than three times greater than the comparable national figure -- 37 percent as against 11 percent. Thirteen percent were single, twice the national proportion. More than half of these separated, divorced, widowed or single women were heads of families. Absence of a husband aggravated the economic position of these women since child care responsibilities or health problems posed barriers to jobs and self-support.

Only 44 percent of nonparticipating Negro wives lived with their husbands -- a significantly lower proportion than that for nonparticipating Puerto Rican wives -- 58 percent. The proportion of nonparticipating Negro women who were single (16 percent) was nearly twice as high as that for Puerto Rican women; that of separated, widowed, or divorced women was also higher among Negro than among Puerto Rican women.

Table 8. Marital status of women, 20-64, not in labor force, major New York City poverty areas, July 1968-June 1969, and United States, March 1969

	New York poverty areas 1968-69	United States March 1969
Total	90,100	27,538,000
Percent distribution	100	100
Married, husband present ...	51	83
Married, husband absent 1/..	21	(
Widowed or divorced	16	(11
Single	13	6

1/ Includes married women whose husbands were living apart from them for any of the following reasons: legally separated or living apart with intention of obtaining a divorce or because of marital discord, or because they were employed and living at a considerable distance from home, were residing at an institution, had moved to another area or had a different place of residence for any other reason.

Nonparticipants who wanted a job

All men and women not in the labor force who resided in the City's poverty areas during the survey period were asked, "Do you want a regular job now, either full- or part-time?" A total of 46,000 or more than one-fourth of all nonparticipants replied "yes" or "maybe, it depends" to this question. Nearly half of all male teenagers said they wanted a job now, and so did two-fifths of all men 20-54 years old. Among women, the proportion wanting work outside the home tended to be less, partly because relatively few Puerto Rican women desired such work at the time of the interview.

The reasons for not looking cited by nonparticipating men and women who wanted a job paralleled their reasons for not being in the labor force. Nearly all teenagers cited going to school or attending a training program. Nearly three-fourths of all men 20-54 years old who wanted a job did not or could not look because of ill health or disability; and the majority of women 20-54 years old reported family responsibilities or health problems as precluding them from looking.

The proportion of nonparticipants residing in the City's poverty areas who wanted a job was comparatively high: in 1968, only

Table 9. Persons not in the labor force who wanted or might want a job

	All persons not in labor force	Persons wanting job	Percent of total
Total, 16 and over ..	170,100	46,000	27
Men	42,900	12,800	30
16-19	9,900	4,900	49
20-54	13,400	5,400	40
55 and over	19,500	2,500	13
Women	127,200	33,200	26
16-19	10,500	3,700	35
20-54	73,100	24,300	33
55 and over	43,700	5,200	12

about 7 percent of all white nonparticipants nationally and 18 percent of Negro nonparticipants said they wanted regular employment.

Income

Data on the income of family heads who were not in the labor force but desired work indicate that they experienced substantial economic pressures, and that many of them lived in poverty. This would go far to explain why, despite impediments to labor force entry, so many nonparticipants wanted a job.

Table 10. Annual family income

	All families	Families with head not in labor force, wants job
Total	139,600	13,000
Percent distribution ..	100	100
$0-2,499	15	44
$2,500-3,499	11	24
$3,500-4,999	17	15
$5,000 or more	57	18

As the table shows, family heads not in the labor force who wanted a job fared badly incomewise even in comparison with all of the families residing in the City's poverty areas, most of whose heads, however, held a job at the time of the interview as well as during the 12 months preceding it. Since data are not available on the size of families whose head was not in the labor force but wanted work, no precise estimate for this group of the number of persons who lived in poverty can be given. If it is assumed that the average size of these families was 3 persons, then close to half of them lived in poverty (based on the 1968 nonfarm poverty threshold of $2,740 for a three-person family). That proportion would be about twice as large as for all poverty-area families, and nearly five times as great as for all of the City's families in 1968.

Qualifications for employment

Only about one in every ten men and women not in the labor force who desired employment cited lack of education, experience, or skill as reasons for not looking. However, the low median number of school years completed by all nonparticipants 25 and over suggests that they would be severely handicapped in the competition for jobs; the men reported an average of little more than 8 years of schooling, and the women, just below 9 years -- about 2 years less than the adult labor force (25 and over) residing in the City's poverty neighborhoods, whose educational attainment, in turn, was well below the average for the New York metropolitan area.

Table 11. Median years of school completed by persons 25 and over

Major New York City poverty areas, July 1968-June 1969	
In labor force	
Men	10.0
Women	10.7
Not in labor force	
Men	8.3
Women	8.9
New York metropolitan area, 1968	
Total	12.1

The work history of nonparticipants who desired employment indicated little recent job experience: only about one-fifth had worked during the year preceding the interview; one-third had worked 5 or more years ago and another fifth had never worked. Work history varied somewhat by reasons for not looking for a job: Just over half of the nonparticipants reporting family responsibilities as impediments to seeking work had last been employed 5 or more years ago or had never worked, as compared with about two-fifths of nonparticipants who cited health reasons. A majority of those who had never worked gave going to school as the reason for not currently looking, and were youths 16-19 years old.

Table 12. Work history of persons not in labor force who wanted a job

Total	46,000
Percent distribution	100
Worked within last year	22
1-2 years ago	13
2-5 years ago	16
5 or more years ago	31
Never worked	18

Table 13. Percent of persons currently not in labor force reporting work experience during year preceding interview 1/, major New York City poverty areas, July 1968-June 1969, and United States, 1968

	New York City poverty areas 1968-69	United States 1968
Total, 16 and over	10	24
Both sexes, 16-19	32	54
Men, 20 and over	9	28
25-54	13	47
55 and over	7	19
Household heads, 20-64	17	n.a.
Women, 20 and over	7	19
25-54	9	21
55 and over	4	9
Household heads, 20-64	9	n.a.

1/ Calendar year for the United States.
n.a. - not available.

The small proportion who had worked during the year preceding the interview indicates that relatively few nonparticipants moved into and out of the labor force during the year.

As table 13 shows, only 9 percent of the adult men who currently were not working or looking for work, and 7 percent of the adult women nonparticipants residing in the City's poverty areas reported work experience in the year preceding the interview -- a much lower proportion than the comparable national figures of 28 percent and 19 percent in 1968. About one-seventh of the male nonparticipants 25-54 years old had worked at some time during the year, compared with nearly one half of their counterparts nationally. Only among poverty-area teenagers was the proportion of nonparticipants with work experience relatively high -- 32 percent -- although it lagged well behind the comparable national average of 54 percent: bearing in mind their high unemployment rate, the contrast represents added evidence of the difficulties these teenagers faced.

The occupations which nonparticipants wanting employment reported for the job they had held last was not greatly different from that of the poverty-area labor force. However occupations were listed for only those of the nonparticipants who had worked within the last 5 years -- half of the total who currently wanted a job. A large number of these men and women not only lacked recent experience, but possessed in most cases only minimal skills and occupational knowledge.

Table 14. Occupational distribution by labor force status

	Persons not in labor force, wanting job	Labor force
Total, 16 and over	46,000	218,700
Occupation reported 1/.....	23,300	216,800
Percent distribution	100	100
White collar	27	33
Clerical and sales	20	23
Blue collar	42	41
Semiskilled and laborers ..	39	33
Service workers	31	26
Private household	13	6

1/ Refers to those who worked within the last few years.

The occupational distribution of nonparticipants wanting to work varied somewhat when reasons for not looking for work are taken into account. Those who were prevented from being in the labor force by health problems were less likely than those impeded by family responsibilities to have held clerical or sales jobs; and they were more likely to have performed service work. Thus, it may well be that the physically demanding jobs in which nonparticipants with health problems had acquired their occupational knowledge and experience could no longer -- or could not currently be -- performed by them, discouraging them from entering the labor market.

Work plans

The desire for a job and the intention to look for one were evidently hard to bridge: Less than half of the 46,000 men and women who were not in the labor force but wanted employment planned to look during the 12 months following the interview. The gap reflects perhaps less on the "seriousness" of the desire for work than on the impediments to its realization. For example, many nonparticipants with health problems said they would work if special arrangements -- such as frequent rest periods or transportation aids -- could be made. However, if they thought such arrangements were unlikely to materialize, they would probably make no plans to seek work. Nonparticipating women with child care problems may have been deterred from planning to look by the absence of accessible day care centers.

Nonparticipants with health problems

Ill health or disability prevented a substantial number of the City's poverty-area residents from participating in the labor force during the survey period. One fourth of all nonparticipants reported ill health or disability as the main reason for not looking for work. Nearly all of the nonparticipants with health problems were 25 years old and over; most of them were women.

The incidence of ill health or disability was substantially higher than nationally. Ten percent of all men 25 and over and 15 percent of all women were nonparticipants because of health problems, as against 4 percent and 9 percent for the comparable national population.

A relatively high proportion of Negro men in the prime working ages -- 25-54 -- were in ill health or disabled, and for this reason were not working or looking for work. Of the 54,000 Negro men in this age group in the City's poverty areas, 11 percent reported health problems as preventing them from entering the labor market. Nationally, only 2 percent of all men in their prime working years were nonparticipants for reasons of health.

Table 15. Male nonparticipants with health problems, major New York City poverty areas, July 1968-June 1969, United States, 1968 annual average

	Civilian population, men, 25-54	Percent not in labor force because of health problems
New York poverty areas (1968-69)		
Total 1/	89,500	9
Negro	54,000	11
Puerto Rican	23,200	5
United States (1968)	32,805,000	2

1/ Includes Whites, other than Puerto Rican, not shown separately.

As factors in nonparticipation, health problems were associated with low educational attainment and past job experience chiefly in semi-skilled and unskilled work. Were the labor market qualifications of nonparticipating men upgraded and their training (or retraining) adapted to their physical ability, health problems might not loom so large as barriers to seeking employment.

There are indications that nonparticipants with health problems were concentrated in the City's major poverty areas. On the more rigid test of inability to work (according to which only those persons are classified as being "unable to work" who report a physical or mental ailment or disability that is expected to prevent them from working for at least 6 months), 7 percent of the population of Negroes 16 and over residing in those areas did not work because of long-term health problems.

The concentration of health problems in the City's poverty areas is attested to by above-average incidence of such diseases as tuberculosis and hepatitis. The following table shows the number of cases per 100,000 population for New York City and for the Health Center Districts of Central Harlem, East Harlem, Mott Haven, and Bedford in 1967; these districts coincide roughly with the Urban Employment Survey area in New York City. These districts also reported a high rate of opiate use, which has been associated with poor health.

Nearly all of the poverty-area nonparticipants with health problems suffered from chronic conditions which had lasted 12 months

Rates per 100,000 population	Tuberculosis	Hepatitis	Opiate use
New York City	44.9	32.5	2290
Central Harlem	153.7	49.0	14570
East Harlem	63.7	43.6	7250
Mott Haven	59.6	15.4	3880
Bedford	91.8	21.0	2410

Source: City of New York, Department of Health, and Opiate Use in New York City. New York State Narcotics Addiction Control Commission and New York City Narcotics Register, November 1969.

or more at the time of the interview. The seriousness of these conditions may in part be judged by the fact that a majority of these nonparticipants was under a physician's care. Three-fifths of them reported organic diseases, such as digestive or cardiac trouble; the other two-fifths suffered from functional disabilities, such as blindness, hearing defects, or missing limbs. Negroes were somewhat more likely than Puerto Ricans to have heart trouble, while Puerto Ricans reported a higher incidence of digestive pathology.

Table 16. Nonparticipants with health problems

	Total 1/	Negro	Puerto Rican
Percent distribution ...	100	100	100
Organic ailments 2/	62	64	63
Digestive	17	14	25
Cardiac	15	20	11
Functional ailments 3/..	38	36	37

1/ Includes Whites, other than Puerto Rican, not shown separately.
2/ In addition to the ailments shown, includes high blood pressure, mental illness, epilepsy, etc.
3/ Includes blindness, hearing defects, missing limbs, paralysis, arthritis, etc.

Desire for employment

A desire for work was expressed by a large proportion of nonparticipants who reported health problems. Two-fifths of them, or about 16,000 said they wanted or might want a job -- compared with only one-sixth of all nonparticipants with health problems nationally who, in 1968, had been asked similar questions regarding their desire to work. Men were about as likely as women to want to work; the proportion of Negroes tended to be higher than that of Puerto Ricans (47 percent vs. 29 percent). Over one-fifth of nonparticipants with health problems said they required special arrangements if they were to go to work. The majority of those in need of special arrangements said they would be available for work immediately or in less than a month, if they were accommodated.

Requiring special arrangements	9,100
Percent distribution	100
Rest periods, light work, part-time work	40
Care of physician	23
Help getting to and from work	6
Special aids 1/	6
Other arrangements	25

1/ Includes ramps or elevating equipment at work, crutches, artificial limbs, eye glasses, etc.

Income

Economic pressures were probably the main reason why nonparticipants with health problems desired work. About one-third of them were heads of families -- mainly women; another third were unrelated individuals living alone or with non-relatives (the remainder were persons living with relatives). The median income of families whose heads did not work or look for work because of ill health or disability was $3,356 during the survey year, well below the median income of all families in the City's poverty areas ($5,600), and only about two-fifths of citywide median family income of $8,000-$9,000 in 1968.

Median income of unrelated individuals not in the labor force because of health problems was also low: at less than $1,600 during the survey year, it compared with median income of over $2,900 for unrelated individuals in the City's poverty areas, and with citywide median income for this group of persons of $3,500 in 1968.

Qualifications for employment

Difficulties in making the special arrangements many nonparticipants said they required to enable them to work were not the only obstacles to their entering the labor force. Lack of qualifications and of recent work experience made it perhaps even more difficult to translate the desire for a job into seeking and finding one. Only one-fifth of all nonparticipants with health problems who wanted a job had worked during the 12 months preceding the interview; nearly two-fifths had last worked from one to five years ago; and another two-fifths had worked five or more years ago, including a small number who had never worked.

Table 17. Work history of persons not in the labor force because of health problems, who want or might want a job

Total 1/	17,300
Percent distribution	100
Worked within last year	21
Worked 1-2 years ago	16
Worked 2-5 years ago	21
Worked 5 or more years ago ...	36
Never worked	6

1/ Represents number of persons who did not look for work because of health problems. Among them, 15,800 reported health problems as the main reason for not looking.

The occupations at the last job held by nonparticipants with health problems who wanted work also suggest that they would encounter difficulties in locating suitable work. Among those who had worked within the last 5 years, four-fifths had been semiskilled or unskilled or service workers at the job they had held last. One-tenth had performed clerical or sales work, and only an insignificant number reported having held professional, technical, managerial, or skilled positions. (For those who had not worked within the last 5 years or who had never worked, occupations were not reported.)

Many nonparticipants with health problems were probably unable to meet the physical requirements of many semiskilled and service jobs. This factor, combined with their generally low educational attainment, made it difficult if not impossible for them to obtain suitable employment. Specific data on educational attainment for the

Table 18. Occupation of persons not in the labor force because of health problems who want or might want a job

Total 1/	17,300
Occupation not reported 2/	7,300
Occupation reported	10,000
Percent distribution	100
White-collar	15
Clerical and sales	11
Blue-collar	46
Semiskilled and unskilled	42
Service	39
Private household	20

1/ Represents number of persons who did not look for work because of health problems. Among them, 15,800 reported health problems as the main reason for not looking.

2/ Worked 5 or more years ago or never worked.

15,800 persons here being discussed are not available, but the data for persons 18 and over who were not in the labor force for reasons other than attendance at school may be indicative. One-half of these persons had had 8 years of elementary school or less; more than three-quarters had 3 years of high school or less. Thus, they were at a competitive disadvantage not only in comparison with workers in the City as a whole (whose educational attainment on average corresponded to more than 12 years of schooling, but even with workers from the City's poverty areas, who on average had completed close to 11 years of schooling.

Table 19. Educational attainment of persons 18 and over by labor force status

	Persons not in labor force 1/	Civilian labor force
Total, 18 and over	149,300	212,700
Percent distribution	100	100
No school	6	1
Elementary school, 1-7 years..	31	19
8 years	15	14
High school, 1-3 years	26	28
4 years	19	29
College	4	9

1/ Excludes persons who were not in the labor force because of school attendance.

Nonparticipants with family responsibilities

Family responsibilities were cited as the primary reason for not working or looking for work by 49,000 women residing in the City's poverty neighborhoods -- representing close to two-fifths of all female nonparticipants 16 and over. It should be noted that an additional 45,000 women were not in the labor force because they were keeping house. Many of these may also have had family responsibilities, but this was evidently not the primary reason why they did not work or look for work.

Size of families

Many women reporting family responsibilities as the reason for nonparticipation had large families: the average family size was 4.4 persons, compared with 3.5 persons for all families in the City's major poverty areas. Two-fifths of these women were in families with five or more persons, although only one-fifth of all poverty-area families (and one-sixth for New York City as a whole) were that large. Negro women whose family responsibilities prevented them from entering the labor force were about as likely as their Puerto Rican counterparts to have relatively large families.

However, nonparticipating Negro women with family responsibilities represented only about one-fifth of the total population of

Table 20. Size of families in major New York City poverty areas, July 1968-June 1969, and New York City, 1968

Size of family	Major New York City poverty areas		New York City
	Women not in labor force because of family responsibilities	All families	All families
Total	49,200	139,600	2,121,000
Percent distribution	100	100	100
2 members	14	38	41
3 members	22	22	23
4 members	22	16	18
5 or more members	43	23	17

Source for New York City data from City Almanac, February 1970, Center for New York City Affairs of the New School for Social Research. Based on special tabulations from the March 1968 Current Population Survey, obtained from the Bureau of the Census.

Negro women in the City's major poverty areas, half the comparable proportion for their Puerto Rican counterparts.

	Negro	Puerto Rican
Women, 16 and over		
Total population	146,200	47,700
not in labor force because of family responsibilities ...	26,600	18,500
Percent of total	18	39

Child care responsibilities and marital status

A majority of the nonparticipating women with family responsibilities -- more than 36,000 -- cared for one or more children. The average size of families with children was 4.6 persons. Virtually all of the nonparticipating women with child care responsibilities were between 16 and 54 years old; nearly two-fifths were heads of households, reflecting the prevalence of broken families. Many were married but separated from their husbands or were single and caring for a child or children. Negro women with child care responsibilities were considerably more likely than Puerto Rican women to be single, and the proportion of Negro women living with their husbands was significantly less

than the comparable percentage for Puerto Rican women or for women not in the labor force nationally.

Table 21. Women not in labor force, by marital status, major New York City poverty areas, July 1968-June 1969 1/, and United States, 1969

Marital status	New York City poverty areas			United States
	Total 2/	Negro	Puerto Rican	All women not in labor force
Total	36,200	19,800	13,300	41,901,000
Percent distribution	100	100	100	100
Married, husband present..	56	47	66	65
Married, husband absent ..	22	26	19	3
Widowed	(7	(7	(7	16
Divorced	(	(	(	2
Single	14	21	8	14

1/ Not in labor force because of child care responsibilities.
2/ Includes Whites, other than Puerto Rican, not shown separately.

Income

Female heads of families who did not work or look for work because of child care responsibilities reported very low annual incomes. Three-fourths of them had less than $3,500 in family income during the year preceding the interview; the comparable proportion for all families with two or more persons in the City's poverty areas was just over one-fourth, and in New York City in 1968, it was about one-tenth.

Nearly all of these women were dependent on welfare for their income. The income they reported tallies closely with the annualized monthly allowances for families of specific sizes and composition, which were effective between October 1, 1968, and July 1, 1969. For a woman with a daughter 3 years old, the allowance (including shelter) amounted to an annual rate of just under $2,100. For a woman with a son of 5 and a daughter of 3, it was a little over $2,600. About $380 would be added for each additional child of preschool age.

Table 22. Income of families with female household heads not in labor force because of child care responsibilities

	Number
Total	13,700
On welfare 1/	12,000
Percent distribution	100
$0-2,499	42
$2,500-3,499	33
$3,500-4,999	16
$5,000 and over	9
Median income	$2,713

1/ At some time during year preceding interview.

Desire for employment

Close to one-half of all Negro women nonparticipants with child care responsibilities, as against one-fourth of their Puerto Rican counterparts, said they wanted a job. As might be expected, these women were somewhat less likely than those who did not want a job to have relatively large families. A larger proportion of younger than of older Puerto Rican women with child care responsibilities -- 16-24 vs. 25-54 -- were willing to take a job, possibly reflecting the effect of family size. Among Negro women, however, age did not affect the desire for employment outside the home.

Table 23. Women not in labor force because of child care responsibilities

	Total	Percent of total wanting job now
Total 1/	36,200	38
Negro	19,800	45
Puerto Rican	13,300	24

1/ Includes Whites, other than Puerto Rican, not shown separately.

Child care problems

Problems of finding proper care for their children probably were among the more important reasons why women who wanted a job did not actually look for one. However on being asked "What are your problems in arranging for child care?" most of the nonparticipating women -- nearly 27,000 -- replied that they wanted to take care of their children themselves, or that they had no child care problem. This majority included only a small proportion of women who wanted work outside their home. On the other hand, one out of four of all women with child care responsibilities reported that they could not find a babysitter at the price they could afford to pay, or at any price, or that they did not trust or had not tried to find a babysitter. Most of these women, moreover, said that there was no child care center available in the neighborhood, although they were willing to use one. These findings did not vary significantly as between Negro and Puerto Rican women.

Table 24. Child care available to nonparticipating women with child care responsibilities

	Number
Total	36,200
Want to care for child myself	26,700
Total with child care problems 1/	9,500
Center available, not used	1,500
Center not available	7,000
Would use	4,100
Would not use	1,900
Might use	1,100
Availability unknown	1,000

1/ Includes women who said they can't find babysitter at any or at my price; don't trust sitters; or did not try to find sitter.

As of October 1969, the Bureau of Child Welfare of the New York City Department of Social Services listed a total of 41 day care centers in or near the areas where the Urban Employment Survey was conducted (see map). These centers had staffs and facilities for about 2,500 children below school age and 400 children of school age. They may actually have served one-third again as many children during a given year, as some children dropped out and others took their place (see Table 25).

The maps following Table 25 indicate that for many nonparticipating women with child care responsibilities, day care centers

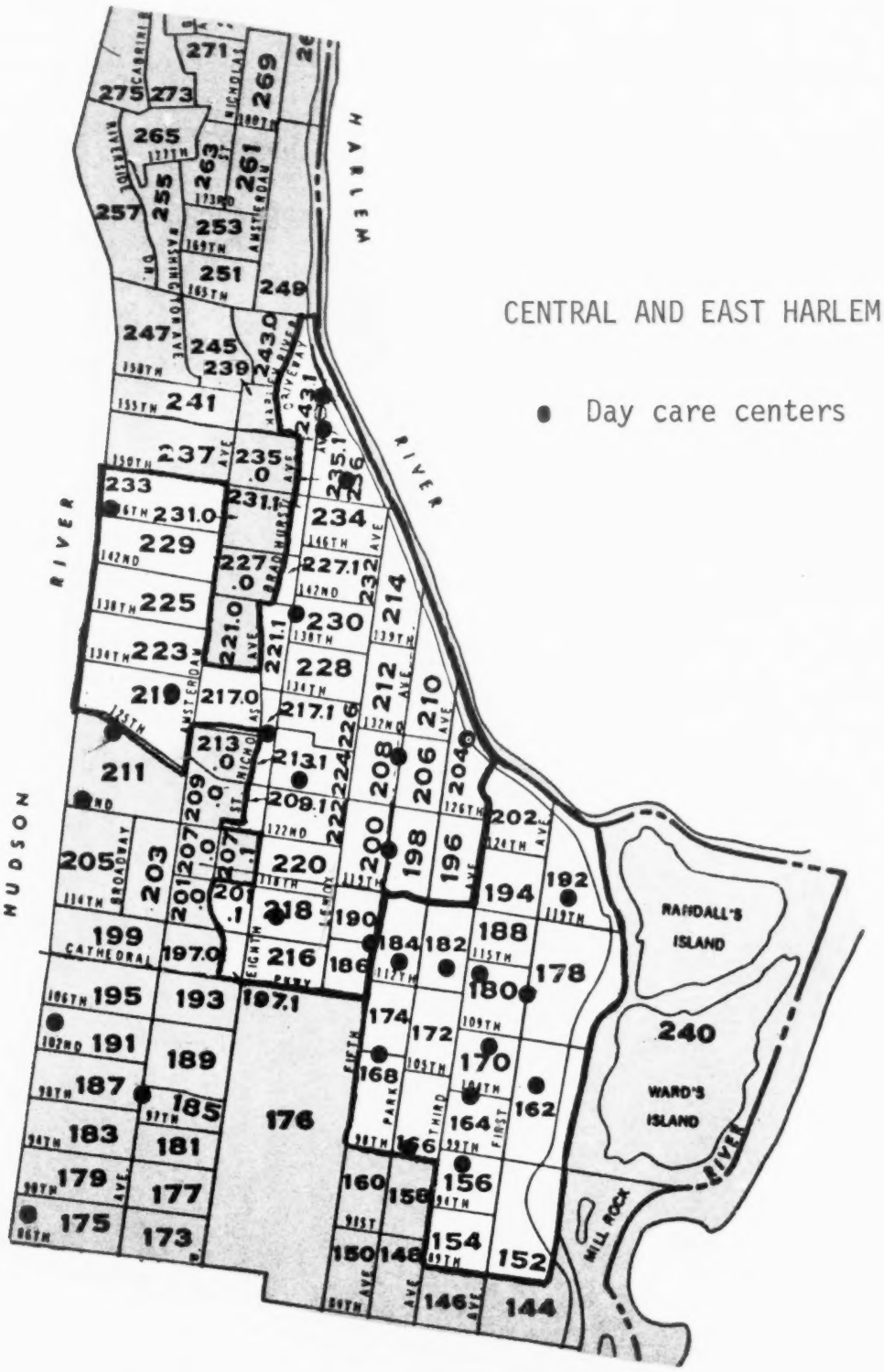
Table 25. Number of day care centers 1/ and capacity by number of children, New York City, October 1969 and October 1970

Number and capacity	Total	Manhattan	Bronx	Brooklyn	Queens and Richmond
October 1969					
Total, New York City					
Number	112	47	23	30	12
Capacity	7,411	3,477	1,487	1,739	708
In or near UES areas 2/					
Number	41	26	6	9	-
Capacity	2,887	2,019	379	489	-
In UES areas					
Number	33	24	4	5	-
Capacity	2,360	1,880	240	240	-
Near UES areas					
Number	8	2	2	4	-
Capacity	527	139	139	249	-
All others shown on map 2/					
Number	18	3	12	3	-
Capacity	1,150	225	715	210	-
All other in City					
Number	53	18	5	18	12
Capacity	3,374	1,233	393	1,040	708
October 1970					
Total, New York City					
Number	137	60	24	36	17
Capacity	8,784	3,999	1,572	2,315	898

1/ Reimbursed by the Department of Social Services.
2/ See maps following this table.

Source: Bureau of Child Welfare, Department of Social Services.

MAP OF CENSUS TRACTS INCLUDED IN NEW YORK CITY UES AREA AND APPROXIMATE LOCATION OF DAY CARE CENTERS REIMBURSED BY DEPARTMENT OF SOCIAL WELFARE

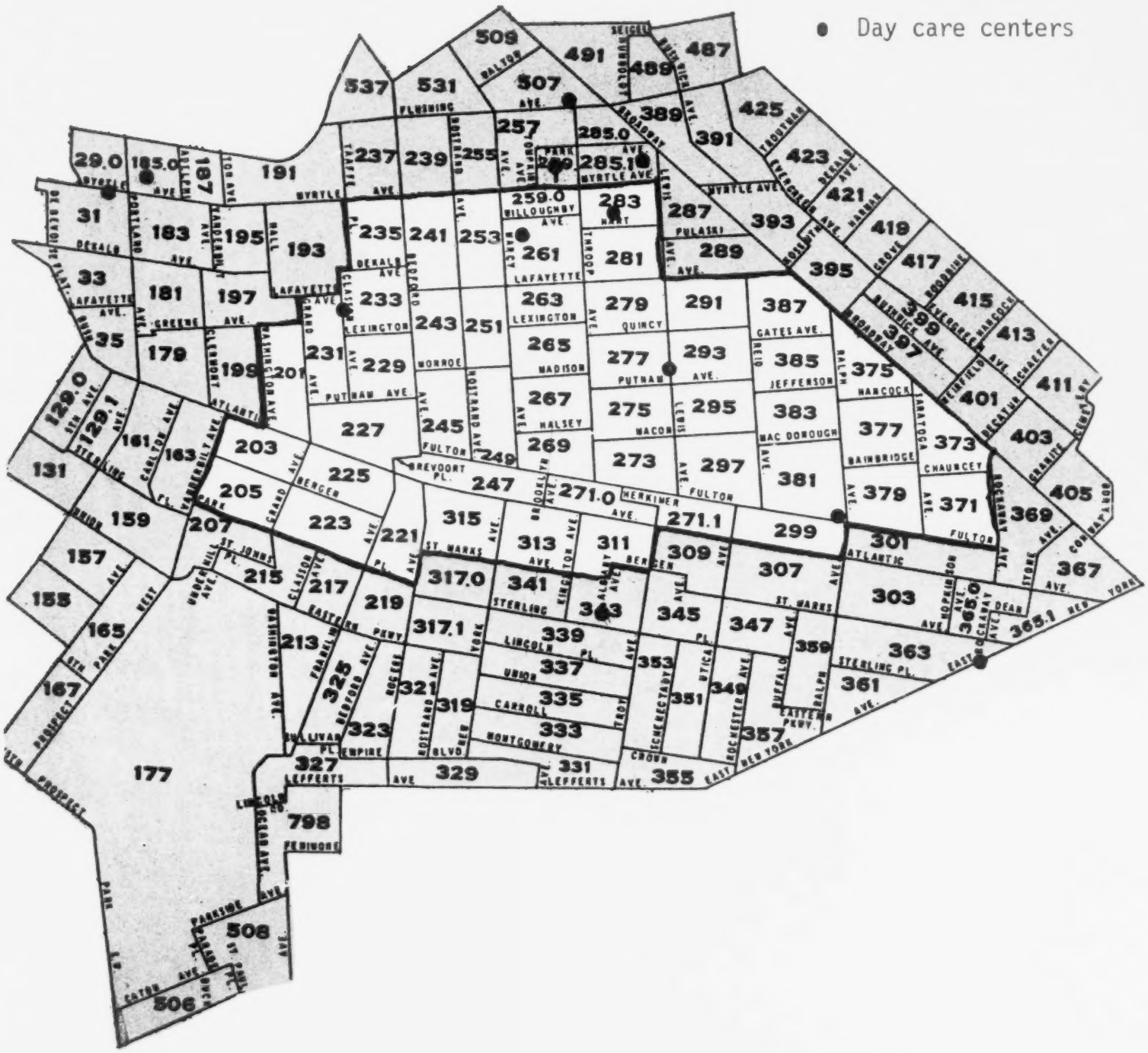


UES area census tracts unshaded

MAP OF CENSUS TRACTS INCLUDED IN NEW YORK CITY UES AREA AND APPROXIMATE LOCATION OF DAY CARE CENTERS REIMBURSED BY DEPARTMENT OF SOCIAL WELFARE

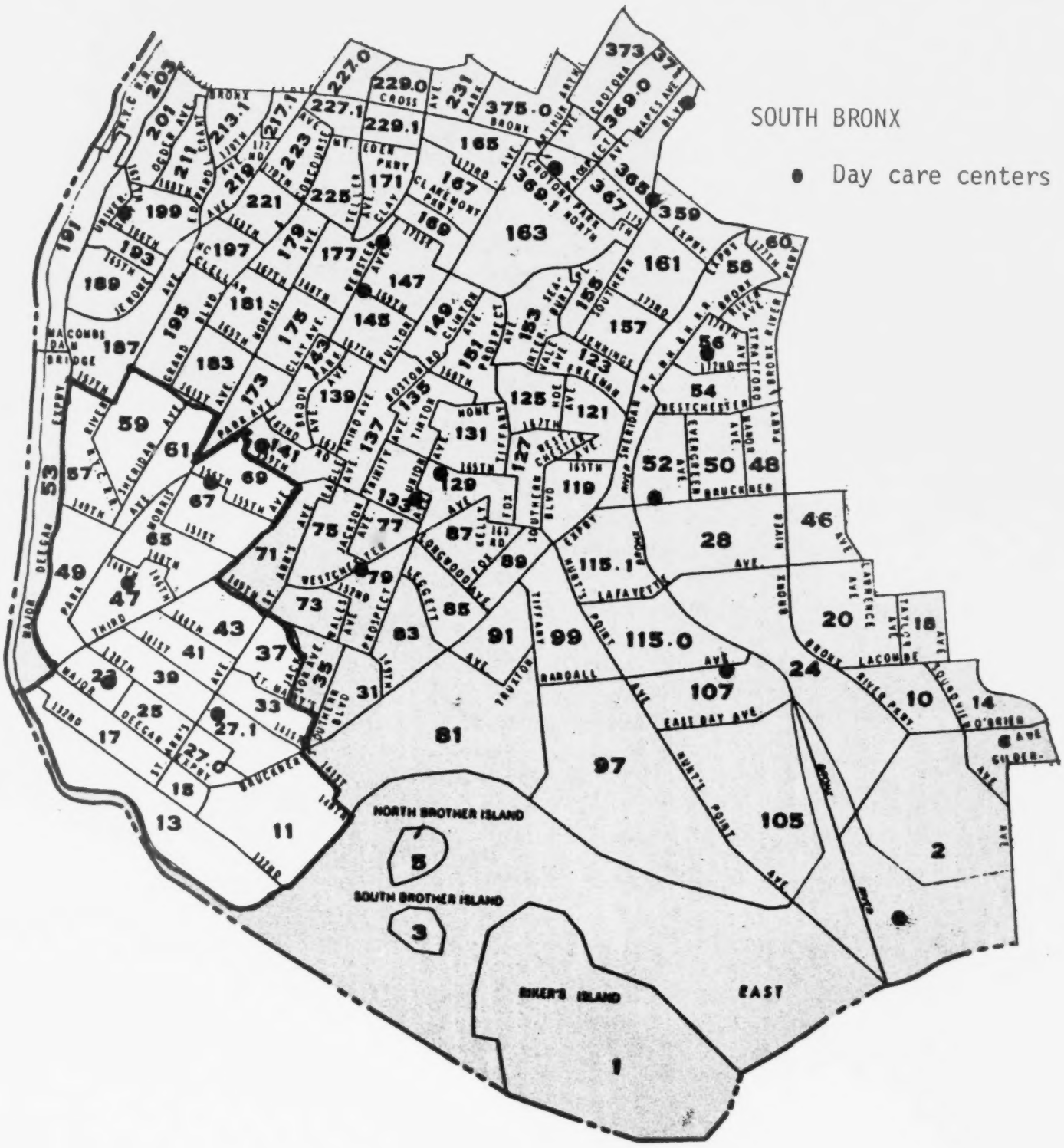
BEDFORD-STUYVESANT

● Day care centers



UES area census tracts unshaded

MAP OF CENSUS TRACTS INCLUDED IN NEW YORK CITY UES AREA AND APPROXIMATE LOCATION OF DAY CARE CENTERS REIMBURSED BY DEPARTMENT OF SOCIAL WELFARE



UES area census tracts unshaded

were not within walking distance of their homes. In some parts of the poverty areas, transportation to the nearest day care center may not have been conveniently available; even if it had been, the added fare expense, and the detour involved before the trip to work could begin, may have discouraged some respondents from even considering the use of day care centers. Thus,the inadequate number and capacity of day care centers would appear to be a factor to deter women with children from entering the labor force.

Qualifications for employment

Other barriers to successful job search were perhaps as important as child care problems in preventing nonparticipating women with family responsibilities from entering the labor force. Only one-sixth of all nonparticipating women with family responsibilities who wanted a job had worked during the 12 months preceding the interview. One-third had worked between 1 and 5 years ago, and more than half had either worked more than 5 years ago or had never worked.

Table 26. Work history of women not in labor force because of family responsibilities who wanted a job

Total 1/	16,400
Percent distribution	100
Worked within last year	15
Worked 1-2 years ago	12
Worked 2-5 years ago	21
Worked 5 or more years ago ..	42
Never worked	11

1/ Represents number of women who reported family responsibilities as a reason for not looking for work. Among them, 15,200 reported family responsibilities as the main reason for not looking.

Furthermore, the occupational makeup of those women who had worked within the last 5 years was heavily weighted towards low-skilled or unskilled work: nearly three out of four had performed semiskilled blue-collar or service work (half of the former service workers had been employed in private households). Virtually all those who had been employed in white-collar fields had held clerical jobs.

Table 27. Women not in labor force because of family responsibilities who wanted a job, by occupation of last job held

Total	16,400
Worked in last 5 years	7,700
Percent distribution	100
White collar	29
clerical and sales	26
Blue collar	45
Semiskilled and unskilled	45
Service	25
Worked 5 or more years ago or never worked	8,700

The occupational distribution of women nonparticipants with family responsibilities also compared unfavorably with that of employed women residing in the City's poverty areas. Employed women were more likely to hold white-collar jobs (37 percent) and less likely to work in semiskilled and unskilled blue-collar occupations (27 percent).

Low educational attainment constituted still another handicap in any search for a job in which nonparticipating women with family responsibilities might have engaged. This is indicated by the data for all women residing in the City's major poverty areas who did not work or look for work because of housekeeping duties. Median years of school completed amounted to little more than 2 years of high school for Negro women 18 and over, and little more than an elementary school education for their Puerto Rican counterparts. Low educational attainment placed these women at a competitive disadvantage not only in the City's labor market generally, but even in comparison with female workers residing in poverty areas. Here, the average female Negro worker 18 and over had more than 3 years of high school, and her Puerto Rican counterpart had 2 years.

Table 28. Median years of school completed, women 18 and over

	In Labor force	Not in labor force, keeping house
Total	11.2	9.4
Negro	11.3	10.1
Puerto Rican	10.0	8.3

In sum, little or no recent work experience, low educational attainment, and lack of adequate skills would have made it quite difficult for nonparticipating women who wanted a job to find one. These handicaps, moreover, would have unfavorably affected their earnings capacity. Realization of being insufficiently prepared to meet the demands of current labor markets, combined with the difficulty of securing child care facilities, was possibly among the reasons why only 45 percent of all nonparticipating women with family responsibilities who wanted a job expressed an intention to look for one during the 12 months following the interview.

Earnings equivalent of welfare allowance

As already noted, female household heads who were not in the labor force because of child care responsibilities typically drew welfare allowances; their median income was $2,713 during the year preceding the interview. The annual equivalent of the basic monthly welfare allowance of $219.25 for a woman with two children (a boy, 5, and a girl, 3) was $2,631. In order to have the equivalent income from a year-round full-time job, taking into account work-related expenses (including such items as lunches, fares, and taxes), gross earnings would have had to amount to about $74 per week for a household head with two dependents, or more than $3,800 per year (see Table 29).

This earnings equivalent of the welfare allowance compares with average weekly earnings of roughly $84 for female household heads 20-64 residing in the City's poverty areas during the survey period and working full time; and with average annual earnings of about $4,250. Nearly one-third of these female household heads grossed less than $75 per week. Assuming women not in the labor force who headed households and cared for children had a choice between drawing a welfare allowance and working, it may not have been to the economic advantage for many of them to opt for the latter. Since most of these women lacked the qualifications that women in the labor force had, they would probably have had to settle for lower wages, had they looked for a job.

The illustrative computations in Table 29 suggest that between October 1968 and October 1969, work expenses of a female head of household with two children would have absorbed one-fourth or more of her gross earnings. This proportion is in line with various studies which show that work expenses take from one quarter to one half of a working wife's gross earnings. 1/ Only minimal allowance is made in the table for child care fees, it being assumed that the working mother has access to a day care center reimbursed by the Department of Social Services. Otherwise, she may require the services of a private baby-

1/ See 1969 Handbook of Women Workers, Women's Bureau Bulletin No. 294, page 35.

Table 29. Illustrative estimates of weekly work-related expenses of a woman heading a household with two children under 9, New York City October 1968-October 1969 1/

Lunches 2/	$4.50
Clothing 3/	2.80
Personal care 4/	.40
Fare 5/	2.00
Job expenses	1.30
Child care 6/	3.00
Mandatory deductions 7/	9.00
Total	$23.00

Weekly equivalent of monthly welfare allowance for a woman with two children, 3 and 5 years of age 8/	$51
Work-related expenses	23
Weekly gross earnings needed to match welfare allowance	$74

1/ The estimages shown for lunches, clothing, personal care, and job expenses have been drawn from Annual Price Survey, Family Budget Costs, October 1968 and October 1969, The Community Council of Greater New York, Appendix 1. The calculation for mandatory deductions is based on schedules that appear in that publication. The Community Council figures are adapted from BLS budget data, and represent costs for New York City alone at low to moderate budget levels.

2/ Figure represents difference in cost between lunch at home (based on Department of Agriculture low-cost food plan) and lunch at a restaurant ($1.30 per meal).

3/ Figure represents difference between cost at home and cost when employed.

4/ Figure represents difference between cost when at home and when employed. Items include beauty aids, cleansing tissue, shoe polish, etc.

5/ Assumes 10 fares at 20 cents each.

6/ Figure is based on the fee schedule of the Bureau of Child Welfare of the Department of Social Services. Assumes that children are placed in a day care center reimbursed by the Department.

7/ Includes deductions for Federal, State and City income taxes, FICA, and disability insurance.

8/ The basic monthly welfare allowance for a woman with two children (boy, 5, and girl, 3) was $219.25 between October 1, 1968 and July 1, 1969. The allowance included $93.25 for rent. Source: Home Economics Program, Department of Social Services.

sitter or child care facility, and this would very likely spell considerably higher fees.

There are of course both tangible and intangible benefits from working outside the home which may make acceptable lower gross earnings than those calculated as the equivalent of a welfare allowance. Among the measurable benefits may be employee pension plans, health insurance, paid sick leave and paid vacations, as well as social security and retirement income benefits above those which a nonworking female head of household can count on. Intangible benefits may constitute equally important inducements to work; among them is the opportunity to widen horizons, develop new skills and discover new aptitudes. Earnings from work would be expected, however, to permit a higher standard of living than income from a welfare allowance, and the added total of work-related expenses roughly indicates the line beyond which this expectation would be fulfilled.

Reports and publications

This is the fifth report on findings from the Urban Employment Survey in New York City's major poverty areas, issued by the Middle Atlantic Regional Office of the Bureau of Labor Statistics. Other reports on major aspects of UES findings are planned, and will be forthcoming as staff resources permit.

Copies of this report are available without charge from the Bureau of Labor Statistics, Middle Atlantic Regional Office, 341 Ninth Avenue, New York, New York, 10001. Related reports include:

Regional Report No. 13, Poverty Area Profiles: The Working Age Population: Initial Findings.*

Regional Report No. 14, Poverty Area Profiles: Characteristics of the Unemployed.*

Regional Report No. 19, Poverty Area Profiles: The New York Puerto Rican: Patterns of Work Experience.

Regional Report No. 21, Poverty Area Profiles, The Job Search of Ghetto Workers

BLS Report No. 370, Employment Situation in Poverty Areas of Six Cities, July 1968-June 1969.*

Reports have also been published by the five other cities where the Urban Employment Survey has been conducted -- in Atlanta, Detroit, Chicago, Houston, and Los Angeles.

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* Out of print. Copies are on file for reference.

Concepts used in this report

Civilian noninstitutional population -- The population, 16 and over, residing in the New York City Urban Employment Survey area, exclusive of inmates of institutions, such as prisons and mental hospitals, and of members of the Armed Forces.

Employed persons -- Employed persons comprise (1) all civilians who, during the specified week, did any work at all as paid employees or in their own business or profession, or who worked 15 hours or more as unpaid workers in a business operated by a member of the family, and (2) all those who were not working (but who had jobs or businesses) because of illness, bad weather, vacation, or labor-management dispute, or because they were taking time off for personal reasons. Excluded from the employed group are persons whose only activity consisted of work around the house (such as own home housework, painting or repairing own home, etc.) or volunteer work for religious, charitable, and similar organizations.

Household -- A household consists of all the persons who occupy a housing unit. A house, an apartment, or other group of rooms, or a single room, is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants do not live and eat with any other persons in the structure and in which there is either (1) direct access from the outside or through a common hall, or (2) a kitchen or cooking equipment for the exclusive use of the occupants.

Household head -- The head of household is the member reported as the head by the household respondent. Household heads are either heads of primary families or primary individuals. The head of a primary family is a household head living with one or more persons related to him by blood, marriage, or adoption. A primary individual is a household head living alone or with nonrelatives only.

Labor force -- The civilian labor force consists of the total of all civilians classified as "employed" or "unemployed" in accordance with the criteria described for these classifications.

Negro -- The designation "Negro" includes a small proportion of persons of races other than Negro or white. Excludes Puerto Ricans.

Not in the civilian labor force -- All persons who are not classified as employed or unemployed are defined as "not in labor force."

Part-time and full-time workers -- Persons who worked 1 to 34 hours are designated as working part-time. Persons who worked 35 hours or more are considered full-time workers.

Puerto Rican -- Puerto Rican refers to all persons of Puerto Rican birth or parentage.

Race or ethnic group -- The designation "Negro" includes a small percentage of persons of races other than Negro or white. "Puerto Rican" includes all persons of Puerto Rican birth or parentage. It excludes Negroes. "White" excludes Puerto Rican.

Unemployed -- Unemployed persons are those civilians who had no employment during the survey week, were available for work, and: (1) had engaged in any specific jobseeking activity within the past 4 weeks. Principal activities include: registering at a public or private employment office; meeting with prospective employers; checking with friends or relatives; placing or answering advertisements; writing letters of application; or being on a union or professional register;

(2) were waiting to be called back to a job from which they had been laid off, or

(3) were waiting to report to a new wage or salary job scheduled to start within the following 30 days.

Unemployment rate -- represents the number unemployed as a percent of the civilian labor force.

Unrelated individual -- a person living alone or with others not his relatives. An unrelated individual may or may not be a primary individual, heading his or her own household.

White -- The designation "White" excludes persons of Puerto Ricans origin for purposes of this report.

Work experience -- Persons with work experience are civilians who worked at any time during the year preceding the interview at full-time or part-time jobs.

Part-time and full-time jobs -- Persons are classified as having worked at full-time jobs if they worked 35 hours or more per week in a majority of the weeks worked during the year. They are classified as having worked at part-time jobs if they worked 1 to 34 hours per week in a majority of the weeks worked during the year.

Part-year workers -- Part-year workers are persons who worked either full time or part time for 1 to 49 weeks.

Weeks worked -- Persons with work experience are classified according to the number of weeks in which they did any work during the year for pay or profit (including paid vacations or sick leave) or worked without pay on a family-operated farm or business.

Year-round full-time workers -- Year-round full-time workers are persons who worked primarily at full-time jobs for 50 weeks or more.

Technical note

The data for the Urban Employment Survey in New York City, on which this report is based pertain to the July 1968-June 1969 period, and were compiled from household surveys of persons 16 and over who resided in the Concentrated Employment Program (CEP) areas of Central and East Harlem, and the South Bronx. In addition, the Bedford-Stuyvesant area of Brooklyn was surveyed. The Urban Employment Survey was also conducted in Atlanta, Chicago, Detroit, Houston, and Los Angeles, and in the balance of the cities of Detroit and Atlanta.

CEP areas are areas in which the Department of Labor has combined separate manpower programs in order to concentrate these programs in specific neighborhoods. The selection of CEP areas in New York as well as in the other UES cities was in large part based on the extent of unemployment and poverty in the areas as shown mostly by the 1960 Decennial Census.

The Urban Employment Survey was directed by the Bureau of Labor Statistics with the cooperation and financing of the Manpower Administration. The Bureau of the Census collected and tabulated the data. The data were collected by trained Census Bureau interviewers from a sample of about 3,600 households in 151 Census tracts in New York City, maps of which may be found on the following pages.

Although the areas covered in this report are referred to as poverty neighborhoods, it should be noted that they include persons and families who are not living in poverty conditions, and who do not have serious employment problems.

The racial or ethnic designations in this report are defined as follows: "Negro" excludes Puerto Ricans, and includes less than 2 percent of persons of races other than Negro or White. "Puerto Rican" refers to all persons of Puerto Rican birth or parentage. "White" refers to all white persons other than Puerto Rican.

Reliability of the estimates

The estimates in this report and in the detailed tables that follow are based on a sample of 3,600 households, and they may differ from the figures that would have been obtained, had it been possible to take a complete census, using the same schedule and procedures. The design of the sample used provides the greatest reliability for data concerning broad population groups; estimates for small groups -- particularly where they fall below 5,000 -- will have larger relative

sampling errors. Differences between such small estimates may be simply the result of sampling variability, and should therefore be interpreted with caution.

All statements of comparison made in the text of this report are statistically significant at a level of at least 1.6 times the standard error; that is, the chances are at least 9 out of 10 that a difference identified in the text indicates a true difference between estimates rather than the chance variations arising from the use of samples.

The standard error is a measure of sampling variability; it indicates the variations that might occur by chance because only a sample of the population was surveyed. The chances are about two out of three that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 9 out of 10 that the difference would be less than 1.6 times the standard error, and 19 out of 20 that it would be less than twice the standard error. The following tables show approximations of standard errors of the levels and of the rates and percentages presented in this report for the New York City Urban Employment Survey area.

Standard errors of level of the annual estimates for the New York City Urban Employment Survey

Size of estimates	Standard error
5,000	560
10,000	800
20,000	1,150
30,000	1,400
40,000	1,600
80,000	2,400
120,000	3,000
160,000	3,500
200,000	4,100
240,000	4,600
280,000	5,100
320,000	5,500
360,000	6,000
400,000	6,400

Standard errors of level of the annual estimates of percentages for the New York City Urban Employment Survey

Base of percentage	Estimated percentage						
	1 or 99	2 or 98	5 or 95	10 or 90	20 or 80	25 or 75	50
5,000	1.1	1.6	2.5	3.4	4.5	4.9	5.6
10,000	.8	1.1	1.7	2.4	3.2	3.4	4.0
20,000	.6	.8	1.2	1.7	2.3	2.4	2.8
30,000	.5	.7	1.0	1.4	1.8	2.0	2.3
40,000	.4	.6	.8	1.1	1.6	1.6	1.9
80,000	.3	.4	.6	.8	1.1	1.2	1.3
120,000	.2	.3	.5	.6	.9	1.0	1.1
160,000	.1	.3	.4	.6	.8	.8	1.0
200,000	.1	.2	.4	.5	.7	.8	.8
240,000	.1	.2	.4	.5	.6	.7	.8
280,000	.1	.2	.4	.4	.6	.6	.7
320,000	.1	.2	.3	.4	.6	.6	.7
360,000	.1	.2	.3	.4	.5	.6	.6
400,000	.1	.1	.3	.4	.5	.5	.6

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INSTITUTIONAL MANPOWER DEVELOPMENT AND
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(JULY 1, 1969-JUNE 30,1970).

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TRAINING ACT; SMTA; COOPERATIVE AREA MANPOWER
PLANNING SYSTEMS; CAMPS

ABSTRACT - THIS REPORT PROVIDES AN OVERVIEW
OF THE TOTAL INSTITUTIONAL MANPOWER TRAINING
EFFORT ADMINISTERED BY THE NEW YORK STATE
EDUCATION DEPARTMENT UNDER FEDERAL AND STATE
LEGISLATION FOR FISCAL YEAR 1970. THE THREE
MAJOR PROGRAMS COVERED ARE MANPOWER
DEVELOPMENT AND TRAINING ACT PROGRAMS, THE
WORK INCENTIVE PROGRAM, AND THE STATE
MANPOWER TRAINING ACT. THE PROGRAM
DESCRIPTIONS COVER FUNDING, NUMBER OF
TRAINING SLOTS, OCCUPATIONAL TITLES, AND
COURSE LENGTHS AND COSTS. INCLUDED IN THE
REPORT IS A DESCRIPTION OF MANY OF THE
PROBLEMS THAT WERE ENCOUNTERED IN THE
DEVELOPMENT, IMPLEMENTATION, AND OPERATION OF
TRAINING PROGRAMS WITH PROPOSED
RECOMMENDATIONS AND SOLUTIONS. (BH)

VT 013 997

ANNUAL REPORT

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institutional manpower development and training in New York State

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PREFACE

The activities of the bureaus of manpower for fiscal year 1970 were more varied than those of previous years because of greater involvement with concentrated employment and NABS-JOBS programs.

Again, as in past years, the bureaus' efforts focused on the development, implementation, and supervision of training programs for disadvantaged persons, primarily those who were long-term unemployed. Over 65 percent of the persons referred to the Federal and State manpower programs were classified as being disadvantaged and all referrals to the WIN programs were identified as welfare recipients.

Proposals developed for the Federal, State, and WIN manpower programs were similar in objectives, structure, and content. Federal manpower multi-occupation projects that contained prevocational training components were comparable to prevocational employability orientation phases of training in the WIN programs. There was little provision for prevocational training in the State Manpower Training Programs. However, a substantial number of State programs did provide for basic and remedial education services.

Included in this report is a description of many of the problems that were encountered in the development, implementation, and operation of training programs with proposed recommendations and/or solutions for many of the problems identified. It is expected with some optimism that the suggestions offered in this report for program improvement will contribute towards bringing about much needed changes in regulations and policies for manpower programs.

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INTRODUCTION

This report presents an overview of the total institutional manpower training effort administered by the New York State Education Department under the current Federal and State manpower legislation for fiscal year 1970. The report was developed through the joint efforts of the Bureau of Manpower Program Development and the Bureau of Manpower Program Supervision, under the direction of John M. Leslie, director of the Division of Special Occupational Services.

The report focuses on the three major programs for which these two manpower bureaus are responsible: the Federal Manpower Development and Training Act, the State Manpower Training Act, and the Federal Work Incentive Training Program.

The total number of training opportunities or slots approved, and the total sum of money encumbered for each program for fiscal year 1970 are shown below. Other funds totaling 2.2 million dollars were made available for special projects and are identified in the tables in the appendix.

Programs	No. of Trainees	Funds
MDTA		
Prevocational	3,557	$ 1,782,855
Skill	5,116	7,427,297
SMTA		
Prevocational	750	799,836
Skill	1,860	2,881,187
WIN		
Employment Orientation	12,265	952,930
Skill	468	374,547
Prevocational	250	19,525
GRAND TOTAL	24,266	$ 14,238,177

Training proposals prepared for the above identified programs including occupational titles, course lengths, cost, and number of trainees per program are shown in tables in the appendix.

KINDS OF MANPOWER LEGISLATION

Federal Manpower Development and Training Act (MDTA)

Programs categorized under the Manpower Development and Training Act, Title II are as follows:

Section 202 - Part-time and other than skill training

Section 204 - On-the-job training

Section 231 - Institutional training

Section 241 - Institutional and/or OJT for residents of redevelopment areas (RAR).

Section 251 - Training for inmates of correctional institutions

As in previous years, regular, multioccupation, RAR, coupled OJT, and special projects were approved in fiscal year 1970. These projects provided training and remedial services to individuals to enable them to obtain employment.

In this fiscal year, more so than in past years, MDTA resources were used jointly with funds from the Economic Opportunity Act appropriation for large-scale national programs developed in response to particular needs and circumstances, namely the Concentrated Employment, and Job Opportunities in the Business Sector programs. Also, in this fiscal year, section 301 (b) (1) of the Manpower Development and Training Act was implemented for the first time. Increased responsibility for program administration was assigned by granting authority to the State to approve up to 20 percent of the allocation without Federal approval. Also, changes in Federal regulations gave authority to the State to approve all budgetary line item changes when there was no increase in the budget total which, heretofore, had required prior Federal approval.

State Manpower Training Act (SMTA)

State manpower programs, in general, followed the guidelines and regulations established for Federal manpower programs and were similar to MDTA in structure and content. However, greater flexibility in scheduling of State funded programs permitted approval of a wider range of training programs to meet the specific needs of local communities and industries of New York State. This was the first year in which an actual appropriation was made by the legislature (totaling $15,000,000) for funding State manpower programs. Previously, funds had been made available from the State's Penalty and Interest Fund.

Work Incentive Training Act (WIN)

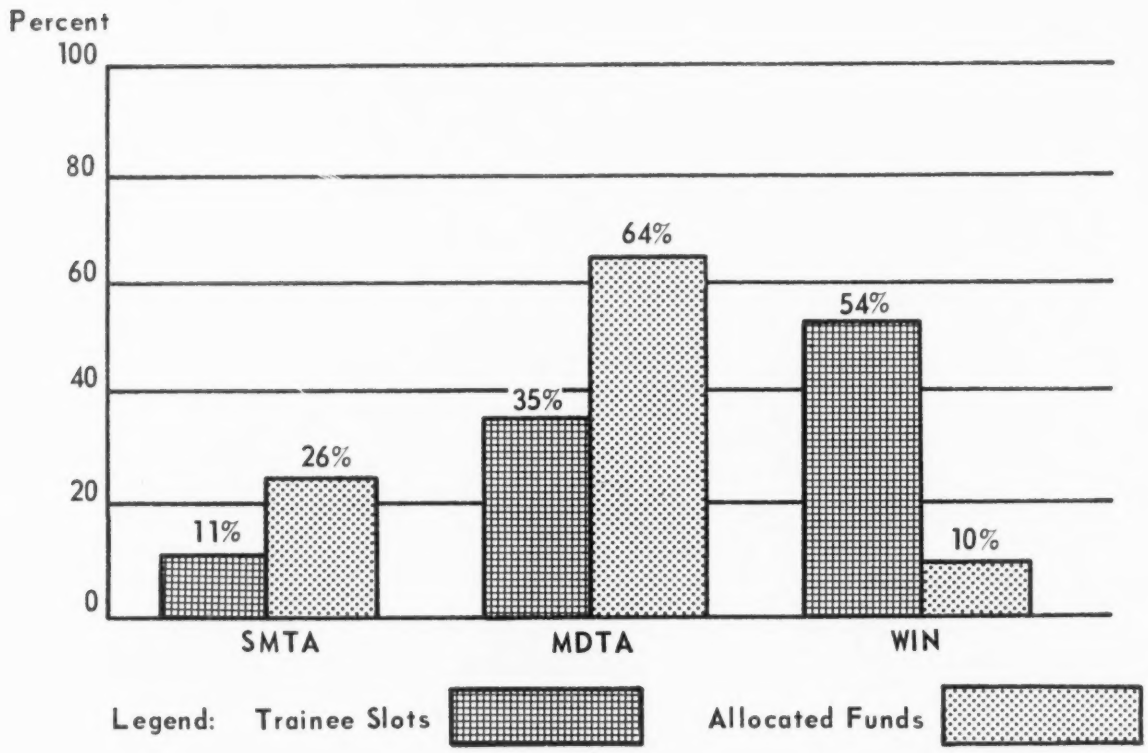
The Work Incentive Program was authorized by the 1967 amendments to the Social Security Act to provide welfare recipients an opportunity to achieve productive employment. The amendment authorized that ADC (Aid to Dependent Children) applicants and recipients be provided financial incentives, opportunities, and necessary services to facilitate their training and subsequent employment.

In the operation of a WIN program, local welfare agencies have the responsibility to refer ADC clients to a WIN team which develops an employability plan for each individual referred. As a part of this plan, the WIN team makes a determination of the services and/or training necessary for the client to become a wage-earning member of society. If it is determined that training is required for employment, the person may be referred to ongoing programs such as Neighborhood Youth Corps, New Careers, and State and Federal manpower programs currently operating where slots are available. New group programs, skill training and any other kind that will enable the welfare recipient to become employable, may be authorized using WIN funds should trainee numbers warrant it.

In its first year, the WIN program was beset with many problems and

got off to a slow start. However, its growth and successes increased steadily, and it has become an important contributor towards bringing chronically unemployed and otherwise disadvantaged persons into the economic and social mainstream of society.

CHART
PERCENTAGE DISTRIBUTION OF TRAINING SLOTS AND ALLOCATED FUNDS BY SOURCE OF FUNDING (SMTA, MDTA OR WIN)



In the above chart, WIN Employability Orientation programs accounted for 51% of all trainee slots.

CAMPS

As in past years, a State CAMPS (Cooperative Area Manpower Planning System) plan was developed and approved by State, regional, and national Federal agencies concerned with manpower development. A great deal of the input for this plan was obtained from local area CAMPS committees.

The State CAMPS Plan may best be described as a plan of Manpower activities for the forthcoming fiscal year. It consists of parts A and B. Part A includes a discussion of -

- Current trends with regard to the economy, population, and labor force, and changes expected to occur that will affect program planning;
- Nature of employment in terms of occupations and industries, in which people work;
- Types of jobs that remain unfilled because of the lack of qualified people to fill them;
- The number and characteristics of unemployed, underemployed, and underutilized persons; the nature of their employment problems; and the services they need to become employable or qualified for better jobs;
- An inventory of the nature and extent of manpower programs that are currently available;
- The nature and extent of needs for manpower services that will go unmet if additional resources are not made available; and
- The identification of those needs for manpower services that should receive priority.

Part B includes -

- Estimates of the extent to which program resources allocated to the State will meet its manpower needs;

- Important new program developments and plans for organizational or administrative changes at the State level;
- A description of interstate and interarea program linkages; and
- A list of manpower programs planned for the State.

The CAMPS Plan was amended as the fiscal year progressed due to changes in labor market demands. These amendments were published in the CAMPS Quarterly Reports. In addition to including notices of amendments to the Plan, input was provided by the Bureau of Manpower Development Program Supervision identifying problems encountered by local training agencies in carrying out their manpower training responsibilities. A copy of a CAMPS Quarterly Report is included in the appendix.

The structure of CAMPS (Cooperative Area Manpower Planning System) was changed in fiscal year 1970 to divide the State into 13 regions as illustrated on the map shown on the following page. The geographic delineation for these regions was an adaptation of that developed by the Office of Manpower Planning Commission for its own planning responsibilities.

The CAMPS restructuring on the local level brought about a more effective and all-inclusive planning system since all areas in the State are now required to be involved in providing input for planning. In the past, representation for planning from the less populated rural areas (classified as the "Remainder of the State") was not provided. In addition, the State Manpower CAMPS Committee structure was changed so that all Federal agencies (seven in number) on the State CAMPS Committee had their signatory status for approval of the State CAMPS Plan changed to consultative members. State University of New York (SUNY), N.Y.S. Department of Civil Service, and the N.Y.S. Department of Environmental Conservation were added as signatory members.

Those agencies now identified as signatory are:

N.Y.S. Department of Labor

N.Y.S. Education Department

N.Y.S. Department of Social Services

N.Y.S. Office for Community Affairs

N.Y.S. Department of Civil Service

N.Y.S. Division for Youth

N.Y.S. Office of Planning Coordination

N.Y.S. Department of Commerce

N.Y.S. Department of Environmental Conservation

State University of New York

Those agencies now identified as consultative are:

N.Y.S. Social Development Planning Commission

N.Y.S. Manpower Resources Commission

N.Y.S. Health Planning Commission

N.Y.S. Division of the Budget

N.Y.S. Crime Control Commission

U.S. Manpower Administration

U.S. Bureau of Apprenticeship and Training

U.S. Department of Housing and Urban Development

U.S. Department of Commerce

U.S. Department of Civil Service

U.S. Department of Agriculture

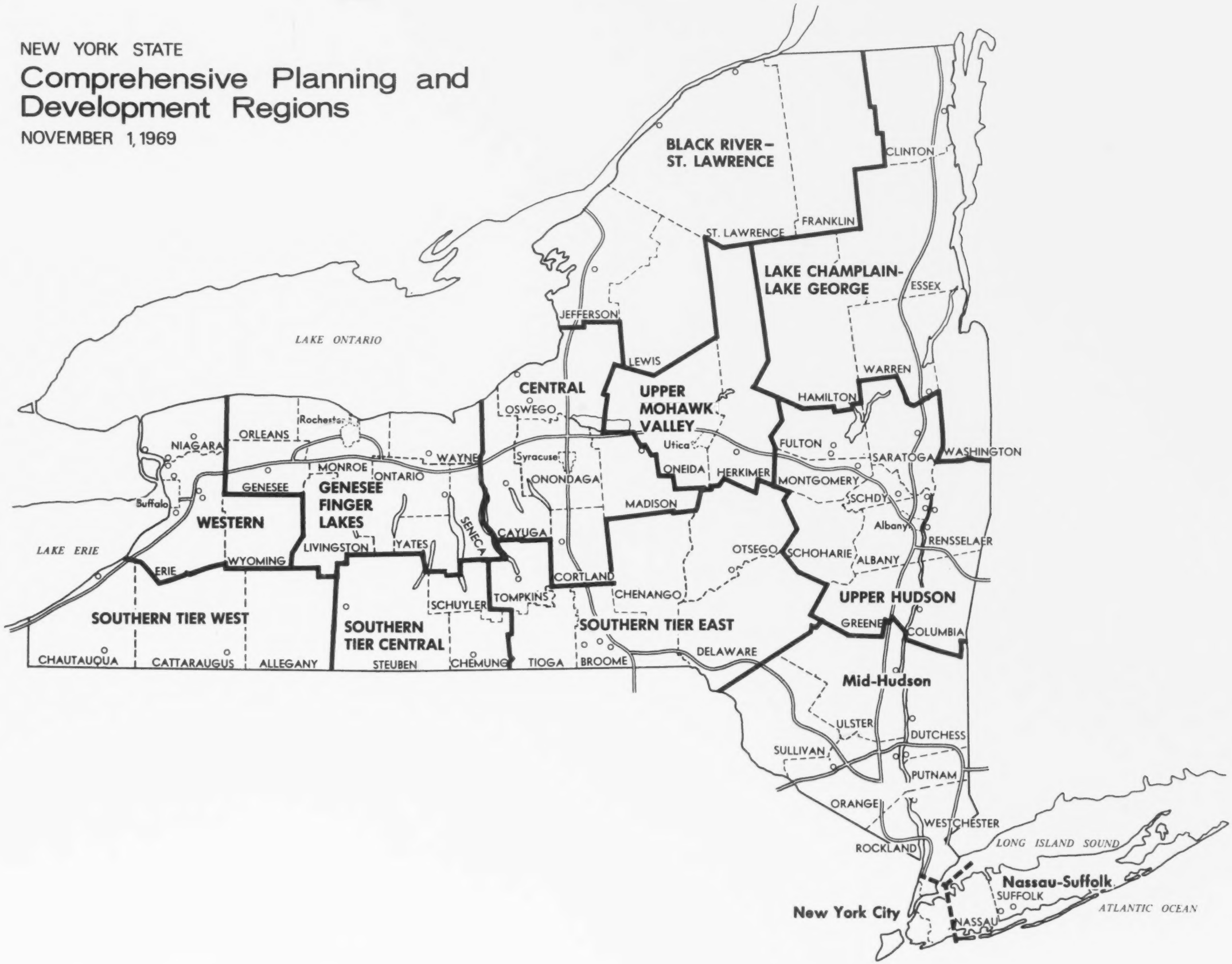
U.S. Office of Economic Opportunity

How well this new structure will function remains to be seen, but with the reorganization of the State CAMPS Committee as a prototype for the structuring and restructuring of local CAMPS Committees, it is hopefully expected that there will be a significant improvement in the development of the annual local and State CAMPS plans.

NEW YORK STATE

Comprehensive Planning and Development Regions

NOVEMBER 1, 1969



SOURCES AND EXTENT OF FEDERAL FUNDS ALLOCATED

TO THE STATE FOR MANPOWER PROGRAMS

Under the Federal Manpower legislation, New York State was allocated a total of slightly over 16 million dollars. Of this sum, 8 million dollars was utilized for financing the institutional costs of training programs. The remaining sum was encumbered to finance training allowances.

The sum of 8 million dollars for institutional costs was encumbered prior to the end of this fiscal year, June 30, 1970. Consequently, it was necessary to request additional funds from the unallotted reserve in Washington to fund other deserving projects that had been developed. A sum of approximately 4 million dollars of reprogram moneys not used by the NABS-JOBS became available for funding these and other projects, particularly for amending 1970 multioccupational programs for additional sections. Of the 4 million dollars, institutional training agencies received slightly over 2 million dollars for training costs.

In addition to funds received as described above, a total of approximately $186,000 was allocated by the HEW Regional Office for the funding of Redevelopment Area Retraining (RAR) projects. This sum represented half the level of funding made available for last year's RAR programs.

Funds were obtained for one section 251 proposal (Correctional Institutional Training), amounting to slightly more than $114,000. Additional funds were also allocated for covering institutional costs of other categories of projects, such as On-the-Job Training, Concentrated Employment programs, and the Training Resources for Youth programs, totaling 2.2 million dollars. Funds totaling $217,000 were obligated to cover costs for the institutional phase of NABS-JOBS programs, which were provided directly to local training agencies rather than funneled through the State Education Department.

In summary, the total funds received by the State for all Federal manpower programs for fiscal year 1970 for funding the institutional training components of programs approved amounted to a rounded figure of $12,760,000.

MDTA FUNDS FOR PROPOSAL DEVELOPMENT

Each year the State Education Department has requested an allocation of developmental funds from the Department of Health, Education, and Welfare through the Director of Manpower for distribution to public training agencies designated to develop MDTA or RAR training proposals. The allocation granted was less than the amount requested, thus, the amounts distributed were less than those requested by local training agencies.

The Bureau of Manpower Program Development distributed developmental funds on a proposal basis. The agency which prepared the proposal submitted its request for reimbursement based upon the actual time and effort expended in developing the proposal, including revisions requested by the State staff.

Two hundred and forty requests were received from public training agencies for developmental funds in fiscal year 1970. As stated above, requests far exceeded the funds on hand and, consequently, were prorated and, since such funds were provided at a late date, distribution was made after all proposals had been completed rather than on an advance basis as was intended.

DESCRIPTION OF SELECTED TYPES OF MANPOWER PROGRAMS

On-the-Job Training Programs

On-the-job training is a type of training provided under actual employment conditions within an industrial or business establishment. In many cases, those referred to an on-the-job training program are in need of special educational services prior to or during the course of employment. Without certain basic education, work and social orientation, and counseling, many persons, particularly the disadvantaged youths and adults, would be unable to benefit from training. When such is the case, a coupled OJT program is usually established to cope with the problem. This remedial approach has been successful when used in conjunction with on-the-job training programs. However, since much of the OJT is contracted on an individual basis or for very limited numbers, this system has not been fully utilized because establishment of remedial programs for small numbers would be economically prohibitive.

A special case of on-the-job training coupled with institutional training in basic education, work orientation, and counseling is found in the JOBS (Job Opportunities in the Business Sector) program operated by NAB (National Alliance of Businessmen) in cooperation with the U.S. Labor Department. Under this program, an employer or a group of employers forming a consortium, enter into a contract with the U.S. Labor Department agreeing to employ underprivileged persons recruited by the local Concentrated Employment Program or State Employment Service. The employer must agree to hire the individual prior to training. Under the JOBS program, an employer may subcontract with an educational institution to provide education services. The MDTA (Manpower Development and Training Act) mandates that the employer give priority to skills centers as the suppliers of such services. This aspect of the JOBS program has <u>not</u> been adhered to in this State to any appreciable extent. Frequently, the skills center

director first learns that a JOBS contract has been negotiated through an announcement in the newspaper. Education services have already been contracted without consultation with or referral to the State Education Department or local public training agencies thereby eliminating the use of the skills centers in the program.

There have been, and will continue to be, efforts made on the part of the Department, with the assistance of the regional office, to encourage JOBS prime contractors to utilize skills centers for institutional components of JOBS programs, and to seek the assistance of the regional Manpower administrator's office in this matter where NABS-JOBS contracts are originated.

Correctional Institution Programs

An amendment to the Manpower Development and Training Act of 1962 added section 251 to title II which provided for pilot programs to train inmates of correctional institutions prior to their release. The legislation was influenced by the results of earlier experimental and demonstration projects held within prisons. Both the earlier and currently approved projects have sought and are continuing to seek new approaches and techniques for comprehensive programs of training and related services for all inmates with the objective of reducing the recidivism rate which is in part caused by the lack of skills to become employed. Section 251 programs can be approved to provide for institutional training within the prison or for such training outside the prison at a regular public or proprietary training facility. The program may also include provision for remedial services, basic education, prevocational training, counseling, and postrelease followup.

Funds for correctional programs are unapportioned Federal funds and do not require the ten percent matching as for the regular section 231 projects. In fiscal year 1970, $3 million was appropriated for section 251 to train 1500 inmates in the 50 states. New York State submitted a prospectus for

each of six different proposals to the Federal Interagency Review Committee for consideration, and of this number, four were returned for development into formal proposals. One of the four was approved at an institutional training cost of $114,000 to provide for 40 inmates. Reasons why more of these programs were not approved for New York are cited in the "Problems and Recommendations" section of this report. However, any such recommendations are now academic since this section of the Manpower Act terminated June 30, 1970 because no appropriation of funds was made for its continuation.

Concentrated Employment Programs

The Concentrated Employment Program (CEP) makes available jobs and training opportunities through services of a variety of nonprofit organizations established to assist disadvantaged persons in a specifically designated target community or area to become employable.

In New York State, the program is administered by the United States Department of Labor and a local sponsor, usually a community human resource agency (HRA). Clientele are referred by local community action groups, employment service, Operation Mainstream, and the Division of Vocational Rehabilitation for the services required.

The CEP projects focus on people with the greatest needs, and those that are the hardest to reach. They are usually located in "slum areas" and lack skills, are too old or too young, have health problems, have police records, or are badly in debt.

One of the prime responsibilities of the local sponsor is to work with employers to accept trainees upon completion of training. In addition, the CEP local sponsor either provides or arranges for services such as basic education, work experience, counseling, testing, guidance, on-the-job training, skills training, vocational rehabilitation, and health and medical care. Most of the CEP programs include a variety of projects. The New York State

Education Department and local school districts are involved only in that part of a CEP project that provides institutional training that may include basic education and/or skills training.

CEP programs are currently operating in New York City, Rochester, and Buffalo in New York State with fiscal year 1970 moneys. However, the State Education Department has not been involved with the Buffalo CEP projects. The city agency that administered the Buffalo CEP project did not request involvement of the local public training agencies or the State Education Department to participate in their program. However, it is expected in the recycling of this program, both local public agencies and the Department will become involved in its training aspects.

The Rochester CEP is presently ongoing under the administration of the Rochester JOBS, Incorporated. Institutional training components of this project are being conducted at the Manpower Skills Center which is a facility operated by the Rochester Board of Education. The program was structured very much like a multioccupational project and was funded with MDTA moneys. Statistics concerning the project are found in the tables in the appendix.

The New York City CEP projects in Central Harlem and East Harlem are also comparable to the multioccupation projects. The agencies involved in these projects at the local level included the sponsor, Manpower Career and Development Agency (MCDA), the New York City Board of Education, employment service; at the State level, the State Education Department and the State Labor Department; at the Federal level; the regional office and the United States Department of Labor, regional Manpower administration office. This multiplicity of agencies caused undue delays in approval of these projects. However, procedures have been refined which should expedite future approvals.

Both Central Harlem and East Harlem CEPs have prevocational training and and six skill clusters. The total amount of money allocated for Central

Harlem was $1,029,708. Of this amount, $649,121 was provided from CEP versatile funds ($510,164 was the Federal share and $138,957 was the sponsor's share) and $308,587 was from MDTA funds. East Harlem was allocated $1,073,484. Of this total, $690,180 was CEP versatile moneys ($520,425 was the Federal share and $169,755 was the sponsor's share) and $383,304 was from MDTA funds.

It is expected that many of the problems encountered in this year's New York City CEP projects will not arise in the future because both the State Education Department and State Employment Service are to be involved early in the planning stages of these programs. One problem that will probably occur again, in spite of early planning, concerns the time restrictions limiting the availability of CEP versatile moneys to one year, contained in the prime contract. This Federal regulation tends to create panic situations which causes all agencies to move at a pace that leaves little time for rational planning and decision-making. This must be corrected if CEP programs are to become fully effective.

Experimental and Demonstration Projects

From the beginning of the Federal Manpower Development and Training Act of 1962, "special programs" were authorized under Title II, Section 202 (b) of the Act. Though these projects were not explicitly called experimental or demonstration projects, they were intended to explore conditions and techniques that could be used for the successful training of people for employment. In 1965, Congress placed the Experimental and Demonstration (E & D) funding authority under Title I of the Manpower Act. The prime objective has been to identify and develop, and to test in operation innovations that promise to provide practical guides on how manpower programs can achieve their purpose most effectively. Projects are of four main types: developmental, pilot, experimental, and demonstration.

There were five E and D projects funded in 1970 under Title I including Recreation Leader; Basic Education and Job Orientation; Maid, General; Project Spruce; and Health Service Occupations. Most of these approvals, in reality, did not meet the criteria of a typical E & D project particularly because there was no provision for controlled groups within each. Most E & D projects, from a total national perspective, were generated and implemented by large universities, foundations, or research agencies.

Individual Referral Programs

The individual referral program satisfied a very real need in the total manpower training picture. When less than a class-size group of individuals showed a desire and an aptitude for training in an occupation, and there would be a lengthy delay in forming a class, or there was insufficient demand to form a class, the individuals were referred to a public or a private school for the necessary training. Usually such individuals were prepared to go directly into skill training so there was seldom concern for prevocational or basic education courses.

In 1969-70, 244 slots were provided in 52 occupations through the MDTA individual referral program at a total cost of $245,375.45. The program for Dog Groomer was the most expensive at $6.25 per trainee hour. The least expensive program was for Licensed Practical Nurse at an average cost of $0.28 per trainee hour, while the average cost per trainee hour for all programs offered was $1.57.

Six hundred and fifteen training slots were provided through STP individual referrals in 62 occupations at a total cost of $559,148.52 in 1969-70. In the 62 occupations the most expensive occupation was Tractor-Trailer Truck Driver at $7.30 per trainee hour; the least expensive was Licensed Practical Nurse at $0.35 per trainee hour, while the average cost per trainee hour for all programs was $1.54. A complete listing of programs offered under both MDTA and STP is included in the appendix.

Health Occupations Programs

The health occupations continued to receive major emphasis in manpower program development. Out of a total budget of $18,817,012 for institutional training for Federal and State Manpower and WIN programs, $2,351,532 was used for 1,685 trainee slots in health occupations.

Changes and trends in manpower training for health occupations occurred as follows:

- In general, practical nursing courses became shorter (but still complied with State regulations as to length) and this continues to be the trend. However, in manpower, the time thus saved was needed to provide additional basic or remedial courses which allowed enrollees to profit from the actual skill training.
- The most innovative proposal developed for the health occupations was to provide training for 800 employees of the New York City Department of Hospitals with emphasis on upgrading in five related areas (Generic Aide, Senior Aide, Health Technician, Licensed Practical Nurse, and guidance and supervision services for Registered Nurse) which represents a career ladder approach. Since training under the Manpower Act is limited to 104 weeks, and since programs may not be degree-granting, funds provided for the professional nursing programs were approved only for guidance and supervision activities.
- The statewide special program for nurses licensed by waiver initiated in 1968 was continued in selected communities on a smaller scale to meet continuing needs in metropolitan areas. Although the boards of education were usually designated as the agencies for conducting the nursing programs, the Urban

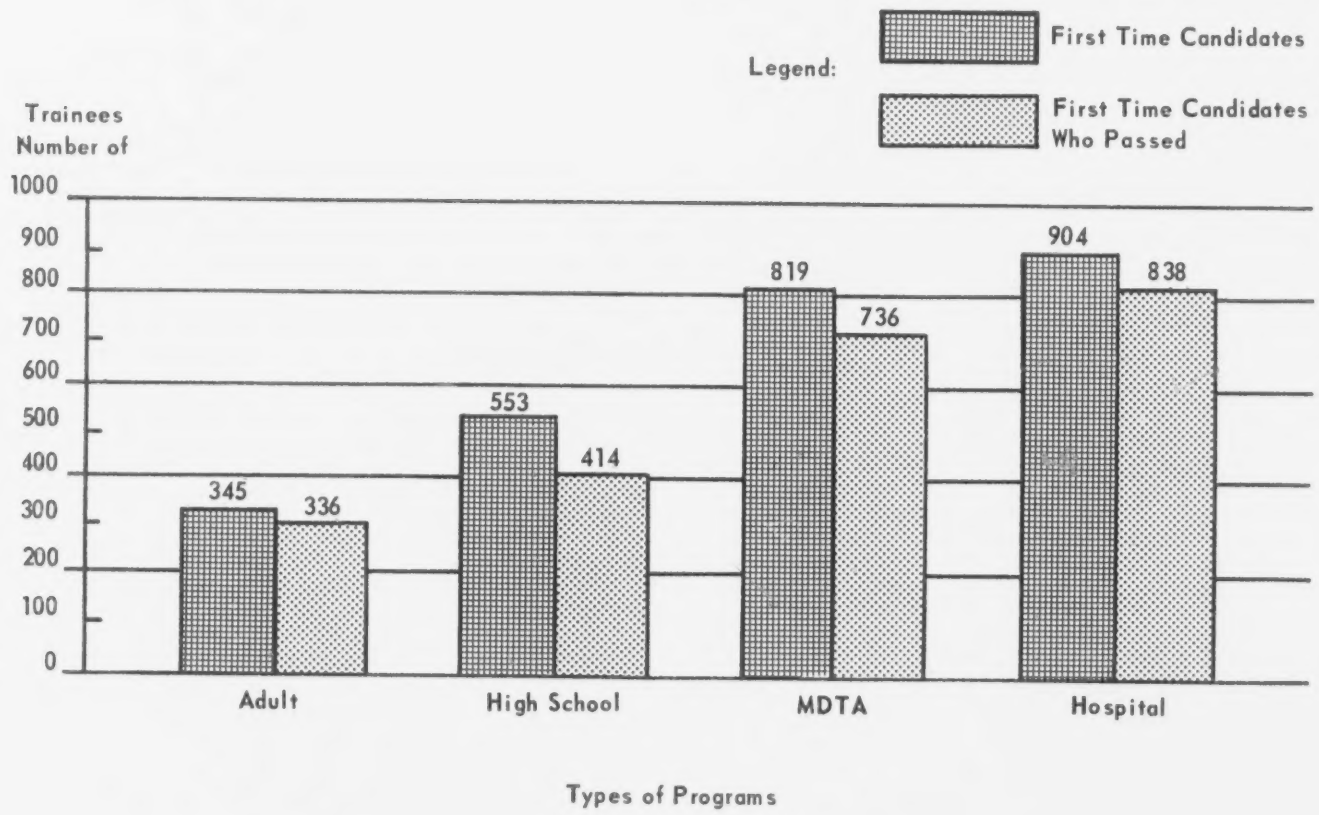
Center of the State University of New York at Brooklyn was an exception and was designated to recycle an upgrading program for waiver nurses.

- The source of funding determined items allowable in budget requests. Trainees enrolled in MDT and STP programs received more funds in training, subsistence, and transportation allowances than WIN trainees insofar as Federal and State manpower allocations were concerned. However, in total, the WIN trainees received greater benefits because they continued to receive the same welfare payments as prior to enrolling in training as well as an additional incentive payment and other benefits such as work permits and licensing fees not provided to the State and Federal manpower enrollees.
- In response to local requests, the New York State Employment Service has projected training needs well enough in advance to allow for program completion prior to admission into scheduled licensing examinations so that there will not be an excessive time lag between graduation and the licensing examination for the convenience of the enrollee.
- A survey made in 1970 to determine the extent of absenteeism in practical nursing programs disclosed that the average was less than three percent. As a result, a recommendation was made to training agencies to allow makeup time in proposals for minimal absenteeism and to refer trainees to subsequent programs in cases of extensive absenteeism.
- As perceived by health service agencies, patient needs will be met by an enlarging spectrum of health specialties. However, training in more sophisticated programs entails problems for manpower because of the questionable legality of performing

functions and duties infringing on other progressional areas already protected by licensure, registration, or certification. Therefore, it appears the emphasis in manpower programs will continue to focus on immediate community health needs through previously established successful patterns of training. However, this could change with the increased return of Vietnam war veterans having had medical corps training who are requesting training in such areas as medical assistants.

Results of Manpower L.P.N. graduates, who took the L.P.N. licensure examination, compared very favorably with L.P.N. graduates of high school and proprietary school programs. This is illustrated as follows:

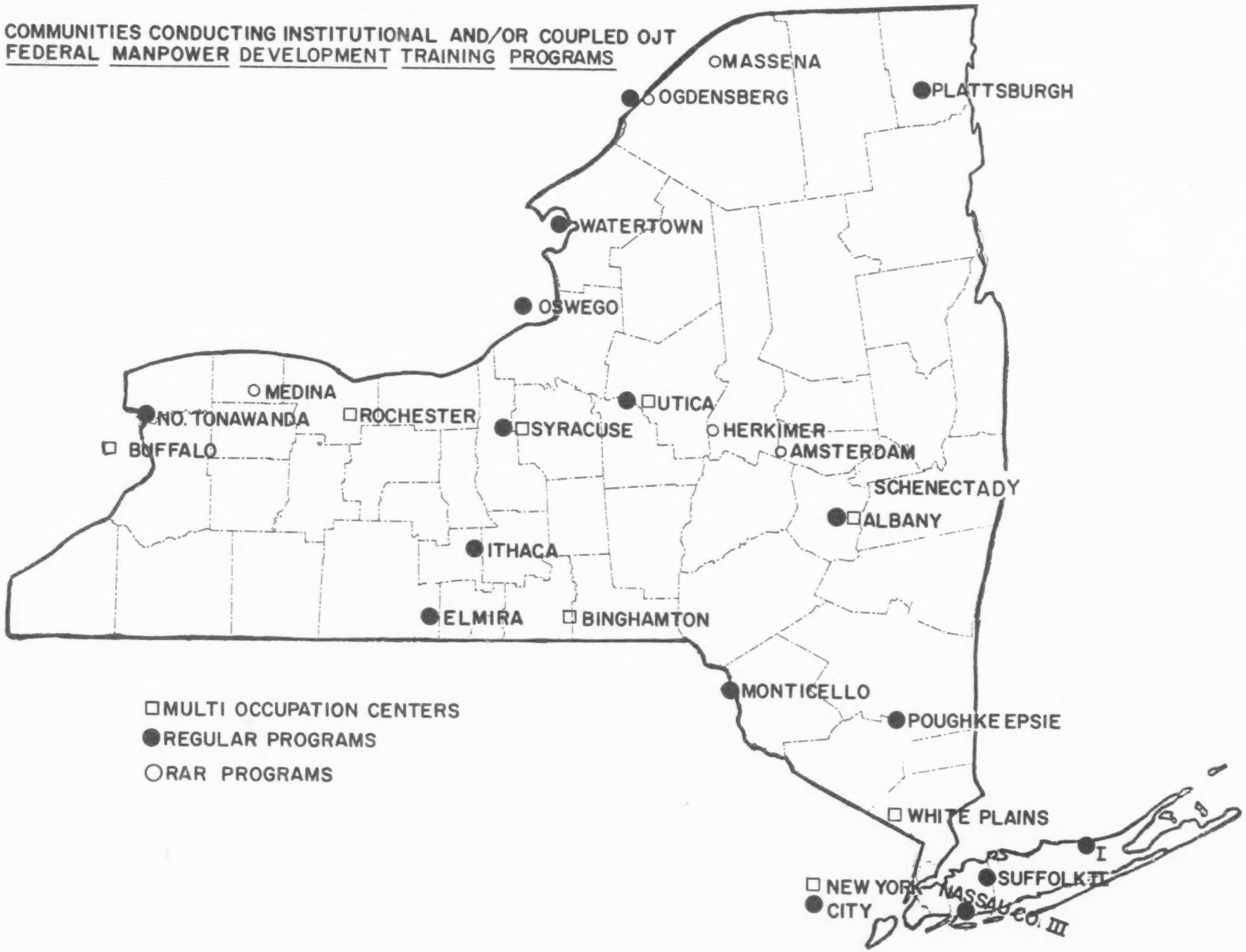
CHART
STATE BOARD EXAMINATION PERFORMANCE FOR
GRADUATES FROM PRACTICAL NURSING PROGRAMS
1968-69



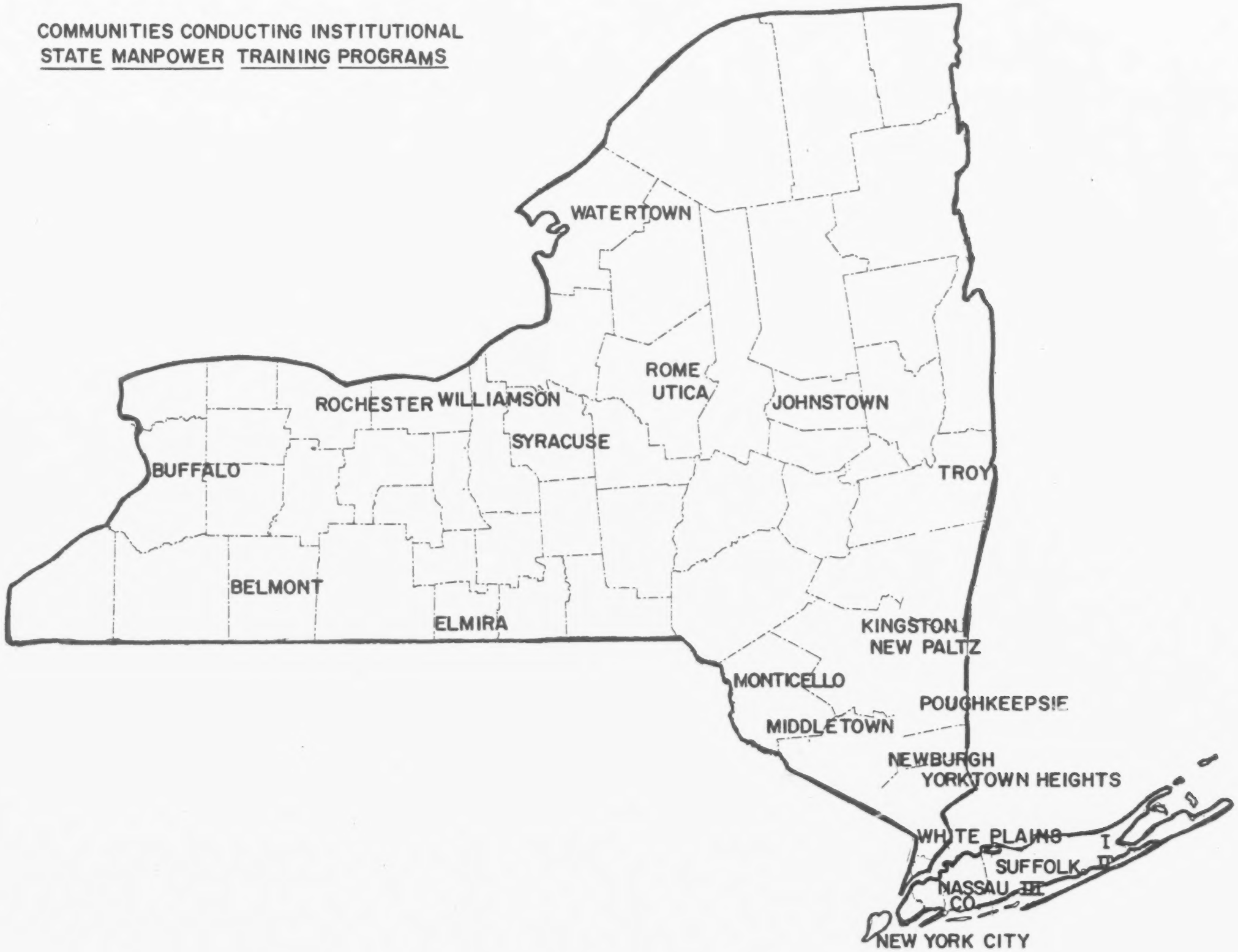
GEOGRAPHIC LOCATIONS OF PROGRAMS

The first of the following maps of New York State identifies the communities for which Federal MDTA training programs were approved; the second, State manpower training programs; and the third, the location of work incentive training programs. In reviewing these maps, it will be apparent that the concentration of projects was in the metropolitan areas. Also, it will be noted that in almost all the communities identified as having manpower programs, each type, namely MDTA, STP, and WIN, is represented and that very few projects were approved for rural areas of the State. This was primarily because of limited funds and job opportunities in these areas.

Multioccupation programs were located in the large urban areas and utilized 70 to 75 percent of available funds thus limiting funds for regular programs in other areas. RAR programs were confined to those areas specially designated as economically depressed. Such areas were so classified after having had an unemployment rate of 6 percent or more over a 6-month period.


COMMUNITIES CONDUCTING INSTITUTIONAL AND/OR COUPLED OJT
FEDERAL MANPOWER DEVELOPMENT TRAINING PROGRAMS
MASSENA
OGDENSBERG
PLATTSBURGH
WATERTOWN
OSWEGO
MEDINA
NO. TONAWANDA
ROCHESTER
UTICA
SYRACUSE
HERKIMER
AMSTERDAM
BUFFALO
SCHENECTADY
ALBANY
ITHACA
ELMIRA
BINGHAMTON
MONTICELLO
POUGHKEEPSIE
WHITE PLAINS
I
SUFFOLK II
NEW YORK CITY
NASSAU CO. III
MULTI OCCUPATION CENTERS
REGULAR PROGRAMS
RAR PROGRAMS

COMMUNITIES CONDUCTING INSTITUTIONAL
STATE MANPOWER TRAINING PROGRAMS



COMMUNITIES CONDUCTING INSTITUTIONAL EMPLOYABILITY ORIENTATION AND SKILL TRAINING WORK INCENTIVE PROGRAMS

SPECIAL ACTIVITIES OF THE MANPOWER BUREAUS

Comparative Cost Report

An analysis was made of programs that had been processed for final audit to determine (1) the differences between estimated and actual cost by line items, and (2) why these differences occurred.

The first step in making this analysis was to group the latest completed programs available in the final audit files into categories, such as Licensed Practical Nurse, Food Services, Automotive Trades, Machine Trades, and Office Occupations, and tabulate the figures for every line item in each project. This procedure was used for 28 programs operated in fiscal year 1967, and 24 programs operated in fiscal year 1968. In these two years, 21 Licensed Practical Nurse programs were selected for review that were approved in fiscal year 1967, and 10 that were approved in 1968.

Although this was a limited study, the findings were significant. Patterns of overestimates and reasons for them emerged which provided useful data for the review of currently completed proposals being processed for approval.

Since a considerable amount of this analysis centered on the Licensed Practical Nurse program, the findings for this program are presented first. Salaries and employee benefits, line items 1A and 1B, were excessively overestimated. However, there is no question that it is difficult to determine these costs with any degree of accuracy. In almost every case, the estimates called for a particular salary and, in reality, instructors were hired at a lower rate of pay than specified, or more instructors were used at a lower rate of pay. Consequently, a lower level of benefits was required, creating a sizeable overestimate of costs in this area. This situation was not true of the multi-programs because there was less staff turnover. Another frequent overestimate, appearing in almost every L.P.N. program, was the gross

overestimate in laundry cost. In many programs, this item could well have been cut by 40 percent and would still not have constituted an underestimate. The problem of overestimates was somewhat remedied in fiscal year 1968 by the pressure exerted to deobligate funds at periodic intervals or as soon as it became apparent there would be excess funds within the project. Nevertheless, upon final audit, most programs had as much excess money left over as was deobligated. It was determined from data reviewed for L.P.N. programs in fiscal year 1967 that 86.26 percent of the moneys approved was encumbered, whereas, in fiscal year 1968, 83.64 percent was encumbered.

Food services projects costs for fiscal year 1967 differed from other programs in that there were more excess funds for "Instructional Supplies" including shipping costs, (line item 1B), than for "Employer Share of Employee Benefits" (line item 2B). Much more money was approved for supplies than was needed for the numbers to be trained. Of the total amount approved, 67.72 percent was utilized; thereby, making the food service programs the highest in terms of overestimated costs.

In the Machine Operator programs for fiscal year 1968, "Instructional Salaries" (line item 1A) and "Employer Share of Employee Benefits" (line item 2B), were the forerunners of excess estimate followed by "Repair and Servicing of Equipment" (line item 3A). There is no question that it is difficult to estimate damage or wear to equipment, but a careful study of the age, use, and type of equipment by a knowledgeable person could reduce the estimate for this category to a more realistic figure. In contrast to other programs, 74.08 percent of the total amount of approved funds were encumbered.

Office occupations followed the usual pattern of other programs in overestimates of costs by line items, but overestimates were much less. For these programs, an average of 92.88 percent of the approved amount was encumbered for fiscal year 1968.

The automotive occupations pattern differed only in that the amount of excess funds in "Other Fixed Charges," such as equipment and fire insurance (line item 2C), was the second largest overestimate line item cost, with "Instructional Salaries" (line item 1A), cost overestimates being the third largest cost overestimate. In the case of line item 2B overestimates, this occurred because the insurances approved, such as liability, health, and workmen's compensation, were not used in the majority of the programs. The analysis of the fiscal year 1968 projects showed that 95.23 percent of the total amount of funds approved were used, thus making the automotive programs the most accurate in their cost estimates.

It is suggested this comparative cost project be continued in ensuing years to develop a set of costs which could be used for establishing a standard cost per pupil or per program. Implementing a standard cost system would enable staff to provide more meaningful consultative and supervisory services. This system and utilization of standard courses of study (subject to modification as may be required) would permit the Department to fulfill its responsibilities for the manpower programs more effectively, with a minimum of delay, in getting programs approved and started, which has been a chronic problem.

Manpower Newsletter

A newsletter was published jointly by the two manpower bureaus, as was done in previous fiscal years. The purpose of this newsletter was to inform local training agencies of current trends and developments and to make known any changes in regulations for manpower programs. A sample of the newsletter follows.

MANPOWER NEWS

THE NEW YORK STATE
EDUCATION DEPARTMENT

BUREAU OF MANPOWER PROGRAM DEVELOPMENT
BUREAU OF MANPOWER PROGRAM SUPERVISION

May, 1970

MANPOWER CONFERENCE

The Fifth Annual Manpower Conference for administrators and directors of Manpower training programs will be held May 20th, 21st, and 22d, at the Homowack Lodge in Spring Glen, New York.

The conference provides an opportunity for local administrative staff to meet and discuss problems and successes in Manpower programs with the State Education Department staff. Representatives from the State Labor Department and federal level agencies will also attend. Among the scheduled events at the conference will be the annual meeting of MANY and panels on such topics as the cluster concept of training, processing final audits, equipment accountability, private school contracts, and the NABS-JOBS programs.

A complete report of the conference proceedings will be prepared and copies distributed to those who attend the conference.

1970 APPROVED FEDERAL FUNDING

As of April 10, 1970, a total of $3.36 million in educational training costs has been approved for New York State for seven of its Multi-Occupational Centers. Twenty regular MDT projects accounted for $885,240. An additional $543,098 for regular MDT projects was approved for the TRY (Training Resources for Youth) project in New York City. Five communities have received a total of $186,010 in Redevelopment Area Retraining (RAR) funds. One Concentrated Employment Program (CEP) is operating in Rochester with an approved budget of $290,537.

1970 APPROVED WIN FUNDING

As of April 10, 1970, ten communities have received a total of $933,910 for WIN Employability Orientation programs and three communities have received $135,337 for skill training.

1971 STATE TRAINING PROGRAM APPROPRIATION

In the State budget for 1970-71, $23 million has been appropriated for the total State Manpower Training Program. This amount is an increase of $8.0 million over the 1969-70 budget. Of the total, approximately $7.2 million will be used for institutional training costs. In 1970, fifty-nine (59) institutional group training projects received $4.0 million in educational costs.

NEW TYPE OF MDT AND STP CONTRACT

For several years, private trade and business schools have participated in training individual and group referrals under both the Federal Manpower Training Act (MDTA) and the State Manpower Training Program (STP). During this time, it was necessary to negotiate new contracts for each new individual or group referral.

Recently, a new type of standard contract has been initiated which needs to be negotiated only once with each school. Adjustments in tuition rates or length of training may be made by amending Appendix B attached to the contract for a particular school when so authorized by the State Education Department supervisor assigned to the project. The new type of contract is a major breakthrough in expediting the processing of contracts.

SKILLS CENTERS

NABS-JOBS

Skills Centers in New York State, to date, have not participated to any great extent in the NABS-JOBS programs. This situation resulted from the failure of the prime contractors to consult with the local Skills Centers prior to subcontracting for educational services and also because of the reimbursable system of payment. This basis mandated for payment is presently being revised to make it more feasible for local MDT training agencies to provide the basic education and remedial components of the contracts. When a local training agency learns through the news media that a NABS-JOBS contract is being developed or has been approved in the area, it should contact the employer awarded the contract to offer its services.

New York City

TRY - Recently, the Training Resources for Youth has revised its program dedicated to serving the urgent needs of young men between the ages of 17 and 21 in the Bedford Stuyvesant section of Brooklyn. Previously, trainees were given counseling, basic education and occupational training to provide them with marketable skills. School dropouts having a myriad of problems predominate in this target group. The outlook of many of these youths has resulted in their steady deterioration into a life of crime, perversion and dope addiction.

The current program, funded with both federal and local monies, is designed to provide trainees with counseling, basic education, employability orientation and limited occupational experience as the first step toward becoming work-ready. Usually, trainees are in the program from 8 to 12 weeks. Upon completion, trainees may be referred to any of the Manpower training programs throughout the metropolitan area or directly to employment.

Student Publishes Booklet - Mrs. Edaphanie Pettigrew, a mid-Manhattan Adult Training Center graduate of the April, 1969, nurse aide upgrading class, has written and published a booklet entitled, "Drugs: Their Physical and Social Effects".

In the booklet, she discusses the various psychedelic drugs, hallucinogens, narcotics, and stimulants in use today, along with their physical and social implications. The drugs discussed include marijuana, LSD, heroin, amphetamines, and barbiturates.

Breakthrough at NYCATC - Seven female trainees were graduated from the duplicating machine operators' course at the New York City Adult Training Center on February 27. The D.M.O. teacher and the basic education teachers have contributed to the breakthrough of women in nontraditional female occupations. Several female graduates of the last group are presently employed with the Metropolitan Life Insurance Company in this capacity.

The WIN-Sears Program - Following the successful cooperative training program with the American Association of Advertising Agencies, Sears-Roebuck has hired 25 WIN trainees as typists after they completed a 12-week training program at the New York City Adult Training Center.

The instructors in the program have indicated that the group was very dedicated and responded well to instruction. Sears sent two supervisors twice a week to familiarize the trainees with the procedures and routines of the company.

The trainees were invited to the Sears offices on 9th Avenue for an all-day visit to familiarize themselves with their future employment. Sears provided free lunches for WIN trainees and WIN education staff members visiting their offices.

The WIN-Sears program culminated with graduation exercises on April 3rd, at the Brotherhood-In-Action Building. Mr. Alfred L. Green, Executive Director of the Division of Employment, delivered an inspiring commencement address in which he stressed the importance of specialized training for occupations in great demand today.

Utica

Industrial Exposition - An industrial exposition was held April 16 to April 18, at the Memorial Auditorium. The Utica Industrial Management Association donated the space for the Skills Center's booth. Members of the faculty and trainees at the Center explained training opportunities to visitors at the booth.

On display were colored slides showing training activities. In addition, there were brochures and copies of MDT NEWS for distribution. Mr. Anthony D'Apice, an instructor at the facility, assisted in preparing the brochures.

MDT on TV - On Sunday, April 26, 1970, Sherman Mears, Administrative Assistant, at the Center, appeared on WKTV's "Employment Opportunity Program". Interviewer Charles Bigler introduced Mr. Mears who explained the skill training opportunities offered at the Center.

Graduation - Twenty-seven trainees in lithovaritype and cashier classes were recently graduated at the Manpower Development and Training Center. A special feature was a dinner prepared and served by the food service trainees at the Center.

White Plains

Skills Center Evaluation - A comprehensive evaluation of MDT programs in the 1968 multi-occupational project has recently been completed by the staff at the Center. Included are an analysis of the personal and economic characteristics of trainees, cost benefit studies of trainees receiving public assistance, the employment status of the project's graduates, and their pre- and post-training earnings. The evaluation also contained a six-year follow-up study of clerical trainees. Some significant findings in the evaluation follow:

(1) Wages after training for employees receiving public assistance averaged approximately 153% greater than the average monthly aid to families with dependent children. As a result, public assistance costs have been reduced by $10,000 per month for the Westchester County Department of Social Welfare.

(2) The MDT graduates earned, in the first year after training, approximately $220,000 more than the total educational cost of their training.

(3) Present employment of clerical trainees represents a significant accomplishment in terms of continued employment of graduates. Of all the respondents, 88.7% completing institutional clerical programs are presently employed in training-related jobs.

The evaluation cites the special activities initiated as an integral part of the Center's program. Three of these activities are SLIM, a special weight-reducing program for women trainees, SSELF (Student Savings Emergency Loan Fund), designed to develop regular systematic savings habits for trainees, and the Executive Council, a trainee council which plans activities for trainees and advises administration in policy development.

LONG ISLAND CITY

The first class of MDT stenographic trainees was graduated from the Plaza Business School on April 3, 1970. Diplomas were awarded by Queens Borough Deputy President Robert T. Groh. Shown below is Miss Miriam DiGiffarde, validictorian, receiving a gold watch for 100% attendance by Mr. Herbert Lieberman of the Central Manpower Bureau, State Employment Service. Looking on is Mr. Callahan, Director of the Plaza Business School.

ROCKLAND COUNTY BOCES

The trainees in the LPN program are anxiously awaiting their graduation in June. Of the 14 trainees in the present class, six are planning to attend Rockland Community College to become registered nurses. Also two of the trainees in this STP program are mothers of daughters who completed the regular high school practical nursing program.

STATE MANPOWER PERSONNEL

Louis J. Siy has received his permanent appointment as Chief of the Bureau of Manpower Program Development. The Division of Special Occupational Services also welcomes back Carl Benenati from his educational leave. Robert Bielefeld has returned to the Division of Occupational Education Supervision.

Mrs. Elizabeth Baker, Bureau of Manpower Program Supervision, attended a two-day conference of the Indiana Manpower Research Association at the University of Indiana, March 18-20. The major emphasis of the conference was the projection of the labor market of the early seventies, the place of and opportunities for the disadvantaged within that market, and the role of Employment Service in training and placement referral.

Fred Arold, Bureau of Manpower Program Development, attended the National Working Conference on Instructional Materials and Media, sponsored by the Montclair State College (N.J.) Adult and Continuing Education Resource Center at Cherry Hill, New Jersey. This conference may inaugurate some needed input into the scarcity of relevant classroom materials in the field of Adult Basic Education. One hundred-forty adult educators from all sections of the United States were invited to evaluate the curricular needs of ABE, to make constructive suggestions to publishers on the basis of these evaluations, and to establish some regular and workable means for a continuing exchange of information between ABE personnel was a major concern expressed.

The final report of the conference is not ready for distribution. Persons interested in its preliminary recommendations or the future directions of this undertaking may contact the Conference Coordinator, Mrs. Mabel M. Ouderkirk, Adult and Continuing Education Resource Center, Montclair State College, Upper Montclair, New Jersey, 07043.

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Manpower Conference

The annual Manpower Conference was held at the Homowack Lodge, Spring Glen, New York, May 20-22, 1970. The theme, Recent Developments in Manpower Programs, was presented by specialists from Federal, State, and local levels. Dissemination of current information regarding new legislation, program direction, evaluation, and basic procedures in program development and supervision were the major concerns of the conference.

Approximately 150 professionals attended either part or all of the conference. Percentage representation by type of affiliation of conference attendees is shown below:

EDUCATIONAL AFFILIATION OF CONFERENCE ATTENDEES

	Percent of Total
Public Education	67
Private Education	16
Federal	4
State and local	11
Other	2

The results of the conference were documented by an evaluation questionnaire which indicated the conference was a very informative one and should be repeated in the next fiscal year. Also, the questionnaire indicated representatives from local training agencies and institutions would like to become more extensively involved in the planning and carrying out of the next conference. This will definitely be incorporated as a part of the overall planning of the next manpower conference.

ACTIVITIES OF THE BUREAU OF MANPOWER
PROGRAM SUPERVISION

The Bureau of Manpower Program Supervision supervises the implementation, operation, and closing of training programs which have been approved and funded under the Federal Manpower Development and Training Act (MDTA), Title V, Social Security Act (WIN), and the State Training Program (STP) under Article 23-A, State Labor Law.

The Bureau's supervisory responsibilities are divided into two major functions: one, program management, and two, program evaluation. Although neither function can be solely limited to office work or field work, a further breakdown is useful here to show where the bulk of particular work responsibilities are carried on. Program management can be considered primarily as office work including fiscal accountability, equipment accountability, individual trainee referrals, provision for inservice training of institutional personnel, curriculum, and procedures review.

The evaluation of training programs is primarily a field supervision task oriented specifically toward complying with Section 160.7 (3) of (45 CFR). This is not to say that the responsibilities listed under program management would not be carried on in the field. Rather, that the field work will include elements of the program management function with the major focus of this function being in this office. The program evaluation function will focus on administrative supervision in the field with a second level of responsibility for program management.

Program Evaluation

Program evaluation was designed to be carried out as a field supervisory activity to provide continuous ongoing assistance to the training agencies and to evaluate programs with a consideration of the need for continuing the

program and proposing recommendations for improvement.

Valid data on Manpower Development and Training Act programs and trainees is essential as a basis for knowledgeable decision-making and program evaluation. The needed data are, at present, available on various report forms and diverse types of narrative input. There is a need to have this data translated into a readily usable form and made available for use by local, State, and Federal Educational and Employment Service agencies.

A study was implemented to determine the feasibility of the establishment of a comprehensive, interdepartmentally coordinated basic manpower data system through investigation of data needs, data accessibility and computer capability. The study was planned to include the development of coordinated reporting forms, a determination of data retrieval and output options, and the field testing of a model data collection and dissemination system. The field test was designed to include the use of new reporting forms, quality control procedures, tabulation of data, and sample retrieval of specified data.

Interim reports were planned for each of the first two phases of the study as a basis for further development of the system. Upon completion of all phases, a final report was anticipated.

As Phase One of the Feasibility Study progressed, an interrelationship was discovered between the objectives of the study and an investigation being made by the Manpower Resources Commission. As a consequence, the Feasibility Study was terminated with the interim report of the first phase. The responsibility for development of a basic data system for manpower has been assumed by the Manpower Resources Commission which maintains liaison with the Education Department through the Assistant Commissioner for Occupational Education and the Chief of the Bureau of Occupational Education Research. Work was continued on a glossary of terms relevant to MDT.

Inservice Training for Local Manpower Staff

A carefully designed and conducted program of inservice training is still very much needed to help instructors gain an awareness of the special needs and problems of disadvantaged trainees. Inservice training provided during this fiscal year was not as extensive as desired. However, it is expected the inservice program will be expanded in the forthcoming fiscal year as a result of a greater awareness of this need as brought out in program evaluation reports.

A modest telephone survey to determine the kinds of inservice trainig activities in the eight upstate skills centers during the 1970 fiscal year indicated:

1. Four agencies conducted such training which primarily focused on orientation of instructors to the manpower programs for a total of 35 sessions involving 59 staff members as participants and seven in planning. Two of the programs which consisted of several sessions were held at regularly scheduled times, usually on a weekly basis, lasting from 1 to 2 hours per session as a part of the regular school day. Eleven different general topics were discussed.
2. Community resource persons were used by only one agency, and in this instance, five different resources were used.
3. Estimated percent of staff members participating in a university or college program for each center ranged from 5 percent to 80 percent, with an overall average of 23.6 percent attending.

This very brief summary indicated that some attempt was being made to provide a limited amount of inservice training to MDT skills center staff, on a wide range of topics.

During the same period of time, AMIDS (Area Manpower Instructors Development Seminars) seminars were presented to the entire professional staff of the skills centers at Albany, Binghamton, New Hyde Park, Syracuse, White Plains, and Utica. Approximately 930 persons - manpower instructors, administrators, counselors, supervisors, trainees, employment service representatives, and others participated in this tuition-free, people-to-people, instructional program.

MDTA, WIN, and STP funds made possible the attendance of 155 professional staff at AMIDS, through reimbursement of travel and subsistence expenditures and through payment of salaries during hours of training after regular school hours. A comparison of allocations and expenditures from the three sources is shown below:

AMIDS ALLOCATION AND EXPENDITURES, NEW YORK STATE

SOURCE	ALLOCATION	EXPENDITURES	NO. OF PERSONS WHO PARTICIPATED
MDTA	$ 19,000.	$ 18,945.	86
STP	1,000.	1,000.	4
WIN	10,000.	9,940.	65
TOTALS:	$ 30,000.	$ 29,885.	155

Fiscal Accountability

During the 1970 fiscal year there were seven Work Incentive projects, 12 coupled On-the-Job Training projects, 29 State training projects, 13 Redevelopment Area Retraining projects, and 133 Manpower Development Training projects which were processed to Educational Financial Aid for final audit.

The total deobligations for MDTA projects during the fiscal year amounted to $6,038,144 for 104 projects. State training project deobligations for 22 projects totaled $381,916.

The Division of Educational Financial Aid processed 81 MDTA project audits totaling $6,164,378, while there were 22 State training project audits processed for an actual cost of $556,000.

Equipment Accountability

At present, the inventory of manpower equipment purchased with Federal and State funds includes over 18,000 nonexpendable items with a total value greater than $5,400,000. Refer to table A in the appendix for a listing of the geographic distribution of this equipment and amounts thereof.

Federal Government Surplus Administration excess property continued as an important source of equipment, supplies, and material. The equipment acquired from this program was on loan and, in most cases, required expenditures of manpower funds only for transportation and installation. The level of utilization of excess property reached almost 3,000 accountable items with an original cost value that approximated $315,000. Another $202,500 in expendable supplies was obtained through excess property sources during the first 9 months of 1970. Refer to table B in the appendix for details of distribution.

The primary task accomplished during the past year has been the conversion of Manpower equipment inventory records to a mechanized punch card system. This system has undergone a great deal of revision and simplification since its conception, and now functions as the primary instrument of inventory control for MDT, STP, and Federal excess equipment. The transition to the punch card system was carried out with the advice and cooperation of the Electronic Data Processing unit of the New York State Education Department.

A great deal of time was required to implement the mechanical record system because of the necessity to completely cross-check and correct over 7 years of equipment records and related information. Codes were assigned to each manpower center and to the different types of equipment in use. This required the revision of all equipment forms to conform with the information needed to compile an equipment inventory printout.

The next task was to verify the accuracy and completeness of the first

printing. Since this task was begun many years after the inception of the manpower program and because the basic format of the printout was revised several times prior to the printing, there was an inevitably high percentage of error and duplication. Corrections were carried out at both the State and local levels. In order to insure that administrators at the manpower training centers would be able to use and check their section of the printout against their own records, a demonstration packet was developed and orientation visits were carried out by equipment section personnel.

The task of correcting the first printing, primarily accomplished by the diligent efforts of each MDT center, resulted in an accurate, up-to-date, single document that brought together for the first time inventory information from all projects in each center, and showed exactly the equipment for which each center will be held accountable.

In order to keep the printout up to date, revised copies will be distributed approximately four times a year to each center both for information and for accountability certification at the end of the year. The advantage of this type of inventory is that the listings may be sorted in any of several ways. MDT centers will receive two copies of their inventory, one sorted numerically by commodity. Another advantage is that both of these lists will contain totals for number of items and dollar cost.

In addition to the inventory lists each center will be informed of MDT equipment not in use in a current or recent MDT project, via the "available" printout. This listing was sorted by commodity or equipment available for transfer to any center that has a need for that equipment in a proposed or ongoing project.

The use of electronic data processing methods in inventory control and the "available" printout are some of the means in use to obtain the best utilization of manpower equipment and, thus, provide the best training opportunities possible per training dollar.

MDT FIELD SERVICE FROM SPECIAL FIELD BUREAUS

In keeping with Department policy, the manpower bureaus utilized staff specialists to provide services in local manpower agencies.

Services Provided by the Bureau of Basic Continuing Education

Four staff members who made a total of 36 field visits to provide:

- Administrative conferences with local staffs
- Instruction observation followed by consultation and discussion with the instructional staffs
- Specific recommendations given to the local staffs as to materials and methodology to incorporate for quality instruction

Proposals were examined for recommendations of utilization of staff, materials, and dollars available:

- Periodic meetings were attended which included members of the Education Department and/or community administrators.
- Bulletins, bibliographies, and other materials were developed and forwarded to the field and MDT bureaus.
- Inservice staff development programs were held by staff for local basic education instructors (Albany, Utica, New York City, and Syracuse).
- Learning laboratories were initiated, or are in the process of being developed, in New York City (Harlem Teams Pre-Employment Program), Rochester, and Buffalo as a direct result of recommendations from the Bureau of Basic Continuing Education.
- The results of research for English as a second language

for trainees were disseminated to all applicable multi-programs.

. A recommendation was made to all multioccupational project directors that correctional institution industries be surveyed for less expensive instructional furniture.

Services Provided by the Bureau of Guidance

Supervision - all staff of this bureau was directly involved in supervision including:

. Onsite visitation to the office of the guidance director of the multi-program which, at times, have included discussion with guidance personnel of the various training centers.

. Assistance to the directors of many of the programs and personal conferences in Albany with bureau staff.

Workshops - This is the third year of annual day-long workshops in New York City for metro area multioccupational project personnel and in Central New York for guidance personnel in MDT upstate.

Publications

. "Counseling of the Urban Poor" was published and since has received wide approval by MDT and other counselor education institutions in the State. The publication emerged from the work of two former supervisors of MDT counselor programs in the City of New York - Mrs. Sealy and Mrs. Ford.

. A second bulletin with parallel pertinence to guidance personnel in programs dealing with the disadvantaged and minority population is planned. Mrs. Fleming, the supervisor in New York City MDT, and other leaders will be responsible for the new publication.

PROBLEMS AND RECOMMENDATIONS AS RELATED TO THE BUREAU OF MANPOWER PROGRAM DEVELOPMENT

In the course of developing MDTA proposals for funding, a number of persistent and recurring problems have been encountered. While most of these problems have not prevented funding of the programs, they have restricted efficient and expeditious handling of projects. The most troublesome are enumerated below with suggestions for improvement:

1. Inappropriateness of Form 3117. Form 3117, Supplement to Summary of Cost of Occupational Training, is overly detailed in its requirements for specific listings of instructional materials and supplies, instructional hour breakdowns, itemized administrative cost breakdowns, and scheduling of trainee sections. While estimates of these costs and the preparation of detailed listings might be realistic for small, single, specific projects, they become misleading, inaccurate, and unfeasible for practical use when developing the larger multi-programs. Some of these programs, of up to 2 years in span, designed to handle a continuous intake of students through prevocational and specific training, and utilizing the clustered format in subprojects, are simply too complicated to handle and budget in such a naive and straight-jacketed fashion. The local training agency is not in a position months before a program begins to make even the most tentative estimates in so detailed a manner. Some consideration should be given to the funding of projects on a modified cost-per-trainee-hour basis, as is now done with private school projects.

2. Administrative and Overhead Costs. As projects are now developed, administrative, counseling, supervisory, and building costs are included in a packet on the basis of the needs of

that single program standing alone. The larger skills center in this kind of environment are faced with the continuing problem of attempting to maintain sufficient staff to properly operate MDTA programs on a project-to-project basis. Consideration should be given to the possibility of an annualized funding based upon an early estimate of total trainee enrollment.

3. Schedule of Sections Information. A great deal of time is spent at all levels in completing schedule of sections information, including starting and ending dates, number of days per month of instruction, number and nature of holidays to be taken, length of program in days and hours, and exact number of trainees per section. In larger multi-projects, a good deal of this data leans toward the meaningless and is completed in form only. Except for total project starting and ending dates, little of this information can actually be known beforehand, due in large part to the uncertainty of eventual employment service referrals, lack of any knowledge beforehand as to actual trainee capabilities, the utilization of formats for continuous intake and outgo of sections of trainees, and the identification of training requirements for occupational clusters. Consequently, schedules tend to need revision several times prior to funding and continually thereafter as training takes place. Consideration should be given to the omission of all but total project starting and ending dates, and length of program in hours per trainee. The local agency, with State supervision once a program is begun, is in a better position to ascertain its class time needs without constant schedule and MT-2 revisions. Funding on a cost-per-trainee basis, as suggested in item 1 above, plus strict reporting of

section data on Form 4021 should provide the Bureau of Manpower Development Program Supervision with sufficient information to satisfy this supervisory role.

4. Time Lag Between Approval of a Project and Notification of Funding. Under presently followed procedures, there is an extensive lag between the time when an MDTA project is signed at State/Federal review and the time when official approval of the project is received by the Bureau of Manpower Program Development in the form of an approval and funding letter. This delay, often as long as 3 to 4 weeks and more, means that the local training agency, with a rigidly imposed schedule of its own (see No. 3 above) to maintain, is often unable to begin a program as outlined in the project Schedule of Sections. In addition to the uncertainty and trainee inconvenience, this also is a cause for failure to initiate a project by the stipulated date and requires a whole series of additional paperwork submissions in the form of schedule changes, with the definite likelihood of additional MT-2 revisions being required before a project is ever begun. Consideration should be given to the possibility of speeding-up the approval process to reduce this time lag to a more reasonable tolerance. This could be accomplished through a change in procedure whereby Regional H.E.W. would be allowed to dispatch a notice of funding to the Bureau of Manpower Program Development immediately, subsequent to the State/Federal review, without waiting for the usual receipt of packages from the State Education Department which have often been delayed in delivery to the U.S. Regional Office. Such a procedure is now a matter of course in Employment Service.

5. Section 251, Projects for Correctional Institutions. Due to the fact that moneys are not apportioned to the states, which thus makes funding uncertain, section 251 has not had the impact which Congress intended. Submission of correctional institution proposals requires all of the developmental work that section 231 (regular) proposals require with none of the implied guarantees. As of June 30, 1970, only one section 251 proposal had been approved for New York State. Consideration should be given to this aspect of MDTA in order to develop more workable avenues for funding of correctional institution proposals.

6. Developmental Funds. In fiscal year 1970, New York State received $90,000 in funds to assist public agencies in the development of proposals. In the same fiscal year, 240 requests were made for these developmental funds based upon MT-1's assigned to public training agencies. The amount requested by local agencies exceeded the State grant. However, vouchers submitted for reimbursement were less than the original requests. There was a delay in processing developmental funds because it was not known what amount of funds would be available. This fact was not known until the State Administrative Budget was approved which was well after the fiscal year had commenced.

Consideration should be given to the possibility of increasing the amount of moneys available for developmental purposes. These funds should be provided on a grant-in-aid basis in the fiscal year preceding program development, rather than as an ex post facto reimbursement as is now done. Larger grants, earmarked for program development, coupled with a simplification of the OE 3117 form as outlined in

No. 1 on page 40, would free more of these developmental funds to be used as they were originally intended for the development of improved educational programs and curricula. As now practiced, most of what is called development tends to be the development of budget forms and itemized lists of various kinds.

7. Lack of Consultation with Education in the Writing of an MT-1. Under the procedure now followed, the MT-1 is prepared primarily by employment service and delivered to the State Education Department for implementation. While no affront to the employment service is intended, it is a questionable proposition that this division of the Labor Department alone is best equipped to dictate the content of institutional MDTA training. Some thought should be given to the possibility of a joint effort being made in the generation of the MT-1; a collaboration between the local employment service director and the local skills center staff with the State Education Department Bureau personnel acting on a consultative basis. Such an effort, coupled with a significant increase in field activity by the Bureau of Manpower Program Development during the period of actual proposal development, would produce a more precise blueprint upon which to base a training program and negate the extensive revisions and budget cutting which is now almost a matter of course when completed proposals are received by the Bureau of Manpower Program Development.

8. Problem Area Related to MT-1's. MT-1's are frequently submitted to the Bureau of Manpower Program Development without sufficient lead time to permit proper proposal development. Sound development ideally requires a minimum of 3 months from the time of submission of the MT-1 until the proposed starting

date of the program. Developing the educational component of a project on short notice can result in approval of what may turn out to be a substandard program.

MT-1's have not been generated for a sufficient variety of occupations and numbers of training slots to utilize the full capacity of ongoing skills centers. This has resulted in a considerable amount of wasted resources and high overhead when considering the per capita cost. The reason usually given for this failure to train at capacity is that the local employment service surveys do not substantiate a need for additional occupations or enrollments. Skills center personnel, on the other hand, who have developed contacts with smaller employers, maintain that a need does exist for additional training. In view of these conflicting points of view, it would seem appropriate for local employment service agencies to undertake a more thorough and comprehensive survey of occupational needs to include the needs of smaller employers.

9. Lack of Funding for Equipment Items. Due to a chronic shortage of funds, necessitating arbitrary budget cutting, many of the skills centers are complaining of a serious shortage of instructional equipment with which to operate approved programs. This is especially true in certain kinds of specific projects which, almost by nature, require the acquisition of expensive items (e.g. Automotive Trades); items in quantity (e.g. clerical occupations typewriters), or items which are scarce in Federal excess and surplus property outlets. Part of this problem, in the past, has been due to the fact that the State was in the process of developing an efficient equipment inventory accounting system. Therefore, requests for high cost items were

difficult to identify as being available for transfer which would have helped to remedy the equipment shortage problem. While this problem is well on the way to solution through the inauguration of a new and comprehensive processing system, the fact still remains that local agencies are being strangled by a budget process which requires the strictest itemization of expected equipment purchases long before a project begins. Subsequent changes in program needs bring into play a time consuming, paper-filled process of request and approval which may or may not be forthcoming. As before, the most practical solution to this dilemma would be the funding of projects on some modified cost-per-trainee-hour or other unit cost basis allowing the local agency working with State Education Department supervisors to determine for itself what means and kinds of expenditures are needed to carry out project objectives.

10. Variation of Budget Forms Between State and Federal Projects. Beginning in fiscal year 1970, Form OE 3117 was adopted for use in the development of project budgets for funding under Federal MDTA. New York State in the subsequent period has continued to require the use of Form 4000 for the funding of projects approved under the State Manpower Training Act, and the Work Incentive Training Program. While this is primarily a problem to be solved by the State of New York, some attempt should be made to reconcile the differences which now exist between the two sets of conflicting forms. Training agencies operating with limited staff are placed in the impractical and wasteful position of having to carry on indefinitely with a multiple set of fiscal ledgers. A revision of Form 3117 as previously described, and an adaption of this new recommended

3117 form would go far to overcome this problem for State manpower and WIN programs.

11. Lack of Communication and Coordination in the Funding of Multi-Agency Projects. Concentrated Employment projects have been difficult to develop due to the multiplicity of local, State, and Federal agencies involved, and a lack of any real or continuing coordination between these agencies. In the beginning there appeared to be a lack of understanding of operational procedures by the various agencies involved. Many of the initial meetings were unstructured and discussions usually ended in misunderstandings over basic program direction and philosophy. In addition to this lack of a practical operating base, fiscal coordination has proven to be a maze of difficulties due to the multiplicity of methods of funding provided for by the various funding agencies.

    Solutions required necessitate a revamping of policies and procedures by administrative agencies responsible. In the meantime, State Employment Service and the State Education Department should become involved in CEP as planning for such a program begins. At the outset, a more efficient and regularized system of responsibility and communications should be established.

12. Excessive Paperwork in MDTA Multioccupational Projects. Current regulations and procedures in the development of Multioccupational programs require the submission of a separate "packet" of materials for each specific skill area or clustered subproject in a multi-program. This process generates a great deal of paperwork in the form of data breakdowns, subbreakdowns, various detailed prorations, and much duplication. It is suggested that a process similar to that practiced for funding WIN proposals be investigated. This requires only a single Form 4000 and backup for all components of

specific training, with any necessary itemization included as attachments. The final approval submission consists of three parts: a prevocational budget, a specifics budget, and a total umbrella budget, rather than the usual 10 or more separate documents required for MDTA.

13. Administrative Problems with HEW. On occasions, the program officer responsible for the prereview of projects has requested changes in a proposal prior to a State/Federal review. It is recommended that any request for such alterations of a proposal be received by the Bureau of Manpower Program Development several working days prior to the date of a Federal/State review, particularly for the more complex proposals such as the "multi's."

Frequently, it has been difficult to schedule State/Federal reviews because of the unavailability of Federal review personnel due to their many other commitments. It is suggested a yearly schedule of reviews be established at the start of a fiscal year on a particular day of each month agreeable to all parties concerned. These reviews could be supplemented by additional dates as the need arises.

PROBLEMS AND RECOMMENDATIONS AS RELATED TO THE
BUREAU OF MANPOWER PROGRAM SUPERVISION

Program Evaluation. Although the State Education Department has been involved in administering Federal manpower programs since 1961, field supervisory services have never been adequate. Arrangements have been made with other Department units to provide the subject supervision. Thus, specialists in trade and technical education supervise the laboratory portion of trade and industrial projects; business education supervises the laboratory portion of business occupations, etc.

In the past, local assistance has not been provided in administrative services and evaluation. With the recent restructuring of the manpower bureau into two different bureaus, this situation should show significant improvement. The Bureau of Manpower Program Supervision has been restructured to provide field services on two different levels, namely, program management and program evaluation.

Fiscal Accountability. To increase fiscal accounting capability in manpower skills centers, each center should have as a minimum staff a half-time fiscal officer working with a full-time bookkeeper. This should provide a greater fiscal efficiency and expedite needed project improvements and amendments during the project operation. Funds have continually been lost due to discovery of unused funds in the "December" days of the project which could have been used to add sections to projects or add and replace equipment and improve the environment of the training facilities.

Local, State, Federal Relationships. One of the serious deficiencies in the manpower program is the direct funding of each Federal project. This has required the maintenance of a continual liaison from the local level to the State level to the regional Federal level, and, in some instances, to the national level. A parallel track is followed by the employment service.

Thus, as many as eight different agencies are often involved with each project approval, amendment, and termination.

The various clearances required on the different levels have created an enormous amount of paper work, made the program inflexible, minimized joint planning, and created blockages which have slowed down project approval and implementation. Since the machinery to eliminate this problem is available and, in fact, a precedent has been set, a strong case can be made for a grant-in-aid. Two examples are offered for consideration: ESEA and the Vocational Education Act of 1963. Both these Federal acts are grant-in-aid programs which are tailored to Federal guidelines, have built-in control, and yet eliminate the massive MDTA control problems.

Underutilization of Training Agencies. Too little consideration is given to the capabilities of training agencies and facilities when programs are being initiated and developed. This is, in part, due to inadequate exploration to correlate occupational needs with training facility potential. It is recommended that existing skills centers be maintained and expanded where possible; specifically: (1) that the program under the jurisdiction of the Nassau County V.E.E.B. be funded as a multioccupational program where the capability exists for the following occupational clusters:

- Health Services
- Automotive Occupations
- Clerical/Stenographic Occupations
- Electrical - Electronics related occupations, including electronics assembly, oil burner repair, household appliance repair, T.V., etc.
- Production Machine Occupations
- Food Services
- Basic Education, Basic Education for Spanish-Speaking Adults, Employability Orientation

It is suggested that the multioccupational program for Nassau County consist of a central core of administration and skill training centrally located, with satellite operations for skill training, basic education, and employability orientation where pockets of disadvantaged population exist.

(2) That a skill center be established in the Poughkeepsie area since there exists a capability and need for the following occupational clusters:

- Health Occupations with some emphasis on psychiatric care.
- Automotive Occupations
- Clerical/Stenographic Occupations, including bookkeeping.
- Production Machine Occupations
- Basic Education and employability orientation

Special "seed money" should be provided for development of this center.

Recommendations Related to Specific Situations. (1) That all proposals be developed to include as a part of costs the value of local and State contributions. (2) That a trainee, once admitted to a Manpower program, be permitted to complete training that meets his or her specific needs in a timely schedule. For example, a trainee in a short Basic Education for Spanish-Speaking Persons program should be allowed to enter skill training immediately or shortly thereafter upon completion of the first segment of training, rather than being kept on a waiting list for a prolonged time. (3) That provision be made for continuous coordination between the manpower bureaus and the Manpower Resouces Commission to insure consideration of basic manpower data needs in any system being developed.

REFLECTIONS ON MANPOWER TRAINING
IN THE 70's

1. The administrations of both Presidents Johnson and Nixon have recognized the need for a coordinated plan for manpower planning and implementation. The CAMPS was an outgrowth of this need. Unfortunately, the CAMPS has been far from successful in achieving this objective. Recommendations were made by both the Johnson and Nixon administrations that the manpower programs be centralized in one agency. Thus, a number of amendments to MDTA are under consideration by the 91st Congress which would consolidate the manpower services and/or agencies, thereby providing a vehicle for coordinated planning and implementation. The Congress can be expected to pass the legislation which will have a significant impact on the flexibility of the administration, planning and implementation of the manpower program. Thus, as the national picture changes, the manpower system can immediately change accordingly, and focus on new developments. For example, in the past five years the focus has been on relieving the pressure on disadvantaged populations in the core cities. Much effort and money was put into this objective which has never been fully attained, mostly because of program inflexibility and the resultant "tooling up" time. With the number of unemployed increasing, it seems reasonable to expect that the manpower program will once again address itself to eliminating unemployment caused by recession and technological changes as was the case under the original Manpower Development and Training Act of 1962. Also, the expected amendments should result in a more effective and efficient manpower program, one which will eliminate competition among programs and which will be able to focus the energies of the various manpower agencies on the

program objectives.

2. It is anticipated that the size and scope of manpower programs will expand due to the increased unemployment levels. It is expected that training directions of manpower programs will change somewhat, placing more emphasis on the training of persons who have become unemployed because of the phasing out or reduction of defense type industries. Unemployment in such cases will not necessarily occur because of skills obsolescence, but because there will be an oversupply of such skilled help. This trend has already started and the Supplemental Training in Employment Program (Step), has been created to assist people who have recently become unemployed under circumstances described above.

3. It is expected that the current manpower legislation will be replaced by new legislation which will give more responsibility to governors and mayors for the administration of manpower programs. It appears there will be more political involvement in these programs.

4. It is expected that the Manpower Resources Commission will play a more significant role in manpower planning for New York State. This Commission has been authorized to develop a much needed State manpower policy which should have a significant effect upon the manner in which manpower programs are assigned, developed, implemented, and monitored.

5. It is anticipated the currently proposed family assistance program legislation, or a modification of it, will be approved and will replace the present WIN program legislation. This has great implications for manpower agencies in terms of the tremendous expansion in training and other services that will be needed for those individuals who will be eligible for the benefits of this program. It is conceivable that a separate administrative agency will be necessary within the Department to fulfill its role in this program.

6. It is predicted that our involvement in the Vietnam war will diminish and, consequently, there will be a need to provide training for greater numbers of veterans. This trend could bring about greater involvement of community colleges and universities in the manpower training effort. Also, past experience has shown that most veterans have applied for training in the semi-technical fields. This fact could have a very significant effect on the direction of future manpower programs. In brief, more technical programs will probably evolve, thus, necessitating development of pretechnical kinds of training which to date have not been available.

7. It is expected that more of the responsibilities for approval and implementation of programs will be assigned to the states. This trend has become evident in recent months by the granting of authority to states for approval of budget amendments without prior approval from Federal agencies and, also, permitting states to fund up to 20 percent of their allocation without going through the usual State/Federal review and funding procedures.

8. It is expected that the procedures for processing proposals will become more streamlined and the paperwork reduced because of the pressures being exerted by all agencies concerned, including findings of evaluation reports on this subject.

9. Greater emphasis will be placed on evaluation of programs. Heretofore, very little has been done in this area. As a result of these evaluations, it is expected program direction and content will be concentrated, even more than before, on meeting individual needs of the disadvantaged.

10. It is expected that the NABS-JOBS program activity will diminish and, consequently, funds will become available for greater numbers of institutional programs. The JOBS program is dependent upon job openings

being available on a large scale, and the current trend has been a diminishing of job openings, particularly in the larger corporations because of the present slowdown in the economy.

11. It is anticipated that the CAMPS plan will become a more effective system for planning of manpower programs and, coupled with the involvement of the Manpower Resources Commission, the training needs of the State will be more effectively and efficiently fulfilled.

A P P E N D I X

TABLE A

EXCESS PROPERTY PROCUREMENT

	1967 to December, 1969 (Equipment and Supplies)	January to December, 1970 (Equipment)**		
City	Value	Value	No. of Items	Value
State Supervision	$*	$ 4,366.00	10	$ 0
Albany	$*	$ 1,874.00	16	$ 0
sub total:	$ 16,335.00	$ 6,240.00		
Binghamton	$ 321.00	$ 321.00	1	$ 0
Buffalo	$ 21,049.00	$ 11,884.00	14	$ 7,481.00
Rochester	$ 3,778.00	$ 1,558.00	54	$ 0
Nassau County	$ 4,301.00	$ 1,600.00	1	$ 0
NYC (01)	$*	$ 9,950.00	161	$*
NYC (02)	$*	$ 85,450.00	792	$*
NYC (03)	$*	$ 11,662.00	148	$*
NYC (04)	$*	$ 27,427.00	437	$*
NYC (05)	$*	$ 20,359.00	266	$*
NYC (06)	$*	$ 25,449.00	18	$*
NYC (07)	$*	$ 36,243.00	166	$*
NYC (08)	$*	$ 6,288,00	13	$*
NYC (09)	$*	$ 14,621.00	446	$*
NYC (10)	$*	$ 953.00	10	$*
NYC (11)	$*	$ 1,913.00	49	$*
NYC (12,13,15,16)	$*	$ 1,172.00	8	$*
sub total:	$340,836.00	$241,487.00	2,514	$ 88,514.00
Utica	$ 77,756.00	$ 34,266.00	149	$103,775.00
Syracuse	$ 8,448.00	$ 10,700.00	3	$ 0
White Plains	$ 1,342.00	$ 6,950.00	18	$ 0
Rome	$ 120.00	$ 0	0	$ 0
Schenectady	$ 3,077.00	$ 0	0	$ 2,639.00
TOTAL:	$477,363.00	$314,961.00	2,780	$202,409.00
	$*	$314,961.00(Equipment)**		
	$*	$202,409.00(Supplies)		
TOTAL:	$477,363.00	$517,370.00		

*Figures not provided in previous reports

**Figures include nonexpendable items carried over from previous years

TABLE B
Equipment Print-Out, Spring, 1970
Federal And State Manpower Programs

City	No. of Items *	Value *
Albany	924	$ 285,971.00
Wellsville	53	$ 6,612.00
Binghamton	637	$ 230,289.00
Auburn	48	$ 6,189.00
Dunkirk	84	$ 12,199.00
Elmira	40	$ 4,585.00
Delhi/Oneonta	59	$ 8,028.00
Poughkeepsie	230	$ 63,164.00
Buffalo	1767	$ 683,651.00
Malone	65	$ 7,847.00
Gloversville	37	$ 4,222.00
Herkimer	22	$ 2,540.00
Watertown	67	$ 12,702.00
Lowville	53	$ 8,321.00
Eaton/Morrisville	31	$ 13,841.00
Mount Morris	35	$ 5,515.00
Oneida	6	$ 543.00
Rochester	1404	$ 455,141.00
Amsterdam	216	$ 51,638.00
Mineola/Nassau Co.	1431	$ 402,926.00
New York City	5040	$1,423,280.00
Niagara Falls	40	$ 10,355.00
North Tonawanda	33	$ 3,524.00
Camden	1	$ 200.00
Utica	1180	$ 414,865.00
Syracuse	1280	$ 469,589.00
Geneva	126	$ 50,124.00
Middletown	45	$ 4,286.00
Newburgh	55	$ 9,317.00
Oswego	58	$ 5,579.00
Troy	87	$ 19,479.00
Orangetown	12	$ 1,633.00
Massena	17	$ 2,039.00
Ogdensburg	90	$ 19,684.00
Potsdam	331	$ 56,511.00
Schenectady	144	$ 81,910.00
Cobleskill	21	$ 2,269.00

Equipment Print-Out (Continued)

City	No. Items*	Value*
Bath/Corning	12	$ 1,731.00
Bath/Steuben	47	$ 19,320.00
Hornell/Corning	13	$ 1,731.00
Suffolk	9	$ 15,722.00
Babylon/Suffolk	465	$ 120,807.00
Brookhaven/Patchogue	21	$ 2,067.00
Riverhead/Suffolk	48	$ 5,713.00
Liberty/Sullivan Co.	4	$ 724.00
Monticello/Sullivan Co.	101	$ 25,056.00
Groton	18	$ 3,060.00
Ithaca	6	$ 750.00
Kingston	132	$ 27,804.00
Glens Falls	215	$ 32,769.00
Ft. Edward/Washington Co.	15	$ 1,810.00
Newark	1	$ 350.00
Wayne Co./Williamson	1	$ 979.00
White Plains	875	$ 280,106.00
Yonkers	135	$ 14,321.00
Yorktown Heights	14	$ 837.00
Salamanca	18	$ 2,685.00
TOTAL:	17,918	$5,423,081.00

*These figures are subject to correction in later printouts.

TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Projects Approved
Component Costs

Location - Training Agency	No. of Specifics	Supervision	Basic Education	Guidance	Building Rental & Other	Prevocational & Occupational Education	Total Project Cost	No. of Trainee Slots		Cost per Trainee Hour
								Pre-voc.	Spec.	
Albany - Board of Education	8	$76,798	$43,874	$44,974	$142,780	$192,245	$500,671	-	205	2.11

Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Prevocational & Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per /1 Trainee Hour	Total /2
6251	(QM)0006-001	Automobile Mechanic	2	40	22	888	28	.98	24,293
6252	(QM)0006-002	Draftsman, Detail	1	40	29	1160	14	.67	10,874
6253	(QM)0006-003	Machine Set-Up Operator	1	40	22	888	14	1.06	13,196
6254	(QM)0006-004	Clerk-Typist	2	40	22	888	28	.69	17,192
6255	(QM)0006-005	Stenographer	2	40	29	1160	28	.67	21,841
6256	(QM)0006-006	Cook	2	40	22	888	28	1.05	26,104
6257	(QM)0006-007	Nurse Aide/Orderly	2	40	16	624	20	.76	9,493

/1 Excludes Supervision, Basic Education, Guidance, and Building Costs

/2 Represents original umbrella funding and excludes Supervision, Basic Education, Guidance, and Building Costs

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TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per /1 Trainee Hour	/2 Total
6258	(QM)0006-008	Nurse, Licensed Practical	3	35-40	53	1971	45	.78	69,252
		TOTALS	15				205		192,245

/1 Excludes Supervision, Basic Education, Guidance, and Building Costs.

/2 Represents original umbrella funding and excludes Supervision, Basic Education, Guidance, and Building Costs.

TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Projects Approved
Component Costs

Location - Training Agency	No. of Specifics	Administrative & Counseling Budget	Basic Education	Prevocational & Occupational Education	Total Project Cost	No. of Trainee Slots		Cost per Trainee Hour
						Pre-voc.	Spec.	
Binghamton - Board of Education	6	$143,631	$35,661	$223,891	$403,200	250	175	1.43

Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainees Slots	Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per[1] Trainee Hour	[2] Total
6780	(QM)0013-001	Prevocational	1[3]	40	10[4]	400[4]	250	.50	49,711
6781	(QM)0013-002	Clerk-Typist	1[3]	40	30[4]	1200[4]	56	.39	26,497
6782	(QM)0013-003	Welder, Combination	1	40	27	1080	12	1.30	16,899
6783	(QM)0013-004	Production Machine Operator	1	40	27	1064	15	1.02	16,599
6784	(QM)0013-005	Auto Body Repairman	1	40	30	1200	12	2.38	34,279
6785	(QM)0013-006	Auto Mechanic (entry)	1[3]	40	24[4]	960[4]	40	1.14	43,657
6786	(QM)0013-007	Cook (entry)	1[3]	40	21[4]	840[4]	40	1.09	36,249
		TOTALS	7				425		223,891

[1] Excludes Basic Education Cost and Administrative and Counseling Costs.
[2] Represents original umbrella funding and excludes Basic Education cost and Administrative and Counseling costs.
[3] Continuous Enrollment.
[4] Average per trainee.

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TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Projects Approved
Component Costs

Location - Training Agency	No. of Specifics	Administrative & Counseling Budget	Basic Education	Prevocational & Occupational Education	Total Project Cost	No. of Trainee Slots		Cost per Trainee Hour
						Pre-voc.	Spec.	
Buffalo - Board of Education	7	$156,842	$18,717	$259,181	$434,740	-	354	$1.75

Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainees Slots	Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour /1	Total /2
5641	(QM)0020-001	Nurse, Licensed Practical	2	35	44	1512	48	.84	61,274
5642	(QM)0020-002	Nurse Aide/Orderly	8	40	8-9	296-328	96	1.09	33,551
5643	(QM)0020-003	Clerk-Typist	2	40	17	656-672	30	.94	18,705
5644	(QM)0020-004	Production Machine Operator	4	40	18-19	752-768	60	1.02	46,559
5645	(QM)0020-005	Welder, Combination	4	40	17	648-672	60	1.09	43,449
5646	(QM)0020-006	Automobile Mechanic (entry)	2	40	19-20	744-768	30	1.25	27,958
5647	(QM)0020-007	Auto Body Repairman (entry)	2	40	19-20	744-768	30	1.23	27,685
		TOTALS	24				354		259,181

/1 Excludes Basic Education Cost and Administrative and Counseling Costs
/2 Represents original umbrella funding and excludes Basic Education cost and Administrative and Counseling costs

TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Projects Approved
Component Costs

Location - Training Agency	No. of Specifics	Administrative & Counseling Budget	Basic Education	Prevocational & Occupational Education	Total Project Cost	No. of Trainee Slots		Cost per Trainee Hour
						Pre-voc.	Spec.	
New York City - Board of Education	9	$1,867,472	$637,422	$2,057,826	$4,562,720	1,600	1,110	$2.41

Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainees Slots	Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour [1]	Total [2]
5139	0042-001	Prevocational	4	36 [3]	12 [4]	432	1600	1.40	815,890
5140	0042-002	Auto Service Station Mechanic	5 [3]	40	35 [4]	1440	100	1.38	155,239
5141	0042-003	Clerical Occupations	20 [3]	40	9-34	360-1360	565	.74	472,120
5142	0042-004	Distributive Occupations	2 [3]	40	7-12	280-480	55	.54	33,349
5143	0042-005	Draftsman, Arch. (Manhattan Tech. Inst.)	1 [3]	40	38 [4]	1500 [4]	15	1.85	41,569
5145	0042-006	Metal and Wood Fabrication	6 [3]	40	16-34	640-1360	105	.96	113,273
5146	0042-007	Repair and Maintenance	9 [3]	40	25-56	1000-2240	150	1.24	236,018

[1] Excludes Basic Education Cost and Administrative and Counseling Costs
[2] Represents original umbrella and excludes Basic Education cost and Administrative and Counseling costs
[3] Continuous enrollment
[4] Average per trainee

TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per [1] Trainee Hour	[2] Total
5147	0042-008	T.V. Service and Repair (RCA)	1	35	39 [4]	1365	45	1.61	98,894
5149	0042	Automotive Services (Roberts Tech. and Trades School)	1 [3]	40	14-35	560-1392	75	1.15	91,474
		TOTALS					2710		2,057,826

[1] Excludes Basic Education Cost and Administrative and Counseling Costs
[2] Represents original umbrella and excludes Basic Education cost and Administrative and Counseling costs
[3] Continuous enrollment
[4] Average per trainee

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TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Projects Approved
Component Costs

Location - Training Agency	No. of Specifics	Administrative & Counseling Budget	Basic Education	Prevocational & Occupational Education	Total Project Cost	No. of Trainee Slots		Cost per Trainee Hour
						Pre-voc.	Spec.	
Rochester - Board of Education	8	$218,906	$38,889	$203,434	$461,229	90	184-208	$1.84

Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainees Slots	Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour [1]	Total [2]
5541	(QM)0021-001	Prevocational	6	40	10	384	90	.64	22,028
5542	(QM)0021-002	Nurse, Licensed Practical	1	35	50	1736	45	.87	66,998
5543	(QM)0021-003	Cook	1	40	30	1200	15	.94	16,932
5544	(QM)0021-004	Machine Set-Up Operator	1	40	20	816	15	.84	10,507
5545	(QM)0021-005	Draftsman	1	40	30	1200	15	.61	10,979
5546	(QM)0021-006	Auto Service Station Mechanic	2	40	30	1200	30	.73	26,133
5547	(QM)0021-007	Clerk Typist/Stenographer	1 [3]	40	20-30 [4]	160-240 [4]	50-74	.96	38,426
5548	(QM)0021-008	Cosmetologist	1	40	25	1008	14	.75	11,431
		TOTALS	14				274-298		203,434

[1] Excludes Basic Education Cost and Administrative and Counseling Costs
[2] Represents original umbrella and excludes Basic Education cost and Administrative and Counseling costs
[3] Continuous enrollment
[4] Average per trainee

TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Projects Approved
Component Costs

Location - Training Agency	No. of Specifics	Supervision	Basic Education	Guidance	Building Rental & Others	Prevocational & Occupational Education	Total Project Cost	No. of Trainee Slots		Cost per Trainee Hour
								Pre-voc.	Spec.	
Syracuse - Board of Education	9	$122,357	$51,552	$47,751	$137,720	$224,713	$584,093	-	150	$ .90

Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Prevocational & Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per[1] Trainee Hour	Total[2]
5421	(QM)0009-001	Clerk-Typist	1[3]	40	20[4]	160[4]	30	.57	35,585
5422	(QM)0009-002	Stenographer	1[3]	40	30[4]	240[4]	15	.55	17,164
5423	(QM)0009-003	Nurse Aide/Orderly	6	35	46	1617	10	.84	15,299
5424	(QM)0009-004	Nurse, Licensed Practical	1	35	49	1715	15	1.18	32,118
5425	(QM)0009-005	Automobile Mechanic	1[3]	40	26[4]	208[4]	15	.65	20,177
5426	(QM)0009-006	Auto Body R/M, Metal Helper	1[3]	40	26[4]	208[4]	15	.66	20,737
5427	(QM)0009-007	Welder, Combination	1[3]	40	26[4]	208[4]	15	.68	21,233

[1] Excludes Basic Education Cost and Administrative and Counseling Costs
[2] Represents original umbrella funding and excludes Basic Education cost and Administrative and Counseling Costs
[3] Continuous Enrollment
[4] Average per trainee

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TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per /1 Trainee Hour	/2 Total
5428	(QM)0009-008	Production Machine Operator	1 /3	40	26 /4	208 /4	15	.80	25,088
5429	(QM)0009-009	Draftsman, Mechanical	1 /3	40	30 /4	240 /4	20	.90	37,312
		TOTALS	14				150		224,713

/1 Excludes Basic Education Cost and Administrative and Counseling Costs

/2 Represents original umbrella funding and excludes Basic Education cost and Administrative and Counseling costs

/3 Continuous enrollment

/4 Average per trainee

TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Projects Approved
Component Costs

Location - Training Agency	No. of Specifics	Supervision	Basic Education	Guidance	Building Rental & Others	Prevocational & Occupational Education	Total Project Cost	No. of Trainee Slots		Cost per Trainee Hour
								Pre-voc.	Spec.	
Utica - Board of Education	19	$67,514	$41,723	$49,114	$103,579	$209,930	$472,852	374	374	$1.66

Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Prevocational & Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour [1]	Total [2]
7327	(QM)0005-001	Prevocational	20	40	3	176	374	.55	33,255
	(QM)0005-002	Nurse Aide/Orderly	2	40	6	240	30	.81	5,541
7329	(QM)0005-003	Clerk-Typist/Stenographer	1	40	24	960	20	.48	9,294
7330	(QM)0005-004	Offset Dupl. Mach. Oper./Vari-Typer	1	40	15	584	15	.75	6,536
7331	(QM)0005-005	Cashier II	2	40	3-4	120-160	30	.71	2,973
7332	(QM)0005-006	Bank Teller	2	40	4	152	30	.62	2,823
7333	(QM)0005-007	Automobile Mechanic	1	40	20	800	15	.86	10,283
7334	(QM)0005-008	Automobile Body R/M, Metal	1	40	21	856	15	.75	9,642

[1] Excludes Basic Education Cost and Administrative and Counseling costs
[2] Represents original umbrella funding and excludes Basic Education cost and Administrative and Counseling costs

TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per /1 Trainee Hour	/2 Total
7335	(QM)0005-009	Gas Engine Repairman	1	40	12	464	15	.69	4,805
7336	(QM)0005-010	Tractor-Trailer Truck Driver	2	40	7	256-272	24	2.21	14,023
7337	(QM)0005-011	Production Machine Operator	2	40	21	824	30	.75	18,597
7338	(QM)0005-012	Welder; Combination	1	40	20	800	15	.81	9,755
7339	(QM)0005-013	Draftsman, Detail Trainee	1	40	20	800	15	.70	8,374
7340	(QM)0005-014	Electronic Mechanic	2	40	34-35	1344-1400	30	.70	28,638
7341	(QM)0005-015	Household Appliance Repairman	1	40	21	840	15	.56	9,245
7342	(QM)0005-016	Component Inspection Tech.	2	40	15	584	30	.61	10,760
7343	(QM)0005-017	Cook	1	40	19	760	15	.82	9,314
7344	(QM)0005-018	Baker	1	40	19	760	15	.78	8,877
7345	(QM)0005-019	Boner/Meat Cutter	1	40	16	648	15	.74	7,195
		TOTALS	45				748		209,930

/1 Excludes Basic Education Cost and Administrative and Counseling Costs

/2 Represents original umbrella funding and excludes Basic Education cost and Administrative and Counseling costs

TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Projects Approved
Component Costs

Location - Training Agency	No. of Specifics	Administrative & Counseling Budget	Basic Education	Prevocational & Occupational Education	Total Project Cost	No. of Trainee Slots		Cost per Trainee Hour
						Pre-voc.	Spec.	
White Plains - Board of Education	9	$202,824	$56,145	$250,967	$509,936	-	284	$1.71

Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainees Slots	Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour /1	Total /2
5906	(QM)0017-001	Clerk/Clerk-Typist	4	37	27	999	112	.49	53,584
5907	(QM)0017-002	Nurse, Licensed Practical	1	35	48	1659	24	1.27	50,174
5908	(QM)0017-003	Surgical Technician	1	35	24	847	10	1.49	12,638
5909	(QM)0017-004	Nurse Aide/Orderly	1	35	9	315	18	.78	4,425
5910	(QM)0017-005	Cook	2	37	27	999	20	1.10	22,018
5911	(QM)0017-006	Auto Body Repairman (comb.)	2	37	25	925	20	1.15	21,303
5912	(QM)0017-007	Auto Mechanic	4	37	32	1184	40	.95	44,782
5913	(QM)0017-008	Production Machine Operator	2	37	38	1391	20	.78	21,697

/1 Excludes Basic Education cost and Administrative and Counseling costs

/2 Represents original umbrella funding and excludes Basic Education cost and Administrative and Counseling cost.

TABLE I

MDTA - Manpower Development and Training Act

Multioccupational Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per /1 Trainee Hour	/2 Total
5914	(QM)0017-009	Electronic Mech. & Electronic Assembler	2	37	25	925	20	1.10	20,346
		TOTALS	19				284		250,967

/1 Excludes Basic Education cost and Administrative and Counseling costs

/2 Represents original umbrella funding and excludes Basic Education cost and Administrative and Counseling cost.

TABLE II

MDTA - Manpower Development and Training Act

Regular Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	No. of Sections	Course Data		Total Hours	No. of Trainee Slots	Institutional Cost	
					Hrs./ Wk.	Instr. Wks.			Per Trainee Hour	Total
Bayshore - Island Drafting School	5822	(R)0015	Draftsman, Mechanical	2	40	25	1000	20	.80	16,000
Suffolk #3 B.O.C.E.S.	5821	(R)0023	Nurse, Licensed Prac.	2	35	41	1428	50	1.26	90,621
Hempstead - Nassau Co. V.E.E.B. (Freeport)	5829	(R)0031	Auto Mech/Auto Body R/M	2	40	26	1040	30	1.55	48,484
(Mineola)	5828	(R)0032	Basic Ed. & Orientation	3/1	36	13/2	468/2	75	1.43	50,308
(Mineola)	5830	(R)0029	Basic Ed. for Spanish-Speaking Persons	2	35	12	420	30	1.18	14,913
(Mineola)	5825	(R)0028	Nurse, Licensed Prac.	3	35	47-55	1540-1820	80	1.12	163,351
Adelphi Business School (Mineola)	5827	(R)0027	Office Occupations with Basics	8	40	14-33	560-1320	40	1.11	39,620
Ithaca - Cortland Tompkins Community College	6742	(R)0019	Clerk-Typist/Steno	1/1	40	28/2-34	1120/2-1360	30	1.06	44,300

/1 Continuous enrollment

/2 Average per trainee

TABLE II

MDTA - Manpower Development and Training Act

Regular Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	No. of Sections	Course Data		Total Hours	No. of Trainee Slots	Institutional Cost	
					Hrs./ Wk.	Instr. Wks.			Per Trainee Hour	Total
North Tonawanda - Board of Education	5625	(R)0033 [1]	Nurse, Licensed Prac.	2	35	41	1442	24	1.25	43,379
Ogdensburg - Board of Education	6390	(R)0024	Nurse, Licensed Prac.	2	35	43	1477	24	1.23	43,511
Oswego County - BOCES	5418	(P)0035 [1]	Engine Lathe Set-Up Op. & Turret Lathe Set-Up	2	6	20	120	30	3.99	14,368
Patchogue - Suffolk #2 BOCES	5812	(R)0007	Nurse Aide/Orderly	8	35	6	210	96	1.78	35,948
Poughkeepsie - Board of Education	253	(R)0001	Draftsman, Trainee	1	37½	20	750	15	1.29	14,525
"	6249	(R)0004	Nurse, Licensed Prac.	2	35	43	1505	24	1.40	50,657
Pulaski - Oswego County BOCES	7499	(R)0026	Nurse, Licensed Prac.	1	35	43	1505	35	1.03	54,422
Riverhead - Suffolk #1 BOCES	5820	(R)0022	Nurse, Licensed Prac. (Including Basics)	2	35	46	1596	25	1.24	49,620
Syracuse - Board of Education	5414	(P)0037 [1]	Traffic Rate Clerk (Upgrading)	1	6	20	120	18	1.48	3,203
Powelson Institute	5411	(P)0036 [1]	Various: Clerical (Upgrading)	9	6	20-42	120-240	135	1.75	33,075
Watertown - Board of Education	7407	(R)0025	Nurse, Licensed Prac.	2	35	44	1526	48	.99	72,972
TOTALS				56				849		885,241

[1] Funded under Section 301 (b) (1)

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TABLE III

MDTA - Manpower Development and Training Act

Reprogram Money

Multioccupation Subprojects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	No. of Sections	Course Data: Hrs./Wk.	Course Data: Instr. Wks.	Total Hours	No. of Trainee Slots	Institutional Cost[1]: Per Trainee Hour	Institutional Cost[1]: Total
Binghamton - Board of Education	6780	(QM)0013-001	Prevocational	1[3]	40	10[4]	400[4]	125	.43	15,826
	6781	(QM)0013-002	Clerk/Typist	1[3]	40	30[4]	1200[4]	40	.36	15,453
	6782	(QM)0013-003	Welder, Combination	1[3]	40	27[4]	1080[4]	15	.74	7,339
	6783	(QM)0013-004	Production Machine Operator	1[3]	40	27[4]	1080[4]	15	.74	7,680
	6784	(QM)0013-005	Auto Body Repairman	1[3]	40	30[4]	1200[4]	15	1.26	11,313
	6785	(QM)0013-006	Auto Mechanic	1[3]	40	24[4]	960[4]	15	.97	10,311
	6786	(QM)0013-007	Cook	1[3]	40	21[4]	840[4]	15	.91	9,723
			TOTALS					240		76,232

[1] Excludes Basic Education Costs and Administrative and Counseling costs

[2] Basic Education totaling $18,567 will be given in conjunction with skills training

[3] Continuous enrollment

[4] Average per trainee

TABLE III

MDTA - Manpower Development and Training Act

Reprogram Money

Multioccupation Subprojects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	No. of Sections	Course Data		Total Hours	No. of Trainee Slots	Institutional Cost [1]	
					Hrs./ Wk.	Instr. Wks.			Per Trainee Hour	Total
Buffalo - Board of Education	-	0020-902	Various (Basic Education) [2]	-	-	-	-			
	5643	0020-003	Clerk-Typist	2	40	17	664-680	30	.91	16,977
	5644	0020-004	Production Machine Operator	2	40	18-19	744-776	30	.96	19,121
	6545	0020-005	Welder, Combination	2	40	17	648-672	30	1.06	19,163
			TOTALS					90		55,261

[1] Excludes Basic Education Costs and Administrative and Counseling costs

[2] Basic Education totaling $4,209 will be given in conjunction with skills training

TABLE III

MDTA - Manpower Development and Training Act

Reprogram Money

Multioccupation Subprojects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	No. of Sections	Course Data		Total Hours	No. of Trainee Slots	Institutional Cost [1]	
					Hrs./ Wk.	Instr. Wks.			Per Trainee Hour	Total
Rochester - Board of Education	5540	0021-902	Various (Basic Education) [2]	-	-	-	-	-	-	
	5541	0021-001	Prevocational	3	40	10	360-384	46	.64	10,981
	5544	0021-004	Machine Set-Up Operator	1	40	20	800-816	15	.84	9,708
	5546	0021-006	Auto Service Station Mechanic	1	40	30	1184-1200	15	.73	12,518
	5547	0021-007	Clerk Typist/Steno	1 [3]	40	17 [4]	880 [4]	74	.96	41,476
	5548	0021-008	Cosmetology	1	40	25	1008	16	.75	11,432
			TOTALS					166		86,115

[1] Excludes Basic Education costs and Administrative and Counseling costs

[2] Basic Education totaling $123,565 will be given in conjunction with skills training

[3] Continuous enrollment

[4] Average per trainee

TABLE III

MDTA - Manpower Development and Training Act

Reprogram Money

Multioccupation Subprojects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	No. of Sections	Course Data: Hrs./Wk.	Course Data: Instr. Wks.	Total Hours	No. of Trainee Slots	Institutional Cost[1]: Per[1] Trainee Hour	Institutional Cost[1]: Total[2]
Syracuse - Board of Education	5420	0009-000	Various (Basic Education)[2]	-	-	-	-	-	-	
	5421	0009-001	Clerk-Typist	1[3]	40	26[4]	1040[4]	30	.58	18,746
	5422	0009-002	Stenographer	1[3]	40	35[4]	1320[4]	15	.56	12,213
	5425	0009-005	Automobile Mechanic	1[3]	40	26[4]	1040[4]	15	.64	10,179
	5426	0009-006	Auto Body Repairman/ Metal Helper	1[3]	40	26[4]	1040[4]	15	.69	10,359
	5427	0009-007	Welder, Combination	1[3]	40	26[4]	1040[4]	15	.69	11,329
	5428	0009-008	Production Machine Operator	1[3]	40	26[4]	1040[4]	15	.79	12,784
	5429	0009-009	Draftsman, Mechanical	1[3]	40	35[4]	1320[4]	20	.89	24,996
			TOTALS					125		100,606

[1] Excludes Basic Education, Supervision, Guidance, and Building Costs

[2] Basic Education totaling $30,397 will be given in conjunction with skills training

[3] Continuous Enrollment

[4] Average per trainee

TABLE III

MDTA - Manpower Development and Training Act

Reprogram Money

Multioccupation Subprojects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	No. of Sections	Course Data: Hrs./Wk.	Course Data: Instr. Wks.	Total Hours	No. of Trainee Slots	Institutional Cost [1]: Per Trainee Hour [1]	Institutional Cost [1]: Total [2]
Utica - Board of Education	7327	(M)0005-001	Prevocational	9	40	3-4	32-176	162	.56	14,963
	7330	(M)0005-004	Offset Dupl. Machine Operator/Varityper	1	40	15	592-616	15	.74	6,897
	7333	(M)0005-007	Automobile Mechanic	1	40	20	816-856	15	.84	10,821
	7336	(M)0005-010	Tractor-Trailer Truck Driver	1	40	7	264-272	12	2.18	7,043
	7337	(M)0005-011	Production Machine Operator	2	40	21	824-856	30	.86	24,793
	7338	(M)0005-012	Welder, Combination	2	40	20	744-848	30	.71	16,135
	7339	(M)0005-013	Draftsman, Detail	1	40	20	800-816	15	.68	8,106
	7340	(M)0005-017	Electronic Mechanic	1	40	35	1344-1368	15	.73	16,050
	7343	(M)0005-017	Cook	1	40	19	760-776	15	.83	9,694
	7344	(M)0005018	Baker	1	40	19	760-776	15	.79	9,410
			TOTALS					324		123,912

[1] Excludes Supervision, Basic Education, Guidance and Building Costs

[2] The following overhead costs totaling $83,342 were obtained from the unallocated reserve in Washington: Supervision - $37,039, Guidance - $17,837, Building - $39,039

TABLE III

MDTA - Manpower Development and Training Act

Reprogram Money

Multioccupation Subprojects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	No. of Sections	Course Data: Hrs./Wk.	Course Data: Instr. Wks.	Total Hours	No. of Trainee Slots	Institutional Cost [1]: Per Trainee Hour	Institutional Cost [1]: Total
White Plains - Board of Education	5906	0017-001	Clerk-Typist	2	37	27	999	50	.51	29,315
	5914	0017-009	Electronic Mechanic and Electronics Orientation	2	37	25	925	20	.76	948
			TOTALS					70		30,263

[1] Excludes Basic Education costs and Administrative and Counseling costs.

TABLE IV

MDTA - Manpower Development and Training Act
Reprogram Monies
Regular Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	No. of Sections	Course Data		Total Hours	No. of Trainee Slots	Institutional Cost	
					Hrs./ Wk.	Instr. Wks.			Per Trainee Hour	Total
Albany - Board of Education	6262	(R)0046	Stenographer	1	40	25	1020	25	.59	15,035
Bayshore - Suffolk #3 BOCES, Fitzgerald Driving School	5823	(R)0045	Household Appliance Repair Driver Education	1	35-40	34	1190-1210	20	1.53	36,651
Suffolk #3 BOCES	5824	(R)0056	Basic Education for Spanish Speaking Persons	1	35	14	483	20	1.00	9,720
Elmira-Schuyler-Chemung, Tioga County BOCES	6748	(R)0048	Welder, Combination	1	35	29	1008	15	1.43	21,670
Hempstead - Adelphi Business Schools	5827	(R)0027	Office Occupations with Basics	2/1	40	24-34	960-1360	20/1	1.09	20,790/1
Monticello-Sullivan County BOCES	6746	(P)0060	Electrician (Upgrading)	2	6	50	300	30	1.32	11,961
New York City - Board of Education	5178	(R)0047	Patrolman	7	36	42	1498-1505	100	2.03	305,361
New York University	5000	(R)0038	Recreation Leader	2	36	17	612	60	1.98	72,827
Plattsburgh-Clinton County BOCES	6399	(R)0062	Production Machine Operator	2	40	26	992-1008	30	2.79	83,842

/1 In addition to original project.

TABLE IV

MDTA - Manpower Development and Training Act

Reprogram Monies

Regular Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
				No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
Poughkeepsie - Board of Education	6263	(R)0050	Clerk-Typist/Stenographer	1[1]	40	23[2]	920[2]	45	.60	33,963
Schenectady - Board of Education	6261	(P)0049	Production Machine Operator	4	8	15	120	80	2.45[3]	12,352[4] 11,255[5]
Syracuse - Board of Education	5412	(P)0053	Automotive Trade (Upgrading)	2	6	50	300	90	1.95	52,797
	5416	(R)0055	Nurse, L.P. (Upgrading)	1	22	61	1360	12	1.97	32,136
	5419	(R)0057	Insurance Rater	1[1]	40	26[2]	1040[2]	30	.68	21,364
	5430	(R)0059	Food Service	1[1]	40	15[2]	600[2]	20	1.14	13,234
	5431	(P)0061	Metal Trades (Upgrading)	15	7	20	140	225	1.62	57,537
	5432	(R)0054	Nurse, L.P.	2	35	49	1708	30	1.69	86,749
Utica - Board of Education	6391	(R)0051	Draftsman, Detail	1	40	21	864	15	1.33	17,295
	6384	(R)0058	Electronic Mechanic	1	40	34	1352	15	.93	18,941
TOTALS				48				982		935,480

[1] Constant enrollment
[2] Average per trainee
[3] Based on total cost of project
[4] Federal funds
[5] Local Matching

TABLE V

MDTA - Manpower Development and Training Act
Concentrated Employment Programs
Multioccupational Projects Approved
Component Costs

Location - Training Agency	No. of Specifics	Administrative & Counseling Budget	Basic Education	Prevocational & Occupational Education	Total Project Cost	No. of Trainee Slots		Cost per Trainee Hour
						Pre-voc.	Spec.	
Rochester - Board of Education (CEP)	7	$121,686	$34,089	$134,762	$290,537	-	200	$1.45

Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainees Slots	Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per [1] Trainee Hour	[2] Total
5551	(CM)0614-001	Machine Set-Up Operator	3	35	25	882	45	.85	35,010
5552	(CM)0614-002	Cook	1	35	39	1358	15	.95	19,853
5553	(CM)0614-003	Auto Service Station Mechanic	1	35	29	1022	15	.72	11,282
5554	(CM)0614-004	Precision Lens Grinder	1	35	13	441	10	1.21	5,510
5555	(CM)0614-005	Auto Body Repairman	1	35	25	882	10	1.24	11,244
5556	(CM)0614-006	Clerk-Typist/Stenographer	3	35	32	1127	55	.57	35,943
5557	(CM)0614-007	Basic Education	1 [3]	35	26 [4]	130 [4]	50	.35	15,920
		TOTALS	11				200		134,762

[1] Excludes Basic Education costs and Administrative and Counseling costs
[2] Represents original umbrella funding and excludes Basic Education costs and Administrative and Counseling costs
[3] Continuous enrollment
[4] Average per trainee

TABLE V

MDTA - Manpower Development and Training Act
Concentrated Employment Programs
Multioccupational Projects Approved
Component Costs

Location - Training Agency	No. of Specifics	Supervision	Basic Education	Guidance	Building Rental & Others	Prevocational & Occupational Education	Total Project Cost	No. of Trainee Slots		Cost per Trainee Hour
								Pre-voc.	Spec.	
N.Y.C. - Board of Education Central Harlem (CEP)	7	$319,938	$62,550		$51,591	$595,629	$1,029,708	310	472	$1.55

Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Prevocational & Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
5172	(CM)0616-001	Computing and Recording	5	40	17 [1]	720 [1]	130		81,175
5181	(CM)0616-002	Typing, Stenography and Related	6	40	23 [1]	960 [1]	145		95,769
5182	(CM)0616-003	Machine Operating	5	40	21 [1]	880 [1]	50		70,144
5183	(CM)0616-004	Repair and Maintenance	9	40	39 [1]	1560 [1]	105		156,263
5184	(CM)0616-005	Nurse, Licensed Practical	1	35	50	1750	12		19,378
5185	(CM)0616-006	Distributive	2	40	12 [1]	480 [1]	30		27,684
5198	(CM)0616-008	Prevocational and Basic Education	8	36	12 [1]	420 [1]	310		133,963
		Driver Education [2]							11,253
		TOTALS					782		595,629

[1] Average per trainee

[2] Component of certain skill training projects

TABLE V

MDTA - Manpower Development and Training Act
Concentrated Employment Programs
Multioccupational Projects Approved
Component Costs

Location - Training Agency	No. of Specifics	Supervision	Basic Education	Guidance	Building Rental & Others	Prevocational & Occupational Education	Total Project Cost	No. of Trainee Slots		Cost per Trainee Hour
								Pre-voc.	Spec.	
N.Y.C. - Board of Education East Harlem (CEP)	7	$350,165	$62,745		$51,352	$609,192	$1,073,484	308	472	$1.52

Subprojects Approved

MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Prevocational & Occupational Education Cost	
			Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total [1]
5172	(CM)0617-001	Computing and Recording	6	40	17	680	130		94,501
5173	(CM)0617-002	Typing, Stenography and Related	6	40	22	880	145		95,100
5174	(CM)0617-003	Machine Operator	7	40	25	1000	95		104,098
5175	(CM)0617-004	Repair and Maintenance	6	40	37	1480	75		111,100
5176	(CM)0617-005	Distributive	6	40	12	480	15		26,637
5177	(CM)0617-006	Nurse, Licensed Practical	1	35	52	1760	12		18,977
5199	(CM)0617-008	Prevocation and Basic Education	8	36	16	560	308		147,526
		Driver Education [2]							11,253
		TOTALS					780		609,192

[1] Excludes Supervision, Basic Education and Building Costs
[2] Component of certain skill training projects

TABLE VI

MDTA - Manpower Development and Training Act

On-the-Job Training Projects Approved

Location	Training Agency	OJT#	Occupational Title	Course Data			Total Hours	No. of Trainee Slots	Institutional Cost	
				No. of Sections	Hrs./ Wk.	Instr. Wks.			Per Trainee Hour	Total
Syracuse	Board of Education	09-0-0012-003 (533)	Various (National Tool, Die and Precision Machine Association)	1	35	16	539	20	1.16	12,487
Albertson Long Island	Human Resources Center	34-0-3204-000	Electronic Assembler	3	40	16	640	40	1.63	41,637
Buffalo	Opportunities Development Corporation	34-0-3205-000	Basic Education (Various)	1/1	10	20/2	200/2	125	3.32	83,062
TOTALS								185		137,186

/1 Continuous enrollment

/2 Average per trainee

TABLE VII

NABS - JOBS MA-5
National Alliance of Businessmen - Job Opportunities in the Business Sector

Location	Training Agency	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
			No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Tr. Hour	Total
Binghamton	Board of Education	Basic Education (Various)	1 /1	20	9 /2	200	200	1.65	66,038
Hempstead (New Hyde Park)	Nassau County V.E.E.B.	Home Health Aide	1	40	2½	100	10	2.00	1,959
		Oil Burner Serviceman	8	20	20	360-388	116	2.67	123,871
New York City	Board of Education	Basic Education	1	15	22	312	10	1.32	4,230
		Basic Education (U.S. Truck Body Company)	3	40	10	400	30	1.77	21,250
TOTALS							366		217,348

/1 Continuous enrollment

/2 Includes one 40-hour week of orientation and eight 20-hour weeks of basic and related education and counseling.

TABLE VIII

MDTA - Manpower Development and Training Act

Redevelopment Area Retraining Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
				No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
Amsterdam - Board of Education	6393	(A)0410	Electronic Mechanic	1	40	32	1280	20	.70	17,968
" " "	6397	(A)0408	Nurse, Licensed Practical	2	35	42	1463	24	1.17	42,878
Herkimer County - B.O.C.E.S	6332	(A)0402	Nurse, Licensed Practical	2	35	43	1512	24	1.30	47,204
Massena - Board of Education	6385	(A)0407	Nurse, Licensed Practical	2	35	44	1540	24	.93	34,647
Medina - Orleans, Niagara County, B.O.C.E.S.	5539	(A)0406	Nurse, Licensed Practical	1	35	44	1554	15	1.14	26,785
Ogdensburg - St. Lawrence County, B.O.C.E.S.	6396	(A)0409	Cook	1	36	26	907.2	16	1.14	16,528
TOTALS				9				123		186,010

TABLE IX

MDTA - Manpower Development and Training Act

Special Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
				No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
New York City - TRY Inc.	5164	(Y)0010	Prevocational (Various)	1 /1	40	10 /2	80 /2	910	2.75 /3 2.00 /4	730,201 /3 272,250 /4

SMTA - State Manpower Training Act
Special Projects Approved

New York City - Board of Education (Harlem Teams for Self-Help)	5129	990535	Prevocational Adjustment	18	40	16	624	250	1.62	252,248
	5137	990548	Prevocational Adjustment	17	40	17	656	250	1.61	251,333
	5170	990581	Prevocational Adjustment	17	40	17	656	250	1.81	296,258
TOTALS				52				750		799,839

/1 Continuous enrollment

/2 Average per trainee

/3 Federal funds

/4 Local matching

TABLE X

MDTA - Manpower Development and Training Act

Correctional Institution Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
				No. of Sections	Hrs./Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
Greennaven Prison Poughkeepsie	6294	105?	Office Machine Serviceman	2	40	40	1520	40	1.89	114,637

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TABLE XI

MDTA - Manpower Development and Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
New York City	The Academy of Advanced Traffic	Manager, Traffic	25	40	1000	1	$1,270.00	$1,270.00
Mineola, L. I.	Adelphi Business School	Accounting Clerk	25	42	1050	5	$1,318.00	$6,590.00
		Bookkeeper	25	26	650	5	$ 860.00	$4,300.00
		Keypunch Operator	25	20	500	2	$ 840.00	$1,680.00
		Stenographer	25	42	1050	3	$1,385.00	$4,155.00
		Stenotype Operator	25	42	1050	3	$1,554.00	$4,662.00
Albany	Adult Learning Center	Adult Basic Education	25	25	650	1	-0-	-0-
		Adult Basic Education	25	40	1000	5	-0-	-0-
		Adult Basic Education	25	42	1050	1	-0-	-0-
		Adult Basic Education	25	47	1175	3	-0-	-0-
		Adult Basic Education	25	50	1250	5	-0-	-0-
Albany	Albany Business College	Accountant	25	34	850	1	$ 965.00	$ 965.00
		Executive Secretary	25	34	850	1	$ 965.00	$ 965.00
Jamaica, L. I.	Allen School for Physicians Aides	Medical Lab Assistant	30	50	1500	2	$1,580.00	$3,160.00
		Medical Lab Assistant	33	45	1500	4	$1,580.00	$6,320.00

TABLE XI

MDTA - Manpower Development and Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Syracuse	American School of Drafting	Mechanical Draftsman	25	40	1000	1	$1,093.00	$1,093.00
New York City	Announcer Training Studios	Radio Announcer	30	27	787	1	$1,485.00	$1,485.00
Buffalo	Anthony Driving School	Truck Driver-Light	25	3	25	1	$ 600.00	$ 600.00
New York City	Apex Training School	Refrigeration Mechanic	30	20	600	1	$1,410.00	$1,410.00
		Refrigeration Mechanic	30	20	600	1	$1,575.00	$1,575.00
New York City	Atlas Barber School	Barber	40	25	1000	2	$ 938.00	$1,876.00
New York City	Automation Institute of Queens	Data Processing	25	12	300	2	$ 995.00	$1,990.00
Babylon, L. I.	Biltmore Beauty School	Cosmetologist	35	29	1000	1	$ 630.00	$ 630.00
Smithtown	Blake Drafting School	Electro/Mechanical Drafting	40	16	630	2	$ 664.00	$1,329.40
Babylon	Brownes Business School	Accounting	25	36	900	1	$1,230.00	$1,230.00
		Keypunch Operator	25	12	300	1	$ 475.00	$ 475.00

TABLE XI

MDTA - Manpower Development and Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Rockville Centre	Brownes Business School	Accountant	25	36	900	1	$1,230.00	$1,230.00
		Bookkeeper	25	36	900	1	$1,230.00	$1,230.00
		Secretary	25	36	900	1	$1,240.00	$1,240.00
Brooklyn	Brooklyn Y.M.C.A. Trade School	Machine Shop Practice	30	27	800	1	$ 790.00	$ 790.00
Buffalo	Buffalo Skill Center	Nurse-Aide		8			-0-	-0-
Buffalo	Bryant and Stratton Business Institute	Computer Programming	25	20	500	1	$1,175.00	$1,175.00
Brooklyn	Calise School	Cosmetologist	34	30	1000	1	$ 685.00	$ 685.00
Syracuse	Central New York Barber School	Barber	40	12	456	1	$ 136.80	$ 136.80
Rensselaer	Chauffeur's Train-School, Inc.	Tractor-Trailer	25	2	50	3	$ 450.00	$1,350.00
Farmingdale, L.I.	Commercial Driver Training, Inc.	Tractor-Trailer	40	3	120	7	$ 695.00	$4,865.00
Bronx	Concourse Beauty School, Inc.	Cosmetologist	35	29	1000	1	$ 980.00	$ 980.00
New York City	Control Data Computer Training School	Detail Programmer	25	24	600	1	$2,100.00	$2,100.00

TABLE XI

MDTA - Manpower Development and Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Bethpage, L. I.	Coronet Beauty School	Cosmetologist	35	29	1000	1	$ 658.50	$ 658.50
Jamaica, L. I.	De Fran's Beauty School	Cosmetologist	35	29	1000	8	$ 984.00	$7,872.00
New York City	Delehanty Inst.	Architectural Draftsman	28	36	1000	2	$1,010.00	$2,020.00
		Auto Mechanic	30	35	1000	6	$1,040.00	$6,240.00
		Electronics T. V. Repairman	30	50	1500	1	$1,600.00	$1,600.00
Delhi	Delhi Agricultural & Technical College	Nurse, Licensed Practical	38	32	1210	4	$ 613.00	$2,452.00
New York City	Eastern School for Physicians Aides	Medical Lab Assistant	35	43	1500	2	$2,190.00	$4,380.00
New York City	Electronic Computer Programming Institute	Business Programmer	30	23	690	4	$1,695.00	$6,780.00
Elmira	Elmira Business Institute	Junior Executive	25	20	500	1	$ 687.50	$ 687.50
Glen Cove	Glen Cove Community Hospital	Nurse, Licensed Practical	35	52	1858	2	$ 625.00	$1,250.00
Hauppauge	Hauppauge Beauty School	Cosmetologist	35	29	1000	1	$ 690.00	$ 690.00

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TABLE XI

MDTA - Manpower Development and Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Brooklyn	Heffley and Brown Business Institute	Stenographer	25	40	1000	1	$ 865.00	$ 865.00
New York City	Interboro Institute	Legal Secretary	25	44	1100	1	$1,490.00	$1,490.00
Babylon, L. I.	Inter-County Barber School	Barber	40	25	1000	5	$ 948.00	$ 948.00
Amityville, L. I.	Island Drafting School	Electronic Assembler	30	29	850	1	$1,440.00	$1,440.00
Hempstead, L. I.	Mandl School for Medical & Dental Assistants	Medical Assistant	30	40	1200	2	$1,563.00	$3,126.00
New York City	Manhattan Medical & Dental Assistants School	Medical Lab Assistant	35	43	1500	1	$1,785.00	$1,785.00
		Dental Assistant	25	12	300	1	$ 520.00	$ 520.00
New York City	Manhattan School of Printing	Offset Pressman	30	11	320	1	$1,060.00	$1,060.00
New York City	Manhattan Technical Institute	Electrical Draftsman	30	34	1000	1	$ 861.00	$ 861.00
Bay Shore	Marcel Haigy's School of Beauty	Cosmetologist	35	29	1000	2	$ 635.00	$1,270.00
New York City	Merchants & Bankers	Bookkeeping, Clerical	25	48	1200	1	$1,075.00	$1,075.00

TABLE XI

MDTA - Manpower Development and Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
New York City	Merchants & Bankers	Clerk-Typist	25	26	650	2	$ 585.00	$1,170.00
		Secretary	25	48	1200	1	$1,320.00	$1,320.00
New York City	Beauty School of Middletown	Cosmetologist	35	29	1000	1	$ 775.00	$ 775.00
New York City	Midtown School of Business	Clerk-Typist	25	26	650	2	$ 608.00	$1,216.00
Schenectady	Modern Welding School	Combination Welder	35	10	350	2	$ 683.20	$ 683.20
		Combination Welder	35	12	420	1	$ 898.00	$ 898.00
		Combination Welder	35	14	476	1	$1,126.85	$1,126.85
Bronx	Monroe Business Institute 29 E. Fordham Road	Secretary	25	43	1075	1	$1,004.00	$1,004.00
Bronx	Monroe Business Institute 1930 Boston Road	Bookkeeper Machine Operator	25	27	650	1	$ 771.20	$ 771.20
		Bookkeeper Machine Operator	25	47	1075	1	$1,157.75	$1,157.75
		Business Programmer	25	43	1075	4	$1,107.44	$4,429.76
		Business Programmer	30/25	46	1125	1	$1,207.44	$1,207.44
		Clerk-Typist	25	43	1075	1	$1,079.00	$1,079.00

TABLE XI

MDTA - Manpower Development and Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Bronx	Monroe Business Institute 1930 Boston Road	Keypunch Operator	25	28	650	1	$ 768.50	$ 768.50
		Secretary, Executive	25	43	1075	1	$1,004.00	$1,004.00
		Secretary, Medical	25	43	1075	1	$ 955.00	$ 955.00
		Secretary	25	43	1075	1	$1,003.75	$1,003.75
Silver Springs, Md.	National Institute of Dry Cleaner	Dry Cleaner	40	8	320	1	$ 509.00	$ 509.00
Toledo, Ohio	National School of Meat Cutting, Inc.	Meat Cutter	42	8	336	1	$ 545.00	$ 545.00
New York City	New York City Adult Training Center	Furniture Finisher	30	20	600	2	$ 792.00	$ 792.00
		Household Appliance Repairman	30	32	960	2	$1,267.20	$2,534.40
		Machinist	30	40	1200	2	$1,584.00	$3,168.00
		Refrigeration Mechanic	30	50	1500	4	$1,980.00	$7,920.00
New York City	N.Y. Institute of Photography	Commercial Photographer	30	40	1200	7	$2,325.00	$16,275.00
		Commercial Photographer	30	40	1200	2	$2,500.00	$5,000.00
New York City	N.Y. School of Dog Grooming, Inc.	Dog Groomer	25	4	100	1	$ 625.00	$ 625.00
New York City	Robert Finance School	Cosmetologist	35	29	1000	1	$ 980.00	$ 980.00

TABLE XI

MDTA - Manpower Development and Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
New York City	Roberts Technical and Trade School	Auto Mechanic	30	33	975	1	$1,125.00	$1,125.00
		Auto Mechanic	30	33	975	5	$1,154.00	$5,770.00
		Automobile Body Repairman	30	34	1000	1	$1,359.00	$1,359.00
		Automobile Body Repairman	30	34	1000	1	$1,379.00	$1,379.00
New York City	Sadie Browns Collegiate Institute	Secretary	25	40	1000	2	$1,275.00	$2,550.00
Buffalo	State University of New York Urban Center	Graphic Arts	25	32	800	1	-0-	-0-
		Clerk-Typist	25	40	1000	1	-0-	-0-
		Stenographer	25	40	1000	1	-0-	-0-
Albany	State University of New York Urban Center	Clerk-Typist	35	17	595	1	-0-	-0-
Schenectady	State University of New York Urban Center	Stenographer	35	31	1085	1	-0-	-0-
Troy	State University of New York Urban Center	Clerk-Typist	30	26	780	1	-0-	-0-
		Clerk-Typist	30	38	1140	2	-0-	-0-
		Welder, Arc	30	40	1200	1	-0-	-0-

TABLE XI

MDTA - Manpower Development and Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Schenectady	Schenectady Cooperative Program in P.N. Education	Nurse, Licensed Practical	30/35	52	1622	5	$ 450.00	$ 2,250.00
		Nurse, Licensed Practical (RESIDENT-Uniform)	30/35	52	1622	1	$ 50.00	$ 50.00
Fleetville, Pa.	Training Services Institute	Operating Engineer	40	5	200	2	$ 895.00	$ 1,790.00
Binghamton	Triple Cities School of Beauty Culture	Cosmetologist	40	13	500	1	$ 287.50	$ 287.50
		Cosmetologist	40	25	1000	1	$ 575.00	$ 575.00
Troy	Troy School of Beauty Culture	Cosmetologist	40	25	1000	1	$ 760.00	$ 760.00
New York City	Upholstery Trades School	Furniture Upholster	30	34	1000	1	$1,305.00	$ 1,305.00
Schenectady	Washington Irving Education Center	Adult Basic Education (SUPPLIES ONLY)	25	40	1000	1	$ 10.00	$ 10.00
Brooklyn, N.Y.	Wilfred Academy of Hair and Beauty Culture (81 Willoughby St.)	Cosmetologist	35	29	1000	3	$ 985.00	$ 2,955.00
		Cosmetologist	35	10	350	1	$ 620.00	$ 620.00
		TOTALS:				244		$245,375.45

TABLE XII

SMTA - State Manpower Training Act

[1] Regular Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
				No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
Amityville Island Drafting School	5817	990557	Electronics Mechanic	2	35	34	1190	20	1.26	30,000
Belmont-Allegany County BOCES	6738	990567	Electronics Mechanic (Entry)	1	30	34	1020	15	1.60	24,518
Buffalo - Board of Education	5631	990552	Nurse Aide/Orderly	6	40	8	280-308	60	1.61	32.790
	5632	990553	Clerk-Typist (Including Basics)	2	40	18	728-744	30	1.26	27,793
	5633	990554	Production Machine Oper. (Entry - Incl. Basics)	1	40	21	840	15	1.39	17,618
	5634	990555	Welder, Combination	1	40	21	840	15	1.40	18,480
	5637	990570	Nurse Aide/Orderly	4	35	8	259-273	48	1.66	22,244
	5639	990571	Clerk-Typist (Including Basics)	1	35	19	644	15	1.45	14,037
Elmira-Schyler-Chemung-Tioga County BOCES	6739	990573	Basic Education and Communication Skills	5	35	8	273	65	1.65	31,271
Elmira-Schyler-Chemung	6734	990580	Nurse, Licensed Prac.	2	35	43	1498	20	1.45	43,659
Elmira Business Institute	6741	990574	Clerk-Typist-Steno	1	30	33	990	30	1.37	40,838

[1] Based on State fiscal year (April 1 - March 31)

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TABLE XII

SMTA - State Manpower Training Act

[4] Regular Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
				No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
Farmingdale-Commercial Driver Training, Inc.	5835	990587	Tractor-Trailer Driver	3	40	3	120	30	5.80	20,850
Hempstead-Nassau County V.E.E.B. (Cedarhurst)	5815	990579	Steno/Typist (Including Basics)	1	35	36	1260	20	1.55	39,037
(Glen Cove)	5815	990566	Basic Education for Spanish Speaking Persons	2	30	14	420	30	.58	8,650
Jamaica-Browne's Business School	5813	990564	Stenographer/Typist	2	35	33	1155	20	1.85	42,740
Johnstown-Hamilton-Fulton-Montgomery County BOCES	6348	990547	Gasoline Engine R/M	1	40	15	592	15	1.98	17,572
	6395	990543	Nurse, Licensed Prac.	2	35	43	1505	24	1.19	43,011
Kingston - Board of Education	6244	990594	Stenographer	1	35	33	1155	20	.80	18,694
Middletown-Orange County BOCES	6245	990541	Nurse, Licensed Prac.	2	35	46	1595	21	1.16	38,925
Monticello - Board of Education	6744	990572	Nurse, Licensed Prac.	2	35	43	1505	24	1.10	39,779
Newburgh - Board of Education	6264	990590	Automobile Mechanic (Entry)	1	30	30	900	15	1.69	22,777

[4] Based on State fiscal year (April 1 - March 31)

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TABLE XII

SMTA - State Manpower Training Act

[1] Regular Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
				No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
New Paltz-Ulster County BOCES	229	990556	Nurse, Licensed Prac.	2	35	50	1750	20	.90	31,645
New York City - Board of Education	5134	990550	Structural Steel Worker	2	40	12	480	20	3.03	29,109
	5166	990577	Meat Cutter (Retail Trade)	2	40	15	608	40	1.93	46,928
	5132	990558	Nurse, Licensed Prac.	12	30-35	51	1631	144	1.61	379,649
	5191	990584	Repair and Maintenance	5	40	54	1792-2136	60	2.59	262,896
Dalehanty Institute	5158	990591	Clerical	3	35	22-39	750-1345	60	1.75	102,043
Pratt Institute	5165	990593	Programmer/Digital-Computer-Operator	2	40	19-38	768-1492	45	2.13	96,825
RCA Institute	5159	990592	Repair and Maintenance	3	35	26-56	910-1960	60	1.88	172,791
Roberts Technical and Trade Schools	5148	990586	T.V. Service & Repair	1[2]	35	39[3]	1365[3]	90	1.61	197,100
	5135	990568	Ornamental Iron Worker (Upgrading)	1	9	51	456	20	3.89	35,479

[1] Based on State fiscal year (April 1 - March 31)

[2] Continuous enrollment

[3] Average per trainee

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TABLE XII

SMTA - State Manpower Training Act

[1] Regular Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
				No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
N.Y.C. - Roberts Trade and Technical Schools	5192	990585	Automotive Mechanic	1	35	40	1390	100	1.07	118,296
Patchogue - Suffolk #2 BOCES	5802	990539	Nurse, Licensed Prac.	2	35	50	1729	36	.94	58,300
	5814	990563	Oil Burner Installation and Serviceman	1	35	30	1050	20	1.64	34,416
Poughkeepsie - Board of Education	6246	990538	Automotive Mechanic	1	40	35	1400	15	1.56	32,787
Riverhead - Suffolk #1 BOCES	5801	990576	Automotive Mechanic (with Basics)	1	35	43	1480	15	2.04	45,192
Rochester - Board of Education	5335	990544	Auto Body Repairman	1	35	24	854	13	1.22	13,632
	5538	990545	Nurse, Licensed Prac.	3	35	45-50	1568-1722	32	1.00	58,405
Rochester - Board of Education	5537	990546	Precision Lens Grinder	1	35	12	434	10	1.17	6,640
Syracuse - Board of Education	7403	990549	Nurse, Licensed Prac.	1	35	49	1722	15	1.23	33,771
	5410	990562	Nurse Aide/Orderly	6	35	7-8	252-280	60	.91	15,299

[1] Based on State fiscal year (April 1 - March 31)

TABLE XII

SMTA - State Manpower Training Act

/1 Regular Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
				No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
Syracuse - Board of Education (Con't.)	5415	990569	Employability Orientation	1 /2	40	6 /3	240 /3	120	.83	25,785
	5413	990588	Basic Education and Communication Skills	3	40	10	384-408	36	1.16	16,779
	7408	990575	Tractor-Trailer Truck Driver	6	40	8	320	60	3.19	59,068
	7413	990578	Nurse, Licensed Prac.	1	35	49	1708	15	1.38	35,446
Utica - Board of Education	6392	990595	Auto Body Repairman, Metal	1	35	24	826	15	1.22	15,122
	6383	990536	Nurse, Licensed Prac.	3	38	48	1801	30	1.01	54,998
	6394	990560	Tractor-Trailer Truck Driver	2	35	7-8	245-266	24	2.83	17,407
Verona-Madison-Oneida County BOCES	6346	990589	Nurse Licensed Prac.	2	35	45	1505	24	1.14	46,628
Watertown - Board of Education	7405	990542	Nurse Aide/Orderly	2	35	8	294	30	1.42	12,396

/1 Based on State fiscal year (April 1 - March 31)

/2 Continuous enrollment

/3 Average per trainee

TABLE XII

SMTA - State Manpower Training Act

[1] Regular Projects Approved

Location - Training Agency	MT-1 #	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
				No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
West Nyack-Rockland County BOCES	5902	990551	Nurse, Licensed Prac.	2	35	43	1505	24	1.62	58,687
White Plains - Board of Education	989	990561	Nurse, Licensed Prac.	2	35	45	1554	32	1.46	72,631
Williamson-Wayne County BOCES	5534	990559	Nurse, Licensed Prac.	2	35-40	42	1533	15	1.19	27,477
Wynantskill-Rensselaer County BOCES	228	990540	Nurse, Licensed Prac.	2	35	46	1625	24	.96	37,516
Yorktown Heights - Westchester County BOCES #1	999	990537	Nurse, Licensed Prac.	2	35	43	1500	24	.96	34,761
TOTALS:				126				1860		2,881,187

[1] Based on State fiscal year (April 1 - March 31)

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
New York City	Academy of Advanced Traffic	Traffic Rate Clerk	25	20	500	1	$ 640.00	$ 640.00
Mineola, L. I.	Adelphi Business School	Accounting Clerk	25	42	1050	2	$1,318.00	$2,636.00
		Bookkeeper	25	26	650	1	$ 746.90	$ 746.9
		Bookkeeper	25	26	650	1	$ 860.00	$ 860.00
		Clerk, General Office	25	26	650	2	$ 746.90	$1,493.80
		Clerk-Typist	25	8	200	1	$ 235.00	$ 235.00
		Clerk-Typist	25	26	650	1	$ 860.00	$ 860.00
		Keypunch Operator	25	20	500	7	$ 589.00	$4,123.70
		Keypunch Operator	30	17	500	3	$ 840.00	$2,520.00
		Stenographer	25	26	650	1	$ 770.15	$ 770.15
		Stenographer	25	42	1050	1	$1,167.50	$1,167.50
		Stenographer	25	42	1050	1	$1,385.00	$1,385.00
		Stenotype Operator	25	42	1050	1	$1,674.00	$1,674.00
Brooklyn	Adelphi Business School	Accounting Clerk	25	42	1050	2	$1,318.00	$2,636.00
		Bookkeeping	25	26	650	1	$ 860.00	$ 860.00
		Clerk-Typist	25	26	650	1	$ 746.90	$ 746.90

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Brooklyn	Adelphi Business School	Clerk-Typist	25	26	650	1	$ 860.00	$ 860.00
		Keypunch Operator	25	20	500	3	$ 589.10	$1,767.30
		Stenographer	25	42	1050	1	$1,167.00	$1,167.00
Utica	Adult Basic Education Center	Adult Basic Education	25	26	625	1	-0-	-0-
Albany	Adult Learning Center	Adult Basic Education	25	12	300	2	-0-	-0-
		Adult Basic Education	25	19	475	1	-0-	-0-
		Adult Basic Education	25	24	600	1	-0-	-0-
		Adult Basic Education	25	25	625	1	-0-	-0-
		Adult Basic Education	25	30	750	3	-0-	-0-
		Adult Basic Education	25	32	800	1	-0-	-0-
		Adult Basic Education	25	38	950	1	-0-	-0-
		Adult Basic Education	25	40	1000	5	-0-	-0-
		Adult Basic Education	25	47	1175	1	-0-	-0-
		Adult Basic Education	25	49	1220	1	-0-	-0-
		Adult Basic Education	25	49	1225	2	-0-	-0-
		Adult Basic Education	25	50	1250	2	-0-	-0-

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Albany	Adult Learning Center	Adult Basic Education	25	52	1300	1	-0-	-0-
		Adult Basic Education	25	52	1525	1	-0-	-0-
		Adult Basic Education	25	50	2000	1	-0-	-0-
Albany	Albany Manpower Training Center	Stenographer	40	26	1020	5	-0-	-0-
		Licensed Practical Nurse	40	12	480	1	-0-	-0-
Albany	Albany School of Practical Nursing	Licensed Practical Nurse	40	50	2000	1	$ 176.00	$ 176.00
New York City	Albert Merrill School	Detail Programmer	25	15	360	1	$1,468.00	$1,468.00
Jamaica, N.Y.	Allen School for Physicians Aides	Medical Assistant	25	24	600	1	$ 950.00	$ 950.00
		Medical Lab Assistant	33	46	1500	2	$1,295.00	$2,590.00
		Medical Lab Assistant	33	46	1500	1	$1,580.00	$1,580.00
		Dental Assistant	25	16	400	1	$ 625.00	$ 625.00
Rochester	American School of Drafting	Mechanical Draftsman	25	40	1000	1	$1,195.88	$1,195.88
Syracuse	American School of Drafting	Mechanical Draftsman	25	33	805	1	$ 864.70	$ 864.70
		Mechanical Draftsman	25	40	1000	4	$1,093.12	$4,372.48
		Mechanical Draftsman	25	40	1000	2	$1,196.00	$2,392.00

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
New York City	Announcer Training Studio	Radio Announcer	30	27	787	1	$1,325.00	$1,325.00
Buffalo	Anthony Driving School	Tractor-Trailer Truck Driver	30	3	90	2	$ 615.00	$1,230.00
New York City	Apex School of Beauty Culture	Cosmetologist	38	27	1000	1	$ 600.00	$ 600.00
New York City	Apex Training School	Refrigeration Mechanic	30	20	600	4	$1,410.00	$5,640.00
		Refrigeration Mechanic	30	20	600	5	$1,415.00	$7,075.00
		Refrigeration Mechanic	25	20	500	4	$1,575.00	$6,300.00
New York City	Atlas Barber School	Barber	40	25	1000	2	$ 938.00	$1,876.00
Syracuse	Automation Institute of Upstate New York	Elec. Mech. Computer	25	27	675	2	$1,950.00	$3,900.00
		Business Programmer	25	22	540	2	$1,650.00	$3,300.00
		Digital Computer Operator	25	12	300	1	$ 825.00	$ 825.00
		Electronics Mech. Computer	25	13	320	1	$ 768.00	$ 768.00
Bronx	Bronx Professional Driving School	Tractor-Trailer Truck Driver	28	5	125	1	$1,185.00	$1,185.00
		Tractor-Trailer Truck Driver	35	3	100	1	$1,085.00	$1,085.00
		Tractor-Trailer Truck Driver	35	3	100	1	$ 985.00	$ 985.00

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TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Brooklyn	Brooklyn Y.M.C.A. Trade School	Refrigeration Mechanic	30	10	300	1	$ 398.90	$ 398.90
		Auto Mechanic	30	28	840	1	$ 761.00	$ 761.00
Bay Shore	Browne's Business School	Bookkeeper	25	36	900	1	$ 960.00	$ 960.00
Rockville Centre	Browne's Business School	Accountant	25	36	900	1	$ 960.00	$ 960.00
		Bookkeeper	25	36	900	1	$ 960.00	$ 960.00
		Bookkeeper	25	36	900	2	$1,230.00	$2,460.00
		Clerk-Typist	25	18	450	7	$ 455.00	$3,185.00
		Clerk-Typist	25	18	450	1	$ 555.00	$ 555.00
		Keypunch Operator	25	6	150	1	$ 250.00	$ 250.00
		Secretary	25	36	900	1	$ 970.00	$ 970.00
		Stenographer	25	36	900	1	$ 970.00	$ 970.00
		Secretary	25	36	900	1	$1,240.00	$1,240.00
Buffalo	Bryant and Stratton Business Institute	Business Programmer	25	20	500	1	$1,175.00	$1,175.00
		Clerk Accountant	25	50	1250	2	$1,505.00	$3,010.00
		Data Processing	25	40	1000	1	$1,217.00	$1,217.00

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Buffalo	Bryant and Stratton Business Institute	Secretary, Administration	25	50	1250	1	$1,322.00	$1,322.00
		Secretary, Legal	25	40	1000	1	$1,077.00	$1,077.00
		Secretary, Medical	25	50	1250	1	$1,310.00	$1,310.00
		Stenographer/Secretary	25	40	1000	1	$1,100.00	$1,100.00
		Stenographer/Secretary	25	40	1000	1	$1,225.00	$1,225.00
Syracuse	Central City Business Institute	Accountant	25	44	1000	1	$1,200.00	$1,200.00
Syracuse	Central New York Barber School	Barber	40	25	1000	1	$ 367.00	$ 367.00
Rensselaer	Chauffeur's Training School, Inc.	Tractor-Trailer Truck Driver	25	2	50	4	$ 450.00	$1,800.00
Farmingdale	Commercial Driver Training, Inc.	Tractor-Trailer Truck Driver	40	3	120	14	$ 695.00	$9,730.00
Newburgh	Computer Careers, Inc.	Keypunch Operator	25	5	125	1	$ 325.00	$ 325.00
Rochester	Continental School of Beauty Culture	Cosmetologist	35	29	1000	2	$ 755.00	$ 755.00
Syracuse	Continental School of Beauty Culture	Cosmetologist	35	29	1000	3	$ 635.00	$1,905.00
		Cosmetologist	35	29	1000	2	$ 700.00	$1,400.00

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
New York City	Control Data Computer Training School	Electronics Mechanic	25	40	1000	2	$2,400.00	$ 4,800.00
		Electronics Mechanic	25	40	1000	1	$2,550.00	$ 2,550.00
New York City	Delehanty Institute	Architectural Draftsman	28	36	1000	8	$1,010.00	$ 8,080.00
		Auto Mechanic	30	15	448	1	$ 205.92	$ 205.92
		Auto Mechanic	30	34	1000	10	$1,040.00	$10,400.00
		T.V. Service and Repairman	30	50	1500	8	$1,600.00	$12,800.00
New York City	Eastern School for Physicians Aides	Medical Secretary	30	44	1320	1	$1,555.00	$ 1,555.00
		Medical Lab Assistant	34	45	1500	1	$2,025.00	$ 2,025.00
		Medical Lab Assistant	33	46	1500	1	$2,190.00	$ 2,190.00
		Medical Lab Assistant	33	46	1500	1	$1,996.00	$ 1,996.00
		Business Programmer	30	23	690	12	$1,695.00	$20,340.00
Elmira	Elmira Business Institute	Keypunch Operator	25	29	710	1	$1,475.00	$ 1,475.00
		Secretary	25	40	1000	7	$1,375.00	$ 9,625.00
Buffalo	Fosdick-Masten	Licensed Practical Nurse	35	36	1250	3	$ 61.00	$ 183.00
Baldwin	Frederick's Beauty School	Cosmetologist	35	29	1000	1	$ 745.00	$ 745.00

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Glen Cove	Glen Cove Community Hospital	Licensed Practical Nurse	30/35	52	1858	1	$ 625.00	$ 625.00
Brooklyn	Grace Beauty School	Cosmetologist	35	29	1000	1	$ 785.00	$ 785.00
Rochester	Harper Method Peter Webb Beauty School	Cosmetologist	35	29	1000	1	$ 700.00	$ 700.00
Brooklyn	Heffley & Browne Secretarial School	Bookkeeper	25	48	1200	1	$ 890.00	$ 890.00
		Stenographer	25	40	1000	5	$ 865.00	$4,325.00
		Stenographer	25	40	1000	1	$ 940.00	$ 940.00
		Stenotype Operator	25	48	1200	2	$1,125.00	$2,250.00
New York City	Helene Fuld School of Practical Nursing	Licensed Practical Nurse	35/40	52	1857	2	-0-	-0-
Hempstead, L.I.	Institute of Computer Technology	Business Programmer	25	13	325	1	$ 845.00	$ 845.00
Brooklyn	Institute of Computer Technology	Business Programmer	25	13	325	1	$ 995.00	$ 995.00
		Computer Peripheral Equipment Operator	25	12	300	1	$ 995.00	$ 995.00
New York City	Interboro Institute	Bookkeeper	25	44	1000	1	$1,693.00	$1,693.00
		Legal Stenographer	25	46	1130	1	$1,893.00	$1,893.00

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TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
New York City	Interboro Institute	Medical Secretary	25	46	1130	1	$1,693.00	$1,693.00
Babylon, L.I.	Inter-County Barber School	Barber	40	25	1000	2	$ 948.49	$1,896.98
Amityville, L.I.	Island Drafting School	Architectural Draftsman	30	34	1000	1	$ 916.00	$ 916.00
		Architectural Draftsman	30	35	1050	2	$1,135.00	$2,270.00
		Draftsman, Electric	30	34	1000	1	$ 927.00	$ 927.00
		Draftsman, Electronic	40	25	1000	1	$1,150.00	$1,150.00
		Draftsman, Mechanical	30	34	1000	3	$ 886.00	$2,658.00
		Draftsman, Mechanical	40	25	1000	1	$1,105.00	$1,105.00
Jamestown	Jamestown Business College	Accountant	25	40	1000	1	$1,075.00	$1,075.00
		Accountant	25	40	1000	2	$1,335.00	$2,670.00
		Secretary	25	40	1000	6	$1,335.00	$8,010.00
Niagara Falls	Kelley Business Institute	Typist	25	40	1000	1	$1,200.00	$1,200.00
New York City	Kerpel School of Dental Technology	Dental Lab Technician	25	45	1125	1	$1,150.00	$1,150.00
		Dental Gold Man	25	44	1100	1	$1,400.00	$1,400.00

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TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Hempstead, L.I.	Long Island Mondell Institute	Architectural Draftsman	25	40	1000	1	$ 866.00	$ 866.00
New York City	Manhattan Medical & Dental Assistant School	Dental Assistant	25	12	300	1	$ 495.00	$ 495.00
		Dental Assistant	25	12	300	3	$ 520.00	$1,560.00
		Medical Lab Assistant	35	43	1500	1	$1,635.00	$1,635.00
New York City	Manhattan School of Printing	Etcher, Photoengraving	30	7	205	1	$ 560.00	$ 560.00
		Stripper	30	7	200	1	$ 660.00	$ 660.00
		Photo/Photoengraving	30	10	300	2	$ 760.00	$1,520.00
New York City	Manhattan Technical Institute	Architectural Draftsman	30	34	1000	1	$ 861.00	$ 861.00
		Arch. Draftsman/Basic Math.	30	39	1150	1	$ 981.00	$ 981.00
		Elec. Draftsman/Basic Math.	30	39	1150	1	$ 981.00	$ 981.00
		Mechanical Draftsman	30	39	1150	1	$ 975.00	$ 975.00
Cambridge	Mary McClellan Hospital	Nurse, Licensed Practical	30/40	47	1400	3	$ 600.00	$1,800.00
Niagara Falls	Master's Driving School	Tractor-Trailer Truck Driver	45	2	90	1	$ 600.00	$ 600.00
Middletown	Beauty School of Middletown	Cosmetologist	35	29	1000	1	$ 775.00	$ 775.00

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TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
New York City	Midtown School of Business	Clerk-Typist	25	26	650	1	$ 608.00	$ 608.00
		Clerk-Typist	25	26	650	1	$ 753.00	$ 753.00
		Stenographer	25	39	975	2	$ 907.00	$1,814.00
New York City	Merchants & Bankers	Court Reporter	25	26	650	1	$ 540.00	$ 540.00
		Bookkeeper	25	48	1200	2	$1,075.00	$2,150.00
		Bookkeeper	25	48	1200	1	$1,320.00	$1,320.00
		Clerk-Typist	25	26	650	3	$ 585.00	$1,755.00
		Clerk-Typist	25	26	650	2	$ 720.00	$1,440.00
		Stenographer	25	44	1100	1	$ 865.00	$ 865.00
		Stenotype Operator	25	48	1200	2	$1,330.00	$2,660.00
Schenectady	Modern Welding School	Combination Welder	35	14	476	1	DVR -0-	DVR -0-
		Welder, Arc	35	2	70	2	$ 254.15	$ 508.30
		Welder, Combination	35	10	350	10	$ 683.20	$6,832.00
		Welder, Combination	35	14	476	7	$1,126.85	$7,887.95
		Welder, Combination	35	12	420	1	$ 897.80	$ 897.80
		Welder, Combination	35	12	400	1	$ 912.00	$ 912.00

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TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Utica	Mohawk Hairstyling School	Cosmetologist	40	2	80	1	$ 100.00	$ 100.00
Bronx	Monroe Business Institute (29 E. Fordham Road)	Accountant	25	43	1075	1	$1,003.75	$1,003.75
		Bookkeeping	25	52	1300	1	$1,480.00	$1,480.00
		Clerk, General Office	25	26	650	1	$ 654.00	$ 654.00
		Clerk-Typist	25	26	650	1	$ 717.00	$ 717.00
		Clerk-Typist	25	43	1075	1	$1,079.00	$1,079.00
		Data Processing	25	43	1075	1	$1,458.75	$1,458.75
		Keypunch Operator	25	26	650	1	$ 768.50	$ 768.50
		Keypunch Operator	25	43	1075	4	$1,254.75	$5,019.00
		Medical Secretary	25	43	1075	1	$ 955.00	$ 955.00
		Secretary	25	43	1075	1	$ 950.00	$ 950.00
		Secretary, Executive	25	43	1075	5	$1,003.75	$5,018.75
Bronx	Monroe Business Institute (1930 Boston Road)	Accountant	25	43	1075	1	$1,003.75	$1,003.75
		Accountant	25	52	1300	1	$1,145.00	$1,145.00
		Bookkeeper	25	43	1075	3	$1,003.75	$3,011.25

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Bronx	Monroe Business Institute (1930 Boston Road)	Clerk-Typist	25	13	325	1	$ 401.00	$ 401.00
		Clerk-Typist	25	43	1075	1	$1,079.00	$1,079.00
		Data Processing	25	43	1075	1	$1,041.00	$1,041.00
		Data Processing	25	43	1075	3	$1,107.44	$3,322.32
		Data Processing	25	52	1300	1	$1,340.00	$1,340.00
		Data Processing	25	43	1075	1	$1,765.00	$1,765.00
		Keypunch Operator	25	26	650	3	$ 768.50	$2,305.50
		Keypunch Operator	25	43	1075	1	$1,254.75	$1,254.75
		Record Keeping w/ Office Procedures	25	52	1300	1	$1,003.75	$1,003.75
		Secretary	25	43	1075	2	$ 950.00	$1,900.00
		Secretary	25	43	1075	1	$ 998.75	$ 998.75
		Secretary	25	43	1075	1	$1,003.75	$1,003.75
		Secretary	35	31	1075	1	$1,218.75	$1,218.75
		Secretary	25	52	1300	1	$1,480.00	$1,480.00
New York City	National Skill Centers	Refrigeration Mechanic	30	19	546	2	$1,272.85	$2,545.70

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
New York City	New York Adult Training Center (45 Rivington Street)	Cabinet Maker	30	50	1500	1	$1,980.00	$2,545.70
		Household Appliance Serviceman	30	32	960	1	$1,267.20	$1,267.20
		Keypunch Operator	30	8	240	1	$ 288.00	$ 288.00
		Machinist	30	40	1200	1	$1,440.00	$1,440.00
		Machinist	30	40	1200	1	$1,584.00	$1,584.00
		Office Machine Serviceman	30	42	1260	2	$1,663.20	$3,326.40
		Refrigeration Mechanic	30	50	1500	3	$1,800.00	$5,400.00
		Refrigeration Mechanic	30	50	1500	3	$1,980.00	$5,940.00
		T.V. Service and Repairman	30	35	1050	1	$1,260.00	$1,260.00
New York City	New York Hotel and Motel Management	Manager, Hotel	25	16	400	1	$ 595.00	$ 595.00
New York City	New York Institute of Photography	Photographer, Commercial	35	35	1225	2	$2,500.00	$5,000.00
New York City	New York School of Mechanical Dentistry	Dental Lab Technician	25	40	1000	2	$ 750.00	$1,500.00
Malone	North Country Community College	Licensed Practical Nurse	35	43	1505	1	$ 653.00	$ 653.00

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Oneonta	Otsego Area School of Practical Nursing	Nurse, Licensed Practical	35	47	1638	5	$ 650.00	$3,250.00
Syracuse	Pauldine's School of Beauty Culture	Cosmetologist	35	29	1000	1	$ 520.00	$ 520.00
New York City	Pels School of Art	Commercial Art	25	40	1000	1	$ 950.00	$ 950.00
Long Island City, New York	Plaza Business School	Clerk, General Office	25	38	949	1	$ 970.00	$ 970.00
		Secretary	25	39	975	2	$1,462.50	$2,925.00
West Seneca (Erie County BOCES #1)	Potter Road Occupational Center	Nurse, Licensed Practical	25/35	51	1400	2	$ 750.00	$1,500.00
Jamaica, L.I.	Queens Beauty Institute	Cosmetologist	35	29	1000	1	$ 900.00	$ 900.00
		Cosmetologist	35	29	1000	1	$ 844.00	$ 844.00
New York City	R.C.A.	Electronics Mechanic	25	13	325	1	$ 435.50	$ 435.50
		Electronics Mechanic	25	34	840	1	$1,252.00	$1,252.00
		Electronics Mechanic	25	45	1120	25	$1,499.00	$37,475.00
		Electronics Mechanic	25	45	1120	11	$1,667.00	$18,337.00
		T.V. Service and Repairman	25	34	840	6	$1,319.00	$7,914.00

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Rochester	Revere Tractor-Trailer Training, Inc.	Tractor-Trailer Truck Driver	25	5	120	1	$ 340.07	$ 340.07
		Tractor-Trailer Truck Driver	25	4	160	7	$ 695.00	$ 4,865.00
Binghamton	Ridley-Lowell School of Business	Bookkeeper	25	40	1000	1	$1,050.00	$ 1,050.00
		Clerk-Typist	25	40	1000	1	$1,050.00	$ 1,050.00
		Secretary	25	48	1200	2	$ 935.00	$ 1,870.00
		Secretary	25	48	1200	2	$ 945.00	$ 1,890.00
		Secretary	25	48	1200	3	$1,260.00	$ 3,780.00
New York City	Robert Fiance Institute	Cosmetologist	30	3	90	1	$ 225.00	$ 225.00
		Cosmetologist	35	29	1000	1	$ 980.00	$ 980.00
New York City	Robert's Technical & Trade School	Auto Mechanic	30	33	975	9	$1,125.00	$10,125.00
		Auto Mechanic	30	33	975	2	$1,128.31	$ 2,256.62
		Auto Mechanic	30	33	975	2	$1,154.00	$ 2,308.00
		Diesel Mechanic	30	31	912	2	$1,052.47	$ 2,104.94
		Diesel Mechanic	30	31	912	3	$1,063.70	$ 3,191.10
		Welder, Combination	30	25	750	2	$1,590.62	$ 3,181.24

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Rochester	Rochester Business Institute	Accountant	25	46	1150	1	$1,995.00	$1,995.00
		Bookkeeper	25	48	1200	1	DVR -0-	DVR -0-
		Secretary	25	46	1150	1	$1,995.00	$1,995.00
		Store Manager	25	46	1150	1	$1,995.00	$1,995.00
Rochester	Rochester Manpower Training Center	Licensed Practical Nurse	35	52	1820	11	-0-	-0-
		Secretary	40	36	1440	4	-0-	-0-
		Stenographer	40	50	1992	1	-0-	-0-
Rochester	Rochester School of Practical Nursing	Licensed Practical Nurse	30/31	52	1600	1	$ 368.05	$ 368.05
New York City	Sadie Brown's Collegiate Institute	Bookkeeper	25	40	1000	2	$1,275.00	$2,550.00
		Clerk-Typist	25	16	400	3	$ 400.00	$1,200.00
		Secretary	25	40	1000	4	$1,225.00	$4,900.00
		Secretary	25	40	1000	2	$1,275.00	$2,550.00
Schenectady, N.Y.	Schenectady Co-op. Program in Practical Nursing	Nurse, Licensed Practical	31/35	52	1625	2	$ 450.00	$ 900.00

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Canton, N.Y.	State University of the State of New York, Agricultural & Technical College	Carpenter	28	30	840	1	$ 480.00	$ 480.00
		Farm Hand, General	28	30	840	2	$ 480.00	$ 960.00
		Mechanical Draftsman	28	30	840	2	$ 480.00	$ 960.00
		Stenographer	28	30	840	2	$ 480.00	$ 960.00
Albany, N.Y.	State University of the State of New York, Hudson Valley Community College (80 Central Avenue)	Calculating Machine Operator	35	33	1140	1	-0-	-0-
		Clerk-Typist	35	26	650	1	-0-	-0-
		Clerk-Typist	35	24	840	1	-0-	-0-
		Clerk-Typist	35	25	875	1	-0-	-0-
		Clerk-Typist	35	30	1050	1	-0-	-0-
		Cosmetologist	30	34	1020	1	-0-	-0-
		Draftsman, Mechanical	35	30	1050	3	-0-	-0-
		Keypunch Operator	35	12	420	1	-0-	-0-
		Keypunch Operator	35	19	665	1	-0-	-0-
		Keypunch Operator	35	25	875	3	-0-	-0-
		Keypunch Operator	35	28	965	1	-0-	-0-
		Keypunch Operator	35	26	910	1	-0-	-0-

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Albany	State University of the State of New York, Hudson Valley Community College 80 Central Avenue	Offset Pressman	35	33	1140	1	-0-	-0-
		Offset Pressman	35	33	1155	1	-0-	-0-
		Stenographer	35	18	630	1	-0-	-0-
		Stenographer	35	33	1140	1	-0-	-0-
		Stenographer	35	33	1155	4	-0-	-0-
		Stenographer	35	38	1330	1	-0-	-0-
Schenectady	State University of the State of New York, Hudson Valley Community College 302 Germania Avenue	Stenographer	35	25	875	1	-0-	-0-
	409 Schenectady St.	Stenographer	35	34	1190	1	-0-	-0-
Troy	State University of the State of New York, Hudson Valley Community College, Washington and Front Streets.	Basic Education	30	11	330	1	-0-	-0-
		Clerk-Typist	15	4	60	1	-0-	-0-
		Clerk-Typist	25	3	75	1	-0-	-0-
		Combination Welder	35	33	1140	1	-0-	-0-
		Dental Assistant	25	35	875	1	$ 675.00	$ 675.00
So. Fallsburg	Sullivan County Community College	Medical Lab Assistant	32	30	960	1	$ 650.00	$ 650.00

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TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
So. Fallsburg	Sullivan County Community College	Structural Draftsman	24	29	690	1	$ 650.00	$ 650.00
		Stenographer	27	30	795	1	$ 600.00	$ 600.00
Schenectady	Spencer Business	Clerk-Typist	25	37	900	2	$ 670.00	$1,340.00
		Secretary	25	44	1100	1	$ 795.00	$ 795.00
		Secretary	25	44	1100	1	$ 815.00	$ 815.00
Elmira	St. Joseph's Hospital Laboratory	Medical Lab Assistant	40	50	2000	1	$ 75.00	$ 75.00
Syracuse	Syracuse Beauty School	Cosmetologist	38	27	1000	2	$ 635.00	$1,270.00
Syracuse	Teletronics School System	Electronic Mechanic	30	17	500	1	$ 500.00	$ 500.00
		Electronic Mechanic	30	47	1400	1	$1,425.00	$1,425.00
		T.V. Service and Repairman	30	30	900	1	$ 925.00	$ 925.00
Ithaca	Tompkins-Seneca B.O.C.E.S. School of Practical Nursing	Nurse, Licensed Practical	35	47	1626	4	$1,640.00	$6,560.00
Niagara Falls	Trott Vocational High School	Nurse, Licensed Practical	30/35	52	1450	1	$ 146.75	$ 146.75
New York City	Upholstery Trade	Furniture Upholster	30	34	1000	1	$1,305.00	$1,305.00

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Syracuse	Upstate Data Processing School	Keypunch Operator	30	4	100	1	$ 365.00	$ 365.00
Utica	Utica MDT Training Center 366 Columbia Street	Nurse Aide	35	10	350	4	-0-	-0-
Utica	Utica School of Beauty Culture	Cosmetologist	35	29	1000	1	$ 690.00	$ 690.00
Utica	Utica School of Commerce	Jr. Accountant	25	40	1000	3	$ 975.00	$2,925.00
		Jr. Accountant	25	40	1000	2	$1,090.00	$2,180.00
		Legal Secretary	25	48	1200	2	$1,250.00	$2,500.00
		Medical Secretary	25	48	1200	1	$1,145.00	$1,145.00
		Medical Secretary	25	48	1200	2	$1,280.00	$2,560.00
		Secretary	25	48	1200	1	$1,250.00	$1,250.00
		Stenographer	25	40	1000	1	$ 925.00	$ 925.00
		Stenographer	25	40	1000	2	$1,040.00	$2,080.00
Utica	Utica School for Practical Nurses	Licensed Practical Nurse	35	44	1400	1	$ 230.00	$ 230.00
Schenectady	Washington Irving Educational Center 418 Mumford Street	Adult Basic Education	25	26	650	1	$ 10.00 Supplies	$ 10.00 Supplies

TABLE XIII

SMTA State Manpower Training Act

Individual Referral Projects Approved

Location of School	Name of School	Occupational Title	Course Data			No. of Trainee Slots	Tuition Costs	
			Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee	Total
Schenectady	Washington Irving Educational Center 418 Mumford Street	Adult Basic Education	25	26	650	2	$ 20.00 Supplies	$ 40.00 Supplies
		Adult Basic Education	25	32	800	1	$ 20.00 Supplies	$ 20.00 Supplies
Syracuse	Washington Irving 644 Madison Street	Adult Basic Education	25	36	900	1	-0-	-0-
		Adult Basic Education	25	40	1000	1	-0-	-0-
Watertown	Watertown School of Commerce	Clerk, General Office	25	41	900	3	$1,700.00	$ 5,100.00
		Secretary	25	41	900	3	$1,700.00	$ 5,100.00
Jamaica, L.I.	Wilfred Academy of Hair and Beauty Culture	Cosmetologist	35	29	1000	3	$ 985.00	$ 2,955.00
New York City	Wilfred Academy of Hair and Beauty Culture	Cosmetologist	35	27	927			
		Cosmetologist	35	29	1000	3	$ 985.00	$ 2,955.00
		TOTALS:				615		$559,148.52

TABLE XIV

WIN - Work Incentive Training
Employability Orientation Projects Approved

Location	Training Agency	Project Number	Course Data				No. of Trainee Slots	Institutional Cost	
			No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Total
Albany	Board of Education	211-EO-70	15	20	3	60	240	.97	13,377
Farmingdale	SUNY Ag. & Tech. College	269-EO-6970	20	30	2	60	400	1.57	37,750
Jericho	Nassau County BOCES	262-EO-6970	14	30	3	90	440	1.68	66,656
New York City	Urban League of Greater New York	465-EO-6970	660	32.5	2	65	9,900	1.12	723,547
Niagara Falls	Board of Education	272-EO-6970	10	30	2	60	150	1.25	11,253
Schenectady	Board of Education	212-EO-70	6	20	3	60	90	1.13	6,106
Syracuse	Board of Education	241-EO-6970	26	30	2	60	345	.65	13,250
Troy	State University Urban Center	213-EO-70	10	20	3	60	120	1.60	11,484
Utica	Board of Education	221-EO-6970	13	30	3	90	180	1.17	18,902
White Plains	Board of Education	281-EO-6970	40	15	4	60	400	2.05	50,605
TOTALS			814				12,265		952,930

TABLE XV

WIN - Work Incentive Training
Prevocational and Specific Skill Training Programs Approved

Location - Training Agency	Project Number	Occupational Title	Course Data				No. of Trainee Slots	Institutional Cost	
			No. of Sections	Hrs./ Wk.	Instr. Wks.	Total Hours		Per Trainee Hour	Totals
Albany - Board of Education	211-0-01	Clerk-Typist	1/1	30	26	745	15	1.04	11,633
Buffalo - Board of Education	271-70-02	Nurse, Licensed Practical	2	30	53	1506	48	1.07	76,998
Bryant and Stratton Business Institute	271-ST-6970	Typist (Refresher)	1	15	10	144	20	2.13	4,000
Nassau County - V.E.E.B.	262-70-01	Nurse, Licensed Practical	1	35	47	1540	10	1.53	23,491
Syracuse - Board of Education	241-0-01	Clerk-Typist	1/1	40	20/2	800/2	40	1.05	30,848
" " "	241-70-02	Nurse, Licensed Practical	2	35	52	1708	15	1.96	50,401
New York City - Board of Education	465-9-21/3	Brokerage Occupations - Prevocational	13	30	10	300	250	1.59	119,525/4
" " "	465-9-22/3	Brokerage Occupations - Specifics	16	35	23	742	320	1.01	177,176/5
TOTALS			37				718		494,072

/1 Continuous enrollment

/2 Average per trainee

/3 A 1969 project funded within 1970 federal fiscal year

/4 Includes 23,905 State funds

/5 Includes 35,435 State funds

TABLE XVI

Manpower Development and Training in New York State

Summary of all Project Classifications

Program Type	No. of Locations	No. of Trainee Slots	Percent of Total Trainees	Total Institutional Cost	Percent of Total Institutional Cost
MDTA - Multioccupational	8	5174	18.6	$ 7,629,441	38.9
MDTA - Regular	14	849	3.0	885,241	4.5
MDTA - Multioccupational	6	1015	3.7	417,128	2.1
MDTA - Regular Reprogram Money	11	982	3.5	935,480	4.8
MDTA - Concentrated Employment Program	3	1762	6.4	2,393,729	12.2
MDTA - On-the-job	3	185	.6	137,186	.7
MDTA - NABS-JOBS	3	366	1.3	217,348	1.1
MDTA - Redevelopment Area Retraining	5	123	.4	186,010	.9
MDTA - Special Projects	1	910	3.2	730,201	3.7
MDTA - Correctional Institutions	1	40	**	114,637	.6
MDTA - Individual Referral	* 64	244	.9	245,375	1.2
STP - Regular	28	1860	6.6	2,881,187	14.8
STP - Special Projects	1	750	2.6	799,839	4.1
STP - Individual Referral	*101	615	2.3	559,149	2.9
WIN - Employability Orientation	10	12,265	43.9	952,930	4.9
WIN - Skill Training	5	718	2.6	494,072	2.5
		27,858	100.0	19,578,953	100.0

* No. of schools
**Less than 0.1%

Page 1 of 1

VT 014 065
HYMER, BENNETT
THE DYNAMICS OF JOB CHANGING; A CASE STUDY OF EMPLOYMENT CONDITIONS FOR BLACK WORKERS IN THE CHICAGO LABOR MARKET.

CHICAGO URBAN LEAGUE, ILL. DEPT. OF RESEARCH.
MF AVAILABLE IN VT-ERIC SET.
REP-2
CHICAGO URBAN LEAGUE, 4500 SOUTH MICHIGAN, CHICAGO, ILLINOIS 60653 ($0.50)
PUB DATE - SEP69 42P.

DESCRIPTORS - LABOR MARKET; *NEGRO EMPLOYMENT; *EMPLOYMENT OPPORTUNITIES; EMPLOYER ATTITUDES; LABOR TURNOVER; *CAREER CHANGE; EQUAL OPPORTUNITIES (JOBS); *RACIAL DISCRIMINATION; *METROPOLITAN AREAS; CASE STUDIES
IDENTIFIERS - *CHICAGO

ABSTRACT - THIS STUDY OF THE DYNAMICS OF JOB CHANGING EXAMINES HOW BLACK WORKERS REACT TO THE LABOR MARKET CONDITIONS WHICH THEY FACE AS A RESULT OF DISCRIMINATION. THE STUDY INDICATES THAT BLACK WORKERS TEND TO BE CONCENTRATED IN FIRMS WITH LARGE FLUCTUATIONS IN EMPLOYMENT AND IN MARGINAL OR DIRTY JOBS WITH LESS OPPORTUNITY FOR FURTHER TRAINING AND PROMOTION. IT IS CONCLUDED THAT FAIR EMPLOYMENT POLICIES BY EMPLOYERS MUST INCLUDE PROGRAMS TO INSURE PROMOTION AND PROVIDE HOUSING AND TRANSPORTATION, AND RECOGNITION OF CONCERNED WORKERS GROUPS. (BH)

VT 014 065

THE DYNAMICS OF JOB CHANGING

A Case Study of Employment Conditions for Black Workers in the Chicago Labor Market

VT014065

Report Number Two in the Chicago Urban League's Studies of the Labor Market

1695

CHICAGO URBAN LEAGUE'S

STUDIES OF THE LABOR MARKET

During the last three years, the Chicago Urban League has engaged in an extensive investigation of the institutional nature of racism within the labor market. Report Number One was an overall analysis of the racial structure of the Chicago labor market. This second study, concerning the dynamics of job changing, examines how Black workers react to the labor market conditions they face as a result of discrimination and segregation. A third report, examining the role of labor market intermediaries that service the Black community, is in preparation.

Research Department Staff

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THE DYNAMICS OF JOB CHANGING

A Case Study of Employment Conditions for Black Workers in the Chicago Labor Market

by

BENNETT HYMER

Research Department Chicago Urban League

September 1969

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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Chicago Urban League's Studies of the Labor Market

Report Number Two

1697

PREFACE

by

Edwin C. Berry

Very often the Chicago Urban League hears employers and personnel men complain about high turnover rates among Black workers. Implicit in these comments is the belief that Blacks make unreliable employees.

The League has always been aware that once on a job the Black worker encounters many problems because of race, any of which can affect his decision to remain on the job or not. Among the more important ones are: animosity from white employees; prejudice on the part of supervisors; discrimination in advancement and promotion; lack of access to further on-the-job training; time spent commuting to work; and working below the skill level for which he or she is qualified.

To understand more fully the factors affecting the Black worker's decision to change jobs and, in addition, to see what reasons are responsible for higher job turnover rates among Blacks than whites, the League's Research Department has examined job hopping in the Chicago labor market.

Though perhaps surprising to employers, the study confirmed many of the League's hunches concerning the dynamics of job changing in the Black labor force. Job hopping by Black workers makes good economic sense. Their earnings usually increase when they move from one employer to another. Most Black workers change jobs voluntarily to earn more money since, unlike whites, they cannot rely on promotion or on-the-job advancement to move up the earnings ladder.

These findings have important implications. To labor market specialists, they indicate that job hopping is often necessary and that Black workers are able to find those employment opportunities that are open to them. Good jobs falling within the skill categories of the Black labor force that go begging do so only because employers are not communicating the information to the Black community

or because the jobs are geographically inaccessible.

To government officials, the findings indicate that enforcement agencies, responsible for executing fair employment laws and executive orders which prohibit discrimination by companies having federal contracts, must take stronger action to eliminate racial disparities in job advancement.

To employers, the study shows the existence of internal barriers based upon race within the company. The high frequency with which workers cited lack of advancement as the reason for changing jobs indicates that discrimination in promotion exists in most firms. Perhaps, more important, the findings indicate that employers can have better relations with their nonwhite employees by opening up to them the full range of opportunities for advancement that exist for white workers. A fair employment policy on the part of employers must not end with the mere act of hiring additional Black workers but must include equitable promotion procedures as well. Under-employment of Black workers below the skill levels for which they are qualified has become as devasting to the Black community as unemployment. Not only does it lower family earnings but in many cases results in both parents having to work in order to provide an adequate standard of living.

Please read the following pages and share with us your reactions. Also note the latest economic data on the Black labor force at the end of the report.

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THE DYNAMICS OF JOB CHANGING

A Case Study of Employment Conditions for Black Workers in the Chicago Labor Market

I. THE IMPORTANCE OF INFORMATION ON JOB CHANGING[1]

A recent story in a Chicago newspaper expressed concern over the large amount of job hopping being done by young Black college graduates.[2] According to the article, employers' attitudes toward Negroes were becoming very cool because of their fear that Black graduates do not remain on jobs long. "Thus, young Negro college graduates are being given a triple hard look while the white applicant isn't."

High rates of job changing among nonwhite workers have always been acknowledged -- by employers in the form of complaints and by labor market specialists to point out that Black workers have higher rates of labor mobility than whites.[3] In the past, though, most of the concern about nonwhite job hopping focused on blue collar workers since outside of the public sector of the economy and private social work very few Blacks could be found working in white collar jobs.

To explain why Black workers do not remain long on those white collar jobs that are now open to them personnel men have cited over-zealousness in trying to make more money. "The prime reasons for most of the Black job hopping is an old reason: money . . . money is more of

---

1. A variety of terms are used to describe the movement of a person from one job to another: job hopping, job shifting, job changing and job moving. In academic circles the phrase "labor mobility" is most commonly used. This report will use these terms synonymously.

Also, the data generated especially for this study pertain entirely to Black workers. In contrast, those from government and other sources refer to nonwhite workers. In Chicago, Negroes comprised 97 percent of the nonwhite population in 1959. To avoid repetition, Blacks and nonwhites will be used interchangeably.

2. "Blacks in Office Jobs are Said to Encounter Peculiar Problems," Chicago Sun-Times (May 11, 1969) p. 67

3. The most recent studies documenting higher rates of labor mobility for nonwhite workers are: Lowell E. Gallaway, Inter-Industry Labor Mobility in the United States 1957 to 1960 (United States Government Printing Office Washington, D. C. 1967) and Samuel Saben, "Occupational Mobility of Employer Workers," Monthly Labor Review (June, 1967)

a factor with young Negro grads than whites . . . the first thought of the Negro graduate is how much money can I get."[4] Unfortunately, this explanation does not go any further to show why the pecuniary factor should be so important. Taken at face value, it gives the impression that for a few dollars more a week the Black employee is prepared to change jobs regardless of the fringe benefits offered by the job or the chances for advancement.[5]

Moreover, simplistic explanations of labor market behavior have usually been used to rationalize deep-rooted prejudices and racist perception about the efficiency of Black employees. Most employers do not relate the patterns of nonwhite job changing to basic economic factors or motivations. Without considering the reasons why Black workers change jobs, they attribute higher rates of turnover to shiftlessness. Accordingly, employers believe that job changing among Blacks represents aimless labor market behavior. In most cases, this thinking is then used to justify discriminatory hiring practices -- because Black workers change jobs often, it is risky to hire them.

Theoretically, a number of factors affect a person's decision to change employers. These include: general work conditions, opportunities for further training and advancement, expected future earnings, time and money spent travelling to work, and job security. Before any conclusions may be reached about the pattern of nonwhite job changing, it is necessary that the relative importance of each of these factors be examined, as well as the peculiar labor market conditions Black workers face because of discrimination and segregation.

To learn more about the reasons why Black workers have higher rates of labor mobility than whites, the Chicago Urban League analyzed the employment changes made by over 2,000 of its job applicants during the period

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4. Chicago Sun-Times, op. cit.

5. Of course it may also be true that in many cases employers are more aware of job hopping by Black workers. Young college graduates entering departments within a company where Blacks have always been excluded are far more conspicuous than white entrants.

1959 to 1966.[6] Each applicant fills out a standard application form similar to those used by employers which includes information concerning the four most recent jobs.

The present study compared an individual's most recent job with the one preceeding along with the reasons for changing employers. The body of data generated in this way represents the most recent analysis of work histories in the Chicago labor market and probably the only one dealing with job changes by Black workers. Census questionnaires do not cover a person's last job so as to permit a comparison between the present job and the one preceeding. Also, work histories from the application forms received by employers and placement agencies have been unavailable to the public.

This body of data may be used in several ways. First, it should help clear up the misconceptions that surround the subject of job changing by Black workers as well as indicating the falsity of myths about Black workers still adhered to by many employers.

Second, it provides employers with the necessary background knowledge upon which they can improve their relations with Black employees. The current wave of 'concerned worker' groups and Black caucuses (in unions) indicates that problems relating to basic labor market practices exist between Black workers and management. Employers who want to reduce their turnover of nonwhite workers will find outlined for them the steps they must take.

Third, the study points out a truth that has been noted so often but is still not believed -- the lack of employment opportunities for Black workers. As late as 1968, 40 percent of the employers surveyed by the National Advisory Commission on Civil Disorders believed that Negroes had the same employment opportunities as whites.[7] Studies of labor mobility show that the amount of job changing de-

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6. These applicants visited the Agency during the year 1966 at both the League's Westside and Southside offices.

7. National Advisory Commission on Civil Disorders, Supplemental Studies (United States Government Printing Office, Washington, D. C. July, 1968), p. 118

pends upon employment conditions. As this report will indicate, among nonwhite workers, the pattern of job changing may be related to the inferior jobs they end up with because of their second class status in the labor market.

MAJOR FINDINGS OF THIS STUDY

1. DIFFERENT LABOR MARKET CONDITIONS RESULT IN DIFFERENT PATTERNS OF JOB CHANGING BETWEEN BLACK AND WHITE WORKERS. IN CONTRAST TO WHITES, BLACK WORKERS ARE:

   - MORE CONCENTRATED IN JOBS WHERE EMPLOYMENT FLUCTUATES WITH CHANGES IN THE BUSINESS CYCLE AND, THEREFORE, MORE LIKELY TO ENCOUNTER LAYOFFS;
   - LESS LIKELY TO RECEIVE ON-THE-JOB TRAINING, ADVANCEMENT, AND PROMOTION;
   - MORE LIKELY, IF IN UNSKILLED OCCUPATIONS, TO BE EMPLOYED IN MARGINAL, PERIPHERAL OR DIRTY JOBS.

2. ACTUAL AND EXPECTED DISCRIMINATION IN PROMOTION, WHICH LIMITS BOTH PRESENT AND EXPECTED EARNINGS, IS A MAJOR FACTOR AFFECTING A BLACK WORKER'S DECISION TO CHANGE EMPLOYERS.

3. THE MOTIVATION BEHIND MOST JOB CHANGES BY BLACK WORKERS IS MORE MONEY.

4. LONG TRAVEL TIME AND MONEY SPENT TO REACH THE JOB IS A SIGNIFICANT CAUSE, NOT ONLY OF BLACK UNEMPLOYMENT, BUT OF JOB HOPPING.

5. THE EFFECT OF LABOR MOBILITY, I.E., JOB HOPPING, IS TO INCREASE THE EARNINGS OF BLACK WORKERS.

6. FAIR EMPLOYMENT POLICIES ON THE PART OF EMPLOYERS MUST INCLUDE: PROGRAMS TO INSURE PROMOTION OF MINORITY WORKERS; PROGRAMS TO PROVIDE HOUSING PARTICULARLY WHEN THE PLANT IS LOCATED IN THE SUBURBS; PROGRAMS TO PROVIDE TRANSPORTATION; AND RECOGNITION OF CONCERNED WORKERS GROUPS.

II. THE FREQUENCY OF JOB CHANGING AMONG BLACK WORKERS

Job changing occurs frequently among Black workers. The 1,200 male applicants whose employment histories were examined participated in over 5,200 job changes. Among the 1,000 female workers, there were 3,700 job changes.

Considering that among men the average length of their work history was 6.8 years, male workers tended to change jobs once every 1.5 years. Based on a five-year average length of work history, female workers switched employers once every 1.4 years.[8]

The extent to which a person changed jobs depended on the level of education. High school dropouts appeared to change jobs the least. Males with one to three years of high school made up 24 percent of the sample, but comprised only 18 percent of the movers; females who did not finish high school were 25 percent of the sample but only 17 percent of the movers. The lower degree of job hopping among high school dropouts may be attributed to the general decline in the demand for unskilled labor in the economy. Unskilled Black workers have less mobility than

8. These figures were obtained by first dividing the total number of job shifts by the total number of persons represented giving the average number of job changes per person. This result was then divided by the average number of years worked.

their semi-skilled and skilled counterparts because of the fewer job openings available to them.

TABLE 1. EXTENT OF JOB CHANGING BY LEVEL OF EDUCATION

LEVEL OF EDUCATION	PERCENT OF SAMPLE Female	Male
Less than 3 years High School	25.3	24.1
High School Graduate	30.9	19.5
1 - 3 Years of College	32.1	33.4
College Graduate	11.7	23.0

LEVEL OF EDUCATION	PERCENT OF MOVERS Female	Male
Less than 3 years High School	16.7	17.9
High School Graduate	38.6	25.5
1 - 3 Years of College	36.3	36.6
College Graduate	8.4	20.0

Among college graduates, in contrast to the favorable employment situation referred to above, the data show that both males and females were less likely to be job movers. Females represented 12 percent of the sample but only 8 percent of the movers. Among males the disparity was smaller -- 23 percent of the sample versus 20 percent of the movers.

The relative stability of this group may be related to the fact that, in the past, professional nonwhite workers could find work suitable in terms of their training only in lower echelons of private social work or in the public sector of the economy. e.g. Federal, State, and Civic Government. For example, in 1966, Black workers occupied only 4.7 percent of the white collar jobs in major Chicago companies and most of these were in lower paying sales and clerical positions.[9]

High rates of job hopping for young Negro college graduates have only been a recent development resulting

9. Equal Employment Opportunity Commission, Nine City Minority Group Employment Profile (Washington, D. C. August 1967)

from a sudden increase in the demand for college-trained Blacks.

Persons with high school degrees but who did not graduate college were more frequent job hoppers. Males and females with 1-3 years of college represented 37 percent of the movers. Males who finished high school but did not go on to college comprised 26 percent of the movers in contrast to 20 percent of the sample; their female counterparts were 39 percent of the movers but only 31 percent of the sample.

III. THE REASONS BEHIND JOB CHANGING

More important than the frequency of job changing is the reason why a person leaves an employer. Both pecuniary and non-pecuinary factors affect a person's decision to change jobs. Pecuniary factors include not only what a person is currently being paid but expected changes in earnings resulting from further training and promotion. Non-pecuniary factors encompass the variety of conditions and satisfactions surrounding the job---whether it is interesting or boring, its physical characteristics, the cleanliness of the plant or office, the social setting, relations with fellow employees and supervisors, etc.

According to the study's findings, Black workers changed jobs primarily for pecuniary reasons. They were either not earning enough or felt they could not advance. The pecuniary factor was expressed in several ways: not enough pay - cited by 18 percent of the men and 12 percent of the women: accepted new position cited by 18 percent of the men and 13 percent of the women: - no advancement - cited by 5 percent of the men, and 2 percent of the women.

TABLE 2: REASONS FOR LEAVING JOB BY SEX

	MALES	FEMALES
Work Terminated	35%	36%
Not Enough Pay	18	12
Accept New Position	18	13
Distance	13	13
Unsatisfactory Work Conditions	7	8
No Advancement	5	2
Health (pregnancy)	4	16

The non-pecuniary factor was expressed in several ways. For the purpose of classification they were placed in a category called unsatisfactory work conditions. This heading included reasons for changing employers such as prejudice, didn't like foreman, and boring work. This factor, however, was only of minor importance--7 percent for men and 8 percent for women. [10] In future years, though, the non-pecuniary factor may grow in importance. Younger Black workers, particularly if they have attended college, are now concerned about a job's relevance to the Black community as well as the relationship between their employers and the Black community.

Reasons for leaving that were beyond the control of a person i.e. work terminations and lay-offs, were other major factors affecting job movement. Thirty-five percent of the males and 36 percent of the females left their jobs involuntarily. The study period, 1959-1966, included several years during which the labor market was characterized by low levels of demand for labor. Most of these changes probably occurred during the early sixties.

That Black workers often have to travel further to jobs in the Chicago labor market was indicated by the substantial response to the reason "distance"---thirteen percent for both men and women. Distance affects a person's decision to stay on a job both in terms of time and money. A combination of segregated housing patterns and inadequate public transportation facilities from the inner city to the outlying regions results in Black workers having to spend more money and time to reach their jobs than whites. Many Black families living in the city do not own cars to enable them to bypass inadequate public transportation facilities. Nor can they move near the jobs loca-

10. The low frequency with which prejudice (which included a Black worker's relation with his fellow employers as well as the racial attitudes of his foreman) was cited did not necessarily mean that discrimination on the job was not a major problem. Here two kinds of discrimination must be distinguished - that associated with advancement, and that related to dealings with other workers. As we shall see, discrimination in promotion was a major factor behind many job changes. In regard to racial rebuffs in personal contacts, it may well be that Black workers come to expect this as a matter of course and leave a job only when it becomes excessive.

tions because of discrimination in the renting and buying of low income and middle income housing.

More men than women tested the labor market before leaving their employers i.e. they did not leave their present job until they found another. Twenty percent of the men in contrast to 11 percent of the women were still working when they came to the League.

Among males, health was of minor importance as a reason for leaving--only 4 percent. However, in the case of women, it was the second most cited factor primarily because of pregnancy.

MOST JOB CHANGES ARE VOLUNTARY AND ARE MOTIVATED BY HIGHER PAY

These results may be shown another way by categorizing the reasons for leaving according to whether they are voluntary or involuntary.[11] In this way, we find that 60 percent of the male job changes were voluntary and 40 percent were involuntary. The difference between the voluntary - involuntary composition between males and females may be related to pregnancy which constitutes most of the health factor among females.

TABLE 3: VOLUNTARY VS. INVOLUNTARY JOB CHANGES

	MALE	FEMALE
Voluntary	60.8%	48.3%
Involuntary	39.2	51.7

11. The report adopted the classification scheme used in most labor mobility studies. "Illness or pregnancy" and "work terminated" were combined to form the Involuntary Category. "Not enough pay", "distance", "didn't like the job", "no advancement", and "accepted new position" were grouped under the heading Voluntary. (For further information see technical note five)

THE MORE EDUCATION A PERSON HAD, THE LEAST LIKELY THE CHANCE OF AN INVOLUNTARY JOB HOP

Whether a job change was voluntarily or involuntarily depended upon both the education and age of the person making the change. Among both males and females, the greater the amount of schooling, the more likely the job hop was due to a voluntary reason. This probably reflected greater security in jobs requiring college training, as such positions were less likely to be subject to work terminations. It may also reflect an increase in job openings for persons with college training, particularly towards the end of the study period 1959-1966. During the years 1965 and 1966 many employers, experiencing labor shortages and Civil Rights pressures, lowered racial barriers in professional jobs.

TABLE 4: REASON FOR LEAVING JOB BY LEVEL OF EDUCATION

LEVEL OF EDUCATION	MALE	
	Involuntary	Voluntary
1-3 Yrs. of High School	53.8%	46.2%
High School Graduate	39.4	60.6
1-3 Yrs. of College	34.0	66.0
College Graduates	17.2	82.8

LEVEL OF EDUCATION	FEMALE	
	Involuntary	Voluntary
1-3 Yrs. High School	70.6%	29.4%
High School Graduate	53.2	46.8
1-3 Yrs. of College	47.8	52.2
College Graduates	27.9	72.1

Among male college graduates, only 17 percent of the job changes were involuntary. In contrast, among high school dropouts, over 53 percent of the changes in employers were involuntary indicating the tenuous nature of jobs for unskilled Blacks.

Among females, the amount of voluntary job changes varied progressively with the level of education. Seventy-two percent of the job moves by college graduates were voluntary in contrast to 29 percent of those with less than four years of high school.

MALE WORKERS BETWEEN 30 AND 34 YEARS OF AGE HAD THE MOST JOB SECURITY

The relationship between age and reason for leaving was not as strong as that between education and reason for leaving. Nevertheless, we find that male workers under twenty-five years of age represented the age group more likely to experience involuntary job changes. With the exception of workers in the 30-34 years of age category, the percentage of voluntary job changes varied around 66 percent. The high figure of 73 percent of voluntary job changes for males in the 30-34 years of age category probably may be accounted for by the stronger persistency of workers in this age range to better themselves. Once over 35 years of age, workers are less likely to change jobs usually because of age barriers in hiring, and economic attachments due to pension funds, insurance, etc. (although they may move to a different occupation within the same company).

TABLE 5: REASON FOR LEAVING JOB BY AGE

AGE (Years)	MALE	
	Involuntary	Voluntary
16-19	43.7%	56.3%
20-24	43.9	56.1
25-29	33.5	66.5
30-34	26.8	73.2
35-39	30.8	69.2
40-49	35.6	64.4
Over 50	33.3	66.7

AGE (Years)	FEMALE	
	Involuntary	Voluntary
16-19	65.9%	34.1%
20-24	49.9	51.1
25-29	54.4	45.5
30-34	48.4	51.6
35-39	51.6	48.4
40-49	50.0	50.0
Over 50	58.3	41.7

Among females there was no relationship between age and whether a job change was voluntary or involuntary. This was probably because the frequency of pregnancy occuring was about the same except at the lower and upper ends of the age range.

IV. JOB CHANGING AND EARNINGS

CHANGING JOBS INCREASED THE EARNINGS OF THE BLACK LABOR FORCE

Most job changes resulted in higher earnings. Male workers increased their earnings 69 percent of the time when they changed jobs while among females 72 percent of the job shifts resulted in an increase in earnings.

TABLE 6: EFFECT ON INCOME OF CHANGING JOBS

	MALE	FEMALE
Income-Increased	69%	72%
Income-Decreased	31%	28%

Not surprisingly, the higher the level of education, the greater was the likelihood that a person would earn more money by changing jobs. This may be explained in terms of two factors. First, persons with greater skills probably had more alternatives open to them. And second, as we have seen, they were more likely to have changed jobs voluntarily and, therefore, were able to plan their job changes more effectively than involuntary movers.

TABLE 7: EFFECT ON INCOME OF CHANGING JOBS BY LEVEL OF EDUCATION

LEVEL OF EDUCATION	MALES	
	Income Increased	Income Decreased
1-3 Yrs. of High School	32%	68%
High School Graduate	61	39
1-3 Yrs. of College	62	38
College Graduate	75	25

LEVEL OF EDUCATION	FEMALES	
	Income Increased	Income Decreased
1-3 Yrs. of High School	89%	16%
High School Graduate	70	30
1-3 Yrs. of College	56	44
College Graduate	80	20

Seventy-five percent of the male college graduates, in contrast to 32 percent of the high school dropouts, increased their earnings by changing employers. Viewed another way, 68 percent of the male high school dropouts, in contrast to 25 percent of the college graduates, de-

creased their earnings by switching employers. Similar results hold in the case of female workers. Males increased their earnings more often than females mainly because more female job changes were involuntary in view of the pregnancy factor.

Age appeared to be less important in explaining whether or not a person increased or decreased his or her earnings although workers 25 and over of both sexes were more likely to increase their earnings than those who were younger.

Effect on Earnings of Reason for Leaving Job

When voluntary shifts are distinguished from involuntary ones, we find that workers who left their jobs voluntarily were more likely to increase their earnings. Among males, 76 percent of voluntary changes, in contrast to 56 percent of involuntary changes, resulted in an increase in earnings. For females, 80 percent of all voluntary changes led to an upward movement in earnings, but only 66 percent of all involuntary changes resulted in an increase. Persons who left jobs voluntarily probably began looking for new ones while still employed. Most likely, they did not change employers until they had found a job that was at least as good if not better.

TABLE 8: EFFECT ON INCOME OF CHANGING JOBS BY REASON FOR LEAVING

Voluntary Changes	MALE	FEMALE
Income Increased	76%	80%
Income Decreased	24%	20%
Involuntary Changes		
Income Increased	56%	66%
Income Decreased	44%	34%

THE DOLLAR PAY-OFF FROM JOB HOPPING WAS GREATEST FOR COLLEGE GRADUATES AND SMALLEST FOR HIGH SCHOOL DROPOUTS

More important than the direction of the income change is the actual dollar change in earnings resulting from the job change. Not surprisingly, the better educated a person was, the greater the change in income that resulted from a job hop. In general, male workers had greater income gains than females. Male college graduates on the average increased their earnings by $816 in contrast to $99 for high school dropouts.[12] The female college graduate ended up earning $699 more after changing jobs while the net pay-off for female high school dropouts was only $70.

TABLE 9: INCOME INCREASE RESULTING FROM JOB CHANGE BY LEVEL OF EDUCATION

LEVEL OF EDUCATION	MALE Change	FEMALE Change
1-3 Yrs. of High School	+ $ 99	+ $ 70
High School Graduate	383	128
1-3 Yrs. of College	427	214
College Graduate	816	699

PERSONS BETWEEN 25 AND 34 YEARS OF AGE HAD THE GREATEST INCOME PAY-OFF

When age is considered as an explanatory factor, workers between 25 and 34 years of age had the greatest income increase among both males and females. Male workers in this prime age category ended up earning $570 more after changing jobs. Among females, the average gain was $469.

12. All the figures represent net dollar changes in income i.e. they are weighted averages of those changes that resulted in an increase in earnings and of those that resulted in a decrease. The fact that all net changes were positive resulted because more workers increased rather than decreased their earnings. There were small differences between the actual size of the positive and negative dollar changes.

TABLE 10: INCOME INCREASE RESULTING FROM JOB CHANGE BY AGE

AGE	INCOME MALE	INCOME FEMALE
16-24 Yrs.	+ $324	+ $276
25-34	570	469
35-44	525	385
45-64	455	422

VOLUNTARY JOB CHANGES PAID OFF MUCH MORE THAN INVOLUNTARY ONES

Workers who changed jobs voluntarily ended up earning more than those who changed involuntarily. In terms of personal background, those who left voluntarily included more persons with college training than among those who left involuntarily. More important, those who left voluntarily were able to prepare themselves for the change and may not have hopped until they had another job lined up or in sight.

TABLE 11: INCOME INCREASE RESULTING FROM JOB CHANGE BY REASONS FOR LEAVING JOB

SEX	INVOLUNTARY	VOLUNTARY
Males	+ $ 71	+ $839
Females	116	605

V. TYPES OF JOB CHANGES - OCCUPATIONAL AND INDUSTRY DIRECTION

Workers usually moved to both new industries and new occupations when going from one job to another. Sixty-two percent of the job changes by males resulted in a worker ending up with a different occupation and industry affiliation. While females were also more likely to change both occupations and industries, the frequency with which they did (48.7 percent) was less than in the cases of males.

TABLE 12: TYPE OF JOB SHIFTS BY SEX

All Job Changes	Same Industry Same Occupation	Different Industry Same Occupation
Males	12.5%	8.8%
Females	16.1	21.8

All Job Changes	Different Occupation Same Industry	Different Occupation Different Industry
Males	16.7%	62.0%
Females	13.4	48.7

The difference between the male and female pattern probably arises from the concentration of women in fewer occupations, e.g., clerical help, and into fewer industries which utilize these occupations.

By consolidating categories we find that 78.8 percent of job changes by males involved a crossover of occupations in contrast to 70.8 percent of industry crossovers. Among females, the occupational crossover was 62.1 percent while the industry crossover was 70.5 percent. Once again, the difference between the male and female pattern may be related to the narrower range of occupations available for women.

When educational groupings are considered, we find that 78 percent of the male college graduates change occupations when switching jobs in contrast to 45 percent of the high school dropouts. This may indicate that unskilled workers are more likely to be locked into particular occupations. On the other hand, the change over of industries did not appear to be related to the level of education. Neither did age affect the type of job change made.

Earnings and Type of Job Change

Interestingly enough, the size of the income change was greater in the case of occupational than industry crossovers.

TABLE 13: INCOME CHANGE BY TYPE OF JOB SHIFTS

TYPE OF JOB SHIFT	MALES	FEMALES
Same Industry - Same Occupation	$312	$364
Different Industry - Same Occupation	327	293
Same Industry - Different Occupation	480	320
Different Industry - Different Occupation	504	382

Among males, the greatest dollar payoff occurred when a person changed both industries and occupations ($504) or when he changed occupations but remained in the same industry ($480). The dollar gain for job changes where a male changed industries only was considerably smaller -- $327 (different industry - same occupation) and $312 (same industry - same occupation) than shifts involving a change in occupation. Among females, as indicated by Table 14, the net change in earnings showed smaller variation.

Among shifts leading to an increase in income among males, 78 percent involved occupational changes and 69.3 percent industrial changes. For females, 60 percent of the changes that resulted in an increase in income were occupational crossovers and 69.3 percent were industry crossovers.

These figures relating income change by type of job shifts, also indicate how economic progress for Black workers usually occurs. They show that occupational changes are more important in raising male earnings. On the other hand, among females, industry changes are just as important. This suggests that Black males are economically held back because of occupational barriers, and therefore, to provide greater employment opportunities these barriers have to be eliminated. In the case of females, because of the smaller range of occupations in which women are found, discrimination operates primarily by keeping nonwhites out of the higher paying industries (for any given occupational category). To raise female earnings, it is necessary to break down industry rather than occupational barriers.

A good illustration of this is shown by the space program which has resulted in the creation of a new industry. Most of the jobs created by the program are in communications and electronics and do not require college degrees. Presumably, the lack of college training should not be a major factor affecting nonwhite employment. Yet, only a handful of Blacks are employed. A small 2.6 percent of the labor force in the space program is nonwhite and most of this is concentrated in lower level jobs. A combination of factors keeps Blacks from being employed by aerospace contractors (who pay salaries and wages which rank among the highest in the labor market): discriminatory hiring policies, entry barriers imposed by unions, and lack of enforcement by government agencies of civil rights laws and federal executive orders. [13]

VI. CAUSES OF JOB CHANGING AMONG BLACK WORKERS

Most voluntary job hopping has been thought to be concentrated among a small number of individuals who fall into the categories of either restless youth, the dissatisfied, or the ambitious. [14] According to this study's findings most nonwhite job changers fall into the ambitious category with the major motivation behind job hopping being to earn more money. Dissatisfaction with work conditions caused only a small proportion of the job changes, while many of the job hops among younger workers were involuntary.

Whether or not most of the job hopping in the Black labor force is accounted for by a small number of persons cannot be discerned from this study's data. However, several considerations suggest that job hopping is less concentrated among Black workers than among whites.

Surveys of the Black community indicate widespread dissatisfaction with employment. Many Black workers are

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13. Jack Robertson, "Space is not Black", The Nation (June 30, 1969) pp. 814-816

14. Neil W. Chamberlain, The Labor Sector (New York: McGraw-Hill, 1965), pp. 39-42

working below the skill levels for which they have been trained because of discrimination. In some instances, they earn less pay than whites for doing the same work because the only jobs that are available are in low paying industries.[15] In other cases, Black workers have to travel long distances to outlying areas of Chicago because discrimination in hiring limits the number of available jobs located in the city. More job changing among blacks would probably occur if equal opportunity in employment became a reality, or if there were sharp increases in the demand for Black labor. The study was not based on data for the years 1967, 1968 and 1969 which in comparison to earlier ones were extremely favorable for adult nonwhite workers. During this period (1966-1969) many Black workers were able to upgrade themselves occupationally by changing employers.

In studying the role played by labor mobility in the operation of the economy, labor market specialists are usually only concerned with the effects of job changing on the allocation of manpower between occupations and industries. That is to say, they are interested in knowing if job changing serves as a mechanism by which workers and jobs are matched with one another, and if it helps to shift workers from lower paying occupations and industries to higher paying ones. There is seldom any mention as to what degree of job changing represents the right or normal degree of labor mobility. During periods of economic expansion when there are shortages of manpower, the need for measures to speed up the flow of labor are emphasized e.g. increasing the number of persons being schooled for new occupations; improving information networks.

On the other hand when studying labor mobility among nonwhite workers, there is usually great concern over the amount of job changing that is done. It is frequently implied that nonwhite workers change jobs too often and that nonwhite job changing has negative effects. Black

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15. According to a recent Chicago Urban League Study, The Unskilled Negro Worker in the Chicago Labor Market, Negro janitors earn $4 less a week, and Negro material handlers $12.80 less than whites, even though they have the same and sometimes even slightly higher work qualifications than their white counterparts.

workers supposedly do not remain on jobs long enough to build up seniority. Moreover, because they change jobs frequently, employers considered it risky to hire nonwhites. Extended further, this reasoning leads to the conclusions that the pattern of Black job changing does not make much economic sense, and that Black workers change jobs aimlessly.

On their part, employers seem to have mixed feelings about the role that job changing plays in the economy. They usually consider it bad when members of their own labor force leave for other jobs, but good when they can recruit talent from other companies. They are very concerned about the high turnover rate of Black employees in the unskilled and semi-skilled occupations and cite this as evidence to support the notion that hiring Blacks is risky. However, they usually are quite willing to steal promising young Black workers from other firms (particularly from smaller companies).

IN VIEW OF EMPLOYMENT CONDITIONS BLACK WORKERS DO NOT CHANGE JOBS TOO FREQUENTLY. HIGHER RATES OF JOB CHANGING AMONG NONWHITE WORKERS MAY BE ATTRIBUTED TO SPECIFIC ECONOMIC FACTORS

According to this study, the pattern of job changing among Black workers makes a great deal of economic sense and reflects sophisticated labor market behavior. Labor mobility increased the earnings of 69 percent of the males and 72 percent of the females during a period when the levels of demand for Black workers were not particularly high. Black workers apparently found higher paying jobs when they were available and in some cases even when they left their previous jobs involuntarily. Significantly, few changes were for rash or subjective reasons such as "didn't like foreman" or "fellow workers treated me badly."

Job changing by Black workers, rather than reflecting irrational labor market behavior, represents a major mechanism by which Black workers increase their earnings. Higher

rates of labor mobility by nonwhite workers, which employers and labor market specialists complain about, occur because of the peculiar labor market conditions Black workers encounter. Differences between white and nonwhite rates of labor mobility may be explained in terms of the whole network of racial barriers in employment including: discrimination in hiring and promotion, housing segregation, and inadequate transportation. Depending upon which skill segment of the labor force is looked at, some factors have greater importance than others.

Unskilled Workers - Unskilled Black workers, unlike unskilled white workers, are over-represented in marginal and peripheral jobs-- those involving dirty work, hazardous health conditions, sudden terminations in employment and social degradation. Not surprisingly, few workers regard these jobs as permanent or hold them in great esteem. Most regard them as dead-end jobs rather than positions having a future in terms of pay and advancement.

> In general, the menial job lies outside the job hierarchy and promises to offer no more tomorrow than it does today . . He (the Black menial worker) has little vested interest in such a job and learns to treat it with the same contempt held for it by the employer and society at large. From this point of view, the job is expendable; from the employer's point of view he is. For reasons real or imagined, perhaps so slight as to go unnoticed by others, he frequently quits or is fired.[16]

Semi-skilled Workers - Lay-offs are another cause of higher rates of labor mobility among nonwhite workers particularly in blue-collar occupations. A study of inter-industry labor mobility during the period 1957-1960, which generally was one of low levels of demand, found that nonwhite workers had higher rates of job changing primarily

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16. Elliot Liebow, Tally's Corner (Little Brown and Company, Boston, 1967) pp. 211-212.

because they were experiencing more involuntary separations.[17]

The chances of a nonwhite worker getting laid-off are much greater than those of a white worker. Proportionately, more Black workers than whites are represented in occupations and industries where production and, consequently, the level of employment varies sharply with the ups and downs of the business cycle. Workers employed in these areas of the economy are more likely to be the victims of involuntary job separations caused by cut-backs in production. (Of course Black workers are over-represented in these jobs because of discrimination). Closely related to this is a second factor. Black workers, because of discrimination in hiring, are the last hired and therefore the first fired when there is any change in production.

During the last few years involuntary job separations have not been a major factor affecting job changing among Black workers. On the other hand, the tight labor market of the late sixties has gotten many workers into precisely those industries where production is sensitive to the business cycle. Most economic indicators now point to a slowdown in the economy as the government's anti-inflationary policy takes hold. When this occurs, lay-offs because of involuntary job separations will once more be a major factor behind job changing (and unemployment), and more Black workers than whites will be the victims of the downturn in economic activity. Already, unemployment of nonwhites has begun rising.

A particular case example is the auto industry in Detroit which last year hired 40,000 so-called hard-core workers. Under corporate and union rules in a lay-off it's generally the last in, first out. Most of the hard-core were the last to be hired.

> "Detroit is wondering how to preserve the jobs of these men, or at least some of their income if there is a business turndown. . . . .Richard Rowan of the University of Pennsylvania who

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17. Lowell E. Gallaway, Inter-Industry Labor Mobility, op. cit.

has studied the Negro's work role in the steel industry says that given a severe recession the minority groups would be right back where they started from."[18]

Skilled and White Collar Workers - A third factor behind job hopping by Black workers is discrimination in promotion particularly in white collar and skilled blue collar work. In these occupations Black workers change jobs more frequently than whites because their advancement is limited, or because they encounter or expect discrimination in promotion. The high frequency with which workers in our sample listed as reasons for leaving their jobs "lack of advancement," "not enough pay," "got a better job," indicates the widespread existence of discrimination in promotion in the Chicago labor market. According to a recent national survey, 18 percent of Negro males and 9 percent of Negro women reported having been refused promotion on a job because of racial discrimination.[19]

Exactly how much discrimination in promotion occurs cannot be exactly determined. To obtain such information would require a comparison of on-the-job advancement between whites and nonwhites of similar backgrounds employed in the same company. Most employers are reluctant to have their employment records examined. This would enable a comparison of the advancement of white workers with Black workers.[20] Only in the case of government employment are data available and these definitely indicate a discriminatory advancement pattern. For example, in 1966, 88 percent of all Black Federal employees in the entire country were in the lowest paying jobs. In the top seven federal job classifications Blacks made up less than 2 percent of all employment.[21]

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18. Robert Dietsch, "Hard-Core Blacks and the Shiny Auto," The New Republic, (March 1, 1969) p. 10

19. The National Advisory Commission on Civil Disorders, Supplemental Studies (U.S. Government Printing Office, Washington, D. C., July 1968) p. 23

20. The only case study that is available to our knowledge documented discrimination in promotion in the meat packing industry in Chicago--A. P. Garbin and John A. Ballweg, "Intra-Plant Mobility of Negro and White Workers," The American Journal of Sociology, (November, 1963) pp. 315-319

21. Saturday Evening Post - "Uncle Sam is a Bigot", (April 20, 1968)

EMPLOYMENT BARRIERS NARROWS THE RANGE OF JOB OPTIONS OPEN TO BLACK WORKERS

Differences in the patterns of job changing may be viewed at the individual level by comparing the job options open to white and nonwhite workers over their lifetimes. In looking for a job, a Black worker because of discrimination in hiring and housing segregation starts off with fewer alternatives. In addition, the fact that employers often use informal channels of recruitment-notifying employees about openings and advertising in newspapers which most Blacks do not read, results in Black workers never hearing about many jobs. (Because of these factors, a Black worker who leaves his employer without first finding another job takes a greater risk than a white in the same situation).

When he does find a job, a Black worker can usually expect to be discriminated against when it comes to promotion. The absence of Black supervisory personnel who could serve as role models usually confirms the notion that the company discriminates in promotion. In cases where an employer has had blacks on his payroll for a long period of time, there has seldom been any up-grading into higher jobs comparable to that for whites.

To advance himself, the Black worker very often has no alternative but to look outside of his present job. But even by using job changing as a way to increase his earnings, the Black worker is still not as well off as his white counterpart who has the alternatives of both promotion (and internal advancement) and of changing employers.[22] Not surprisingly, whites are in a much better position to make the most of their training and backgrounds. On the average, they earn considerably more over their lifetimes than Blacks. A recent government study shows that the difference in income between white and nonwhite workers

22. Whites also have more opportunities to go into business for themselves. According to the Interracial Council for Business Opportunity (quoted in Saturday Review, August 23, 1969) only 2.3 percent of the nation's businesses are owned by nonwhites and of these it may well be that Orientals account for a disproportionate share.

of similar age and educational backgrounds increases with the passage of time.[23] This can only be explained by the differences in the extent to which whites and Blacks are able to acquire on-the-job training and advancement.[24]

VII. RECOMMENDATIONS

Employers:
1. End Discrimination in Promotion
2. Recognition of Concerned Worker Groups and Black Caucuses
3. Provide Transportation from Inner City to Outlying Areas
4. Provide Housing for Inner City Workers

Government:
5. Use of Fair Employment Machinery

The data generated by this study refutes once and for all the notion that nonwhite workers are shiftless or are unreliable employees. Black workers change jobs more often that whites either because they are more frequently laid-off, because they encounter discrimination in promotion, and because they do not earn enough. Rather than Black workers making unreliable employees, it is companies who discriminate in hiring and in promotion who make unreliable employers. Employers who want to reduce turnover rates must open up to nonwhite workers all of the opportunities for promotion, training, and advancement that are available for whites. An equal opportunity employment policy has to include not only the hiring of additional nonwhite workers but their advancement as well.

> AN EFFECTIVE FAIR EMPLOYMENT POLICY DOES NOT END WITH AN EMPLOYER HIRING MORE BLACK WORKERS. IT MUST APPLY TO ALL PHASES OF EMPLOYMENT: HIRING, PLACEMENT, SUPERVISION, TRAINING, UPGRADING, AND PROMOTION

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23. Herman P. Miller, Income Distribution in the United States (U.S. Government Printing Office, Washington, D. C.) pp. 130-143

24. This is estimated statistically in Lowell E. Gallaway - "The Anatomy of the Negro-White Income Differential" The Negro and Employment Opportunities eds: Herbert R. Northrop and Richard L. Rowan (University of Michigan Press 1965) pp. 45-66

1. End Discrimination in Promotion

In many cases, because of past discrimination, Black workers operate with the expectancy that they will be passed up when it comes to promotion. According to the National Advisory Commission on Civil Disorders, 68 percent of the Black labor force believe that many or some Negroes miss out on promotions today because of race.[25] In cases where Blacks are entering a company or a specific department for the first time, the absence of nonwhite supervisory personnel is often taken to mean that such jobs are for whites only. Employers, besides reviewing their promotion procedures to insure that there is no discrimination, must clearly outline to new workers the procedures for advancement. If in the past nonwhite workers have been denied access to supervisory positions, the company must obviously indicate its new promotion policy and take steps to remedy past wrong doings.

In some cases, racial discrimination in promotion may result from discrimination in collectively bargained seniority systems. Here, some agreement between management and union must first be worked out. A remedy in seniority discrimination cases that may be becoming the standard (in lieu of its being ordered by at least two federal courts and of being worked out as the solution between the International Paper Company and the papermakers and paperworkers) involves promoting from within as rapidly as job openings and qualifications permit, regardless of the form of seniority system, until Negroes are no longer behind whites with lesser plant seniority.[26]

2. Recognition of Concerned Worker Groups and Black Union Caucuses

Recently, many employers have been faced with "concerned worker" groups of Black caucuses in the unions with whom they deal. The formation of these organiza-

25. The National Advisory Commission on Civil Disorders Supplemental Studies, op. cit. p. 22

26. Alfred W. Blumrosen, "Job Seniority & Discrimination", Monthly Labor Review, (March 1969) p. 52

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tions of Black employees result from the inability of Black workers to communicate to management through normal channels and (or) the inaction of employers in dealing with the grievances. These groups represent a new trend in the Black worker's struggle for economic equality. Rather than being silent about unfair treatment or leaving an employer because of discriminatory treatment, Blacks have now chosen to negotiate for their economic rights through labor tactics which have proven effective for other groups.

In some cases, the issues that are raised concern matters other than those pertaining to work conditions, pay, promotion, and on-the-job training. These include the relationship between the company and the entire Black community, and the relevance of the job to the needs and aspirations of Black people.

Employers who want to improve their relations with their nonwhite labor force (as well as to reduce turnover rates) should recognize these groups and communicate with them as soon as possible. It is the Urban League's experience that the demands of "concerned worker" groups are for the most part legitimate. If anything, the grievances have taken too long in getting voiced. In many cases, management may be unaware of conditions in the plant because of cover-up on the part of lower echelon supervisory personnel. In other instances, management has failed to realize that Black workers now refuse to accept second class treatment.

Where an employer already has formulated a fair employment policy that has been developed with the full backing of top officials, and is recognized as a major policy commitment and contains objectives within the company's reach, it is important that this policy be communicated and administered effectively. Responsibility for implementing the policy must be assigned along with the establishment of a system for control and audit.[27]

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27. A study of the employment policies of major companies may be found in: United States Department of Labor, Manpower Administration, Finding Jobs For Negroes (Manpower Automation Research, Monograph No. 9, November 1968)

In cases where discriminatory or unfair treatment results from union practices, employers should take steps to see that these practices end when contracts are being renegotiated. During the period when the current contract is in effect, employers should try to remedy as many of the complaints brought forward by the Black (union) caucus as are possible under existing labor laws. Employers who pass the blame for the grievances on to the white dominated union will only cause further discontent and harm relations with their Black workers.

3. Employers With Plants in the Suburbs Must Provide Transportation to Inner City Workers

Often, Black workers leave their jobs because they have to spend too much time and money commuting to work. In the Chicago metropolitan area, most of the jobs that are being added to the economy (as well as most of the new housing) are located in suburban and outlying areas far removed from the inner city where most of the black population resides.[28] Many companies are relocating from the inner city to the suburban sectors.

Segregated housing patterns together with inadequate public transportation, particularly for night shifts, prevents access to these jobs. This is particularly true for unskilled and low income workers who are unable to afford cars.

For many, the cost of getting to and from work is too high relative to what the job pays. Unskilled white workers confronted by the same situation usually can reduce the high transportation costs by moving to a neighborhood near the job.

Lack of adequate transportation also results in high rates of absenteeism. The person who misses the only available bus or lift usually cannot get other transportation. While 51 percent of major employers surveyed by The National Advisory Commission indicated that 'Negroes are apt to have a high rate of absenteeism, therefore, hiring too

28. Urban America in One Year Later estimates that between 7[illegible] and 80 percent of added employment in trade and industry is going to the suburbs.

many may upset production schedules.' Yet very few companies seem to be concerned with why this is so.[29]

Employers located in the suburbs or who have branches there, must develop programs to provide better access to jobs. These would include: pressuring existing transportation systems to expand; setting up or expanding company bus service; offering travel allowances to offset commuting costs.

Lack of transportation also hinders the Black worker in job searching. Labor mobility studies have shown that informal job search is the most important source of information about job openings i.e. workers learn about jobs from friends, neighbors, relatives or seeing a help wanted sign. In the case of suburban jobs, these informal mechanisms are almost completely absent.

> If all of your friends live in the ghetto, if few of them are employed in the rapidly growing suburban parts of the metropolis, and if you seldom visit the suburbs, there is only the remotest chance of your learning about jobs available there. . For a suburban job to be acceptable to ghetto Negroes, it must be an especially good one to offset the heavy costs of commuting daily from the central ghetto to a peripheral work place. Such jobs are usually snapped up long before they reach channels where the isolated ghetto resident might learn of them.[30]

To improve the flow of information to the black community about jobs which pay enough to compensate for the transportation costs involved, employers should communicate knowledge of job openings directly to the Black community via the Black media and other relevant constitutions.

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29. National Advisory Commission, op. cit. p. 122

30. John F. Kain, "Coping with Ghetto Unemployment," American Institute of Planners (AIP) Journal (March, 1969) p. 81

4. Provide Housing for Inner City Workers

The combined effect of housing segregation and inadequate transportation facilities is to reduce the number of jobs available to the Black community. A recent study estimates that, in 1956, 24,000 jobs were lost to the Negro community in Chicago because of housing segregation, and that this figure would probably be higher for 1969.[31] It is also estimated that because of the exodus of industrial and retail establishments from the city to the outlying areas, the south and west sides of Chicago (where most Blacks live) lost 90,000 jobs between 1955 and 1964.[32]

The adverse effect of housing segregation combined with inadequate public transportation may also be responsible for the high nonwhite to white joblessness ratio in Chicago. In 1967, the city had an unemployment rate well below the national average for Standard Metropolitan Statistical Areas. Yet, "in Chicago, the nonwhite jobless rate was 3.2 times as high as the white rate; this was one of the highest ratios in the areas studied."[33]

Both to reduce job hopping caused by distance and to open up new jobs for the black community, employers must begin to develop housing policies. Just as most companies help new executives get settled so should they provide housing for new unskilled workers from the inner city. Such a policy would involve: supporting the passage of fair housing legislation; co-operating with local fair housing groups; pressuring realtors, banks and other institutions which are part of the local market to open up housing for Blacks; buying, building, and renting housing for Blacks in neighborhoods near or where the plant is located.

5. Enforcement of Anti-Discrimination Laws and Federal Executive Orders

At the present time the Federal Government has on hand

31. John F. Kain, op. cit, pp. 80-83

32. Pierre de Vise, Chicago's Widening Color Gap (Inter-university Social Research Committee December 1967) p. 74

33. Paul O. Flaim, "Jobless Trends in 20 Large Metropolitan Areas", Monthly Labor Review, (May, 1968), p. 25

a potentially effective machinery for combatting discrimination in employment. It consists of Title VII of the 1969 Civil Rights Acts and federal executive orders requiring that federal contractors not only refrain from discrimination in hiring and promotion but take "affirmative action" to improve their employment of minorities.

Unlike the fair employment mechanism of the Civil Rights Act, which is essentially a means of redressing individual complaints, the contract compliance system has the potential to alter entire patterns of employment. Government contractors account for a substantial proportion of the jobs in the economy. During 1968-1969, there were 225,000 contracts subject to executive order 10925 prohibiting job discrimination by government contractors.[34] One employee in three works for a company which holds federal contracts and these companies are usually the large firms. If one of these companies is found to be in violation of anti-discrimination regulations, either the Labor Department's Office of Federal Contract Compliance or the government agency which signed the contract can impose sanctions including that of contract cancellation.

Yet, the federal government has been lax in using this machinery. Recently, it awarded a $9.4 million dollar contract to three southern textile mills, even though these companies were in violation of anti-discrimination regulations and, therefore, were not eligible to receive government contracts. This action . . .

> undermined the position of Defense Department contract-compliance officials who have been bargaining with the textile companies since mid-1967 to improve their equal employment posture; it disrupted relations with the Labor Department, which is charged with supervising contract compliance activity throughout the government; and it involved a real or apparent capitulation to political pressure from Senator Strom

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34. Budget of the United States Government, (1969, Appendix) p. 711

Thurmond R.S.C.) and Representative L. Mendel Rivers (N.S.C.). It also violated an executive order requiring companies to be in compliance with fair employment requirements at the time they receive contracts.[35]

Use of the fair employment machinery by the federal government would not require any extra spending or setting up additional programs. All that is necessary is that the President put his backing behind it so that contract compliance receives top priority.

35. Robert L. Kuttner, "The Rusty Fair Employment Machine", Washington Monthly (April 1969) pp. 62-73

APPENDIX A

TECHNICAL NOTES

1. TIME PERIOD OF THE STUDY

The study examined those job changes made during the period 1959-1966. Only a minority of the work histories went further back in time both because of the overall youngness of the sample, and because the application forms contained room for information on only the last four jobs. Employment conditions for nonwhites in the Chicago labor market did not improve significantly until about 1965 with really high levels of demand not appearing until late 1967.

2. RESEARCH ON LABOR MOBILITY

Research on labor mobility and job hopping has been scarce primarily because of the difficulty in obtaining detailed information on work histories. Those studies that are available pertain to much earlier time periods and have only limited applicability to the Chicago labor market. Moreover, only a few of the findings that are available are broken down by race. In view of these reasons we have limited comparing our results with those of other studies. The reader is referred to them for his own interest.

1. Labor Mobility and Economic Opportunity, E. Wight Bakke ed. M.I.T. Press 1954.
2. Labor Mobility in Six Cities, Gladys Palmer, New York, Social Science Research Council, 1954.
3. Research on Labor Mobility, Herbert S. Parnes, Social Science Research Council, New York, 1954.
4. Inter-industry Labor Mobility in the United States, Lowell E. Gallaway, U.S. Department of Health Education and Welfare.

3. REPRESENTATIVENESS OF SAMPLE

It may be asked whether the sample upon which the empirical part of the study is based is representative of the total nonwhite labor force. At the time of the study, the League as a labor market intermediary attracted proportionately more younger applicants and persons who had college training than were represented in the nonwhite labor force.

However, since most of the findings are broken down by age and education, the question is really one of deciding whether applicants in particular age and education groupings are representative of those in the entire population. Judging from the League's experience, there is no reason to expect that they are not.

4. The distribution of the percent of movers by level of education was obtained by assuming that each job hop represented a different person. That is, if a male college graduate had three jobs, they were represented as three job changes by male college graduates. In the case of age, this could not be done since a person's age varied during his employment history.

5. REASON FOR LEAVING JOB

The data used are based on all changes regardless of whether they represented the most recent move, the second most recent move, etc. The pattern of involuntary vs. voluntary changes was about the same when we examined separately the most recent change, the second most recent change, the third most change and the fourth most recent change.

In some cases, information was unavailable particularly for the third and fourth most recent jobs where many applicants could not recall the reason why they left their jobs.

To simplify the findings, the data on voluntary and involuntary changes excludes responses where information was unavailable and where the original job was only part-time. Also, those responses which could not be placed into any meaningful category were omitted. This only occurred in a few cases.

APPENDIX B

CURRENT ECONOMIC DATA ON THE BLACK LABOR FORCE

EMPLOYMENT

-- Job discrimination in Chicago is borne out by a recent survey of major employers. In the private sector of the economy Negroes are one-tenth as likely as whites to be professional or managerial workers, one-fifth as likely to be sales workers, half as likely to be skilled blue-collar workers, and three times as likely to be laborers and service workers.

PERCENT OF WORKERS BY

OCCUPATIONAL GROUP; CHICAGO SMSA: 1966

Occupation	All workers		Negro percent	Spanish-American percent
	Number	Percent		
Total	1,304,825	100.0	100.0	100.0
White collar, total	586,810	45.0	15.6	10.4
Professional	78,660	6.0	0.8	1.1
Technical	53,601	4.1	1.5	1.6
Officials and managers	105,455	8.0	0.8	0.8
Sales	88,668	6.7	1.5	0.9
Clerical	260,426	20.0	10.8	6.0
Blue collar, total	718,015	55.0	84.3	89.5
Craftsmen	164,062	12.5	6.5	9.4
Operatives	321,558	24.6	37.0	44.8
Laborers	142,831	11.0	25.2	28.1
Service	89,564	6.8	15.4	7.0

Source: U. S. Equal Employment Opportunity Commission "Job Patterns for Minorities and Women in Private Industry" Equal Employment Opportunity Report No. 1 (reprinted in Chicago's Widening Color Gap by Pierre de Vise, Inter-university Social Research Committee p. 75

UNEMPLOYMENT

-- "Even during the current unprecedented period of sustained economic growth, unemployment among Negroes has been continuously above the 6.0 percent recession level widely regarded as a sign of severe economic weakness when present for the entire work force". (Report of the National Advisory Commission on Civil Disorders).

-- In 1968 the national unemployment rate for nonwhites was 6.7 percent in contrast to 3.2 percent for whites. In Chicago, the nonwhite unemployment rate was 7.6 percent while the white rate was only 2.3 percent.

Source: United States Department of Labor Statistics on Manpower – A Supplement to the Manpower Report of the President (March 1969)

-- Among teenagers, the 1969 unemployment (for the nation) rate was 25.0 percent in contrast to 11.0 percent for white youths.

Source: U. S. Department of Labor Employment and Earnings and Monthly Report on the Labor Force (January 1969)

-- Unemployment rates for nonwhites understate the actual amount of unemployment. The Bureau of Labor Statistics does not include persons who have been driven out of the labor force and who are no longer seeking employment as a result of long term joblessness. These include many older Blacks who have exhausted their unemployment insurance benefits as well as a large but undetermined number of young persons who never entered the labor market in the first place because of the unavailability of jobs.

Source: Paul O. Flaim "Persons not in the labor force" Monthly Labor Review (July 1969)

-- Also, it is estimated that population surveys of the working age population undercount about 9.5 percent of nonwhites in contrast to 2.2 percent of whites.

Source: Denis F. Johnston and James R. Wetzel "Effect of the census undercount on labor force estimates" Monthly Labor Review (March 1969)

POVERTY

-- Thirty (30) percent of Negroes in central cities lived in poverty in 1967. The incidence of Negro poverty in the cities was three times that of whites.

Source: U. S. Bureau of the Census. "Trends in Social and Economic Conditions in Major Metropolitan Areas."

-- In Chicago, 48 percent of all nonwhite families live in what the Census Department calls poverty areas. Over 42,000 nonwhite families in Chicago earned less than $3,335 in 1968.

Source: U. S. Department of Commerce, Bureau of the Census

-- Of the country's 8.3 million nonwhite poor, only 3.4 million received welfare in 1968.

INCOME

-- In Chicago, according to 1966 data, nonwhite family income was only 61.6 percent of that for whites. Moreover, "as there are more wage earners per Negro family . . . the ratio between Negro and white personal income is more like 1 to 2. In fact, two-earner Negro families (often) earn less than one-earner white families."

Source: Pierre de Vise Chicago's Widening Color Gap p. 80

MEDIAN FAMILY INCOME IN CHICAGO

	1966	1960
All Families	$9,400	$7,270
White Families	9,900	7,700
Nonwhite Families	6,100	4,800

Source: Pierre de Vise Chicago's op. cit.

INDUSTRY

-- In Chicago, the number of Negroes employed in an industry depends upon the amount of low-paying white-collar and blue-collar jobs in that industry, and how close the industry is located to the Black community.

NUMBER OF WORKERS IN 15 LARGEST INDUSTRIES IN THE CHICAGO SMSA, RANKED BY PERCENT OF NEGRO WORKERS: 1966

Industry	Total employment		White collar		Craftsmen		Blue collar	
	Number	Percent Negro	Number	Percent Negro	Number	Percent Negro	Number	Percent Negro
Food	65,270	22.1	22,363	3.0	6,465	11.4	36,442	36.4
Primary metals	59,188	21.9	15,116	2.7	11,914	12.5	32,158	34.5
Medical services	42,792	19.7	23,783	7.9	863	6.4	18,146	35.9
Retail trade	111,046	16.9	78,385	12.0	3,501	16.7	29,160	30.0
Railroad transportation	46,084	16.8	16,016	1.8	11,520	7.7	18,549	35.3
Transportation equipment	38,600	15.3	9,479	2.2	6,549	5.0	22,172	24.2
Electric machinery	146,646	13.0	42,043	2.0	14,867	8.4	89,736	18.9
Fabricated metals	64,541	12.9	18,063	1.0	12,065	6.4	34,413	21.5
Business Services	36,173	11.7	22,622	4.0	1,684	5.4	11,867	27.2
Printing	48,059	11.0	20,113	3.5	12,786	2.2	15,160	28.2
Nonelectrical machinery	94,454	7.8	33,755	0.9	21,413	4.6	43,286	14.7
Wholesale trade	67,724	7.5	44,033	2.9	4,684	7.3	19,007	18.4
Communication	34,090	7.2	24,446	7.5	8,157	1.5	1,487	33.0
Motor freight	25,023	6.2	6,435	1.1	1,934	10.4	16,834	7.7
Insurance	34,607	4.7	33,769	4.5	120	6.7	718	12.1

Source: Equal Employment Opportunity Commission, Nine City Minority Group Employment Profile (August 1967)

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MAJOR LABOR-LAW PRINCIPLES ESTABLISHED BY THE NLRB AND THE COURTS (DECEMBER 1964 FEBRUARY 1971).

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ABSTRACT - PRECEDENT-SETTING RULINGS BY THE NATIONAL LABOR RELATIONS BOARD AND THE COURTS ARE DESCRIBED. THE CASES WHICH ARE INCLUDED COVER ANTITRUST LAW, ARBITRATION ENFORCEMENT, EQUAL EMPLOYMENT OPPORTUNITY, RAILWAY LABOR ACT, AND REPRESENTATION AND UNFAIR LABOR PRACTICES UNDER THE TAFT-HARTLY ACT. (BH)

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Major Labor-Law Principles Established by the NLRB and the Courts

(December 1964 — February 1971)

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MAJOR LABOR-LAW PRINCIPLES ESTABLISHED BY THE NLRB AND THE COURTS

(December 1964 - February 1971)

ANTITRUST LAW CASES

Issue	Holding	Comment
Union-Employer Agreement		
Retail Store Hours	A contract between the Meat Cutters and the Associated Food Retailers of Greater Chicago barring sales of meat and meat products before 9 a.m., and after 6 p.m., did not violate the Sherman Antitrust Act. There was no majority opinion. The judgment was announced in an opinion by Justice White in which Chief Justice Warren and Justice Brennan joined. Justice Goldberg concurred in the judgment, and Justices Harlan and Stewart joined him. Justice Douglas, joined by Justices Black and Clark, dissented in another opinion. (Local 189, Meat Cutters v. Jewel Tea Co., US SupCt. - 1965, 59 LRRM 2376)	The decision reversed one by the U. S. Court of Appeals at Chicago, which had held that the contract did not come within the labor exemption to the antitrust laws. (Jewel Tea Co. v. Food Retailers, CA 7-1964, 56 LRRM 2065)
Mine Mechanization	A union may make wage agreements with a multi-employer bargaining unit and, in pursuance of its own union interests, may seek to obtain the same terms from other employers. Evidence limited to such union behavior would not make out a case under the antitrust laws. But a union forfeits its exemption from the antitrust laws when it clearly is shown that the union has agreed with one set of employers to impose a certain wage scale on other bargaining units. One group of employers may not conspire to eliminate competitors from the industry, and the union is liable, along with the employers, if it becomes a party to the conspiracy. On this basis the Supreme Court ruled that the alleged agreement between the United Mine Workers and the large coal companies to obtain uniform labor standards throughout the industry, if proved, was not exempt from the antitrust laws. But the Court reversed the holding below and remanded the case for a new trial because the trial court admitted evidence concerning the efforts of the union and the companies to get the Secretary of Labor to set a high Walsh-Healey minimum wage and also told the jury that it could include damages resulting from this action in its verdict. Such action was not considered unlawful. (United Mine Workers v. Pennington, US SupCt-1965, 59 LRRM 2369)	The U. S. Court of Appeals at Cincinnati had upheld a jury verdict awarding a small operator $270,000 in treble damages. It decided that there was sufficient evidence of a conspiracy between the United Mine Workers and major coal companies, in violation of the antitrust laws, to raise a question for the jury. As part of the conspiracy, the union was alleged to have agreed to go along with mechanization of the mines and closing of those that could not be mechanized in return for agreement by the companies not to protest the wage increases demanded by the union as long as they were matched by increased productivity through mechanization. (Pennington v. United Mine Workers, CA 6-1963, 54 LRRM 2761) Upon remand of the case, the federal district court decided that the United Mine Workers did not violate the antitrust laws in its contractual and other relations with the larger producers. But it awarded two of the small producers compensatory and punitive damages for violations by the union of Tennessee law. It laid down these rules for proof of violation of the antitrust laws: (1) To establish that the union and the major producers violated the antitrust laws by entering into the industry-wide contract, it is not sufficient to show that the effect of the agreement was to force out of business some employers who lacked the financial ability to meet the contract's labor standards; it also must be shown that there was a "predatory intent" on the part of the union and the major producers to drive such other employers out of business. (2) The

ANTITRUST LAW CASES - Contd.

Issue	Holding	Comment
Union-Employer Agreement--Contd. Mine Mechanization--Contd.		standard of proof of such "predatory intent" is a middle ground between the standard of a "preponderance of the evidence" applied in the ordinary case and that of proof of guilt "beyond a reasonable doubt" applied in criminal cases. So the small producers were required to persuade by a substantial margin and to come forward with "more than a bare preponderance of the evidence" to prevail. (Pennington v. United Mine Workers, USDC ETenn-1966, 62 LRRM 2604) The standard of proof of "predatory intent" applied by the district court was that laid down by the Supreme Court in a damage suit for an alleged secondary boycott under the Taft-Hartley Act. (See United Mine Workers v. Gibbs, US SupCt 1966, 61 LRRM 2561) The U. S. Court of Appeals at Cincinnati later reviewed and remanded the 1966 decision of the district court in the Pennington case. It held it was not necessary to find a "predatory intent" by the union and the large producers to drive the small producers out of business to find a violation of the Sherman Act; the term is merely shorthand to describe the anti-competitive conspiracy that must be established by "clear proof." The Supreme Court denied review of the holding. (Lewis v. Pennington, CA 6-1968, 69 LRRM 2280; Pennington v. United Mine Workers, US SupCt-1968, 69 LRRM 2851)
	The Supreme Court later agreed to review the issue of the degree of proof required in antitrust cases involving unions. In a five-to-four decision, the Court held that the standard of "clear proof" drawn from the Norris-LaGuardia Act applies only to the union's authorization, participation in, or ratification of the acts allegedly performed on its behalf. The standard of proof for the other elements of the case is the usual "preponderance of evidence" rule generally applicable to civil actions in federal courts. Justice White wrote the majority opinion. He was joined by Chief Justice Burger and Justices Brennan, Stewart, and Blackmun. Justice Douglas wrote the dissenting opinion. He was joined by Justices Black, Harlan, and Marshall. (Ramsey v. United Mine Workers, US SupCt-1971, 76 LRRM)	The dissenting Justices would have affirmed the holding of the district court on the basis that there was no "clear proof" that the union approved a plan to drive small, marginal operators out of business.
	In a case decided about a week before the en banc decision by the circuit court in the Ramsey case, a panel of the circuit court upheld a jury verdict awarding two small producers $1, 500. 00 in treble damages against the	The district court cleared the union of violation of the antitrust laws. It stated that all the evidence, taken as a whole, did not constitute "clear proof" required by Section 6 of the Norris-LaGuardia Act to establish a violation by a union of the antitrust laws. (Ramsey v. United Mine Workers, USDC ETenn-1967, 64 LRRM 2498) Seven months after the Supreme Court had denied review in the second go-round in the Pennington case, the Sixth Circuit reviewed the district court holding in the Ramsey case and held that the standard of proof in antitrust cases involving labor unions is the same "preponderance of the evidence" standard applied in other civil antitrust cases. (Ramsey v. United Mine Workers, CA 6-1969, 70 LRRM 3281) On a rehearing en banc, the court divided evenly and thus affirmed the district

ANTITRUST LAW CASES – Contd.

Issue	Holding	Comment
Union-Employer Agreement--Contd. Mine Mechanization--Contd.	United Mine Workers and $150,000 in attorneys' fees. The lower court had instructed the jury to apply the "clear-proof" standard of proof in making its determination. (Tennessee Consolidated Coal Co. v. United Mine Workers, CA 6-1969, 72 LRRM 2312) The Supreme Court later denied review of the decision. (United Mine Workers v. Tennessee Consolidated Coal Co., US SupCt-1970, 73 LRRM 2600)	court's holding and the "clear proof" standard. (Ramsey v. United Mine Workers, CA 6-1969, 72 LRRM 2321) In a decision handed down subsequent to the Ramsey case, a three-judge panel of the Sixth Circuit noted that "this Circuit is somewhat in disagreement as to the degree of proof required to hold a labor union liable for violating the Sherman Act." In upholding a treble-damages award of more than $7 million against a coal company and the United Mine Workers, the court stated that while "clear proof" is necessary to show that the union participated in, authorized, or ratified the acts of its officers, the essential elements of the conspiracy necessary to resolve the ultimate issue of liability need be shown only by a preponderance of the evidence. This was the rule adopted by the majority of the Supreme Court. (South-East Coal Co. v. Consolidation Coal Co., CA 6-1970, 75 LRRM 2634)
'Most-Favored-Nation' Clause	In a decision that drew heavily on the Pennington opinion, the U. S. Court of Appeals at Chicago reversed a lower court judgment in favor of a group of employers and ordered the lower court to consider a union's contention that a "most-favored-nation" clause in a standard area contract, which the employers sought to have an arbitrator apply, violates the antitrust laws. Such a violation, if found, is a defense to the action to compel arbitration, the appeals court said. The court rejected both the employers' contention that the arbitrator may consider antitrust violations and the union's contention that the "most-favored-nation" clause is illegal per se under the Pennington decision. After examining the three opinions in the Pennington case, the court ruled that the union must prove that the clause was adopted for a predatory purpose. (Associated Milk Dealers, Inc. v. Milk Drivers, CA 7-1970, 73 LRRM 2435)	In a case arising under the Taft-Hartley Act, the NLRB found no "predatory purpose" in an employer's insistence on the inclusion of a "most-favored-nation clause" in a labor contract. So the Board found that the employer's action did not violate the Taft-Hartley Act. The Board ruled that the clause was a mandatory subject of bargaining under the Act. (Dolly Madison Industries, NLRB-1970, 74 LRRM 1230)
Musicians' Contracts	The American Federation of Musicians did not violate the antitrust laws by enforcing union "price lists" setting minimum limits on the amount that may be charged for one-shot "club dates." Establishment of the lists is exempt from the Sherman Act under the Norris-LaGuardia Act as an activity affecting a "labor" group that is a party to a "labor dispute." Justices Black and White dissented. (American Federation of Musicians v. Carroll, US SupCt-1968, 68 LRRM 2230)	The U. S. Court of Appeals at New York had held that the Musicians Union did not violate the antitrust laws in most of its relationships with orchestra leaders. But it did rule that the union violated the Sherman Act by unilaterally establishing the minimum prices to be paid for orchestral engagements, finding that the controversy over such prices was not a "labor dispute" under the Norris-LaGuardia Act. One judge dissented to the holding on price-fixing. (Carroll v. American Federation of Musicians, CA 2-1967, 64 LRRM 2276)

ANTITRUST LAW CASES – Contd.

Issue	Holding	Comment
Union-Employer Agreement–Contd.		
Prescription Drug Plan	A prepaid prescription drug service plan negotiated by a union and an employer did not violate the Illinois Antitrust Act, according to a ruling by the Illinois Supreme Court. Under the plan, local pharmacists who signed contracts with the insurance company operating the plan became participating providers of prescription drugs. The participating providers verified the eligibility of persons applying for benefits and provided them with "covered drugs" for a charge equal to cost plus a fixed dispensing fee. The court found that the plan came under the labor exemption to the Antitrust Act. (B & L Pharmacy v. Metropolitan Life Insurance Co., Ill SupCt-1970, 74 LRRM 2333)	The action was brought by a nonparticipating pharmacy that contended that the fixed-fee aspect of the plan violated the Antitrust Act.

MAJOR LABOR-LAW PRINCIPLES ESTABLISHED BY THE NLRB AND THE COURTS

(December 1964 – February 1971)

ARBITRATION ENFORCEMENT CASES

Issue	Holding	Comment
Arbitrability: Contract Terms (Interest)	In an action brought under Section 301 of the Taft-Hartley Act, a federal district court had authority to order the arbitration of the terms of a new contract between an employer and a union pursuant to the provisions of the expired contract between the parties. The expired contract provided for automatic renewal unless either party proposed amendments or a new contract prior to the expiration date, adding that: "Should either party propose such amendments or a new contract, and an agreement proves impossible, the difference or differences shall be arbitrated as herein provided." The union's demand for arbitration was not made until after the contract had expired, and the company argued that it therefore had been relieved of any obligation to arbitrate. But the court noted that the Supreme Court has held that the expiration of a collective bargaining agreement does not preclude an arbitrator from determining whether the parties intended the arbitration clause to cover disputes arising before, but not submitted to arbitration until after, the termination date. (Printing Pressmen v. Piedmont Publishing Co., CA 4-1968, 67 LRRM 2939)	In opposing the union's demand for arbitration of the terms of the new contract, the company argued that the courts are precluded from compelling what has come to be known as "interest" or "prospective" or "quasi-legislative" arbitration. But the court viewed the Supreme Court's holdings in labor arbitration cases as "not only recognizing arbitration as an acceptable method of resolving labor disputes, but actively encouraging it." With regard to the argument that compelling arbitration of contract terms involves the court in a "quasi-legislative" area, the court replied that it "is not asked to determine the provisions of a new contract or to perform any nonjudicial function," adding that the drawing of the new contract will be in the hands of an arbitrator, where the parties chose to place the responsibility.
Arbitrability: Determination		
Submission of Issue To Arbitrator	Arbitration award that union's grievance relating to recall of strikers was not arbitrable may not be vacated by court where there is no error either in arbitrator's conclusions or in procedure by which he reached those conclusions. The parties had agreed to submit the issue of arbitrability to the arbitrator. (Metal Products Workers v. Torrington Co., CA 2-1966, 62 LRRM 2011)	The union argued that a national labor policy required that the grievance be arbitrated on the merits. The decision upheld the ruling of the Federal District Court in Connecticut. (Metal Products Workers v. Torrington Co., USDC Conn-1965, 59 LRRM 2267)
Arbitrability: Jurisdiction		
Award Against Public Policy	An employer properly was denied an injunction against arbitration of a discharge grievance, even though an award directing reinstatement assertedly would be contrary to state policy, the employee having been discharged for violating a state gambling law. (Jenkins Bros. v. Local 5623, Steelworkers, CA 2-1965, 58 LRRM 2542)	A petition for review of the decision was filed with the U. S. Supreme Court. Review was denied. (Jenkins Bros. v. Steelworkers Local 5623, US SupCt-1965, 60 LRRM 2233)
Contract Exclusions	Certain grievances, including those involving discharge of strikers and refusal to grant senior employee's bid for equal-paying job, are arbitrable as a matter of right, notwithstanding exclusionary language in the labor-management	The contract clause in this case was negotiated by the company in 1963 in a deliberate attempt to limit the scope of arbitration and avoid "the doctrine of easy arbitrability." The clause was aimed specifically at the

ARBITRATION ENFORCEMENT CASES – Contd.

Issue	Holding	Comment
Arbitrability: Jurisdiction--Contd.		
Contract Exclusions--Contd.	contract. But it is not mandatory that the company submit to the union's demand to arbitrate two grievances involving piece rates and one involving discipline. (Electrical Workers (IUE) v. General Electric Co., CA 2-1968, 70 LRRM 2082) The Supreme Court later denied review of the decision. (General Electric Co. v. Electrical Workers (IUE), US SupCt-1969, 71 LRRM 2254)	Steelworkers Trilogy in which the Supreme Court held that in actions brought under Section 301 of the Taft-Hartley Act to compel arbitration, the function of the courts is limited to ascertaining whether the party seeking arbitration is making a claim which on its face is governed by the contract; the courts may not undertake to determine the merits of a grievance under the guise of interpreting the arbitration clause of the contract. (Steelworkers v. American Manufacturing Co., US SupCt-1960, 46 LRRM 2414; Steelworkers v. Warrior and Gulf Navigation Co., US SupCt-1960, 46 2416; Steelworkers v. Enterprise Wheel & Car Corp., US SupCt-1960, 46 LRRM 2423)
Discharge of Strikers	An employer must arbitrate grievances arising from the discharge of strikers, even though the strike may have been an unfair labor practice under the 60-day strike ban of Section 8(d) of the Taft-Hartley Act. The court, however, declined to decide whether the same rule would apply where a strike admittedly or clearly was a violation of Section 8(d). (Trailways, Inc. v. Motor Coach Employees, CA 1-1965, 58 LRRM 2848)	A petition for review of the decision was filed with the U. S. Supreme Court. Review was denied. (Trailways of New England, Inc. v. Street, Electric Ry. & Motor Coach Employees, US SupCt-1965, 60 LRRM 2255)
Dismissal of Grievance As Bar to Arbitration	An arbitration award dismissing a grievance on procedural grounds does not bar subsequent arbitration of the same grievance. The arbitrator had dismissed the grievance without consideration of the merits because it had not been signed by the grievant or processed through the full grievance procedure under the contract. Five days later, the grievance was refiled over the employee's signature and processed in accordance with the contract's procedures. A second arbitrator then upheld the grievance, with the employer not participating. The decision was by the Third Circuit Court of Appeals and reversed that by a federal district court. (Local 616 Electrical Workers, IUE, v. Byrd Plastics, Inc., CA 3-1970, 74 LRRM 2550)	The court said that it is possible for parties to a contract to state specifically that any dismissal of a grievance, whether on the merits or on procedural grounds, bars further arbitration. But the contract in this case does not make it clear that a dismissal for failure to follow proper procedure is to be "final and binding."
EEOC Jurisdiction: Conflict	See below under "Equal Employment Opportunity Cases: Preemption: Contract Remedies."	
Exhaustion of Remedy	Unless the contract expressly provides otherwise, an employee must attempt to use the grievance-arbitration procedure of the union	The opinion was signed by eight of the nine justices, with Justice Black dissenting. In Black's view, the holding "manifests great

ARBITRATION ENFORCEMENT CASES - Contd.

Issue	Holding	Comment
Arbitrability: Jurisdiction--Contd.		
Exhaustion of Remedy--Contd.	contract covering his employment in pressing a grievance before resorting to the courts. On this basis, a state court was held not to have jurisdiction of a suit brought by a laid-off employee to recover severance pay under a union contract where the employee had made no attempt to use the grievance-arbitration procedure under the contract. (Republic Steel Corp. v. Maddox, US SupCt-1965, 58 LRRM 2193)	concern for the interests of employers and unions but not enough understanding and appreciation of the plight of the individual worker." The decision reversed a holding by the Alabama Supreme Court. (Republic Steel Corp. v. Maddox, Ala. SupCt-1963, 53 LRRM 2003) See below under "Railway Labor Act Cases" for decision refusing to apply the same rule under the Railway Labor Act; also see below under "Equal Employment Opportunity Cases."
NLRB Jurisdiction: Conflict	A union representing production and maintenance employees may compel arbitration, by a suit brought in a state court, of a grievance asserting that technical employees represented by another union are performing production and maintenance work, even though the dispute may involve matters within the jurisdiction of the NLRB. Arbitration is available as an alternative remedy to an NLRB proceeding. (Carey v. Westinghouse Electric Corp., US SupCt-1964, 55 LRRM 2042)	In a companion case handed down the same day, the Court held that federal and state courts have concurrent jurisdiction under Section 301 of the Taft-Hartley Act of a suit by a union member for an alleged breach of a union contract by a joint employer-union committee in deciding to dove-tail the seniority lists of two companies, even though the member also alleges a breach by the union of its duty of fair representation - an action that arguably may be an unfair labor practice under the LMRA. (Humphrey v. Moore, US SupCt-1964, 55 LRRM 2031)
	Neither the presence of a problem of contract interpretation nor the presence of an arbitration provision in the collective bargaining contract deprived the NLRB of jurisdiction to decide an unfair labor practice case. The case grew out of the action of a company reducing the wages of 11 employees to conform to their job classifications during the term of a contract. The union did not invoke the contract grievance-arbitration procedure. Instead, it filed an unfair-labor-practice charge with the NLRB. The Board found that the company violated its bargaining duty under the Act by unilaterally modifying the contract during its term without following the procedure prescribed by the contract. The U. S. Court of Appeals at St. Louis upheld the Board's decision. (Huttig Sash & Door Co., NLRB-1965, 60 LRRM 1035; NLRB v. Huttig Sash & Door Co., CA 8-1967, 65 LRRM 2431)	The case was pending before the appeals court at the time the Supreme Court decided the Acme and C & C Plywood cases. (See below under "NLRB Jurisdiction: Interpretation of Contract.") In those cases, the Supreme Court upheld the jurisdiction of the NLRB to interpret collective bargaining contracts where necessary to the resolution of unfair labor practice charges under the Taft-Hartley Act.
	An NLRB cease and desist order against a union, issued upon the employer's charge that the union's strike in a subcontracting dispute violated Section 8(b)(4)(D) of the Taft-Hartley Act, does not bar arbitration of a grievance protesting the subcontracting as a violation of	The case also involved issues as to the arbitrability of the dispute under the contract and the effect of the strike on the right to proceed to arbitration. The holdings on these issues are discussed below under "Strikes: Effect on Arbitration" and "Subcontracting: Bargaining

ARBITRATION ENFORCEMENT CASES – Contd.

Issue	Holding	Comment
Arbitrability: Jurisdiction--Contd.		
NLRB Jurisdiction: Conflict-- Contd.	the union contract. The issue of the contract violation was not litigated before the NLRB, and the Board expressly agreed in a stipulation providing for its order that the union was not relinquishing its contract claim. (IUE v. General Electric Co., CA 2-1964, 56 LRRM 2289)	History." The decision later was denied review by the U. S. Supreme Court. (General Electric Co. v. IUE, US SupCt-1964, 57 LRRM 2608)
NLRB Jurisdiction: Honoring Award	The NLRB did not abuse its discretion in deferring to the decision of an arbitrator and dismissing a charge that the Taft-Hartley Act was violated when, after the expiration of a union-shop contract, a union obtained an arbitration award that an employee should have been discharged as a dues-delinquent under the contract, but in view of the passage of the Indiana Right-to-Work Law, he should be treated as reemployed as a new hire on the contract's expiration date. (Ramsey v. NLRB [International Harvester Co.], CA 7-1964, 55 LRRM 2441)	In the 1955 Spielberg case (Spielberg Mfg. Co., NLRB-1955, 36 LRRM 1152), the NLRB enunciated the doctrine that it would honor an arbitration award where "the proceedings appear to have been fair and regular, all parties had agreed to be bound, and the decision of the arbitration panel is not clearly repugnant to the purposes and policies of the Act." The principle of honoring arbitration awards that meet specified standards was extended to representation cases in the 1963 Raley's Inc. decision (Raley's Inc., NLRB-1963, 53 LRRM 1347). The Ramsey decision applied the Spielberg standards. It also cited the Lincoln Mills decision (Textile Workers v. Lincoln Mills, US SupCt-1957, 40 LRRM 2113) to the effect that arbitration of labor disputes should be encouraged. The decision later was denied review by the U. S. Supreme Court. (Ramsey v. NLRB, US SupCt-1964, 56 LRRM 2544)
	The NLRB acted properly in refusing to honor an arbitration award upholding the discharge of six employees. But the Board abused its discretion and acted contrary to its own established policies in disregarding the part of the award relating to allegations of unlawful interference by the employer. The case grew out of a rivalry between two unions, and the six employees were discharged because of their activity on behalf of one union, while the other union represented them at the arbitration hearing. It would be unfair and repugnant to the act to bind the employees to the arbitration award, the court said, since they relied on the previously filed unfair-labor-practice charges, and they were represented by the union they had opposed. But the award on the interference charges was another matter. They were among the issues presented to the arbitrator, the arbitrator ruled in favor of the company, and the attorney for the union joined in asking the court to approve the	This was one of the rare cases in which a court has reviewed the Board's application of its standards for giving "hospitable acceptance" to the arbitration process. So far as the Board's refusal to honor the award on the interference charges was concerned, the court said that the incongruous result of the Board's refusing to honor the award at the behest of the union that had acquiesced in it should be avoided. The NLRB later refused to defer to arbitration on a charge that a company violated its Taft-Hartley bargaining duty by establishing new job classifications unilaterally at a time when it had agreed with a union to arbitration of a dispute regarding the classifications from which the new ones were developed. The Board pointed out that the parties deliberately refrained from submitting the basic issue of the unilateral action to arbitration. (Zenith Radio Corp., NLRB-1969, 71 LRRM 1555)

ARBITRATION ENFORCEMENT CASES – Contd.

Issue	Holding	Comment
Arbitrability: Jurisdiction--Contd.		
NLRB Jurisdiction: Honoring Award– Contd.	award. Since the Board's standards were met, it should have honored this part of the award. (NLRB v. Auburn Rubber Co., CA 10-1967, 66 LRRM 2129)	
	The NLRB did not abuse its discretion when it refused to defer to an arbitration award that an employer's cashiers were part of an existing unit of restaurant employees represented by a union. The court made these points: (1) In the past, the union consistently had excluded cashiers from its proposed unit of restaurant employees, and such evidence was not presented to the arbitrator; and (2) the employer did not represent the interests of the cashiers adequately at the arbitration hearing. (NLRB v. Horn & Hardart Co., CA 2-1971, 76 LRRM 2443)	The company and the second union contended that the case was governed by the Board's decision in Raley's, Inc., in which the Board deferred to an arbitration award holding that certain employees involved in a representation proceeding were covered by an existing contract. (See above.) But the Board distinguished the two cases. Although the petitioning union was not represented at the arbitration hearing in Raley's, its position was identical to that of the employer, and the employer vigorously asserted the position in the arbitration proceeding. For a decision in line with the reasoning in Horn & Hardart, see Warm Springs Lumber Co., NLRB-1970, 73 LRRM 1429. The Board noted that the issue involved--an interpretation of a certification--was "uniquely suited to Board determination." (Horn & Hardart Co., NLRB-1969, 69 LRRM 1522)
	The NLRB did not abuse its discretion by refusing to defer to arbitration in a case involving an employer's unilateral establishment of a new job classification. The controversy was not clearly a question of contract interpretation, the court states, since the new classification was not mentioned in the contract. The court upheld the Board's finding that the employer violated the Taft-Hartley bargaining obligation. (Office and Professional Employees v. NLRB, CA DC-1969, 70 LRRM 3047)	On the facts of the case, the court stated, it could not upset the Board's assertion of jurisdiction even assuming it applied the standard suggested by NLRB Member Brown for giving greater deference in all cases in which the contract is likely to settle the matter. In another later case, the NLRB refused to defer to arbitration on a charge that a company violated its Taft-Hartley bargaining duty by establishing new job classifications unilaterally. The Board said that the complaint alleged an unfair labor practice based on the unilateral action; the parties deliberately refrained from submitting this basic issue to arbitration; and they indicated that, in their view, the issue was an appropriate one for determination by the Board. (Zenith Radio Corp., NLRB-1969, 71 LRRM 1555)
	In one of the first major decisions in which the new Chairman Miller participated, a majority of the NLRB held that a company did not violate the Act by refusing to arbitrate grievances filed during the interval between contracts, even though both the old and the new contracts contained grievance-arbitration procedures. There were three opinions. The principal	The majority opinion stressed the consensual nature of arbitration and a disinclination to compel it once the contract has expired. In dissenting, McCulloch emphasized the national labor policy favoring arbitration as a method of resolving labor disputes.

ARBITRATION ENFORCEMENT CASES – Contd.

Issue	Holding	Comment
Arbitrability: Jurisdiction-- Contd.		
NLRB Jurisdiction: Honoring Award-- Contd.	opinion was signed by Chairman Miller and Member Jenkins. There was concurring opinion by Member Brown, and a dissenting opinion by Member McCulloch. Member Fanning did not participate. (Hilton-Davis Chemical Co., NLRB-1970, 75 LRRM 1036)	
NLRB Jurisdiction: Honoring NLRB Decision	An order staying arbitration of a discharge grievance was affirmed by the New York State Court of Appeals on the basis of a finding that the underlying issue already had been determined adversely to the grievant in an NLRB unfair practice case. (In re Buchholz, NY CtApp-1965, 58 LRRM 2462)	In a similar holding, a lower New York court stayed an arbitration proceeding pending an NLRB decision on the validity of the union contract. The NLRB proceeding was based on a charge that the contract was negotiated by a minority union. (In re Vera Ladies Belt & Novelty Co., NY SupCt-1965, 58 LRRM 2544)
NLRB Jurisdiction: Interpretation of Contract	The NLRB has jurisdiction in an unfair-labor-practice case to require an employer to furnish a union with information concerning the removal of machinery and equipment from the employer's plant, even though the removal was the subject of grievances filed by the union and the contract contained a clause providing for binding arbitration of grievances filed by the union. (NLRB v. Acme Industrial Co., US SupCt-1967, 64 LRRM 2069)	In support of its holding, the Court said that in requiring the employer to furnish the information, the NLRB was not making a binding interpretation of the contract. It was only acting upon the probability that the requested information was relevant and would be of use to the union in carrying out its statutory duties and responsibilities.
	In deciding whether an employer violated his Taft-Hartley bargaining duty by unilaterally instituting a premium pay plan, the NLRB had jurisdiction to interpret the collective bargaining contract to the extent necessary to determine whether the union had given up its right to bargain about the plan. The Board was not divested of its jurisdiction to entertain the unfair-practice charge by a provision in the contract that "arguably" permitted the employer to institute the premium-pay plan. (NLRB v. C & C Plywood Corp., US SupCt-1967, 64 LRRM 2065)	In this case, the contract contained no binding arbitration clause. So the Court stated that the NLRB's action in no way was inconsistent with the policy favoring arbitration of contract disputes.
Procedural Arbitrability	Although the question whether the parties are obligated to submit the subject matter of a dispute to arbitration is for the court to decide, questions of procedural arbitrability, such as whether the parties have exhausted the preliminary steps of the grievance procedure, should be left for the arbitrator to resolve. (John Wiley & Sons v. Livingston, US SupCt-1964, 55 LRRM 2769)	The Court said that such issues of procedural arbitrability are so intertwined with the merits of a dispute that their reservation for determination by the courts would create problems of separating related issues and duplication of effort. The case also involved an issue as to survival of grievances, which is discussed below under "Survival of Rights." The decision affirmed a holding by the U.S. Court of Appeals at New York. (Livingston v. John Wiley & Sons, CA 2-1963, 52 LRRM 2223)

ARBITRATION ENFORCEMENT CASES - Contd.

Issue	Holding	Comment
Arbitrability: Jurisdiction--Contd.		
Strikes: Effect on Arbitration	A work stoppage in violation of a no-strike clause in the union contract does not necessarily give the employer the right to refuse to arbitrate the grievance that prompted the stoppage. The operation of the grievance-arbitration provisions of the contract is not contingent upon the union's observance of the no-strike pledge. It is immaterial that the company may not file a grievance over the no-strike breach; it may sue for damages in a federal district court. (Packinghouse Workers v. Needham Packing Co., US SupCt-1964, 55 LRRM 2580)	The Court made clear, however, that it was not deciding whether "a fundamental and long-lasting change" in the relationship between the parties prior to a demand for arbitration would justify a refusal to arbitrate. The present decision reversed a holding by the Supreme Court of Iowa. (Packinghouse Workers v. Needham Co., Iowa SupCt-1963, 52 LRRM 2336) In the ensuing arbitration, the arbitrator sustained the grievance as to reinstatement of the strikers, but reduced the back pay. (Needham Packing Co., Inc., Davey, 1965, 44 LA 1057) A state district court in Iowa issued a judgment enforcing the award, but this judgment was reversed by the Iowa Supreme Court, which found that the arbitrator had exceeded his authority in ordering the reinstatement of the strikers, since the alleged oral agreement by company to reinstate the strikers was not a part of the contract and so was not subject to its arbitration provisions. (Local 721, Packinghouse Workers v. Needham Packing Co., Iowa SupCt-1967, 65 LRRM 2498) The U. S. Supreme Court later denied review of the case. (Packinghouse Workers, Local 721 v. Needham Packing Co., US SupCt-1967, 66 LRRM 2308)
	A union did not waive its right to arbitration of a dispute concerning a plant closure by striking in violation of a no-strike clause in its contract with the employer. But the dispute to be resolved by the arbitrator should include the employer's counterclaim that the union violated the no-strike clause in the contract. The decision was by a three-judge panel, with one judge dissenting. (Ice Cream Drivers v. Borden, Inc., CA 2-1970, 75 LRRM 2481)	The majority of the court invoked the Boys Markets holding on injunctions against strikes in violation of no-strike clauses. (See below under "Injunction against Strike-- No-Strike Clause.") But the dissent did not consider Boys Markets pertinent.
Subcontracting: Bargaining History	A union's strike over a pending grievance, regardless of whether the strike violated a no-strike contract, did not constitute an election of remedies so as to bar arbitration of the grievance. The contract in no way expressly conditions arbitration upon there having been no strike over the grievance, and no such condition legitimately may be read into the contract. (IUE v. General Electric Co., CA 2-1964, 56 LRRM 2289)	The case also involved issues relating to NLRB jurisdiction, discussed above, and arbitrability, discussed below. It was denied review by the U. S. Supreme Court. (General Electric Co. v. IUE, US SupCt-1964, 57 LRRM 2608)
	A union's grievance protesting a subcontract as a violation of the recognition, job description, and seniority provisions of the contract is arbitrable under a clause providing for arbitration	Chief Judge Lumbard dissented from this part of the decision. The case also involved issues relating to NLRB jurisdiction and the violation of a no-strike clause; these are discussed above.

ARBITRATION ENFORCEMENT CASES - Contd.

Issue	Holding	Comment
Arbitrability: Jurisdiction--Contd.		
Subcontracting: Bargaining History--Contd.	of disputes over the "interpretation or application" of contract. A purpose to exclude subcontracting disputes from arbitration is not shown by a clause barring bargaining during the contract term of issues that were or could have been subject to prior negotiation and a bargaining history indicating that the union's efforts to obtain a clause limiting subcontracting were unsuccessful. (IUE v. Gen'l. Elec. Co., CA 2-1964, 56 LRRM 2289)	The decision was denied review by the U. S. Supreme Court. (General Electric Co. v. IUE, US SupCt-1964, 57 LRRM 2608)
	The mere allegation that the agreement has been violated does not automatically entitle the union to arbitration of a subcontracting grievance under a clause providing for arbitration of "alleged violations" of the agreement. No provision expressly covers subcontracting, even though the parties did not bargain on it, and the contract specifies that the company will bargain on matters not covered by the contract, but may refuse to arbitrate any such matter. The bargaining history properly may be considered by the court in determining whether the union's grievance involves a violation of the contract so as to bring it within the arbitration clause. (Petroleum Workers v. American Oil Co., CA 7-1963, 54 LRRM 2598)	The judgment was affirmed by the U. S. Supreme Court by an equally divided Court, with Justice Goldberg not participating. There was no opinion. (Petroleum Workers v. American Oil Co., US SupCt-1964, 57 LRRM 2512) This left a division among the circuits on whether a court may consider the bargaining history in determining arbitrability. The Ninth Circuit has agreed with the Seventh that the bargaining history may be considered. (Communications Workers v. Telephone Co., CA 9-1964, 57 LRRM 2203) The Second, Third, and Fourth Circuits, however, have held the other way. (IUE v. Gen'l. Elec. Co., CA 2-1964, 56 LRRM 2289; Ass'n of Westinghouse Employees v. Westinghouse Elec. Corp., CA 3-1960, 46 LRRM 3084; A. S. Abell Co. v. Typographical Union, CA 4-1964, 57 LRRM 2480)
Survival of Rights	The disappearance of a corporate employer by merger does not automatically terminate all rights under a union contract entered into by the employer before the merger. In appropriate circumstances, the successor employer may be required to arbitrate grievances under the contract. The Court also ruled that the fact that the contract has expired does not defeat the arbitrability of the grievances--even those based on rights claimed after the expiration of the contract; had there been no merger, the employer would have been required to discharge certain obligations notwithstanding the expiration of the contract. (John Wiley & Sons v. Livingston, US SupCt-1964, 55 LRRM 2769)	This case also involved issues of procedural arbitrability, which are discussed above. The decision affirmed a holding by the U. S. Court of Appeals at New York. (Livingston v. John Wiley & Sons, CA 2-1963, 52 LRRM 2223) In a later opinion, the U. S. Court of Appeals at New York refused to allow an arbitration clause to follow employees to a new company that had purchased the business of their former employer. Another union represented the employees of the purchasing company, and the NLRB had ruled that the former employees of the seller had been merged into the unit represented by that union. (McGuire v. Humble Oil & Refining Co., CA 2-1966, 61 LRRM 2410)
	A company that moves a plant to a new location may be required to arbitrate the question of the employment rights at the new plant even though (1) the new plant is a	In reversing, the Supreme Court cited its decisions in the John Wiley case and Steelworkers v. American Mfg. Co. (US SupCt-1960, 46 LRRM 2414). The Court of Appeals had

ARBITRATION ENFORCEMENT CASES – Contd.

Issue	Holding	Comment
Arbitrability: Jurisdiction--Contd.		
Survival of Rights--Contd.	considerable distance away; (2) the contract has expired. The decision was per curiam and reversed a holding by the U. S. Court of Appeals at Chicago. (Carpenters v. Kimball Co., US SupCt-1964, 57 LRRM 2628) See below under "Taft-Hartley Act: Unfair Labor Practice Cases" (Bargaining Obligation: Successor Employers) for discussion of NLRB rulings on obligations of successor employers.	considered the Wiley holding not applicable to the present case. (Piano Workers v. Kimball Co., CA 7-1964, 56 LRRM 2644)
	Seniority rights under a collective bargaining contract did not survive the expiration of the contract and the relocation of the plant. The decision expressly overrules the 1961 holding in the Glidden case. (Zdanok v. Glidden Co., CA 2-1961, 47 LRRM 2865) Remarking that "it is time Glidden be formally interred," the unanimous nine-judge court said: "We are persuaded that the majority opinion in the Glidden case was erroneous and that the erroneous reasoning led to an incorrect result." Judge Waterman, who was of the majority in the Glidden decision, observed in a concurring opinion that the "result reached there has received notoriously scant acceptance." He stated: "I am happy to join in the destruction of that precedent." (Local 1251, UAW v. Robertshaw Controls Co., CA 2-1968, 68 LRRM 2671)	In its opinion, the court noted that the Glidden decision provoked considerable law review comment, "most of it adverse." It added that the other federal circuits preferred to follow the contrary holding of the Court of Appeals at Cincinnati in the Ross Gear case. (Oddie v. Ross Gear and Tool Co., CA 6-1962, 68 LRRM 2671). Subsequently, the U. S. Court of Appeals at Cincinnati rejected an employee's claim that he had a property right in a job he had held for 30 years that survived a removal of plant operations to a location several hundred miles away. The employee relied on the Glidden decision, but the court pointed out that Glidden had been overruled. It also noted that the removal agreement terminated seniority rights of employees at the old location. (Charland v. Norge Division, Borg-Warner Corp., CA 6-1969, 70 LRRM 2705)
Arbitration: Procedure		
Fair Hearing	An arbitration award was vacated where the arbitrator ignored the testimony of a management witness, the reason given being that the witness should have been called while the company was presenting its "case in chief" and not later as a rebuttal witness. (Harvey Aluminum Co. v. Steelworkers, USDC CenCalif-1967, 64 LRRM 2580)	The court said that rules of evidence, as applied in court proceedings, have no place in arbitration proceedings if the result is to keep the arbitrator from considering relevant evidence.
Trilateral Arbitration	A federal district court had jurisdiction and power to order consolidation of two arbitration cases involving the competing work claims of two unions. (Columbia Broadcasting System v. American Recording and Broadcast Ass'n., CA 2-1969, 72 LRRM 2140)	A key element in the holding was the presence in both union contracts of broad arbitration clauses, permitting the company to submit a grievance to arbitration.

ARBITRATION ENFORCEMENT CASES – Contd.

Issue	Holding	Comment
Arbitration: Review of Award		
Implication of Past Practice	An arbitrator exceeded his authority in deciding that an employer's past practice of granting employees paid voting time of one hour on election day was continued during the current contract as an implied condition in view of the employer's failure to negotiate a contrary policy into the agreement. One member of the three-judge panel dissented. (The Torrington Co. v. Metal Products Workers, CA 2-1966, 62 LRRM 2495)	The appeals court decision upheld the vacation of the award by the U. S. District Court for Connecticut. (Torrington v. Metal Products Workers, USDC Conn-1965, 60 LRRM 2262)
Injunction Against Strike--No-Strike Clause	A federal district court was not barred by the Norris-LaGuardia Act from issuing a mandatory injunction to enforce an arbitration award directing two unions and their members to cease and desist from work stoppages in violation of a no-strike clause in a collective bargaining contract, since the controversy is outside the scope of the Act as not involving a "labor dispute." (New Orleans Steamship Assn. v. Local 1418, Longshore Workers, CA 5-1968, 67 LRRM 2430) The Supreme Court denied review of the holding. (Longshore Workers, ILA, Local 1418 v. New Orleans Steamship Assn., US SupCt-1968, 69 LRRM 2434)	The decision in this case was handed down prior to the Supreme Court's landmark Boys Markets decision. In Boys Markets, the Court held that the Norris-LaGuardia Act does not bar injunctive relief against a strike called by a union in violation of a no-strike clause in a collective bargaining contract where (1) the grievance leading to the strike was subject to arbitration under the contract, (2) the employer was ready to proceed with arbitration, and (3) the employer suffered irreparable injury from the union's breach of its no-strike obligation. (Boys Markets, Inc. v. Retail Clerks Union, Local 770, US SupCt–1970, 74 LRRM 2257) The decision overturned the Court's 1962 holding in the Sinclair Refining case. In Sinclair, the Court held that a no-strike clause could not be enforced by an injunction in a suit brought under Section 301 of the Taft-Hartley Act. (Sinclair Refining Co. v. Atkinson, US SupCt-1962, 50 LRRM 2420)
	An employer's suit to enforce arbitration award is an action for breach of contract and specific performance over which federal district court had jurisdiction under Section 301 of the Taft-Hartley Act. It is not an injunctive proceeding prohibited by the Norris-LaGuardia Act. (ILA Local 1291 v. Philadelphia Marine Trade Assn., CA 3-1966, 62 LRRM 2790) The court later upheld a federal district court decision holding the union in contempt of the order. (ILA Local 1291 v. Philadelphia Marine Trade Assn., CA 3-1966, 65 LRRM 2510)	This decision and a later one denying the union a jury trial in a proceeding in which it was held in contempt of the order enforcing the award were reversed by the Supreme Court on the ground of vagueness of the district court's order. (ILA Local 1291 v. Philadelphia Marine Trade Assn., US SupCt-1967, 66 LRRM 2433) The case was decided before the Supreme Court handed down its decision in Boys Markets, Inc. v. Retail Clerks Union, Local 770, supra.
	If a company asks a state court to enjoin a strike on the ground that it violates a no-strike clause, the union may insist that the case be transferred to the federal courts as stating a breach-of-contract claim under Section 301 of the Taft-Hartley Act. In so holding, however,	The unresolved issue in this case was whether the restrictions placed by the Norris-LaGuardia Act on the issuance of injunctions against strike applied to cases removed from state courts to federal district courts. In the Sinclair Refining case (see above), the Supreme Court held that

ARBITRATION ENFORCEMENT CASES – Contd.

Issue	Holding	Comment
Arbitration: Review of Award--Contd.		
Injunction Against Strike--No-Strike Clause--Contd.	the Supreme Court declined to say whether the usual federal rules against strike injunctions should apply in such a case. In a concurring opinion, Justices Stewart, Harlan, and Brennan suggested that when this question does come up, the Court will want to reconsider the "scope and continuing validity" of its ruling against orders enjoining breach-of-contract strikes. (Avco Corp. v. Aero Lodge 735, IAM, US SupCt-1968, 67 LRRM 2881)	the Norris-LaGuardia Act deprived federal courts of jurisdiction to issue injunctions against peaceful strikes. In line with the concurrence in the Avco case, the Supreme Court later reversed itself and held that federal district courts had jurisdiction, under certain circumstances, to enjoin strikes in violation of collective bargaining contracts. (Boys Markets v. Retail Clerks Union, Local 770, supra.)
Procedural Ruling	An arbitrator's dismissal of a discharge grievance as untimely filed barred subsequent resort to the federal courts on the substantive issues, according to a ruling by the U. S. Court of Appeals at Cincinnati. The court upheld dismissal of a damage action against an employer by an employee who was forced to resign. (Chambers v. Beaunit Corp., CA 6-1968, 69 LRRM 2732)	The arbitrator had dismissed the grievance without reaching the merits because it was filed well after the 10-day period specified in the contract's grievance procedure.
Wage-Dispute Award	An arbitration award in a wage dispute was reinstated by the U. S. Court of Appeals at New Orleans. A federal district court had vacated the award as beyond the scope of the arbitrator's authority. The employees involved were truck drivers, and the grievance was filed when the company changed the method of payment from a "day-rate" basis to an hourly and day-rate basis. (Textile Workers v. Paper Products, Inc., CA 5-1968, 69 LRRM 2578)	The appeals court said that the arbitrator did not modify any contract provision or the wage but "merely resolved the ambiguity concerning how the wage rates were intended to be applied" by looking to the practice of the parties following the execution of the contract; the contract was the source of the award.
Railroad Arbitration Act		
Expiration of Award: Effect	The work rules established under the law providing for compulsory arbitration of the work rules controversy on the railroads did not automatically expire at the end of the award period. The work rules are subject to change only in accordance with the procedure prescribed by the Railway Labor Act. Even prior to the expiration of the award, however, the carriers had a statutory duty to respond to notices of the unions and to begin bargaining about the rules to become effective upon expiration of the award. (Railroad Trainmen v. Akron & Barberton Belt Railroad Co., CA DC-1967, 65 LRRM 2229)	The decision affirmed that of a lower court on the question of the expiration of the work rules. But it reversed the holding of the lower court on the duty of the carriers to bargain about the rules to become effective upon the expiration of the award. (See Akron & Barberton Belt Railroad Co. v. Railroad Trainmen, USDC DC-1966, 61 LRRM 2451, 2642.) This case, along with others raising the same issue, was denied review by the Supreme Court. (Akron & Barberton Belt Railroad Co. v. Railroad Trainmen, US SupCt-1968, 67 LRRM 2385)

ARBITRATION ENFORCEMENT CASES – Contd.

Issue	Holding	Comment
Railroad Arbitration Act--Contd.		
Federal Preemption: State Full-Crew Laws	The 1963 Joint Resolution of Congress providing for arbitration of the diesel-fireman and crew-consist issues in the dispute between the nation's railroads and the railway brotherhoods did not preempt the state full-crew laws for railroads. The effect of the holding was to nullify the arbitration award of the diesel firemen and crew consists in all states with full-crew laws--said in the opinion to number 13. Justice Douglas dissented. (Locomotive Engineers v. Chicago, Rock Island & Pacific R. R. US SupCt-1966, 61 LRRM 2209) With Justice Douglas again dissenting, the Supreme Court later reversed a decision of a three-judge federal district court that had held unconstitutional two Arkansas laws setting minimum crew sizes on freight trains operating in the State. In its opinion, the Supreme Court noted that it had upheld the constitutionality of these laws in the past and that the voters of Arkansas defeated a 1958 referendum proposal to repeal them. (Locomotive Firemen v. Railroad Co., US SupCt-1968, 69 LRRM 2625)	In earlier litigation, a federal district court and the U. S. Court of Appeals for the District of Columbia rejected challenges by the brotherhoods to both the legality of the award and the constitutionality of the arbitration statute. The Supreme Court denied review. (Locomotive Firemen v. Certain Carriers, USDC DC-1964, CA DC-1964, 55 LRRM 2089, 2517, US SupCt-1964, 56 LRRM 2064)

MAJOR LABOR-LAW PRINCIPLES ESTABLISHED BY THE NLRB AND THE COURTS

(December 1964 – February 1971)

EQUAL EMPLOYMENT OPPORTUNITY CASES

Issue	Holding	Comment
Civil Rights Act, Title VII: Procedures		
Attorney's Fees	A federal district court that found no unlawful pattern or practice of job discrimination on the basis of race in an action brought by the Attorney General under Title VII holds that the United States may be liable for costs and attorneys' fees of the company and unions charged with violations of the Act. However, the court reserved final action on the matter until the appellate procedures have been exhausted. (U. S. v. Jacksonville Terminal Co., USDC MFla-1970, 2 FEP Cases 610, 611) In a case in which violations were found, a federal district court in Louisiana awarded Negro employees who brought a successful class action under Title VII costs plus $20,000 in attorneys' fees. It gave consideration to the time and work required and the novelty of the action. (Clark v. American Marine Corp., USDC Ela-1970, 2 FEP Cases 670)	The court pointed out that the general statutory prohibition against the award of attorneys' fees against the United States is not applicable, since Title VII specifically states that such an award may be made in the discretion of the court.
Class Actions	Persons charging unlawful job discrimination may bring a class action under Title VII of the Civil Rights Act, and it is not necessary for each member of the class to have filed a charge with the Equal Employment Opportunity Commission. On this ground, the court reinstated as plaintiffs several Negroes who had been eliminated from the action because they had not sought relief through EEOC. Participation by the class members is limited, however, to those issues that may be raised by the Negro employee who did file a charge with EEOC, the court said. (Oatis v. Crown Zellerbach Corp., CA 5-1968, 68 LRRM 2782; 1 FEP Cases 328)	Prior to this decision, the use of the class action in Title VII cases appeared to have been firmly established. (See Jenkins v. United Gas Corp., CA 5-1968, 69 LRRM 2152; 1 FEP Cases 364.) A number of courts, however, had declined to permit an applicant for employment to represent a class including present employees. (See, for example, Johnson v. Georgia Highway Express, Inc., USDC NGa-1968, 70 LRRM 2664; 1 FEP Cases 637; Russell v. Alpha Portland Cement Corp., USDC WAla-1968, 69 LRRM 2256; 1 FEP Cases 386.)
Conciliation by EEOC	Conciliation efforts by the Equal Employment Opportunity Commission are not a jurisdictional prerequisite to the maintenance of a Title VII suit by an aggrieved individual. The Act merely requires that the Commission have an opportunity to persuade the employer before the action can be brought. This rule was laid down in three cases decided by the U. S. Court of Appeals at Richmond that later were denied review by the Supreme Court. (Gaston County Dyeing Machine Co. v. Brown, CA 4-1968, 70 LRRM 3065; 1 FEP Cases 702; cert denied by US SupCt-1969, 70 LRRM 3062; 1 FEP Cases 699; Observer Transportation Co. v. Lee, CA 4-1968, 70 LRRM 3065; 1 FEP Cases 702; cert denied by US Sup	Similar decisions have been handed down by the U. S. Courts of Appeals at Philadelphia, New Orleans, and Chicago. (IBEW v. EEOC, CA 3-1968, 68 LRRM 2939; 1 FEP Cases 335; Dent v. St. Louis-San Francisco Ry., CA 5-1969, 70 LRRM 2284; 1 FEP Cases 583; Choate v. Caterpillar Tractor Co., CA 7-1968, 69 LRRM 2486; 1 FEP Cases 431. In two earlier cases, also denied review by the Supreme Court, the U. S. Court of Appeals at Richmond held that the filing of a charge with EEOC is a prerequisite to bringing a suit under Title VII. (Stebbins v. Nationwide Mutual Insurance Co., CA 4-1967, 66 LRRM 2133; 1 FEP Cases 235; cert. denied by US

EQUAL EMPLOYMENT OPPORTUNITY CASES – Contd.

Issue	Holding	Comment
Civil Rights Act, Title VII: Procedures--Contd.		
Concilliation by EEOC -- Contd.	Ct-1969, 70 LRRM 3062; 1 FEP Cases 699; Pilot Freight Carriers, Inc. v. Walker, CA 4-1968, 69 LRRM 2916; 1 FEP Cases 456; cert denied by US SupCt-1969, 70 LRRM 3062; 2 FEP Cases 699.)	SupCt-1968, 68 LRRM 2899; 1 FEP Cases 300; Mickel v. South Carolina State Employment Service, CA 4-1967, 65 LRRM 2328; 1 FEP Cases 182; cert denied by US SupCt-1967, 67 LRRM 2898; 1 FEP Cases 300.
Finding of Reasonable Cause	A finding by the Equal Employment Opportunity Commission of "reasonable cause" to believe a violation of Title VII has been committed is not a prerequisite to an action in a court by the alleged victim of unlawful discrimination. A federal district court had dismissed the action on the ground that the finding of no "reasonable cause" precluded it from hearing the case. In reversing, the U.S. Court of Appeals at Philadelphia examined the legislative history of the Act and concluded that "good reason and fealty to the spirit and purpose of the Act command that we do not require an affirmative finding by the Commission as a passport for judicial review." (Fekete v. U.S. Steel Corp., CA 3-1970, 2 FEP Cases 540)	The lower courts have divided on the issue. For decisions holding that a finding of "reasonable cause" is a prerequisite to a suit, see Chavez v. Rust Tractor Co., USDC-NM-1969, 2 FEP Cases 339; Fekete v. U.S. Steel Corp., USDC WPa-1969, 2 FEP Cases 104. For decisions holding that such a finding is not a prerequisite to a suit, see Aiken v. New York Times, USDC SNY-1969, 2 FEP Cases 64; Ross v. Continental Telephone Service, USDC NM-1969, 2 FEP Cases 356. In a case drawing on earlier civil-rights legislation, the U.S. Court of Appeals at Chicago held that a Negro former employee and a Negro job applicant could maintain an action against a union for allegedly assisting in the maintenance of a racially discriminatory hiring system, even though the aggrieved persons did not file a charge against the union with the EEOC. The action could be maintained under the Civil Rights Act of 1866, as amended, the court said. (Waters v. Wisconsin Steel Works and the United Order of American Bricklayers and Stone Masons, Local 21, CA 7-1970, 2 FEP Cases 574) The Supreme Court later denied review of the case. (Wisconsin Steel Works of International Harvester Co. v. Waters, US SupCt-1970, 2 FEP Cases 1059)
Limitation of Actions: Continuing Violation	Charges were timely filed by a group of laid-off female employees, even though the layoffs occurred more than 90 days before the charges were filed, since the charges alleged that the alleged layoffs were "continuing." (Cox v. U.S. Gypsum, CA 7-1969, 70 LRRM 3278; 1 FEP Cases 714)	The court also noted that the recent hiring of new employees suggested discriminatory recalls.
Limitation of Actions: Filing of Grievance	The filing of a grievance protesting denial of a promotion tolls the 90-day statute of limitations on the filing of a charge under Title VII with the Equal Employment Opportunity Commission. The Court found no inconsistency between its holding and that of other courts that the exhaustion of contract grievance procedures is not a prerequisite to the filing of a charge with EEOC. (See below under "Preemption: Contract Remedies".) (Culpepper v. Reynolds Metals Co., CA 5-1970, 2 FEP Cases 377)	A lower court had dismissed the action, since the charge was not filed with the EEOC within the prescribed 90 days. But the appeals court stated that an employee should not be penalized for trying to reach a private settlement without litigation.

EQUAL EMPLOYMENT OPPORTUNITY CASES - Contd.

Issue	Holding	Comment
Civil Rights Act, Title VII: Procedures -- Contd.		
Limitations of Actions: Futility of Charge	An employer and racially separate unions were not entitled to summary judgment in an action under Title VII by an injured Negro longshoreman, although a federal district court had granted such judgment. The district court had held that the longshoreman was not a person aggrieved under Title VII because he had not filed his charge with the EEOC within 90 days of the last time he applied for work. The appellate court noted that the longshoreman testified that he was physically capable of performing only certain light jobs that were reserved exclusively for white workers, and that it would have been futile to have applied for these jobs within the 90-day period. Such testimony created disputed issues of material fact, the appeals court stated. (Boudreaux v. Baton Rouge Marine Co., CA 5-1971, 3 FEP Cases 99)	In a footnote, the appeals court questioned whether the 90-day requirement is a jurisdictional prerequisite to a Title VII action. The 90-day requirement, seems to be directed toward ensuring that the EEOC expend its conciliation resources only on alleged unlawful employment practices that are reasonably current.
Prior Resort to State Agency	An Arizona Negro job applicant's action under Title VII of the Act was ordered dismissed by the U. S. Court of Appeals at San Francisco because the applicant filed a charge directly with the EEOC without first going to the Arizona Civil Rights Commission. The applicant had relied upon advice by the EEOC's General Counsel that the Arizona Commission lacked authority "to grant or seek relief" within the meaning of Section 706(b) of the Act, since it could not enforce a cease-and-desist order unless a respondent already had been served with a cease-and-desist order involving a prior violation. The court disagreed, stating that the "relief" mentioned in the Act refers to what the state agency may seek and not to what the state courts may grant. (Crosslin v. Mountain States T & T Co., CA 9-1970, 2 FEP Cases 480) The Supreme Court later vacated the order of the appeals court dismissing the action and remanded the case. (Crosslin v. Mountain States Telephone Co., US SupCt-1971, 3 FEP Cases 70)	The Arizona Commission not only seeks relief in precisely the same fashion as the EEOC does, the appeals court observed, but it seeks precisely the same relief as well--the elimination of the unlawful practice by "conference, conciliation, and persuasion." The Supreme Court did not disturb the finding as to the status of the Arizona Commission, although dissenting Justice Douglas would have granted review on the point. It remanded the case to the district court for consideration of the position advanced by the Solicitor General that the court should retain jurisdiction for a period sufficient to allow the individual bringing the charge to go before the State Commission. It added that it was expressing no opinion as to the merits of the Solicitor General's position.
	An employee who alleged that he was discriminated against in employment because he is a Negro, who filed a charge with the Colorado Civil Rights Commission, and who later filed a charge with the EEOC more than 30 days after the termination of proceedings before the Colorado Commission, failed to comply with the time limitation set forth in Section 706(d) of Title VII. So the EEOC and a federal district court did not have jurisdiction	On February 22, 1971, the Supreme Court granted review of this case. Contending that the decision of the appeals court would affect more than a quarter of the charges filed with it each year, the EEOC stated the issue as follows: "The question presented is whether a district court is without jurisdiction to entertain a suit alleging racial discrimination in employment in violation of Title VII because the EEOC, after receiving a written

EQUAL EMPLOYMENT OPPORTUNITY CASES – Contd.

Issue	Holding	Comment
Civil Rights Act, Title VII: Procedures -- Contd.		
Prior Resort to State Agency -- Contd.	to act on his claim. (Love v. Pullman Co., CA 10-1969, 2 FEP Cases 141)	charge from the complainant, referring it to the appropriate state employment practices commission and waiting until that agency had terminated its jurisdiction, investigated the original charge without immediately obtaining an additional written charge or authorization from the complainant."
Civil Rights Act, Title VII: Substantive Rulings		
Ability Tests	An employer violated Title VII by requiring a high-school education or passing a standardized general intelligence test as a condition of employment in or transfer to jobs where (1) neither requirement is shown to be significantly related to successful job performance, (2) both requirements operate to disqualify Negro applicants at a substantially higher rate than white applicants, and (3) jobs in question formerly had been filled only by white employees as part of a long-standing practice of giving preference to whites. Section 703 (h) of the Act permits only intelligence tests that are job-related. (Griggs v. Duke Power Co., US SupCt-1971, 3 FEP Cases 175) The decision reversed that of the U.S. Court of Appeals for the Fourth Circuit. (Griggs v. Duke Power Co., CA 4-1970, 2 FEP Cases 310)	In 1955, nine years before adoption of the Act, the company established a requirement of a high-school education or its equivalent for all employees except those in its labor department. It later amended the promotion and transfer requirements by providing that an employee who was on the payroll prior to September 1, 1965, and who did not have a high-school education or its equivalent could become eligible for transfer or promotion by passing the Wonderlich general intelligence test and the Bennett Mechanical AA general mechanical test with scores equivalent to those achieved by the average high-school graduate. The Negroes who filed the suit admitted that the company has abandoned its policy of restricting Negroes to the labor department. But they contended that the education and testing requirements preserve and continue the effects of past discrimination, thus violating Title VII.
Arrest Record: Use in Hiring	An employer violated Title VII by refusing to hire a Negro job applicant because he had been arrested "on a number of occasions" for offenses other than minor traffic violations. Negroes, the court stated, are arrested substantially more frequently than whites. So any policy that disqualifies prospective employees because they have been arrested once, or more than once, discriminates against Negro applicants in violation of Title VII. The discrimination exists even though the policy is applied objectively and fairly as between applicants of various races. (Gregory v. Litton Systems, Inc., USDC CenCalif-1970, 2 FEP Cases 821)	The court granted the Negro both damages and injunctive relief. It awarded compensatory damages of $4,400 as the difference between what he has earned since the company's offer of employment was withdrawn and what he would have earned if he had been employed by the company. It also ordered the company to pay the Negro's attorney a fee of $5,000.

EQUAL EMPLOYMENT OPPORTUNITY CASES - Contd.

Issue	Holding	Comment
Civil Rights Act, Title VII: Substantive Rulings--Contd.		
Past Discrimination: Affirmative Relief	Section 703(j) of Title VII, which forbids "preferential treatment" solely because of racial imbalance, must be read in conjunction with the fundamental purposes of the Act and the provision for affirmative relief. So Section 703(j) "cannot be construed as a ban on affirmative relief against continuation of effects of past discrimination resulting from present practices (neutral on their face) which have the practical effect of continuing past injustices. Any other interpretation would allow complete nullification of the stated purposes" of the Act. Following this reasoning, the U. S. Court of Appeals for the Sixth Circuit reversed a federal district court's refusal to order affirmative relief in a pattern-or-practice action brought by the U. S. Attorney General against a union. (U. S. v. IBEW, Local 38, CA 6-1970, 2 FEP Cases 716)	The appeals court noted that continued discrimination could result from such past practices as a limitation of new apprentices to relatives of the all-white membership of a union or limitation of membership to persons who had previous experience under the union contract, while such experience was racially limited to whites. The Supreme Court later denied review of the appeals court's decision. (IBEW Local 38 v. U. S., US SupCt-1970, 2 FEP Cases 1121)
Past Discrimination: Seniority System	A federal district court was warranted in restraining a union's admitted discrimination in union membership and employment referrals, where the union limited membership to persons with four years of experience as "improver" members of union, restricted "improver" membership to sons or close relatives of present members, and refused to refer Negroes and Mexican-Americans for employment. The court properly ordered the union to admit four persons to membership, to refer nine others for employment, and to alternate white and Negro referrals until objective membership criteria are developed. (Local 53, International Association of Heat and Frost Insulators and Asbestos Workers v. Vogler, CA 5-1969, 70 LRRM 2257; 1 FEP Cases 577)	Where necessary to insure compliance with the Act, the court said, the district court was fully empowered to eliminate the present effects of past discrimination. This case was a leading one on the authority of the courts to order affirmative action to eliminate the present effects of past discrimination. In support of the holding it cited the following: United States v. Local 189, Papermakers & Paperworkers, USDC ELa-1968, 67 LRRM 2912 (See below for further discussion of this case); Quarles v. Philip Morris, Inc., USDC EVa-1968, 67 LRRM 2098; 1 FEP Cases 260.) But there have been other cases in which courts have refused to order affirmative action to relieve present effects of discrimination that occurred prior to the effective date of the Act. (See Dobbins v. Local 212, IBEW, USDC SOhio-1968, 69 LRRM 2313; 1 FEP Cases 387.)
	A seniority system based on job seniority, as opposed to mill seniority, violates Title VII where the employer had maintained racially segregated lines of progression and labor pools, since the reliance on job seniority cuts into the employees' present right not to be discriminated against on the basis of race. By having future employment conditioned upon previously determined racial status, Negro employees will lose promotions that, but for their race, they would have won, even though standard may be neutral on its face. (Local 189 Paper-	The appeals court decision was upon review of a permanent injunction granted by a district court in the case. (U. S. v. Local 189 Papermakers & Paperworkers, USDC ELa-1969, 71 LRRM 2738, 1 FEP Cases 820) The same court earlier had granted a preliminary injunction in the case. (U. S. v. Local 189, Papermakers & Paperworkers, USDC ELa-1968, 67 LRRM 2912) In a subsequent proceeding involving the Papermakers and Crown Zellerbach, the district court directed, the successful plaintiffs to draft an order embodying the following points:

EQUAL EMPLOYMENT OPPORTUNITY CASES – Contd.

Issue	Holding	Comment
Civil Rights Act, Title VII: Substantive Rulings -- Contd.		
Past Discrimination: Seniority System--Contd.	makers & Paperworkers v. U. S., CA 5-1969, 1 FEP Cases 875) The Supreme Court later denied review of the case. (Local 189 Papermakers & Paperworkers v. U. S., US SupCt-1970, 2 FEP Cases 426)	● The company's use of its testing program for new hires is permanently enjoined, and no new program may be substituted unless it first is demonstrated to the court that the program has been validated in accordance with principles set out in the EEOC's guidelines on testing. Negroes who have failed the test requirement may not be excluded from jobs held by white employees who were not subjected to the tests. ● The separate progression lines in departments may be maintained, but Negroes affected by the past discrimination must be offered vacancies in the formerly white-only jobs in order of their seniority and in preference to any other employee in the plant. ● Employees who are assigned to previously black-only jobs may transfer to the entry-level job in formerly white-only lines of progression without reduction in their current wage level. (Hicks v. Crown Zellerbach Corp., USDC ELa-1970, 2 FEP Cases 1059)
	A complete revamping of the seniority and transfer system was ordered by a federal district court in an action brought by the U. S. Attorney General against Continental Can Company and Local 12146 of District 50. The company and the union were charged with a "pattern or practice" of discrimination based on race. The company was permanently enjoined from discriminating against employees or job applicants on the basis of race. (U. S. v. Continental Can Co., USDC EVa-1970, 2 FEP Cases 1044)	The lengthy order issued by the court required, among other things, that Negroes affected by past discrimination shall be given the right to elect to transfer to jobs in formerly all-white departments on a "continuing" basis or a "vacancy-by-vacancy" basis by signing an appropriate form to be supplied by the company.
	In a similar case, the U. S. Court of Appeals at St. Louis issued a broad remedial order directing the local unions to take a number of steps, including opening hiring halls to qualified Negroes, modifying experience requirements for otherwise qualified Negroes, modifying the journeyman's examination procedure, and adjusting initiation fees. (U. S. v. Sheet Metal Workers, CA 8-1969, 2 FEP Cases 127)	In a case that arose in Ohio, the Ohio Supreme Court held that the low bidder on a contract for work on an Ohio college campus was properly denied the contract for failure to give unequivocal assurance of an affirmative action program for employment of Negroes conforming to the requirements of Title VII, Executive Order 11246, and the Ohio Gubernatorial Executive Order. The court said the requirement is a reasonable requirement of the bid and does not constitute a guarantee of Negro employment so as to violate Title VII. (Weiner v. Cuyahoga Community College District, Ohio SupCt-1969, 2 FEP Cases 30) The U. S. Supreme Court later denied review of the case. (Weiner v. Cuyahoga Community College District, US SupCt-1970, 2 FEP

EQUAL EMPLOYMENT OPPORTUNITY CASES - Contd.

Issue	Holding	Comment
Civil Rights Act, Title VII: Substantive Rulings--Contd.		
Past Discrimination: Seniority System--Contd.		Cases 337) For a district court decision upholding the U.S. Labor Department's revised Philadelphia Plan for minority-group employment on federally financed construction, see Contractors Assn. of Eastern Pa. v. Shultz, USDC EPa-1970, 2 FEP Cases 472. This case is pending on appeal before the U.S. Court of Appeals for the Third Circuit.
Pattern or Practice Actions	In action by U. S. Attorney General under Section 707 of Civil Rights Act, the establishment of an unrestricted plant-wide seniority and bidding plan was held not appropriate, notwithstanding the contention that such a plan is needed to compensate Negro employees for past discrimination and to achieve a more proportionate racial balance. Under the facts and the legislative history of the Act, the court said, the proposed remedy is not justified. There are substantial opportunities for upward and horizontal mobility, there are significant differences between the departments to which bidding presently is limited, and the employees whom the Attorney General intended to benefit often have declined available progression opportunities in the past. (U.S. v. H.K. Porter Co., USDC NAla-1968, 70 LRRM 2131; 1 FEP Cases 515)	In another pattern or practice case involving a union, the court entered judgment for the Attorney General. It found that the evidence, including that relating to discrimination by the union prior to the effective date of the Act, justified an order in favor of the Attorney General. But the court did not require the union, which was all-white as a result of pre-Act discrimination against Negroes, to take affirmative action to relieve the present-day result of pre-Act discrimination, since that would constitute the granting of unlawful preferential treatment to Negroes. (Dobbins v. Local 212, IBEW, USDC SOhio - 1968, 69 LRRM 2313; 1 FEP Cases 387) (For a broad order in a pattern-or-practice case, see U.S. v. Medical Society of South Carolina, USDC SC-1969, 71 LRRM 2057; 1 FEP Cases 725.)
	A federal district court erred in denying a preliminary injunction sought by the Attorney General in a pattern-or-practice action brought against an employer charged with racial discrimination in hiring, transfer, and promotion. The lower court answered the wrong question in deciding the issue, according to the appeals court. Shortly after the action was filed, the company was awarded a government contract that resulted in a substantial increase in its work force. So the company and the union negotiated a new agreement that loosened transfer procedures somewhat in favor of Negro employees. The lower court denied the injunction largely because it concluded that the new transfer program did not violate Title VII. But the appeals court said that the question was whether the fact that the new union contract and the transfer program partially corrected violations shown by the Attorney General negated the need for the injunction. It decided that it did not, finding that the Attorney General should prevail on the merits. (U.S. v. Hayes International Corp., CA 5-1969, 2 FEP Cases 67)	In holding that the injunction should have been issued, the appeals court said: "We take the position that in such a case, irreparable injury should be presumed from the very fact that the statute has been violated. Whenever a qualified Negro employee is discriminatorily denied a chance to fill a position for which he is qualified and has the seniority to obtain, he suffers irreparable injury and so does the labor force of the country as a whole."

EQUAL EMPLOYMENT OPPORTUNITY CASES - Contd.

Issue	Holding	Comment
Civil Rights Act, Title VII: Substantive Rulings--Contd.		
Pattern or Practice Actions--Contd.	Finding a pattern and practice of discrimination against Negroes in violation of Title VII, the U.S. Court of Appeals at St. Louis fashioned a broad order designed to eliminate the past violations. The court ordered the local unions involved to modify referral systems to permit Negroes who are reasonably qualified to register for employment at the locals' hiring halls and to be placed in the highest groups for which they qualify. They also are ordered to modify experience requirements for Negroes otherwise qualified and to take reasonable steps to publicize to the Negro community that all persons now are permitted to use the referral system. One local also is ordered to modify its journeyman's examination procedure so that the examination is objective in nature, is designed to test the ability of the applicant to perform journeyman's work, and is given and graded in such a manner as to permit review. (U.S. v. Sheet Metal Workers, CA 8-1969, 2 FEP Cases 128)	In its decision, the appeals court reversed a federal district court holding and rejected a contention that the government is required to prove specific instances of discrimination after the effective date of the Act.
Preemption: Contract Remedies	Contractual grievance procedures need not be exhausted before a charge is filed with the Equal Employment Opportunity Commission under Title VII of the Act. Nor need contract procedures be exhausted before an employee files an action in court for injunctive relief and damages under Title VII. (King v. Georgia Power Co., USDC NGa-1968, 69 LRRM 2094, 1 FEP Cases 357; Culpepper v. Reynolds Metals Co., USDC NGa-1968, 70 LRRM 2360, 1 FEP Cases 590) Also see Bowe v. Colgate Palmolive Co., CA 7-1969, 2 FEP Cases 121, in which it was held that a party may pursue both contractual and statutory remedies, but must elect a remedy after adjudication to preclude duplicate relief.	In a non-Title VII case, the Supreme Court previously had held that Negro and white employees could maintain an action for an injunction and damages against a railroad and a union for their refusal to promote them because of alleged racial discrimination, even though the employees had failed to exhaust their remedies under the contract, the union constitution, and the Railway Labor Act. The employees alleged that the refusal to promote violated the contract and the union's duty of fair representation. The court found that it would have been futile for employees to proceed with the contract and statutory remedies. (Glover v. St. Louis-San Francisco Ry., US SupCt-1969, 70 LRRM 2097)
Preemption: Contract Remedies -- Prior Arbitration	By seeking to obtain redress under the grievance-arbitration provisions of a collective bargaining contract for alleged racial discrimination in employment, an employee did not waive his right to a remedy in the federal courts under Title VII. Moreover, the statute of limitations on the Title VII action was tolled by the employee's pursuit of the contractual remedy. (Hutchings v. U.S. Industries, Inc., CA 5-1970, 2 FEP Cases 725) This decision was handed down only 15 days after the U. S. Court of Appeals for the Sixth Circuit had held the other way in a case involving alleged sex discrimination under Title VII. (Dewey v. Reynolds Metals Co., CA 6-1970, 2 FEP Cases 687)	The Dewey case was taken to the Supreme Court, and the Court granted review on January 18, 1971. The case also involves an issue of alleged religious discrimination under Title VII.

EQUAL EMPLOYMENT OPPORTUNITY CASES - Contd.

Issue	Holding	Comment
Civil Rights Act, Title VII: Substantive Rulings--Contd.		
Preemption: State Safety Laws	A state regulation limiting the lifting by female employees to 30 pounds was not a defense to an action by a female employee for damages and an injunction because she was denied a job as a switchman because she was a female. The court noted that EEOC had recognized certain state protective laws as bona fide occupational qualifications, but it agreed with the employee that the 30-pound limit was too inflexible and too low. (Weeks v. Southern Bell Telephone Co., CA 5-1969, 70 LRRM 2843, 1 FEP Cases 656) In a similar holding, the U.S. Court of Appeals at Chicago held that a limit of 35 pounds on weight to be lifted by female employees amounted to unlawful discrimination based on sex. (Bowe v. Colgate-Palmolive Co., CA 7-1969, 2 FEP Cases 121)	Section 703(e)(1) provides an exception to the prohibitions against discrimination based on religion, sex, or national origin where one of the three is a "bona fide occupational qualification." On this basis, state laws limiting hours or weights to be lifted by women have been asserted as defenses to Title VII discrimination charges. The courts have divided on the issue. (See Rosenfeld v. Southern Pacific Co., USDC CCalif-1968, 69 LRRM 2822, 1 FEP Cases 450, in which the court found that the state rules limiting hours and weights for female employees were preempted by Title VII and enjoined the employer from relying upon them to discriminate against female employees. Also see Mengelkoch v. Industrial Welfare Commission, USDC CCalif-1968, 68 LRRM 2277, 1 FEP Cases 314, in which the court held that such problems of interpretation of state laws should be resolved first by state courts.)
Preemption: Taft-Hartley Act	The jurisdiction of federal district courts in actions to enjoin or recover damages for racial discrimination in violation of Title VII is not preempted by either the Taft-Hartley Act or the Railway Labor Act. (See Local 53, International Association of Heat and Frost Insulators and Asbestos Workers v. Vogler, CA 5-1969, 70 LRRM 2257, 1 FEP Cases 577; King v. Georgia Power Co., USDC NGa-1968, 69 LRRM 2094, 1 FEP Cases 357; Dobbins v. Local 212, IBEW, USDC SOhio-1968, 69 LRRM 2313, 1 FEP Cases 387.) But see Norman v. Missouri Pacific R.R., USDC EArk-1968, 68 LRRM 2796, 1 FEP Cases 331, in which a federal district court was held not to have jurisdiction under Title VII of a suit alleging discrimination against Negro porters as compared with white brakemen. The court said the dispute should be resolved by the National Railroad Adjustment Board.	These decision have assumed added importance as a result of a holding by the U.S. Court of Appeals for the District of Columbia that racial discrimination in employment by an employer is unlawful interference under the Taft-Hartley Act. (Packinghouse Workers v. NLRB [Farmers Cooperative Compress], CA DC-1969, 70 LRRM 2489)
	Women with pre-school age children must be hired on the same basis as men with such children under Title VII. But "the existence of such conflicting family obligations, if demonstrably more relevant to job performance for a woman than a man, could arguably be a basis for distinction under Section 703(e) of the Act." So reasoning, the Supreme Court set aside a decision of the U. S. Court of Appeals for the Fifth Circuit, which upheld summary judgment for the employer who refused to hire such women and remanded the	In a case brought under the equal-pay provisions of the Fair Labor Standards Act, the U.S. Court of Appeals at Philadelphia held that a manufacturer of glass containers violated the Act by paying female selector-packers an hourly rate 10 percent below that paid male selector-packers. The court rejected the argument that the two jobs were different because of certain additional tasks performed by the male employees. (Shultz v. Wheaton Glass Co., CA 3-1970, 19 WH Cases 336)

EQUAL EMPLOYMENT OPPORTUNITY CASES - Contd.

Issue	Holding	Comment
Civil Rights Act, Title VII: Substantive Rulings--Contd.		
Sex Discrimination--Contd.	case for a full development of the facts concerning the existence of a bona fide occupational qualification. Justice Marshall agreed with the remand, but disagreed with the Court's "indication" that a bona fide occupational qualification "could be established by a showing that some women, even the vast majority, with pre-school age children have family responsibilities that interfere with job performance and that men usually do not have such responsibilities." (Phillips v. Martin Marietta Corp., US SupCt-1971, 3 FEP Cases 40) See also above under "Preemption: State Safety Laws."	

MAJOR LABOR-LAW PRINCIPLES ESTABLISHED BY THE NLRB AND THE COURTS

(December 1964 - February 1971)

RAILWAY LABOR ACT CASES

Issue	Holding	Comment
Bargaining Obligation		
National Bargaining	The Railway Labor Act does not compel a union to accept national bargaining of a crew-consist dispute, although such bargaining is lawful and may be used when appropriate. (Railroad Trainmen v. Atlantic Coast Line R. R., CA DC-1967, 66 LRRM 2115)	The railroad contended that the dispute should be handled on a national basis, since the union served substantially identical proposals at or about the same time on a number of carriers. The Supreme Court denied review of the decision. (Atlantic Coast Line R. R. v. Railroad Trainmen, US SupCt-1968, 67 LRRM 2232)
Unilateral Action	A lower court properly enjoined a railroad from making new "outlying work assignments" establishing reporting points away from the railroad's principal yard, even though the union's collective bargaining contract did not prohibit such assignments. Dispute concerning outlying work assignments was pending before National Mediation Board, and Section 6 of the Act requires that actual working conditions out of which the dispute arose must be preserved while the procedures of the Act are being exhausted, without regard to whether these conditions are covered in the collective bargaining agreement. (Detroit and Toledo Shore Line Railroad Co. v. United Transportation Union, US SupCt-1969, 72 LRRM 2838)	Justice Harlan, joined by Chief Justice Burger, concurred in part and dissented in part. He disagreed with the majorities test for determining when a "freeze" of a working condition is appropriate. The dissent stated: "I find it difficult to think that Congress intended that either party, by serving a Section 6 notice, should be able to shackle his adversary and tie him to a condition that has been historically and consistently controverted."
Dispute Settlement Procedures		
Mediation by NMB	A federal district court erred in ordering the National Mediation Board to cease its efforts to mediate the 15-month dispute between National Airlines and the Machinists Union. In reversing the district court holding, the U. S. Court of Appeals for the District of Columbia said that only in "rare and unusual" cases do courts have jurisdiction to scrutinize the operations of the National Mediation Board; this case is not one of them. (Machinists v. National Mediation Board, CA DC-1970, 73 LRRM 2278)	In holding that the district court did not have jurisdiction to order the Mediation Board to terminate its mediation efforts, the appeals court further limited the scope of judicial review of actions of the Board. But the perspective taken, the court said, does not "lead to the conclusion that the [mediation] process is indefinitely interminable, on the say-so of the agency alone, at least where the court may, as we think it can, reconcile both in theory and in practice a limited power of scrutiny that avoids the threat of administrative absolution, but does not abort or trammel the administrative process."
Employee Damage Suits		
Exhaustion of Remedies	A railroad employee has a choice of using the grievance-adjustment machinery provided by the Railway Labor Act or going directly to court with a breach-of-contract suit for damages. The Supreme Court adheres to this rule, despite its holding in the Maddox case (Republic Steel Corp. v. Maddox, US SupCt-1965, 58 LRRM 2193) that an employee must exhaust any contract	Justices Harlan, Stewart, and White dissented. They argued that the distinction in remedies available under the two Acts, if anything, weighs in favor of respecting the procedure established by Congress.

RAILWAY LABOR ACT CASES - Contd.

Issue	Holding	Comment
Employee Damage Suits--Contd.		
Exhaustion of Remedies--Contd.	grievance procedure before bringing a court action under the Taft-Hartley Act. The Court noted the differences between voluntary arbitration under the Taft-Hartley Act and arbitration imposed by law under the Railway Labor Act. (Walker v. Southern Railway Co., US SupCt 1966, 63 LRRM 2491) See "Arbitration Enforcement Cases: Exhaustion of Remedies" for a discussion of the Maddox case.	
	Negro and white employees could maintain an action for an injunction and damages against a railroad and a union for their refusal to promote them because of alleged racial discrimination, even though the employees had failed to exhaust their remedies under the union contract, the union constitution, and the Railway Labor Act. (Glover v. St. Louis-San Francisco Ry., US SupCt-1969, 70 LRRM 2097)	The employees alleged that the refusal to promote them violated both the contract and the union's duty of fair representation. The court found that it would have been futile for employees to proceed with the contract and statutory remedies.
Jurisdictional Disputes		
Duty to Make Affirmative Awards of Disputed Work	In resolving work-jurisdiction disputes under the Railway Labor Act, the Railroad Adjustment Board has a duty to make an affirmative award of the disputed work even though one of the competing unions refuses to participate in the proceedings. (Transportation-Communication Employees Union v. Union Pacific Railroad Co., US SupCt-1966, 63 LRRM 2481)	In 1961, the Supreme Court held that the NLRB had a duty to make affirmative awards of disputed work in resolving jurisdictional disputes under the Taft-Hartley Act. (NLRB v. Radio Engineers Union [Columbia Broadcasting System], US SupCt-1961, 47 LRRM 2332). The Union Pacific decision imposed a similar duty under the Railway Labor Act.
Major Disputes		
Back-Pay Award	A federal district court may order back pay, as well as reinstatement, for employees who were laid off by railroad in violation of the notice and bargaining requirements of the Railway Labor Act. The case had been remanded to the district court twice for the imposition of suitable relief and sanctions, but the district court held that it had no authority to award back pay. The appeals court, however, noted that the courts have a role in maintaining the status quo in a "major" dispute under the Act and that there was a "peculiar necessity" for a back-pay award as a sanction. (Seafarers Union v. Galveston Wharves, CA 5-1968, 68 LRRM 3043)	There had been no prior case in which a court had awarded back pay in this type of action. For this reason, the appeals court set out some guidelines for the computation of the back pay. The obvious "touchstone," it said, is the procedure used by the NLRB in computing back pay under the Taft-Hartley Act. It said, for example, that an employee has a duty to make a reasonable effort to obtain interim employment to mitigage the damages resulting from his unlawful discharge. In a subsequent case, the U.S. Court of Appeals for the Ninth Circuit upheld a district court's issuance of a preliminary injunction against a strike involving either an interpretation of the union contract or a matter of work-assignment priorities. The court said this was not a "major" dispute, but either a minor dispute with the railroad or a jurisdictional dispute with a rival union. As such, it could be enjoined. (Locomotive Firemen v. Union Pacific Railroad Co., CA 9-1970, 73 LRRM 2912) The Supreme Court denied review of the case. (Locomotive Firemen v. Union Pacific Railroad Co., US SupCt-1970, 75 LRRM 2379)

RAILWAY LABOR ACT CASES - Contd.

Issue	Holding	Comment
Representation Elections		
Certification on Basis of Plurality Vote	A union that was certified as bargaining representative on the basis of an election in which it received only a plurality of the votes but in which a majority of the employees voted for some union representation is entitled to a mandatory injunction compelling the employer to bargain with it. (Aeronautical Radio, Inc. v. National Mediation Board, CA DC-1967, 65 LRRM 2522)	The Board had reasoned that since a majority of the employees had voted for some representation, the union that was the choice of a majority of those voting for representation should be certified as bargaining representative. The Supreme Court denied review of the decision. (Aeronautical Radio, Inc. v. National Mediation Board, US SupCt-1967, 66 LRRM 2370)
Direction of New Election	A federal district court did not have jurisdiction to enjoin the National Mediation Board from holding a new election among airline employees after setting aside a prior election without resolving the incumbent union's challenge to ballots cast in the election. The NMB has authority to hold a new election if there are reasonable grounds for doubting whether the prior election accurately reflected the employees' wishes. Moreover, in holding the new election, the NMB had authority to order the incumbent union either to appear on the ballot or to abandon any further representation of the employees. (Railway, Airline & Steamship Clerks v. National Mediation Board, CA DC-1968, 68 LRRM 2651)	The district court had issued a preliminary injunction against the holding of a new election. It found that the threatened harm was irreparable and the questions raised substantial. The Supreme Court later denied review of the decision of the appeals court reversing the action of the district court in issuing the preliminary injunction. (Railway, Airline & Steamship Clerks v. National Mediation Board, US SupCt-1968, 69 LRRM 2435)
Right to Vote for No Representation	The Railway Labor Act does not require that the employer be made a party to the proceeding in which a collective bargaining representative is to be chosen for the employer's employees. Nor does it require the Board to hold a hearing, in which the employer may participate on the issue of the craft or class (unit) in which the election will be held. Furthermore, the National Mediation Board did not exceed its authority under the Act in using a ballot in conducting a representation election that does not provide a space in which the employees may vote for "no union." So the Board's action in this respect is not subject to judicial review. Justice Stewart dissented to the holding on the form of the ballot. (Railway Clerks v. Non-Contract Employees, US SupCt-1965, 59 LRRM 2051)	The decision upheld long-standing practices of the National Mediation Board in conducting representation elections under the Railway Labor Act. It reversed a holding by the U. S. Court of Appeals for the District of Columbia upholding the action of a district court in enjoining the Board from conducting an election with a ballot that does not permit the employees to vote against any union representation. (United Air Lines v. National Mediation Board, CA DC-1964, 55 LRRM 2628)
Review of Adjustment Board Awards	Grievance awards by the Railroad Adjustment Board are not subject to federal court review on their merits. The Railway Labor Act makes the Adjustment Board the final arbiter of minor grievances and limits court review to the amount of money that may be awarded. (Gunther v. San Diego & Arizona Ry., US SupCt-1965, 60 LRRM 2496)	In the case involved, the Adjustment Board had ordered reinstatement and back pay for a worker discharged for alleged physical disability. First, however, it had appointed a panel of three physicians to examine the worker, each party naming one physician and the Board selecting the third. Noting that this seems an eminently fair method of settling the health issue, the Supreme Court stated that the trial court had no business concerning itself with anything other

RAILWAY LABOR ACT CASES - Contd.

Issue	Holding	Comment
Review of Adjustment Board Awards--Contd.		than the amount of back pay. Applying the Supreme Court's holding, an appeals court later held that an airline was not entitled to a trial de novo in a federal district court of a system board of adjustment's award ordering reinstatement of pilots. (Northwest Airlines v. Air Line Pilots, CA 8-1967, 64 LRRM 2485)
Secondary Picketing	A state court does not have jurisdiction to enjoin peaceful secondary picketing by a union representing railroad workers once the dispute-settlement procedures of the Railway Labor Act have been exhausted. On this basis, the Supreme Court overturned a Florida state court injunction against picketing by Railroad Trainmen at the Jacksonville Terminal Company aimed at the Florida East Coast Line in what the Court described as "the Nation's longest railroad labor dispute." The picketing began after all procedures for resolving a "major" dispute under the Act had been exhausted and the railroad had made unilateral changes in rates of pay, rules, and working conditions. Justices Black, Douglas, and Stewart dissented. (Railroad Trainmen v. Terminal Co., US SupCt-1969, 70 LRRM 2961)	The majority opinion noted that the Act makes no provision for the handling of a railroad labor dispute once the Act's settlement procedures have been exhausted. It added that the "least unsatisfactory solution" is to allow the parties "to employ the full range of whatever peaceful economic power they can muster, so long as its use conflicts with no other obligation imposed by federal law." The dissenting opinion, which was written by Justice Douglas, stated that the case was governed by the Court's 1949 decision in Giboney v. Empire Ice & Storage, US SupCt-1949, 23 LRRM 2505. On this basis, the dissent would leave the regulation of secondary picketing, where Congress has not preempted the field, to the states.
Strikes: Injunctions in Minor Disputes	The Norris-LaGuardia Act did not deprive a federal district court of jurisdiction to enjoin a union's threatened strike over a dispute stemming from the railroad's attempt, at the request of another union, to cancel a tripartite work and seniority agreement. The dispute is a "minor" dispute within the meaning of the Railway Labor Act and thus subject to submission to the National Railroad Adjustment Board for final resolution. (Locomotive Firemen v. Chicago, Milwaukee, S. P. & R. R. Co., CA 7-1968, 68 LRRM 2660)	The case was taken to the Supreme Court, but it was denied review. (Locomotive Firemen v. Chicago, Milwaukee, S.P. & P. R. R. Co., US SupCt-1969, 70 LRRM 2225)
Strikes: Rights of Struck Airline, Railroad	A strike does not give a railroad the right to abrogate the labor contract and unilaterally set new terms of employment. But a struck railroad does have the right and duty to use self-help to keep operating, and so it may make "reasonably necessary" changes in working conditions -- under court supervision. In making such changes, the railroad need not first follow the lengthy mediation procedures under the Railway Labor Act, since this might make the carrier's right of self-help and its duty to attempt to operate academic. (Railway Clerks v. Florida East Coast Ry. Co., US SupCt-1966, 62 LRRM 2177)	A district court called upon to grant a carrier relief from a contract, the Supreme Court said, should satisfy itself that the carrier is making a good-faith effort to restore service and is not using the strike to curtail that service. Justice White dissented, contending that the ruling will result in a railroad's bargaining with a court, instead of a union.
	An airline violated the status quo provisions of the Railway Labor Act when it discharged wild-	The factual background was as follows: After exchanging Section 6 notices with the union, the

RAILWAY LABOR ACT CASES - Contd.

Issue	Holding	Comment
Strikes: Rights of Struck Airline, Railroad--Contd.	cat strikers en masse, but the airline was entitled to take limited self-help measures to keep its planes flying. The court found that the strike was illegal, but this did not justify the mass discharge or relieve the airline of its duty to maintain the status quo. Under the circumstances, the court said, the airline could have replaced the strikers, but all strikers who were not replaced were entitled to reinstatement from the date they would have returned to work had they not been discharged. (National Airlines v. Machinists, CA 5-1969, 72 LRRM 2294) The company sought to get the Supreme Court to review the holding, but the Court denied review on January 11, 1971. (National Airlines v. Machinists, US SupCt-1971, 76 LRRM 2160)	airline reduced the number of men required to taxi an airplane from three to two. When three employees were suspended for refusal to obey the new rule, other employees struck. Two temporary injunctions and requests from the union failed to get the men back to work. The airline thereafter discharged the strikers.
Union Security		
Religious Objection	Section 2, Eleventh, of the Railway Labor Act, which permits union-shop agreements, is not unconstitutional as violative of the First Amendment as construed to apply to a Seventh Day Adventist, whose religious beliefs forbid union membership or support. It is simply not possible in an ordered society to allow every aspect of religious belief to stay the hand of Government under the aegis of the First Amendment. (Gray v. Gulf, Mobile & Ohio Railroad Co., CA 5-1970, 74 LRRM 2769)	The Supreme Court later denied review of the decision. (Gray v. Gulf, Mobile, & Ohio Railroad Co., US SupCt-1971, 76 LRRM 2160)

MAJOR LABOR-LAW PRINCIPLES ESTABLISHED BY THE NLRB AND THE COURTS

(December 1964 – February 1971)

TAFT-HARTLEY ACT: REPRESENTATION CASES

Issue	Holding	Comment
Bargaining Rights		
Election of Procedure	A union that proceeds to a representation election is not precluded from thereafter filing a refusal-to-bargain charge based on the employer's refusal to recognize and bargain with the union prior to the election. The Board will issue an order requiring the employer to bargain if the union can show either that (1) the employer improperly denied the pre-election bargaining request or (2) the union lost its majority as a result of unfair labor practices of the employer designed to destroy the union's majority and evade the bargaining obligation. (Bernel Foam Products Co., NLRB-1964, 56 LRRM 1039) The Bernel Foam rule was approved by the Supreme Court, as part of the NLRB's entire authorization-card doctrine. But the Court did not rule on the question whether a bargaining order is appropriate where there is no interference by the employer with the election process. (NLRB v. Gissel Packing Co., US SupCt-1969, 71 LRRM 2481) See below under "Bargaining Obligation, Bargaining Rights: Use of Authorization Cards as Basis" for decisions involving the application of the Bernel Foam rule in unfair labor practice cases.	This holding overturned the rule of the 1954 Aiello Dairy Farms case (Aiello Dairy Farms, NLRB-1954, 35 LRRM 1235) that if a union went ahead with a representation election, it was barred from later obtaining Board action on a refusal-to-bargain charge based on the employer's conduct prior to the election. The Aiello case, in turn, had reversed the 1951 M.H. Davidson Company holding (M.H. Davidson Co., NLRB-1951, 28 LRRM 1026) that a union that filed a representation petition and proceeded to an election did not waive its right to file a refusal-to-bargain charge after the election. The Bernel Foam decision restored the Davidson policy and thus gives a union two chances to win representation rights--through the election or in the unfair labor practice proceeding. The Bernel Foam doctrine later was approved by the U.S. Courts of Appeals at New York, St. Louis, and the District of Columbia as within the NLRB's discretion. But the New York Court described the bargaining-order remedy as "strong medicine" and suggested that it should be applied with restraint. (NLRB v. Flomatic Corp., CA 2-1965, 59 LRRM 2535; Colson Corp. v. NLRB, CA 8-1965, 59 LRRM 2512, cert. denied by US SupCt, 60 LRRM 2353; IUE v. NLRB [S.N.C. Mfg. Co.] CA-DC-1965, 59 LRRM 2232, cert. denied by U.S. SupCt, 60 LRRM 2353)
Election Objections	The Board, however, will not issue a bargaining order in such an unfair practice case unless the union also is pressing objections to the election, and the employer's pre-election misconduct is sufficiently serious to warrant setting the election aside. (Irving Air Chute Co., Inc., NLRB-1964, 57 LRRM 1330)	This decision elaborated on Bernel Foam and set out the circumstances under which the Board will issue an order requiring the employer to bargain as a result of the unfair labor practice proceeding. The decision later was affirmed by the U.S. Court of Appeals at New York. [Irving Air Chute Co., Inc. v. NLRB, CA 2-1965, 59 LRRM 3052]
Bargaining Units		
Bank Employees	A unit consisting of lithographic employees working for a bank is appropriate for collective bargaining under the Act, notwithstanding the argument that the only appropriate bargaining unit in the banking industry is a bank-wide unit. (Bank of America, NLRB-1969, 70 LRRM 1179)	In contending that the unit should be bank-wide, the bank tried to draw an analogy to the public-utility industry. Unit determinations involving public utilities, it asserted, have been based on the underlying premise that fragmentation into many bargaining units would be disastrous in the basic-service industries. The Board stated, however, that there is an essential difference between banks

TAFT-HARTLEY ACT: REPRESENTATION CASES - Contd.

Issue	Holding	Comment
Bargaining Units--Contd.		
Bank Employees -- Contd.		and public utilities in that a public utility has a virtual monopoly in a given geographic area. Moreover, the Board added, even in the public-utility industry an over-all unit is not the only appropriate unit, and units smaller in scope may be found appropriate where the "traditional criteria" to support such a finding are present.
Children of Major Stockholders; Social Security Annuitants	Children and spouses of persons holding substantial stock interests in closely held corporations will be excluded from bargaining units of corporate employees. On this basis, the son of a substantial shareholder in a closely held corporation was excluded from a bargaining unit. (Foam Rubber City No. 2 of Fla., Inc., NLRB-1967, 66 LRRM 1096)	The decision overruled earlier holdings in the American Steel Buck and other cases in which children of corporate shareholders were included in bargaining units. (See American Steel Buck Corp., NLRB-1953, 66 LRRM 1096) In another reversal of policy, the Board held that employees no longer will be excluded from bargaining units merely because they are limiting working time and earnings to avoid decreasing their social security annuities. Members Brown and Jenkins dissented. (Holiday Inns, NLRB-1969, 71 LRRM 1333)
Clarification of Unit	The NLRB did not exceed its authority in directing self-determination elections at two of a company's plants to determine whether the employees wanted to continue to be represented separately by a union or to be represented by the same union in a certified multi-plant unit that would be company-wide. The decision was by a two-to-one margin. According to the majority of the court, the NLRB's action in directing the self-determination elections, if at all inconsistent with the Act, was certainly not so "plainly beyond its bounds" nor so "clearly in defiance" of the Act as to vest a district court with jurisdiction to issue an injunction. The dissenting judge asserted that the Board arbitrarily exercised a power not conferred on it by Congress nor implied by any phraseology in the Act. (McCulloch v. Libbey-Owens-Ford Glass Co., CA DC-1968, 68 LRRM 2447) The Supreme Court later denied review of the appeals court's holding. (Libbey-Owens-Ford Glass Co., v. McCulloch, US SupCt-1969, 70 LRRM 2225)	The decision of the NLRB was by a majority consisting of Chairman McCulloch and Members Brown and Zagoria. They reasoned that the Board had authority to conduct the self-determination elections as an investigatory fact-finding tool. Dissenting Members Fanning and Jenkins contended that there was no authorization under the Act for such elections. Representation was not an issue, they asserted. The issue was the scope of the unit. (Libbey-Owens-Ford Glass Co., NLRB-1967, 67 LRRM 1096) A federal district court enjoined the Board from conducting the elections, agreeing with the dissent at the Board that there is no authority to hold such elections in the absence of a question of representation. (Libbey-Owens-Ford Glass Co. v. McCulloch, USDC DC-1968, 67 LRRM 2712) Before reversing the district court, the appeals court granted a partial stay of the injunction to permit the Board to conduct the elections but not to issue any order based upon them.
	A majority of the NLRB dismissed a union's petitions (1) to amend a certification to combine four bargaining units, or (2) to "clarify" the unit by holding self-determination elections at three plants to determine whether the employees want to be represented in the multi-plant unit sought by the union. There were three opinions, with Member Zagoria being the swingman. He agreed with Members Fanning and Jenkins that the union's petitions should be dismissed, but he did not agree with their rationale. Chairman McCulloch and Member Brown dissented. Pointing out that the union had sought to add plants to the multi-	As the swingman, Zagoria pointed out that the unit sought by the union in Libbey-Owens-Ford was employer-wide and, as such, was presumptively appropriate. But the unit sought in the PPG case would have covered only part of the company's glass operations and so should not be found appropriate on any basis other than the agreement of the parties. With Zagoria having left the Board, the holding casts some doubt on the viability of the Libbey-Owens-Ford doctrine.

TAFT-HARTLEY ACT: REPRESENTATION CASES - Contd.

Issue	Holding	Comment
Bargaining Units--Contd.		
Clarification of Unit--Contd.	plant unit in several negotiations, the Fanning-Jenkins opinion stated that the plants the union sought to merge were not identifiable as an administrative division of the company and are not related either geographically or by a history of bargaining. These factors, the opinion added, are the accepted bases for multi-plant units that do not constitute employer-wide units. The McCulloch-Brown dissenting opinion took the position that employees in the three plants shared common interests with employees of the nine plants already in the multi-plant unit. (PPG Industries, Inc., NLRB-1969, 73 LRRM 1001)	
	A union in the petroleum industry was not entitled to have elections held at three unrepresented plants to determine whether employees at each of these plants desire to be included in an existing multi-plant unit. The petitioning union represents 23 of the company's plants--20 in one unit and three in another. There are about 12 unrepresented plants, and one is represented by a rival union. The union petitioned to add three of the unrepresented plants to its 20-plant unit. An NLRB panel majority consisting of Members Fanning and Jenkins found that the requested unit failed to meet any of the normal criteria that might make it appropriate for bargaining. So under the reasoning of the PPG Industries decision, they said, the single-plant units could be combined with the multi-plant unit over the company's opposition only if the resulting unit would be distinguished by "such shared factors as common terms and conditions of employment, substantial uniformity of wage systems and fringe benefits, substantial integration of operations, interchange of employees within unit lines, and the like." They concluded that each of the three unrepresented plants is an appropriate separate bargaining unit. (Cities Service Oil Co., NLRB-1970, 73 LRRM 1598)	As he did in the PPG case, former Chairman McCulloch dissented. He would have found that the three unrepresented plants have a sufficient community of interest with those in the 20-plant unit to make the union's requested unit appropriate. Member Brown, who dissented with McCulloch in the PPG case, did not participate. The same panel later denied a union's petition to merge three bargaining units in a company's chemical division into a single multi-plant unit for reasons similar to those given in the Cities Service case. McCulloch concurred, stating that he considered the case distinguishable from PPG and Libbey-Owens-Ford. (Rohm & Haas Co., NLRB-1970, 74 LRRM 1257)
	See below under "Judicial Review" for a discussion of other cases involving court review of NLRB determinations in representation cases.	
Definition of Unit: Consent Elections	Where an employer and a union enter into a stipulation for certification upon consent election and stipulate that the appropriate unit will include certain jobs, the NLRB may not alter the unit. On this basis, the court ordered the Board to count the ballot of an employee whose vote could have	In this case, the parties did not sign the list of employees, so it did not become a part of the consent agreement. But the court found that they mentioned the job by name, so they clearly intended it to be in the unit.

TAFT-HARTLEY ACT: REPRESENTATION CASES – Contd.

Issue	Holding	Comment
Bargaining Units--Contd.		
Definition of Unit: Consent Elections--Contd.	affected the outcome of the election. (Tidewater Oil Co. v. NLRB, CA 2-1966, 61 LRRM 2693)	
Department Store Employees	Separate units of selling, nonselling, restaurant, and clerical employees were held appropriate in retail department stores, although a store-wide unit is the optimum unit, in view of differences in work tasks and interests, separate supervision, lack of interchange, and other factors. Member Jenkins dissented. (Stern's, Paramus, NLRB-1965, 58 LRRM 1081; Arnold Constable Corp., NLRB-1965, 58 LRRM 1086; Lord & Taylor, NLRB-1965, 58 LRRM 1088)	In these three companion cases, the Board departed from its prior policy under which a store-wide unit was considered the optimum unit, although smaller units were permitted under some circumstances. The decisions appear to make clear that henceforth the Board usually will permit separate units of selling and nonselling personnel.
	A retail department store's automotive service department is sufficiently distinct from other departments to warrant a separate bargaining unit, even though a store-wide unit is presumptively appropriate and some factors justify such a unit. The automotive service employees are set apart from other employees in that they have different skills, perform no selling duties, work in a separate area with separate supervision, and wear uniforms. The decision was by a panel composed of Chairman McCulloch and Members Fanning and Brown. (Montgomery Ward & Co., NLRB-1964, 58 LRRM 1110)	The decision followed by a few days those in the three department store cases in which separate units of selling, nonselling, restaurant, and clerical employees were permitted.
"Hard-Core" Unit	A unit of "orientation-observation" employees is not appropriate for collective bargaining, according to a ruling by the NLRB. The unit sought by the union is composed of "hard-core" unemployed working in the construction industry under a program to provide training and employment for disadvantaged persons. Their employer classifies them as "orientation-observation" employees for a period of from two weeks to a month; if they complete this preliminary training period successfully, they are assigned as trainee laborers or craft trainees on various construction projects where they become members of bargaining units represented by unions other than the one seeking to represent them initially. (Inter-City Contractors Service, NLRB-1970, 74 LRRM 1173)	In finding the proposed unit inappropriate, the Board said that a unit of such employees necessarily would be unstable and impracticable. It added that it is questionable whether a collective bargaining relationship for these employees would be feasible or serve any purpose.

TAFT-HARTLEY ACT: REPRESENTATION CASES – Contd.

Issue	Holding	Comment
Bargaining Units--Contd.		
Insurance Employees	In determining what unit is appropriate for bargaining, the NLRB is barred by law from giving controlling weight to the extent to which the union has been successful in organizing workers. But the Board is free to consider the extent of organization as one factor in its unit determination. After stressing these points, the U.S. Supreme Court said it was at a loss to determine what weight the Board gave to extent of organization when it established a unit of insurance agents at a single district office. The Board did not articulate its reasons for finding this particular unit appropriate, the Court said, and did not distinguish its determination from different groupings of the company's agents in other cases. Unlike the U.S. Court of Appeals at Boston, however, the Supreme Court was not willing to conclude from the Board's silence that extent of organization was the controlling factor. It remanded the case for further findings. (NLRB v. Metropolitan Life Ins. Co., US SupCt-1965, 58 LRRM 2721)	A practical effect of the Supreme Court's ruling was to postpone a general review of the Board's new policy of determining small units of insurance workers. Prior to 1961, the Board permitted only state-wide or employer-wide units. At the time of the Supreme Court's decision, the Board's application of its new policy had been upheld by the U.S. Courts of Appeals at Richmond (NLRB v. Quaker City Life Ins. Co., CA 4-1963, 53 LRRM 2519), Philadelphia (Metropolitan Life Ins. Co., v. NLRB, CA 3-1964, 55 LRRM 2448), and Cincinnati (Metropolitan Life Ins. Co., v. NLRB, CA 6-1964, 55 LRRM 2930). It was rejected by the U.S. Court of Appeals at Boston in the case decided by the Supreme Court (Metropolitan Life Ins. Co., v. NLRB, CA 1-1964, 55 LRRM 2444). The Board reaffirmed its initial holding upon remand and "articulated" its reasons for the unit determination. (Metropolitan Life Ins. Co., NLRB-1966, 61 LRRM 1249)
Lumber Employees; Non-Ferrous Metal Employees	A departmental unit of maintenance employees at the facility of a company manufacturing lumber and plywood is not appropriate for collective bargaining under the Act. Instead, the unit should consist of all production and maintenance employees at the facility. In so ruling, the NLRB noted that it had held in 1949 that only plant-wide units embracing all production and maintenance employees were appropriate in the lumber industry. (Weyerhaeuser Timber Co., NLRB-1949, 25 LRRM 1173) Since the 1966 Mallinckrodt decision, however, the Board has based appropriate units in the lumber industry on the same factors as units in other industries. (Mallinckrodt Chemical Works, NLRB-1966, 64 LRRM 1011) But this does not mean that the integrated nature of the operations and the industry bargaining pattern and stability, the factors underlying the Weyerhaeuser decisions, are not factors to be considered, even though they are not sufficient in and of themselves to preclude consideration of other relevant factors. On the basis of all the relevant factors, the majority of the Board concluded that the departmental maintenance unit was not a distinct and homogeneous employee group. Members Fanning and Zagoria dissented. (U.S. Plywood, NLRB-1969, 70 LRRM 1163)	In their dissenting opinion, Members Fanning and Zagoria asserted that a "strikingly similar multi-craft maintenance unit" was found appropriate in the Crown Simpson case. (Crown Simpson Pulp Co., NLRB-1967, 64 LRRM 1429) In the view of the dissent, the majority acted contrary to "the accepted principle that it is improper for the Board arbitrarily to discriminate between industries in the application of its general rules governing unit determinations." The majority, however, found the Crown Simpson case distinguishable on its facts. Shortly thereafter, the Board held that a production and maintenance unit was the only appropriate unit in an aluminum rolling mill, even though there was no bargaining history and a union requested a separate maintenance unit. Members Fanning and Jenkins dissented. (Alcan Aluminum Corp., NLRB-1969, 72 LRRM 1097)

TAFT-HARTLEY ACT: REPRESENTATION CASES - Contd.

Issue	Holding	Comment
Bargaining Units--Contd.		
Nation-Wide Company	Rejecting the finding of the NLRB, the U. S. Court of Appeals for the Sixth Circuit held that a unit composed of employees at three offices of an administrative district of a nation-wide guard-service and detective company is not appropriate for collective bargaining under the Taft-Hartley Act. The unit should be district-wide, the court stated, in view of the centrally determined labor policy, the close supervision of employees from the district office, and the uniform working conditions throughout the district. The court refused to enforce a bargaining order issued by the Board on the basis of an election held in the three-office unit. (NLRB v. Pinkerton's, Inc., CA 6-1970, 74 LRRM 2355) One member of the three-judge panel dissented.	The court noted that the Board had found district-wide units appropriate in several other cases involving the company. It said that the Board went too far in determining on the basis of geographical location that the guards in the three offices constituted an appropriate unit.
Quarry Employees	A unit composed of employees in the calcite operation of a large stone quarry is not appropriate for collective bargaining under the Act. This decision, by a two-to-one margin in a panel of the U. S. Court of Appeals at Richmond, reversed the unit determination of the NLRB. In disagreement with the Board, the majority of the court found that the quarry was a highly integrated, interdependent, and interrelated operation employing approximately 280 to 290 employees with similar wages, working conditions, job classifications, and fringe benefits and with over-all central management and control. There were 80 to 90 employees in the calcite operation. (NLRB v. Harry T. Campbell Sons' Corp., CA 4-1969, 70 LRRM 2886)	The dissenting opinion stressed that the court's limited function in such a case is to determine whether substantial evidence in the record as a whole supports the Board's determination that a designated bargaining unit is an appropriate unit. The court is not required, the dissent added, to determine the appropriate unit or a more appropriate unit than that determined by the Board.
Retail Employees	Single-store bargaining units are presumptively appropriate in the retail chain field. Such a unit will be considered appropriate unless it can be shown that it effectively has been merged into a broader unit. Members Leedom and Jenkins dissented, contending that the presumption should run in favor of a unit embracing stores in an administrative division of the chain or a geographical area. (Frisch's Big Boy Ill. - Mar, Inc., NLRB-1964, 56 LRRM 1246) The NLRB's decision in the Frisch's case was rejected by the U. S. Court of Appeals at Chicago. The court said that the restaurant in which the election was directed was part of a chain of restaurants located in the same city and similar so	Up until 1961, the Board's policy was to make bargaining units in the retail chain industry co-extensive with the employer's administrative division or the geographic area involved. This policy was changed in the Sav-On Drugs case (Sav-On Drugs, Inc., NLRB-1962, 51 LRRM 1152), in which the Board said it henceforth would apply the same unit policy to retail chains as it applies to other cases involving multiplant enterprises. The present decision extends the new policy to make single-store units presumptively appropriate. A ruling by the U. S. Court of Appeals at Boston upholding a single store unit was denied review by the Supreme Court. (Primrose Supermarket v. NLRB, U. S.

TAFT-HARTLEY ACT: REPRESENTATION CASES - Contd.

Issue	Holding	Comment
Bargaining Units--Contd.		
Retail Employees -- Contd.	far as the impact of labor relations is concerned. (NLRB v. Frisch's Big Boy Ill-Mar, Inc., CA 7-1966, 61 LRRM 2362) The NLRB later restated its general approach to the question of units in retail-chain operations. It emphasized that it will adhere to the policy of finding a single-store unit to be presumptively appropriate, but that such a presumption might be overcome where it is shown that the day-to-day interests of employees in the particular store had merged with those of employees of other stores. (Haag Drug Company, NLRB-1968, 67 LRRM 1289) Applying this policy, the Board rejected a union's request for a unit embracing employees at one of five retail food stores in a chain's New Hampshire division. Factors noted by the Board included limitations on the store manager's authority in personnel matters, direct supervision of store departments by divisional supervisors, the store's geographical closeness to another store, and the amount of employee interchange. (Star Market Co., NLRB-1968, 68 LRRM 1497)	SupCt.-1965, 60 LRRM 2234) Two years later, however, the U.S. Court of Appeals at Boston held that the NLRB went too far when it directed an election in a unit embracing the employees of a single store in a chain of supermarkets. The Board's unit determination, the court said, does not square with the Board's findings of fact, which disclose that the chain is a small, compact, homogeneous, centralized, and integrated operation. (NLRB v. Purity Food Stores, Inc., CA 1-1967, 65 LRRM 2261) The Supreme Court denied review of the case. (NLRB v. Purity Food Stores, Inc., US SupCt-1967, 66 LRRM 2507)
Truck Drivers	A unit of truck drivers was denied severance from the existing unit of production-and-maintenance employees in which the truck drivers had been included for a number of years. Applying standards set forth in Kalamazoo Paper Box Corporation (NLRB-1962, 49 LRRM 1715), the Board noted that the drivers spent a substantial amount of time performing work identical to that of other employees in the existing unit, that they spend the great majority of their time in city driving for which their hours and method of compensation are the same as those of other unit employees, and that they have the same supervision as shipping department employees, who are included in the over-all unit. Member Fanning dissented. (Olinkraft, Inc., NLRB-1969, 72 LRRM 1337)	In dissenting, Fanning argued that the majority misapplied the standard set in the Kalamazoo Paper case. The standards were designed to avoid automatic severance of truck drivers from established units, he said, but they were not intended to deny severance to functionally distinct groups of drivers.
Warehouse Employees	A unit consisting of employees at one of three warehouses in which a company engages in wholesale operations is appropriate for collective bargaining under the Act. A contention by the company that the unit should include all employees engaged in wholesale operations was rejected by the Board. In	In the Sav-On Drug case, the Board took the position that past unit determinations in the retail-chain-store industry had overemphasized the administrative grouping of the employer. (Sav-On Drugs, Inc., NLRB-1962, 51 LRRM 1152) In the future, the Board said, unit determinations involving retail chains

TAFT-HARTLEY ACT: REPRESENTATION CASES – Contd.

Issue	Holding	Comment
Bargaining Units -- Contd.		
Warehouse Employees--Contd.	support of its holding, the Board stressed the separate supervision of the employees at the one warehouse, the minimal transfer and interchange of employees among the three warehouses, and the differences in employee functions at the warehouses. (Amfac, Inc., NLRB-1968, 69 LRRM 1466)	would be based on all the circumstances of each case. This policy was extended to warehouse operations in the Amfac case.
Craft-Severance Elections	Henceforth, the NLRB will broaden its inquiry in craft-severance cases to permit evaluation of all considerations relevant to an informed decision. The following are illustrative of relevant areas of inquiry: (1) whether the proposed unit embraces a distinct and homogeneous group of skilled craftsmen performing the functions of their craft on a nonrepetitive basis or employees constituting a functionally distinct department working in trades or occupations for which a tradition of separate representation exists; (2) the bargaining history of employees in the plant and other plants of the employer; (3) the extent to which the employees have maintained their separate identity during their inclusion in the broader unit; (4) the history and pattern of bargaining in the industry; (5) the degree of integration of the employer's production processes; (6) the qualifications of the union seeking to represent a severed unit. (Mallinckrodt Chemical Works, NLRB-1966, 64 LRRM 1011; Holmberg, Inc., NLRB-1966, 64 LRRM 1025; E.I Dupont Co., NLRB-1966, 64 LRRM 1021)	In adopting the new policy, the Board overruled the doctrine established in the 1954 American Potash case. It also revised principles established in a series of decisions dating back to 1948, known collectively as the National Tube doctrine. Under American Potash, the Board permitted craft severance in all except four industries if these tests were met: (1) the employees constituted a true craft or departmental group; and (2) the union seeking to represent the craft or departmental unit was one that traditionally concerned itself with the special problems of the employees. (American Potash and Chemical Corp., NLRB-1954, 33 LRRM 1380) Under National Tube, the NLRB denied all craft units in four excepted industries--basic steel, basic aluminum, lumbering, and wet milling--on the basis of the integrated work forces. (National Tube Co., NLRB-1948, 21 LRRM 1292; Corn Products Refining Co., NLRB-1948, 23 LRRM 1090; Weyerhaeuser Timber Co., NLRB-1949, 25 LRRM 1173; Permanente Metals Co., NLRB-1950, 26 LRRM 1039)
Election Campaigning		
Access to Eligible Voters: Names-and-Addresses Rule	Without a majority opinion among the four written, the U. S. Supreme Court reversed a ruling by the U. S. Court of Appeals at Boston refusing to enforce an NLRB subpoena to require an employer to provide a list of the names and addresses of employees eligible to vote in a representation election to be conducted by the Board. The appeals court held that the rule on which the subpoena was grounded was invalid because it was promulgated in disregard of the requirements of the Administrative Procedure Act. Shifting majorities in the Supreme Court held that the rule is invalid but that the Board, nevertheless, had the power to require the employer to furnish the list. The Court's "prevailing opinion" by Justice Fortas, in which Chief Justice Warren and Justices Stewart and White join, made these points:	The names-and-addresses rule was established by the NLRB early in 1966 in a group of cases that had been consolidated for consideration and oral argument. It requires an employer to furnish the Board with the names and addresses of employees eligible to vote in a representation election within seven days after an election has been directed or a consent-election agreement has been approved. The Board then makes the information available to all parties to the election. (Excelsior Underwear, Inc., Saluda Knitting, Inc., and K. L. Kellogg & Sons, NLRB-1966, 61 LRRM 1217) The Board enforced the rule indirectly by setting the election aside where the employer had failed to furnish the list, and it enforced it directly by subpoena proceedings. Prior to the decision by the Court of Appeals at Boston, the

TAFT-HARTLEY ACT: REPRESENTATION CASES – Contd.

Issue	Holding	Comment
Election Campaigning -- Contd.		
Access to Eligible Voters: Names-and-Addresses Rule -- Contd.	● The rule was not promulgated in accordance with the procedures for rule-making set forth in the Administrative Procedure Act, nor was it a proper "adjudication" under the Act. So it is not a "rule" in the sense that it must be obeyed, without more, by the affected public. ● Nevertheless, the company specifically was directed by the Board to submit the list of names and addresses, and the direction was an order the company was required to obey. ● The requirement of disclosure is substantively valid. Congress granted the Board a wide discretion to ensure the fair and free choice of bargaining representatives, and it is for the Board to weigh this interest against the asserted interest of employees in avoiding the problems that union solicitation may present. ● The Board has the power to enforce the requirement by subpoena. The list is "evidence" within the meaning of Section 11(c) of the Act. A concurring opinion by Justice Black, joined in by Justices Brennan and Marshall, agreed with the third and fourth points of the prevailing opinion. They disagreed with the holding that the requirement is an invalid exercise of the Board's rule-making power. Instead, they would hold that it is a proper exercise of the Board's adjudicatory power. Dissenting in separate opinions, Justices Douglas and Harlan agreed that the rule is invalid and would affirm the holding of the appeals court. Justice Harlan would go further and require the Board to initiate a new rule-making proceeding and, without such a proceeding, to follow its earlier decisions that did not require employers to furnish names-and-addresses lists to unions during organizing campaigns. (NLRB v. Wyman-Gordon Company, US SupCt-1969, 70 LRRM 3345)	U. S. Courts of Appeals at Richmond and Chicago had upheld the rule as a valid exercise of the Board's powers. (NLRB v. Hanes Hosiery Division, Hanes Corp., CA 4-1967, 66 LRRM 2264; NLRB v. Crane Packing Co., CA 7-1967, 66 LRRM 2481) At the time the Board adopted the names-and-addresses rule, it rejected union demands in two cases that they be given equal time to address employees in plants in which the employers had made speeches to employees on company premises during working hours. The Board said it would defer reconsideration of its rule, which normally does not permit such requirement of equal time, until the effects of the names-and-addresses rule could be ascertained. (General Electric Co., and McCulloch Corp., NLRB-1966, 61 LRRM 1222)
	An employer who furnished an incomplete list of names and addresses prior to an election because of employees' fears of union harassment was not entitled to a hearing before the Board before the enforcement of a subpoena for the full list. The U. S. Court of Appeals for the Third Circuit affirmed the enforcement of the subpoena and found no violation of due process in the Board's denial of a hearing on the issue. The court agreed	Following the filing of the representation petition by the union, the Board held a hearing at which the employer challenged the Board's authority to require the employee list. When the Board directed him to file the list, he supplied the names of all the employees, but left off the addresses of most of them. The union lost the election, but the Board set it aside. It then issued a subpoena for the employee list, and a federal district court en-

TAFT-HARTLEY ACT: REPRESENTATION CASES - Contd.

Issue	Holding	Comment
Election Campaigning -- Contd.		
Access to Eligible Voters: Names-and-Addresses Rule -- Contd.	with the Board's contention that the Wyman-Gordon decision (see above) established the validity of the employee-list requirement. The court further observed that constitutional due process was not violated, the hearing requested by the employer is not mandated by any law. (NLRB v. Delaware Valley Monuments, Inc., CA 3-1970, 74 LRRM 2973) The Supreme Court denied review of the case on December 14, 1970. (Delaware Valley Armaments v. NLRB, US SupCt-1970, 75 LRRM 2810)	forced it. In another case, however, the Board refused to set aside an election where the employee list supplied by the employer contained numerous inaccuracies. It said that the employer was in "substantial compliance" with the rule. (Fontainebleau Hotel Corp., NLRB-1970, 73 LRRM 1606)
Captive-Audience Speeches	The NLRB was warranted in finding that a department store violated Section 8(a)(1) of the Act by promulgating an unlawful no-solicitation rule that banned union solicitation in nonworking areas during nonworking time and then by having officials make coercive anti-union speeches to employees assembled in the store during working time and denying the union an equal opportunity to reply. The store's conduct created a "glaring imbalance" in organizational communication. (Montgomery Ward & Co. v. NLRB, CA 6-1965, 58 LRRM 2115)	In the 1962 May Department Store case, the NLRB reestablished the 1951 Bonwit-Teller "captive-audience" rule for department stores (May Department Stores Co., NLRB-1962, 49 LRRM 1862). The May decision, however, was reversed by the U. S. Court of Appeals at Cincinnati (May Department Stores Co. v. NLRB, CA 6-1963, 53 LRRM 2172). The Board reaffirmed the May doctrine in the Montgomery Ward case (Montgomery Ward & Co., Inc., NLRB-1964, 55 LRRM 1063). But in affirming the Board's holding in Montgomery Ward, the court distinguished the case from the May case. It pointed out that in the May case, it was conceded that the store's no-solicitation rule, though broad, was privileged because of the nature of the company's retail store business. The Board later declined, for the time being, to adopt a general "equal-time" rule. See above under "Access to Eligible Voters."
Chatter at Polls	Prolonged conversation between representatives of either side and voters waiting to cast their ballots in a representation election has a potential for distraction, last-minute electioneering or pressure, and unfair advantage. On this basis, the NLRB set aside an election where the union's secretary-treasurer stood next to a line of employees waiting to vote and engaged some of them in conversation for several minutes. The union official admitted engaging in conversation with the voters, but he said his remarks related to the weather and similar topics. (Milchem, Inc., NLRB-1968, 67 LRRM 1395)	In its opinion, the Board noted that it had not "enunciated a clear standard" for gauging the impact of idle chatter on the outcome of elections. Instead of trying to devise such a standard, the Board decided to adopt a "blanket prohibition" against any prolonged conversation between one of the parties and those waiting to vote. Such a rule would be easily understood and simply applied, the Board said.

TAFT-HARTLEY ACT: REPRESENTATION CASES – Contd.

Issue	Holding	Comment
Election Campaigning -- Contd.		
Community Campaigns	Statements made by the employer and by prominent members of the community, including the mayor's wife, the proprietor of a grocery store, and the pastor of a church, did not interfere with a free choice in an election, even though the statements by the community leaders sparked rumors that the plant would close if the union won the election. The Board pointed out that the employer, at the union's request, issued a letter to the employees disavowing these rumors and there was no showing that the union was dissatisfied with the disavowal. It also noted that the letter stated that the employer intended to keep the plant operating regardless of the outcome of the election. Chairman McCulloch and Member Brown dissented. (Claymore Manufacturing Co., NLRB-1964, 56 LRRM 1080)	The dissenting members contended that the statements of the community leaders appeared authoritative and by their sheer number and nature were such as to tend to confuse the voters. They also asserted that the employer's letter did not unequivocally disavow the statements but tended to capitalize on the fears generated by them.
Free Luncheon During Election	A union did not interfere with a representation election when it served a luncheon for employees, even though the luncheon was held while the polls were open, and in the same building where the balloting took place. The decision was by NLRB Members Fanning and Jenkins. Chairman Miller dissented. The luncheon was served outside the polling area, and only sandwiches and soft drinks were served. Employees were not compelled to attend. The majority declined to hold that luncheons of this type have such a "potential for distraction or last minute pressure" that they must be "prohibited absolutely." (Lach-Simkins Dental Labs., NLRB-1970, 75 LRRM 1385)	In dissenting, Chairman Miller argued that the providing of free refreshments by either party during and immediately surrounding the polling times should invalidate an election. He conceded that the fare provided was not munificent, but added: "I would not care to invite future litigation on such issues as whether it would be permissible * * * to provide a thick steak or an egg salad sandwich during polling hours or at what point in between or on either side of those possible menus we would draw the line."
Initiation Fee Waivers	The "economic inducement" offered by a union in telling employees that its initiation fee would be waived if the union won the election was material and impeded a reasoned choice sufficiently to warrant setting aside the election. In so ruling, the U.S. Court of Appeals at Cincinnati reversed the NLRB, which had found no election interference in the union's statement. The union said it had promised the waiver to counter a rumor that its $6 initiation fee was $300. (NLRB v. Gilmore Industries, Inc., CA 6-1965, 58 LRRM 2419) See opposite column for a contrary holding by another appeals court.	Considering pre-election offers to waive initiation fees a traditional union practice, the NLRB has raised no objection to such offers, provided no strings are attached, such as how the employees vote or how the election turns out. (See General Electric Co., NLRB-1958, 42 LRRM 1116; A.R.F. Products, Inc. NLRB-1957, 40 LRRM 1398.) The Board later decided to drop the exception and held that a union's promise to waive its initiation fee does not justify setting the election aside, even where conditioned on how the employees vote or the outcome of the election. (Dit-Mco, Inc., NLRB-1967, 64 LRRM 1476) The Board's decision was affirmed by the U. S. Court of Appeals for the Eighth Circuit. The court found no fault with the

TAFT-HARTLEY ACT: REPRESENTATION CASES – Contd.

Issue	Holding	Comment
Election Campaigning--Contd.		
Initiation Fee Waivers – Contd.		Board's conclusion that such waivers have no improper effect upon the freedom of choice of the employees. (NLRB v. Dit-Mco, Inc., CA 8-1970, 74 LRRM 2664)
Misrepresentations in Campaigning	A handbill passed out by a union on election day and the day before was held to contain "substantial misrepresentations of material facts of vital concern to employees" and also to be so timed that there was no opportunity to verify the union's claims. The handbill cited a long list of employee benefits and said they were in all union contracts "in this and other areas." The U.S. Court of Appeals at Richmond, reversing the NLRB, held that the "misrepresentations" justified setting the election aside. (NLRB v. Bonnie Enterprises, CA 4-1965, 58 LRRM 2395)	In ruling that the distribution of the handbill was not cause for setting the election aside, the NLRB compared the union statements to the "extravagant promises" so often made by political candidates. (Bonnie Enterprises, Inc., NLRB-1964, 55 LRRM 1217)
	A handbill distributed three days before an NLRB election and statements in radio announcements broadcast during the election period justify setting aside an election won by a union. The handbill reported the company's president as saying that he would like to tie two employees to their machines and set them afire. The radio broadcasts misrepresented gains made by the union in bargaining with another employer. A majority of the court, sitting en banc, held that the handbill exceeded the bounds of permissible propaganda and that the timing of the broadcasts, which contained some statements that the company had answered earlier, precluded a rebuttal by the company. Two judges dissented. (Schneider Mills, Inc. v. NLRB, CA 4-1968, 67 LRRM 2413)	The decision reversed both the holding of the NLRB and that of a panel of the court. The two judges who dissented to the decision of the full court, relied on the opinion of the panel that decided the case earlier. (See Schneider Mills, Inc. v. NLRB, CA 4-1968, 67 LRRM 2417.) For the decision of the Board, see Schneider Mills, Inc., NLRB-1966, 62 LRRM 1527. In another case, a campaign leaflet distributed by a union on the eve before an election was held by the U.S. Court of Appeals at New Orleans to justify setting aside the election, which the union won by a vote of 22 to 21. The court found that the union made false statements regarding shift transfers, holidays, and automatic raises at another plant. The court reversed the NLRB holding. (National Cash Register Co. v. NLRB, CA 5-1969, 72 LRRM 2051)
	An employer interfered with an election by his actions in connection with the distribution of paychecks on the day before the balloting. The election was held on a Friday. Although the employer had a rule that paychecks were not to be distributed before 2:00 p.m. on Friday, the employees received their checks on Thursday. Seven dollars and fifty cents had been withheld from each check. Each employee then received an envelope containing $7.50 in cash and bearing a statement from which, the Board found, he reasonably could conclude that the union's dues were $7.50 weekly instead of monthly. If the employee wished to receive his full	In dissenting, Chairman Miller argued that the Board should use great care in setting elections aside on the basis of misrepresentations where there is no other evidence of misconduct or other impropriety.

TAFT-HARTLEY ACT: REPRESENTATION CASES - Contd.

Issue	Holding	Comment
Election Campaigning -- Contd.		
Misrepresentations in Campaigning -- Contd.	pay, he was required to sign a statement that the $7.50 was going to him rather than to the union. A majority consisting of Members Fanning and Brown found that this was a misrepresentation sufficient to justify setting the election aside. Chairman Miller dissented. (National Homes Corp., NLRB-1970, 75 LRRM 1477)	
Movie: 'And Women Must Weep'	See below under "Employer Discrimination, Interference: Organizing, Election Interference" for rulings on showing of anti-union movie.	
Racial Appeals	Literature distributed by union and Interdenominational Ministerial Alliance in campaign to organize employees who were predominantly Negroes does not warrant setting the representation election aside, even though the campaign undeniably was based upon a racial issue. Although some of the language in the literature had emotional overtones and is not condoned, it was not designed to inflame racial hatred, but, instead, to encourage racial pride and concerted action for economic betterment. Moreover, the appeal to the racial issue was germane to the larger issue of the advantages and disadvantages of a union for the workers. The Board distinguished the literature from that used in the earlier Sewell case, which was designed, the Board said, to inflame racial hatred and to engender a conflict between Negro and white workers in a Southern plant. (Archer Laundry Co., NLRB-1965, 58 LRRM 1212; Aristocrat Linen Supply Co., NLRB-1965, 58 LRRM 1216) See, however, a decision by the U.S. Court of Appeals at Richmond holding that racial appeals made by a union to Negro employees warranted setting the election aside. (NLRB v. Schapiro & Whitehouse, Inc., CA 4-1966, 61 LRRM 2289). Also see another later NLRB decision declining to set aside election where the union made racial appeals to Negro employees. The Board found that the union merely was making appeals for collective action by the disadvantaged. (Baltimore Luggage Co., NLRB-1967, 64 LRRM 1145)	In the 1962 Sewell Manufacturing case, the NLRB laid down new rules for determining whether appeals to racial prejudice will warrant setting a representation election aside. The test, the Board said, will be whether the party making the racial appeal limits itself to setting forth truthfully the other party's position on matters of racial interest and does not deliberately seek to overstress and exacerbate racial feelings by irrelevant, inflammatory appeals. The burden will be on the party making use of a racial appeal to establish that it was truthful and germane. (Sewell Manufacturing Co., NLRB-1962, 50 LRRM 1532) The Sewell rule was one of a series of new rules laid down by the Board in 1962 for determining election interference. In the Dal-Tex Optical case, which dealt with statements of legal position, the Board said that it would henceforth look at the surrounding circumstances and the economic realities of the employer-employee relationship to determine whether the statements, regardless of the form in which made, interfered with employee freedom of choice. (Dal-Tex Optical Co., NLRB-1962, 50 LRRM 1489) Then in the Hollywood Ceramics case, the Board said that misrepresentation or other campaign trickery will cause an election to be set aside if it involves a substantial departure from the truth, is made at a time that prevents an affirmative reply by the other party, and is such that the misrepresentation may reasonably be expected to have a significant impact on the election. (Hollywood Ceramics Co., NLRB-1962, 51 LRRM 1600)

TAFT-HARTLEY ACT: REPRESENTATION CASES – Contd.

Issue	Holding	Comment
Election Campaigning--Contd.		
Racial Appeals--Contd.	With one judge dissenting, a three-judge panel of the U.S. Court of Appeals at Richmond upheld the Board's decision in this case. The majority of the panel agreed with the distinction drawn by the NLRB between racial appeals that are "temperate in tone, germane, and correct factually" and those that "overstress and exacerbate racial feelings by irrelevant and inflammatory appeals." (NLRB v. Baltimore Luggage Co., CA 4-1967, 67 LRRM 2209)	
Sound-Car Broadcasts	The Peerless Plywood rule barring speeches to massed assemblies of employees during the 24 hours preceding a representation election was not violated where a union used a sound car to broadcast appeals to employees who were at work during the 24 hours preceding the election. Members Brown and Zagoria dissented. (Crown Paper Board Co., NLRB-1966, 62 LRRM 1041)	The majority distinguished the case from the earlier U.S. Gypsum case in which sound-car speeches were held to violate the 24-hour rule. It pointed out that in the present case there were no speeches, only appeals interspersed with music and that the appeals were made only for an hour. In U.S. Gypsum, speeches that could be heard by working employees were broadcast for about 7-1/2 hours. (U.S. Gypsum Co., NLRB-1956, 37 LRRM 1374)
Threats and Promises: Free Speech	An employer interfered with an election through the impact of letters he sent to employees. There is no merit in the contention that the coercive impact of the implied threat of plant closure in the first letter was mitigated by the second letter. The second letter clearly kept alive the earlier threat that the employer might, on his own initiative, close the plant if the intervening union won the election. The decision was by Members Fanning and Brown. Chairman Miller dissented. (McLaughlin Co., NLRB-1971, 76 LRRM 1317)	In his dissent, Chairman Miller made this statement: "The letters include no specific threat and merely recite facts representing UAW's history as known to the employer. To imply a threat from them is to preclude an employer from truthfully relating his experiences with a union to employees, which experiences, in an employer's view, are relevant to an informed choice. In my opinion, the Board's role in policing preelection campaigns is not to strip preelection statements of the protection afforded by Section 8(c) of the Act simply because they stress the disadvantages of collective bargaining as drawn by an employer from his own experience." Chairman Miller apparently would apply the free-speech proviso of Section 8(c) to representation cases, something the Board had declined to do in such cases as Dal-Tex Optical discussed above.
Employer Election Petitions	An employer who wants to test the majority status of an incumbent union must present more than a bare petition. He must show by "objective considerations" that he has some reasonable grounds for believing the union has lost its majority since certification. An election will not be directed on an employer petition where	The decision overturned the rule established in the 1949 Whitney's case and applied in a number of cases thereafter. (Whitney's, NLRB-1949, 23 LRRM 1297)

TAFT-HARTLEY ACT: REPRESENTATION CASES - Contd.

Issue	Holding	Comment
Election Compaigning - Contd.		
Employee Election Petitions--Contd.	there is a mere change in ownership and no express assumption of the union contract by the new owner. (U.S. Gypsum Co. NLRB-1966, 61 LRRM 1384)	
Board Review of Regional Director's Determinations	It is not mandatory for the NLRB to review unit determinations of its regional directors. Review is discretionary with the Board as shown by Section 3(b) of the Act authorizing the Board to delegate to regional directors authority to determine appropriate bargaining units. The decision was unanimous. (Magnesium Casting Co. v. NLRB, U.S. SupCt-1971, 76 LRRM 2497)	In 1969, the U.S. Court of Appeals for the Second Circuit held that the Board must make its own findings of fact when the validity of a certification is challenged in an unfair-labor-practice proceeding. (Pepsi-Cola Buffalo Bottling Co. v. NLRB, CA 2-1969, 70 LRRM 3185; cert. denied by US SupCt-1969, 72 LRRM 2659) In the Magnesium case, however, the U.S. Court of Appeals for the First Circuit held the other way. (NLRB v. Magnesium Casting Co., CA 1-1970, 74 LRRM 2234)
Judicial Review	A federal district court did not have jurisdiction to enjoin the NLRB from conducting a representation election where the claimed jurisdiction was predicated on a finding that the Board had misapplied the Act in holding a bus company and a maintenance company to be "joint employers" of the employees involved. Whether the bus company was an "employer" of the employees was essentially a factual issue, not an issue depending on the construction of the statute. (Boire v. Greyhound Corp., US SupCt - 1964, 55 LRRM 2694) A subsequent NLRB decision in an unfair-practice case requiring the bus company and the maintenance company to bargain jointly with the union representing the maintenance employees was enforced by the U.S. Court of Appeals at New Orleans. (NLRB v. Greyhound Corp., CA 5-1966, 63 LRRM 2434) A federal district court had jurisdiction to direct the NLRB to certify the results of an election that already had been held. The court said that the Board had set the election aside "because of an apparent infirmity in its own procedure." Under such circumstances,	In its 1958 Leedom v. Kyne decision, the Supreme Court upheld the jurisdiction of a federal district court to vacate a Board certification, using its general equity powers, in an injunction action brought by a union. The Court found that the Board had contravened Section 9(b)(1) of the Act by including professional engineers and non-professionals in the same bargaining unit without giving the professionals an opportunity to vote on such inclusion. This was an exception to the general rule that an NLRB determination in a representation case is not such a "final order" as is subject to direct judicial review. (Leedom v. Kyne, US SupCt-1958, 43 LRRM 2222) The Court distinguished between the Boire case and the Kyne case, pointing out that the issue in the Boire case was essentially a factual one, while that in the Kyne case depended solely on construction of the Act. Relying on this decision, a federal district court directed the NLRB to certify the results of a valid election where the Board had set the election aside and directed a new one because the agent of the Board who had conducted the election had committed an

TAFT-HARTLEY ACT: REPRESENTATION CASES - Contd.

Issue	Holding	Comment
Judicial Review--Contd.	the court added, the Act imposes on the Board a mandatory duty to certify the election results. (Miami Pressmen's Local 46 v. McCulloch, CA DC-1963, 53 LRRM 2786) See above under "Clarification of Unit" for a discussion of scope of judicial review in case in which the Board enlarged a unit in a clarification proceeding.	act "that tended to destroy confidence in the election process." (IUE v. NLRB [Athbro Precision Engineering Corp.], USDC DC-1968, 67 LRRM 2361) The U.S. Court of Appeals at Philadelphia, however, held, in another case, that neither Section 10(f) of the Taft-Hartley Act nor Section 10 of the Administrative Procedure Act conferred jurisdiction on it to direct the NLRB to conduct an election and certify the results. A union had asked the court for such relief, contending that a question of representation was disclosed at the hearing on the union's petition for certification. (Operating Engineers v. NLRB [Giles & Ransome, Inc.], CA 3-1964, 55 LRRM 2669)
Voting Rights of Strikers' Replacements	See below under "Strikers' Replacements: Voting Rights."	

MAJOR LABOR-LAW PRINCIPLES ESTABLISHED BY THE NLRB AND THE COURTS

(December 1964 – February 1971)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES

Issue	Holding	Comment
Bargaining Obligation		
Bargaining Agent	If an international union has been certified by the NLRB as exclusive bargaining representative of an employer's employees, the employer violates his bargaining duty if he bypasses the international and negotiates and signs a contract with a local of the international. (Independent Stave Co. v. NLRB, CA 8-1965, 60 LRRM 2406)	In upholding the NLRB's holding to this effect, the court noted that in the 1958 Borg-Warner case (42 LRRM 2034), the U. S. Supreme Court held that a demand that a local union be named exclusive bargaining agent under a contract was not a subject of mandatory bargaining under the Act.
Bargaining Rights: Authorization-Card Bargaining Orders	A union does not have to be certified as the winner in an NLRB-conducted election to invoke a bargaining obligation from an employer under the Taft-Hartley Act. It may establish its majority status by other means under the unfair-labor-practice provisions of the Act. Although authorization cards admittedly are inferior to the election process as a means of establishing a union's majority status, they adequately can reflect employee sentiment when the election process has been impeded. A card that is unambiguous on its face should be counted in determining a union's majority unless it is proved that the employee was told that its "sole" or "only" purpose was to obtain an election; this rule, however, should not be given a "mechanical" application. The NLRB may issue an order requiring an employer to bargain with a union on the basis of authorization cards where the employer has engaged in practices that have the tendency to undermine a union's majority and impede the election process. The decision was unanimous. (NLRB v. Gissel Packing Co., US SupCt-1969, 71 LRRM 2481)	This was the test case on the entire authorization-card doctrine of the NLRB. During the oral argument before the Supreme Court, however, the Board announced that it virtually had abandoned the doctrine that an employer may be ordered to bargain if he did not have a "good-faith doubt" of the union's authorization-card majority. The Court also stressed that it was not ruling on the status of ambiguous or dual-purpose cards or on whether a bargaining order ever is appropriate where there is no interference with the election process. Finally, the Court said that there is a category of minor or less extensive unfair labor practices that, because of their minimal impact on the election machinery, will not sustain a bargaining order. In one of its first decisions applying the Gissel doctrine, the NLRB placed stress on the "widespread" unfair labor practices committed by the company.
Bargaining Rights: Order to Bargain After Election Loss (Bernel Foam Rule)	A union that proceeds to a representation election is not precluded from thereafter filing a refusal-to-bargain charge based on the employer's refusal to recognize and bargain with the union prior to the election. The Board will issue an order requiring the employer to bargain if the union can show either that (1) the employer improperly denied the pre-election bargaining request or (2) the union lost its majority as a result of unfair labor practices of the employer designed to destroy the union's majority and evade the bargaining obligation. (Bernel Foam Products Co., NLRB-1964, 56 LRRM 1039) The Bernel Foam doctrine later was approved by the U.S. Courts of Appeals at New York, St. Louis, and the District of	The Board later added that it will not issue a bargaining order in such an unfair practice case unless the union also is pressing objections to the election, and the employer's pre-election misconduct is sufficiently serious to warrant setting the election aside. (Irving Air Chute Co., Inc., NLRB-1964, 57 LRRM 1330) See above under "Representation Cases" for a discussion of the background of this doctrine. The Board's decision later was affirmed by the U. S. Court of Appeals at New York. (Irving Air Chute Co. v. NLRB, CA 2-1965, 59 LRRM 3052) In one of the cases decided by the Supreme Court in the Gissel case, NLRB v. General Steel Products, Inc., the union proceeded to an election and lost it. The Supreme

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation -- Contd.		
Bargaining Rights: Order to Bargain After Election Loss (Bernel Foam Rule)--Contd.	Columbia as within the NLRB's discretion, although the New York Court suggested that the bargaining-order remedy should be applied with restraint. (NLRB v. Flomatic Corp., CA 2-1965, 59 LRRM 2535; Colson Corp. v. NLRB, CA 8-1965, 59 LRRM 2512, cert. denied by US SupCt, 60 LRRM 2353; IUE v. NLRB [S.N.C. Mfg. Co.], CA DC-1965, 59 LRRM 2232, cert. denied by U.S. SupCt, 60 LRRM 2353)	Court upheld the NLRB's bargaining order based on the authorization cards held by the union prior to the election. See NLRB v. Gissel Packing Co., supra.
Bargaining Rights: Use of Authorization Cards as Basis (Statement of NLRB Position)	The NLRB restated its position on authorization cards and bargaining orders in two decisions issued after the Supreme Court's decision in NLRB v. Gissel Packing Co., supra. In the Board's view, the Gissel decision established the following principles: (1) a bargaining order may be issued to redress unfair labor practices so coercive that such an order would be needed to repair their unlawful effects even in the absence of a violation of Section 8(a)(5); and (2) where the unlawful conduct is less flagrant, the Board may find a Section 8(a)(5) violation and issue a bargaining order if the possibility of erasing the effect of the unfair practices and ensuring a fair election by the use of traditional remedies is slight and the employees' preference, as expressed through authorization cards, would be protected better by a bargaining order. With respect to allegations of misrepresentation in the solicitation of the cards, the Board said the following rule would be applied: Where the objective facts, as evidenced by events contemporaneous with the signing, clearly demonstrate that the misrepresentation was the decisive factor in causing an employee to sign an authorization card, his card will not be counted; but where the only indication of reliance on such a misrepresentation is the signer's subsequent testimony as to his subjective state of mind when signing the card, the card will be considered valid. (Garland Knitting Mills, NLRB-1969, 72 LRRM 1112; Marie Phillips, Inc., NLRB-1969, 72 LRRM 1103)	Prior to Gissel, the NLRB's position on bargaining orders had been set out in the Aaron Brothers case. The Board stated that an employer's refusal to recognize a union on the basis of cards would not violate the Act where (1) the employer does not engage in substantial unfair labor practices designed to dissipate the union's majority; (2) the employer does not engage in other conduct indicating an objective of seeking delay and rejecting the collective bargaining concept; and (3) the General Counsel does not offer any other affirmative evidence from which an inference of bad faith might be drawn. (Aaron Brothers Co., NLRB-1966, 62 LRRM 1160) Although the NLRB's brief in Gissel followed the Aaron Brothers approach, the Supreme Court noted that in oral argument, the Board announced that it virtually had abandoned the good-faith or bad-faith approach. So under the Board's current doctrine, the Court said, an employer's good-faith doubt of the union's majority is largely irrelevant, and the key to the issuance of a bargaining order is the commission of serious unfair labor practices that interfere with the election processes and tend to preclude a fair election. The Court remanded the cases to the Board for findings not phrased in terms of good- or bad-faith doubt. See NLRB v. Gissel Packing Co., supra.
Bargaining Rights: Use of Authorization Cards as Basis; Test for Validity of Cards	In determining the effect to be given authorization cards, the central inquiry is whether the employees by their act of signing clearly manifested an intent to designate the union as their bargaining agent. In assessing that intent, the starting point is the wording of the card. Where a card on its face clearly declares a purpose to designate the union as bargaining agent, the card itself effectively advises the employee of that purpose. This is particularly so where the form of the card is such as to leave no room for possible ambiguity. An employee who signs	This case was used as a vehicle by the Board to restate its position on when authorization cards will be counted in determining a union's majority status. The Board's position first was stated in the 1963 Cumberland Shoe case in which the Board laid down the rule that if a card is unambiguous on its face, it will be counted unless the union solicitor obtained it by the representation that its "sole" or "only" purpose was to obtain an election. (Cumberland Shoe Corp., NLRB, 1963, 54 LRRM 1233; enforced by CA 6, 1965, 60 LRRM 2305)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Bargaining Rights: Use of Authorization Cards as Basis; Test for Validity of Cards--Contd.	such a card may not understand all the legal ramifications that may follow his signing, but if he can read, he is at least aware that by signing he is effectuating the authorization the card declares. Declarations by union organizers that cards are desired to obtain an election do not constitute misrepresentation of either fact or purpose under ordinary circumstances. Such statements normally are no more than truthful statements of a concurrent purpose for which the cards are sought. So the fact that employees are told by those who solicit the cards that an election is contemplated or that a purpose of the card is to make an election possible is not sufficient, of itself, for vitiating unambiguously worded cards. But where union organizers solicit cards on the explicit or indirectly expressed representation that they will use the cards "only" to obtain an election and then seek to use them to establish majority representation, the cards will be invalidated. This does not imply that a finding of misrepresentation will be limited to situations in which employees expressly are told in haec verba that the "sole" or "only" purpose of the cards is to obtain an election. The Board never has suggested such a mechanistic application of the principles. It looks to substance, rather than form, and it is not the use of certain key or "magic" words that is controlling. It is the totality of circumstances surrounding the solicitation of the cards that is determinative. (Levi Strauss & Co., NLRB-1968, 68 LRRM 1338; McEwen Mfg. Co., NLRB-1968, 68 LRRM 1343)	In the Gissel case, the Supreme Court approved the Cumberland Shoe doctrine as restated in Levi Strauss. See NLRB v. Gissel Packing Co., supra. In the interval between Cumberland Shoe and Gissel, several U. S. courts of appeals refused to go along with the "sole" or "only" rule of Cumberland Shoe. See NLRB v. Swan Super Cleaners, CA 6-1967, 66 LRRM 2385; NLRB v. Logan Packing Co., CA 4-1967, 66 LRRM 2596; Crawford Mfg. Co. v. NLRB, CA 4-1967, 66 LRRM 2529, cert. denied by US SupCt-1968, 67 LRRM 2997; NLRB v. Dan Howard Mfg. Co., CA 7-1968, 67 LRRM 2278; The Schwarzenbach-Huber Co. v. NLRB, CA 2-1969, 70 LRRM 2805. In the Schwarzenbach case, the court called the authorization-card "business" an "abomination." These decisions all would appear to be affected by the Supreme Court's Gissel opinion where the cards are unambiguous. In remanding a case to the NLRB following the Gissel decision, the U.S. Court of Appeals at New Orleans said a bargaining order may be issued where: (1) the union had valid authorization cards from a majority of the employees in an appropriate unit; (2) the employer's unfair labor practices were serious and extensive, although not "outrageous" or "pervasive" enough to justify a bargaining order in the absence of a card majority; (3) the possibility of erasing the effects of the employer's conduct and of ensuring a fair election are slight; and (4) employee sentiment best can be protected in the particular case by a bargaining order. (NLRB v. American Cable Systems, Inc., CA 5-1969, 71 LRRM 2979)
Bargaining Rights: Use of Authorization Cards as Basis; Delay in Issuing Complaint	An employer may be ordered to bargain with a union on the basis of authorization cards obtained by the union from a majority of the employees five years earlier. The union demanded recognition on the basis of the cards in 1962. When the employer refused, the union petitioned for an election, which it lost. Although the election was set aside, the union withdrew its petition for a new election and filed unfair-labor-practice charges. The NLRB's General Counsel deferred action on the charges for 15 months because he anticipated correctly that the Board would reverse its policy of refusing to entertain refusal-to-bargain charges based on an employer's refusal to recognize a union before an election. The delay in issuing the complaint is insufficient ground for refusing to enforce the Board's bargaining order, the court said. (Bryant Chucking Grinder Co. v. NLRB, CA 2-1967, 67 LRRM 2017)	In support of its holding, the court cited the Supreme Court's 1962 Katz decision in which the Court said: "Inordinate delay in any case is regrettable, but Congress has introduced no time limitation into the Act except that in Section 10(b)." (NLRB v. Katz, US SupCt-1962, 50 LRRM 2177, 2182) One appeals court judge reluctantly concurred in the decision "distasteful though that is." Another judge dissented, saying: "The Board appears to have been so anxious to punish the guilty employer, or to put the union in the saddle regardless of all other considerations, that it has completely ignored the interest of the employees." The Supreme Court later denied review of the Bryant Chucking Grinder case. (Bryant Chucking Grinder Co. v. NLRB, US SupCt-1968, 68 LRRM 2408)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Bargaining Obligation -- Contd.		
Bargaining Rights: Use of Authorization Cards as Basis: Independent Knowledge of Union's Majority	An employer may be ordered to bargain with a union on the basis of authorization cards, even though he does not commit any independent unfair labor practices, if he had independent factual knowledge of the union's majority status. In this case, there were only four employees in the unit, and the employer's representative accepted the cards and acknowledged that the signatures were genuine. When recognition later was refused, all four employees struck. The Board said that any bona fide dispute as to the union's majority status had been dissipated. (Pacific Abrasive Supply Co., NLRB-1970, 74 LRRM 1113)	In making the ruling, the Board relied on the following language in the Supreme Court's Gissel opinion: "When confronted by a recognition demand based on possession of cards signed by a majority of his employees, an employer need not grant recognition immediately, but may, unless he has knowledge independently of the cards that the union has a majority, decline the union's request and insist on an election * * *." (Emphasis supplied.) See NLRB v. Gissel Packing Co., supra.
Bargaining Rights: Use of Authorization Cards as Basis: Interference Violations	An employer may be ordered to bargain with a union whose majority status has been undermined by the employer's unlawful acts of interference. A bargaining order is warranted, even assuming that the employer's refusal to recognize the union was not unlawful. The decision was by an NLRB panel composed of Chairman Miller and Members Fanning and Brown. Chairman Miller concurred in a separate opinion. (United Packing Co., NLRB-1971, 76 LRRM 1156)	Again, the Board invoked the Gissel opinion. Under its rationale, the Board said, it is necessary to assess the extensiveness of the employer's unfair labor practices in terms of their past effect on the election conditions and the likelihood of their recurrence in the future. Chairman Miller said that he would predicate the bargaining order solely on the employer's commission of unlawful interference that made a fair election impossible or the chance of a fair rerun slight. See NLRB v. Gissel Packing Co., supra.
Bargaining Rights: Use of Authorization Cards as Basis; Minor Violation	An unaggravated interference violation of Section 8(a)(1), standing alone, does not warrant the issuance of a bargaining order against the employer after the union had lost an election. The appropriate remedy in such a case is the issuance of an order directing the employer to cease and desist from any further 8(a)(1) violations and directing a new election after the passage of a reasonable period of time and opportunity for further persuasion by the union. One judge dissented from the court's refusal to enforce the order to bargain. (NLRB v. Flomatic Corp., CA 2-1965, 59 LRRM 2535) In its Gissel Packing opinion, the Supreme Court said that there is a category of minor or less extensive unfair labor practices that, because of their minimal impact on the election machinery, will not sustain a bargaining order. See NLRB v. Gissel Packing Co., supra.	Describing the issuance of a bargaining order in such a case as "strong medicine," the court urged restraint in its use. It added that the argument for restraint is even more compelling in the light of the Board's Bernel Foam decision, which the court states will result in a union's taking care to raise an unfair labor practice charge along with petitioning for an election even though there is only a very slight basis for doing so. The U.S. Court of Appeals for the District of Columbia rejected the reasoning of the Second Circuit, stating that the extent of the interference by the employer is a matter within the expertise of the Board. (Steelworkers v. NLRB [Northwest Engineering Co.], CA DC-1967, 64 LRRM 2650) The Supreme Court later denied review of this case. (Northwest Engineering Co. v. NLRB, US SupCt-1967, 66 LRRM 2444)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Bargaining Rights: Use of Authorization Cards as Basis; Minor Violation – Contd.	A bargaining order issued by the NLRB on the basis of findings of unlawful interrogation of employees by the employer and unlawful threats of reprisals if the employees chose the union as bargaining representative was denied enforcement by the U.S. Court of Appeals for the Second Circuit. The court did not agree with some of the Board's findings, particularly that the employer's questioning of two employees was unlawful. It also observed that there was no evidence that the employer's unlawful threat to close the plant if the union came in was known to anyone other than the employee to whom it was made. Under the circumstances, the court decided that the only appropriate course was to vacate the bargaining order and remand this portion of the case to the Board for further findings and conclusions. (NLRB v. General Stencils, Inc., CA 2-1971, 76 LRRM 2288)	In another case, the U.S. Court of Appeals for the Seventh Circuit enforced a bargaining order, although it had some misgivings about the actual impact of the employer's violations and whether the employees would have voted for the union even if the employer had not committed violations. So it decided that the Board's order should be modified to advise the employees of their right to petition independently for a new election. (NLRB v. Drives, Inc., CA 7-1971, 76 LRRM 2296)
Bargaining Rights: Use of Authorization Cards as Basis; One-Year Election Rule	Although Section 9(c)(3) of the Act forbids the NLRB to conduct a representation election in a unit in which a valid election has been conducted during the preceding 12 months, this does not bar the Board from ordering an employer to bargain with a union that, although defeated in the election, has obtained authorization cards from a majority of the employees within the year following the election. The decision was by a three-judge panel. One judge dissented. (Conren, Inc. v. NLRB, CA 7-1966, 63 LRRM 2273)	The decision upheld that of the NLRB. (Conren, Inc., NLRB-1966, 61 LRRM 1090) The dissenting judge expressed the view that the union's soliciting of cards within a year of the valid election is as disruptive of industrial peace as a second election. The U.S. Supreme Court denied review of the case. (Conren, Inc. v. NLRB, US SupCt-1967, 64 LRRM 2640)
Conduct of Negotiations: Over-all Bad Faith	General Electric Company violated the good-faith bargaining duty under the Act by its conduct both at and away from the bargaining table during its 1960 negotiations with the Electrical Workers (IUE). This was evidenced by GE's (1) presentation of its personal-accident insurance proposal on a take-it-or-leave-it basis, even though the proposal was presented before the company was obligated to bargain about it; (2) refusal to furnish within a reasonable time cost-related information highly relevant to certain employee benefit proposals, even though the company insisted that it was bargaining about level of benefits, rather than costs; (3) attempting to deal separately with local unions on matters properly the subject of national negotiations and by soliciting	More than nine years elapsed before this case finally was resolved. Over 10,000 pages of testimony were taken by NLRB Trial Examiner Arthur Leff before he issued his report in the case. The NLRB took almost four years in issuing its decision. The NLRB's rulings were upheld by the appeals court. See General Electric Co., NLRB-1964, 57 LRRM 1491 for the Board's decision.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd. Conduct of Negotiations: Over-all Bad Faith--Contd.	locals to abandon or refrain from supporting the strike; and (4) over-all approach to and conduct of bargaining, including its insistence on its "fair and firm" contract proposal and its employee communications campaign. The decision was by a three-judge panel, and each judge wrote an opinion. There was a principal opinion by Judge Kaufman, a concurring opinion by Judge Waterman, and a concurring and dissenting opinion by Judge Friendly. (NLRB v. General Electric Co., CA 2-1969, 72 LRRM 2530) The Supreme Court denied review of the case, and it also denied a petition by GE for a rehearing on the denial of review. (General Electric Co. v. NLRB, US SupCt-1970, 73 LRRM 2600; petition for rehearing denied 73 LRRM 2971)	
Conduct of Negotiations: Denial of Check-off	The NLRB had no authority under the Act to order an employer to agree to a dues check-off in the initial contract with a union, even though it found that the employer had failed to bargain in good faith by consistently rejecting the union's demand for a check-off. The NLRB has no power to compel an employer or a union to agree to any substantive contract provision. The Supreme Court's decision was by a four-to-two margin, with Justices Douglas and Stewart dissenting and Justices White and Marshall not participating. It reversed the second decisions in the case of both the NLRB and the U. S. Court of Appeals for the District of Columbia. In concurring, Justice Harlan noted that he did so "on the understanding that nothing said therein is meant to disturb or question the primary determination made by the Board and sustained by the Court of Appeals that petitioner did not bargain in 'good faith,' and thus may be subject to a bargaining order enforceable by a citation for contempt if the Board deems such a proceeding appropriate." (H. K. Porter Co. v. NLRB, US SupCt-1970, 73 LRRM 2561)	In its first decision in the case, the Board found a violation of the bargaining duty, but it did not order the company to grant the check-off. (H. K. Porter Co., NLRB-1965, 59 LRRM 1462) The decision was upheld by the U. S. Court of Appeals for the District of Columbia, and the Supreme Court denied review. (Steelworkers v. NLRB [H. K. Porter Co.], CA DC-1966, 62 LRRM 2204; H. K. Porter Co. v. NLRB, US SupCt-1966, 63 LRRM 2236) The case went back to the appeals court when a new impasse developed. At that point, the court said that the company could not meet its obligation merely by negotiating on alternatives to a check-off. It would be perfectly proper, the court said, for the NLRB to order the company to grant a check-off in return for a reasonable concession on the other matters still in dispute. Indeed, the court added, "it is possible that in an appropriate case, the Board could simply order the company to grant a check-off." One judge dissented. (Steelworkers v. NLRB [H. K. Porter Co.], CA DC-1967, 66 LRRM 2761) Upon remand of the case, the Board ordered the company to grant the dues check-off. It had found that the refusal to grant the check-off was for the purpose of frustrating an agreement. (H. K. Porter Co., NLRB-1968, 68 LRRM 1337) The Board's decision was enforced by the U. S. Court of Appeals for the District of Columbia in a per curiam order by a three-judge panel, with one judge dissenting. (H. K. Porter Co. v. NLRB, CA DC-1969, 71 LRRM 2207)
	A company violated its bargaining duty by refusing during negotiations, as a matter of "principle," to grant the union a dues check-off. The court found that the company adopted its bargaining stance to weaken or	The decision by the NLRB also was a divided one, with Members Brown and Jenkins dissenting to the holding that the company violated its bargaining duty. (Roanoke Iron & Bridge Works, Inc., NLRB-1966, 62

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Conduct of Negotiations: Denial of Check-off--Contd.	destroy the union. It said that an employer or a union may not assume an intransigent position in bad faith on a mandatory subject of bargaining even though its purpose to frustrate an agreement on that issue coincides with a willingness to reach some over-all agreement. One member of the three-judge panel dissented, pointing out that the company did bargain to an agreement, although without a check-off. (Steelworkers v. NLRB [Roanoke Iron & Bridge Works, Inc.], CA DC-1967, 67 LRRM 2450)	LRRM 1464) The court pointed out that the purpose in the H.K. Porter case was to frustrate any agreement whatsoever, while in this case it was to weaken or destroy the union. The Supreme Court denied review of the case. (Roanoke Iron & Bridge Works, Inc., v. NLRB, US SupCt-1968, 68 LRRM 2097)
	A company did not violate its bargaining duty by refusing to agree to a union dues check-off, although it gave "vague and specious" reasons for rejecting the proposal. The bad-faith import is negated by the bargaining background and the over-all course of the negotiations. (Cone Mills Corp., NLRB-1968, 67 LRRM 1241)	The Board cited the following as negating bad faith: (1) There is insufficient evidence of any determination on the part of the employer to weaken or destroy the union; (2) the employer has dealt with the union almost continuously since the 1930's, and since 1935 the union has functioned without any provision for a check-off of dues; and (3) the negotiations produced agreement on many items, including a 6.2 percent wage increase, and the check-off proposals received considerable attention throughout the negotiations. The company was found to have violated the Act with respect to a discharge and a refusal to furnish the union with certain data with respect to a pension plan. The NLRB was upheld on the pension-data finding but not on the discharge. (Cone Mills Corp. v. NLRB, CA 4-1969, 71 LRRM 2916)
Conduct of Negotiations: Hard Bargaining	A company did not violate its bargaining duty by insisting upon, during protracted bargaining covering some 28 months and 74 formal negotiating sessions, a modification of prior contracts by incorporation of a broad-management-rights clause and language limiting arbitration to grievances based upon express terms of the contract. The company also did not violate its bargaining duty by its communications to employees during negotiations, including letters, bulletins, and formal and informal meetings. (Procter & Gamble Manufacturing Company, NLRB-1966, 62 LRRM 1617)	In clearing the company of violations, the Board distinguished its conduct from that of General Electric in the GE case. It pointed to the company's willingness to make concessions on other points and the noncoercive and factual nature of its communications to employees.
	A company did not violate the Act by adhering to its so-called final offer during the several negotiating meetings that were held between the date on which the offer was made and the date on which a strike began. But the company did violate the Act by insisting to the point of impasse that any contract signed include superseniority for nonstrikers and strike replacements. (Phillip Carey Manufacturing Co. v. NLRB, CA 6-1964, 55 LRRM 2821)	In clearing the company of any violation for adhering to its final offer, the court agreed with the NLRB. At the time the case was pending before the Board, it was anticipated that it might be a forerunner of the holding in the General Electric case. But the Board went to great lengths to make clear that it was not passing on any general technique of bargaining. (Philip Carey Manufacturing Co., NLRB-1963, 52 LRRM 1184) The Supreme Court was asked to review the case on the issue of whether the

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Conduct of Negotiations: Hard Bargaining--Contd.		charges were barred by the six-month statute of limitations. Review was denied. (Philip Carey Manufacturing Co. v. NLRB-1964, 57 LRRM 2307)
	A company was not in contempt of an order requiring it to bargain in good faith with a union where it held 32 bargaining sessions with the union at which practically every matter in dispute was discussed. Although the record of these sessions leaves no doubt that the company and the union were on nonconverging courses, there is no basis for finding that the conduct and actions of the company were in contempt of the bargaining order. (NLRB v. American Aggregate Co., CA 5-1964, 56 LRRM 2997)	The court previously enforced an NLRB order requiring the employer to bargain in good faith with the union. The Board's order was predicated on a finding that the company displayed a predetermination not to make any real concession and to reserve to itself unilateral power to decide matters of earnings, grievances, and other conditions of employment. (American Aggregate Co., NLRB-1959, 45 LRRM 1207; enforced NLRB v. American Aggregate Co., CA 5-1960, 47 LRRM 2297)
	A company did not violate the Act by the totality of its conduct during 13 bargaining sessions with a union without reaching an agreement. Although the company engaged in a course of "hard bargaining," the following evidence its good faith: (1) It met with the union whenever requested; (2) it submitted numerous counterproposals, discussed the union's proposals at length, and gave reasons for its position where remaining adamant; and (3) by the end of the negotiations, 54 of the 62 subsections that had been submitted for consideration had been agreed upon, and three had been withdrawn. (Dierks Forests, Inc., NLRB-1964, 57 LRRM 1086)	The Board's trial examiner had found a violation of the bargaining duty based on the totality of the company's conduct. In rejecting the trial examiner's findings, the Board observed that it has been admonished by the Supreme Court that it may not "either directly or indirectly, compel concessions or otherwise sit in judgment upon the terms of collective bargaining agreements." (See NLRB v. American National Insurance Co., US SupCt-1952, 30 LRRM 2147)
Conduct of Negotiations: Coordinated or Coalition Bargaining	General Electric Company violated its bargaining duty under the Act when it refused to bargain, after it had received formal notice of contract reopening from the Electrical Workers (IUE), with an IUE bargaining team that included representatives of seven other unions. But GE did not violate the Act by refusing to meet with the "coordinated" or "coalition" team for preliminary discussions prior to the formal reopening of the IUE contract. In making this distinction, the court adopted the position taken by Member Zagoria at the Board level. (General Electric Co. v. NLRB CA 2-1969, 71 LRRM 2418)	The basic issue, the court stated, is whether a union's inclusion of members of other unions on its bargaining committee justifies an employer's refusal to bargain. It does not, the court said, in the absence of a finding of bad faith or ulterior motive on the part of the unions. So long as the committee sought to bargain solely on behalf of employees represented by IUE, the company was not entitled to refuse to bargain. The preliminary meeting was another matter, the court said. The company had an absolute right to refuse to engage in preliminary meetings prior to formal reopening of the contract. So it could condition its agreement to preliminary meetings on a requirement that the union negotiating committee be limited to members of the union with which the new contract was to be negotiated. At the NLRB level, Member Jenkins dissented in full, while Member Zagoria dissented to the holding on the preliminary meeting. (General Electric Co., NLRB 1968, 69 LRRM 1305) Prior to the
	Shortly after the court decision in the GE case, the U. S. Court of Appeals at St. Louis held that the Minnesota Mining and Manufacturing Company violated the Act by refusing to bargain with a negotiating committee of OCAW that included members employed at other 3M plants who were members of other unions. The	

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Issue	Holding	Comment
Bargaining Obligation--Contd.		
Conduct of Negotiations: Coordinated or Coalition Bargaining--Contd.	court cited the GE decision. (Minnesota Mining and Manufacturing Co., CA 8-1969, 72 LRRM 2129)	Board's decision, there were three holdings on the Board's request for a Section 10(j) injunction pending adjudication of the case. (See McLeod v. General Electric Co., USDC SNY-1966, 62 LRRM 2809; CA 2-1966, 63 LRRM 2809; US SupCt-1967, 64 LRRM 2129.) In a somewhat related holding, the NLRB held that a union violated its bargaining duty by insisting that an employer continue to recognize it as bargaining representative for an inappropriate unit following a unit-clarification finding by the Board. (Smith Steel Workers [A. O. Smith Corp.], NLRB-1969, 70 LRRM 1145)
Conduct of Negotiations: Coordinated or Company-Wide Bargaining	By insisting on simultaneous and satisfactory settlement of contracts in other bargaining units of the company and by striking in support of such demands, a group of unions unlawfully attempted to engage in company-wide bargaining. The integrity of a bargaining unit, whether established by certification or by voluntary agreement of the parties, may not be unilaterally attacked. (AFL-CIO Joint Negotiating Committee [Phelps Dodge Corp.], NLRB-1970, 74 LRRM 1705) The case is pending before the U.S. Court of Appeals for the Third Circuit.	In another case growing out of the long and bitter copper strike of 1967-1968, an NLRB trial examiner found that the Steelworkers and nine other unions violated the Act in the attempt to engage in "coordinated" or company-wide bargaining with Kennecott Copper Corporation. But no exceptions were filed by the unions within the time limit, even though the Board had granted an extension of time. So the Board disposed of the case in a routine order. (See 70 LRR 199, 70 LRR 427.)
Conduct of Negotiations: Joint Bargaining (At Employer's Request)	Although a company may suggest the presence of two unions at negotiations it may not insist upon such presence to the point of impasse; it is not a mandatory subject for bargaining under the Act. By insisting upon such joint negotiations, the company was infringing upon a basic employee right guaranteed by the Act--the right of employees to select their own bargaining representatives. (F. W. Woolworth Co., NLRB-1969, 72 LRRM 1465)	The company operates a chain of stores. One union was certified as bargaining agent for the selling and nonselling employees in one store. Another union was certified as bargaining agent for the culinary department employees in the same store. The company insisted that the two unions negotiate jointly with it. It cited the decisions on coordinated bargaining by unions. But the Board emphasized that there is no reverse application of the principle laid down in the coordinated bargaining cases.
Data for Bargaining: Arbitration Claim Files	The obligation under the Act of an employer to provide a union bargaining representative with information needed by the union to police its contract extends to an employer's files of claims under an arbitration award directing that wage payments be made to certain employees. The Board said that only by having access to the files could the union evaluate the fairness of the employer's compliance with the arbitration award. (Twin City Lines, Inc., NLRB-1968, 67 LRRM 1553)	As a result of a snowstorm, the company had to cancel all service for several hours. The arbitrator awarded pay to the employees depending on the time they reported or telephoned. The company's limited offer to give the union access to the files of specifically named employees was not considered adequate by the court.
Data for Bargaining: Benefit Programs	A company violated its bargaining duty under the Act by refusing during negotiations to furnish the union with information relating to the cost of proposed improve-	The same court, in a decision handed down in 1961, had held that the company did not violate its bargaining duty when it refused to give the union information

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Data for Bargaining: Benefit Programs--Contd.	ments in existing welfare programs. The union had demanded the information to permit it better to evaluate the desirability of an increase in welfare benefits as opposed to an equivalent increase in take-home pay. (Sylvania Electric Products, Inc. v. NLRB, CA 1-1966, 61 LRRM 2657) The Supreme Court denied review of the holding. (Sylvania Electric Products, Inc., v. NLRB, US SupCt-1966, 63 LRRM 2236)	relating to the cost of a non-contributory group insurance program. Such costs, the court said, are neither wages nor conditions of employment, and they did not become a bargaining issue, since they were not interposed as a ground for resisting a request for a change in coverage. (Sylvania Electric Products, Inc. v. NLRB, CA 1-1961, 48 LRRM 2313; cert denied, US SupCt-1961, 49 LRRM 2173)
Data for Bargaining: Grievance Information	An employer lawfully refused to supply a union with cost information relating to the subcontracting of certain work, notwithstanding the union's contention that the information was needed to enable it to process grievances alleging that the subcontracting violated the contract. The union said it needed information relating to the cost of subcontracting and the cost of having the work done by employees of the company. But the Board found that none of the contract provisions alleged to have been violated referred to cost. (Southwestern Bell Telephone Co., NLRB-1968, 69 LRRM 1251)	The union had tried unsuccessfully to obtain a ban on subcontracting for some time. After the company subcontracted two projects, the union filed grievances. The company refused to supply the information, explaining that the work had been subcontracted because its own employees were too busy to do it.
Data for Bargaining: Merit-Rating Data	A company violated the Act by refusing to provide a union representing a unit of professional employees in a research center with the following information: (1) the current salary "guide curves" used by the company in the administration of its salary system; (2) the guide curves for the previous five years; (3) the academic degrees of all employees in the bargaining unit, along with a statement of the principal type of work each had been performing. (Emeryville Research Center, NLRB-1969, 70 LRRM 1099)	In deciding that the company was obligated to provide the union with the information requested regarding the guide curves, the Board stated that the information was necessary to enable the union to bargain intelligently. The case is pending before the U.S. Court of Appeals at San Francisco on a petition for review.
Data for Bargaining: Names and Addresses	Under the particular facts of the case, an employer must supply a union bargaining representative with a mailing list of the names and home addresses of all employees in the bargaining unit. Possession of the mailing list is relevant to the union's performance of its responsibilities in representing the employees. The court pointed out that when bargaining actually was in progress, the company mailed literature to the employees that supported the company's position. Unless the bargaining was to be completely one-sided, the court concluded, the union had to know the persons for whom it was bargaining so it could present its arguments to them and learn their opinions. (Standard Oil Co. of Calif. v. NLRB, CA 9-1968, 69 LRRM 2014)	Among the particular facts cited by the court in support of its holding were: (1) the relatively low union membership in the unit (only about half); (2) the residential dispersion of unit employees over a five or six county area; (3) the apparent ineffectiveness of the steward system; (4) the lack of adequate exposure of unit employees to union bulletin boards; and (5) the inefficiency of handbilling efforts. The decision upheld that of the NLRB. Member Zagoria dissented at the Board level, contending that the union's request for the home addresses was based solely on its desire to "counter the company propaganda" and this negated any suggestion that the list was sought for bargaining purposes. (Standard Oil Co. of Calif., NLRB-1967, 65 LRRM 1509)
	An insurance company unlawfully refused to supply a union with a list of names and ad-	In a sharply worded dissent, Judge Friendly said: "The occasion for my dissent is that we engage

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Data for Bargaining: Names and Addresses--Contd.	dresses of bargaining-unit employees, where the unit was nation-wide and covered some 16,000 insurance agents in 897 of the company's offices. The union contended it needed the list to solicit employee views on contract proposals, inform them concerning contract benefits, and encourage their participation in policing the labor agreement. (Prudential Insurance Co., v. NLRB, CA 2-1969, 71 LRRM 2254) The Supreme Court denied review of the holding. (Prudential Insurance Co. v. NLRB-1969, 72 LRRM 2695)	in self-deception when we proceed on the basis that the union's real objective is what its request of Prudential professed. There comes a point where we 'should not be ignorant as judges of what we know as men.' * * * The union wants the names and addresses of the agents not to poll them about contract proposals nor to service their grievances, but to engage in active solicitation of membership." The majority opinion upheld the holding of the Board. (Prudential Insurance Co., NLRB-1968, 69 LRRM 1409)
	A large aircraft company violated the Act by refusing to furnish to the Machinists Union a list of the names and addresses of all employees in the bargaining unit represented by the union. The court rejected the adequacy of a number of alternative ways, suggested by the company, by which the union could communicate with the employees, such as handbilling, bulletin boards, and distribution racks. (United Aircraft Corp. v. NLRB, CA 2-1970, 75 LRRM 2692)	As in the Standard Oil and Prudential cases, the court stressed the large number of employees -- 25,000 -- and their dispersal over a wide area.
Data for Bargaining: Point Information	A company did not violate the Act by refusing to furnish a union point information used in evaluating the various elements of a job for classification purposes--under the particular circumstances of the case. The union apparently had abandoned its demand for the point information and made no further requests for it for eight months. So the Board concluded that the demand was not related either to a pending grievance or the general administration of the contract. Member Fanning dissented. (Anaconda American Brass Co., NLRB-1964, 57 LRRM 1001)	Dissenting Member Fanning contended that the holding was "disruptive of long-established precedents." He argued that the union had at all times a statutory right to know precisely what points the company had assigned to any or all jobs.
Data for Bargaining: Profit Information	An employer who pleaded inability to pay a wage increase did not fulfill his obligation to substantiate his claim when he permitted a union-selected accountant to go over his books to verify the employer's profit-and-loss statement. The examination was subject to a condition that the accountant would tell the union only whether the profit-and-loss statement was accurate. One judge dissented in part. (Metlox Mfg. Co. v. NLRB, CA 9-1967, 65 LRRM 2637)	The court upheld the decision of the NLRB in the case. (Metlox Manufacturing Co., NLRB-1965, 59 LRRM 1657) The Supreme Court denied review of the case. (Metlox Manufacturing Co. v. NLRB, US SupCt-1968, 67 LRRM 2231). The U.S. Court of Appeals at Richmond, agreeing with the NLRB, held that another employer was not required to furnish a union with detailed information on gross profits and deductions therefrom for the union's use in bargaining on a bonus based on a percentage of profits where the employer did not plead inability to pay a higher bonus, and the union showed no specific need for the data. (Furniture Workers v. NLRB [White Furniture Co.] CA 4-1967, 67 LRRM 2484)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Data for Bargaining: Profit Information--Contd.	An employer who claims that competitive disadvantage precludes him from granting a wage increase has the same duty to meet a union's demand for substantiating data as an employer who claims inability to pay. (NLRB v. Western Wirebound Box Co., CA 9-1966, 61 LRRM 2218)	Noting that the Supreme Court has held that an employer who asserts inability to pay a wage increase has an obligation to present proof of its accuracy, the Court stated that it could see no reason why an employer who insistently asserts that competitive disadvantage bars granting a union wage demand does not have a like duty to come forward, on request, with some substantiation. The decision upheld that of the NLRB. (Western Wirebound Box Co., NLRB-1964, 55 LRRM 1193)
Data for Bargaining: Salary Data	A publishing company violated its bargaining duty under the Act when it refused to give a union representing a unit of the company's employees information relating to the exact salaries paid employees in the unit, including those paid salaries in excess of those specified in the union contract. The company provided information with respect to each employee not receiving the top minimum for his classification and the experience rating of each employee covered by the agreement. But it refused to furnish the union information relating to salaries of employees paid in excess of the top minimum. (Cowles Communications, Inc., NLRB-1968, 69 LRRM 1100)	Member Zagoria dissented, stating that he is reluctant to tie any more mandatory corsets around the bargaining process than the weight of the evidence requires. It was his position that the union's needs would be met by requiring the company to furnish a list of salaries above the top minimum rates, including a statement of how many employees receive each salary.
Data for Bargaining: Subcontracting	See discussion under "Arbitration Enforcement Cases" (NLRB Jurisdiction: Interpretation of Contracts)	
Data for Bargaining: Time Studies	A company must let the union have access to the plant to make its own time studies of disputed operations involved in pending grievances. The time studies were relevant and necessary to the union's administration of the grievance machinery of the contract, and the needed information was not available to the union through alternative channels. (The Fafnir Bearing Company v. NLRB, CA 2-1966, 62 LRRM 2415)	The decision of the appeals court upheld that of the NLRB in the case. (Fafnir Bearing Co., NLRB-1964, 56 LRRM 1108) Before the appeals court acted, the case went to the Supreme Court on the issue of the right of the union, the successful charging party, to intervene in the review proceeding before the U.S. Court of Appeals at New York. The Supreme Court upheld the right of the union to intervene; it remanded the case to the appeals court for further proceedings. (Auto Workers v. Fafnir Bearing Co., US SupCt-1965, 60 LRRM 2479)
	A company violated its bargaining duty by refusing to make plant facilities available to a union that asked permission to conduct a time study, since the information the union sought was necessary to enable it to decide whether to go to arbitration over a grievance protesting piece rates set by the company pursuant to a time study of its own. (Wilson Athletic Goods Mfg. Co., NLRB-1968, 67 LRRM 1193)	Contrary to the finding of its trial examiner, the Board found it immaterial that the union did not request to review the company's time study before seeking to conduct its own. In a later case, the U. S. Court of Appeals at Richmond upheld the right of a union to make its own time studies in connection with grievance processing, despite a "zipper" clause in the contract stating that the agreement constitutes a full and complete settlement of all bargainable subjects. Although this foreclosed further negotiations on subjects bargained about,

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation --Contd.		
Data for Bargaining: Time Studies--Contd.		the court said, it did not waive the union's right to make time studies. (General Electric Co. v. NLRB, CA 4-1969, 71 LRRM 2562) The Supreme Court denied review of the holding in the General Electric case. (General Electric Co. v. NLRB, US SupCt-1970, 73 LRRM 2120)
	In another case involving General Electric Company, the NLRB held that the company violated the Act by refusing a union's request that a union representative be permitted to make an evaluation within the plant of two jobs involved in grievances filed under the collective bargaining contract. The company offered, instead, to give the union video tapes showing the manner in which the two jobs are performed. But the video tapes were not considered to be a necessarily reliable and reasonably expeditious substitute for the in-plant evaluation sought by the union. The decision was by a three-member panel, with Members Fanning and Brown comprising the majority and Chairman Miller dissenting. (General Electric Co., NLRB-1970, 75 LRRM 1265)	In his dissent, Chairman Miller observed that he thought it to be the rule of law, that while an employer must supply necessary and relevant information to a union, he need not supply it in precisely the form requested.
Wage Data Obtained In Confidence	A company that conducted an area wage survey violated the Act when it refused to furnish an incumbent union with correlated data tying job classifications and pay rates to the specific companies surveyed. The company was engaged in a wage dispute with the union, and it furnished the union with a graph showing 20 job classifications, as well as the highest and lowest paid for each classification by each company surveyed. The union challenged the data and asked that the rates be tied to particular companies. The company refused, stating that the information had been obtained in confidence. The Board rejects the company's position, stating that information is not exempt from disclosure "merely because it was obtained from other employers in confidence." (General Electric Co., NLRB-1970, 74 LRRM 1444)	In support of its holding, the Board cited an earlier decision involving General Electric in which a trial examiner, with Board approval, stated: "Should such correlated (area wage survey) information be necessary for the intelligent processing of grievances by the union, the company would not be warranted in withholding it from the union because it may have been given such information on the understanding that it would not be disclosed." (General Electric Co., NLRB-1968, 69 LRRM 1254)
Execution of Contract	An employer violated the Act by refusing to execute a written contract with a certified union even though the contract, if properly signed, would have expired prior to enforcement of the Board's order, and the union apparently had lost its majority status. A new expiration date extending six months beyond that agreed to was fixed by the court.	The holding was based on the language of Section 8(d) of the Act requiring a party to bargain, upon request, to execute a written contract incorporating any agreement reached. Once full agreement has been reached, the duty to execute a written contract is applied strictly, as the decision in this case shows. The court's decision affirmed that of the NLRB

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Execution of Contract--Contd.	One judge dissented. (NLRB v. Warrensburg Board & Paper Corp., CA 2-1965, 58 LRRM 2145)	in the case. (Warrensburg Board & Paper Corp., NLRB-1963, 53 LRRM 1335)
	A company was adjudged in civil contempt of a bargaining order issued under the Act when it refused to execute a contract incorporating the agreement reached with the union. The court also adjudged the company in contempt for unilaterally granting wage raises to some employees without notifying the bargaining representative or giving it an opportunity to bargain about the increases. (NLRB v. Ralph Printing & Lithography Co., CA 8-1970, 75 LRRM 2267)	The execution of a contract in this case was refused by the owner of the company after his attorney had reached an agreement with the union.
Multi-Employer Bargaining: Employer Withdrawal	An employer was obligated to sign a contract negotiated by a multi-employer group, even though he had given notice of an intent to withdraw and had filed an election petition before the contract was signed. It made no difference whether the union still had a majority at the employer's plant; nor did it matter that the union in the past had negotiated special terms with some employers in the group. (NLRB v. Sheridan Creations, Inc., CA 2-1966, 61 LRRM 2586)	The decision upheld the ruling of the NLRB (57 LRRM 1176). The employer sought Supreme Court review, but review was denied. (Sheridan Creations, Inc. v. NLRB, US SupCt.-1967, 64 LRRM 2108)
	An employer who was operating his business as a debtor in possession while an arrangement was being established under the Bankruptcy Act did not violate the Act by refusing to adhere to a multi-employer agreement negotiated by an association to which he belonged, even though he did not give timely notice of withdrawal from the multi-employer bargaining relationship. The unusual circumstances relating to the employer's financial condition provided a basis for an exception. (U.S. Lingerie Corp., NLRB-1968, 67 LRRM 1482)	It has been the NLRB's position that to withdraw from a multi-employer bargaining relationship, an employer or a union ordinarily must give timely and unequivocal notice of withdrawal. For a notice to be timely, it must be given before the date set to begin multi-employer negotiations. But the Board will recognize an exception where there are unusual circumstances affecting the notice of withdrawal.
	See below under "NLRB Remedies: Bargaining Violations" in which an employer who refused to execute a contract negotiated on his behalf by an association from which he had not made a timely withdrawal was required to pay the fringe benefits called for by the contract. (NLRB v. Strong [Strong Roofing & Insulating Co.], US SupCt-1969, 70 LRRM 2100)	
Multi-Employer Bargaining: Union Withdrawal	The rules governing withdrawals from multi-employer bargaining relationships are equally applicable to employers and unions. On this basis, a union lawfully withdrew from such a relationship where (1) the withdrawal was made	This was the second case in which the NLRB held that the rules applicable to employer withdrawals from multi-employer bargaining relationships were equally applicable to union withdrawals. The first involved Detroit news-

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Multi-Employer Bargaining: Union Withdrawal—Contd.	before the date set to begin multi-employer negotiations, and (2) the withdrawal was unequivocal. The decision upheld a split ruling by the NLRB. (Publishers' Association of New York City v. NLRB, CA 2-1966, 62 LRRM 2722) The Supreme Court denied review of the case. (Publishers Association of New York City v. NLRB, US SupCt-1966, 63 LRRM 2527)	papers. (Evening News Assn., NLRB-1965, 60 LRRM 1149, 1154) Member Brown dissented at the Board level in both cases. The Board's decision in the Detroit Newspapers case was upheld by the U.S. Court of Appeals at Cincinnati. (Detroit Newspapers Publishers Assn. v. NLRB, CA 6-1967, 64 LRRM 2403) The NLRB later held that a union may withdraw from multi-employer bargaining with respect to one or more employers while continuing such bargaining with the remaining members. But it also held that the remaining employers may withdraw from the multi-employer bargaining if they believe the union's fragmentation efforts make such bargaining no longer desirable. (Pacific Coast Assoc. of Pulp and Paper Manufacturers, NLRB-1967, 64 LRRM 1420)
Ratification of Settlement	Rejection of a negotiated contract by a majority of skilled workers, who comprise 10 percent of the bargaining unit, means that no contract came into existence, even though a majority of the production and maintenance workers, who make up the remaining 90 percent of the unit, voted approval. The method of ratifying a contract, the U.S. Court of Appeals at Cincinnati ruled, is an internal concern of the union. The court upheld the dismissal of an action brought by the employer under Section 301 of the Taft-Hartley Act for breach of contract. (Lear Siegler, Inc. v. UAW, CA 6-1969, 73 LRRM 2097)	The appeals court finds, however, that the lower court erred in granting summary judgment on the point that the skilled workers were not a "labor organization" within the meaning of the Act, thus rejecting the company's argument that the UAW was trying to force the company to bargain with a union other than that certified by the NLRB. The appeals court remanded the case on this point.
Subjects for Bargaining: "Bar List"	A "bar list" -- a list maintained by an oil company of former employees and others who are barred from entering its refineries -- is a mandatory subject of bargaining under the Act. The list, which had been in existence for over 30 years, contained the names of (1) all employees who had been discharged regardless of the reason; (2) employees who quit and who, in the company's judgment, had been submarginal workers; and (3) employees of contractors who had been discharged for breach of rules while working on the company's property. (Shell Oil Co., NLRB-1967, 66 LRRM 1038)	The company took the position that it was not required to bargain about the list, since those on it no longer were part of the bargaining unit. The Board disagreed, stating that the list relates to an employee's job performance and his future in much the same way as a pension plan does.
Subjects for Bargaining: Cafeteria, Vending Machine Prices	A company was not required, upon request by a union, to bargain about changes in prices in a plant cafeteria operated by a caterer. Although the company arranged for meetings between the union and the caterer, it took the position that it could not discuss or bargain	The decision reversed both the holding of the NLRB and that of a panel of the court. The Board decision was by a three-to-two vote, with Members Jenkins and Zagoria dissenting. (Westinghouse Electric Corp., NLRB-1966, 61 LRRM 1165) The decision by the panel of the

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Subjects for Bargaining: Cafeteria, Vending Machine Prices--Contd.	about the prices, since it had no power to fix or control the prices of food served in the cafeterias by the independent contractor, the caterer. It was not the intent of Congress, the court said, to bring every act by every employer within the ambit of "conditions of employment." Equating the "trifles" involved in this case with subjects such as wages, hours, working conditions, job security, pensions, insurance, choice of bargaining representatives, or other subjects directly and materially affecting conditions of employment, the court added, is "sheer nonsense." (Westinghouse Electric Corporation v. NLRB, CA 4-1967, 66 LRRM 2634)	court was by a two-to-one vote. (Westinghouse Electric Corp. v. NLRB, CA 4-1966, 64 LRRM 2001) The two judges who formed the majority of the panel dissented to the decision of the full court. In holding that the company was required to bargain about changes in the cafeteria prices, the NLRB relied, in part, on the 1949 Weyerhaeuser case in which the company was required to bargain about the price of meals furnished to its sawmill and logging camp employees. (Weyerhaeuser Timber Co., NLRB-1949, 25 LRRM 1163) In trying to bring the Westinghouse case within the Weyerhaeuser rule, the court observed, the NLRB engaged in a "flight of fancy."
	The prices of food in vending machines operated by a company in its plant are not "conditions of employment," within the meaning of the Taft-Hartley Act. So a company did not violate its bargaining duty when it increased the food prices without bargaining with a union representing some of its employees. A majority of a three-judge panel of the U.S. Court of Appeals for the Fourth Circuit so held in reversing a decision of the NLRB. The employees involved could purchase lunch in the plant cafeteria, from the vending machines, or off the premises. The vending machines were owned by an outside contractor. As a result of complaints, the company and the vending machine contractor met with several unions, but not the one that filed the charge. Prices on some items were increased, and the union demanded that the company bargain about the price increases. The company refused. The majority of the court found the facts similar to those in the Westinghouse case and held there was no violation. (McCall Corp. v. NLRB, CA 4-1970, 75 LRRM 2223)	The Board asked the court either to distinguish the case from Westinghouse or to overrule the Westinghouse decision. The dissenting judge would have required bargaining about the price increases in both the Westinghouse and McCall cases. But he also took the position that the facts were distinguishable.
Subjects for Bargaining: Hiring Hall	A union's demand for a nondiscriminatory hiring hall is a mandatory subject for bargaining under the Act. Terms of hiring are a condition of employment, particularly in an industry such as construction where employment is transitory and employees move from job to job and employer to employer. (NLRB v. Houston Chapter, Associated General Contractors, CA 5-1965, 59 LRRM 3013)	The court affirmed the decision by the NLRB in the case (Houston Chapter, Associated General Contractors, NLRB-1963, 53 LRRM 1299). Both the Board and the court rejected a contention that such a hiring hall would be an unlawful form of union security under the Texas Right-to-Work Law.
Subjects for Bargaining: Housing	The rent employees pay for company housing adjacent to the mine in which they work is a "condition of employment" within the meaning of the Act. So the company's unilateral increase in 1966 of rentals that had remained at	The court did not agree that rents for company housing are mandatory subjects of bargaining as a matter of law; it depends on an analysis of all the relevant facts. Here, all housing in the town is owned by the company, about

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Subjects for Bargaining: Housing--Contd.	the same level since 1954 was an unlawful refusal to bargain. (American Smelting & Refining Co. v. NLRB, CA 9-1969, 70 LRRM 2409) The Supreme Court denied review of the case. (American Smelting & Refining Co. v. NLRB, US SupCt-1969, 71 LRRM 2328)	70 percent of the union members live there, and there is a waiting list for the houses. Moreover, the nearest private housing is 25 miles away.
Subjects for Bargaining: Hunting Privilege	The privilege of exclusive hunting on a reserved portion of a paper company's forest preserve is an employee benefit about which the company was obligated to bargain before discontinuing. It is immaterial that the privilege is not mentioned in the contract and was never discussed in negotiations. Immediate restoration of the privilege for the future is ordered. (Southland Paper Mills, Inc., NLRB-1966, 63 LRRM 1386)	The privilege had existed for 20 years, but was withdrawn after the company suffered its first strike. The company wanted to repair damaged customer relations by inviting customers to hunt during the 1965-1966 season.
Subjects for Bargaining: Medical Examinations	A company was not required by the Act to bargain with a union concerning physical examinations certain employees were required to take where the management prerogative clause in the union contract retained for the company the sole right to "determine the qualifications of employees." This language encompassed physical examinations and removed that subject from the scope of bargaining during the term of the contract. Member Fanning dissented. (LeRoy Machine Co., NLRB-1964, 56 LRRM 1369)	In the same case, however, the Board held that the union had not waived its right to bargain on rates for new jobs, since there was no express provision in the contract giving the company the right to fix such rates unilaterally or binding the union not to request bargaining on the issue.
Subjects for Bargaining: Performance Bond	A union violated the Act by insisting, as a condition to entering into a contract, that the employer establish a fund as security for the payment of wages and fringe benefits, such a demand not being a mandatory subject of bargaining. Members Brown and Jenkins dissented. (Carpenters Union [Excello Dry Wall Co.], NLRB-1963, 55 LRRM 1015)	The Board previously had held that an indemnity bond insisted upon by an employer was outside the scope of mandatory bargaining. The decision was affirmed by the U. S. Court of Appeals at Richmond. (NLRB v. Davison [Arlington Asphalt Co.], CA 4-1963, 53 LRRM 2462)
	A union violated the Act by insisting during contract negotiations that the employer, a plastering contractor, agree to a provision under which the employer would post a cash bond to cover any assessment for wages or fringe payments due under the contract. The proposed clause also would have required the employer to pay liquidated damages and to guarantee payment of wages and fringe benefits due employees of subcontractors. The performance bond was a nonmandatory subject of bargaining. One judge dissented. (NLRB v. Hod Carriers, Local 1082, CA 9-1967, 66 LRRM 2333)	The decision upheld that by the NLRB in the case. (Hod Carriers Union, Local 1082 [E. L. Boggs Plastering Co.], NLRB-1964, 58 LRRM 1033) The court noted that the NLRB uniformly has held that performance bonds are not mandatory subjects for bargaining and that the courts uniformly have upheld the rulings. The Supreme Court denied review of the case. (Hod Carriers Local 1082 v. NLRB, US SupCt-1968, 67 LRRM 2385)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Subjects for Bargaining: Performance Bond--Contd.	A union's insistence to impasse upon a contract clause that would require the employer to pay the union "a sum equivalent to the initiation fees and dues the union would have received for each employee not included in the bargaining unit" if the employer violated a clause barring subcontracting to employers not parties to the master labor agreement was an unlawful refusal to bargain under the Taft-Hartley Act. An NLRB order against the union is enforced. (NLRB v. Bricklayers, Local 3, CA 9-1968, 69 LRRM 2944)	In so holding, the court said it is true that some provisions of a contract may be classed as mandatory subjects for bargaining. But the clause sought in this case is more akin to one requiring the posting of a performance bond than to a union-security or no-strike clause. A performance-bond clause has been held to be a non-mandatory bargaining subject, the court added, and the rule is the same whether the provision is insisted upon by the union or the employer.
Subjects for Bargaining: Plant Closure	An employer was not obligated under the Act to bargain about a decision to shut down a plant where he was faced with the economic necessity of either moving or consolidating a failing business. But the employer still had an obligation to notify the union of his intentions so that the union would be given an opportunity to bargain about the rights of the employees whose employment status would be altered by the managerial decision. (NLRB v. Royal Plating and Polishing Co., CA 3-1965, 60 LRRM 2033)	The NLRB had held that the employer violated the Act by failing to bargain about the economically motivated decision to close the plant. It ruled the same way in a reconsideration of its initial holding after the Supreme Court's decisions in the Fibreboard subcontracting and Darlington plant-closure cases. (57 LRRM 1006, 59 LRRM 1141) In a subsequent decision on the remedy to be applied for the bargaining violation in the Royal Plating case, the Board decided to fashion a remedy to insure what it called "meaningful" bargaining. It ordered the company to pay back pay to the terminated employees subject to limitations designed to encourage "meaningful" bargaining. (Royal Plating and Polishing Co., NLRB-1966, 63 LRRM 1045)
	An employer was not obligated under the Act to bargain about a decision to terminate its sole remaining contract operation in an area after loss of other contracts had made it uneconomical to continue operations in the area. The court reviewed the case in the light of the Supreme Court's Fibreboard and Darlington opinions and decided that the case was distinguishable factually from both Fibreboard and Darlington. Unlike Fibreboard, it said, this company was not continuing the same work at the same plant under similar employment conditions. It was discontinuing operations in the area completely. Unlike Darlington, there was no anti-union motive in this case. (NLRB v. Wm. J. Burns Intl. Detective Agency, CA 8-1965, 59 LRRM 2523)	In supporting its holding before the court that the company had violated the Act by failing to bargain about the decision to terminate the operation (Wm. J. Burns Intl. Detective Agency, NLRB-1964, 57 LRRM 1163), the NLRB relied on the decision of the Supreme Court in the Fibreboard case. (Fibreboard Paper Products Corp. v. NLRB, US SupCt-1964, 57 LRRM 2609)
	A company did not violate the Act by failing to give notice to or to consult with the union before ceasing manufacture of one line of products or by laying off employees affected by the decision without bargaining with the union about the methods of selecting employees for lay-off. The management rights provision of the union contract gave the employer	The decision to discontinue the line was made after a bankruptcy proceeding and at a time when all employees had been laid off. The union asked several times to negotiate about the discontinuance of the line and the manner of layoff, but the company at no time acceded to the request.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Subjects for Bargaining: Plant Closure--Contd.	the exclusive right to eliminate production of any of his products and to lay off employees who were no longer needed. (Ador Corp., NLRB-1965, 58 LRRM 1280)	
	An employer was not required to bargain about a decision based solely on greatly changed economic conditions to terminate his business and reinvest the capital in a different enterprise in another location as a minority partner. A decision of such fundamental importance to the basic direction of the corporate enterprise is not included within the area of mandatory bargaining under the Act. But the employer was required to notify the union of the decision to close the business and to bargain about the effect of the decision on the employees the union represented. (NLRB v. Transmarine Navigation Corp., CA 9-1967, 65 LRRM 2861)	The NLRB had held that the company violated its bargaining duty by executing the contract to terminate the business and enter the new one without bargaining about the decision with the union. The company asked for reconsideration of the decision after the Supreme Court's Darlington decision, but the Board denied the motion. (Transmarine Navigation Corp., NLRB-1965, 59 LRRM 1232)
	A company met its statutory obligation to bargain with a union about the relocation of its plant to a point 35 miles away where the company discussed the effect of the move with the union at length and even offered to bargain about the relative advantages of the move itself. The company was not required to recognize and bargain with the union at the new location until it reestablished its majority. It was not disputed that the move was precipitated by legitimate economic reasons and was in no way anti-union. (Auto Workers v. NLRB [Pierce Governor Co.], CA DC-1968, 67 LRRM 2695) One judge dissented.	Regarding the company's refusal to recognize the union without proof of its majority status at the new plant, the court set forth this rule: "It is established that, although a plant relocation does not in itself invalidate a union's representative status, such a relocation or any other substantial change in employee personnel sufficient to justify a reasonable doubt concerning the continued majority, is a valid premise for a company's demand for assurance on the point, provided anti-union policy or intent does not taint the company's position." The court pointed out that, as it turned out, only one employee of the 200 or more at the new plant had worked at the old plant. The decision upheld that of the NLRB. (Pierce Governor Co., Inc., NLRB-1967, 65 LRRM 1027) The NLRB later held in a related case that a company did not violate the Act by (1) refusing to bargain with the union regarding the transfer of employees from one plant to another plant at which certain work was relocated, and (2) refusing to recognize and bargain with the union as the representative of the employees at the second plant. To establish a duty on the part of the employer to bargain with the union at the second plant, the Board stated, it must be shown either that the union represents a majority of the employees at that plant or that the union's lack of a majority is attributable to unfair labor practices of the employer. Neither, it said, was established by the evidence in this case. (Westinghouse Electric Corp., NLRB-1969, 70 LRRM 1255)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Subjects for Bargaining: Plant Closure -- Contd.	A company that closed its plant and moved its operations to a new plant 27 miles away for economic reasons violated its bargaining duty under the Act by refusing to furnish the union representing the employees at the old plant with information about jobs at the new plant and by refusing to bargain about the transfer of the employees to the new plant. But the company may not be ordered to bargain with the union at the new plant, to continue at the new plant the wages and employment conditions that had been established at the old plant, and to pay back pay at the rates paid at the old plant. (Cooper Thermometer Co. v. NLRB, CA 2-1967, 65 LRRM 2113)	The court upheld the NLRB's finding on the refusal to bargain, but it did not approve the parts of the Board's remedial order relating to bargaining, wage rates and working conditions, and back pay at the new plant. See below under "Remedies: Plant Removal or Closure" for a further discussion of remedies in these cases. (For Board's decision, see Cooper Thermometer Co., NLRB-1966, 63 LRRM 1219) In a later case, the Board found no violation in a company's refusal to bargain about transfer of employees to a new plant where certain work was relocated and his refusal to bargain with the union as representative of the employees at the new plant. The union remained bargaining agent at the old plant. The Board distinguished the case from Cooper Thermometer. (Westinghouse Electric Corp., NLRB-1969, 70 LRRM 1255)
	A multi-corporation employer violated its bargaining duty by closing down one of its plants for economic reasons without prior notice to or consultation with the union. It was no defense that the union did not request bargaining, since it was not aware of the decision to close the plant. This being a partial closing, rather than a complete cessation of business, the case is governed by the Fibreboard, rather than the Darlington, decision. Since the necessary result of the plant closing was a termination of employment, the company failed to bargain about "a term or condition of employment." (Ozark Trailers, Inc., NLRB-1966, 63 LRRM 1264)	In holding that the company was obligated to bargain about the decision to close the plant, the Board reaffirmed the rationale of its Fibreboard decision. It also rejected the reasoning of the U. S. Courts of Appeals at St. Louis and Philadelphia in the Adams Dairy and Royal Plating cases in which the courts had rejected Board decisions that the companies violated the Act by failing to bargain about subcontracting and plant-closure decisions. (See above for a discussion of the Royal Plating decision and below for a discussion of the Adams Dairy decision.)
	For a discussion of cases involving the right to close a plant and the motivation therefor, see below under "Employer Discrimination, Interference."	
Subjects for Bargaining: Production Ceilings	See below under "Union Coercion, Discrimination."	
Subjects for Bargaining: Racial Discrimination	See below under "Employer Discrimination, Interference."	
Subjects for Bargaining: Ratification of Contract	An employer violated the Act by insisting, after all other terms of the contract were agreed upon, that the contract be approved or ratified by a majority of the employees. (Houchens Market v. NLRB, CA 6-1967, 64 LRRM 2647)	Ratification of the contract was not a mandatory subject for bargaining, the court said, so the employer could not insist upon it as a condition to an agreement.
Subjects for Bargaining: Reorganization Plan	A company did not violate its bargaining duty under the Act when it failed to negotiate with the union about a planned revision of the com-	In finding a violation in this case, the NLRB said that "reorganization plans designed to change outmoded work rules and to eliminate

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Subjects for Bargaining: Reorganization Plan--Contd.	pany's terminal operations. The company's action was a change in its day-to-day operating procedures and may not be characterized as directly involving mandatory bargaining subjects under the Act. Moreover, to require the company to bargain about the revision would significantly abridge its freedom to manage its own affairs. The decision denied enforcement to a split decision of the NLRB. (NLRB v. Dixie Ohio Express Co., CA 6-1969, 70 LRRM 3336)	unnecessary jobs are undeniably intended to effect changes in established terms and conditions of employment." It added that in this country, "such matters traditionally have been subjected to collective bargaining." (Dixie Ohio Express Co., NLRB-1167, 66 LRRM 1092) Member Jenkins dissented at the Board level.
Subjects for Bargaining: Retirees' Benefits	Retirees are not "employees" within the meaning of Section 8(a)(5) of the Taft-Hartley Act. So an employer is not required to bargain with a union concerning changes in the benefits retirees receive. The U. S. Court of Appeals for the Sixth Circuit so held, in reversing a decision by the NLRB. The Board's position, the court stated, not only is not supported by the language of the Act, but also is in defiance of the Act's purposes. (Pittsburgh Plate Glass Co. v. NLRB, CA 6-1970, 74 LRRM 2425) On February 22, 1971, the Supreme Court granted review of the case.	In its decision, the NLRB held that retirees are "employees" and that their benefits are mandatory subjects for bargaining as coming within the phrase "wages, hours, and other terms and conditions of employment." Member Zagoria dissented. (Pittsburgh Plate Glass Co., NLRB-1969, 71 LRRM 1433) The Board continued to adhere to its position after the reversal by the Sixth Circuit. See Union Carbide Corp., NLRB-1970, 75 LRRM 1548. But also see Hooker Chemical Corp., NLRB-1970, 75 LRRM 1357, in which Chairman Miller said he agreed with the Sixth Circuit that retirees are not "employees" under the Act.
Subjects for Bargaining: Safety Rules	A public utility company violated its bargaining duty under the Act when it made changes in safety rules without bargaining about them with the union representing the employees. Safety rules are a "condition of employment" about which an employer must bargain. The fact that the company was legally obligated to provide safe and healthful conditions of employment did not relieve it of its bargaining duty. (NLRB v. Gulf Power Co., CA 5-1967, 66 LRRM 2501)	The decision upheld that handed down by the NLRB in the case. (Gulf Power Co., NLRB-1966, 61 LRRM 1073)
Subjects for Bargaining: Strike Insurance	Strike insurance obtained by an employer does not come within the scope of mandatory bargaining under the Taft-Hartley Act. So the Act does not require an employer to bargain about such insurance. Moreover, the union may not insist that the employer bargain about it. The union conditioned the contract as a whole upon acceptance of the clauses relating to strike insurance. Among other things, the union proposed that the grievance-arbitration provisions and the no-strike clause not be applicable to an employer with strike insurance. (Operating Engineers, Local No. 12 [Associated General Contractors of America, Inc.], NLRB-1970, 76 LRRM 1033)	The Board said that what the union was seeking was a regulation of the employers' economic strength and bargaining position. Such an objective is understandable and the Act does not prohibit it. But an employer is not required to bargain about it.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Subjects for Bargaining: Subcontracting	A company was obligated under the Taft-Hartley Act to bargain with the union representing its maintenance employees about an economically motivated decision to subcontract maintenance work. The NLRB had authority to order the company to resume the subcontracted operation and to reinstate the displaced employees with back pay. The holding was unanimous, although Justices Stewart, Douglas, and Harlan concurred separately, and Justice Goldberg did not participate. (Fibreboard Paper Products Corp. v. NLRB, US SupCt-1964, 57 LRRM 2609)	This long-awaited opinion did not lay down any general rule on the obligation to bargain about subcontracting. The majority opinion stressed that the holding is "on the facts of this case" and does not "encompass other forms of 'contracting out' or 'subcontracting' which arise daily in our complex economy." Even so, the three concurring justices viewed the opinion as radiating "implications of such disturbing breadth" that they stated specifically that they agree with the decision "within the narrow limitations implicit in the specific facts of this case." The facts stressed by the majority opinion as underlying the holding were these: "The company's decision to contract out the maintenance work did not alter the company's basic operation. The maintenance work still had to be performed in the plant. No capital investment was contemplated; the company merely replaced existing employees with those of an independent contractor to do the same work under similar conditions of employment."
	A dairy was not obligated under the Act to bargain with the union representing its driver-salesmen about an economic decision to discharge the driver-salesmen and replace them with independent contractors. This holding was made upon remand of the case from the Supreme Court for reconsideration in the light of the Fibreboard opinion. The court said that the case is so factually distinguishable from Fibreboard as to take it outside the orbit of the Fibreboard holding. Among the facts the court stressed were the change in the capital structure of the dairy, the change in basic operating procedure, the independence of the contractors in performing the work contracted out, and the existence of a current contract with two years still to run on its term. (NLRB v. Adams Dairy, Inc., CA 8-1965, 60 LRRM 2084)	In its first holding in the case, the court reversed the NLRB and held that the dairy was not obligated to bargain about the decision to replace the drivers with independent contractors, but only about the treatment of the drivers who were thus replaced. (NLRB v. Adams Dairy, Inc., CA 8-1963, 54 LRRM 2171) This holding went to the Supreme Court, but the High Court merely remanded the case for reconsideration in the light of the Fibreboard decision. (NLRB v. Adams Dairy, Inc., US SupCt-1965, 58 LRRM 2192) In the Ozark Trailers case (see above), the Board rejected the reasoning of the appeals court in the Adams Dairy case. It also rejected the reasoning of the U. S. Court of Appeals at Philadelphia in the Royal Plating case. The U.S. Court of Appeals at St. Louis, however, later stated that it was adhering to the position it took in Adams Dairy.
Subjects for Bargaining: Subcontracting--Westinghouse Tests	A company did not violate Act by failing to consult union bargaining agent about each of thousands of annual subcontracting decisions involving bargaining unit work, since (1) recurrent contracting out of such work was motivated solely by economic considerations, (2) it comported with traditional methods by which employer conducted business operations, (3) it did not vary significantly in kind or degree from subcontract-	This decision was handed down by the Board after the Supreme Court had decided the Fibreboard case. Although the majority opinion of the Board does not specifically refer to the Court's Fibreboard opinion, it emphasizes that the Board's condemnation of unilateral subcontracting in Fibreboard and like cases "was not intended as laying down a hard and fast rule to be mechanically applied regardless of the situation involved."

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Subjects for Bargaining: Subcontracting--Westinghouse Tests--Contd.	ing of work under established practice, (4) it had no demonstrable adverse effect on employees in the unit, and (5) union had opportunity to bargain about changes in existing subcontracting practices at general negotiation meetings. Unilateral subcontracting would be held a violation of the Act, however, where (1) the subcontracting involved a departure from previously established operating practices, (2) it effected changes in conditions of employment, or (3) it resulted in significant impairment of job tenure, employment security, or reasonably anticipated work opportunities for those in the bargaining unit. Although unilateral subcontracting of bargaining unit work in accordance with established practice may be found lawful, an employer is under an obligation to bargain with the union on request at an appropriate time regarding such restrictions or other changes in current subcontracting practices as the union may wish to negotiate. (Westinghouse Electric Corp., NLRB-1965, 58 LRRM 1257)	In a concurring opinion, however, Member Jenkins specifically states that he would rely on the limiting language set out in the majority opinion of the Supreme Court in the Fibreboard case to the effect that the holding does not encompass other forms of subcontracting and contracting out.
	Since the Westinghouse decision was handed down, the Board has applied the tests laid down therein to clear employers of violation charges growing out of unilateral subcontracting in the following cases: Empire Terminal Warehouse Co., NLRB-1965, 58 LRRM 1589; Superior Coach Corporation, NLRB-1965, 58 LRRM 1369; American Oil Co., NLRB-1965, 58 LRRM 1412; Fafnir Bearing Co., NLRB-1965, 58 LRRM 1397; Allied Chemical Corp., NLRB-1965, 58 LRRM 1480, affirmed CA 4-1966, 61 LRRM 2632; General Tube Co., NLRB-1965, 58 LRRM 1496.	In all of these cases, the one factor most consistently stressed was the absence of any significant detriment to employees in the bargaining unit or any significant impact upon their terms and conditions of employment. But in another case, a three-member panel of the NLRB held that a company's unilateral subcontracting of some bargaining work did not violate the Act, even though the subcontracting eliminated some jobs described in the union contract. Member Brown dissented; Members Fanning and Zagoria formed the majority. According to the majority, the elimination of job classifications is merely one factor to be considered in determining whether unilateral subcontracting is unlawful. In this case, there were countervailing factors, including a management-rights clause in the contract. (Union Carbide Corp., NLRB-1969, 72 LRRM 1150)
Subjects for Bargaining: Subcontracting: Contract Clauses	A company did not violate the Act by unilaterally subcontracting bargaining-unit work where it relied upon a long-standing contract clause stating that, when subcontracting such work, the company will deal only with subcontractors who pay wages on a level with those in the bargaining unit. This clause, plus the company's continuous practice of subcontracting occasional maintenance work, indicates	The holdings in these two cases were handed down before the Supreme Court's Fibreboard decision. They anticipated to some extent the tests later laid down by the Board in the broader Westinghouse decision.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Subjects for Bargaining: Subcontracting: Contract Clauses--Contd.	that no prior notice or bargaining was required. (Shell Oil Co., NLRB-1964, 57 LRRM 1271, 1275)	
	A company did not violate the Act by unilaterally subcontracting a once-a-year machinery rebuilding job that formerly had been performed by bargaining-unit employees. The holding was based on (1) a management-rights clause giving the company the unrestricted right "to alter, rearrange or change, extend, limit or curtail its operations or any part thereof," and (2) the fact that the subcontracting did not involve any job loss and the company did bargain about it as soon as the union protested. (Kennecott Copper Corp., NLRB-1964, 57 LRRM 1217)	This case, also pre-Fibreboard, involved a management-rights clause and the absence of any loss or substantial loss of bargaining-unit work.
	The NLRB was not warranted in finding that a company did not violate the Act when it unilaterally changed the method of shipping automobiles so that employees of another company performed both stages of a parking operation, the first stage of which formerly had been performed by employees of the first company, since the Board's finding that the change did not involve the contracting out of work performed by members of the union lacked evidentiary support. The change in the operation eliminated six jobs performed by bargaining-unit members and thus had an adverse effect on the unit that was more than de minimis; the provision in the union contract that "methods, processes, and means of manufacturing" were exclusively the company's responsibility was not a waiver of the union's right to bargain over contracting out of work. (United Auto Workers v. NLRB [General Motors Corp.], CA DC-1967, 64 LRRM 2489)	The NLRB had held that the company did not violate the Act in this case prior to the Supreme Court's Fibreboard decision. (General Motors Corp., NLRB-1964, 57 LRRM 1277) The appeals court remanded the decision to the Board for clarification after Fibreboard, and the Board adhered to its decision, stating that the company's action was not within the contemplation of the Fibreboard decision. (General Motors Corp., NLRB-1966, 62 LRRM 1009)
	The Supreme Court denied review of the appeals court's decision. (General Motors Corp. v. United Auto Workers, US SupCt-1967, 66 LRRM 2307)	
Successor Employer's Obligations	The purchaser of a business that has an established collective bargaining arrangement becomes a successor-employer where the employing industry remains essentially the same despite the change in ownership. A normal consequence of such a finding is that the successor-employer is obligated to recognize	The four cases were consolidated by the NLRB for oral argument, and certain employer and union organizations were invited to participate in the argument and to submit briefs. The decisions drew heavily on the Chemrock, John Wiley, and Overnite Transportation cases discussed below. In addi-

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Successor Employer's Obligations--Contd.	and bargain with the union chosen by the employees as their bargaining representative prior to the purchase of the business. Moreover, the obligation to bargain imposed on a successor-employer includes the negative injunction to refrain from unilaterally changing wages and other benefits established by a prior bargaining agreement even though that agreement has expired. This leaves the narrow issue whether the national labor policy embodied in the Act requires the successor-employer to honor a collective bargaining agreement negotiated on behalf of the employing enterprise by the predecessor. A majority of the Board holds that, in the absence of unusual circumstances, the Act imposes such an obligation. (The Wm. J. Burns International Detective Agency, Inc., NLRB-1970, 74 LRRM 1098; Hackney Iron & Steel Co., NLRB-1970, 74 LRRM 1102; Travelodge Corp., NLRB-1970, 74 LRRM 1105; Kota Division of Dura Corp., NLRB-1970, 74 LRRM 1104) In the Kota case, it was the union, rather than the employer, that refused to honor the contract with the predecessor employer. The Board said the obligation should be the same for a union as it is for an employer. Members Jenkins dissented to both the holding with regard to employers and that with regard to unions.	tion to ordering the company in the Burns case to honor the union contract, the Board ordered it to give retroactive effect to all the clauses of the contract and to make the employees whole, with 6 percent interest, for any losses suffered by reason of the refusal to honor, adopt, and enforce the contract. In a later case, the Board applied the reasoning of the Burns decision to hold that a successor-employer violated the Act by refusing to continue the insurance and checkoff provisions of a pre-existing collective bargaining contract. (S-H Food Service, NLRB-1970, 74 LRRM 1418)
	An employer who purchased the plant of a manufacturer violated the Act by failing to bargain, upon request, with the union that had a contract with the manufacturer, unilaterally changing the rates of five employees represented by the union, and dealing directly with the employees, rather than with their union. Employees of the seller of an enterprise must be regarded as employees of the purchaser where the only substantial change that resulted from the transaction was the transfer of plant ownership. Member Jenkins dissented. (Chemrock Corp., NLRB-1965, 58 LRRM 1582)	In support of its holding, the Board quoted from the Supreme Court's John Wiley opinion in which it was held that the obligation to arbitrate grievances under a collective bargaining contract survived both the expiration of the contract and the disappearance of the corporate employer by merger. (John Wiley & Sons v. Livingston, US SupCt-1964, 55 LRRM 2769) The company did not take the case to the courts.
	If the purchaser of a business continues operations with no significant change, he may not unilaterally alter the wages and other benefits established by the seller's contract with the union. It is immaterial that the contract had expired before the sale and that the purchaser had made known in advance his unwillingness to continue such wages and benefits. Under such circumstances, the	The court's decision upheld that of the NLRB in the case. (Overnite Transportation Co , NLRB-1966, 61 LRRM 1520) Both the Board and the court found support for their holdings in the Supreme Court's John Wiley decision, discussed above. The Supreme Court denied review of the case. (Overnite Transportation Co. v. NLRB, US SupCt-1967, 66 LRRM 2307)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Successor Employer's Obligations -- Contd.	purchaser becomes a successor employer, and he is obligated to bargain with the union representing the employees before changing the wages and benefits. The NLRB has authority in such a case to order the purchaser to restore the wages and benefits provided by the expired contract and to make the employees whole for losses caused by the unilateral changes. (Overnite Transportation Co. v. NLRB, CA 4-1967, 64 LRRM 2359) See below under "NLRB Remedies: Successor Employers" for decisions on remedies in these cases.	
	In a case in which a company that had a contract with a union was absorbed by another company that had a contract with the same union, the U.S. Court of Appeals at Boston came up with a novel solution. It decided that the issue which contract applies to the former employees of the absorbed company should be resolved by arbitration, but the arbitration shall be governed by the contract of the company that survived the merger. The dispute centered on differences between key job rates under the two contracts. One judge dissented. (Bath Iron Works Corp. v. Bath Marine Draftmen's Association, CA 1-1968, 68 LRRM 2010)	The court said it could find no satisfactory resolution of the issue in conventional contract or corporate law. So it sought to determine the equities consistent with the national labor policy.
Successor Employer's Obligations: Construction Industry	A successor-employer in the construction industry did not violate the Act when he refused to bargain with a union that had a contract with the predecessor-employer. The predecessor's contract with the union had been entered into under Section 8(f) of the Act, which permits construction industry collective bargaining agreements in the absence of an established union majority. So such contracts, the Board decided, do not create a presumption of continuing majority status, thus distinguishing them from those involved in the Burns line of cases. Where a contract with a predecessor employer has been entered into under Section 8(f), no duty is imposed upon the successor employer to honor its predecessor's bargaining obligation unless there is independent proof of the union's actual majority and of the successor-employer's unlawful refusal to bargain. (Davenport Insulation, NLRB-1970, 74 LRRM 1726)	In other industries, the Board pointed out, a union's contract with a predecessor-employer created a valid presumption of a continuing majority that carried over to the successor-employer.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Transcript of Negotiations	A union did not violate the Act when it refused to agree to a demand by the employer that a transcript be made of the negotiations. Among other things, the Board mentioned a 10-year practice of not recording the bargaining sessions and the union's expressed belief that restraints would be imposed upon its representatives by the stenographer's presence. (St. Louis Typographical Union [Graphic Arts Association], NLRB-1964, 57 LRRM 1370)	Members Fanning and Brown would have gone beyond the holding and would have found that such preliminary arrangements for negotiations are not mandatory subjects for bargaining under the Act. So a party would not be permitted to insist upon a demand relating to such arrangements to the point of impasse.
	An employer did not violate his bargaining duty by demanding that a verbatim transcript be kept, at company expense, as a condition for resuming negotiations with the union. The court said the only objection it could conceive to having an official reporter in negotiations was that it might inhibit the parties from throwing out feelers. But this could be done "off the record" or in private meetings, the court added. (NLRB v. Southern Transport, Inc., CA 8-1966, 61 LRRM 2277)	The NLRB had found that the employer's demand for the verbatim transcript violated the Act. (Southern Transport, Inc., NLRB-1964, 58 LRRM 1017) The employer had been found to have violated the bargaining duty on an earlier occasion.
Unilateral Action	A company that unilaterally canceled the usual Christmas bonus after a union won representation rights for the employees violated its bargaining obligation under the Act, even though the decision to drop the bonus was made before the union was certified. The bonus was listed as an employee benefit in the company's newspaper after the decision to drop it was made, so the union assumed it still would be paid and didn't call for bargaining on it. The NLRB was within its rights in ordering the bonus paid for that year and leaving the issue of further payments open for bargaining. (NLRB v. Exchange Parts Co., CA 5-1965, 58 LRRM 2097)	The same company was held to have violated the Act, in a case that went all the way to the Supreme Court, by timing the announcement and grant of improved employee benefits to influence the outcome of a representation election. (See discussion below under "Employer Discrimination, Interference.")
		The same court held in another case that an employer who withheld half-yearly wage increases from apprentice pressroom employees prior to an election, while granting the increases to composing-room employees who were not unionized, violated the Act. The court also found that the employer violated the Act by continuing to withhold the increases after the union was certified as bargaining representative of the pressroom employees. (NLRB v. Dothan Eagle, Inc., CA 5-1970, 75 LRRM 2531)
Union Representation: Investigation	A company did not violate its bargaining duty under the Taft-Hartley Act by refusing to permit an employee to have a union representative present while he was questioned about an alleged theft of company property. The employee admitted the theft and was suspended. The function of the interview, the court said, was to question the employee, not to bargain with him. Even if the company had been committed to disciplinary action, the court added,	The NLRB had held that the company violated its bargaining duty when it denied the employee' request that the union represent him at the meeting. The Board said that the company's conduct amounted to an unlawful attempt to deal directly with the employee on matters affecting the terms and conditions of his employment and so was a violation of the bargaining obligation under the Act. (Texaco, Inc., NLRB-1967, 66 LRRM 1296) In a subsequent decision, the

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Bargaining Obligation--Contd.		
Union Representation: Investigation--Contd.	the interview would not have been transformed into a collective bargaining session requiring union representation. (Texaco, Inc. v. NLRB, CA 5-1969, 70 LRRM 3045)	NLRB found that a company did not violate the Act by refusing an employee's request for union representation at a meeting about the employee's declining to perform a job. The Board found that the "potential" discipline was remote and the purpose of the meeting was essentially the gathering of information. (Jacobe-Pearson Ford, Inc., NLRB-1968, 68 LRRM 1305)
Union Representation: Profit-Sharing Discussion	A company did not violate its bargaining duty under the Act when it refused to permit a union representative to attend meetings in which it discussed a pension and profit-sharing plan with employees. The plan previously had been agreed to by the company and the union, and the company asserted that the purpose of the meetings was merely to provide information about the plan. The Board agreed, finding that the company made no effort to modify or renegotiate the plan at the meetings. (Ingraham Industries, NLRB-1969, 72 LRRM 1245)	In defending its refusal to permit the union to be represented at the meetings, the company pointed out that it was neither customary nor generally desired that the union be represented at meetings with employees about such matters as insurance benefits, accident and sickness insurance, and personal problems.
Withdrawal of Recognition	A company did not violate the Act by withdrawing recognition of two locals of a union and refusing to bargain with them following a bitter and violent strike. The company had a reasonably based good-faith doubt of the majority status of the unions in view of the sharp decline in union dues check-off authorizations following the strike. One member of the three-judge panel dissented to the holding. (Lodges 1746 & 743, IAM v. NLRB [United Aircraft Corp.], CA DC-1969, 71 LRRM 2336)	The legal principles relating to withdrawal of recognition are well settled, the court said. In the absence of special circumstances, a union enjoys an irrebuttable presumption of majority status for one year after certification. But after the first year, the presumption becomes rebuttable upon a showing of "sufficient evidence to cast serious doubt on the union's continued majority status." (See NLRB v. Gulfmont Hotel Co., CA 5-1966, 62 LRRM 2453; Stoner Rubber Co., NLRB-1959, 44 LRRM 1133; Celanese Corp., NLRB-1951, 28 LRRM 1362.) The decision of the court in the United Aircraft case reversed that of the NLRB. (United Aircraft Corp., NLRB-1967, 67 LRRM 1010) In another case involving an interrupted bargaining relationship, the U.S. Court of Appeals at Cincinnati held that a company did not violate its bargaining duty by abandoning the grievance-arbitration procedure after it had received a termination notice from the union and the contract had expired. In reversing the holding of the NLRB, the court said that the grievance procedure was not part of the "established operational pattern" at the company's plant. (Kingsport Publishing Corp. v. NLRB, CA 6-1968, 69 LRRM 2193)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Employer Discrimination, Interference		
Defenses: Mistaken Belief	An employer violated Section 8(a) (1) of the Act by interfering with the right of employees to engage in protected concerted activity when he discharged two union members because he honestly, but mistakenly, believed they had threatened to dynamite the plant. The employees were otherwise engaged in protected concerted activity, and a good-faith belief in employee misconduct does not justify a discharge where the supposed misconduct is part of protected activity under the Act. (NLRB v. Burnup and Sims, Inc., US SupCt-1964, 57 LRRM 2385)	The Court sidestepped the question whether the employer violated the ban in Section 8 (a) (3) on discrimination against employees to discourage union activity; the employer's motive would be a critical factor in such a case. But motive and good faith are not an issue, the Court noted, where an employer is charged with interfering with the right of employees to engage in protected concerted activity.
Exclusion from Stock Plan	By excluding all employees represented by a union from a contributory saving and stock-ownership plan, unless the union waives its right to bargain about the plan or similar plans, a company violated the Act's prohibition against interference with rights guaranteed to employees under the Act. Although the unionized employees are not automatically disqualified from ever participating in the plan, the NLRB noted, they could remain or become eligible to participate only if their union surrendered its statutory right to bargain about the subject matter of the plan. Voluntary in nature, the plan provides that an eligible salaried employee may invest not less than two percent, but not more than eight percent, of his base salary in either U.S. Bonds or the company's common stock. For every $2 an employee invests, the company invests $1 in its common stock on behalf of the employee. (Bendix-Westinghouse Automotive Air Brake Co., NLRB-1970, 75 LRRM 1079)	In a case handed down earlier in 1970, the Board held that employee benefit plans that on their face are restricted to employees who are not members of a union or who have foregone their right to bargain through a representative are inherently restrictive of employee rights by Section 7 of the Act, and without further evidence of restraint, interference, or coercion are per se violations of the Act. (Motor Wheel Corp., NLRB-1970, 73 LRRM 1211) In the present case, the Board stated that it is aware that the Sixth Circuit denied enforcement in the Motor Wheel and a similar Goodyear Tire holding. (Motor Wheel Corp. v. NLRB, CA 6-1970, 74 LRRM 2832; Goodyear Tire and Rubber Co. v. NLRB, CA 6-1969, 71 LRRM 2977) In the present case, the Board noted that the court in Goodyear attached weight to the facts that the language involved was included by agreement of the contracting parties and that the record indicated no employee lost anything as a result of the provision. The Board disagrees that language alone may not have an inhibiting effect. But it also distinguished the cases in that the present Bendix case involved a waiver of statutory rights, while Goodyear and Motor Wheel did not. Although concurring in the Bendix decision, Chairman Miller would defer to the Sixth Circuit's view in Goodyear, which he understands to mean that the Board must consider both the language and any relevant factual context that may be helpful in determining the impact on employees.
Lockouts: Multi-Employer Groups	Members of a multi-employer bargaining group did not violate the Act by locking out their regular employees and using temporary replacements to continue operations	In the 1957 Buffalo Linen case, the Supreme Court held that a defensive lockout by a multi-employer group was a lawful protective move against a whipsawing strike. (NLRB v. Truck

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Employer Discrimination, Interference--Contd.		
Lockouts: Multi-Employer Groups--Contd.	in response to a whipsawing strike called by a union against one member of the group, who also continued operations with temporary replacements. The action of the employers was not demonstrably destructive of employee rights, and a finding of violation of Section 8(a) (3) requires a showing of improper subjective intent. There was a separate concurring opinion by Justice Goldberg in which Chief Justice Warren joined. Justice White dissented. (NLRB v. Brown, US SupCt-1965, 58 LRRM 2663)	Drivers Local 449 [Buffalo Linen Supply Co., US SupCt-1957, 39 LRRM 2603) But the NLRB later held that this rule did not apply where the employers who locked out their employees continued to operate. (Brown Food Store, NLRB-1962, 50 LRRM 1046) The Supreme Court's decision reversed this holding. The NLRB later held that a newspaper publisher did not violate the Act when it suspended publication after the other newspaper in the city was shut down by a strike of the Newspaper Guild, even though the two newspapers do not bargain jointly with the Guild. The NLRB pointed out that (1) the publishers have joint contracts with the Teamsters and the Typographical Union; (2) the no-strike provisions in those contracts were violated when members of those unions refused to cross the Guild picket line; and (3) the union members thereby engaged in unprotected activity against which both employers in the multi-employer unit were privileged to take lawful defensive action by suspending publication. (Hearst Corp., NLRB-1966, 63 LRRM 1441) The decision was upheld by the U. S. Court of Appeals for the District of Columbia. (News Union of Baltimore v. NLRB, CA DC-1968, 67 LRRM 2487)
	Although a lockout to defend a multi-employer bargaining unit against a threat of a whipsawing strike is lawful under the Supreme Court's Buffalo Linen rule (NLRB v. Truck Drivers Local 449 [Buffalo Linen Supply Co., US SupCt-1957, 39 LRRM 2603), lockouts to forge a new multi-employer bargaining group, rather than to preserve an existing one, are unlawful. (Great Atlantic & Pacific Tea Co., NLRB-1963, 54 LRRM 1384)	The Board said that such a lockout was an offensive tactic used to force a change in the bargaining pattern, rather than to preserve the pattern that already existed.
	An agreement of New York City newspapers to shut down all operations in the event of a breach-of-contract strike at one plant does not violate the Act. (New York Mailers Union v. NLRB, CA 2-1964, 55 LRRM 2287)	The holding affirmed a holding by the NLRB (Publishers Association of New York City, NLRB-1962, 51 LRRM 1434), which pointed out that the agreement was entered into in response to repeated walkouts by certain craft unions and was not intended to discourage legitimate and protected activity.
Lockouts: Offensive Bargaining Lockouts	An employer does not violate the Act when, after an impasse has been reached in contract negotiations, he temporarily shuts down his plant and lays off his employees for the sole purpose of bringing economic pressure to bear in support of his legitimate bargaining position. There were concurring	The NLRB had found that the employer in this case violated the Act by invoking such a lockout, stating that he had no reasonable basis for fearing a strike. (American Ship Building Co., NLRB-1963, 53 LRRM 1245) The U. S. Court of Appeals for the District of Columbia upheld the Board's finding.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Employer Discrimination, Interference--Contd.		
Lockouts: Offensive Bargaining Lockouts--Contd.	opinions by Justices White and Goldberg, with Chief Justice Warren joining in the Goldberg concurrence. (American Ship Building Co. v. NLRB, US SupCt-1965, 58 LRRM 2672)	(Local 374, Boilermakers v. NLRB [American Ship Building Co.], CA DC-1964, 55 LRRM 2913) The Supreme Court reversed both decisions.
	Where two Detroit newspapers had agreed that if a union struck one over a demand of mutual interest, the other would support the first and not publish, one of the newspapers did not violate the Act when it suspended publication and later locked out the employees after the union had struck the other newspaper. Until the American Ship opinion, a bargaining lockout was regarded as presumptively unlawful. But American Ship changed all this, obliterating any legal distinction between offensive and defensive lockouts. The facts plainly warrant the conclusion that the lockout was designed preponderantly to support the newspaper's bargaining proposals. Both publishers were bargaining at the same time, had the same contract expiration dates, and were confronted with the same key union demands. Moreover, the union had suspended negotiations with the newspaper that invoked the lockout and had threatened to strike it. Member Zagoria concurred in the result. Member Brown dissented. In his dissent, Brown stresses that the Supreme Court "meticulously limited" its American Ship holding to post-impasse lockouts. It did not sanction, he asserted, a lockout to assist another employer in that employer's dispute with a union. (Evening News Association, NLRB-1967, 65 LRRM 1425)	The decision was handed down upon reconsideration of the case after the Supreme Court's American Ship and Brown decisions. The Board initially had found that the lockout amounted to unlawful interference and discrimination. (Evening News Association, NLRB-1964, 55 LRRM 1091) The U. S. Court of Appeals at Cincinnati reversed the Board's decision, but the Board carried the case to the Supreme Court, which vacated the appeals court's decision with instructions that the case be remanded to the Board for further consideration in the light of the American Ship opinion. (Detroit Newspaper Publishers v. NLRB, CA 6-1965, 59 LRRM 2401; Newspaper Drivers & Handlers Local 372 v. Detroit Newspaper Publishers, US SupCt-1966, 61 LRRM 2147)
	Even assuming that a formal multi-employer unit had not been formed or had not been accepted by the union, a lockout by members of a multi-employer group would have been a lawful "offensive" lockout under the American Ship doctrine, in the absence of (1) an unlawful motive of discouraging union membership or discriminating against union members, or (2) the lack of a legitimate business interest on the part of the locking-out employers. All the employers had reached an impasse in bargaining with the unions; the record is replete with evidence to support this finding. Moreover, the General Counsel did not meet his burden of proving unlawful motivation on the part of the employers. In addition, the lockout was a lawful defensive measure to preserve the integrity of the multi-employer bargaining unit. The	This decision was handed down by the Board upon reconsideration of the case. The Board had found the lockout lawful initially, but the U. S. Court of Appeals for the District of Columbia considered the Board's opinion "ambiguous" and remanded the case for the Board's expert judgment on the legal and policy questions raised. (Weyerhaeuser Co., NLRB-1965, 60 LRRM 1425; Western States Regional Council v. NLRB, CA DC-1966, 62 LRRM 2670) In another lockout case, the U. S. Court of Appeals at New Orleans upheld a Board decision finding a bargaining lockout lawful, despite a bargaining violation. The Board had held the lockout was unlawful prior to NLRB v. American Ship Building Co., supra. (Hess Oil & Chemical Corp. v. NLRB, CA 5-1969, 72 LRRM 2132) See also Laclede Gas Co. v. NLRB, CA 8-1970, 73

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Employer Discrimination, Interference -- Contd.		
Lockouts: Offensive Bargaining Lockouts -- Contd.	employers had formed a valid multi-employer unit; the unions had accepted that unit; and an impasse in bargaining had been reached. (Weyerhaeuser Co., NLRB-1967, 65 LRRM 1428)	LRRM 2365, in which the court found that what the NLRB considered a layoff was a partial lockout. The court remanded the case for a determination by the Board as to the legality of the partial lockout. Upon remand, the Board reversed itself and held that the layoffs were not so inherently prejudicial to the interests of the employees as to warrant a finding of violation, that the company sustained its burden of establishing legitimate business objectives for the layoffs, and that the layoffs were intended to be -- and were -- temporary and incidental to a lawful, tactical bargaining maneuver. Member Fanning dissented. (Laclede Gas Co., NLRB, 1970, 75 LRRM 1483)
Lockouts: Offensive Bargaining Lockouts -- Pre-impasse Lockout	An employer did not violate the Act by locking out his employees before an impasse had been reached in negotiations in view of the following: (1) the lockout was not inherently destructive of employees' rights, and the employer had a legitimate and substantial business interest for the lockout; (2) the employer was not alleged to have had any anti-union motive; (3) the employer engaged in 10 negotiating sessions before the lockout and six afterward; (4) the union was strong, and the company had been organized for several years; (5) the employer had made numerous concessions during negotiations, and disagreement had been narrowed to a few items; (6) the major disagreement involved a work assignment issue over which the employer had suffered a long strike several years earlier, and the union stated that it was ready to strike over the issue "at a time of its choosing;" and (7) the employer was engaged in a highly seasonal business, and had fear of "unusual harm" from a strike during the busy season. (Lane v. NLRB [Darling & Company], CA DC-1969, 72 LRRM 2439)	The court upheld a four-to-one decision by the NLRB. The majority of the Board reasoned that unless an employer is motivated by a wish to discourage union activity or to evade bargaining, the test of the legality of a lockout is whether it is so inherently prejudicial to union interests and so devoid of significant economic justification that no specific evidence of intent is required. In dissenting, Member Brown observed that the company had no reason to fear an imminent strike. (Darling & Co., NLRB-1968, 68 LRRM 1133)
Managerial Employee's Discharge	The discharge of an "electrification adviser" was unlawful, even if he might be excluded from a bargain-unit as a "managerial employee." In so holding, the NLRB overruled cases indicating that managerial employees are not entitled to the protection of the Act. (See Swift & Co., NLRB-1956, 37 LRRM 1391.) (North Arkansas Electric Cooperative, NLRB-1970, 75 LRRM 1068)	The Board pointed out that the "managerial employee" category was created by the Board, rather than established by the Act. The real question, it added, is whether he is an "employer" or an "employee" protected by the Act. See below under "Union Coercion, Discrimination: Fining Supervisors" for a discussion of cases involving fines imposed by unions on Supervisory employees. See below under "Union Coercion, Discrimination: Fining Supervisors" for a discussion of cases involving fines imposed on supervisors by unions.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Employer Discrimination, Interference--Contd.		
Organizing, Election Interference: Anti-Union Movie	An employer's showing of the movie "And Women Must Weep" as part of an orientation program for new employees was not unlawful interference with employees' organizing rights under the Act, but rather was an exercise of the right of free speech protected by Section 8(c) of the Act. The movie, which purports to be a true account of a 1956 strike at an Indiana plant, admittedly shows the bad side of unionism and is designed to discourage union membership. But all this notwithstanding, the court said, the employer was not guilty of an unfair labor practice unless the showing of the film constituted a "threat of reprisal or force;" otherwise, it was an expression of the employer's right of free speech protected by Section 8(c). The NLRB erred in relying upon decisions setting aside representation elections where the employer had shown the movie during the pre-election period. (Southwire Co. v. NLRB, CA 5-1967, 65 LRRM 3042)	In a three-to-two decision handed down in 1962, the NLRB held that an employer's showing of the movie to assembled employees on the evening before an election so interfered with their free choice as to justify setting the election aside. It was not contended that the employer's conduct was an unfair labor practice. (Plochman & Harrison-Cherry Lane Food, Inc., NLRB-1962, 51 LRRM 1558) With two members dissenting again, the Board held in 1963 that the showing of the movie 12 days before an election "reinforced" the effect of letters distributed to employees that, of themselves, were sufficient to warrant setting the election aside. Once again there was no contention that the showing of the film was an unfair labor practice. (Carl T. Mason Co., NLRB-1963, 53 LRRM 1063) The Board's first holding that the showing of the movie was an unfair labor practice was in the present Southwire case. (Southwire Co., NLRB-1966, 62 LRRM 1280) Since then, the Board has held the showing of the movie to be an unfair labor practice in two other cases, one of them again involving the Southwire Co. (Southwire Co., NLRB-1967, 65 LRRM 1272; Hawthorn Co., NLRB-1967, 65 LRRM 1609) The U.S. Court of Appeals at St. Louis, however, reversed the Board's holding on the showing of the movie in the Hawthorn case. It said that without evidence and an express finding by the Board, it may not be assumed that employees interpreted the film as a threat of force or reprisal by the company if they should become unionized. (NLRB v. Hawthorn Co., CA 8-1969, 70 LRRM 2193)
Organizing, Election Interference: Denial of Benefits	A company's exclusion of union members who are covered by negotiated pension plans from a company's savings and profit-sharing plan is unlawful discrimination under the Act. But an NLRB order directing the company to put all union members in the position in the plan in which they would have been but for the exclusionary clause is "punitive" and may not be enforced. (Kroger Co. v. NLRB, CA 6-1968, 69 LRRM 2425)	The court pointed out that there was no evidence of union animus on the part of the company; it nad bargained with several unions for a number of years. Moreover, it added, any determination of the present status under the plan of those who have been excluded would be pure speculation, since participation always has been voluntary. The Supreme Court denied review of the case. (Kroger Co. v. NLRB, US SupCt-1969, 71 LRRM 2254)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Employer Discrimination, Interference--Contd.		
Organizing, Election Interference: Grant of Benefits	An employer violated the Act by timing the announcement and grant of improved employee benefits to influence the outcome of a representation election. (NLRB v. Exchange Parts Co., US SupCt-1964, 55 LRRM 2098)	The decision reversed a holding by the U.S. Court of Appeals at New Orleans (NLRB v. Exchange Parts Co., CA 5-1962, 50 LRRM 2507), which in turn had reversed a decision by the NLRB (Exchange Parts Co., NLRB-1961, 48 LRRM 1147). The appeals court had stressed that the benefits were granted permanently and unconditionally.
Organizing, Election Interference: Threat or Prediction	An employer did not engage in unlawful interference under the Act by statements in literature distributed prior to a representation election. In particular, the literature asserted: (1) Unionization would disrupt the existing harmonious employee-employer relationship and probably would lead to strikes, with resulting wage loss and possible violence; (2) labor troubles would aggravate the already serious financial troubles of the company; (3) present and future wage levels and employee benefits would be subject to collective bargaining should the union win the election; and (4) unionization could subject employee job security to the whims of union leaders. These statements, the court said, were mere predictions of what the union might do and possibilities or probabilities if the union won; they were not threats of reprisal. (NLRB v. TRW-Semiconductors, Inc. CA 9-1967, 66 LRRM 2707)	The NLRB had found that the statements amounted to unlawful interference under the Act. According to the court, the finding appeared to be based upon a conclusion that the statements were coercive. But the mere fact that campaign propaganda may induce fear, the court said, does not remove it from the protection of the Section 8(c) free speech proviso. Moreover, statements are not removed from protection of the proviso because they may be demonstrably incorrect. The remedy is for the union to answer them, not a cease-and-desist order. (See TRW Semiconductors, Inc., NLRB-1966, 62 LRRM 1469) In the 1969 Gissel case, however, the Supreme Court, in holding such a statement unlawful, said "conveyance of the employer's belief, even though sincere, that unionization will or may result in the closing of the plant is not a statement of fact unless, which is most improbable, the eventuality of closing is capable of proof. (NLRB v. Gissel Packing Co., US SupCt-1969, 71 LRRM 2481)
Organizing, Election Interference: Threat To Replace Strikers	An employer's references to a possible strike and the resulting replacement of strikers violated the Act, the NLRB ruled. It found that the statements amounted to a threat permanently to replace unfair-labor-practice strikers. The statement by the company's president that, as a matter of principle, she never would agree to a union-security contract also was found unlawful. Chairman Miller dissented. (Tommy's Spanish Foods, NLRB-1970, 76 LRRM 1001)	In dissenting, Chairman Miller argued that the remarks about union security were "simply lawful rhetoric" -- "no more legally offensive than a union's promise * * * that it will not settle for less than a $1-an-hour raise."
Plant Closure	An employer has the absolute right to terminate his entire business for any reason he chooses, including anti-union bias. He does not, however, have a similar right to close part of his business, to transfer work to another plant, or to open a new plant to replace a closed plant. The termination of part of a multi-plant business will violate the Act if the employer is motivated by a purpose to "chill" unionism in the remaining parts of the business and if he reasonably can foresee that the partial closing will have that effect. The	This was the bitterly litigated Darlington case in which both the NLRB and the U. S. Court of Appeals at Richmond had divided on the "absolute-right" issue. The Board rejected the contention that an employer has an absolute right to close his plant and go out of business for any reason he chooses, (Darlington Manufacturing Co., NLRB-1962, 51 LRRM 1278) The appeals court reversed this holding. (Darlington Manufacturing Co., v. NLRB, CA 4-1963, 54 LRRM 2499) The Supreme Court remanded the case to the appeals court and the Board for a determina-

Issue	Holding	Comment
Employer Discrimination, Interference--Contd.		
Plant Closure--Contd.	decision was unanimous, although Justices Stewart and Goldberg did not participate. (Textile Workers v. Darlington Manufacturing Co., US SupCt-1965, 58 LRRM 2657)	tion of whether the Darlington mill was closed to "chill" unionism in other plants owned by the parent Deering, Milliken & Company. Upon remand, the NLRB found that the closing of the Darlington Mill was motivated, at least in part, by a purpose of discouraging union organization in the company's 26 other textile mills. It cited the following: (1) The strong anti-union views of the dominant personality in the family that controls the mills; (2) his prior public call for state officials and businessmen to prepare to avert unionism "at all costs;" (3) his prompt move to liquidate the mill after the union's election victory; (4) his subsequent recommendations that managers of other mills embark on a "public relations program" to make clear that the mill might move out of the community if the employees chose to unionize; (5) the strong inference that the admitted anti-union motive in closing the Darlington mill carried with it a wider anti-union motive of discouraging unionism at other mills. (Darlington Manufacturing Co., NLRB-1967, 65 LRRM 1391) The U.S. Court of Appeals at Richmond upheld the NLRB's findings on the purpose and effect of the plant closure. It also upheld the Board's ruling that Darlington and Deering Milliken were a single employer under the Act. (Darlington Manufacturing Co. v. NLRB, CA 4-1968, 68 LRRM 2356) The Supreme Court denied review of the case. (Darlington Manufacturing Co. v. NLRB, US SupCt-1969, 70 LRRM 2225; Deering Milliken, Inc., v. NLRB, US SupCt-1969, 70 LRRM 2225)
	An employer did not violate the Act by closing down part of his business and laying off the employees, since the partial shutdown, although prompted by antiunion considerations, was not motivated by a purpose to "chill" unionism in the remaining part of the business, but was a result of the employer's religious conviction against dealing with a union. In so holding, the Board reversed its earlier holding in the case. It reconsidered the case in the light of the Supreme Court's Darlington opinion. (A. C. Rochat Co., NLRB-1967, 64 LRRM 1321)	In its first decision in the case, the Board found that the employer violated the Act by the partial shutdown, but it did not order him to resume the operation, the employer contending resumption would cost $50,000. (A. C. Rochat Co., NLRB-1965, 58 LRRM 1242) In another case, the NLRB ordered an employer who closed his plant and moved to a new location to avoid bargaining with a union, to bargain with the union at the new location without requiring the union to reestablish its majority among the employees at the new location. (Garwin Corp., NLRB-1965, 59 LRRM 1405) The decision, however, was reversed by the U. S. Court of Appeals for the District of Columbia. (Local 57, Garment Workers v. NLRB [Garwin

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Employer Discrimination, Interference--Contd.		
Plant Closure--Contd.		Corp.], CA DC-1967, 64 LRRM 2159) The Court said the order deprived the employees at the new location of their right to select their bargaining agent. The Supreme Court denied review of the case. (NLRB v. Garwin Corp., US SupCt-1967, 65 LRRM 2441)
	An employer did not violate the Act when he closed one of his six shops and discharged the employees even though his motive was to thwart unionization at that shop. The NLRB found that the closing of the shop was not intended to "chill" unionism at the remaining shops, citing the following: (1) There was no evidence that contemporaneous union activity was being carried on at the other shops, that unionization of the closed shop was the first step toward unionization of other shops, or that the employer believed that it was the first step; (2) the evidence did not indicate that employees at the other shops were aware of the organizing activity at the closed shop or that they would become aware; and (3) there was no indication that the employer's officials discussed the closing of the shop with supervisors or employees at the other shops. (Motor Repair, Inc., NLRB-1968, 67 LRRM 1051)	The Board did find that the employer enlisted the support of an employee at one of the other shops to assist him stopping unionism at the shop that was closed and that the employer later rehired two of the employees from the closed shop at another shop after giving them union withdrawal cards to sign. But this conduct, the Board states, does not warrant the inference that the shop was closed for the purpose of discouraging union activity at the other shops, even though this may have been its effect.
	The NLRB was warranted in finding that a laundry violated the Act by discontinuing its wholesale shirt division and discharging 22 employees in an effort to rid itself of a union, the economic reasons given for the shutdown not being honestly invoked. (NLRB v. Savoy Laundry, Inc., CA 2-1964, 55 LRRM 2285)	Although upholding the NLRB's finding of a violation of the Act, the court deleted from the Board's order a provision requiring the laundry to take reasonable and business-like steps to resume the division. Since the laundry has not operated that division for almost three years, the court said, it would be unduly harsh to require its resumption. In a subsequent development in the case, the U. S. Court of Appeals at New York ordered the employer jailed because of his continued refusal to obey the bargaining order issued and enforced in the case. Although conceding that the union no longer represents a majority of the employees and that they have asked for a new election, the court said that the Board has the power to refuse to grant the election petition until the outstanding unfair-practice order has been obeyed. (NLRB v. Savoy Laundry, Inc., CA 2-1965, 61 LRRM 2021)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Employer Discrimination, Interference--Contd.		
Protected Activities: Credit-Union Protest	An employer did not violate the Act by discharging an employee who, after being warned, circulated a petition in the shop area and solicited signatures of employees and foremen in support of his position in a dispute with the officers of the employee credit union. Such activity was not protected under the Act. (G & W Electric Specialty Co. v. NLRB, CA 7-1966, 62 LRRM 2085)	To qualify for protection under the Act, the court said, concerted activity by employees must call for action by the employer on a matter over which he has control. The ruling reversed that of the NLRB. (G & W Electric Specialty Co., NLRB-1965, 60 LRRM 1088)
Questioning of Employees	An employer's polling of employees is unlawful, in the absence of unusual circumstances, unless the following conditions are met: (1) The purpose of the poll is to determine the truth of a union's claim of majority status; (2) the employees are told that this is the purpose of the poll; (3) assurances are given against reprisal; (4) the employees are polled by secret ballot; and (5) the employer has not engaged in unfair labor practices or otherwise created a coercive atmosphere. The major departure from prior policy was the addition of the requirement that the polling be done by secret ballot. (Struksnes Construction Co. NLRB-1967, 65 LRRM 1386)	Even after the free-speech proviso was inserted in the Act in 1947, the NLRB held that an employer's questioning of employees about their union sympathies was of itself unlawful. (Standard-Coosa-Thatcher Co., NLRB-1949, 24 LRRM 1575) This per se doctrine was abandoned in the 1954 Blue Flash Express case. (Blue Flash Express, NLRB-1954, 34 LRRM 1384) In setting aside an NLRB finding of unlawful interrogation several years later, however, the U. S. Court of Appeals at New York suggested that such questions as the following should be asked in distinguishing between lawful and unlawful interrogation: (1) Is there a history of employer hostility and discrimination? (2) Did the interrogator appear to be seeking information on which to base taking action against individual employees? (3) Was the interrogation by officials high in the company hierarchy? (4) Was the employee called from work to the boss's office or otherwise questioned in an atmosphere of unnatural formality? (5) Were the employee's replies evasive or untruthful, indicating that the interrogation actually inspired fear? (Bourne v. NLRB, CA 2-1964, 56 LRRM 2241)
	Applying the NLRB's Struksnes standards, the U.S. Court of Appeals at St. Louis held that an employer's failure to state specifically that no reprisals would be taken against employees who favored the union made a secret-ballot poll illegal under the Act. One judge dissented, contending that assurances against reprisal were inherent in the total situation. (NLRB v. Berggren & Sons, Inc., CA 8-1969, 70 LRRM 2338)	The court, however, disagreed with the Board's additional findings that the poll served no legitimate purpose and was conducted against a backdrop of hostility toward the union. It enforced the Board's order solely on the ground that the employer gave no affirmative assurance that no reprisals would follow a vote in favor of the union. The Supreme Court denied review of the holding. (Berggren & Sons, Inc. v. NLRB US SupCt-1969, 72 LRRM 2431)
	The questioning of three employees about the contents of statements they had given to NLRB agents amounted to unlawful interference under the Act. Two of the employees divulged the contents of their statements to the company's attorneys. (Surprenant Mfg. Co. v. NLRB, CA 6-1965, 58 LRRM 2484)	The company argued that the ruling conflicted with today's trend toward broadened opportunities for complete discovery in pre-trial stages. But the court said that the questioning in this case exceeded the needs of the situation.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Employer Discrimination, Interference--Contd.		
Racial Discrimination	Employment discrimination by an employer on the basis of race is unlawful interference under Section 8(a)(1) of the Act. The NLRB was not ousted from jurisdiction over such matters by Title VII of the Civil Rights Act of 1964, which specifically forbids employment discrimination based on race. The employer also violated the good-faith bargaining duty under Section 8(a)(5) of the Act by refusing to bargain meaningfully and in depth about alleged racial discrimination in the plant. The decision was by a three-judge panel of the court. One judge wrote a separate concurring opinion, concurring in the remand of the case to the NLRB for hearings and findings. The case was remanded to the NLRB for hearings on whether the company has a policy and practice of invidious discrimination based on race or national origin. (Packinghouse Workers v. NLRB [Farmers Cooperative Compress], CA DC-1969, 70 LRRM 2489)	In its decision, the NLRB held only that the company had violated the Act by failing to bargain in good faith about the alleged racial discrimination in the plant. There was no charge that the company had engaged in unlawful interference by the alleged racial discrimination. But the court stated that the matter of racial discrimination was litigated in connection with the refusal-to-bargain charge. The court added that where the matter is litigated, even though the particular violation has not been charged specifically, the Board can find such a violation. A petition for review of the holding was filed in the Supreme Court, but review was denied. (Farmers Cooperative Compress Co. v. NLRB, US SupCt-1969, 72 LRRM 2658)
	For cases involving alleged racial discrimination by unions, see below under "Union Coercion, Discrimination--Fair Representation."	
Union Access to Plant	A company did not violate the Act by refusing to allow a former union president who had been discharged by the company to enter the production areas of the plant to observe a rate review. Ordinarily, both the company and the union have the right to select their own representatives and the duty to deal with the representative selected by the other. Special circumstances can make exceptions, however. In this case, the former union president had been discharged for instigating a slowdown, and the company feared that his presence in the plant would interfere with production. This was a reasonable ground for denying him access to the plant. (General Electric Co. v. NLRB, CA 6-1968, 67 LRRM 2401)	The decision reversed that of the NLRB. (General Electric Co., NLRB-1966, 63 LRRM 1153) So far as outside union organizers are concerned, the Supreme Court in 1956 held that an employer lawfully may post his property against both solicitation and distribution of literature by non-employee union organizers, provided (1) the union may reach the employees through other available channels of communication, and (2) the employer's notice or order does not discriminate against the union by allowing other solicitation or distribution. (NLRB v. Babcock & Wilcox Co., US SupCt-1956, 38 LRRM 2001) See Solo Cup Co., NLRB-1968, 68 LRRM 1385 below for application of these rules to permit solicitation by outside organizers in an industrial park.
	An employer-lessee in an industrial park was not required to permit union solicitation on the steps of its plant and in its parking lot. Contrary to the NLRB's finding, the court ruled that the industrial park was not a "quasi-public" place. Moreover, by consenting to enforcement of the Board's order requiring it to allow solicitation in certain areas of the industrial park, the owner of the park provided the union with reasonable access to the employer's employees. (NLRB v. Solo Cup Co., CA 7-1970, 73 LRRM 2789)	The NLRB had ruled that the employer was required to permit union solicitation on the steps and in the parking lot. (Solo Cup Co., NLRB-1968, 68 LRRM 1385)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Employer Discrimination, Interference--Contd.		
Union Insignia	An employer did not violate the Act by forbidding the wearing of unusual and oversize union insignia by employees whose work required a high degree of concentration. The company was manufacturing magnetic memory devices for the computer and digital equipment industries and had taken many steps to eliminate distractions to employees at their work. (Fabri-Tek, Inc. v. NLRB, CA 8-1965, 60 LRRM 2376)	The court conceded that the right to wear union buttons or other insignia at work ordinarily is regarded as one of the employee rights protected by the Act. But it pointed out that the right is not unqualified.
Union Solicitation: Basic Rules	An employer did not violate the Act by discharging employees for distributing union literature on a path leading from the plant through a truck-loading and maneuvering area to the employee parking lot. The area was a working area, contrary to the finding of the NLRB, and employees were engaged in loading a truck at a loading dock adjacent to the path at the time the distribution took place. The path used by employees in going to and from work did not convert the truck-loading facility into a nonworking area. (Patio Foods v. NLRB, CA 5-1969, 72 LRRM 2066)	This case involved an application of the rules laid down by the NLRB in 1962 for determining the legality of no-distribution and no-solicitation rules. Distinguishing between no-distribution and no-solicitation rules, the Board laid down these "area" tests for determining the legality of no-distribution rules: ● A rule forbidding distribution of union literature by employees in working areas will be presumptively valid even though it applies both to working and nonworking time. ● A rule forbidding distribution in nonworking areas during nonworking time will be presumptively invalid. So far as mere solicitation, the rules are: ● A rule forbidding union solicitation by employees during their nonworking time will be presumptively invalid even though limited to working areas. ● A rule forbidding union solicitation during working time in any plant area will be presumptively valid. (Stoddard-Quirk Manufacturing Co., NLRB-1962, 51 LRRM 1110) In two later cases, the U.S. Court of Appeals at New Orleans took the position that the rule permitting union solicitation during nonworking time should be applied in such a way to require that both the employee doing the soliciting and the employee being solicited be on nonworking time. (See Campbell Soup Co. v. NLRB, CA 5-1967, 65 LRRM 2608; Mason & Hanger--Silas Mason Co., Inc., v. NLRB, CA 5-1968, 69 LRRM 2948.)
Union Solicitation: Contract Prohibition	A ban on all solicitation and distribution in a plant that was negotiated by an employer and a union as part of a collective bargaining contract did not violate the Act as applied to forbid all solicitation and distribution on behalf of a rival union. The prohibitions were not unilaterally imposed but were the	The court's decision reversed a three-to-two holding of the NLRB. (Gale Products, NLRB-1963, 53 LRRM 1242) The majority of the Board said that neither the employer nor the incumbent union is entitled to freeze out a rival union by withholding from the employees their customary opportunities for expres-

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Employer Discrimination, Interference--Contd.		
Union Solicitation: Contract Prohibition--Contd.	fruits of collective bargaining by the employees involved. Nor does the record disclose discriminatory enforcement of the contract provisions against adherents of the rival union--an organization formed by an ousted president of the contracting union. One judge dissented. (NLRB v. Gale Products, CA 7-1964, 57 LRRM 2164)	sion of opinions at their place of work. Two other decisions by the NLRB holding no-solicitation, no-distribution contract clauses invalid were reversed by the U. S. Court of Appeals at Cincinnati, the court placing stress on the importance of the freedom to contract. (Armco Steel Corp. v. NLRB, CA 6-1965, 59 LRRM 2077, General Motors Corp. v. NLRB, CA 6-1965, 59 LRRM 2080) Nevertheless, the NLRB later adhered to its position, stating that such a ban unlawfully permits the contracting union to "freeze out" any rival union. (General Motors Corporation, NLRB-1966, 62 LRRM 1210) The Board's position, however, later was upheld by the U.S. Courts of Appeals for the District of Columbia and New Orleans. (Steelworkers v. NLRB, CA DC-1966, 64 LRRM 2009; NLRB v. Mid-States Metal Products, Inc., and Local 738, International Chemical Workers Union, CA 5-1968, 69 LRRM 2656) In 1970, the Board reconsidered its Armco Steel decision and by a three-to-two margin agreed with the Sixth Circuit that the no-distribution clause was lawful. The majority consisted of Chairman Miller and Members McCulloch and Jenkins. Members Fanning and Brown dissented. (Armco Steel Corp., NLRB-1970, 74 LRRM 1695)
Federal Preemption Injunctions Against Picketing	A Tennessee state court did not have jurisdiction to issue an injunction against peaceful picketing by a union at a shopping center being erected by a building contractor who operated an open shop and did interstate business, it being arguable whether the facts showed a "labor dispute" within the meaning of Section 2(9) of the Taft-Hartley Act so that the matter lay within the exclusive jurisdiction of the NLRB. (Liner v. Jafco, Inc., US SupCt-1964, 55 LRRM 2048)	The decision reversed a holding by the Tennessee Court of Appeals. (49 LRRM 2585) It was another application of the principle enunciated in the 1959 Garmon and earlier cases that state jurisdiction must yield when conduct is "arguably" or "potentially" subject to the Taft-Hartley Act, either as protected activity under Section 7 or as an unfair labor practice under Section 8. (San Diego Building Trades Council v. Garmon, US SupCt-1959, 43 LRRM 2838)
	A Florida state court did not have jurisdiction to enjoin peaceful picketing to protest substandard wages paid by foreign-flag vessels to American longshoremen working in American ports where there is no evidence that longshoremen were involved in any internal affairs of ships that would be governed by foreign law, since the picketing arguably was subject to the NLRB's exclusive jurisdiction under the Taft-Hartley Act. (ILA, Local 1416 v. Ariadne Shipping Co., US SupCt-1970, 73 LRRM 2625)	A concurring opinion by Justice White, in which Chief Justice Burger and Justice Stewart joined, agreed with the majority, but on the basis that the picketing "actually" was protected under the Act. The concurring opinion added: "So long as employers are effectively denied determinations by the NLRB as to whether 'arguably protected' picketing is actually protected except when an employer is willing to threaten or use force to deal with picketing, I would hold that only labor activity determined

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Federal Preemption--Contd. Injunctions Against Picketing -- Contd.		to be actually, rather than arguably, protected under federal law should be immune from state judicial control. To this extent * * * Garmon * * * should be reconsidered. "
	A writ of certiorari was dismissed as improvidently granted in a case in which Alabama courts had issued a temporary injunction against a union's picketing of a sidewalk owned by an employer. The Court concluded, among other things, that the record was obscure and that "only a bare remnant of the original controversy remains. " Justices Black and Harlan would have reversed on the basis of the Garmon decision. (Taggart v. Weinacker's Inc., US SupCt-1970, 73 LRRM 2628)	In a concurring opinion, Chief Justice Burger said: "In my view, any contention that the states are preempted in these circumstances is without merit. The protection of private property, whether a home, factory, or store, through trespass laws is historically a concern of state law. Congress has never undertaken to alter this allocation of power, and has provided no remedy to an employer within the National Labor Relations Act to prevent an illegal trespass on his premises. " Nothing in Garmon would warrant a holding that state laws are ineffective in this area, he added.
Libel or Slander Action	A state court has jurisdiction of a damage action for libel or slander based on false and defamatory statements during a union organizing campaign if the aggrieved party pleads and proves the statements were made with malice and they injured him. (Linn v. Plant Guard Workers, US SupCt-1966, 61 LRRM 2345)	Chief Justice Warren and Justices Black, Douglas, and Fortas dissented to the holding.
Secondary Boycotts	The authority given to federal and state courts by Section 303 of the Taft-Hartley Act to award compensatory damages to persons injured by secondary boycotts that violate the Act preempts state law in private damage actions based on a union's peaceful secondary activities. (Local 20, Teamsters v. Morton, US SupCt-1964, 56 LRRM 2225)	This decision makes it clear that federal law must be applied in damage actions brought under Section 303 of the Taft-Hartley Act, whether the actions are brought in federal or state courts. A judgment rendered by a federal district court and affirmed by the U. S. Court of Appeals at Cincinnati (Morton v. Local 20, Teamsters, CA 6-1963, 53 LRRM 2839) was vacated, and the case was remanded.
	A state court had jurisdiction to enjoin organizational or secondary-boycott picketing by the Marine Engineers, since the NLRB has ruled that MEBA, as a union of supervisors, is not a "labor organization" under the Taft-Hartley Act. (Hanna Mining Co. v. Marine Engineers, US SupCt-1965, 60 LRRM 2473)	The state courts had decided not to assume jurisdiction, their theory being that the activity involved was covered by the Taft-Hartley Act, even if the union was not covered. But the Supreme Court said that the NLRB's ruling on the supervisory question means that MEBA's conduct is not "arguably subject" to the Federal Act.
Union Violation of Fair Representation	A state court had jurisdiction over a suit brought by a union member against the union and its officers for their allegedly wrongful refusal to seek arbitration of his discharge grievance. But the state court was required to apply federal law in resolving the case. Since the state court did not apply the governing federal standards, its decision must be reversed. The Supreme Court split three ways in the case. The majority opinion was written by Justice White and was joined in by four other Justices. A concurring opinion written by Justice Fortas and joined in by	The decision reversed that of the Missouri Supreme Court, but only on the basis of the failure to apply federal law. Under federal law, the U. S. Supreme Court said, a breach of the statutory duty of fair representation occurs only when a union's conduct with respect to a member of the bargaining unit is arbitrary, discriminatory, or in bad faith. Moreover, the Court added, the individual employee does not have an absolute right to have his grievance taken to arbitration, regardless of the provisions of the applicable contract.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Federal Preemption--Contd. Union Violation of Fair Representation -- Contd.	Chief Justice Warren and Justice Harlan took the position that the case is subject to the exclusive jurisdiction of the NLRB, since it involves an alleged breach by the union of its duty of fair representation. A dissenting opinion by Justice Black viewed the majority holding as requiring an employee who seeks to sue his employer for a simple breach of his employment contract to prove not only that he attempted to exhaust his remedies under the union contract, but also that his attempt to exhaust them was frustrated by arbitrary, discriminatory, or bad-faith conduct on the part of the union. (Vaca v. Sipes, US SupCt-1967, 64 LRRM 2369) For a discussion of cases involving federal preemption issues in arbitration, see above under "Arbitration Enforcement Cases."	
Injunctions: Discretionary (Sec. 10(j))	A federal district court did not abuse its discretion in issuing a temporary injunction enjoining a company from interfering with, restraining, or coercing employees in the exercise of their statutory rights and ordering the reinstatement of six discharged employees, pending a determination of the issues by the NLRB. Congress did not intend that injunctive relief under Section 10(j) should be limited to emergencies endangering the national welfare or to situations with "heavy and meaningful repercussions." But the NLRB must show something more than "probable cause" for believing a violation is occurring before an injunction may be granted. The circumstances of the case must demonstrate that a probability exists that the purposes of the Act will be frustrated unless temporary relief is granted. (Angle v. Sacks [Kansas Refined Helium Co.], CA 10-1967, 66 LRRM 2111)	The court modified the part of the injunction that ordered the company to tender sufficient transportation money to permit the six discharged employees and their families to return. Under the modified order, the company was required to offer travel funds to the discharged employees only if they indicated they would accept temporary reinstatement. For a discussion of decisions on the issuance of Section 10(j) temporary injunctions in refusal-to-bargain cases, see above under "Bargaining Obligation--Conduct of Negotiations: Coordinated or Coalition Bargaining."
	An employer charged with violating employee rights and its bargaining duty under the Act was ordered by a federal district court to cease its alleged interference with the employees' union activity and to bargain with the union. The court found reasonable cause to believe that the employer, acting through its representatives, engaged in unlawful interference and an unlawful refusal to bargain. (Little v. Portage Realty Corp., USDC NInd -1970, 73 LRRM 2971)	This was one of the rare Section 10(j) injunctions sought by the Board. The Board seeks only from 15 to 18 annually, and the number was even smaller until the last few years. It also was one of a very few sought in a case of alleged refusal to bargain.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Injunctions: Mandatory (Section 10(l))	The charging party who appeared in an action by the NLRB's regional director for a temporary injunction under Section 10(l) of the Act lacks standing to appeal the federal district court's denial of the injunction. The charging party before the Board is not a party in the Section 10(l) action, and to grant appeal rights would constitute an unwarranted expansion of the exception to the Norris-LaGuardia Act. Moreover, the charging party may not intervene in order to prosecute the appeal. (Sears, Roebuck & Co v. Carpet Layers, CA 10-1969, 71 LRRM 2251)	The Supreme Court granted review of the case on November 17, 1969. The Court later dismissed the employer's appeal as moot. It pointed out that the NLRB had issued its decision holding that the union did violate the Act. The Board's order, the Court said, would terminate a Section 10(l) injunction, so regardless of whether the employer has a right of appeal in such a case, no remedy would be available at this point. It added that Section 10(e) provides an adequate remedy once the Board has acted. (Sears, Roebuck & Co. v. Carpet Layers, U.S. SupCt-1970, 74 LRRM 2001) See Automobile Workers v. Scofield, U.S. SupCt-1965, 60 LRRM 6479, for a decision upholding the right of both the successful charged party and the successful charging party to intervene in proceedings to review or enforce NLRB orders.
Jurisdictional Disputes	In a series of four awards of disputed work under the jurisdictional-strike provisions of the Act, the NLRB gave weight to such factors as the following: satisfaction of the employer with the performance of work by his employees, area practice, contract language, efficiency of operations, company practice, economy of operations, NLRB certification, past practice, and skills of the employees involved. In all four cases, the awards confirmed the assignment of the work by the employers. There were dissents in three of the cases. (Plumbers & Pipefitters [D'Annunzio Bros. Inc.], 59 LRRM 1163; Electrical Workers Union, IBEW [New York Telephone Co.], 59 LRRM 1167; Electrical Workers Union, IBEW [Emmett Electrical Co.], 59 LRRM 1149; Longshoremen's [Pocohontas Steamship Co.], 59 LRRM 1152)--all NLRB-1965)	In the 1961 Columbia Broadcasting case, the U. S. Supreme Court told the Board it was required to make affirmative awards of disputed work in jurisdictional-strike cases. (NLRB v. Radio Engineers Union [Columbia Broadcasting System], 47 LRRM 2332). When the Board made its first awards the following year, it said that it would not "formulate rules" for making job assignments. Each case "will have to be decided on its own facts." But the Board did say that it would "consider all relevant factors in determining who is entitled to the work in dispute, e.g., the skills and work involved, certifications by the Board, company and industry practice, agreements between unions, and between employers and unions, awards of arbitrators, joint boards, and the AFL-CIO in the same or related cases, the assignment made by the employer and the efficient operation of the employer's business." (Machinists Union [J. A. Jones Construction Co.], 49 LRRM 1684)
	In its third attempt to resolve a difficult and complex work-jurisdiction dispute that had persisted for 20 years, the NLRB decided to give what appears to be controlling weight to two arbitral decisions involving the work. The NLRB awarded the work on the basis of two arbitral awards--a 1957 award by Harvard Professor John Dunlop and a 1965 award by the Appeals Board of the National Joint Board for the Settlement of Jurisdictional Disputes in the building and construction industry. Member Jenkins dis-	The majority of the Board noted that the Dunlop award apparently had the approval of the council with which both unions were affiliated. Its continued viability, the Board added, was reflected in the later decision of the Joint Board.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Jurisdictional Disputes--Contd.	sented, contending that the majority should have given more weight to such factors as efficiency and economy and prior work-assignment practices. (Millwrights Local 1102 [Don Cartage Co.], NLRB-1966, 63 LRRM 1085)	
	In deciding a work-jurisdiction dispute, the NLRB may give consideration to factors of economy and efficiency. Where these factors clearly outweighed a limited past practice, the NLRB correctly determined that the work of pulling telephone cables into newly constructed buildings and installing equipment and terminal boxes should go to members of the Communications Workers, rather than to members of the Electrical Workers (IBEW). (NLRB v. Local 25, IBEW [New York Telephone Co.], CA 2-1968, 68 LRRM 2633)	The past practice of calling in IBEW members for this work existed only in New York City, the court pointed out, and then only on new construction or major alterations on fully unionized jobs.
	The NLRB may not ignore an agreement between two unions to settle a jurisdictional dispute through the construction industry's National Joint Board for the Settlement of Jurisdictional Disputes, according to a decision by the U.S. Court of Appeals for the District of Columbia. The holding conflicts with an NLRB policy of conducting a proceeding under Section 10(k) of the Act to award disputed work to one of the competing unions whenever a voluntary adjustment procedure does not bind all the parties to the jurisdictional dispute. The NLRB has considered employers to be parties to such disputes, and employers are not bound by National Joint Board determinations. The court, however, states that the rival unions are the only parties to a jurisdictional dispute, relying on the legislative history and the Supreme Court's Columbia Broadcasting decision, discussed above. (Plasterers Local 79 v. NLRB, CA DC-1970, 74 LRRM 2575)	The decision was by a three-judge panel, with one judge dissenting. The dissenting judge accused the majority of overturning 20 years of NLRB and court decisions. He described the legislative history cited by the majority as "isolated comments."
NLRB Jurisdictional Standards Hospitals, Nursing Homes	Reversing a 1960 decision, the NLRB asserted jurisdiction over private hospitals and nursing homes within its jurisdiction. The Board established jurisdictional yardsticks of gross annual income of $250,000 for private hospitals and $100,000 for private nursing homes. (Butte Hospital Properties, NLRB-1967, 66 LRRM 1299; University Nursing Home, NLRB-1967, 66 LRRM 1263)	The NLRB previously had asserted jurisdiction over a private nonprofit corporation whose entire operation was dependent on government contracts. (Woods Hole Oceanographic Institution, NLRB-1963, 53 LRRM 1296)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
NLRB Jurisdictional Standards--Contd.		
Professional Sports	Professional baseball is an industry in or affecting interstate commerce and therefore is subject to NLRB jurisdiction. So the NLRB, on this basis, directed an election in a unit of umpires working for the American League of Professional Baseball Clubs. Member Jenkins dissented, arguing that an amendment to the Taft-Hartley Act would be needed to give the Board jurisdiction over professional baseball. (American League of Professional Baseball Clubs, NLRB-1969, 72 LRRM 1545)	Meanwhile, a federal district court in New York held that professional baseball is not subject to the federal antitrust laws. (Salerno v. American League, USDC SNY-1969, 72 LRRM 2970)
Universities and Colleges	Jurisdiction will be asserted over those private, nonprofit colleges and universities whose operations have a substantial effect on commerce. The NLRB so decided in June 1970 in cases involving Cornell and Syracuse Universities. It overruled its 1951 decision in the Columbia University case (Trustees of Columbia University, NLRB-1951, 29 LRRM 1098) Following the adoption of the new policy, the Board directed an election in a state-wide unit of Cornell's non professional employees. But it dismissed a petition for election in a unit of Syracuse employees, since the New York State Labor Relations Board already has conducted an election for Syracuse employees, a union has been certified, and the parties are negotiating a contract. (Cornell University, NLRB-1970, 74 LRRM 1269)	Using rule-making procedures, the Board later established a jurisdictional standard for private universities and colleges of a gross annual revenue of at least $1, 000, 000 for operating expenses. In determining whether a university or college meets the standard, the Board will exclude from gross annual revenue only those contributions which, because of limitations by the grantor, are not available to be used for operating expenses. These contributions -- that would encompass such things as gifts to endowment or building funds -- are excluded because of their "generally nonrecurring nature." But income from the investment of such funds will be counted in determining whether the university or college meets the standard. The Board estimates that the standard will bring some 80 percent of all nonprofit universities and colleges and 95 percent of their nonprofessional personnel within its jurisdiction. (Jurisdiction: Rule of NLRB, 1970, 75 LRRM 1442)
NLRB Orders: Judicial Review	In court proceedings for review or enforcement of NLRB orders, both the successful charged party and the successful charging party have a right to intervene. (Automobile Workers v. Scofield, Automobile Workers v. Fafnir Bearing Co., US SupCt-1965, 60 LRRM 2479)	The effect of the holding is to make review and enforcement proceedings tripartite in nature.
NLRB Policies: Retroactive Application	In refusing, on a technical ground, to enforce an NLRB order against an employer who negotiated a contract with a minority union to take effect when and if the union achieved a majority, the U. S. Court of Appeals at New York sharply criticized the Board's practice of giving retroactive application to changes in policy. Pointing out that the Board's holding overruled a long-standing contrary decision, the court said retroactive application of policy changes	The court suggested that the Board should make greater use of its rule-making authority to announce new policies, instead of doing this almost exclusively on a case-by-case basis. It pointed out that an employer or a union may be penalized as a result of retroactive application of policy changes for doing something that was legal under the Board rules in effect at the time the act was committed. The Board followed the court's advice in making the

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
NLRB Policies: Retroactive Application--Contd.	"raises judicial hackles." (NLRB v. Majestic Weaving Co., CA 2-1966, 61 LRRM 2132)	new "names-and-addresses" rule for representation elections effective only prospectively. See above under "Representation Cases."
	The NLRB did not exceed its powers, in ordering reinstatement and back pay for permanently replaced economic strikers who had been denied reinstatement when vacancies in their jobs occurred after they had made their initial application for reinstatement. The company argued that the imposition of back-pay liability was improper, since the Board applied a new policy to acts that were not unlawful at the time committed. But the court said that the importance of protecting the statutory rights of the striking employees outweighed the fact that the company had relied on a prior Board rule or policy. One member of the three-judge panel dissented, stating "my mind rebels against imposing upon an employer a huge penalty for failure to ancitipate what the Supreme Court might hold sometime in the future." (Laidlaw Corp. v. NLRB, CA 7-1969, 71 LRRM 3054) See below under "Strikes, Picketing--Reinstatement of Strikers," for a further discussion of this case.	In upholding the decision of the NLRB, the court relied primarily on the decision of the Supreme Court in the Fleetwood Trailer case. In Fleetwood, the Supreme Court held that unless an employer who refuses to reinstate economic strikers when jobs become available can show that his action was based on "legitimate and substantial business justifications," he will be guilty of an unfair labor practice under the Act. (NLRB v. Fleetwood Trailer Co., Inc., US SupCt-1967, 66 LRRM 2737)
	A panel of the NLRB consisting of Chairman Miller and Members Fanning and Jenkins later split two-to-one on the retroactive application of the Laidlaw doctrine to another case. Members Fanning and Jenkins voted in favor of the retroactive application; Chairman Miller dissented. Although Miller said that he accepts the principle of the Laidlaw decision, he added that he considered it "highly unfair" to apply it to the case in question. (Coca Cola Bottling Works, Inc., NLRB-1970, 75 LRRM 1551)	In his dissent, Chairman Miller pointed out that when the company initially was considering the reinstatement rights of the economic strikers, it acted in good faith and in accordance with Board precedent at that time.
NLRB Procedures		
Obligation To Rule On Complaint	The NLRB does not have discretionary authority to refuse to rule on a complaint charging an unfair labor practice properly brought before it. Moreover, if the Board finds a violation, it then must issue a remedial order, even though its judgment is that an order will serve no useful purpose. Under the statutory scheme devised by Congress, the discretion to determine whether complaints are sufficiently meritorious to be brought before the Board was vested solely in the Office of the General Counsel. De minimis violations are to be screened out by the General Counsel; only he has the authority to dismiss alleged violations	The trial examiner had dismissed every charge except one. The Board said that the violation would be too isolated to warrant the issuance of a remedial order; so no purpose would be served by passing on the correctness of the finding.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
NLRB Procedures--Contd.		
Obligation To Rule On Complaint--Contd.	as not warranting Board consideration. By the same token, the Board does not have discretion to refuse to issue a cease-and-desist order when it finds that an unfair labor practice has occurred. (Auto Workers v. NLRB [Omni Spectra, Inc.] CA 6-1970, 74 LRRM 2481)	
Pre-Settlement Conduct	The NLRB acted within its authority in overruling past policy to hold that conduct prior to a settlement agreement may be considered as background evidence in evaluating post-settlement conduct. The union-respondent in the case argued that the new policy would discourage parties from settling their disputes. Although conceding that there may be some merit to the contention, the court said that the procedural effect of a settlement agreement clearly is for the NLRB, not the courts, to decide. (NLRB v. Northern California Council of Hod Carriers, CA 9-1968, 67 LRRM 2502)	In its holding, the NLRB expressly reversed the principle announced in the 1951 Larrance Tank case that conduct prior to a settlement agreement may not be considered in evaluating post-settlement activities alleged as unfair labor practices. (Larrance Tank Corp., NLRB-1951, 28 LRRM 1045) A reexamination of the principle led to its reversal, the Board said. (Northern California Council of Hod Carriers [Joseph's Landscaping Service], NLRB-1965, 60 LRRM 1156)
NLRB Remedies		
Alternate Remedies	In a case in which the NLRB found that an employer violated the Act by refusing to sign a written contract embodying an oral agreement already reached with a union, the Board acted within its statutory authority by ordering the employer to do one of the following: (1) bargain in good faith with the union to reach a new contract settlement; or (2) at the union's request, sign a written contract embodying the terms previously agreed upon. In approving the alternate remedies, the court stated that the order was designed to effectuate the duration clause of the oral contract the employer refused to put in writing. This provided for automatic renewal for additional one-year periods unless either gave notice to amend or terminate at least 60 days before the scheduled date of expiration. To give the union the alternate right to bargain for a new contract, the court added, would simply be enforcing a right the union had under the agreed-upon contract the employer refused to sign. The court also upheld the part of the NLRB's order requiring the company to reimburse the employees, with six percent interest, for the loss of any benefits that would have accrued to them had the company signed the contract. (NLRB v. Beverage-Air Co., CA 4-1968, 69 LRRM 2369) See below under "Bargaining Violations: Retroactive Payment of Benefits" for other cases on retroactive reimbursement.	The same court in 1966 refused to enforce an NLRB order giving a similar choice of remedies to a union. It is inconsistent and unreasonable, the court said, to give the union the option of binding the employer to the agreement already negotiated or of abrogating the contract and requesting new negotiations. (NLRB v. Huttig Sash & Door Co., CA 4-1966, 62 LRRM 2271) In denying a motion for rehearing of the case, however, the court said that it would "not deem the decision in this case as precluding" the issuance of the type of order fashioned by the Board and would "be prepared to consider it on its merits" in a future case. The court noted this comment in the Beverage-Air case. The same type of order had been enforced by the U.S. Court of Appeals at Cincinnati, but the court added as a reason for enforcement that no objection was made to the order by the employer prior to oral argument in the court proceeding to enforce it. (NLRB v. Ohio Car & Truck Leasing, Inc. CA 6-1966, 62 LRRM 2262) The court also pointed out that it had enforced a similar order in a case decided in 1962 and that the U.S. Court of Appeals at New York had enforced such an order in a case decided in 1965. (See NLRB v. Wate, Inc., CA 6-1962, 51 LRRM 2701; NLRB v. Warrensburg Board & Paper Corp., CA 2-1965, 58 LRRM 2145.)
Bargaining Violations: Check-off Order	The NLRB had no authority to order an employer to agree to a check-off provision in its first contract with a union, even though it found that the employer had failed to bargain in good faith by consistently rejecting the union's demand	The decision reversed the second decisions in this case of both the NLRB and the U.S. Court of Appeals for the District of Columbia. (See H.K. Porter Co., NLRB-1968, 68 LRRM 1337; H.K. Porter Co. v. NLRB, CA DC-1969, 71

Issue	Holding	Comment
NLRB Remedies--Contd.		
Bargaining Violations: Check-off Order--Contd.	for a check-off. While the parties' freedom of contract is not absolute, the Court said to allow the Board to compel agreement when the parties themselves are unable to do so would be to violate the fundamental premise on which the Act is based. The decision was by a divided Court. Justice Black wrote the majority opinion in which Chief Justice Burger and Justice Brennan joined. Justice Harlan concurred separately. Justices Douglas and Stewart dissented. Justices White and Marshall took no part in the decision. (H. K. Porter Co. v. NLRB, US SupCt-1970, 73 LRRM 2561) See also above under "Conduct of Negotiations: Refusal of Check-off."	LRRM 2207.) In concurring, Justice Harlan said that he did so "on the understanding that nothing said therein is meant to disturb or question the primary determination made by the Board and sustained by the Court of Appeals that petitioner did not bargain in 'good faith,' and thus may be subject to a bargaining order enforceable by a citation for contempt if the Board deems such a proceeding appropriate." In finding that the company violated the bargaining duty, the Board said that the refusal to grant the check-off was "for the purpose of frustrating an agreement." In a later case, the NLRB found that a company's refusal to grant a check-off was motivated by bad faith in that its purpose was to weaken and destroy the union's status as bargaining representative. But the Board denied the union's request that the remedy require the company to grant the check-off. The appeals court upheld the Board's decision. (Steelworkers v. NLRB [Roanoke Iron & Bridge Works, Inc.] CA DC-1967, 67 LRRM 2450) The Supreme Court later denied review of the case. (Roanoke Iron & Bridge Works, Inc. v. NLRB, US SupCt-1968, 68 LRRM 2097)
Bargaining Violations: Retroactive Payment of Benefits	In a case in which an employer was found to have violated the Act by refusing to bargain with a union about the transfer of employees from a closed to a new plant, the NLRB was not warranted in ordering the company to offer reinstatement to the employees at the rates paid at the old plant and to pay the employees back pay at the rates paid at the old plant. (Cooper Thermometer Co. v. NLRB, CA 2-1967, 65 LRRM 2113)	The court said that the Board's order assumed that if the parties had bargained about the transfer, the company would have agreed to maintain existing rates and conditions of employment at the new plant.
	The NLRB had authority to order an employer who refused to execute and acknowledge a contract negotiated by a multi-employer bargaining association of which he was a member to pay the fringe benefits called for by the contract. The Court rejected the argument that the order intruded into the area of the enforcement of collective bargaining contracts in contravention of the policy and scheme of the Act. Justice Black concurred specially and Justice Douglas dissented. (NLRB v. Strong [Strong Roofing & Insulating Co.], US SupCt-1969, 70 LRRM 2100)	The NLRB's refusal to order back pay as a remedy for a refusal-to-bargain violation, however, was upheld by a federal court of appeals in another case. The court found that the employer's purpose in refusing to bargain with the certified union was to obtain judicial review of what it believed to be substantial questions concerning the propriety of the union's pre-election campaign tactics and was not an "exercise in

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
NLRB Remedies--Contd.		
Bargaining Violations: Retroactive Payment of Benefits--Contd.		frivolity tending only to delay the inevitable." So the NLRB gave the appropriate relief when it issued a bargaining order. (Electrical Workers, IBEW v. NLRB, CA DC-1969, 71 LRRM 2402)
Bargaining Violations: Retroactive Payment of Benefits--Bonus	An NLRB order requiring a company to pay employees the difference between bonuses they actually received and those they would have received had the company not unilaterally altered the bonus formula was denied enforcement by the U.S. Court of Appeals at Cincinnati. The Board's decision, the court stated, does not explain sufficiently why the reimbursement claim should not be the subject of collective bargaining, the parties having had a long and satisfactory bargaining history. (Beacon Journal Publishing Co. v. NLRB, CA 6-1969, 72 LRRM 2639)	This was the second time the court had refused to enforce an order of the Board requiring retroactive reimbursement for the bonus not paid. In its first decision, the court upheld the Board's finding that the company's unilateral alteration of the bonus violated the Act. But it remanded the case to the Board for further consideration of the reimbursement remedy. (Beacon Journal Publishing Co. v. NLRB, CA 6-1968, 69 LRRM 2232)
Bargaining Violations: Retroactive Payment of Benefits--'Make-Whole' Order	The NLRB has ample authority under the Act to issue "make-whole" orders to provide meaningful relief for employees unlawfully denied the fruits of collective bargaining. The NLRB had found that the company had violated its bargaining duty under the Act, but as a remedy it merely ordered the company to cease and desist from the unlawful conduct. But the union urged that there should be compensatory relief for the effects of the company's unlawful action, including a retroactive wage increase, a cost-of-living escalator clause, and reimbursement for lost dues and initiation fees. The court remanded the case to the Board for consideration of an appropriate remedy, stating that even if the Board declines to take the steps advocated by the union, it might provide other remedies to advance the policies of the Act and prevent the employer from having a free ride during the period of litigation. The decision was by a three-judge panel of the court, with one judge dissenting. (Electrical Workers, IUE v. NLRB [Tiidee Products, Inc.] CA DC-1970, 73 LRRM 2870) The company asked the Supreme Court to review the decision before it was reconsidered by the Board, but the Court denied review. (Tiidee Products, Inc. v. Electrical Workers, IUE, US SupCt-1970, 73 LRRM 2870)	The majority of the court distinguished this case from the H.K. Porter case discussed above, stating that the remand to the Board was limited to past damages, not to compulsion of a future contract term. In a later case, the same court indicated that it does not regard every instance of an employer's refusal to bargain with a union as appropriate for the issuance of a "make-whole" order. It upheld the NLRB's denial of such an order in a case in which it found no indication in the record that the employer wished to delay unnecessarily the final outcome of the dispute. The legality of the refusal to bargain rested upon a factually debatable question, the court added, and there were great discrepancies between the various accounts of its actions. At no time, did the employer raise patently frivolous issues. (Steelworkers v. NLRB, [Quality Rubber Co.], CA DC-1970, 74 LRRM 2747) The court's decision in Tiidee Products was handed down before the Board's decision in the Ex-Cell-O case discussed immediately below.
	Although a company violated its bargaining duty under the Act by refusing to bargain with a union while it tested the union's certification as bargaining representative in the courts, the NLRB does not have authority to	Oral argument was held in Ex-Cell-O and three related cases on July 12 and 13, 1967. The Board later decided the other cases, applying the principle established in Ex-Cell-O to deny "make-whole" orders. (Herman Wilson

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
NLRB Remedies--Contd.		
Bargaining Violations: Retroactive Payment of Benefits--'Make-Whole' Order--Contd.	issue a "make-whole" order requiring the company to compensate its employees for monetary losses incurred as a result of the company's unlawful refusal to bargain with the union certified as the employees' bargaining representative. The compensation sought was intended to cover increased wages and benefits the company "would have agreed to if it had bargained in good faith." The Board was unanimous in finding that the company violated its good-faith bargaining duty, but it divided three-to-two on the "make-whole" order. Chairman Miller and Members Fanning and Jenkins decided that the "make-whole" order would go beyond the Board's authority under the Act. Members McCulloch and Brown dissented. The majority pointed out that there was no contention that the company acted flagrantly in defiance of statutory policy; it merely sought judicial review of the Board's decision not to set aside the election. But referring to the court's decision in Tiidee, it added that the issuance of a compensatory remedy cannot be based on a subjective determination of whether the position of the employer is "debatable" or "frivolous." What is debatable to the Board may appear frivolous to a court. The majority also cited the Supreme Court's decision in H. K. Porter Co. v. NLRB, supra, to the effect that the Board does not have authority to compel an employer or a union to agree to any substantive provision of a contract. (Ex-Cell-O Corporation, NLRB-1970, 74 LRRM 1740) The Ex-Cell-O case is now pending before the U. S. Court of Appeals for the District of Columbia.	Lumber Co., NLRB-1970, 75 LRRM 1210; Zinke's Foods, Inc., NLRB-1970, 75 LRRM 1211; Rasco Olympia, Inc., NLRB-1970, 75 LRRM 1209) The decisions were by a panel composed of Members Fanning, Brown, and Jenkins. Member Brown, who dissented in Ex-Cell-O, indicated that he would award a compensatory remedy in Wilson Lumber, in which the employer refused to bargain with a union certified after winning an election, and in Zinke's Foods, in which the employer refused to recognize a union on the basis of authorization cards. But in Rasco Olympia, involving an employer's refusal to continue bargaining with a union after expiration of a collective bargaining contract, Member Brown argued that a compensatory remedy should be denied, noting that he would limit the remedy to "initial bargaining situations." The question, raised by Tiidee, Quality Rubber, and to some extent Ex-Cell-O, whether a distinction should be made between cases in which the employer's refusal to bargain is in good faith and those in which the reasons given were "patently frivolous" and there was bad faith is before the Board in Tiidee. The Zinke's Foods case is now pending before the U.S. Court of Appeals for the District of Columbia, along with Ex-Cell-O.
'Flagrant' Violations	In five cases involving the same employer and what the NLRB called "massive and deliberate" unfair labor practices, the Board devised remedies that went beyond the usual reinstatement, back-pay, and notice-posting order. In the first case, the Board ordered the company to take this additional action: (1) Mail to each of its employees in each of its North and South Carolina plants, not just those involved in the case, a copy of the cease-and-desist order, which was to be signed by a company official; (2) convene working time meetings of employees in the various departments of all the plants and have a company official read the notice to the assembled employees; (3) give the union reasonable access	In Stevens I and II, company petitioned for review in the U.S. Court of Appeals at Richmond, but the cases were transferred to the U.S. Court of Appeals at New York, where the union had petitioned for review. In reviewing the Board's decision in the first case, the New York Court went along with the notice-posting and notice-mailing requirement of the order. But because of the "element of humiliation" involved in the public-reading provision, the court modified the order to require reading of the order only in the plants in which unfair labor practices were found to have been committed and to give the company the alternative of having the notice read by a representative of the Board, rather than a company official. (J. P. Stevens & Com-

Issue	Holding	Comment
NLRB Remedies--Contd.		
'Flagrant' Violations--Contd.	to plant bulletin boards for a period of one year. (J. P. Stevens & Company, Inc., NLRB-1966, 61 LRRM 1437) In its second decision, the Board added the requirement that the company supply the union with the names and addresses of all employees in its plants in the two states. (J. P. Stevens & Company, Inc., NLRB-1967, 64 LRRM 1321) In its orders in Stevens III and IV, the Board modified the public reading requirement to permit the company to have the order read by a Board, rather than a company, official. The names-and-addresses requirement was not included in the Stevens III order, but it was in the Stevens IV order. The Stevens V order was the same as in Stevens IV. (J. P. Stevens & Co., Inc., NLRB-1967, 66 LRRM 1024; J. P. Stevens & Co., Inc., NLRB-1967, 66 LRRM 1030; J. P. Stevens & Co., Inc., NLRB-1968, 69 LRRM 1088) In a split decision, a majority of a three-judge panel of the U.S. Court of Appeals at Richmond enforced parts of the orders in Stevens III and IV and modified other parts. The parts enforced in full were those requiring the posting of appropriate notices in all the company's North and South Carolina plants for 60 days, mailing a copy of the notice to each employee, giving the union reasonable access to the company's bulletin boards for a period of one year, and having a company official or Board agent read the notice to employees during working time in the plants in which the violations were found. The names-and-addresses requirement was modified to limit it to employees in the three plants involved in Stevens IV. The Board's order applied to employees in all the company's North and South Carolina plants. (J. P. Stevens & Co., Inc., CA 4-1968, 70 LRRM 2104) The Board's order in J. P. Stevens V, which was the same as the order in Stevens IV, was enforced by the U. S. Court of Appeals at New Orleans. (J. P. Stevens & Co. v. NLRB, CA 5-1969, 72 LRRM 2433)	pany, Inc. v. NLRB, CA 2-1967, 65 LRRM 2829) The court also refused to enforce the part of the order in the first case that required the company to give the union "reasonable" access to the plant bulletin boards, stating that the Board did not establish need for such a provision. The order as thus modified was denied review by the Supreme Court. (J. P. Stevens & Company, Inc. v. NLRB, US SupCt-1967, 66 LRRM 2728) In reviewing the order in the second case, the court approved the provision requiring the company to give the union "reasonable" access to the bulletin boards, but it would not approve the names-and-addresses requirement. (Textile Workers Union v. NLRB [J. P. Stevens & Company, Inc.], CA 2-1967, 67 LRRM 2055)
	In another case involving what the NLRB described as "flagrant" violations, the U. S. Court of Appeals at New Orleans refused to enforce parts of the order that it considered ambiguous, too broad, or "unnecessarily embarrassing and humiliating to management." (NLRB v. Laney & Duke Co., CA 5-1966, 63 LRRM 2552)	A provision requiring the company to promise that it will not "make any other promises to our employees we do not intend to keep" was deleted as too broad. One requiring the company to read the notice to all employees singly or collectively was deleted as "unnecessarily embarrassing and humiliating." One stating that the company "will not promise to restore the raises which our employees used to get every

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
NLRB Remedies--Contd.		
'Flagrant' Violations--Contd.		year before they joined the union" was modified as ambiguous.
	Another U. S. Court of Appeals, that for the District of Columbia, struck down as "humiliating and degrading" that part of a Board order that would have required the employer to assemble the employees on company time and read to them the cease-and-desist order issued by the Board. One member of the three-judge panel dissented. (IUE v. NLRB [Scott's Inc.], CA DC-1967, 66 LRRM 2081)	The dissenting judge took the position that any difficulty that might be created by the public-reading provision would be dissipated by modifying the provision, as was done in the J. P. Stevens & Company case, to require that an NLRB official, rather than the employer, read the notice to the employees. The case went to the Supreme Court on the parts of the order relating to union access to company property and bulletin boards. Review was denied. (Scott's Inc. v. NLRB, US SupCt-1968, 67 LRRM 2308)
	An employer who committed extensive unfair labor practices during an election campaign properly was ordered to read to his employees the NLRB notice stating that the employer had violated the Act. In upholding the order, the court pointed out that as many as 44 or 45 of the employer's 190 employees were illiterate. (NLRB v. Bush Hog, Inc., NLRB-1968, 70 LRRM 2070)	The court distinguished the case from NLRB v. Laney & Duke Co., supra, pointing out that in Laney & Duke only three of 54 eligible employees were illiterate; moreover, the requirements of the order were much more onerous.
	In a case in which it characterized the violations as "outrageous" and "pervasive," the NLRB fashioned a remedy that included virtually every type of affirmative action called for in flagrant cases except an order to bargain. The violations found ran the gamut--discharges and layoffs for union activity, threats of discharge and other retaliatory action for engaging in union activity, threats to close the plant if the union came in, promises of benefits to employees to discourage support for the union, causing the arrest of union representatives who distributed handbills near the plant, limiting the size of union buttons worn by employees, and making coercive speeches to "captive" audiences of employees. Among the affirmative actions ordered were (1) a public reading of the Board's order by the company's president to assembled groups of employees; (2) mailing of a copy of the notice signed by the company's president to each employee; (3) granting the union reasonable access for three months to bulletin boards and other places where notices to employees customarily are posted; (4) making available to the union at a time mutually agreeable suitable facilities, such as customarily are made available for employee meetings, so that a one-hour	The Board added to its order a special provision relating to an election. Since the employer may have made it impossible for the union to obtain designations from 30 percent of the employees to support an election petition, the Board stated it would conduct an election, upon the request of the union, within 30 days following the employer's compliance with the order. The 30-percent showing of interest will not be required.

Issue	Holding	Comment
NLRB Remedies--Contd.		
'Flagrant' Violations--Contd.	meeting may be held at which a union representative may speak to employees; (5) making available to the union each time a company official addresses employees about union representation similar facilities, at a mutually acceptable time, so that the union may present its views to employees assembled on company time for a similar period of time (this applies for six months after the decision); and (6) supplying the union with a list of the names and addresses of employees. (Loray Corp., NLRB-1970, 74 LRRM 1513)	
Interference Violation: Bargaining Order	Although no refusal-to-bargain violation was found, the NLRB was warranted in ordering an employer to bargain with a union whose authorization-card majority had been dissipated by the employer's Section 8(a)(1) interference violations. The interference violations, the court said, destroyed the conditions for a fair representation election. (NLRB v. Priced-Less Foods, Inc., CA 6-1968, 70 LRRM 2007) See above under "Bargaining Obligation--Bargaining Rights: Use of Authorization Cards as Basis" for other cases involving authorization-card bargaining orders.	The court stressed that it considered a representation election a better procedure for employees to express their choice as to union representation. But it agreed with the NLRB that the company's interference violations were serious enough to warrant the bargaining order. The decision in this case was handed down before the Supreme Court's decision in NLRB v. Gissel Packing Co., supra. For a similar decision handed down after Gissel, see United Packing Co., above under "Bargaining Rights: Use of Authorization Cards as Basis: Interference Violations."
Plant Closure, Subcontracting	In a case in which an employer closed his plant and moved to a new location to avoid bargaining with a union, an appeals court upheld an order requiring the employer to do the following: (1) furnish the union with a list of the names and addresses of all employees at the new plant and keep the list current for one year; (2) grant the union reasonable access for one year to the plant bulletin board and all places where notices to employees customarily are posted; (3) permit employees to have access to union organizers on plant parking lots and plant approaches during nonworking time for one year; and (4) bargain with the union upon proof that a majority of the employees have designated the union as their bargaining agent. (Garwin Corp. v. NLRB, CA DC-1969, 70 LRRM 2465) The Supreme Court denied review of the holding. (Garwin Corp. v. NLRB, US SupCt-1969, 71 LRRM 2605)	This was the second decision by the appeals court in the case. In its first decision, the court denied enforcement to a Board order that would have required the employer to bargain with the union at the new location without requiring the union to reestablish its majority status at the new location. The Supreme Court denied review of the decision refusing to enforce the order. (Local 57, Garment Workers v. NLRB [Garwin Corp.], CA DC-1967, 64 LRRM 2159; Garwin Corp. v. NLRB, US SupCt-1967, 65 LRRM 2441) The NLRB decisions are Garwin Corp., NLRB-1965, 59 LRRM 1405, and Garwin Corp., NLRB-1968, 67 LRRM 1296.
	Although the NLRB was warranted in holding that a laundry violated the Act in closing a division and discharging the employees in an effort to rid itself of a union, the part of the order requiring the laundry to take reasonable and business-like steps to re-	In the landmark Fibreboard Paper case, in which the company was held to have violated the Act by failing to bargain about an economically motivated decision to subcontract its maintenance work, the Supreme Court upheld an NLRB order requiring the

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
NLRB Remedies--Contd.		
Plant Closure, Subcontracting--Contd.	sume the division was not warranted. Since the laundry had not operated the division for almost three years, it would be unduly harsh to require its resumption, the court said. (NLRB v. Savoy Laundry, Inc., CA 2-1964, 55 LRRM 2285)	company to resume the subcontracted operation and reinstate the displaced employees with back pay. (Fibreboard Paper Products Corp. v. NLRB, US SupCt-1964, 57 LRRM 2609)
Reinstatement, Back Pay: Reduction of Back Pay	A "considerable delay" by the NLRB in issuing a back-pay specification for employees found to have been denied reinstatement in violation of the Taft-Hartley Act does not warrant a reduction in the back pay awarded to the employees. Even if the Board's delay violated the Administrative Procedure Act, a majority of the Supreme Court ruled, a reviewing court may not interfere with the Board's order to balance the interests of the employer and the employees. The opinion was by Justice Marshall. Justice Douglas dissented in an opinion in which Chief Justice Burger and Justice Harlan joined. (NLRB v. J. H. Rutter-Rex Manufacturing Co., US SupCt-1969, 72 LRRM 2881)	The U.S. Court of Appeals at New Orleans found that the Board had been guilty of "inordinate" delay and had violated the Administrative Procedure Act to the prejudice of the company. It modified the Board's order to eliminate all back pay accruing after July 1, 1959 (J.H. Rutter-Rex Manufacturing Co., CA 5-1968, 68 LRRM 2916) Commenting on the appeals court's ruling, the dissenting opinion in the Supreme Court said that the appeals court was exercising its responsibility "for assuring that the Board keeps within reasonable bounds."
Reinstatement, Back Pay: Tolling Back Pay	Unfair-labor-practice strikers who made an unconditional group offer to return to work, but who turned down reinstatement to their former jobs because fewer than all the strikers were included, were not entitled to back pay for the period following their rejection of the employer's offer. The employer's job offer tolled its liability for back pay to the strikers who turned it down. It was a three-to-two decision, with Chairman McCulloch and Members Fanning and Zagoria in the majority and Members Brown and Jenkins dissenting. (Southwestern Pipe, Inc., NLRB-1969, 72 LRRM 1377)	The majority expressly overruled a 1962 decision in Robert S. Abbott Publishing Co., NLRB-1962, 52 LRRM 1500; enforcement denied, CA 7-1964, 55 LRRM 2994.
Successor Employers	An employer who acquires and operates in basically unchanged form a business of an employer found guilty of unfair labor practices under circumstances that charge the purchaser with notice of the unfair practice charges against the seller will be jointly and severally liable with the seller for remedying the unfair labor practices. In upholding the decision of the NLRB, the court stressed that the purchaser continued the same operation even to the jobs in question. (United States Pipe and Foundry Co. v. NLRB, CA 5-1968, 68 LRRM 2913) For the decision of the Board in the case, see Perma Vinyl Corp., NLRB-1967, 65 LRRM 1168.	The decision, in effect, overruled the holding in the 1954 Symns Grocer case in which the NLRB laid down the rule that a bona fide purchaser of a business may not be required to remedy the unfair labor practices of the seller. (Symns Grocer Co. NLRB-1954, 34 LRRM 1326) The Symns Grocer decision overruled, to the extent inconsistent therewith, the decision handed down by the Board in the 1948 Alexander Milburn case. In the Milburn case, the Board held that a company that takes over the entire business, personnel, and labor relations of another company with knowledge of the commission of unfair labor practices

Issue	Holding	Comment
NLRB Remedies--Contd.		
Successor Employers--Contd.		by its predecessor is responsible for remedying the unfair labor practices. (Alexander Milburn Co., NLRB-1948, 22 LRRM 1249)
	A single integrated enterprise, consisting of two patrol companies and a newly organized third company to which the business operations of the two former companies were transferred, is obligated to remedy the unfair labor practices committed by the two predecessor companies prior to the creation of the third company. In so holding, the court found that the integrated enterprise continued the unfair labor practices by refusing to reinstate to available jobs economic strikers who had requested reinstatement. (NLRB v. Frontier Guard Patrol, Inc., CA 10-1968, 69 LRRM 2106)	The court also noted that the predecessor companies had disabled themselves from carrying out the remedial obligation by transferring the business operations to the new company. For the decision of the NLRB, see Frontier Guard Patrol, Inc., NLRB-1966, 63 LRRM 1315.
	See above under "Bargaining Obligation--Successor Employer's Obligations" for a discussion of remedies in refusal-to-bargain cases involving successor employers.	
Union Violations: Contumacious Conduct	After adjudging a union in civil contempt for in three instances violating prior decrees forbidding violations of the secondary-boycott provisions of the Taft-Hartley Act, the U. S. Court of Appeals for the Second Circuit ordered the union to pay all the expenses of the NLRB in connection with the action, including attorneys' fees, to pay fines for each future violation of the decrees of $10,000 plus $1,000 per day, and to post a notice of the adjudication coupled with a promise of future compliance, to read it at specified membership meetings, and to distribute it both to individual union members and to all employers with whom the union had signed contracts. (NLRB v. Local 825, Operating Engineers, CA 3, 75 LRRM 2032)	The court rejected the union's arguments that the reimbursement-of-expenses remedy is punitive and that the contingent-compliance fine is inappropriate. As for the notice requirement, the court dismissed the union's objection that, except for posting, it was both unnecessary and demeaning. The purpose, the court said, is to inhibit such violations as have been disclosed.
Union Violations: Refusal To Process Grievance	A union that unlawfully failed to process an employee's grievance over his discharge was ordered to pay the employee back pay from the time he asked the union to press the grievance until the time the union fulfilled its obligation of fair representation to the employee or he obtained employment substantially equivalent to that from which he was discharged. Member McCulloch dissented, arguing that assessing all the damages arising from the discharge against the union violates the U. S. Supreme Court's action in Vaca v. Sipes. (Vaca v. Sipes,	The majority noted that the collective bargaining contract denied employees a right of action against the union for breach of contract, permitting such an action only by the union. So it rejected the contention that the employee should be left to an action against the employer and the union under Section 301.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
NLRB Remedies–Contd.		
Union Violations: Refusal To Process Grievance--Contd.	US SupCt-1967, 64 LRRM 2369) McCulloch would have ordered the union to furnish the employee reasonable legal fees to enable him to bring a Section 301 action against the employer and the union. In such an action, McCulloch noted, a court could determine whether the discharge was proper and could apportion any damages between the employer and the union. (IUE, Local 485, NLRB-1970, 74 LRRM 1396)	
Secondary Boycotts: Hot-Cargo Contracts		
Boycotts: Consumer Picketing	The amended secondary-boycott provisions of the Act do not prohibit all peaceful consumer picketing at neutral retail stores, but only such picketing as is used to persuade customers of the stores to stop trading with the stores in order to force the stores to stop dealing with the struck employer. Picketing that is used merely to persuade customers not to purchase the products of the struck employer is closely confined to the primary dispute and is not forbidden. Justices Harlan and Stewart dissented, taking the position that all consumer picketing at neutral stores amounts to restraint and coercion in violation of the Act. Justice Black, in concurring in the judgment of the majority, agreed with the Harlan-Stewart interpretation of the ban, but considered it to be violative of the free-speech guarantee of the Constitution. (NLRB v. Fruit Packers Local 760 [Tree Fruits Labor Relations Committee], US SupCt-1964, 55 LRRM 2961)	In its decision in the case, the NLRB agreed with the Harlan-Stewart view that all consumer picketing at neutral stores was forbidden. (Retail, Wholesale & Department Store Union [Perfection Mattress & Spring Co.], NLRB-1961, 49 LRRM 1297) This view was upheld by the U. S. Court of Appeals at New Orleans. (Perfection Mattress & Spring Co. v. NLRB, CA 5-1963, 53 LRRM 2800) The U. S. Court of Appeals for the District of Columbia, however, took the view that there must be evidence that the store owners actually were restrained or coerced by the picketing for there to be a violation. (Fruit Packers Local 760 v. NLRB [Tree Fruits Labor Relations Committee], CA DC-1962, 50 LRRM 2392) The holding of the Supreme Court went beyond this in permitting picketing designed only to get customers to stop buying the products of the struck employer. In a later case, a union contended that its picketing of a bank that was using the services of a janitorial-service company with which the union had a dispute came within the Tree Fruits doctrine. But the U. S. Court of Appeals at Denver agreed with the NLRB that the picketing was unlawful. The court pointed out that the picketing did not follow a product or service of the primary employer, but was directed at the bank, its employees, and its customers. Moreover, at no time did the union picket the offices of the janitorial-service company. (NLRB v. Building Service Employees International Union, Local No. 105 [Industrial Janitorial Service, Inc.] CA 10-1966, 63 LRRM 2307)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Secondary Boycotts; Hot-Cargo Contracts--Contd.		
Boycotts: Consumer Picketing--Contd.	Peaceful picketing at retail stores to persuade customers to stop buying products of a struck or nonunion company is permissible, but the product involved must be clearly identified and the picketing must not be aimed at inducing a general loss of business by the store. So a broad appeal to look for the union label is an unlawful secondary boycott. Despite the union's claim that it was only trying to educate the public to look for the union label, the court agreed with the NLRB's finding that it was aimed at one specific manufacturer. Since the object was specific, the picket signs also should have been specific. The too-general appeal sought to shut off all trade with the stores, and so was unlawful. One judge dissented. (Local 140 Furniture Workers v. NLRB [U.S. Mattress Corp.], CA 2-1968, 67 LRRM 2392)	Both the Board and the appeals court applied the distinction drawn by the Supreme Court in the Tree Fruits case between picketing aimed at persuading customers to stop all trading with the retail stores and that aimed at persuading them merely to stop buying the products of the struck employer. The Board said the union knowingly and deliberately extended the reach of the picketing appeal beyond the products of the "nonunion" employer. (Furniture Workers, Local 140 [U.S. Mattress Corp.], NLRB-1967, 65 LRRM 1074)
	A union violated the Act by picketing a shopping center in an attempt to induce customers not to patronize four restaurants and one jewelry store that advertised in a newspaper with which the union had a labor dispute, the union's object being to force the restaurants and the store to stop advertising in the newspaper. Since the restaurants and store advertised their entire businesses, not just their products, the picketing amounted to more than the mere following of a struck product allowed by the Tree Fruits decision. The union also violated the Act by distributing handbills at the shopping center asking the public not to patronize "this establishment" in an attempt to induce customers to stop patronizing the four restaurants and the jewelry store. Since the language of the handbills clearly referred to all establishments in the shopping center, whether they advertised in the newspaper or not, the handbilling was not privileged under the publicity proviso. (Honolulu Typographical Union v. NLRB, CA DC-1968, 68 LRRM 3004)	The decision upheld that of the NLRB. Member Jenkins dissented at the Board level, contending that "it is no longer open to doubt that an advertiser, whether a broadcasting station or a newspaper, participates in the production of the product it advertises and that a union having a dispute with the newspaper or broadcaster may picket those products at the point where consumers receive them." (Honolulu Typographical Union [Hawaii Press Newspapers], NLRB-1967, 66 LRRM 1194) The NLRB relied on both the Tree Fruits and the Honolulu Typographical Union cases in holding that a union engaged in an unlawful secondary boycott by picketing stores of a discount chain that advertised in a newspaper against which the union was on strike while at the same time distributing handbills urging a total boycott by consumers of all products sold by the discount chain. (Los Angeles Typographical Union [White Front Stores], NLRB-1970, 73 LRRM 1390)
Boycotts: Coverage --State Agencies	The secondary-boycott provisions of the Act applied to an attempt by a union to induce the Alaska State Marine Highway System to stop doing business with the City of Juneau, even though the system and the city are political subdivisions, rather than employers, under the	In his dissent, Jenkins stated that nothing in the legislative history indicates that the secondary-boycott provisions are to apply where "not only the boycotted employer is exempt but the employees taking the action are also employed by an exempt employer

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Secondary Boycotts; Hot-Cargo Contracts--Contd.		
Boycotts: Coverage –State Agencies--Contd.	Act. The secondary-boycott provisions contain no language limiting their coverage to "employers." Instead coverage extends to disputes involving "persons," and political subdivisions are "persons" under the Act. Although deciding to assert jurisdiction over the dispute, the Board found no violation, stating that the union was engaging in lawful primary activity in its efforts to compel the Marine Highway System to stop sending state-owned ferry boats to the city's docks. Member Jenkins dissented. (Longshoremen (ILWU), Local 16, NLRB-1969, 71 LRRM 1305)	and thus are not amenable to any other provisions of the Act."
Boycotts: Publicity Proviso	The proviso permitting a union to use publicity, other than picketing, to advise customers that a store is distributing products "produced" by the struck employer is not limited to disputes in which the struck employer is the "manufacturer" of the products. The proviso is as broad, in terms of employers covered, as the prohibition to which it is an exception. (NLRB v. Servette, Inc., US SupCt-1964, 55 LRRM 2957)	In a decision handed down upon a remand from the U. S. Court of Appeals at San Francisco after the Supreme Court's decision, the NLRB reaffirmed its earlier ruling that a television station is a "producer," for the purpose of the proviso, of products advertised on its programs. The appeals court had reversed the Board's original holding to this effect. (American Federation of Television & Radio Artists [Great Western Broadcasting Corp.], NLRB-1964, 58 LRRM 1019)
	In a case involving an air-conditioning and heating subcontractor who had a dispute with a union, the union was held not to have violated the Act by distributing handbills at stores operated by companies that were using the services of the subcontractor at a shopping center still under construction. There is no geographic limitation on the scope of the publicity proviso to the secondary boycott prohibition, the Board said. (Sheet Metal Workers, Local 54 [Sakowitz, Inc.], NLRB-1969, 70 LRRM 1215)	In explaining its holding, the Board said: "The absence of a geographic limitation to the scope of the provision is inherent in the fact that radio and newspaper advertising is within the scope of its protection. To restrict the locus of permissible handbilling, while protecting appeals to all prospective consumers who listen to radios or read newspapers, would be patently inconsistent."
Boycotts: Partial Cessation of Business	A union violated the secondary-boycott provisions of the Act when it sought to force the general contractor on a building project to bind all the subcontractors on the project to a particular form of job assignment. The clear implication of the union's demands was that the general contractor would be required either to force a change in the policy of one subcontractor or to terminate the contract with him. To hold that this flagrant, secondary conduct with the most serious disruptive effects did not violate the secondary-boycott prohibition would be largely to ignore the original concern of Congress in adopting the prohibition. Justices Douglas and Stewart	The NLRB found that the union's action was a violation of the secondary boycott prohibition, but the U. S. Court of Appeals for the Third Circuit reversed. It held that to prove a violation of the boycott prohibition, it is necessary to establish that the union's object was to cause a total cessation of business between the neutral and primary employers. (NLRB v. Operating Engineers, Local 825 [Burns & Roe, Inc.], CA 3-1969, 71 LRRM 2079)

Issue	Holding	Comment
Secondary Boycotts; Hot-Cargo Contracts--Contd.		
Boycotts: Partial Cessation of Business--Contd.	dissented, contending that there never was a demand by the union that the general contractor and the other subcontractors "cease doing business" with the subcontractor with whom the union had the dispute. (NLRB v. Local 825, Operating Engineers [Burns & Roe, Inc.], US SupCt-1971, 76 LRRM 2129)	
Boycotts: Coercion of Supervisors	If a union directs appeals to managerial employees of a neutral employer who does business with a struck employer, the appeals will violate Section 8 (b) (4) (i) (B) only if they are to induce the employees to withhold their services from their employer with an object of forcing him to stop doing business with the struck employer. If the appeals are to induce the employees to exercise their "managerial discretion" to stop doing business with the struck employer, they will violate Section 8 (b) (4) (ii) (B) only if they threaten, coerce, or restrain the employees in the exercise of managerial discretion. (NLRB v. Servette, Inc., US SupCt, supra)	In its decision in the Servette case, the NLRB drew a distinction between higher-ranking and lower-ranking supervisors for the purpose of applying the boycott provisions. It would be a violation, the Board said, merely to induce lower-ranking supervisors to withhold their services. But there would be a violation with regard to higher-ranking supervisors only if they were restrained or coerced to get them to stop doing business with the struck employer. (Wholesale Delivery Drivers Union [Servette, Inc.], NLRB-1961, 49 LRRM 1028) The U. S. Court of Appeals at San Francisco rejected this distinction. (Servette, Inc. v. NLRB, CA 9-1962, 51 LRRM 2621)
Boycotts: Reserved-Gate Picketing	A union did not violate the secondary-boycott ban by picketing a gate to a railroad spur track located on a right-of-way owned by the railroad and adjacent to a struck plant. The gate was used exclusively by employees of the railroad. The picketing was protected primary activity, since it occurred at a situs proximate to and related to the day-to-day operations of the struck plant. (Steelworkers v. NLRB [Carrier Corporation], US SupCt-1964, 55 LRRM 2698)	The Supreme Court's decision reversed a holding by the U. S. Court of Appeals at New York (Carrier Corp. v. NLRB, CA 2-1962, 51 LRRM 2338) and upheld the ruling of the NLRB in the case (Steelworkers Local 5895 [Carrier Corp.], NLRB-1961, 48 LRRM 1319). The Supreme Court considered the case governed by the reserved-gate picketing doctrine laid down in the 1961 General Electric case. (Local 761, IUE v. NLRB [General Electric Co.], US SupCt-1961, 48 LRRM 2210)
	A union's picketing of a gate reserved for neutral subcontractors on a construction project in support of a strike against the general contractor violated the Act, since the picketing did not take place reasonably close to the situs of the union's dispute with the struck contractor. The general contractor had two subcontractors, and the union admittedly had no dispute with them. There were three gates at the construction site, and the general contractor placed signs at two of them stating that they were reserved for the use of the neutral subcontractors and their suppliers. The other gate was marked for the use of the general contractor and his suppliers. The union picketed all three gates. (NLRB v. Building	This was the second of two cases involving the same parties and the same issue brought before the Board. The issue was whether reserved-gate picketing in the construction industry is governed by the "normal-operations" test laid down for reserved-gate picketing in the General Electric case (Local 761, IUE v. NLRB [General Electric Co.], US SupCt-1961, 48 LRRM 2210) or the more stringent tests for common-situs picketing laid down in the Moore Dry Dock case (Sailors' Union of the Pacific [Moore Dry Dock Co.], NLRB-1950, 27 LRRM 1108) The majority of the Board decided in the first case that the Moore Dry Dock tests should be applied to reserved-gate picketing in the construction

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Secondary Boycotts; Hot-Cargo Contracts--Contd.		
Reserved-Gate Picketing--Contd.	Trades Council [Markwell & Hartz, Inc.], CA 6-1967, 66 LRRM 2294)	industry. (Building Trades Council [Markwell & Hartz, Inc.], NLRB-1965, 60 LRRM 1296) These tests require that the picketing be limited to times when the struck employer's employees actually are present at the common site, that the picketing be limited to places "reasonably close" to the operations of the struck employer's employees, that the pickets show clearly that their dispute is with only the struck employer, and that the struck employer's employees be engaged in the employer's normal business at the common site. The first decision was enforced by the U.S. Court of Appeals at New Orleans. (Building Trades Council [Markwell & Hartz, Inc.], 66 LRRM 2712; cert. denied, US SupCt 68 LRRM 2205) The decision in the second case, which was upheld by the U.S. Court of Appeals at Cincinnati, was handed down by a panel of the Board. (Nashville Building Trades Council [Markwell & Hartz, Inc.], NLRB-1967, 65 LRRM 1149)
	Picketing by a typographical union at a gate to a construction site that had been reserved for use by employees of the general contractor, employees of subcontractors, and suppliers was a violation of the secondary-boycott provisions of the Act. The union picketed in support of its strike against the publishing company for which a new building was being constructed. It argued that the picketing was a lawful work-preservation measure, since many of the jobs held by its members would be eliminated when the new building was completed. But the Board found that the basic reason for picketing the construction site was to stop construction by causing the contractors and subcontractors to terminate their relationship with the construction company. (Janesville Typographical Union No. 197 [Gazette Printing Co.], NLRB-1968, 69 LRRM 1457	The union tried to bring the picketing under the "normal-operations" test of the General Electric case (see above) and the "work-preservation" test of the National Woodwork case (see below). But the Board decided that normal operations did not include future related operations. Such a conclusion, it stated, would negate the entire reserved-gate doctrine, since all work performed on a primary employer's premises would in some way contribute to the efficiency or profitability of the operations ultimately. The case is pending before the U. S. Court of Appeals at Chicago.
Roving or Common-Situs Picketing	An independently owned and operated warehouse in which a struck employer's products were stored was not a part of the struck employer's operation for the purpose of applying the rules on common-situs picketing. The mere presence of a primary employer's goods on the premises of a neutral employer under an established business relationship was not sufficient, of itself, to convert picketing of the neutral premises from unlawful secondary to lawful primary picketing. The decision was by a three-judge panel of the U. S. Court of Appeals for the Fifth Circuit. One judge dissented. (Auburndale Freezer Corp. v. NLRB, CA 5-1970, 75 LRRM 2752)	By a three-to-two margin, the NLRB had held that the facts in the case established the continuous "presence" of the struck employer at the warehouse. So it held that the warehouse was a "common situs" under the Moore Dry Dock rules, even though no employees of the struck employer worked at the warehouse, and no trucks of the struck employer made deliveries at the warehouse during the picketing. (Steelworkers, Local 6991 [Auburndale Freezer Corp.], NLRB-1969, 71 LRRM 1503)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Secondary Boycotts; Hot-Cargo Contracts--Contd.		
Roving or Common-Situs Picketing--Contd.		See also Teamsters, Local 592 [Estes Express Lines], NLRB-1970, 73 LRRM 1497, in which a panel of the Board split on the legality of ambulatory picketing of a struck employer's trucks. The majority found that the picketing conformed to the Moore Dry Dock standards. But the dissent said that conformance to the standards is not alone determinative; it is necessary to determine the "true object" of the picketing.
Hot-Cargo Contracts: Coal Contract	A clause in the contract between the United Mine Workers and the bituminous coal producers doubling the contribution (from 40 to 80 cents) a company must make to the union welfare and retirement fund is not an unlawful hot-cargo clause under Section 8(e) of the Act. The clause is a union-standards clause to protect and preserve the units work of employees covered by the agreement. (United Mine Workers Union [Dixie Mining Co.] NLRB-1971, 76 LRRM 1394) The predecessor "protective wage clause" was held invalid by the Board in 1963. (United Mine Workers Union [Bituminous Coal Operators Assn.], NLRB-1963, 54 LRRM 1037). The U.S. Court of Appeals for the District of Columbia remanded the case to the Board, stating that the clause would not be invalid if it was "germane to the economic integrity of the principal work unit ." (Lewis v. NLRB, CA DC-1965, 59 LRRM 2946) On remand, the Board dismissed the complaint, with Chairman McCulloch dissenting. Meanwhile, the Board had held the 80-cent clause unlawful. (United Mine Workers Union [Bituminous Coal Operators Assn.] NLRB-1967, 65 LRRM 1324) The U.S. Court of Appeals for the District of Columbia also remanded this case to the NLRB. (United Mine Workers v. NLRB [Dixie Mining Co.], CA DC-1968, 68 LRRM 2664) The 1971 decision holding the clause lawful was the result.	In his dissent in the 1969 case, Chairman McCulloch stated that he would find both the "protective wage clause" and the 80-cent clause unlawful. In dissenting to the 1971 holding, Chairman Miller and Member Brown took the position that the 80-cent clause is a union-signatory and not a union-standards clause. See above under "ANTITRUST LAW CASES: Union Employer Agreement-Mine Mechanization" for a discussion of decisions dealing with the legality of United Mine Workers' contracts under the antitrust laws.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Secondary Boycotts: Hot-Cargo Contracts--Contd.		
Product Boycotts	Unions did not violate the hot-cargo or secondary-boycott provisions by maintaining and enforcing contract provisions that (1) gave union members the right to refuse to install prefabricated doors at a construction project and (2) specified that an employer will not subcontract certain construction work. The Court found that the purpose of the contract clauses was to preserve work traditionally performed by the union members. Justices Stewart, Black, Douglas, and Clark dissented. (National Woodwork Manufacturers Association v. NLRB, US SupCt-1967, 64 LRRM 2801; Houston Insulation Contractors v. NLRB, US SupCt-1967, 64 LRRM 2821)	The majority of the Court said that even if such conduct comes within the "sweeping" language of the statutory prohibitions, the legislative history clearly establishes that it was not the congressional intent to ban such traditional primary activity of unions. Applying the reasoning of these cases to subcontracting provisions in a contract between a Teamsters local and a group of carriers, the U. S. Court of Appeals at Philadelphia held that a provision that, in effect, requires owner-operators and fleet owners and their employees to become members of the union to obtain subcontracts had a secondary objective and thus violated the hot-cargo prohibition. (A. Duie Pyle, Inc. v. NLRB, CA 3-1967, 65 LRRM 3107) The NLRB had held the clause lawful. (Highway Truck Drivers and Helpers, Local 107, NLRB-1966, 62 LRRM 1224)
	In a case remanded to the NLRB after the National Woodwork decision, the NLRB held that a union engaged in an unlawful secondary boycott when it induced a contractor's employees not to install certain precut aluminum jacketing on pipes for a power plant that was under construction. In distinguishing the case from National Woodwork and Houston Insulation (see above), the Board said that in those cases the unions were enforcing work-preservation clauses designed to protect work which unit employees regularly and traditionally had performed. But in the instant case, the Board added, the contractor's employees never had manufactured precut aluminum jacketing, and there was no contract provision reserving such work for them. (Asbestos Workers, Local 8, NLRB-1968, 69 LRRM 1344)	The U. S. Court of Appeals at Cincinnati had accepted the Board's finding that the union had induced the employees to refuse to install the jacketing, but it remanded the case for reconsideration in the light of the two Supreme Court decisions. (Preformed Metal Products Co., Inc. v. NLRB, CA 6-1968, 68 LRRM 2574) In another case decided after National Woodwork, the U. S. Court of Appeals at St. Louis held that a fabrication clause in a union contract that required trim pipers on boilers to be fabricated on the job site or in a shop of an employer bound by the contract was not unlawful under Section 8(e). The court said it was a primary work-preservation clause, even though reacquisition of work was involved. (American Boiler Manufacturers Assn. v. NLRB, CA 8-1968, 69 LRRM 2851) The decision was denied review by the U. S. Supreme Court (American Boiler Manufacturers Assn. v. NLRB, US SupCt-1970, 74 LRRM 2420)
	Even if the contract between a contractor and the organization for which a building is constructed requires that prefabricated materials be used, a union still may invoke a "work-preservation" clause in its contract with the contractor and refuse to install the materials. The NLRB found that a union violated the secondary-boycott provisions of the Act in the case, applying a "right-of-control" test in determining that the contractor was a neutral in the dispute. (Plumbers Local 636, NLRB-1969, 71 LRRM 1499) But the U. S. Court of Appeals for	In explaining its holding, the court said: "Work-preservation clauses, of necessity, will have effect by a domino-like process: the union negotiates the restriction with its employer--the contractor. The contractor, bound by his collective bargaining agreement, will not contract with a builder who seeks to use prefabricated materials. The builder may then accede to the demand that the work be done at the job site, or he may seek another contractor not bound by such restrictive union contract." So in many cases involving work-preservation clauses, the "right to control"

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Secondary Boycotts: Hot-Cargo Contracts--Contd.		
Products Boycotts--Contd.	the District of Columbia disagreed. It found that the contractor was bound by the work-preservation clause in its contract with the union before he signed the construction contract. (Local 636, Plumbers v. NLRB [Mechanical Contractors Assn.], CA DC-1970, 74 LRRM 2851)	will be in a party other than the union's immediate employer. But this is not the test under National Woodwork. The "right-to-control" test must be abandoned. Since the Board applied the wrong test, the court concluded, the case must be remanded to the Board for application of the right test.
"Protection-of-Rights" Clauses	The "protection-of-rights" clauses negotiated by the Teamsters Union and covering picket lines, struck goods, employee rights, subcontracting, and hazardous work are lawful in part and unlawful in part. The clause immunizing employees against discipline for refusing to cross or work behind a picket line is lawful insofar as it applies to (1) picket lines in support of a primary strike at the contractor's own plant and (2) picket lines at another employer's premises in the absence of any demonstrated secondary intent. Struck-work clauses are lawful only where they protect refusals to work in situations in which there is an "ally" relationship between the contracting and struck employers. The employee-rights clause immunizing individual employees against discipline for refusing to handle struck goods are unlawful. The subcontracting clause obligating the employer not to subcontract to employers who do not observe union standards is unlawful. The hazardous-work clause was repudiated by the parties and is not ruled upon (Truck Drivers Local 413 v. NLRB [Patton Warehouse, Inc.], CA DC-1964, 55 LRRM 2878; Truck Drivers Local 728 [Brown Transport Corp.], CA DC-1964, 55 LRRM 2878)	In a decision handed down in 1963, the NLRB had held invalid "protection-of-rights" clauses covering 22 states. (Teamsters Union, Local 413 [Patton Warehouse, Inc.], NLRB-1963, 52 LRRM 1252; (Teamsters Union, Local 728 [Brown Transport Corp.], NLRB-1963, 52 LRRM 1258) The appeals court decision upholds the Board in part, reverses it in part. The U. S. Supreme Court denied review of the decisions by the appeals court. (Truck Drivers and Helpers Local Union 728 v. NLRB, US SupCt-1964, 57 LRRM 2496; Truck Drivers Union Local 413 v. NLRB, US SupCt-1964, 57 LRRM 2496) The same appeals court later upheld an NLRB decision that a clause to protect employee refusals to cross picket lines at other employers' premises would violate Section 8 (e) if applied to secondary, as well as primary, picket lines even though the clause was phrased in the language of the Section 8 (b) (4) picket-line proviso. (Drivers Local 695 v. NLRB [Madison Employers' Council], CA DC-1966, 62 LRRM 2135)
Subcontracting: Construction	Strikes or picketing to obtain job-site subcontracting restrictions in the building and construction industry, within the exception to the Act's hot-cargo contract ban, are lawful. But strikes or picketing to enforce such subcontracting restrictions are unlawful, as also is picketing that has a dual objective of obtaining such a clause and of forcing a neutral contractor to stop doing business with a particular subcontractor. (Northeastern Indiana Bldg. & Construction Trades Council, NLRB-1964, 57 LRRM 1081)	The Board originally had held that strikes or picketing both to obtain or to enforce such subcontracting restrictions were unlawful. But it decided to modify its position on strikes or picketing to obtain such restrictions after three federal courts of appeals had rejected its position in this respect. (Construction, Production & Maintenance Laborers Union v. NLRB [Colson and Stevens Construction Co.], CA9-1963, 54 LRRM 2246; Essex County District Council of Carpenters v. NLRB, CA 3-1964, 56 LRRM 2091; Orange Belt District Council v. NLRB [Calhoun Drywall Co.], CA DC-1964, 55 LRRM 2293)
	Although a union may not strike or picket to enforce a lawful agreement restricting job-site	To hold that such a lawful agreement may not be enforced through a judicial proceeding, the

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Secondary Boycotts; Hot-Cargo Contracts--Contd.		
Subcontracting: Construction -- Contd.	subcontracting in the construction industry, it may enforce such an agreement through a judicial proceeding. (Sheet Metal Workers v. Hardy Corp., CA 5-1964, 56 LRRM 2462)	Court said, would create an anomalous situation and render the exception to the hot-cargo ban for such agreements of little or no value.
	Subcontracting clauses drafted by the Bricklayers and Plumbers Unions were held not to come within the construction subcontracting exception to the hot-cargo clause ban. The Bricklayers clause authorized members of the union to refuse to work on any job on which craftsmen had less favorable wages and working conditions than those provided in the union contract. It added that such a refusal to work should not be ground for discharge or other discipline. The Plumbers Union clause barred subcontracting to nonsignatory employers. It also provided that if any work on a project were performed by employees not covered by the union's contract, the union would be free to call its members off the job. (Bricklayers Union [Greater Muskegon General Contractors Assn.], NLRB-1965, 59 LRRM 1081; Plumbers & Pipefitters Union [A-1 Mechanical Contracting Co.], NLRB-1965, 59 LRRM 1085)	In deciding that neither of these clauses came within the protection of the construction-subcontracting exception, the Board said that they provide for enforcement of the restrictions by economic force. On this basis, the Board ruled that the Bricklayers Union violated its bargaining duty under the Act by insisting that the illegal clause be included in the contract and violated the secondary-boycott provisions by picketing to compel the employer to agree to the clause. Member Fanning dissented. The Plumbers Union also violated the secondary-boycott provisions, the Board held, by picketing the construction project in an effort to compel the employer to agree to its unlawful clause. The decision was by a panel consisting of Chairman McCulloch and Members Brown and Jenkins. The Bricklayers' case was enforced by the U. S. Court of Appeals at Cincinnati, to the extent that the union's insistence on the illegal clause was a violation of the bargaining duty. (NLRB v. Bricklayers Union [Greater Muskegon General Contractors Assn.], CA 6-1967, 65 LRRM 2563)
	The NLRB was warranted in finding that an international union and its local violated the Act by threatening a general contractor with the enforcement of a construction-site clause of a contract under which the contractor was to be prohibited from subcontracting to a nonunion subcontractor electrical work within the jurisdiction of the local union, thus allowing the local and other unions to terminate their contract with the contractor. The court gave these reasons: (1) the construction-site proviso to Section 8(e) of the Act does not permit a contract provision that purports to authorize a secondary-boycott violation; (2) Section 8(e) prohibition extends to reaffirmation of existing agreement as well as to contract's initial execution; (3) termination clause does not merely give express recognition to legal remedy of unilateral rescission but rather is a means of economic pressure; and (4) the general contractor suffers economically. (NLRB v. Electrical Workers, IBEW, and Local No. 769 [Ets-Hokin Corp.], CA 9-1968, 69 LRRM 2959)	The NLRB found that the prohibition against subcontracting to nonunion subcontractors was lawful, since it applied only to on-site construction work. But it added that the termination clause involved a form of economic pressure that is forbidden by Section 8(e) of the Act. (Ets-Hokin Corp. [Electrical Workers, IBEW], NLRB-1965, 60 LRRM 1045) The Supreme Court denied review of the case. (Electrical Workers, IBEW, v. NLRB [Ets-Hokin Corp.], US SupCt-1969, 71 LRRM 2294)

Issue	Holding	Comment
Strikes, Picketing		
Free Speech	In a case decided solely on the basis of the constitutional right of free speech, a Pennsylvania court was held to have violated the U. S. Constitution by enjoining a union's picketing in a pick-up zone and parking lot in a shopping center. A state, the U. S. Supreme Court said, may not totally forbid or unreasonably restrain picketing on private property that is generally open to the public. There were five opinions. There was a majority opinion by Justice Marshall and joined in by Chief Justice Warren, Justice Brennan, Justice Stewart, and Justice Fortas. There was a concurring opinion by Justice Douglas, and there are dissenting opinions by Justices Black, Harlan, and White. In its argument, the union contended that the state court did not have jurisdiction because the dispute involved issues within the exclusive jurisdiction of the NLRB and that the picketing was protected activity under Section 7 of the Taft-Hartley Act. But the majority of the Court did not reach the preemption issue, disposing of the case on the free-speech issue. (Food Employees v. Logan Valley Plaza, US SupCt-1968, 68 LRRM 2209)	The basic premise of the majority opinion was that peaceful picketing at a location generally open to the public is protected by the First Amendment in the absence of other factors relating to the purpose or manner of the picketing. Since there was no issue relating to the purpose or manner of the picketing, the majority opinion continued, the case turned upon the location. In this case, the shopping center was the functional equivalent of the business district of a normal town and was open to the public to the same extent. The three dissenting opinions take divergent views. Justice Black would have upheld the injunction, contending that store owners are not compelled to provide picketing areas for pickets to drive customers away. Justice Harlan did not consider the free-speech issue an appropriate one for the Court to decide. Justice White expressed the view that even if the shopping area has some aspects of public property, it nevertheless is true that some public property is available for some uses but not for others. Whether the shopping center is public or private property, he added, it is a place for shopping and not a place for picketing.
	In a case in which the Alabama Supreme Court had held that a court of the state had jurisdiction to enjoin a union's picketing on privately owned sidewalks and in front of the entrance to a department store complex, the U.S. Supreme Court dismissed a writ of certiorari as improvidently granted. The Court observed that the record was obscure and that "only a bare remnant of the original controversy remains." Justices Black and Harlan would have reversed on the basis of federal preemption. In a concurring opinion, Chief Justice Burger said: "In my view, any contention that the states are preempted in these circumstances is without merit." (Taggart v. Weinacker's, Inc., US SupCt-1970, 73 LRRM 2628)	In upholding the injunction, the Alabama Supreme Court distinguished the case from Food Employees v. Logan Valley Plaza, supra. It said the store's sidewalks had not acquired the "quasi-public" character of a town or community business block, as was found in Logan Valley Plaza. (Taggart v. Weinacker's, Inc., Ala. SupCt-1968, 69 LRRM 2348)
Picket-Line Crossing	An employer is justified in discharging employees who refuse to cross a picket line at the premises of another employer with whom their employer is doing business, and the employer is not required to reinstate such employees upon unconditional application, even though they have not been permanently replaced. (NLRB v. L. G. Everist, Inc., CA 8-1964, 56 LRRM 2866)	In its decision in the case, the NLRB had held that employees who refuse to cross a picket line are subject to the same action by their employer and have the same statutory status as economic strikers. The employer may replace them to permit continued operation of his business, but he may not refuse to reinstate them if they make unconditional application for reinstatement

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Strikes, Picketing--Contd.		
Picket-Line Crossing--Contd.		before they have been permanently replaced. (L. G. Everist, Inc., NLRB-1963, 53 LRRM 1017) The court said there is no valid basis for equating such employees with economic strikers.
Picket-Line Crossing: Confidential Secretary	An employer's discharge of a "conscientious confidential secretary with scruples against crossing a picket line" was a violation of the Taft-Hartley Act. When the secretary refused to go to work across the picket line of employees engaged in a lawful economic strike, she plighted her troth with the strikers, the court said, and became an economic striker herself. It was immaterial that she did not belong to the striking union or that she could not become a member because of her confidential status. (NLRB v. Southern Greyhound Lines, CA 5-1970, 74 LRRM 2080)	The court enforced the NLRB's back-pay order covering the period from the end of the strike to the date of the employer's offer of reinstatement.
Picket-Line Violence: Union's Liability	A federal district court erred in assessing damages for picket-line violence by members of a local of the United Mine Workers against the parent union. The damages were awarded on the basis of a state-law conspiracy claim, after the court had dismissed a claim based on an alleged violation of the Taft-Hartley Act's secondary-boycott restrictions. Although the damages were grounded on state law, the federal Norris-LaGuardia test of union responsibility for the unlawful actions of its members was applicable. That test requires "clear proof" that the union took part in, authorized, or ratified the unlawful conduct. This test was not met. (United Mine Workers v. Gibbs, US SupCt-1966, 61 LRRM 2561)	The Court upheld the jurisdiction of the federal district court to take the state-law tort claim in conjunction with the Taft-Hartley claim. It said that if federal and state claims derive from a common nucleus of operative facts and they are such that the plaintiff ordinarily would be expected to try them in one proceeding, the federal court may hear the entire case.
Picketing While Off Duty	An employer may not discharge employees who continue working during a labor dispute, but picket the employer's premises during their off time. Peaceful picketing is protected by the Act, and there is no requirement that employees walk off the job to exercise that right. (Edir, Inc., NLRB-1966, 62 LRRM 1322)	The Board, however, cautioned that the case did not present the issue of what legitimate measures, short of discharge, the employer might take against such employees.
Racial Discrimination Picketing	Picketing by employees to protest their employer's alleged racially discriminatory hiring practices lost its protected status under the Taft-Hartley Act when the employees failed to seek or obtain the sanction of their union. Since the desire for nondiscriminatory hiring relates to terms and conditions of employment, picketing in support of such a desire	This was the second time the court ruled on the case. In a decision handed down in 1965, the court upheld the NLRB's finding that picketing by employees to persuade their employer to abandon racially discriminatory hiring practices is protected activity under the Act. But it remanded the case to the Board for further proceedings on whether employees who

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Strikes, Picketing--Contd.		
Racial Discrimination Picketing--Contd.	would be protected activity under Section 7 of the Act. But the desire for nondiscriminatory hiring, although a proper subject for collective bargaining, may not be the proper subject for a grievance. It affects the entire bargaining unit; it is not personal to an individual. Because such hiring is a proper subject for bargaining between the union and employer, Section 9(a) vests in the union the task of vindicating the employees' interest. The court remanded the case to the NLRB for a second time for further proceedings consistent with the court's second opinion. (NLRB v. Tanner Motor Livery, Ltd., CA 9-1969, 72 LRRM 2866)	engage in such picketing still may be discharged where there is an established collective bargaining representative with a contract with the employer, and the employees do not act or seek to act through that representative. (NLRB v. Tanner Motor Livery, Ltd., NLRB-1965, 59 LRRM 2784) On remand, the Board held that the employees were not required to act through the union before engaging in such picketing. (Tanner Motor Livery, Ltd., NLRB-1967, 65 LRRM 1502)
Recognition -- Area Standards Picketing	Although picketing to protect area labor standards does not come within the Section 8(b)(7) restrictions on recognition picketing, picketing to compel an employer to sign a contract to pay wages and fringes equal to those paid under union contracts is recognition picketing and subject to the Section 8(b)(7) restrictions. (Centralia Building Trades Council v. NLRB [Pacific Sign & Steel Building Co.] CA DC-1966, 62 LRRM 2511)	The NLRB previously had recognized picketing to protect area labor standards as being outside the Section 8(b)(7) restrictions. (Houston Building & Construction Trades Council [Claude Everett Construction Co.], NLRB-1962, 49 LRRM 1757)
Recognition--Informational Picketing	The NLRB was warranted in finding that a union's picketing of cafeteria for more than 30 days before filing a representation petition did not violate Section 8(b)(7)(C) of the Act, even though an object of the picketing was to obtain recognition, where the purpose of the picketing was truthfully to advise the public that the cafeteria employed nonunion employees or had no contract with the union, and the picketing did not have the effect of inducing any stoppage of deliveries or services to cafeteria by any other employer. (Smitley v. NLRB [Crown Cafeteria], CA 9-1964, 55 LRRM 2302)	This decision upheld the second decision of the NLRB in the case. The Board first had held the picketing unlawful (Hotel & Restaurant Employees Union, [Crown Cafeteria], NLRB-1961, 47 LRRM 1321), but it reversed this holding upon reconsideration (Hotel & Restaurant Employees Union [Crown Cafeteria], NLRB-1962, 49 LRRM 1648).
Recognition--Informational Picketing: Minor Stoppages of Deliveries	The NLRB was warranted in holding that a union's picketing at retail stores was protected by publicity proviso to Section 8 (b) (7) (C) of Act, even though during the period of the picketing there were three delivery stoppages, two work delays, and several delivery delays, where picketing took place at 18 stores over a 12-week period, and the union took active measures to ensure that there would be no interruption in pickups or deliveries. Whether informational picketing has the "effect" of stopping pickups or deliveries so as to remove it from protection	The court upheld the Board's position (51 LRRM 1053) that mere isolated interferences with pickups and deliveries will not remove picketing from the protection of the publicity proviso. The court also held that the Board was warranted in finding that the picketing was for the purpose of "truthfully" advising the public that the stores did not employ union members, even though the picket signs did not point out that nonselling employees of the stores were represented, at least in part, by other unions.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Strikes, Picketing--Contd.		
Recognition--Informational Picketing: Minor Stoppages of Deliveries--Contd.	of proviso does not depend on number of interruptions to deliveries or services but upon actual impact of picketing on the employer's business. (Barker Bros. Corp. v. NLRB, CA 9-1964, 55 LRRM 2544)	
Refusal to Work Overtime	A union violated the Act by inducing employees of two meat distributors to refuse to work overtime, since the union's object was to force the distributors to cease doing business with a meat processor that had a labor dispute with the union's international. It was immaterial that overtime work was voluntary under the distributors' collective bargaining contract. This did not make the refusal to work overtime any the less a strike or any less coercive, the NLRB said, particularly as it had been the employees' practice to work overtime during the periods in which the work stoppages occurred. (Meat Cutters, Local P-575 [Iowa Beef Packers, Inc., NLRB-1971, 76 LRRM 1273)	The Board pointed out that the courts have approved its doctrine that a concerted refusal to work overtime is a strike and that the Act prohibits a strike for a secondary object, as in this case.
Reinstatement of Strikers	Unless an employer who refuses to reinstate economic strikers when jobs become available can show that his action was based on "legitimate and substantial business justifications," he will be guilty of an unfair labor practice under the Act. The right of economic strikers to reinstatement does not expire when they first apply. This basic right to jobs cannot depend upon job availability as of the moment when applications are filed. In a concurring opinion joined in by Justice Stewart, Justice Harlan stated that the issue was simply whether the six strikers were still "employees" to whom the employer had an affirmative obligation to prefer. Since their jobs had not been filled permanently and had not been abolished, they continued to be employees entitled to preference in hiring. Business justification or motivation was not involved. (NLRB v. Fleetwood Trailer Co., Inc., US SupCt-1967, 66 LRRM 2737)	The decision reversed that by the U.S. Court of Appeals at San Francisco, which had held that the reinstatement rights of an economic striker are determined at the time he makes application for reemployment. If there is no job vacancy at the time, the employer has no obligation to seek out or prefer the economic striker for a vacancy that opens up later. (NLRB v. Fleetwood Trailer Co., CA 9-1966, 63 LRRM 2155) The basic reinstatement rights of economic strikers were fixed by the Supreme Court in the 1938 Mackay Radio case. The Court held that an employer whose employees have struck for economic reasons may protect his business by hiring replacements for the strikers. If permanent replacements are hired before the strikers apply for reinstatement, the employer may refuse to discharge the replacements and rehire the strikers without subjecting himself to liability for unlawful discrimination under the Act. (NLRB v. Mackay Radio & Telegraph Co., US SupCt-1938, 2 LRRM 210) In 1955, the NLRB extended this doctrine by holding that an employer was not obligated to reinstate an economic striker whose job had been abolished or absorbed by other employees for economic reasons. The Board added that the employer, thereafter, was not required to seek out the striker for new employment,

Issue	Holding	Comment
Strikes, Picketing--Contd.		
Reinstatement of Strikers--Contd.		but only to refrain from discriminating against him should he specifically request new employment. The decision was upheld by the U.S. Court of Appeals at Chicago. (P & V Atlas Industrial Center, NLRB-1955, 36 LRRM 1171; Teamsters Local 200 v. NLRB [P & V Atlas Industrial Center], CA 7-1956, 8 LRRM 2095)
	Economic strikers remain employees under the Act even after they have been replaced. So they are entitled to reinstatement as vacancies occur in their former jobs unless (1) they have obtained regular and substantially equivalent employment elsewhere in the meantime, or (2) the employer is able to establish legitimate and substantial business reasons to justify his failure to offer reinstatement. The court both upheld the NLRB's decision and enforced its order requiring reinstatement and back pay for the strikers denied reinstatement when vacancies in their jobs arose. One judge on the three-judge panel dissented, stating: "My mind rebels against imposing upon an employer a huge penalty for failure to anticipate what the Supreme Court might hold at some time in the future. Moreover, I doubt if the court has reviewed the record in a labor case where the employer under the advice of knowledgeable counsel so scrupulously adhered to the law as taught by the Board and the court." (Laidlaw Corp. v. NLRB, CA 7-1969, 71 LRRM 3054) The Supreme Court denied review of the holding. (Laidlaw Corp. v. NLRB, US SupCt-1970, 73 LRRM 2537) See also above under "NLRB Remedies: Reinstatement, Back Pay" for a further discussion of strikers' rights.	In upholding the right of the economic strikers to reinstatement, upon departure of their replacements, the Board relied upon the Supreme Court's decision in NLRB v. Fleetwood Trailer Co., Inc., supra. The company, however, contended that the decision "creates in perpetuity a vested interest of an employee in the job, or any substantially equivalent job, he held when he first went on strike." See above under "NLRB Policies: Retroactive Application" for a case in which a three-member panel of the Board, with Chairman Miller dissenting, applied the Laidlaw doctrine retroactively. (Coca Cola Bottling Works, Inc., supra)
Strikers' Misconduct	A retail store was not required to reinstate an economic striker who called a customer crossing the picket line a "bastard" and a "son-of-a-bitch." A picket must exercise a higher degree of control toward the employer's customers and other members of the general public than he exercises toward the employer and his employees. (Montgomery Ward & Co. v. NLRB, CA 10-1967, 64 LRRM 2712)	The decision reversed that of the NLRB. (Montgomery Ward & Co., NLRB-1965, 60 LRRM 1433) If a strike is a simple economic strike uncomplicated by issues of employer unfair labor practices, an employer need show only that he had an honest belief that strikers engaged in misconduct for which discharge was justified. His refusal to reinstate normally will then be upheld unless it is affirmatively shown that the strikers did not in fact engage in the alleged misconduct. (Rubin Bros. Footwear, Inc., NLRB-1952, 30 LRRM 1109; NLRB v. Burnup & Sims, Inc., US SupCt-1964, 57 LRRM 2385)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Strikes, Picketing--Contd.		
Strikers' Misconduct--Contd.	In the case of a strike that was caused or prolonged by the employer's unfair labor practices, the employer was not required to reinstate strikers who engaged in the following misconduct: grappling non-strikers who were trying to enter the plant, driving their car in front of nonstriker's car to prevent her from passing, being present when eggs were thrown at a non-striker's car, driving a car from which eggs were thrown at a nonstriker's car. The court disagreed with the balance struck by the NLRB between the employer's misconduct and the misconduct of strikers in determining reinstatement rights. (Oneita Knitting Mills v. NLRB, CA 4-1967, 64 LRRM 2724)	The decision reversed that of the NLRB. (Oneita Knitting Mills, Inc., NLRB-1965, 59 LRRM 1367) If a strike is an unfair labor practice strike, the employer's misconduct is taken into consideration and balanced against the employees' misconduct in considering whether the employer was justified in refusing to take the strikers back. This requires weighing on a case-by-case basis the misconduct of the employer against the strikers' misconduct. (NLRB v. Thayer Co., CA 1-1954, 34 LRRM 2250; cert. denied, US SupCt-1954, 35 LRRM 2100) In another case, the U. S. Court of Appeals at New York, reversing the NLRB, weighed an employer's unlawful conduct against a union's misconduct and decided that the union was not entitled to an order requiring the employer to bargain with it. The union sought recognition and bargaining on the basis of authorization cards signed by a majority of the employees in the bargaining unit. (NLRB v. United Mineral Corp., CA 2-1968, 67 LRRM 2343)
Voting Rights of Economic Strikers	In determining whether an employer's withdrawal of recognition from a union following an economic strike violated the Act, the U. S. Court of Appeals at New Orleans agreed with the NLRB that permanently replaced economic strikers must be included in the bargaining unit in determining the union's status. Both the Board and the court relied on the 1959 amendment to Section 9(c)(3) of the Act, which made permanently replaced economic strikers eligible to vote in any election conducted within 12 months after the commencement of the strike. The court observed that the Board carried out the congressional desire that such strikers be permitted to vote in an election, and logic requires that they also be included within the bargaining unit in determining the union's continued majority status. (Pioneer Flour Mills v. NLRB, CA 5-1970, 74 LRRM 2343)	In contending that the union had lost its majority status, the employer relied on the Board's 1959 Stoner Rubber decision. (Stoner Rubber Co., NLRB-1959, 44 LRRM 1133) But the Board reversed its policy in the present case.
Voting Rights of Strikers' Replacements	Replacements for economic strikers who were retained after the strike had ended and all strikers had returned to work were eligible to vote in a representation election. The decision by the NLRB was on remand from the U.S. Court of Appeals at St. Louis, which refused to enforce a Board order requiring the employer to bargain with the union. On September 23,	In rescinding its bargaining order, the NLRB said that it erred in giving controlling weight to the fact that the strike had ended before the election was held. In Tampa Sand & Material Co., NLRB-1961, 47 LRRM 1167, the Board noted, replacements for economic strikers were permitted to vote where the strike occurred after the election was directed.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Strikes, Picketing--Contd.		
Voting Rights of Strikers' Replacements--Contd.	1965, the NLRB's regional director ordered a representation election. Later, five employees in the unit struck. The employer hired two new employees and transferred a third into the unit, telling each he was a replacement for a striker. At the election, the union challenged the ballots of the three replacements, and the regional director sustained the challenges, and certified the union as bargaining representative. After the employer refused to recognize the union, the Board issued a bargaining order. The court denied enforcement and remanded the case. (Macy's Missouri-Kansas Division v. NLRB, CA 8-1968, 67 LRRM 2563) Upon remand, the Board rescinded the bargaining order, with Members Brown and Zagoria dissenting. (Macy's Missouri Kansas Division, NLRB-1969, 70 LRRM 1039)	But in Greenspan Engraving Corp., NLRB-1962, 50 LRRM 1380, replacements were not permitted to vote where the strike preceded the direction of election. So the Board concluded that it is the timing of the strike that is important, and the three replacements were eligible to vote, since the strike was called after the direction of election. The dissenting members argued that the Tampa Sand decision was based in part on the fact that the replacement status of the new employees could not be challenged because the strike still was in progress at the time of the election. In this case, the strike had ended when the election was held, they added, and the evidence made it clear that the "purported" replacements were merely additional employees hired after the voter-eligibility date.
Strikers' Vacation Rights	A company violated the Act when it refused to pay strikers vacation benefits accrued under a terminated collective bargaining contract while announcing an intention to pay such benefits to non-strikers, even though there was an absence of proof of anti-union motivation on the part of the company, since discriminatory conduct carrying a potential for adverse effect upon employee rights was proved and no evidence of a proper motivation on the part of the company appeared on the record. If conduct is inherently destructive of important employee rights, the NLRB may find an unfair labor practice without finding anti-union motivation, even if the employer comes forward with evidence that he acted on the basis of business considerations. If, however, the adverse effect upon rights is comparatively slight, an anti-union motive must be proved if the employer produces evidence of legitimate and substantial business justification for the conduct. In either case, "the burden is upon the employer to establish that he was motivated by legitimate objectives, since proof of motivation is most accessible to him." (NLRB v. Great Dane Trailers, Inc., US SupCt-1967, 65 LRRM 2465)	In a dissent joined in by Justice Stewart, Justice Harlan said: "This alteration of the burden of proof in Section 8 (a) (3) cases may either be a rule of convenience important to the resolution of this case alone or may, more unfortunately, portend an important shift in the manner of deciding employer unfair labor practice cases under Section 8 (a) (3). In either event, I believe it is unwise." In support of its holding, the majority opinion cited, among others, the decision in the 1963 Erie Resistor case. In Erie Resistor, the Court held that an employer's grant of super-seniority to replacements for economic strikers and to employees who abandon the strike was so "inherently discriminatory and destructive" of union activity as to violate the Taft-Hartley Act without regard to the employer's motivation. (NLRB v. Erie Resistor Corp., US SupCt-1963, 53 LRRM 2121)
Union Coercion, Discrimination		
Disciplinary Action: Crossing Picket Line	A union did not engage in unlawful restraint and coercion of employees under the Act by imposing fines on members who crossed a lawful picket line set up by the union and by institut-	This was the fourth decision in the case. With one member dissenting, the NLRB held that the union's action did not violate the Act. (Automobile Workers Union,

Issue	Holding	Comment
Union Coercion, Discrimination--Contd.		
Disciplinary Action: Crossing Picket Line--Contd.	ing a legal proceeding to collect the fines. The decision was by a five-to-four margin. The majority opinion made these points: (1) An integral part of the national labor policy of vesting unions chosen as bargaining representatives with power to order the relations of the employees with their employer is the recognition of power in the union to protect itself against erosion of its status through reasonable discipline of members who violate the rules governing membership, particularly when the union engages in a strike; (2) the legislative history leads to the conclusion that Section 8 (b) (1) (A) was aimed at restraint and coercion by unions in organizational campaigns--threats of reprisal, mass picketing, and other violence. (NLRB v. Allis-Chalmers Manufacturing Co., US SupCt-1967, 65 LRRM 2449)	[Allis-Chalmers Mfg. Co.], NLRB-1964, 57 LRRM 1242) A three-judge panel of the U. S. Court of Appeals at Chicago upheld the decision. (Allis-Chalmers Manufacturing Co. v. NLRB, CA 7-1965, 60 LRRM 2097) The court later reheard the case en banc and, with three of the seven members dissenting, reversed its earlier decision. (Allis-Chalmers Manufacturing Co. v. NLRB, CA 7-1966, 61 LRRM 2498) After the U. S. Supreme Court's decision, the Wisconsin Supreme Court upheld a judgment in favor of the Auto Workers Union in its test suit to collect the fine against one of the members. (Local 248, UAW v. Natzke, Wis SupCt-1967, 66 LRRM 2439)
	Some of the gaps left by the Allis-Chalmers decision were filled in by two later decisions by the Board. It held: A union violated the Taft-Hartley Act by imposing fines on strike-breaking employees who had resigned from the union before crossing the union's picket line to report for work. But the union did not violate the Act by fining strike-breaking employees who crossed the picket line without resigning from the union and those who did not resign until after they had crossed the picket line. The decision was by a majority consisting of Members Fanning, McCulloch, and Jenkins. Member Brown dissented to the ruling regarding the employees who had resigned before crossing the picket line. Chairman Miller did not participate in the case. (Machinists, Lodge No. 405 [The Boeing Co.], NLRB-1970, 75 LRRM 1004) A union did not violate the Act by imposing a $500 fine on a member who crossed the union's picket line, notwithstanding the contention that the fine was unreasonable in amount. It was not the intention of Congress that the Board regulate the amount of union fines and establish standards regarding their reasonableness. The decision is by Members Fanning, Brown, and Jenkins. Member McCulloch dissented; Chairman Miller did not participate. (Machinists, Local Lodge 504 [Arrow Development Co.], NLRB-1970, 75 LRRM 1008)	In the Boeing case, the Board conceded that a fine is "inherently coercive." But so long as it is imposed on a member, it comes within the proviso permitting a union to prescribe its own rules regarding the acquisition or retention of membership. In the Arrow Development case, only one employee was fined. He earned $610.12 during the four-week strike and netted $511.33. The union fined him $500. He did not resign from the union.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Union Coercion, Discrimination--Contd.		
Disciplinary Action: Crossing Picket Line--Contd.	An employer did not violate the Act by furnishing free legal assistance to employees threatened by fines by their union for crossing a picket line at the employer's plant. (Leeds and Northrup Co., NLRB-1965, 60 LRRM 1482)	In its decision upholding the employer's action, the NLRB indicated that a change in circumstances might have made the company's action an unfair labor practice. It emphasized that the company did not solicit the employees to cross the picket line, did not offer legal assistance until the union threatened the employees with discipline, did not offer to pay the fines but, instead, made clear that the employees would have to pay the fines themselves if the court upheld them. The Board also noted that there was no evidence that the nonstriking employees were induced by the employer's action to resist the suits brought by the union. In another proceeding growing out of the same strike, the U.S. Court of Appeals at Philadelphia ruled that it had jurisdiction to review the refusal of an NLRB regional director and the Board's General Counsel to grant the employer an evidentiary hearing on his objections to an informal settlement agreement between the regional director and the union under which the complaint issued against the union was withdrawn. After deciding it had jurisdiction to review the action, the court decided that the employer was entitled to an evidentiary hearing on the settlement agreement. (Leeds & Northrup Co. v. NLRB, CA 3-1966, 61 LRRM 2283)
Disciplinary Action: Crossing Picket Line--No-Strike Clause	A union violated the Act by fining members who crossed a picket line set up by a sister union representing a different unit of employees at the plant with which the first union had a no-strike contract. The imposition of the fines, the Board said, offended a basic statutory policy--that of requiring adherence to the terms of a valid collective bargaining contract. The local that established the picket line represented a unit of clerical employees at the plant. The union that fined its members for crossing the picket line represented production and maintenance employees. The decision of the Board was unanimous. (District 50, Local 12419 [National Grinding Wheel Co.], NLRB-1969, 71 LRRM 1311)	Under the proviso to Section 8(b)(1)(A), the Board said, a union that penalizes its members generally is not in violation if its sanctions are internal in character (fine, suspension, or expulsion) and are not directed against the member's employment status or tinged with violence. But there is an exception where the reason for the discipline contravenes public policy so as to overcome the immunity based on the internal character of the discipline. To require a member to participate in a violation of a no-strike clause under pain of fine, suspension, or expulsion, the Board stated, is inherently unreasonable. See also Glaziers Local Union No. 1162, NLRB-1969, 73 LRRM 1125, in which a union was held to have violated the Act by fining two members who refused to join a strike called by a union in violation of its own no-strike contract with the employer.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Union Coercion, Discrimination—Contd.		
Disciplinary Action: Exceeding Production Ceiling	A union did not violate Section 8(b)(1)(A) of the Act by fining members for drawing immediate piecework pay for work in excess of a production ceiling initiated by the union. The union also suspended the members for one year and sued in a state court to collect the fines; the fines ranged from $50 to $100. In finding that the union did not violate the Act, the Court said: "The union rule here left the collective bargaining process unimpaired, breached no collective contract, required no pay for unperformed services, induced no discrimination by the employer against any class of employees, and represents no dereliction by the union of its duty of fair representation. In light of this, and the acceptable manner in which the rule was enforced, vindicating a legitimate union interest, it is impossible to say that it contravened any policy of the Act." The decision was by a seven-to-one margin, with Justice Black dissenting and Justice Marshall not participating. (Scofield v. NLRB [Wisconsin Motor Corp.], US SupCt-1969, 70 LRRM 3105)	The case had a long history before it finally was resolved by the Supreme Court. The NLRB held that the union did not violate the Act, with Member Jenkins concurring separately and Member Leedom dissenting. (Automobile Workers Union [Wisconsin Motor Corp.], NLRB-1964, 55 LRRM 1085) Before the decision was reviewed on its merits, it went to the Supreme Court on the issue of the right of the union to intervene in the review proceedings. The Supreme Court upheld the right of both the successful charged party and the successful charging party to intervene in proceedings to review or enforce NLRB orders. (Automobile Workers v. Scofield, US SupCt-1965, 60 LRRM 2479) The U. S. Court of Appeals at Chicago later upheld the decision of the NLRB on the merits. (Scofield v. NLRB, CA 7-1968, 67 LRRM 2673)
	A union violated the Act by unilaterally establishing production ceilings and fining members who exceeded the ceilings. The establishment of production ceilings does not come within the Section 8 (b) (1) (A) proviso authorizing unions to establish internal rules. Instead, the production ceilings are "terms and conditions of employment" on which the union must bargain with the employer under Section 8 (b) (3) of the Act. The union's action, the court said, also raises the question whether it violated Section 8 (d) of the Act, which prohibits a party from attempting to modify a contract unless it has given written notice to the other party and to the Federal Mediation and Conciliation Service. (Associated Home Builders v. NLRB, CA 9-1965, 60 LRRM 2345) This decision was handed down prior to the Supreme Court's decision in Scofield v. NLRB, supra. But the Supreme Court skirted the question whether the union's initiation of the production ceilings violated the bargaining duty under the Act. The majority opinion pointed out that, although the company never had agreed to refuse to pay employees immediately for work in excess of the ceiling, it has bargained with the union about the ceiling and had obtained promises from the union to increase it.	In its decision in the case, the NLRB found no violation of the Act in the union's establishment of the production ceilings and the imposition of the fines for exceeding them. But it ruled that the union did violate the Act when it applied dues payments made under a union-shop contract against the fines imposed for exceeding the production ceilings. Such action, the Board said, carried with it the threat of discharge under the union-security provisions of the contract, and the Act does not permit discharge for nonpayment of union fines. (Bay Counties District Council of Carpenters [Associated Home Builders of Greater East Bay], NLRB-1964, 55 LRRM 1219)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Union Coercion, Discrimination--Contd.		
Disciplinary Action: Exceeding Production Ceiling--Contd.	Justice Black's dissenting opinion referred to the disputed pay as "extra pay for piecework production in excess of that agreed upon by the union and the company."	
Disciplinary Action: Filing Charges With NLRB	A union violated Section 8(b)(1)(A) of the Act by expelling a member for failure to exhaust the intra-union grievance procedure before filing an unfair-labor-practice charge with the NLRB. Unless plainly internal affairs of the union are involved, the Supreme Court said, overriding public interests require unimpeded access to the Board. In a concurring opinion, Justice Harlan stated that he would go even further and hold that a union may not punish a member for invoking his remedies before a court or an agency even where the complaint or grievance concerns an internal union matter. (NLRB v. Marine & Shipbuilding Workers, US SupCt-1968, 68 LRRM 2257)	The Supreme Court reversed the decision of the U. S. Court of Appeals at Philadelphia, which held that such expulsion is authorized expressly by Section 101(a)(4) of the Labor-Management Reporting and Disclosure Act and is permitted under the proviso to Section 8(b)(1)(A) of the Taft-Hartley Act. (Marine & Shipbuilding Workers v. NLRB, CA 3-1967, 65 LRRM 2629)
	Two unions violated the Act by fining members for filing unfair labor practice charges with the Board or for failing to exhaust internal union remedies before filing the charges. (Operating Engineers Union [Charles S. Skura], NLRB-1964, 57 LRRM 1009; Operating Engineers Union [Wellman-Lord Engineering, Inc.], NLRB-1964, 57 LRRM 1012)	The proviso to Section 8(b)(1)(A) of the Act permitting unions to prescribe their own rules regarding acquisition or retention of membership, the Board says, does not authorize a union to use coercive means to enforce a rule that prevents or limits access to Board processes. The Board's holding in the Wellman-Lord case later was upheld by the U. S. Court of Appeals for the District of Columbia. (Roberts of Local 925 Operating Engineers v. NLRB, CA DC-1965, 59 LRRM 2801)
Disciplinary Action: Decertification Petition	A union did not improperly restrain or coerce employees in a decertification election by expelling two members who had actively supported the decertification petition. The Board made these points: (1) The union's disciplinary action was limited to the employees' union membership status and no attempt to affect their job interest was involved; (2) the ground for expulsion was plainly related to a matter of legitimate union concern and was one that properly may be the subject matter of internal union discipline; and (3) the expulsions were appropriate union disciplinary action under the circumstances--a union may take steps to preserve its own integrity. (Tawas Tube Products, Inc., NLRB-1965, 58 LRRM 1330)	The acting regional director of the Board had held that the union's expulsions of the members were unfair labor practices under the rationale of the Skura case. But the Board found that the expulsions came within the proviso to Section 8 (b) (1) (A), which specifies that the section "shall not impair the right of a labor organization to prescribe its own rules with respect to the acquisition or retention of membership therein."
	A union did not violate the Section 8 (b) (1) (A) prohibition of restraint or coercion of	The court's decision upheld that of the NLRB in the case (Steelworkers Union

Issue	Holding	Comment
Union Coercion, Discrimination--Contd.		
Disciplinary Action: Decertification Petition--Contd.	employees by suspending from membership for five years a member who had filed a petition to decertify the union as bargaining representative. The union's action clearly came within the protection of the proviso to Section 8 (b) (1) (A) specifying that the prohibition "shall not impair the right of a labor organization to proscribe its own rules with respect to the acquisition or retention of membership therein." (Price v. NLRB, CA 9-1967, 64 LRRM 2495)	[Pittsburgh-Des Moines Steel Co.], NLRB-1965, 60 LRRM 1008) and it gives support to the principle laid down by the Board in the Tawas Tube case above. The employee originally filed a petition for a union-shop deauthorization election, but later withdrew it and filed a decertification petition. The Supreme Court denied review of the holding. (Price v. NLRB, US SupCt-1968, 68 LRRM 2403)
	Although a union's expulsion of a member for filing a decertification petition does not violate Section 8(b)(1)(A), a union did violate the Act when it fined, rather than expelled, a member who had filed a petition to decertify the union. In so ruling, the majority of the NLRB said that in such cases the public policy in each situation should be weighed against the union's right to regulate its internal affairs. The rule permitting a union to expel a member seeking its decertification is an exception to the rule prohibiting a union from penalizing a member because he has sought to invoke the Board's processes. It is an exception based on the necessities of the situation--the right of a union to defend itself. But when a union fines a member because he has filed a decertification petition, the Board added, the effect is not defensive. It is punitive. It has the effect of discouraging members from seeking access to the Board's processes, and the union is no better able to defend itself against decertification. There was a majority opinion signed by Chairman McCulloch and Member Zagoria. Member Brown joined the majority in a concurring opinion. Members Fanning and Jenkins dissented. (International Molders' and Allied Workers Union, Local No. 125 [Blackhawk Tanning Co., Inc.], NLRB-1969, 72 LRRM 1049)	The two dissenting members contended that there is no meaningful distinction between fining and expulsion and that the Board and the Supreme Court have so held. Moreover, they added, a fine does not limit access to the Board's decertification processes any more than does suspension or expulsion, and this is particularly so where fining is usually a lesser penalty than and a prelude to expulsion. In a subsequent case, the Board held that a union violated the Act by insisting that an employee pay union dues, on penalty of discharge under a valid union-security contract, during a period when the employee's membership rights in the union had been impaired significantly because he had filed a decertification petition. (United Steelworkers, Local 4186 [McGraw Edison Co.], NLRB-1970, 73 LRRM 1570)
	A local of the Steelworkers Union violated the Act by insisting that an employee pay union dues, on penalty of discharge under a valid union-security contract, during a period when the employee's membership rights in the union had been impaired significantly because he had filed a decertification petition. In effect, the union initially had expelled the employee. But after he had appealed, it restored him to membership but suspended his right to attend union meetings for more than one year and to hold union	The Board stressed that the union's insistence upon the employee's continued payment of dues during a period when his rights as a member were significantly reduced constituted a continuing form of coercion upon access to Board processes. It cannot be viewed as a noncoercive form of internal discipline that would have no discouraging effect upon a member's decision to invoke the Board's representation processes.

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Union Coercion, Discrimination--Contd.		
Disciplinary Action: Decertification Petition--Contd.	office indefinitely. When the employee then refused to pay his union dues, the union threatened to invoke the union-security clause to effect his discharge. The employee paid the dues. (United Steelworkers, Local 4186 [McGraw Edison Co.], NLRB-1970, 73 LRRM 1570)	
Disciplinary Action: Fining Supervisors	A union violated the Act by fining three supervisors for continuing to work during a strike called by the union. In agreement with the NLRB, the U. S. Court of Appeals at Cincinnati held that the union's action amounted to unlawful restraint and coercion of the company in the selection of its representatives for the purposes of collective bargaining and the adjustment of grievances. The fines were suspended, but with a warning against repetition of similar conduct. The NLRB's order, which the court enforced, required the union to expunge from its records the fact that the supervisors had been fined. (NLRB v. Lithographers, Locals 15-p and 272 [Toledo Blade Co.], CA 6-1971, 76 LRRM 2422)	The fines were imposed on the company's superintendent and two foremen. Under the union' regulations, the superintendent and the foremen were not permitted to hold office in the union or to vote. But they were required to be members of the union, as were all employees. Another court of appeals adopted the same line of reasoning in upholding an NLRB ruling that a union violated the Act by fining a working foreman for performing work before the start of the regularly scheduled workday and for using employees from other crafts to perform work within the union's jurisdiction. (NLRB v. Sheet Metal Workers, Local 49 [General Metal Products Inc.], CA 10, 1970, 75 LRRM 2062)
Fair Representation: Grievance Processing	A union's refusal to process the grievance of an employee discharged for insubordination violated the union's duty of fair representation under the Taft-Hartley Act. The Board rejected the union's argument that the refusal to process the grievance was based on a conclusion that there was no chance of winning the case before an arbitrator. The Board relied on evidence that the union's business manager, who declined to process the grievance, was motivated by resentment resulting from the employee's opposition to the employer's overtime policy. The business manager supported the overtime policy. As a remedy, the Board ordered the union to ask the company to reconsider the grievance and, if necessary, to take the case to arbitration under the contract in effect at the time of the discharge. It declined to order reinstatement and back pay. (Electrical Workers, IUE, [Automotive Plating Corp.], NLRB-1968, 67 LRRM 1609)	In its 1967 opinion in Vaca v. Sipes, the U. S. Supreme Court held that a state court had jurisdiction of a suit by a union member and its officers for damages resulting from the failure of the union to carry his grievance through all steps of the grievance procedure. But it added that the state court must apply federal law. The court then said that under federal law, a breach of the duty of fair representation occurs only when a union's conduct toward a member of the bargaining unit is arbitrary, discriminatory, or in bad faith. An employee does not have an absolute right to have his grievance taken to arbitration, regardless of the provisions in the applicable contract. (Vaca v. Sipes, US SupCt-1967, 64 LRRM 2369) See above under "Federal Preemption" for a discussion of the jurisdictional aspects of the Vaca case.
Fair Representation: Racial, Other Discrimination	A segregated white local union that failed to process a grievance of a member of a Negro local at the same company violated	This landmark holding drew on the 1962 Miranda decision in which a Board majority held that the Act gives employees the right

Issue	Holding	Comment
Union Coercion, Discrimination--Contd.		
Fair Representation: Racial, Other Discrimination--Contd.	its duty of fair representation under the Act and also engaged in unlawful restraint and coercion of employees under Section 8 (b) (1)(A) of the Act. The union was stripped of its certification as bargaining representative and ordered to cease and desist its unlawful practices, including a violation of its bargaining duty by refusing to process the grievance. All five members of the Board agreed that the union's certification should be rescinded, but Chairman McCulloch and Member Fanning dissented to the unfair labor practice holdings. (Independent Metal Workers Union [Hughes Tool Co.], NLRB-1964, 56 LRRM 1289)	to be free from "unfair or irrelevant or invidious" treatment by their bargaining agent. If a union accords employees such treatment, the Board added, it commits an unfair labor practice; if the employer participates in or makes such treatment possible, he also commits an unfair labor practice. (Miranda Fuel Co., NLRB-1962, 51 LRRM 1584) Chairman McCulloch and Member Fanning dissented. The Miranda holding was denied enforcement by the U.S. Court of Appeals at New York in a decision in which there was no majority opinion, the three-judge panel splitting three ways. (NLRB v. Miranda Fuel Co., CA 2 1963, 54 LRRM 2715)
	Two local unions violated the Act by maintaining and enforcing a 75-25 percent distribution of work between an all-white local and an all-Negro local and by forbidding the assignment of white and Negro gangs to work together in ship hatches. The unions also violated their bargaining duty under the Act by negotiating a contract that discriminated against a group of employees on an unfair, invidious, or irrelevant basis. All five members agreed that the discrimination violated the Act insofar as it was based on the local an employee belonged to, but Chairman McCulloch and Member Fanning dissented to the holding that the racial discrimination was an unfair labor practice (Local 1367, International Longshoremen's Assn. [Galveston Maritime Assn., Inc.], NLRB-1964, 57 LRRM 1083)	The division among the Board members in this case was the same as in the Hughes Tool case, with Chairman McCulloch and Member Fanning maintaining that the Board may find unlawful discrimination under the Act only when it relates to union membership or activities. The decision of the Board was enforced in a brief per curiam order by the U.S. Court of Appeals at New Orleans. (NLRB v. Local 1367, International Longshoremen's Assn. [Galveston Maritime Assn.], CA 5-1966, 63 LRRM 2559) The Supreme Court denied review of the case. (Local 1367, International Longshoremen's, Assn. v. NLRB, US SupCt-1967, 66 LRRM 2307)
	A union violated the Act by failing to press back-pay and integration grievances of Negro members of the union. An NLRB order directing the union not only to stop discriminating against the Negro members, but also to go to the company and demand antidiscrimination contract clauses was enforced. (Local 12, United Rubber Workers v. NLRB, CA 5-1966, 63 LRRM 2395)	The court upheld a three-to-two decision of the NLRB (Local 12, United Rubber Workers Union [Business League of Gadsen], NLRB-1964, 57 LRRM 1535). As they had in other similar cases, Chairman McCulloch and Member Fanning dissented. The Supreme Court denied review of the case. (Local 12, United Rubber Workers v. NLRB, US SupCt-1967, 66 LRRM 2306)
	A union breached its duty of fair representation and violated the Act by discriminating on the basis of race in the operation of its hiring hall, and an employer's association also violated the Act by participating in the union's unlawful conduct. The decision was by a panel consisting of Members Brown, Jenkins, and Zagoria. Chairman McCulloch and Member Fanning have dis-	In a footnote concurrence, Member Zagoria stated that he would find only that the union violated Section 8(b)(1)(A)--restraint or coercion--and that the employers violated Section 8(a)(1)--interference. He did not consider it necessary to decide whether the union also violated Section 8(b)(2)--discrimination--or whether the employers vio-

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES – Contd.

Issue	Holding	Comment
Union Coercion, Discrimination--Contd.		
Fair Representation: Racial, Other Discrimination--Contd.	sented in earlier cases involving findings of violation of the Act grounded upon discrimination based on race. As a remedy, the Board ordered the union to accept applications of rejected Negroes on the same terms and conditions applied to white applicants, with seniority as of a date six months before their unfair-labor-practice charges were filed. (Houston Maritime Assn., Inc. [Local 1351, International Longshoremen's Assn.], NLRB-1967, 66 LRRM 1337)	lated Section 8(a)(3)--discrimination. Also in a footnote concurrence, Member Jenkins stated that he would have gone further on the remedy. He would have dated the seniority of the Negro applicants back to the date when they first were refused registration by the union. The case is pending before the U. S. Court of Appeals at New Orleans on a petition for enforcement filed by the Board.
Initiation Fees: Excessiveness	A union violated the Act by requiring new members to pay a $1,000 initiation fee. The $1,000 fee, the Board said, is excessive and discriminatory and restrains and coerces nonmembers in the exercise of their right to join the union. In support of its holding, the Board noted the following: (1) The purpose of the fee admittedly was to limit membership; (2) the fee was nearly six times greater than the weekly wage of employees belonging to the union, and it was twice as large as that of the union's sister local, and (3) although the union provides death and medical benefits in addition to what the members receive under the collective bargaining contract, the evidence does not establish that the increase in the fee from $500 to $1,000 was required to pay for them or to meet any other financial obligation of the union. (Longshoremen, ILA, Local 1419 [New Orleans Steamship Assn.], NLRB-1970, 75 LRRM 1411)	This was one of the rare cases involving the Section 8(b)(5) prohibition against the charging of an excessive or discriminatory initiation fee by a union with a union-security contract. The Act directs the Board to consider, among other relevant factors, the practices and customs of labor organizations in the particular industry and the wages currently paid to the employees affected.
Union Dues Rebate	A union-shop contract may be used to enforce a dues policy under which members are given a $2 dues refund for attending the monthly union meeting. The union had raised dues from $3.75 to $6 a month, but it rebated $2 to those attending monthly meetings. When a member balked at paying the extra $2, the union threatened him with discharge under the union-shop contract. Under prior policy, the Board had held that an attempt to collect such a penalty under a union-shop contract was unlawful. It now reasoned that the $2 dues refund does not differ from the use of union dues money for refreshments, prizes, or entertainment at meetings, and so is not an improper penalty. Chairman McCulloch and Member Jenkins dissented. (Local 171, Pulp & Paper Workers, NLRB-1967, 65 LRRM 1382)	The prior policy was established in 1962 in the Leece-Neville Company case. The union's attempt to use the union-security clause to collect the extra dues was regarded as unlawful discrimination and restraint or coercion. The Board also held that the extra amount that was rebated for attendance at union meetings was not "periodic dues" that are "uniformly required" within the meaning of the Act. (Leece-Neville Co., NLRB-1962, 51 LRRM 1563)

TAFT-HARTLEY ACT: UNFAIR LABOR PRACTICE CASES - Contd.

Issue	Holding	Comment
Union Security	In adopting Section 14(b) of the Taft-Hartley Act, Congress left the states free to legislate in the field of union-security agreements, and it did not deprive them of the power to enforce their laws restricting the execution and enforcement of such agreements. But the state power recognized in Section 14(b) begins only with the actual negotiation and execution of the union-security agreement. So picketing to obtain union-security agreements remains within the exclusive jurisdiction of the NLRB, while the states have the power to declare a contract illegal and enjoin its enforcement, including ordering reinstatement with back pay of an employee discharged under a contract that violates the state law. (Retail Clerks v. Schermerhorn, US SupCt-1963, 54 LRRM 2612)	The Court previously had ruled in this case that a state may outlaw an agency-shop contract under the authority granted to the states by Section 14(b). (Retail Clerks, Local 1625 v. Schermerhorn, US SupCt-1963, 53 LRRM 2318) It reserved for later decision the question whether a state may enjoin the operation of an unlawful agency-shop contract or whether this is a matter preempted by the Taft-Hartley Act for the NLRB.
	A hiring-hall arrangement that expressly states that union membership is not to be considered in job referrals is not subject to state regulation under a right-to-work law. Although Section 14(b) of the Taft-Hartley Act permits right-to-work laws, it does not protect a state law that is so broadly stated or construed as to bar such non-discriminatory hiring-hall arrangements. (NLRB v. Tom Joyce Floors, Inc., CA 9-1965, 60 LRRM 2434)	The case arose when a Nevada contractor opposed an NLRB order to bargain about a union's hiring-hall demand, contending that such an arrangement would violate the State's Right-to-Work Act. The Board rejected this contention. (Tom Joyce Floors, Inc., NLRB-1964, 57 LRRM 1390)

TABLE OF CASES CITED

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KREUTZKAMPF, JUNE; KIEFER, CHARLES
STATUS OF VOCATIONAL EDUCATION RESEARCH AND DEVELOPMENT ACTIVITIES IN MINNESOTA 1968-1970. AN ANNOTATED BIBLIOGRAPHY.

MINNESOTA RESEARCH COORDINATING UNIT IN OCCUPATIONAL EDUCATION, MINNEAPOLIS.
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ABSTRACT - DEVELOPED TO PROVIDE VOCATIONAL AND PRACTICAL ARTS EDUCATORS WITH INFORMATION ABOUT THE TYPES OF RESEARCH AND DEVELOPMENT ACTIVITIES BEING CONDUCTED IN MINNESOTA, THIS REVIEW AND SYNTHESIS PRESENTS 142 STUDIES OF RESEARCH RELATED ACTIVITIES CONDUCTED IN THE STATE DURING THE YEARS 1968-1970. THE PUBLICATION IS ORGANIZED INTO FOUR MAJOR SECTIONS, WITH THE FIRST PROVIDING A SUMMARY AND OVERVIEW OF THE NUMBER OF STUDIES CONDUCTED IN EACH OF EIGHT PROBLEM AREAS, THE SECOND PRESENTING ANNOTATIONS OF RESEARCH COMPLETED, ARRANGED ACCORDING TO VOCATIONAL AREA, THE THIRD DEVOTED TO AN EVALUATION OF RESEARCH AND DEVELOPMENT ACTIVITIES IN THE STATE, AND THE FOURTH PROVIDING A BIBLIOGRAPHY OF STUDIES ALSO ARRANGED ACCORDING TO THE FOLLOWING VOCATIONAL AREAS REPRESENTED IN SECTION TWO: (1) AGRICULTURAL EDUCATION, (2) BUSINESS EDUCATION, (3) DISTRIBUTIVE EDUCATION, (4) GUIDANCE AND COUNSELING, (5) HEALTH EDUCATION, (6) HOME ECONOMICS EDUCATION, AND (7) TRADE AND INDUSTRIAL EDUCATION. EACH ENTRY IN THE BIBLIOGRAPHY CONTAINS THE NAME OF THE INVESTIGATOR, TITLE, LOCATION, AND DATE OF COMPLETION. (AW)

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an annotated bibliography

MINNESOTA RESEARCH COORDINATING UNIT FOR VOCATIONAL EDUCATION
UNIVERSITY OF MINNESOTA MINNEAPOLIS, MINNESOTA 55455

STATUS OF VOCATIONAL EDUCATION RESEARCH AND DEVELOPMENT ACTIVITIES IN MINNESOTA 1968-1970

1968-1970

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THE MINNESOTA RESEARCH COORDINATING UNIT FOR VOCATIONAL EDUCATION performs the following four functions in behalf of the State and national systems of vocational education:

1. Stimulate, facilitate and coordinate innovative research and development efforts.

2. Disseminate research-related information to assist research and development efforts and to speed the implementation of worthy educational innovations.

3. Increase the number and improve the competence of producers and consumers of vocational research-related materials.

4. Create knowledge and useful products that have potential for making long-range and general qualitative improvements in vocational education.

Status of vocational education research and development activities in Minnesota 1968-1970

AN ANNOTATED BIBLIOGRAPHY BY
JUNE KREUTZKAMPF AND CHARLES KIEFER
JUNE 1971

MINNESOTA RESEARCH COORDINATING UNIT
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FOREWORD

The Minnesota Research Coordinating Unit for Vocational Education has developed a series of publications designed to provide vocational and practical arts educators with information about the types of research and development activities being conducted in Minnesota. The first publication was simply a bibliography of studies conducted in Minnesota during the years 1965 to 1967. The second publication provided a classification scheme for synthesizing the results of research and development activities for the years 1965-1967.

This, the third publication in the series, is an annotated bibliography of research related activities conducted in the state during the years 1968-1970. The purposes of these publications are:

(a) to provide vocational and practical arts educators with a summary of the research and development activities.
(b) to identify problem areas which require further investigation for each vocational field and for the state.
(c) to determine the status of research and development activities conducted in Minnesota as they relate to the established priorities for these activities.

Information for the annotated bibliography was obtained through the cooperative efforts of practitioners in the state as well as various departmental, college and university libraries. Both studies for degree and non-degree purposes were obtained from people who were employed in private and public elementary, secondary, post secondary schools and colleges and the University of Minnesota. Research reports already published at the Minnesota Research Coordinating Unit and other research organizations of the University are not included in this report.

The publication is organized into four major sections. The first section presents a summary and overview of the number of studies conducted in each of eight major problem areas. The number of studies are reported separately for each vocational field followed immediately by a summary evaluation for each field and recommendations for further research. The third section is devoted to an evaluation of research and development activities in Minnesota in terms of current and future research and development priorities. The fourth and final section is a bibliography of studies organized according to subject matter fields. Each entry contains the name of the investigator, title, location, and date of completion.

Almost all of the publications cited in this publication are available either in the library maintained by the Minnesota Research Coordinating Unit or library maintained by each of the respective vocational departments at the University of Minnesota or the state colleges. In some cases, only a single copy of the study was available and may be obtained by contacting the respective author.

The Minnesota Research Coordinating Unit wishes to acknowledge the cooperation of the many people who responded to the request for copies of research studies and developmental projects. Besides sending copies of studies to be reviewed, many of the people contributed copies of the studies to be maintained in the RCU library so it could be available to other people in the State. Appreciation is also extended to the various college and departmental libraries who made it possible to obtain copies of masters' and doctoral theses.

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INTRODUCTION

This report on research and developmental projects which have been conducted in Minnesota in the period 1968-1970 has been compiled by the Minnesota Research Coordinating Unit for Vocational Education in an attempt to keep people informed about the current status of research and development activities in vocational, technical, and practical arts education.

A goal of educational research in vocational and technical areas is to provide a body of knowledge upon which decisions for change in the educational enterprise can be based, and development activities can be undertaken for the purpose of designing the methods or means for accomplishing the desired change.

At an October, 1970 meeting of representatives of the State Advisory Council for vocational education, the Minnesota State Department of Education, the Cooperative Area Manpower Survey Committee (CAMPS), and the Minnesota Research Coordinating Unit for Vocational Education met and formulated the following research and development priorities.

Rank		Problem Area	Number of Studies in Each Priority
1.	a.	Develop a method for securing and then secure an inventory of the occupational education needs of all people in the State.	7
	b.	Devise a system for utilizing student need and occupational demand data to plan occupational programs at the state and local levels.	15
2.	a.	Develop a procedure for predicting and then predict occupational demand in a form useful for program planning.	14
	b.	Secure continuous data about applicants to vocational programs, their progress in the program, and their performance after leaving the programs.	8
	c.	Devise methods for improving the curriculum development process.	49
3.	a.	Devise a system for improving guidance-selection practices and improving the quality and efficiency of vocational programs (using data about applicants).	19
	b.	Develop and evaluate "orientation to the world of work" programs.	7
	c.	Develop a system for disseminating data needed for program planning to the manpower training agencies that can use it.	1

4.	a.	Develop the method for securing and then secure an inventory of the occupational education needs of the handicapped and disadvantaged. (16 years or older).	8
	b.	Determine whether "disadvantaged" students (of various kinds) require different instructional treatments from other students, and if so, the best way to treat them.	5
	c.	Secure data about the disadvantaged that will permit the selection of the most appropriate treatments.	2
5.	a.	Develop a procedure for predicting and then predict occupational demand (focusing on the disadvantaged and handicapped, 16 years and older) in a form useful for program planning.	0
	b.	Define the nature and purpose(s) of (a) career development, (b) pre-vocational, (c) orientation, etc. programs.	6
		Other Studies	5
		Comparative Studies	6
			144

At the right of each priority is a number representing the studies conducted in Minnesota from 1968-1970. This categorizing has been arbitrarily done by the reviewers, and shows some trends of research undertaken. Six of the studies were done in comparative education and five studies seemed to fit under none of the priorities, so were classified as "other studies."

This review and synthesis was done in terms of the progress it represents on the research problem areas mentioned above. As the categories show, there was a preponderance of work done in the area of devising methods for improving the curriculum development process. Many of the studies in this area were developmental. Of the areas with few or no studies, both 4(a) and 5(a), having disadvantaged, and development of a procedure for predicting and then predict occupational demand (for handicapped and disadvantaged) in a form useful for program planning, indicate work which needs to be done. Development of a system for disseminating data needed for program planning to the manpower training agencies that can use it (3c), is also a definite area which needs study.

What follows is a brief review of each study by area of vocational education to serve as a reference source and/or guide for interested researchers in the State and people who are in positions to influence the research direction of others. A bibliography is given at the end of the report by vocational area, in the hope that an interested individual might find this a convenient source for information of recent research activities. Most of the studies are available in the departmental college offices or libraries of the respective universities or the Minnesota Research Coordinating Unit.

AGRICULTURAL EDUCATION

Thomas (1969) studied the relationships of the philosophy of education to the teaching tenure of graduates of agriculture education at the University of Minnesota. Results from the 118 graduates involved in the study indicated that a person's educational philosophy did not affect his decision to teach after graduation, nor his tenure of teaching. There was a trend for members to agree more with the academic philosophy after college, and to agree less with the Community School Philosophy. The study showed that scores on the checklist would be of little help in counseling seniors about the likelihood of entering and staying in the field of teaching agriculture.

Jopp (1970) developed a prestige scale for agricultural occupations as viewed by high school vocational agriculture students, their parents and high school counselors. Fifty students, parents and school counselors within a twenty-five mile radius of St. Cloud, Minnesota ranked the occupations. This study indicated that agricultural occupations which generally require a college education are in the upper portion of the prestige rank, while those agricultural occupations dealing with sales appear to be on the lower end of the prestige scale. Annual earnings and social prestige did not seem to have an affect on the prestige ranking.

The appropriateness of various educational experiences for student teachers in vocational agriculture in Minnesota, North Dakota and South Dakota was investigated by Chyung (1970). Experiences before and after the student teaching period were rated by both student teachers and teachers. Student teachers placed greatest emphasis on organizing and maintaining a department, while teachers emphasized planning for instruction. A low rating was given to background information in the community by both teachers and student teachers. Of 144 activities listed, eighty-nine were selected as most highly recommended activities for student teaching.

Murray (1968) determined how farmers in the vocational agriculture farm management programs of southern Minnesota completed practices in farm power, machinery and electricity. Results indicated that the farmer himself completed one-half of electrical practices; about sixty-five percent of farm power practices, and about eighty-five percent of farm machinery practices. Commercial firms completed less than ten percent of these practices for farmers. However, as the level of operator earnings increased, more of the problems dealing with power mechanics were completed by commercial firms.

Toedter (1968) analyzed machine costs in crop production on certain north central Minnesota farms, using machine time to allocate costs, and compared this

to the work unit method of allocation. A twenty-five percent discrepancy between analyses was found. Since accurate machine costs are important to the farmer in making future decisions, the author recommended that the machine method of crop cost allocation be programmed for computer analysis unless computer costs prove to be prohibitive.

Moller (1968) recommended that Wyoming expand its adult agriculture program and when sufficient enrollment is obtained, center the program around a systematic instruction similar to the one used by Minnesota in record keeping and analysis. This recommendation was made after analyzing the responses of a questionnaire sent to past adult class enrollees from 1963-1967. Two-thirds of the respondents indicated their willingness to join a vocational agriculture farm-ranch management program utilizing a record keeping system.

Awakul (1968) studied the Extension Service in selected Minnesota counties in order to make recommendations for a long range plan for agriculture education development in Thailand. Some recommendations were: unification of the agriculture service; coordination of community resources, provision for qualified personnel and training facilities, and development of a service program.

Priebe (1968) compiled an inventory of interests of Minnesota farmers and compared it to the "men in general" category as identified by the Strong Vocational Interest Inventory Test. This 1968 farmer criterion group was compared to the 1936 farmer criterion group. Differences among the 1936 and 1968 groups were numerous, however, the most striking difference between the two sample groups was the higher educational level of the 1936 sample. A new farmer occupational scale was constructed for the Strong Inventory containing a total of seventy-eight items of which thirty-seven are new.

Norenberg (1970) also used the Strong Vocational Interest Inventory to compile a new vocational agriculture teacher criterion group and to develop a new occupational scale for vocational agriculture teachers. His sample included vocational agriculture teachers from Minnesota, North Dakota, South Dakota and Wisconsin. Some comparisons between vocational agriculture teachers and the "men in general" scale included a higher degree of interest in activities concerning agriculture, teaching, mechanics, and out-of-doors activities and a lower degree of interest for artistic, language and musical activities. A new vocational agriculture teacher occupation scale was constructed with a total of sixty-nine items.

Copa (1970) designed and tested a model to identify the inputs of an educational system to be included in the production function for that system. The Minnesota farm management program of 1967 was chosen as the educational system to test and demonstrate the feasibility of the model. An initial set of production function inputs was identified and measured in quantifiable form and the relationship of program output to many specific inputs was analyzed. This was the first step toward the construction of a production function for an educational system.

An inventory and analysis of managerial activities performed by managers of retail farm supply firms was done by Hartog (1969). Relationships between managerial clusters and 1) managerial success, 2) size of firm, and 3) years of

managerial experience were studied. It was concluded that managerial success was partially attributed to clusters of activities dealing with financial reporting and business objectives. He recommended further use of the behavioral task format in studying managerial behavior.

A study conducted by Lehto (1969) was designed to develop a shorter version of a cost analysis model than the one now used by the Minnesota Vocational Agriculture Farm Business Analysis. Twenty-five enrollees in a farm management class at Evansville, Minnesota made detailed cost analyses of their farms for 1967. The study revealed that this method would not necessarily reveal a great deal more usable information on farm business than other methods presently used.

After surveying a wide range of vocational agriculture programs and curriculums, Barber (1969) proposed a four year course of study for vocational agriculture to meet the student's or community's needs in Red Wing, Minnesota. Eighteen controlled semester courses with clearly defined prerequisites were proposed. Emphasis was placed on making the semester courses vocational with a focus on learning by doing, and keeping instruction closely tied to the FFA program of activities.

Vrieze (1969) conceptualized a comprehensive agricultural mechanics facility with its satellite basic facilities to extend the sphere of education of vocational agriculture to production agriculture, farm related occupations in agriculture and agriculture mechanics to schools and students presently not offered these programs. Maximum use of instructor talents and portable equipment would be possible, however, the investigator indicated that more careful analysis and scrutiny was needed before such programs become feasible.

Ruf (1970) outlined the necessary steps involved in planning, developing, promoting, implementing and evaluating a post high school agri-business program. A historical research method approach was used at the Willmar Area Vocational Technical Institute. Three appendices made up the supplement of this report. Ten areas of development of an agri-business program were identified and suggested for further investigation.

Tavares (1969) analyzed essential features of agricultural programs at the secondary level in order to provide a basis for developing similar programs at the secondary level in Brazil. Experiences of other countries were compared to show the need of bridging the gap between the three levels of education and national, state and local agricultural policies. He stated a need to maximize the potential of people who already possess agricultural skills and knowledge.

Duarte (1968) offered suggestions for developing solutions to agriculture problems through improved educational opportunities. He concluded that Brazil needed to give more financial assistance to agriculture education. His suggestions included raising prices for crops and providing the incentive to engage in agriculture.

After an evaluation of two prototype systems of electronic farm record keeping, Leske (1970) concluded: (a) Record keeping knowledge is essential for satisfactory use of an electronic farm record service, (b) not all farmers should use the electronic farm record service, (c) farmers' time will be saved if the

electronic record service is used, (d) vocational agriculture instructors will experience a time savings, and (e) the evaluation should be continued with respect to time savings, comparative difficulty of using the systems, and usefulness of specific phases of monthly information.

Recommendations resulting from a study by Fog (1969) concerning the influence of certain factors on the amount of agriculture mechanics taught in Minnesota high schools indicated that for maximum educational output, agriculture mechanics departments should not be shared with another department. Shop facilities should have a minimum of 150 square feet floor space per student and a school should be large enough to provide training for more than seventy-five students in vocational agriculture. College students majoring in agricultural education should have a minimum of ten quarter hours of college credit in agriculture mechanics plus some in-service training.

Vrieze evaluated the modular curriculum and its schedule with reference to Plainview Community School and vocational agriculture students. This type of schedule seemed to have great potential for agriculture educators. (Vrieze, Clifford)

Ojakangas (1969) surveyed farmers who had participated in the farm management programs in northeastern Minnesota from 1956-1965 to find reasons why half of the farmers surveyed had dropped the program. Twenty-eight questionnaires were completed. Reasons given for dropping out included; (a) service not available since agriculture department was closed, (b) retirement, and (c) change in major occupation. Several indicated they needed a brief layoff before they would participate again.

Go (1970) designed a study to provide information for expanding the pilot farm business management program for adult farmers at the Mindanao Institute of Technology in Catabato, Phillippines. He found that elementary school agricultural teachers who were M.I.T. graduates needed overall training in farm business management. Correlation coefficients between teaching competency and the five variables of age, teaching experience, high school vocational agricultural training, and overall grade point average in agricultural economics were found to be significantly different from zero at the .05 level of significance. Correlation between teaching competency and credits taken after graduation was not significantly different from zero at the .05 significance level.

Stassen's (1970) survey of schools with an organized agriculture advisory committee revealed the need for greater emphasis on enlarging the committee to include not only farmers but persons in agri-business occupations. He recommended that the committee should be used to a greater extent in studying problems of the agriculture department, and also stated a need for further research and studies to determine the effectiveness of agricultural advisory committees.

Novotny (1970) questioned twenty-seven families enrolled in the farm management program in the Albany area to determine the subject matter to be taught in a soil and water phase of agricultural mechanics and to answer the question of whether it should be taught in high school or adult education. Fifteen soil

and water competencies were chosen for the questionnaire. Ten of these competencies were indicated by the farmers as suitable for teaching. A close correlation was noted for the competencies to be taught to high school students and to adults. He concluded that soil and water competencies should be a part of an agricultural mechanics program in every high school.

Carlson (1970) attempted to determine if a more accurate method of calculating machinery costs for specific crops could be used. He also tried to determine if a more efficient method could be utilized to separate machinery costs for livestock from those used for crops. He found a great variation among farmers and among crops. The costs appeared no more accurate using the new method than using the formula developed in 1968 by the Vocational Agriculture Farm Management program.

Virta (1969) analyzed the essential competencies needed by workers in the ornamental horticulture and greenhouse industries to ascertain the horticultural competencies essential to employees in these industries. People in five levels of responsibility (employers, sales supervisors, foremen, sales clerks, and workers) were interviewed. Significant differences were found for the competencies needed by employees in greenhouses as compared to employees in ornamental horticulture. Supervisory personnel in both groups were expected to have a high level of competency. Workers and sales clerks were rated low in terms of their competency level.

SUMMARY AND IMPLICATIONS: The studies conducted in agriculture were concerned with philosophies of education; appropriateness of curriculum and instructional experiences; and analysis of farm practices with respect to operating costs. Other studies attempted to identify the interest patterns of agricultural workers and teachers and to develop a production function model to evaluate educational programs.

With regard to the studies reviewed, some of the more cogent conclusions were that: scores on the checklist concerned with the philosophy of vocational agriculture are of little help in assisting students to make vocational choices about entering the field of agriculture; agriculture occupations requiring a college education are rated more prestigious than those occupations which were concerned with the selling of agricultural products; commercial firms are being called on more frequently to repair power equipment on farms especially for the more well to do farm owners; and the interest patterns of agriculture teachers, as measured by the Strong Interest Inventory, differ from "men in general" on such things as: out-of-doors, artistic, language and musical activities.

Some of the recommendations which can be implemented include: (a) developing comprehensive vocational agriculture mechanics programs in cooperation with satellite agencies, (b) expanding the membership of advisory committees for adult education programs, (c) developing curriculums designed with the use of the behavioral task format to train managers for agri-business occupations, and (d) revising the high school vocational agriculture program to include units dealing with soil and water conservation.

Areas in which future research and development efforts may be directed include: (a) determining the effectiveness of advisory committees for developing and operating local vocational agriculture programs; (b) developing a procedure

to secure an inventory of the occupational education needs of agriculture occupations and make manpower predictions, especially for new and emerging agribusiness occupations; (c) developing and evaluating orientation to work and/or pre-vocational education programs dealing with agricultural occupations; and (d) determining instructional treatments suitable for disadvantaged-handicapped students in rural areas.

BUSINESS EDUCATION

Green (1969) investigated the business and office education programs for the Minnesota area vocational-technical schools. Twenty-three schools offered post high school instruction in business and office education in 1967-1968, as compared with four in 1962-1963. Student enrollment grew from 150 students in 1962-63 to 1,816 students in 1967-68. Female students made up seventy-one percent of the enrollment, and male students made up twenty-nine percent. The secretarial program had the largest enrollment of 540 students, with accounting second at 431 students, and clerical third with 429. He recommended that programs in legality, medical terms, and finance be added to the secretarial curriculum.

Sharp (1970), in a survey of the business work experience of 1300 practicing business education teachers in the public schools in Minnesota, concluded that business work experience is and should be an important part of the preparation of business education teachers. If this experience is to be of value and of maximum use to the teacher, it must be kept up to date. He also stated that some business education teachers lack work experience in areas that are a keystone to their area of specialization.

Zwack (1969), in an effort to determine the extent to which business machines courses are being offered in Minnesota secondary schools, noted that twenty-two schools offered a separate course in business machines, with eight offering the course for one-half year and fourteen for a full year. Most of the schools offered this course only in the senior year. Seven machines made up the foundation for the machines training offered in these schools.

Falness (1968) surveyed selected businesses to determine if the accounting curriculum of Minnesota area vocational technical schools provided the necessary preparation to meet office employment standards for beginning accountants. Recommendation for curriculum improvement was additional related training opportunities in (a) communications, (b) business mathematics, and (c) office procedures. In other aspects, the accounting curriculum was adequate.

Boe (1969) gathered data from secondary schools experimenting with flexible scheduling in bookkeeping and accounting. Seventeen schools responded to a questionnaire. Conclusions drawn were that the majority of teachers and students experienced no difficulty in following flexible modular schedules. Nearly one-half of the teachers stated that no consideration is given to ability grouping in bookkeeping and accounting. (Most teachers felt further training would be beneficial or necessary in order to teach satisfactorily.)

Eckman (1969) determined what techniques can be used to provide for individual differences in typewriting instruction. Seventeen of twenty-one schools attempted to limit class size in typewriting to under thirty-five pupils. Less than half used a lab in typewriting instruction. Slightly more than one-

third of the instructors gave individual assignments. All classes used the blackboard, with bulletin boards ranking second and recordings ranking third. Three schools were using team teaching, and three of the typewriting teachers were using programmed learning. Recommendations which appear justified were: Grouping by ability if possible; grouping within typewriting classes, and the use of a typewriting laboratory.

McGill (1969) compared the offerings for business education majors in Catholic secondary schools in Minneapolis and St. Paul with the recommendations of the Minnesota Department of Education. Noticeable weaknesses were found in course offerings in general business, business mathematics, business law, and economics. Pronounced weaknesses in automation and distributive education were also noticed. Less than half of the schools participated in guidance, placement and follow-up activities.

Price and Hopkins (1970) reviewed and synthesized research in business and office education. A complete document was published by the ERIC Clearinghouse in Columbus, Ohio, April of 1970.

A final report from the United States Office of Education on a New Office and Business Education Learning System was finished in January, 1970. The above authors were principal contributers to the NOBELS Project, with the principal investigator from Wayne State University, Detroit, Michigan. (Price, Ray G. and Hopkins, Charles R., January, 1970.)

Bisel (1969) studied the effects of composing material while at the typewriter upon learning of beginning typing skills. The experimental group received highly structured quantities of composition after the second week of school. The control group received no composition instruction, but did receive additional class time for drill-timings and various other typewriting problems. Three and five minute speed and accuracy timed writings were used as criteria. Composition did not have a significant effect on the earlier straight copy writings, but it did seem to have a negative effect on the accuracy of the experimental group. It did not improve achievement to any significant degree on straight copy or production.

Guimont (1969) analyzed optical character recognition machines and their impact on the keypunch and verifier occupation, in determining the advantages of these machines; the extent to which they are affecting the keypunch and verifier occupation; and if the secondary and post secondary curriculums in data processing are in need of updating. The study revealed that installation of optical character recognition equipment does not necessitate the abolishment of keypunch input devices. There also appears to be a carry over from the keypunch to the optical character recognition typist skill, and that the skills essential for OCR employees can be taught in our present business education curriculum.

Pehrson (1970) tried to determine the correlation between the Turse Shorthand Aptitude Test and the ACT composite score to the letter grades assigned students, and which of the two (Turse Shorthand Aptitude or ACT) is the better predictor of shorthand success. The students from 1966-69 at Mankato State College made up the sample. Correlations did not reach the .7 or .8 level of predictive significance. The difference between the correlation coefficients of

the ACT composite and Turse composite was not significant at the .05 level, therefore, it was ascertained that neither test is a superior predictor of shorthand success. All but one of the factors studied were related to shorthand achievement in some degree, but no single factor appeared to be highly predictive.

Minshall (1969) compared student achievement in shorthand in twelve high schools and five vocational schools in southern Minnesota. On the tests, the results indicated that additional training made a significant difference in the number of errors. The same amount (in years) of training did not seem to make any significant difference, whether it was in the vocational school or in the high school. It would seem that students seeking higher proficiency in shorthand should give additional post high school training some consideration.

Olson (1969) hypothesized that the inclusion of a practice set in the first year bookkeeping curriculum would not result in a significantly different level of understanding of bookkeeping principles and theory. This experiment involved four Iowa high schools, two schools as a control group and two an experimental group. There was no significant difference on: the 1967 Iowa Tests of Educational Development scores; student understanding of bookkeeping principles and theory; and student interpretation of business papers and bookkeeping forms. A significant difference was, however, noted in student recognition of business papers and bookkeeping forms. A positive response was given for the inclusion of a practice set in first year bookkeeping.

In an attempt to isolate and identify those problems that are unique to the establishment of a cooperative office education program in a post high school institution with emphasis on a junior college situation, Briest (1969) noted the following problems: anticipated lack of work stations; lack of school personnel; financing; overall structure; and lack of time to organize the program.

Lenius (1969) studied the relationship between student aptitude, achievement, and utilization of laboratory during unscheduled time. Positive relationships at the .01 level of significance were found between the AICPA Orientation Test and the three criteria. High school level and achievement scores, achievement scores and number of modules used in the open laboratory, and the scores of the AICPA orientation test, high school level and the number of modules used in the open laboratory were also compared.

SUMMARY AND IMPLICATIONS: Most of the studies reported were developmental projects which attempted to improve curriculum and/or instructional techniques for business education programs in both public and private schools. Some of the specific areas investigated dealt with (a) the development of curriculum-instruction materials and the study of individual differences; (b) modular and open laboratory scheduling; (c) skill development with business machines; and (d) identifying problems in implementing cooperative office education programs. In addition, surveys were conducted in order to estimate the growth of business education programs in the state and to determine the desirability of having a work experience requirement for business education teachers.

Based on the studies identified and included in this report, the following conclusions seem warranted: business education enrollments have increased

twelve-fold during the years 1962 to 1968; the current accounting and business machine curriculums seem adequate, but there appears to be a need to develop post-secondary office occupation programs to develop the necessary level of proficiency in certain skill areas; and there is an increasing concern for business education programs becoming more involved in vocational guidance and placement activities, and for conducting follow-up studies of graduates to evaluate programs.

While there is a need to continue conducting development projects dealing with curriculum and instruction, more emphasis should be placed on conducting research on significant problems related to the field of business education. In terms of the priorities established for the State, some of the problem areas which require additional attention are: (a) projecting manpower requirements for business-office and related occupations, (b) identifying ways in which business-office education programs can more adequately meet the needs of disadvantaged-handicapped students, (c) developing methods for planning business education programs at the local level, and (d) developing and evaluating procedures to account for individual differences as they relate to program planning and curriculum development.

DISTRIBUTIVE EDUCATION

In a survey of the distributive occupations and training opportunities in the Roseville School District #623, Clark (1968) found 225 distributive training positions open to serve the increased enrollment needs of distributive education students. A replacement rate of approximately seventeen percent a year projects an immediate need for trained distributive employees. By the year 1973, a forty percent increase was projected to meet the expansion and replacement needs of distributive personnel.

A study to determine the present status of pre-employment distributive education classes in Minnesota was conducted by Mann (1969). Salesmanship was taught by all teachers responding and job interviews and channels of distribution was reported by nearly one hundred percent of the respondents. The most popular projects were those requiring the student to act independently of the teacher and/or textbook. Grade 11 was the dominant grade in which pre-employment was offered. Law and store layout were considered the least important content areas.

Holm (1970) conducted a national survey on forty-six schools having a distributive education program with modular flexible scheduling in order to suggest a program in this area for Jefferson Senior High School in Alexandria, Minnesota. Major advantages of this modular flexible program were: (a) flexibility in individualized instruction; (b) meeting the specific needs for a particular course; (c) utilizing staff and resources; and (d) offering an expanded educational program. A major disadvantage of modular flexible scheduling seems to be its inability to reach or deal with the unmotivated person who tends to misuse independent study time, avoid counseling or individual help, and is absent frequently. Reporting schools indicated distributive education cooperative students had little difficulty in scheduling work hours, but stressed the need for very thorough advanced planning of all aspects of the program.

Stolhanske (1968) attempted to establish a relationship between trainee job satisfaction and the importance he attached to various vocational needs. Distributive, office education, and trade and industrial vocational groups were compared, with six types of needs being significantly different. Distributive education attached more importance to creativity, responsibility and authority; office education attached more importance to company policies and practices, co-workers, and moral values; and trade and industrial education did not attach more importance to any of the variables. Needs important to the workers were achievement, advancement, ability utilization, working conditions, co-workers, and security.

Carlson (1969) tested the validity of the retail sales clerk key on the MVII with retail sales clerks, retail hardware store owners, distributive education teacher-coordinators and future distributive education teacher-coordinators at the University of Minnesota. Results indicated all groups seemed to prefer similar liked interests but the groups had only a small percent of items they all

disliked equally. Some broad interest patterns which were acceptable to all of the groups were identified. However, since likes and dislikes do not match, the key in its present form cannot be used for these other groups.

Grossman (1970) attempted to discover how the distributive education teacher-coordinators perceived their jobs and what effect a workshop had on the job perceptions of the thirty-six counselors and thirty-six coordinators who were enrolled. Findings indicated that distributive education teacher-coordinators, as compared with counselors, rated twice as many items as important or very important. Counselors who had the workshop experience, as compared with counselors who did not have the workshop experience, rated more duties as important. The workshops had no effect on the way distributive education teacher-coordinators perceived their jobs, and all respondents agreed on the same twelve items as being "very important" or "important" duties of the distributive education teacher-coordinator. More workshops were recommended for coordinators, counselors and other faculty members. Teacher-coordinators and counselors were encouraged to cooperate in meeting the guidance and vocational needs of the students.

Klaurens (1969) conducted an occupational experience and career development program for twenty-one distributive educators and fifteen vocational counselors. The six weeks training program included (a) human relations training, (b) group processes, (c) preparation for occupational experience, (d) directed occupational experiences, (e) lectures, (f) seminars, and (g) materials development. Outcomes included increased self-insight, development of awareness of the importance of their interpersonal relationships with students, and better mutual understanding of distributive education and guidance activities.

Bluhm developed a product research and training manual for the Alexandria Area Vocational Technical School. A set of instruction sheets was developed to explain to a student how he can develop a manual to familiarize himself with necessary facts about the product.

Bluhm also developed a set of instruction sheets for a one quarter course in retail management and principles at the Alexandria Area Vocational Technical School. The purpose was to provide an opportunity for students to "start their own business" from the conceptual to the operational stage of development.

A set of management problems for distributive education students was developed by Warner (1968). This was constructed to help instruct high school distributive education students in the techniques of decision making on a management level. With these problems, the students followed a step by step procedure in determining alternative solutions to management problems.

Votca (1969) developed case studies for use in a distributive education class on the basis of responses of these groups; (a) distributive coordinators, (b) American Institute of Men's and Boy's Wear, Inc., and (c) Menswear Retailers of America. Case problems related to selling techniques of retail menswear salesmen were written. After using these case problems to teach a class, recommendations were made that additional case problems be written to teach empathy, coordinated selling, the five steps of selling, decision making and creativity.

Wenschlag (1970), in a report to the Dean of Education, University of Minnesota, listed twenty-one general learning objectives reflecting the dimensions and problems of adjusting to the world of work. These provided the actual framework for specific enabling objectives. Nine objectives are listed under the general objective of developing the ability to learn, adjust and change in his chosen occupation. These nine objectives introduced a job learning systems concept.

Lundell (1968) developed a systematic method of storing and presenting information about distributive education in Minnesota. The data bank, utilizing the COBOL Computer System, was used to store and obtain computer output of information in understandable English. The data bank contains thirty-two areas of information for all distributive education in Minnesota by school totals and state totals. Information can be added to the data bank each year.

Ludlow (1969) analyzed tasks performed by thirty-seven management trainees in Minneapolis and St. Paul department stores. His results indicated management trainees spend an equal amount of on-the-job time among three major activities; (a) selling, (b) training and merchandising, and (c) communication with customers or supervisors. Fifteen percent of their training time was spent in formal education activities.

Sheeks (1968) conducted an analysis of home furnishings sales occupations in the Minneapolis - St. Paul metropolitan area to determine both the need for and knowledge and skill of home furnishings sales persons. Seven major findings and twenty-four minor findings were recorded. Sales experience was listed as the most critical factor in selecting home furnishings sales persons.

Votca (1968) investigated the problem of coordinated selling in the Retail Menswear Business by contacting several national retail menswear associations. The author concluded that selling by menswear retailers lacks consumer orientation and that the retail menswear business needs more sophisticated, coordinated selling targeted to the objective of more consumer orientation.

Kobe (1968) tried to determine to what extent job adjustment problems led to individuals being either discharged or considered a marginal worker; promoted to positions of higher responsibilities; or considered average employees. Forty-six employers who had machine shop graduates of the Mankato Area Vocational School responded to a questionnaire. Results indicated attitudes toward work as being the major reason for discharging or promoting machine shop employees. Attitude toward work and job knowledge and skill were the two most important reasons employers rated employees as "average" workers. Interpersonal relationships was also considered important for successful machine shop workers.

Crose (1969) compared the relevancy of the program offerings at Anoka Senior High School with the occupational goals of the students enrolled during 1968-69. From a list of 231 possible occupations, students selected occupations which most closely matched their immediate, five year, and ten year occupational aspirations. Senior opinion regarding relevancy of the school's vocational offerings to occupational goals indicated the choice most often given was moderately related. Vocational cooperative training programs were valued as adding to the educational experiences and as broadening the scope of education. A list of twelve (12) major findings concerning occupational goals was also given.

In comparing graduates of 1966, 1967 and 1968, Lynch (1969) tried to evaluate the distributive education curriculum of Pulaski High School, Milwaukee, Wisconsin. Work experience, distributive education classroom instruction, and the personal help of the teacher-coordinator were considered the most helpful activities. The four units most highly rated were: selecting and applying for a job; personality development and good grooming; computing income tax; and discussions of on-the-job problems. Other areas which were recommended to be included to a greater depth were "Exploring occupations outside the realm of distribution", "Marketing management", and "Speech for distributive education". Of the fifty-three percent of graduates who were employed, forty-four percent were in a distributive occupation.

In an effort to prepare persons in the Business Studies Division to make rational decisions regarding program development and operation, Goodenough (1969) evaluated the Marketing Program in General College at the University of Minnesota. Information was gathered by questionnaires from graduates of 1959-61, 1968, 1969 and training supervisors of 1969 graduates. Seventy percent of the 1959-61 graduates are in marketing occupations, and forty-four percent of the 1968 graduates are in full time marketing. The graduates of 1969 felt that the topics of salesmanship, supervision, retailing, advertising and buying would be helpful. A weakness concerning adequate information about the marketing program and the role they would be playing was indicated by forty percent of the training supervisors. More work-related assignments were recommended.

Vomhof (1969) evaluated the effectiveness of the competitive events at the 1969 Leadership Conference of the Distributive Education Clubs of America and made recommendations for revising these contests. Recommendations included: 1) whenever possible, make the requirements for the state and national contests the same for each event; 2) clarify Minnesota DECA handbook; and 3) increase the educational relevance of the competitive events program.

Collard (1970) studied the factors influencing nonparticipation of distributive education coordinators in the DECA Youth Organization. The coordinators who made up the sample were from Minneapolis, St. Paul and Columbia Heights. Data from a questionnaire and interview were tabulated. Two main factors emerged as reasons for non-participation; lack of student motivation and lack of funds for the students or the coordinator. Other factors were: (a) inappropriateness for inner city schools, (b) lack of support from school administration, and (c) insufficient benefits from club activities. Recruiting students for and financial support of the program were two major recommendations.

SUMMARY AND IMPLICATIONS: The studies reviewed in the field of distributive education dealt with a wide range of problem areas. One area of research dealt with employed workers: (a) identifying factors for hiring successful employees; (b) job satisfaction and work adjustment of employed workers; (c) identifying the occupation needs of workers; and (d) determining the characteristics of successful employees. Another area of investigation centered on the problems of identifying the status of and developing curriculum and instructional materials for pre-employment and preparatory distributive education programs. Many of these studies have direct implications for teachers and counselors who are concerned with assisting students to make realistic career decisions.

Most of the studies reviewed were conducted by individuals pursuing an advanced degree at one of the state colleges in Minnesota or at the University. It, therefore, seems reasonable that most of the studies dealt with problems of student, teacher or worker behaviors.

In light of these conclusions and the list of R & D priorities established for the State, areas in which additional investigations need to be conducted are: (a) obtaining and utilizing data about students to further assist them to make realistic career decisions and assist schools to provide more relevant programs; (b) developing and/or obtaining data for making manpower projections for occupations related to distributive education; (c) developing and evaluating programs designed to facilitate career development education for disadvantaged and non-disadvantaged students at all levels of education; (d) identifying the competencies of and providing training for staff (teachers, coordinators, counselors) who must deal with problems of the disadvantaged-handicapped person.

GUIDANCE AND COUNSELING

Wilke (1970) studied the 1962, 1964 and 1966 male graduates of Blooming Prairie High School as an aid to determining industrial arts curriculum and building needs. Of the ninety-seven respondents, over seventy percent had moved from the district at the time of the study. Of the total number responding, forty-three were in industrial related occupations and only nine were in occupations related to agriculture. Recommendations by male graduates indicated support for expanded curriculum, facilities and equipment. An improved and expanded industrial arts program was generally supported by graduates.

Chambers, Dutt and Nahrs (1968) surveyed the 1964 graduates of Willmar High School to evaluate the educational experience received at this school. Vocational planning as indicated by these students was a continual process. Courses which should have been stressed more were speech, typing, foreign language and mathematics. Dramatics and debate were two activities which needed to be emphasized more. The largest number entering college in 1964 were attending the local junior college. Prime considerations in choice of college seemed to be location and costs.

Rowe (1969), in the Lakeville school district, gathered information from the graduates of 1955, 1960, and 1965 to aid secondary students in planning their educational programs and in making career decisions. Less than half of each graduating class attended college. The unemployment rate for each of the classes was less than one percent. Courses listed as being most valuable on the job were usually mathematics, typing, English and bookkeeping. Variables correlating significantly with occupational level in descending order of importance were: (a) amount of time spent in college; (b) high school GPA; (c) differential aptitude non verbal score; (d) class rank; (e) Minnesota Scholastic Aptitude Test scores; and (f) Iowa Test in Educational Development standard score gain.

In order to diagnose student needs for the future, Itman (1968) conducted a follow-up study of the class of 1967 at Highland Park Senior High School. Seventy-eight percent of the students continued their education into college, ten percent went to vocational training and twelve percent terminated their education. It appeared that the curriculum was mainly geared for the large group of college bound students without wholly neglecting the other groups. For example, the on-the-job training, manual arts and business education classes were geared for vocational or terminal education. Group guidance was a recommendation made to aid students in selecting a vocational objective.

Langsweirdt (1968) attempted to find the best single predictor of college success of Jordan High School graduates at Mankato State College. He also wanted some suggestions for improvements in the Jordan High School curriculum. The average GPA of a Jordan High School graduate and the average ACT percentile for a Jordan High School student was higher than the averages predicted for a freshman at Mankato State. The areas of difficulty for Jordan students at Mankato State

were the same areas that need curriculum revision at the high school level.

A follow-up study of the classes 1965-68 of Lincoln Senior High School was conducted by Reeve (1969) to determine what had happened to these students, and to obtain information useful for curriculum development. A clear conclusion was that not all of the high school curriculum was considered relevant by the students. Relevant courses reported were sciences, mathematics, drafting, speech and electronics. A recommendation was made to provide opportunities for informational experiences for parents to aid students in the process of making educational-vocational decision making. Also, continuous and forward looking revision of Lincoln Senior High School curriculum should be encouraged.

The primary purpose of a study by Stewart (1968) of the graduates of 1956 and 1961 of Richfield High School was to add objective information to the professional estimates regarding the post high school educational-vocational experiences of past graduates. Conclusions were that as ability or achievement decrease (1) a smaller proportion of graduates attend college; (2) a higher proportion of graduates attend non-college training, and (3) the proportion of those who seek no post-high school training increases. One implication of these findings suggests that educational programs and guidance services for low ability students need to be strengthened. Sex differences were found to be very significant in favor of males when considering post-high school training.

Nahre (1969) summarized the 1969 graduates of Willmar High School. Almost fifty-six percent of the graduates will be enrolled in college in the fall; nearly twenty-five percent will attend area vocational schools or private trade schools, approximately fourteen percent of the class will have full-time employment or are seeking employment at this time, six percent will enter the military, and nearly three percent are married or have plans for marriage.

Edin made four recommendations for all vocational educators in Central Minnesota after surveying the vocational education interests of tenth and twelfth grade students in the area. Over seventy-one percent of the high school students surveyed indicated that they would like to take some sort of vocational education in high school. Due to the lack of high school vocational education opportunities in the region, a suggestion was made that the three post-secondary area schools explore the possibility of bussing students into their facilities on a half day basis. If state approval could be granted and financial arrangements made, existing programs could be expanded and new ones added.

Steckling, Markwardt and Krueger examined the question of how students from various social classes respond to school counseling. Respondents were from the 1965 graduating class of a Minnesota high school. A conclusion was that the counselor's role is not equally understood by all social classes. A majority of all social classes find counselors helpful, understanding, and interested in their problems. It was apparent that students from higher social classes make more frequent use of counseling in a school setting and in a psychiatric setting than do students from lower social classes.

"Are guidance services aimed at the college bound student?" was the question investigated by Nigg, Markwardt, and Krueger. Both hypotheses; there is no significant difference between high school graduates who are planning to attend

college and high school graduates who were not planning to attend college in their utilization, and in the degree of satisfaction received from guidance services of their high school. There appeared to be a tendency for college bound students to see the counselor for educational and vocational help, whereas the non-college bound students use the counselor more often for personal help.

One major area of the guidance program in need of improvement as investigated by Neunsinger (1969) was providing junior high students with information about the role of the counselor and the guidance program. He suggested this information should stress the importance of the students to society and the availability of the counselor to discuss any personal, occupational or educational problems.

Weber (1969) sent a questionnaire to all the counselors in Blue Earth and LeSueur counties in order to assess the understanding and coordination between the counselors and the Minnesota Valley Mental Health Center. Information gathered provided a strong basis upon which counselors could work with the Minnesota Valley Mental Health Center.

Weber (1968) studied the curriculum at LeCenter High School and found that it was satisfactory. Additional courses requested by students were more foreign language and some additional vocational education courses.

In a similar study, MacDonald (1970) attempted to discover faculty and students' opinions with regard to curricular needs at Aitken High School. In general, both students and faculty felt a need for a broader vocational and terminal offering. Some adjustment in present courses was also suggested.

Benewicz, et. al., (1969) evaluated the new curriculum at Detroit Lakes High School called the "Detroit Lakes Plan". An evaluation was conducted in five phases and covered a period of three years. Statistical evidence showed that the success of the Detroit Lakes Plan can be measured by results of achievement tests, school attendance, increased participation, and improved attitudes. Many meaningful attitude changes seem to have come about as a result of the program.

Kreul (1968) evaluated a proposal for the orientation and placement of rural junior high school students who are culturally, economically, and educationally deprived in large city school systems. This program was inaugurated to ease the problem of transition from ungraded one room schools to large city schools. Five phases were incorporated into this project. Of the 221 students surveyed, over 215 felt the program was successful and had helped them adjust to life in a large school system.

Kreul (1968) also evaluated a multiphase program for assimilating variant and rural youth into an urban educational setting. Two groups of ten each formed an experimental and control group. The experimental group participated in special activities and the control group did not. The groups were assessed on their mathematics and reading ability as well as on ten behavior characteristics determined by other students, parents and counselors at the beginning and end of the year. The results of the first year of this program were not all favorable, however, many of the students in the experimental group did show some academic and behavior improvements not evidenced by the control group.

Two treatments were used with volunteer eleventh grade students from a suburban metropolitan high school to foster vocational growth. Students in treatment A made up their own goals to aid in vocational development; group goals and activities of students in treatment B were established by the experimenter. Twelve class sessions were held for each of these groups. Fleming (1970) found no significant difference between treatments. There was a slight trend in favor of the experimental group, but no conclusion could be drawn.

SUMMARY AND IMPLICATIONS: Studies were conducted in several Minnesota schools to evaluate the guidance and counseling programs and to make recommendations for improvement in general curricula. General conclusions indicated that: (a) vocational planning is a continual process; (b) not all the high school curriculum is considered relevant by all students; (c) students from high socio-economic classes make more frequent use of the counseling services than students from low socio-economic classes; and (d) there is a tendency for college bound students to seek assistance from the counselor for making occupational-educational decisions, while the non-college bound students seek the help of the counselor to solve personal problems.

While there were meaningful attitude changes brought about because of the introduction of new curricula, there still seems to be a need for strengthened educational programs and guidance services for low ability students, for better communication between the counselor and the student, and for broader vocational and terminal education offerings.

While research was profitably conducted in curriculum evaluation, future research efforts could focus more on developing content for and evaluation of the process of counseling. When comparing these areas with the list of priorities established, research could well encompass: methods for identifying the occupational-educational needs of students; obtaining data about students and then assisting them to select and succeed in relevant educational and/or occupational experiences; developing materials for and evaluating career development education programs for youth at all levels of education; obtaining and using manpower prediction data to assist students to make realistic occupational choices; identifying the competencies of and provide training for elementary school teachers and staff who are responsible for orienting students to the World of Work.

HEALTH EDUCATION

Aase (1968) investigated the reasons a selected group of students gave for choosing practical nursing as a vocation. Subjects were twenty-eight students currently enrolled in the Faribault School of Practical Nursing. Parents seemed to be the most influential factor in the students' decision to enroll in a program of practical nursing. Friends and exposure to the job ranked second and third respectively. Students chose a practical nursing program over the registered nurse program primarily for more bedside care, lower cost, and the shorter time involved for study. A recommendation was made for a similar study to be made on schools of practical nursing in urban areas.

Rosdahl (1968) tried to predict the success in practical nursing from the MSAT, GATB scores and high school rank. The criterion of success was the completion of the practical nursing program and success on the Minnesota State Board of Nursing Test examination. None of the predictor variables correlated highly enough with either of the criteria to warrant exclusive use. High school rank was the best single predictor of GPA, but had a low correlation with the criterion. The MSAT was the best single predictor of success on the state board examination but correlations were still quite low. It appeared clinical success comprised a large portion of both criteria and this would seem to account for the low predictability of these factors.

Hendrickson (1969) identified policies and practices within a vocational school which have proven most effective in defining and implementing the role of the Nurse-Director. Ten practices were identified. The Nurse-Director, while primarily a teacher, spends on the average forty-four percent of her time performing administrative and coordination activities. A recommendation was made for at least one year of successful teaching experience in an accredited or approved practical nursing program as a requisite for the nurse director position.

SUMMARY AND IMPLICATIONS: Health occupation research efforts were centered on prediction of success in practical nursing, job analysis of a Nurse-Director, and reasons for choosing to enter practical nursing. Factors for choosing this vocation were more bedside care, lower cost and shorter time for educational preparation. Criteria as the MSAT, GATB, and high school rank did not predict success as a practical nurse, since clinical success seemed to play a large part in predicting future success.

As a requisite for becoming a Nurse-Director, a recommendation was made that a nurse have at least one year of successful teaching experience in an accredited or approved practical nursing program.

While these few research efforts are important, much more research is needed in the area of health education. Predictions for manpower needs in these occupations is essential for future program planning. Student data involving selection practices, progress in the program and performance after leaving the program is necessary to devise methods for improving the curriculum. Many more studies need to be undertaken to determine the effectiveness of these programs in health occupations. Some effort may well be directed towards seeing how the handicapped-disadvantaged student can be utilized in these types of occupations.

HOME ECONOMICS EDUCATION

Conceptual styles and differences in styles of presentation of the self were among the main areas studied in home economics education at the University of Minnesota.

Fujan (1969) attempted to show that more creative persons will show a preference for learning activities that are not characterized by ambiguity and will be less dogmatic, while less creative persons will show preference for those activities that are characterized by ambiguity. Forty-two teen-aged students from the eleventh and twelfth grades of a private girls school participated in the study. Neither hypothesis was supported, however, the author felt a sample more representative of creativity and dogmatism might yield different results.

Grote investigated whether adolescents of a certain age at the highest level of conceptual development hold different beliefs about clothing selection than those at lower levels. Three separate scores on the Torrance Tests of Creative Thinking were analyzed for ninety-eight eighth grade girls. Conclusions indicated that creative thinking adolescents are influenced less by peers when selecting clothing; and in making judgments about others place relatively little value on clothing.

Fifty-one home economics teachers from the University of Minnesota were tested for concreteness - abstractness in personality structure and creative thinking ability. The Goldstein-Scheerer object sort test was used as a measure of performance and the Omnibus Personality Inventory (theoretical orientation scale) was used for non-performance on the concreteness - abstractness continuum. Abraham (1969) used Cattell's Sixteen Personality Factor Questionnaire and Torrance's Verbal Test B and Figurial Test B to measure creative thinking ability. The two hypotheses were partially supported: 1) an individual who is abstract in personality structure will show more creative thinking ability than if he is concrete; and 2) a person abstract in personality will be more creative with respect to performance in fluency, flexibility, originality and elaboration than a person who has a less abstract personality. The study indicated abstractness in personality and thinking is related to measures of creativity.

The hypothesis that non-authoritarian teachers prefer complex thinking and that complex thinking teachers more accurately perceive their students' values was tested by Alfonson (1968). Seventy-five home economics student teachers at the University of Minnesota from 1963-64 were tested for authoritarianism, simplicity-complexity in thinking, and accuracy in perception. A positive linear relationship was found between authoritarianism and simplicity-complexity in thinking. Simplicity-thinking extroverts were more accurate in judging rank order of values of students than complex thinkers. Theoretical expectations regarding cognitive complexity and accuracy in perception were not supported by this study.

Brown (1968) administered tests to persons classified as negative independent-authoritarian to determine whether this type of person is different in style of self-presentation than those persons who are at the authoritative-acquiescent stage. Conclusions indicated that negatively independent-authoritarian people faked more desirable responses, gave more extreme responses, and described themselves less negatively than acquiescent-authoritative persons.

Murphy (1969) tested the hypothesis that teacher conceptual systems were related to ways of handling information and applying sanctions. One hundred thirty-six student teachers were tested by means of twenty minute tape recordings of lessons, a Paragraph Completion Test and the Harvey, Hunt and Schroder Conceptual Systems Test. Results showed a positive relation between increasing abstractness of teachers conceptual systems and the proportion of handling information by helping students theorize and express themselves. At this point, there was an inverse relation between the increased abstractness and questioning students for precise answers and sanctioning of attainment.

Hickner (1968) related authoritarianism in personality organization of supervising teachers to values and accuracy of judgment of student teachers. Ninety-eight women supervisors and 373 student teachers participated in the study. There was evidence to support the theory that a relationship existed between values upheld and authoritarianism, and that the non-authoritative person has high theoretical and aesthetic values.

Kadue (1970) found no significant relationships between any measured dimension of cognitive simplicity-complexity of supervising teachers and the accuracy of their judgment about student teacher values. Results consistently showed a trend in the direction of greater accuracy by the cognitively complex supervising teacher.

Ellison (1970) explored the relationship of conceptual level of school children to mother's employment and educational level. A seventh grade class of social studies and a twelfth grade English class were tested with Hunt's Conceptual Level Questionnaire and Hunt's Interpersonal Flexibility Opinion Scale. Students also responded to five questions concerning their mothers. There was no statistical support for any hypothesis except conceptual level and educational level of mothers for twelfth grade boys. The author indicated high overall educational levels may have been a reason for obtaining results which were not statistically significant.

Anderberg (1968) compared the scores on the MTAI with selected scales of the Minnesota Counseling Inventory for a sample of two groups of home economics teachers who had withdrawn from the profession and those who remained in the profession. Results indicated that those who remained in the profession had higher scores on the MTAI, were more accepting, had a greater degree of happiness, tended to be more responsible, were more realistic, and were of a less depressed nature than those who had withdrawn from teaching.

Conklin (1968) found no significant difference in general academic ability, personality characteristics, family background or size of high school attended between those who persisted and received a degree and those who withdrew in good standing from the college of Agriculture, Forestry and Home Economics in the

1958-59 freshmen class. Although the persistence to graduation was only forty-three percent, no attempt was made to ascertain the reasons for students' withdrawing from the college.

In assessing a Home Economics workshop sponsored by the Minnesota Home Economics Association and the Minnesota Dietetic Association, Conklin (1968) ascertained that if a prime purpose of the workshop was recruitment, it was not effective. Providing information about home economics careers might prove to be more successful.

Halker (1968) attempted to do three things in determining what preparation prospective home economics teachers have for working with economically and educationally deprived adults at selected land grant institutions. The range and variety of experiences was narrow with little actual contact with the poor. There seemed to be a deficiency in real and vicarious experiences within liberal and general aspects of curriculum. The author proposed five characteristics of a pre-service program in this area.

Thorup (1968) conducted a study and found that predictions of future teaching success made by a master teacher correlated much higher with first year teaching ratings than college supervisors ratings. Eighty-two home economics student teachers at Long Beach and San Fernando Valley, California State Colleges in 1965-66 participated in the study. Factors identified for success were warmth and friendliness, acceptance of all races and backgrounds, willingness to help students with personal problems, ability to motivate students, and maintenance of a cooperative classroom atmosphere. More effective and direct guidance at the pre-service level was recommended in order to produce successful teachers.

Henningsgard (1969) reported that highly mobile disadvantaged students had the most negative attitudes toward school. Girls were found to have significantly more negative attitudes toward school regardless of rates of mobilities. These results were reported from data collected at Franklin Junior High School in Minneapolis.

Havel (1970) tested differences among lower class students in reactions to school at West Senior High School in Minneapolis. Three of the five hypotheses were not supported statistically, however, the hypothesis that students who consider school learning as inadequate preparation for real life situations will participate in fewer kinds of school connected activities was supported at both the .05 and .02 level of significance.

Ott (1968) tried to identify the recognized problems of young marrieds in selecting equipment and furnishings for their first household. Young marrieds in a six county area of central Minnesota were given a two part survey questionnaire concerning reasons for not having acquired the furnishings, and various problems encountered in buying equipment. There was little variation in the problems identified. Not having enough money to make the purchase was the prime reason for not acquiring furnishings.

Olson (1969) examined the structure of FHA Chapter projects concerned with the elderly, mentally ill and retarded in order to identify leadership responsibilities and provision for individual growth. Fifty-one projects with these special needs in mind had been carried out by chapters with only brief individual contact. More extensive plans, which include closer contact between FHA and special needs groups, were recommended for future activities.

Restad developed a food service course outline for Columbia Heights Senior High School. This program was directed toward students over fourteen years of age. The outline is constructed to develop attitudes and skills essential for performance at the entry level food service occupations.

SUMMARY AND IMPLICATIONS: Most of the home economics related research studies were conducted by persons seeking advanced degrees at state colleges or at the University. The major areas of concern dealt with (a) assessing the conceptual styles and development of students as it relates to learning and teaching, and (b) identifying the educational and occupational needs of disadvantaged-handicapped youth and/or adults.

Conclusions with respect to conceptual styles and development are: (a) abstractness in personality seems to be related to a person's level of creativity; (b) a positive linear relationship exists between measures of authoritarianism and the level of complexity of the thought process; and (c) persons rated differently in authoritarianism express themselves differently with respect to giving extreme responses on and/or faking responses on tests.

Other studies centered on the needs of educationally and economically deprived youth and adults. It was concluded that some of these students considered school learning irrelevant to real life and that there was a need to develop curriculums and/or youth groups in which the special needs of these groups can more adequately be served.

While these areas are certainly important to the field of home economics, other areas that might be studied further in compliance with the list of priorities set aside by the State are: (a) developing a method for securing occupational needs of individuals in the State with respect to home economics education; (b) utilizing student needs and occupational demand to facilitate program planning in both occupational and non-occupational home economics programs; (c) securing continuous data about the progress and performance of former students; (d) developing programs designed to orient students to occupations related to home economics with special emphasis on handicapped-disadvantaged youth and adults.

TRADE AND INDUSTRIAL EDUCATION

A number of studies were done in this area utilizing the survey method.

Delperdang (1969) surveyed the Minnesota area vocational technical school directors to determine what interdisciplinary programs or courses are currently included in their curriculums. A special emphasis was made for the programs for supervisory personnel in the building construction and cabinet-making industry. None of the twenty-five area vocational technical schools had any interdisciplinary programs in any area. Thirteen had interdisciplinary courses in one or more areas: nine were in business and four in trade and industry. Ten schools have more than one course, and three have only one course. A job analysis for supervisory employees and carpentry foremen was formulated and an interdisciplinary curriculum was set up for a two year program at the Faribault Area Vocational-Technical school.

Gavin (1968) evaluated the Industrial Arts Department at Mankato State College by analyzing questionnaires from 75 other institutions. On a comparative basis, Mankato State is slightly below the number of majors reported by the majority of the institutions; slightly above the median of those institutions in professorial staff; but below the median in graduate assistants, full time secretaries and student help. Staff members of the Industrial Arts Department at Mankato State indicated a need to update equipment and instruction in this department.

Lorenz (1969) surveyed 118 companies in the Addison, Illinois area to determine the industrial dimensioning practices in their drafting rooms. He concluded that most companies use their own drafting standards, utilizing a combination of the unidirectional and aligned dimensioning systems. Most companies still use fractions, and the coordinate and true positions systems are in widespread use. With just a few exceptions, the dimensioning system was unaffected by size of company or type of industry.

Johnson (1969) tried to predict final grade point average for Industrial Education majors at the University of Minnesota. The sample included thirty-four students from Fall quarter 1958 to Spring quarter 1965. He found it difficult to predict success in terms of grade point average because of restricted variance due to college admissions procedure. Grade point average at the college level was the best predictor of future success. Correlations between grades and success were not high enough for use at this time.

Haugo (1969) determined how many openings existed in Minnesota mining classifications for industrial technology graduates and projected needs for 1975-1980. The total need for industrial technology graduates may be considerably higher than his study indicated, since manufacturing represented only one-fifth of all non-agricultural industrial employment in Minnesota. Respondents from machinery firms, except electrical, indicated the greatest need for industrial technology graduates. By 1980 the openings for industrial technology graduates

in Minneapolis-St. Paul will represent about six percent of the total openings in the state.

Klucking (1968) studied junior and senior high school industrial arts electricity and electronics to identify technical knowledges necessary for teaching these courses. Results showed an overlap of technical concepts existed between the junior and senior high school programs. A junior high program begins with the basic concepts of electricity and progresses to more difficult, complex tasks. The secondary level starts with the fundamental tasks in electronics and gradually works its way towards higher levels of concepts. A recommendation was made for evaluation of teacher training electronics courses in light of this study.

A number of courses of study were developed during the three year period in trade and industrial education.

Anderson (1970) accumulated data from thirty-one colleges concerning industrial technology program curricula related to development of curricular guides for use at Mankato State College. Four distinct parts were noted in the Industrial Technology curricula: 1) non-technical courses; 2) business courses; 3) math and science courses; 4) common technical core courses; and 5) technical specialty courses. The investigator noted that recommendations of industry should play an important part in the development of Industrial Technology curricula. Management, supervision and organization, or courses relating to public relations were ranked near the top. Courses in office practices were generally ranked near the bottom.

Three schools developed courses of study: Duluth Junior High in graphic arts; Oak Grove Junior High School, Bloomington, in the Industrial Arts Program, and the Moose Lake High School in the Industrial Arts program. Each of these resulted in a document delineating the programs by phases, courses and course outlines.

Colburn developed two unipacs to introduce learners to concepts in construction of flooring. These unipacs will be the foundation for a lab learning activity that will afford an opportunity to build a scale model platform floor system.

Willman (1970) developed a "Big Brother" project for drafting in which he recommended older students serve as a big brother by helping other students. He stated that this program would help cut down on the frustration of being "all thumbs" by individual help.

LaPatka (1968) compared selected factors influencing student enrollment in area vocational-technical,mechanical drafting in Minnesota. Drafting courses in high school proved to be the most influential decision-making item in the study. Publicity by vocational schools, industry and high school counselors also was an influential factor. A continued effort needs to be made to spread information through existing channels, and to explore new avenues for communication.

Bentson (1968) studied the effectiveness of two methods of teaching engineering graphics on forty eleventh and twelfth grade students. The control group emphasized original thinking, problem solving and creativity or design. No

significant differences between the groups were found on achievement or student interest, however, student interest on the attitude scale was found to be significantly different.

The relative effectiveness of the T square, parallel rule, and drafting machine for teaching high school mechanical arts was studied by Kitto (1968) in two Minneapolis schools. The three treatments were used alternately with three groups, with the addition of exposure to sectioning, threaded fasteners, and detail drawing. There were no significant differences or interactions on any of the hypotheses tested. There was some tendency for choice of media to affect efficiency. Choice of content significantly affected drawing efficiency.

Meyer (1969) could not answer the question "Does television in itself improve the learning process in selected industrial arts areas?" in a study conducted at Mankato State. Two classes of tenth grade industrial arts were studied; one group was taught by the traditional classroom method, and the other was taught by the media of television. There were no significant differences to produce conclusive evidence in favor of either group. The students, however, were very interested in cooperating with this type of study.

Royer (1968) developed safety rating scales for selected tools and equipment in industrial arts and vocational agriculture school shops. Conclusions formulated from these scales indicated that the majority of high school shops in Minnesota are not providing the optimum in a safe working environment for students. Color coding, safety zoning, and non-skid treatment could be a move toward a more favorable change in attitudes of the students and school administrators.

Bots (1969) used an experimental and control group in designing an instrument and procedure to determine instances of proactive inhibition (overt versus covert) between Volt - Ohm - Millimeter meter reading exercise and comprehension of electronic principles. No significant difference was found between the two treatments.

Smith (1968) tested an empirical procedure for identifying technical associative conceptual structure for discriminating between flexible and inflexible radio and television repairmen. The free association methodology was used with major technical stimulus words. Fifty-one of the 171 words were significant at the .05 level. Flexible workers elicited a greater number of total responses and a greater number of different responses. Flexible workers also had a larger technical associative vocabulary. The flexible workers also organized more concepts and at a higher degree of abstraction.

In a similar study, Pratzner (1969) tested the technical associative conceptual structure with radio communications repairmen. Differences were found between flexible and inflexible persons and also between this group and Smith's sample.

Development of a procedure for assessing the technical and substantive quality of video-taped, non-contrived, classroom behaviors of junior high school students was attempted by Rehder (1969). Episodes of frequent or unusual classroom occurences, controversial incidents, and episodes containing complex

behavior and accompanying subtle motives were deemed most valuable for becoming a basic medium for an instrument that could detect different levels of perception and sensitivity for a viewer. The investigator did not, however, see video tapes as a replacement for classroom observation.

McLain (1968) compared the relative effectiveness of a video taped demonstration and a live demonstration in a seventh grade class in woodworking at Minnetonka East Junior High School. There was no significant difference between the two applied treatments and among the levels. It was concluded that a video tape demonstration was as effective as a live demonstration for students of different abilities and for large or small classes.

Farning (1969) developed a communications text that was geared specifically for technical vocational students at the post high school level. Interest and initial learning was high in the field testing of this material in an area vocational technical school.

Heitzman (1968) developed a list of competencies for teachers of occupational skills for the handicapped. He recommended developing a psychological screening device to identify potential teachers of handicapped teachers. A practicum experience was also recommended for prospective teachers, but was not to be used as a screening device except when the protection of the student within the school is in jeopardy.

Larson (1970), in comparing changes in awareness of trade and technical occupations of boys as they progress from sixth to ninth grade, concluded that ninth grade boys have an eight percent broader view of vocational opportunities than do sixth grade boys. Ninth grade boys tend to be less influenced by father's occupation, or preferences of parents and relatives, and show more interest in skilled trades than sixth grade boys. The industrial arts teacher, most often singled out, had a significant effect upon choices.

Bauer (1970) studied the functions of selected directors of Minnesota Area Vocational-Technical schools to make recommendations for pre-service training. Nine areas of preparation were recommended with seven areas of past experience training noted as helpful. Among these were supervision, teaching, work, public relations, leadership training and administrative experience.

Krech (1969) surveyed fifty-four businesses in the St. James community to get reactions about the possibility of locating a vocational program in the area. A need for repairmen of all kinds was a prime concern. A majority of people felt the most fitting class for St. James would be a course for machinists, adapted to the needs of the local industries. Continuation of a strong program in farm management was also suggested.

Larson (1968) reviewed the 1966 Secondary Urban Area Summer program for the Minneapolis Public Schools, however, evaluation of these programs was not ordered in such a way to demonstrate that students benefited from the program. Among the results were: maximized freedom of choice and freedom in performance, encouragement of students to take field trips, strong approval of the informal atmosphere, and participation and involvement of students. The most single promising summer program was the orientation camp sessions at Camp Wells, Big

Lake, Minnesota. The program did not reach, however, as many of the severely disadvantaged children as was originally hoped.

Superintendents from Mahtomedi, Mounds View, North St. Paul, Roseville, Stillwater and White Bear Lake worked together to develop position papers concerning the establishment of the Metropolitan Technical center in Washington and Ramsey Counties. A statement of philosophy and objectives, a statement of the relationships of the occupational educational program, and preliminary recommendations of programs for intermediate districts and general advisory committee and structure were developed. (Vick, Vernon, A Report from Cooperating School Districts, 1969)

Anderson (1969) proposed the PIVOT (Project Integrating Vocational Orientation and Training) Program for Stillwater High School. This project had two general objectives; meeting the needs of as many pupils as possible, and providing a curriculum to permit exploration and development of individual skills in a basically fundamental academic program.

Wilke (1969) attempted to determine the effectiveness of the present vocational department in Blooming Prairie High School. He recommended that the school district recognize existent weaknesses in the education of the non-college bound student. The results indicated forty percent of Blooming Prairie graduates begin college, but less than one half of these people complete college. Recommendations included: (a) conducting a study to determine the reason for the large number of college dropouts, and (b) developing plans to encourage students to take vocational courses in addition to the requirements for college entrance.

Gahr (1969) compared two groups of students enrolled in a nine week unit in electricity at Jackson Junior High in Osseo. One group used a standard textbook and the second group used a workbook. Neither group had any prior experiences with electricity. No significant differences were found between groups, therefore, the investigator concluded either method could be used effectively.

Nicholson (1969) compared the effectiveness of audio-visual media with the live demonstration in relation to student 1) factual learning, 2) learning perceptual motor skills, and 3) insight into a task requiring employment of both factual learning and perceptual motor skills. A test - retest situation was used in the area of photography. Although no statistically significant differences were found on initial learning, initial performance, it was reported that about twenty percent of instructional time was saved by using the audio-visual media.

Chandavinral (1968) studied the problems of inadequacy of instructors, equipment and training materials in vocational technical education in Thailand. He compared the findings to the vocational schools in the United States. Recommendations were made to establish a central technical service center and mobile laboratory unit and to improve instructional efficiency of vocational schools in the provinces. It was believed that improvement in vocational technical education instruction led to the development of skilled manpower and upgrading of living standards of Thailand.

Saratanti (1969) conducted a similar study, but with specific attention to vocational mathematics. The study was a review of the vocational education curriculum in Thailand. He stated it was important that improvement be made immediately since the need for highly skilled trained manpower was urgent.

SUMMARY AND IMPLICATIONS: A majority of the studies dealing with trade and industrial education were conducted by individuals who were pursuing an advanced degree at one of the state colleges or at the University. Most of the studies were concerned with the problem of developing and evaluating curriculum and instructional materials; other studies attempted to evaluate post-secondary vocational programs; and still others were concerned with predicting success for college and/or post-secondary students.

In most cases, the results of the studies were intended to have a direct impact on operating programs. That is, the investigator (a) developed new courses of studies; (b) identified content for developing new curriculum or (c) evaluated some instructional techniques in an attempt to improve the teacher-learner environment. Relatively few studies had implications for such long-range research problems as local and state program planning, manpower projections, or assessing the occupational-education needs of disadvantaged or handicapped youth or adults.

As a consequence, directions for future research and development activities may profitably include such areas as: (1) identify the occupational-education needs of both youth and adults and determine ways to effectively and efficiently meet these needs, (2) develop and evaluate curriculum and instructional materials for elementary and junior high students which are designed to orient them to the world of work, (3) develop and test a system for collecting information about the occupational needs of individuals and manpower demands of industry to assist in program planning at the local and state level, and (4) develop a system to evaluate and improve the efficiency and effectiveness of various kinds of occupational training programs. In addition, it seems imperative for more persons to become involved in the conduct of research and/or development activities which are designed to improve the quality of occupational programs in the state.

COMPARISONS

COMPARISONS TO 1965-67 BIBLIOGRAPHY:

This report was prepared to provide information of recent, relevant research in the area of vocational, technical and practical arts education to interested educators, administrators and researchers. Studies were summarized under eight subject matter areas of vocational education. The studies provide a great number of significant findings that should prove helpful to the educators in the area where research was conducted.

In comparing sections of the two bibliographies:

1. The 1965-67 bibliography listed determinations of need for expanded vocational offerings, and appropriate setting for this training as areas for further study and research. The 1968-70 bibliography pointed to the need for specific courses in the expanded vocational offerings and made the implication that post high school training in area vocational-technical schools was a good setting.

2. The 1965-67 bibliography indicated a need for manpower studies in all areas. The 1968-70 bibliography disclosed that some manpower research was done in the areas of business and distributive education, trade and industrial education and the health occupations.

3. The 1965-67 bibliography noted a need for curriculum development in agriculture and several other areas. The 1968-70 bibliography reported studies relating to curriculum development in distributive education, health and food, agriculture, trade and industrial and industrial and general vocational education. Developments included product research and training manuals, case studies, and textbooks.

4. The 1965-67 bibliography indicated some new teaching aids, teaching materials and teaching methods in use. The 1968-70 bibliography included investigation concerned with teaching techniques and methods in home economics, distributive education, guidance and counseling, and trade and industrial education. Variables studied included authoritarianism, dogmatism, creativity and concreteness - abstractness.

5. The 1965-67 bibliography indicated a need for more safety education for cooperative work study. The 1968-70 study shows research done in the area of safety for distributive education, trade and industrial and vocational education.

CONCLUSIONS AND IMPLICATIONS

Conclusions

One of the purposes of this annotated bibliography was to determine the status of research and development activities in the State and make recommendations with regard to future research and research related efforts. After analyzing the results of research for each of the separate vocational fields, the following conclusions seem warranted:

1. A majority of the studies included in this publication were conducted by persons who were seeking an advanced degree at one of the state colleges or at the University of Minnesota. Relatively few studies were initiated and conducted by persons who were responsible for operating either public or private vocational education programs.

2. A majority of the studies reviewed were developmental projects concerned primarily with developing and/or testing the effectiveness of curriculum-instructional materials for students within a particular school. Only a few studies were conducted for the purpose of providing new knowledge about a particular problem area or learning more about the characteristics of a particular population of students.

3. The results obtained from a majority of the studies had application to only the school and/or students employed in the study and cannot, therefore, be readily generalized to other educational environments. This was generally true for those studies which attempted to develop and evaluate various types of curriculum and instructional materials.

4. There is a lack of both research and development activities in the area of health and allied occupations. Both institutions of higher education and local education agencies should be encouraged to conduct research and/or develop curriculum and instructional materials for this new and emerging field of vocational education.

Implications

The conclusions previously discussed have pointed out various limitations concerning both the quality and quantity of vocational education research and development activities in the State. These limitations have implications for both short-range and long-range research related activities.

Some of the more obvious implications for immediate, short-range activities are to: (a) encourage educators responsible for operating vocational programs

to conduct R & D activities, (b) provide research training and consultation to persons in public and private agencies who either are or wish to engage in research activities, (c) encourage the conduct of research and development activities in all vocational fields, but especially in health and allied occupations, and (d) conduct research studies and develop curriculum and instructional materials which have immediate, generalizable application to other educational institutions.

In terms of the priorities established for Minnesota in 1969-70, future research and development activities may profitably be concerned with various aspects of the following problem areas:

a. Identify the occupational and educational needs of youth and/or adults.

b. Develop methods to predict or forecast occupational demand.

c. Develop and evaluate career development and "orientation to world of work" programs.

d. Develop and evaluate the effectiveness of curriculum and instructional materials for various types of vocational programs with special emphasis on the needs of disadvantaged and handicapped youth and adults.

e. Provide training programs for persons responsible for developing and operating vocational programs especially in the area of new and emerging occupations and career development education.

Other implications provided by this publication relate primarily to the development and operation of statewide management information systems. Although some of the studies reviewed in this publication dealt with the development of a system for collecting data from previous program graduates, none of the studies were concerned with the problem of developing statewide management information systems. It seems likely, therefore, that the responsibility for developing and operating these systems resides primarily with public or private institutions or state agencies rather than with operators of local programs.

The purpose for developing statewide management information systems is to systematically provide state and local decision makers with information which is necessary to continually improve both the quality and quantity of vocational education in the State. In terms of the priorities established, the four management information systems which would benefit the State most are:

1. Develop a system for planning and developing vocational programs which is based on identifying the occupational needs of all people in the State and matching this with current and predicted occupational demand.

2. Develop a system for securing continuous data on applicants to and graduates from vocational programs to (a) improve the guidance-selection process and (b) evaluate the effectiveness and efficiency of the vocational programs.

3. Develop a system for identifying the competencies of and predicting the need for persons who are responsible for giving leadership to various types of vocational education and/or career development education programs.

4. Develop a system for the identification, selection, and organization of curriculum content to facilitate the articulation among elementary, secondary, and post-secondary vocational and career development programs.

BIBLIOGRAPHY

AGRICULTURAL EDUCATION

Awakul, Vichitr, A Study of Extension Work in Selected Minnesota Counties to Coordinate the Resources for Development of Agricultural Programs in Thailand. University of Minnesota, St. Paul, 1968. M.A. degree.

Barber, Donald George, Development of a Four Year Course of Study for Vocational Agriculture to meet the Students' and Communities Needs. University of Minnesota, St. Paul, 1969. M.A. degree.

Carlson, Arnold John, Machine Costs and Field Labor Requirements for Specific Crops in the Wells, Minnesota Area. Library, Department of Agriculture Education, University of Minnesota, St. Paul, 1970. M.A. degree.

Copa, George Hubert, Identifying Educational System Inputs towards Production Function Application in Education. Ph.D. dissertation, Library, University of Minnesota, Minneapolis, 1970.

Chyung, Woo Hyun, A Study of Vocational Agriculture Student Teaching in the Central Region; Minnesota, North Dakota and South Dakota. Ph.D. dissertation, Library, University of Minnesota, Minneapolis, 1970.

Duarte, Primo, Contributions to a Plan for Development of Agricultural Education in Brazil. University of Minnesota, St. Paul, 1968. M.A. degree.

Fog, Peter A., Agricultural Mechanics Curriculum in Minnesota High Schools. University of Minnesota, St. Paul, 1968. M.A. degree.

Go, Samuel S., Farm Business Management Training Needs of M.I.T. Graduates Teaching Elementary Agriculture in Catabato, Phillipines. Ph.D. dissertation, Library, University of Minnesota, Minneapolis, 1970.

Hartog, Edward Claus, Development of a Method to Determine Educational Content of Farm Supply Store Management. Ph.D. dissertation, Library, University of Minnesota, Minneapolis, 1969.

Jopp, Harlan Vernon, A Study of the Prestige Values of Agricultural Occupations in the St. Cloud Area. University of Minnesota, Minneapolis, 1970. M.A. degree.

Lehto, Dennis Irving, Development and Evaluation of a System of Enterprise Cost Analysis to be used in an Instructional Farm Management Program. Colloquium, M.A. Agricultural Education, University of Minnesota, St. Paul, 1969.

Leske, Gary Warren, An Evaluation of Instructional Innovations for Adult Agricultural Education in Farm Business Management. Ph.D. dissertation, University of Minnesota, St. Paul, 1970.

Moller, Frederick H. Jr., A Study to Measure the Effectiveness of Wyoming's Adult Education in Agriculture. Colloquium, M.A. 1968, Agriculture Education, University of Minnesota, St. Paul, 1968.

Murray, John James, Farm Power, Machinery and Electricity Practices Computed by Selected Farmers in Vocational Agriculture Farm Management in Southern Minnesota. University of Minnesota, St. Paul, 1968. M.A. degree.

Norenberg, Curtis D., An Interest Inventory of Vocational Agriculture Teachers. Ph.D. dissertation, Library, University of Minnesota, Minneapolis, 1970.

Ojakangas, Sulo J., A Study of the Northeastern Minnesota Farm Management Program with Special Emphasis on the Reasons for the Heavy Dropout Rate.

Priebe, Donald Walter, An Interest Inventory of Minnesota Farmers. Ph.D. dissertation, Library, University of Minnesota, Minneapolis, 1968.

Ruf, William Adolph, Development of the Agricultural Programs at the Willmar Area Vocational Technical Institute. University of Minnesota, St. Paul, 1970. M.A. degree.

Stassen, Kenneth H., A Study of the Selection Makeup and Effectiveness of Advisory Committees to the Vocational Agriculture Program. University of Minnesota, St. Paul, 1970. M.A. degree.

Tavares, Charles Alberto, The Development of Agricultural Education at the Secondary Level in Brazil. University of Minnesota, St. Paul, 1968. M.S. degree.

Thomas, Paul F., The Relationship of the Philosophy of Education to the Teaching Tenure of Graduates of Agricultural Education at the University of Minnesota. Colloquium paper, M.A., University of Minnesota, St. Paul, 1969.

Toedter, Phillip Aaron, An Analysis of Machine Costs in Crop Production on Certain North Central Minnesota Farms using Machine Time to Allocate Machine Costs. University of Minnesota, St. Paul, 1968. M.A. degree

Virta, Allan Andrew, An Analysis of Essential Competencies needed by Workers in the Ornamental Horticulture and Greenhouse Industries. Ph.D. dissertation, Library, University of Minnesota, Minneapolis, 1968.

Vrieze, Clifford D., Duties and Responsibilities of Vocational Agriculture Technical Assistants. Plainview Community School, 1969.

Vrieze, Clifford D., The Modular Curriculum and its Schedule. Plainview Community School.

Vrieze, Clifford D., Vocational Agriculture Mechanics Instruction and Vocational Centers. Plainview Community School, 1969.

BUSINESS EDUCATION

Bisel, Franklin J., An Experimental Study of the Effects of Composition at the Machine upon Learning in Beginning Typewriting. Mankato State College, Mankato, Minnesota, 1969. M.S. degree.

Boe, Ronald L., Variations in Flexible Scheduling in Bookkeeping and Accounting in Minnesota High Schools. Mankato State College, Minnesota, 1969. M.S. degree.

Briest, Roger D., Establishing a Cooperative Office Education Program within the Academic Confines of a Minnesota Junior College. Mankato State College, Mankato, Minnesota, 1969. M.S. degree.

Eckman, Alvin H. Provisions for Individual Differences in Typewriting Instruction in Selected Minnesota High Schools. Mankato State College, Mankato, Minnesota, 1969. M.S. degree.

Falness, Roy T., An Employment Survey of Selected Business with Implications for Accounting Curriculum Revision in Minnesota Area Vocational-Technical Schools. Mankato State College, Mankato, Minnesota, 1968. M.S. degree.

Green, James W., An Investigation of the Business and Office Education Programs in Minnesota Area Vocational-Technical Schools. Mankato State College, Mankato, Minnesota, 1969. M.S. degree.

Guimont, Dale William, An Analysis of Optical Character Recognition Machines and their Impact on the Keypunch and Verifier Occupations. Mankato State College, Mankato, Minnesota, 1969. M.S. degree.

Lenius, Edsel, Relationships between Student Aptitude, Achievement and Utilization of Unscheduled Open Laboratory. Mankato State College, Mankato, Minnesota, 1969. M.S. degree.

McGill, Sister Mary Patricia, A Study of the Business Education Curriculum of the Catholic Schools of the Archdiocese of St. Paul and Minneapolis, Mankato State College, Mankato, Minnesota, 1969. M.S. degree.

Minshall, Gordon L., A Comparison of Student Achievement in Shorthand in Selected High Schools and Vocational Schools in Southern Minnesota. Mankato State College, Mankato, Minnesota, 1969. M.S. degree.

Olson, Jerry G., The Value of a Practice Set in First Year Bookkeeping. Mankato State College, Mankato, Minnesota, 1969. M.S. degree.

Pehrson, Patricia J., A Comparison of Student Achievement in Shorthand and Performance on the Turse Test and the ACT Test at Mankato State College. Mankato State College, Mankato, Minnesota, 1970. M.S. degree.

Podratz, James Carl, A Study of Enrichment Materials for the Teaching of Business Law in the Suburban Conference of Minnesota. Mankato State College, Mankato, Minnesota, 1968. M.S. degree.

Price, Ray G., and Hopkins, Charles R., New Office and Business Education Learning Systems. Contract for Research on Project NOBELS under U.S.O.E. Grant No. OE G-8-80414-3733(085), University of Minnesota (91-F), 1970, Minneapolis.

Price, Ray G., and Hopkins, Charles R., Review and Synthesis of Research in Business and Office Education, Second Edition. ERIC Clearinghouse on Vocational and Technical Education. The Center for Vocational and Technical Education, The Ohio State University, Columbus, Ohio, 1970.

Sharp, John Curtis, A Survey of the Business Work Experience of Practicing Business Education Teachers in the Public High Schools of the State of Minnesota. Mankato State College, Mankato, Minnesota, 1970. M.S. degree.

Zwach, Donald J., A Survey of Current Practices in Teaching Business Machines Courses in Selected Minnesota Schools. Mankato State College, Mankato, Minnesota, 1969. M.S. degree.

DISTRIBUTIVE EDUCATION

Bluhm, Donald L., Product Research and Training Manual. Alexandria Area Vocational-Technical School, Alexandria, Minnesota.

Bluhm, Donald L., Starting a Retail Operation. Alexandria Area Vocational-Technical School, Alexandria, Minnesota.

Carlson, James R., Interest Patterns of Distributive Oriented Personnel on the Minnesota Vocational Interest Inventory. University of Minnesota, Minneapolis, 1969. M.A. degree.

Clark, Almond A., A Survey of Distributive Occupations and Training Opportunities in the Roseville School District #623. University of Minnesota, Minneapolis, 1968. M.A. degree.

Collard, Gerald L., A Study of Factors Influencing Non-Participation of Distributive Education Coordinators in the DECA Youth Organization. University of Minnesota, Minneapolis, 1970. M.A. degree.

Crose, Robert L., Relevancy of the Program Offerings at Anoka Senior High School to the Occupational Goals of the Students Enrolled during 1968-1969. Distributive Education, University of Minnesota, Minneapolis, 1970. M.A. degree.

Goodenough, LeRoy J., An Evaluation of the Marketing Program in General College at the University of Minnesota. University of Minnesota, Minneapolis, 1969. To fulfill Specialist in distributive education requirements.

Holm, Ellsworth R., A Suggested Program for Cooperative Distributive Education using Modular Flexible Scheduling in Jefferson Senior High School, Alexandria, Minnesota. University of Minnesota, Minneapolis, 1970. M.A. degree.

Grossman, Shirley Schaker, The Role of the Distributive Education Teacher-Coordinator. University of Minnesota, Minneapolis, 1970. M.A. degree.

Klaurens, Mary K., Occupational Experience and Career Development Training for Distributive Educators and Vocational Counselors. Final report for U.S. Office of Education, Bureau of Research, Project No. 8-0273. University of Minnesota, Minneapolis, 1969.

Kobe, John Robert, Worker Characteristics of Machine Shop Workers. University of Minnesota, Minneapolis, 1968. M.A. degree.

Ludlow, J. Mark, The Analysis of Tasks Performed by Management Trainees in Minneapolis and St. Paul Department Stores. University of Minnesota, Minneapolis, 1969. M.A. degree.

Lundell, William R., Programmed Analysis of Distributive Education in Minnesota. University of Minnesota, Minneapolis, 1968. M.A. degree.

Lynch, Richard L., Distributive Education Classroom Curricula Evaluation by Program Graduates. University of Minnesota, Minneapolis, 1969. M.A. degree.

Mann, Charles W., A Study of Areas, Projects, Grade Levels, Course Titles, and Textbooks used in Pre-employment Distributive Education Classes in the State of Minnesota. University of Minnesota, Minneapolis, 1969. M.A. degree.

Sheeks, John T., An Analysis of Home Furnishings Sales Occupations in the Minneapolis-St. Paul Metropolitan Area. University of Minnesota, Minneapolis, 1968. M.A. degree.

Stolhanske, James Gordon, Relationship between Job Satisfaction and the Needs of Cooperative Education Student Trainees. University of Minnesota, Minneapolis, 1968. M.A. degree.

Vomhof, Carroll G., An Evaluative Study of the Minnesota Association of the Distributive Education Clubs of America Competitive Events Program. University of Minnesota, Minneapolis, 1969. M.A. degree.

Votca, Cornelius F., An Investigation of the Problems of Coordinated Selling in the Retail Menswear Business. St. Cloud Area Vocational-Technical School, St. Cloud, 1968.

Votca, Cornelius F., Case Problems Related to Selling Techniques of Retail Menswear Personnel. Mankato State College, Mankato, 1969. M.S. degree.

Warner, William L., Management Case Problems for Distributive Education Students. University of Minnesota, Minneapolis, 1968. M.A. degree.

Wenschlag, Roger E., Study to Identify the Occupational Adjustment Competencies to be Included in the Distributive Education Curriculum. Report to Dean Merwin on Output from Bureau of Education Research Financial Research Assistantship 1969-70. College of Education, University of Minnesota, Minneapolis, 1970.

GUIDANCE AND COUNSELING

Benewicz, Urban J., et. al., An Experiment in Curriculum. Detroit Lakes High School, Detroit Lakes, Minnesota, 1969.

Benschater, Donald, Follow-up Study of Jefferson High School Graduates. Jefferson High School, Alexandria, Minnesota, 1970.

Bradfield, Eugene L., Manpower Research and Development Program. Unpublished federal fund proposal, Bemidji State College, Bemidji, Minnesota, 1970.

Chambers, Merwin; Dutt, Herbert J.; and Nohre, Marland C., A Follow-up Survey of the Graduates of Willmar High School, Class of 1964. Willmar High School, Willmar, Minnesota, 1968.

Edin, Stanley A., Vocational Education Interests of Tenth and Twelfth Grade Students in Central Minnesota with Emphasis on Staples Vocational-Technical School. Colorado State University, Fort Collins, Colorado, 1968. M.S. degree.

Fleming, Margaret, An Experimental Study of the Effects of Two Group Counseling Approaches on the Vocational Development of Eleventh Grade Students. University of Minnesota, Minneapolis, 1970. M.A. degree.

Itman, William B., Follow-up Study of the Class of 1967. Highland Park Senior High School, St. Paul, 1968.

Kreul, William (Project Director), Final Evaluation Report, Grant No. OE-1132, A Proposal for the Orientation and Placement of Culturally, Economically, and Educationally Deprived Children of Junior High School Age. South Junior High, St. Cloud Public Schools, St. Cloud, Minnesota, 1968.

Landsweirdt, Gerald C., A Statistical Investigation and General Survey of Jordan High School Graduates from 1963-1967 who attended Mankato State College. Jordan High School, Jordan, Minnesota, 1968. M.S. degree.

MacDonald, John W., Opinions on Curricular Needs of Students at Aitken High School as Seen by Faculty and Students. Aitken High School, Aitken, Minnesota, 1970.

Neusinger, Roger M., Student Evaluation of a Small, Rural High School Guidance Program. Atwater High School, Atwater, Minnesota, 1969.

Nigg, Lloyd; Markwardt, Frederick; and Krueger, Albert, Are Guidance Services Aimed at the College Bound Student? Central Junior High School, St. Paul, Minnesota.

Nohre, Marland C., A Summary of 1969 Graduates of Willmar High School. Willmar, Minnesota, 1969.

Reeve, R. C., A Follow-up Study of the Graduates 1965-68. Lincoln Senior High School, Thief River Falls, Minnesota, 1969.

Rowe, Richard, A Former Student Follow-up Study for Three Selected Classes, 1955, 1960, and 1965. Lakeville High School, Lakeville, Minnesota, 1969.

Steckling, David; Markwardt, Frederick; and Krueger, Albert, How Students from Various Social Classes Respond to School Counseling. St. Cloud State College, St. Cloud.

Stewart, Larry R., Follow-up Study of Richfield High School Graduates, Classes 1956 and 1961. Richfield Public Schools, Richfield, Minnesota, 1968.

Weber, Paul R., A Survey on the Quality of the Curriculum of LeCenter High School. LeCenter High School, LeCenter, Minnesota, 1958.

Weber, Paul R., Questionnaire Results Pertaining to Relationships of Counselors to the Minnesota Valley Mental Health Center, a Confidential Report. LeCenter High School, LeCenter, Minnesota, 1969.

Wilke, Wallace Wayne, A Follow-up Study of 1962, 1964, and 1966 Graduates of Blooming Prairie High School as an Aid to Determining Industrial Arts Curriculum and Building Needs. Moorhead State College, Moorhead, Minnesota, 1970. M.S. degree. Minnesota Research Coordinating Unit Small Grant recipient.

HEALTH

Aase, Helen, Investigating Factors Influencing Decision to Enter Practical Nursing - a Survey of Selected Students. Health Education, Mankato State College, Mankato, 1968. M.S. degree.

Hendrickson, Janet H., The Nurse-Director in a Minnesota Area Vocational-Technical School. A Descriptive Study of the Role of the Nurse-Director of a Practical Nursing Program in a Minnesota Area Vocational Technical School. University of Minnesota, Minneapolis, 1969. M.A. degree.

Rosdahl, Caroline S. Bunker, Predicting Success in Practical Nursing from MSAT, GATB Scores, and High School Rank. University of Minnesota, Minneapolis, 1968. M.A. degree.

HOME ECONOMICS EDUCATION

Abraham, Ferial, Concreteness - Abstractness as Related to Creativity. University of Minnesota, St. Paul, 1969. M.A. degree.

Alfonson, Laurencia C., The Relationship of Authoritarian Conceptual Functioning and Elements of Simplicity - Complexity in Thinking among Student Teachers. University of Minnesota, St. Paul, 1968. M.A. degree.

Anderberg, Sally Richards, A Comparison of the Scores on the MTAI and Selected Scores of the Minnesota Counseling Inventory of a Sample of Home Economics

Teachers Who have Withdrawn From and Those Who Remain in the Profession. University of Minnesota, St. Paul, 1968. M.A. degree.

Brown, Marjorie M., Differences in Styles of Presenting the Self. Paper presented at Home Economics Teacher Education Section of American Home Economics Association. University of Minnesota. 1968.

Conklin, Barbara Basham, A Comparison of Home Economics Students Who Completed Requirements for a Bachelor of Science Degree and Those Who Withdrew in Good Standing from the College of Agriculture, Forestry and Home Economics 1958-59 Freshmen Enrollees. University of Minnesota, St. Paul, 1968. M.A. degree.

Ellison, Alice, Relation of Conceptual Level of Adolescents to Mother's Employment Level and Mother's Educational Level. University of Minnesota, St. Paul, 1970. M.A. degree. Minnesota Research Coordinating Unit Small Grant recipient.

Fujan, Sister Marie, O.S.B., Student Preferences for Ambiguous Versus Non-Ambiguous Learning Activities. University of Minnesota, St. Paul, 1969. M.A. degree.

Grote, Audrey M., Relation of Creativity in Adolescent Girls to Beliefs about Clothing Selection. University of Minnesota, St. Paul, 1969. M.A. degree.

Halker, Marilyn Ogland, The Preservice Preparation of Home Economics Teachers for Work with Adults. University of Minnesota, St. Paul, 1968. M.A. degree.

Havel, Vlasta Vadura, Differences among Lower Class Students in Reactions to School. University of Minnesota, St. Paul, 1970. M.A. degree.

Henningsgard, Helen Crews, Mobility of the Disadvantaged Child as Related to Attitude toward School. University of Minnesota, St. Paul, 1969. M.A. degree.

Hickner, Marybelle R., Authoritarianism in Personality Organization of Supervising Teachers as Related to Values and Accuracy of Judgment of Student Teachers. Ph.D. dissertation, Library, University of Minnesota, Minneapolis, 1968.

Kadue, Marjorie, Simplicity-Complexity in Thinking of Supervising Teachers as Related to Accuracy of Judgments of Student Teachers. University of Minnesota, St. Paul, 1970. M.A. degree.

Murphy, Patricia Durey, Conceptual Systems and Teaching Styles. Ph.D. dissertation, Library, University of Minnesota, Minneapolis, 1969.

Olson, Ilene Anderson, Minnesota F.H.A. Chapter Projects Concerned with the Elderly, Mentally Ill, and Retarded. University of Minnesota, St. Paul, 1969. M.A. degree.

Ott, Irene Mae, An Investigation of Selection and Financial Problems Recognized by Young Marrieds in Establishing their First Household. University

of Minnesota, St. Paul, 1968. M.A. degree.

Restad, Lou Ann., Food Service: Course Outline. Columbia Heights Senior High School, Minneapolis.

Thorup, Roine Fife Hunt, A Study of the Relationship of Certain Attitudes and Characteristics of Home Economics Student Teachers Candidates and their Subsequent Effectiveness as Secondary School Teachers. Ph.D dissertation, University of Minnesota, Minneapolis, 1968.

TRADE AND INDUSTRIAL EDUCATION

Anderson, Claire J., PIVOT (Project Interacting Vocational Orientation and Training for a Comprehensive High School). Stillwater Senior High School, Stillwater, Minnesota, 1969.

Anderson, Neil H., Course Offerings of Selected Industrial Technology Programs. Mankato State College, Mankato, 1970. M.S. degree. Minnesota Research Coordinating Unit Small Grant recipient.

Bauer, Vernon J., Directors in Minnesota Area Vocational-Technical Schools: A Descriptive Study of the Functions of Selected Directors of Minnesota Area Vocational Technical Schools and Factors to be Considered in the Preparation and Training of Directors. University of Minnesota, Minneapolis, 1970. M.A. degree.

Bentson, Oliver, An Experimental Study Comparing the Effectiveness of Two Methods of Teaching Engineering Graphics. Moorhead State College, Moorhead, 1968. M.S. degree.

Bots, John James, Proactive Inhibition: Instrumentation Design for the Study of Overt Versus Covert Activity. University of Minnesota, Minneapolis, 1969.

Carlson, Bill, et al, Countdown to Success in the 70's. Moose Lake High School, Industrial Arts Department, 1970.

Chandavinral, Artorn, Vocational Education and Skilled Manpower Development of Thailand. University of Minnesota, Minneapolis, 1968. M.A. degree.

Colburn, James R., Unipac #1 - Let's Start from the Bottom. Sibley High School, St. Paul

Colburn, James R., Unipac #2 - The Floor Below You. Industrial Arts Department, Sibley High School, St. Paul.

Delperdang, Marlene, Interdisciplinary Programs in Area Vocational-Technical Schools. Mankato State College, Mankato, 1969. M.S. degree.

Farning, Max, Communication for Technical and Trade Students. Industrial Education, University of Minnesota, Minneapolis, 1969. M.A. degree.

Gahr, Richard J., An Experimental Comparison of Standard Textbook and Workbook Methods in Individualized Instruction. University of Minnesota, Minneapolis, 1968. M.A. degree.

Gavin, Gordon, A Study of Industrial Arts at Mankato State College and Selected Colleges and Universities. Department of Industrial Arts, Mankato State College, Mankato, 1968.

Haugo, Richard R., Four Year Industrial Technology Graduates in Minnesota Manufacturing Classifications Projected to 1980. University of North Dakota, 1969. Doctorate of Education degree.

Heitzman, Darrell D., A Variation of the Competency Approach to Curriculum Construction for Preparing Teachers of Occupational Skills for the Handicapped. University of Minnesota, Minneapolis, 1968. M.A. degree.

Industrial Education Department: Course of Study: Junior High Graphic Arts. Duluth Public Schools, 1969.

Johnson, Brian B., A Study in the Prediction of Final Grade Point Averages for Industrial Education Majors at the University of Minnesota. University of Minnesota, Minneapolis, 1969. M.A. degree.

Kitto, Thomas A., An Experimental Study of the Relative Effectiveness of the T-Square, Parallel Rule, and Drafting Machine for Teaching High School Mechanical Drafting. University of Minnesota, Minneapolis, 1968. M.A. degree.

Klucking, W. Thomas, A Study to Identify Technical Knowledge Necessary for Teaching Junior and Senior High School Industrial Arts Electricity-Electronics. A Foundation Work for Technical Competency Examination Development. Industrial Education, University of Minnesota, 1968. M.A. degree.

Krech, Emery A., A Vocational Survey of Fifty-four Businesses in the St. James Community. St. James Public Schools, St. James, Minnesota, 1969.

LaPatka, George C., A Comparison of Selected Factors Influencing Student Enrollment in Area Vocational-Technical Mechanical Drafting Programs in Minnesota. Stout State University, Menominee, Wisconsin, 1968. M.A. Plan B paper.

Larson, William A., An Investigation into the Occupational Choice of Sixth and Ninth Grade Boys. University of Minnesota, Minneapolis, 1970.

Lorenz, James, A Survey of Industrial Dimensioning Practices. University of Minnesota, 1969. M.A. degree.

McLain, William P., An Experimental Comparison of the Relative Effectiveness of a Video-Taped Demonstration and a Live Demonstration. University of Minnesota, Minneapolis, 1968. M.A. degree.

Mamel, William W., The Industrial Dimensioning Practices. University of Minnesota, 1969. M.A. degree.

Meyer, Edwin C., A Research Study in the Use of the Video-Tape Recorder in Industrial Arts. Mankato State College, Mankato, 1969. M.S. degree.

Nicholson, Merle A., A Comparison of Teaching a Photographic Technique by means of Lecture-Demonstration and Motion Pictures. University of Minnesota, Minneapolis, 1969. M.A. degree.

Pratzner, Frank Charles., Testing an Empirical Procedure for Identifying Technical Associative Conceptual Structure: Discriminating between Workmen Within and Between the Occupations. Ph.D. dissertation, Library, University of Minnesota, Minneapolis, 1969.

Rehder, Curtis J., A Development of Video-Tape Episodes of Actual Classroom Incidents with Implications for Teacher Training. University of Minnesota, Minneapolis, 1969. M.A. degree.

Royer, Lewis R., The Development and Testing of Safety Rating Scales for Selected Shop Tools and Equipment. University of Minnesota, Minneapolis, 1969. M.A. degree.

Saratanti, Sati, Vocational Education Problems in Thailand with Specific Attention to Vocational Mathematics. University of Minnesota, Minneapolis, 1969. M.A. degree.

Smith, Brandon Burmell, Testing an Empirical Procedure for Identifying Technical Associative Conceptual Structure: Discriminating between Flexible and Inflexible Radio and Television Repairmen. Ph.D dissertation, Library, University of Minnesota, Minneapolis, 1968.

Vick, Vernon, A Report from the Cooperating Districts Vocational Education Committee to Aid in the Establishing of the Metropolitan Technical Center in Washington and Ramsey Counties.

Wilke, Wallace, Vocational Evaluation, Blooming Prairie High School, Blooming Prairie, Minnesota, 1968-1969.

Willman, A. C., Big Brother, Duluth Community Schools, 1970.

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Moss, J. Jr. Report of a Five-State Occupational Education Research and Development Planning Conference. ED 012 317. January 1967.

* Technical Report No. 2: Selecting and Developing a Research Problem. September 1967.

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* Moss, J. Jr. Technical Report No. 3: The Evaluation of Occupational Education Programs. September 1968.

Hahn, M. Review of Research on Creativity. ED 029 090. September 1968.

Pratzner, F. C. and L. Faurot. Summary of Studies Conducted in Minnesota, 1965-67. ED 023 895. September 1968.

McMillion, M. B. Correlates of Leadership Decision Patterns of High School Pupils. ED 025 646. 1968.

Klaurens, M. (Ed.) Developing Innovative Vocational and Technical Teacher Education Programs. ED 029 094. May 1968.

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Persons, E. and G. Copa (Eds.) Report of the Central Regional Research Conference on Agricultural Education. October 1970.

* Copa, G. Technical Report No. 4: Identifying Inputs Toward Prediction Function Application in Education. April 1971.

* Smith, B. B. and E. L. Jiloca. The Relationships of Selected Factors to the Occupational-Educational Choices of Twelfth Grade Students. April 1971.

* Wheeler, D. Technical Report No. 5: Measuring Job Relatedness. June 1971

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VT 014 082
COSTER, JOHN K., AND OTHERS
A HOLISTIC APPROACH TO EVALUATING OCCUPATIONAL EDUCATION WITH IMPLICATIONS FOR ACCREDITATION.

NORTH CAROLINA STATE UNIV., RALEIGH. CENTER FOR OCCUPATIONAL EDUCATION.
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ABSTRACT - THE HOLISTIC APPROACH TO THE IMPLEMENTATION OF OCCUPATIONAL EDUCATION PRESENTED IN THIS PAPER IS BASED ON THE PREMISES THAT OCCUPATIONAL EDUCATION: (1) IS A CONTINUOUS RATHER THAN DISCRETE PROCESS, (2) IS NOT A SEPARATE ENTITY BUT IS AN INTEGRAL FACET OF THE TOTAL EDUCATIVE PROCESS, AND (3) HAS A SIGNIFICANT INTERFACE WITH BOTH SOCIETY AT LARGE AND THE NATIONAL LABOR MARKET AND MUST BE ABLE TO PROVIDE THE INDIVIDUAL WITH THE SKILLS AND KNOWLEDGES WHICH WILL ENABLE HIM TO INTERACT EFFECTIVELY WITH BOTH. IN ORDER TO TRANSLATE NATIONAL GOALS RELATIVE TO OCCUPATIONAL EDUCATION INTO REALITY, A MODEL FOR EDUCATION FOR OCCUPATIONAL PROFICIENCY WAS DEVELOPED. THE MODEL CONSIDERS THE TOTALITY OF PREPARATION FOR EMPLOYMENT WITHIN THE SCHOOL SYSTEM AND IS BASED ON THE ASSUMPTION THAT ALL CURRICULAR EXPERIENCES ARE OR SHOULD BE RELATIVE TO PREPARATION FOR GAINFUL EMPLOYMENT. IN ADDITION TO THE PROFICIENCY MODEL, A GENERAL EDUCATIONAL SYSTEM EVALUATION MODEL WAS DEVELOPED AND PROVIDES THE CONCEPTUAL FRAMEWORK FOR THE EVALUATION AND UPGRADING OF AN EDUCATIONAL SYSTEM. AN OCCUPATIONAL EDUCATION SYSTEM CAN BE DEVELOPED, IMPLEMENTED, EVALUATED, AND UPGRADED BY DEFINING THE ELEMENTS OF THE GENERAL EVALUATION MODEL IN TERMS OF THE OCCUPATIONAL PROFICIENCY MODEL. THE IMPLICATIONS OF THIS APPROACH WITH RESPECT TO ACCREDITATION ARE DISCUSSED. (SB)

VT 014 082

A HOLISTIC APPROACH TO EVALUATING OCCUPATIONAL EDUCATION WITH IMPLICATIONS FOR ACCREDITATION

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INTRODUCTION

During the preparation of this paper, and now during its presentation, there has been one assumption which has served as a guide. That assumption is that the authors and all of the participants assembled at this meeting partake of a common mission which is to contribute to improving the quality and quantity of occupational education for all persons and groups in each community in this nation. The assumption is grounded in the firm awareness that the aim of improving occupational education is embedded deeply in the fabric of American education, and attested to by the fact that every set of educational aims formulated in this century has included the preparation for occupational proficiency as one of its major aims. Unfortunately, however, the attainment of this aim has left much to be desired. According to the National Advisory Council for Vocational Education, only one youth out of every four in secondary schools was enrolled in a program of occupational education during 1966. This was true despite the fact that only one youth out of every six will achieve a baccalaureate degree. Even granting the rapid growth of postsecondary occupational education programs, only four percent of the youths between the ages of 18 and 21 were enrolled in these programs, and occupational education programs for adults enrolled a scant three per cent of the adult population during 1966.[1] These data relate only to the quantity of occupational education. The quality of occupational education, its assessment and control, though related, are entirely separate issues.

The forces represented at this conference have within their authority the power to improve occupational education to the extent that appropriate programs may be provided for all persons who need to be prepared for employment

in occupations not requiring the baccalaureate degree. They also have the power to insure that the training received in these programs will be relevant, appropriate, and consistent with the occupational demands of society and the specific attribute structure of the individual. At the same time, the forces represented here have the obligation to the American public to ascertain that such education will be efficient in terms of costs and effective in terms of outcomes. To achieve these goals, all forces must work in harmony. We cannot tolerate the luxury of isolation and independent action. It is for that reason that the Center for Occupational Education has worked closely with the Southern Association of Colleges and Schools in the development of its program to improve the quality and quantity of occupational education for all persons in the 11 southern states served by the Association. But neither the interests of the Center nor those of the Southern Association are restricted to regional boundaries. The improvement of programs and the assessment of the effects of these programs constitute the major problem in occupational education in the entire nation today.

There is no question that if the goals of occupational education are to be attained, the resources of the accreditation agencies must be enlisted toward the attainment of these goals. One of the primary purposes of any accreditation program is the upgrading of education. If this purpose is not always stated explicitly, it does stand revealed implicitly in the by-laws of agencies such as the regional accrediting associations. Selden listed this educational upgrading among the major purposes of accreditation, referring to it as "stimulating institutional self improvement." He also noted that the other purposes of accreditation, admissions and the maintenance of academic standards, were becoming less important in relation to stimulating improvement.[2]

The responsibility for improving the quality and quantity of occupational education and the maintenance of quality control is not the sole province of the accreditation agencies. Contributions to improvement come from many areas and agencies, among them the U. S. Office of Education, the American Vocational Association, and state and local educational agencies. But the regional accreditation agencies have long been recognized for their prestige and power, and their approbation has been recognized as a hall mark of quality. If there has sometimes been a difference of opinion between the regional accrediting agencies and occupational educators over what constitutes "quality," perhaps one reason might be that the goals of occupational education have not been communicated sufficiently well.

The primary purpose of this paper is to present a holistic approach to the implementation of occupational education. Although this conference is directed primarily toward postsecondary occupational education, it is not possible to view this segment, or any segment, in isolation from other levels of education without the observer's resultant myopia obscuring the relationship to other programs. Concomitantly, occupational education has been isolated too long from general or academic education, whereas in reality the educative process is continuous and integrative. Hence, there are three premises which guide the holistic approach to occupational education presented in this paper. First, occupational education is viewed as a continuous, rather than as a discrete process. Second, occupational education is considered not as a separate entity, but as an integral facet of the total educative process. Finally, occupational education is viewed as having a significant interface with both society at large and the national labor market, generally referred to by

occupational educators as "the world of work," and it must be able to provide the individual with the skills and knowledge which will enable him to interact effectively with both.

In presenting the holistic approach, we shall examine the national goals for occupational education, present a model for education for occupational proficiency, interrelate this model with a model for program planning and evaluation, then point out the implications of the holistic approach for accreditation and program implementation.

THE MODEL FOR EDUCATION FOR OCCUPATIONAL PROFICIENCY

The Philosophical Basis for the Model

The national goals set forth by Congress in House Report 1647[3] and Senate Report 1386[4] of the 90th Congress, 2nd Session, are manifested in the Vocational Education Amendments of 1968. These national goals for vocational education, as expressed by Congress, are both explicit and implicit. The explicit goals are stated in the Declaration of Purpose of the Vocational Education Amendments of 1968:

> It is the purpose of this title to authorize Federal grants to States to assist them to maintain, extend, and improve existing programs of vocational education, to develop new programs of vocational education, and to provide part-time employment for vocational training on a full-time basis, so that persons of all ages in all communities of the State--those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, those with special educational handicaps, and those in postsecondary schools--will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training.[5]

The implicit goals may be inferred from the reports of Congress. The Senate Report stated that "The immediate motivation for the 1963 Act was the high level of unemployment among untrained and inexperienced youth. Longer term criticism alleged a failure to change occupational emphases in keeping with an increasingly sophisticated technical economy. More dimly recognized, but implicit, was the growing need for formal preparation for employment."[6]

The House Report stated "The vocational education legislation that we report today includes many features which will assist our society in that task of becoming a greater and more productive nation."[7]

It seems clear that Congress intends that opportunities for training be provided for all persons who can profit from such training for whom a college education is not appropriate, within the ability of Congress to provide the necessary funds. And, further, it seems clear that Congress intends that this training for subprofessional occupations shall be at a level of quality equivalent to that offered in schools for students who are proceeding towards college. The goals of vocational education which relate to adequate and appropriate preparation for employment are closely related to the national goals of alleviating poverty, minimizing unemployment, maximizing the productive contribution of each member to society, and maintaining a healthy dynamic economy. The implicit goals, themselves, may be stated in terms of a debt. That is, vocational education owes to each person who is capable of participating in the economic productivity of the nation, an opportunity to obtain the necessary skills and knowledge enabling him to enter into and progress in a career based on the occupational demands of society and the attribute system of the individual.

These explicit goals and implicit goals should be recognized for what they are, not simply abstract notions, but rather a mandate from society, expressed through the medium of national legislation, which is intended to guide our direction. These goals established a national priority which all of us in occupational education should recognize and keep firmly in mind.

The goals of contemporary programs of occupational education are the product of a series of developments. The process of this development

began in this decade with the report of the Panel of Consultants on Vocational Education,[8] subsequently manifested in the Vocational Education Act of 1963, reexamined by the Advisory Council on Vocational Education,[9] subsequently redefined in the House and Senate Reports, and remanifested in the Vocational Education Amendments of 1968.

A Model for Education for Occupational Proficiency

In order to examine occupational education in relation to national goals, we have developed a model for education for occupational proficiency. This model has been designed to serve as an initial step in translating national goals relative to occupational education into reality. The model is presented as a preliminary report. Refinement is required prior to its implementation. Not only is work required for the implementation for the model, but also work is required in order to determine the strategies through which the model may be introduced into local educational agencies.

The generic basis of the model is the concerns expressed by Congress for fuller and more complete attention to the needs, interests, and abilities of the individual in the development and implementation of expanded programs of occupational education. The model goes beyond that which has traditionally been considered vocational and technical education, although vocational and technical education as it has been operated in the public school system is an essential element of the model. The model considers the totality of preparation for employment within the school system. It is termed "a model for education for occupational

proficiency" in that it is based on the assumption that most if not all education, that is, most if not all curricular experiences provided under the direction of the school, are or should be relevant to preparation for gainful employment. Where the individual receives specific education for employment may be a function of time and place. It may occur in the secondary schools, in the postsecondary schools, in colleges and universities, or in adult classes. The model does not deny that much preparation for occupational proficiency is provided outside the school system; however, this model is restricted to the school system.

The model is depicted schematically in Figure 1. Figure 1 essentially consists of two systems--the school system and the occupational structure or work system. The occupational structure system overlaps the school system to denote that persons may be in school and working simultaneously. The input into the model is the individual, and he enters the model concomitant with his entrance into the school system. The model shows that the entrant is conditioned by the social familial value system which provides his background and the basis of the individual attributes which must be modified through the school system.

The school system is subdivided into four levels. The lower grades are analogous to elementary school, the middle grades are analogous to junior high school, and the upper grades which are analogous to senior high school. The higher, postsecondary, and adult education are beyond or external to the three lower levels. The broken lines which separate each of the levels are intended to denote a high degree of flexibility and articulation between and among the several levels of the school system. No level is considered terminal.

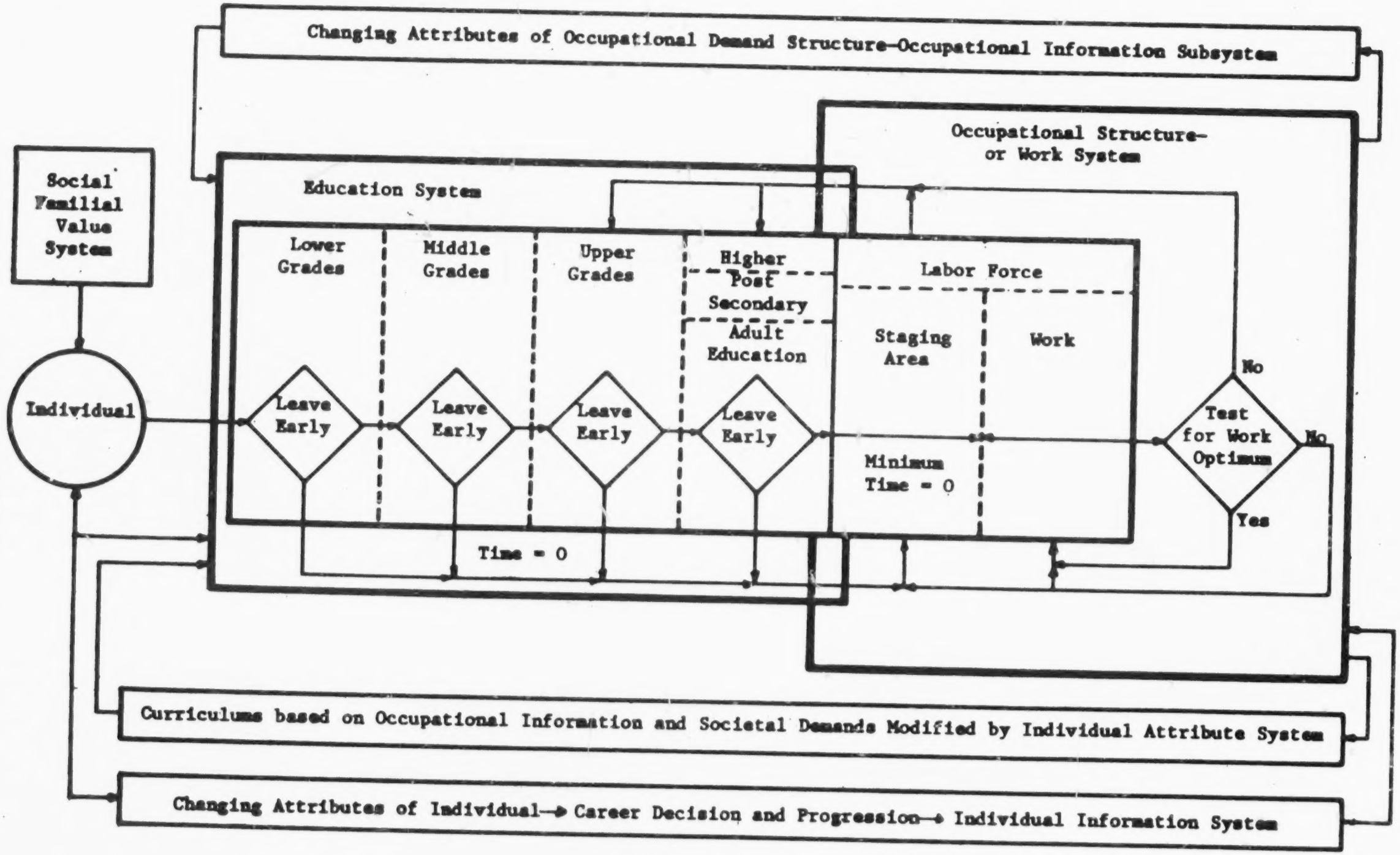


FIGURE 1

A MODEL FOR EDUCATION FOR OCCUPATIONAL PROFICIENCY

To function effectively, the school system must retain the individual to that point in time at which he can leave the school system and enter the employment with maximum benefit to himself and the highest possible degree of productivity to the social and economic structure of society. Within the occupational structure or work system the block labeled "labor force" represents the number of persons available for employment at any given point in time. The labor force may be thought of as a staging area into which the product of the school system is placed prior to obtaining employment in the world of work, as well as the component of the population that is working. The individual who completes the system, including higher education or postsecondary schools, enters the labor force upon the completion of his formal education. Decision points are placed on the lower base line of the school system to denote that the individual may decide to leave the system prior to completion of a public school education program. Once the individual decides to leave the system, he or she immediately enters in the labor force, except in special conditions such as illness, induction into armed forces, or, in the case of girls, pregnancy. Technically, the model does not distinguish among individuals who leave the school system at the completion of high school or who enroll and drop out of a higher education or postsecondary program, and individuals who leave school prior to completion of high school.

The model is highly individualistic, and some students who have had access to high quality vocational training in the upper grades may have the necessary skills for entrance into the labor force or into an

apprentice program. Some individuals may terminate their educational program before completing higher education or postsecondary school programs and have adequate skill development for entry into employment. Other individuals may have completed high school, enrolled in higher education, left higher education before completion, and entered the labor force without having developed skills which will enable them to enter into employment at a level commensurate with their attribute systems. Youths who leave school prior to acquiring salable skills enter the labor force without marketable skills with a disadvantage both to themselves and to the social and economic structure of society. One of the fundamental problems that confronts planners in occupational education is that of restructuring the school system to maximize the holding power of the school in order to ensure that each individual leave school with a salable skills.

Let us now examine more closely the occupational structure or work system of the model for education for occupational proficiency. Two essential elements are provided in the system. One relates to the mission of the total system to provide each individual with the opportunity for employment at a level of optimum advantage to himself and to society, in light of the attribute system of the individual. The second relates to the continuous process by which the individual may be recycled from the labor force to the school system so that he can receive training essential for employment at the optimum level of his capacity. To function effectively, therefore, the system must provide for the possibility and opportunity for individuals to leave the school system, enter the labor force, and reenter the school system on either a full-time or part-time basis.

We have indicated through our flow lines that the reentry may be either at the upper grades or at the postsecondary or adult programs. Again, the principles to be applied are that no educational program is terminal nor is any decision to leave the system irrevocable.

We have introduced into this model a somewhat complicated decision box which suggests that under ideal and optimum conditions, consistent with practice and the changing attributes of the individual and the changing attributes of the occupational demand system, the individual may consciously or subconsciously test his employment for its quality of optimality. If the individual decides at any point in time that he is functioning at an optimum level of satisfaction to himself then this decision is denoted by "yes" and is reflected in the flow line back to work. The individual, hence, has questioned his status, decided it is satisfactory, and continued in his present place of employment. If the answer is "no," that is, the individual is not working at optimum level of performance or satisfaction, then he has a number of alternatives. He may continue at his job, even though it is not optimum, he may obtain a different job, or he may decide to leave work entirely and immediately recycle himself into the school system. Another alternative is to continue in work but to reenter the school system on a part-time basis to get additional training which may lead to reentrance into the labor market, or to recycling through the optimum decision block. All of these alternatives are connoted by the "no" routes from the decision block.

The model for education for occupational proficiency makes explicit three elements which are essential to optimizing employment. These elements

are set into the model to encompass both the school system and the occupational structure or work system. The first is the changing attributes of the individual, leading to career decision and progression, and manifested as the individual information system. This element is shown as an input into both the school and the work systems to denote that attributes are constantly modified, decisions are made at diverse points in time, and that the individual is acting on his own in relation to the decision points to continue education, enter into employment, or recycle through the school system. This element is the point of primary concern of the occupational counseling and guidance subsystem in the school which must function effectively if the goal of optimum employment is to be realized.

The second element is labeled "curriculums based on occupational information and societal demands modified by the individual attribute system." This element is embedded into the school system, but derives its content from the occupational structure. The flow diagram, therefore, illustrates this element as emerging from the occupational structure and acting as an input into the school system. Curricular experiences are considered modular, and are constructed to facilitate the attainment of specific behavioral objectives at any given point in time in light of the individuals goal system and consistent with his attributes and the occupational demands of society. If we hold the position that the dichotomy between general or academic programs and vocational, technical, or occupational education programs must be obliterated then our basic concern is that the curricular experiences are appropriate in terms of eventually

maximizing or optimizing the potential for employment of the individual and that they must provide for the desired combination of basic skills, scientific and technical training, development of attitudes and habits, provisions for decision making, and prerequisites for occupational preparation in higher and postsecondary institutions. The construction of curricular modules and the introduction of these modules into the school system are the responsibility of curriculum developers in occupational education.

But this responsibility is assigned to occupational education because of the expertise required for effective development of these modules and not to connote a dichotomy between the educational objectives related to preparing persons for employment and other educational objectives. Divisiveness in the school system is a luxury which cannot be tolerated if the national goals outlined earlier in this paper are to be realized.

The third element in the model is the changing attributes of occupational demand structure which includes the occupational information subsystem. This element is derived from the occupational structure and work system and implemented by the school system. Specifically, it routes the dynamic characteristics of the world of work and the constant changes that are taking place in the structure of occupations directly into the school system. In terms of the curriculum problem, the changing attributes of occupational demand structure dictate that new curriculums must constantly be developed and inserted into the school system if the school system is to be an effective agent in preparation of individuals for the contemporary world of work.

The model with its accompanying philosophical framework which has just been presented may provide a structure for discussing occupational education. We admit that the model is presently incomplete; however, it does provide a structure from which more sophisticated models may be developed and a vehicle for discussing the nature of the evaluation processes that might be applied to occupational education. (For a more detailed treatment of the occupational proficiency model refer to "The Curriculum Problem and National Goals," Coster, Morgan and Dane, 1969.)

The next section of this paper will present a generalized model of educational evaluation, and describe the interface between the occupational proficiency model and the evaluation model.

A GENERAL EDUCATIONAL SYSTEM EVALUATION MODEL

Light and Smith[10] have credited current evaluation methods with possessing far greater power in detecting failure than inspiring success. The literature is replete with examples of programs that have failed (e.g., Jensen, Coleman, Westinghouse.[11]) It is our contention that while many programs may have failed in some absolute sense, current evaluation models have also failed since only a few cases have been cited which indicate that programs have been changed for the better as a result of the evaluation process. The current view of evaluation assumes a static model in which some external source monitors a system at discrete time periods (usually after the program is completed) and imposes arbitrary criteria in order to determine if a program is successful, based on mean scores of the various functional subsystems. The current approaches to evaluation may be described as being product oriented; stressing what is produced rather than how it is produced. This approach is not suited for program development and improvement.[12]

Evaluation practices of regional accrediting agencies, however, are dynamic. The regional associations have long been concerned with upgrading education programs, and they have employed a feedback system to inform participating agencies about the strengths and weakness of their enterprizes as well as recommending alternatives for improvement. This dynamic approach can lead to program improvement as well as provide information that can be used by program developers to increase their probabilities of success. However, there are weaknesses in the evaluation approach of the regional associations. Some of these weaknesses are: (1) relationships between process and product

are assumed to exist despite little empirical evidence that such relationships do exist; (2) process evaluation is stressed to the virtual exclusion of product evaluation; and (3) no external criterion are applied to determine the relative performance of educational systems. These weaknesses do not preclude the regional associations from upgrading an educational system; but only limit confidence in the utility of the evaluations due to the subjective approach.

The model to be presented can be viewed as a combination of the two approaches to educational evaluation. The model will have the objective monitoring properties of the current evaluation approaches, as well as the dynamic properties of the regional association approach.

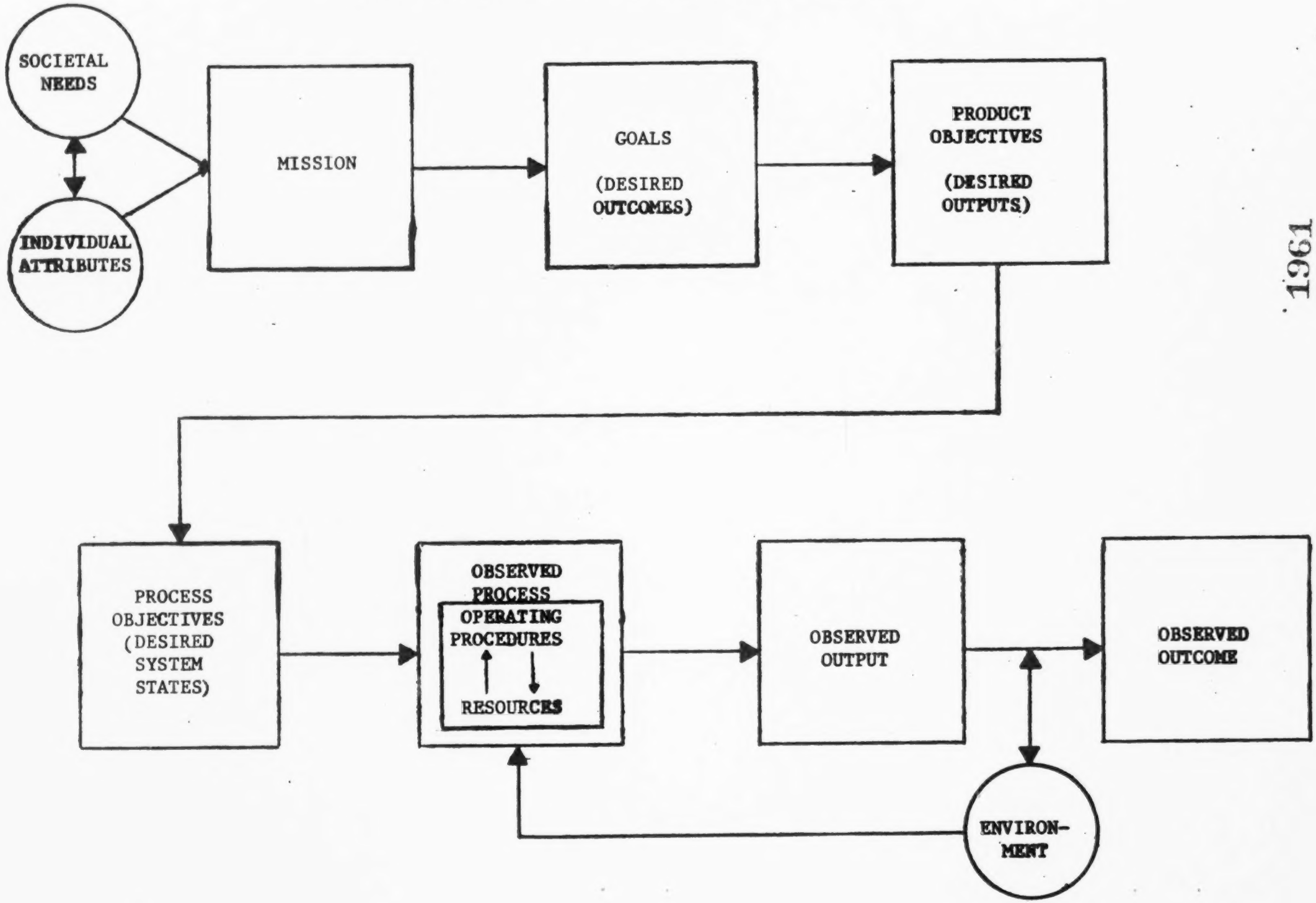
The Model for Educational Planning and Evaluation

Let us turn now to consideration of a basic structural model for educational planning and evaluation which will be useful not only to accrediting agencies, but also to education administrators as well. The model is shown in Figure 2. The first element in the model is the attribute system of the individual, his needs, interests and abilities. The second element is the needs of society. From these twin sources, mission statements can be formulated which specify the ultimate purpose of the educational system. In American public education mission statements based on individual attributes and societal needs have often been legislatively formulated.

The mission statement defines the functional nature of the education system and any change in the statement requires that a new system be developed, or changes be made in the old system. For any system, the mission statement is assumed to be fixed at any point in time, even though it may change at some future time.

FIGURE 2

STATIC STRUCTURAL MODEL OF EDUCATIONAL EVALUATION



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Given a mission statement, specific goals may be formulated which are a "best estimate" of the methods by which the mission may be accomplished. Given these goals, product objectives may be formulated which are a "best estimate" of the concrete entities that are necessary in order to fulfill the goals. Given product objectives, process objectives may be defined which describe the system states that are necessary in order that concrete entities are produced. The sequence from mission to product objective can be conceptualized as moving from diffuse to specific and from abstract to concrete.

A familiar example might aid in distinguishing between the mission goals, product objectives and process objectives. Suppose a mission statement were "A man will be sent to the moon in 1970." The goals may be exhaustively defined as: a rocket capable of carrying a man must (1) lift off of the earth's surface 30 feet, (2) fly between 30 feet from the earth to the moon's surface, and (3) land on the moon's surface during 1970. Goals are arbitrarily defined in terms of estimated functional importance and in this case serially. After the goals are defined, product objectives are defined. For Goal 1, a product objective might be "a rocket engine capable of generating 50 million ft./lbs. of thrust must be developed by 1969." A process objective for the product objective might be: "a study must be conducted to examine the relative properties of liquid and solid fuel systems." In the example, it is readily apparent that each step from process to goal must be accomplished before the mission can be fulfilled. The process objectives are desired system states; the product objectives are desired outputs, and the goals are desired outcomes which result from the interaction of the outputs with the environment. The possibility should be noted that

one may fulfill all product objectives and not reach the goal, or all process objectives and not fulfill the product objective. In the case of the latter, one can simply change the process if product objectives are not met, but in the case of the former, one must examine both the output and the environment prior to deciding which corrective course one must take.

The structural elements of the model are depicted in Figure 2. They are:

(1) The value structure of a given society, including the social, economic, and political structure in which educational programs are developed and implemented.

(2) The clientele and the attributes of the clientele for which programs are designed.

(3) The mission of the program, which is a manifestation of the combined mix of the value structure of society and the attributes of the individual.

(4) The goals of the program--the desired outcomes.

(5) The product objectives--the desired outputs.

(6) The process objectives--the desired system states.

(7) The observed processes--the system states.

a. The operational procedures--the method, techniques, emphases, and efforts utilized to attain the product objectives.

b. The resources--both material (including facilities, equipment and material) and human (including teaching, administrative, supervisory, service and special staff)--utilized to attain the product objectives.

(8) The observed output--defined in terms of statements in the product objective.

(9) The observed outcomes--defined in terms of the goals statement.

(10) The environment--those forces which may impinge on the outputs and processes to alter outcomes.

The static structural model may be employed at any level. It can be used to evaluate the efficiency of a single program of instruction, or a program at the local, state or national level. System efficiency may be defined in terms of the degree to which the observed outcomes, outputs and procedures are in juxtaposition with the desired outcomes, outputs and procedures. The structural model is a formalization of the current approaches to evaluation if one stresses output to the virtual exclusion of process and outcome. In this model, once set, goals, product objectives, and process objectives are fixed. This model may be used to monitor systems at discrete time intervals.

The General Educational System Evaluation Model (See Figure 3) has as its structural base the elements of the static structural model. It may be noted that the model has decision-maker inserts between the mission and goals, between the goals and product objectives and between the product objectives and the process objectives. The first decision-maker is the policy-maker, who is usually at the highest level on an administrative chart. He translates the mission into goals. The second decision-maker is the administrator, usually at a lower level of management. He translates the goals into product objectives. The final decision-maker is the implementor who translates the product objectives into process objectives. He is usually at an even lower level of management. Feedback loops from the output process

FIGURE 3

A GENERAL EDUCATIONAL SYSTEM EVALUATION MODEL

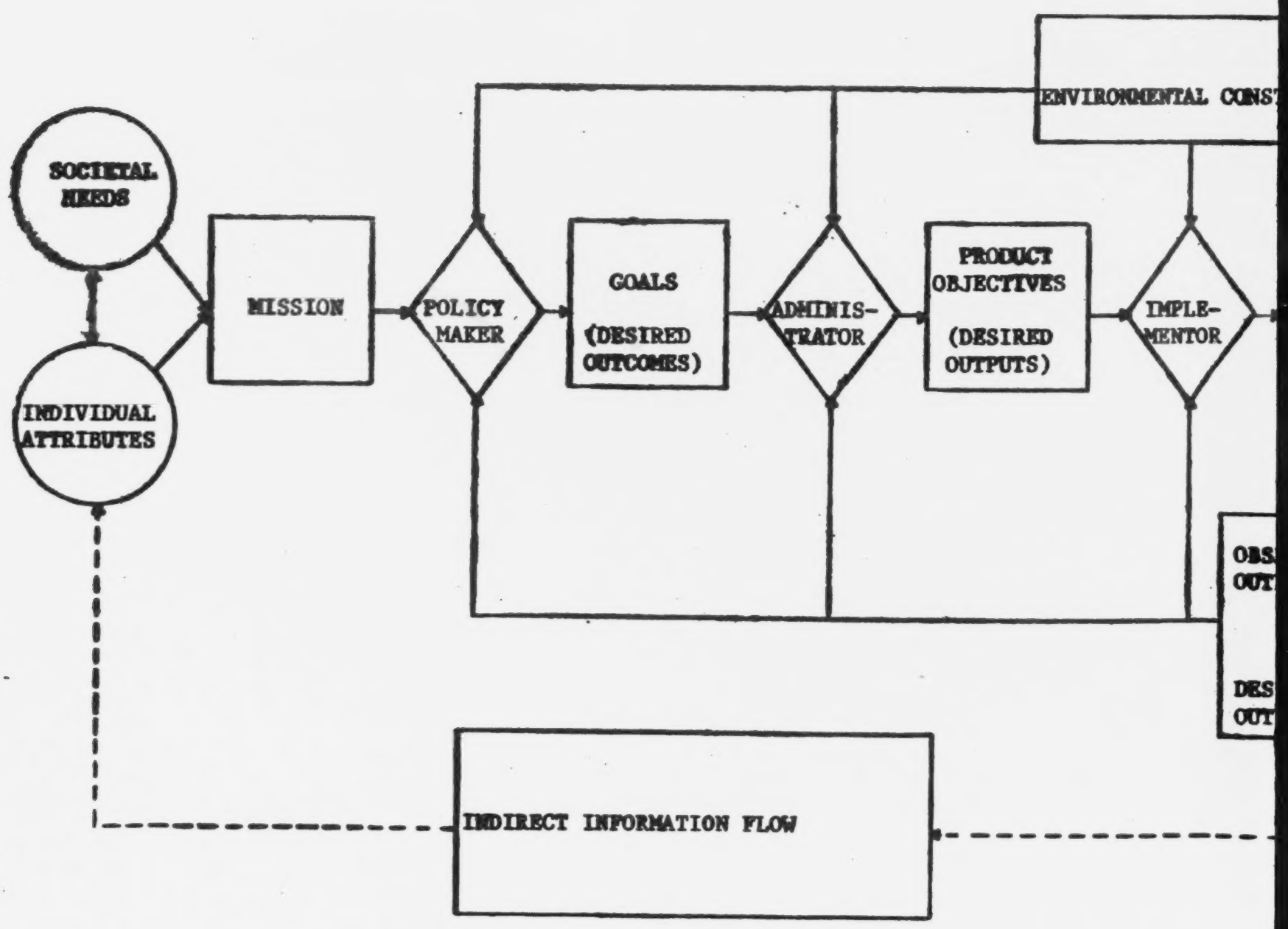
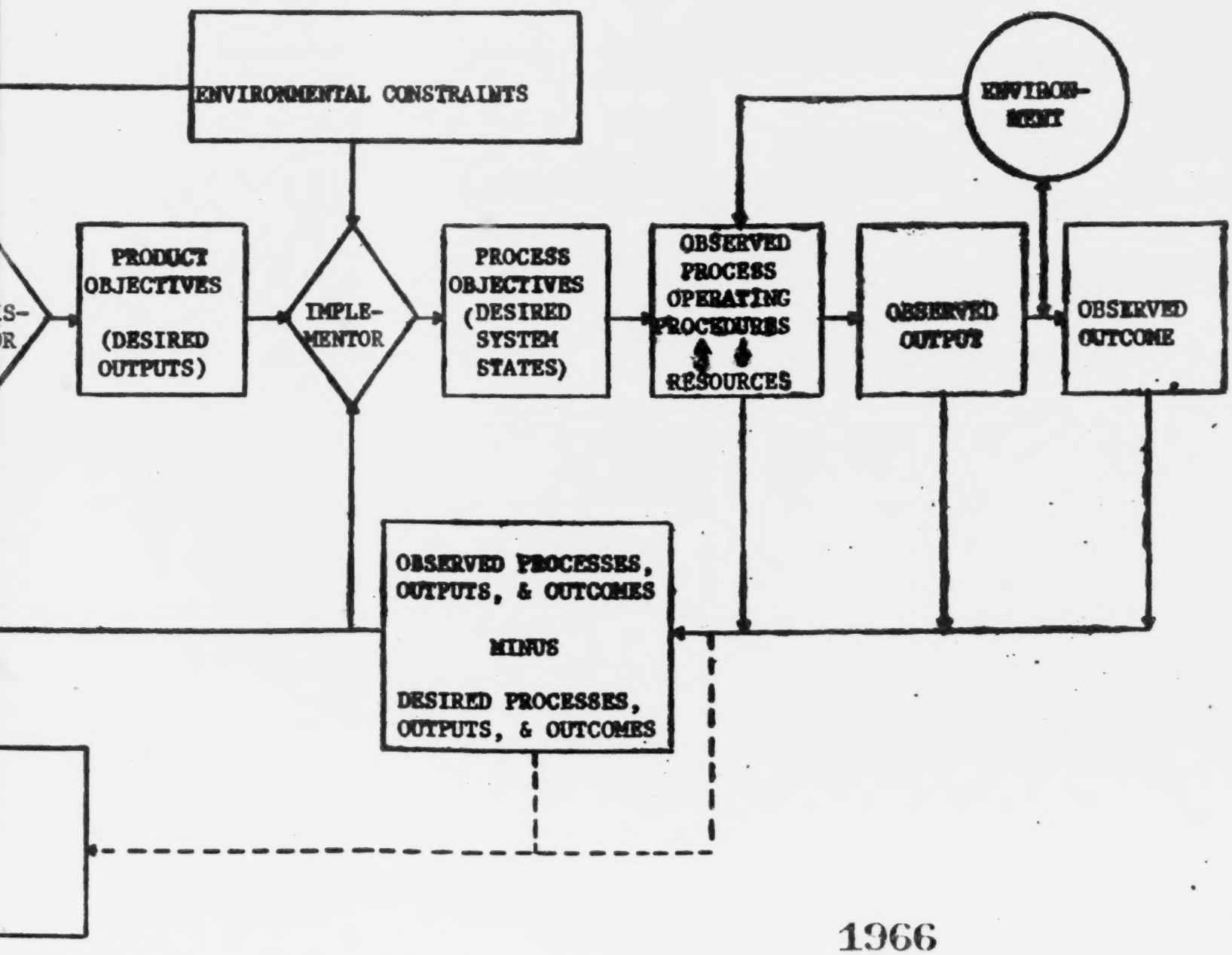


FIGURE 3

CATIONAL SYSTEM EVALUATION MODEL



and outcome evaluation have been shown to each decision-maker (in small local education agencies or schools this might be one person). After the first evaluation, the policy maker decides in light of the evaluation data and the mission statement whether his goals are reasonable. If the goals are not reasonable, then they should be changed. After the policy-maker has adjusted the goals, the administrator must then examine his product objectives in terms of their potential for fulfilling the adjusted goals, in light of the evaluation data. If the product objectives are not reasonable they should be altered. After the administrator had adjusted the product objectives, the implementor must examine process objectives in terms of the evaluation data and product objectives. The process of examination and reexamination of goals, product objectives, and process objectives is viewed as a continuous process. Only through constant, and diligent effort can we expect to improve the quality of education in America. It must be noted once again that this general model performs the same functions as previous approaches, as well as providing for the interface of programs within any given level.

Before turning to the discussion of the interface between the models which have been presented, several comments about evaluation are in order. First, evaluation is defined as the comparison between the processes, outputs, and outcomes which are desired and those which are actually observed. Therefore, if the desired conditions and the observed conditions are equal the system, by definition, is performing optimally.

Second, to this point, only internal evaluation has been discussed. However, the system may be externally evaluated, assuming that at the point

in time the mission goals, product objectives and process objectives are fixed. Results of external evaluation should feedback to the decision-makers along with recommendations for improvement.

THE INTERFACE BETWEEN THE OCCUPATIONAL PROFICIENCY AND GENERAL EVALUATION MODELS

The occupational proficiency model provides the philosophical background and the conceptual framework for an idealized occupational education system. The general evaluation model provides the conceptual framework for the evaluation and upgrading of an educational system. Therefore, we will generally describe how this idealized system might be developed, implemented, evaluated and upgraded by defining the elements of the general evaluation model in terms of the occupational proficiency model. Since the level of the system to be evaluated will not be defined, only general classifications will be discussed.

The mission of occupational education is: to provide each individual with the opportunity for employment at a level of optimum advantage to himself and to society, in light of the attribute system of the individual. The goals of occupational education are related to work performance in the labor market. The product objectives are related to those skills and attitudes possessed by persons just prior to leaving the education system, and the process objectives are those intervening activities undertaken by the occupational education system aimed at satisfying the product objectives. The environmental constraints of the decisions-makers are present at all levels. The most common environmental constraint is funds. For the policy-maker, a major constraint is manpower availability and labor market demands. For the administrator, a major constraint is the measurement technology available to measure output. For the implementor the availability of personnel and facilities, even given enough funds, is a major constraint. Many other constraints will be present, hence the decision-makers must define the constraints under which they are working.

Once the desired properties of the system have been stated, the development of the system is temporarily complete. This phase must be reexamined on the completion of each evaluation.

The implementation of the system simply consists of operationalizing the process objectives. Of course there will be some slippage due to both random system error (e.g., unclear process objectives) and systematic system error (e.g., attitudes of personnel about process objectives, or prior experiences). One responsibility of the implementation phase is to minimize the occurrence of error. When the operation of the system begins, the implementation phase is temporarily completed.

The evaluation phase consists of gathering data in terms of the stated goals, product objectives and process objectives. Then, a comparison must be made between the desired and observed states.

Evaluation of the total system may be undertaken externally by imposing another value system on the results of the internal evaluation, by imposing criterion levels. The information then must be fed back to the policy-maker, administrator, and implementor and the upgrading-redevelopment phase begins. Adjustments are made to the goals, product objectives and process objectives in light of the data, the next higher level of control statement and environmental constraints.

This system continually cycles, environmental constraints constantly change, the system is constantly improved based on evaluation information. By comparing those systems which have been externally evaluated as good with those evaluated as bad, one can isolate properties of the good systems that differentiate them from bad systems, thereby establishing casual chains which can be used to further upgrade the system. This, of course,

assumes that comparable systems do exist.

If the holistic approach to occupational education is implemented, in conjunction with the evaluation model which we propose, we believe that the mission of occupational education can be obtained. We do not contend that this paper presents the only approach to completing the mission, but we do contend that the mission must be accomplished.

IMPLICATIONS FOR ACCREDITATION

It would be presumptuous for us to prescribe the role of accreditation agencies in their efforts to improve the quality and quantity of occupational education. By the very nature of their organizational structure and charter, these agencies define their own roles and the parameters of their operation. What we can do is to plead for an examination of the process of occupational education which includes attention to the efficacy of its product within the constraints of charter and resources. More to the point, we can plead that the accreditation agency insist that its member institutions attend to the total process of planning and evaluation.

There are, however, certain specific implications that can be drawn for accreditation based on the concepts and models presented herein which relate to the contribution of accreditation to the improvement of occupational education.

First, there is a fundamental premise in American education which is that each individual has a right to the best possible education commensurate with his specific attributes, and realistic in terms of his aspirations. This premise has a number of implications when applied to occupational education. It implies that each student should be able to pursue an educational program which will enable him to be appraised of his occupational potentials in the light of his attributes. He should have the opportunity to explore the alternatives for careers open to him. He should have the opportunity to participate in a training program which will equip him for initial entry into the career of his choice. Finally, he should

have access to additional training or re-training in order to improve his skills or prepare for a new occupation. Accreditation can improve occupational education by helping institutions to live up to this fundamental American ideal.

Second, accrediting agencies may help to improve occupational education by improving the climate (environment) for occupational education. There are two dimensions of the climate for occupational education. One dimension is external to the local school system; the other is internal. Externally, the climate is conditioned by national goals which relate to minimizing unemployment and underemployment. At another level it is influenced by state and local goals, encompassing the policies of state and local boards of education which specify the importance of preparing persons for employment and encourage school systems to develop comprehensive occupational education programs. Finally, there is a climate of community opinion and attitude toward the significance of preparing people for occupational proficiency. This includes the combination of social, economic, and political factors which impinge directly and indirectly upon the development and implementation of adequate curricular offerings leading to the preparation for employment.

Internally, the climate relates to the status of occupational education programs in the school system. This includes insuring that the total curriculum is work-related and work-oriented, insuring that adequate options and alternatives are provided in the curriculum, and insuring that there is a realistic guidance program available which is coordinated with the instructional program on one hand, and the abilities and expectations of individuals on the other.

Third, this paper has presented the process of planning and evaluation as a continuous, dynamic process. This process includes the establishment of goals, the specification of product and process objectives, the installation of the process, and the observance of output and outcomes in relation to objectives and goals, respectively. If the process is realistic, then the objectives will be based on contemporary manpower requirements and future projections as well as on the occupational needs of the individuals in the system. If the system is effective, then the output will approximate the objectives, and the outcomes will approximate the goals. Outcomes, by definition, are the result of the interaction of the output with the environment, and this interaction may militate against the effectiveness of the total program. Thus, goals, objectives, and process may need to be adjusted constantly for maximum effectiveness. In the final analysis, the effectiveness of the program is contingent upon the employability of the product of the system. The accreditation agency has the responsibility to communicate to its membership the prerequisites for continued excellence, including the factors and conditions that distinguish between adequate and inadequate programs.

Constraints of time and resources may not permit a detailed examination of each institution's planning and evaluation process. For this reason, the accreditation agency may be thought of as having a monitoring function to insure that the process is adequate for the task. Hence, the entire planning and evaluation process should be examined during the course of accreditation, as well as the evidence that the institution is willing to accept that its goals and objectives are attained.

In the real world, environmental constraints militate against the breadth and effectiveness of programs of occupational education, thereby reducing the probability that the individual will be prepared for an appropriate and reasonable career. The environmental constraints relate broadly to the extent to which the community is willing to commit its resources to preparing its members for employment. Hence, it seems reasonable to assume that the accreditation process should examine the environmental constraints as part of the process of evaluation and accreditation.

Finally, the process of evaluation, including accreditation, must be viewed as a dynamic process, which, like the process that it evaluates is subject to constant improvement. This means that the evaluation and accreditation process should be subject to external validation against standards required for proficiency in the labor force. The model which we have presented today appears valid in the light of the national goals which exist today. As goals change, and as evaluation technology improves, we can expect changes in our evaluation strategies and changes in our approach to occupational education. Such is the nature of a dynamic world.

REFERENCES

[1] Report of the National Advisory Council for Vocational Education, Washington, D. C.: U. S. Government Printing Office, 1968.

[2] Selden, William K. Accreditation. New York: Harper and Brothers, 1960, p. 42.

[3] U. S., Congress, House, Committee on Education and Labor, Vocational Education Amendments of 1968. Washington, D. C.: U. S. Government Printing Office, 1968.

[4] U. S., Congress, Senate, Committee on Labor and Public Welfare, Vocational Education Amendments of 1968. Washington, D. C.: U. S. Government Printing Office, 1968.

[5] Vocational Education Amendments of 1968. Public Law 90-576, Part A, Sec. 101.

[6] Committee on Labor and Public Welfare, op. cit., p. 3.

[7] Committee on Education and Labor, op. cit., p. 3.

[8] Panel of Consultants on Vocational Education, Education for a Changing World of Work. (Washington, D. C.: U. S. Government Printing Office, 1963.

[9] U. S., Congress, Senate, Subcommittee on Education of the Committee on Labor and Public Welfare, Notes and Working Papers Concerning the Administration of Programs Authorized Under Vocational Education Act of 1963, Public Law 88-210 as Amended. Washington, D. C.: U. S. Government Printing Office, 1968. Parts of this report were later published as General Report of the Advisory Committee on Vocational Education. Vocational Education: The Bridge Between Man and His Work.

[10] Light, Richard J. and Smith, Paul V. "Choosing a Future: Strategies for Designing and Evaluating New Programs," Harvard Educational Review 1970, 40, 1-29.

[11] Ibid.

[12] Ibid.

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ABSTRACT - THIS BOOKLET PROVIDES INFORMATION TO HELP THE CAREER SERVICEMEN APPROACHING RETIREMENT IN PLANNING A SECOND CAREER IN CIVILIAN LIFE. HELPFUL HINTS ARE PROVIDED FOR THE JOB SEARCH AND INTERVIEWS, AND AVAILABLE ASSISTANCE FROM MILITARY AND OTHER SOURCES IS DESCRIBED. (BH)

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TARGET -- TOMORROW

SECOND CAREER PLANNING FOR MILITARY RETIREES

VT014090

TRANSITIONAL MANPOWER PROGRAMS
Office of the Assistant Secretary of Defense
Manpower and Reserve Affairs

1978

TARGET–TOMORROW

Second Career
Planning
for
Military
Retirees

TRANSITIONAL MANPOWER PROGRAMS
Office of the Assistant Secretary of Defense
Manpower and Reserve Affairs

September 1970

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1979

FOREWORD

This booklet is addressed to the career serviceman, a competent and proven individual who, as he approaches retirement from the military service, is confronted with a task he has never had to do before—organize for entry into a second career.

I am confident that those for whom this booklet has been written will address themselves to civilian life with the same qualities of self-reliance they applied to their military responsibilities; that they will use the information provided by these pages to embark upon new and rewarding careers; and that they will use the counseling and referral services available to them in clarifying and giving effect to their future efforts.

Your association with the National Government will continue beyond your retirement; its numerous Departments and Agencies, many of which are specifically mentioned in this booklet, will remain ready to assist you. Wherever you locate, you will acquire the services of State and local governments. These are also pointed out in the pages that follow.

The termination of a long and honorable military career is a starting point toward further personal satisfactions, whether they are in industry or commerce, education, or public service.

On behalf of your Government, I offer my thanks for your past service and Godspeed for your future life.

Roger T. Kelley
Assistant Secretary of Defense
Manpower and Reserve Affairs

1980

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JOB
NEGOTIATION FOR EMPLOYMENT
PREPARATION FOR JOB SEARCH
DEVELOPMENT OF CIVILIAN
EMPLOYMENT OBJECTIVES
REVIEW OF EXPERIENCE

1981

PREFACE

Each part of this booklet is designed for practical use by the military retiree. It is not expected that its entire contents will be applicable to all individuals, nor that the information it contains will completely satisfy the requirements of any one person. Each man must answer certain questions for himself, perhaps with the assistance of a professional counselor.

It is intended that this booklet provide the retiree with workable solutions to his own retirement situation and assist him in resolving the transition between military and civilian life.

In approaching second career employment, the serviceman must take four steps:

- First, *review his experience* (Section 1).
- Second, *develop his civilian employment objectives* (Section 2).
- Next, *prepare for his job search* (Sections 3 and 4).
- Finally, *negotiate for his employment* (Section 6).

Taken one at a time, and at a pace which allows for adequate reflection and information-gathering, these steps will bring the second career within reach, steadily and surely, until it can be grasped.

1982

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1983

INTRODUCTION

The year you retire, whether it is this year or the next, you will join over 60,000 other men who are entering civilian life after completing their military careers.

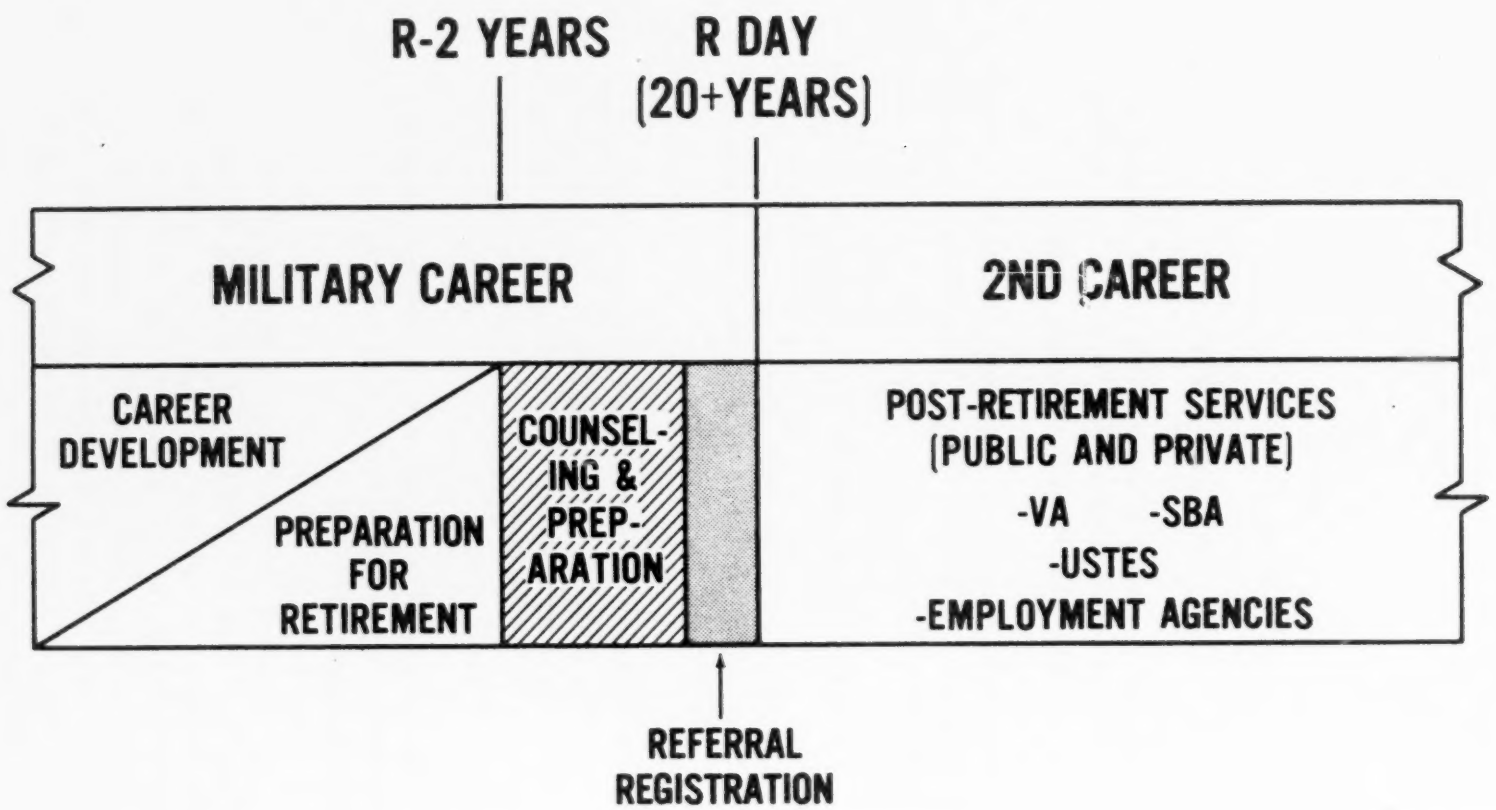
Like yourself, they will have numerous advantages, both as veterans and as military retirees. They will face the same problems you will:

- Choosing a new career.
- Finding where their talents are wanted, with adequate pay, and in a locality satisfactory to them and their families.
- Adjusting to the civilian world, such as learning the civilian job market, getting accustomed to new terms and methods of operation, and finding out how to present themselves to their best advantage in civilian life.

The purpose of this guide is to reduce such problems, and make the transition from military to civilian life as smooth as possible for you.

The transition period between being a career military man and a civilian is not the day of retirement. Retirement day—"R-Day"—is just about in the center of a period that may last as long as four years. At least half of this period is during the last two years of your military service. The other half is in your second career, following retirement, when you may still be searching for the right slot and may still need assistance.

PLANNING FOR A SECOND CAREER



Look at it this way:

R-Day minus 2+ years: You are a career military man. Your career has developed to the point where you are a senior officer or NCO and will continue until the day you retire, with added experience and perhaps with the addition of skills you have not acquired before. Meanwhile, you know, or feel, that your military career is coming to an end; so, you begin to think about what you are going to do after you leave the service and begin to prepare for it.

R-Day minus 2 years: By this time, the date of R-Day is more definite and you have started to make more definite retirement plans. Sometime in the next 2 years you will find a need for guidance, for professional counseling, and assistance in preparing for your future.

R-Day minus 6 months: You become eligible to register with the Department of Defense REFERRAL Program. By this time, you may have been counseled, refined what you want to do (and are able to do) into some definite civilian employment objectives and are ready to try a selected second career. The REFERRAL Program is designed to bring you into contact with employers. It is described briefly on page 5.

R-Day: Your day of retirement, after 20 years or more of military service. You may or may not have established exactly what you want to do, or found a specific job in a selected career, but you know how it is done and where to go for further assistance.

R-Day plus 2 years: For a while during this period you are more a military man than you are a civilian. After 20 or more years in uniform, your total adjustment to civilian life will take more than a few months. During this time, you may change jobs, or even change careers. What you learned about career selection and jobseeking before retirement will remain useful. The services available to you as a retiree will continue to help you:

- The Veterans Administration
- The United States Training and Employment Service

- Public services (State and local government facilities)
- Private post-retirement services

Such is the normal sequence for each of the many men who retire from the Armed Forces each year.

The most important step—one you can begin now—is a candid review of your own experience. You will find such a review of greatest advantage if you do it before you leave the service and before you have made a decision on what you are going to do in civilian life. You can do much of this review yourself, but few men can do all of it by themselves. You probably will need a counselor after your first efforts at reviewing yourself. Such counselors are available to you in the service, for guidance in this task.

The Counselor

The counselor's job is to offer you his professional assistance. He is not a miracle worker. He will not be able to find you a job, but can help you find one for yourself. He will not make decisions for you but he will be able to help you see yourself more clearly than you can alone. His time is available to help you with your problems, but you can save your own time—and his time—by thinking through your problems and assets before talking with him.

Counseling within the services will include the opportunity to register with the Department of Defense REFERRAL Program mentioned above. REFERRAL is a service offered to you as a prospective retiree and is entirely voluntary.

1987

The REFERRAL Program

One of the major keys to your transition to civilian life is contained in the Department of Defense REFERRAL Program. This program is designed to assist in the employment of all military* retirees. It provides for counseling services before retirement, and voluntary registration into a computerized system that matches men and jobs on a nationwide basis.

To the individual, the REFERRAL Program means providing accurate information on a registration form that will permit computer storage and retrieval of his personal data. This information will be stored in the computer for subsequent matching with job opportunities as they are received. Employers will be notified of your qualifications and desires whenever they match the jobs offered; employers interested in you and your talents will then be able to work directly with you, for further information or an employment interview. This first step brings you into contact with a prospective employer. The rest is up to you.

To the employers, the REFERRAL Program provides a list of selected men who can fulfill the requirements of the offered jobs. Abbreviated resumes of the qualifications of these men, and information on how they can be contacted, are received by the employers. Thereafter, each employer can communicate directly with the individuals he feels most suit his requirements.

REFERRAL does not guarantee jobs—it offers job opportunities.

1988

Much of what is contained in this guide is directly applicable to the REFERRAL Program: the evaluation of his own military career that each man must make; sources of information about the job market; the techniques of business correspondence and personal resumes; and the elements of negotiating with an employer about a job position.

This guide is intended to help you plan your initial steps toward a second career and start you thinking about your long-range objectives.

The average man retiring from the services today can look forward to 20, 30, or more years of active and productive life. He cannot plan that many years ahead with the precision of a military operation. The social and physical environment, and the nature of jobs will change too rapidly to make the future certain. Individuals change and grow during such a period of time.

Many men who have never been in the Armed Forces have experienced the same change of career that you will encounter on retirement from the service. Some of these were closed out of careers which became obsolete, and forced into new careers. Some moved into new careers created by new technology. This is the world you are entering. Your plans must be flexible enough to follow opportunities as they arise.

In this guide, you will be asked to examine yourself and make some preliminary decisions on what you want from a second career.

With your cooperation, it will help you relate yourself to . . . Tomorrow.

1989

1

WHO ARE YOU ?

To see yourself as others see you, look at some of the men of your rank and seniority:

- With few exceptions they are hale and hearty. The military life is not an easy one and anyone who spends 20 years or more in it is pretty strong and sound, much more so than the average man his age in civilian life.

- Most of them are entering civilian life with an annual retirement income for the remainder of their lives.

- Every one is mature, experienced, well traveled, with established skills.

- Each has been a success in his military career, compared numerous times with men of his own age and experience and promoted or retained on active duty because his qualifications were superior to other men of his rank and experience.

- All have exercised authority over others and know the responsibilities of leadership and supervision.

These are exceptional qualifications; you are an exception if you don't possess them all.

There are many other assets that can be added to these personal qualifications: special privileges as a retired military man on bases and other facilities; medical care; an

1990

WHO
ARE
YOU
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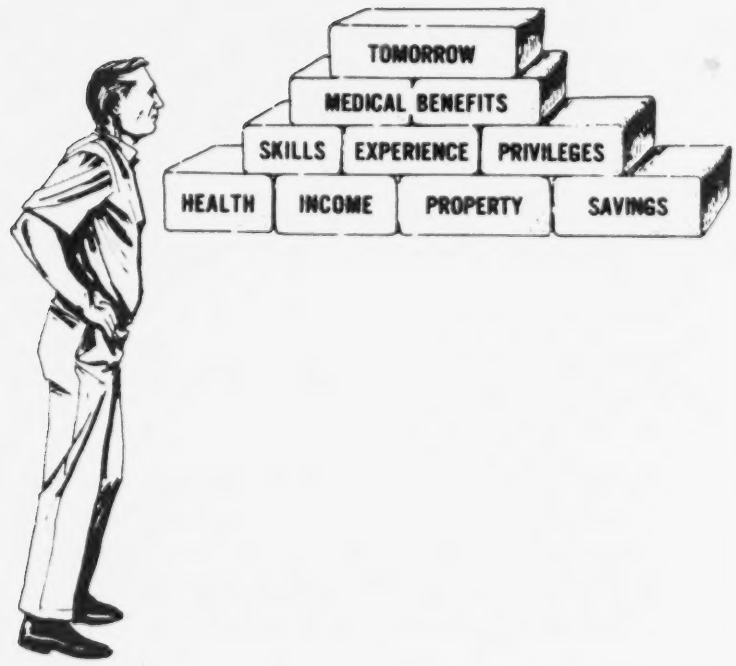
BUILD ON YOUR ASSETS



1991

established insurance program; dependents and survivor benefits; perhaps some property or substantial savings.

WHO ARE YOU ?

Your own service will give you all you need to know about your continuing military status, your civilian status, the privileges you will retain, and the benefits you have earned. Much of that information has a bearing on what is in this guide, but it will not be repeated here in any detail.

There are also some disadvantages.

You are entering a different kind of world from that you have known for many years. You will have to adapt to it in your own way.

You are used to assigned tasks and specific deadlines, clear lines of authority, and easily identifiable rank and seniority. You are used to integrity, in stating and hearing facts without much need for questioning them. Many of these things you take as a matter of course are less precise, and less obvious, in the world outside of the military.

You have probably done many things for many years that do not appear to have a direct relationship to any function outside the Armed Forces. What does a bomb disposal technician, or an intelligence officer, do in civilian life? How many jet engine mechanics, or senior infantry officers, can business or industry absorb each year?

You may even find it hard to communicate with others in speech or writing, with your vocabulary of military terminology.

You also may find that the decisions required of you in your personal life are something new and different. For a long time, what happened to you was largely dictated by your military status. What happened to your family during the same period was also a result of orders from above. Now, you will find each of these decisions largely an independent one; with your own future and that of your family, affected by your personal judgment.

1992

WHO ARE YOU ?

A LOOK IN THE MIRROR

What you need first is a sincere examination of yourself. It is essential that you *review your experience* before making any decisions such as a new career. Such a review will add to the wisdom of your eventual choice of career and serve you as a useful tool in your later search for employment and negotiations with employers.

Think over your abilities—what you do well and what you do less well than others.

Think over your skills:

Technical skills are those concerned with data or things.

Organizational skills are those concerned with planning, organizing, directing, negotiating, and representing the activities of an organization.

- Prepare a list of the things you have done during your military career. A convenient form for this is provided on page 16 following. From such a list, a counselor will be able to relate your service experience and skills to civilian vocations.

- In going back over the things you have done, think about whether they represent technical skills, or organizational skills, or both. Remember that technical skills also include such things as speaking, writing, teaching, inspecting, reviewing, and analyzing. Organizational skills include the management of funds, public utilities, and public services.

- Think about what you have done the way a civilian would: were you a supervisor, and manager, or an executive? A supervisor manages workers who are in direct contact with the means of production or the providing of services. A manager exercises control over supervisors and evaluates results. An executive is involved with long range programs, goals, and policies.

1993

- Ask yourself what practical knowledge you have obtained during your career. What do you know about materials, equipment, procedures, techniques, or processes? How much initiative, adaptability, or judgment have you had to exercise? How much work have you had to delegate, or coordinate? How much time have you spent in training other men to do things?

Try to look at your past military assignments a little differently from the way you saw them before, sifting out the abilities you displayed in each one. Examine them with further questions:

- What was the situation when you arrived and how did it change while you were there? How much did you affect that change? What job knowledge did you bring to that assignment? Were you specially trained for it, or did you have to prepare yourself for it before—or during—the assignment?

- What did you need to do the job:

  Initiative?
  Adaptability? Versatility?
  Judgment?
  Technical skills?

- What was your level of personal responsibility? What resources were you responsible for? How many men did you supervise? How did you control them? With whom did you have to work outside your unit? How did you function where coordination was complex?

- What special skills, in addition to your military specialty, did you use:

  Speaking?
  Writing?
  Teaching?
  Inspecting?
  Reviewing?

WHO
ARE
YOU
?

LOOK AT YOURSELF PRIOR TO COUNSELING

- What managerial skills did you have to use:

  Financial?

  Control or system management?

  Coordination?

  Working with both industry and government?

  Operating services, or utilities?

WHO ARE YOU ?

Try listing your many military assignments, not in chronological order, but according to what you showed by doing them. See if you can organize them so they show an analysis of your *experience*. One example of this technique is shown below; it is only a demonstration, since each man has his own background and will end up with a different breakdown of skills and abilities.

The preparation of such a record, tailored to your own background, will summarize your occupational experience. You will find that you need this information in many ways and that it will be useful to you numerous times, both in your preparation for the job search and in the search itself.

This record will also let you get extra mileage out of your time spent with a counselor. He will be able to get down to significant topics and questions much sooner if he does not have to dig out the information already shown in convenient form. What you have developed can be used by both you and your counselor toward sound decisions related to your own future.

FINANCIAL STATUS

Along with your other considerations, examine your financial status; it, too, is a part of who and what you are.

- List your assets: savings, investments, equity in property, vehicles, personal property, and insurance policies at their real worth.

WHO ARE YOU ?

- List your liabilities: bills, mortgage balances, and other unpaid obligations.

- List your total estimated income after retirement, from all sources; compare it with known recurring annual expenses.

- Project your financial status beyond military retirement, considering such factors as: Federal income tax, State income and property taxes, education plans for dependents, major investments foreseen (house, automobile replacement, boat), travel and recreation plans after retirement, and cost of living index for potential locations.

Analysis of your financial status will show certain fixed costs and some nonfixed, or flexible, costs. These are important. Keep them and modify them as you make decisions that affect your figures: selection of location, estimated starting salary in your selected career field, or low-income period during training or educational preparation.

COUNSELING

It is not always easy for a person to look at himself with complete objectivity. Neither is it easy to locate and review all the material that can be useful in comparing military assignments to civilian occupations. These are functions where you can use the help of a counselor to find the abilities you take with you into civilian life. Your service can provide such counseling; so can the Veterans Administration; so can other Government or private agencies listed on page .

Your service counselor—and the others in varying degrees—can do certain things for you:

- Use the several service manuals that describe military specialities and relate them to civilian occupation lists produced either by the services, or by the U.S. Department of Labor.

WHO ARE YOU ?

- Find out, by talking with you and reviewing your service record, the technical or organizational *skills* you have that may not show up in your own self-examination.

- Identify the *abilities* you have developed during your military career and relate them to civilian opportunities.

- Relate the *level* of your military experience to similar levels in business and industry that may be unfamiliar to you.

- Advise you on *career fields* in civilian life that best match your abilities and desires.

A counselor can assist you in these many ways, but he is neither you nor God. It would take him years to know as much about you as you already know about yourself. He is not all powerful and he is not all wise. He can help you with specialized knowledge and specialized resources, but he can help you best if you have come to grips with some of the problems and circumstances of your own retirement before ever talking with him.

There are things a counselor cannot do:

- He cannot guarantee you a job. This is something that must be done by you, with his help, but the major part of the task is yours.

- He cannot act as your secretary. The clerical work, the writing of your resume, the library research, and correspondence must come from your own resources, not his. He can guide you and advise, but the actual mechanics of your job search is your own affair.

- He is not responsible for the accuracy of information you put in your REFERRAL registration form, your resume, or other documents involving

ANALYSIS OF MAJOR MILITARY ASSIGNMENTS

General Category	Type of Activity	Most Recent Assignment	Previous Assignment	Previous Assignment
Initiative, Adaptability, Responsibility	Started New Activities			
	Handled Peak Loads and Changing Demands			
	Made Major Decisions			
Supervision and Management	Upper, Level Manager			
	Mid-level Manager			
	First-line Supervisor			
Special Skills	Speaking/ Writing/ Teaching			
	Inspection/ Review			
	Private Industry Contacts			
	Service or Utility Operations			

1999

ANALYSIS OF MAJOR MILITARY ASSIGNMENTS

General Category	Type of Activity	Most Recent Assignment	Previous Assignment	Previous Assignment
Technical Skills and Knowledge of Industrial Processes	Electronic-Electrical			
	Mechanical/ Power Equipment			
	Precision Tools			
	Scientific, Technical, Profession Skills			
	Computer/ ADP			
	Personnel/ Training			
	Health/ Medical			
	Communications			
	Transport/ Traffic Control			
	Business Management			
	Procurement Supply			

WHO ARE YOU ?

your own personal background. Accuracy is important, but it must be assumed as your own responsibility.

You will find that your counselor will try to think with you, not apart from you. His is not a paperwork job, it is working with people like yourself. He may ask questions, but will want you to do most of the talking. He needs what you already know before he can help you on your way: by focusing you on some general or specific objective, considering the alternatives open to you, clearing up some of the things that may be troubling you, and fixing in your own mind the qualifications you have that mean something in civilian life.

YOUR COUNSELOR CAN HELP YOU . . .

-formulate an employment objective . . .

-explore all the alternatives open to you . . .

-prepare a resume which presents your qualifications . . . in terms of what you can do for an employer

-locate information about employment.

Your counselor can help you do these things; he cannot do them for you.

ANXIETIES

One of the more difficult things to recognize and face up to is the natural concern of most men on making such a fundamental change in their way of life as you will make on retirement from the Armed Forces. Most probably, the subject will come up at some time during your discussions with a counselor. It is something else you should think over before getting down to the actual counseling.

2001

What disturbs you the most about leaving the service?

WHO ARE YOU ?

- Is it the fact of living in the civilian world as a civilian after so many years of military life?

- Is it losing the clear and well-defined social structure of the military and going into an environment where it's no longer easy to know who is who?

- Would you like to stay in the military service, or at least continue to work for the government, but feel yourself frozen out of these occupations by regulations or laws?

- Are you unsure of civilian seniority rules, retirement systems, and policies concerning middle-aged men getting and holding jobs?

- Do you feel that you lack an appropriate skill for the transition to civilian life?

There are similar questions that can be asked, each related to some sense of uneasiness about leaving the service or entering civilian life. Whatever causes you concern is worth a further examination.

Some of the problems may be cleared up by information—facts. For instance: the question of continued Government service as a civilian can be specifically resolved by official information on dual compensation laws available at any military post or station. Restrictions on your activities as a civilian with retired military status are explained in detail in directives available to you at any military installation. There are other references, a number of them mentioned later in this booklet, that provide reliable information on civilian business and industry, cost of living in various areas, tax rates in the several States, union and industry fringe benefits, and other matters that may trouble you only because of their unfamiliarity.

2002

WHO ARE YOU ?

Less easy to define, or answer, are the anxieties about leaving the service because you have been satisfied with the life it offered and feel you are losing something important to you on your departure. If such is the case, you still have to face the fact of leaving the service; face yourself, also, and try to determine what your problem—your "hang-up"—is. Perhaps some of the following information will help:

- Many men have found satisfaction in the service because it offered them stability. For some, it was the knowledge that there are no lay-offs in the sense that they occur in civilian life. For others, the service gave them the stability of performing tasks they considered important, responsible, creative, and demanding. For some, service life strengthened and supported them; the uniform added self-respect and meaning to what they were doing; they appreciated the authority and direction they received, the specific orders on where to go and what task to perform, and the instructions on what to wear at given times, or how to conduct themselves in given circumstances.

- Many men have enjoyed the upward climb, the competition, and the rewards of satisfactory service that carried them to the top of their profession. It is not easy for these to start over again in a new career, losing much of what they have earned in the way of status and self-satisfaction. These men feel like a whale being turned into a minnow.

- A number of men retire each year as a result of failure of selection for promotion, in the case of officers, or of having received lower performance ratings in recent years. These are shocking events to men who have been in the high group for many years. It mars their confidence at precisely the time they need confidence and often results in bitterness toward a system to which they have given many years of loyalty.

2003

The married man of the age at which most men retire from the services may have additional circumstances that add to the personal problems of retirement. His wife will have some of her own views on the conversion from military life to civilian life: where to live, how to live, what kind of home to have, what kind of income will be required. This may be a trying time for her, too, and add to the pressures on the man actually retiring.

The children of a service couple planning retirement may be in their own difficult adolescent years, creating even more pressure on the retiree.

On approaching retirement, some men experience all of these pressures; few men experience none of them. Your own situation may fall somewhere in between these two extremes. Whatever your personal problems, they are bound to have some effect on how you feel as retirement approaches.

> It is quite normal for a man to begin to be disturbed about his forthcoming retirement as early as 2 or 3 years before his final day of duty.
>
> It is equally normal for a man to feel confused about who he is, or what he is going to do, immediately after hanging up his uniform for the last time.
>
> It is not unusual for a career serviceman to be more of a soldier than a civilian for several years after he retires.

As you ask yourself "Who am I?" consider that you are a little different during the period of transition from military to civilian life from the person you were during your long service career, that the transition is not a brief one, and that for some people as normal as yourself it can last 5 years or more. Test this, if you choose, by asking some of your friends who retired several years ago: "How many different things did you do the first few years? How

2004

WHO ARE YOU ?

many different jobs did you try before you settled into the one you have now? How many times did you move in the first two years?"

If you wish to test this further, ask yourself?

- Now that I am approaching retirement, do I feel any bitterness or disappointment about my service that I didn't have a few years back? Do I feel that today's servicemen aren't as good as those of former days, or that the senior officers don't know as much as they used to know? Do I feel that discipline has gone downhill in recent years?

- Am I more irritable now? Am I getting along less well with the men I work with? Am I having more friction with my family than I used to?

- Do the more recent service procedures annoy me? Would I prefer to go back to the way we were doing things a few years ago?

- Have I lost interest, efficiency, or energy to do my job?

- Am I less temperate about eating or drinking than I used to be?

If you recognize any of these as applicable to yourself, also recognize that they are not uncommon among the many thousands of officers and senior noncommissioned officers retiring every year. Knowing this, you know yourself better.

POSITIVE FACTORS

On the positive side, you should recognize that your age group (most officers retire at about 45 years of age; enlisted men retire a few years younger than that) is the same group considered by industry and commerce to be the peak productive years of their own people. Retirement, in

civilian life, means putting men out to pasture at 60 and 65 years of age, after 40 to 50 years of work. You are not one of these. You are a "will be," not a "has been."

WHO ARE YOU ?

Also on the positive side is one key factor that each man must find for himself: *a realistic goal for civilian employment*. Counselors and others may help you find this, but the initial steps are up to the individual. Try to move toward this goal yourself; then, visit your counselor and let him check out your ideas. With him, find out what other help exists to better define your goal and what alternatives are available that will equally fulfill your requirements.

The section you have just finished reading was meant to help you see yourself more clearly. The better you know yourself the easier it will be to fit into a new and rewarding career.

Now, ask yourself the question: What do I want to do?

WHAT
DO
YOU
WANT
?

2

WHAT DO YOU WANT ?

It is natural for men who have found a satisfying way of life to wish to continue in the same path. You faced many problems during the course of your military career. You have been trained to take care of yourself and of others; this has given meaning to your life and has made you important to people other than yourself. You have been judged in terms of how well you have performed and how much influence you have exercised. You have good reason to be proud of these skills and would miss the sense of personal worth they give you. It is this feeling of personal worth that would be absent in an indefinite round of leisure, where every day is a holiday and no holiday has meaning. In approaching a second career, therefore, the key question is:

> "How can you attain the satisfactions that you used to attain in your first career?"

The answer to that question is the second major step toward a second career: the *development of civilian employment objectives.*

As a result of the economic independence you earned by your military service, you are in a position to make some choices:

- *What do you want from work?* Even if you are financially independent, you probably wish to work for reasons other than money. A man who has gone up in a difficult and demanding profession such as the Armed Forces will miss the

WHERE IS SATISFACTION?

WHAT DO YOU WANT ?

satisfaction of achievement if he stops work entirely. Most people of your caliber want the challenge that work offers; they want to contribute their talents to something. It is more difficult for such a person to retire completely—quit working entirely—than to remain active and productive.

WHAT DO YOU WANT ?

- *What field of work should you seek?* Whether you want to work, or must, the question arises as to what field you work in and whether you can obtain the satisfaction of proficiency in it.

You are mature and knowledgeable. Your goals are not like those of a younger man; they are tempered by judgment and experience. You know the pleasures of accomplishment and adventure, but you also have obtained respect for security. You have known the satisfaction of status and authority. You appreciate time to pursue interests outside of the normal work week. You probably have definite ideas on where you wish to locate. Compare your own objectives with those usually associated with mature people:

- A chance to earn a good deal of money
- A steady, secure income
- Activity that has some meaning to others
- A chance for advancement
- Travel, or unusual experience
- A highly respected position
- An opportunity to use special talents and interests
- Regular hours, with free time for leisure
- A chance to influence, or supervise others
- An opportunity to be original and inventive

2009

WHAT DO YOU WANT ?

- Pleasant friendships
- No protracted absence from homelife
- An opportunity to help others
- Living in a desired locality
- Being free from supervision
- Doing something for which you will be remembered

You can also recall past activities that have been a source of pride and satisfaction to you; experiences that gave you exhilaration; such things as favorable recognition from your seniors, the men under you, or the men you worked with; outstanding successes in which you were personally involved. These recollections are important, not as reminiscences, but as indicators of what you really like and would like to experience further.

From such segments of your own past, there are clues that will give you a strong indication of where you will find real satisfaction in your life as a retiree. It is not enough to enjoy in retrospect or by retelling them to new acquaintances. Instead, you can find areas in civilian life where you can repeat, in variety, the pleasures of past experiences.

- What were these pleasurable experiences?
- Why did you enjoy them?
- What was it about each that makes you remember it so well?
- What kind of activity can you enter that will let you repeat them?

This guide cannot answer such questions about yourself; they apply to the particular circumstances of each person.

2010

You may be able to answer them better by considering how each of the following applies to you:

WHAT DO YOU WANT ?

- There are certain things you have done that you are definitely proud of; note these down and see if what you eventually decide to do will give you similar satisfactions.

- Think over the awards and other forms of recognition you have received. What did you do to get them and will your new life offer the opportunity to do these outstanding things again?

- Have you made suggestions that were adopted and worked toward the improvement of an organization? Will you be in a position to do this again?

- Think of the times when you were completely absorbed in what you were doing. Ask yourself why you were so absorbed.

- Pick out what you think were the peak experiences of your life. What was so different about them that makes them stand out in your mind?

- You probably have been elected by a group at one time or other, or asked to be their spokesman. What were the circumstances; why were you the one they wanted at the time?

- Have you ever started a new program of some kind, in the service, in the school or church you attended, or in your community? Did it catch on and work?

- As you look back over your military career and your life prior to entering the service, select what you feel were your outstanding successes.

While you are looking at yourself in this manner, consider the failures you have experienced—everyone has had some. Such experiences can be used as indicators of

2011

how you overcome difficult events. They can be used also as warning signals, alerting you to the types of things you don't like to do, or find it hard to adapt to.

WHAT DO YOU WANT ?

It is not unusual for a person to set aside these failures, blaming them on a system, or on other people involved in the same incident, and not conceding any personal responsibility for them. This may be a convenient attitude—even satisfying—but by it a person denies himself the valuable lessons to be learned from failure.

Begin by asking yourself when you felt frustrated. Was it in a course of instruction? Was it in a certain assignment, or with a certain unit, or working under a certain person? At what times did you feel insecure (other than the obvious insecurity of combat, the failure of an aircraft engine, disaster at sea, and similar experiences)? When and where were you most aggressive, fighting against the system, or against another person or group? When did you feel resentful against another person, or against your unit or service? Usually, this kind of feeling is a result of trying to solve a hard problem, or having to work your way out of some difficulty. It is a "failure feeling". You have probably had this feeling, perhaps many times. What were the circumstances?

- What have you failed to accomplish, in the past 5 years, that you really tried to do?
- What have you really wanted to do, in the past 5 years, that never got beyond the stage of wishing to do them?
- When did you give up trying to do something you thought you wanted to do? Was it when the going got rough, or when you realized you might not make it? Was it when the competition got too heavy, or did you just replace it with a different interest?
- What were the reasons for your failures? Too aggressive, or too timid about your abilities? Not

2012

enough preparation? Did you give up because you wanted to avoid failing? Did you find out you weren't really clear about what you wanted to accomplish?

- What were the things at which you failed and did you learn anything from the experience? Could you do it now, without failing?

WHAT DO YOU WANT ?

Your answers to any of these questions will give you some clues as to what you do well and what you don't do well; what "bugs" you and what activities give you satisfaction. Keep them in mind as you plan your retirement, for they represent your strong points and the areas in which you can expect to develop the fastest.

In your decision on what you want to do, consider what you *can* do best and use your experience in recognizing those things you can't do well. This is another area in which counseling can be of assistance, but be prepared to discuss your successes and failures, your objectives in retirement, and your need or desire to work.

Your financial situation and the personal responsibilities you may have toward others—your immediate family, dependent parents, the support of children of a previous marriage—are factors you should also consider in making your choices.

As a veteran you are eligible for a considerable amount of Government support in preparing yourself for almost any career you wish to undertake. As your decisions are made, consider the educational resources you can apply to what you want to do. If you need high school courses or technical training to adapt your military skills to civilian employment, your veterans benefits will be of substantial help. Bookkeeping, business law, typing, or other special courses can be a considerable asset in following your career path. Veterans benefits include opportunities to complete college or obtain advanced degrees. Your own service will

2013

provide you with the details on these benefits and the methods of obtaining them. Keep them in mind as you develop your future plans.

WHAT DO YOU WANT ?

The next step is finding out if there is a market in civilian life that matches your desires and ability.

Who wants you?

2014

3

WHO WANTS YOU ?

Now that you have made an initial reckoning of yourself—the *review of experience*—and selected some activities in the civilian world that interest you—the *employment objectives*—you are in a position to search the world of work for occupations and industries that fit you as an individual—the *preparation for the job search*.

You began this by learning about yourself and examining your skills, talents, and desires. You have built upon this knowledge by making some decisions on what type of activities would give you real satisfaction. The next step is to go about the process of finding your particular path toward an initial job and eventual career.

YOUR OCCUPATION LIST

You may start by building a list of potential occupations, based on what you know of yourself. After you have made your first list, go over them with a variety of people who know you well and see where they agree or disagree with your choices. Then, have them checked by a counselor; he is trained to help you test your ideas, revise, and expand them.

Civilian employment may be sought in any of several major sectors of the national economy, such as:

Federal, state and local government

Big business

2015

Small businesses, including the relatively new fields of franchising

Agriculture

Public service institutions, such as hospitals

Education and educational services

WHO WANTS YOU ?

The terms "business" and "industry" refer chiefly to the various fields of buying, selling, and manufacturing of commodities. The term "occupation" is used for the various kinds of work or careers of people in business or industry.

Pharmacy, for example, is an occupation of specialists in the drug or pharmaceutical business; a pharmacist, however, can adapt to many other technical occupations in the chemical industry: industrial chemicals, plastics and resins, soaps and detergents, fertilizers, paints and allied products, perfumery or cosmetics.

2016

An electrician can fit equally into big business or government work, but he may not wish to work in a big organization. Such an individual can build up a list of smaller employers in a variety of industries, using his occupation to find the kind of working conditions he wants.

A man such as yourself, looking for employment in a particular occupation can find out about the demand for workers in that occupation through the U.S. Department of Labor or the local State Employment Service office—either near his home, or near the base where he is stationed.

WHO WANTS YOU ?

A BUSINESS OF YOUR OWN

A man thinking about starting a business of his own needs to know about the market for the product or service (such as appliance repair) in which he is interested. The Office of Marketing, U.S. Department of Commerce, publishes a "Marketing Information Guide" to assist such people in making sound decisions. Assistance is available also from the Small Business Administration, which is designed to counsel, assist, and protect the interests of small business.

FRANCHISES

Those who are interested in franchises are similarly eligible for assistance from the Small Business Administration. In addition, the U.S. Department of Commerce publishes a pamphlet on franchising, entitled "Franchise Company Data for Equal Opportunity in Business".

When you have built up a list of occupations, based upon what you can do and would like to do, you must face the question:

Who wants me?

Most people answer that question by casting about in the job market, reading "Help Wanted" columns, visiting an

2017

WHO
WANTS
YOU
?

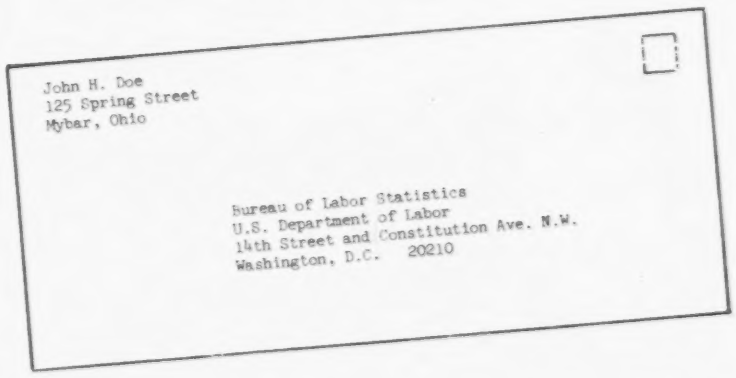
employment agency or two, and making a few visits to employers until they are discouraged and take the first serious job offer they encounter—whether they like it or not.

You can do better than this.

Once you have selected a preliminary list of occupations you feel may interest you, do some homework on them. Some suggested sources for this are:

WHO WANTS YOU ?

- *The Occupational Outlook Handbook* and *Occupational Outlook Quarterly*, published biennially and quarterly, respectively, by the Bureau of Labor Statistics, U.S. Department of Labor, and giving the long-range employment outlook in important occupations and industries.



- *The College Placement Annual*, distributed free through university placement offices and retired activity sections of the armed forces, presents the occupational needs of over 2000 corporations and government agencies.

- *The Encyclopedia of Associations*, available at most libraries, lists the several thousand associations representing almost every type of occupation. Many of these associations have advertisements in their periodicals on professional jobs available; some operate a placement service for members of the profession.

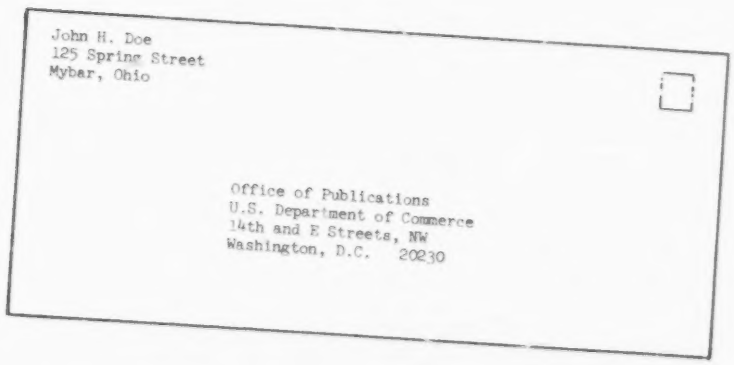
GROWTH TRENDS ARE OPPORTUNITIES

WHO WANTS YOU ?

- *The Marketing Information Guide,* published monthly by the U.S. Department of Commerce, provides current information on the status of industries, by region, throughout the U.S.

- *The U.S. Industrial Outlook,* published annually by the Business and Defense Services Administration, U.S. Department of Commerce, presents both a narrative and statistical analysis of trends in the U.S., by industry and for the major areas of the economy (consumer goods, construction, wholesale and retail trade, etc.).

WHO WANTS YOU ?



Information on major employers in any locality normally can be obtained by writing or visiting the Chamber of Commerce of that area. Particularly helpful will be information on what firms are expanding and have manpower requirements in your selected civilian objective. Local banks and brokerage houses can often provide financial reports that give similar indications.

Chamber of Commerce Beth-Ch Ch
PerpetualBg Beth-652-4900
Chamber of Commerce of Montgomery County
354-A HungrfrdDr Rockvl-424-6000
Chamber of Commerce of Prince Georges County
5132BaltoAv Hyatts-927-9121
Chamber of Commerce of Rockvl
230 N Wash Rockvl-424-9300
Chamber of Commerce of Silver Spring
8510DixonAv SilSpg-585-6300
Chamber of Commerce of Wheaton
2401BlueridgeAv Wheaton-949-0080
Chamberlain Basil B 1516ChillumRd Hyatts 559-4369
Chamberlain Bessie B
2501QueensChplRd MtRainr-WArfld 7-2503

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Any local library, either on a military base or in the civilian community, can offer other material. Ask for references pertinent to your civilian career selections: periodicals, directories, and reference books that will give you recent information on the occupations, companies, officials, or products in which you are interested.

WHO WANTS YOU ?

Your original list of desirable occupations or industries may shrink as you learn about them. This can result from several factors.

You may have determined to locate in a certain area after retirement. Some of the things you thought you would like to do in the way of work may not be present in your selected area, or may be contracting instead of expanding, which would limit your opportunities for advancement and increased income in future years.

An even more sensitive indicator is the amount of advertising for these selected positions in the daily newspapers and professional or trade magazines. If you have a geographical preference, it is wise to obtain a short-term subscription to one or more of the local newspapers. Labor demand varies from one locality to another, and what pertains to your present area may not be applicable some distance away.

In your considerations, some attention should be given to general activities that are under sustained expansion and cover a variety of individual occupations.

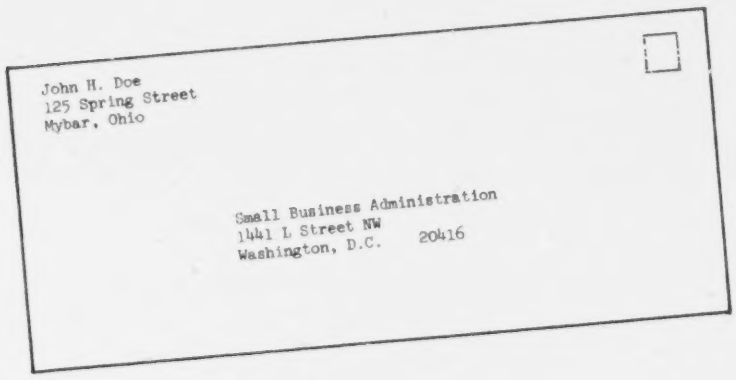
Among these is the area of public administration and local government. This subject is described in some detail in appendix A. Further information can be obtained from any service counselor, who will have available a listing of the many associations and other organizations who represent public interest groups; most of these can provide literature or other information on specialized areas of public administration and some offer placement services within their specialty.

2022

Although the teaching profession is not expected to continue its marked expansion of the past ten years into the 1970s, the field of education services described in appendix B appears to offer many opportunities to the military retiree. A similar field—that of hospital administration and services by non-medical personnel—is expected to offer additional opportunities over the next decade.

The ownership or operation of small business is covered in part in appendix C. Further information can be obtained by writing the Small Business Administration.

WHO WANTS YOU ?



Franchises offer a way to go into business with certain advantages in return for certain contractual obligations and usually the payment of an initial fee. Some details on franchise operations are given in appendix D.

At the time you retire there may be a wide demand for workers, or the labor market could be "tight". Even in the worst periods, however, there are jobs available. You may have to go to where the job opening is instead of settling down where you would most like to be; you may have to adjust your scale of living to the positions available to you; you may have to accept a position similar to what you want instead of exactly what you want; but you can find work to do.

Nationwide, there are jobs for competent men who can produce for business and industry. An example is the constant demand for salesmen in almost every industry. In

addition, you can create a job for yourself by showing an employer that a problem exists in his company and convincing him that you can solve the problem for him.

Thorough preparation will greatly assist you in determining the markets for your particular talents and clarifying your thinking on what you want to do. With such preparation you will enter the job search with some definite purposes in mind. You will be able to concentrate on selected job opportunities, each having a direct relationship to your own desires and capabilities. You also will have discarded a lot of raw material no longer applicable to you.

WHO WANTS YOU ?

Furthermore, you will be ready to show some definite objectives to the many Government and private activities available to help you in your job search. These are discussed in the following section.

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4

THE JOB SEARCH

Your career as a member of the Armed Forces conditioned you to a way of life that was oriented toward the accomplishment of missions. You may have worked within budget limitations and know the value of dollars and cents, but the real issue was to get the job done. You were mission oriented.

You will find this attitude as useful in civilian life as it has been to you in the service. Your missions may be different—a sales quota, production output, the repair of a piece of equipment, or completion of a report—but you know how to tackle a job and also know the importance of completing it within the deadline.

One adjustment you may have to make concerns the careful attention to profits in business and industry.

If you remain in government work—including local government—or enter such nonprofit-making professions as health or education services, you probably will be working within budget allowances similar to those of the military services. If you enter the world of business or industry, however, you will find that the cost of materials and manpower is related primarily to profit.

THE WORLD OF PROFIT AND LOSS

Most businesses are profit oriented. Although there are awards and recognitions similar to those in the military services, such things as pay raises and promotions are influenced by how much the company profits from your work.

You should expect, at the beginning of your job hunt, to encounter this attention to profit. Many a businessman who interviews you will be thinking primarily in terms of profit.

The salary he pays to you may have to bring him an appreciable return in dollars and cents—in increased sales, increased knowledge, increased skills, increased efficiency, improved organization. You are hired for what you can do to add to the profit of the organization.

The central theme of profit is present in other areas not normally considered a part of the business world. Hospitals and educational institutions are in this category. They offer opportunities to more than doctors or professors. They offer opportunities to the retired military man who can act as manager, technician, or administrative specialist in such areas as food services, supply, utilities, finance, maintenance, transportation, and public information. Institutions such as colleges or hospitals may not be required to operate for profit, but they cannot operate at a loss. They need men who are business oriented, responsible for efficient and economical operation.

Your job search must be adapted to this profit motive—profit for the man or organization you want to work for.

The preparations you have already made—analyzing yourself, deciding what you want to do—is highly personal. Now, you must develop a strategy for getting what you want. You must relate what you know about yourself to the job market. Where do you fit in?

- Consider what you think a good job is in the commercial world: the pay, the privileges, the level, the hours, the work conditions. What do you expect from a job; and how much would you be satisfied with?

- Do you relate your worth to an employer with your present military income? Remember that you have come up through a long, hard process and were paid in accordance with your value to an institution. You may be an expert in administration or supply, tactics or techniques applicable to the Armed Forces.

2026

- Can you now demand the same salary from business or industry? Perhaps—if you can show them a profit above your salary and the other expenses of having you as an employee.
- Do you expect the same prestige, privileges, accommodations or respect you now have as a senior NCO or senior officer? Will you consider it a loss in status if you do not have your own subordinates or office? Can you expect these out of what you can provide the employer in productivity or profit?
- Would you work under a younger man? You are not used to situations where the Boss is 23 years old, without the traditional separation of functions between the junior and senior NCO, or the NCO and the officer.

Think these things over from the employer's viewpoint. What is he looking for in an employee? You will find that he is looking for performance that can be translated into profit, or reduction of costs.

The competitive market you are entering means more than competing with others seeking the jobs or positions you want. There is competition also among employers, for topflight people. Promotion by seniority as well as selection exists in civilian life as in the service, but is far less rigid. There is competition for profit through talent. Talent scouting, executive search, is a business. There are ways to move up in any field where you can demonstrate the capability of making profit for your employer, by ideas, superior work, organizational skill, human relations. Such opportunities are in your own future, but the immediate problem is how to begin your job search.

There may be shortcuts, depending on the individual, but the best place to begin is normally the writing of a resume. Whether you think you need one or not, the function of writing a resume on yourself is of considerable value to you.

The resume puts you on the line, in civilian terms, directed toward your capability to make a profit for the employer.

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Your resume, then, should be tailored to this civilian market.

THE RESUME

The resume sells your talents and capabilities to an employer.

In developing your resume, keep in mind that its purpose is not to get you a job, but to get you an interview. Your resume should interest a busy man, make him want to see you and talk to you about a job. It should have an attractive appearance, be short, but also be a comprehensive summary of your qualifications. This is not an easy task.

Look upon your resume as a dust jacket on a new book that tries to catch the reader's attention, present a brief synopsis, and make the reader want to know more about what the book contains. In the resume you are also capturing the reader's eye, giving him a brief history of yourself, and trying to make him interested enough in you to "read" you through a personal interview.

To do its job well the resume must be efficient.

It must be easy to read, neatly done, balanced on the page, with a reasonable amount of white space.

The employers who receive your resume should get an original copy, or a reproduction (by printing or photo-offset) so good that it appears to be an original. Carbon copies, or any reproduction process that is obviously a copy of an original, merely hurt your chances of making a favorable initial impression. Letterpress printing produces excellent quality reproductions in any quantity, but is relatively expensive. Photo-offset produces good, clear copies at much less cost (about $3.00 for 100 pages).

Preferably, your resume should be one page, never more than two pages. A resume that goes to three pages requires someone to dig into it to find whatever essential points are important to him as an employer.

A military man commonly finds himself verbally disabled when it comes to executing a resume going forth into

2028

the world of commerce and industry. His writing habits have been centered on military language for many years. He thinks in military terms, and expresses himself in military terms. Everyone he has been in contact with during his military service has understood the convenient and often essential use of abbreviations and acronyms. He is fond of passive verbs, and uses words that mean one thing in the military and another in civilian life. He sprinkles capital letters among his nouns. The conversion of this style of writing to something not only understandable, but attractive and interesting to a civilian reader, must be a conscious effort and may require assistance. At the very minimum, the final copy of any resume should be read over by a couple of people other than the writer, preferably civilians. If they understand clearly what you have said and find no misspellings, nonstandard punctuation, or grammatical errors, you are well on your way.

What interests an employer in you?

Mainly, he wants to know what you can do, especially for him. He doesn't care what you *think* you can do; he wants to know what you can do and how you can substantiate it by supporting evidence.

This is the most important area in which to be careful about military language. Try to substitute civilian terms for the familiar military ones: you are writing for a businessman, not a general or admiral. Here are some examples of switching over from military to civilian descriptions:

Military →	*Civilian*
Commander, Commandant, Commanding Officer, Chief, Staff NCO, Petty Officer, or any designation of rank	*Senior executive, operating executive, executive assistant, department head, administrator, manager, direct supervisor*
Commanded	*Directed, administered, managed, coordinated, supervised, planned, executed*

Civilians, officers, soldiers, sailors, airmen, enlisted men, troops, as describing those under your supervision or control	*Subordinate complement, staff, associated personnel, work crew, clerical forces, technicians, production personnel, men, men and women*
GySgt, E-9, JAG, BuPers, DAC, Quartermaster, 117th AC&W Sqdrn, NROTC, COMEUPHRATPAT, G-4, etc.	*Spell it out (supply operations, mid-level supervisor, personnel management, etc.),or—drop it.*
Combat	*Extremely hazardous conditions.*

THE JOB SEARCH

The trick is to phrase what you have done in terms that the civilian will understand. To state your military assignment, post or station, and years at that duty, may not mean much to him. To state, for example, that you were directing the efforts of a supply depot during that same period will be meaningful to him. To be able to state that you instituted an improved system of inventory control while you were there, resulting in increased efficiency or reduced cost, puts down what you did in terms he will understand and appreciate.

What you can do may also be expressed through educational or training accomplishments: "Graduate, Industrial College of the Armed Forces, 1965"; "Completed Advanced Automotive Mechanics Course, 1965." Such entries show acquired skills that can be supported, if necessary, by documents. Not all service schools have titles that are meaningful to a civilian employer. If the title of a school or course you have attended is not self-explanatory to a civilian employer, add a short statement as to its purpose and scope. It will help him understand what you have done.

In addition to the fundamental information as to what you can do, the employer is interested in certain vital

2030

statistics: your age, education, marital status, number of dependents, general health, interests and hobbies, special qualifications (such as possession of a commercial pilot's license), height and weight. These can be simply expressed within a single, brief paragraph.

Also important to the employer are:

Your address and telephone number.

Your date of availability.

There are two basic types of resumes:

The *reverse chronological resume,* which lists your experience in reverse from the most recent past to about 5 years ago. Your experience in earlier years is less significant and can be briefly summarized, unless it contains something of special interest to the job you are pointed toward. See the example on page 52.

The *functional resume*, where you break down your experience into categories, rather than chronologically, covering each aspect of the function you can fulfill for the employer. Note that this type of resume is organized to highlight the functions and skills which the applicant wants to emphasize to a reader who is skimming over it rapidly. An example of the functional type of resume is shown on page 53.

There are some things that are better avoided in a resume unless there is a clear advantage to you in using them. Consider each of these carefully before they are included:

- Avoid the personal pronoun. It is better to describe yourself as a person ("Graduated from Brooke University in 1952; Was responsible for the mechanical functioning of heavy construction equipment; Developed a system of navigation training for student pilots"), rather than to say "I" did this or that.

Reverse Chronological Resume

BYRUM M. CHESNER

523 Marlowe Street, Penwell, New Jersey 08641 (604) 273-4154

objective	Appliance service technician for major mechanical or electrical appliances.
recent experience	1968-1970, Senior noncommissioned officer at a major military training base. As Supervisory Instructor, was responsible for mechanical and electrical training of 5,500 students annually and the functions of 22 instructors. Developed instructional material, visual and mechanical training aids. 1967-1968. Instructor and advisor to 500-man native force in southeast Asia. Instructed in mechanics and operation of weaponry and radio-electronics; supervised maintenance of motor vehicle and other large mechanical equipment. 1965-1968. Instructor and inspector of complex mechanical-electrical military equipment (nuclear weapons). Trained 220 men in the operation and maintenance of equipment; conducted cyclical and special inspections of electrical and mechanical apparatus. Additionally, was responsible for administration of training and inspection records.
earlier experience	Administered training records for 200-man groups of students at military training facility (1963-1965). Operated and maintained small and medium sized mechanical equipment, motor vehicles, radio equipment during various assignments in southeastern and southwestern United States and Far East (Korea).
general education	1 year college equivalent, affirmed by the Commission on Accreditation of Service Experience, American Council on Education. 6 semester hours on Business Law, Trenton State College, Trenton, New Jersey. 1 semester Oklahoma A&M, Stillwater, Oklahoma. High school, graduate, Seminole, Oklahoma.
special training	General Electric Service Technician, Fort Dix, New Jersey, 1969. Track Vehicle Mechanical Course, Fort Knox, Kentuckey, 1968. Advanced Automotive Mechanics Course, Fort Chaffee, A Arkansas, 1953. Basic Automotive Mechanics Course, Fort Sill, Oklahoma, 1949. Correspondence courses completed on personnel administration, typing, law, communication-electronics, and supply administration.
personal data	Age 39 . . . married, 4 children . . . height 5'10" . . . weight 160 . . . health, excellent.
date available	November 5th, 1970.

Functional Resume

WILLIAM A. BROWN

2204 Farell Street, Berwyn, Virginia 22031 (703) 372-7466

Objectives:	Staff assistant in business consulting firm; organization planning officer; project manager.
Experience:	Served as naval officer, naval aviator, and navigator aboard surface vessel. Directed crews up to 30 in accomplishment of both tactical operations and administrative programs of the Navy. Assignments have included preparation of operational plans, conduct of instruction, and formal written and oral presentations to top military and civilian management.
Operations Improvement Skills:	Using the ability to transfer and adapt knowledge from one field to another and to focus it on problems to achieve practical solutions, devised and installed improvements in operations during various naval assignments: designed a procedure to permit survivors of a plane crash at sea to stay together in the water; developed an air-droppable water survival packet; wrote and supervised adoption of an emergency plan to overcome defects in shipboard emergency steering procedures. Gained support of servicemen and their families in upgrading operational efficiency by the adoption of safety measures. Instructed junior line officers in the technical elements of their duties and student aviators requiring special handling.
Negotiations:	Represented a major command in negotiations between the armed services at successively higher command and control levels in order to systematize and coordinate the information-gathering actions of various organizations in the Western Pacific Area. On a continuing basis, conducted liaison with contemporary commands of other services to insure the safe, effective, and efficient utilization of search aircraft.
Operations Planning and Management:	Planned aerial search operations in the Western Pacific to meet continually varying requirements. Analyzed organizational tasks, identified risks and hazards, located profitable areas for the concentration of resources, prepared written plans and procedures, and scheduled and supervised the ensuing operations.
Education	BS in Business Administration 1965; Naval Postgraduate School, Monterey, California. Master of Aerospace Operations Management (to be conferred October 1970).
Personal:	Married, two school age children. Interests: Hunting and fishing. Have commercial pilot's license with 4000 hours logged. Member of Toastmasters.
Date Available:	November 5th, 1970.

- Stay away from military titles and functional designations ("Received spot promotion to Major during . . .; Post Inspector, 1966"). Tell what you did, not who you were.

- Don't emphasize your retired status.

- Furnish references only on request of the employer. Have them with you for the interview if you think they may be needed, but avoid submitting them with your resume. Remember that you are trying to get in to see someone and talk to him. Too much information may lead to a decision *not* to see you.

- Photographs are seldom needed on a resume (sometimes they are specifically prohibited). Again, if they want to know what you look like they will call you in for an interview and you will have gotten into the door—which is the main point of the resume.

Writing your resume will not be an easy task. Boiling down 20 years or more of experience into a page or two is difficult. Neither will the resume be accomplished quickly—it is an important document to you and shouldn't be slammed together in a few hours. Write an initial draft and rewrite it after a day or two. Take some time to think it over, and rewrite it again. It is suitable to begin with a resume that is several pages long, and edit it down in subsequent versions until it is of reasonable length. Write it yourself, in your own words. Get help if you need it, from friends, from a counselor, from any of the books or pamphlets that cover the subject. Take it seriously; it means a lot to you.

You will find that the development of your resume will accomplish a number of things that are byproducts of the principal purpose, but of value to you.

The resume helps you recognize the type of situation you are entering when you leave the service and adapt to

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civilian life. While you are writing it, you will also be forming ideas as to what kind of job you are going for and how you will go about it. After you have completed a satisfactory resume you will be better equipped to address the basic strategy you will use in your job search.

THE JOB SEARCH

There are two basic strategies for the job search. Which one you use is governed by your own situation.

The *custom-designed* strategy is very personalized. In it, you move out on your own, making contacts, following up on personal referrals, and presenting your employment proposals to key people in business or industry.

The initiative is largely up to you; so is the planning. If you have skills or talents—technical or executive—that you know (or believe) fit known demands in civilian life, such a strategy may be suitable in your situation. If you are a member of a professional society, academic or social fraternity, you will find that these assets will help you to develop a custom-designed strategy in your job search.

A man following this type of strategy needs as much of an inside track on potential employers as he can obtain. In a sense, he is working within the companies and corporations and needs information on who the key people are, as well as a considerable amount about the internal functions of the company. In addition to more personal sources, which vary with each individual, there are some basic documents generally available which offer some of this information:

Standard and Poor's Directory

Thomas' Register of American Manufacturers

MacRae's Blue Book

Moody's Industrial Manual

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ON YOUR OWN MERITS

THE JOB SEARCH

Dun & Bradstreet Directories

The Million Dollar Directory

The Middle Market Directory

THE STANDARD STRATEGY

The other basic strategy is in more general use. It is the *standard strategy* of using the commercial or government facilities available to locate employers and obtain interviews. This standard strategy means more work on your part, but may be as effective as the custom-designed strategy when you are looking for jobs in general. It requires you to make a broad attack on the job market, through responding to advertisements, applying to personnel offices of suitable companies, and using the facilities of government or commercial employment agencies.

LETTERS OF APPLICATION

Like the resume, most of the initial overtures in the job search are in paper form.

Each resume you send out is normally attached to a brief *letter of application*. This either may be unsolicited, or in response to an advertisement or other information you have received that an employer may be in the market for your talents.

Since the resume provides the significant information about you, a covering letter of application should be brief. It should be as job oriented as possible under the circumstances:

- It should point toward a specific type of employment that you are seeking, or that the employer has announced; or,
- It should point out some key factor about you that will immediately interest the employer.

If at all possible, address the letter of application to an individual rather than to a company, office or title. This personalizes it, gets it to a specific person, and affords him the gratification of seeing his name. He will credit you with knowing enough about the organization to recognize an officer by name.

Conclude such a letter with a statement that places upon the company some obligation for response, such as: "Please inform me if I can provide any additional information that can be of use," or, "Please let me know if any additional action is required on my part in connection with this inquiry."

An example of a letter of application is contained on page 60.

APPLICATION FORMS

The other most common document encountered in the job search is a company *application form*. These forms are not standardized and vary among industries, and among companies within industries. Their common characteristic is the requirement for detailed information on the applicant. On all visits to personnel offices, and for all interviews, you should be prepared to provide details from records or notes in your possession, such as:

- Social Security number
- Addresses and Zip Codes of past residences and references
- Family birth dates
- Service information (dates, numbers)
- Reserve status in the Armed Forces

PERSON-TO-PERSON

The man retiring from the service and entering civilian life should not ignore the many friends and personal

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contacts he has made during his military career; neither should he be reluctant to apprise these people of his retirement and his entrance into a second career.

Personal correspondence you have let lapse over the years can be reopened, if only to let past friends and acquaintances know of your new life and location. Club, social, or fraternal memberships should be retained during your job search, or resumed if you have let them become dormant in the past few years. All of these are assets you have acquired during your time in the service and may be of material benefit to you in many ways.

THE JOB SEARCH

Whichever job strategy you adopt, you may require the assistance and good offices available from these several sources. In addition, there are the more formal means of assistance discussed in the following section.

CONTACTS

Names and addresses of friends, business associates, other key people you have encountered in the service

MEMBERSHIPS

Clubs, societies, fraternal organizations

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Letter of Application

Mr. William P. Brown
Management Supervisor
TerraPond Corporation
346 Midland Street
Grand Lake, Idaho 41467

Dear Mr. Brown,

The article on the TerraPond Corporation, contained in the current issue of Management, the Journal of the American Management Association, contained a reference to your planned expansion into land development in the Pacific Northwest.

Since I have a personal interest in the Idaho-Montana area, and a professional interest in land development, I am providing the enclosed resume for your consideration.

Although you will find the resume fairly complete, I shall be happy to provide you with any further information you may need on my experience and qualifications.

Very truly yours,

Malcolm H. Cossingham

2212 Burlington Drive
East Kansas City, Kansas
31446

Encl

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CHECK LIST FOR YOUR JOB SEARCH

RESUME

Reverse chronological, functional, or both. Tailored to the employer.

STRATEGY OF JOB SEARCH

Custom-designed or standard

LETTERS OF APPLICATION

Specific to job or employer

Contains key factor about you, to arouse the employer's interest

APPLICATION FORMS

Be prepared for providing vital information:

- Social Security Number
- Past addresses
- Birth dates
- Service information
- Reserve status
- References
  - Business
  - Credit
  - Personal

5

HELPING HANDS

On entering the job market, you are immediately in competition with hundreds of thousands of others also seeking jobs. Most of these are not hunting a job for the first time; many are already employed and merely looking for an improved salary or work situation; almost all are experienced in some kind of civilian occupation and the technique of job hunting. The kind of job you want is most likely the kind also attractive to other competitive job-seekers. They have certain advantages over you; you must use every advantage you have.

HELPING HANDS

The value and importance of friends, acquaintances, and personal contacts were discussed in the previous section. These are part of your assets and should be employed whenever and wherever you can use them. In addition, there are numerous agencies and activities, both Government and private, that can assist you.

GOVERNMENT ASSISTANCE

There are government resources at Federal, State, and local levels available to you.

DOD REFERRAL Program.—The REFERRAL Program is designed to assist the 60,000 to 65,000 servicemen who retire from the Armed Forces each year. It provides counseling services, with the general objective of voluntary registration of the retiree into a computerized man-job matching service on a nationwide basis. You should consider the REFERRAL Program in your job search, not as a placement service, but as one step in obtaining

DISTRICT OF COLUMBIA GOVERNMENT

Employees' Compensation&Security Bureaus
See Labor Department of

Employment of the Handicapped—
The President's Committee on
ConstitutnAv&14thNw 393-2420

Employment Program of State Department
1900 E Nw RE 7-5600

Employment Service United States
National&District Offices—
See Labor Department of

Engraving&Printing Bur of Treasury Dept
14th at C Sw EX 3-6400

Environmental Science Servs Admin—
See Commerce Dept of

EQUAL EMPLYMNT OPPORTUNITY COM—
1800 G Nw ---------- 343-1100
Washington Area Ofc ---------- 382-1[illegible]
Marie B Poston Dir ---------- 38[illegible]

560—VIRGINIA—VOGEL

EMPLOYERS SERVICE—
1001ConnAvNw ---------- 393-7977
2201WilsonBlvd Arl ---------- 524-9608
4211King Alex ---------- 548-5232

Employment Agencies Maine Emplymnt Centr
1107 I Nw 737-1911

Employment Program 1900 E Nw ---------- RE 7-5600

Employment Security Bur of
ConstitutnAv&14thNw 393-2420

Employment Service D of C Offices—
(See United States Government)

Employment Service Maryland State—
See Maryland State of

Employment Serv U S D of C Offices
See U S Govt Listings

Employment Service United States National Office—
(See United States Government)

Employment Service Veterans Rep—
(See United States Government)

Employment Service Virginia State—
See Virginia State Employment Service

EMPLOYMENT SERVICES INC
733 15thNw 347-1[illegible]

HELPING HANDS

UNITED STATES GOVERNMENT

V

VETERANS ADMINISTRATION—U S— 347-1121
Veterans Benefits Ind ---------- 483-6666
VA Hospital ---------- 483-6666
50 IrvingNw ---------- 483-6666
Day Care&Treatment Centr 50 IrvingNw 483-6666
Mental Hygiene Clinic 50 IrvingNw 483-6666
Outpatient Serv 50 IrvingNw ---------- 483-6666
Veterans Benefits Office 2033 M Nw EX 3-4120
Central Office 810VermontAvNw ---------- EX 3-4120
Veterans Reemployment Rights Office of 393-2420
ConstitutnAv&14thNw
Veterans Office 515 22dNw ---------- RE 7-5600
Vocational Rehabilitation Admin—
See Health Education&Welfare
Voice of America USIA 330 IndepAvSw 963-1110

CIVIL SERVICE COMMISSION— 343-1100
1900 E Nw ---------- 737-9616
Examination Ind ---------- 737-9616
Federal Job Ind ---------- 737-9877
Retirement&Ins Ind ---------- 343-1100
Appeals Examining Office ---------- 343-1100
Board of Appeals and Review ---------- 343-1100
Bureau of Exec Manpower ---------- 343-1100
Bureau of Inspections Services ---------- 343-1100
Bureau of Management Services ---------- 343-1100
Office Services Division ---------- 343-1100
Bureau of Personnel Investigations ---------- 343-1100
Bureau of Policies and Standards ---------- 343-1100
Bureau of Retirement and Ins ---------- 343-1100
Bureau of Training ---------- 343-1100
Interagency Bd of US Civil Serv Examiners
for Wash DC 737-9616
International Organizatns Employees
Loyalty Bd 343-1100
Office of the General Counsel ---------- 343-1100

contacts with employers who have reviewed the basic information on you contained in the system and are interested in the talents, skills, or capabilities you possess. It will be up to you to provide your own written resume and follow up the initial contact with the completion of application forms, interviews, or any other action the employer may require.

U.S. Training and Employment Service.—This nationwide system is a coordinated effort between the Department of Labor and the separate States. Each State has one or more employment offices affiliated with the U.S. Training and Employment Service. Together, they provide information on the local job market and job vacancies in local areas, counseling and guidance, advice on personal resumes, career selection, and adjustment to jobs.

HELPING HANDS

U.S. Civil Service Commission.—The Commission can advise you on positions with the Federal Government. For information on the U.S. Civil Service, visit one of the 65 Interagency Boards of Civil Service Examiners; there is at least one of these in each State, listed in the telephone Directory under "U.S. Government." These Boards operate Job Information Centers to advise and process applicants. Information on Federal Government positions is available also at State employment offices affiliated with the U.S. Training and Employment Service. In rural areas, the local U.S. Post Office can direct you to the nearest U.S. Civil Service facility.

Veterans Administration.—The Veterans Administration does not act as an employment agency, but provides counseling services to veterans and can inform you of veterans rights and benefits, including education and training you may require as preparation for entering a specific civilian occupation, or fulfilling the requirements of a specific job offer. In addition to its headquarters in Washington, the Veterans Administration operates through Regional Offices throughout the U.S. and Veterans Assistance Centers in many major metropolitan areas. Assistance from the Veterans Administration while on active duty may be obtained by filling out VA Form 21E-1990a,

Serviceman's Application for Programs of Education or Training, and mailing it to the VA Regional Office covering the area where you are stationed.

State, county, and municipal civil service systems.—There are a large number of job opportunities in State and local governments. (See appendix A.) There is normally a civil service system at each local government level from which information can be obtained on job openings, requirements, and salary ranges.

HELPING HANDS

Small Business Administration.—The Small Business Administration is a Federal Government operation that provides information and advice to small businessmen. Included in their services is a system whereby a man operating, or planning to open, a small business can obtain local professional advice from volunteer consultants—either retired businessmen and executives, or active ones willing to devote part of their time to assisting less experienced owners and operators. Appendix C provides additional details on this consultant service. It is particularly significant for the retiree who contemplates a business of his own, or a franchise operation within a business corporation.

PRIVATE EMPLOYMENT AGENCIES

Private employment agencies, like public employment offices, bring qualified candidates and job openings together. Private employment agencies, unlike public employment offices, charge a fee for their services.

Employment Agencies bring qualified candidates and job openings together. They do not all operate alike.

Some employment agencies charge their fee to the job-seeker. They operate as a job-finding agency for the applicant.

Other agencies charge the employer a fee and act as his agent in finding employees.

Some agencies combine these services, charging either the applicant or the employer, and sometimes partially charging both for their services.

Most of the States, the District of Columbia and Puerto Rico have laws regulating these agencies. The States without such laws are Alabama, Mississippi, New Mexico, and Vermont. Each of the jurisdictions with such a law requires employment agencies to be licensed; some laws restrict the amount of the placement fees such agencies may charge, and 25 prohibit fees for registration—that is, paying the employment agency for registering with it for help in obtaining employment. If, however, you are given assistance in writing a resume, or specialized testing, a charge may be made. It is wise to check the local or State laws before registering with an employment agency. When you accept a job (or a referral) you will be requested to sign an agreement which specifies your responsibilities and those of the agency, lists the scale of fees, and describes the methods of payment.

Executive Recruiters. Executive job agencies are usually retained by management to find executives for them; payment is made to the agency by management. The type of person these agencies seek is more highly qualified than those normally listed by regular employment agencies. The military retiree should bear in mind that executive recruiters are operating to satisfy the employers, not employees, and are looking for people who can contribute to the efficiency of some business or industry.

Employment Counselors. These agencies charge the individual for career guidance that may lead to a job. Fees are usually based on the amount of counseling desired by the client and part of the fee is normally paid in advance. Few of these agencies offer any guarantee of a job for the fee paid.

The type of service obtained from commercial agencies depends on what the applicant needs. Before enlisting their help, he should ask some questions:

How much will the charge be? Service charges vary. Although the higher fees may indicate superior service, this is not always true. The reputation of an

agency can often be determined by making inquiries to employers, friends, the local Better Business Bureau, or Chamber of Commerce. It is generally unwise to pay a fee before accepting a position located for you by the agency.

What happens if I get a position through an agency and then lose it? If you leave the position through no fault of your own, most agencies will charge for a temporary rather than a permanent position and will retain a percentage (usually 10 or 20 percent) of your gross earnings on the job and return the balance of the fee you paid; they may offer you another position in lieu of the refund. If you are responsible for your loss of position, you will normally have to accept loss of the fee. Some agencies may make allowances for your holding the position only a short while. Depending on the State law, the agency may be required to make an adjustment in the fee. It is advisable to check with the agency about leaving a position obtained through their services.

What if I change my mind between being referred to a job and reporting for work? The full service charge is usually retained by the agency in these cases.

Upon enlisting the help of a commercial agency, the retiree should check this list of reminders:

- Read and fully understand any contract before signing it. Any oral promises contrary to those in the contract should be put into writing and signed by the agency owner or manager.

- Any position accepted through the agency should be carefully considered; you most probably are obligated to pay the agency on acceptance of a position.

- If you find that the agency has sent you to a firm which has not agreed to see you, check with the agency at once.

- Be sure and inform the agency if there are restrictions on how you want your resume distributed. Most agencies will send your resume to many employers. If there are firms or industries in which you are not interested, let the agency know.

- Be honest with the agency. Inform them of adverse information about yourself, if any, in order to avoid later embarrassment.

- It is to your advantage to cooperate with the agency. Inform them of the results of interviews obtained through their services. Accept their advice on interview techniques and resume information; they have an interest in placing you.

- If you have any doubts about an employment agency, check its reputation with the local Better Business Bureau before signing a contract for its services. Any complaints you have about the agency should be submitted to the Better Business Bureau in writing.

- Be very careful about signing a note for the payment of the employment agency fee. Unless prohibited by law, the note may be discounted to a finance company. If this happens and you lose your job for any reason within a short period you have no redress. The finance company is interested only in receiving your payments. The employment agency already has its money.

Consider local colleges or universities for such things as aptitude testing, psychological testing, or other psychological services. Many educational institutions offer such services at a nominal fee.

Also, there are numerous books and pamphlets on jobseeking and the writing of resumes available from libraries and bookstores.

PROFESSIONAL AND SOCIAL SERVICE ORGANIZATIONS

There are a large number of other sources of assistance, of great variety, from which the individual can choose. These include professional and social organizations, fraternal associations, clubs, and similar social institutions. A sample listing of these is contained in appendix E. The individual must make his own selection from such a list and include organizations of which he is—or may be—a member, or with which he is associated by race, creed, interest, education, or other affiliation.

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BARGAINING TABLE

Landing the right job is a product of negotiation. This *negotiation for employment* is the final planning step for your second career.

You will have yourself to put on the table: your abilities, skills, experience, and potential, that the employer can use for profit.

The employer will have a job to offer that pays in money and satisfaction.

Ideally, both of you will end up agreeing that you are getting a good bargain for what you offer.

BARGAINING TABLE

You should be able to approach each one of these bargaining sessions—employment interview, or personal application—with confidence. You have a wider experience in the world than a younger man. You know yourself better. You know what you are good at and the kind of work you should avoid. Your military service has accustomed you to making decisions, working longer hours than you probably ever will encounter in civilian life, and made you adaptable enough to fit into a new series of tasks in a lot less time than a younger man. You offer "instant experience" to an employer and a rapid return on his investment in you. These, along with the special skills you have that relate to the civilian job objective you have selected, are a part of what you can do for the employer, the subject most interesting to him.

There will probably be many sessions with employers and their staff members before you find the position that is

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the right one for you. Accept this: there is an advantage in working on a volume of applications and contacts. Each one increases your experience in negotiating with the employer. Each one can open up additional leads for you to follow and let you sound the market for your abilities.

Keep a "log," or diary, of your experience in applications and interviews. Note down the mistakes you seemed to have made and review them so they are not repeated.

Work on the principle of "Three Contacts":

The Interview

The Thank You Letter

The Follow-up—by telephone or return visit

BARGAINING TABLE

The "Three Contact" system keeps you—by name and qualities—before the employer for a week or more. It shows you are interested. It makes him aware of you, causes him to reconsider employing you, and keeps your name before him. It costs little and can have appreciable return.

Keep your contacts personal. Learn and record the names of the people you meet. *Write and address them by name*; nothing is more satisfactory to a person than being identified as himself!

Remember that women comprise a large part of the business world and that your contacts with them are no less important than with the men you meet. Most of the lower level office workers—and some of the high level ones—will be women. Their influence is important and they can be of great help to you. Recognize that they fill significant jobs, wherever they are employed.
Clerks, receptionists, and secretaries are usually called (and introduced) by their first names in a business office. Make it a point to learn their *last* names and address them as Miss (or Mrs.)_____ in your future contacts with them; they will look upon it as a mark of respect and appreciate it.

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It is a compliment to any one of the personal contacts you make to ask him for the names of others who may be interested in your talents. Whether a man is interested in hiring you or not, he may know of others in the business world who need a man such as yourself. You can expand each individual contact to many more by merely asking. If you draw a blank, you have lost nothing but a little breath; if you get a name or two you have an inside track on others who are knocking on the door. These are simple and effective techniques; use them to your own advantage.

THE INTERVIEW

You are doing two things at the interview:

Selling yourself to the interviewer or employer.

Buying the job offered.

The employer doesn't have to buy you or sell you the job you want, but you can make him want to do both by selling yourself to him. You may not be successful in this every time, especially the first few times. Not every interview will be enjoyable. Don't be disappointed at making a mistake. Interviewing, like advertising, takes preparation, concentration, and experience.

BARGAINING TABLE

Exercise some modesty in presenting your qualifications. Don't overwhelm the interviewer with things you have done that are beyond the scope of his company or operation. Watch for an opportunity to present what you can do for him, then present it fully, within the scope of his manpower, production, or money resources. This also will form the basis for fair pricing of the job when the subject of pay or salary is reached.

Prepare youself before the interview by finding out as much as you can about the company you will visit. List the questions you can ask:

- Finance, gross sales, net profit.
- Expansion or diversification plans.

- Key executives, their backgrounds.
- Business competition.

During the interview, be concerned with the person to whom you are talking. Rather than trying to impress him, focus on his needs, his concerns, and any erroneous impressions he may display while talking to you. If necessary, force yourself to listen and exercise some caution on pushing your merits forward.

Try to get the interviewer to talk about his own business: its successes and problems, its past and future plans.

Be ready for the opening questions. They are usually:

- What can I do for you?
- Tell me about yourself.
- Why are you interested in this company?

BARGAINING TABLE

Think of these questions while you are preparing for the interview.

What can I do for you? Do you want to apply for a job in some particular operation of the company? Are you seeking something further than the job you are applying for; a progression into a more advanced position after you have proved yourself in this new career? Are you interested in moving on and up with a company you have selected because it is dynamic and expanding?

Tell me about yourself. Tell the things about yourself that you think the interviewer wants to know. Include some of the vital statistics—you are married or single; you are a graduate of some school or course—*but relate as much about yourself to his operation as you can*. This may take some homework before the interview, but it will be well worth it.

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Why are you interested in this company? Again, homework. If you have looked into the company as an organization it won't be difficult to express something of interest that they will appreciate and you will gain from.

Keep in mind that most companies—or any other type of hiring institution—have two basic questions about each applicant that must be satisfied:

Why is he interested in this organization?

What does he have to offer us?

If, at the conclusion of any interview, you have satisfied those two questions in the mind of the employer you will have gone a long way in interesting him in you.

Stay away from military subjects unless they are a specific asset in interesting the employer in you, and even then, be careful of overemphasizing your military background. Relate your service experience to what it shows you can do, not who you were. Give the impression that you are now pointed ahead, to use what you have learned in the civilian world.

BARGAINING TABLE

Watch for sales resistance on the part of the interviewer.

Don't try to impress him; instead, be alert to his needs, his concerns about you, or any erroneous impressions he reveals.

Seek to understand and clarify what is troubling him.

Search for and seek to expand upon areas where the two of you seem to be in accord.

Remember that it is possible the man you will be talking to has had some past military experience himself, but of a different kind from yours—whether as a junior enlisted man or officer, or for just a few years. His outlook on the

INTERVIEWS ARE TWO-WAY STREETS

BARGAINING TABLE

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military services may be different from yours. He may have some preconceived opinions on career servicemen, senior NCOs, or officers. If these come out in the conversation, it is a time for you to listen, not push. Once you know his position, try to show that you are not a "type", but an individual person who can do something for him in his business. Get the interview back on the right track: a job opening and a man who can fill it properly.

The interview also is an opportunity for you to size up the place where you may work. You are incurring no obligation by appearing; instead, you are being permitted something of an inside look into the operation. While the interview is in progress, consider the things that may affect you as an employee:

- Is it the kind of place where you would like to work?
- Will you enjoy the people you will be working under, and with?
- Will you be doing what you want to do?
- Is there an opportunity to move up in the organization to positions of greater influence and responsibility, increased salary, or access to new opportunities?

BARGAINING TABLE

Your visit should include, if possible, spending some time with the person who will actually supervise your work. This will let you judge whether he will be easy to approach and will provide the information or guidelines you will need to do the job well. A helpful supervisor is one who is not only concerned with the purposes of the organization, but is interested also in the forward and upward movement of the employees associated with his part of the operation. Even more important, the participation of this supervisor in the decision to employ you will cause him to have a personal interest in your future success with the company.

WORKING CONDITIONS

Your retirement income allows you to be selective about the working conditions under which you will function in civilian life. You have worked many years for the reward of financial security; it now permits you to pass by any job where you can see you will be unhappy in your work. As you visit places of potential employment, attempt to look at them from these standpoints:

- Are the employees now in the firm satisfied with their working conditions?
- How does the employer, or supervisor, really get things done? Does he play one employee, or group, against another, or does he build his work force around cooperation?
- Does he have a reputation for recognizing the talents and contributions of his employees? Or, does he play the Boss game all the way?

BARGAINING TABLE

- Does the employer promote or pay on the basis of ability, self-improvement, and good work; or, is his promotion system based on seniority or favoritism?
- Does the employer have a program for training and development of the people working for him?
- Did the employer, in the course of the interview, complain about his work force, or did he seem proud of them?
- Did there see to be a cordial relationship between management and the work force? Did the people you met, particularly the ones who first received you, seem proud of the company and congenial with one another?

These are only some of the questions that can be explored during your negotiations with a company for employment. If you are satisfied with your own reactions

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to the working conditions that are apparent to you in your contacts with the firm, you will be accepting employment in an organization that at least fulfills your basic requirements on these points. Without this, you may be buying a situation where adequate income is degraded by personal dissatisfaction with the day-to-day work environment. Happiness is the right job, not the wrong one.

THE QUESTION OF MONEY

The question of salary or wage range is usually brought up at the end of an interview. It is a clear indication of an employer's interest in hiring you. By this time, you will have been sufficiently exposed to what the job offers in things other than salary, and the possible disadvantages that could be compensated for by more income, to make some kind of decision.

You can protect yourself, in any application for a job, by looking into the general wage range offered for the position you want, through reviewing the want-ad columns to determine the beginning salary, or through the local State and U.S. Training and Employment Service office.

BARGAINING TABLE

There are some other things to think over before you establish the general price tag you want to place on your services.

- The lower limits of the wage range you have decided on should be the minimum you are prepared to accept. This amount must satisfy your basic requirement for income. The higher limits of your selected wage range should not be so high that it prices you out of the job market for the positions you desire.

- The wage range for almost any job you accept initially is your beginning wage for whatever occupation you have selected. With rare exceptions, you will earn more than that after the break-in period and a chance to prove your worth.

- The income level you desire should be realistic. It should match the normal wage for the job you want and the area you have selected to work and live in. You will have trouble getting big-city wages in a rural area, or rural living conditions in a metropolitan area. Be prepared for some slippage in matching all your desires and expect some compromises along the way.

- Keep in mind that your desired wage range and your qualifications for the jobs you want are related. High wages demand high qualifications.

- Sell your qualifications at what you believe is their true worth in a competitive job market. You have an advantage here, since most men must find employment that provides all the necessities of life to them and their dependents. You can use your retirement income to be more selective and more competitive for jobs that offer expansion, promotion, and increased future pay.

BARGAINING TABLE

A primary issue to avoid, in any negotiation for wages, is your retirement income. You have earned this by past service. It is the same as the ownership of private property, investment income, stock options, or any of the other additives to income common to civilian life. If your past career had been in civilian life, no one would presume to inquire what stocks or bonds you hold, what property you own, or what inheritances you have received, in connection with the application for a position. Your retirement income is a personal asset no different from these and should not be a consideration in how much you are worth to a company.

You may find it useful to bring out the fact that your former military status permits you to obtain Government-subsidized training in almost any kind of occupational field. As a veteran, you are able to obtain courses to improve your value to the company at no expense to the management. Specific information can be obtained from

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the Veterans Administration on any training you may need, or the employer may advise, to specially qualify you for a job or promotion.

THE AGE FACTOR

The Congress of the United States has prohibited discrimination in employment on account of age. Their action is set forth in Public Law 90-202, the Age Discrimination in Employment Act of 1967. This law promoted the employment of older workers based on ability rather than age. It prohibits arbitrary age discrimination in employment and helps employers and employees find ways to meet problems arising from the impact of age on employment. It protects most individuals who are at least 40 but less than 65 years of age from discrimination in employment based on age in matters of hiring, discharge, compensation, or other terms, conditions, or privileges of employment. Employers of 25 or more employees are covered, as well as labor unions and employment agencies. None of these is allowed to use printed or published notices or advertisements indicating preference, limitation, specification, or discrimination based on age.

The Act is enforced by the Wage and Hour Division, U.S. Department of Labor, Washington, D.C. 20210. Inquiries or complaints should be referred to the Division's National Office in Washington, D.C., or to any of its field offices located in major cities throughout the United States and listed in the telephone book under "U.S. Government—U.S. Department of Labor".

The prohibitions of the Act do not apply:

—where age is a bona fide occupational qualification reasonably necessary to the normal operations of the particular business;

—where the differentiation is based on reasonable factors other than age;

—where the differentiation is caused by observing the terms of a bona fide seniority system or any bona fide employee benefit plan which is not a subterfuge to evade the purposes of the Act;

—where discharge or discipline of an individual is for good cause.

Although this law prohibits such practices, it may not entirely prevent them. Since your birth date is merely a statistic, your best response to the problem of age is presentation of yourself at a personal interview. There you can be judged by appearance, conduct and ability.

BARGAINING TABLE

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A FAMILY AFFAIR

If you have a wife and family—and most retirees do—there are considerations relating to them that are a part of your overall decisions in the transition from military to civilian life.

Your wife is generally in the same age bracket as yourself. She has experienced, in her own life, much that has been directly associated with the Armed Forces: periodic transfers and changes of duty; Government quarters; military social life; recurrent shipment of household effects; or long separations.

Your children, if you have sons or daughters of school age, have similarly experienced a life where school dislocations are normal and playmates or friends have been lost and regained on each successive move.

A FAMILY AFFAIR

Your retirement is an important step to your family. It means a stability they have seldom known, after the final move into a civilian community. It will probably mean the advantages of an increased annual income to the family—your civilian earnings added to your retirement pay. It will mean opportunities to them, as well as to you, for a more even pace of life under improved circumstances. They will share in what you have earned by your past service.

Your selection of location—where you will live, at least initially, in your new career—should be a family decision, weighing your employment opportunities against the advantages or disadvantages presented to your family.

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A FAMILY AFFAIR

A
FAMILY
AFFAIR

Forecast, as well as you can, the educational requirements of your children and assess their effects on your decisions regarding employment and location. Forecast, as well, their growing independence, the times when they will go off on their own, either through marriage, or into the work force. Estimate not only the expenses of higher education, but the reduction in income tax exemptions you will experience as your children become wage earners themselves. Such factors are contributory to computing your net earnings over the future years and the earning power you will have to exercise to live the way you want to live.

Consider the possibility of your wife working as the children grow to maturity. Many women choose to enter the world of work as their home responsibilities diminish. What difference will this make in your situation and does it have a bearing on the decisions you are required to make at this time?

Ask your family, as well as yourself, whether proximity to a military base is a governing factor in your decisions. How significant to your wife is the availability of a Government commissary, or Service Exchange? How significant to your family is the availability of service medical facilities, including hospital care?

Another aspect to be considered is the establishment of a reasonably permanent residence, a new experience for many service families. Such a circumstance can be accompanied by both pleasures and problems and may entail a substantial investment in furniture as well as property. Expenses of establishing a home vary considerably from area to area. The high salary areas usually mean high property value areas also. The desires of your wife and children in what kind of residence you occupy may be a surprise to you; you could even be shocked. The final decision, in all probability, will be a balancing of the aspirations of your family within your estimated earning power. Such a balance may affect your civilian employment objective and your selection of location.

It is well to remember that your wife is entering into a decision to which she has given much thought. What you eventually rent or purchase will be her home for a protracted period of time, not ending with the termination of your current tour of military duty. She may have been looking forward to such a settling down and have definite ideas as to its size, location, and facilities. She is experiencing a major change in her way of life, along with you.

Will your wife, in particular, feel the effects of separation from the service as keenly as you will? Many service wives immerse themselves in the social life of a military base; others may divide their activities between the local base and the local community; others are more civilian oriented and have become accustomed to becoming a part of the general community wherever they have gone. Retirement from the service is not retirement from people. Your wife will continue to seek the warm friendships that all mature people enjoy. They may be found in different ways:

A FAMILY AFFAIR

- Continuation of service-oriented social activities at nearby military facilities.
- Through business associates in the world of work.
- Through neighborhood activities in your selected community.
- Through working with volunteer social, religious, or charitable organizations.
- Through the resumption of education, particularly higher education.
- Through hobbies and similar activities outside of the home.

The choice—or choices—is highly individual and the listing above is far from complete. The important point is

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that any such decision is pertinent to your own at this time and part of the overall considerations to be weighed.

If you and your family have been highly oriented to service life in the past few years, in such a circumstance as living on a major military base, attending base schools, using base recreation facilities, and generally conducting your social life among your military friends, it may be well to begin circulating into the civilian community before you retire. Start to learn more about the civilian world that will be your major environment in the future.

Keep in mind that this transition from military to civilian life will have an effect on your family as well as on yourself; that the change may be troublesome to them, also, and add to the strain on all of you. An initial disappointment in your job search can be aggravated by the equal disappointment of your wife. Both of you can become irritated in your own way, at some essential compromise between what you had planned and your capability for obtaining it within the first year of retirement. It is a time for understanding and "keeping your cool."

CONCLUSION

A FAMILY AFFAIR

The targeting of your own tomorrow is a highly individual operation. The information in this guide has been generalized to cover as many of the problems and solutions that could occur in each man's own situation. It may help, but cannot direct, your own life or future.

One thing remains to be said:

You will be doing yourself a disservice if you do not make at least one visit to a counselor before getting out of the service. Each of the Armed Forces provides such a counseling service for men on active duty. The titles may differ, but the function remains the same for all. These men and women have available to them much more than can be put into booklet form. They are oriented toward the

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problems and circumstances of personnel of your own service. They are in contact with local as well as national agencies and facilities whose assistance you may be able to use. Whether your needs can be fulfilled in a single visit, or a dozen, they are there to help you make the transition to tomorrow.

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APPENDIX A

STATE AND LOCAL GOVERNMENT POSITIONS

Positions in State and local (county, parish, city, township, borough, etc.) governments cover a wide range of skills and functions. Many of these offer particular opportunities to the generalist as well as to the specialist, in a work environment much more similar to military service than the majority of jobs in business and industry.

The following listing of general job categories with examples is representative of the types of positions likely to be available in the non-Federal governments.

BUDGET AND FINANCE

- Auditors
- Controllers
- Revenue Collectors
- Fiscal Affairs Officers
- Budget Analysts
- Accountants
- Budget and Management Officers
- Purchasing Officers

ENGINEERING AND PUBLIC WORKS

- Field Engineers
- City Engineers
- Air Pollution Control Officers
- Construction Inspectors
- Dust and Mine Gas Engineers
- Public Utility Directors
- Public Works Directors
- Mechanical Maintenance Supervisors
- Survey Officers
- Sanitary Engineers
- Fleet Superintendents
- Traffic Engineers
- Building-Zone Officers

GENERAL GOVERNMENT

Municipal Management Administrators
Administrative Analysts
Directors of Administration
Public Administrators
City Managers
Directors of Community Services

GENERAL MANAGEMENT SYSTEMS AND ELECTRONIC DATA PROCESSING

Computer Systems Analysts
Data Systems Specialists
Programer-Analysts
Programers
Systems Analysts

HEALTH, WELFARE, AND HOSPITAL ADMINISTRATION (NON-M.D.)

Public Health Education Directors
Social Workers
Physical Therapists
Occupational Therapists
Environmental Health Directors
Psychometrists
School Health Supervisors
Mental Health Service Directors
Dietitians
Social Welfare Supervisors

PERSONNEL AND TRAINING

Personnel Directors
Directors of Personnel Services
Personnel Analysts
Directors of Training
Test Technicians
Employment Administrators
Employee Benefits Administrators
Directors of Manpower
Classification and Pay Officers

PLANNING AND COMMUNITY DEVELOPMENT

Community Resource Development Specialists
Planning Directors
Researchers
Directors of Urban Renewal/Development
Social Planners
Relocation Administrators
Planning Officers
Community Relations Coordinators
Physical Planning Coordinators
Demographers
Model Cities Analysts

SPECIAL PROGRAMS

Recreation Supervisors	Directors of Services
Youth Services Directors	Writers/Editors
Museum Curators	Claims Examiners
Public Information Officers	Librarians

TEACHING, RESEARCH, AND EDUCATIONAL ADMINISTRATION

Instructors	Administrative Officers
Researchers	Program Directors
Teachers	Fiscal Officers
Librarians	Utilities and Maintenance Specialists
Transportation Specialists	

The increased attention throughout the country toward housing and urban development is a factor that should be considered in the selection of job targets within State and local governments. By 1970, there were 707 urban renewal programs, 2,200 public housing programs, and 200 model cities programs in existence. These represent a wide variety of disciplines and needed skills or experience in functions where the expanding requirements for human talents provide opportunities for advancement.

Another area of expanding interest and concern is the environmental sciences, solving the massive and growing problems of water, air, and land pollution.

A third such area of expansion in local government is urban planning, including transportation.

The eligibility of retirees for positions in local government is based largely on their academic qualifications and military experience. Local governments seek personnel who can competently fill the positions open; few positions allow concurrent training to meet the demands of the job. A retiree interested in State or local government as a new career should therefore relate his existing qualifications to the available openings. Where he feels that additional training or education may be required, it is advisable that he complete it before actual application for positions. Service counselors are able to provide information on vacancies and requirements in such fields as city management.

APPENDIX B

EDUCATION AND EDUCATION SERVICES

Current forecasts on the education profession from the Bureau of Labor Statistics, U.S. Department of Labor, indicate that the need for teachers during the period 1970-1980 will be substantially reduced from previous projections if the current rate of teaching graduates continues. Job openings for elementary and high school teachers, for example, are expected to total 2.4 million from now until 1980, while the supply of such teachers during the same period will reach 4.2 million if the present trend continues. This projection indicates that the teaching situation for the next ten years will be the reverse of the 1960's, when the demand for teachers far exceeded the supply.

While such a projection does not mean that a demand for teachers will disappear during the next decade, it is clear that the teaching profession will not be the dynamically expanding field it has been for the past 10 years.

Education services--the nonteaching positions—are expected to continue to demand a large number of skilled persons during the decade 1970-1980.

Education is a big business in the U.S. It currently involves over $38 billion of public funds annually. There are over 20,000 school districts in the country, concerned with the education of 46 million students below college age. These statistics do not include colleges and universities, parochial, or private schools.

The system of public education is nationwide; private schools are equally widespread. This offers a wide selection of locality within both teaching and nonteaching positions in the educational field.

Detailed information on schools, school districts, key personnel, and mailing addresses are contained in the several publications produced by the U.S. Office of Education, U.S. Department of Health, Education, and

Welfare. These documents, available at most public libraries and educational institutions and on sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, give complete listings of all public schools, with other pertinent information:

Education Directory, Part 1, State Governments (Education)
Education Directory, Part 2, Public Schools Systems
Education Directory, Part 3, Higher Education
Education Directory, Part 4, Education Associations

TEACHING POSITIONS

Eligibility for teaching positions at the senior college level is largely determined by the colleges and universities themselves. For teaching below the senior college level, individuals should make inquiry on the certification standards required. One source of this information is the "Manual on Certification Requirements for School Personnel in the United States" published by the National Education Association. This book may be found in some libraries, and is used as a reference by most teaching institutions. Another book of interest to those considering a teaching profession is "Teaching Opportunities" published by the Office of Education, U.S. Department of Health, Education, and Welfare.

POSITIONS IN EDUCATION SERVICES

There are numerous positions within the public and private school systems of interest as second careers for retired military personnel. The type of work required is often compatible with military skills. As nonprofit institutions, the operations and functions of school systems have several similarities with the military services. They are budget controlled. They operate on a predetermined annual cycle, less affected by economic changes than business or industry. The system of seniority and promotion is not unlike that of the Armed Forces. They offer a wide variety of activities familiar to the military man:

Transportation

Administration
Public Information

Fiscal Control
Library

Public Utilities
Business Management

Supply
Financial Aid

Medical Care

Building Maintenance

Grounds Maintenance

APPENDIX C

SMALL BUSINESS ADMINISTRATION

MANAGEMENT ASSISTANCE PROGRAM

The Management Assistance Program conducted by the Small Business Administration is designed to reduce the number of failures experienced by new small businesses because of poor management.

The methods used are those of counseling and training in the local community, by local volunteer instructors and advisors experienced in small business operations.

The managerial potential of the small businessman is evaluated, his education and experiences are assessed, and his knowledge of business needs is examined. Where a need for management assistance is determined, a plan is developed to correct discovered weaknesses, with a time phasing of at least 12 months of counseling and needed training. Functional areas covered by this assistance may include any of the following:

- Market feasibility
- Location
- Money needs
- Initial stock
- Layout
- Merchandising
- Advertising and sales promotion
- Record keeping
- Insurance
- Taxes and regulations
- Credit and collections
- Personnel
- Future planning
- Technical skills
- Other deficiencies

Volunteer instructors and advisors are members of two organizations: Service Corps of Retired Executives (SCORE); and Active Corps of Executives (ACE).

SCORE counselors work without fee, other than reimbursement of out-of-pocket expenses by their clients. They provide management counseling and guidance to small businessmen, using their own experience to help the small businessman succeed and make his operation more profitable.

ACE volunteers are recruited from active, rather than retired, executives. These are men and women in mid-career themselves, with business knowledge and experience combined with a willingness to devote their own time and effort in assisting new small businessmen. They also work without fee except for reimbursement of expenses by the client.

Management training, by either SCORE or ACE volunteers, offers four types of assistance to the small businessman:

Training courses

Conferences

Problem clinics

Workshops for prospective business owners.

Followup courses on single broad management functions (personnel management; financial management) are also offered, as well as courses cosponsored by colleges or universities, chambers of commerce, or local business organizations. A nominal fee may be required in such courses to cover expenses.

Assistance through the Management Assistance Program is widespread, with 165 active SCORE chapters as of the end of 1969.

Information on this program can be obtained from the Small Business Administration, 1441 L Street, N. W., Washington, D.C. 20416, and from local Chambers of Commerce.

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APPENDIX D

FRANCHISES

A franchise is basically the operation of a business under special privileges granted by a corporation holding rights in the merchandise or service offered to the public. These privileges may involve the use of some celebrity's name, the use of patented or copyrighted products, territorial protection from direct competition, or the advantages of national advertising of the product or services offered.

Most franchises require a substantial amount of initial capital, and involve a fee paid to the franchisor. The franchiser assumes all, or the greatest part, of the financial risk, but enjoys the special privileges not obtainable as an independent.

If you feel that a franchise operation offers you both satisfaction and profit, look over the field. Visit franchises already in operation and the franchise shows periodically presented in major metropolitan areas.

Your task is to find the right business for you, the right franchise for you, and the right kind of deal from the franchisor.

Reliable franchisors will give you literature on their operation, explain their program, and let you study any proposed contract with your own legal counsel. It is up to you to determine whether the concept presented is a sound one or not.

Study the product represented, whether it is a food operation, a service operation, or some kind of hard-goods sales outlet. You are a consumer and should have your own opinions on the marketability of what is being sold by asking yourself whether it would be attractive to you or your family.

If the franchise is based on the name of some celebrity, make your own judgment on how much of an impact his (or her) name will be on selling the product.

What will the franchisor offer you as a businessman? Do you really need his help in setting up your own business? Whatever fee he wants, can you do better by putting the same amount of money into your own independent operation? Many franchises are worth every cent you pay into the fee they ask; others may not be. Get advice, both legal and commercial, before you put your name and money on the line.

Consider these factors:

What are the weekly sales you can expect?

What will be your cost of sales?

How much labor will you need, and at what cost?

What will it cost for rent and utilities, maintenance and services?

How much will promotion and advertising cost, and how much can you expect from the national operation?

Remember payroll taxes on your employees, and such things as insurance, group insurance, and group hospitalization.

What will be the annual cost of licenses, snow removal, gardening, and donations to charities as a business?

What will be your own operating profit? Will you have to put in 60 or 70 hours a week yourself to make it?

Legal counsel on the signature of any franchise contract is a must. The corporation with which you are associating will have their own counsel; you would be ill-advised not to have your own. You want a contract that satisfies your end of the bargain, one you can live happily with and prosper by.

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There are special helping hands for you if you are considering a franchise type of business:

National Association of Franchised Businessmen
1404 New York Avenue
Washington, D.C. 20005

National Better Business Bureau
230 Park Avenue
New York, New York 10017

Boston College Center for the Study of Franchise
Distribution and Smaller Business
Boston College
Chestnut Hills, Mass. 02167

Federal Trade Commission
Washington, D.C. 20580
(for free pamphlet: Advice for Persons Who Are Considering an Investment in a Franchise Business)

Sales and Distribution Division, U.S. Department of Commerce
Washington, D.C. 20230
(for free booklet: Franchise Company Data)

Small Business Administration
1441 L Street N. W.
Washington, D.C. 20416
(for free booklet: Are You Ready for Franchising? No. 115, Small Marketers Aid Series)

APPENDIX E

PROFESSIONAL AND SOCIAL SERVICE ORGANIZATIONS

The listings in this Appendix are not comprehensive, but provide a sampling of the many types of national organizations whose services and activities may be of assistance to the retiree. Complete local listings of such organizations may be found in the yellow pages of the telephone directory, under *Associations*, *Clubs*, *Fraternal Orders*, and *Social Service Organizations*.

ASSOCIATIONS.

Air Force Association
Air Force Sergeants Association
American Association of Retired Persons
American Legion
American Veterans of World War 2 and Korea
Association of the United States Army
B'nai B'rith
Catholic War Veterans of the U.S.
Coast Guard League
Congress of Racial Equality
Disabled American Veterans
Fleet Reserve Association
Jewish War Veterans of U.S.A.
Marine Corps League
Marine Corps Reserve Officers Association
Military Order of the Purple Heart
Military Order of the World Wars
National Association for the Advancement of Colored People
Naval Reserve Association
Navy League
Reserve Officers' Association of the U.S.
Retired Officers Association

Society of American Military Engineers
U.S. Armor Association
Veterans of Foreign Wars of the U.S.

CLUBS.
American Legion Posts
Army-Navy Clubs
Kiwanis Clubs
Knights of Columbus
Moose Lodges
Odd Fellows Halls
Rotary Clubs
Veterans of Foreign Wars Posts

FRATERNAL ORDERS.
College Fraternities
Elks Lodges
Knights of Columbus Councils
Masonic Lodges and Temples
Moose Lodges
Odd Fellows Halls

SOCIAL SERVICE ORGANIZATIONS.
Jewish Social Service Agencies
Legal Aid Societies
National Urban League
Junior Chamber of Commerce

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VT 014 117
EISEN, IRVING; FEINGOLD, S. NORMAN, ED.
SEVEN STEPS TO FINDING YOUR PLACE IN THE WORLD OF WORK. A GUIDE FOR JEWISH AND OTHER MINORITY YOUTH.

B'NAI B'RITH, WASHINGTON, D.C. VOCATIONAL SERVICE.
MF AVAILABLE IN VT-ERIC SET.
B'NAI B'RITH VOCATIONAL SERVICE, 1640 RHODE ISLAND AVENUE, N.W., WASHINGTON, D.C. 20036 ($1.25-ALL ORDERS UNDER $2.00 MUST BE PREPAID)
PUB DATE - 71 33P.

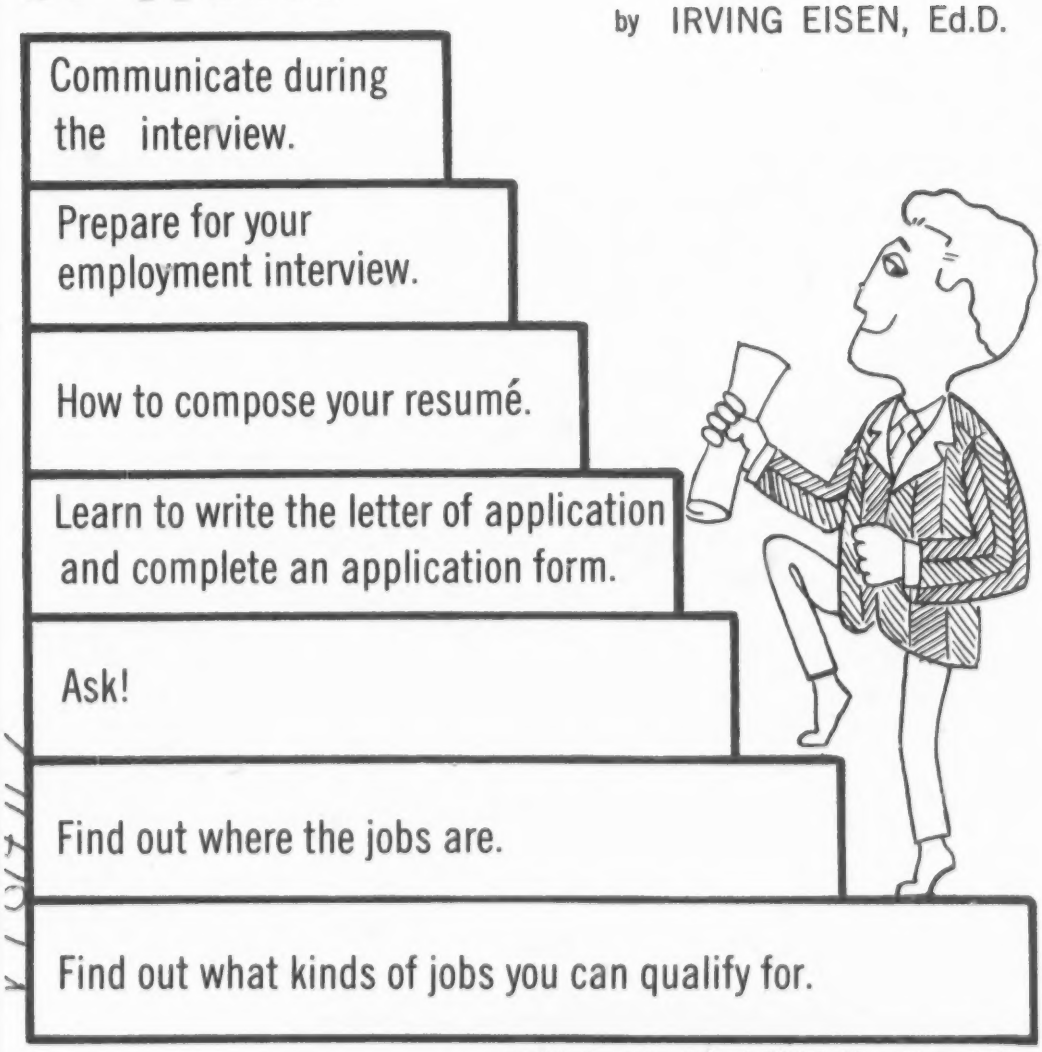
DESCRIPTORS - OCCUPATIONAL INFORMATION; *VOCATIONAL COUNSELING; *GUIDELINES; *MINORITY GROUPS; WORKING WOMEN; *JOB PLACEMENT; *JOB APPLICATION; GUIDES

ABSTRACT - DISCUSSED IN THIS PAMPHLET ARE SEVEN GUIDELINES FOR FINDING EMPLOYMENT. PRESENTED AS SEVEN STEPS, THEY ARE: (1) FIND OUT WHAT KINDS OF JOBS YOU CAN QUALIFY FOR, (2) FIND OUT WHERE THE JOBS ARE, (3) ASK (4) HOW TO WRITE THE LETTER OF APPLICATION AND COMPLETE THE APPLICATION FORM, (5) HOW TO COMPOSE YOUR RESUME, (6) PREPARING FOR YOUR EMPLOYMENT INTERVIEW, AND (7) COMMUNICATION DURING THE INTERVIEW. OTHER TOPICS DISCUSSED INCLUDE GETTING READY FOR WORK AND SPECIAL PROBLEMS OF MINORITY GROUPS AND WOMEN. (JS)

VT 014 117

Seven Steps to Finding YOUR Place in the World of Work

by IRVING EISEN, Ed.D.



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THEODORE B. MARKS
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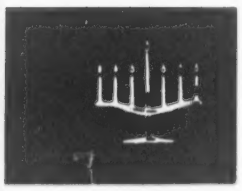
PAUL L. SCHWARTZ
Memphis, Tenn.

MRS. A. LOUIS SEGAL
Philadelphia, Pa.

LOUIS WEBER
Southfield, Mich.



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Seven Steps to Finding YOUR Place in the World of Work

A Guide for Jewish and Other Minority Youth.

by

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Under the Editorship of Dr. S. Norman Feingold
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INTRODUCTION

This career booklet is for YOU if you are getting out of school and going to work. It was written with YOU in mind if you are like one of the young persons described below:

1. graduating from high school,
2. completing a training program at a trade or a vocational-technical school,
3. completing some special training in the Armed Forces which prepared you for a "non-military" occupation,
4. receiving an associate degree from a two-year community college in a specialized technicial level occupation, or
5. receiving a bachelor's or higher professional degree from a college or graduate school.

This career booklet is for YOU if, having completed a program of education and training, and, having also had some work experience, you are now looking for either a better or a different job. You will most likely need to use the skills of job-hunting many times during your lifetime of work.

This career booklet is NOT YET for you if you are still in school and are interested mainly in finding part-time or temporary employment. If you are still in school and want to "try out" a role in the world of work, be sure to read the book *Part-Time, Summer and Volunteer Jobs* by Dr. Daniel Sinick, available from B'nai B'rith Vocational Service, 1640 Rhode Island Avenue, N.W., Washington, D. C. 20036, or *Finding Part-Time Jobs* by Dr. S. Norman Feingold and Harold List, available from Science Research Associates, Inc., 259 E. Erie Street, Chicago, Illinois 60611.

This career booklet is for YOU if you are seriously looking for your own special role to play as a working, productive adult in a busy, ever-changing world at work. Knowing the skills of finding jobs will be essential to your success in your career life.

The major content of this booklet describes SEVEN STEPS which are an essential part of the job-finding process. The steps are organized with a view toward making it easier for you to repeat the process each time you seek a new or better job.

The "Seven Steps to Finding Your Place in the World of Work" is preceded by a section on the psychology of motivation. This section is intended to help clarify the importance of "placement readiness." These are the conditions and inner feelings which must be "set" before you can expect to find yourself in a work setting suitable for you.

Attention is called to special aspects of job-hunting for members of minority groups and women. These mainly relate

to effects of unfair discrimination in hiring—or not hiring—on the basis of race, sex or religion. Comments are added on the needs and growing opportunities for minority youth to improve their chances for being employed.

The "Seven Steps" are followed by a section which, it is hoped, may help you appreciate that the future which the world of work holds for all of us can be forecast with certainty in one word—CHANGE. New technologies and organizational forms will call upon you for unusual responsiveness and sensitivity to change. The final section emphasizes the ever-closer relationship between true success on a job, openness to a changing world, and skill in finding a new job whenever the situation arises.

GET READY TO LOOK

This career booklet was written to help you plan your job-hunting steps effectively. It can help you find a job that is *right* for you if you are READY.

You are READY to look for a *right* job if you have completed the following preparations for the job hunt:

Make a Career Decision!

The jobs that can be right for you are ones that can offer you more than just a chance to "make a living." The best jobs are those that will help you "make a life" for yourself in a rewarding career that will not only meet your personal and social needs but satisfy your real interests.

If you are not yet sure what career will most likely express your interests and values, you should think seriously about first getting educational and vocational counseling. The Amer-

Make a Career Decision

ican Board on Counseling Services publishes, every two years, a directory of approved professional agencies. Your school or college counselor can help you make a wise career choice, or can refer you to a well qualified source of help. B'nai B'rith Vocational Service has twenty field offices throughout the United States which provide testing, counseling, and career information to thousands of youth each year. The Jewish Vocational Services, Presbyterian Guidance Services, YMCA's and various other professional resources in many communities employ specially trained counselors to help people make a career choice. Many colleges and universities maintain a counseling department and placement service for their students and alumni.

There are many booklets and pamphlets which describe opportunities in various careers. Your school, college guidance office, or your library will have a file of occupational literature. B'nai B'rith Vocational Service publishes educational and vocational guidance literature and leaflets describing careers which you may find helpful. *Occupations and Careers* by S. Norman Feingold and Sol Swerdloff, published by McGraw-Hill Book Company, is a standard text describing the world of work. It is available in most libraries.

Learn a Trade or Profession

Learn a Trade or Profession!

You are READY for active job hunting if you have spent time and effort in preparing for a particular career. Some employer will now be willing to pay you a full salary and provide you with opportunities for many personal satisfactions.

There are rare exceptions to the "fact of life" that you must have education and training for a career. Some people are

"born" with an unusual talent for art, music, or drama. Some people do have unusual strength to perform heavy labor. Others are born with unusual beauty and can model clothes and appear in special settings. Even these people require a degree of training. Most of us must acquire a salable skill or trade before we can actually earn an income that is secure, stable, and more than just enough to "make ends meet."

Some people have learned a salable skill based on a combination of common experiences. They have acquired such skills as: driving an auto, dealing considerately with people, or using small hand tools. Much of this kind of work is offered on a part-time or temporary basis. People who have reached this level of training can usually find jobs which meet immediate or short-term needs for earning their "daily bread."

The "fact of life" is, however, that the more specialized and necessary are the abilities you have to offer a prospective employer, the more likely he is to employ you and pay you a FULL salary.

Adopt the best possible attitude toward work!

You are READY to look for a job and will be most likely to find the best opportunities if your feelings about work are *positive*.

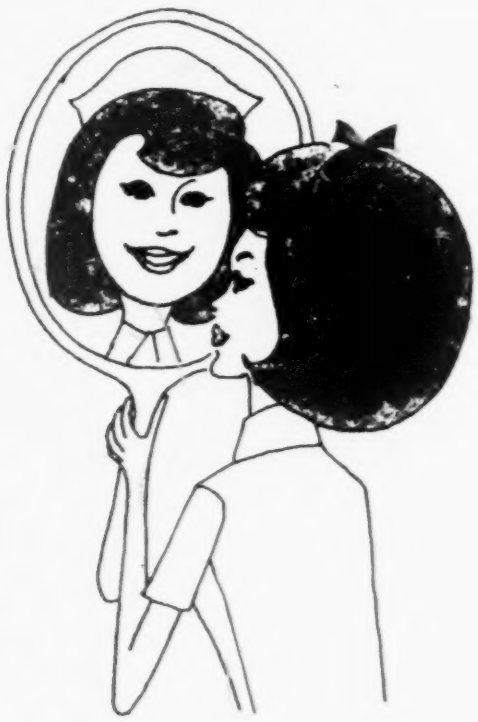
Negative feelings about work will, somehow, influence a prospective employer who may otherwise be interested in "buying" your skills and education. He will attempt to evaluate your motivations and decide whether you will produce at a reasonable level of efficiency.

You are READY to look for your special place in a world at work if:

1. work means you will increase your independence and meet responsibilities,
2. work means that you will have an opportunity to help the people you serve and benefit society as a whole.
3. work means that you can put your education, training, and energy to use constructively and creatively,
4. work means that you will gain experience and learn to do your job better,
5. work means gaining the respect of others and recognition for the things you do well,
6. work means that you will expand your social contacts,
7. work means opportunities for fun as well as funds, and
8. work means to you that you will enrich your life and become the best person you can.

If you think of a job *only* in terms of "money," you are probably not yet ready to do your best possible job of job-hunting. You might very well profit from a conversation with someone whose opinions you value highly. A teacher, counselor or a former employer may serve as a "sounding board"

for you in facing up to your feelings about work. Feelings of pessimism or hopelessness—some too deep for you to be fully aware of—may be dampening your enthusiasm or blocking your determination to find the best job for you. You may need to get your negative feelings about work "off your chest" before you are READY to find *your* place in a world at work.



Look at Yourself

SEVEN STEPS TO THE SKILLS OF JOB-FINDING

The following sections suggest seven steps you will need to follow each time you go job-hunting. Almost all vocational counselors and experts on labor market trends agree that you will need to use your job-hunting skills many times during your working lifetime. Even if you and your current employer are very pleased with things as they are, you may find yourself seeking a promotion to a new job.

Step One. Find out what kinds of jobs you can qualify for.

If you have been trained to fill any one job, it is almost a certainty that you can qualify for many similar jobs. For example, if you are trained to be a teacher, there are numerous jobs which are related to teaching and education. Step One tells

you how to identify similar job titles within the same "job family."

Step Two. Find out where the jobs are.

After identifying the job titles for various positions you could possibly fill, locate an employer with a vacancy. Step Two suggests a number of places to investigate actual job openings.

Step Three. Ask!

If you know what kinds of jobs you can qualify for and where the vacancies may be found, you will need initiative and "know-how" in applying for the job. Step Three suggests the many ways to apply for a job

Step Four. How to write the letter of application and complete an application form.

Of all the ways to ask for a job, the letter of application is often a most necessary means of expressing your interest. Step Four suggests the essential points in writing a letter of application and offers helpful hints in filling out the application blank.

Step Five. How to compose your resumé.

You can't pack all the facts about your qualifications into your letter of application. Step Five describes the most effective ways to summarize your training and experience. Composing your resumé is suggested as a way of looking at yourself and building self-confidence.

Step Six. Preparing for your employment interview.

The employment interview is the most crucial step in your job hunt. Advance thought and careful planning can improve your chances for employment. Step Six points out specific ways to prepare for a successful session with your future employer.

Step Seven. Communication during the interview.

The interview is a personal contact that must be anticipated each time you seek a new or better job. Step Seven emphasizes some of the often overlooked ways in which you may be able to communicate effectively everything you want known about the real you.

STEP ONE: FIND OUT WHAT KINDS OF JOBS YOU CAN QUALIFY FOR.

If you have made a reasonably clear decision about your career and have prepared yourself for a role in that overall

career field, you may recall having heard the titles of several jobs for which you can best qualify. Perhaps your counselor has mentioned several occupations to consider. No one really has to search for only one "best job." There are over 25,000 different jobs which the U. S. Department of Labor has found to exist in our country. With these many jobs there are more than just one or two jobs in any career field which may meet your needs, match your interests, and fully use your talents and abilities. To find out the titles of all the occupations which could interest you, observe the following:

. . . Make a list of as many job titles as you can recall. Use 3" x 5" index cards.

. . . The illustration below is a copy of a section of the "Dictionary of Occupational Titles," Vol. II—Occupational Classification, (Published by the U. S. Department of Labor, Manpower Administration). Most libraries have the latest edition of the D.O.T. in their reference sections. Study the "Occupational Group Arrangement of Titles" in the D.O.T. until you can see the relationship between "job families." Your counselor at school or at a public or private agency can often help you in catching on. Find and *list* titles of jobs related to the careers in which you are interested. You will find that a system of using a 3" x 5" index card for each job provides flexibility. Analyze the descriptions of the jobs in the D.O.T. to learn more about:

ART 230 PHOTOGRAPHY

PHOTOGRAPHY AND MOTION PICTURE CAMERA WORK

.062

Work Performed

Work activities in this group primarily involve photographing people, objects, or materials with still or motion picture cameras. Workers frequently conceive artistic photographic effects, and arrange and prepare the subject matter to be photographed.

Worker Requirements

An occupationally significant combination of: Imagination; aesthetic appreciation, a feeling for form and symmetry; an eye for color; dexterity with fingers and hands and eye-hand coordination; and a facility for dealing with people.

Clues for Relating Applicants and Requirements

Collection of cameras and scrapbook of own photos.
Collections of the work of great photographers.
Expressed preference for public contact work.
Success as photographer for college newspaper.

Training and Methods of Entry

Hobbies and casual experience in school and military service are usually considered extremely important factors for entry into this field. Courses in photography and newspaper or magazine theory and practice are also significant. Workers usually start with routine, stock assignments and progress through experience to the more creative facets of photography and motion picture camera work.

RELATED CLASSIFICATIONS

Decorating and Art Work (.031; .051; .061) p. 228
Art Work (.081) p. 232
Motion Picture Projecting, Photographic Machine Work, and Related Activities (.282; .382) p. 514
Artistic Restoration, Decoration, and Related Work (.281; .381) p. 234

QUALIFICATIONS PROFILE

GED: 4 5
SVP: 7 8

Apt:	GVN	SPQ	KFM	EC
	2 3 3	2 2 4	3 3 3	5 2
				4 3
				4

Int: 9 6
Temp: X 9
Phys. Dem: L 4 5 6

1. related classifications or "job families,"
2. required job training time,
3. capacities and abilities required,
4. interests which are related to each kind of work,
5. different types of occupational situations which require some personality adjustments,
6. physical demands and activities required, and
7. the working conditions and physical surroundings.

. . . To refine your list, eliminate duplicates and undesirable job titles. If you have listed your jobs on 3" x 5" index cards, arrange them in order of preference. Place the most desirable jobs in front of your card index file.

. . . Explore recent trends and gather data about those jobs you listed and their related job families in the "Occupational Outlook Handbook" (published by the U. S. Department of Labor, Bureau of Labor Statistics, Washington, D. C.). Your library or school counselor may have a recent copy of this biennial publication for your reference.

The textbook, OCCUPATIONS AND CAREERS, by S. Norman Feingold and Sol Swerdloff, published by McGraw-Hill Book Company, is another valuable resource. Along with other information, it will give you valuable leads to:

1. locations of employment in each job,
2. employment outlook and expected opportunities for well qualified applicants, and
3. where to obtain more information. (This section could lead to names and addresses of industry placement services, industry and trade newspapers, journals, and lists of leading employers.)

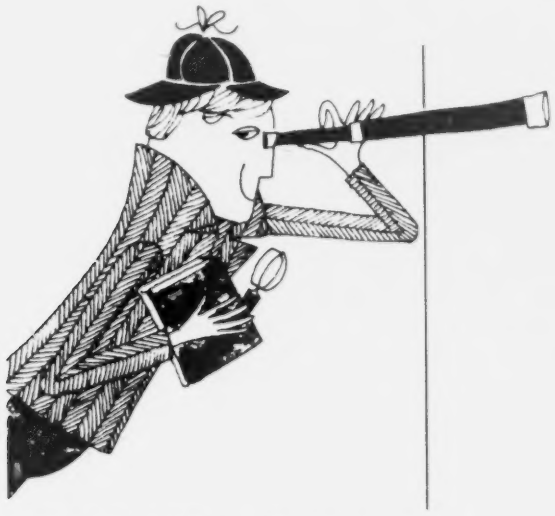
Make notes about your job leads on your 3" x 5" index cards. Next, refine your list again by eliminating or placing at the back of your pack those job cards with a relatively bleak outlook. Place at the front of the index cards those job cards with a promising future and opportunities available in sections of the country in which you are planning to live. (Of course, you wouldn't be considering a career in mining if you want to live in New York City!)

Get started—and continue your efforts until you have listed all the jobs of your choice.

STEP TWO: FIND OUT WHERE THE JOBS ARE.

Collecting your pack of index cards has helped you identify the jobs you want, the jobs which are probably available, the industries in which jobs are most likely to occur, areas of the country in which you may find such employment, and dis-

cover other valuable and relevant information. Where are you most likely to find the names and addresses of actual employers? Who has positions to offer which are similar to the ones you want to find? Where are the job vacancies? The answers to these critical questions may be in the following places:



Find Out Where the Jobs Are

1. newspapers—the "Help Wanted" columns of the classified advertisements,
2. trade and professional magazines,
3. "The Job Finder: It Pays to Advertise," Cambridge, Mass. Bellman Publishing Company. 1966.
4. yellow pages of telephone directories,
5. industry or professional placement services and Chambers of Commerce,
6. industrial directories (Thomas' Registry of American Manufacturers, McRae Blue Book, Moody's Industrial Manual, two directories by Dun and Bradstreet, the Million Dollar Directory, and the Middle Market Directory.),
7. industrial personnel offices,
8. union hiring halls,
9. your own school or college guidance or placement offices,
10. state-employment service offices,
11. federal civil service,
12. state, county, and municipal civil service or personnel offices,
13. local employment offices,
14. school board personnel offices,
15. local "Y," your church or synagogue or youth center,
16. friends and relatives—and their friends (especially

those employed in positions similar to the ones you hope to find),

17. city boards of trade, and
18. non-profit and governmental organizations (J.V.S., U.S.E.S., 40-Plus Clubs, etc.).

Ask for a Job

STEP THREE: ASK! (IF AT FIRST YOU DON'T RECEIVE, ASK, ASK AGAIN!)

There are definite ways to ASK for a job.

1. Write letters of application to potential employers.
2. Make appointments and appear for job interviews.
3. Place advertisements in the "Situation Wanted" columns of newspaper and magazine classified advertisement sections.
4. Visit public and private employment agencies and personnel offices of large companies for unscheduled interviews. File applications and leave a resumé.
5. File an application in your school or college placement office. (Alumni offices of many schools also do placement work.)
6. Place a "Job Wanted" notice on bulletin boards in your local "Y," Community Center or other organizations.

2094

Your minister or rabbi, your teachers, and your professors meet and talk with many people each day. Business leaders, fraternal and service organization leaders—almost everyone who enjoys a role of meeting and dealing with people—welcome a chance to inform you about job possibilities and openings. ASK every friendly person you meet whether they know the name of an employer who is looking for a willing worker with your unique qualifications. ASK them to keep you in mind. Spread the news that you are "looking."

Of all the above ways to ASK for a job, the LETTER OF APPLICATION, the APPLICATION BLANK itself, the RESUMÉ, and the JOB INTERVIEW in particular require careful thought and preparation.

It is essential that your letters, application blanks, resumé, and interview manners communicate to employers the impression that:

1. you have made a definite decision to accept the kind of job for which you are applying,
2. you have the abilities, interests, and education the job requires,
3. you have a positive attitude toward work,
4. you have confidence in yourself, both as a unique person and as a valuable help to your prospective employer, and
5. you really want the job!

AVOID USE OF THE TELEPHONE, unless a call was specifically requested. The phone can be used to arrange the time and place for a personal contact; but avoid trying to conduct an "interview" on the phone. Telephone conversations are too impersonal and may interrupt a busy person. It is often too easy for an employer to dismiss your application by phone.

Getting a job is a job in itself. This usually requires a great deal of time and effort. Plan this "work" realistically and you won't be discouraged.

STEP FOUR: HOW TO WRITE THE LETTER OF APPLICATION AND COMPLETE AN APPLICATION BLANK.

It is important that your letter of application have an immediate effect that will attract the reader's attention and stimulate him to look further—to look at your resumé, invite you for a personal interview, or send an application form.

Here are some well-tried suggestions for writing letters of application:

1. Type your letter, unless your handwriting is perfectly legible and particularly attractive.

2. Use good quality, plain white paper. Follow a standard business style. Of course, make sure you've signed it before sealing the envelope.
3. Address your letter to a particular person, if possible, rather than to an official title.
4. Declare yourself as a candidate, making a reference to the specific position and to the name of the employer. If a mutual friend informed you about the job, mention his name. (Be sure you have your friend's consent.)
5. Describe your general qualifications and call attention to the enclosed RESUMÉ.
6. Mention your availability date, particularly if it is tied to graduation.
7. Close with a request that your correspondent make the next move—that he write or call you for an interview appointment. A phone number where you can be reached is especially important.
8. Keep a carbon copy. You may only need to change names and dates to use the important paragraphs for another letter. You may want to follow up your letter with a phone call to let the employer know your intentions are sincere.

Look at the letter of application below. Does it follow these suggestions?

111 Park Street
New Haven, Connecticut
06511
September 12, 1970

Dr. William J. Beucler
Personnel Director
Beucler, Wood & Brine, Inc.
501 Crescent Street
New Haven, Connecticut 06515

Dear Dr. Beucler:

Dr. Irving Eisen recently mentioned to me that you have a vacancy in your publishing organization. This is my application for a position as a technical writer.

My Bachelor's degree program was completed with a major in English at Southern Connecticut State College. My minor is in Biological Sciences. My work experience includes writing articles for our college newspaper describing programs and activities in our college Science Department. The enclosed resumé will give you a more complete picture.

I am not presently employed and will welcome an opportunity to start with your publishing organization at an early date.

Please call or write to me for an interview at any time convenient for you. My home telephone number is 624-8190.

Sincerely yours,

ALVIN SMITH

Encl. (Resumé)

You may receive an application blank in response to your letter of application. The application blank serves as a messenger between the candidate and the potential employer. View it with the same importance you give to the letter of application. The employer who interprets the completed blank may find out more from it than the candidate ever intended. It is an important link in hiring.

Here are some helpful hints in filling out an application blank:

1. Fill out the application blank neatly and accurately. Physical appearance of the form tells the employer something about the applicant.
2. Use ink and print answers unless otherwise specified. Write your signature.
3. Answer all questions. Questions left unanswered become conspicuous by their absence.
4. Answer all questions as frankly and as honestly as you can. If you are hired your application form will become a permanent part of your personnel record.
5. Follow instructions. Be careful with dates and the order in which you tell about past job experience. If

Application Blank

asked to list both jobs and education in reverse order with most recent experience first, do so.

6. Give required number of references.
7. If requested, state minimum acceptable salary. This question should not be left unanswered.

"Practice makes perfect." The more forms you fill out, the easier it becomes to fill them out. Application blanks may be obtained from private or public employment agencies in your own area. Practice on them before the time when you need and want a particular job.

STEP FIVE: HOW TO COMPOSE YOUR RESUMÉ

A prospective employer will probably want more information about you than can be reasonably included in a letter. You can provide a quick summary of your background on a data sheet, commonly called a *RESUMÉ*.

Young people usually can summarize this data on one sheet. As your experience record grows you may need more pages for your resumé. Most effective resumés will look somewhat like the accompanying illustration. Follow these widely accepted suggestions:

1. Organize the data attractively and clearly so the reader can "spot" immediately the vital facts which concern him most.
2. Type your resumé. One perfect original can be duplicated adequately by photocopying, multilithing, or mimeographing. Use of a quality duplicating

Compose Your Resumé

service can save retyping costs. (Do not use mimeographed or duplicated letters of application! They should be somewhat individualized for each employer.)

3. State briefly the position, or type of position, which you are seeking. The person who is looking for "any kind of job" may not find his resumé well received.
4. Identify yourself at the head of your resumé—your name, address and phone number.
5. Personalize yourself—age, height, weight, health, draft status, marital status.
6. Educational background should include your major, degrees or certificates earned, the schools from which you earned them, and dates of graduation. Start with your most recent educational experience first. Emphasize positive aspects of your academic and extra-curricular records in this section.
7. Work experience can be best described by listing, again in sequence starting with your most recent job and working back, the following data about each of your positions: job title, employer's name and address, beginning and ending dates, and a brief job description. Duties of jobs might best emphasize those which are like the one for which you are applying. (You might consider composing separate resumés for different career goals.)
8. Include in a separate paragraph other information about your qualifications: relevant honors or awards, membership in meaningful civic or professional organizations, hobbies, special interest field, or volunteer work.
9. Either list the names, titles, and addresses of three persons whose comments about your personal and job qualifications will be considered helpful by the reader of your resumé, or tell your reader you will furnish references upon request. (Never use anyone's name as a reference unless you have asked his permission.)
10. Attach a small photograph of yourself (not an informal snapshot!) if you feel the application warrants the additional expense. In some situations, such as federal employment, this is not permitted.

Carry extra copies of your resumé with you whenever you appear for an interview or visit an employment service office. Even if you have enclosed one previously, your letter and resumé may have become separated or even lost among the many papers in a busy office.

Be prepared to revise and up-date your resumé continu-

ously throughout your entire work career. Know your social security number. Save your college catalog. You may need the information it contains describing your courses of study. Keep your grade reports. File the original copies of letters of recommendation from each employer. Compile a running record of your annual salaries. Your resumé will serve as a brief picture of your record of continuing growth.

RESUMÉ

Alvin Smith **10 Mill Road** **Woodbridge, Connecticut 06525** **Home Phone: 624-8190**	**For a position in** **TECHNICAL WRITING** **AND RELATED WORK**
PERSONAL:	**Height, 5'10"; Weight, 145 lbs.; Health, Excellent; Single; Draft Status, 2S.**
EDUCATION:	**Springfield Regional H.S., New Jersey, College Prep. Diploma, 1966. Southern Connecticut State College, Major in English, Minor Biology, B.A. 1970. Accepted in Evening Division Master's Degree Program in English at Southern Connecticut State College.**
EXPERIENCE:	**Student Assistant (pa.1-time), 1968-70, Hilton C. Buley Library, Southern Connecticut State College, New Haven. Clerk and Delivery (part-time), 1966-68, Towers Pharmacy, Crown St., New Haven.**
EXTRA-CURRICULAR ACTIVITIES:	**Reporter and Feature Writer, College Newspaper (3 yrs.), Member of Science Fiction Club, S.C.S.C. President (1 yr.), Member of Varsity Soccer Team (2 yrs.)**
HONORS:	**Dean's List each semester in college, graduated Cum Laude, Grade average 3.531 (A-).**
HOBBIES:	**Playing soccer and golf, reading science fiction literature, making home movies.**

References will be gladly furnished upon request or copies of letters of recommendations may be obtained from Hadden Libby, Director of Placement Services, Southern Connecticut State College, New Haven, Connecticut 06515.

Preparing for Your Employment Interview

STEP SIX: PREPARING FOR YOUR EMPLOYMENT INTERVIEW

The employment interview is a face-to-face contact and is probably the most important step toward getting a job. The employment interview is equally important to the employer. Very few permanent positions are filled without some personal contact.

The job interview is likely to create natural tensions for you. All your previous steps in looking for a job have in many ways been leading up to this point. But they have also been very helpful preparations. Your analysis of job families in the *Dictionary of Occupational Titles* and in the *Occupational Outlook Handbook* hopefully have convinced you that you are definitely interested in this particular job. Your work in composing a resumé may have helped you feel confident that you are well-qualified for the job on hand.

Plan Your Interview!

Your goals for the interview all add up to making it a natural opportunity to discuss frankly those qualities you can offer your prospective employer and the job benefits to you. You are more likely to meet these goals and feel more relaxed if you know what is expected during the interview.

1. Find out in advance as much as you can about the company's products or services, its record of growth, and its employment picture. Many companies have a booklet describing their concern.
2. Find out about any special aspects of positions that are currently vacant.
3. Rehearse! Have a friend play the role of the employer by posing questions you may be asked: "Why do you want to work for us?" "What jobs have you held?"
4. Prepare essential questions about the job, salary, hours, working conditions, etc., which you may want to ask.

Go for your interview expecting to be dealt with in a friendly manner by a company representative who has been trained to meet strangers easily and talk with them pleasantly.

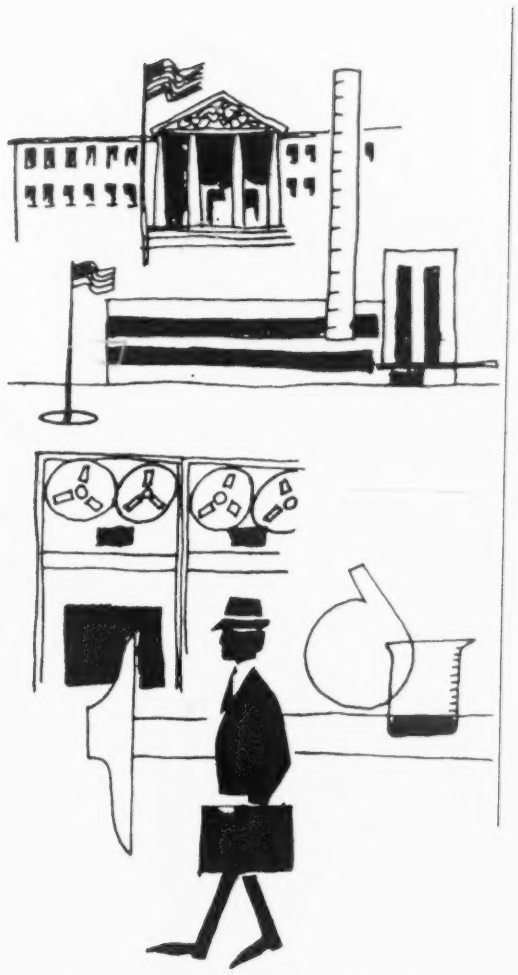
1. Dress appropriately. Avoid any appearance that draws attention away from the real you and blurs the purpose of your interview.
2. Know the exact address of where you're going, when to get there, how to get there, how much travel time to allow, the exact name and title of the interviewer, and his exact room location.
3. Arrive on time or a few minutes early. Arrive alone.

Political buttons may get votes, but not jobs. Gaudy jewelry or heavy cosmetics may attract a "date" but repel a job offer. A last-minute arrival will not help. Nor will you be at your best if you arrive just barely in time after a confused search for the right office and a "cliff-hanger" dash.

STEP SEVEN: COMMUNICATION DURING THE INTERVIEW

The employment interview is your opportunity to communicate! In addition to being verbal, you will communicate in many other ways. Everything you do, all your movements, will add up to "body language." Make your body and all your actions say positive things for you.

1. Smile, greet your interviewer, and shake hands firmly —*after* the interviewer extends his.
2. Watch for an indication of where you're expected to sit.
3. Sit with your face and your body turned toward the interviewer. Keep an "eye-contact" relationship going.
4. Smoke only if invited to do so. Don't chew gum.
5. Express appreciation for a chance to talk about yourself.



Interview is Face to Face Contact

6. Express feelings of enthusiasm about the job and the employing organization if you can do so honestly. Be as open, frank, and spontaneous as you can without unnecessarily hurting yourself or the person interviewing you.
7. Answer questions forthrightly and fully, but avoid too much talking.
8. Ask questions about the job which reflect interest in, and real concern for, finding a job which you will want to keep. Your questions might well include a few related to salary and "fringe" benefits. Be sure to ask about other matters, too. For example, ask for assurances that the employer is an "Equal Opportunity Employer" or that the climate of relations with unions or among employees is a friendly one. If social values or business ethics are important to you, raise such questions about the organization.

9. Be prepared to accept a job offer or have a ready excuse for additional time to decide. Most often, before the employer can make you a firm job offer, he will in all probability interview other applicants, send for your school records or college transcripts, or contact references and former employers.
10. Be prepared, in cases where large organizations use a personnel office, to be requested to take a standardized objective test. Think of such tests as part of the total "screening" interview.
11. Leave when the interviewer gives you some indication that he has all the data necessary.
12. Before your final exit indicate something which reassures the employer that you "really want the job."

The personal interview, in most instances, will be the last step in your job hunt. If you accept the offer, there may be personnel records to be completed, social security forms to be filled out, a physical examination to be taken, and a few other orientation steps to be observed. However, after the interview and the job offer you can rest assured that you've landed a job!

Succeeding on the Job

Success is never an *end* in itself. Success is a *process* of one thing following (succeeding) another. If you succeed in your work, among the rewards you can look forward to is a chance to find an even more satisfying job. You may not necessarily leave your employing organization, but you can be almost certain that *success* will mean *change* in your work life.

Changes in your jobs will extend over a long period. If you are in school or college now, you will still be working during the Twenty-first Century! Men usually can look forward to working for about forty years. The U. S. Department of Labor's Occupational Outlook Division has predicted that the average high school girl today will marry, start a family, and *then* spend twenty-five more years of her lifetime as a worker. *During the 25 to 40 years of your work lifetime you may expect to change jobs many times.*

Make the best record possible on each job. Build a reputation with your first employer and co-workers. Each time you change your employer, you will usually ask your past employer for a letter of recommendation. New employers will often telephone for a personal and confidential word about your reliability, cooperativeness, ability, and other qualifications.

Here are some rules you may follow in your daily work activity to assure that your career life will move forward:

1. Learn all you can on-the-job.

2. Read job manuals, professional literature, company newsletters and magazines, and take advantage of training courses whenever offered.
3. Know the reasons for your job and its importance. Find out how your job functions relate to the work of others.

Succeeding on the Job

4. Do your job as accurately, efficiently, and economically as possible. Observe other successful workers for hints about "performance standards"—promptness, neatness, alertness.
5. Get acquainted with your new group of co-workers. Treat each of them with respect for their knowledge about your job and your new employer. Make and keep friends by using tact and consideration at all times.
6. Avoid projecting an image of yourself as a "squabbler," "griper," "buck-passer," "gold-bricker," "Alibi-Ike," "loner,"—or any other of the "types" which both workers and employers agree are not

pleasant people to have around.

7. Communicate with co-workers and supervisors. Keep others posted if anything happens in your area that may have a later effect on them. Express honest opinions about decisions your supervisor has under consideration. Make reasonable suggestions for improving your organization's products or services.
8. Become familiar with your employing company's table of organization – the way in which it groups its workers. Analyze the departments in which change-over of employees can be forecast. Know the requirements for the various kinds and levels of positions. Consider applying for a transfer to a department that is more challenging to you if you are qualified.
9. Become familiar with the organization's policies and personnel code.
10. Prepare for advancement. Many corporations will pay your tuition fees for attending college, business and technical schools at night. Accept an opportunity to "fill in" for a co-worker who must be absent.
11. Ask for "feed-back" from your supervisor about your job performance. Attempt to follow his suggestions for change and improvement.
12. Keep yourself informed of the activities of other organizations in industries similar to your current one.

If your advancement is apparently much slower than that of others less qualified, try to find out why. You may need to re-examine your original career choice; or the ever-changing technology of our age may have had an adverse impact on your particular job function.

Always try to leave one job or an old employer with the best possible relationship. Try to take a good reputation with you and leave a good reputation behind. Save your old employer from as much inconvenience as possible due to your depar-

Keep an Eye on Changes in the World of Work

ture. Give adequate termination notice. Offer to train a replacement. Part courteously and as warmly as possible with everyone, even those with whom you may have often disagreed.

Special Problems of Minority Groups and Women

A B'nai B'rith Vocational Service survey, carried out in cooperation with the B'nai B'rith Women, of 6,600 affiliated Jewish high school youth in 40 states and the District of Columbia, showed applicants from minority groups have been faring much better in recent years. Religion and race are not as important as they once were in obtaining the job of your choice.

However, if you are a young person from a minority background, you need to face openly some special aspects of finding a job. While discrimination in hiring people on the basis of their race, religion or sex has been markedly reduced in America over recent years, remnants of bigotry may still be having a serious impact on your opportunities for employment and on your own attitudes toward finding your most fulfilling work role. Someone else may have been hired for a job you wanted and needed because the employer preferred persons of another religion, skin color, or sex. You, yourself, may have been discouraged from trying to get certain desirable jobs because you felt your religion, race, or sex limited your chances. You have an obligation to yourself and to other members of your minority group to oppose any unfair employment practices you encounter.

Unfair employment practices must be recognized frankly by you whenever you encounter them. If an employer rejects your job application on the basis of racial or religious qualifications which are not directly relevant to the requirements of the position being filled, he is discriminating against your minority group. For example, it would be relevant to require a minimum of educational preparation and experience in hiring a teacher or an accountant; it would not be relevant, nor fair, to give preference to applicants who are males.

Examples of unfair job discrimination in the past could be listed at great length. They are often in violation of many Federal and State laws, as well as an offense to your dignity. Employers who have agreed to avoid unfair hiring practices display a sign designating them as "An Equal Opportunity Employer."

It is not necessary that you have "proof" of any unfair choice by an employer before you take action to prevent continuing harm to others. Many social agencies exist to discuss your feelings and help you.

The Anti-Defamation League of B'nai B'rith has a long history of struggling to minimize unfair, biased or irrelevant dis-

crimination in hiring. They will help take appropriate action on any complaint by Jewish, Black, Puerto Rican, or other minority youth. You can locate the office of the Anti-Defamation League which is nearest to you by writing to Anti-Defamation League of B'nai B'rith, 315 Lexington Avenue, New York, N.Y. 10016, or you may contact an officer of any Jewish Federation agency in your own community to locate the nearest Anti-Defamation League office.

Black youths may discuss a discriminatory employment incident with an officer of the Black Coalition in his community or with an officer of any of the Black community organizations. The Urban League is frequently likely to have a full-time professional employee available to give your complaint immediate attention.

Your own State will have a Human Rights Commission with offices in major cities. You can locate your State Human Rights Commission by consulting the telephone directory.

The Anti-Defamation League of B'nai B'rith, Urban League, Human Rights Commissions, and many other organizations are sensitive to the deadening, discouraging effect that bias, bigotry and prejudice can have on the enthusiasm and hopefulness of the job hunting activity of minority youth. You will help them help you and others by keeping them informed if you feel you might have been the victim of unfair discrimination in a hiring or promotion decision by an employer.

The history of America is a story of one wave of immigrant people following another in a process of finding work and establishing a firm place for themselves and their children in our nation's world of work. If you are an immigrant, or if you have recently moved from a rural area of the United States to live and work in a large city, you may need and can obtain special help in finding your own place. Many youths who received an inadequate early education in a rural or ghetto school can benefit from professional services. These are now available to up-grade their training and improve chances for employment in a good job.

If you are a minority youth whose early school background was limited or cut short, ask any school counselor about such programs as Upward Bound. Contact the local office of your State Employment Service to learn about a Youth Opportunity Center in your area. There is special training for youth whose background was deprived or disadvantaged. Take full advantage of new and growing opportunities to succeed on an employment level you may not have previously thought possible for you.

The orthodox Jewish job-seeker has special needs to consider in this area. He must find a job that does not require working on Saturday and will permit him to observe the

Jewish holidays. Seventh Day Adventists and other groups have similar problems. In face of these requirements, the individual involved may seek employment with a person of a similar faith or in a religious organization related to his faith.

The usual sources of job leads can be used too with the job seeker's special requirements made clear. Jewish Vocational Service and B'nai B'rith Vocational Service have sponsored special projects to help orthodox youth and adults obtain appropriate jobs.

A FINAL WORD: KEEP AN EYE ON CHANGES IN THE WORLD OF WORK

Not only will you probably change jobs many times; it is likely that if you are starting your work lifetime now, you may change your type of occupation three or four times. Education will be a continuous process in a changing world. You may anticipate returning to school or college for retraining. You may feel certain that you will need to use your skills in finding a new job many times during your work career.

If you keep abreast of the trends in the world of work, you can make plans and take advantage of changes. Each new job can bring you a step closer to your ideal career goals.

1. More and more jobs will require higher levels of technical and professional education.
2. More and more people will be needed in the output, not of concrete, material objects but in producing intangible services such as education, health, recreation, travel, etc.

3. The location of job opportunities will shift and change with growing freedom from rigid, geographic factors of power sources and raw material availability.
4. Automation and computerization will mean sweeping changes in working hours, in the roles of women, and in the number and kinds of jobs available.

The one key lesson to be learned from studies of trends in the world of work is: Be Ready for Change; Be Ready to Learn; Be Flexible.

Know how to find a good job *whenever* the situation arises.

Know how to find your special place—and keep it—in an ever-changing world at work where new exciting career opportunities are emerging to meet the needs of unusual human potential.

Selected Bibliography

Adler, K.A. **The Job Resumé and Letter of Application.** Cambridge, Mass.: Bellman Publishing Co. 1971.

Area Trends in Employment-Unemployment. U. S. Department of Labor, Washington, D. C. Monthly.

Counselor's Information Service. Quarterly annotated bibliography of current literature on educational and vocational guidance. Washington, D. C.: B'nai B'rith Vocational Service.

Eisen, Irving. **Careers in Teaching and Education.** Washington, D. C.: B'nai B'rith Vocational Service. 1970.

Eisen, Irving and Leonard H. Goodman. **A "Starter" File of Free Occupational Literature.** Washington, D. C.: B'nai B'rith Vocational Service. 1970.

Eisen, Irving and Leonard H. Goodman. **Studying for Success in High School and College.** Washington, D. C.: B'nai B'rith Vocational Service. 1968.

Feingold, S. Norman. **A Career Conference For Your Community.** Washington, D. C.: B'nai B'rith Vocational Service. 1964.

Feingold, S. Norman. **Counselors and Community Resources.** C.I.S. Washington, D. C.: B'nai B'rith Vocational Service. 1970.

Feingold, S. Norman. "Guidance for Gifted Students." Washington, D. C.: B'nai B'rith Vocational Service. (Reprint from **Occupational Outlook Quarterly,** 12: 14-17, 1968).

Feingold, S. Norman. **The Job Finder: It Pays to Advertise.** Cambridge, Mass.: Bellman Publishing Company. 1966.

Feingold, S. Norman. "New Challenges in Counseling Jewish College Youth." Washington, D. C.: B'nai B'rith Vocational Service. (Reprint from **Journal of Jewish Communal Service,** 43: 237-244. 1967.)

Feingold, S. Norman. **Latest Information on Scholarships in the Space Age.** C.I.S. Washington, D. C.: B'nai B'rith Vocational Service. 1968.

Feingold, S. Norman (Ed.). Occupational Brief Series. Washington, D. C.: B'nai B'rith Vocational Service.

Careers in City Management, 1968.
Careers in Community Relations Work, 1970.
Careers in Corporate Management, 1968.
Careers in Medicine, 1970.
Careers in Memorial Counseling, 1968.
Careers in Optometry, 1968.
Careers in Pharmacy, 1970.
Careers in Psychology, 1968.
Careers in Social Casework in Jewish Agencies, 1971.
Careers in Social Group Work in Jewish Agencies, 1969.

Careers in Synagogue and Temple Administration, 1968.

Careers in Vocational Service in Jewish Agencies, 1969.

Careers in the Biological Sciences, 1970.

Careers in the Cantorate, 1968.

Careers in the Rabbinate, 1969.

Casework Careers in Jewish Communal Agencies, 1971.

Your Opportunity for a Professional Career in Jewish Communal Service, 1968.

Feingold, S. Norman. **Scholarships, Fellowships and Loans.** Cambridge, Mass.: Bellman Publishing Company, Vol. III, 1955; Vol. IV, 1962.

Feingold, S. Norman. **Vocational Outlook for the 1970's and the 1980's.** Washington, D. C.; B'nai B'rith Vocational Service. C.I.S. 1969.

Feingold, S. Norman and Alfred Jospe. **College Guide for Jewish Youth.** Washington, D. C.; B'nai B'rith Vocational Service and B'nai B'rith Hillel Foundations. 1968-69 Edition.

Feingold, S. Norman and Harold List. **Finding Part-Time Jobs.** Chicago, Ill.: Science Research Associates. 1962.

Feingold, S. Norman and Sol Swerdloff. **Occupations and Careers.** New York, N. Y.: McGraw-Hill Book Company, 1969.

Feingold, S. Norman, Sol Swerdloff and William Mead. **Prep School Guide for Jewish Youth.** Washington, D. C.: B'nai B'rith Vocational Service. 1966.

Hopke, William E. (Ed.). **Encyclopedia of Careers.** Chicago, Ill.: J. G. Ferguson Publishing Company. 1967.

Kaiser, Ronald S. and Benjamin Lasoff. **Scholarships and Other Financial Aids in Minnesota.** Minneapolis, Minn.: Twin Cities B'nai B'rith Vocational Service. 1967.

Konopka, Gisela. **Social Group Work: A Helping Process.** Englewood Cliffs, N. J.; Prentice-Hall. 1963.

Liebers, A. **How to Pass Employment Tests.** New York, N. Y.: Arco Publishing Company. 1966.

Lubin, James L. **Technical Career Index: A Complete Index to Companies, Salaries, Benefits, Job Selection.** Bernardsville, N. J.: Padric Publishing Company. 1969.

McKay, A. Ernest. **The Macmillan Job Guide to American Corporations.** New York, N. Y.: The Macmillan Company. 1967.

National Association of Social Workers. **Encyclopedia of Social Work,** New York, N. Y. 1965.

National Commission on Social Work Careers. **Unlock the Power of Human Resources Through Social Work With Groups.** New York, N. Y. 1967.

National Jewish Welfare Board. **Your Career Opportunity as a Social Worker in the Jewish Community Center and YM-YWHA.** New York, N. Y. 1967.

National Jewish Welfare Board. **Scholarships, Fellowships and Work Study Plans for Graduate Social Work Education.** New York, N. Y. 1968.

Pins, Arnulf. **Your Opportunity for a Professional Career in Jewish Communal Service.** Washington, D. C.: B'nai B'rith Vocational Service. 1968.

Scholarships, Fellowships and Loans News Service. Cambridge, Mass.: Bellman Publishing Company. Quarterly.

Sinick, Daniel. **Part-Time, Summer and Volunteer Jobs for Jewish and Other Minority Youth.** Washington, D. C.: B'nai B'rith Vocational Service. 1969.

Sinick, Daniel. **You and Your Child's Career.** Washington, D. C.: B'nai B'rith Vocational Service. 1966.

Social Work Recruiting Center of Greater New York. **Twenty Questions and Answers About Social Work.** New York, N.Y. 1967.

Swerdloff, Sol and Howard Rosen. **College and Career Plans of Jewish High School Youth.** Washington, D. C.: B'nai B'rith Vocational Service. 1964.

U. S. Department of Labor, Bureau of Labor Statistics. **Occupational Outlook Handbook** 1970-71.

U. S. Department of Labor, Manpower Administration. **Job Guide for Young Workers** 1969-1970 Edition. Washington, D. C.: U. S. Government Printing Office.

U. S. Department of Labor, Wage and Labor Standards Administration, Women's Bureau. **1969 Handbook on Women Workers.** Washington, D. C.: U. S. Government Printing Office. 1969.

U. S. Department of Labor, Manpower Administration. **Dictionary of Occupational Titles,** Vol. 1, Definition of Titles, Third Edition. Washington, D. C.: U. S. Government Printing Office. 1965.

U. S. Department of Labor, Manpower Administration. **Dictionary of Occupational Titles,** Vol. II Occupational Classification, Third Edition. Washington, D. C.: U. S. Government Printing Office. 1965.

U. S. Department of Labor, Manpower Administration. **Dictionary of Occupational Titles** Supplement, Selected Characteristics of Occupations (Physical Demands, Working Conditions, Training Time). Third Edition. Washington, D. C.: U. S. Government Printing Office. 1966.

U. S. Department of Labor, Manpower Administration. **Dictionary of Occupational Titles** Supplement 2, Selected Characteristics of Occupations by Worker Traits and Physical Strength (Third Edition). Washington, D. C.: U. S. Government Printing Office. 1968.

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BACK TO WORK AFTER RETIREMENT.

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ABSTRACT - THIS BOOKLET WAS PREPARED BY THE MANPOWER ADMINISTRATION TO PROVIDE FACTS ABOUT THE EMPLOYMENT OF OLDER WORKERS IN THE UNITED STATES. INCLUDED ARE GENERAL INFORMATION ON THE JOB MARKET FOR PERSONS OF RETIREMENT AGE, TIPS ON JOB HUNTING, SPECIFIC JOB OPPORTUNITIES FOR RETIREES, AND SUGGESTIONS ON QUALIFYING FOR JOBS THROUGH GOVERNMENT AND PRIVATE PROGRAMS. (AW)

VT 014 123

Back To Work After Retirement

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The older Americans in our midst have been pioneers and builders during a period of dramatic change and severe testing. They remind us of the moral values and personal qualities which have been the basis of our national achievements. Having learned to live with change and challenge, they offer us, now and for the future, a valuable resource of skill and wisdom.

—Richard Nixon

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Preface

Now that the handshakes are over and you've wound the gold watch, looked at the check presented by your coworkers, or snapped the catch on the gift attaché case for the tenth time—what?

Or . . if your "retirement" was the result of a company merger or reorganization—now what?

Or . . if the pressure of a daily 9-to-5 grind has become too great, but you're not ready to settle down to 8 hours of daytime TV—then what?

For many retired men and women, the answer to these questions will be going back to work . . . full time, part time, or for part of the year.

This booklet gives you facts about the employment of older workers in the United States:

> Gives you tips on job hunting.
> Suggests specific job opportunities for retirees.
> Tells you how you may qualify for jobs through Government and private programs.

You're Retired: Where Do You Go From Here?

It takes planning to keep "off the shelf" in retirement. What can you do? Here are some choices:

> *You can enjoy a leisurely retirement*—pursue hobbies; enjoy your children and grandchildren; move to a new home in another State; travel.

> *You can take part in voluntary activities* in your community—social and charitable—that will offer you a meaningful role, keep you in touch with people of all ages.

> *You can start your own small business*—a real challenge, with some pitfalls. But many retired persons are succeeding.

> *You can get a part-time or seasonal job* that will allow you flexibility in the hours of work and also provide income to supplement pensions and social security payments. Studies show that part-time hiring has increased at three times the rate of full-time employment during the past few years.

> *You can take a full-time job*—but it isn't easy for older people. Yet it can be done, if you're determined and imaginative. The work you do will depend upon your skills, your resourcefulness, the needs of your community . . . and also upon your own attitude, your willingness to accept a job change or retraining to meet today's employment needs.

Why Go Back To Work?

Obviously, your retirement income will influence the choice you will make. It will probably be the major factor —though not necessarily the only one. Let's look at this and other reasons for going back to work:

> *You need the money.* If you live in a city, or in a metropolitan area where expenses are high, even social security and a small pension may be inadequate. Studies show that for many retired persons, income from a job is the only way to meet rising living costs and achieve even a modest standard of living. Earned income can make the difference between having the things you need—and just scraping along.

> *You miss job status.* Many retirees don't really want to stop working. For them, getting back to work means having a goal, a place away from home to go every day, a job to be done, people to talk to. If you're in good health and prefer activity to sitting on the sidelines, you'll enjoy that status of working once again, feel you have regained your place in the world.

> *You want to be useful.* In many jobs the very qualities that come with age are bonuses . . . you have experience, skill, and stability, and the good judgment that has come with a lifetime of work. You're conscientious, loyal, hard working because you want to make good. Our Nation can't afford to waste valuable manpower. There are too many jobs that need doing.

A Note About Social Security

You can work part time and still receive all or part of your social security benefits.

If a retired worker earns $1,680 a year or less, he and his family can receive all their social security benefits for the year. If he earns more than $1,680 in a year, 1 dollar of the benefits is withheld for each 2 dollars earned from $1,680 to $2,880. For every dollar earned over $2,880, a dollar in benefits is withheld. Regardless of total earnings for a year, full benefits are payable for any month in which the retired worker neither earns wages of more than $140 nor performs substantial services in self-employment. After 72, a person can earn any amount—and still receive full benefits, with no restrictions. For information, call or write the nearest Social Security District Office.

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But Will They Hire You?

You may feel uneasy about applying for another job soon after retirement. Chances are you held the same job for many years, knew everything about your work, and are doubtful about finding a new job now. What's more, the abruptness of your retirement—whether voluntary or involuntary—may have shaken your self-confidence.

The important thing is to be resourceful and flexible in job hunting. The skills you developed over the years may no longer be marketable. You may have to train for new skills.

Don't be hesitant about retraining. The placement rates for older workers in training programs are higher than the average—because of their accumulated skills and disciplined work habits.

If necessary, be prepared to change your type of work and your working conditions. Be realistic in accepting the wages you can get—even if they are lower than those you were accustomed to receiving.

Retired workers who are adaptable are able to start interesting second careers. In Hartford, Conn., the State employment security agency placed a woman of 70 in *two* jobs—working mornings as a telephone solicitor, and two afternoons a week keeping a service catalog up to date. In New York City, a retired plant supervisor whose hobby was gardening took a part-time position as a salesman in a gardening shop—with great success and personal satisfaction.

Age doesn't have to be a job handicap.

Check these myths about older workers against facts determined by studies made by the Department of Labor and other agencies. They should reassure you.

The Myth	The Fact
> Older workers are too slow—they can't meet the production requirements.	Studies show no significant drop in performance and productivity in older workers. Many older workers exceed the average output of younger employees.
> Older workers can't meet the physical demands of our jobs.	Job analysis indicates that less than 14 percent of jobs today require great strength and heavy lifting. Labor-saving machinery makes it possible for older workers to handle most jobs without difficulty.
> You can't depend on older workers—they're absent from work too often.	According to surveys, workers 65 and over have a good record of attendance in comparison with other age groups.
> Older workers are not adaptable—they're hard to train because they can't accept change.	Evaluations of older jobseekers show that a high proportion are flexible in accepting a change in their occupation and earnings. Adaptability depends on the individual: many young people are set in their ways, and many older workers adjust to change readily.
> Hiring older workers increases our pension and insurance costs.	Pension and insurance costs need not stand in the way of hiring older workers. Costs of group life, accident, and health insurance and workmen's compensation are not materially increased by hiring older workers. Most pension plans provide for benefits related to length of service or earnings, or both. Small additional pension costs, when incurred, are more than offset by the older worker's experience, lower turnover, and quality of work.

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What Kind of Job is Right for You?

There are job opportunities for older persons in both government and private industry. The following list suggests part-time or full-time jobs in the private sector. These jobs are only a few of the many that older persons can successfully perform. You may want to match them against your experience, aptitudes, and desires—as a guide for the kind of second career that will be best for you. There are also hints here about businesses you may wish to start.

If you like to deal with the public

Salesperson
Product demonstrator
Survey worker
Recreation attendant
Waiter or waitress
Travel agent
Receptionist
Information clerk
Hotel clerk

If you like to work with figures or in an office

Bookkeeper
Stenographer or typist
Food checker
Timekeeper
Tax adviser
Cashier
Proofreader

If you like to work outdoors

Landscaper
Farm assistant
Messenger
Service station or parking lot attendant or operator
Doorman or watchman
Deliveryman

If you have cultural interests

Musician or artist
Writer or editor
Language teacher
Model builder
Librarian
Tutor
Photographer's assistant
Antique dealer
Manager of a hobby shop, bookstore, or flower shop

If you're good with your hands

Auto mechanic
Carpenter
Painter or paperhanger
Repairman
Tailor or seamstress
Beautician
Cook or caterer
Laundryworker
Motion picture projectionist
Wrapper, shipper

Opening Your Own Business

The dream of many a retired person is to open his own small business—to turn to profit what may have been a part-time hobby or a longtime interest. This can range all the way from selling fishing tackle to operating a private art gallery. To make money, however, your business must fill a need . . . like operating a day-care center in an area with many children and working mothers. Understanding the tax structure is important. Whether you wish to manufacture a product or sell a product or a service—you'll probably be wise to check with your local office of the U.S. Department of Commerce, the Small Business Administration, or your local Chamber of Commerce.

Be Cautious!

Before you contact a private employment agency, make any final arrangements in starting your own business, or take any major step that will affect your finances and your future: Double check! The Better Business Bureau can advise you about the reliability of most firms in your area. If your previous experience does not include operating or managing a business, you should consider getting some business training. The U.S. Government's Small Business Administration (SBA) has a variety of services and publications that can help. SBA also can tell you what loans may be available for you and will counsel you on management problems. Legal counsel may be a wise step before you make definite commitments regarding real estate or major purchases. Look before you sign!

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A Second Career: Getting Ready

Making the Decision

You've looked at the opportunities open to you. Which is best for you? Here's where you need a careful personal inventory.

Assets. Write them down. List your skills, education, work experience, any talents, hobbies, accomplishments in which you take pride. Don't shortchange yourself.

Liabilities. Be honest about shortcomings in your education and work record. Personal or health problems should also be taken into consideration before applying for a job. See yourself from the employer's point of view.

Preparing a Résumé

Using your personal inventory as a guide, outline facts that will be important for your employer to know about your background, skills, and experience. The résumé is an important tool in selling your services: it should be attractive to the eye and carefully organized to emphasize your strong points. The résumé is mailed out with letters to prospective employers and taken along on job interviews.

Facts the résumé should include:

> Your name, address, and phone number.

> The kind of job you are looking for.

> Your work record, starting with your most recent job and working backward (and including, for each job, your employer's name and address; dates of employment; and your position, duties, and accomplishments).

> Your education—high school, college, and graduate school—with dates and degrees received.

> Your personal data: age, marital status, number of dependents, military service.

> Two or three names of personal references.

Planning Strategy

Try every possible source for jobs. Check newspaper want ads. Visit public and private employment agencies. (Check the latter carefully before signing anything.) Talk to the officers of your professional or trade association. Don't hesitate to tell friends, relatives, business acquaintances that you're looking for a job. List companies in your area that may be able to use your services—and write to each, describing your qualifications and enclosing your résumé.

Writing Letters of Application

To answer a help-wanted ad or write to a prospective employer, you'll need a short, crisp, attention-getting letter to send with your résumé. Prepare a basic letter that can easily be adapted to different situations. Begin by stating the position you seek. Then, in a few words, tell why you believe you can make a real contribution to the company to which you are writing. Refer to your enclosed résumé. Close by saying that you will phone shortly to seek a personal interview. Keep it interesting—and brief.

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The Job Interview

The job interview is your moment of truth—your best opportunity to convince an employer that you have something to offer his organization. But businessmen are busy people. An employer may give you only a few minutes to tell him about your qualifications. Here are a few tips to help you make the most of them.

Before the Interview . . .

> Find out as much as you can about the firm, its products or services—to improve your presentation and give you confidence.

> Get information about the salary scale in your area for the job you are seeking.

> Anticipate the questions you'll be asked—and plan a few points you can bring out about your qualifications for the job.

> Dress neatly and conservatively for the interview.

> Bring copies of your résumé to the interview and a list of references, if they are not included in the résumé.

> Allow plenty of time so that you can arrive for your appointment early—and calm.

At the Interview . . .

> Stress your skills, not your limitations.

> Be poised and confident but not cocky.

> Be pleasant but businesslike.

> Speak firmly and clearly.

> Listen attentively to your interviewer's questions.

> Answer questions honestly and briefly.

> Bring out your stability and good attendance record.

> Ask intelligent questions about the nature of the job.

> Be realistic if asked about your salary requirements.

> If the employer cannot use your services, ask him politely if he can suggest another employer.

> When the interview is over, thank the employer courteously and leave promptly.

> *Don't* be timid and ill at ease.

> *Don't* be stubborn and argumentative.

> *Don't* stress your need for a job.

> *Don't* emphasize your age or personal problems.

> *Don't* exaggerate your skills.

> *Don't* criticize a former employer.

> *Don't* run on and on, boring the interviewer.

> *Don't* discuss salary, benefits, and hours until the employer does.

> *Don't* hesitate to fill out an application form, give references, or take a physical exam if requested.

Followup

If the employer does not offer you a job but asks you to call or come for another interview, be sure you phone or appear on time. If he suggests a lead with another company, look into it promptly.

Try to gain something from each interview you have. After it's over, analyze what you said, what the employer said, what points interested him or antagonized him. Judge whether you were poised—or talked too much. Decide how you can make the next interview a better one.

A Note About Age Discrimination in Employment Legislation

To eliminate barriers to employment of older people, the Federal Government and many State governments now have laws prohibiting age discrimination in employment. The Federal law—the Age Discrimination in Employment Act of 1967—applies to *workers between the ages of 40 and 64* throughout the country. This measure makes it unlawful: (1) For an employer to fire or refuse to hire a person strictly on the basis of age; (2) for employment agencies to refuse to refer a client to a prospective employer for a job opening because of age; (3) for prospective employers to state age preferences in help-wanted advertisements; and (4) for unions to deny membership to an individual because of age.

In announcing a memorandum of understanding between their two agencies on March 15, 1970, Robert D. Moran, Wage-Hour Administrator, and John B. Martin, Commissioner on Aging, stated that "discrimination [in employment] based on age is fully as perverse and as damaging both to the economy and to human dignity as is discrimination based on race, sex, or other criteria."

For information on the legislation, contact any office of the Wage and Hour Division of the U.S. Department of Labor. Offices are listed in the telephone directory under the Department of Labor in the U.S. Government listings.

Getting Help

You are not alone. A number of government and private agencies will provide you with job information, job leads —other aids to make retirement and/or second careers easier. They will welcome a call or visit.

For Job Information

Your local State employment service office—for the address, look in the phone directory under State government listings.

Your Regional Manpower Administrator, for information on the Department of Labor's older worker job programs described in this booklet—for the address, see the back cover.

Your State Agency on Aging—for the address, write the Administration on Aging, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20201.

Federal Job Information Centers in many cities, for information about U.S. Government jobs—for the address, look in the phone directory under U.S. Government, Civil Service Commission.

Your local or State Chamber of Commerce.

Your local public library, for business directories and trade magazines and books and pamphlets on occupations.

For Job Leads

Your local State employment service office.

Professional or trade associations—see listings available at libraries.

Your labor union employment service.

Church, YMCA, and YWCA vocational services.

Forty-Plus Clubs for executives in major cities. There are clubs in Chicago, Denver, Los Angeles, New York, Philadelphia, and Washington. See the phone directory for address and phone number.

Retired Officers Association's employment service for members, 1625 Eye St., NW., Washington, D.C. 20006.

Nonprofit volunteer employment agencies for older workers in some cities—check if there is one in your area.

Private temporary employment agencies. Some deal primarily with older workers. See yellow pages in the telephone directory.

For General Information for Retirees

American Association of Retired Persons, an association of retired people with chapters throughout the country, 1225 Connecticut Ave., NW., Washington, D.C. 20036.

National Council of Senior Citizens, an association of affiliated clubs for senior citizens throughout the country, 1627 K St., NW., Washington, D.C. 20006.

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The Public Employment Service Can Help

Your State employment service is the best single source of information about full-time and part-time job opportunities in your community.

There are more than 2,400 local employment service offices throughout the country which offer counseling and job placement to everyone—without cost or obligation.

Most important to you is the fact that State employment service offices are expanding their services to older workers. In many offices in larger cities, Older Worker Service Units have been set up. In a number of other communities, there are older worker specialists with expert knowledge about opportunities for mature persons.

The address of your local employment service is listed in the telephone directory under the State government listings. If you live in a small town or rural area where there is no employment service office, ask at your Post Office for the address of the office nearest you, or write to the State office for information about local job openings.

Some important services that the employment service provides for older workers are:

> *Job market information.* Up-to-date information about the job situation in your area—and about nearby employers who are hiring older workers.

> *Counseling and testing.* Helpful tests to determine your qualifications and expert advice on jobs.

> *Job referral.* Extensive lists of full-time and part-time job openings in your community. Referral to jobs that suit your qualifications.

> *Help in getting training and other services.* Referral to available local programs offering training in new skills.

Under the Human Resources Development Program, the employment service can also refer older workers to community agencies that help people get the medical care, legal counsel, transportation arrangements, and other services they need to become employable.

Your employment service office also performs another valuable service for older men and women. Working with local organizations, it tells employers the truth about older workers—that they have high productivity and often exceed younger workers in judgment, safety, and dependability.

See the nearest office of your State employment service first—and keep in touch with the employment service throughout your job search.

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Government Older Worker Job and Training Programs

A number of Federal agencies now have special programs designed to place unemployed older citizens in useful, paying jobs. These jobs are generally made available to low-income older or retired workers over 55 who live in cities or depressed rural areas. Many are in projects that help improve the worker's own community. The number of jobs presently available is limited—and there is a waiting list for participation in most of the programs.

Over the past 6 years, the Manpower Administration of the U.S. Department of Labor has placed new emphasis on helping older workers. During this period, more than 200,000 needy older men and women have received assistance or job training through Labor Department programs.

Here's what workers in these programs say about their jobs:

"Now I have a reason to get up in the morning. . . . I feel young again."

"My job has given me confidence that I can earn my own livelihood. . . . association with others in my age group is a great inspiration to me."

"With this little job, I have financial independence and peace of mind."

"It is much better to earn a living than to get a hand-out. . . . it has given me back my self-respect."

"It gives you a good feeling to know that in your senior years you can lead a useful and productive life."

Department of Labor Older Worker Job Programs

Operation Mainstream

This program pays needy, unemployed people to do work that improves the communities where they live. Steady jobs are made available to older men and women —mostly in rural areas, where job opportunities are hard to find. About 15,000 older persons a year are employed through Operation Mainstream—and a little less than half are age 55 or older.

Using Operation Mainstream funds, the Department of Labor has developed special programs for older workers —in cooperation with three leading organizations that represent or work with the elderly: the National Council of Senior Citizens, the National Council on the Aging, and the National Farmers Union. Several of these programs are described below.

Green Thumb

Operated by the National Farmers Union under a grant from the Department of Labor, Green Thumb employs more than 2,000 low-income men—mostly retired farmers—in the rural areas of 14 States. These men put their skills to work to beautify highways, build parks and recreation areas, restore historical sites, and carry out other needed conservation and community betterment projects. Green Thumbers work 3 days a week and earn $1.60 an hour or up to $1,500 a year. To qualify, they must be low-income workers 55 or over. Their average age is 69, and their average income before joining the program was $900 per year, often for an entire family. Hiring is done through local State employment service offices.

Green Thumb workers—there are some in their 90's—enjoy their useful outdoor work. It helps train them for such jobs as gardeners, landscapers, and highway maintenance men—and some go on to jobs with private firms later.

"It's a lifesaver to us old men who want to work and have been cut out of the factory because of age," said a 78-year-old former Trenton, N.J., steelworker who had been out of work for 19 years before joining Green Thumb. No one wanted to hire an older man with a heart condition. Today, he heads a nine-man crew of Green Thumbers who help beautify Trenton's parks. "I've got a home," he said. "If it wasn't for Green Thumb, I would have lost it."

Green Light

Another Farmers Union-sponsored program is making an impact in rural America. Funded by the Department of Labor, Green Light employs low-income rural people 55 years of age or over to work as aides in health, education, and community service agencies. Because of the nature of Green Light jobs, the program is likely to attract more women then men, in contrast to Green Thumb. There are now Green Light projects in 10 States.

Senior Aides

The Senior Aides Program hires men and women, aged 55 and over, to help with public service jobs. Operating under an agreement between the Department of Labor and the National Council of Senior Citizens, it provides work with pay for more than 1,000 older and retired people in

21 communities across the Nation. About half of these people are over 65; most have had difficulty finding jobs.

Senior Aides are trained to work as aides in schools, hospitals, day-care centers, and other community agencies. They help provide needed services for other elderly people too—delivering meals to shut-ins, teaching arts and crafts, and bringing to older people information about Medicare and other health programs. Senior Aides work 20 hours a week and earn an average of $2 an hour. They are hired through local State employment service offices.

Senior Community Service Project

This program aims at showing how effectively older people can serve as aides in health and social service projects. Working part time for pay, retired men and women without professional experience are being trained to perform some really unusual community services.

The Senior Community Service Project is run by the National Council on the Aging under contract with the Department of Labor. In 11 areas, participating men and women serve as home repair aides, help in libraries and community centers, distribute surplus food, and organize senior citizen activities. Here's one of the unusual jobs that project workers perform: at a San Antonio, Tex., juvenile detention center, they give personal counseling to young first-time offenders. Hard-to-handle youngsters are "reached" by the warm, friendly approach of these sympathetic older people.

Manpower Development and Training Act (MDTA) Projects

Projects developed by the Department of Labor under the Manpower Development and Training Act have shown that older workers can profit greatly from occupational training. MDTA projects provide institutional training at schools for unemployed people of all ages—including older men and women. Enrollees learn the skills they need to get and hold a job. This program also makes available on-the-job training—which gives older persons the opportunity to learn new skills while working for pay. About 95 percent of the older people who have taken on-the-job training in MDTA projects have been placed in regular jobs.

As part of these projects, new methods are being developed to help older workers. Lively group guidance sessions and job clinics prepare applicants for entering —or reentering—today's demanding job market. Self-help groups for older workers are being organized. And a strong effort is being made to reach employers and develop suitable job openings for older and retired people.

For more information about any of these programs, get in touch with the nearest local office of the State employment service. Or write your nearest Regional Manpower Administrator—you'll find the address on the back cover of this booklet.

Employment Through Other Federal Agencies

Foster Grandparent Program

Lonely older people and lonely children are drawn together in a heart-warming program called the Foster Grandparent Program. This nationwide program provides opportunities for low-income older people to serve needy children in various institutional settings. Foster Grandparents read to the children, take them out into the community, and teach them self-reliance. Today, more than 4,000 Foster Grandparents serve 8,000 children in any one day, and about 20,000 children a year.

The Foster Grandparent Program is administered and funded by the U.S. Department of Health, Education, and Welfare's Administration on Aging. Foster Grandparents must be low-income men and women, 60 years of age or older. More than half are over 70, and 1 in every 5 is a Foster Grandfather. These older people serve 20 hours a week and receive the Federal minimum wage of $1.60 an hour. For older men and women, the Foster Grandparent Program provides an opportunity to add to reduced incomes and—more than that—it provides the deep satisfaction that comes with giving deprived children the love they have never known. For information, write to the HEW Regional Commissioner, Social and Rehabilitation Service, or to the Administration on Aging, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20201.

Each State now has an agency devoted exclusively to working for and with older people. While they are not employment agencies, they frequently can be of assistance to retirees in various ways.

Employment in the Federal Government

Of 2,900,000 Federal employees today, some 230,000, or 8 percent, are 60 years of age or over. The Federal Gov-

ernment evaluates each job applicant on the basis of ability, not age. There is no maximum age limit for Federal jobs. Persons under age 70 can qualify for regular appointments. Persons over 70 can receive only temporary appointments, which can be renewed.

The Federal Government has employed a great many older men and women in recent years. At present, however, Federal job opportunities for workers of all ages are few, because of current budget limitations.

If you wish information about a job in the U.S. Government, visit or write the nearest Federal Job Information Center. These centers are operated by the U.S. Civil Service Commission in more than 70 cities throughout the country. You also can get civil service information from your local State employment service office.

Referral—For Retired Military

The Department of Defense has a program to aid retired servicemen in entering second careers. It consists of a counseling service and a computerized man-job matching system. The program assists the retiree in coping with the realities of the employment search and helps reduce floundering, indecision, and uncertainty. The counselor provides job-related services with awareness of factors affecting occupational decisions at this stage of life. For information, get in touch with the Department Referral Program, Transitional Manpower Programs, Office of the Assistant Secretary of Defense, Washington, D.C. 20301.

Census Surveys

The Commerce Department's Bureau of the Census maintains a crew of 1,200 to 1,500 part-time interviewers on its payroll. Older people who can qualify are eligible for employment. The physical demands are considerable, and interviewers must be able to drive a car and to read a map. For further information, write to the Census Bureau Regional Office nearest you in: New York City, Philadelphia, Boston, Atlanta, Dallas, Chicago, Denver, Los Angeles, Seattle, Detroit, Charlotte (N.C.), and St. Paul.

Cooperative Weather Observers

Persons who have an interest in observing weather are selected by the National Weather Service (formerly the Weather Bureau) from permanent residents in a community to serve as paid or volunteer cooperative weather observers. Age is not stressed. Observers must be able to assume the responsibility of recording official observations. For additional information, write to: The National Weather Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Silver Spring, Md. 20910.

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Recommended Reading

For the Jobseeker

Books and Pamphlets

Albee, Lou. *Over Forty—Out of Work. How to Win at the Job-Hunting Game.* Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970, 194 pages. An objective and sympathetic analysis of the steps toward finding and starting out on a new job in later years or embarking on a new career.

Arthur, Julietta K. *Retire To Action. A Guide to Voluntary Service.* Nashville, Tenn.: Abingdon Press, 1969, 254 pages. Discusses postretirement voluntary work and also references Federal and local programs which include job counseling and placement in income-producing employment for persons after retirement.

Boll, Carl R. *Executive Jobs Unlimited.* New York: Macmillan Co., 1965, 169 pages. The 10th printing of this book attests its value in projecting information on how to get a satisfying job at whatever age. This is experience distilled from years of guiding men as the placement chairman of the Harvard Business School Alumni Association.

Bolles, Richard Nelson *What Color Is Your Parachute?* San Francisco: Parachute Publications, 1971, 162 pages. A practical how-to-do-it manual on how to choose and plan a second career. Although special attention is given to clergy seeking secular employment, the book contains a wealth of useful information for all career switchers.

Buckley, Joseph C. *The Retirement Handbook. A Complete Planning Guide to Your Future.* New York: Harper & Row, 1967, 362 pages. Many of the financial aspects of retirement are covered along with constructive suggestions for developing small businesses.

David, William. *Not Quite Ready To Retire.* New York: Collier Books, 1970. A listing of over 300 things the older worker can do and how to find out about them.

Door To Opportunity. Available from the Over-Sixty Counseling and Employment Service, an auxiliary of the Montgomery County (Maryland) Federation of Women's Clubs, 4700 Norwood Drive, Chevy Chase, Md. 20015. A pamphlet outlining the purpose of this counseling service, which is "to give persons who have retired a chance to prove their ability and to put their skills to work for the benefit of the community: a program of job development and counseling, referral and placement."

Harper, Maxwell J. and Arthur R. Pell. *How To Get The Job You Want After Forty. A Programmed Campaign Showing How To Find, Apply for, and Obtain the Job of Your Choice.* New York: Pilot Books, 1967, 84 pages.

Making Ends Meet: Financial Problems. New York: Retirement Advisors, Inc., 4 West 57th Street, 10016. Often a hobby begun in early life may become a source of income in later years.

Pitkin, Walter, Jr. *Life Begins at Fifty.* New York: Simon and Schuster, 1965, 224 pages. The years from 50 to 65 form the framework of this study in which attitudes toward new goals, new orientation of time and activities, can bring rewards in satisfaction, money, and development.

Private Employment Agencies 1969-1970. Washington: The National Employment Association, 2000 K Street NW., 20006. A directory of member agencies throughout the Nation, with a key to placement specialties.

Report on the National Council of Senior Citizens' Senior Aides Program. Washington: National Council of Senior Citizens, 1627 K Street NW., 20006, 1970, 50 pages. Willing workers derive satisfaction and salary in different skills and occupations where age is of no consequence. This report is about a national demonstration project to employ low-income elderly persons on community service jobs in their own communities.

Retirement Almanac, 1968. Edited by Henry Schmidt. Cos Cob, Connecticut: Retirement Publications, Inc., 1968, 168 pages. Provides information, guidance, directions, and facts on second careers, a business of one's own, and educational opportunities.

Thinc. CPC's "Out-Placement" Service. New York: Career Planning Corporation, 1345 Avenue of the Americas, 10019, 1970. Especially for executives who have outgrown, or become outgrown in, a company.

Who's Hiring Who. Washington: The Manpower and Management Corporation, 1970, 158 pages. A journal of jobs, showing where the jobs are, the kinds of openings specific employers are likely to have, and how

to prepare yourself to get the right job. Excellent sections on résumés, interviews, and career advancement.

Articles

Aun, Emil M. "No One Under Sixty Need Apply," *Manpower,* August 1970, pp. 28-32. Relates the experiences of persons who found stimulating, rewarding, and income-producing use of their time and efforts in later years, often with the assistance of the Over-Sixty Counseling and Employment Service.

"The Minuses in Being Forty Plus," *Manpower,* April 1970, pp. 14-19. Real experiences in being unemployed at forty plus are related and the role of the Forty-Plus Club in locating work to meet this situation is reviewed.

Older and Retired Low-Income Farmers Program: Green Thumb. Washington: Green Thumb, Inc., 102 Fourteenth Street, NW., 20005, 1970. "Muscling Out of Retirement," *Life,* October 16, 1970, pp 38-39. Under the Green Thumb program, retired farm men are employed by the U.S. Labor Department to work on beautification, restoration, and conservation projects on public-type property such as highways and parks. Under the Green Light program, women are employed as teacher aides, in libraries, in preparing school lunches, and in outreach work with the disabled and homebound.

Government Publications

Job Finding Techniques for Mature Women. Washington: U.S. Department of Labor, Women's Bureau, February 1970, Pamphlet II, 40 pages. A concise, complete how-to-face-it, how-to-get-it guide, with directions on where to go.

Manpower Information. An Annotated Bibliography. Phoenix, Ariz.: Arizona State Employment Service, 1717 West Jefferson Street, 85007. April 1970, 31 pages. A wide selection of information on occupations, educational programs, and institutions, with the addresses of State and nationwide agencies.

For the Counselor, the Trainer, the Manager

Books and Pamphlets

Bauer, Dorothy. *Senior Community Service Project.* New York: National Council on the Aging, September 1969. Results of a demonstration program designed to employ older persons needing additional income, able and willing to work, and to show how they could function as subprofessionals or paraprofessionals in the fields of health and social welfare.

Belbin, R. M. *The Discovery Method. An International Experiment in Retraining.* Paris: Organisation for Economic Co-operation and Development, 1969, 85 pages. A description of the successful method for awakening the older person's ability to learn a new job or skill that has been developed in the United States.

Biderman, Albert D. *Implications of the Second Career Pattern for Military Education.* Presented at the Social Science Conference on "The Perceived Role of Military," Bandol, France, September 22, 1970. Washington: Bureau of Social Science Research, Inc., 1200 Seventeenth Street NW., 20036. Reviews the current attitude of the military toward preparing for second careers and offers prospects for the transition.

Clark, Le Gros. *Pensioners in Search of a Job.* London: The Pre-Retirement Association, (n.d., perhaps 1969), 30 pages. Discusses the prospects for part-time employment among older workers.

JOBS 70. Washington: National Alliance of Businessmen, 1730 K Street NW., 20006. A program to provide employment, training, and upgrading of employees who fulfill certain qualifications and are under 22 or over 45 years of age. The recruitment program is administered through the State employment services and ranges widely in the kinds of work undertaken.

Koyl, Leon F. and Pamela Marsters Hanson. *Age, Physical Ability and Work Potential.* New York: National Council on the Aging, 1969, 53 pages. Scientific matching of physical capacities of workers to the physical demands of the job.

Macarov, David. *Incentives to Work.* San Francisco: Jossey-Bass, Inc., 1970, 253 pages. A study of the effect that a guaranteed income at subsistence level would have on the work incentive of the recipients. Poverty, aging, withdrawal, and social isolation are discussed.

National Institute of Industrial Gerontology. *Employment of the Middle-Aged Worker.* New York: National Council on the Aging, 1969, 341 pages. The three papers

composing this study probe the economic and social problems facing the elderly person whose income is derived from work if access to work is threatened.

Rosenberg, George S. *The Worker Grows Old.* San Francisco: Jossey-Bass, Inc., 1970, 206 pages. A study of the social isolation of the working class which offers insights as to how social environment should be altered if the problems of isolation are to be meaningfully handled.

Schoderbek, Peter P. and William E. Reif. *Job Enlargement. Key to Improved Performance.* Ann Arbor, Mich.: The University of Michigan, Bureau of Industrial Relations, 1969, 113 pages.

—"Aging and Manpower Development," Chapter 6 in *Aging and Society.* Edited by Matilda White Riley and others. New York: Russell Sage Foundation, 1969, pp. 161-200. Stresses the value of retraining programs and job redesign to override age differences and analyzes the effect of increased educational level on work behavior and participation by the older age group.

Slote, Alfred. *Termination: The Closing at Baker Plant.* Indianapolis: Bobbs-Merrill Co., 1969, 340 pages. The effect of a plant shutdown on the workers and their families as well as the entire community, and what was done to restore the social and economic health of the area.

Sofer, C. *Men in Mid-Career.* New York: Cambridge University Press, 1970, Cambridge Papers in Sociology No. 4, 224 pages. A study of British managers and technical specialists.

Somers, Gerald G. *Evaluation of Work Experience and Training of Older Workers.* Madison: University of Wisconsin, Industrial Relations Research Institute, 1967, 79 pages. A cost-benefit analysis of the employment program for older welfare recipients.

Articles

Haber, Lawrence D. "Age and Capacity Devaluation," *Journal of Health and Social Behavior,* September 1970, pp. 167-182. The relationship between aging and disability and their effect on employment and social activity of the working-age population are examined in this paper. The question is also posed as to whether society's built-in expectations of age and aging affect the capacities of older people.

Sheblak, Vernon. "The Older Worker: Employment and Training," *Training and Development Journal,* March 1969, pp. 4-8. Discusses the different approaches toward training and testing the older worker and suggests methods for improving vocational counseling.

Sheppard, Harold L. "The Potential Role of Behavioral Science in the Solution of the Older Worker Problem," *American Behavioral Scientist,* Sept./Oct. 1970, pp. 71-80. Discusses the reality of the stereotypes about age and work.

Government Publications

The Federal Role in Encouraging Preretirement Counseling and New Work Lifetime Patterns. Washington: U.S. Senate, Special Committee on Aging. Hearing before the Subcommittee on Retirement and the Individual, July 25, 1969. Discusses programs for retraining military and civilian personnel.

Older Workers: Manpower Programs for Senior Citizens. Washington: U.S. Department of Labor, Manpower Administration, April 1969, 6 pages. A concise review of Federal programs which are designed with the older person particularly in mind, to help him to find new openings and new skills and to train or upgrade him.

Towards A Full Share in Abundance. Washington: U.S. Senate, Special Committee on Aging, 1970. A series of hearings during the 91st Congress in 1969 and 1970 which reviewed the economic problems of the aging and the programs and projects which have been initiated out of this concern.

Good Luck To You

As you start out on your job search, it's good to know that you have something of value to offer your community. Even in our society where youth is so highly prized, the skills, experience, and wisdom of older men and women are greatly needed. The contributions of older Americans are among our most important assets.

So good luck to you. You have every reason to feel optimistic and to look forward to the good job you'll find —the good job you'll do.

And if you need proof that you *don't* have to apologize for your age, here it is—in a little list prepared by *Changing Times* magazine:

> Cervantes completed *Don Quixote* when he was nearing 70.

> Clara Barton, at 59, founded the American Red Cross.

> Goethe finished the dramatic poem *Faust* at 82.

> Verdi composed *Otello* at 73, *Falstaff* in his late seventies.

> George Bernard Shaw wrote his famous drama *Saint Joan* at 67.

> And, although he once said, "Almost everything that is great has been done by youth," Benjamin Disraeli became Prime Minister of England for the second time at 70.

This Above All

Remember, when you look for a job, you are selling a product—yourself. Package that product and advertise it. When you are talking to an employer, don't just sit there and react. Act! Tell him what you can do for him. *You* may know that you have the exact combination of ability and experience he needs for that job, but *he* won't know it if you don't tell him. Don't boast. Be honest, be positive, be enthusiastic!

The Manpower Administration acknowledges gratefully the contributions to this publication of the Administration on Aging of the Department of Health, Education, and Welfare, which provided material on its operations and programs, and the National Council on the Aging, which prepared the bibliography.

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For more information on manpower programs and services in your area, contact your local employment service office or the nearest office of the Regional Manpower Administrator at the address listed:

Location	States Served	
John F. Kennedy Fed. Bldg. Boston, Mass. 02203	Connecticut Maine Massachusetts	New Hampshire Rhode Island Vermont
341 Ninth Avenue New York, N.Y. 10001	New Jersey New York	Puerto Rico Virgin Islands
P.O. Box 8796 Philadelphia, Pa. 19101	Delaware Maryland Pennsylvania	Virginia West Virginia
D.C. Manpower Administrator 14th and E Streets, NW. Washington, D.C. 20004	District of Columbia	
1371 Peachtree Street, NE. Atlanta, Ga. 30309	Alabama Florida Georgia Kentucky	Mississippi North Carolina South Carolina Tennessee
219 South Dearborn Street Chicago, Ill. 60604	Illinois Indiana Michigan	Minnesota Ohio Wisconsin
911 Walnut Street Kansas City, Mo. 64106	Iowa Kansas	Missouri Nebraska
1100 Commerce Street Dallas, Tex. 75202	Arkansas Louisiana New Mexico	Oklahoma Texas
Federal Office Bldg. 1961 Stout Street Denver, Colo. 80202	Colorado Montana North Dakota	South Dakota Utah Wyoming
450 Golden Gate Avenue San Francisco, Calif. 94102	Arizona California Hawaii Nevada	American Samoa Guam Trust Territories
Arcade Plaza 1321 Second Avenue Seattle, Wash. 98101	Alaska Idaho	Oregon Washington

U.S. DEPARTMENT OF LABOR J. D. Hodgson, Secretary
Manpower Administration 1971

VT 014 128
HAGMANN, LARRY; BARLOW, MELVIN L.
ROLE OF ADVISORY COMMITTEES IN OCCUPATIONAL EDUCATION; TYPES OF ADVISORY COMMITTEES.

CALIFORNIA UNIV., LOS ANGELES. DIV. OF VOCATIONAL EDUCATION.
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DESCRIPTORS - *ADVISORY COMMITTEES; *AGENCY ROLE; *VOCATIONAL EDUCATION

ABSTRACT - THIS DISCUSSION OF THE ROLE OF ADVISORY COMMITTEES INCLUDES HISTORICAL BACKGROUND, FUNCTIONS OF NATIONAL AND STATE ADVISORY COUNCILS, SELECTION OF MEMBERS, MAJOR CATEGORIES OF COMMITTEE INVOLVEMENT, AND MOTIVATION OF COMMITTEE MEMBERS. TYPES OF LOCAL ADVISORY COMMITTEES ARE DESCRIBED, INCLUDING GENERAL, SPECIFIC AREA, AND AD HOC COMMITTEES. (BH)

VT 014 128

Hawaii Practical Arts and Vocational Association

ROLE OF ADVISORY COMMITTEES IN OCCUPATIONAL EDUCATION

TYPES OF ADVISORY COMMITTEES

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University of California
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ALA MOANA HOTEL
HONOLULU

August 9, 1971

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Hawaii Practical Arts and Vocational Association

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ROLE OF ADVISORY COMMITTEES IN OCCUPATIONAL EDUCATION

The establishment of advisory committees in the field of vocational education is a long-standing practice based upon the principle that an optimum occupational program can be achieved only through the combined efforts of the involved groups - the schools, industry, and business. Various specific combinations of people from these major groups work together, e.g., employer, employee, and educator; management, labor and education; or other such combinations. Despite the identity of these participants, it was intended that policy-making for occupational education depend upon persons who represent the instructional process, the work concerned, and the employers who are in a position to hire the vocational students.

The literature of contemporary education frequently refers to the desirability of seeking and utilizing advice from various experts concerning the educational process and its product. Phrases such as "the school without walls," "using community resources," "the community is the laboratory of the school," "career education," etc., all derive from the concept that in the development of educational programs, quality depends upon effective utilization of many resources.

Standards of performance, evaluation, and accountability in general demand judicious use of advisory services with respect to many facets of an occupational program. It is entirely appropriate, therefore, that plans for a vocational education program now and the immediate future focus upon advisory committees and their function in the development of occupational education. A brief review of the historical background will show how some of the principles related to advisory committees developed.

Historical Background

Although the idea of establishing committees to advise educators is not new, vocational education has only recently begun to realize their full potential. The use of advisory committees grew out of the apprenticeship system which had its roots in the guilds of the Middle Ages. "The close supervision imposed by the guild was responsible for high standards of workmanship and resulted in the well-wrought and artistic productions of the later Middle Ages."[1]

Although citizen advisory committees for general education have been in vogue for some years, the evidence seems to indicate that "The advisory committee is an invention of the vocational education movement."[2] Citizen advisory committees for general education have explored and made recommendations concerning:

> "(1) buildings and grounds, (2) finances, (3) consolidation of school districts, (4) curriculums and co-curricular activities, (5) educational policies and objectives, (6) pupil personnel services, (7) supplies and equipment, (8) relations with boards of education and school administrators, (9) community and general school welfare, and (10) school community relations."[3]

The first use of advisory committees for vocational education was recorded in 1911, but "comparatively little advantage was taken of this

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[1]Roy W. Roberts, Vocational and Practical Arts Education (New York: Harper and Row Publishers, 1965), p. 51.

[2]Melvin L. Barlow, "Foundations of Vocational Education," American Vocational Journal, Vol. 42, No. 3 (March, 1967), p. 18.

[3]Gene C. Fusco, Citizens Committees for Better Schools. U.S. Department of Health, Education, and Welfare, Office of Education, (Washington D.C.: U.S. Government Printing Office, 1964), p. 3.

bridge between education and industry until the early forties."[4] Many vocational educators have theorized that the bridge was crossed at this particular time because of the emergency situation created by World War II which pressured industry and education to work together. In 1940, when training programs were organized to prepare war production workers, the use of representative advisory committees was specified in the regulations. Beneficial results of such committees enhanced the popularity and development of advisory committees in vocational education. Over the years, more and more people from business and industry have been involved in vocational education.

> "It is estimated that over 100,000 business and industry leaders throughout the United States are voluntarily serving on some 20,000 advisory committees established by secondary and post-secondary schools to assist in the development of vocational and technical education programs. In Wisconsin alone there are over 4,000 representatives of management and labor on advisory committees of local and area vocational schools and technical institutes. Both the Los Angeles Trade-Technical College and Denver's Opportunity School have over 600 industry representatives on their advisory committees."[5]

Another example of the growing importance of advisory committees is demonstrated by the recent action of the Board of Education in Los Angeles which ruled that all 625 schools in the system shall have citizen advisory councils. It also stated that, "The majority of the members on newly created councils are required to be elected from among students'

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[4] Franklin R. Johnson, "An Analysis of Methods and Techniques Practiced in Utilizing the Service of Lay Curriculum Advisory Committees" (Unpublished doctoral dissertation, Graduate School of Education, University of California, Los Angeles, 1969), p. 2.

[5] Samuel M. Burt, Industry and Community Leaders in Education (Kalamazoo, Michigan: The W.E. Upjohn Institute for Employment Research, 1969), p. 1.

parents by balloting in communities served by the schools."[6]

U.S. Commissioner of Education, Sidney P. Marland, Jr., takes a strong position concerning the value of advisory committees.

> ". . . people from business, industry, and organized labor who have expertise in career opportunities should be brought in to provide for closer collaboration with the schools."[7]

Thus the history of advisory committees in general, and for vocational education in particular, provides ample evidence of the value of such committees in developing the best educational practices. That representative advisory committees can in fact assist materially in achieving desirable educational goals is not debatable; and therefore it is not surprising that the Congress and the nation's vocational education leaders take strong positions relative to national and state advisory councils.

National and State Advisory Councils

Technological developments during the post-World War II years provided a new stimulus for establishing advisory councils. During 1959-60, the American Vocational Association worked vigorously to alert the Congress and the Secretary of Health, Education, and Welfare to the fact that a national review of vocational education was imperative. The Association had strongly supported the concept of advisory services for more than 50

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[6]"Board of Education to Require Citizens Councils at All Schools," Los Angeles Times, June 29, 1971, p. 2.

[7]Sidney P. Marland, Jr., "Career Education Now" (Paper presented at the National Assocation of Secondary School Principals, Houston, Texas, January 23, 1971).

years, and its concern for new kinds of advisory relationships prompted the promotion of the proposed national review of vocational education.

National Advisory Council

In 1961, President Kennedy appointed a Panel of Consultants on Vocational Education; many of their recommendations were reflected in the Vocational Education Act of 1963. A requirement of the 1963 Act was the appointment of a National Advisory Council on Vocational Education, at intervals of five years, for the purpose of reviewing the status and progress of vocational education. Accordingly, the first Council was appointed by President Johnson late in 1966, and the review of vocational education was undertaken during 1967. The Council's report was used by the Congress in writing the Vocational Education Amendments of 1968. Specifications for the Council indicated that:

> "Its 21 members must include persons who are familiar with vocational education and manpower training programs, spokesmen for labor and management, experts in the training of the handicapped and socioeconomically disadvantaged persons, and representatives of the general public, including parents and students."[8]

The National Advisory Council was required to meet at least four times per year and its duties consisted of the following:

> "(A) advise the Commissioner concerning the administration of, preparation of general regulations for, and operations of, vocational education programs supported with the assistance under this title.
>
> (B) review the administration and operation of vocational education programs under this title, including the

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[8]U.S. Department of Health, Education, and Welfare, Office of Education. The Vocational Education Amendments of 1968 (Washington, D.C.: U.S. Government Printing Office, 1969), p. 1.

effectiveness of such programs in meeting the purposes for which they are established and operated, make recommendations with respect thereto, and make annual reports of its findings and recommendations for changes in the provisions of this title to the Secretary (of HEW) for transmittal to the Congress; and

(C) conduct independent evaluations of programs carried out under this title and publish and distribute the results thereof."[9]

State Advisory Councils

Public Law 90-576 also stipulated that:

"Any State which desires to receive a grant under this title for any fiscal year shall establish a State Advisory Council, . . . "[10]

The law does not indicate the number of persons required to serve on the state advisory council, but it does say that its membership should include people who are familiar with the state's vocational needs, management and labor, post-secondary institutions, administration of state and local vocational education, and representatives of: technical and vocational education, local education agencies, manpower and vocational agencies, school systems with large concentrations of disadvantaged students, those who are physically or mentally handicapped, as well as the general public. It has been estimated that in order to fulfill, satisfactorily, all the required types of representatives, there would need to be a minimum of twelve members. Some states have appointed more than this calculated minimum number, with one state reporting a high of 27 members.

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[9]U.S. Congress, Public Law 90-576, 90th Congress, 1st sess., 1968, p. 4.

[10]Ibid.

The state advisory council is required to hold at least one public meeting annually to give the public an opportunity to express their views concerning vocational education. The law does not require any special form of internal organizational structure other than the election of a chairman at the first meeting. Each state thus must develop its own governing procedures, internal structure, operational procedures, staffing pattern, and allocation of funds utilized in performing its role and responsibilities. The 1968 Amendments authorize a minimum of $50,000 and a maximum of $150,000 for state advisory councils.

It is estimated that the establishment of state advisory councils has brought an additional 1,000 business, educational, labor, professional, and community leaders together in the interest of improving vocational education. The law has also provided funds for the members to exercise much-needed leadership for developing a meaningful and effective system of industry-education cooperation in the states.

State advisory councils must perform three functions:

> " 1. Advise the state board on the development of policy matters arising in the administration of the state plan;
>
> " 2. Evaluate programs, services and activities and,
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> " 3. Submit to the Commissioner of Education and the National Advisory Council an annual report on the effectiveness of vocational education, with recommendations for such changes which may be warranted."[11]

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[11] W.R. Miller, et al. The Advisory Committee and Vocational Education (Washington, D.C.: American Vocational Association, 1969), p. 11.

The major responsibilities of the state advisory councils appear to be evaluative in matters such as: (1) examination of the financial aids policies, (2) physical plant and other program resources, (3) number of school dropouts and unemployed being served, (4) number of handicapped being served, (5) number of socioeconomic disadvantaged persons being served, and (6) number of youths and adults being served in total as compared to the number who should be served.

The 1968 Amendments require that the state board of vocational education take into consideration the evaluation report of the advisory council when developing the state plan, and that the state plan be prepared in consultation with the council. Samuel Burt suggests several types of involvement: that preliminary drafts of sections of state plans should be sent to the advisory council for review and comments; that the advisory council seek, as needs, the advice of consultants, industry groups, local educational agencies, etc., for recommendations to the state board concerning these preliminary drafts; that when the full draft is completed, the state department of education should arrange for a joint public hearing of the state board and the advisory council; and that the state board invite the advisory council to attend the meeting and participate in reviewing the final copy of the state plan which is to be submitted to the U.S. Commissioner of Education.

The exact relationship between the state council and the state board of education has been the subject of much discussion. Burt takes the position that:

> "The participatory role of the state advisory council however, must be clearly defined as not including involvement in administrative and operational matters at either the state

> or local levels. Nor should the fact that the councils are to be established as entities separate from the state boards of vocational education be interpreted to mean that the councils are to function autonomously rather than interdependently."[12]

The issue of autonomous vs interdependent functioning is frequently discussed; advisory councils must contantly remind themselves of their role in relation to the on-going program of vocational education.

Calvin Dellefield, Executive Director, National Advisory Council for Vocational Education, stressed another important relationship of state advisory councils saying that, "Vocational education, perhaps more than any other type of educational program, requires close cooperation with the community."[13]

Because vocational education prepares youth and adults to enter the labor force, and also provides them with the opportunity for continually upgrading their skills, programs should be evaluated and reevaluated by persons engaged in the various occupations in order to be certain that instruction offered is relevant.

Having established the importance of advisory committees, the next step is selecting occupational advisory committee members.

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[12] Samuel M. Burt, Industry & Community Leaders in Education: The State Advisory Councils on Vocational Education (Kalamazoo, Michigan: The W.E. Upjohn Institute for Employment Research, 1969), p. 2.

[13] Calvin Dellefield, "Using State Advisory Councils and Committees to Improve Vocational Programs for Rural Students" (Paper presented at the National Institute on the Coordination of Supportive Services for Vocational Education Students in Rural Areas, Fayetteville, Arkansas: University of Arkansas, January, 1970).

Selection of Occupational Advisory Committee Members

Before determining the selection criteria for occupational advisory committee members, a consensus should be reached concerning the size of the committee. One observer takes the position that "occupational advisory committees are usually more effective if they limit membership from five to seven members and use consultants as the need arises."[14] The American Vocational Association, in its booklet The Advisory Committee and Vocational Education, suggests six to ten persons as the appropriate number for occupational committees.

It is also important that advisory committee members clearly understand their role and function.

> "They must understand that their function is advisory, not administrative. It must be clear to them that they are contributing from their own experience and knowledge to assist the governing board (teacher) and school officials in making policy decisions and in planning details of program operation, but that final responsibility rests with the governing board. It must be understood that it may not always be possible for the board (teacher) or the school administration to adopt in full the recommendations of an advisory committee."[15]

If the educator cannot accept the full recommendations of the advisory committee, he should explain his reasons to the committee.

Some of the more obvious criteria for selecting members are: intelligence, leadership experience, interest and willingness to work for

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[14] Sam W. King, Organization and Effective Use of Advisory Committees. U.S. Office of Education (Washington, D.C.: U.S. Government Printing Office, 1960), p. 24.

[15] Western New York School Study Council, Organization and Operation of a Local Program of Vocational Education (New York: State University of New York at Buffalo, 1968), p. 31.

the program, ability to work with others, experience in the occupation represented, and not being "out of touch" with students and graduates of the school program.

A vital factor in the selection of committee members is the degree of support they have from the companies they represent. The nature of such support will have a bearing upon attendance at daytime meetings, and on other matters such as company funds for scholarships, publicity, and donation of equipment and supplies. A committee member's effectiveness within the power structure of the industry he represents is exceedingly important. The prospective member's influence with companies, individuals, and professional organizations in his industrial field will directly affect the results he can achieve in most categories of involvement.

Political contacts and influence represent another desirable qualification for potential advisory committee members. It also benefits the program if the occupational advisory committee member can obtain community support of the program. Furthermore, if he is in a position to hear community suggestions and comments concerning the program, he can provide immediate feedback to the appropriate personnel. Insights into sensitive community situations regarding the program and the school comprise another valuable asset for a committee member.

Occupational advisory committee members should be chosen from both large and small businesses in order to assure a variety of inputs representing a wide range of industrial operations. This will result in a broader based program, capable of training an employee who has greater flexibility in terms of placement.

Leadership qualities are especially desirable in a committee member

because of the frequent need for special or ad hoc subcommittees. Generally, these subcommittees have the task of drawing up recommendations for action to be taken by the occupational advisory committee. It is important, therefore, that the committee member in charge of this subcommittee be capable of organizing a team and achieving a goal.

The ability to work with others becomes particularly valuable when the occupational advisory committe comprises representatives from all facets of the industry (or business) for a particular program. These would include "elements of management, labor (union and non-union), manufacturers of equipment and supplies, legal advisors, wholesale and retail merchandisers of the product, public relations, advertising personnel, and possibly other categories."[16] Such broad representation improves the problem-solving capability of the group, which in turn enhances the quality of the program.

Another important element to be represented by members is sensitivity to management-labor relations; this helps to prevent harmful flare-ups and the possibility of ineffective service from the committee. In order to include still another viewpoint, at the local level the practice of appointing students and recent graduates to occupational advisory committees is growing rapidly.

In the actual selection process, representatives should be acceptable to the school, the organization or business they represent, and to the other advisory committee members. The next major issue, related to the complex operation of the advisory committee, is the nature of the committee's involvement in the work at hand.

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[16]Franklin R. Johnson, op. cit., p. 81.

Principal Categories of Occupational Advisory Committee Involvement

Members of advisory committees can be helpful in many ways and some of these will be discussed in seven broad categories: (1) job market analysis, (2) instructional planning, (3) students, (4) teachers, (5) legislation, (6) public relations, and (7) program evaluation.

It is not likely that there is an industry-education team involved in every aspect of each activity being considered. However, there are certain common segments which can be discussed that benefit each team in its particular situation. The first category in which every industry-education team should be involved to some degree is job market analysis.

1. Job Market Analysis

Realistically, before establishing, increasing or reducing any vocational education program, it should be determined what the needs are for its graduates. Occupational advisory committees should advise the school administrators concerning the type of training required by a particular industry in order to provide the initial employee training needs of the community as well as the retraining and upgrading of employees. The information necessary to determine these needs is obtained through surveys. The committee cannot be expected to conduct these surveys, but through the efforts of labor market economists or occupational analysts in cooperation with knowledgeable people from industry and education, the type of data needed can be determined and the surveys conducted.

There are basically three kinds of occupational and occupation-related surveys for determining occupational needs concerned here:

" 1. The survey of a single craft or occupations, such as carpentry, sheet-metal work, radio repair, applicance repair, offset presswork.

" 2. The survey of an industry, e.g., printing, construction, data processing, in which all the jobs within the industry are studied.

" 3. The survey of a community in which all or some of the principal jobs or occupations in which people of the community are employed are studied.

"The general objectives of these surveys are usually to determine:

" 1. The number of people in a geographic area currently employed in a given occupation, and the additional numbers needed currently and through the next (usually) five years.

" 2. The occupation(s) in greatest demand.

" 3. The jobs within an occupation for which training is needed.

" 4. The number of graduates from school occupational education programs who might be accepted for employment in a community.

" 5. The interest of young people and adults in training for selected occupations.

" 6. The need for supplemental training for people already employed.

" 7. New areas in which school preparatory or upgrading education and training are needed.

" 8. Which school programs should be expanded or, perhaps, discontinued, or established.

" 9. The education and training requirements of the occupation, job or industry that can be met by a school program." [17]

The increasing mobility of people is adding to the importance of considering state and national surveys. Surveys relating industry needs to education were recognized by the national leaders who planned the Vocational Education Act of 1963 which "provides for entering into cooperative arrangements . . . making available . . . occupational information regarding reasonable prospects of employment in the community or elsewhere."[18] The Vocational Education Amendments of 1968 actually provide funding for this function by authorizing $5 million per year for "national, regional, state, and local studies and projections of manpower needs for use and guidance of federal, state and local officials, and of advisory councils . . . . "[19] Such surveys help in furnishing information for instructional planning.

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[17] Samuel M. Burt, Industry and Vocational-Technical Education (New York: McGraw-Hill Book Company, 1967), p. 82.

[18] U.S. Congress, Vocational Education Act of 1963 Public Law 88-210, 88th Cong. 1st sess., 1963, p. 4.

[19] U.S. Congress, Vocational Education Amendments of 1968 Public Law 90-576, 90th Cong. 1st sess., 1968, p. 2.

2. Instructional Planning

While reviewing the literature on occupational advisory committee functions, it was observed that course planning was a function mentioned by all authors. Although the occupational advisory committee should always be involved in course outline planning and revisions, it should not be expected to make an in-depth trade analysis. Teachers and school administrators should do the detailed planning which, in this age of accountability, should involve the development of student performance objectives that state the objective or performance, the conditions and the criteria. The development of student performance objectives assists the educator when he asks the occupational advisory committee to review the course of study because it makes the committee members conscious of the program's intent and goals. Furthermore, they can change or delete those that are not realistic.

Course length is another aspect of course planning that the advisory committee should help determine; allowances should be made for individual differences because each student progresses at his own rate.

The level of the course content should be based on the true needs of the occupation, which are best determined by those involved in that particular industry. For the same reason, the advisory committee should also be involved in shop layout and in determining tool and equipment standards. They may also be of assistance in the preparation and review of budget requests for equipment and supplies.

Other areas of the instructional programs where the occupational advisory committee might be helpful are: developing school policy regarding the types of production work or "public jobs" in which the students

would be involved for instructional values; assisting in developing related courses for apprentice and work experience programs; providing books, magazines, and visual aids concerning the industry; obtaining equipment through loan or donation from industry. All of these directly affect the assistance given to students.

3. Students

Selection criteria for students desiring to enter the program should be suggested by the committee because its members know what aptitudes are needed to work in the industry they represent. If specific industrial representatives were consulted during the development of selection criteria, potential employers in those industries are likely to feel that the program's graduates are well qualified. Moreover, the occupational advisory committee could be helpful in preparing the aptitude, achievement, certification, and licensing tests that are necessary for admission into the program and for the initial employment phase of the program's graduates.

The actual selection of students is the responsibility of the educators who interview, administer tests, and make the final decision about accepting the student.

The occupational advisory committee members (and other employers as well) can help in recruiting students by visiting schools that feed into the program and participating in career day meetings.

Placement, which is one of the most important facets of a successful program, should result as a natural follow-through if the advisory committee assisted toward developing the selection criteria and the

instructional program. All of the reference materials concerned with advisory committees stress placement as a major element of their responsibilities. The committee can help by employing the graduates or by recommending them to other employers in the industry. If possible, they should assist in arranging for summer and part-time student employment.

Because occupational advisory committees are usually familiar with the employment needs and trends of the industry, they should advise the educators regarding employment opportunities and encourage industry to cooperate in the follow-up studies made by the training program. Although it is imperative for the advisory committee to be concerned with students, the teacher must have its primary attention.

4. Teachers

Development of selection criteria for teachers and evaluation of their trade competencies are essential areas in which committees can assist school administrators. Although the advisory committee does not directly hire the teacher, it can recommend skilled craftsmen who work well with beginners as prospective teachers. It can also encourage these craftsmen to seek positions as teachers.

> "Prospective teachers may be found through a number of sources. Some of them are: industrial associations or societies, the Vocational Industrial Clubs of America, the Future Teachers of America, Civil Service lists, college and university placement agencies, teacher education colleges, public and private employment services, industrial employers, the armed forces, unions, professional education societies, advisory committees, and program graduates."[20]

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[20] James R.D. Eddy, Implementation - New Designs for the Challenge of the 1970's (Washington, D.C.: American Vocational Association, 1968), p. 20.

Once the teacher has been employed, the occupational advisory committee can help him in various ways, such as:

- o assisting new teachers to develop "industry-like" instructional activities.
- o encouraging older teachers to keep instructional materials up to date.
- o providing feedback from the community concerning teacher's efforts.
- o making arrangements for plant and field trips.
- o conducting in-service training programs for teachers.
- o arranging for resource personnel from the industry to assist in special projects.
- o providing funds to attend state, regional, and national conventions of industry.
- o obtaining summer employment in the industry to update teachers' occupational skills.

Members of the advisory committee should make an effort to become personally acquainted with the teacher, and the teacher should feel "at home" in the plant or business office of the committee member. Beyond specific assistance to teachers, committee members can support budgets and legislation related to the occupational program.

5. Legislation

The occupational advisory committee can be of great service in supporting state and national legislation regarding vocational education and program appropriations. By this support, the committee members are assuring the legislators and administrators that the program is relevant

and that it is meeting the needs of industry. The committee members can accomplish this directly or through associations such as industrial organizations, service clubs, and civic groups. General advisory committees, at both the state and national levels, usually prime the support for legislation, but depend on the local general and occupational advisory committees to enlist support of others for the legislation.

One educator believes that schools are a product of political decisions, especially where curriculum development, increased finances and services are concerned. He suggested that educators should recognize that there are political advisers and make efforts "to learn just who they are, what values motivate them, what power resources are available to them, and what the patterns of interaction are which may exist among them."[21] Public relations, which is closely related to legislation and program appropriations, is another area in which advisory committees can assist materially.

6. Public Relations

In any business venture, whether small or large, the aspect of public relations cannot be ignored. Public relations in a small business is the responsibility of an individual; in a large business it is handled by a separate department. If educators are going to operate in a business-like manner (and this is a major thrust today) then they should develop skills in public relations.

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[21] Russell T. Gregg, "Political Dimensions of Educational Administration," Teachers College Record, LXVII, No. 2 (November, 1965), 118-28.

The vocational education program has an effective source in the occupational advisory committee for program publicity through its news media contacts. When the school is planning an open house, or an industry-education show, the advisory committee can help publicize it through contacts not readily available to the school, such as trade magazines, company news letters and bulletin boards, local newspapers, radio and television. Committee members can make speeches, present awards, and talk with guests about the occupational programs of the school. They can also participate in radio and television programs to "sell" vocational education to parents and future students.

The committee can help to solicit funds from industry for the purpose of advertising vocational education, the school or a specific program. Moreover, the members' day-to-day contacts are a continuing means of making others aware of the industry-education venture and its benefits to the community.

The effectiveness of this and the five foregoing categories that have been discussed is encompassed in the final category, evaluation.

7. Evaluation

Although evaluation is the final category of discussion, it is extremely important. There are two types of evaluation and a program of quality should have both. Formative, or on-going evaluation, is what is involved in good instructional planning. For example, if the teacher develops student performance objectives for his class and checks them out with the program's occupational advisory committee, formative evaluation is taking place; the teacher gets immediate feedback from the committee

regarding the adequacy or inadequacy of these objectives. Obviously, this is far more effective than teaching for an entire year, only to find that the objectives were wrong.

Year end or summative evaluation is the other kind of evaluation; it is needed to determine achievement with respect to the objectives which were validated by formative evaluation during the year.

The occupational advisory committee members, each a specialist in a particular industry, are competent to help in developing "standards of excellence." These standards are described in realistic, achieveable terms; e.g., "An excellent program will place all of its graduates." When discussing standards of excellence, Burt relates this concept to the businessman saying:

> "Many businessmen use the single measure of profit as their evaluation tool. The more sophisticated businessman, however, looks at his profits and then questions how to increase them. This inevitably involves him in making detailed analyses of his entire operation. In doing so, he must establish criteria for every facet of his organization's activities in order to meet established goals."[22]

As pointed out earlier, a quality program must undergo both formative and summative evaluation. Because of various constraints, this may not be possible in the first evaluation effort. However, a little evaluation is better than none at all.

The entire subject of occupational advisory committee involvement may seem to demand insurmountable goals, but looked at in terms of standards of excellence, it is realistic in the best conditions. To achieve this

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[22]Samuel M. Burt, op. cit., p. 246.

goal it may be helpful to discuss the various ways of motivating occupational advisory committee members.

Motivating Occupational Advisory Committee Members

When establishing and working with occupational advisory committees, educators must be sure to keep the exchange of ideas on a two-way avenue. A program can receive many benefits from a good advisory committee, and educators should take every opportunity to give recognition to these benefits. Some possible avenues for expressing recognition are discussed in the following paragraphs: the order in which they are presented is not significant.

Ideally, the chairman of the occupational advisory committee should be an effective democratic leader. Experiments have shown that groups operating under democratic leadership are more productive than those under authoritarian or laissez-faire leaders. Problem-solving success and the recognition of the special skills of each member produce more fruitful results under democratic leadership. This type of leadership also rightfully encourages greater interaction among the members. When members know each other and basic formalities can be put aside, more effective work generally takes place. Also, those who enjoy social contacts with industry peers find the occupational advisory committee to be a very beneficial climate for such contacts.

When the educators and the advisory committee members become acquainted and know each other's specialties, each will realize the need for being on the committee. This generally makes for enthusiastic committee members. Also, whenever an occupational advisory committee

member is performing outstanding service to the program, his efforts should be recognized and commended.

Making the membership effective and productive enhances the attractiveness of serving on the occupational advisory committee. When goals are achieved, the program is improved, and consequently the advisory committee will be recognized. Generally, people enjoy being members of successful teams.

Some occupational advisory committee members will want to go beyond their general advisory duties. Such a person can help the program a great deal, and it is important to keep him on useful program-centered projects that bring him satisfaction and further enhance his advisory role.

There are many individual personal signs of recognition that help to motivate the committee members. Probably the foremost is the fact that educators involved with the committee take the time to know and call the respective committee members by name. This adds a personal touch and lets the member know that he is important in this industry-education relationship. If the committee member discusses some of his personal interests with the education representative, the latter should take note of it. A brief reference to the matter at some later time serves to remind the committee member that educators are interested in him as a person.

Occasionally, an administrator or education representative on the advisory committee may need some special information on equipment or supplies. A phone call or individual meeting with an advisory member may result in volunteered help which is far beyond what the educator dares to ask.

Although the businessmen who serve on the occupational advisory

committee usually have busy schedules, they often respond favorably to an occasional invitation to lunch with a school administrator or the education representative on the advisory committee.

> " . . . more scholarships and donations of equipment have come from a luncheon and/or a cocktail than from formal meetings organized for that purpose--even though there has been no reference made to the subject."[23]

There may be a time when an occupational advisory committee member asks for a personal favor, such as counseling someone in his family, or attendance at industry programs. Perhaps the advisory member may tell a friend to ask for information, using his name. If requests of this nature receive the red carpet treatment, education will have a more dedicated advisory supporter.

There are school functions for which no preparation is required (either by the school or the committee member) that may be of general interest to the occupational advisory committee members, e.g., graduation exercises, open house, and special exhibits. If invitations are extended, members will appreciate being included even though they may not be able to attend.

The occupational advisory committee members can become directly involved in many aspects of the program and school operations. For many, this direct involvement further motivates and enhances their activities on the advisory committee. Classroom participation, for example, would include speaking on the current practices of a particular occupation or demonstrating a special technique or skill. These presentations tend to reinforce the teacher's instruction and enhance his effectiveness.

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[23] Franklin R. Johnson, op. cit., p. 68.

If the program has funds for scholarships, participation of committee members extends the perception of the scholarship selection committee, and also makes the advisory members aware of the value of supporting deserving students. This aspect can be carried a step further by asking the advisory members to make the presentations during the school ceremonies. The students thus become acquainted with the industry and with its support of the program.

Other examples of motivational involvement might be: serving as chairman of an ad hoc advisory committee that is dealing with a special interest related to his own field; assignment to attend an education conference or convention with an administrator or educational representative, etc.

Laymen who are sincerely interested in school improvement can be very important and of real assistance to a specific field, department, or the entire school. The recommendations of citizens' advisory groups can set the stage for needed reforms and innovations which might otherwise be difficult to achieve. Often these recommendations are the result of careful study of community needs and desires. An important consequence of such a study can be a new and constructive understanding between schools and the community, or specifically, better communication between the educators for a particular occupation and the community businesses that employ their trainees. Of course, all of this success hinges on the educator's ability to make use of the recommendations made. If the advisory committee's recommendations are like "songs to a deaf ear," the "singer goes unheard" and will soon become discouraged.

TYPES OF ADVISORY COMMITTEES

Just as a business is departmentalized for accomplishing various tasks, so also would it make sense to have various departments or types of advisory committees. The role of the National and State Advisory Councils has already been discussed. This portion deals specifically with the local level and covers the following:

- o General Committees (all areas of occupational education)
- o General Committees (occupational clusters)
- o Specific Occupational Area Committees
- o Special or ad hoc committees

It is interesting to note that in 1969 the American Vocational Association conducted a survey and found that many states are currently using local advisory committees.[24] As of 1969, thirty-four states (one of which is Hawaii), as well as the District of Columbia, Puerto Rico and the Virgin Islands, stipulate the use of local advisory committees in their state plans; fifteen states do not require but recommend their use. Mississippi, Guam, and the Trust Territory do not stipulate their use.

General Committees-- All Areas of Occupational Education

A general advisory committee could serve an area vocational center, a community or junior college, an entire school district, or only one school within the district. The members of this committee usually include representatives of the entire occupational spectrum represented in the program, spokesmen of organized groups, influential citizens, employers,

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[24] W. R. Miller, op. cit., p. 47.

supervisors, as well as present and graduate students.

The main purpose of advisory committees of this type is to work with local educators to develop and accomplish the long range goals of the entire occupational program. Through community surveys, they determine the general needs and help to identify the present and future industrial employment requirements. As a result of these determinations, they contribute to the establishment and maintenance of realistic and practical occupational education programs.

They can also assist in developing community understanding and support of the occupational program. This would certainly include efforts to improve the importance of and the respect for the entire vocational education program.

General Committees--Occupational Cluster

Advisory committees are sometimes called departmental advisory committees. They generally serve one occupational cluster (e.g., allied health) in a vocational school, or in a sparsely populated area, they may serve the entire district for a specific cluster.

The purpose and functions of the general occupational cluster advisory committee are similar to those of the general (all areas) advisory committee but are naturally more specifically oriented in terms of the occupational cluster.

Specific Occupational Area Committees

Specific occupational area committees are the backbone of schools such as Los Angeles Trade-Technical College and Denver's Opportunity School. (This was pointed out earlier, in the discussion on historical

background.) Each school has more than 600 representatives from industry on its area advisory committees.

Eddy stresses the importance of specific occupational area advisory committees:

> "Assistance gained from advisory committees, . . . will improve the quality of content and the scope of individual instructional areas, make it possible for a program to serve the industries and individuals of a community more effectively, and enhance the status of the program and the school."[25]

Members of the specific occupational area advisory committee are usually selected from the related industry and include employers, employees, union representatives, managers, and students. This committee meets continuously throughout the year, whereas general advisory committees meet once or twice early in the year for the purpose of planning.

Special or Ad Hoc Committees

The special or *ad hoc* committee is a temporary advisory group that is organized for one specific problem, such as establishing a new program, obtaining a special piece of equipment, etc. Upon the completion of the task or solution to the problem, the committee is disbanded. In the case of a committee charged with forming a new program, some members of the *ad hoc* advisory committee who formed the program may then become members of a permanent specific occupational area advisory committee for the new program. An *ad hoc* advisory committee with the problem of obtaining a new piece of equipment (or other specific task) may be composed of one member of the existing specific area advisory committee and other

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[25] James R. D. Eddy, *op. cit.*, p. 18.

consultants who are experts in solving this kind of problem.

Summary

It may be said that advisory committees are a lot of work, and it's true. However, the benefits derived far outweigh the work involved. Public involvement in education and industry's approval of the program can only enhance its future growth.

The advisory committee is the principal means of achieving relevance in education. Generous utilization of such committees prevents continuation of occupational programs that are not required, and helps to initiate quickly new programs required by business and industry for which employment is available.

Attention will be concentrated on advisory services during the August 1971 conference in Hawaii. New interpretations and new means of implementing the founding principles of the vocational education movement--cooperative efforts among management, labor, and education will be sought. Now, as it was in 1906, when the National Society for the Promotion of Industrial Education (NSPIE) began, drawing industry and education together provides a more gradual transition from school to the world of work for every student--what could be more important?

REFERENCES

Barlow, Melvin L., "Foundations of Vocational Education." American Vocational Journal. Vol. 42, No. 3 (March 1967), 16-19.

Barlow, Melvin L., "Principles of Vocational Education." A paper presented jointly to the United States Chamber of Commerce and the California State Chamber of Commerce. San Francisco, California, October 16, 1969.

Burt, Samuel M., Industry and Vocational-Technical Education. New York: McGraw-Hill Book Co., 1967.

Burt, Samuel M., Industry and Community Leaders in Education: The State Advisory Councils on Vocational Education. Michigan: The W.E. Upjohn Institute for Employment Research, 1969.

Dellefield, Calvin, "Using Advisory Councils and Committees to Improve Vocational Programs for Rural Students." A paper presented to the National Institute on the Coordination of Supportive Services for Vocational Education Students in Rural Areas. Fayetteville, Arkansas: University of Arkansas. January, 1970. p. 6.

Fusco, Gene C., Citizens Committees for Better Schools. Washington, D.C.: U.S. Government Printing Office. 1964.

Gregg, Russell T., "Political Dimensions of Educational Administration." Teachers College Record. Vol. LXXII. No. 2 (November 1965), 118-28.

Implementation - New Designs for the Challenge of the 1970's. James R.D. Eddy, chairman. Washington, D.C.: The American Vocational Association, 1968.

Johnson, Franklin R., "An Analysis of Methods and Techniques Practiced in Utilizing the Services of Lay Curriculum Advisory Committees." Unpublished doctoral dissertation, Graduate School, UCLA, 1969.

King, Sam W., Organization and Effective Use of Advisory Committees. Washington, D.C.: U.S. Government Printing Office. 1960.

Los Angeles Times, "Board of Education to Require Citizens Councils at All Schools," June 29, 1971.

Marland, Sidney P. Jr., "Career Education Now." (Speech presented at the National Association of Secondary School Principals, Houston, Texas, January 23, 1971.)

Miller, W. R., Advisory Committees and Vocational Education. Washington, D.C.: American Vocational Association, Inc., 1969.

Roberts, Roy W., Vocational and Practical Arts Education: History Development and Principles. New York: Harper and Row Publishers, 1965.

U.S. Congress, Vocational Education Act of 1963. Public Law 88-210. 88th Congress. 1st Session. 1963.

U.S. Congress, Vocational Education Amendments of 1968. Public Law 90-576. 90th Congress. 1st Session. 1968.

U.S. Department of Health, Education, and Welfare. Office of Education. The Vocational Education Amendments of 1968. Washington, D.C.: U.S. Government Printing Office. 1969.

Western New York School Study Council, Organization and Operation of a Local Program of Vocational Education. New York: State University of New York at Buffalo. 1968.

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KRUCKENBERG, VERNICE
CONSUMERS IN THE KNOW: AN EXPERIMENTAL PROJECT IN ADULT HOME ECONOMICS EDUCATION.

NORTH DAKOTA STATE BOARD FOR VOCATIONAL EDUCATION, BISMARCK.
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ABSTRACT - AN EXPERIMENTAL ADULT HOME ECONOMICS EDUCATION PROGRAM FOR A RURAL COUNTY IN NORTH DAKOTA WAS INITIATED TO REACH AS MANY FAMILIES AS POSSIBLE THROUGH A VARIETY OF METHODS. PROJECT ACTIVITIES INCLUDED: (1) THE SELECTION OF AN ADVISORY COMMITTEE WHICH WAS TO ADVERTISE THE PROGRAM AND RECEIVE COMMUNITY SUGGESTIONS, (2) ADVERTISEMENT OF ACTIVITIES THROUGH RADIO, TELEVISION, NEWSPAPER, AND POSTERS, AND (3) A COMMUNITY SURVEY TO DETERMINE MAJOR CONCERNS RELATING TO HOMEMAKING. ON THE BASIS OF INFORMATION RECEIVED THROUGH THE SURVEY AND ADVISORY COMMITTEE ACTIVITIES, SEVERAL PROGRAMS WERE PLANNED, INCLUDING: (1) A TRAVELING BOOK SERVICE COMPOSED OF PACKETS OF INFORMATION ON BUYMANSHIP AND HOMEMAKING, (2) INFORMATIONAL FLYERS DISTRIBUTED BY LOCAL GROCERIES, (3) PUBLIC AND GROUP MEETINGS DEALING WITH HOME DECORATING, HEALTH AND FIRST AID, DRUG ABUSE, GARMENT FITTING PROBLEMS, AND OTHERS, AND (4) WORK WITH COMMUNITY AGENCIES. EVALUATION BY QUESTIONNAIRES AND OTHER METHODS REVEALED THAT A GREATER NUMBER OF ADULTS CAN BE REACHED THROUGH METHODS OTHER THAN FORMAL CLASSES AND AN ADVISORY COMMITTEE IS ESSENTIAL TO PROJECT DEVELOPMENT. SEVERAL PROJECT MATERIALS INCLUDING THE COMMUNITY SURVEY, SAMPLE PACKET FROM THE TRAVELING BOOK SERVICE, INFORMATIONAL FLYERS, AND EVALUATION FORMS ARE APPENDED. (SB)

VT 014 153

Consumers in the Know

AN EXPERIMENTAL PROJECT

IN ADULT HOME ECONOMICS EDUCATION

CENTER SCHOOL DISTRICT
in cooperation with
STATE BOARD FOR VOCATIONAL EDUCATION
CENTER, NORTH DAKOTA 58530

VT014153

CONSUMERS IN THE KNOW

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Center School District
in cooperation with
State Board for Vocational Education
Center, North Dakota 58530

Mrs. Vernice Kruckenberg, Project Director

1971

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FOREWORD

Making vocational education available to greater numbers of adults in North Dakota is one of the current year's objectives of the State Board for Vocational Education. Vocational adult programs in Consumer & Homemaking Education have reached more persons in urban areas of North Dakota than rural.

Experimentation in providing adult home economics education through a variety of methods of programming seemed to be a possible approach needed in rural areas. With this purpose in mind, the "Consumers in the Know" project was approved.

This report gives a description of the planning, programming, and evaluation of the project. It is the hope of the State Board for Vocational Education that the findings will provide direction for other adult home economics programs in rural areas.

The cooperative efforts of the Center School District, Oliver County residents, and other persons involved in the project have made new opportunities in home and family life education available to adults.

Mrs. Vernice Kruckenberg, project director, is to be commended for her work and the outcomes of the "Consumers in the Know" project.

Carrol E. Burchinal
State Director of Vocational Education

I. INTRODUCTION

The "Consumers in the Know" project was developed as an experimental adult home economics education program for a rural county in North Dakota. Oliver County was chosen as the site for the project. The Center School District served as the subcontracting agency in cooperation with the State Board for Vocational Education.

Center was chosen as the location for this project for several reasons:

1. No adult home economics program through the school had ever been offered to residents of the county.

2. The small number of families living in the county suggested that it might be easier to reach more persons than in a more heavily populated area.

3. One school district serves most of the county residents.

4. Federal funds were made available by Public Law 90-576 "for programs designed to assist consumers and to help improve home environments and the quality of family life". The law also stated that 1/3 of the funds of Part F must be expended for use in depressed areas. This county was so designated by the U.S. Department of Commerce.

5. The Center School Board and its administrator showed interest in making this type of a program available to the district.

The project proposal initiated by the State supervisors of home economics education received approval by the State Board for Vocational Education. Following this approval, the Center School District applied for a grant to conduct a special project in adult Consumer & Homemaking education. The grant was made so the project began February 1, 1971, and was completed June 30, 1971. In consultation with the State supervisor, the school district hired a project director. She was Mrs. Vernice Kruckenberg, a graduate of North Dakota State University with a major in home economics education.

Project objectives were:

1. To develop a pilot project in Consumer & Homemaking education for adults in rural areas.

2. To reach as many families as possible through trying a variety of methods of programming for adults.

3. To involve adults in the planning, programming, and evaluation of the pilot project.

4. To develop written adult program activities for use in other communities.

II. METHODS AND RESULTS

ADVISORY COMMITTEE

In getting a new project started, the question may arise as to where one actually begins. One of the first steps in getting the "Consumers in the Know" project started was organization of an advisory committee.

Need and Function of Advisory Committee

Advisory committees are needed to serve as a liaison between the project and the community. Organization of an advisory committee for "Consumers in the Know" helped fulfill the project objective of involving adults in the planning, programming, and evaluation of the pilot project.

Specific functions of the advisory committee for "Consumers in the Know" were to tell people about the project and its activities, to receive and voice suggestions and comments from people in the community, and to interpret the needs and interests of the community by acting as a sounding board for ideas developed by the project director.

Selection of Advisory Committee Members

Selection of advisory committee members was made from a list suggested by the school superintendent, principal, and some teachers. The persons selected to serve on the committee were persons showing an interest in the community, persons interested in adult education, and persons who were willing to serve. The various committee members were also selected to represent different geographic areas of the county. Other persons such as welfare personnel, county extension agent, and clergymen could have been asked to suggest names of people for committee members.

After a list of names for possible committee members was obtained, each person was called by the telephone. They were given information about the project: it was being sponsored by the Center School District and the North Dakota State Board for Vocational Education, and it was an experimental project in adult home economics education. They were asked if they'd be interested in hearing more about the project. If they replied "yes", a time was set for the project director to visit them at their homes.

While visiting these persons, the project was explained in more detail: the purpose and need, funding, and their role in the project. Some books and pamphlets related to buymanship and homemaking were taken along for the person to review. She probably had never been exposed to these materials such as Co-Ed's Better Buymanship books. These visuals were of great assistance in arousing interest about the project. Ideas for carrying out the project were also discussed. Each individual was asked her opinion of these ideas and the project as a whole.

If the persons seemed responsive to the project, they were asked if they would serve on the advisory committee for the project. Each prospective member asked about the amount of time that would be involved in committee work and who else was going to be on the committee.

In calling people to tell them about the project and ask about their interest, some people immediately said they weren't interested, but every person visited and asked to be an advisory committee member consented. In only one case, the lady was not home at the appointed time for the visit. She could not be reached later, either.

As a result of the visits, seven advisory committee members were selected. Three had professional training. All were homemakers at the time and had families. They ranged in age from the twenties to the sixties. The age variation proved helpful in getting a variety of opinions and ideas.

Meetings of the Advisory Committee

The week following the visits, the first advisory committee meeting was held. This first meeting needed to be carefully planned so each member would feel comfortable in her new role, would feel she personally had something to contribute, and would find the committee meeting enjoyable. The agenda for the first meeting was:

1. Present advisory committee members with folders containing a calendar to record events and meetings, a tablet to jot down ideas and suggestions they get from other people, and a booklet entitled "So, You're a Member of an Advisory Committee" (published in 1970 by North Dakota State Board for Vocational Education) to help them understand what an advisory committee does.

2. Discuss:
   --suggestions or questions of committee members
   --activating program
   --community survey
   --publicizing events
   --meeting times and places

Several good ideas and suggestions resulted from this first meeting. The members seemed to feel the checklist and letter for the survey (see Appendix A) were clearly written. One advisory committee member suggested putting the checklist in the newspaper as a reminder for people to send theirs in and for people who might otherwise be missed. This proved to be a very worth-while suggestion as some of the newspaper checklists were returned.

In discussing how to start the program, the project director presented possible directions for the project. Ideas included neighborhood group meetings, area group meetings, traveling book club, consultation hour, exhibits, displays, and information booths at the grocery stores. The committee decided to start with the traveling book club. They planned how it should be implemented. Each member volunteered to be responsible for circulating a packet.

Other suggestions made by committee members at this first meeting were: presenting programs to the Homemaker Clubs, publicizing programs on the radio, and working in some way with elderly people in the county.

A total of six advisory committee meetings was held over the five-month period. At each of these meetings, time was spent in evaluating current activities, considering suggestions for possible activities, and making definite plans for scheduled events. At the last advisory committee meeting, time was spent evaluating the project and the functions of the advisory committee. Results of this evaluation will be included in this report (see page 17).

Summary

The advisory committee proved to be very helpful to the "Consumers in the Know" project. Each member in her own way carried out the functions of the committee. One member wrote in her evaluation:

> "Before senior citizens day, I stopped and talked to older folks on the street, called them on the telephone, and tried to work up enthusiasm. The 'personal touch' beforehand seemed important at all meetings."

This comment illustrates the value of an advisory committee. An effective committee can contribute greatly to the enthusiasm and success for a project.

PUBLICITY

In any kind of project designed to reach people, publicity plays an important role. The kind of publicity to use varies from community to community. The advisory committee can be very helpful in determing how to publicize activities.

The kinds of publicity used for the "Consumers in the Know" project in Oliver County were newspaper articles, posters in stores, individual letters, and radio and television announcements. All were used to publicize project activities, except the radio and television. It was used only for the Senior Citizens Day.

In the evaluation (Table 3) persons were asked whether they heard about activities through the newspaper, radio, television, or posters. Most replied they had heard about them through the newspaper and posters. (Examples of the newspaper articles are found in Appendix E.) Several persons indicated on the evaluation form they had also heard about activities by talking to other people. It was an oversight in making up the evaluation form not to include individual letters and verbal contacts as ways of hearing about activities. It would have been interesting to know how many heard about activities verbally. As one advisory committee member said (page 4), "The personal touch beforehand seemed important at all meetings".

COMMUNITY SURVEY

Purpose

A letter and checklist (see Appendix A) were sent to 650 families in Oliver County. The purposes of the survey were to determine the major concerns related to homemaking and to make people aware that the project was being conducted in their county.

Results

The results as shown on Table 1 were based on the 121 checklists returned. To determine the top concerns the responses in the great concern and some concern columns were tabulated. The five major concerns listed in order were: (1) Meeting health and first-aid emergencies, (2) Stretching the grocery dollar, (3) Beautifying my home and yard, (4) Understanding food and drug laws that affect my family, and (5) Determining whether a sale is really a sale. It is possible Oliver County families were concerned with meeting health and first-aid emergencies because there aren't any medical facilities in the county.

The survey seemed to accomplish its second purpose as evidenced by feedback the advisory committee received. The survey was probably more effective in making people aware of the project than any other kind of publicity.

TABLE 1

RESULTS OF "CONSUMERS IN THE KNOW" SURVEY

		Great Concern	Some Concern	No Concern
1.	Planning meals for my family's health.	48	31	16
2.	Preparing foods in appealing ways.	33	55	11
*3.	Stretching the grocery dollar.	75	26	4
*4.	Understanding food and drug laws that affect my family.	54	38	8
5.	Entertaining in the home--inexpensively.	21	51	21
*6.	Determining whether a sale is really a sale.	47	44	10
7.	Purchasing household furniture and equipment.	34	43	14
8.	Making wise use of credit.	39	31	16
9.	Establishing good housekeeping habits.	38	46	14
10.	Making better use of my time and energy in caring for my home and family.	35	44	13
*11.	Beautifying my home and yard.	55	43	7
12.	Making my home safe for my family.	51	35	7
*13.	Meeting health and first-aid emergencies.	68	34	4
14.	Deciding whether to buy or make clothing.	18	48	24
15.	Constructing clothing for the family.	22	41	22
16.	Mending or remodeling clothing.	27	44	18
17.	Caring for my baby or small children.	19	19	32
18.	Selecting play materials suitable for my children.	14	29	30
19.	Disciplining my children from childhood to adolescence.	48	24	14
20.	Understanding my teen-agers.	47	19	16
21.	Developing hobbies with older people.	29	41	18

*Items which received the most checks in the Great and Some Concern columns.

PROGRAM ACTIVITIES

In planning the program for the "Consumers in the Know" project, activities were planned to meet the needs of Oliver County residents as expressed on the community survey. In addition, a variety of activities was planned to fulfill the objective--to reach as many families as possible through a variety of methods of programming for adults other than formal classes. Several different techniques in adult education were tried in this pilot project. Following is a description of the activities and their success in Oliver County:

Traveling Book Service

The Traveling Book Service was the first activity started upon suggestion of the advisory committee. It was composed of packets of information related to buymanship and homemaking. Each packet contained a variety of subject matter information ranging in form from one-page fact sheets to paperback books. Inserted into the packet was an instruction and evaluation sheet (see Appendix B). This provided a record of who had received the packet and provided an opportunity for packet recipients to comment about the service.

Initially, a packet was given to each advisory committee member who read it and gave it to a neighbor to read. She, in turn, passed it on to another neighbor. Circulation of the packets was either by direct passing from person to person or by passing through the mail. If the packet was one to be passed by mailing, it had extra envelopes with needed postage. The reason for mail packets was for the convenience of rural people in passing the packet. However, it was found in many cases the envelopes for mailing were never used.

Thirteen packets were circulated within the Traveling Book Service and approximately 75 persons were reached. An exact number is not available because some packets were not returned and some packets were read by people who did not sign their names.

Typical comments about the Traveling Book Service were:

> "I think this is very informative. It is really worth the time to read."
>
> "Not enough time to go over everything to get the most out of it."
>
> "Be nice if we could keep the booklet we were interested in."
>
> "I would like to keep every pamphlet. There is good information in all of them. How can we get just certain pamphlets?"
>
> "I especially liked the traveling packet as it had so many pamphlets of varied topics that could be read and notes taken at my leisure."

It was suggested on the instruction sheet that the packet be passed to another person within a week. Many comments indicated that this was not enough time. However, some guideline needed to be made so the packets would be kept in circulation. Also, many people expressed a desire to obtain some of the pamphlets included in the thirteen packets and the publisher's address. A copy of this listing (see Appendix B) was sent to each person who had received a packet with instructions for ordering the pamphlets.

Most comments received on the evaluation sheets in the packets were favorable. However, an advisory committee member had received the comment that the information in the packets could be found in any woman's magazine. The availability of these magazines and their use by most women is questionable. When the information is so conveniently presented as in the Traveling Book Service, it is more likely women will read and use the information. In the final evaluation of the project, the women who had received and used the Traveling Book Service indicated they learned something, too (see Table 3).

Informational Flyers

The advisory committee at one of their meetings discussed techniques for reaching people in the county who would not attend meetings. One member suggested having fact sheets in the grocery stores for people to pick up while shopping. As a result, informational flyers were planned as another "Consumers in the Know" activity.

The flyers were distributed at the two grocery stores in Center. The owners were very cooperative in carrying out this activity. When asked if the flyers could be left in their stores for people to pick up, both owners suggested putting them in grocery sacks. Thus, people would take them home and, hopefully, read them. The flyers were also distributed by the county welfare office to persons receiving public assistance and food stamps.

The director prepared and distributed ten different flyers (see Appendix C). Each one remained at the stores for a week's time. The flyers were planned according to the major concerns from the community survey and according to suggestions from the advisory committee and other persons.

About 275 families were served by the informational flyers. Comments received about the flyers were varied. Some people felt a particular flyer had helpful information while others didn't. This made it difficult to plan the flyers since they were distributed to people of different educational and economic levels. In the evaluation, over half the people who said they read the flyers also said they learned something new. This seems to prove that the informational flyers were effective in reaching adults.

Public Meetings

Another activity of the "Consumers in the Know" project was public meetings. The public meeting idea originated from a suggestion at a neighborhood group meeting. The ladies at this meeting said they would rather have public meetings held at the school so everyone might attend. Consequently, a series of public meetings was planned on topics suggested by these ladies and according to the major concerns indicated on the community survey.

OBJECTIVES, CONTENT, AND METHODS FOR PUBLIC MEETINGS:

Decorating Highlights for Your Home

Objectives: Each participant will become aware of the role color, texture, and accessories have in decorating one's home.

Each participant will analyze the color and texture of a room in her home and suggest minor changes that would make it more harmonious.

Each participant will be able to arrange furniture in a sample room according to space available and room activities.

Content: Use of Color in the Home
Ways of Combining Textures in a Room
Principles of Room Arranging
Use of Accessory Items

Methods: Illustrated talk, group discussion

Health & First-Aid Series - "First Things First"

1st Meeting - The 4 B's - Breathing, Bleeding, Broken Bones, and Burns

Objective: Each participant will know what steps to take in an accident where first aid is required (especially in cases of stoppage of breathing, bleeding, broken bones, and burns).

Content: Steps in administering mouth-to-mouth resuscitation for stoppage of breathing
Use of pressure to stop bleeding, kinds of bandages
Types of burns and first aid for each
Types of breaks in bones and ways to splint them

Methods: Film and demonstration

2nd Meeting - Artificial Respiration and Poisonings

Objectives: Each participant will administer mouth-to-mouth resuscitation using the demonstrated technique on Resuscui-Anne.

Each participant will know what to do in case of a poisoning or overdose.

Content: Procedure in administering mouth-to-mouth resuscitation
Poisons, overdoses and the kind of counterdose found in the home to administer

Methods: Film, demonstration, practice session

3rd Meeting - Drug Abuse

Objective: Participants will realize that a drug abuse problem does exist.

Content: History of Drugs
Source and Processing of Drugs
Prevention of Drug Abuse
Treatment of Drug Addicts
Punishment for Drug Abuse

Methods: Film and group discussion

Fitting Workshops

Objectives: Each participant will identify the fitting problems in a garment modeled at the workshop.

Each participant will alter the garment which she brought to the workshop.

Content: Definition of a well-fitted garment
Ways to achieve good fit
Common fitting problems and their alterations

Methods: Illustrated talk, practice session

Senior Citizens Day

Objectives: Each participant will recognize the effect light has on his eyes and on color.

Each participant will become acquainted with activities of senior citizens' clubs and steps in organizing such a club.

Program: Pot Luck Lunch
Speaker on Lighting and Your Eyes
Speaker on Organizing a Senior Citizens Club
Musical Entertainment
Games and Recreation

Attendance at Public Meetings

The number of people who attended each of the public meetings is illustrated on Table 2. A total of 120 persons (34 men and 86 women) were served through public meetings. At each public meeting, new persons were reached. The attendance list showed 25 persons attended more than one public meeting, while 95 persons attended only one public meeting. In the evaluation of the project most persons who had attended the public meetings also indicated they learned something new (see Table 3, page 16). Therefore, it appears the persons who attended the public meetings found them worth-while; however, bad roads, poor weather, or conflicting meetings often kept some people from attending.

It is interesting that the Senior Citizens Day reached 42 new persons and 3 who had previously been at a meeting. This appears to indicate that to reach older adults one needs to have meetings designated specifically for "senior citizens".

TABLE 2

ATTENDANCE AT PUBLIC MEETINGS

Meeting	Number Attending	Number Previously at a Meeting	New Audience
Decorating April 5	24	0	24
Health & First Aid - 4 B's April 20	19	8	11
Fitting Workshops April 30 and May 1	28	10	18
Health & First Aid - Respiration and Poisonings May 11	13	9	4
Health & First Aid - Drug Abuse May 18	30	14	16
Senior Citizens Day May 25	45* 6**	3 5	42 1

*Senior Citizens
**Others - Advisory committee members who were not senior citizens, but helped with program and arrangements.

Other Group Meetings

Program Presentations to Homemaker Clubs

Upon suggestion of the advisory committee at their first meeting, the project director offered to present programs at Homemaker Club meetings. A letter was sent to the presidents of the ten clubs in the county, telling them about the project and the availability of the director for presenting a program. If a program was desired, the club could select the topic. However, it was suggested that guests be invited to attend the meeting.

Programs were presented to four clubs with a total of 48 members and 9 guests served. Even though not a large number of people were reached, the program presentations to Homemaker Clubs proved to be an effective technique of teaching adults not reached through other "Consumers in the Know" activities. It provided the clubs an opportunity to obtain new information of interest to them probably not available through their club program.

Neighborhood Group Meetings

One objective of the "Consumers in the Know" project was to reach as many families as possible through a variety of methods of programming for adults. One activity, the neighborhood group meeting, was planned as part of the project but never became an effective teaching technique in Oliver County.

The neighborhood group meetings were designed so several ladies in a neighborhood could meet in their homes for the purpose of discussing specific topics related to buymanship and homemaking. The discussion would be led by the project director of "Consumers in the Know". Each group could decide the number and time of their meetings. It was hoped this would be an effective technique since each group could have meetings on topics of special interest to their small group. However, even though newspaper publicity and individual contacts were made in regard to the neighborhood group meetings, only one was ever held and at that meeting it was decided public meetings should be held. Possibly, the public meetings were more effective since it took no preparation on the part of the ladies attending, whereas neighborhood meetings required preparation by the hostess.

Work with Community Agencies

Through its activities, the "Consumers in the Know" project worked cooperatively with community agencies. These agencies served as resources for planning and implementing programs. Working with the different agencies established a good relationship between the agencies and the project. It eliminated some duplication and competition of activities in the community.

The County Extension Service was a valuable resource for obtaining data about the county. It was also helpful in expanding the "Consumers in the Know" project by cooperatively presenting programs. One was the public meeting on fitting clothing. Since both the county agent and project director had received requests about this topic, a workshop was offered cooperatively. The project director presented the lesson and the county agent made the arrangements and publicized the workshop. Another cooperative activity was the presentation

of programs at Homemaker Club meetings. The project director gave the lesson and the club invited guests. This helped to expand the project by reaching new people.

The "Consumers in the Know" project worked with the County Health Service in presenting a series of public meetings on health and first aid. The county nurse gave the lessons while the project director publicized meetings, made the arrangements, and duplicated materials. This series of meetings was planned because the item meeting health and first-aid emergencies was the primary concern on the community survey.

The County Welfare Service aided the project by volunteering to distribute the informational flyers to the recipients of public assistance and food stamps.

EVALUATION

The "Consumers in the Know" project was evaluated in terms of its objectives.

It is obvious the first objective, to develop a pilot project in consumer and homemaking education for adults in a rural area, was reached since the "Consumers in the Know" project was established in Oliver County, a rural area. This was the first adult home economics education offered through the school.

To evaluate the second objective, to reach as many families as possible through a variety of methods of programming for adults, an evaluation letter and form (see Appendix D) were sent to 191 of the approximate 650 families in the county. The persons receiving the evaluation form were selected at random. Only 28 of 191 forms were returned. Since June is a busy time for rural people, this probably accounts for the low rate of return on the evaluation forms. Lack of time prevented follow-up of another letter or telephone calls to get more evaluations returned.

The results of the 28 evaluation forms returned are shown in Table 3. According to these 28 returns, more than half the people (59%) indicated they had been aware of the different activities. Of the people aware of the activities, about 70% participated. It seems evident, even though only 28 responded on the evaluation, the "Consumers in the Know" project did reach families through a variety of methods of programming for adults.

TABLE 3

EVALUATION RESULTS RANDOM SAMPLE

Informational Flyers (distributed at grocery stores in Center)	I received it	I read it	My family read it	I learned something new	Didn't know about it
Planned-Overs, Leftovers or Waste?	16	12	1	4	7
A Guide to Good Eating	13	11	2	6	9
Think Twice...About Potatoes	11	11	5	9	10
A Consumers in the Know Calendar	9	8	3	4	11
Bone Up on Beef	11	11	0	5	8
Should You Use Credit?	14	12	6	6	8
Credit Costs	13	13	5	7	8
First-Aid Facts for the Home	9	8	4	5	10
Facts or Frauds	6	6	2	3	12
The Papers in Your Life	11	10	4	9	9

Traveling Book Service (packets of information related to buymanship and homemaking)	I knew about it	I used it	My family used it	I learned something new	Didn't know about it
	14	12	4	9	11

Public Meetings	I knew about it	I was able to attend	I learned something new	Didn't know about it
Decorating Highlights for Your Home	16	12	10	9
The 4 B's - Breathing, Bleeding, Broken Bones & Burns	16	8	6	9
Artificial Respiration & Poisonings	14	6	3	10
Drug Abuse	15	6	2	10
Fitting Workshops	16	7	5	9
Senior Citizens Day	20	7	1	3

I heard about these activities through the newspaper 14, radio 3, television 1, posters 10.

*Write-ins included: letter 3, verbal 1.

The third objective, to involve adults in the planning, programming, and evaluation of the pilot project, was reached by the establishment and use of an advisory committee. Other people helped by participating in the community and evaluation surveys. Their opinions influenced the planning, programming, and evaluation of the project.

The last objective, to develop written adult program activities for use in other communities, was reached by the writing of this report. It will be helpful to other home economics educators in developing similar adult programs. Already, some North Dakota teachers have requested copies of some instructional materials developed for the project.

It was felt that it would be interesting to do some additional evaluation of the project. One was written evaluation with the advisory committee (see Appendix D). Another was evaluation by people in the county who actually participated in the project.

The evaluation with the advisory committee was carried out at their last meeting. They were given the advisory committee evaluation form (Appendix D) to complete. They were asked not to sign their names to the form.

In evaluating the project, four advisory committee members rated it as successful and three as average in success. They felt the most useful activity of the "Consumers in the Know" project was the public meetings. They rated the traveling book service second and the informational flyers third. The advisory committee rated the following four flyers as being most useful to Oliver County residents: The Papers in Your Life and What to Do with Them, Should You Use Credit?, A Guide to Good Eating, and First-Aid Facts for the Home.

One suggestion they had for a similar project was to incorporate home visits into the project activities.

In evaluating their role, they felt the functions set up for the "Consumers in the Know" advisory committee were adequate. One member felt the advisory committee could be given more responsibility and, therefore, become more involved with the activities. Further evaluation with the "Consumers in the Know" advisory committee was carried out by the State Supervisor for Home Economics (see Table 4). Results seemed to indicate a positive attitude concerning the participation of advisory committee members.

TABLE 4

EVALUATION OF PARTICIPATION OF ADVISORY COMMITTEE MEMBERS

	Yes	No	Some
1. Has the work of the advisory committee members helped your community better understand the "Consumers in the Know" project?	6		
2. Do you think it was a good idea to involve persons outside the school in this project?	6		
3. Do you feel the work of the advisory committee contributed to increasing interest of the community in the project?	5		1
4. Did the work of the advisory committee help the director of the program in making decisions about activities of the project?	6		
5. Do you feel that the advisory committee helped the director with choosing and using community resources?	5	1	
6. Did your work with the program help inform you more about some aspects of home economics?	6		
7. Do you feel an advisory committee is essential to the success of a project such as "Consumers in the Know"?	5	1	
8. If you wish to make some comments about your part on the advisory committee or on any part of the "Consumers in the Know" project, please do.			

The other evaluation with people who had participated in the project was conducted through the mail with the same form as the random sample evaluation (see Appendix D). The two forms were color keyed to keep them separate. The participant sample was sent to 123 people who had attended the public meetings, received a traveling book service packet, or were on the mailing list. The results of the participant evaluation are based on 47 returns or 38% of the participants (see Table 5). Most of the activities were planned to reach the homemaker; however, the evaluation shows other persons in the family made use of the information. More than half the respondents (53%) indicated they also learned something new from the activities. It is interesting that more persons said they learned something new from the informational flyers and traveling book service than from the public meetings. This might suggest these two techniques were more effective for residents in Oliver County.

TABLE 5

EVALUATION RESULTS PARTICIPANTS SAMPLE

Informational Flyers (distributed at grocery stores in Center)	I received it	I read it	My family read it	I learned something new	Didn't know about it
Planned-Overs, Leftovers or Waste?	39	35	2	18	4
A Guide to Good Eating	33	28	4	9	7
Think Twice...About Potatoes	30	26	7	16	8
A Consumers in the Know Calendar	25	23	5	11	11
Bone Up on Beef	26	22	2	8	7
Should You Use Credit?	33	29	8	12	7
Credit Costs	27	24	6	11	6
First-Aid Facts for the Home	30	26	6	16	8
Facts or Frauds	23	21	2	6	11
The Papers in Your Life	29	25	6	20	5

Traveling Book Service (packets of information related to buymanship and homemaking)	I knew about it	I used it	My family used it	I learned something new	Didn't know about it
	34	23	7	14	11

Public Meetings	I knew about it	I was able to attend	I learned something new	Didn't know about it
Decorating Highlights for Your Home	32	13	10	13
The 4 B's - Breathing, Bleeding, Broken Bones & Burns	35	10	6	10
Artificial Respiration & Poisonings	34	10	6	11
Drug Abuse	32	8	4	13
Fitting Workshops	36	15	12	11
Senior Citizens Day	37	13	3	6

I heard about these activities through the newspaper 20, radio 3, television 1, posters 17.

*Write-ins included: club meetings 1, letters 5, verbal 1.

III. CONCLUSIONS

1. Adults can be reached through methods of programming other than formal classes.

2. Different kinds of people and a greater number can be served in adult education through a variety of methods of programming rather than using only one.

3. An advisory committee is essential in the planning, programming, and evaluation of a project.

4. The cooperation of the superintendent and school board contributes to the success of the project.

5. The total number of participants in activities of "Consumers in the Know" was 470. This is not an unduplicated count, since some persons took part in more than one activity. In a small rural county where there are only 650 families, however, this seems to indicate that the "Consumers in the Know" project made vocational home economics available to persons needing and wanting adult education.

APPENDIX A

COMMUNITY SURVEY

ADULT HOME ECONOMICS
EDUCATION PROJECT
FOR OLIVER COUNTY

Consumers in the Know

CENTER SCHOOL DISTRICT
in cooperation with
STATE BOARD FOR VOCATIONAL EDUCATION
CENTER, NORTH DAKOTA 58530

Mrs. Vernice Kruckenberg, Project Director
794-6116

March 1, 1971

TO: Residents of Oliver County

Dear Resident:

We're pleased to announce that Oliver County has been selected to participate in a new experimental project in adult education. The project, "Consumers in the Know", is the first of its kind conducted in North Dakota. It is being sponsored by the Center School District in cooperation with the State Board for Vocational Education.

We would like to invite you to participate in this project. It is designed to help families of all ages with their needs related to consumer practices. Various types of activities will be planned on subjects of help or interest to adults in Oliver County. This is where we need your help. By completing the attached checklist, you will give us an idea of the ways to plan a helpful program. You will be performing a tremendous service to the success of the "Consumers in the Know" project by completing the checklist and returning it in the enclosed stamped envelope.

To help in planning and developing this project, an advisory committee has been selected. Superintendent David Blackstead, Center, is serving as consultant for the program. The committee, representing persons from different areas of Oliver County, is composed of Mrs. Kenneth Henke, Mrs. David Blackstead, Mrs. Eugene Elhard, Mrs. Otto Skager, Mrs. Llyod Huber, Mrs. Kent Janssen, and Mrs. Warren Rockenbach. These committee members will be happy to receive questions, comments, or suggestions you may have about the project. Or, I'll be happy to talk to you about the project; you can contact me by calling 794-6116, Center High School.

Sincerely,

Mrs. Vernice Kruckenberg
Project Director

VK:af

Enc.

"CONSUMERS IN THE KNOW"

CHECKLIST

Check those items that are of concern to you and your family. Return the checklist in the enclosed envelope within a few days.

	Great Concern	Some Concern	No Concern
1. Planning meals for my family's health.			
2. Preparing foods in appealing ways.			
3. Stretching the grocery dollar.			
4. Understanding food and drug laws that affect my family.			
5. Entertaining in the home--inexpensively.			
6. Determining whether a sale is really a sale.			
7. Purchasing household furniture and equipment.			
8. Making wise use of credit.			
9. Establishing good housekeeping habits.			
10. Making better use of my time and energy in caring for my home and family.			
11. Beautifying my home and yard.			
12. Making my home safe for my family.			
13. Meeting health and first-aid emergencies.			
14. Deciding whether to buy or make clothing.			
15. Constructing clothing for the family.			
16. Mending or remodeling clothing.			
17. Caring for my baby or small children.			
18. Selecting play materials suitable for my children.			
19. Disciplining my children from childhood to adolescence.			
20. Understanding my teen-agers.			
21. Developing hobbies with older people.			
22. Other concerns or problems:			

ABOUT MY FAMILY

We live on a farm_____, in town_____.
We have _____ number of children.
Organizations we belong to are _____.
_____.
_____.

If you are especially interested in taking part in this project, give your name and address:

A P P E N D I X B

T R A V E L I N G B O O K S E R V I C E

PACKET INSTRUCTION AND EVALUATION SHEET
BOOK LIST

"Consumers in the Know"

SPECIAL

TRAVELING BOOK SERVICE

What is it? A service offered to residents of Oliver County as a part of the Adult Home Economics Education project, "Consumers in the Know". It is a packet composed of informational material related to buymanship and homemaking.

What shall I do with the packet? Simply look through the packet and read whatever is of interest to you. Then give the packet to a neighbor or friend within a week, so they may read what interests them and in turn pass it on to another person.

*Before passing the packet on, please give us your comments about it on the enclosed form. Also sign your name below so you will not receive this packet again. After six names appear below, return to:

1.

2.

3.

4.

5.

6.

Your Opinion of Traveling Book Service Packet

After looking over the packet, list three pamphlets in which you were especially interested:	Other comments about the service or information in the packet:
1. 2. 3.	
1. 2. 3.	
1. 2. 3.	
1. 2. 3.	
1. 2. 3.	
1. 2. 3.	

"Consumers in the Know"

SPECIAL

TRAVELING BOOK SERVICE

What is it? A service offered to residents of Oliver County as a part of the Adult Home Economics Education project, "Consumers in the Know". It is a packet composed of informational material related to buymanship and homemaking.

What shall I do with the packet? Simply look through the packet and read whatever is of interest to you. Then send the packet to a neighbor or friend within a week, so they may read what interests them and in turn pass it on to another person. To send the packet just transfer all of its contents to one of the enclosed stamped envelopes, address the envelope with the name of whom you wish to send it to and put in the mailbox. The amount of postage on the envelope will be sufficient so none need be added.

*Before passing the packet on, please give us your comments about it on the enclosed form. Also sign your name below so you will not receive this packet again. After six names appear below, return to:

1. 4.

2. 5.

3. 6.

Your Opinion of Traveling Book Service Packet

After looking over the packet, which three pamphlets would you suggest as worth-while for others to read:	Other comments about the service or information in the packet:
1. 2. 3.	
1. 2. 3.	
1. 2. 3.	
1. 2. 3.	
1. 2. 3.	
1. 2. 3.	

ADULT HOME ECONOMICS
EDUCATION PROJECT
FOR OLIVER COUNTY

Consumers in the Know

CENTER SCHOOL DISTRICT
in cooperation with
STATE BOARD FOR VOCATIONAL EDUCATION
CENTER, NORTH DAKOTA 58530

Mrs. Vernice Kruckenberg, Project Director
794-6116

May 13, 1971

TO: Persons Having Received A Traveling Book Service Packet

Dear Packet Recipient:

After the Traveling Book Service was developed and in circulation, several people requested information about where and how some of the books or pamphlets could be obtained. Enclosed is a listing of all the publications included in the packets and the addresses where these publications can be obtained.

By writing the various companies, you may receive a personal copy of these publications. In some instances, there may be a cost for the publication. When, to my knowledge, there is a cost, I have indicated it next to the publication title.

You may find you don't need any of the pamphlets right now, but it may be worth-while for you to keep the listing for reference in future months.

Sincerely,

Vernice Kruckenberg

Mrs. Vernice Kruckenberg
Project Director

VK:cw

Enc.

ADULT HOME ECONOMICS
EDUCATION PROJECT
FOR OLIVER COUNTY

Consumers in the Know

TRAVELING BOOK SERVICE LISTING

Here is a listing of the publications included in the Traveling Book Service packets. Also given is the address of where the publication can be obtained. If there were booklets or pamphlets in the packet of which you would have liked personal copies, you can receive them by writing the publishers.

Publications	Addresses
Sears Hidden Value Series: How to Select Window Treatments Selecting Fashions Fashions in Dining Your Space Age Kitchen How to Select Floor Coverings Let's Decorate the Bathroom How to Select Furniture How to Select Young Underfashions How to Select Infants & Children's Clothing	Sears Consumer Information Services 7401 Skokie Blvd. Skokie, Illinois 60076
Quick & Easy Ways with Salmon Salmon: the perfect snack food	Canned Salmon Institute 3100 South 176th Seattle, Washington 98188
Money Management Booklets: 25¢ each Your Budget Children's Spending For Young Moderns Your Food Dollar Your Clothing Dollar Your Housing Dollar Your Home Furnishings Dollar Your Equipment Dollar Your Shopping Dollar Your Automobile Dollar Your Health & Recreation Dollar Your Savings & Investment Dollar	Money Management Institute Household Finance Corporation Prudential Plaza Chicago, Illinois 60601
Mind Your Money Leaflets: 25¢/set When You Spend When You Shop When You Use Credit	

1971 Housewares & Gifts Report (January 71 - $1.25) 1971 Home Entertainment Product Report ($1.25) 1971 Home Furnishings Report (May 71 - $1.25)	Consumer Guide Circulation Office P. O. Box 385 Evanston, Illinois 60204
Managing Your Family's Credit	National Foundation for Consumer Credit, INC. 1819 "H" Street, N. W. Washington, D. C. 20006
Standards for Kitchen Cabinets	National Kitchen Cabinet Assoc. 1941 Bishop Lane Louisville, Kentucky 40218
Conrad Consumer's Survival Manual	Bureau of Consumer Protection 711 State Office Building Philadelphia, Pennsylvania 19130
Credit Cards: Thirty Days to Reality - 15¢ (by Elsie Fetterman)	Publications Room University of Connecticut Storrs, Connecticut 06268
How Much Health Is There in "Health" Foods? Reprint from May 1963 issue of Readers Digest	Readers Digest Assoc., INC. Pleasantville, New York 10570
Home Lighting Summary Book	Better Light Better Sight Bureau 750 Third Avenue New York, New York 10017
Teens & Money	Stewardship Council 1505 Race Street Philadelphia, Pennsylvania 19102
A Family Guide to Property & Liability Insurance	Insurance Information Institute 110 William Street New York, New York 10038
Let's All Make Cookies	Consumer Education Department Lever Brothers Company New York, New York 10000

The Handbook of Gardening - 95¢ (Paperback Book)	Robert A. Farmer & Assoc., INC. Cambridge, Massachusetts 021
1,001 Decorating Ideas - Spring 1971 (Quarterly Magazine)	Conso Publishing Co. 149 5th Avenue New York, New York 10010
Instant Beauty with Wash 'n' Wear Wigs	Essandess Special Editions Simon & Schuster, INC. 630 Fifth Avenue New York, New York 10020
Guide to Man-Made Fibers	Educational Director Man-Made Fiber Producers Assoc., INC. 350 Fifth Avenue New York, New York 10001
Grandmother's Household Hints - 95¢ (Paperback Book)	Paperback Library INC. 260 Park Avenue South New York, New York 10010
Public Affairs Pamphlets: 25¢ each No. 141 Enjoy Your Child - Ages 1,2, & 3 No. 144 Understand Your Child - From 6 to 12 No. 154 How to Discipline Your Children No. 163 3 to 6: Your Child Starts School No. 302A How to Stretch Your Money No. 348A A Guide to Consumer Credit No. 382 Buyer, Be Wary! No. 409 Funeral Costs & Death Benefits No. 413 New Ways to Better Communities No. 438 Parent-Teenager Communication No. 445 Helping Your Child Speak Correctly No. 453 The Responsible Consumer	Public Affairs Pamphlets 381 Park Avenue South New York, New York 10016
The U. S. Government Sewing Book - 95¢ The Family Book of First Aid - 95¢ (Paperback Books)	Awards Books P. O. Box 2080 Grand Central Station New York, New York 10017
Good Housekeeping's 100 Great Budget Dinners 1971 Edition	The Hearst Corporation 959 Eighth Avenue New York, New York 10019

Feeding a Crowd	General Foods Corporation Dept. RO, 250 North Street White Plains, New York 10602
The Sweater Primer The Magic Rinse The Starch Primer Fancy Fabrics Beautiful Batik Creative Crafts New Variations in Salads Sandwiches Plain & Fancy	Consumer Service Department Best Foods A Division of CPC International INC. International Plaza Englewood Cliffs, New Jersey 07632
Gel Power If Nature Threw You One Curve Too Many Jiffy Gelatine Dishes	Knox Gelatine, INC. Johnstown, New York 12095
Nutrition: a Sound Investment	Consumer Services Department Quaker Oats Company Merchandise Mart Chicago, Illinois 60654
Vitamins & Your Health	National Vitamin Foundation 250 West 57th Street New York , New York 10019
How to Be a Better Shopper	Regional Consumer Affairs Representative The Sperry & Hutchinson Company 3385 South Bannock Englewood, Colorado 80110
3 Easy Recipes for Finishing Furniture How to Have a Prettier Room	Consumer Education Dept. Johnson's Wax Racine, Wisconsin 53400
Shoes for the Family Penney's Fashions & Fabrics Spring/ Summer 1971 Polyester Fabric File Fabric Descriptions Home Furnishings News	J. C. Penney Company, INC. Educational Relations 1301 Avenue of the Americas New York, New York 10019
RC 30 Foods RC 31 Clothing RC 32 Home Furnishings RC 33 Dollar Sense (Each costs about 50¢)	Co-Ed Better Buymanship Books 904 Sylvan Avenue Englewood Cliffs, New Jersey 07632

Nutrition Today (Bimonthly Magazine) Rates: $6.00/year $1.25 Single copies	Nutrition Today 1140 Connecticut Avenue, N. W. Washington, D. C. 20036
DuPont Fiber Facts Facts About Fibers Let's Talk About Carpets Hoisery Handbook Home Sewing Suggestions with Fabrics containing Nylon, Dacron, & Orlon How to Buy Upholstered Furniture	Public Relations Department E. I. DuPont De Nemours & Co. Wilmington, Delaware 19898
Drug Abuse: The Chemical Cop-out Adolescence for Adults	Mr. Selvig Blue Cross - Blue Shield Office 301 South 8th Fargo, North Dakota 58102
Today's New Wool in Contract Upholstery Today's New Wool for Commercial Carpets Today's New Wool in Commercial Blankets	Wool Bureau INC. 1088 Merchandise Mart Chicago, Illinois 60654
Foods Lesson Plan - "Convenience Product" Study	Consumer Education Department Lever Brothers Company 390 Park Avenue New York, New York 10022
Know Your Pellon Nonwovens The Inside Story of Knits, Nonwovens, & Fusibles	Educational Department Pellon Corporation 1120 Avenue of the Americas New York, New York 10036
Let's Talk About Furniture Quality & Construction Let's Talk About Upholstery Fabrics Let's Talk About Furniture Styling	Consumer Education Division Kroehler Manufacturing Company Naperville, Illinois 60540
The Concern for Quality	National Association of Manufacturers 277 Park Avenue New York, New York 10017
Making the Most of Your Money	Educational Division Institute of Life Insurance Health Insurance Institute 277 Park Avenue New York, New York 10017

Planning Your Trousseau - 5¢ Your Dream Wardrobe - 5¢ Coats & Suits & You - 5¢ There Is Nothing Like a Dress - 5¢ The Many Looks of Sportswear - 5¢ Having-a-Baby Clothes - 5¢ Fashions Called Lingerie - 5¢ How to Dress Your Little Girl - 5¢ Mother-Daughter Guide to Fashion - 5¢ Your College Wardrobe - 5¢ Travel in Style - Free Girdles & Bras - Free	Consumer Service Division Union Label Department International Ladies' Garment Workers' Union 275 Seventh Avenue New York, New York 10001
A Girl & Her Figure - 25¢ Heart Disease - 10¢ Lower Cost Meals That Please in Our Senior Years - 15¢	National Dairy Council 111 North Canal Street Chicago, Illinois 60606
A 1.77:1/6 Family Fare, Food Management & Recipes - 45¢ A 1.77:124 Lamb in Family Meals - 15¢ A 1.77:127 Milk in Family Meals - 15¢ A 1.77:103/2 Eggs in Family Meals - 15¢ A 1.77:105/2 Vegetables in Family Meals - 15¢ A 1.77:110/2 Poultry in Family Meals - 15¢ A 1.77:112 Cheese in Family Meals - 15¢ A 1.77:144 How to Buy Eggs - 5¢ FS 13.111:43/2 Additives in Our Food - 15¢ FS 13.111:41/2 How Safe Is Our Food? - 20¢ FS 17.210:424 Smoking, Health, & You - 15¢ FS 14.111:8 Infant Care - 20¢ FS 3.52:35b Social Security Information for Young Families - 10¢ FS 3.52:29 If You Become Disabled - 15¢ FS 3.52:35 Recent Improvements in Your Social Security - 10¢ FS 3.25/2:965/2 Health Insurance for People 65 or Older - 10¢ FS 17.210:423 Your Teenage Children & Smoking - 15¢ Pr 36.8:C76/S12 Be Sure Before You Sign - 10¢ Pr 36.8:C76/K75 Knock, Knock - 10¢ A 1.77:99/2 Planning Bathrooms - 15¢ Handbook for Emergencies	Superintendent of Documents Government Printing Office Washington, D. C. 20402 (The series of numbers is the catalog numbers to order the publications by. This list is not a complete listing of the homemaking bulletings available from the printing office. If interested, you may order their complete bibliography of publications.)
Social Security Benefits Social Security: What It Means for Parents of a Mentally Retarded Child	United States Department of Health, Education, & Welfare Social Security Administration (Obtain from your local Social Security Office)

Know Your Canned Foods It's on the Label Focus on Canned Foods	Home Economics - Consumer Service National Canners Association 1133 20th Street, N.W. Washington, D. C. 20036
Youth & Money - 75¢	National Education Association 1201 16th Street, N. W. Washington, D. C. 20036
Family Feeding For Fitness & Fun	American Dairy Association 20 North Wacker Drive Chicago, Illinois 60606
8 Easy Steps to Cover Your Shoes - $1.00	Mary Futrelle Bintliff P. O. Box 5634 Riverside, California 92501
The Total Look in Interior Design	Milady Publishing Corp. 3839 White Plains Road Bronx, New York 10467
Money Management for Children Money Management for Young Couples Problems Facing the Consumer Everybody's Money (Magazine for credit union members)	Education Department CUNA International, INC. Box 431 Madison, Wisconsin 53701
How to Underline or Line a Skirt with Klopman's Keynote-Plus	Klopman Mills, INC. 1345 Avenue of the Americas New York, New York 10019
Form 78YG Wash-in or Wash-out? Laundry Tips Form CL69 Dial-a-Fabric, Laundry Recipes Form 57YG How to Read a Hangtag Form 19YG Removing Spots & Stains The Encyclopedia of Home Laundry - 50¢	Home Service The Maytag Company Newton, Iowa 50208
Gardening Handbook - 95¢ (Paperback by T. H. Everett)	Fawcett Publications, INC. Greenwich, Connecticut 06830
Consumer Reports (Monthly Magazine) Rates: $8.00/1 year $14.00/2 years $18.00/3 years	Subscription Director Consumer Reports P.O. Box 1000 Mount Vernon, New York 10550

Unique Invisible Zippers Almost Everything You Need to Know About Sewing on Polyester Fabrics	Unique Zippers 4120 Stoneway North Seattle, Washington 98103
Sewing with Special Fabrics - Lingerie Sewing with Special Fabrics - Knits Sewing with Special Fabrics - Velvet How to Sew on Special Fabrics - Plaids Inside Story of Fashion - Linings, Interfacings Fit Is Fundamental to Fashion	Education Department Vogue/Butterick Pattern Service 161 6th Avenue New York, New York 10013
How to Hang Pictures & Decorative Arrangements (single sheet)	Good Housekeeping 57th Street at 8th Avenue New York, New York 10019
Sew It Yourself with Cannon Towels & Sheets	Cannon Homemaking Service Cannon Mills, INC. New York, New York 10020
Betty Crocker's The How & Why of Packaging Betty Crocker's Cooky Wise Betty Crocker's Flair with Frostings & Desserts Beating the High Cost of Eating	General Mills, INC. 9200 Wayzata Boulevard Minneapolis, Minnesota 55440
From Folk Costume to Modern Fashion - 50¢ McCall's Fashion Workshop - 25¢ Wardrobe Planning Guide (Wall Chart) - 10¢ Figure Your Type (Wall Chart) - 20¢ KNITS - 35¢ McCall's You-Do-It-Decorating Spring Edition - 75¢	McCall Pattern Company Educational Department 230 Park Avenue New York, New York 10017
Talon Makes It Centered Applications - Zippers Lapped Applications - Zippers Talon Announces the Disappearance of the Zipper Make It with Talon Notions in Knits	Talon Educational Services 41 East 51st Street New York, New York 10022
Simplicity's KNITS Simplicity Sewing Book - $1.00	Educational Division Simplicity Pattern Co. 200 Madison Avenue New York, New York 10016

Home Repair (1971 Magazine - $1.00)	Science & Mechanics Publishing Co. 229 Park Avenue South New York, New York 10003
Low-cost Cooking Ideas (Magazine - $1.00)	Special Interest Publications Magazine Division of Meredith Corp. 1716 Locust Des Moine, Iowa 50303
Stain Removal Guide	Speed Queen Company 32-04 Northern Boulevard Long Island City, New York 11101
Mobile Home Maintenance	Mobile Home Manufacturers Assoc. 20 North Wacker Drive Chicago, Illinois 60606
Handbook of Stitches - Cost ???? (by Grete Petersen & Elsie Svennas) Reinhold Craft Cards - $1.95	Van Nostrand Reinhold Company 450 West 33rd Street New York, New York 10001
So Now You Must Keep House - But How?	Bissell Home Service Institute Grand Rapids, Michigan 49501
The ABC's of First Aid	The Norwich Pharmacal Company Norwich, New York 13815
Think Spaghetti! Macaroni Makes Sense/Cents in the Seventies	National Macaroni Institute P. O. Box 336 Palatine, Illinois 60076

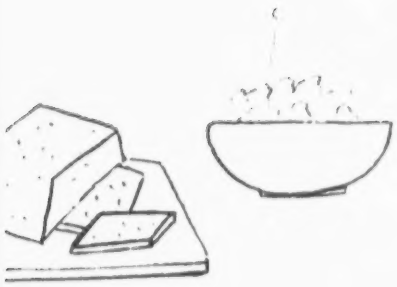
Consumers in the Know

CENTER SCHOOL DISTRICT
in cooperation with
STATE BOARD FOR VOCATIONAL EDUCATION
CENTER, NORTH DAKOTA 58530

Mrs. Vernice Kruckenberg, Project Director
794-6116

APPENDIX C

INFORMATIONAL FLYERS



PLANNED-OVERS, LEFTOVERS OR WASTE?

What Can You Do With.....	Provides Your Family With.....
<u>A couple of frankfurters</u>? Make a mock ham spread. Chop or grind the frankfurters. Blend with 3 tablespoons Mayonnaise, 1 teaspoon Worcestershire, and a small sweet pickle (chopped). Makes a delightful sandwich.	Mock Ham Sandwich=1 serving from the Bread & Cereal Group
<u>Egg yolks</u>? Use them in baked custard, cakes, cookies, homemade noodles, or even scrambled eggs. Or simmer the yolks in water until hard cooked. Mince with a fork and use it as a garnish on foods, or add it to a tossed salad or moisten with mayonnaise and add chopped olives for a sandwich spread. Or eat the hard cooked yolk with salt.	1 Egg=1 requirement from the Meat Group
<u>About ½ cup whole kernel corn</u>? Make corn fritters. To corn add 1 egg beaten until light. Then add 3 tablespoons flour, ¼ teaspoon baking powder, 1/8 teaspoon salt, pinch nutmeg. Bake on oiled griddle using tablespoon of batter for each fritter.	Corn Fritters=1 serving from the Vegetable & Fruit Group
<u>Slices of Dry Bread</u>? Make French Toast. Combine beaten eggs with milk and sugar. Dip bread into batter and fry. Or for a large family try baking or broiling the French Toast - takes less time than frying.	French Toast=1 serving from the Bread & Cereal Group
<u>Leftover cooked macaroni</u>? Make a salad. Combine tuna or diced chicken, diced celery, diced pickles or olives with the macaroni. Moisten with mayonnaise. Season & serve.	Macaroni Salad=1 serving from the Bread & Cereal Group
<u>Leftover cooked beef</u>? Make easy Beef Stroganoff. Cut beef into thin slices & saute in shortening. Add 2 cups sliced mushrooms, 2 tablespoons minced onion, & half cup bouillon. Cook over low heat 5 minutes. Stir in a cup of sour cream & heat through. Serve over buttered noodles.	Beef Stroganoff=1 serving from the Meat Group =1 serving from the Bread & Cereal Group =A partial serving from the Milk Group

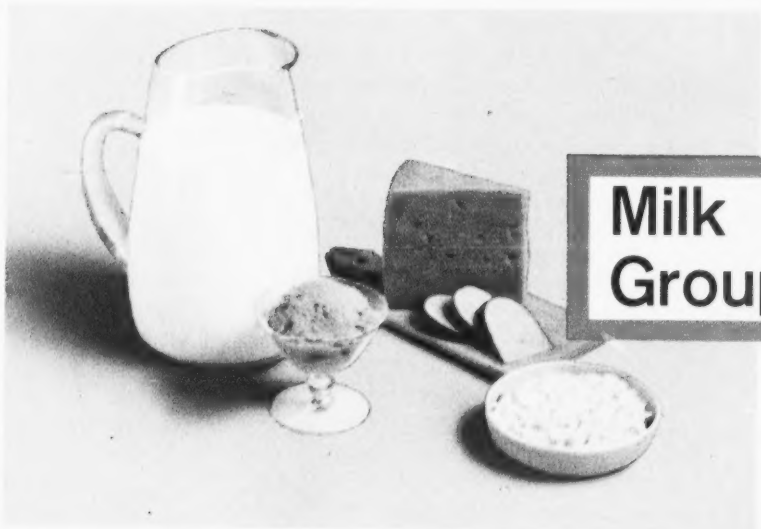
Flyer No. 1. Prepared for "Consumers in the Know" Project, Center School District, Center, North Dakota 58530

7 layer #2

Consumers in the Know Program
Center School District
Center, North Dakota 58530

A Guide to Good Eating

Use Daily:



Milk Group

3 or more glasses milk — Children
smaller glasses for some children under 8

4 or more glasses — Teen-agers

2 or more glasses — Adults

Cheese, ice cream and other milk-made foods can supply part of the milk

Meat Group

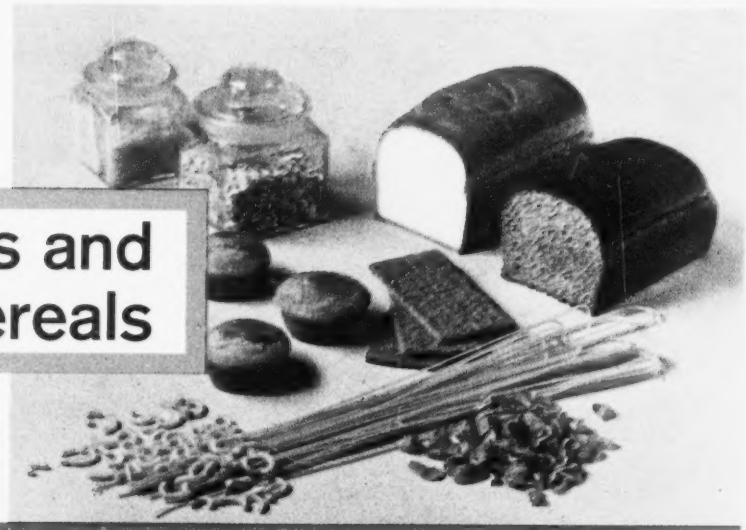
2 or more servings

Meats, fish, poultry, eggs, or cheese—with dry beans, peas, nuts as alternates

Vegetables and Fruits

4 or more servings

Include dark green or yellow vegetables; citrus fruit or tomatoes



Breads and Cereals

4 or more servings

Enriched or whole grain
Added milk improves nutritional values

2215

FOR BULLETIN BOARD USE, CUT OR FOLD BACK ALONG THIS LINE

This is the foundation for a good diet. Use more of these and other foods as needed for growth, for activity, and for desirable weight.

The nutritional statements made in this leaflet have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

Build Meals Around These FOUR IMPORTANT FOOD GROUPS

MILK GROUP . . . Use daily

3 or more glasses milk—children; 4 or more—teen-agers (smaller glasses for some children under 8)
2 or more glasses—adults
3 or more glasses—pregnant women
4 or more glasses—nursing women
(a glass—8 ounces or ¼ quart of milk)

Needs of some younger children may be met by smaller servings. That is, a 6-ounce glass may replace an 8-ounce glass.

These quantities of milk provide about ¾ of the day's calcium recommended for good nutrition.

Milk is our main source of calcium in foods. For calcium . . .
1 slice American cheese (1 oz.) = ¾ glass milk
½ cup creamed cottage cheese = ⅓ glass milk
½ cup (¼ pint) ice cream = ¼ glass milk

Milk also contributes fine quality protein, vitamins—especially riboflavin and vitamin A—and many other nutrients.

For children, 3 glasses of milk supply ⅔ to all the protein recommended daily and all the riboflavin.

For adults, 2 glasses of milk supply about ¼ the protein and about ½ the riboflavin.

Skim milk lacks whole milk's fat and vitamin A (unless fortified); other food values are the same, calories less.

One glass of skim milk plus 1 scant tablespoon of butter equals the food values of whole milk.

Butter supplies milk's flavorful and easily digested fat along with its vitamin A.

Use milk as a beverage and in cooking—in hot cereals, milk soups, white sauces, puddings and custards. Pour on fruit, cereal and puddings.

The combination of milk with cereal or bread is excellent, especially in meals where little or no meat or eggs are served. The proteins in milk make those in cereals and bread more useful in the body.

MEAT GROUP . . . Use 2 or more servings daily

Meat, fish, poultry, eggs, or cheese—with dry beans, peas, nuts or peanut butter as alternates

Use amounts of these foods to supply *at least* as much protein as that in 4 ounces of cooked lean meat (about ⅓ pound raw).

Good practices to follow are

An egg a day or at least 3 to 5 a week

Liver, heart, kidney, or sweetbread about once a week

Other kinds of meat, fish, poultry or cheese: 4 to 5 or more times a week

With dried beans, peas, nuts or peanut butter, serve milk or cheese. The animal protein makes the vegetable protein more useful in the body.

Foods in the meat group are counted on to supply about ½ the protein recommended daily for good nutrition.

Two servings for an adult might be, for example . . .
1 medium serving meat (3 ounces, cooked) + 1 egg

Choose combinations from the following which are about equal in amount of protein . . .
1 ounce cooked lean meat, poultry, or fish
1 egg
1 slice cheese, American or Swiss (1 ounce)
2 rounded tablespoons creamed cottage cheese (2 ounces)
2 tablespoons peanut butter (1 ounce)
½ cup cooked dried beans or peas

Eggs and meat, especially liver, are important for iron; also for B-vitamins. Pork supplies large amounts of the B-vitamin, thiamine. The legumes—dried beans, peas, nuts—are good sources of iron and thiamine, but their protein should be supplemented with an animal protein.

VEGETABLES & FRUITS . . . Use 4 or more servings daily

Include a dark green leafy or deep yellow vegetable or yellow fruit at least 3 to 4 times a week for vitamin A; a citrus fruit, or tomatoes, or other good source of vitamin C every day.

Use other vegetables and fruits for variety as well as their minerals, vitamins, and roughage.

Use potatoes frequently for all these food values plus food energy.

Use fresh, canned or frozen vegetables and fruits.

Save food values and flavors of vegetables by cooking quickly in small amount of water.

Dried fruits are valuable for iron.

A serving is ½ cup or more.

Foods in this group should supply over half the vitamin A and all of the vitamin C recommended daily for good nutrition.

Vegetables & fruits high in vitamin A	*These are about equal in vitamin C*
broccoli, chard	1 medium orange, ¾ cup juice
all "greens"	½ grapefruit, ¾ cup juice
kale, spinach	2 medium tomatoes, 2 cups juice
carrots	½ large cantaloupe
sweet potatoes	1 cup strawberries
tomatoes	¾ cup broccoli
cantaloupe, apricots	1½ cups cabbage, raw, shredded

BREADS & CEREALS . . . Use 4 or more servings daily

Use enriched or whole grain products. Check labels!

Choose from breads, cooked and ready-to-eat cereals, cornmeal, crackers, grits, spaghetti and macaroni, noodles, rice, quick breads and other baked goods if made with whole grain or enriched flour.

A serving is 1 slice bread; ½ to ¾ cup cereal.

Foods in this group supply valuable amounts of protein, iron, several B-vitamins, and food energy.

Cereals cooked and/or served with milk and breads made with milk are improved in quality of protein as well as quantity of protein, minerals, and vitamins.

ADDITIONAL FOODS . . . The foods recommended form the foundation for a good diet. In general, use smaller servings for young children; more or larger servings may be needed by teen-agers, pregnant and lactating women.

Most nutrient needs are met by the amounts of foods suggested by the "Guide." Special attention must be given to food sources of iron for young children, teen-agers and women. Liver, eggs, meat, legumes, dried fruit, dark green leafy vegetables, enriched or whole grain breads and cereals are good iron sources.

More food for energy, calories, is usually required. The amount varies with age, size, and activity. Food from the four groups helps to achieve an adequate diet.

Calorie restricted diets can be pleasing and satisfying when energy comes mostly from foods in these four groups.

Some source of vitamin D should be included for infants and children, pregnant and lactating women, and adults getting little sunshine. Good sources are vitamin D milk, fish oils, and direct sunshine.

NORTH DAKOTA DAIRY PRODUC
PROMOTION COMMISSION
BOX 327
EDGELEY, N. DAK. 58433

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Flyer #3

Consumers in the Know Program
Center School District
Center, North Dakota 58530

THINK TWICE . . ABOUT POTATOES

Are you diet conscious? Have you eliminated potatoes? Do you think that they are high in calories? If your answer is yes -- think twice about potatoes.

DID YOU KNOW --

An Apple

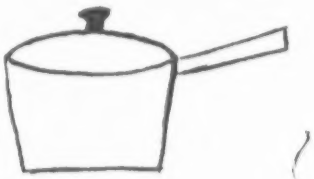
=

A Potato

in Number of Calories.

Potatoes can be prepared in many different ways:

BOILED



= 40 calories for ½ cup

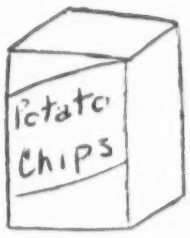
MASHED WITH MILK ADDED

= 60 calories for ½ cup

BAKED

= 90 calories for a medium potato

POTATO CHIPS



= 115 calories for 10 chips

FRENCH FRIED

= 155 calories for 10 pieces

PAN FRIED

= 230 calories for ½ cup

Can you figure the cost of each?

(Try preparing potatoes as in some of the recipes on the back.)

POTATO DUMPLINGS

2 cups riced cooked potatoes, firmly packed

1 egg, beaten

3/4 teaspoon salt

3/4 cup sifted all-purpose flour

Combine all ingredients and mix thoroughly. With floured hands, roll into balls 1 to 1½ inches in diameter; roll in flour and drop into gently boiling salted water. Simmer, covered, about 10 minutes. Remove dumplings with a whisk or slotted spoon. Serve with braised, roast, or stewed meats, with or without gravy. Yields 12 medium dumplings.

CORN FLAKE POTATOES

Pare 6 medium potatoes. Melt 3 tablespoons of butter with 2 tablespoons of Heinz steak sauce. Dry potatoes with a towel. Roll in butter mixture and then in crushed corn flakes. Place on oiled shallow pan. Bake at 350 degrees for 1-1½ hours.

DUCHESS POTATOES

1 egg or egg yolk

¼ cup grated Cheddar cheese (1 ounce), optional

2 cups well-seasoned mashed potatoes

Paprika

Add egg and, if used, grated cheese, to mashed potatoes. Beat until light and fluffy. Pile in greased 2-cup baking dish and brown in hot oven (425 degrees) about 20 minutes. Sprinkle with paprika and serve. Serves 4.

EGG AND POTATO SCRAMBLE

2 slices bacon

4 medium-sized potatoes, sliced thin

1 teaspoon salt

4 eggs, beaten

¼ cup milk

Fry bacon slices and remove from frying pan. Fry potatoes in the fat until they are well browned, sprinkling with salt as browning starts. Cover pan closely. Cook over low heat until potatoes are tender. Combine eggs, milk, and pepper. Pour over potatoes in pan and cook slowly, stirring until eggs are set. Crumble bacon slices and add just before removing pan from heat. Serves 4.

Flyer No. 3. Prepared for "Consumers in the Know" Project, Center School District, Center, North Dakota 58530

A CONSUMERS IN THE KNOW CALENDAR

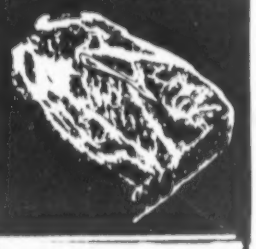
An informed consumer can predict (often months in advance) when prices will be lower on certain types of merchandise. Knowing when seasonal sales and annual promotions are likely to occur may save you as much as 15% to 30% on many items. Look ahead on your Consumers in the Know Calendar to see when you can expect to find bargains.

JANUARY "White Sales" on sheets, blankets, towels; storewide clearances; men's coats & shirts; shoes; furs; furniture; small appliances; freezers; refrigerators; clothes dryers; water heaters; Christmas cards & decorations.	FEBRUARY "Washington's Birthday" Sales; furniture; rugs; bedding; mattresses; housewares; TV; radio; drapes; china; glassware; clothes dryers; air conditioners; used cars price reductions; seat covers for cars.	MARCH Housewares; china; silverware; garden supplies; luggage; spring clothing; washing machines; clothes dryers.
APRIL Spring cleaning supplies; garden supplies; men's & boy's suits; women's & children's coats; dresses; millinery; ranges; washing machines; clothes dryers.	MAY TV sets; washing machines; tires; lingerie; handbags; silver; "White Sales"; soaps & cleaning aids; gifts for "June Brides".	JUNE Dresses; piece goods; swimwear; sportswear; home improvements; building materials; lumber; washing machines; refrigerators; air conditioners; TV sets.
JULY Summer clearances after the Fourth; lingerie; handbags; hosiery; sportswear; millinery; children's wear; men's shirts; shoes; floor coverings; appliances; fuel oil; toiletries.	AUGUST Clearance of summer clothing; back-to-school specials; women's & children's coats; men's & boy's suits; men's coats; rugs; furniture; bedding; "White Sales"; hardware; paints; drapes; air conditioners; tires.	SEPTEMBER "Labor Day" Sales; back-to-school specials; housewares; china; silver; glassware; piece goods; fabrics; hardware; paints; new cars--current model clearances; batteries; mufflers.
OCTOBER "Columbus Day" Sales; furs & fur-trimmed winter clothing.	NOVEMBER "Veterans' Day" Sales; "Thanksgiving Day" Sales; pre-Christmas specials; women's & children's coats; piece goods; fabrics; ranges; water heaters; blankets; linens; used cars price reductions; seat covers for cars.	DECEMBER Late in the month, winter clothing; after Christmas, markdowns on toys & gifts; used cars price reductions.

Flyer No. 4. Prepared for "Consumers in the Know" Project, Center School District, Center, North Dakota 58530

BONE UP ON BEEF

Confused by all the different names given to cuts of meat? Learn to identify the cut by the bone.

these bones	T-bone	Rib Bone	Wedge bone	Round bone	Blade bone
identify these cuts					
called	T-bone steak Porterhouse steak Strip loin* Tenderloin*	Rib steak Club steak Rib roast Rolled rib roast*	Sirloin steak Sirloin roast Top sirloin steak	Shoulder steak Round steak Chuck steak Chuck roast Rump roast*	Chuck steak Chuck roast

for DRY or MOIST COOKING METHODS	(WITH DRY HEAT)	(WITH MOIST HEAT)
	<u>Oven-roasting</u>: Roast in a slow oven (325 degrees)., fat side up, on a rack in a low, open pan. Do not sear or add water. Use a meat thermometer (for roasting only) 140 degrees - rare, 160 - medium, 170 - well-done. <u>Oven-broiling</u>: Preheat broiler to degree required by your range for best results. Slash fat edge of 1 to 2 inch thick steak. Broil on rack 3 inches from heat until done as desired. Turn once. <u>Pan-broiling & Frying</u>: Steaks thinner than 1 inch may be broiled in heavy, lightly greased, open skillet. Brown on both sides. Reduce heat. Turn as necessary to cook evenly. Use no water. Season. To pan-fry, use slightly more fat.	<u>Braising</u>-includes pot roasting & stewing: Season meat or dip into seasoned flour. Brown slowly in a small amount of hot fat, turning to brown evenly, in a heavy skillet or kettle. Add herbs, spices & vegetables for additional seasoning, & a small amount of liquid. Cover & cook until fork-tender on top of range or in a 350 degree oven.

With this one rule for all: LOW TEMPERATURE ..... for retention of high quality meat protein, flavor, juiciness & tenderness, & to reduce shrinkage.
*Cuts with these labels will appear boneless in the store because the bone will have been removed.

Source: Martha Logan, Swift Premium Company
Flyer No. 5. Prepared for "Consumers in the Know" Project, Center School District, Center, North Dakota 58530

Should You Use Credit?

Ask yourself these questions before you decide to buy on credit or borrow money.

1. Do I need it?
2. Do I need it now?
3. Is having it now worth the extra money I must pay to use credit?
4. Can I make the payments?
5. Will I pay too much interest?
6. What good will it do me?
7. What will I go without to pay for it?
8. Is it worth the risk of losing the money I have put into it if I can't finish paying for it?
9. Am I buying (or borrowing) from a fair and honest person?
10. Should I risk owing so much money that I won't be able to get more if I get sick or have an accident?

Think about your answers. Is it best to use credit or to wait until you can pay cash?

Remember...
Make sure you have more and better reasons for using credit than for not using it.

Have You Used Credit To:

- Buy things you need when you don't have enough cash to pay for them?
- Buy things you can use while you pay for them?
- Get better service on something needing repairs? (If you still owe money on the item, the store may give you better service.)
- Meet emergencies like sickness?

Can you think of other situations in which you used credit for good reasons?

Do You Realize When Using Credit:

- It costs more than paying cash?
- You may buy things you don't need?
- You may buy more than you can pay for?
- If you can't finish paying for things, you lose them? You also lose the money you have already paid.
- You might not shop around to get the best buy?
- You may agree to something you don't want because you don't know what the contract means?

Can you think of other drawbacks in using credit?

Source: PA-865, U. S. Department of Agriculture
Flyer No. 6. Prepared for "Consumers in the Know" Project,
Center School District, Center, North Dakota 58530

CREDIT COSTS

You pay money to use credit. Before you buy "on time" or borrow money, find out how much it will cost you.

You Can Figure the Cost of Credit By:

1. Multiplying the amount of each payment by the number of payments you will make.
2. Then adding the down payment to your answer.
3. Finally, subtracting the cash price, including the sales tax. The answer is what you pay for credit.

Example:

You want to buy a washing machine. It would cost $290 (price plus tax) if you paid cash for it. You plan to make a down payment of $30. You say you will make 18 monthly payments of $16.50.

STEP 1.
Multiply the amount of each payment by the number of payments.

	$16.50
	x18
	13200
	1650
Answer:	$297.00

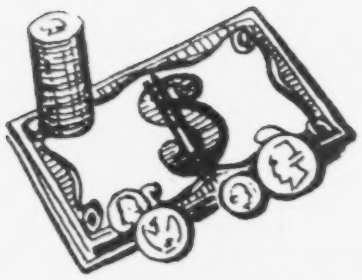
STEP 2.
Add the down payment to your answer. This gives the total amount you will pay.

	$297.00
	30.00
	$327.00

STEP 3.
Subtract the cash price from the "on time" price. This is how much more you pay to buy "on time".

	$327.00
	-290.00
	$ 37.00

DO'S & DON'TS OF CREDIT



DO'S

* Do make the biggest down payment you can. Then your other payments will be smaller. You will pay less interest.

* Do pay off what you owe as soon as you can.

* Do get a written contract that tells all you will have to pay.

* Do understand what you sign.

* Do shop around. Find out where you will pay the least for credit.

DON'TS

* Don't buy "on time" if you don't have to.

* Don't buy more than you need.

* Don't buy "on time" unless you know you will have enough money to make every payment.

* Don't buy things "on time" unless they are worth the extra cost. Buying "on time" costs money.

* Don't borrow money from an illegal lender.

Source: PA-867, PA-869, U. S. Department of Agriculture Flyer No. 7. Prepared for "Consumers in the Know" Project, Center School District, Center, North Dakota 58530.

FIRST AID FACTS FOR THE HOME

WHEN BREATHING STOPS start mouth-to-mouth artificial respiration. Send someone for a doctor, and don't give up until the doctor arrives. If breathing is stopped by electric shock, turn off the current or knock the wire away with a dry piece of wood before touching the injured person. Then make sure victim's mouth & throat are clear. Tilt head back with hand under neck. Pull his chin up to keep tongue from blocking the air passage. Take a deep breath and cover his mouth with yours, holding the victim's nose closed, and blow into his mouth until his chest rises. Remove your mouth & let him exhale. When you hear the victim breathe out, replace your mouth & blow again. Repeat every three seconds. Don't give up until a doctor arrives.

IN SEVERE BLEEDING apply pressure directly over wound with a sterile gauze pad or a clean cloth. Hold pad in place with a bandage or cloth strip. If you have no pad, close wound with your fingers and hold it closed with pressure. Maintain pressure for 3-5 minutes. Raise bleeding part higher than the rest of the body. Never use a tourniquet to control bleeding, unless a part of an arm or leg is cut off or completely crushed or mangled, and the bleeding can't be controlled by direct pressure. No one but a doctor should release such a tourniquet.

In minor wounds cleanse the wound and surrounding skin with soap and water. Apply a bandage. See a doctor if the wound appears to become infected.

QUICKLY DILUTE SWALLOWED POISON with a full glass of milk or water. Call doctor or Poison Control Center. Save container or label from swallowed material. Do not cause vomiting if victim is unconscious, or has swallowed a strong acid, lye, strychnine, or kerosene. If these are not the case, induce vomiting by giving him a baking soda solution or using a finger or spoon to gag them.

WHEN IN DOUBT ABOUT THE SERIOUSNESS OF ANY INJURY - CALL A DOCTOR PROMPTLY!

Tell him: 1. What has happened,
2. Where the victim is,
3. What has been done.

Emergency Telephone Numbers

Doctor_____
Hospital_____
Drugstore_____
Poison Control Centers - Bismarck
Bismarck Hospital - 223-4700
St. Alexius - 223-5000
Quain & Ramstad - 223-1420

WHEN SOMEONE IS BURNED OR SCALDED seriously, cover the injury with the cleanest cloth available, have victim lie down, & call a doctor. If the injury is mild & the skin is not broken, immerse the burned area in cold water or apply ice. Wash and bandage loosely. Do not break blisters. Chemical burns should be flushed with running water.

IF A BONE IS BROKEN do not attempt to straighten or set the broken bone. Do not move the patient unless you have to. In that case, immobilize the break by splinting the broken bone to prevent further injury. Splint the injury with a piece of wood, metal rod, rolled newspaper, or any rigid object long enough to reach above and below the break. If the skin is also broken, cover the area with a sterile dressing.

TO STOP A NOSEBLEED seat victim with head tilted forward. Loosen clothing at neck. Apply cold compresses to back of neck & bridge of nose. Pinch nostrils firmly for five minutes.

SHOCK USUALLY OCCURS with severe injury or illness, or emotional upset. Signs of shock are cold, clammy skin with beads of perspiration, paleness, shallow breathing. Victim may feel chilled & nauseated. Keep victim warm and lying down with feet elevated. Give no other treatment. Call a doctor.

IF SOMEONE IS CHOKING on something caught in his throat, place adult in a leaning position over a chair or turned on his side, if lying down. Strike a sharp blow between his shoulder blades. Hold a small child head down and pat between his shoulder blades. Apply mouth-to-mouth breathing if necessary.

Flyer No. 8. Prepared for "Consumers in the Know" Project, Center School District, Center, North Dakota 58530

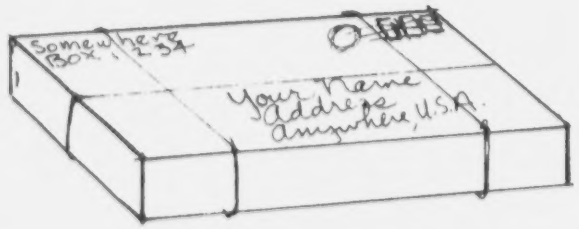
FACTS OR FRAUD - WHAT ARE THE FACTS?

Door-to-door Salesmen

What's his lead? What promises does he make? What's the price? the quality? Check his address. READ BEFORE YOU SIGN!

Mail Fraud

Who's it from? What must I do? How much will it cost? How good is it?

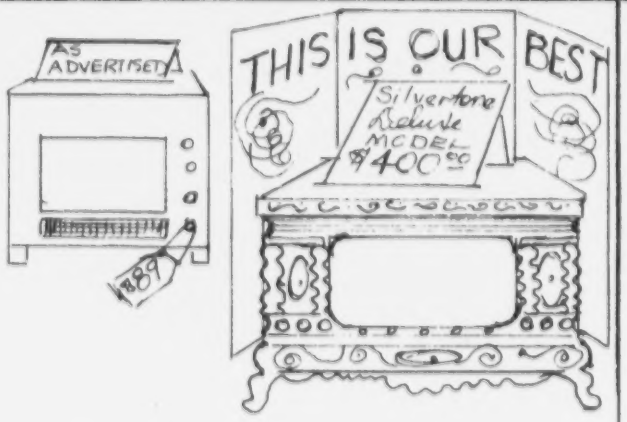


Unordered Merchandise

Did someone in your family order it? You don't have to pay for it or return it, if you don't use it.

Subscriptions

What's the catch? How much will it cost in all? REMEMBER--FEW THINGS ARE REALLY FREE!



Bait and Switch

Is merchandise really for sale? Does salesman try to show you something higher priced or critize the sale item?

Sale

Is it really a sale? How do prices compare with those in other stores? What about quality?

Source: Texas Consumer Education Curriculum Guide, Texas Tech University

Flyer No. 9. Prepared for the "Consumers in the Know" Project, Center School District, Center, North Dakota 58530.

2226

THE PAPERS IN YOUR LIFE ----

& WHAT TO DO WITH THEM

From birth certificates, to the last will and testament, life is just one paper after another. The main trouble is plain bulk. If you are average, your family handles approximately 1,000 bills, checks, receipts, letters and other documents a year. This may not sound like much. However, in 25 years, if you're the squirrel type, you'll need a file room to contain the accumulation. The next question is: What should be kept? For how long? What can be safely destroyed.

Here are a few of the kinds of papers found around a home, with suggestions of what to do with them:

ITEM	Carry with you	Current file	Destroy after	Permanent File-- list in	Stored	Safety Deposit Box
Account books		x			x	
Automobile title, bills of sale				x		x
Bank statements, deposit slips, check stubs		x	1 to 3 years			
Birth certificates				x		x
Burial lot deeds				x		x
Cancelled checks		x	3 yrs. except: ----		Paymts. for: Income tax, deductibles mtg. paymt. rent until move; buying securities investments	
Education records incl. certificates to teach, etc.				x		x
Church - baptism confirmation				x		x
Citizenship papers				x		x
Copyrights, patents				x		x
Driver's license	x					
Employment records				x		x
Evidences of debt			5 yrs. after pd. in full	x		x
Guarantees, warranties					for life of purchase or until sold	

ITEM	Carry with you	Current file	Destroy after	Permanent File List in	Stored	Safety Deposit Box
Identifications:						
Blood type	x			x		
If diabetic	x					
Name & Address	x					
Notify whom?	x					
If epileptic	x					
Doctor preferred	x					
Instruction books		Until sold				
Insurance policies			When			
Property		x				
Personal liability		x	expires			
Automobile		x				
Life		x		x		x
Inventories		Revise annually				x
Licenses to practice profession	Display					
Marriage & divorce records				x		x
Military service records				x		x
Organization memberships	x					
Real estate papers:						
Periodic receipt		x			x	
Mortgage				x		x
Abstracts				x		x
Receipts & receipted bills		x	4 or 5 years			
Sales slips		x	1 year unless a guarantee, tax deductible, etc.			
Savings bonds & investments				x		x
Social Security No.	x			x		
Tax returns:						
Income tax		x			x	
Local taxes		x			x	
Wills				x		x

Source: Agricultural Extension Service, University of Wyoming

Flyer No. 10. Prepared for "Consumers in the Know" Project, Center School District, Center, North Dakota 58530

APPENDIX D

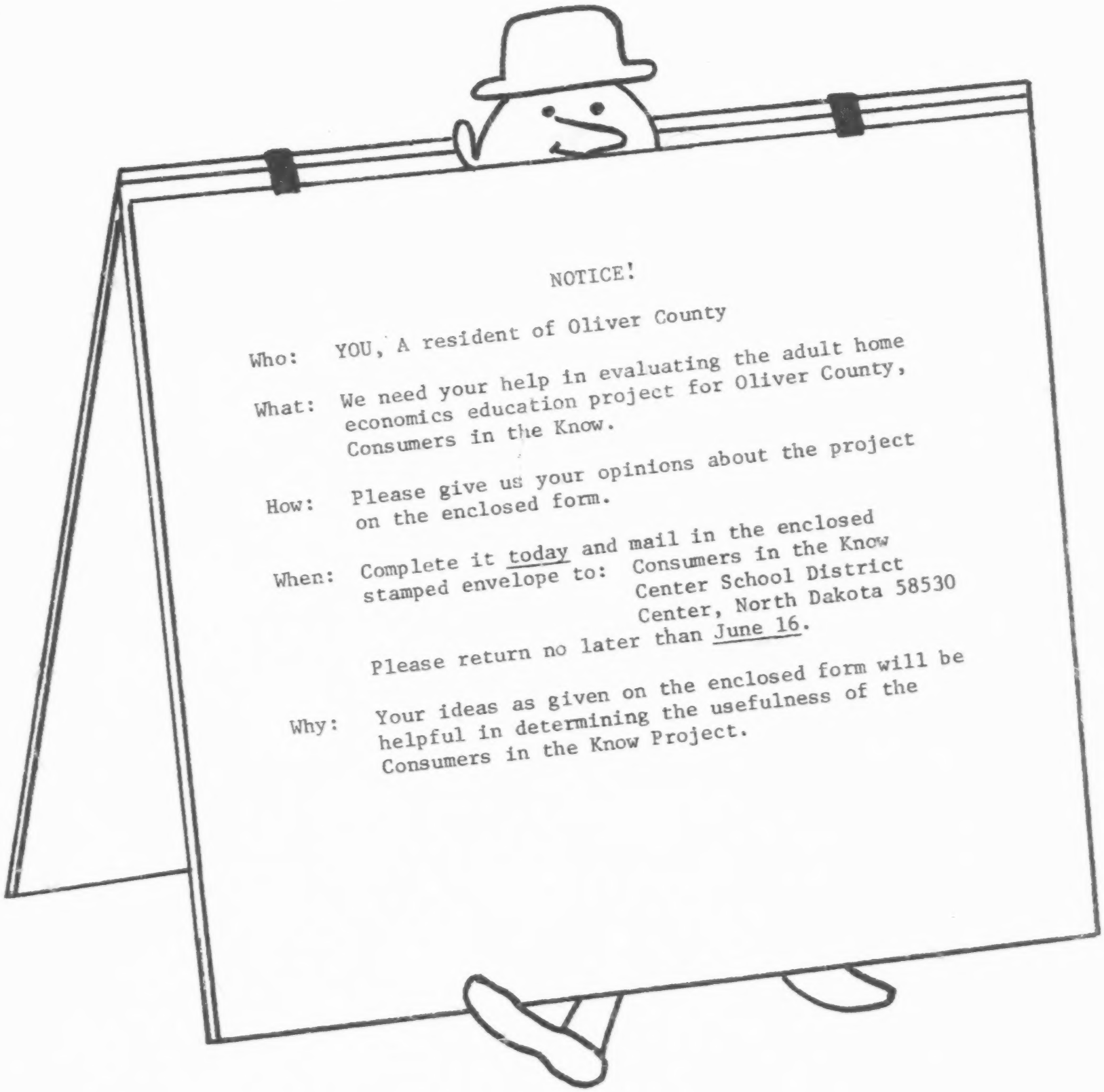
EVALUATION FORMS

ADULT HOME ECONOMICS
EDUCATION PROJECT
FOR OLIVER COUNTY

Consumers in the Know

CENTER SCHOOL DISTRICT
in cooperation with
STATE BOARD FOR VOCATIONAL EDUCATION
CENTER, NORTH DAKOTA 58530

Mrs. Vernice Kruckenberg, Project Director
794-6116



NOTICE!

Who: YOU, A resident of Oliver County

What: We need your help in evaluating the adult home economics education project for Oliver County, Consumers in the Know.

How: Please give us your opinions about the project on the enclosed form.

When: Complete it today and mail in the enclosed stamped envelope to: Consumers in the Know
Center School District
Center, North Dakota 58530

Please return no later than June 16.

Why: Your ideas as given on the enclosed form will be helpful in determining the usefulness of the Consumers in the Know Project.

CONSUMERS IN THE KNOW EVALUATION

As a part of the "Consumers in the Know" project, several different kinds of activities took place. Please check (✓) the appropriate columns to indicate your responses. Check as many columns as needed. Thank you.

Informational Flyers (distributed at grocery stores in Center)	I received it	I read it	My family read it	I learned something new	Didn't know about it
Planned-Overs, Leftovers or Waste?					
A Guide to Good Eating					
Think Twice...About Potatoes					
A Consumers in the Know Calendar					
Bone Up on Beef					
Should You Use Credit?					
Credit Costs					
First-Aid Facts for the Home					
Facts or Frauds					
The Papers in Your Life					

Traveling Book Service (packets of information related to buymanship and homemaking)	I knew about it	I used it	My family used it	I learned something new	Didn't know about it

Public Meetings	I knew about it	I was able to attend	I learned something new	Didn't know about it
Decorating Highlights for Your Home				
The 4 B's - Breathing, Bleeding Broken Bones & Burns				
Artificial Respiration & Poisonings				
Drug Abuse				
Fitting Workshops				
Senior Citizens Day				

I heard about these activities through the newspaper____, radio____, television___, posters____.

Additional Comments:

ADVISORY COMMITTEE EVALUATION

1. One of the objectives of the "Consumers in the Know" project was to reach as many families as possible through trying a variety of methods of programming for adults.

   In terms of this objective, do you feel the project was:

   _____very successful _____successful _____average in success

   _____unsuccessful _____very unsuccessful

2. Rate the three major activities of the "Consumers in the Know" project (flyers, public meetings, traveling book service) in the order that you feel they were the most useful to residents of Oliver County.

   First_____

   Second _____

   Third_____

3. Rate the ten informational flyers that were distributed at the grocery stores according to their usefulness to Oliver County residents. Number from 1 to 10.

   _____Planned-Overs, Leftovers or Waste?
   _____A Guide to Good Eating
   _____Think Twice...About Potatoes
   _____A Consumers in the Know Calendar
   _____Bone Up on Beef
   _____Should You Use Credit?
   _____Credit Costs
   _____First-Aid Facts for the Home
   _____Facts or Frauds - What are the Facts?
   _____The Papers in Your Life and What to Do with Them

4. If a similar program were offered in another community, what suggestions or changes would you make?

5. The functions of the advisory committee were to (1) interpret the needs and interests of the community, (2) tell others about program activities, and (3) receive suggestions and comments from people in the community. Do you feel these functions adequately describe what you did as an advisory committee member?

   How did you individually carry out one of these functions?

   What other functions might an advisory committee have in a project such as this?

STATE BOARD FOR VOCATIONAL EDUCATION

STATE OFFICE BUILDING
900 EAST BOULEVARD AVENUE
BISMARCK, NORTH DAKOTA 58501

(701) 224-3186
MAJORE LOVERING, SUPERVISOR OF HOME ECONOMICS
KAREN E. BOTINE, ASSISTANT SUPERVISOR OF HOME ECONOMICS

June 16, 1971

TO: Advisory Committee Members of "Consumers in the Know" Project in Oliver County

FROM: Majore Lovering, State Supervisor of Home Economics Education

In behalf of the State Board for Vocational Education, I want to thank you for your part in the "Consumers in the Know" project. Without the help of a local advisory committee, I feel certain this adult home economics program would have been less effective.

One of the responsibilities of the State supervisor of home economics is to plan new programs to meet the needs of youth and adults. Adult home economics classes have reached many North Dakotans. It seemed that trying out an adult home economics program which was not organized on a regular class basis was needed. This was one of the reasons the State Board for Vocational Education asked the Center School District to participate in the "Consumers in the Know" project.

We hope to establish similar programs to this in other counties next year. Past experience usually is a guide for improvement. Based on your experience of serving on this advisory committee, would you please answer the questions enclosed and return them to me on or before June 25.

ML:af

Enc.

"BUY NORTH DAKOTA PRODUCTS"

EVALUATION OF PARTICIPATION OF ADVISORY COMMITTEE MEMBERS

Please check "yes" or "no" to the following questions:

	Yes	No
1. Has the work of the advisory committee members helped your community better understand the "Consumers in the Know" project?		
2. Do you think it was a good idea to involve persons outside the school in this project?		
3. Do you feel the work of the advisory committee contributed to increasing interest of the community in the project?		
4. Did the work of the advisory committee help the director of the program in making decisions about activities of the project?		
5. Do you feel that the advisory committee helped the director with choosing and using community resources?		
6. Did your work with the program help inform you more about some aspects of home economics?		
7. Do you feel an advisory committee is essential to the success of a project such as "Consumers in the Know"?		
8. If you wish to make some comments about your part on the advisory committee or on any part of the "Consumers in the Know" project, please do.		

APPENDIX E

NEWSPAPER PUBLICITY

"MORNING PIONEER"
Mandan, North Dakota
February 27, 1971

Center School District Planning Adult Consumer Education Project

An experimental program designed to help families with needs related to consumer practices is currently being developed for use in the Center school district.

The consumer education project will be conducted in cooperation with the State Board for Vocational Education and will be directed by Mrs. Larry Kruckenberg, a home economist. Project funds were appropriated by the 91st Congress.

David Blackstead, Center superintendent of schools, will serve as program consultant and is working with Mrs. Kruckenberg on selection of an advisory committee which will aid her in planning and developing the project.

Included in the types of activities which will be conducted to help adult homemakers are neighborhood group meetings, demonstrations, information centers and exhibits. Family meals, use of credit, health, buying clothes, as well as suggestions from participants, may also be covered.

According to Majore Lovering, state supervisor of home economics education and state consultant for the program, the project could be a guide for other rural, adult consumer education programs in North Dakota and other midwestern states and will help meet an urgent need for better informed and alert consumers.

"CENTER REPUBLICAN"
Center, North Dakota

OLIVER COUNTY RESIDENTS

Plan to Participate in

"CONSUMERS IN THE KNOW"

A federally funded Adult Home Economics Education Project

ACTIVITIES PLANNED

Traveling Book Service:
This service is made up of packets of informational materials related to buymanship and homemaking. Some of these packets are passed directly from person to person; others are sent through mail. A person receiving a packet, keeps it for a week reading whatever is of interest and then passes it on to another person.

Informational Handouts:
Handout sheets on food preparation, nutrition, and food selection will be distributed weekly at the Center grocery stores — John's U-Save Store and Klein's Jack & Jill. The first informational handout sheet is now available at these stores. Everyone is welcome to take one of these sheets home to read.

Neighborhood Group Meetings:
Several women in a neighborhood may decide to meet in their homes and discuss certain topics of their choice relating to homemaking. Discussion at these meetings may be led by the project director for "Consumers in the Know." The number and time of the meetings is established by each neigborhood group.

Other Planned Activities:
Other activities for the project to be announced at a later date might include large group meetings, classes, exhibits, and displays.

Anyone interested in participating in these activities may contact—Consumers in the Know, Center School District, Center, N. D. 58530 or call 794-6116 on Wednesdays.

"CENTER REPUBLICAN"
Center, North Dakota

April 2, 1971

Home Decorating To Be Discussed

Wondering how to add sparkle to some room in your home? This topic and others will be discussed at a meeting entitled "Decorating Highlights for Your Home" to be held on Monday, April 5 at 7 p.m. MST. The meeting sponsored by the Consumers in the Know project will be held in the Home Economics Room at the Center High School.

Topics to be discussed include color and its use, ways to combine textures in a room and the use of accessory items. Also featured at the meeting will be displays of craft ideas that can be used in decorating one's home.

The public is invited to attend the meeting. Anyone having craft items they have received or made are encouraged to bring them for display.

April 8, 1971

Health And First Aid Meetings Scheduled

Broken Bones — First Degree Burns, Carbon Monoxide Poisonings! Do these things frighten you? Would you be prepared to help a victim of such an accident until the doctor arrived? Find out how to deal with these emergencies.

"First Things First" is a series of meetings on health and first aid emergencies sponsored by Consumers in the Know, the Adult Home Economics Education Project for Oliver County, in cooperation with the Custer Health District.

Mrs. Reuben Baisch, Mercer and Oliver County Health Nurse, will be presenting the series. The first meeting scheduled for Tuesday, April 20 will include a film and practice session concerning the 4 B's, breathing, bleeding, burns and broken bones. The meeting will be held at 7:30 p.m. MST in the Home Economics Room at the Center High School.

At the second meeting Mrs. Baisch will discuss the correct methods of administering artificial repiration. "Rescue Anne" will be available for demonstration and practice. Announcement of the meeting date will be made later.

The last meeting on May 18th will include a film and discussion on drugs. Find out what adults need to know about the drug problem.

"CENTER REPUBLICAN"
Center, North Dakota
April 16, 1971

Health Nurse To Discuss The 4 B's

The 4 B's, Breathing, Bleeding, Burns and Broken Bones will be discussed at a meeting on April 20 at 7:30 p.m. MST in the Home Economics Room at the Center High School.

Mrs. Reuben Baisch, Mercer-Oliver Counties health nurse will conduct the meeting, providing practical information for dealing with these health and first aid emergencies.

The meeting is the first in a series, sponsored jointly by Consumers in the Know, an Adult Home Economics Education project for Oliver County, and the Custer Health District. Topics for the other meetings in the series will include arificial respiration, poosioning and drugs.

"CENTER REPUBLICAN"
Center, North Dakota
May 7, 1971

SECOND IN A SERIES

Artificial Respiration and Poisoings Will Be Discussed May 11 Meeting

Artificial respiration and Poisonings will be the topics discussed at a meeting on May 11 at 7:30 p.m. MDT in the Home Economics Room at the Center High School.

Mrs. Reuben Baisch, Mercer- Oliver counties health nurse will show a film on administering artificial respiration in emergency situations. Following the film there will be a discussion of what to do in the case of a poisoning and a practice session in giving artificial respiration. Resusie Anne will be available for use in the practice session.

The meeting, sponsored jointly by the Consumers in the Know, an Adult Home Economics Education project for Oliver County, and the Custer Health District, is the second in a series. The first meeting covered the 4 B's, Breathing, Bleeding, Burns and Broken Bones. The last in the series on May 18th will be on drugs. Persons unable to attend the first meeting should feel free to attend the rest of the meetings.

"MORNING PIONEER"
Mandan, North Dakota
May 19, 1971

Oliver Senior Citizens Will Be Honored

Senior Citizens Day honoring Oliver County residents 55 and over has been set for Tuesday beginning at 11:30 a.m. MDT in the Old City Hall at Center. The event is in observance of May as Senior Citizens Month.

Activities will begin at 11:30 a.m. MDT with a noon pot luck dinner. Afternoon activities will include speakers, entertainment, music and games. Steve Dunn, Center, will be master of ceremonies for the day.

Mrs. Jeanine Germain, home service adviser for Montana Dakota Utilities Co. in Bismarck, will present a program on "Lighting and Your Eyes". Nels Porsborg from the Mandan Golden Age Club will tell about his club's activities and about organizing senior citizen clubs.

The rest of the afternoon will consist of playing games, cards, and bingo. Prizes will be given during the bingo playing.

The event is being sponsored by Consumers in the Know, the adult home economics education project for Oliver County. All Oliver County senior citizens are invited to attend. Beverage, dishes, and silver will be provided for the dinner. Those attending are asked to bring either a hot dish, salad or dessert.

"HAZEN STAR"
Hazen, North Dakota
June 10, 1971

Committee Chosen For Senior Citizens Club

A senior citizen's club organizational committee was selected at Oliver County's Senior Citizens Day on May 25 in Center. The committee, composed of Mrs. Jesse Benjamin, Mabel Price, Art Isaak, Ted Moon and William Wolf, was selected by the 45 senior citizens present.

The agreement to form a senior citizen's club was made after an inspiring talk by Nels Porsborg on club activities and organizing a senior citizen's club. Porsborg is past president of the Mandan Golden Age Club.

The Senior Citizens Day held in observance of May as Senior Citizens Month was sponsored by Consumers in the Know, the adult home economics education project for Oliver County. Advisory board members who helped with the pot luck lunch and program were Mrs. David Blackstead, Mrs. Eugene Elhard, Mrs. Kenneth Henke, Mrs. Lloyd Huber, Mrs. Kent Janssen, Mrs. Warren Fockenbach and Mrs. Otto Skager. Master of ceremonies for the day was Stephen Dunn, Center.

A program feature was a talk by Mrs. Jeanine Germain, home service adviser for MDU in Bismarck, on Lighting and Your Eyes." Mrs. Germain showed different kinds of lights, their effect on one's eyes and on color.

Entertainment for the senior citizens included a banjo solo by Bill Fockenbach, Ft. Clark, and a kitchen band by the Hannover Farmerettes Homemaker Club. Group singing, playing cards and bingo completed the day's activities.

"MORNING PIONEER"
Mandan, North Dakota
June 24, 1971

Adult education project nears completion

Consumers in the Know, an experimental project in adult home economics education for Oliver county, is scheduled for completion at the end of this month.

The five month project was designed to help families of all ages with their needs related to homemaking and buymanship.

Consumers in the Know has served about 300 families.

One activity established to help families in Oliver County was the Traveling Book Service.

Some of the books and pamphlets circulated as part of the service have been contributed to the Center School Library for use by school students and adults. Books and pamphlets include such topics as disciplining children, dollar sense, drug abuse, sewing with special fabrics, and better buymanship of home furnishings.

A report of the project is being written and distributed as a guideline for similar projects conducted in other communities. A copy of the report will be available at the Center library at a later date.

Anyone interested in reading any of these materials may obtain them at the school library. Summer library hours are from 9 a.m. to 4 p.m. (MDT).

Persons interested in an adult home economics education project for next year should contact the school.

ACKNOWLEDGMENTS

Many people need to be thanked for their contributions to the "Consumers in the Know" project. Some of these include the advisory committee of Mrs. David Blackstead, Mrs. Eugene Elhard, Mrs. Kenneth Henke, Mrs. Llyod Huber, Mrs. Kent Janssen, Mrs. Warren Rockenbach, and Mrs. Otto Skager; and David Blackstead, Superintendent of the Center School District. Recognition is due to Dr. Patricia Murphy, Associate Professor of Home Economics Education at North Dakota State University, for serving as consultant for the evaluation of the project.

A special thank-you is extended to Majore Lovering and Karen E. Botine, State Supervisors for Home Economics Education, and their secretary, Mrs. Arlene Fluto. Appreciation is given to the State Board for Vocational Education for their support and interest in the project.

Mrs. Vernice Kruckenberg
Project Director
"Consumers in the Know"

VT 014 163
AGRICULTURAL EDUCATION FOR THE SEVENTIES AND BEYOND.

COMMISSION ON EDUCATION IN AGRICULTURE AND NATURAL RESOURCES, WASHINGTON, D.C. COMMITTEE ON AGRICULTURAL EDUCATION.
NATIONAL SCIENCE FOUNDATION, WASHINGTON, D.C.
AMERICAN VOCATIONAL ASSOCIATION, WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUBLICATIONS SALES, AMERICAN VOCATIONAL ASSOCIATION, 1510 H STREET, N.W., WASHINGTON, D.C. 20005 (ORDER NO. 42371; SINGLE COPIES $.75)
PUB DATE - JUL71 46P.

DESCRIPTORS - *AGRICULTURAL EDUCATION; VOCATIONAL EDUCATION; VOCATIONAL AGRICULTURE; *PROGRAM EFFECTIVENESS; *PROGRAM PLANNING; *EDUCATIONAL CHANGE; PROGRAM DEVELOPMENT; RELEVANCE (EDUCATION); TEACHER EDUCATION; EDUCATIONAL RESEARCH

ABSTRACT - IN VOCATIONAL AND TECHNICAL EDUCATION IN AGRICULTURE, NEW PROGRAMS ARE BEING IMPLEMENTED, INNOVATIONS TESTED, AND OLD CONCEPTS CHALLENGED. THIS REPORT FOCUSES ON VOCATIONAL AND TECHNICAL EDUCATION PROGRAMS AT THE SECONDARY, POST-SECONDARY, AND ADULT LEVELS. IT IS CONCERNED WITH OPTIMIZING THE EFFECTIVENESS OF THESE PROGRAMS AND IS DESIGNED TO ASSIST THOSE IN POLICY MAKING, PLANNING, AND LEADERSHIP POSITIONS TO DEFINE THE FUTURE ROLE AND SCOPE OF VOCATIONAL AND TECHNICAL EDUCATION IN AGRICULTURE. TO MEET THE NEEDS OF THE EDUCATOR AND STUDENT IN AGRICULTURE, IT IS RECOMMENDED THAT: (1) PLANNING AND RESEARCH EFFORTS BE EXPANDED, (2) THE TEACHING-LEARNING PROCESS BE IMPROVED, (3) RELEVANT PROGRAMS BE MADE READILY AVAILABLE, AND (4) PREPARATION OF AGRICULTURAL EDUCATORS BE IMPROVED. (SB)

VT 014 163

agricultural education for the seventies and beyond

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VT014163

2243

Agricultural Education for the Seventies and Beyond has been prepared by a group of professionals who have distinguished themselves in leadership roles in agriculture and agricultural education throughout the United States. It projects the best thinking of those in the profession, and should be of particular interest and importance in the areas of policy-making, planning, and leadership in agricultural education.

In 1967 the Commission on Education in Agriculture and Natural Resources appointed a Committee on Agricultural Education to review the situation and to recommend future directions for vocational and technical education with special reference to the preparation of agricultural educators. The work of the Commission was supported by the National Science Foundation.

The American Vocational Association is honored to publish this bulletin in cooperative support of the Commission on Education in Agriculture and Natural Resources, National Research Council.

Lowell A. Burkett

Lowell A. Burkett
Executive Director
American Vocational Association

2244

PREFACE

In vocational and technical education in agriculture, new programs are being implemented, innovations tested, and old concepts challenged. Educators are devoting increased energies to formulation of long-range goals. The public is properly concerned whether the tempo of this movement is realistic and the direction relevant to future needs.

This report focuses on vocational and technical education programs in agriculture at the secondary, postsecondary and adult levels. It is concerned with optimizing the effectiveness of these programs, and is designed to assist those in policy making, planning and leadership positions to define the future role and scope of vocational and technical education in agriculture. It should aid those who must project the need for educational programs, develop the forms that such programs might take, and define the nature of the preparation of those who will serve as educators in agriculture.

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INTRODUCTION

Preoccupation with projections about the future and concern about redirection of existing activity are normal adjuncts to planning. Educational needs in the year 2000 will be very different from those of today. Many individuals now receiving vocational training will be active well into the next century. The rich traditions, valuable experiences and vigorous programs of past and present agricultural education, however, must be taken into account. Programs of agricultural education for the remainder of the twentieth century should be built on the strengths of current programs and on projections of future needs.

Dimensions of Agricultural Education

Although "vocational-technical education in agriculture" and "agricultural education" have been defined in various ways, only a comprehensive definition would be consistent with the nature of the tasks likely to confront agricultural education and agricultural educators during the remainder of this century.

The field of agricultural education: (a) is as broad as, and contributes to, all aspects of education; (b) responds to the technical information needs of those who are—or expect to be—vocationally committed to the agricultural sector; (c) is responsible for the general

agricultural education of individuals outside the agricultural sector; and (d) provides a transitional experience for many who live in rural areas but who have no vocational commitment to agriculture. Agricultural education blends the applied sciences of agriculture with the applied behavioral sciences of education.

The agricultural sector includes supply and service functions involving agricultural inputs; production of agricultural commodities; processing and distribution of agricultural products; use, conservation, development and management of air, land and water resources; development and maintenance of rural recreational and aesthetic resources; and, related economic, sociological, political, environmental and behavioral functions.

An agricultural educator is one who has extensive preparation in agricultural disciplines and who has knowledge and understanding of the teaching-learning process.

Influences on Program Development

Federal Participation in Vocational-Technical Education

There has been an unbroken line of federal-state-local cooperative endeavor in vocational education for more than 50 years. The Smith-Hughes Act, passed by Congress in 1917, established vocational education as an integral part of the American educational system. From

1918 to 1963, a series of acts further implemented and expanded the concepts of the Smith-Hughes Act.

The Vocational Education Act of 1963, which revised federal policy for vocational education, was motivated by an existing high unemployment rate among untrained and inexperienced youth. Training was redirected from a few selected occupational categories to vocational programs available to individuals at all levels and in all vocations, with particular emphasis on persons with special needs.

In 1968, Congress amended the 1963 Act and provided additional impetus to vocational-technical education. The Vocational Education Amendments of 1968 provide for overhaul and consolidation of all previous legislation pertaining to occupational training. The act authorizes a major increase in federal support for vocational education.

Federal legislation now authorizes the establishment of state vocational education advisory councils; cooperative vocational education work-study programs to provide meaningful work experience along with formal education; federal help in curriculum development and the establishment of model programs at the state and local level; and, a special program for teacher training in vocational education through exchanges of personnel, in-service training, short-term institutes, and fellowships.

Legislative Restraints

Legislation providing resources for, and regulation of, agricultural education programs can be expected to promote improved long-range planning. Financial and regulatory arrangements at the federal, state and local levels can and should be adjusted to fit the changing needs of agricultural education. There is little doubt that recent state and federal legislation has facilitated the development of programs in agricultural education. In some instances, the earlier statutory framework or administrative interpretations restricted rather than facilitated progress.

Requirements for Planning Educational Programs

Historically, agricultural education has been characterized by systematic planning at the local level. In most instances, it has been directed to meet local needs. In recent years, some agricultural educators have focused attention on more formal methods of program planning, involving (1) a statement of the scope of activity to be planned; (2) an explicit function to be maximized or minimized, i.e., a goal; (3) adequate cost data on alternative strategies; and, (4) an estimate of the contributions of each alternative strategy to achieving the objective.

Educational planning typically has proceeded with little direct

attention to costs of alternative strategies, and with even less attention to potential benefits—economic and humanistic—that might derive from alternative strategies.

Contemporary Trends and Predictions

In the maelstrom of change in society, in education and in agriculture, three trends appear to be particularly significant for agricultural education.

An expanding and mobile population: By the year 2000, a very high proportion of this nation's population will reside in urban areas and will work in large organizations. Even by 1980, this figure will reach three-fourths; furthermore, of the rural one-fourth, only one in seven or eight will live on a farm. The mobility of the rural population, and the demand for higher quality and more efficient education, will force a reduction in the number of educational systems in rural areas; those that remain will be larger and more comprehensive. Agricultural educators cannot ignore their responsibility for educating the rural nonfarm and urban populations. The need for efficiency in agricultural production results in increased demands for more highly trained manpower in the supporting services and related business and industry sectors.

Technological advances in agriculture: Speculation as to the kind

of agriculture that will exist by the year 2000 is exciting and challenging. Some predict there will be agricultural satellites with sensors able to utilize infrared wave lengths in detecting growth changes, thereby making possible accurate predictions concerning nationwide —even worldwide—yields of various crops. Remote sensing via the satellites may trace the spread of plant disease or insect infestations and provide precise information to farmers concerning needed irrigation. Other predictions include the use of computer-controlled machines to plant crops, fertilize by prescription, determine when produce is ready for market, and harvest on order. The application of new technological developments will lead to larger farms, more complex agri-business firms, larger financial inputs, increased mechanization, and a further reduction in labor. The farm of the future will be operated like a large business. Farming will be more complex, and will require a higher level of managerial ability. This makes management training a necessity for future farmers. Computers will play a much larger part in management by providing such services as record keeping, land-use planning, feed formulation, and up-to-date marketing information.

Demands for education in agriculture: The agricultural industry of the future will require increasing numbers of highly trained people; the educational minimums for agricultural employment will continue

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to increase. There will be an expanding need for technical training and a growing demand for technical services in producing, harvesting, and marketing agricultural products. Occupations providing goods and services to the farmer or assisting in the marketing and processing of farm products will require large numbers of technically trained personnel. Currently, Americans spend over $20 billion a year for outdoor recreation. By 1980, this expenditure is expected to approximate $50 billion, creating 200,000 new full-time jobs in small cities and the countryside. Agricultural education programs must respond to these needs for trained personnel.

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VOCATIONAL-TECHNICAL EDUCATION IN AGRICULTURE

Vocational education in agriculture traditionally has been provided for three groups: high school youth, young farmers, and adult farmers. According to the U.S. Office of Education,[1] however, major changes in scope have occurred within the past decade, and vocational and technical education in agriculture is now concerned with:

—Secondary school youths, out-of-school youths, and adults who wish full-time vocational and technical training for entry into agriculture;

—Employed youths and adults who need vocational and technical training in agriculture to upgrade their occupational performance;

—Youths and adults who may not benefit from regular vocational and technical education programs in agriculture, but who can benefit from special programs designed to meet their needs.

Meeting the changing educational needs of the agricultural sector and serving the clientele outlined above poses a new challenge for agricultural educators. In some instances, these needs can be met through modification of the traditional program of vocational agri-

culture; in others, a complete realignment of the curriculum may be necessary.

Secondary Programs

Past Strengths

New programs should capitalize on the successes of the past. Many of the educational concepts and practices pioneered in agricultural education will play a vital role in the programs of tomorrow.

Perhaps the most striking characteristic of the agriculture teacher has been his concern for the individual student, both in classroom teaching and in supervised occupational experience. The traditional farm visits have aided in providing highly personalized curricula. Parent–teacher–student involvement has been employed in developing educational and occupational goals for the student. The teacher has accepted responsibility for individual counseling and guidance activities. Opportunity for leadership development has been provided through the Future Farmers of America. Leadership qualities have been stressed as a key to the development of the individual. The spirit of competition, individual achievement and teamwork in FFA have made the instructional program relevant and challenging.

Agricultural educators have been employed on a full-time basis to provide for a year-round program. Summer programs have assisted in making the instructional programs more realistic and in accord

with student and community needs by providing time to work with individual students and the community, thereby affording an opportunity for the teacher to update his technical and professional competency.

Finally, a spirit of cooperation and *esprit de corps* has been the trademark of vocational agriculture teachers, local administrators, and state supervisory staffs.

Current Trends

A variety of changes occurring in secondary schools is having a profound effect on agricultural programs. Greater emphasis is being placed on the community as a resource for the entire school. Part-time aides, assistants, specialists and other resource people from the community are making it possible to broaden and deepen the curriculum. The community is being used as a laboratory. Outside agencies are providing learning activities not available within the school system.

Teaching machines, individualized instruction packages, video tapes, computer-assisted instruction, high speed information retrieval systems, and a variety of new instructional media are part of the technological revolution that tends to free the teacher of much routine activity. Students using new techniques and manuals may learn on their own, in or out of the formal classroom.

New governmental programs are encouraging pilot programs and experimentation. Innovations such as team teaching, independent study, large group instruction, flexible scheduling, use of teacher assistants, and non-graded provisions for unusually gifted or culturally deprived students will influence future directions in agricultural education.

Program Implications

Agricultural education, like all fields of education, must espouse a bold, imaginative program that will come to grips with the problems inherent in our compulsory education system. Schools must be seen as places where learning is encouraged and motivated. In order to achieve this, future programs must consider the following as imperative:

—That the teacher become more a "director of learning" and the student assume more responsibility as a self-directed learner.

—That teacher efficiency be improved through a supplementing of teacher efforts with hardware, where appropriate. This will change the role of the teacher in that drill, rote memory and repetitive-type performance will be accomplished through the use of machines.

—That agricultural education serve a wider range of students by providing varying levels of instruction for different levels of ability and background. Future programs must be designed to attract both boys and girls, students reared in nonfarm environments, dropouts, the disadvantaged, and handicapped students who need retraining—not only students contemplating college or a post-high school technical training.

—That staffing distinguish between teacher responsibilities that require a graduate degree and years of successful teaching experience, and the competence needed to perform less critical tasks. Assistant teachers and aides may perform many of the clerical or routine duties now consuming a great deal of teaching time.

—That coordinated programs of vocational education at the high school level be developed. Subject matter specialists will continue to be found in agriculture, business, distributive education, home economics, trade and industry, technical education and health occupations. However, an administrator may well be employed to administer the total vocational program within a curricular structure that will reflect a range of occupational training. Instruction teams may cooperate in teaching students.

—That agricultural education explore the possibility of shifting from time criteria to performance criteria for assessing student achievement. Performance goals are now being identified, and student success should be evaluated on the basis of how well a student can advance toward identified objectives.

—That curriculum changes provide a new dimension for instruction in agriculture that will encourage substitution of "agricultural education" for "vocational agriculture." Agricultural education will encompass general occupational information in agriculture at the elementary and junior high levels as well as programs in vocational agriculture at the high school level. Semester or block courses may become commonplace, making it possible for students to select from a range of courses in designing a specific program.

—That secondary education—in vocational agriculture as well as elsewhere—be student-centered, with emphasis on optimal development of each individual student according to his own abilities, interests, and motivations. Errors in counseling and career choice are expensive to both individual and society. Career counseling and guidance by agricultural educators must be objective and vocationally impartial. The agricultural educator must serve as the coordinator of information

on agricultural careers for elementary and junior high students, as well as for those in high school.

—That experience in agricultural occupations, whether on the farm, in the school laboratory, or in local industry, be available for each student according to his needs, abilities, and occupational objectives. Simulated experiences may gain in popularity and usefulness as substitutes, especially in instances where real work experiences are not possible.

—That teachers of vocational agriculture play a larger role, in conjunction with the school placement office, in assisting students in obtaining employment.

—That programs be so structured that the student has maximum flexibility in his choice of post-high school occupational or educational patterns.

Postsecondary Programs

Need for Postsecondary Programs

Major changes in agricultural education over the past few years have taken place at the postsecondary school level; they offer continuing opportunities for growth and development. Three major conditions influence this expanding role:

—There is an increase in the competencies required by agri-

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cultural workers; job entry and advancement requirements are moving steadily upward, with emphasis on the "why" as well as on the "how."

—There is an increased awareness on the part of the general public as to the potential value of, and critical need for, postsecondary vocational-technical education. The focus of attention on the rural and urban disadvantaged, on urban unrest, on rural migration to the cities, and on other social problems has caused general public concern. The problem is aggravated by substandard education. Vocational and technical education can play a major role in solving some of these critical problems.

—Professionals are requesting and employing more technicians to assist them in their work.

Growth of Postsecondary Programs

The number of vocational-technical programs providing post-high school (13th and 14th year) education in agriculture has increased from approximately 80 in 1965-66 to approximately 400 in 1968-69. Over 18,500 students were enrolled in postsecondary agricultural programs in 1968-69.

The two-year post-high school institutions are the fastest growing

educational institutions in the United States. Successful programs are being conducted by technical institutes, junior or community colleges, and four-year colleges and universities.

Program Emphasis in Agriculture

Essentially, two areas in agricultural education are emphasized at the post-high school level: (1) vocational and (2) technical training programs. Emphasis here is on the latter.

The agricultural technician uses one or more applied natural science, engineering, social science, or business skills in the performance of his job. He usually does not require the level of training expected of a baccalaureate degree, but his performance and education are above that required of a skilled worker.

The following is one description of an agricultural technician:

> An agricultural technician is a worker located between the skilled worker and the professional in the job classification structure in his work performance and in his educational attainment. He possesses the skill and ability, working independently or with minimal supervision from a professional, to analyze and interpret information, diagnose problems, make decisions, and make practical application of theoretical knowledge in performing specific tasks in a specialized field in the production, proc-

essing, distribution, or marketing of goods and services in agriculture. He must exercise cognitive skills primarily but also he must be able to supervise and perform manipulative skills.[2]

Agricultural technicians are the product of an intensive, carefully structured educational program, usually offered as a two-year program at a post-high school institution. A technical education program should prepare students for employment in a specific occupation or in a family of closely allied occupations and should include fundamentals that do not change rapidly. General education courses are an integral part of technical education programs and should be related to the particular vocational-technical instruction.

Postsecondary programs, emphasizing training in skills and designed to equip individuals for a job, should be articulated with other technical programs. The programs must be designed to accommodate students whose interests and motivations vary. This will make it necessary to allow students to enter and leave a program at various times during the school year and with varying degrees of training in skills.

Elements for Successful Post-High School Programs in Agriculture

As the role of post-high school institutions expands to meet increasing demands of the public, educational leaders must understand

the factors that undergird a successful program.

—Vocational education has a unique role to play in filling the educational gap between high school and the four-year college degree programs.

—Post-high school institutions must seek instructors with appropriate teaching and technical abilities. Dynamic teacher education programs are needed to supply qualified instructors having expertise in the technical field.

—The curriculum, in order to be relevant, must be based on the needs of (1) the industries employing the graduates, (2) the students who seek the training, and (3) the society or environment in which graduates are to operate. Continuing contact must be maintained with the agricultural industry through advisory committees and coordinated work experience programs. Systematic evaluation of the success of graduates will keep the curriculum from becoming obsolete.

—Vocational and technical education should not be considered terminal. Students and educators should understand that continuing education will be normal for agricultural workers at all levels.

—Post-high school programs should be articulated with high school programs. Coordinated planning with high school

teachers and administrators will assist in the development of post-high school programs that build upon knowledge and skills the student has gained in high school.

—Post-high school programs in agriculture should be available to serve the needs of youth and adults at all levels in both rural and metropolitan areas. Programs must provide educational opportunities for the high school dropout, for employees who want to be retrained or upgraded, and for the disadvantaged. They should also serve as a stimulus to the student who may later choose to enter a four-year program.

—Occupational experience designed and supervised cooperatively by educator and employer should be an integral part of these training programs.

—Adequate facilities and modern equipment must be available to provide training for industry needs.

—Recruitment, placement and follow-up of students must be recognized as major components of effective vocational and technical training programs.

—Programs should be continually evaluated.

Adult Education Programs

Adult education in agriculture involves two components: (1) that

focused primarily on vocational training for individuals committed to the agriculture sector, and (2) a general, liberal education segment. The latter aspect, although related to, and frequently a product of, adult vocational education in agriculture, is common to adult education generally and will not receive major attention here.

A special aspect of adult education involves agriculture as a part of general adult education for nonagriculturalists. This may become increasingly important as employment shifts occur and as fewer and fewer individuals have meaningful contact with agriculture, except as consumers.

Adult vocational training may be further subdivided into continuing education for those maintaining a vocational commitment to agriculture, and retraining for those who are redirecting their vocational commitment away from agriculture. The latter is hardly an integral part of the problem of adult education in agriculture, but the social and economic urgency of focusing upon retraining and redirection of underemployed labor in "production agriculture" demands the attention of educators generally.

Agencies Involved

The needs for adult continuing education in agriculture are currently being met by six major institutional groups: (1) secondary

public school systems, (2) vocational-technical schools, (3) federal agencies, (4) cooperative extension services, (5) public and private universities, and (6) business and industry. They have generally functioned in an uncoordinated, or at best informally integrated, fashion; each has proceeded somewhat apart from and at times in opposition to the others. Moreover, in many of these groups, personnel are less effective than they would be if they had more training in the teaching-learning process.

Role of the Agricultural Educator

In recent years, the role of the agricultural educator has been changing rapidly. For the 20 or 30 years beginning in the 1920s, the county agricultural extension agent and the vocational agriculture instructor were virtually the sole sources of technical information. In the period since World War II, many public and private agencies have been providing information and assistance to farmers and, to a limited extent, other segments of the agri-business complex, while the extension agent and the agricultural instructor have continued to be looked to as providers of "up-to-date" and "unbiased" information. While other sources of information may be equally pertinent and up-to-date, they are to some extent subject to a possible bias in that they have products to sell.

The median level of schooling of farmers 25 to 44 years old is today four years higher than was that of their counterparts in 1950; in many communities a large number of farmers hold the bachelor's degree and a few have a master's degree. Educational requirements for extension agents and vocational agriculture teachers have been raised in line with these changes. It is not uncommon for the majority of extension field staff to hold the master's degree and for area extension agents to have Ph.D.'s. A comparable upgrading of the educational levels of vocational agriculture teachers has occurred.

With farmers becoming fewer and better educated than in the past, the role of the generalist in adult education will, it is likely, diminish further with respect to those individuals vested with management and decision-making powers. Adult education programs provided by the public school system may be adequate for farm employees below the management or executive level, but the demands for adult education involving specific and highly refined skills and abilities will undoubtedly increase and will require the services of specially trained adult educators.

The continual upgrading of educational levels of farmers has far-reaching implications for (1) levels of training for agricultural educators and (2) programs for updating their knowledge from time to time. As is well known, extension services have begun to utilize staff

with the M.S. and Ph.D. degree in direct response to these same concerns.

Without adequate initial and in-service training, agricultural educators are likely to face continuing competition with other sources of technical information. Competing information sources are likely, for example, to provide integration of technical information, with other relevant data of the farm business, into a management package. This is one area about which adult education programs of the future should be built and toward which undergraduate education must be oriented. To provide management and decision-making information, however, agricultural educators must be well-trained in the economics of resource allocation, income distribution, and management efficiency. This emphasis in training has been clearly lacking in some teacher training programs because the biological and physical sciences have occupied center stage. Strong preparation in agricultural economics and rural sociology would seem vital to the future agricultural educator.

To the extent that in-service vocational training programs are taught by agricultural educators, use of specialists to present technical information would very likely improve the educational program. This would permit the agricultural educator to emphasize management and to serve in a coordinating role.

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A Coordinated Approach to Adult Education

If adult education is to proceed with maximum efficiency, a closely coordinated, well-integrated effort at the local level is imperative, although the success that can be achieved is uncertain in the light of organizational and philosophical tendency to separateness at both state and national levels. However, at least for those sources of adult education lying in the public sector, coordination and integration should be expected. The paramount objective for public schools, post-high school institutions, and the extension service should be effective service to society. Maintenance of competitive and uncoordinated educational programs is hardly consistent within this concept.

A master plan for adult education is needed in each community and in each functional economic area. Each major adult education agency has something to contribute: local or area agricultural educators can identify adult educational needs, plan programs, secure specialists, publicize and evaluate programs; business and industry can provide up-to-date, pertinent and pragmatic information on farm inputs and marketing; subject matter specialists from post-high school institutions can provide technical expertise.

FUTURE RESPONSIBILITIES OF THE AGRICULTURAL TEACHER EDUCATOR

The increasing demand for a variety of agricultural educators places added responsibilities upon those responsible for preparing them. Identifying the needs for educational programs is in part up to agricultural faculties; the preparation of agricultural educators rests heavily with teacher educators. The accelerating pace of change will tax the vision and capabilities of both. In the past, teacher education programs have focused primarily upon preparing high school vocational agriculture teachers, but attention is now turning to the preparation of those who can serve in various programs, all the way from formal education in general agriculture at the elementary and high school levels to informal adult education.

The responsibilities of staff members in agricultural education will extend to encompass some functions not now regularly carried out. They will establish contact with a wide clientele. Regardless of the form that teacher education programs take, the underlying purpose is to develop understanding and an ability to design, implement and evaluate educational programs.

To meet their responsibilities, teacher educators need to design curricula for:

—High school teachers who will prepare youth for on-farm or off-farm employment in agriculture.
—Metropolitan high school teachers who will prepare youth for employment that requires specialized knowledge and skill in agriculture.
—Post-high school teachers who will prepare youth for para-professional positions in agricultural industries.
—Cooperative extension personnel to serve a broad spectrum of adult education needs in agriculture.
—Agricultural educators who will be entering international education programs.
—Agricultural educators to work in agri-business—including sales, promotion and public relations.
—Elementary and secondary teachers of general agriculture.
—Agricultural educators to conduct adult education programs.
—Agricultural educators who have the specialized knowledge and skills needed to work with disadvantaged students.

Preparation of Agricultural Educators

The primary goal of a university or college teacher education department is to develop students who will contribute to the improvement of society as active, informed citizens, as education leaders,

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and as teachers of youth and adults. In the broadest sense, the preparation of agricultural educators should:

—Provide educational opportunities and experiences that optimize the development of personal, social, and professional qualities.

—Emphasize basic scientific concepts, principles, and relationships applicable to agriculture.

—Provide functional, relevant education.

—Provide for the integration of theory and practice.

—Provide flexibility to meet the needs of individual students.

—Provide a substantial measure of specialization.

Agricultural educators in the future must become more and more "educational directors." In order to fill this role, they should be prepared to:

—Assist people in defining their needs and in weighing alternatives.

—Provide leadership in organizing and planning educational programs.

—Participate in planning and conducting research leading to program development and improvement.

A single curriculum is not likely to fulfill all requirements; a single

type of preparation is likely to fill few demands well. Furthermore, the educational needs of agricultural educators can no longer be met by the traditional undergraduate program. It is necessary to develop multi-track curricula that will provide greater flexibility for specialization. Prospective agricultural educators should have the opportunity to enroll in a dual major—agricultural education plus a technical field.

Opportunities must be available to majors in all departments within the college of agriculture to meet teacher certification requirements or otherwise to qualify as agricultural educators. Furthermore, agricultural industry employees should be attracted into agricultural education by being provided with appropriate alternatives to present teacher preparation requirements. On-the-job internships should be utilized to attract graduates from other fields.

General Education

General education is aimed at preparing an individual for a full and satisfying life as a professional, as a member of a family, and as a citizen. But the mere inclusion of credit hours in the curriculum will not guarantee results. In supporting a student's professional specialty, subjects such as the humanities, if well taught, can expand the student's breadth of educational experience. By no means all

prospective agricultural educators need take the same courses.

Care should be exercised that there be a balance between the general education portion and the other segments of the curriculum. General education courses should be introduced early, when needed, to provide a background of understanding for the applied courses.

Technical Agricultural Training

Future curricula in technical agriculture should provide greater emphasis than in the past on principles and their application. In addition, the subject matter included must be relevant to a changing agriculture. It is imperative that courses in technical agriculture for future educators place major emphasis upon basic scientific concepts, principles, and relationships germane to an in-depth understanding of the particular discipline. This portion of the curriculum must be designed to develop understandings applicable to the total agricultural sector.

Professional Education

Professional education should equip the student with those basic pedagogic skills essential to plan, implement, and evaluate programs in agricultural education. The common denominator is the ability to apply the concepts of the educational process.

Occupational experience, including student teaching, is an essen-

tial component of professional preparation. Student teaching must remain a requirement for those to be certified for classroom teaching, but work with agricultural industries, extension services, and other institutions or agencies may be more appropriate in some programs for agricultural educators than the traditional student teaching.

Curricula should develop the capacity to design, implement, and evaluate future high-quality agricultural education programs. They may focus upon (1) strong preparation in the teaching-learning process, with supporting work in technical agriculture and general education, or (2) strong preparation in technical agricultural fields with supporting work in general and professional education. The latter pattern is particularly desirable for those involved in adult education.

Graduate and In-Service Education for Personnel in Vocational-Technical Education in Agriculture

Workshops and conferences have been used to upgrade competency in the teaching-learning process and technical agriculture subject matter areas for high school teachers. In the future, they need to be more responsive to the planning process, and greater efforts must be made to bring about improvements in local programs by

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capitalizing on existing abilities and incorporating research results in education and technology.

In-service programs must be expanded to serve other agricultural educators.

Faculties in agricultural education must continue to provide advanced preparation at the master's and doctoral level for teacher educators, supervisors and administrators of vocational-technical programs, and research specialists.

Additional emphasis on basic social science concepts, with liberal exposure to such fields as psychology and sociology, is essential in graduate programs. Future teacher educators not only need expertise in the teaching-learning process but need competence in designing and conducting meaningful research.

Research

Professional agricultural educators have a major responsibility for the initiation and direction of research in collaboration with university research units, state departments of education, and the U.S. Office of Education. Interdisciplinary research should be fostered.

As staff members of agricultural education expand their research programs, consideration should be given to several key areas: curriculum, improved instructional systems, program planning and eval-

uation, the role of student organizations, career information at the high school and post-high school level, programs for the rural disadvantaged, and general education in agriculture.

Long-range studies of the instructional process, including those centering in agricultural education, are of primary importance. Research pertaining to the administration and supervision of agricultural education is needed. Innovations in administrative policy and organizational structure relating to finance, staffing, facilities, research and program development should be studied in a systematic manner.

Pilot programs should become an essential segment of agricultural educators' programs of curriculum research. Exploration and evaluation of new methods and techniques will provide the faculty with a means for updating teacher education programs and assuring relevancy to the programs being developed.

Continuing effort must be directed to the dissemination and implementation of research findings.

Improved Teaching of Agriculture at the University Level

Traditionally, members of the teaching faculty in four-year institutions, both graduate students and professionals, have not been

required to prepare for teaching by formal study of the teaching-learning process. Despite this, some staff members seek assistance in delineating course objectives, developing improved teaching techniques, and constructing evaluation instruments.

Teacher educators must extend their efforts to improve instructional quality and enhance the instructor-pupil relationship at the college and university level; they must increasingly serve as educational innovators, supplying ideas, methods, expertise and assistance to all other departments in the college of agriculture. They should provide leadership:

—In developing a positive attitude toward more effective instruction.
—In applying the most effective teaching-learning techniques in their own classrooms.
—In working with others to develop instruction laboratories, workshops, and symposia on improvement of college teaching, including professional preparation in extension work.
—In designing and conducting services and course offerings directed toward improvement of instruction for graduate students from all disciplines within agriculture.

RECOMMENDATIONS

That Planning and Research Efforts Be Expanded

To meet the needs of the educator and student in agriculture, it is recommended that:

—Planning groups, where not already in existence, be formed for each state and for each local education system for the purpose of developing and revising, as needed, programs for agricultural education. Such plans should include appropriate recommendations on the preparation of agricultural educators.

—The planning process be based on (1) an appropriately broad definition of agriculture and agricultural education, (2) early formulation of plans geared to the needs of society and the capabilities and interests of students, (3) effective and efficient execution of programs, and (4) continuous evaluation of economic and humanistic costs and benefits.

—Planning groups have access to data and information on costs and benefits of alternative programs.

—Agricultural education staff members expand efforts in research, in evaluation, and in use of pilot studies of pre-service and in-service education, of post-high school adult programs

and of opportunities for the disadvantaged.

—Research findings be transmitted to policy groups in such form that supporting legislation might be enacted.

That the Teaching-Learning Process Be Improved

To assist agricultural educators in their unending task of improving the teaching-learning process, it is recommended that:

—Secondary education be student-centered, with emphasis on optimal development of each individual.

—Flexible curriculum patterns and educational methods be developed to stimulate a desire for learning, to develop relevant educational programs, to provide opportunities for individual study, to prepare students for continuing educational opportunities, to provide improved counseling and personalized instruction, to emphasize supervised occupational experience, and increase opportunities for social and leadership activities.

—Educational programs derive from student interest and recognize differing learning styles, aptitudes and achievement rates, as well as the diversity of job skills required.

—Sufficient personnel be made available (using teaching assistants where necessary) to provide specialized agricultural

training, as well as general education in agriculture, as a recognized portion of the curriculum for nonagricultural students.

—A coordinated and integrated master plan for adult education in agriculture be developed for each functional economic area, with participation by public and private adult education agencies.

—In programs for adults, the educational needs of the agricultural sector be met by appropriate use of agricultural educators from business, industry, colleges and universities.

That Relevant Programs Be Made Readily Available

Because changing needs in the agricultural sector generally dictate that instruction in agriculture be made readily available, it is recommended that:

—Programs in agricultural education seek to serve an increasingly broad range of students at the secondary level, with special emphasis on students with low academic ability, those who are underachievers, and the disadvantaged.

—Post-high school and adult programs in agriculture be expanded, with special emphasis on the needs of high school

dropouts, the culturally disadvantaged, and individuals needing retraining.

—Supporting work, undergraduate and graduate, be provided for agricultural educators majoring in technical subject matter fields.

That Preparation of Agricultural Educators Be Improved

Because preparation of those who teach is the single most effective means to upgrade instruction, it is recommended that:

—Universities and colleges design and implement flexible curricula which provide varying mixes of general, technical and professional education in view of the wide range of abilities and goals of students and the diversity of the agricultural industry.

—Undergraduate programs emphasize the content and processes of secondary and postsecondary education in a classroom, laboratory and work-study format; that adult education concepts, procedures, and techniques be emphasized as a part of in-service and graduate education.

—Pre-service and in-service training be required of vocational and technical educators, with emphasis on improving skills,

learning specific competencies, and gaining occupational experience.

—Graduate education complement and supplement a required regimen of in-service training; that both M.S. and Ph.D. programs be provided, with appropriate emphasis on teaching, administration and research.

—Faculties in agricultural education aspire to leadership in developing centers for innovative ideas, methods, and procedures relative to undergraduate and graduate teaching.

FOOTNOTES

[1] U.S. Department of Health, Education and Welfare, *Objectives for Vocational and Technical Education in Agriculture* (Bulletin 1966, No. 4, OE-81011), pp. 3-4.

[2] *Preparing Agricultural Technicians,* Report of a National Seminar on Agricultural Education, The National Center for Advanced Study and Research in Agricultural Education, The Ohio State University, Columbus, Ohio, July 20-24, 1964.

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BRITTON, MARGARET HICKSON
A COMPARISON OF ROLE EXPECTATIONS OF EMPLOYED AND NON-EMPLOYED HOMEMAKERS.

MF AVAILABLE IN VT-ERIC SET.
PUB DATE - AUG71 87P.M.S. THESIS, WINTHROP COLLEGE

DESCRIPTORS - *HOME ECONOMICS EDUCATION; MASTER THESES; *WORKING WOMEN; *ROLE PERCEPTION; *HOUSEWIVES; FAMILY RELATIONSHIP; HOME MANAGEMENT; FAMILY MANAGEMENT

ABSTRACT - TO DETERMINE IF SIGNIFICANT DIFFERENCES OCCURRED BETWEEN NON-EMPLOYED HOMEMAKERS AND THEIR HUSBANDS AND EMPLOYED HOMEMAKERS AND THEIR HUSBANDS, DATA WERE COLLECTED BY MEANS OF TAPE RECORDED INTERVIEWS WITH 105 ADULT SUBJECTS. FROM RESPONSES TO QUESTIONS CONCERNING ROLE EXPECTATIONS OF HOMEMAKERS, DISCRETE IDEAS WERE NOTED AND RECORDED ONTO A CHECK LIST ADAPTATION OF THE QUESTIONNAIRE, "RATE YOURSELF AS A HOMEMAKER." ANALYSIS OF SIGNIFICANT DIFFERENCES REVEALED THAT BOTH EMPLOYED AND NON-EMPLOYED HOMEMAKERS PERCEIVE THEIR ROLE MORE COMPREHENSIVELY THAN DO HUSBANDS. THE EMPLOYED GROUP EXPRESSED MORE CONCERN FOR PERSONAL RELATIONSHIPS WITH THEIR CHILDREN AND MORE EXPECTATIONS DEALING WITH FAMILY AND COMMUNITY RELATIONSHIPS THAN DID THE NON-EMPLOYED GROUP. THE NON-EMPLOYED GROUP EXPRESSED GREATER CONCERN FOR TIME MANAGEMENT AND MORE FREQUENTLY MENTIONED EXPECTATIONS RELATING TO OUTDOOR CARE OF THE HOME THAN DID THE EMPLOYED GROUP. IN VIEW OF THE INCREASING NUMBER OF WORKING WOMEN, IT IS NECESSARY FOR BOTH MEN AND WOMEN TO RE-EVALUATE THE ROLE OF THE HOMEMAKER WITH THE FAMILY ORGANIZATION, AND HOME ECONOMICS PROGRAMS SHOULD MAKE AN EFFORT TO HELP FAMILIES EXAMINE PRESENT THINKING ON SEX ROLES. (SB)

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A COMPARISON OF
ROLE EXPECTATIONS OF
EMPLOYED AND NON-EMPLOYED HOMEMAKERS

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INTRODUCTION

The social and economic changes of the last half century have led women into the working field. Scientific and technological improvements not only simplify many home duties and reduce the time required for the physical tasks of homemaking, but also mean greater job specialization and new employment opportunities. Development of public education for both boys and girls and the gradual achievement of equal opportunities for higher learning have encouraged women to prepare for and seek employment in ever-expanding fields. Over the years, more responsible jobs with higher wages and better working conditions have been opened to women.

With the current emphasis on individual fulfillment, it is imperative that use be made of every individual's talents and abilities, thus giving each and everyone the opportunity to participate fully in the social and economic life of the country. Related to this emphasis, women have been promised equality and greater economic opportunity under government programs that marked the beginning of a new national effort to eradicate discrimination based on sex, race, and age. The President's Commission on the Status of Women, established in 1961, studied the role of women in American life, examined their needs, and evaluated their potential

contribution to the country's economic, social, and political development. At the Federal level the Interdepartmental Committee and the Citizens' Advisory Council on the Status of Women have followed through on the work of the original Commission (U. S. Women's Bureau, 1969). The Civil Rights Act of 1964 was of particular interest to women, since its employment provisions prohibit discrimination in employment on the basis of sex, as well as other characteristics. The Equal Pay Act of 1963 promised better wage protection for women by prohibiting wage discrimination on the basis of sex. Executive Order 11141, issued February 12, 1964, helped older women by the broad implications of the order, which prohibited Federal Government contractors and subcontractors from arbitrary discrimination against older workers in recruitment and employment (U. S. Women's Bureau, 1965).

When a group of women workers were questioned by the Women's Bureau of the Department of Labor (1965) about why they were working, most of them cited financial reasons. Practically all the women workers without husbands were supporting themselves. Most of the married women workers were contributing to essential living expenses. A number were working to raise family living standards, while others were helping to send their children to college. Still another group had husbands who were unemployed or unable to work or were employed in a low wage occupation. Only a few of the

women were working just for the satisfaction of having a job or for the purpose of keeping their skills from getting rusty.

It is significant that the more education a woman acquires, the more likely she is to seek paid employment, irrespective of her financial status. The educated woman desires to contribute her skills and talents to the economy not only for financial rewards, but even more to reap the psychic rewards that come from achievement and recognition and service to society (U. S. Women's Bureau, 1969).

Just how many women are in the job world? According to the Department of Labor (1970), 30.5 million women work for pay away from home, in a family business or on a family farm. These 30.5 million women, representing 43 percent of all women of working age, make up 38 percent of all workers in this country. In 1920 they made up only 20 percent. Of part-time workers more than half are women. The number of these part-time women workers has increased more rapidly during the last ten years than the number of all full-time workers.

These women workers are wives, mothers, single women, widows, divorcees. In the recent years, however, the number of married women in the labor force has shown the greatest increase. Almost 60 percent of all working women are married and living with their husbands; 22 percent are single. In 1940, about half were single; only 30 percent were

married and living with their husbands. About one-seventh of all women workers today have children under age six (U. S. Women's Bureau, 1969).

The remarkable rise in the numbers and proportions of women in the labor force is due to a combination of demographic, economic, and social developments. Among demographic factors, the most important were the overall increase in population and the changed ratio of women to men in the population, resulting from the greater longevity of women. Economic and social factors included the increasing demand for labor as the industrial structure of employment shifted job growth from agriculture to goods-producing activities to service. Another factor has been the resultant trend toward urban living. To these factors were added, more recently, the widespread use of labor-saving equipment in the home, rising aspiration toward a higher standard of living and a higher level of education, and increased job opportunities for women in rapidly expanding clerical, service, and sales occupations. Finally, an evolution in social attitudes and values encouraged women to develop their abilities and talents to the fullest in paid work (U. S. Women's Bureau, 1969).

The majority of women continue to be homemakers, whether or not they also have jobs. In 1968, 41 million women were not in the labor force, and 35 million of these devoted their full time to housekeeping. Almost two-fifths

of all married women and many single women as well are both homemakers and workers. During a work week in 1968, 50 percent of all women were keeping house full time, and about 42 percent were either full- or part-time workers. Most of the remainder were girls 16 to 20 years of age who were in school (U.S. Women's Bureau, 1969).

Because of the tremendous revolution in the pattern of women's lives, it has become necessary for girls to develop a new self-image. In view of past and present data, it appears that the trend of homemakers entering the employment field will continue. Along with this employment, the major responsibility for homemaking tasks will still fall upon the homemaker. In a report published by the Women's Bureau (1966), the "dual role" concept was discussed in the light of preparation of teenage girls to make meaningful choices in order to be able to realize their fullest potential in both spheres. Whether or not the mastery of this dual role with the satisfactory integration of home and work has been attained by currently employed homemakers is the partial subject of the present study. Comparisons need to be made in order to see if and what similarities and differences exist between employed and non-employed homemakers in relation to their perceived role expectations.

The present study was structured after, and incorporated raw data from, the larger framework of the Southern regional research project, "Evaluation of Vocational Home Economics Programs in Terms of the Effectiveness of

Full-Time Homemakers and Homemakers Who Are Also Full-time Employees." The regional project was completed in March 1971.

The purpose of the regional project was to develop and use criterion measures to evaluate vocational home economics programs at the secondary level in terms of the effectiveness of full-time homemakers and full-time employees who were also homemakers. As such, the study hoped to make a contribution to vocational education by providing instruments for evaluating programs of home economics, criteria for planning future programs, and evidence of the contribution home economics has made, and is making, to both family life and the world of work (Loftis, 1968).

The initial phase of the research done in Georgia, Kentucky, and South Carolina consisted of interviews to identify specific expectations of homemakers. These statements of expectations were then grouped into general categories. From these data, an instrument for determining the effectiveness of full-time homemakers was developed. The instrument for determining the effectiveness of full-time employees who were also homemakers was developed using employers of such women as the source of data. Each measure was tested for validity and reliability. In a later phase of the regional project, the criterion measures, as well as a questionnaire related to family status, employment, and years of homemaking instruction, were administered to

homemakers, employed and non-employed, in the states of Florida, Georgia, Kentucky, and South Carolina. Data were analyzed and the results presented in the Final Report of Project No. 071204, "Evaluation of Vocational Home Economics Programs in Terms of the Effectiveness of Full-Time Homemakers and Homemakers Who Are Also Full-Time Employees" (Cross, 1971).

Purpose of the Study

The purpose of the present study was to compare the role expectations of employed and non-employed homemakers as perceived by employed homemakers, husbands of employed homemakers, non-employed homemakers, and husbands of non-employed homemakers. Data were available from the initial phase of the regional study in the form of cards with a discrete word, phrase, or sentence which represented an expectation expressed by an interviewee. From the initial comparison of expressed expectations of homemakers within categories of behaviors expressed by subjects, hypotheses were derived to guide further examination of the data. Questions raised by this researcher, however, were not part of the regional design.

Objective and Hypotheses

The objective of the present study was to compare the role expectations of homemakers as perceived by homemakers,

employed and non-employed, and husbands of employed and non-employed homemakers.

The major hypothesis proposed by the study was that a significant difference would be found to exist in the percentages of role expectations expressed by (1) non-employed homemakers than by employed homemakers, and (2) homemakers than by husbands. Specifically, these differences would lie in the areas of:

a. physical care of children,

b. family and community relations,

c. time management of household tasks and time spent with children,

d. food preparation,

e. outdoor care of the home, and

f. care of clothing.

Limitations of the Study

Because of the structure and criteria of the regional study, several limitations of this study were to seen. First, the study was descriptive rather than experimental in design. The raw data were secured from three states, representing 105 interviews based on a selected sample with employed homemakers, husbands of employed homemakers, non-employed homemakers, and husbands of non-employed homemakers. In the regional investigation, adolescents were also interviewed, but these subjects were not used in the

present study because the sample was too small. Also, the present study focused on adult roles as perceived by adults.

The number of interviewees in each group varied with 29 husbands of non-employed homemakers, 28 non-employed homemakers, 28 employed homemakers, and 20 husbands of employed homemakers. As such, the analysis of data was concerned with percentages of the frequencies of expressed expectations of homemakers. Each interviewee was a member of an intact family with at least one child living in the home. The use of persons from intact families represented a limitation of the study since it is evident that there are childless and one parent families as well as other family compositions.

Definitions

The following definitions were used throughout this study:

Homemaker. A homemaker was depicted as a woman. The homemaking responsibilities of the husband and other family members were recognized, but were limited by this study in order to focus on the wife-mother role.

Expected Role of the Homemaker. The expected role was that foreseen image influenced by what the husband expects, what the children need, and what the standards are among friends and in the neighborhood. In a more specific vein, the term in the study related to tasks and functions anticipated of the homemaker.

Expectation. Expectation referred to those behaviors presumed to constitute the homemaker's role.

Data were secured from four groups: non-employed homemakers, husbands of non-employed homemakers, employed homemakers, and husbands of employed homemakers. Data were then paired and two general comparisons emerged based on employment grouping and spouse grouping.

Employment Comparison. The first analysis made, based on employment, compared the combined data from non-employed homemakers and husbands of non-employed homemakers with the combined data from employed homemakers and husbands of employed homemakers. Hereafter, reference to the employment analysis will be by the symbol E.

Spouse Comparison. The second analysis made, based on spouse grouping, compared the combined data from non-employed homemakers and employed homemakers with the combined data from husbands of non-employed homemakers and husbands of employed homemakers. Hereafter, reference to the spouse analysis will be by the symbol S.

REVIEW OF THE LITERATURE

The twentieth century has run the gamut in attitudes expressed on the subject of a woman engaging in the working world. In 1915, Black noted:

> It is a general opinion and especially, perhaps, among persons of the middle class, that the working for money of married women is to be deplored. That such work is sometimes made necessary by poverty will be conceded, and wives who earn because they must are pitied; while wives who work not for their own or their children's bread, but rather for butter for it, are regarded as at least somewhat blameworthy. The underlying implication seems to be that the wife and mother who thus works must be withdrawing from the care of her home and her children time and attention of which they are really in need . . . (p. 1).

Neither the general public nor social scientists were prepared for reports which began to appear in 1955 and the following years that more than a third of the mothers of school-age children were employed. These reports, emanating from census surveys through textbooks, newspapers, and magazines, sharply contradicted the traditional image of the mother. Social scientists and the general public had been aware of the employment of mothers in World War II, but had regarded this as a temporary adaptation to a unique set of wartime conditions (Durand, 1946). Generally, it was felt that the roles of mother and employee were incompatible and could be reconciled only in an emergency.

Major social changes evoke more negative than positive emotions, as people confuse the familiar with the superior.

In the case of the working mother, Nye and Hoffman (1963) cited social scientists who took the negative view, expressing a relationship between maternal employment and higher divorce rates, more crime and delinquency, increased alcoholism. Other sociologists contended that employment was gravely detrimental to children. Only a small minority, Komarovsky (1953) and Landis (1955) to cite two, took a position favoring the change as providing a wider variety of activities for women and permitting fuller use of their training and talents. For this reason, they felt that the mother's working might actually improve family life. Others have pointed out that the growth and development of the personalities of children are part of an intricate complex of influences and experiences that are operative whether the mother is employed outside the home or remains in the home. Phillips (1966) has gone further in supporting the theory that in our society the activities of women cannot be confined to the home, for the conditions in the community and in the nation have a great effect on the family.

Role Conceptions

Role, in general, may be defined as the behavior expectations impinged upon the incumbent of any social position. Yet, when viewing woman's role, there is not necessarily concensus between the different expectations. In fact, there is frequently conflict or inconsistency (Gross,

Mason, & McEachern, 1958). Two main theories regarding a woman's role in her family are the traditional Western European idea that the woman's place is in the home and the contrasting theory that a woman's position is relative to the society in which she lives (Koos, 1953). Williams (1952) stated that there are important pressures to preserve the traditional role of women, and that some social arrangement such as extra family services, low birth rates, and the nuclear family are necessary to insure that the necessary functions are performed.

In the United States, the role of women as housewives and mothers has been altered radically during the twentieth century. Up to this time, spinning, weaving and making clothes, baking bread, curing meat, making soap, brewing beer, and many other processes now carried out in factories, as well as a good deal of teaching and nursing, were part of a woman's household routine (Myrdal & Klein, 1956). After this time, many tasks for women became simplified, labor-saving devices came into widespread use, families with fewer children emerged, and schools took over more tasks of raising and educating children.

Woman's dual role has come into the forefront in a discussion of homemakers. Weil (1962) raised the question of how married women who plan to or do participate in the world of work perceive this role, since role perception is not only necessary for action, but is the first stage of action

itself. Foote's discussion (1954) of the change in the role of women used the term "professionalization" to summarize the interrelationship of variables and trends which appeared most influential in redefining a woman's role in marriage. These variables would include such things as freer access to higher education, less time in conducting a household, receiving the husband's assistance, and society's attitude toward working mothers.

Swinging the pendulum to the extreme, Women's Liberation advocates have stated that the concepts of the "women's role" and "woman's work" are absurd, as are the differences between the sexes and the resulting rigidity of sex-role tasks (Rollin, 1971). Millet (1970) sees communes as a desirable alternate to family life and a solution to women's problems. Other advocates urge round-the-clock, state-supported child-care centers to rid mothers of unpaid domestic servitude at home. Their eschatological aim is to topple the patriarchal system of a man-controlled society. Thus, the Women's Liberation movement spurns the dual role concept for modern woman.

Even though the employed woman is a widely recognized part of today's society, many women still cling to the traditional concept of a "woman's place is in the home." Empey's survey (1958) revealed that eight out of ten college women prefer marriage to a career, and when it came to selecting a career even though married, 75 percent preferred

work relating to their role as a homemaker. Several studies have been conducted to distinguish those women who are career-oriented and those who are home-oriented. Hoyt and Kennedy (1958) were able to differentiate between the two groups by their scores on the Strong Vocational Interest Blank for Women and on the Edwards Personality Preference Schedule. On the other hand, Avila (1967) discovered no basic personality differences within the two groups except on a typological basis. Other studies made by Vetter and Lewis (1964) and Kammeyer (1967) of differences in personality as it affects career or home preference revealed no significant difference per se.

Dual Role Fulfillment

Among the many factors which may facilitate or hinder the employment of the wife-mother, the largest group includes those which influence the extent to which the woman's time is required for fulfillment of her roles as housewife and mother. A study was made by Wenck (1967) to determine if employed homemakers manage their home differently than non-employed homemakers. Employed homemakers lacked time for specific projects, relaxation and personal development, maintaining well-arranged cupboards and closets, helping children with schoolwork, and careful shopping for clothing and household items. However, time management was the biggest problem not only for the employed homemakers, but also

for the full-time homemakers. In a report on problems and concerns of working mothers, Whatley (1963) found those activities reported to be a "big problem" were the ones having to do with large tasks which were not regularly in the daily routine, such as washing windows and waxing floors. As a group, it was noted, employed mothers were not using the manpower of family members or hired help. Instead, they tried to do most of the work they would do individually as full-time homemakers and also to work in the labor force. Hunsicker (1967) questioned employed homemakers about time and money management problems encountered. The most frequently indicated money problems included emergency funds, anticipating future needs and staying within a budget. Many homemakers experienced difficulty with purchasing decisions.

Along with the factors which will determine the confidence with which a woman plays either the homemaker or the working mother role is the matter of her standards in homemaking and child care. One of the apparent barriers would seem to be the emphasis on the nuclear family in which so many of the instrumental tasks of keeping the family going are traditionally those of women (Rossi, 1968). The "overload," to use the Rapoports' term (1969), is considerable. Many questions can be raised about the institution of the nuclear family and the constraints it places on the activities of both parents (Winch, 1970). Ginsberg (1958) suggested that many of the gains which have been achieved by

the automation of housekeeping have been counterbalanced or wiped out by a rise in standards of housekeeping. Although there are more efficient laundering systems, concomitantly there is a higher standard of cleanliness and appearance in dress. Women have been freed from the time-consuming drudgery of housework, but they are confronted by much higher standards of child care than ever before and are expected to spend many more hours with their children than was the case in former years. The working woman cannot afford to respond to these ever rising expectations. According to Siegel (1963), the strong achievement motivation which may be found in many working women might be expressed in a kind of exhaustive and exhausting perfectionism which is probably not only damaging to children but also destructive to the woman's own composure. The testimony of working mothers who judged themselves as successful is that they have needed to be relaxed about housekeeping and be willing to use some of the money they earn to pay for having housekeeping and routine child care done by others. Ruderman (1968) has placed focus upon the need for further development of supplementary child care services and facilities.

The maximum well-being of the family is a major concern of the working mother, especially as it affects her children. Nye and Hoffman (1963) pointed out, however, the importance of recognizing the needs of each family member. Oettinger (National Manpower Council, 1958) prefaces any comments on

the effect of the working mother on children by "It depends." Considerations include the kind of mother, the kind of child, the kind of family, how much the mother works, what she does, why she works, the age of the children, provisions for their care, and how they perceive their mother's work. Oettinger further recommends that few mothers with children under six should work full time and even fewer with children under three, because these are critical years in child development. However, since each case is unique it must be considered as such. Research in this area is complicated by the complexity of the problem and the many variables that are influential. The mother with young children who works part-time appears in a favorable light in research conducted to date.

There is no doubt that maternal employment affects family schedule and activities, but very few attempts have been made to study the relationships. One study by the U. S. Department of Agriculture (1959) on family food buying indicated that maternal employment does not result in a poorer diet but does involve the purchase of more pre-packaged foods which provide greater convenience at a higher cost.

Powell (1965) suggested that maternal employment is positively related to: (1) juvenile delinquency in the middle class, but not in the lower class, (2) positive effects on the adolescent child if employment is part-time,

(3) encouragement of independence in the child, (4) harassment and guilt feelings of the mother when there are preschool children, (5) child's concept of the female role, (6) son's withdrawal and over dependence, and (7) strong "achievement" motive in the child.

In spite of the difficulty of drawing many definite conclusions about the effects on their children of mothers' working, the effects of the single factor of maternal employment seem to be small and different for each child involved. In general, researchers tend to agree that the quality of relationship while the parent and child are together is more important than the amount of time spent together.

Career orientation of the wife and the favorable attitude of the husband were the determining factors in influencing the actual or planned work participation reported in a study by Weil (1961). His discussion of familial roles on a more popular level emphasized the change of division of labor within the home in terms of the husband's assistance with chores. This analysis suggested the factor of the husband's help with child care especially as it affects the wife's participation in the labor force. Mailer (1971) described a marriage contract which included the division of jobs and time for which each parent is responsible. It went further to list tasks the husband was to be responsible for, such as house-cleaning and making beds. Haavio-Mannila

(1967) concluded that the traditional division of labor between the sexes still persists in most families, although two-thirds of the wives are working outside the home. Furthermore, the dissatisfaction expressed by working women was more often with their husband's participation in household tasks than with their own status at work or in social activities. This dissatisfaction was found whether or not the women's work position was inferior to that of men.

Pace (1970) investigated the place of personal and background factors in the attitudes of married women toward married women's employment. The study revealed that the groups who favored women's employment were those who had worked since marriage, had some college or vocational training, had family incomes of $10,000 or more, perceived husbands, children, and peers as approving of their employment, and were employed in higher status occupations.

Blood (1965) concluded that the old asymmetry of male-dominated, female-serviced family life is being replaced by a new symmetry, both between husbands and wives and between brothers and sisters. He concluded further that the converging roles of men and women result in the family's being less segregated internally, far less stratified into different age generations and different sexes, enabling family members to share more of the activities of life together, both in work and play.

Siegal and Haas (1963) summarized the contrasts between

working mothers and those who stayed at home to be: (1) working mothers' husbands are more favorable toward maternal employment than other husbands, (2) working mothers' families are smaller than the families of non-working mothers, (3) their relations with their husbands are apparently neither more nor less satisfactory than those of non-working mothers, (4) their families are somewhat more equalitarian in their attitudes toward division of authority and of labor in the home, and the family members are somewhat more active in the routine running of the household then is typical in other families, and (5) working mothers' attitudes and reported practices with respect to child-socialization are little different from those of other mothers. With the exception of the difference in family size, the differences which were found between working mothers and others were not extreme or dramatic.

Summary

As it has been previously noted, modern woman has a choice between career and marriage, or a combination of the two. The homemaker needs to decide how much time she will devote to her housework, within the limits imposed by necessity and budget. She can take the time necessary to do a thorough job or can continue for a long while with superficial straightening up; she can be quick and efficient or dawdle, prolonging work so that it is never finished. Rose

(1951) state that, employed or non-employed, the total number of things the average woman expects to do adds up to an impossible time schedule for her. She cannot do all these things or she will do them more superficially than she expects.

With regard to relationships within the family, researchers agree that it is the quality of time spent with family members by the homemaker that is important, not the quantity of time. Family members, too, must be willing to accept the fact of the homemaker taking on part of the financial responsibility of the group and help to resolve problems which may occur in the day-to-day household routine.

When the role expectations of the employed homemakers and non-employed homemakers are analyzed, the question arises as to whether or not there is a significant difference between the two. The only difference encountered may be their initial choice of work or non-work. Or, both groups may tend to have the same perceptions of their role in the particular framework within the home. The basic problem, however, stems from the dualist role of the employed woman. She must be able to adjust to and coordinate both roles, assessing the extent to which she can perform each role successfully without detriment to the other.

PROCEDURE FOR THE STUDY

The design of the present study was structured after the Southern regional research project, "Evaluation of Vocational Home Economics Programs in Terms of the Effectiveness of Full-Time Homemakers and Homemakers Who Are Also Full-Time Employees," completed in March 1971. In evaluating homemaker effectiveness, it was assumed by this researcher that the extent to which a homemaker is effective in a particular task relates directly to the amount of emphasis placed upon an expressed role expectation.

Description of the Subjects

In the first phase of the regional study, a selected sample of 105 adults plus 30 adolescents were chosen from each of the three participating states, Georgia, Kentucky, and South Carolina. The 105 adults comprised the sample of the present study. The sample included the following kinds of people:

1. Non-employed homemaker (H),
2. Husband of non-employed homemaker (HU),
3. Employed homemaker (EH), and
4. Husband of employed homemaker (HUE).

Socio-economic levels were controlled by selecting on a proportionate basis subjects for whom the husband's

occupation represented one of three general occupational classifications: professional, management or technician, and working class. Geographic location was controlled by selecting subjects from city, town, and rural areas. Both Negro and white subjects were included in the sample. In the present study, however, a comparison was not made based on these particular variables due to the size of the sample.

Collection of the Data

The data which were used in this study were collected during the initial phase of the Southern regional research project according to criteria developed by those researchers. The data used by this researcher were collected in Georgia, Kentucky, and South Carolina.

Expected behaviors of homemakers were identified through a series of interviews, using a tape recorder, in each of the three aforementioned states. Subjects responded to an open-ended question, "What do you think is expected of a homemaker?" Probes were used to elicit complete responses. Preliminary drafts of the interview schedules were tested in Georgia and South Carolina during the spring and fall of 1966. Accordingly, revisions were made both in the schedule and procedures following the testing.

The interviewer or research director in each of the three states contacted individuals known to meet the prescribed criteria. After assuring the participants of

anonymity, a time and place was determined for the tape recorded interview. The tape recordings were transcribed as soon as possible after completion of the interview.

The interview protocols were examined to identify each expectation that was expressed by the interviewee. Expectation referred to those behaviors presumed to constitute the homemaker's role. Each discrete idea of an expectation was identified and assigned a number to represent one of the following categories, arbitrarily chosen at the outset of the study:

1. Food and Nutrition
2. Clothing and Textiles
3. Housing (housekeeping, furnishings, decorating)
4. Child Care and Development
5. Personal Care and Development
6. Economics (budgeting and money matters)
7. Management (scheduling)
8. Community Activities (outside, social, church)
9. Family Relations
10. First Aid and Health

As the categorizing progressed, the original listing was revised to accommodate the responses adequately.

Each discrete work, phrase or sentence which represented an expectation expressed by an interviewee was typed on a 3 x 5 card. Each card further carried code numbers and letters which identified the respondent category, geographic

area and socio-economic level of the interviewee involved.

The researcher in each state categorized the behaviors from the respective interviews. Subsequently, the data from the three states were combined and a new structure for categorizing emerged. The basis for the new framework was the frequency count of discrete behavioral expectations. The framework comprised the following six categories arranged in rank order based on the three-state data:

1. Child Development
2. Family and Community Relationships
3. Family Economics and Management
4. Housing
5. Food and Nutrition
6. Clothing and Textiles

Selection of items for the criterion measure, Rate Yourself as a Homemaker, was based on combined data drawn from interviews with homemakers, husbands, and adolescents from the three states. Any expectation which occurred with a frequency of at least ten percent of the total number of expectations was selected. A measure of 116 items resulted. The original phrasing of the item was retained to the extent possible that would be consistent with clarity of meaning and brevity. A five point scale was devised with polar descriptions ranging from "This is true of me more often than of homemakers I know" to "This is true of homemakers I know more often than me."

In an effort to validate the instrument, it was administered by the regional researchers in Georgia and Florida to three groups of people. Homemakers were asked to rate themselves and to suggest the name of a friend who could rate them. The husband of each homemaker provided ratings for his wife. Scores were computed and compared between groups. In all three comparisons there was a positive correlation between the scores beyond the .05 level. In Georgia the highest correlation was between the homemakers' scores and husbands' ratings ($r = .625$). Second highest was between husbands' and friends' ratings ($r = .537$) and lowest was between homemakers' and friends' ratings ($r = .526$). Data secured from Florida revealed the highest correlation to be between the homemakers' scores and husbands' ratings ($r = .502$). Second highest was between husbands' and friends' ratings ($r = .425$) and lowest was between homemakers' and friends' ratings ($r = .377$). Since an r of approximately .265 was needed for .05 confidence level, the correlation between each pair of scores is highly significant, thus providing evidence of concurrent validation. The Spearman Rank Order Correlation was also employed and the coefficients were further evidence of validity (Cross, 1971, p. 13-14).

It was the purpose of the present study, however, to utilize the coded information cards of the non-employed homemakers, husbands of non-employed homemakers, employed

homemakers, and husbands of employed homemakers in a comparison of expressed expectations based on the employment (E) and spouse (S) groupings. Using the cards from the three states, each interviewee was rated by this researcher on an adaptation of the instrument, Rate Yourself as a Homemaker, according to his stated expectations of homemakers as described to the particular regional research project interviewer. This adaptation consisted of a check list for responses.

Accordingly, some revisions were made in the original instrument for the purpose of this study. Instead of using the original five point scale, a check list response pattern was employed. Two items, "Does the food buying" and "Purchases clothing to meet individual family needs" were deleted; expressed expectations of this nature were noted under the items "Does the shopping for food" and "Buys clothes for the family," respectively. Two items, "Maintains an attractive appearance" and "Sews" were added by this researcher because of their frequency on the cards and for clarification of other items.

Analysis of Data

The analysis of data was concerned with revealing items which were significant in difference between the percentages of the combined groups in the E and S comparisons.

The number of responses for each item on the instrument,

Rate Yourself as a Homemaker, in each separate group were counted. Data were then paired based on the E and S comparisons, and four groups emerged:

1. Non-employed homemakers and husbands of non-employed homemakers
2. Employed homemakers and husbands of employed homemakers
3. Non-employed homemakers and employed homemakers
4. Husbands of non-employed homemakers and husbands of employed homemakers.

The number of group responses were calculated for each item. Due to the variance in the number of subjects within each group, percentages were derived from the frequencies of expressed expectations.

To determine how much difference was needed to make a judgement that there was a significant difference (D) between percentages not due to chance, the test for "Significance of Difference between Two Proportions from Different Universes" was used (McCormick, 1941). Based on the number within groups, it was determined that a value of at least 2.00 was the numerical level of acceptance of significant difference. Expert opinion recommended that a value of 3.00 and above would indicate that a highly significant difference had occurred.

FINDINGS

The regional criterion measure, Rate Yourself as a Homemaker, included items in each of six categories of expectations:

1. Child Development
2. Family and Community Relations
3. Family Economics and Management
4. Housing
5. Food and Nutrition
6. Clothing and Textiles

The present investigation involved an adaptation of the original measure to permit examining frequency responses by groups within categories. A check list response evolved, using the items included in the original measure. A listing of items by categories may be found in the appendix.

Interviewee statements referring to specific items were then recorded on the checklist. Frequencies of expressed expectations were counted in each of the four groups: employed homemakers, husbands of employed homemakers, non-employed homemakers, and husbands of non-employed homemakers. Frequencies of expressed expectations were then combined to provide employment and spouse groupings. In the employment grouping frequencies of expressed expectations of employed homemakers and husbands of employed homemakers were combined

as were the non-employed homemakers and husbands of non-employed homemakers. In the spouse grouping frequencies of expressed expectation of employed homemakers and non-employed homemakers were combined as were the husbands of employed homemakers and husbands of non-employed homemakers. From the number of responses in each group, the percentage was thus calculated (Appendix, Table 7).

Items within each category were analyzed to determine whether a significant difference (∈D) occurred between groups in the employment (E) and spouse (S) comparisons. Those items, representing expectations, which revealed a significant difference are presented in Tables 1-6. Each table presents one category of expectations and the numerical values derived from the formula for finding the significant difference between the two groups being compared. Only those values found to be significantly different, with a value of at least 2.00 are included. Those values which fall between 2.00 and 2.99 represent the five percent level of significance. A value of 3.00 and above, representing the one percent level, reveals a high level of significance.

Child Development

The first and largest category of expectations of homemakers, that of Child Development, consisted of 36 discrete ideas which were stated as items in the research instrument. Statements included referred to religious and moral

guidance, socialization of the child, and physical care-first aid. The results obtained indicated that 11 items differed significantly, four of which were highly significant, in the E comparison. In the S comparison, a total of 13 items differed significantly with eight at a high level of acceptance (Table 1). Numbers falling in a particular column indicate that that group more frequently has expressed the specific expectation. If a value of 2.00 to 2.99 appears, a five percent level of acceptance is indicated. Those differences found to be highly significant (one percent level) are indicated by values in excess of 3.00.

TABLE 1

Items Differing Significantly in the Child Development Category

Item	ED Level of Acceptance			
	E Comparison		S Comparison	
	H+HU	HE+HUE	H+EH	HU+HUE
4. Takes children to Sunday School & church			2.35	
5. Encourages having friends of children in the home			5.45*	
6. Supervises the recreational activities of children			2.81	
8. Knows where children are at all times			2.93	
9. Teaches children sense of responsibility			4.37*	
10. Gives children responsibility	2.27		3.92*	
13. Provides for the physical care of children	2.38			4.88*
14. Sees that provisions are made for medical and dental care	3.80*			
15. Helps prevent injuries to children	2.27			
16. Is able to care for minor accidents	5.40*			
18. Knows when to take children to doctor	2.00			
20. Spends time with children			2.87	
22. Understands the child's point of view			2.35	
23. Helps child with his problems			4.80*	

(Table continued on next page)

TABLE 1

Item	∈D Level of Acceptance			
	E Comparison		S Comparison	
	H+HU	HE+HUE	H+EH	HU+HUE
25. Disciplines the child	2.75			4.18*
26. Sets limits for the child		2.03		
29. Provides for children's schooling			3.44*	
32. Teaches child how to do household duties	2.85			
33. Helps child with personal problems		3.05*	4.19*	
34. Helps with child's homework		3.71*		

Note.--Column indicating ∈D level is that group more frequently expressing expectation.
*difference significant at the one percent level.

Comparison of employed (E) groups and spouse (S) groups revealed four expectations in which significant differences occurred in both categories. The two items "Provides for the physical care of children" and "Disciplines the child" were expressed more frequently by the non-employed group in the E comparison and by the husbands in the S comparison. The non-employed group in the E comparison and the homemaker group in the S comparison expressed more frequently the item "Gives children responsibility." The item "Helps children with personal problems" was expressed more by the employed

group in the E comparison and by the homemaker group in the S comparison.

E Comparison

The greatest amount of difference in the E comparison was in the area of physical care and first aid which was expressed more by the non-employed group; the items "Is able to care for minor accidents" and "Sees that provisions are made for medical and dental care" were highly significant in difference. Other significant differences in items expressed more frequently by the non-employed group occurred in the expectations, "Helps prevent injuries to children," "Knows when to take children to doctor," and "Teaches child how to do household duties."

The employed group expressed more concern for the items, "Helps with child's homework" and "Helps child with personal problems," which were highly significant in difference. In addition, the employed group mentioned the expectation "Sets limits for the child" more frequently than did the non-employed group.

S Comparison

From the 13 items in the S comparison which differed significantly, only two items were expressed more frequently by husbands. These items, "Provides for the physical care of children" and "Disciplines the child," were highly significant in difference.

The homemaker group more frequently cited expectations

having to do with the day-to-day relationship with the child. Significantly higher in difference for the homemakers were items "Encourages having friends of children in home," "Helps child with his problems," "Teaches children to have a sense of responsibility," "Gives children responsibilities," and "Provides for children's schooling." Other areas cited more by homemakers were "Knows where children are at all times," "Spends time with children," "Supervises the recreational activities of children," "Takes children to Sunday School and church," and "Understands the child's point of view."

Family and Community Relations

The Family and Community Relations category of expectations of homemakers consisted of 22 items, more specifically dealing with participation in activities outside the home, husband and family relationships, and personal development. The results indicated that five items were significantly different in the E comparison, with two being highly significant. The S comparison resulted in ten items that were significantly different; seven were of high significance (Table 2).

TABLE 2

Items Differing Significantly
In the Family and Community Relations Category

Item	∈D Level of Acceptance			
	E Comparison		S Comparison	
	H+HU	HE+HUE	H+EH	HU+HUE
39. Cooperates with school			6.31*	
42. Sees that the family does things together			5.17*	
44. Builds a feeling of family unity			3.44*	
45. Creates a pleasant home atmosphere		2.73	3.49*	
47. Is a good homemaker		2.55	2.96	
48. Is a good mother			3.89*	
50. Loves, understands, and makes her husband feel important		3.18*		
51. Is willing to adjust to her husbands moods and needs			2.13	
52. Gets along with people		3.00*	3.09*	
53. Is a good hostess			3.66*	
55. Has a balance of activities between work, social affairs, and family		2.86	2.59	

Note.--Column indicating ∈D level is that group more frequently expressing expectation.
*difference significant of the one percent level.

Comparison of the E and S groups revealed four expectations in which significant differences occurred in both categories. The employed group in the E comparison and the

homemaker group in the S comparison expressed more frequently the items "Creates a pleasant home atmosphere," "Is a good homemaker," "Gets along with people," and "Has a balance of activities between work, social activities, and family."

E Comparison

In the E comparison, the five expectations which differed significantly were all expressed more frequently by the employed group. The items highly significant in difference were "Loves, understands, and makes her husband feel important" and "Gets along with people."

S Comparison

All of the expectations in the S comparison which displayed a significant difference were expressed more by the homemaker than by the husband group. Those expectations highly significant in difference included the following: "Cooperates with school," "Sees that the family does things together," "Is a good mother," "Is a good hostess," "Creates a pleasant home atmosphere," "Builds a feeling of family unit," and "Gets along with people."

Family Economics and Management

The Family Economics and Management category of expectations of homemakers consisted of ten items. Of these, three items differed significantly in the E comparison with two items of high significance. The S comparison resulted in

three items significantly different, one item being highly significant in difference, (Table 3).

TABLE 3

Items Differing Significantly in the Family Economics and Management Category

Item	∈D Level of Acceptance			
	E Comparison		S Comparison	
	H+HU	EH+HUE	H+EH	HU+HUE
59. Takes care of paying the bills			2.13	
60. Is a good shopper			5.21*	
61. Knows the amount of household expenses		2.43		
67. Manages her time	4.53*		2.87	
68. Considers home and family concerns of more importance than work outside the home	5.29*			

Note.--Column indicating ∈D level is that group more frequently expressing expectation.
*difference significant at the one percent level.

One item, "Manages her time," was found to be significantly different in both the E and S comparison, being expressed more frequently by the non-employed and homemaker groups.

E Comparison

Two items in the E comparison were highly significant in difference with the non-employed group expressing these expectations more frequently. These items were "Considers

home and family concerns of more importance than work outside the home" and the previously cited "Manages her time." Mentioned more frequently by the employed group was the expectation "Knows the amount of household expenses."

S Comparison

All the expectations which resulted in significant differences were expressed more frequently by the homemaker group than by the husbands. The item "Is a good shopper" was highly significant. Other items revealing significant difference included "Manages her time" and "Takes care of paying the bills."

Food and Nutrition

The Food and Nutrition category of expectations of homemakers was composed of 17 items. Of these, the E comparison resulted in ten items significant in difference, five of which were highly significant. The S comparison revealed eight items significant in difference, six of which were highly significant (Table 4).

TABLE 4

Items Differing Significantly in the Food and Nutrition Category

Item	∈D Level of Acceptance			
	E Comparison		S Comparison	
	H+HU	EH+HUE	H+EH	HU+HUE
69. Does the shopping for food		2.31		3.35*
70. Stays within planned food budget			3.21*	
71. Takes advantage of advertised food specials		2.31		
72. Has meals ready on time		2.89		
74. Manages the preparation of food for the family	3.82*			
76. Knows how to plan well-balanced meals		2.23		
77. Prepares nourishing meals		3.18*	2.24	
78. Provides food for children		4.92*		
79. Supervises proper eating of food			3.42*	
81. Preserves food by canning and/or freezing			4.76*	
82. Makes a garden	3.32*		2.13	
83. Uses food to give family pleasure	3.11*			
84. Has meals at home		2.31	3.70*	
85. Prepares and serves attractive meals			3.01*	

Note.--Column indicating ∈D level is that group more frequently expressing expectation.
*difference significant at the one percent level.

Four items were significantly different in both the E and S comparison. The employed group in the E comparison and the homemakers group in the S comparison mentioned more frequently the expectations "Has meals at home" and "Prepares nourishing meals." The item "Does the shopping for food" was expressed more by the employed group and by the husband group. "Makes a garden" was more frequently expressed by the non-employed group and by the homemaker group.

E Comparison

In the E comparison the non-employed group expressed three expectations more frequently than the employed group. These three items, all highly significant in difference, were "Manages the preparation of food for the family," "Makes a garden," and "Uses food to give family pleasure."

The employed group expressed more concern for the items "Provides food for the children" and "Prepares nourishing meals" which were highly significant in difference. In addition, the employed group mentioned the expectations "Has meals ready on time," "Does the shopping for food," "Has meals at home," "Takes advantage of advertised food specials," and "Knows how to plan well-balanced meals."

S Comparison

From the eight items in the S comparison which differed significantly, only one item was expressed more frequently

by husbands. This item, "Does the shopping for food," was highly significant in difference.

Among the items more frequently cited by the homemakers, the following were highly significant in difference: "Preserves food by canning and/or freezing," "Has meals at home," "Supervises proper eating of food," "Stays within planned food budget," and "Prepares and serves attractive meals."

Housing

The Housing category, with the smallest frequency of expectations of homemakers, consisted of nine items having to do with furnishing and maintenance of the home and outdoor care. The results obtained in the E comparison indicated that three items were significant in difference with two being highly significant. The S comparison indicated that one item was significant in difference. (Table 5).

TABLE 5

Items Differing Significantly in the Housing Category

Items	∈D Level of Acceptance			
	E Comparison		S Comparison	
	H+HU	EH+HUE	H+EH	HU+HUE
88. Selects and hangs draperies		3.70*	2.63	
93. Plants and cares for flowers and shrubbery	3.35*			
94. Cares for yard	2.28			

Note.--Column indicating ∈D level is that group more frequently expressing expectation.
*difference significant at the one percent level.

E Comparison

Two items were highly significant in difference. One, "Selects and hangs draperies," was expressed more by the employed than by the non-employed group. The other expectation, "Plants and cares for flowers and shrubbery," was expressed more by the non-employed group. This group also mentioned the item "Cares for yard" more often than did the employed group.

S Comparison

One item differed significantly in this comparison; the homemakers more frequently than the husbands expressed the expectation "Selects and hangs draperies."

Clothing and Textiles

The Clothing and Textiles category of expectations of

homemakers consisted of 22 discrete items. Statements included referred to purchasing practices, clothing construction and maintenance. The results obtained indicated that five items differed significantly, four of which were highly significant, in the E comparison. In the S comparison, a total of ten items differed significantly with seven of high significance (Table 6).

TABLE 6

Items Differing Significantly in the Clothing and Textiles Category

Item	∈D Level of Acceptance			
	E Comparison		S Comparison	
	H+HU	EH+HUE	H+EH	HU+HUE
96. Sews clothing for self			3.26*	
97. Sews clothing for children			3.26*	
98. Provides clothing		3.20*		
102. Irons and presses clothes	3.48*			
103. Mends and repairs the clothing			2.36	
104. Supervises the care of clothing		2.31	3.86*	
105. Keeps clothing ready to wear when needed			4.74*	
106. Teaches children to care for clothes			3.44*	
107. Stores clothes where they can be found	3.11*			
109. Considers time and money in making clothing choices	3.11*			
111. Provides clothing suitable for weather			4.38*	
112. Dresses children properly			2.87	
113. Reads clothing labels			2.96	
114. Recognizes the quality of fabric and construction of clothing			4.01*	

Note.--Column indicating ∈D level is that group more frequently expressing expectation.

*difference significant at the one percent level.

E Comparison

Four items were highly significant in difference in the E comparison. Three of these items, "Irons and presses clothes," "Stores clothes where they can be found," and "Considers time and money in making clothing choices" were expressed more by the non-employed than by the employed group. The other expectation highly significant in difference, "Provides clothing," was expressed more by the employed group. Also expressed more by the employed group was the expectation "Supervises the care of clothing."

S Comparison

All of the expectations in the S comparison which revealed a significant difference were expressed more by the homemakers than by the husbands. Highly significant differences were found in the following seven items: "Keeps clothing ready to wear when needed," "Provides clothing suitable for weather," "Recognizes the quality of fabric and construction of clothing," "Supervises the care of clothing," "Teaches children to care for clothes," "Sews clothing for self," and "Sews clothing for children."

DISCUSSION OF FINDINGS

Of the 37 items which differed significantly in the E comparison, 18 items were expressed more frequently by the non-employed than by the employed group. The employed group mentioned 19 expectations more frequently. In the S comparison, 45 items revealed a significant difference between the paired groups, three of which were expressed more frequently by the husbands than by the homemakers. These three all indicated a highly significant difference.

In general, the results indicated that the employed group expressed more concern for those tasks which were necessary for the basic functioning of the household. Such expectations included "Is a good homemaker," "Sets limits for the child," "Has meals at home," "Prepares nourishing meals," "Provides clothing," and "Knows the amount of household expenses." From the findings, however, it appears that this study tends to agree with Whatley (1963) in that employed mothers try to do most of the work they would individually do as full-time homemakers.

It was interesting to note that the non-employed group perceived various time-consuming tasks to be an integral component of the homemaker role. Such expectations included "Irons and presses clothes," "Makes a garden," "Plants and cares for flowers and shrubbery," and "Cares for yard." Yet,

it was this same group of non-employed homemakers and husbands of non-employed homemakers who more frequently mentioned those expectations relating to time management. The items "Manages her time," "Considers time and money in making clothing choices," and "Stores clothes where they can be found" were all cited by the non-employed group. It would appear, therefore, that the employed group believes time-consuming tasks should be relinquished upon entering the world of work and extra family services utilized to take on the responsibilities once reserved for the homemaker. As far as the time management aspect is concerned, this study tends to agree with Wenck (1967) that time management is not a concern solely of employed homemakers, but also of non-employed homemakers.

Along the same line, Wenck (1967) noted that employed homemakers lacked time for helping children with homework, personal development and relaxation, and careful shopping for clothing and household items. The present study, however, revealed that items in this category were expressed more by the employed group than by the non-employed group. The items "Helps with child's homework," "Gets along with people," "Does the shopping for food," and "Takes advantage of advertised specials" reveal a discrepancy between this study and that of Wenck's. However, it must be kept in mind that Wenck's study was concerned with <u>actual</u> role

performance whereas the present study made an inquiry into the expected role of the homemaker.

The United States Department of Agriculture has suggested that employed homemakers purchase more pre-packaged foods which provide greater convenience at a higher cost. This study revealed that the employed group more frequently expressed the expectation "Takes advantage of advertised specials." No doubt, employed and non-employed homemakers as well utilize convenience foods, but perhaps the employed group search for moderate prices.

Of the three expectations expressed more frequently by the husbands in the S comparison were two items dealing specifically with child development: "Provides for the physical care of children" and "Disciplines the child." The nature of the male species may be to leave such tasks of discipline to the wife. It would seem that these two particular expectations would be a joint responsibility. Further research into this area might provide more insight.

In the same category of child development, the E comparison revealed significant differences in items dealing with physical care and first aid. The non-employed group more frequently expressed the expectations "Provides for the physical care of children," "Is able to care for minor accidents," "Sees that provisions are made for medical and dental care," "Helps prevent injuries to children," and "Knows when to take children to doctor." It may be assumed

that the mere day-to-day presence of the non-employed homemaker with the child accounts for the frequency of these particular expectations.

Relationships as opposed to task performances were foremost in the expectations expressed by the employed group. The item "Loves, understands, and makes her husband feel important" was mentioned more frequently by the employed group. It may be conjectured that this particular ideal may become an issue when the wife works, as employment may threaten the husband-wife relationship especially should there not be whole-hearted approval from the husband of his wife's employment status. It appears that the expectations expressed by the non-employed group are more task-oriented. Further research in this area would be beneficial.

Relationships, too, were expressed more by homemakers than by husbands, especially in the child development area. Homemakers foresaw their role as companion, counselor, and mother to their child. Again, the larger proportion of time the child spends with the mother than with the father may account for the differences in expectations between the two groups.

The item, "Considers home and family concerns of more importance than work outside the home," was expressed, predictably, more frequently by the non-employed than by the employed group. The basic choice of non-employment appears to account for the high significance of difference. On the

other hand and in line with their choice of employment, the employed group mentioned more frequently the item "Has a balance of activities between work, social affairs, and family."

SUMMARY

The purpose of the present study was to make a comparison of role expectations of homemakers to determine if significant differences occurred between groups composed of non-employed homemakers, husbands of non-employed homemakers, employed homemakers, and husbands of employed homemakers. Data utilized were collected by regional investigators as part of the initial phase of the study "Evaluation of Vocational Home Economics Programs in Terms of the Effectiveness of Full-Time Homemakers and Full-Time Employees Who Are Also Homemakers." Three states, Georgia, Kentucky, and South Carolina, participated in the preliminary study.

Collection of data was by means of tape recorded interviews with 105 adult subjects. From responses to questions concerning the role expectations of homemakers, discrete ideas were noted and transferred to 3 x 5 cards. The present investigator recorded the responses from the cards onto a check list adaption of the questionnaire, Rate Yourself as a Homemaker. An analysis of significant differences was made according to combined groupings of paired subjects. Comparisons were made based on employment (E) and spouse (S) groupings.

Conclusions

In the comparisons of role expectations of homemakers expressed by husbands and wives, employed and unemployed, several conclusions are to be drawn.

Homemakers, employed and non-employed, perceive their role more comprehensively than do husbands. In all categories of expectations, homemakers' responses were more encompassing; husbands were less verbal. The employment comparison showed a close equality in the number of responses. However, a pattern of responses appeared. The employed group cited items dealing with relationships more frequently than did the non-employed group which tended to think more in terms of specific task performances.

In relation to the hypotheses proposed by this study, therefore, the preceding statements seem to affirm the hypothesis that homemakers foresee their role in greater detail than do husbands. This study does not support the hypothesis that the non-employed group would foresee the role of homemakers to a greater extent than the employed group. The hypotheses of this study also predicted that differences would occur in the areas of:

1. physical care of children,
2. family and community relations,
3. time management,
4. food preparation,

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5. outdoor care of the home, and

6. care of clothing.

Differences in these categories did occur, with the employed and non-employed groups both expressing particular expectations more frequently. From this study observations which may be made include:

1. The employed group appears more concerned with personal relationships with the child; the non-employed group with physical care.

2. The employed group expressed more frequently expectations dealing with family and community relationships than did the non-employed group.

3. The non-employed group expressed greater concern for time management than did the employed group.

4. The employed group more frequently mentioned expectations dealing with the preparation of an adequate diet for family members. The non-employed group saw food as a pleasurable experience for the family.

5. The non-employed group in all instances more frequently mentioned expectations relating to outdoor care of the home than did the employed group.

6. Few discriminatory differences occurred in the clothing and textiles category. The employed group were concerned with providing and supervising the care of clothing. However, the non-employed group appeared to feel that the actual care of clothing was the homemaker's responsibility.

Recommendations

In light of the ever-increasing movement of women into the world of work, it is necessary for both men and women to re-evaluate the role of the homemaker within the family organization. Homemaking tasks previously delegated to the wife-mother may be shifted to other family members. Walker's recent research (1971) indicated, however, that the amount of time a man helps around the home does not vary with the amount of time the wife works outside the home. In view of findings such as this, an effort could be made in home economics programs to help families examine present thinking on sex roles. This might be indirectly accomplished by providing a strong program of home economics with quality instruction for both boys and girls in grades K through 12. Working cooperatively in such a manner, new sex roles for the future might be established.

The current Women's Liberation movement has much to say to home economists. First, in view of the increasing numbers of women into the working world, the argument for equal division within the home appears to be valid. Secondly, the movement criticizes a program of home economics for it feels that such a program acts as a perpetualizing agent for the traditional role of women. Perhaps a program that strives toward this end should be criticized. Indeed, it is the responsibility of home economics teachers today to prepare women and men to assume the <u>dual</u> role in adult life.

Clinging to old ideals of the woman's role in society may be self-destructive. It appears that the traditional role of women is becoming obsolete; indeed, the modern role is many-faceted.

It is suggested that the instrument used in the present study, Rate Yourself as a Homemaker, be used on a broader scale to compare expectations with actual performance ("I do") of employed and non-employed homemakers. The instrument might also be administered to one-parent families to ascertain if differences occur in their role expectations. A similar study might be conducted to focus on men and the husband-father role.

The administration of the instrument and resulting information may provide a basis for change in the curriculum of home economics programs. For example, the present study revealed greatest emphasis on child development and family and community relations. Hence, these two portions of the curriculum should receive proportionate attention in schools located in communities comparable to those where interviews were secured.

An appropriate education for women must be related to the totality of the challenges they will face in life. A need is felt for a long range view of the total life pattern of tomorrow's homemaker to ascertain whether concepts in curriculum planning will meet the needs of the expanded role of women. The desirability of providing an

educational base from which young women can draw knowledge is evident. The evidence suggesting implications for the education of young men is equally compelling.

BIBLIOGRAPHY

Albrecht, M. A complete guide for the working mother. Garden City, N. Y.: Doubleday, 1967.

Avila, D. Inverted factor analysis of personality differences between career- and homemaking-oriented women. Journal of Educational Research, 1967, 60, 416-418.

Banducci, R. Effect of mother's employment on the achievement, aspirations, and expectations of the child. Personnel and Guidance Journal, 1967, 46, 263-267.

Bayton, J. A. Role perceptions of young homemakers and nutrition education programs. Journal of Home Economics, 1965, 57, 347-350.

Black, C. (Ed.) Married women's work. London: G. Bell & Sons, 1915.

Blackburn, M. Girls prepare for dual role. American Vocational Journal, 1964, 39, 27.

Blood, R. O. Long-range causes and consequences of the employment of married women. Journal of Marriage and the Family, 1965, 27, 43-47.

Brandon, G. L. (Ed.) Research visibility; educating women for the world of work. American Vocational Journal, 1970, 45, 33-48 (ED 045 849).

Cain, G. G. Married women in the labor force. Chicago: University of Chicago Press, 1966.

Caudle, A. H. Financial management practices of employed and nonemployed wives. Journal of Home Economics, 1964, 56, 723-727.

Cross, A. Evaluation of vocational home economics programs in terms of the effectiveness of full-time homemakers who are also full-time employees. Athens, Georgia: University of Georgia, 1971.

Davies, V. A rapid method for determining the significance of difference between two percentages. Dittoed circular, Washington State University, Pullman, Washington, n.d.

Durand, J. D. Married women in the labor force. American Journal of Sociology, 1946, 52, 217-224.

Empey, L. T. Role expectations of young women regarding marriage and a career. Marriage and Family Living, 1958, 20, 152-155.

Eyde, L. D. Work values and background factors as predictors of women's desire to work. Columbus, Ohio: Ohio State University Press, 1962.

Fleck, H. Changing life patterns for women. Forecast for Home Economics, 1968, 14, F-17.

Foote, N. Change in American marriage patterns and the role of women. Eugenics Quarterly, 1954, 1, 254-260.

Friedan, B. The feminine mystique. New York: Dell Paperback, 1970.

Gianopulos, A., & Mitchess, H. E. Marital disagreement in working wife marriage as a function of husband's

attitude towards wife's employment. Marriage and Family Living, 1957, 19, 373-378.

Ginsberg, S. D. Changing attitudes about children. Pennsylvania University. Schoolmen's Week Proceedings, 1958, 45, 328-41.

Gross, N., Mason, W., & McEachern, A. Explorations in role analysis. New York: John Wiley & Sons, 1958.

Gruenberg, S. M., & Krech, H. S. The many lives of modern woman. New York: Doubleday, 1952.

Haavio-Mannila, E. Sex differentiation in role expectations and performance. Journal of Marriage and the Family, 1967, 29, 568-578.

Hartley, R. E. Children's concepts of male and female roles. Merrill Palmer Quarterly, 1960, 83-91.

Hoyt, D. P. & Kennedy, C. E. Interest and personality correlates of career-motivated and homemaking-motivated college women. Journal of Counseling Psychology, 1958, 5, 44-49.

Hunsicker, N. A. Management problems of young employed homemakers. (Masters thesis, Iowa State University of Science and Technology), 1967 (ED 026 483).

Kammeyer, K. Sibling position and the feminine role. Journal of Marriage and the Family, 1967, 29, 494-499.

Komarovsky, M. Women in the modern world. Boston: Little, Brown, 1953.

Koos, E. L. Marriage. New York: Henry Holt, 1953.

Landis, P. H. Making the most of marriage. New York: Appleton-Century-Crofts, 1955.

Loftis, H. A. Development of a criterion measure to evaluate vocational home economics programs at the secondary level--A progress report based on South Carolina data. Dittoed report, Winthrop College, Rock Hill, S. C., 1968.

Lopata, H. Z. Life cycle of the social role of the housewife. Sociological and Social Research, 1966, 51, 5-22.

Mailer, N. The prisoner of sex. Harper's, 1971, 242, 41-92.

Maloch, F. Characteristics of most and least liked household tasks. Journal of Home Economics, 1963, 55, 413-416.

Massman, M. M. Permanent values from high school senior home economics. Journal of Home Economics, 1964, 56, 687-690.

McCormick, T. C. Elementary social statistics. York, Pa: Maple Press, 1941.

Millett, K. Sexual politics. Garden City, N. Y.: Doubleday, 1970.

Myrdal, A. R., & Klein, V. Women's two roles. London: Routledge & Kegan Paul Ltd., 1956.

National Manpower Council. Work in the lives of married women. New York: Columbia University Press, 1958.

Nye, F. I., & Hoffman, L. W. The employed mother in America. Chicago: Rand McNally, 1963.

Ogburn, W. F., & Nimkoff, M. F. Technology and the changing family. Boston: Houghton Mifflin, 1955.

Pace, L. W. A study of attitudes of married women toward married women's work. Missouri University. Extension Division, 1970 (ED 042 989).

Parker, F. J. Task distribution within the family. Journal of Home Economics, 1966, 58, 373-375.

Parsons, T., & Shils, E. A. (Eds.) Towards a general theory of action. Cambridge, Mass.: Harvard University Press, 1952.

Phillips, F. L. Changed status of women. Education, 1966, 87, 246-247.

Podell, L. Occupational and familial role-expectations. Journal of Marriage and the Family, 1967, 29, 492-493.

Powell, K. S. Maternal employment in relation to family life. Marriage and Family Living, 1961, 23, 350-355.

Powell, K. S. Employed mothers in America (Fact!) An affluent society (Fact or fiction). Speech delivered to Rock Hill, S. C., Branch, AAUW, March, 1965.

Ramsey, G. V. Some attitudes and opinions of employed women. National Association of Women Deans and Counselors Journal, 1963, 26, 30-36.

Rapoport, R., & Rapoport, R. N. The dual career family. Human Relations, 1969, 22, 3-30.

Reichert, A. Homemaker as employed mother. Journal of Home Economics, 1961, 6, 18-22.

Rollin, R. What's women's lib doing to the family? Plenty! Look, 1971, 35, 40.

Rose, E. J. Study of graduates of the University of Minnesota home economics curriculum. University of Minnesota, 1951.

Roseman, J. E., & Campbell, D. P. Why college-trained mothers work. Personnel and Guidance Journal, 1965, 43, 886-992.

Rossi, A. S. Transition to parenthood. Journal of Marriage and the Family, 1968 30, 26-39.

Ruderman, F. A. Child care and working mothers; a study of arrangements made for daytime care of children. New York: Child Welfare League of America, 1968 (ED 045 175).

Searls, L. G. College major and the tasks of homemaking. Journal of Home Economics, 1966, 58, 708-714.

Siegal, A. E., & Haas, M. B. Working mother: a review of research. Child Development, 1963, 34, 513-542.

U. S. Department of Agriculture. Food consumption and dietary levels of household as related to employment of homemaker, United States by region. Washington, D. C.: Household Food Consumption Survey, Report 15, 1959.

U. S. Department of Labor. Background facts on women workers in the United States. Washington, D. C.: U. S. Government Printing Office, 1970.

U. S. Department of Labor. Marital and family characteristics of workers. Washington, D. C.: U. S. Government Printing Office, 1971.

U. S. Women's Bureau. Handbook on women workers. Washington, D. C.: U. S. Government Printing Office, 1965.

U. S. Women's Bureau. Handbook on women workers. Washington, D. C.: U. S. Government Printing Office, 1969.

U. S. Women's Bureau. Fact sheet on the changing patterns of women's lives. Washington, D. C.: U. S. Government Printing Office, 1966.

Vetter, L., & Lewis, E. C. Some correlates of homemaking vs. career preference among college home economics students. Personnel and Guidance Journal, 1964, 42 593-598.

Walker, K. Homemaking still takes time. Journal of Home Economics, 1969, 61, 621-124.

Walter, J., & Ojemann, R. H. A study of the components of adolescent attitudes concerning the role of women. Journal of Social Psychology, 1952, 35, 101-110.

Weil, M. W. An analysis of the factors influencing married women's actual or planned work participation. American Sociology Review, 1961, 26, 91-96.

Weil, M. W. Career-homemaker role: new orientation for analysis. Journal of Home Economics, 1962, 54, 294-296.

Wenck, D. A. Employed and nonemployed homemakers; how they manage. Journal of Home Economics, 1967, 59, 737-738.

Whatley, A. E. Working mothers report on problems and concerns. Journal of Home Economics, 1963, 55, 119-121.

When mother works; pro and con discussion. Practical Home Economics, 1961, 6, 26-27.

Who's come a long way, baby? Time, 1970, 96, 16-21.

Wilkes, P. Mother superior to women's lib. New York Times Magazine, Nov. 29, 1970, 27-29.

Williams, R. American society. New York: Alfred A. Knopf, 1952.

Winch, R. F. Permanence and change in the history of the American family and some speculations as to its future. Journal of Marriage and the Family, 1970, 32, 6-15.

Wood, M. W. Homemakers employed outside the home. American Vocational Journal, 1962, 37, 22-23.

APPENDIX

COMPLETE LISTING OF ITEMS BY CATEGORY AND NUMBER
IN THE REGIONAL RESEARCH INSTRUMENT,
RATE YOURSELF AS A HOMEMAKER

Child Development

1. Sets standards of right and wrong for children
2. Demonstrates good moral standards
3. Guides the religious training of children
4. Takes children to Sunday school and church
5. Encourages having friends of children in home
6. Supervises the recreational activities of children
7. Helps children to choose associates
8. Knows where children are at all times
9. Teaches children to have a sense of responsibility
10. Gives children responsibility
11. Understands and is able to cope with the different characteristics of children of various ages
12. Encourages children to develop their own personality
13. Provides for the physical care of children
14. Sees that provisions are made for medical and dental care
15. Helps prevent injuries to children
16. Is able to care for minor accidents
17. Recognizes signs of illness
18. Knows when to take children to doctor

19. Maintains close relationships with children by giving love and affection
20. Spends time with children
21. Keeps lines of communication with children open
22. Understands the child's point of view
23. Helps child with his problems
24. Does things with the children
25. Disciplines the child
26. Sets limits for the child
27. Reasons with the child
28. Rears children by guiding social behavior
29. Provides for children's schooling
30. Provides for future education of children
31. Helps children learn intellectual skills
32. Teaches child how to do household duties
33. Helps child with personal problems
34. Helps with child's homework
35. Helps children develop habits which lead to good health
36. Attends to children's personal needs

Family and Community Relations

37. Participates in community organizations
38. Participates in organizations having social purposes
39. Cooperates with school
40. Shares in community activities where the whole family is involved

41. Participates in civic and political affairs
42. Sees that the family does things together
43. Guards the health of the family
44. Builds a feeling of family unity
45. Creates a pleasant home atmosphere
46. Is a companion to her husband
47. Is a good homemaker
48. Is a good mother
49. Is a professional and/or social asset to her husband
50. Loves, understands, and makes her husband feel important
51. Is willing to adjust to her husband's moods and needs
52. Gets along with people
53. Is a good hostess
54. Keeps informed about home and family matters
55. Has a balance of activities between work, social affairs and family
56. Arranges time for self
57. Has own friends
58. Attractive in appearance

Family Economics and Management

59. Takes care of paying the bills
60. Is a good shopper
61. Knows the amount of household expenses
62. Keeps records of expenses
63. Manages the family's money

64. Keeps informed about all aspects of family financial affairs
65. Plans and keeps a budget
66. Manages the home
67. Manages her time
68. Considers home and family concerns of more importance than work outside the home

Food and Nutrition

69. Does the shopping for food
70. Stays within planned food budget
71. Takes advantage of advertised food specials
72. Has meals ready on time
73. Plans the family meals to provide for individual needs and/or preferences
74. Manages the preparation of food for the family
75. Has a basic knowledge of nutrition
76. Knows how to plan well-balanced meals
77. Prepares nourishing meals
78. Provides food for children
79. Supervises proper eating of food
80. Provides snacks for the family
81. Preserves food by canning and/or freezing
82. Makes a garden
83. Uses food to give family pleasure
84. Has meals at home

85. Prepares and serves attractive meals

Housing

86. Decorates the home attractively
87. Arranges furnishings and accessories for convenience
88. Selects and hangs draperies
89. Selects and buys furniture
90. Uses home furnishings money wisely
91. Keeps the house clean, neat and orderly
92. Keeps the kitchen clean
93. Plants and cares for flowers and shrubbery
94. Cares for yard

Clothing and Textiles

95. Sews
96. Sews clothing for self
97. Sews clothing for children
98. Provides clothing
99. Buys clothes for the family
100. Alters clothes
101. Does the laundry
102. Irons and presses clothes
103. Mends and repairs the clothing
104. Supervises the care of clothing
105. Keeps clothing ready to wear when needed
106. Teaches children to care for clothes
107. Stores clothes where they can be found

108. Cares for clothing so it will last

109. Considers time and money in making clothing choices

110. Provides clothing suitable for various occasions

111. Provides clothing suitable for weather

112. Dresses children properly

113. Reads clothing labels

114. Recognizes the quality of fabric and construction of clothing

115. Selects best buys within family clothing budget

116. Makes use of hand-me-down garments

TABLE 7

Frequency of Expressed Expectations
By Employment and Spouse Grouping

Item	Employment				Spouse			
	H+HU N=57		EH+HUE N=48		H+EH N=56		HU+HUE N=49	
	N	%	N	%	N	%	N	%
1	11	19	11	23	12	21	10	20
2	9	16	7	15	9	16	7	15
3	15	26	11	23	15	27	11	22
4	22	39	21	44	26	46	17	35
5	3	5	5	10	8	14	0	0
6	11	19	8	17	13	23	6	12
7	4	7	2	4	4	7	2	4
8	4	7	2	4	5	9	1	2
9	7	12	8	17	12	21	3	6
10	6	11	2	4	7	13	1	2
11	16	28	17	35	18	32	15	31
12	9	16	5	10	9	16	5	10
13	33	58	22	46	23	41	32	65
14	16	28	6	13	12	21	10	20
15	6	11	2	4	4	7	4	8
16	13	23	2	4	9	16	6	12
17	8	14	4	8	8	14	4	8
18	10	18	5	10	7	13	8	16

(Table continued on next page)

TABLE 7

Item	Employment				Spouse			
	H+HU N=57		EH+HUE N=48		H+EH N=56		HU+HUE N=49	
	N	%	N	%	N	%	N	%
19	15	26	13	27	15	27	13	27
20	14	25	10	21	16	29	8	16
21	8	14	8	17	9	16	7	15
22	3	5	2	4	4	7	1	2
23	15	26	13	27	15	27	13	27
24	14	25	10	21	16	29	8	16
25	8	14	8	17	9	16	7	15
26	3	5	2	4	4	7	1	2
27	4	7	6	13	9	16	1	2
28	1	2	1	2	1	2	1	2
29	23	40	13	27	14	25	22	45
30	2	4	4	8	4	7	2	4
31	1	2	0	0	1	2	0	0
32	8	14	7	15	8	14	7	15
33	5	9	2	4	6	11	1	2
34	6	11	3	6	4	7	5	10
35	9	16	10	21	12	21	7	15
36	5	9	1	2	4	7	2	4
37	1	2	4	8	5	9	0	0

(Table continued on next page)

TABLE 7

Item	Employment				Spouse			
	H+HU N=57		EH+HUE N=48		H+EH N=56		HU+HUE N=49	
	N	%	N	%	N	%	N	%
38	1	2	5	10	4	7	2	4
39	8	14	5	10	8	14	5	10
40	9	16	8	17	11	20	6	12
41	26	46	20	42	26	46	20	41
42	7	12	7	15	7	13	7	15
43	21	37	17	35	28	50	10	20
44	6	11	5	10	7	13	4	8
45	15	26	10	21	13	23	12	24
46	16	28	12	25	21	38	7	15
47	2	4	1	2	2	4	1	2
48	3	5	4	8	6	11	1	2
49	12	21	16	33	19	34	9	18
50	12	21	9	19	12	21	9	18
51	3	5	6	13	7	13	2	4
52	6	11	5	10	9	16	2	4
53	4	7	6	13	5	9	5	10
54	12	21	17	35	14	25	15	31
55	4	7	6	13	7	13	3	6
56	4	7	8	17	9	16	3	6
57	14	25	10	21	17	30	7	15

(Table continued on next page)

TABLE 7

Item	Employment				Spouse			
	H+HU N=57		EH+HUE N=48		H+EH N=56		HU+HUE N=49	
	N	%	N	%	N	%	N	%
58	3	5	2	4	2	4	3	6
59	6	11	10	21	11	20	5	10
60	18	32	12	25	18	32	12	24
61	2	4	3	6	3	5	2	4
62	23	40	15	31	23	41	15	31
63	15	26	17	35	29	52	13	27
64	7	12	14	29	13	23	8	16
65	2	4	1	2	1	2	2	4
66	4	7	7	15	6	11	5	10
67	11	19	8	17	10	18	9	18
68	23	40	15	31	20	36	18	37
69	23	40	17	35	21	38	19	39
70	26	46	19	40	23	41	22	45
71	29	51	24	50	27	48	26	53
72	28	49	13	27	20	36	11	22
73	20	35	6	13	13	23	13	27
74	23	40	26	54	13	23	19	39
75	9	16	11	23	14	25	6	12
76	6	11	9	19	9	16	6	12
77	5	9	9	19	8	14	6	12

(Table continued on next page)

TABLE 7

Item	Employment				Spouse			
	H+HU N=57		EH+HUE N=48		H+EH N=56		HU+HUE N=49	
	N	%	N	%	N	%	N	%
78	18	32	14	29	18	32	14	29
79	51	89	36	75	47	84	40	82
80	11	19	10	21	10	18	11	22
81	28	49	29	60	33	59	24	49
82	10	18	15	31	17	30	10	20
83	1	2	0	0	1	2	0	0
84	12	21	12	25	18	32	6	12
85	8	14	2	4	7	13	3	6
86	3	5	0	0	2	4	1	2
87	1	2	3	6	4	7	0	0
88	9	16	8	17	12	21	5	10
89	22	39	23	48	23	41	22	45
90	7	12	4	8	6	11	5	10
91	3	5	8	17	8	14	3	6
92	16	28	15	31	16	29	15	31
93	6	11	3	6	4	7	5	10
94	36	63	32	67	37	66	31	63
95	6	11	4	8	6	11	4	8
96	6	11	1	2	4	7	3	6
97	4	7	1	2	3	5	2	4

(Table continued on next page)

TABLE 7

Item	Employment				Spouse			
	H+HU N=57		EH+HUE N=48		H+EH N=56		HU+HUE N=49	
	N	%	N	%	N	%	N	%
98	14	25	11	23	17	30	8	16
99	15	26	13	27	20	36	10	20
100	4	7	3	6	5	9	2	4
101	28	49	21	44	27	48	22	45
102	21	37	10	21	18	32	13	27
103	15	26	10	21	16	29	9	18
104	13	23	16	33	20	36	9	18
105	6	11	7	15	11	20	2	4
106	4	7	3	6	6	11	1	2
107	3	5	0	0	1	2	2	4
108	3	5	2	4	2	4	3	6
109	3	5	0	0	1	2	2	4
110	4	7	4	8	5	9	3	6
111	4	7	5	10	8	14	1	2
112	25	44	19	40	18	32	26	53
113	5	9	4	8	7	13	2	4
114	22	39	19	40	27	48	14	29
115	16	28	16	33	19	34	13	27
116	0	0	1	2	1	2	0	0

A COMPARISON OF
ROLE EXPECTATIONS OF
EMPLOYED AND NON-EMPLOYED HOMEMAKERS

Thesis Abstract
Presented To
The Graduate School
In Partial Fulfillment
Of the Requirements for the Degree

Master of Science

in the

School of Home Economics
Winthrop College

August, 1971

by

Margaret Hickson Britton

2374

The purpose of the study was to make a comparison of role expectations of homemakers to determine if significant differences occurred between groups composed of non-employed homemakers, husbands of non-employed homemakers, employed homemakers, and husbands of employed homemakers.

Data utilized were collected by regional investigators participating in the study "Evaluation of Vocational Home Economics Porgrams in Terms of the Effectiveness of Full-Time Homemakers and Full-Time Employees Who Are Also Homemakers." Collection of data was by means of tape recorded interviews with 105 adult subjects in the states of Georgia, Kentucky, and South Carolina. The present investigator transferred responses onto a checklist adaptation of the instrument Rate Yourself as a Homemaker. The analysis of data was concerned with revealing items which were significant in difference between the percentages of the combined groupings of paired subjects. Comparisons were made based on employment and spouse groupings.

The analysis of the spouse grouping affirmed the hypothesis that homemakers perceive their role more comprehensively than do husbands. The employment comparison revealed a close equality in the number of responses. The employed group cited items dealing with relationships more

frequently than the non-employed group which tended to think more in terms of specific task performance. The findings suggest further differences in expectations in the areas of physical care of children, family and community relations, time management, food preparation, outdoor care of the home, and care of clothing.

VT 014 173
BUCKEY, SYLVIA, AND OTHERS
FACILITIES FOR INSTRUCTION IN ORNAMENTAL HORTICULTURE.

PENNSYLVANIA STATE UNIV., UNIVERSITY PARK.
PENNSYLVANIA AGRICULTURAL EXPERIMENT STATION.
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ABSTRACT - THIS PUBLICATION CONTAINS GUIDELINES FOR USE IN DEVELOPING INSTRUCTIONAL FACILITIES FOR ORNAMENTAL HORTICULTURE, WHICH IS EMERGING AS AN IMPORTANT AGRIBUSINESS AND ENVIRONMENTAL EMPLOYMENT AREA. FACILTIES PLANNING CAN ONLY BE EFFECTIVELY DONE AFTER THE INSTRUCTIONAL PROGRAMS HAVE BEEN DEVELOPED, AND FOLLOWING DEVELOPMENT, THESE FACTORS SHOULD BE CONSIDERED: (1) CHOOSING A LOCATION, (2) FACILITIES NEEDED FOR THE VARIOUS INSTRUCTIONAL AREAS, (3) USE OF EXISTING STRUCTURES OR FACILITIES, AND (4) ORIENTATION OF FACILITIES TO TOPOLOGY AND UTILITIES. IN ADDITION TO THESE GENERAL CONSIDERATIONS, GUIDELINES ARE PROVIDED FOR DEVELOPING GREENHOUSE CROP PRODUCTION FACILITIES, NURSERY CROP PRODUCTION FACILITIES, AND TURFGRASS DEMONSTRATION AREAS. EQUIPMENT LISTS FOR EACH INSTRUCTIONAL AREA, ORNAMENTAL HORTICULTURE INSTRUCTIONAL MATERIALS, AND RECOMMENDED TREES, SHRUBS, AND FLOWERS FOR SCHOOL ABORETUMS ARE APPENDED. (SB)

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FACILITIES FOR INSTRUCTION IN ORNAMENTAL HORTICULTURE

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The cover photograph is courtesy of Williamsport Community College, Williamsport, Pennsylvania.

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Introductory Statement

Facilities for Instruction in Ornamental Horticulture has been written by the Department of Agricultural Education through a contractual agreement between The Pennsylvania State University and the United States Office of Education, Division of Adult and Vocational Research.

Although this publication is intended to apply primarily to ornamental horticulture programs in schools in Northeastern United States, many of the space requirements and layout concepts have wide application.

Richard F. Stinson, Project Director
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FACILITIES FOR INSTRUCTION IN ORNAMENTAL HORTICULTURE

INTRODUCTION

Ornamental horticulture is emerging as an important agribusiness and environmental employment area. As schools formulate or reformulate their vocational programs in light of current and projected occupational needs of the communities they serve, the need for guidance in developing instructional facilities for new programs has become evident.

It seems necessary to state that facilities planning can only be effectively done after the programs of instruction have been developed. One or several of the following instructional areas might be included: Introduction to Ornamental Horticulture, Nursery Production, Landscape Maintenance and Establishment, Landscape Design, Turfgrass Maintenance and Establishment, Garden Store Operation, Arboriculture, and Flower Shop Operation and Management. The vocational agriculture department in the school might also be simultaneously instructing in Field Crops, Dairy, Livestock, Poultry, Agricultural Products, Agricultural Supplies, Agricultural Mechanics, Forestry and Conservation of Natural Resources.

Choosing a Location

In planning a school location for a program that includes ornamental horticulture, it is essential that the land be reasonably level, well drained, and easily tilled. From 10 to 30 acres will be needed for the development of a land laboratory. A good supply of water must be available for irrigation of the nursery and turf areas. Unobstructed sunlight as well as wind protection are required for a greenhouse. Established schools that are adding an ornamental horticulture program should acquire land if they do not have it, or work out a cooperative program with existing municipal parks or lands.

When developing plans, it is well to seek the assistance of various individuals, agencies, and groups that can provide helpful ideas and suggestions. It is essential that planners are fully acquainted with local and state building codes, regulations, and standards. Information

on these subjects may be obtained from sources such as state, county, or city planning commissions, state school building authorities, state vocational education staffs, school building architects, insurance companies, educational organizations, or suppliers of equipment and facilities. The service of a competent architect is essential. Plans should be discussed in detail so that there are no misunderstandings.

Instructional Areas and Facilities Needed

The instructional areas in ornamental horticulture that have emerged in recent years due to the demands for trained persons are:

1. Greenhouse Crop Production
2. Nursery Crop Production
3. Turfgrass Maintenance and Establishment
4. Retail Flower Shop Operation and Management
5. Landscape Design
6. Landscape Maintenance and Establishment
7. Arboriculture
8. Garden Store Operation

In addition to these, a course, Introduction to Ornamental Horticulture, is often offered in the 9th or 10th grade to aid students in choosing a vocational area within the field. Rarely would a school offer courses in all of these instructional areas. Thorough planning is important in setting up a program to include the appropriate facilities and equipment for the instructional areas of ornamental horticulture to be included in the vocational agriculture program.

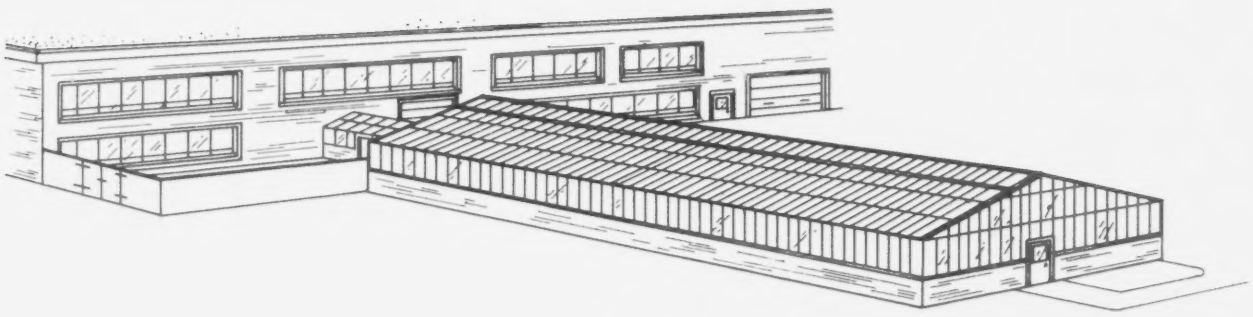
A typical ornamental horticulture facility for a school in the Northeastern United States includes a classroom, greenhouse, headhouse, mechanics shop, and acreage for turf plots, nursery, and an arboretum. Classroom and shop should not be combined because this eliminates the simultaneous use of facilities by more than one class, (Multiple-teacher departments are rapidly becoming the rule, rather than the exception.)

Table 1, "Instructional areas and facilities needed," provides a means of quickly determining the needs for a particular instructional area, as well as overlapping needs for combinations of instruction areas. Figure 1, "Suggested facilities for school programs in ornamental horticulture," is an example of how these facilities may be arranged.

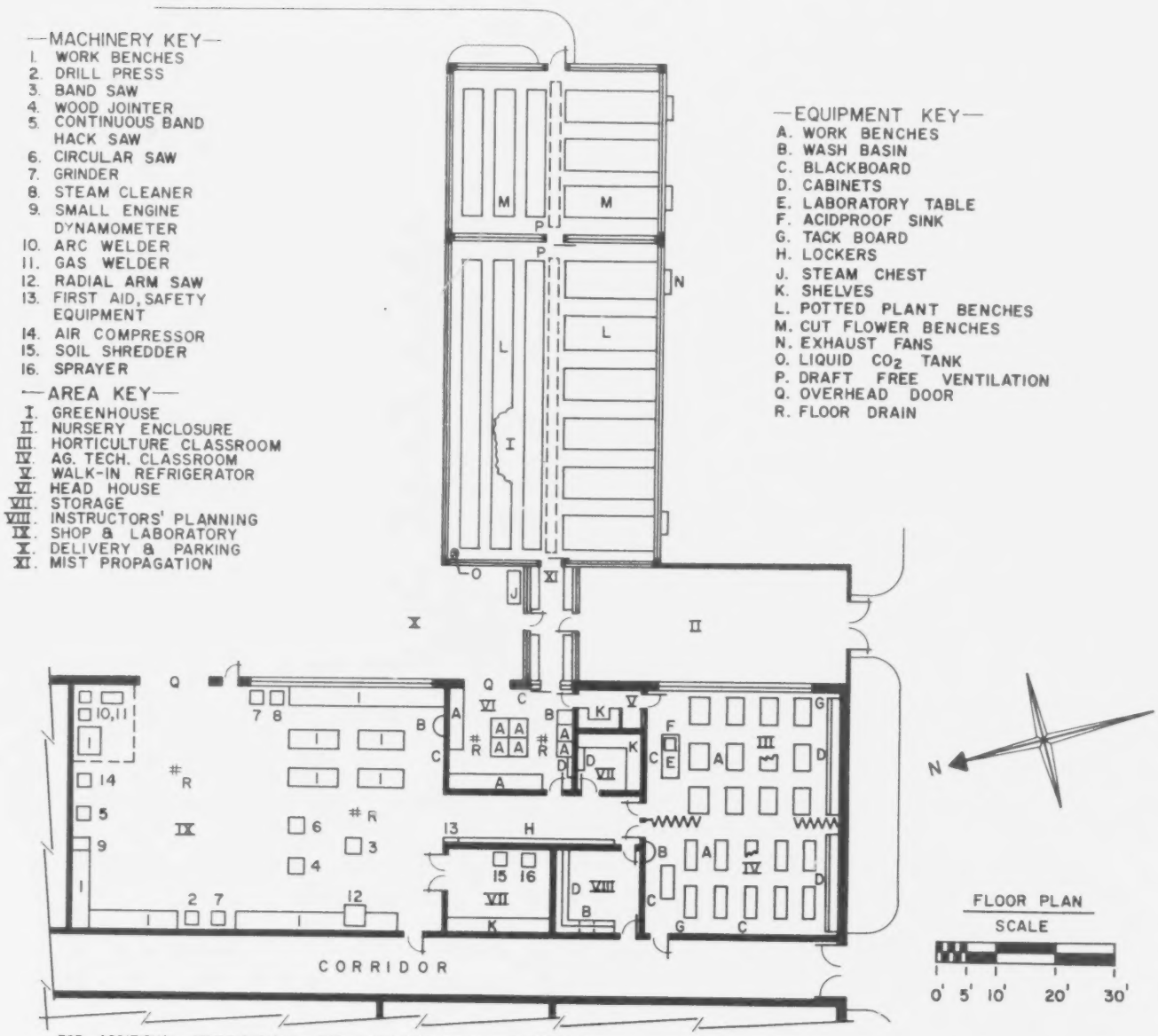
This illustration shows how a very limited area could be developed. An arboretum containing all the trees and shrubs that students should learn to identify would require about 15 additional acres.

Table 1. Instructional areas and facilities needed

Facility	Instructional Area							
	Introduction to Orn. Horticulture	Greenhouse Prod.	Nursery Prod.	Turfgrass	Landscape Maint.	Landscape Design	Flower Shop	Garden Center
Agr. Mechanics Shop	X	X	X	X	X			X
Classroom	X	X	X	X	X	X	X	X
Greenhouse	X	X	X				X	X
Walk-in Refrigerator	X	X	X		X		X	X
Hort. Workroom (Headhouse)	X	X	X	X	X			X
Headhouse or Plant Laboratory	X	X	X	X	X	X	X	X
Agr. Mech. Storage	X	X	X	X	X	X		X
Covered Outdoor Storage	X	X	X	X	X			X
Teacher Office(s)	X	X	X	X	X	X	X	X
Land Laboratory								
Nursery	X		X		X			X
Paved Area								
Container Nurs. Stock	X		X		X			X
Coldframes	X	X	X		X			X
Arboretum	X		X		X	X		X
Turfgrass								
Demonstration Plots	X			X	X	X		X
Golf Course (1-3 holes)	X			X	X			



PERSPECTIVE OF AGRICULTURAL WING



FOR ADDITIONAL SPECIFICATIONS, SEE SUPPLEMENTARY INFORMATION.

DESIGNED BY THE DEPARTMENT OF AGRICULTURAL EDUCATION OF THE PENNSYLVANIA STATE UNIVERSITY, IN COOPERATION WITH THE PENNA. DEPARTMENT OF PUBLIC INSTRUCTION.

Figure 1. Suggested Facilities for School Programs in Ornamental Horticulture.

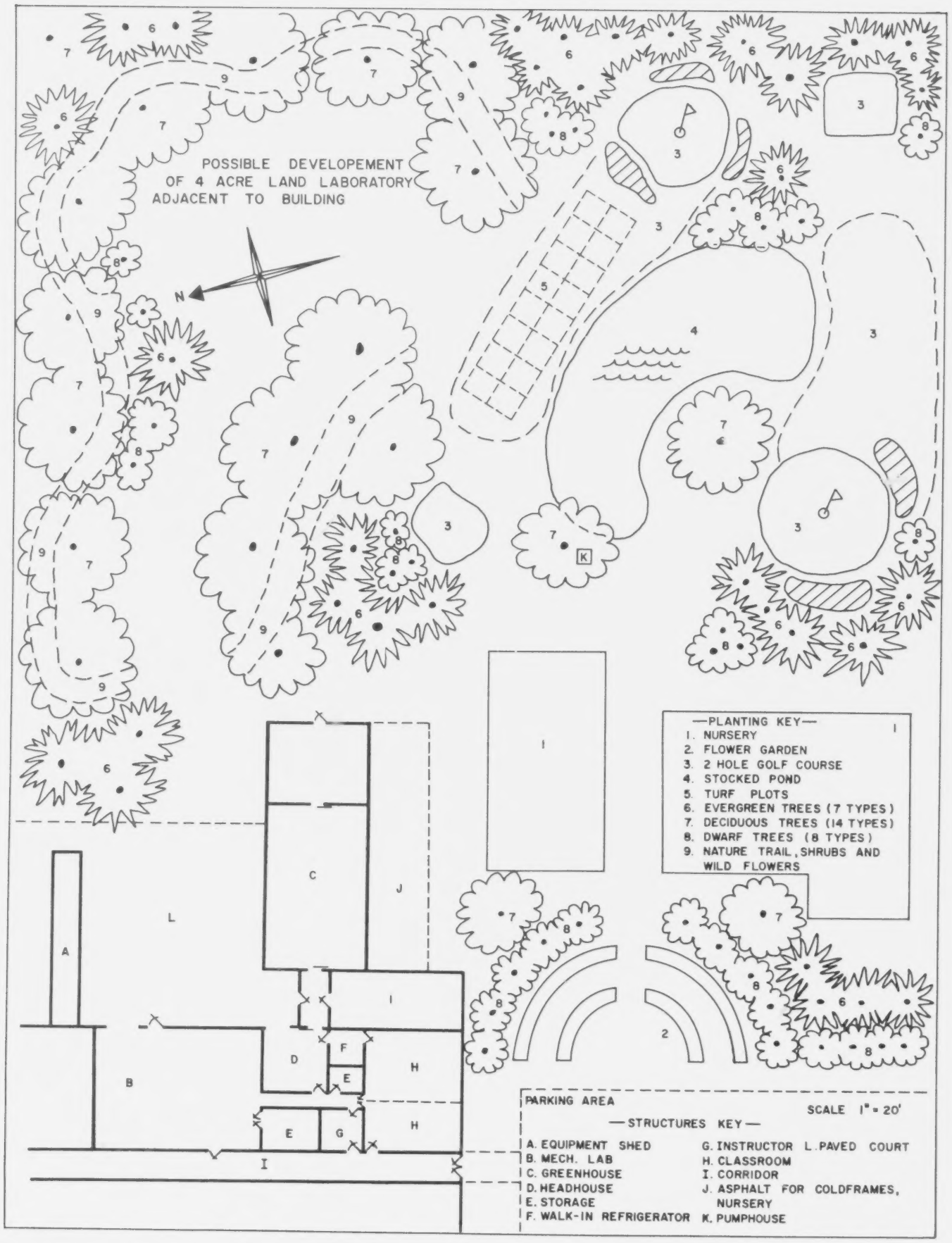


Figure 1. (continued) Suggested Facilities for School Programs in Ornamental Horticulture.

Use of Existing Structures or Facilities

In some cases a school may wish to change from a general agriculture program to a program specializing in ornamental horticulture. In this case the already existing mechanics shop and classroom can be used if there is space nearby to build the headhouse and greenhouse, and acreage useable for a nursery and land laboratory. If space is not available for expansion, an alternative is to build a complete new horticulture facility apart from the old structure.

The usual vocational agriculture classroom equipped with tables is adaptable for ornamental horticulture use. The tools and equipment generally found in a vocational agriculture shop are mostly identical with those used for instruction in ornamental horticulture.

Orientation of Facilities to Topography and Utilities

It is important that a greenhouse and outdoor facilities be properly oriented with regard to topography, sun, utilities, and access roads.

Greenhouse

The greenhouse should be built on level, well-drained land with good air drainage. It should be readily accessible from the workroom, (headhouse), classroom, and shop. The ridge line should run east and west to minimize the shade from roof supports. It must be so positioned that midwinter shadows (twice as long as the height of the object casting them) of nearby structures do not fall within the greenhouse. Electricity and water will be needed. A reliable heating plant separate from the one used for heating the main school building is essential.

Nursery

The nursery should be from 1 to 4 acres in size and must be on well-drained soil. A clay-loam soil is needed for "balled and burlapped" nursery stock because it will hold a soil ball better than looser soils. A gentle slope with a south, southeastern, or southwestern exposure is best. Protection from strong winds is important. Irrigation for nursery beds is

essential. Cold frames and a lathhouse for small size stock are desirable. An area for container growing should be included.

Turfgrass

Turfgrass plots for demonstration of types of turfgrasses, weed control, fertility, and cultural practices require about 1 acre.

A golf course of from 1 to several holes will require from 1 to 3 acres per hole.

Permanently installed irrigation equipment is necessary for all plantings of turfgrass.

Arboretum

A planting of about 300 different kinds of trees and shrubs for identification purposes will be needed for certain instructional areas in ornamental horticulture. From 3 to 5 plants of each species or cultivar (variety) should be planted to insure against loss of single specimens and to enable students to learn to recognize more than one specimen. Students must be able to identify these plants on sight in any season. About 15 to 20 acres of good land will be required for this purpose. Many of these specimens can be incorporated into the landscaping of the grounds in the immediate vicinity of the school building. This arboretum can be combined with a nature study and conservation area if facilities for this instruction are also needed.

Beds for roses, annuals, perennials, and bulbs should be included for identification purposes and for instruction in cultural practices. The equivalent of about 2,000 square feet of actual bed space will be needed. Good soil, full sun, wind protection, and irrigation equipment will be needed. This flower garden could be given a prominent position in the school landscape plan.

Access and Parking

Roads leading to the ornamental horticulture facility need to be substantial and wide enough to carry trucks and buses. A paved road immediately adjacent to the nursery would be highly desirable. Parking facilities need to be adequate for staff personnel, visitors, and commuter students. If a new ornamental horticulture facility is near the main school building, existing parking may often be used or expanded.

Equipment

Lists of suggested equipment, arranged by instruction areas are given in Appendix B.

GREENHOUSE CROP PRODUCTION FACILITIES

The Greenhouse

Within limits, greenhouses equipped with automatic heating and cooling devices can come close to satisfactory year-around climatic control for plants. Most plants grow best within a fairly narrow temperature range. Low winter sunlight can be partially compensated for by increasing the atmospheric carbon dioxide in the greenhouse, resulting in greater photosynthetic efficiency. Figure 1 illustrates a school greenhouse with three sections for growing groups of crops with differing temperature requirements.

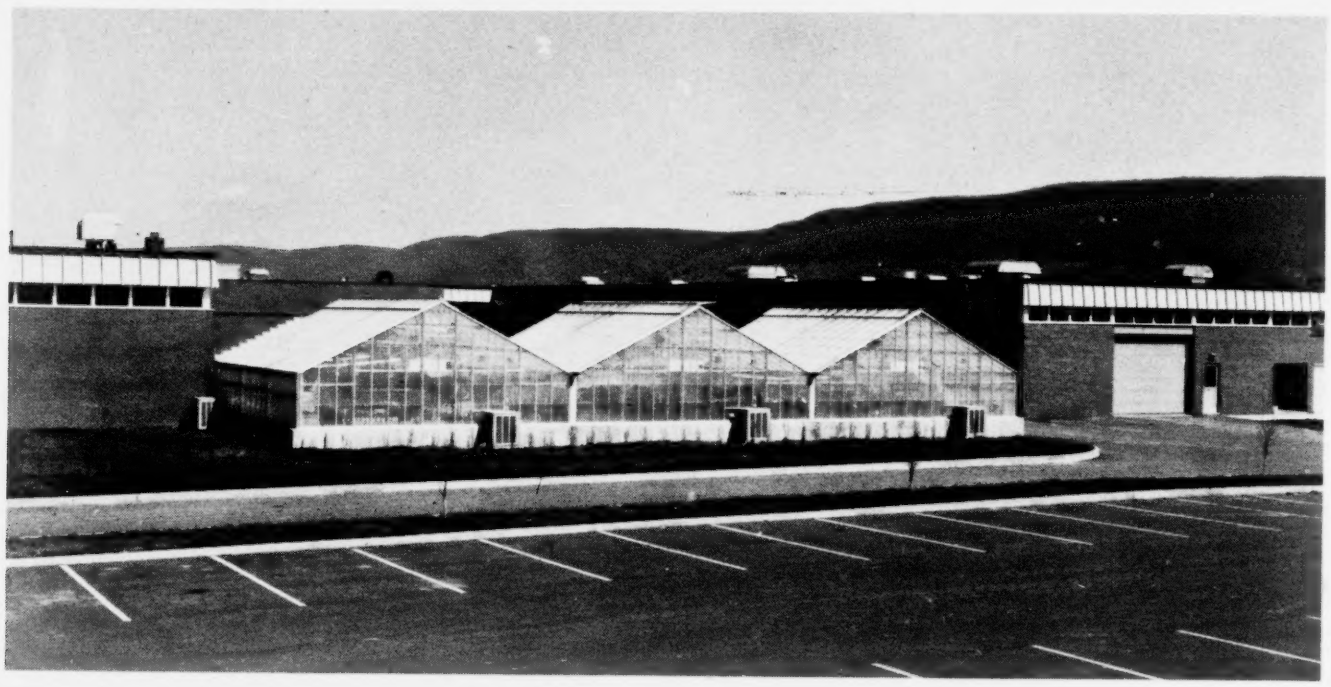


Figure 2. Greenhouse facilities at an area vocational technical school.

Size, Shape, and Layout. Greenhouses are usually rectangular. A width of approximately 32 feet is recommended for school greenhouses. The length of the greenhouse can be varied to fit needs.

The greenhouse should be divided into 2 independently controlled sections. One, about twice the size of the other, should be for warm temperature crops (60-65°F night temperature), while the smaller one is for cool temperature crops (50-55°F night temperature).

Four benches each four feet wide, running lengthwise in each section allows ample room between benches for walkways. The greenhouse may be designed with one side having lengthwise benches for cut flowers and the other half having short benches for potted plants. Benches can be fabricated from corrugated asbestos-cement sheets with sides made of 2 by 6-inch lumber.

As a general rule, there should be at least 50 square feet of growing space per student. At least an equal amount of space per student will be needed for walks in a school greenhouse.

An example of a school greenhouse layout is shown in Figure 3.

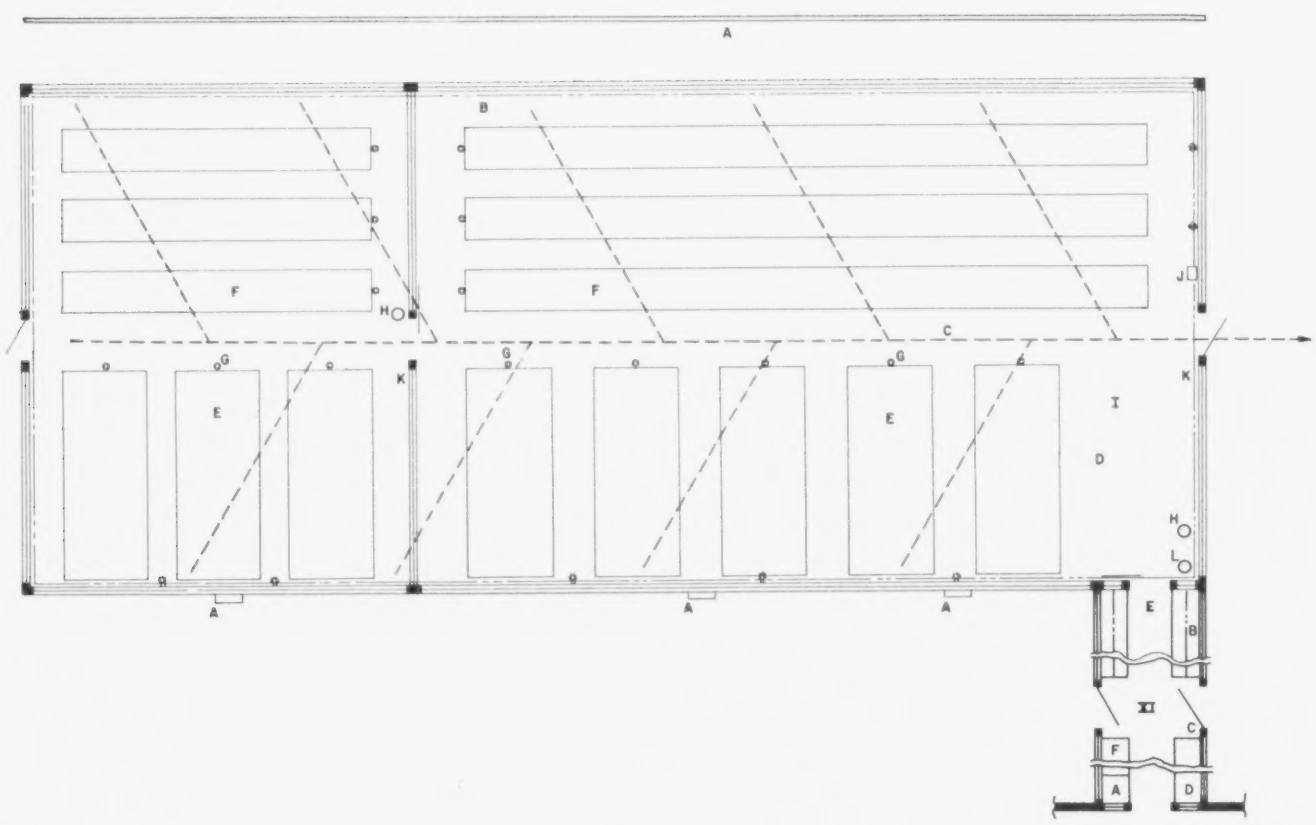


Figure 3. School Greenhouse Facility.

Construction. The supporting framework of the greenhouse consists of side posts at about 10 foot intervals, to hold the rafters and trusses. The eave extends from post to post at the point where the rafter and truss joins the side post. The ridge extends from rafter to rafter at the peak

of the house. Between the ridge and the eave several purlins extend from rafter to rafter. For wide houses or for trusses that need additional support, posts are provided at each rafter from the purlin to the ground. Sash bars rest on the purlins, ridge, and eaves. The glass is supported on these sash bars (See Figure 4).

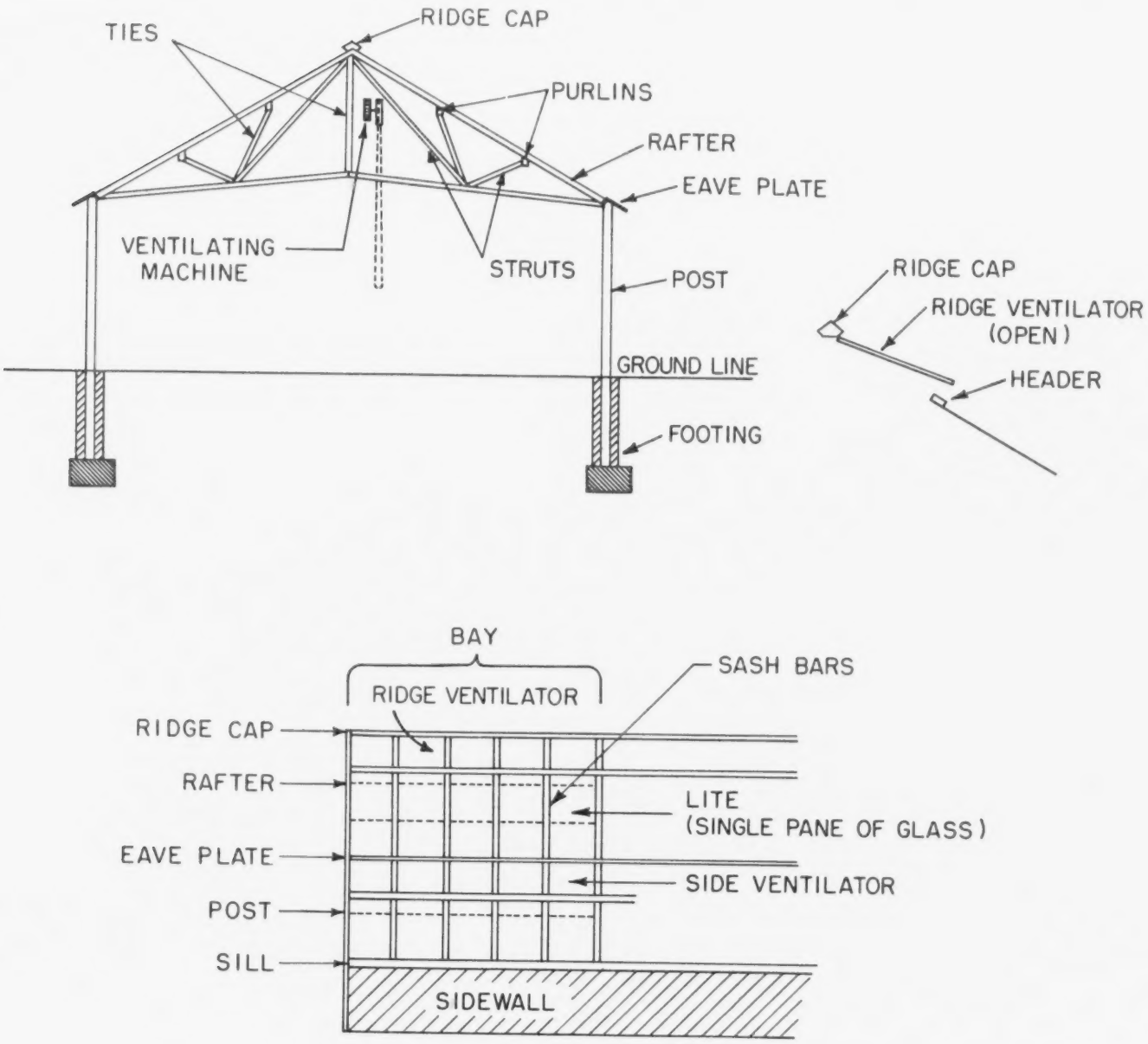


Figure 4. The parts of a greenhouse.

Construction Materials. The supporting structure for a school greenhouse should be aluminum alloy or steel because of permanence and low

maintenance. Sash bars may be of aluminum alloy or wood; the former are preferred because of permanence and low maintenance (no painting).

A school greenhouse should be glazed with glass rather than rigid or film plastic because glass has the best light transmission qualities and greatest durability. Glass breakage is not usually a serious problem. Pane (lite) widths of 20 inches are usually used. Lites are bedded in plastic putty to assure a tight seal and held firmly in place on the sash bars by means of aluminum bar caps. The lites are overlapped 1/4 inch.

Greenhouses glazed with rigid plastic or film plastic are less costly to construct because the supporting structure is lighter weight, but such greenhouses are not permanent structures. Film plastics must be replaced annually while rigid plastics may develop reduced light transmission over several years. Plastic greenhouses are generally more difficult to heat and ventilate properly than glass glazed greenhouses.

The lower half of the side wall in a greenhouse is a nonsupporting structure (the weight of the house rests on the posts) and may be constructed of any durable material. Concrete, cement blocks, and asbestos-cement sheets are materials commonly used for this purpose.

Greenhouse benches may be constructed of many different materials. Several kinds are shown in Figures 5, 6, and 7. Most greenhouse benches are built so the top edge is 30 inches from the floor--a convenient working height for most people. A convenient working width is 40 to 42 inches.

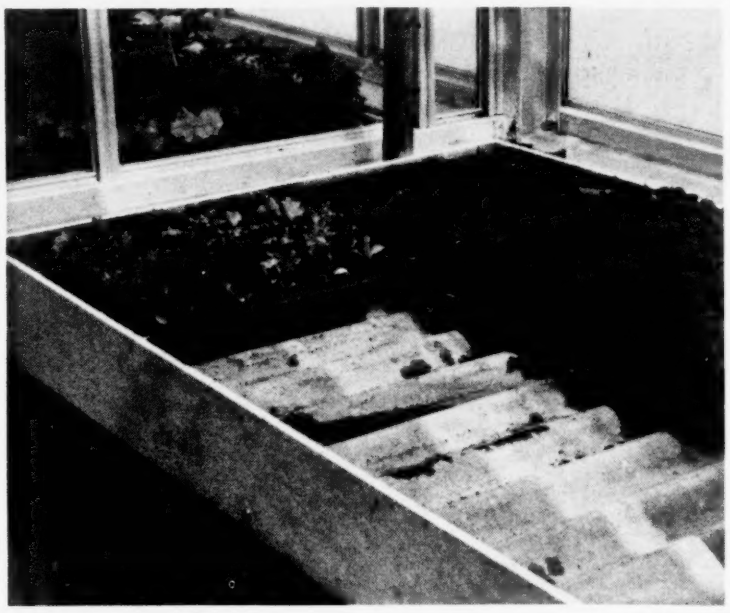


Figure 5. Corrugated asbestos cement pipe frame bench.

Figure 6. A concrete bench with slits for drainage.

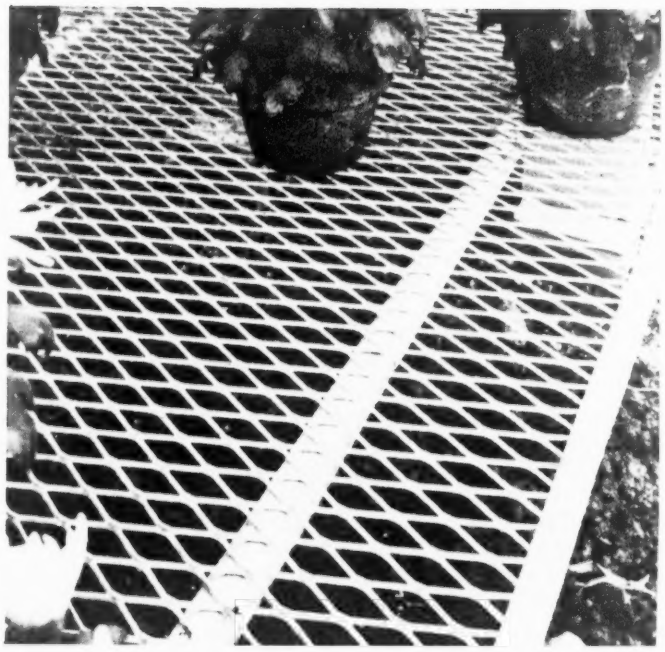


Figure 7. A wire fabric bench (Courtesy, Lord and Burnham Co., Irvington-on-Hudson, N.Y.)

Figure 8, "Example of a Facility for Teaching Ornamental Horticulture," is a plan that includes instructional areas for greenhouse crop production and flower shop operations (including floral design). The classrooms and work areas may also be used for instruction in turfgrass, landscape, and nursery when combined with appropriate outdoor laboratory spaces.

Succeeding figures and text indicate in detail the equipment and specifications for the parts of the facility.

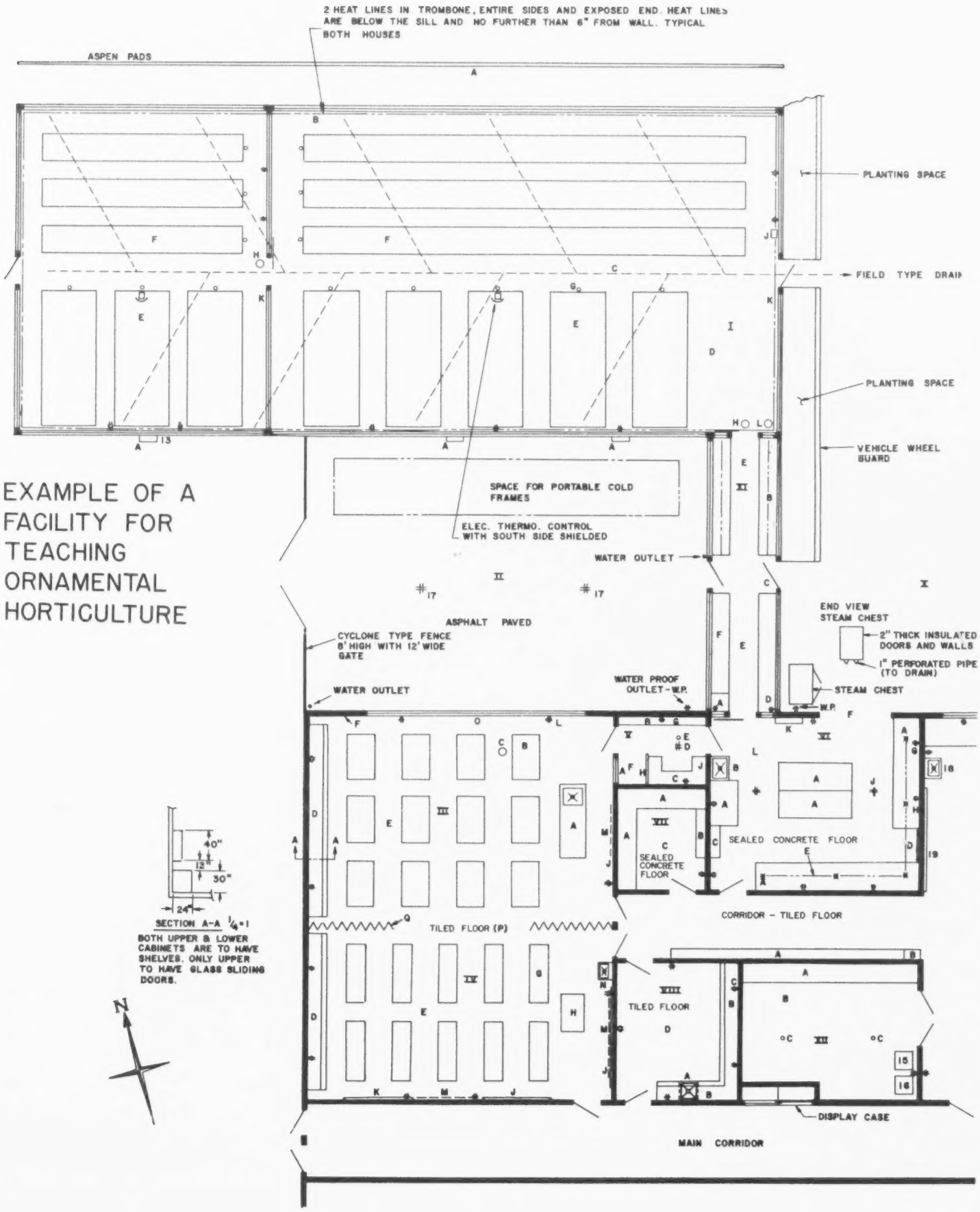


Figure 8. Example of a Facility for Teaching Ornamental Horticulture.

MACHINERY KEY

1. WORK BENCH
2. DRILL PRESS
3. BAND SAW
4. WOOD JOINTER
5. CONTINUOUS BAND HACK SAW
6. CIRCULAR SAW
7. GRINDER
8. STEAM CLEANER
9. SMALL ENGINE DYNAMOMETER
10. ARC WELDER
11. GAS WELDER
12. RADIAL ARM SAW
13. COOLING FAN
14. AIR COMPRESSOR
15. SOIL SHREDDER
16. SPRAYER
17. DRAINS
18. SINK
19. BLACKBOARD
20. OVERHEAD DOORS

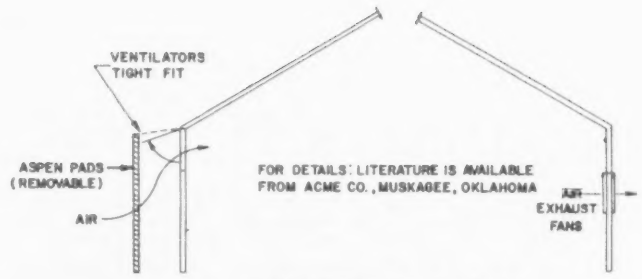
AREA KEY

I GREENHOUSE
II NURSERY ENCLOSURE
III HORTICULTURE CLASSROOM
IV AG. TECH. CLASSROOM
V WALK-IN REFRIGERATOR
VI HEAD HOUSE
VII STORAGE
VIII INSTRUCTORS PLANNING
IX SHOP AND LABORATORY
X DELIVERY & PARKING-PAVED
XI GREENHOUSE CORRIDOR

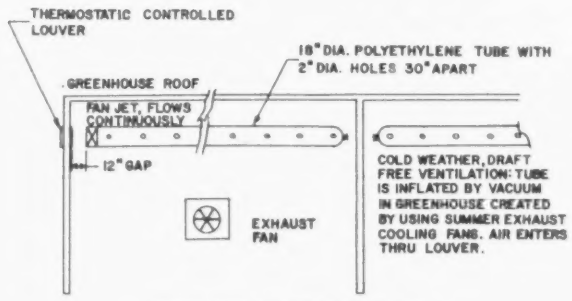
ALPHABETICAL KEY

SEE ATTACHED DETAILED SPECIFICATIONS

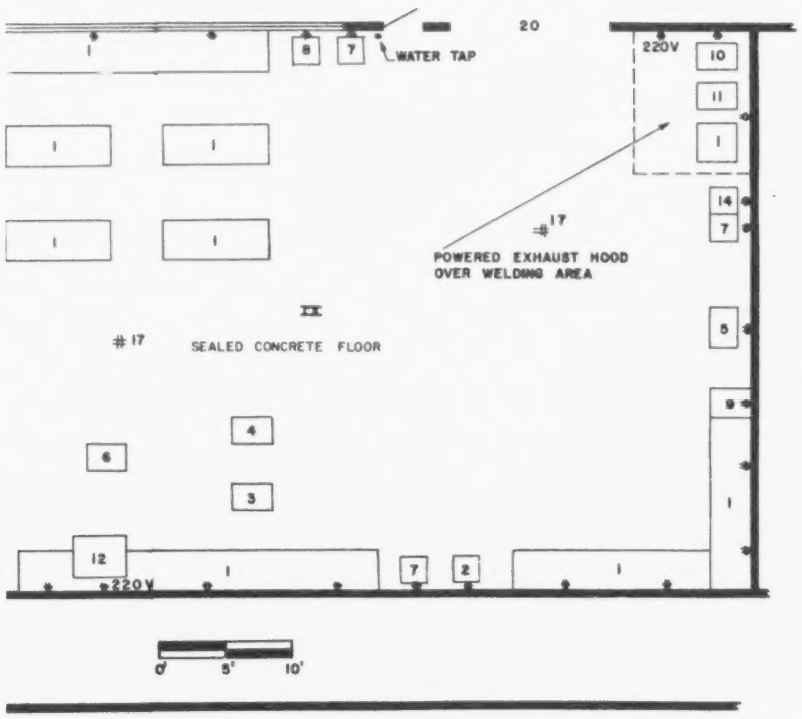
#17



COOLING SYSTEM-APRIL TO OCTOBER



DRAFT FREE VENTILATION SYSTEM



GENERAL NOTES:

1. TEMPERATURE CONTROL SYSTEMS:
   A. HEATING
      HEAT LINES ON, FAN JET ON
   B. NEUTRAL
      FAN JET ON
   C. SLIGHT COOLING
      FAN JET ON, LOUVER OPEN & SIDE FANS ON LOW SPEED
   D. STRONG COOLING
      PAD VENTS OPEN, WATER ON & SIDE FANS ON HIGH SPEED
2. HEATING SYSTEM IS TO BE A BOILER WITH HEAT EXCHANGER, SEPERATE FROM MAIN SYSTEM. GREENHOUSE WILL BE HEATED WITH CIRCULATING HOT WATER & STEAM WILL BE AVAILABLE FOR TREATING SOIL.
3. AUTOMATIC VENTILATION IN RIDGE OF EACH HOUSE SECTION IS TO BE ELECTRICALLY OPERATED AND THERMOSTATICALLY CONTROLLED.
4. ALL ELECTRIC RECEPTICALS, ARE 110 VOLTS UNLESS OTHERWISE SPECIFIED.

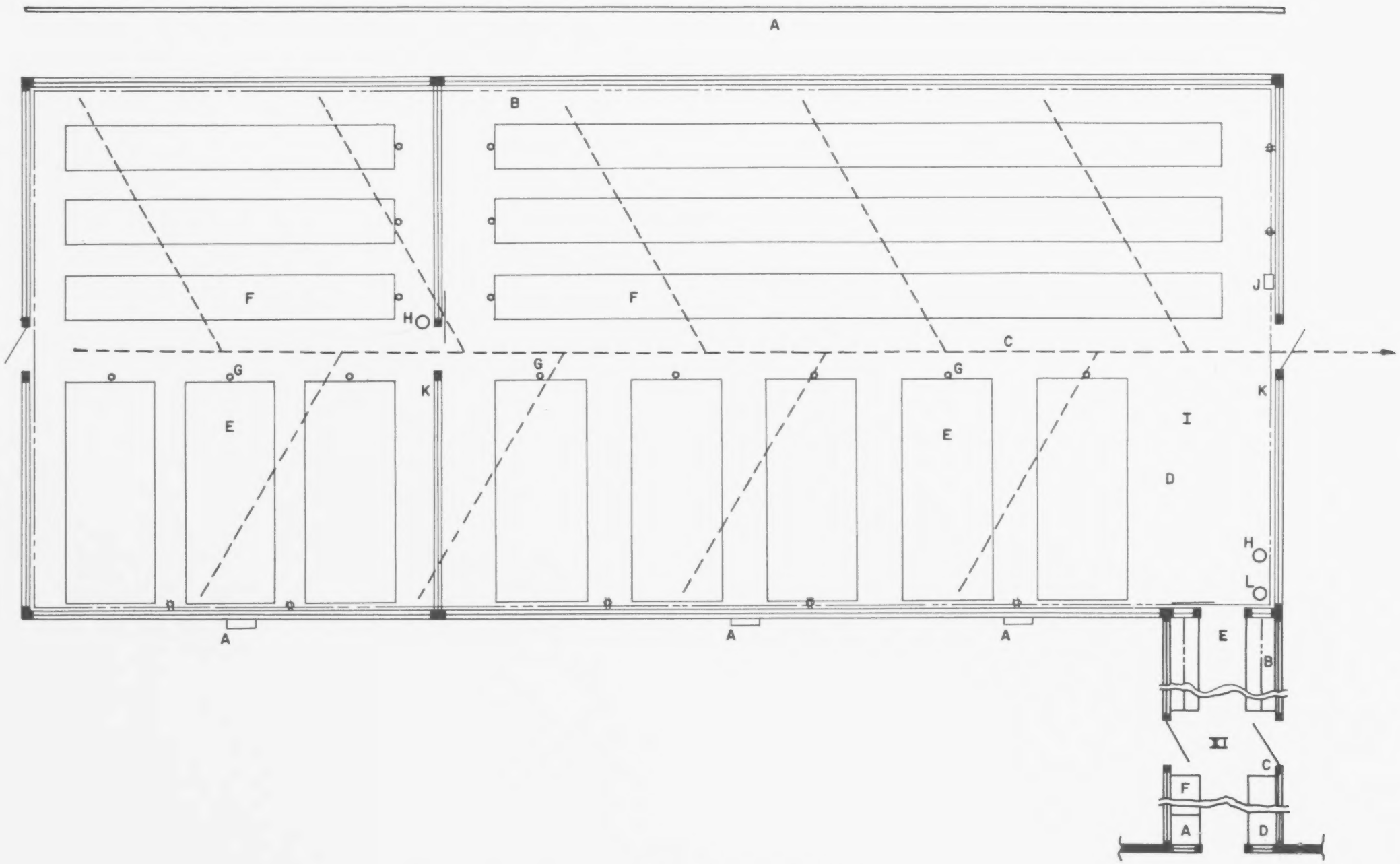


Figure 9. School Greenhouse Facility.

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DETAIL SPECIFICATIONS

I

GREENHOUSE

(An all-aluminum alloy greenhouse with 24" x 26" glass panes is recommended)

A. Cooling system - fan and pad

B. Heating system - trombone, fin-type pipes; steam boiler with heat exchanger to give hot water for heating greenhouse and steam outlets for steaming benches; or a hot water boiler with alternate steam conversion

C. Tile drain - 4" agricultural tile drainage field 36" under all greenhouse structures

D. Floors - concrete walk full width of space between benches, 6" depth of 1/2" to 3/4" washed stones under all greenhouse benches

E. Pot plant benches - 30" high, surface of 1/8" expanded galvanized metal; edges - redwood or copper-naphthenate treated wood; legs - concrete block; supports - 3/4" galvanized pipe or copper-naphthenate treated wood

F. Cut flower benches (must support 50 lbs./sq.ft.) - 30" high; surface 3/8" corrugated asbestos cement; sides - 6" high; copper-naphthenate treated wood; legs - concrete blocks; supports - 3/4" galvanized pipe

G. Watering systems - drop down threaded outlets as shown; pot plants - plastic tubes; cut flowers - sprinkler tubes

H. Steaming outlets - 1-1/2" threaded steam outlets overhead, use with special flexible steaming hose 45' long

I. Electrical outlets (waterproof) as shown, controlled by electrical timer at "J"

J. Electrical outlets (waterproof) - not tied to timer, 4'6" above floor

K. Carbon dioxide tank - with flow regulator and time switch. Outlets at fan of "fan-jet" ventilation system - use 1/2" polyethylene tubes for distrubution

XI

GREENHOUSE CORRIDOR

A. Fertilizer injector and stock solution tank

B. Mist propagation system, mist nozzles on 3' centers on 2' stand pipes, controlled by solenoid valve activated by time switch

C. Threaded water outlet

D. Waterproof electrical outlets (double)

E. Floor - concrete walks - 6" of 1/2" to 3/4" washed stones under benches

F. Greenhouse bench

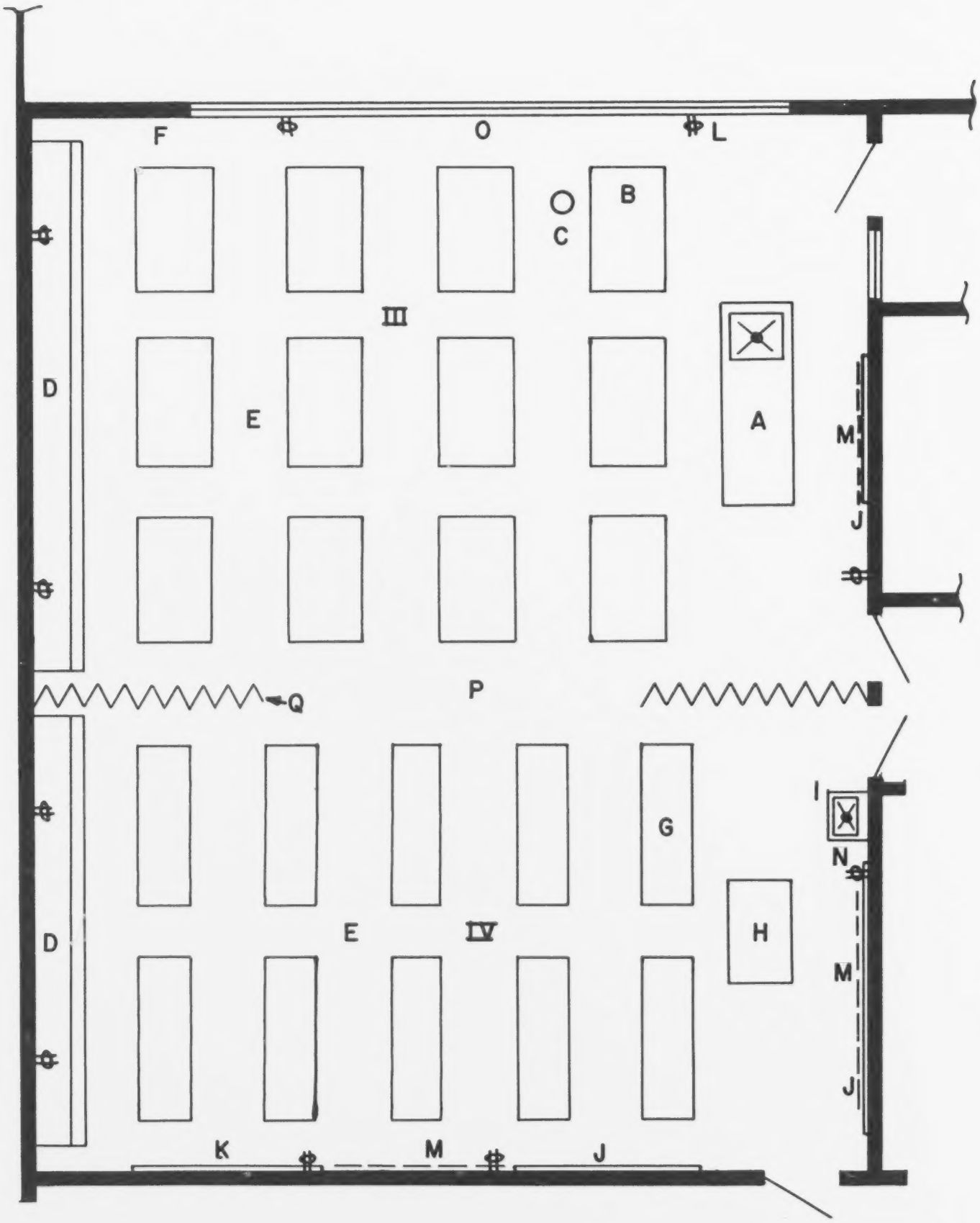


Figure 10. Classrooms for Ornamental Horticulture.

III and IV

CLASSROOMS

A. Teacher desk (acid proof) - acidproof sink, gas, and electrical services

B. Tables (acid proof) - 3' wide, 5' long, 30" high

C. Laboratory stools (64) - 18" high

D. Storage cabinets - 24" wide, 30" high with 4" deep drawers; wall cabinets 12" wide above other, with lockable sliding glass doors. All cabinets with adjustable shelves.

E. Lighting - fluorescent lamps with soft white tubes (other types distort flower colors)

F. Walls - light gray - to avoid color distortion and distraction
Ceiling - white

G. Tables - 2' x 6' x 30"

H. Teacher desk

J. Blackboards

K. Tackboard

L. Double electrical outlets

M. Screen - for slides and motion pictures

N. Sink - with hot and cold water outlet

O. Windows - provide for darkening room

P. Tiled floor (rubber, plastic, asphalt)

Q. Folding wall (soundproof)

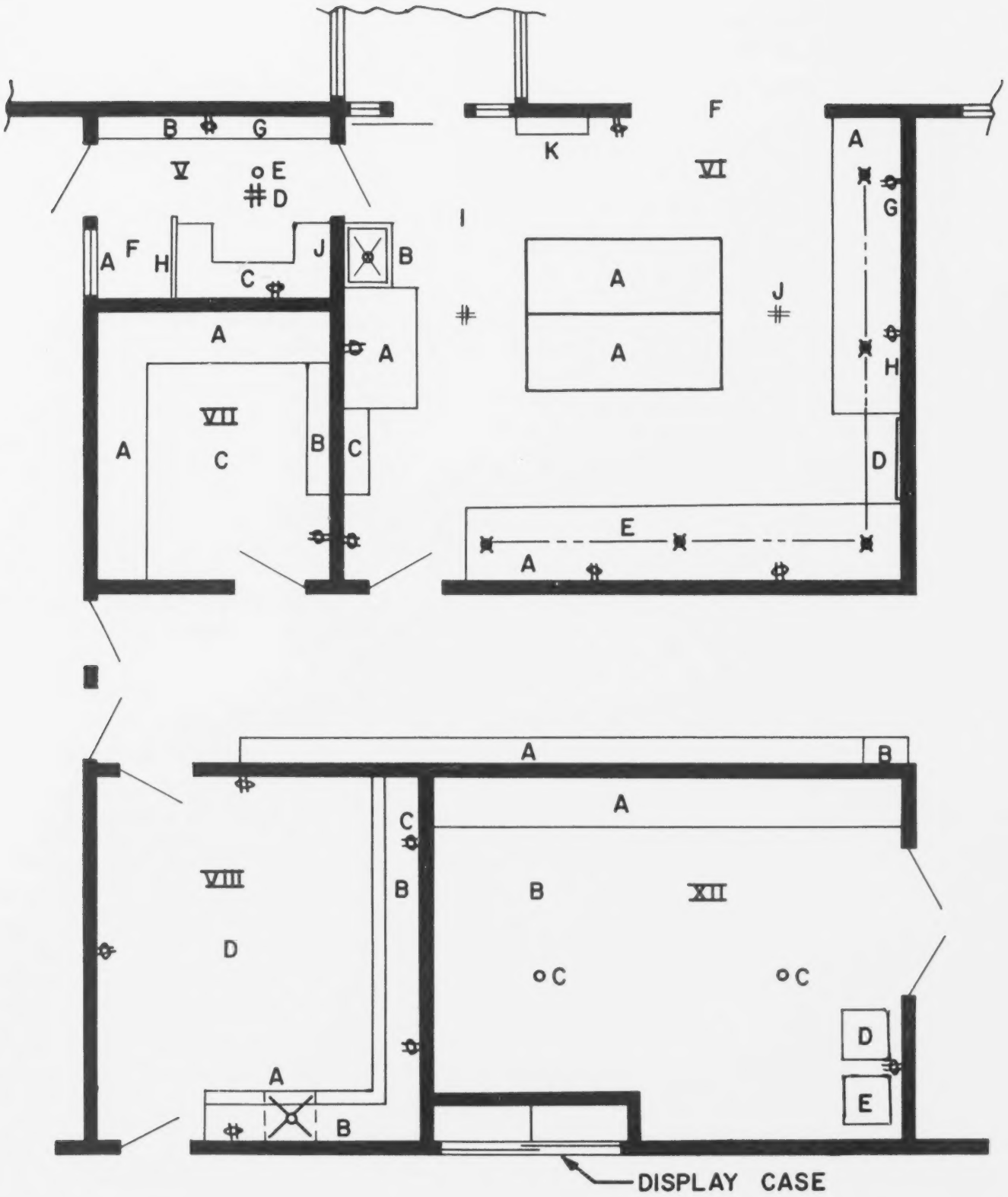


Figure 11. Walk-in Refrigerator, Plant Laboratory, Storage and Teacher's Office.

V

WALK-IN REFRIGERATOR

A. Thermopane display window

B. Shelves 12" wide, 18" between shelves

C. Shelves 24" wide, 18" between shelves

D. Floor drain - removable grid

E. Incandescent lamp

F. Fluorescent lamp - 4' long, double tube

G. Double electrical outlets - waterproof

H. Tack board wall

I. Controls - temperature range 35° to $50^{o}F$, plus or minus $2^{o}F$

VI

HEADHOUSE OR PLANT LABORATORY

A. Potting tables - dimensions: 3' wide, 30" high with 18" back; materials: 3/8" asbestos cement; inset metal edges; curved metal at table back; 30 gal. plastic rubbish drums for fertilizer and soil

B. Lead and copper sink on floor - dimensions: 12" sides; water tap- hot and cold must be 24" above floor threaded outlet; splash board at wall; soap and towel dispensers

C. Storage cabinet - wood or metal - dimensions: 12" deep, 3-1/2' wide, 8' high; shelves - adjustable, 12" apart; lockable

D. Blackboard

E. Overhead water pipe - with retractable drops 8' apart; spray nozzles with hand control at nozzle

F. Roll up door - garage type with pedestrian door in it

G. Electrical outlets - double, 4' 6" above floor

H. Tack board - 4' 8" above floor to 8' above floor, 12' long

I. Overhead lighting - fluorescent daylight type

J. Floor drains - removable grids

K. Master control panel - greenhouse heating, cooling, lighting, CO_2 injection, etc.

M. Sealed concrete floor

VII

STORAGE

A. Shelves - 2' wide, 2' apart

B. Garden tool storage - 8' high, hooks for spades, rakes, etc.

C. Lighting - incandescent lamp

VIII

TEACHER OFFICE

A. Sink (acid proof) - hot and cold water

B. Counters (acid proof) - storage cabinets under; glass door storage cabinets over

C. Double electrical outlets

D. Fluorescent lamps - daylight type

Corridor

A. Lockers - 40 each of 12" x 12" size

B. First aid kit

Display Case

Dimensions: 8' long, 4' high, bottom 4' above floor; sliding glass doors - lockable type; shelves - adjustable, removable, glass; pegboard back wall; lighted - fluorescent lamps; refrigerated

IX

HORTICULTURAL MECHANICS SHOP

1. Work bench space for 20 students
2. Drill press
3. Band saw
4. Wood jointer
5. Continuous band hacksaw
6. Circular saw
7. Two grinders

8. Steam cleaner
9. Small engine dynamometer
10. Arc welder
11. Gas welder
12. Radial arm saw
13. Cooling fan
14. Air compressor
15. Soil shredder
16. Sprayer
17. Floor drains - 2
18. Sink
19. Blackboard
20. Overhead door

X

SOIL TREATMENT AREA

Steam chest approximately 6' by 3' by 3' with tightly fitting doors in one side; used for steaming soil.

XII

SHOP STORAGE

A. Storage rack for pipe, metal and lumber
B. Floor - sealed concrete
C. Lighting - incandescent
D. Soil shredder
E. Sprayer

Greenhouse Environmental Control

A school greenhouse should be semi-automatically controlled by thermostats and time switches that activate heating, cooling, air circulation, carbon dioxide, lighting, and water systems in the same ways that these are used in commercial production.

Heating systems, regardless of the kind of fuel, and distribution equipment, are controlled by thermostats especially designed for greenhouse use. The temperature control accuracy must be within $\pm 1^{o}F$. Greenhouses are compartmented so plants having different temperature requirements may be grown separately. Each compartment, therefore, must have an independently controlled heating system. The pipe placement for a hot-water heated greenhouse is shown in Figure 12. School greenhouses should use hot water rather than steam as a heat source because it permits more accurate temperature control. The appropriate placement of unit heaters, combined with pipe radiators, is shown in Figure 13. (Unit heaters alone are not adequate in Northeastern States.)

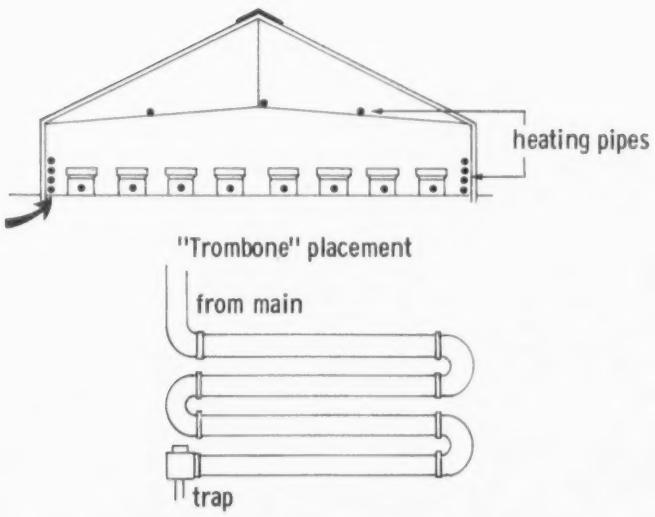


Figure 12. Pipe placement for a hot water-heated greenhouse

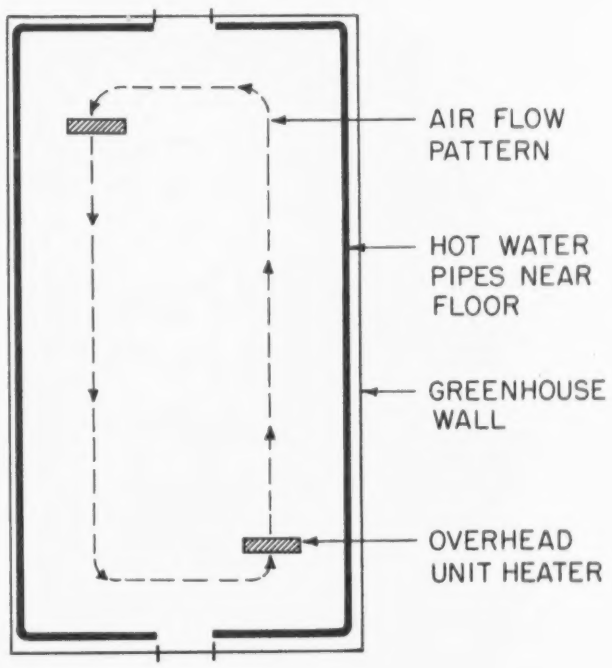


Figure 13. Unit heaters and pipe radiator placement.

Thermostatic controls and thermometers must be shielded from the sun to prevent inaccurate control and readings.

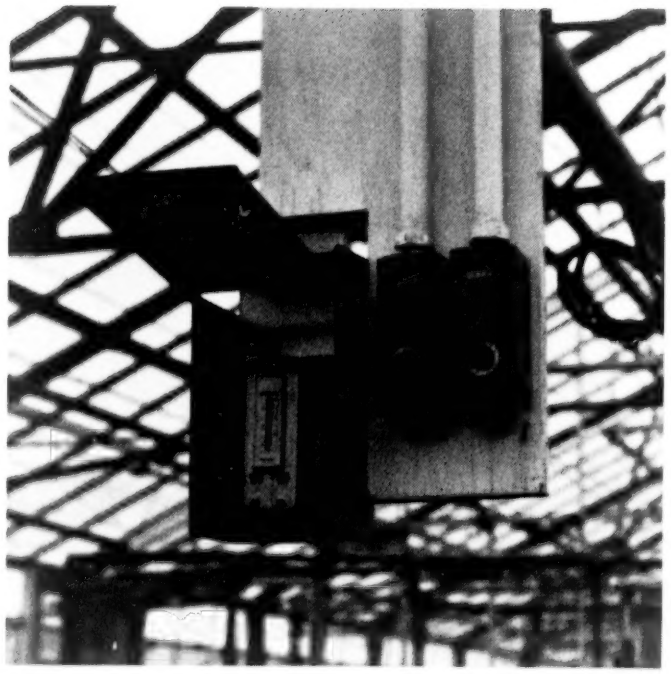


Figure 14. Thermostat shielded from sun.

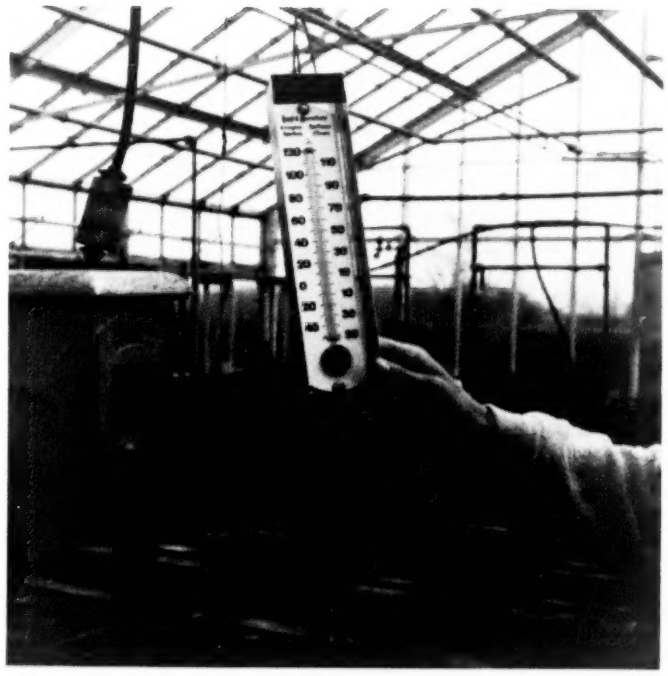


Figure 15. Thermometer shielded from sun.

Temperature control in the school greenhouse in summer months can be achieved by the use of evaporative cooling devices. Crops to be flowered for fall classes are grown during summer months when artificially cooled air is essential for greenhouse crop production. Figures 16 and 17 illustrate the pad and fan system in which fans draw cooled air into the greenhouse through a wet pad. Figure 18 shows a unit evaporative cooler which is appropriate for small greenhouses, provided the cooled air is distributed evenly by means of perforated polyethylene sleeves.

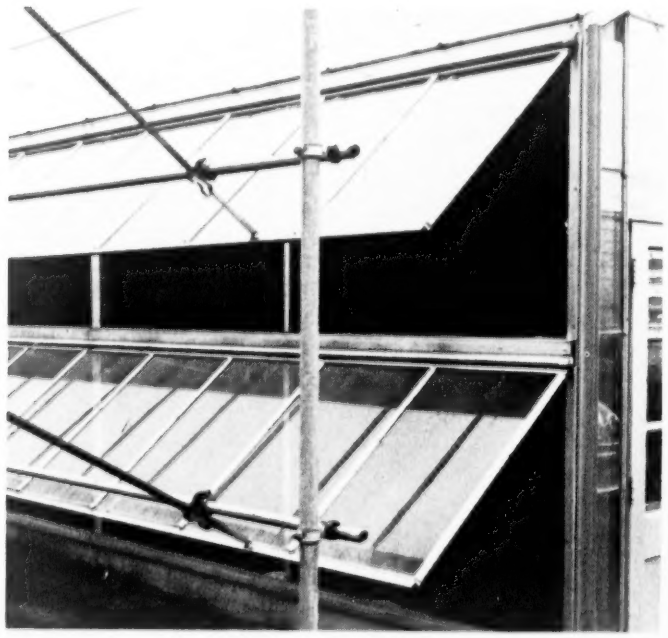


Figure 16. evaporative cooling; wet aspen pad in north wall of greenhouse.

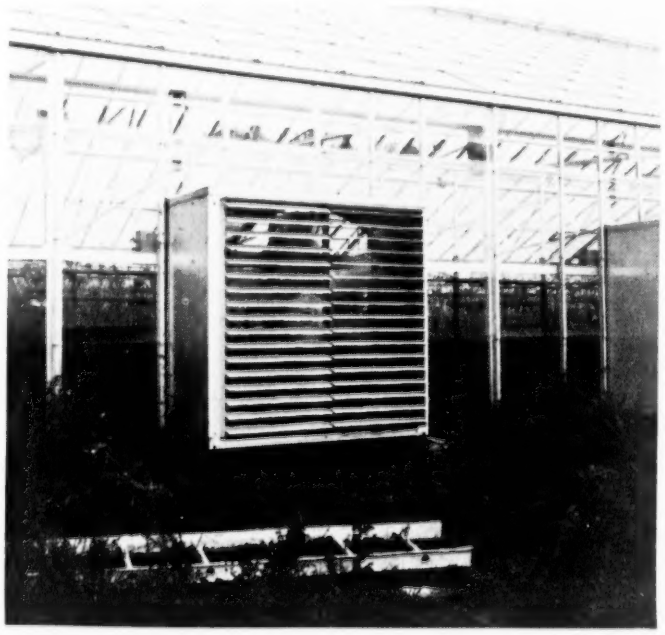


Figure 17. Evaporative cooling; fans in the wall opposite the pad.

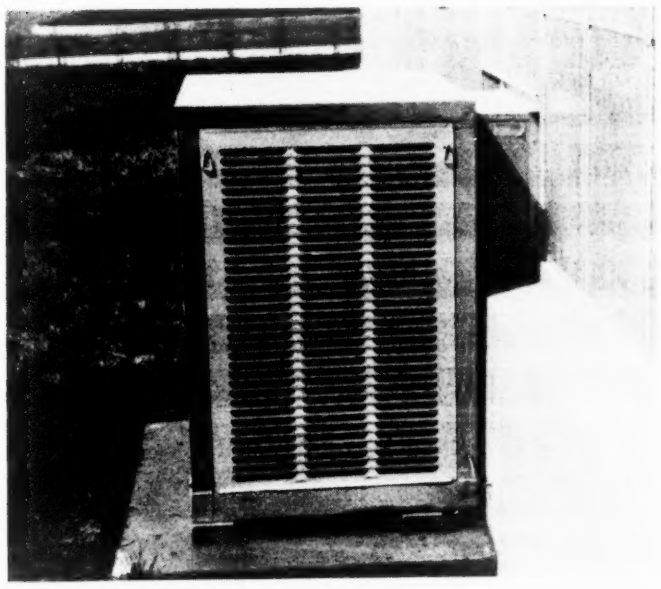


Figure 18. Unit evaporative air cooler.

School greenhouses must be equipped with a device for providing air circulation which prevents certain diseases by removing moisture from the leaf surfaces. Gentle air circulation also provides better temperature control by preventing stratification of air layers of different temperatures.

Figure 19 illustrates a fan for air circulation. One such device is adequate for a greenhouse compartment about 30 feet long. It may be combined with an independently activated heater.

Figure 20 shows a perforated polyethylene tube which has a continuously operating fan 18 inches from the end wall. An independently operated louver admits outside air when cooling is desired.

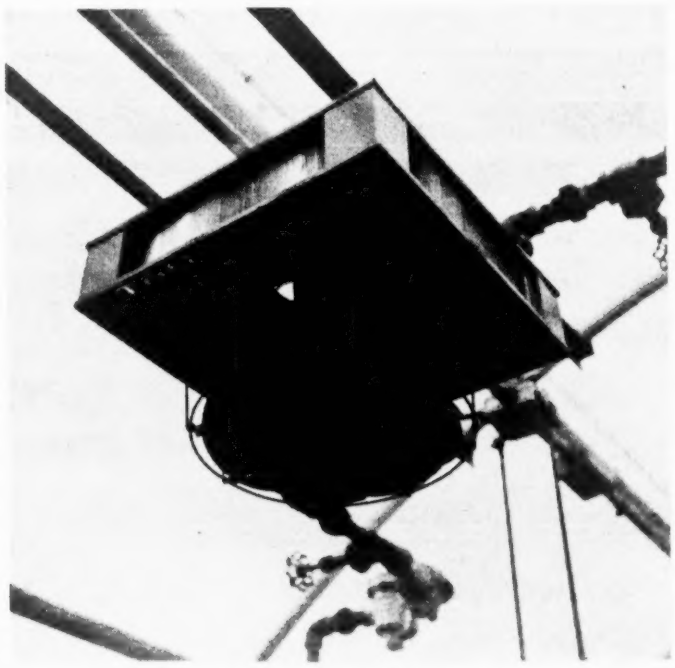


Figure 19. An air circulating fan with independent heater.

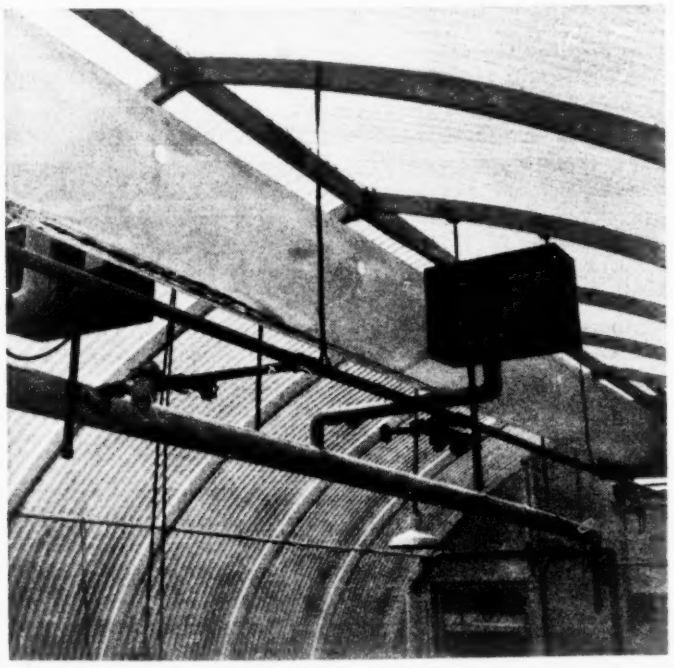


Figure 20. Perforated polyethylene tube for air circulation or cooling.

During mild weather air is also admitted to the greenhouse by means of side and ridge ventilators. These are normally hand-operated with the exception of the leeward (east side) ridge ventilator which should be motorized and controlled by a thermostatic device. A hand-operated ventilating machine is indicated in Figure 21, while a thermostatically controlled one is shown in Figure 22.

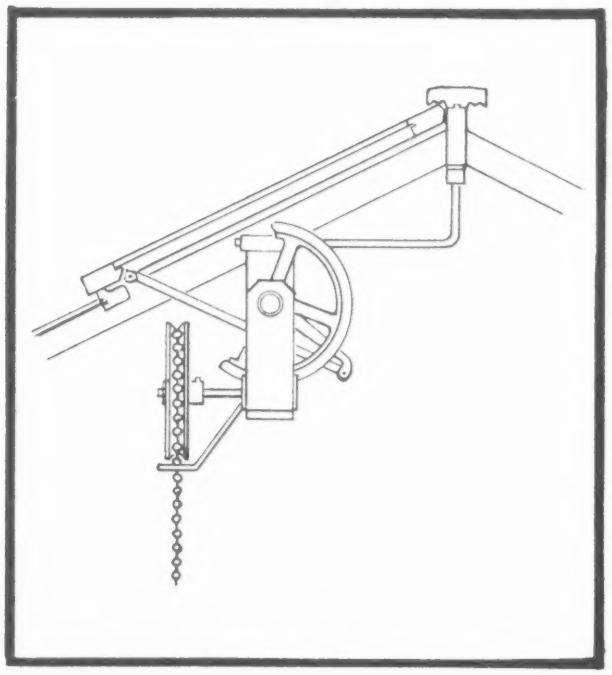


Figure 21. Hand-operated ventilating machine. (Courtesy, Lord and Burnham Co., Irvington-on-Hudson, N.Y.)

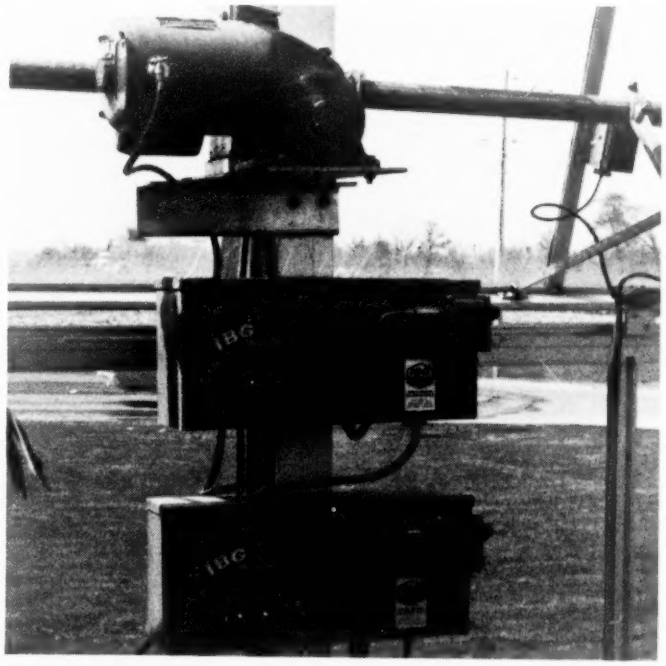


Figure 22. Thermostatically controlled ventilating machine.

Increased levels of CO_2 are used to increase yields and speed production in commercial greenhouses during late fall, winter, and early spring. A school greenhouse should be equipped to demonstrate this technique to students. Several means are available for doing this, but the safest and most accurate system for a school greenhouse is one employing four to eight tanks of liquid carbon dioxide, a manifold, a regulator, and 1/4-inch polyethylene tubes to distribute the carbon dioxide to air circulating fans.

The length of the dark period in the 24-hour day-night cycle influences the flowering or nonflowering of certain crops such as poinsettias and chrysanthemums. Both of these crops require an interrupted dark period to promote leafy growth. This is done with 60 or 100 watt incandescent lamps 4 feet apart and 2 feet over the tops of the plants as

shown in Figure 23. A time-switch turns these on for several hours in the middle of the dark period. When these plants have become sufficiently tall, flower buds are started by providing long dark periods (13 to 16 hours) by means of special black cloth drawn over the plants in the evening and morning to artificially extend the night length. This equipment is also illustrated in Figure 23. Schools should be equipped to demonstrate this control of photoperiod.

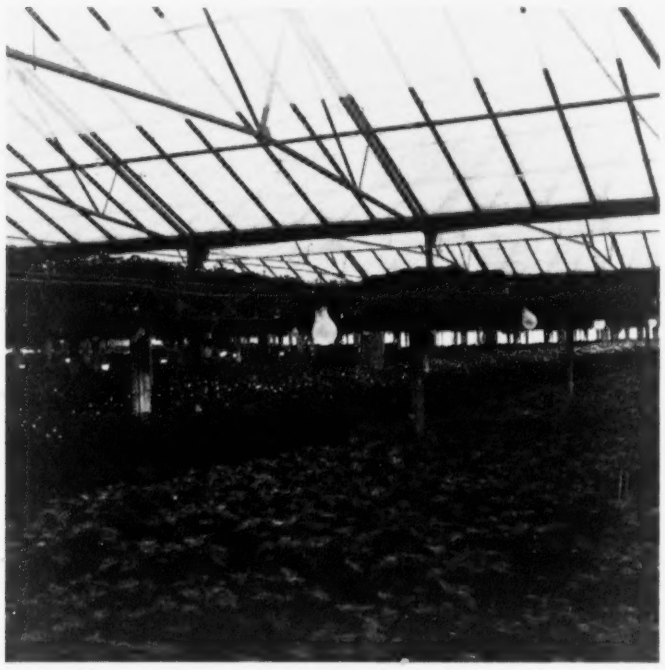


Figure 23. Lights and black cloth for photoperiod control.

Semi-automatic devices for watering greenhouse crops save so much work that they have been universally adapted for greenhouse production. Figure 25 illustrates the use of 180° flat spray nozzles mounted on a plastic pipe on the bench edge for watering cut flower crops. Figure 26 illustrates a "spaghetti" system with small tubes that carry water to each potted plant from a larger distribution pipe. Both systems are usually operated by valves. School greenhouses should be equipped to demonstrate the use of these devices.

Germination of seeds and rooting of cuttings is practiced in commercial greenhouses under a fine spray of water which is distributed over a greenhouse bench by means of nozzles that are activated for a few seconds on a 5-to 10-minute cycle during daylight hours. See Figure 27. A time clock and an interval timer with a solenoid valve are needed to control the system. About 200 square feet of bench space in a school greenhouse should have this equipment. "Bottom heat" is provided by means of a thermostatically controlled electrical heating cable.

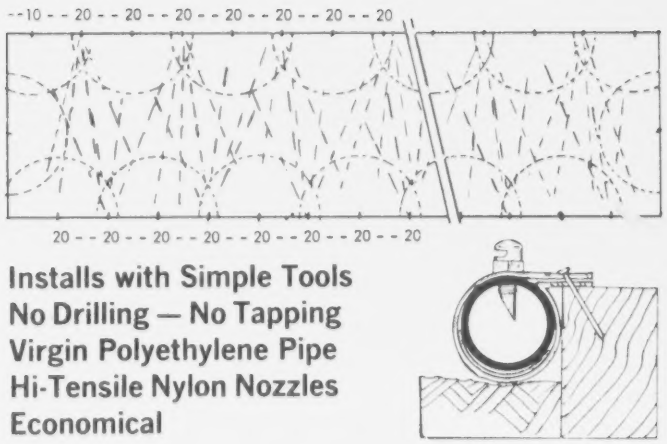


Figure 25. Flat spray nozzles for watering cut flower crops. (Courtesy, Lord and Burnham Co., Irvington-on-Hudson, New York.)

Figure 26. "Spaghetti" system for watering potted plants.

Greenhouses save considerable expense by fertilizing plants while watering them. This is done by injecting a concentrated fertilizer solution into the irrigation line so that the plants are given diluted fertilizer solution at every watering. A school greenhouse should be equipped with a fertilizer injection device such as that illustrated in Figure 28.

Figure 27. Mist propagation system.

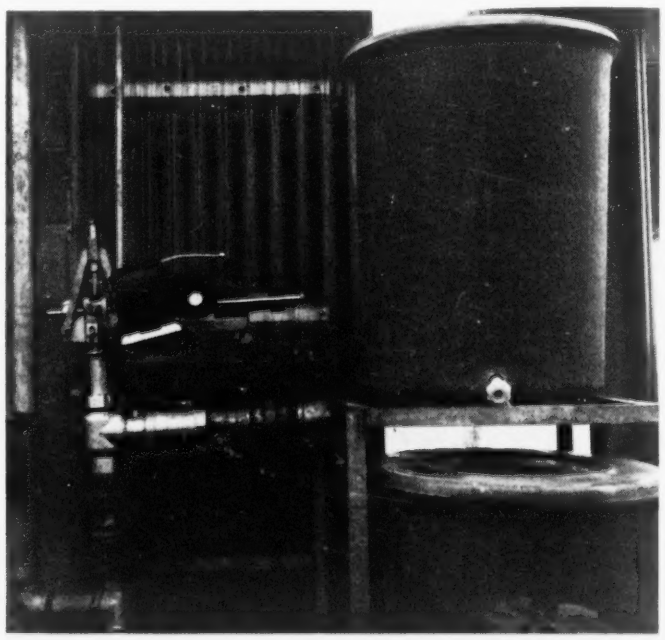


Figure 28. A fertilizer injector.

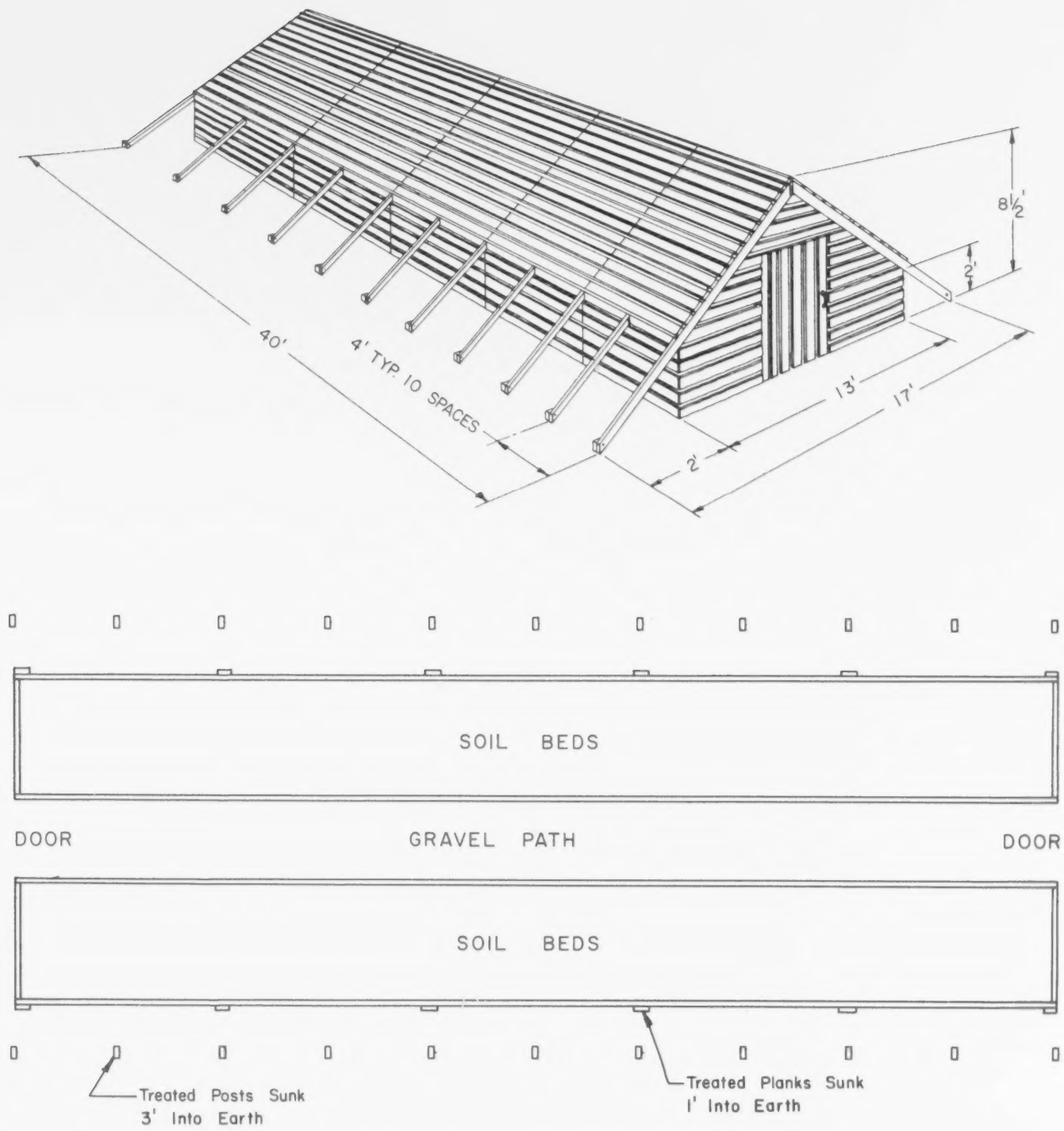


Figure 29. Plan for an A-frame School Lathhouse.

NURSERY CROP PRODUCTION FACILITIES

The ornamental horticulture school facility where courses in nursery crop production are offered needs a lathhouse, a plot for field-grown stock, an area for container stock, and an arboretum, in addition to propagation space in the greenhouse, and coldframe space for small plants.

Nursery Lathhouse

A lathhouse the size and shape indicated in Figure 29 should be adequate for most schools. The A-frame design avoids snow load problems that may be encountered with a flat roof. It is important that the lath strips be applied in a north-south direction so that the plants are exposed to moving alternate patterns of sun and shade. Gravel walks and a water outlet are desirable.

Field Plot

Figure 30 illustrates in simplified form how a field plot for nursery stock may be laid out. This plan is for only 55 species of nursery plants, chosen from the list presented in Appendix A, footnoted (f). This list is for Plant Hardiness Zone 6. Schools in other hardiness zones may find it desirable to make some substitutions in this list. The minimum worthwhile size for a school nursery is about 1/4 acre. By adding more species and numbers of plants, the school nursery could be increased in size and usefulness. It seems unlikely that one could justify as an educational facility a school nursery over 2 acres in size.

Container Nursery Stock Area

About 50 kinds of nursery plants, chosen from those footnoted (c) in Appendix A should be grown as container nursery stock. This number should be grown on an outdoor surface. An asphalt paved area about 50 feet by 50 feet could adequately handle this stock. A less expensive alternative is a smoothed area, the same size, covered with 4 mil polyethylene film on which is placed a 3 to 4 inch depth of 3/4 inch diameter crushed stone. A system of plastic tubes, with one ending in each container, can be used for irrigation. Portable cold frames or quonset-style polyethylene film covered frames can be installed for winter protection (this film is removed in spring and replaced in fall).

TYPE OF PLANT	SPACING BETWEEN ROWS	SPACING IN ROWS	BLOCKS							LENGTH OF ROTATION
STANDARD DECIDUOUS TREES (7 SPECIES) (A)	5'	18"	A-1 PLANT 1971 THIN 1974 HARVEST '76 COVER CR.'77 REPLANT '78	A-2 PLANT 1972 THIN 1975 HARVEST '77 COVER CR.'78 REPLANT '79	A-3 PLANT 1973 REPLANT '80	A-4 PLANT 1974 REPLANT '81	A-5 PLANT 1975 REPLANT '82	A-6 PLANT 1976 REPLANT '83	A-7 PLANT 1977 REPLANT '84	7 YEARS
SMALL DECIDUOUS TREES (6 SPECIES) (B)	4'	18"	B-1 PLANT '71 THIN '74 HARVEST '75 COVER CR. '76 REPLANT '77	B-2 PLANT '72 THIN '75 HARVEST '76 COVER CR.'77 REPLANT '78	B-3 PLANT '73 REPLANT '79	B-4 PLANT '74 REPLANT '80	B-5 PLANT '75 REPLANT '81	B-6 PLANT '76 REPLANT '82		6
EVERGREEN TREES (8 SPECIES) (C)	4'	2'	C-1 PLANT '71 HARVEST '75 COVER CR. '76 REPLANT '77	C-2 PLANT '72 REPLANT '78	C-3 PLANT '73 REPLANT '79	C-4 PLANT '74 REPLANT '80	C-5 PLANT '75 REPLANT '81	C-6 PLANT '76 REPLANT '82		6
NARROW-LEAF & BROAD-LEAF EVERGREEN SHRUBS (6 SPECIES) (D)	4'	2'	D-1 PLANT '71 HARVEST '74 COVER CR. '75 REPLANT '76	D-2 PLANT '72 HARVEST '75 COVER CR. '76 REPLANT '77	D-3 PLANT '73 HARVEST '76 COVER CR. '77 REPLANT '78	D-4 PLANT '74 HARVEST '77 COVER CR. '78 REPLANT '79	D-5 PLANT '75 HARVEST '78 COVER CR. '79 REPLANT '80		260'	5
LARGE DECIDUOUS SHRUBS (6 SPECIES) (E)	4'	1'	E-1 PLANT '71 HARVEST '73 COVER CR. '74 REPLANT '75	E-2 PLANT '72 HARVEST '74 COVER CR. '75 REPLANT '76	E-3 PLANT '73 HARVEST '75. COVER CR. '76 REPLANT '77	E-4 PLANT '74 HARVEST '76 COVER CR. '77 REPLANT '78				4
MEDIUM DECIDUOUS SHRUBS (8 SPECIES) (F)	4'	1'	F-1 PLANT '71 HARVEST '72 COVER CR. '73 REPLANT '74	F-2 PLANT '72 HARVEST '73 COVER CR. '74 REPLANT '75	F-3 PLANT '73 HARVEST '74 COVER CR. '75 REPLANT '76					3
SMALL DECIDUOUS SHRUBS (6 SPECIES) (G)	4'	1'	G-1 PLANT '71 HARVEST '72 COVER CR. '73 REPLANT '74	G-2 PLANT '72 HARVEST '73 COVER CR. '74 REPLANT '75	G-3 PLANT '73 HARVEST '74 COVER CR. '75 REPLANT '76					3
DECIDUOUS & EVERGREEN VINES AND GROUND COVERS (8 SPECIES) (H)	4'	1'	H-1 PLANT '71 HARVEST '72 COVER CR. '73 REPLANT '74	H-2 PLANT '72 HARVEST '73 COVER CR. '74 REPLANT '75	H-3 PLANT '73 HARVEST '74 COVER CR. '75 REPLANT '76					3

SCALE 0 5' 10' 15' 20'

200'

Figure 30. Planting and Rotation Plan for a Field-Grown Nursery at a School.

Arboretum

Figure 31 shows how the school grounds may be used as an arboretum to include 200 to 300 kinds of trees and shrubs. Because students seeking occupations in nursery contracting, nursery production, landscape nurseries, and garden stores must be able to identify these plants on sight at any season of the year, the arboretum is a vital instructional facility. The outline or shape of a tree is an important clue to its identity, for this reason it needs to be seen at a distance. If the land area is divided into large circles or oblongs, and trees are planted along the borders, distant views of them are possible within an overall pleasing design.

Three to 5 trees of one species should be planted in groups to avoid having students memorize an individual specimen. For study purposes, trees should be grouped by genus; all oaks should be in one area, for example. Evergreen trees should be grouped at intervals throughout the arboretum to give winter interest. Trees should be spaced 40 to 80 feet apart.

Small trees should be planted in groups for study purposes, but the groups should be spread out through the arboretum to distribute the spring color. They should be spaced 15 to 20 feet apart.

Shrubs should be planted in groups by genus. Shade-tolerant species could be planted under the trees. Special soil preparation will be needed for plants that require acid soil.

Before construction and planting, several nursery-landscapers in the area (preferably advisory committee members) should be asked to examine the plan and make suggestions. Actual execution may take several years. A sample sequence for a 5-year plan follows:

a. First year
   - Complete all grading
   - Install irrigation and power lines
   - Build permanent structures
   - Plant standard trees
   - Plant turf

b. Second year
   - Plant small trees
   - Plant ¼ nursery
   - Install golf course tees and greens

c. Third year
   - Install turf plots
   - Plant ¼ nursery
   - Plant ½ shrub collections

d. Fourth year
   - Install paths
   - Plant ¼ nursery
   - Plant ½ shrub collections

e. Fifth year
   - Plant ¼ nursery
   - Install flower garden

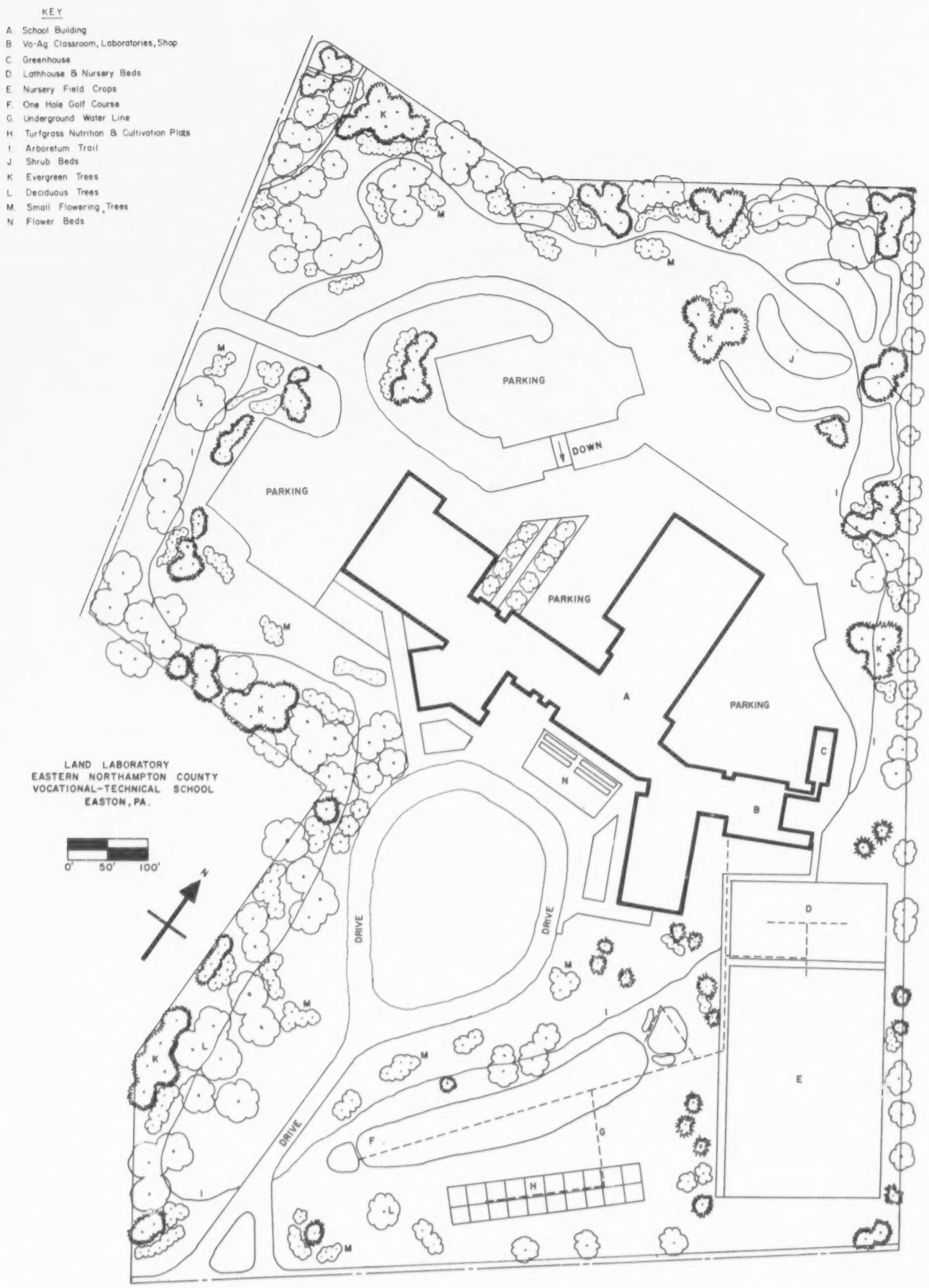


Figure 31. Layout of a School Land Laboratory Including an Arboretum.

TURFGRASS DEMONSTRATION AREA

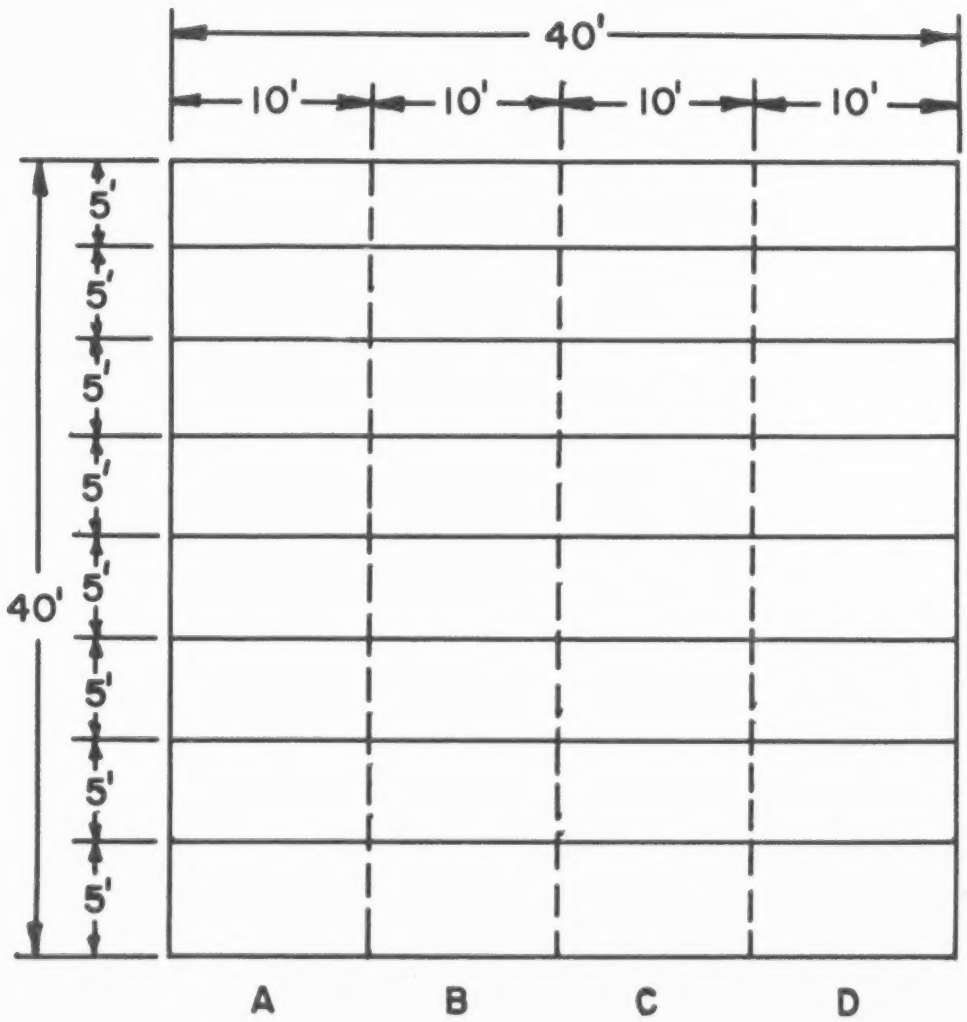
Two turfgrass areas should be included in the facility if instruction in turfgrass maintenance and establishment is part of the ornamental horticulture program. These would be in addition to a one (or more) hole golf course.

Figure 33 indicates how a plot may be laid out to demonstrate the effect of mowing height and fertility on several kinds of turfgrasses.

Figure 34 suggests a layout for a demonstration of the effect of seeding rates and fertilizer application rates on the response of a good lawn seed mixture. Adequate space should be set aside so that each class could set up this demonstration area each year.

Additional turf plots to demonstrate the effectiveness of selective herbicides might be desirable.

Figure 32. Turfgrass demonstration plots.



Variety

1. Common Kentucky Bluegrass
2. Fylking Kentucky Bluegrass
3. Pennlawn Red Fescue
4. Kentucky 31 Tall Fescue
5. Redtop
6. Rough Bluegrass
7. Highland Colonial Bentgrass
8. Perennial Ryegrass

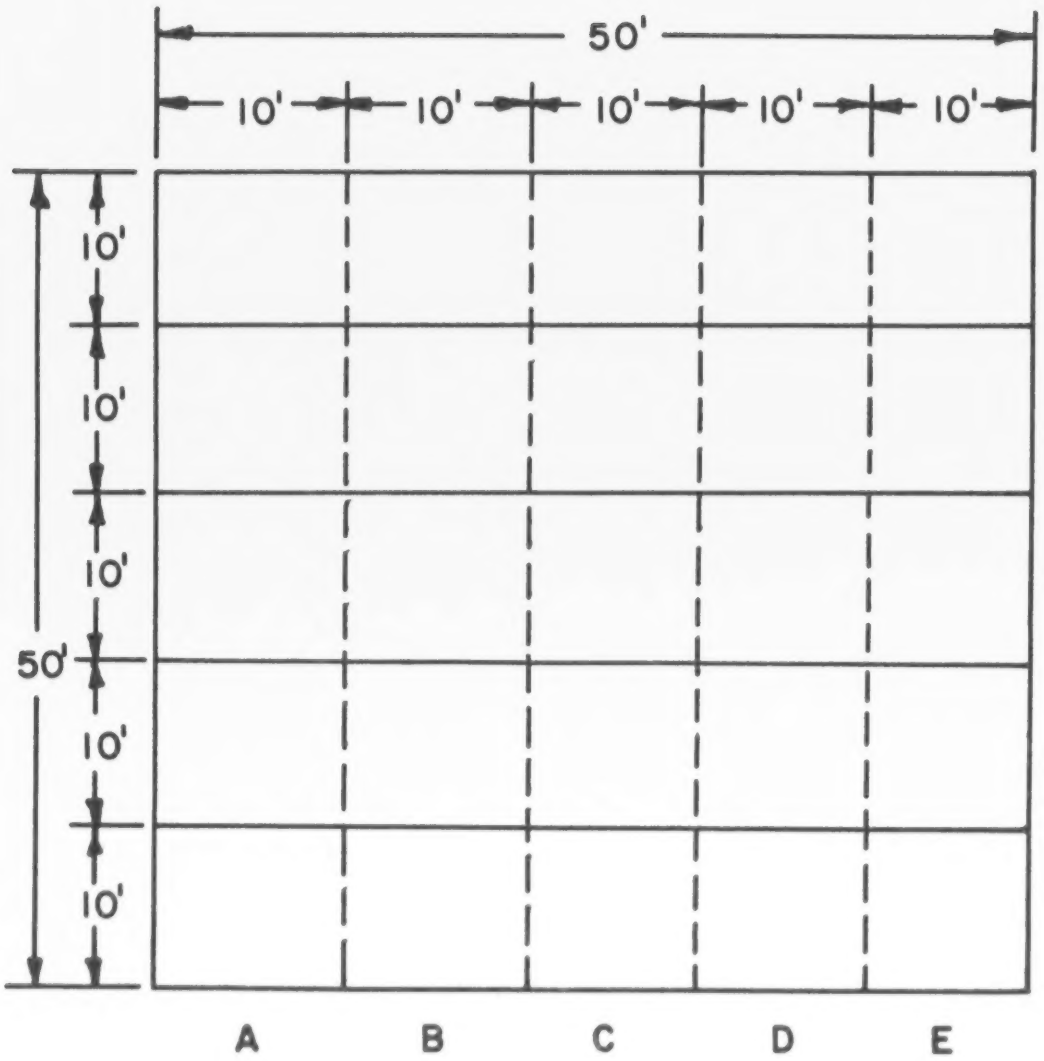
A. Mow at 3/4" height - Fertilize with 1 lb. N per 1,000sq. ft.

B. Mow at 3/4" height - Fertilize with 4 lb. N per 1,000sq. ft.

C. Mow at 1 1/2" height - Fertilize with 1 lb. N per 1,000 sq. ft.

D. Mow at 1 1/2" height - Fertilize with 4 lb. N per 1,000 sq. ft.

Figure 33. Plot layout for demonstration of effect of mowing height and fertility on several turf grasses (H. O. Wilcox).



1. 5 lbs. 10-5-5 fertilizer per 1,000 sq. ft.
2. 10 lbs. 10-5-5 fertilizer per 1,000 sq. ft.
3. 20 lbs. 10-5-5 fertilizer per 1,000 sq. ft.
4. 40 lbs. 10-5-5 fertilizer per 1,000 sq. ft.
5. 80 lbs. 10-5-5 fertilizer per 1,000 sq. ft.

A. 1 lb. seed per 1,000 sq. ft.
B. 2 lb. seed per 1,000 sq. ft.
C. 4 lb. seed per 1,000 sq. ft.
D. 8 lb. seed per 1,000 sq. ft.
E. 16 lb. seed per 1,000 sq. ft.

Figure 34. Plot layout for demonstration of effect of fertility levels on seeding rates of a good lawn seed mixture (H. O. Wilcox)

APPENDIX A

RECOMMENDED TREES, SHRUBS, AND FLOWERS FOR SCHOOL ARBORETUMS

STANDARD DECIDUOUS TREES

	Common Name	Technical Name	Hardiness Zones
	Red Maple	Acer rubrum	3-8
	Column Red Maple	Acer rubrum columnar	3-8
	Norway Maple	Acer platanoides	3-8
	Norway Maple	Acer platanoides 'Crimson King'	3-8
(f)	Sugar Maple	Acer saccharum	3-8
	Pyramid Sugar Maple	Acer saccharum pyramidale	3-8
(f)	European Beech	Fagus sylvatica	4-8
	Purple Beech	Fagus sylvatica atropunicea	4-8
(f)	Ginkgo	Ginkgo biloba	4-8
	Sentry Ginkgo	Ginkgo biloba fastigiata	4-8
	Thornless Honeylocust	Gleditsia triacanthos inermis	4-8
	Moraine Locust	Gleditsia triacanthos inermis Moraine	4-8
(f)	Sunburst Honeylocust	Gleditsia triacanthos inermis Sunburst	4-8
(f)	Sweet Gum	Liquidambar styraciflua	4-8
	Tulip Tree	Liriodendron tulipifera	4-8
	Black Tupelo	Nyssa sylvatica	4-8
	Northern Red Oak	Quercus borealis	4-8
	Scarlet Oak	Quercus coccinea	4-8
	Shingle Oak	Quercus imbricaria	5-8
(f)	Pin Oak	Quercus palustris	4-8
	English Oak	Quercus robur	5-8
	Pyramidal English Oak	Quercus robur fastigiata	5-8
	Live Oak	Quercus virginiana	7-8
(f)	Thurlow Weeping Willow	Salix elegantissima Thurlow	4-8
	Little-Leaf Linden	Tilia cordata	3-8

(c) recommended for container stock for school nursery

(f) recommended for field stock for school nursery

SMALL DECIDUOUS TREES

	Common Name	Technical Name	Hardiness Zones
	Amur Maple	Acer ginnala	2-8
	Japanese Maple	Acer palmatum	5-8
(c)(f)	Bloodleaf Japanese Maple	Acer palmatum atropupureum	5-8
	Silk Tree	Albizzia julibrissima rosea	6-7
	Serviceberry	Amelanchier canadensis (laevis)	4-8
	Cutleaf Weeping Birch	Betula pendula laciniata	2-7
	European Hornbeam	Carpinus betulus	5-8
	Pyramidal European Hornbeam	Carpinus betulus fastigiata	5-8
(f)	Eastern Redbud	Cercis canadensis	4-8
(f)	Flowering Dogwood	Cornus florida	4-8
	Kousa Dogwood	Cornus kousa	5-8
	Cornelian Cherry Dogwood	Cornus mas	4-8
	Paul's Scarlet Hawthorn	Crataegus oxycantha Pauli	4-7
	Washington Hawthorn	Crataegus phaenopyrum	4-7
	Russian Olive	Elaeagnus angustifolia	2-8
	Franklinia	Franklinia alatamaha	6-8
	Gold-Rain Tree	Koelreuteria paniculata	5-8
	Laburum	Laburnum vossi	5-8
	Kobus Magnolia	Magnolia kobus	4-8
(f)	Saucer Magnolia	Magnolia soulangeana	5-8
	Star Magnolia	Magnolia stellata	5-8
	Sweetbay Magnolia	Magnolia virginiana	5-8
	Arnold Crabapple	Malus arnoldiana	4-8
	Carmine Crabapple	Malus atrosanguinea	4-8
	Dorothea Crabapple	Malus dorothea	4-8
	Japanese Flowering Crabapple	Malus floribunda	4-8
	Hall's Parkman Crabapple	Malus halliana 'Parkman'	5-8
	Hopa Crabapple	Malus hopa	4-8
	Bechtel Crabapple	Malus ioensis 'Plena'	2-8
	Eley Purple Crabapple	Malus purpurea 'Eleyi'	4-8
(f)	Sargent Crabapple	Malus sargenti	5-8
	Scheidecker Crabapple	Malus scheideckeri	4-8

SMALL DECIDUOUS TREES (Continued)

Common Name	Technical Name	Hardiness Zones
Pink Cloud Pissard Plum	Prunus cerasifera 'Rosea'	3-7
(f) Kwanzan Cherry	Prunus serrulata	5-7
Higan Cherry	Prunus subhirtella	5-7
Weeping Higan Cherry	Prunus subhirtella pendula	5-7
Yoshina Cherry	Prunus yedoensis	5-7
European Mountain Ash	Sorbus aucuparia	2-8

EVERGREEN TREES

Common Name	Technical Name	Hardiness Zones
(f) White Fir	Abies concolor	4-8
Cedar of Lebanon	Cedrus libani	7-8
(c) Sawara Falsecypress	Chamaecyparis pisifera	3-8
Cryptomeria	Cryptomeria japonica	5-8
(c) American Holly	Ilex opaca	5-8
(c) Red Cedar	Juniperus virginiana	2-8
(f) Southern Magnolia	Magnolia grandiflora	7-8
(f) Norway Spruce	Picea abies	2-8
Serbian Spruce	Picea omorika	4-8
(c)(f) Koster Blue Spruce	Picea pungens argentea	2-8
Austrian Pine	Pinus nigra	4-8
Red Pine	Pinus resinosa	2-8
(f) White Pine	Pinus strobus	3-8
(f) Scotch Pine	Pinus sylvestris	2-8
Yew Podocarpus	Podocarpus macrophyllus	7-8
Douglas Fir	Pseudotsuga menziesii	4-8
(c)(f) Canada Hemlock	Tsuga canadensis	3-8

LARGE DECIDUOUS SHRUBS

Common Name	Technical Name	Hardiness Zones
Cornelian Cherry Dogwood	Cornus mas	4-8
(f) Smoke Bush	Cotinus coggyria 'Purpureus'	5-8
Aldenham Spindle Tree	Euonymus europeaus 'Aldenhamensis'	3-8
Chinese Witch-hazel	Hamamelis mollis	5-8
(f) Shrub Althea	Hibiscus syriacus	5-8

LARGE DECIDUOUS SHRUBS (Continued)

	Common Name	Technical Name	Hardiness Zones
(f)	Beauty-bush	Kolkwitzia amabilis	4-8
(f)	Amur Privet	Ligustrum amurense	3-8
	European Privet	Ligustrum vulgare	4-8
	Amur Honeysuckle	Lonicera maacki	2-8
	Tatarian Honeysuckle	Lonicera tatarica	3-8
	Sweetbay Magnolia	Magnolia virginiana	5-8
(f)	Hybrid Lilac	Syringa hybrid	5-8
	Chinese Lilac	Syringa chinensis	5-8
	Highbush Blueberry	Vaccinium corymbosum	3-8
	Burkwood Viburnum	Viburnum burkwoodi	5-8
	Wayfaring Tree Viburnum	Viburnum lantana	3-8
	Nannyberry Viburnum	Viburnum lentago	2-8
	Blackhaw Viburnum	Viburnum prunifolium	3-8
	Sargent Cranberrybush Viburnum	Viburnum sargenti	4-8
	Tea Viburnum	Viburnum setigerum	5-8
(f)	Siebold Viburnum	Viburnum sieboldi	4-8
	American Cranberrybush Viburnum	Viburnum trilobum	2-8

NARROWLEAF EVERGREEN SHRUBS

	Common Name	Technical Name	Hardiness Zones
(c)	Slender Hinoki Falsecypress	Chamaecyparis obtusa gracilis	3-8
(c)(f)	Pfitzer Juniper	Juniperus chinensis pfitzeriana	4-8
	Sargent Juniper	Juniperus chinensis 'Sargenti'	4-8
(c)	Creeping Juniper	Juniperus horizontalis	5-8
(c)(f)	Andorra Juniper	Juniperus horizontalis plumosa	3-8
(c)(f)	Mugho Pine	Pinus mugo mughus	4-8
(c)	Spreading English Yew	Taxus baccata 'repandens'	6-8
(c)(f)	Spreading Japanese Yew	Taxus cuspidata	4-8
(c)	Upright Japanese Yew	Taxus cuspidata capitata	4-8
(c)	Dwarf Japanese Yew	Taxus cuspidata nana	4-8
(c)	Hatfield Yew	Taxus media 'Hatfieldi'	4-8
(c)(f)	Hick's Yew	Taxus media 'Hicksi'	4-8
(c)(f)	Ware's Arborvitae	Thuja occidentalis 'Wareana'	2-8

LARGE, BROADLEAF EVERGREEN SHRUBS

Common Name	Technical Name	Hardiness Zones
(c) Japanese Aucuba	Aucuba japonica	7-8
(c) Common Box	Buxus sempervirens	5-8
(c) Common Camellia	Camellia japonica	7-8
Sasangua Camellia	Camellia sasangua	7-8
(c) Evergreen Euonymus	Euonymus japonica	8
(c) American Holly	Ilex opaca	5-8
Sweet Bay Laurel	Laurus nobilis	6-8
(c) Chinese Photinia	Photinia serrulata	7-8
Cherry Laurel	Prunus laurocerasus 'Schipkaensis'	6-7
(c) Rose Bay Rhododendron	Rhododendron maximum	3-8
Leatherleaf Viburnum	Viburnum rhytidophyllum	5-8

MEDIUM DECIDUOUS SHRUBS

Common Name	Technical Name	Hardiness Zones
Acanthopanax	Acanthopanax sieboldianus	4-8
(c) Mentor Barberry	Berberis mentorensis	5-8
(c) Japanese Barberry	Berberis thunbergi	5-8
Flowering Quince	Chaenomeles lagenaria	4-8
(c) Red Osier Dogwood	Cornus stolonifera	2-8
(c) Spreading Cotoneaster	Cotoneaster divaricata	5-8
Hedge Cotoneaster	Cotoneaster lucida	4-8
(f) Snowflake Deutzia	Deutzia scabra candidissima	5-8
(c)(f) Winged Euonymus	Euonymus alatus	3-8
(c)(f) Forsythia, "Lynwood Gold," "Spring Glory," "Beatrix Farrand"	Forsythia intermedia spectabilis	5-8
Vernal Witchhazel	Hamamelis vernalis	4-8
French Hydrangea	Hydrangea macrophylla hortensia	6-8
Winterberry Holly	Ilex verticillata	3-8
Winter Jasmine	Jasminum nudiflorum	5-8
(f) Kerria	Kerria japanica pleniflora	4-8
(c) Beauty-bush	Kolkwitzia amabilis	4-8
Regel Privet	Ligustrum obtusufolium regelianum	3-8
(c) Winter Honeysuckle	Lonicera fragrantissima	5-8

MEDIUM DECIDUOUS SHRUBS (Continued)

	Common Name	Technical Name	Hardiness Zones
	Blueleaf Honeysuckle	Lonicera korolkowi	5-8
(c)	Northern Bayberry	Myrica pensylvanica	2-8
	Avalanche Mockorange	Philadelphus lemoine 'Avalanche'	5-8
	Albatre Mockorange	Philadelphus virginalis 'Albatre'	5-8
	Virginal Mockorange	Philadelphus virginalis 'Virginal'	5-8
(c)	Flame Azalea	Rhododendron calendulaceum	5-8
	Korean Rhododendron	Rhododendron mucronulatum	4-8
	Royal Azalea	Rhododendron schlippenbachi	4-8
	Jetbead	Rhodotypos scandens	5-8
	Father Hugo Rose	Rosa hugonis	5-8
	Rugosa Rose	Rosa rugosa	2-8
(f)	Bridalwreath Spirea	Spirea prunifolia plena	4-8
	Van Houtte Spirea	Spirea vanhouttei	4-8
	Snowberry	Symphoricarpos albus laevigatus	3-8
(f)	Persian Lilac	Syringa persica	5-8
(f)	Fragrant Viburnum	Viburnum carlesi	4-8
(f)	Linden Viburnum	Viburnum dilatatum	5-8
	Japanese Snowball	Viburnum plicatum	4-8

MEDIUM, BROADLEAF EVERGREEN SHRUBS

	Common Name	Technical Name	Hardiness Zones
(c)	Japanese Aucuba	Aucuba japonica	7-8
(c)	Wintergreen Barberry	Berberis julianae	5-8
	Thorny Eleagnus	Eleagnus pungens	7-8
(c)	Evergreen Euonymus	Euonymus japonica	8
(c)	Spreading Euonymus	Euonymus kiautschovicus	6-8
(c)	Convex-Leaf Japanese Holly	Ilex crenata convexa	6-8
(c)	Burford Chinese Holly	Ilex cornuta 'Burfordi'	7-8
	Mountain Laurel	Kalmia latifolia	5-8
(c)	Japanese Privet	Ligustrum japonicum	7-8
	Nandina	Nandina domesticum	7-8
	Japanese Pieris	Pieris japonica	6-8
	Cherry Laurel	Prunus laurocerasus 'Schipkaensis'	5-7
(c)	Laland Firethorn	Pyracantha coccinea lalandi	6-8

MEDIUM, BROADLEAF EVERGREEN SHRUBS

Common Name	Technical Name	Hardiness Zones
Leatherleaf Viburnum	Viburnum rhytidophyllum	5-8

SMALL DECIDUOUS SHRUBS

Common Name	Technical Name	Hardiness Zones
Purple Box Barberry	Berberis thunbergi minor	5-8
Japanese Quince	Chaenomeles japanica	4-8
(c)(f) Rockspray Cotoneaster	Cotoneaster horizontalis	4-8
Slender Deutzia	Deutzia gracilis	4-8
(c)(f) Dwarf Winged Euonymus	Euonymus alatus compactus	3-8
Oak-leaved Hydrangea	Hydrangea quercifolia	5-8
Shrubby St. Johnsworth	Hypericum prolificum	4-8
(c) Tree Peony	Paeonia suffruticosa	5-8
Bush Cinquefoil	Potentilla fruticosa	2-8
(f) Dwarf Flowering Almond	Prunus glandulosa	4-8
(c) Mollis Azalea	Rhododendron kosterianum	5
(f) Arctic Willow	Salix purpurea nana	2-8
(c) Anthony Waterer Spirea	Spirea bumalda 'Anthony Waterer'	5-8
(c) Dwarf European Cranberrybush	Viburnum opulus nanum	3-8
(c)(f) Weigela	Weigela 'Bristol Ruby'	4-8

SMALL, BROADLEAF EVERGREEN SHRUBS

Common Name	Technical Name	Hardiness Zones
(c) Glossy Abelia	Abelia grandiflora	5-8
Wintergreen Barberry	Berberis julianae	5-8
Three Spine Barberry	Berberis triacanthophora	5-8
Warty Barberry	Berberis verruculosa	5-8
(c) Korean Littleleaf Box	Buxus microphylla 'Koreana'	5-8
Warminster Broom	Cytisus praecox	5-8
(c) Rose Daphne	Daphne cneorum	4-8
(c) Somerset Daphne	Daphne somerset	5-8
(c) Bigleaf Wintercreeper Euonymus	Euonymus fortunei vegetus	5-8
(c) Evergreen Candytuft	Iberis sempervirens	5-8
(c) Convex-Leaf Japanese Holly	Ilex crenata convexa	6-8

SMALL, BROADLEAF EVERGREEN SHRUBS (Continued)

	Common Name	Technical Name	Hardiness Zones
(c)	Drooping Leucothoe	Leucothoe catesbaei	4-8
(c)	Box Honeysuckle	Lonicera nitida	7-8
(c)	Oregon Holly Grape	Mahonia aquifolium	5-8
	Mountain Pieris	Pieris floribunda	4-8
(c)	Carolina Rhododendron	Rhododendron carolinianum	5-8
(c)	Catawba Rhododendron	Rhododendron catawbiense	4-8
(c)	Hybrid Azalea	Rhododendron hybrid	5-8
(c)	Hybrid Rhododendron	Rhododendron hybrid	4-8
(c)	Snow Azalea	Rhododendron mucronatum	6-8
(c)	Amoena Azalea	Rhododendron obtusa amoena	6-8
(c)	Torch Azalea	Rhododendron obtusa kaempferi	6-8
(c)	Korean Yodogawa Azalea	Rhododendron yedoensis poukhanensis	5-8
	Fragrant Sarcococca	Sarcococca ruscifolia 'Hookeriana Humilis'	7-8
(c)	Reeves Skimmia	Skimmia reevesiana	7-8

DECIDUOUS AND EVERGREEN VINES

	Common Name	Technical Name	Hardiness Zones
(c)	Five-leaf Akebia	Akebia quinata (D)*	4-8
	Poreclain Ampelopsis	Ampelopsis brevipedunculata (D)	4-8
	Cross Vine	Begonia capreolata (E)	6-8
	Trumpet Creeper	Campsis tagliabuana 'Madame Galen' (D)	4-8
(c)(f)	European Bittersweet	Celastrus orbiculatus (D)	2-8
(c)(f)	Clematis	Clematis hybrids (D)	5-8
	Sweet Autumn Clematis	Clematis paniculata (D)	5-8
(c)	Bigleaf Wintercreeper Euonymus	Euonymus fortunei vegetus (E)	5-8
(c)	Algerian Ivy	Hedera canariensis (E)	7-8
(c)(f)	English Ivy	Hedera helix 'Baltica' (E)	5-8
(c)	Climbing Hydrangea	Hydrangea petiolaris (D)	4
	Common White Jasmine	Jasminum officinale (D)	7-8
	Henry Honeysuckle	Lonicera henryi (D)	4-8
	Trumpet Honeysuckle	Lonicera sympervirens (E)	3-8
	Low's Japanese Creeper	Parthenocissus tricuspidata 'Lowi' (D)	4-8
	Veitch Japanese Creeper	Parthenocissus tricuspidata 'Veitchi' (D)	4-8

* (D) = Deciduous; (E) = Evergreen

DECIDUOUS (D) AND EVERGREEN (E) VINES (Continued)

	Common Name	Technical Name	Hardiness Zones
	Passion Flower	Passiflora caerulea (D)	8
(c)(f)	Japanese Wisteria	Wisteria floribunda (D)	4-8
(c)	Chinese Wisteria	Wisteria sinensis (D)	5

DECIDUOUS AND EVERGREEN GROUNDCOVERS

	Common Name	Technical Name	Hardiness Zones
	Goutweed	Aegopodium podograria variegatum (D)	3-8
(f)	Carpet Bugle	Ajuga reptans (D)	4-8
	Sweet Woodruff	Asperula odorata (D)	4-8
	Scotch Heather	Calluna vulgaris (E)	4-8
	Lily-of-the-Valley	Convallaria majalis (D)	2-8
(c)	Creeping Cotoneaster	Cotoneaster adpressa (D)	4-8
(c)	Bearberry Cotoneaster	Cotoneaster dammeri (D)	4-8
(c)	Rockspray Cotoneaster	Cotoneaster horizontalis (D)	4-8
(c)	Baltic English Ivy	Hedera helix 'Baltica' (E)	5-8
(c)(f)	Creeping Juniper	Juniperus horizontalis (E)	2-8
(c)	Sargent Juniper	Juniperus chinensis 'Sargenti' (E)	4-8
	Henry Honeysuckle	Lonicera henryi (D)	4-8
	Canby Pachistema	Pachistima canbyi (E)	5-8
(c)(f)	Japanese Spurge	Pachysandra terminalis (E)	4-8
	Chilean Pernettya	Pernettya mucronata (E)	7-8
	Memorial Rose	Rosa wichuriana (D)	5-8
	Lowbush Blueberry	Vaccinium angustifolium laevifolium (D)	2-8
(f)	Myrtle, Periwinkle	Vinca minor (E)	4-8

GARDEN FLOWERS, HERBACEOUS PERENNIALS

	Common Name	Technical Name
	Japanese Windflower	Anemone vitifolia
(c)	Butterfly Weed	Asclepias tuberosa
(c)	Astilbe	Astilbe hybrids
	Shasta Daisy	Chrysanthemum maximum
(c)	Garden Chrysanthemum	Chrysanthemum morifolium
(c)	Delphinium	Delphinium hybrid (esp. D. belladonna h.)
(c)	Bleeding Heart	Dicentra spectabilis

GARDEN FLOWERS, HERBACEOUS PERENNIALS

Common Name	Technical Name
Gas Plant	Dictamnus fraxinella
Globethistle	Echinops ritro (esp. 'Taplow Blue')
(c) Daylily	Hemerocallis hybrids
Coral Bells	Heuchera sanguinea
Rose Mallow	Hibiscus moscheutos
(c) Evergreen Candytuft	Iberis sempervirens
Red Hot Poker	Kniphofia foliosa
(c) True Lavender	Lavendula vera (esp. 'Munstead')
Cardinal Flower	Lobelia cardinalis
Loose Strife	Lythrum superbum
(c) Peony	Paeonia hybrids
(c) Oriental Poppy	Papaver orientale
Garden Phlox	Phlox paniculata
Globe Flower	Trollius europeus

GARDEN FLOWERS, HERBACEOUS ANNUALS

Common Name	Technical Name
Snapdragon	Antirrhinum majus
Coleus	Coleus blumei
Impatiens	Impatiens sultani
Geranium	Pelargonium hortorum
Petunia	Petunia hybrid
Salvia	Salvia splendens
Marigold	Tagetes erecta

GARDEN FLOWERS, BULBS

Common Name	Technical Name
"Autumn Crocus"	Colchicum autumnale
Crocus	Crocus species
Madonna Lily	Lilium candidum
Rubrum Lily	Lilium speciosum 'Rubrum'
Armenian Grape Hyacinth	Muscari armeniacum
Daffodil	Narcissus pseudo-narcissus
Siberina Squill	Scilla siberica
Tulip	Tulipa hybrid

APPENDIX B

EQUIPMENT LISTS BY INSTRUCTION AREAS

FLORICULTURE PRODUCTION

Automatic Pot Watering System
Automatic Bed Watering System
Automatic Mist System
Automatic Fertilization System
Steam Sterilization System
Carbon Dioxide Injection System
Germination Cabinet
Non-Mercury Greenhouse Thermometers
Thermo-humidograph (7 day)
Interval Timers
Photoperiod Clock Timer
Photoperiod Lighting Equipment
Black Shade Cloth
Sterilizing Covers
Steaming Manifold
Steam Resistant Connecting Hose
Probe Type Dial Thermometer (to 220°F)
Mask Respirator
Rubber Protective Hat, Coat, Gloves, Boots
Spring Scale - ounce
Spring Scale - pound
Shovels - spade
Rakes - steel
Trowels
Greenhouse Soil Tiller
Soil Bins
Fertilizer Bins
Soil Shredder
Soil Screen
Flower Pot Washer
Greenhouse Sprayer (electric) 25 gallons
Pesticide Storage Cabinets
Heating Cable with Thermostat
3/4-inch Watering Hose
Skate Conveyer
Greenhouse Carts
Flats
Portable Cement Mixer
Wheelbarrows

RETAIL FLORICULTURE

Storage Refrigerator
Display Refrigerator
Display Cases
Display Shelves
Floral Design Desk Units
Ribbon Rack
Tape Holder
Chicken Wire Dispenser
Wrapping Paper Dispenser
Order Pad
Cash Register
Stapler
Storage Cabinets - glass front
Storage Cabinets - opaque front
Display Window
Sink
Refrigerator Vases
Pottery and Glass Vases
Papier-maché Vases
Florist Shears
Florist Knives
Styrofoam Cutter
Wire Forms and Tripods

LANDSCAPE MAINTENANCE AND ESTABLISHMENT

Pickup Truck
Tractor (2 bottom, 12-14" plow rating)
Tiller Attachment for Tractor
Loader for Tractor
Plow - 2 bottom
Disc Harrow
Cultivator
Dozing Blade
Root Pruner
Post Hole Digger (mechanical)
Duster, Crank
Sprayer (trailer, internal combustion engine)
Tiller (small)
Turf Aerifier
Rotary Mower
Reel Mower
Carry Lift
Soil Shredder
Soil Sterilization System (mechanical)
Soil Sterilization System (chemical)
Soil Auger
Seeder (tractor mounted)
Fertilizer Spreader (tractor mounted)
Irrigation System - stationary
Irrigation System - travel type
Electric Trimmers
Planting Bar
Topographic Tractor Tape with Reel
Lawn Water Meter
Brush Cutter
Spring Scale
Chain Saw
Portable Cement Mixer
Locke Hand Level
Abney Level
Line Level
Hopper Spreader
Cyclone Spreader
Wheelbarrow (pneumatic tire)
Tree Cart
Hand Garden Sprayer (2 gallons)
Nursery Spade
Shovel (straight handle)
Mattock, Long Cutter
Pick
Rake - steel
Rake - wood
Rake - magnesium

LANDSCAPE MAINTENANCE AND ESTABLISHMENT

Bar Digger
Spading Fork
Hoe - Dutch Scuffle
Hoe - nursery
Dibble
Budding and Grafting Knives
Pruning Shears (hedge and tree)
Hand Pruner
Pruning Saw
Pole Pruner
Pole Saw
Ax
Hatchet
Sickles
Scythe
Sledge Hammer
Bulb Planters
Extension Ladder
Step Ladder
Hose - nylon
Climbing Ropes
Steel Engineer's Tapes (100')
Steel Architect's Tapes (50')

GARDEN STORE SALES

Display Cases
Display Bins
Display Racks
Sales Desk
Order Pad
Cash Register

LANDSCAPE DESIGN

Drawing Tables
Drafting Set (instruments)
Polar Planimeter
T-squares - single head
T-squares - double head
45° Triangle
30° - 60° Triangle
French Curve - number 13
French Curve - number 18
Landscape Template
Circle Template
Protractor
Architect's scale
Engineer's Scale
Portable Fluorescent Tracing Board
Pantograph
Cutting Table - 24" x 24"
Paper Roll Dispenser
Lettering Set
Set Rapid-O-Graph Pens
Pastel Set
Water Color Set
Set of Color Pencils - wax
Set of Color Pencils - nonwax
Blueprint Machine
Sandpad
Erasing Shield
Drafting Brush
Steel Engineer's Tape (100')
Steel Architect's Tape (50')
Abney Level

TURF MAINTENANCE AND ESTABLISHMENT

Tractor (2 bottom, 12-14" plow rating)
Dozing Blade
Tractor Pulled Cart
Spike Tooth Harrow
Power Drag
Steering Sulky
Liquid Fertilizer Spreader
Hopper Spreader
Cyclone Spreader
Tiller
Aerator - spoon
Large Sprayer (gasoline powered)
Sod Cutter
Lawn Mowers - riding
Lawn Mowers - rotary
Lawn Mowers - reel - gang
Lawn Mowers - reel - green
Verti-cut Mower
Lawn Roller
Lawn Vacuum
Lawn Edger
Grass Trimming Shears
Sprinkler Irrigation System
Travel Type Sprinkler
Cup Cutter

NURSERY PRODUCTION

Tractor (2 bottom, 12-14" plow rating)
Rotor Tiller Attachment for Tractor
Loader for Tractor
Plow - 2 bottom
Disc Harrow
Spike Tooth Harrow
Cultivator
Dozing Blade
Root Pruner
Post Hole Digger (mechanical)
Sprayer (trailer, internal combustion engine)
Power Tiller (small)
Turf Aerifier
Rotary Mower
Reel Mower
Carry Lift
Soil Shredder
Soil Sterilization System (mechanical)
Soil Sterilization System (chemical)
Seeder (tractor mounted)
Fertilizer Spreader (tractor mounted)
Irrigation System - stationary
Irrigation System - travel type
Duster
Planting Bar
Topographic Tractor Tape with Reel
Lawn Water Meter
Brush Cutter
Germination Cabinet
Spring Scale
Chain Saw
Hopper Spreader
Cyclone Spreader
Wheel Barrow (pneumatic tire)
Tree Cart
Hand Garden Sprayer (2 gallons)
Nursery Spade
Shovel, (straight handle)
Mattock, Long Cutter
Pick
Rake - steel
Rake - wood
Rake - magnesium

NURSERY PRODUCTION (CONTINUED)

Bar Digger
Spading Fork
Hoe - Dutch Scuffle
Hoe - nursery
Dibble
Budding and Grafting Knife
Pruning Shears (hedge and tree)
Hand Pruner
Pruning Saw
Pole Pruner
Pole Saw
Ax
Hatchet
Sickles
Scythe
Sledge Hammer
Step Ladder
Hose - nylon
Hose - rubber
Steel Engineer's Tapes (100')

DIAGNOSTIC LABORATORY

Soil Test Kit
Soil Tester (probe)
pH Meter
Sol-U-Bridge
Carbon Dioxide Tester
Probe Soil Thermometer
Max-min Thermometer
Thermo-humidograph, 7-day
Bouyouco Moisture Meter
Sling Psychrometer
Flowmeter
Dissection Microscope
Monocular Microscope
Set of Seed Scales
Dissecting Kit
Brass Sieves
Glassware

APPENDIX C

ORNAMENTAL HORTICULTURE INSTRUCTIONAL MATERIALS

Department of Agricultural Education
The Pennsylvania State University
University Park, Pennsylvania 16802

Manuals and Handbooks

The Teacher's Manual contains the complete text with the same paging as the Student Handbook, but includes additional (green) pages at the end of each unit containing supplemental information, additional references, slide sets, filmstrips, motion pictures, special equipment, suggested activities, and a sample test. The Teacher's Manual also includes a multiple-choice examination covering the complete text.

Retail Flower Shop Operation and Management - A Teacher's Manual
Teacher Education Series Volume 9, Number 1t, 1968.

Retail Flower Shop Operation and Management - A Student Handbook
Teacher Education Series Volume 9, Number 1s, 1968.

Contents: occupational opportunities; uses and characteristics of flowers, plants, materials; designing-principles, equipment, special designs; using flowers; merchandising and selling; management - location, capital, personnel, layout, packaging, delivery, records; references.

Landscape Maintenance and Establishment - A Teacher's Manual
Teacher Education Series Volume 9, Number 2t, 1968.

Landscape Maintenance and Establishment - A Student Handbook
Teacher Education Series Volume 9, Number 2s, 1968.

Contents: exploring opportunities; landscape maintenance - pruning, fertilizing, mulching, watering, weed control, insect and disease control, safety checklist for pest control materials; landscape establishment - reading a blueprint, laying out the landscape plan, grading the site, construction, soil modification, buying nursery stock, planting; references; appendices.

Landscape Design - A Teacher's Manual
Teacher Education Series Volume 9, Number 3t, 1968.

Landscape Design - A Student Handbook
Teacher Education Series Volume 9, Number 3s, 1968.

Contents: occupational opportunities; importance of landscaping - use, beauty, property value, analysis of landscape requirements - site analysis, analysis of family needs, layout plan; ideas for solving problems - public area, private area, service area, plant materials; structures and plants - structures, materials, structural plan, kinds of plants, planting plan, selecting plants; estimating landscape cost; references.

Turfgrass Maintenance and Establishment - A Teacher's Manual
Teacher Education Series Volume 9, Number 4t, 1969.

Turfgrass Maintenance and Establishment - A Student Handbook
Teacher Education Series Volume 9, Number 4s, 1969.

Contents: exploring job opportunities; kinds of turfgrasses and their uses; maintaining residential and institutional lawns - fertility, fields and special turf areas; maintaining golf courses; planning and establishing new turfgrass areas - planning areas, grade drainage, irrigation, fertilzer, soil conditioners, preparation for seeding, selecting grasses, seeding, vegetative planting, caring for new grass, renovation; references.

Greenhouse Crop Production - A Teacher's Manual
Teacher Education Series Volume 10, Number 3t, 1970.

Greenhouse Crop Production - A Student Handbook
Teacher Education Series Volume 10, Number 3s, 1970.

Contents: occupational opportunities; greenhouse location; structures; equipment - benches, beds, heating, cooling, CO_2; environmental control - watering, soil and fertilizer, pest control; potted plants - chrysanthemum, poinsettia, Easter lily, bedding plants, others; cut flowers - chrysanthemum, carnation, snapdragon, others; vegetables - tomato, lettuce; references.

Nursery Production - A Teacher's Manual
Teacher Education Series Volume 12, Number 4t, 1971.

Nursery Production - A Student Handbook
Teacher Education Series Volume 12, Number 4s, 1971.

Contents: kinds of nurseries; occupations in the nursery business; the physical plant; how nursery plants grow; propagation of nursery stock; growing nursery stock in the field; growing nursery stock in containers; marketing; understanding management; references; appendices.

Outlines of Courses in Ornamental Horticulture
Teacher Education Series Volume 12, Number 1, 1971.

Contents: outlines of courses in ornamental horticulture; ornamental horticulture program for grades 10, 11, and 12; nursery production; greenhouse crop production; landscape contracting; retail flower shop operation and management; turfgrass maintenance and establishment; retail garden store operations; arboriculture; horticultural mechanics; appendix.

Facilities for Instruction in Ornamental Horticulture
Teacher Education Series Volume 12, Number 3, 1971.

Contents: introduction; greenhouse crop production facilities; nursery crop production facilities; turfgrass demonstration area; appendix A, recommended trees and shrubs for school arboretums; appendix B, equipment lists by instruction areas; appendix C, instructional materials.

Slide Sets

Slide sets consist of 2- by 2-inch color slides that complement the manuals and handbooks. Many of the slides are identical with black and white illustrations in the text, giving an additional dimension to the presentation of the material. A script accompanies each set.

A. Designing with Flowers and Decorative Materials - 63 slides

B. Exploring Turfgrass Occupations - 30 slides

C. Commonly Used Trees, Shrubs, Groundcovers, and Vines - 52 slides

D. Turfgrass Identification - 30 slides

E. Types of Turf - 17 slides

F. Weed Identification - 37 slides

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TEACHER EDUCATION; *MINORITY GROUPS

ABSTRACT - THIS SEMINAR REPORT, PRINTED IN
DITTO FORMAT, DISCUSSES THE POSSIBLE
CONTRIBUTIONS OF VOCATIONAL EDUCATION IN
HELPING TO SOLVE THE NATION'S SOCIOECONOMIC
PROBLEMS, WHICH ARE BORNE DISPROPORTIONATELY
BY MINORITY GROUP MEMBERS. THE PAPERS
CONSIDER IDENTIFICATION AND UNDERSTANDING OF
THE DISADVANTAGED, EXISTING PROGRAMS AND
LEGISLATION, CURRICULUM NEEDS, COUNSELING
SERVICES, AND OPPORTUNITIES FOR BLACKS. (BH)

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VOCATIONAL EDUCATION

for the

Disadvantaged

A SEMINAR REPORT

SPRING 1971

VOCATIONAL EDUCATION DIVISION

904 WILDWOOD DRIVE
FLORIDA STATE UNIVERSITY
TALLAHASSEE, FLORIDA 32306

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VOCATIONAL EDUCATION FOR THE DISADVANTAGED

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PREFACE

Vocational Education seminars at Florida State University are aimed at assisting advanced graduate level students to investigate timely problems in the field. No problem area could be more appropriate to examine than the one which was tackled by this Seminar group: Vocational Education for the Disadvantaged. It comes at a time when we are continuing to witness massive numbers of unemployed and underemployed persons in society; it comes at a time when three-quarters of a million young men and women anually join the ranks of the school dropouts; and it comes at a time when many of those who graduate from high school find that they lack the job and employability skills needed to get a job. Even worse is the fact that the above groups are made up disproportionately of minority group members: Negroes, Indians, Puerto Ricans, Cuban refugees, Mexican-Americans, Appalachian whites and the nation's migrant laborers. The social and economic consequences of neglecting these "disadvantaged" members of society can no longer be tolerated. Their vast numbers are tragic evidence of the current inadequacy of our educational system.

Even though the Seminar participants knew that vocational education was not a panacea for all of our current educational ills, it was felt that vocational education did have the potential to make a significant contribution to many of the current problems facing society. To be sure, the major dilemma that the Seminar participants faced was in getting an adequate grasp of an extremely difficult and extremely complex issue. Their sincere desire to shed some light on this most complicated problem is perhaps the most significant aspect of this report.

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It is hoped that this report will be of value: first, to those who developed it; second, to those in advanced vocational education studies at Florida State University who follow; and third, to those educators and laymen alike whose interests lie in seeking solutions to a most pressing educational problem.

Dr. Roger W. Haskell, Associate Professor
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Chapter 1

Identifying and Understanding the Disadvantaged

Alton P. Salter

Introduction

When the panel of consultants on vocational education made their 1963 report to the President, numerous recommendations, suggestions, and implications for serving the disadvantaged laced the 296 page document. Among their five generic recommendations was a single suggestion that "Vocational Education must...make educational opportunities equally available to all, regardless of race, sex, scholastic aptitude, or place of residence." (Report of the Panel of Consultants, 1962, p. XVII) Throughout the document the disadvantaged, identified as "youth with special needs", are alluded to as being an opportunity for service for Vocational Education.

As is historically the case, Congress was guided by the Panel's recommendation in the passage of the Vocational Education Act of 1963. Within the text of the law, it was stated that the training of the disadvantaged, inclusive of the physically handicapped, was a major purpose of funds appropriated under the law. Further, it was written that a minimum of "ten per centum" of all general federal appropriation would be used for that purpose.

(Public Law 88-210, 1964, p. 2). Yet, in the Annual Report on vocational education, it was reported that "220,000 persons with special needs, or 3 percent of all those served by vocational education", were served. Total expenditures, local, state, and federal, for the purpose of serving those with special needs slightly exceeded 10% of federal effort. (Venn, 1970, p. 11) Implications are clear that one primary purpose of public law 88-210 had not been met by the close of FY 1968.

Because of this and a growing national concern for the education of the less fortunate, the federal legislators were far more cogent in the drafting of the Amendments to the Vocational Education Act of 1963, Public Law 90-576. Within the act, certain federal funds were earmarked, specifically and for no other purpose than serving the disadvantaged and handicapped. Furthermore, the figure of "ten per centum" as written in the 1963 law was changed to read "25 per centum" in the new law. This percentage to be applied to all general appropriation was further refined to clearly distinguish between disadvantaged and handicapped. The law states that federal funds will be expended for:

> "(4)(A) Vocational education for persons (other than handicapped defined in section 108(6) who have academic, socioeconomic, or other handicaps that prevent them from succeeding in the regular vocational education program." (Public Law 90-576, 1968, p. 9)

Thus, it is clear that people with special needs will be served if federal funds are expended for vocational

concept for programs. This paper will examine the general identification and characteristics of the disadvantaged. Hopefully, the reader will have a deeper understanding of one segment of the nation's population that vocational education has been legally mandated to serve.

Identification of the Disadvantaged

Definitionally, the disadvantaged are different from the majority of the people in the community. The United States Bureau of Adult, Vocation and Library Programs, Division of Vocational and Technical Education, U. S. Office of Education defines the term disadvantaged as follows:

> "Disadvantaged Person--Persons who have academic, socioeconomic, cultural, or other handicaps that prevent them from succeeding in regular vocational education programs designed for persons without such handicaps, and who for that reason require specially designed educational programs or related service or both in order for them to benefit from a vocational education or consumer and homemaking education program." (Department of Education, 1969)

The definition is refined to include persons whose special needs result from poverty, neglect, delinquency, or cultural or linguistic isolation. Gordon states, "These are the youngsters with higher incidences of learning disabilities and lower achievement levels: poor kids, black kids, Puerto Rican kids, Mexican-American kids, and American Indian kids." (Gordon, 1969, p. 3)

More concisely, most of the population considered

disadvantaged minority groups. The only other groups to be considered as disadvantaged are selected whites, concentrated in isolated areas such as the Appalachians, migrant workers, and Cuban refugees. But they too are a minority in American society. (Cohen, 1969)

To conclude that all members of a minority are disadvantaged would be an erroneous generalization. However, the vast majority of these minorities are the majority of the disadvantaged. For example, approximately 25 million people in the United States have income below the level considered poverty, $3,533 for a family of four. Sixty-eight percent (68%) of that number are white representing 10% of the white population. The remaining 32% of our poor are non-white; but one-third of all non-whites are poor. Furthermore, in comparing income gaps between the groups, the disparity is quite marked. (Parham, 1970)

Aside from the income gap, the impoverished are faced with a much more serious plight, consumer practices. Because of income limitation, the disadvantaged are required to expend their monies for life's necessities. The bulk of the income necessarily going to nondurable goods, shelter, food, and clothing. Little is left for durable goods, often taken for granted by the advantaged. The mass entertainment media, considered a bridge between the education and cultural gap, is not a necessity but rather a luxury for the disadvantaged. Research indicates that the disadvantaged buy about one (1) durable good annually. If more is bought,

such as a television set and an [illegible] (Irelan) while basic necessities go lacking.

The disadvantaged are criticized for this, but questions may be raised. Is the purchase of a washer a luxury for a large family where the mother's time is a premium, transportation is limited, and laundromat expenditures mean no milk that week? True, the poor are vulnerable to persuasive selling. It is particularly hard for the disadvantaged, deprived for generations, to resist when easy access to unknown luxury is offered. (Irelan, 1967)

Understanding the Disadvantaged

Gallington has identified six general characteristics of the behavior of the disadvantaged. These are: "(1) withdrawal tendencies, (2) poor achievement, (3) resentment of authority, (4) loitering, (5) rejection of school, and (6) delinquency." (Gallington, 1970, p. 20)

The tendency to withdraw among the disadvantaged is not to be confused with psychoanalytic terminology, but is rather a socioeconomic condition. The reason for this is that the most general referent of the term disadvantaged are people characterized by poverty and resulting isolation.

Much of the poverty can be blamed to generations of discrimination. This lack of opportunity has fostered an attitude of apathy among the largest segment of disadvantaged in this society, ethnic minority groups. These, according

to Gordon, have linguistic, racial, and attitudinal differences and a lower level of intellectual efficiency function. As a result, schools have little success in dealing with these children educationally. Isolated in the rural or urban slum for the larger portion of their school experience, it is not surprising that a child would withdraw from a population that has rejected him in the school setting (Gordon, 1969)

Poor achievement has its highest incidences among groups who are generally considered disadvantaged and parallels resentment of authority. Bound by isolation, poverty, cultural and linguistic differences, the school represents a pseudo situation and an alien threat. The problem resides in a child being faced at an early age to cope with situations of life that are difficult for most adults. Having had few if any successful adult models to formulate personality after, the youngster quickly learns who to trust.

Certainly, it isn't the forces of law and order that have dealt with him, his peers, and family unreasonably. Often, possession of money or food have been regarded as grounds for suspicion. Childhood curiosity has been confused with delinquency and play has been termed misbehavior or destruction of property.

More seriously, schools and communities have failed him. In school, he is termed slow, when his teacher speaks and his readings are written in a second language to him.

They cannot relate and excluded are the disadvantaged systematically. Communities tend to provide even inadequate, not excellent, school facilities, teachers, non-teaching professionals, playgrounds or spaces, and saddest of all--job opportunities. (Kemp 1966) One is sickened to read follow-up answers from Negro youths who have achieved that report that they are unemployed because "I am a Negro."

Loitering and rejection of schools are identified by Gallington as a fourth and fifth characteristic of the disadvantaged. This can easily be understood through an examination of manpower strategies for the 1960 decade. The non-white population has done its part to narrow the educational gap but employment opportunity has not paralleled in growth. If education, the alleged tool of success, does not produce opportunity for success - why attend school?

Narrowing of the educational gap between the white and non-white population of the United States has not narrowed the disparity in the employment gap proportionally or led to an equilization tendency. For example, in 1960 slightly under 80% of the white youth left high school as graduates while slightly more than 50% of the non-white population left similarly equipped. In 1968, the two groups' educational attainment was separated by about 10% with whites having increased to 80% and non-whites at 70%.

Unemployment among youth has not similarly changed. In 1960, thirty percent of the out-of-school blacks were unemployed. Eight years later the figure was 23%. Among

for white youth the figures were 16% and 12% as the two respective years considered. This leaves no question to the U. S. Department of Labor conclusion that "to close the unemployment gap requires that employment opportunities accompany educational gains." (U. S. Department of Labor, 1970)

Youth, today, are the most enlightened generation of American history. This group knows what's happening. They demand relevance in more than in rhetoric; they deal in realities. Patterson accuses that there is "really no difference in the values of the disadvantaged and the rest of society. The disadvantaged have the same goals in terms of needs and wants, but they are unable to satisfy them. The poor accept the values of the main society - success, affluence, material and social goods - but are frustrated in obtaining them." (Patterson, 1969, p. 10)

Need one wonder then why those, who witness the myth of education being quatable to success, would reject school? Readily, we realize that his loitering may be a period of reflection, denied him in his environment and also in school, to question the very ideals of democracy. With all of his intellectual prowess, the disadvantaged likely reflects and recapitulates the dissentient group who conquered the Atlantic in 1620 to escape oppression, built a society based upon opportunity and equality, conquered the moon in the twilight of 350 years of history, and was fostering what it sought to escape, oppression, as late as 1971.

The disadvantaged disturb, deliquent behavior most often out of satisfaction of individual human needs. It is not difficult to understand that one who is hungry would steal; one who has no recreational outlet would destroy property; one who is aware of his guaranteed constitutional rights would be apoity, or one who sees no visible opportunity would be apathetic. This country's schools, communities, and other social institutions must recognize, understand, and deal with the plight of the disadvantaged. Otherwise the United States will become victims of the plight of which Quigley warned when he quoted President Woodrow Wilson in his address to Congress for declaration of war against Germany. Wilson said, "The only rock upon which order and continuity can be built is the intelligent aspiration of all the people." (Quigley, 1942, p. 19)

Conclusion

Mistrust of a system that has heaped inequity upon this large segment of the country's population is prevalent among the disadvantaged. To them opportunity has been deprived: education has been deprived; education has been substandard and meaningless; law and order has threatened survival; and home has been a retreat from a rejective, exclusive society. It is clear that vocational education must take into account cultural and socioeconomic realities if any success is to be met in reaching the disadvantaged. No longer can a fantasy-like system accuse

the learning disabilities and cultural differences of the disadvantaged to their innate characteristics.

They seek and desire the same opportunity, advantage, or chance that American democracy has been built upon. Thus, education, not the disadvantaged, must adjust. Change with understanding considered must occur simultaneously.

References

The Vocational Education Act of 1963. P.L. 88-210.

The Vocational Education Amendments of 1968. P.L. 90-576.

U.S. Manpower in the 1970's: Opportunity & Challenge. U.S. Government, 1971.

Cohen, E.E. A guide to the development of vocational education programs and services for the disadvantaged. U. S. Government, 1969.

Gallington, R.O. ed. Industrial arts for disadvantaged youth. Bloomington: McKnight & McKnight, 1970.

Gordon, Edmund. Counseling the disadvantaged, CAPS Capsule. 1969 ERIC 3-9.

Irelan, L. M. ed. Low-income life styles. U.S. Government, 1967.

Kemp, B.H. The youth we haven't served. U.S. Government, 1966.

Parham, J. On being disadvantaged. Paper presented at meeting of Georgia area school administrators' meeting. February 19, 1970.

Patterson, C.H. Reaction, CAPS Capsule. 1969 ERIC 10.

Quigley, T.H. In the sweat of thy face. Atlanta: Turner E. Smith & Co., 1942.

Venn, G. Vocational and technical education annual report/fiscal year 1968. U.S. Government, 1970

Willis, B. Chrm. Education for a changing world of work: Report of the panel of consultants on vocational education. U.S. Government, 1963.

CHAPTER II

LEGISLATION FOR VOCATIONAL EDUCATION FOR THE DISADVANTAGED

William Ripley

Introduction

Federal legislation for vocational education, in the past ten years, has gone through drastic changes. Beginning in 1962 and extending through the most recent legislation, the basis for funding vocational education has been revised. Prior to 1960, funds were provided to subsidize specified vocational education programs. Perhaps as an outgrowth from the national concern during the early sixties for poverty and unemployment, procedures were restricted to the extent that funds were allotted on the basis of types of people and areas to be served.

One of the major classifications of people with whom Congress has shown a great deal of concern has been the disadvantaged. The purposes of this paper will be to:

1. Give a brief description of Federal legislation, as it pertains to the disadvantaged, in the past decade.
2. Discuss the most recent legislation in Florida which makes reference to vocational, education for the disadvantaged.
3. Analyze some of the problems, misuses and weaknesses of some of the most recent Federal and Florida legislation that deals with vocational education for the disadvantaged.

The Vocational Education Act of 1963

This Act, an outgrowth of recommendations made by The Panel of Consultants on Vocational Education, represented the first major phase of the new method of funding vocational education. The National Committee on Employment of Youth stated that

> In enacting the Vocational Education Act of 1963, Congress redirected vocational educators to provide vocational education oriented to the needs of the people instead of being aimed at rigid categories in a limited number of occupations. (Cohen, 1969, p. 5).

The intent of the Act had two major purposes:

1. To change the philosophy of vocational education so that persons with special needs might be served.
2. To redirect the main threat of vocational education from selected occupational classifications to aiding all people in preparation for successful employment.

It would seem, then, that Congress, through this Act, displayed a relatively sincere concern with the plight of those persons who have academic, socioeconomic or other handicaps which prevent them from succeeding in regular vocational programs. However, the positive effects of this concern were minimal. The Advisory Council in its 1968 report, stated that "the Act has fallen short of fulfilling its . . . major purposes." (Cohen, 1969, p. 5).

One major reason for the failure of the Act to meet the growing demand for serving the disadvantaged was its permissive attitude towards expenditure of funds. Although the intent of the Act clearly expressed a desire to serve disadvantaged persons, no guidelines were incorporated into the Act to protect

the intent. However, the foundation, although weak, had been laid.

The 1968 Vocational Education Amendments

Apparently very much aware of the shortcomings of the Vocational Education Act of 1963, Congress reinforced its intent to serve the disadvantaged through vocational education by giving top priority to this group in the 1968 Vocational Education Amendments. Throughout the Act are various degrees of intent to provide funds for the disadvantaged.

Congress's concern for this particular group of people is most readily evidenced in Part B, as a mandatory percentage expenditure of funds is stipulated. For any given fiscal year, of the total funds allotted to a State under section 102(a), the basic allotment, a minimum of 15 per cent must be used for vocational education programs for the academically and socio-economically disadvantaged.

Section 102(b) authorized 40 million dollars for each of the fiscal years ending June 30, 1969 and June 3, 1970 solely for "vocational education for persons . . . who have academic, socioeconomic or other handicaps that prevent them from succeeding in the regular vocational education program." (P.L. 90-576, Sec. 122 (a)(4)(A)). The apparent rationale for this initial and separate authorization was to help implement programs which realistically reached the disadvantaged.

Part C of the Act provides funding for

> experimental, developmental or pilot programs . . . designed to meet the special vocational needs of youths, particularly youths in economically depressed communities who have academic, socioeconomic, or other

> handicaps that prevent them from succeeding in the regular vocational education programs. (P.L. 90-576, Sec. 131(b)).

However, funds authorized under Part C may also be expended for other research and training projects, with no minimum percentage required to be used in the area of the disadvantaged.

An intent to serve those persons with special needs is also declared in Part D, Exemplary Programs and Projects. Funds from this Part "may be used for model or demonstration programs which help disadvantaged youth." (The Vocational Education Amendments of 1968, 1969, p. 8). Again, there is clearly nothing more than a weak desire indicated in this Part to give consideration to the disadvantaged.

Part E of the Act provides for the authorization of grants to establish and operate Residential Vocational Schools.

> In making such grants, the Commissioner (Commissioner of Education) shall give special consideration to the needs of large urban areas having substantial numbers of youths who have dropped out of school or are unemployed. (P.L. 90-576, Sec. 151(a)).

Although the phraseology is a degree stronger than the preceding paragraph, it is still too weak to insure the disadvantaged would measurably gain from the establishment of residential vocational schools.

Part F authorizes appropriations for consumer and home-making education. A State may receive an amount equal to 50 per cent of the amount spent for this purpose. However, areas which are considered economically depressed or have high rates of unemployment may receive an amount equal to 90 per cent of the amount expended for consumer and homemaking education. Such

areas must receive a minimum of one-third of the funds authorized under this Part. Although a monetary inducement to utilize funds for serving deprived persons is evident, it does not include guidelines which would necessitate every State to utilize these funds as they are intended.

The funding of Part G, Cooperative Vocational Education Programs, also provides for consideration for disadvantaged persons. "Priority for funding cooperative work-study programs through local educational agencies is given to areas that have high rates of school dropouts and youth unemployment." (P.L. 90-576, Sec. 173(a)(8). Again, no assurance that those intended to be served will actually be so.

The requirement for the expenditure of funds is also very permissive in Part H, Work-Study Programs for Vocational Education Students. Priority is implied to be given to areas which have a large number of deprived persons. But an implication does not necessarily protect the intent.

Recent Vocational Legislation in Florida

Perhaps the most dynamic legislative committee during the 1970 legislative session was created to investigate the organization, funding and operation of vocational education in Florida. The findings of this committee were published in a report, called the MacKay Report,' after the chairman, Kenneth H. MacKay, Jr. Two of its findings and recommendations pertain to the disadvantaged.

The committee could find no evidence of accountability for out-of-school youth and potential dropouts. "It is our (committee members) feeling that some educators are anxious to

push these 'undesirables' elsewhere as some else's problem." (MacKay, 1970, p. 11). In an attempt to begin combating this problem, Recommendation 19 of the report stated that

> Responsibility for out of school youth shall be vested in the district school board. Each district shall file a plan for reaching potential dropouts and out of school youth with the Department of Education. (MacKay, 1970, p. 12).

The MacKay Committee also felt that "many student age blacks who might profit from occupational training courses are not doing so." (MacKay, 1970, p. 12). Recommendation 20 requested that

> A major recruitment drive should be undertaken to increase black enrollment in vocational education courses. Use should be made of the mass media, special experimental programs, and specialized personnel. (MacKay, 1970, p. 12).

The 1970 Legislative Session passed two laws which incorporated, in some way, the two recommendations discussed above. The first, HB 3895, provided that each school district, by September 1, 1971, must offer courses in a minimum of five vocational education areas. Further, these courses must be available to all people, regardless of their past academic successes or failures. These courses must be structured so students may enroll at any time throughout the year. The Act also stipulates that "each district school board and local welfare board shall cooperate to locate, identify and attempt to recruit all unemployed or under-employed persons into such courses." (HB 3895, Sec. 2).

The second Act which gave consideration to the disadvantaged was HB 3893. This Act deals with the assignments of occupational specialists, which "<u>may</u> include the identification

and intensive counseling of potential or actual dropouts and their parents . . ." (HB 3893, p. 2).

Conclusions

One cannot help be somewhat impressed with the increased concern for the disadvantaged by both Congress and the Florida Legislature. However, when the effectiveness of most vocational education programs is analyzed with respect to their success in serving the disadvantaged, the conclusion must be reached that legislative concern delegated through intent is not sufficient. The 1968 Vocational Education Amendments, though a vast improvement over the 1963 Act, generally does not provide guidelines strong enough to insure the expenditure of funds for vocational educating the disadvantaged.

Such phrases as evidenced in the prior discussion of the Act simply allows the use of funds to serve the disadvantaged. The only mandate is in Part B of the Act. But even here, non-committed administrators have a loophole.

> If an expenditure for vocational education falls within more than one of the categories for which there is a percentage requirement, the total amount of the expenditure may be counted as an expenditure for vocational education in one of the categories . . . . (Federal Register, Sec. 102.59(d).

Thus, as a 15 percent minimum requirement is also stipulated for postsecondary vocational education, it would be conceivable that the total cost of any postsecondary vocational program in which there were enrolled a small minority of definitionally disadvantaged students could be used to fulfill the percentage requirement outlined under Part B. for the disadvantaged. Yet, the educational service to the disadvantaged would be minimal.

Florida legislatures have also shown a desire to provide vocational education for the disadvantaged. The 'MacKay Report' can be compared to the reports issued by the National Advisory Council on Vocational Education: they 'tell it like it is.' But, there is a tremendous gap between the Council's recommendations and Federal legislation. The same gap exists between the 'MacKay Report' and the Florida legislation which immediately followed. The concern reflected in the 'MacKay Report' regarding the failure of vocational education to serve the 16-20 year old black student was not even mentioned in the legislation. However, one might assume these blacks may be included in the phrases 'unemployed, underployed, potential or actual dropouts.'

The legislation did mandate the recruitment of the unemployed and underemployed into vocational programs. But, no guidelines were incorporated into the Act to insure the mandate will be followed.

Generally, then, present legislation on both the Federal and Florida level does not provide strong enough dictates to guarantee the vocational educating of the disadvantaged.

Recommendations

The overall problem of providing vocational education programs which realistically serve the disadvantaged is extremely complex. The theme of this paper has been to criticize legislation for its permissiveness in the expenditure of funds intended for the disadvantaged. However, money is available for this purpose if so desired by state and county administrators. It is apparent that the desire to do so at this level is very spasmodic.

In addition, one must not equate the successful educating of the disadvantaged with funding. Although money is essential, other factors carry equal weight. Qualified teachers who have the training and ability to work with youngsters that have problems related to being disadvantaged is important. Provisions for combating such severe problems as emotional and psychological disorders, reading retardation, economic need and alienated personalities must be made. Curriculums must be revised so they are relevant to the needs of the disadvantaged. Functionable job placement agencies must be available in order to successfully place students who have completed a vocational program.

In essence, then, increased funding with stronger mandates is not the only solution. Other problems must be considered. However, it would seem that before the battle can be waged, weapons must be available. Legislation must be written so as to insure the expenditure of funds for vocationally educating the academically, socioeconomically and otherwise disadvantaged segment of our society. Legislative guarantees must be made that money will be spent to select and train teachers to work with the disadvantaged, to provide supplementary services such as psychological and reading clinics, to revise curriculums and to secure employment for those students who are economically deprived. Until such legislation is passed, the accomplishments with the disadvantaged will be minimal and spasmodic.

References

Cohen, Eli F, Project Director, A Guide to the Development of Vocational Education Programs and Services for the Disadvantaged. Prepared by the National Committee on Employment of Youth. U.S. Office of Education, 1969.

Federal Register, Volume 35, No. 91, Part II, State Vocational Education Programs, Department of Health, Education and Welfare, Washington, D. C. May 9, 1970.

H.B. 3893, An Act Relating to Occupational Specialists, Florida Legislature, 1970.

H.B. 3895, An Act Relating to Vocational Instruction, Florida Legislature, 1970.

'MacKay Report', Florida House of Representatives, Committee on High Education, March 2, 1970.

Public Law 90-576, Amendments to The Vocational Education Act of 1963, 90th Congress, H.R. 18366, October 16, 1968.

The Vocational Education Amendments of 1968, U.S. Department of Health, Education, and Welfare, No. OE-80064, U.S. Government Printing Office, Washington, D. C., 1969.

CHAPTER III

NOTEWORTHY VOCATIONAL EDUCATIONAL PROGRAMS IN FLORIDA WHICH SERVE THE DISADVANTAGED

Richard H. Cassidy

It is apparent when reviewing vocational programs for the disadvantaged, that Florida has followed the recommendations of the Third Report of the National Advisory Council on Vocational Education, by not separating the disadvantaged from the mainstream of education.

> . . . Such programs say to the disadvantaged that they are second-class citizens who cannot make it in the mainstream. Such programs appear to shut the door to career advancement. What the disadvantaged want and need is access to vocational and technical programs for career preparation in the mainstream. Counseling, tutoring and other support and assistance are essential, but separateness destroys dignity. (Third Report, July 10, 1970, p. 6-7)

Provisions under the Vocational Education amendments of 1968, Title I Part B require at least 15 percent of vocational education funds be spent on the disadvantaged. Programs must have more than 50 percent disadvantaged students in order to be completely financed by federal and state funds. With these requirements, this paper will review some innovative programs that are aimed at serving the disadvantaged in urban, rural and the private sector.

Florida's Efforts To Serve The Disadvantaged

During the 1969-70 school year 10,065 disadvantaged students were involved in 38 different occupations just in the trade and industry field. This one field alone showed one out of every eight students who participated in this field was disadvantaged. There are three categories of programs in vocational education to help the disadvantaged: regular programs designed to

serve all students; modified programs which adapt for disadvantaged students; and special programs specifically designed for the disadvantaged. New and expanded programs, by each of the vocational services, which will make it possible to serve more disadvantaged are listed in the Annual Descriptive Report (1971) published by the State Department of Education (p. 3).

New and Expanded Programs

Agricultural Education	18
Distributive Education	17
Health-Related Occupations Education	15
Home Economics Education	10
Office Occupations Education	34
Technical Education	5
Trades & Industrial Education	171
Diversified Cooperative Training	12
Work Experience	37

Programs For Rural Disadvantaged

Last year during a visit to Carrabelle High School, the principal remarked that if it were not for the industrial arts teacher and his program many of our boys would have left school long ago. Realizing that fact, the Director of Curriculum Improvement for Franklin County school system and a few teachers in the Carrabelle High School, designed a totally integrated science curriculum. It includes the unique combination of marine mechanics, boat building, sea farming, marine biology-meteorology and oceanography.

The marine mechanics program teacher is a local seafood business operator who has great concern for the young people living in the local area. His program may be the first inboard-outboard diesel vocational training program at the high school level in the South. During the two years of training, as juniors and seniors, the students work on every conceivable kind of engine, from small 1 1/2 horsepower gasoline engines to

powercraft size inboard diesels. Since the classroom is right at the waterfront, repairs can be made on some of the boats without removing their engines. Related instruction on seamanship is given by the Coast Guard. This enables the students to conduct open-sea testing on their engine repairs.

In that there is a critical shortage (Cook 1970) in the area of trained diesel and inboard marine mechanics, local marine operators must do their own maintenance. Consequently, the program has no trouble in job placement as the instructor is bombarded with requests to hire all the students he graduates.

Another successful program for the rural disadvantaged was implemented in Liberty County. The traditional vocational agriculture studies 1, 2, 3 and 4 were expanded to include vocational home economics, ornamental horticulture and small gasoline engine repair. "Facilities are away from the main campus in an old school that was reopened", said Ford (1971), the small gasoline engine instructor, "but we are trying to serve the youth in the area. Next year we hope to expand even further and open an electronics laboratory". Small gasoline engine repair is the most popular program which includes all portable engines such as, outboard motors, chain saws and lawnmowers. Through these programs, it is hoped that students will not have to leave the area to find work or if they do leave, they will have some skills that will transfer.

In Bradford and the Union County area, school officials in conjunction with the State Department of Education and the Florida Trucking Association have set up a six-week commercial truck driving course. The course

consists of instruction in: "trucking regulations, freight handling, accident prevention, insurance coverage, customer relations and defensive driving (Annual Descriptive Report 1971, p. 29-30)." Basic driving skill development is learned by actually handling the equipment on the highway. The program has a 100 percent job placement, according to the Public Relations Director for the State Department of Education, with over 100 successfully completing instruction. Because of the success of this program two more commercial truck driving courses have been implemented in Bartow and Miami.

Programs For Urban Disadvantaged

Escambia County became concerned about students who, for whatever reasons, did not fit into the traditional academic programs. In fact, most counties in the Florida panhandle have about half their students drop out of school between the seventh and twelfth grades. "The reasons are numerous but most apparently drop out because of failure, the end result of lack of interest (E. Dixie Beggs, Introduction, Undated)".

A pilot study was conducted in Escambia County from January to June, 1969, with 17 boys between 15 and 17 years of age to test the feasibility of teaching mathematics, reading, communications and vocational subjects without failure on the part of the student. School administrators felt the pilot program was so successful in meeting the needs of the students that it should be expanded. At present there are over 600 disadvantaged youth in the program and another 1300 students on the waiting list.

The first question that comes to mind is what makes the Beggs Education Center innovative. Each student was identified as an underachiever or a possible dropout by his grade retardation, reading retardation, low scholastic

average, school attendance, IQ score and personality deficiencies. Of the initial 3400 students in Escambia County who were identified as potential dropouts, 1300 applications were returned from parents giving consent for their child to enter the non-graded vocational program. Over 900 home visits were made by counselors and teachers to insure the selected student had no gross physical handicaps, mental retardation or severe emotional problems that would inhibit his participation in the program.

The school day is divided into three 90-minute periods of which two are devoted to study of mathematics, communications and reading to master basic requirements. All academic studies that students engage in are related to his occupational choice. At the present time there are nine occupational training areas from which a student may choose a career. Teacher-student ratio was planned for 12 to 1 for the first three years of the program. This light teaching load enables the teacher to write study units and work individually with his students. The program calls for rotating students through several occupational areas rather than being assigned to the one area they select. Exceptions are made for boys and girls who have made friends and who are succeeding in a program, or for those who feel they cannot succeed in another occupational area. School rules are kept at a minimum at Beggs in order to give students a chance to set limits for themselves. Approximately 25 percent of the student population have had contact with the Juvenile Court. These students are not the easiest to work with. It is encouraging to note that school attendance has increased from about 70 to 87 percent. A study (Beggs, Undated) of the disadvantaged population which the Beggs Center serves indicated that at least 75 to 80 percent of the students

would never have stayed in school or would have quit school before graduation, if it were not for the Beggs program.

The school system and the University of West Florida conducted a six-week workshop to orientate the faculty on the needs and methods of teaching the disadvantaged. One interesting rationale has come to light in teaching the academic subjects.

> It is the concensus that the related academic programs would be much more successful if taught by young elementary teachers who had worked with fifth and sixth grade students. The rationale is that their experiences in teacher training would be more child oriented rather than content oriented; emotionally and in their learning skills, the disadvantaged are much more akin to the elementary child than to the secondary; and elementary teachers have had the basic training in teaching reading and as a result are more adept at creating workable reading programs while regression to the traditional remedial reading does not work. (E. Dixie Beggs, Undated, p. 7).

Work Experience Program

The work experience program in Florida is primarily designed to help the disadvantaged youth from dropping out of school. It is aimed at the critical time when youth need help the most--from age 14 and in grades 7 through 10. The program was designed so that after grade 10 the student must select another program to pursue an occupation or increase his efforts in the academic program. Students are identified for this program through teachers, permanent records and student behavior. The pamphlet called Work Experience Program Standards (1970) lists the following criteria for potential students in this program:

> . . . Overage in grade; not relating with classwork; truancy problems; need to work to continue their education; deprived economically; negative attitudes concerning work, school or society; alienated children; discipline problems; and half day performers. (p. 9)

Each student meets for one period a day with the teacher-coordinator

to receive employability skill training. Essentially the program is designed: (1) to encourage students to stay in school, (2) to allow students to earn money while in a supervised school program and (3) to improve motivation and a better self-image in the deprived youth.

One unique part of the funding is that state legislators chose to fund the work experience programs by one full teacher unit under the Minimum Foundations Program without regard to the Average Daily Attendance count. According to statistics collected by Program Services at the Florida State Department of Education and presented in the Annual Descriptive Report the work experience program involved 3,053 students in 1969 and 4,372 students in 1970. An increase of 37 new programs is projected for expansion throughout the state.

Program To Help Migrant Students

Florida Migrant Education, a division of the State Department of Education, has implemented a vocational education program called "Learn and Earn". The rationale behind the program is that it is important for a young person who has experienced deprivation and failure at home and school to be in a program where failure is non-existent. The program to serve this type of student must accept different abilities, different interest levels, and must guide and coach students to their highest level of attainment. The program must be different from the traditional program in education and have compassion and interest in the student as an individual. In this program emphasis is placed on the occupational and attitudinal skills needed to enable the student to be gainfully employed.

There are seven different areas of occupational training: Supermarket, Auto Tune-up, Small Engine Repair, Hospital Housekeeping, Patient Care, Office Clerk and Agribusiness. The student gains firsthand experience in his chosen occupational area. Learning by doing serves as a basis for skill development and includes cooperative employment in industry or business. These programs start at a remedial level and progress as far as the individual is able to attain. Once the student has gained job knowledge in a saleable skill he is placed with a work coordinator for on-the-job training. Because Florida has a very large migrant population, and in order to serve as many of the schools as possible which have migrant students, the occupational units were placed in well designed self-contained mobile classroom units. The mobile units are assigned to counties that have a possibility for job placement after training and that show a desire to adopt the program for their area's occupational needs. All expenses incurred by the county are financed by federal funds under the stipulation that the "Learn and Earn" program does not supplant a program already in existence. Students who are under the legal work age are paid a stipend to help them stay in the program and older students are paid a stipend until they are placed in employment.

The success of any program depends upon the instructional staff. With this in mind, preservice and inservice training was necessary to orient the staff to the objectives of the program and to acquaint them with the problems peculiar to the education of migrant students. Also for better communication and to aid the instructor one teacher aide was hired from the migrant population for each occupational unit.

Since the implementation of "Learn and Earn" Florida's public schools have been receiving outstanding praise and endorsement from most of the participants in the program, school personnel and the community at large. All indications are that the "Learn and Earn" program approach is a giant step toward meeting the needs of this target population. At the present time, thirty mobile units have been placed in five counties training approximately 700 students. Although this amount is significant, it does not nearly meet the need for training and reducing the migrant student dropout. "Approximately eight out of ten children of the migrant workers still do not make it to high school (Learn and Earn, Undated)".

Private Sector Disadvantaged Program

The Perry-Taylor County Chamber of Commerce has been soliciting private industry in the area to participate in "JOB '70". The National Alliance of Businessmen Job '70 Program was founded to aid disadvantaged to find meaningful employment. It has two basic functions, one of which is to train disadvantaged individuals for jobs, and the second aim is to upgrade individuals who are underemployed. In this program a person is classified as disadvantaged if he earns less than $3800 for a family of four, is a school dropout, recipient of welfare, under 22 or older than 45 years and unemployed. At least 25 employer pledges must be received before funds may be requested from the Florida Employment Service. Employers participating in the program may be reimbursed up to $3000 maximum payment for each employee trained.

Griffin (1971) said, "The program is open to all employers regardless of the size or type of business". It is designed for the disadvantaged to break the poverty chain by becoming employed or upgraded in skills.

Conclusions

These few vocational education programs that we have discussed are not the panacea for all disadvantaged students. But they are specific examples of some of Florida's effort to educate a target population. Meaningful programs, well equipped occupational shops, qualified instructors and employment waiting at the completion of occupational programs will provide the impetus for the disadvantaged student to enter vocational programs. Most important of all, only when educators put forth the effort, will vocational education become meaningful for the disadvantaged youth.

REFERENCES

Annual descriptive report, bulletin 70E, January 19, 1971, Division of Vocational, Technical and Adult Education, State of Florida, Department of Education, Tallahassee, Florida

Cook, C., Marine Science, Tabloid, December 1970, Florida Education Association, Tallahassee, Florida

E. Dixie Beggs Education Center, its planning and development, undated, Department of Vocational Education and Services, Escambia County Schools, Pensacola, Florida

Ford, P., Instructor at Bristol High School, personal interview, February 17, 1971, Tallahassee, Florida

Griffin, M., JOBS '70 program is planned in Taylor, Tallahassee Democrat, February 19, 1971

Kopp, W., The BOCES mandate to serve rural disadvantaged, American Vocational Journal, November 1970

Learn and earn program prospectus, undated, Migrant Education Section, State Department of Education, Tallahassee, Florida

Third report, National Advisory Council on Vocational Education, Vocational Education Amendment of 1968, July 10, 1970, Regional Office Building, Washington, D. C.

Work experience bulletin 80H-1, August 1970, Division of Vocational Technical, Adult Education, State Department of Education, Tallahassee, Florida

CHAPTER IV

Vocational Education or General Education for the Disadvantaged

Ronald E. Molyneux

Some Thoughts on the System

For many years now, probably more than we as professional educators would like to admit, educators have alienated themselves from each other. We have all gathered in our little niches for the purpose of perpetuating our kind, that is, whatever field we are in just happens to be what every American youth needs, regardless of the student's socio-economic background. However, we have agreed on one thing, this being that a small percentage of students, low achievers, in any given school system should be channeled into some kind of occupational education. Thus we have assumed that the rest will aspire to the same educational goal that we as educators have aspired to, a college education.

But the fallacy is that only about 20% of the occupational opportunities in the future will be available to those students who complete a higher education. Thus we are leaving at least half of the students with educations that are comprised of niches of education that have no real meaning for the future of the learner. For the disadvantaged, this crisis is even further complicated by the fact that only a small percentage of this group will have the background and/or financial

ability to go on to a higher education. So this group is left with an extremely high percentage of the students having no saleable skill on completion of public education. And, these students are aware of this. If the school system has been good enough to teach them to communicate, they will say, "This school is not relevant."

As Others See It

(Wolfson, 1969) contends that education must be regarded as a long-term endeavor. Combined with housing, employment, and a change in individuals participation in government, a reordering in urban education to meet the needs of the students must offer a reasonable alternative to urban crisis. (Wolfson, 1969, p.52) goes on to say,

> If it is to be relevant to immediate needs, urban education must include vocational or occupational education. The world of work is a motivating force for most young people; in the minds of inner-city youth, it has added significance.
>
> Orientation to employment, the development of skills for employment, emphasis on establishing habits and attitudes for successful participation in gainful employment, and planning for continuing progress in educational preparation - all are part of a program of occupational education which must be related to the total program of urban education.

(Feldman, 1967) believes that occupational education will flourish when educators agree that the distinct purpose of education for some students is socio-economic escalation. Others see the problem in the same light. (Kugler, 1967, p.32) says,

> Contemporary public education unconsciously does deny educational and, therefore, economic opportunity to a clearly defined segment of American society.

To reinforce this concept of education, (Gillie, 1967, p.45) says,

> The irony of this development is that the general education should be the part of the student's education that has the greatest lasting value in the most positive sense. For the students we are discussing here, it should be centered around the problems they have lived with and will be living with in the immediate future.

The complexities of twentieth-century living and hence educating, are palitable only to the extent of understanding the far reaching implications that influence it. (Jogren and Gatcher, 1969, p.226) state some of these implications as follows:

> 1. American society is in a crisis period which has as one of its primary causes the dislocations and changes affected by the technological revolution.
> 2. Many of the dislocations and changes are especially evident in the world of work.
> 3. These dislocations and changes are discriminatory in their effect in that they are serving to widen the gaps among economic groups. Because economic status is related to ethnic group membership, the economic and social distances among the ethnic groups are also widening.
> 4. The educational system of the country is being challenged to effect viable means to cope with the crisis. Vocational Education is especially challenged because of its unique responsibility and exhibited capability in educating and training people for participating successfully in the world of work.
> 5. The rapid population increase that accompanied the technological revolution has compounded the problem. Despite large absolute increases in programs and enrollments in vocational education, the relative numbers are not increasing enough to meet the perceived demand.
> 6. It is becoming increasingly apparent that training in occupational skills will not in itself effect the needed changes. Fundamental literacy skills are lacking in many of those people needing vocational training. The resolution of the problem is also

dependent on attitudinal change both by the trainee and by society.

To further complicate the problem, (Slaiman, 1967) points to the fact,

> ...that for every job opening made available to minority groups, there are one and one-half jobs that are eliminated because of technological advances.

(Reed, 1968, p.83) says,

> Statistics indicate that those occupations requiring the most education will increase their attainment very little compared with those requiring the least education.

(Venn, 1968, p.113) makes the following statement:

> In our present society, most people will have to change occupations four or five times during their lives. Therefore, a long-range policy of preparing individuals with simple, specific job skills no longer makes sense, yet specific entry skills are required for joining the labor force at any given time.

Direction That Might Be Taken

(Whiting, 1969, p.230) has the following opinion about education:

> 1. More attention needs to be given to formulation of useful guidelines and instructional principles as framework for future development.
> 2. Compensatory and remedial programs are not sufficient.
> 3. There is every indication that a commitment on the part of the higher education community to cope with the problem of the disadvantaged student automatically and realistically involves a decision to enter directly into the field traditionally confined to secondary education.

(West, 1968, p.359) gives his solutions in a very pointed direction. These are as follows:

1. Compensatory education is not an adequate answer to the vocational problems of minorities. The real hope lies in the improvement of classroom instruction.

2. The school should deliberately set out to change the values and attitudes of those whom it instructs. This is based upon the fact that it is not merely the lack of information and skills restricting minority youth, but personality traits and value systems.

3. Preparation for the world of work must be accepted as a major objective of schools; it must have a priority fully equal to preparation for academic or professional careers. A comprehensive high school would be ideal.

4. Effective vocational programs of counseling education and training must be locked into the real world of work where all the activities are actually being performed for which youngsters are being prepared.

5. Authentic and believable models are essential in the career preparation of minority youth.

Some Concluding Thoughts

To discount the existence of all the statements presented, an educator would have to be blind to the world around him. To state that he has the answers to the problems herein, an educator would have to have a fixation of a grand magnitude. At the present time, one can only look in a general direction. The problems of the schools and of the students stretch in virtually every direction of American life. All around us today people are asking, and sometimes demanding, a reordering of priorities. The onslaught of public opinion has not been directed at the educator yet. This is probably because we are still closely aligned with "mom and apple pie." But if we look close, it is coming. In the past few years, universities have made harder and harder criticisms.

We as educators have to become committed to the problem

at hand, and challenge it with all of the creative thinking that we have. The polarization that exists between occupational education and general education, or college preparatory, has to be resolved. Occupational education has to give its students more than just a specific saleable skill, for in a technological society specific saleable skills change at the advent of a new machine or process. General education has to also change, for too many students leave the school setting with little or no skills that will make them employable.

References

Feldman, M. J. Why Manpower Training Should Be a Public School Mission. American Vocational Journal, 1967, 42 (8), 26-28.

Gillie, A. C. Needed: A New Program of General Education for Ghetto Youth. American Vocational Journal, 1967, 42 (8), 42-45.

Jogren, D. S. & Gutcher, D. Current and Future Demands on Vocational Education. The High School Journal, 1969, 52 (5), 219-228.

Kugler, H. L. Self Examination for Public Education. American Vocational Journal, 1967, 42 (8), 32-34.

Reed, H. J. Educational Change for Manpower Development. Vocational Guidance Quarterly, 1968, 17 (2), 83.

Slaiman, D. Civil Rights in the Urban Crisis. Seminar on Manpower Policy and Program, U.S. Department of Labor, 1967.

Venn, G. Occupational Education for Everyone. The Bulletin of the National Association of Secondary School Principles, 1968, 52 (Whole No. 332), 112-122.

West, E. H. Education and Jobs. Journal of Negro Education, 1968, 37, 359-363.

Whiting, A. N. Obligations to the Disadvantaged Student. Liberal Education, 1969, 55, 229-234.

Wolfson, H. T. Vocational Education in the Urban Setting. American Vocational Journal, 1967, 44 (4), 52-54.

CHAPTER V

VOCATIONAL CURRICULA FOR THE DISADVANTAGED

Jeanette L. McGlamory

Working Premise

"All children want to learn but, in some way or other, they become 'unmotivated'." Martin Deutsch notes eagerness for schooling when children first begin, followed by a declining enthusiasm the longer they are exposed to school. (Kliebard, 1967, p.1)

Introduction

The purpose of this research is to suggest means that are available through instructional adaptation to provide relevant education which will not only prevent children from becoming "unmotivated" but which will also enable the Disadvantaged to pursue the vocation which they choose.

Vocacional Educacion Dependent Upon Basic Education

In order to build vocational curricula for the Disadvantaged, it must be realized that general education is of utmost importance to vocational education. Technology demands more and more sophisticated workers. At the same time, the availability of more sophisticated workers permits the development of more sophisticated technology. This circle demands and provides opportunity for only those people who have both

an excellent general education and excellent vocational preparation. (Orstein, 1967, p. 213) If the vocational curriculum is to keep up with the demands of society, vocational education cannot be divorced from general education--ways must be investigated (techniques, courses, etc.) which will adequately serve the Disadvantaged so that seasonal, blind-alley and back-breaking jobs will not be all that is available for this segment of society.

The Federal Government has already recognized this competency by amending the Manpower Development and Training Programs to provide basic education classes. (Bloom, 1965, p.123)

Learning Difficulties Cited

Current theory assumes that the learning difficulties of the Disadvantaged result from a lack of basic preparation--that is, that he is socially inadequate, hasn't sufficient male figures in his life, has no books in his home, can't delay gratification, and suffers from accumulated environmental and cultural deficits. (Penner, 1967, p. 22)

What methods and techniques are necessary to make the curriculum relevant to meet these needs?

Needs Assessment Survey

Russo (1968) stated, "Teachers are convinced that 'training activities' must be planned and conducted from and at the grass roots level, rather than by or at the District Office or the College, removed from the local school and

neighborhood." In other words, each school would need to survey its student population--conduct a Needs Assessment (percentage of students reading below grade level; percentage planning to attend college; percentage in socio-economic classification of more than $10,000 and under $3,000 income, etc.); also taking into consideration figures from follow-ups on graduates. Then and only then, can priorities be isolated. (Holton, 1969, p. 116)

Curricula and programs to serve the Disadvantaged (based on Needs Assessment) can then be budgeted--for instance, there might be a need for three extra reading teachers, more paraprofessionals, more basic or vocational English classes, more co-op programs, or, perhaps, a multipurpose center that offers remedial, developmental and supplemental instruction for Disadvantaged students, such as the Yuba County Reading-Learning Center operated by the Marysville ESEA Title I Project; a Curriculum and Instructional Materials Center that develops, field tests, and evaluates innovative instructional units for Disadvantaged students, such as the Stockton ESEA Title III Project; or a Demonstration-Laboratory Center that is either a comprehensive school program or a program of special classes for Disadvantaged pupils (and their parents) such as the Santa Cruz Title I Project. Each school must choose and budget for programs, equipment, etc. which are relevant to the needs of their Disadvantaged students. (Stone, 1969, p. 26)

Differentiated Curricula

Such men as Ross L. Finney, David Snedden and Charles Hughes Johnston stress the value that differentiated curricula has in preparing each individual to fill his proper niche in the social order. (Holton, 1969, 143)

However, whether the case for differentiated curricula is argued in terms of psychological differences, social efficiency or the inability to cope with academic subject matter, the effect on the school program is the same. Certain groups, historically defined in different ways, are isolated from the mainstream of our cultural heritage on the grounds that they are ill equipped to cope with such "abstruse" matters.

Too many times a curriculum: (1) programs youths to "fit" society, rather than engendering skills which would allow them to "alter" society; (2) stresses the grade as important, not the learning; and (3) "stigmatizes" students into "low ability" tracks which immediately restrict his occupational choice.

What is the alternative insofar as the Disadvantaged are concerned? The alternative is to use whatever means available, through compensatory education and instructional adaptation, to see to it that the genuine disadvantages with which certain children may start life do not become permanent handicaps.

New Approaches, Methods, etc.

Many programs for the Disadvantaged can be cited--each meeting with varying degrees of success: in the Army, new approaches have overcome illiteracy in adults with surprising speed; programmed learning has had marked effects on drop-outs in New York and prisoners in Alabama whose level of intellectual functioning was quite low; other methods--non-graded classes, multiple periods, clusters, use of gamelike techniques have also shown considerable potential; Montessorian techniques have achieved results in Los Angeles and Mount Vernon; imaginative "hip" lessons, combined with role playing have proved exciting in Syracuse; team teaching has worked in Pittsburgh; and new readers have improved reading levels of educationally deprived youngsters in Detroit. (Dawson, 1969, p. 7)

Parent Involvement

Teachers and administrators are now aware that a much larger part of the problem of educating the Disadvantaged must be dealt with in the home than was earlier realized. Despite the awareness, and the contacts with parents arranged through in-service and projects, teachers are still limited in their time, ability, and, sometimes, willingness to continue and expand those contacts.

The use of community workers, often themselves from a Disadvantaged background and relatively untrained, appears to be increasing. Non-professional or paraprofessionals need

to be recruited from among the poor themselves, to assist teachers so they can play more fully their professional roles as teachers. This auxiliary manpower could also provide excellent male role models for educationally deprived youngsters and provide someone to whom they can relate. (Dawson, 1969, p.33)

At this time, there seems to be three problems in this area which must be overcome: (1) teachers are sometimes reported to use non-professionals or paraprofessionals for more lower-level, clerical tasks than is intended, instead of utilizing them to work directly with the children; (2) aides who are also parents of children in that school occasionally give teachers concern about their own authority; and (3) teachers are sometimes defensive about aides from a disadvantaged community who have a greater rapport with, or speak the native language of, the children.

Special parent-teacher groups, led by non-professional parent education coordinators, are excellent when directed toward full, genuine, two-way communication between the parents and the schools. In this way, parents can be involved as important supportive elements of the programs for the Disadvantaged.

Administrative Arrangements

In order to reach the goal of providing relevant and individualized programs for the Disadvantaged, there are certain administrative arrangements which should be explored: team teaching, multiple periods, non-graded classes, educational parks, intensive extra-school programs (during summers, weekends,

and after-school hours.) These extra-school programs can introduce into the schools specialists in many fields; also, tutors and special uses of programmed learning and educational TV could also be brought in here. (Borton, 1970, p. 74)

To explore just one of these arrangements--multiple periods (blocks), there is immediate flexibility in working with a student who varies in background, ability and vocational goal. In a longer period of time, with fewer students, the teacher can adequately select learning material geared to the student's readiness (by pre-testing him); can supervise and re-inforce him until he masters on-going learning tasks before new ones are introduced; and use structured learning materials organized to facilitate sequential learning. Also, the need of the Disadvantaged student is met in that he is not just a number; the teacher now has the time to get to know him, his abilities, and his aspirations. There is time in block periods for individual and group counseling. The Disadvantaged are not "stigmatized;" there is more teacher-time for everyone.

Non-Verbal Learning Experiences

A factor of the new programs which often causes misunderstanding is that most of them emphasize non-verbal experiences, either through physical expression and involvement or through art or music (affective and pycho-motor domains). Non-verbal educational techniques are based on the obvious, but little-utilized fact that a child learns most of his emotional-response patterns at a very young age--before he

can talk. Education which deals with feelings is often facilitated by skipping over the verbal labels which have been learned relatively late in life, regaining the other senses, and then re-integrating them with verbal thought and new behaviors.

Games and improvisations (role-playing) allow a simulation of the self. While they are real and produce real emotions, their tightly defined limits provide a way to try out new behavior without taking the full consequences which might occur if the same action were performed in ordinary relationships. (Morine, 1970, pp. 144-145)

Providing training in a place of business is one type of role-playing...the school and the teacher provide the feedback and "cushion" for failure or success. Certainly, if teachers should "intern," the Disadvantaged should be given the opportunity to "try their wings" without fear of being fired or experiencing total failure or frustration.

Peer Learning

Ronald Lippitt's "peer learning" (Reissman, p. 23) demonstrates that youngsters can be helpful in teaching their peers and can benefit themselves from playing the teacher role. As any teacher can report, there is nothing like learning through teaching. By having to explain something to someone else, one's attention is focused more sharply. This principle may be especially valuable for Disadvantaged youngsters because in their informal, out-of-school learning, they tend to

learn much more from each other, from their brothers and sisters, than from their parents reading them a book or answering their questions. They are essentially peer learners by style and experience!

Learning Activity Packages

The advocates of Learning Activity Packages (LAPS) or Contracts point to the value of letting each student proceed at his own pace. Evaluation of these packages and contracts would indicate a high degree of success with good (above-average or average) readers and well-motivated students. However, in order to serve the needs of the Disadvantaged student, material must be appropriate to his reading level, and it must be presented in "bite-sizes," not the "whole meal" at one time. It is imperative that rewards and/or feedback be available to the slow-learner, under-achiever, or under-motivated; the teacher is needed more as a tutor, rather than as a supervisor.

Programmed Learning and Instructional Material

New urban readers and other appropriate curriculum materials for the Disadvantaged have been developed in Detroit by Follett Publishing Company and in New York by Bank Street College and published by MacMillan. These readers incorporate the Disadvantaged and themes in a more representative view of urban life. The research in Detroit indicates that all youngsters, not only the Disadvantaged read better with these

readers. Encyclopedia Britannica and Myron Woolman are also contributing greatly in this area. (Kliebard, 1967, p.18)

The publishing companies are also indicating the reading level of their educational material to aid the teacher in choosing instructional materials. They recommend programmed materials for certain levels, backgrounds, etc.

New Teaching Machines (Programmed Learning) and Pacers (EDL-McGraw-Hill) are available also to aid teachers in making their presentations of materials more concrete and less verbal.

Change in Terminal Objectives

There are certain changes which must be made if vocational programs are to serve the needs of all levels of ability. Some of these changes are: (1) more combination (core) of basic and occupational (skill) courses; (2) behavioral objectives for each DOT occupation for which the students are training; (3) more teacher-training in counseling and guidance; and (4) more and better articulation grade-to-grade.

SUMMARY

Team teaching, non-graded classes, multiple periods, clusters, programmed learning, learning activity packages, peer learning, parent involvement, group discussions, TV, newspapers, paraprofessionals, role-playing and field trips have been suggested as possible avenues in implementing curricula for the Disadvantaged.

However, there must be a thoretically directed, integrated approach (not piecemeal and unintegrated, which now is the case) if large scale improvement in the learning of the Disadvantaged is to be achieved--not "compensatory" efforts. Also, teachers must have a voice in decisions that affect them (i.e. lower student-teacher ratios, techniques that work, etc.)

Conclusions

Vocational education for the Disadvantaged...

It SHOULD be done;

It MUST be done;

It CAN be done!

REFERENCES

Bloom, Davis, & Hess, Compensatory Education for Cultural Deprivation. New York: Holt, Rinehart & Winston, 1965.

Borton, T., Reach, Touch & Teach. New York: McGraw-Hill, 1970.

Dawson, H. S., On the Outskirts of Hope. New York: McGraw-Hill, 1969.

Holton, S. M., Understanding the American Public High School. Boston: Allyn and Bacon, 1969.

Kliebard, H. M., "Curriculum Differentiation for the Disadvantaged," The Educational Forum, November, 1967.

Morine, H., A Primer for the Inner-City School. New York: McGraw-Hill, 1970.

Orstein, A. C., "Teaching the Disadvantaged." The Educational Forum, January, 1967.

Reissman, F., Blueprint for the Disadvantaged. Anti-Defamation League of B'nai B'rith.

Renner, R. R., "Schools and the Poor," The Educational Forum, November, 1967.

Russo, F. X., "Recruiting Teachers for the Disadvantaged," The Educational Forum, January, 1968.

Stone, J. C., Teachers for the Disadvantaged, San Francisco: Jossey-Bass, 1969.

ADDITIONAL REFERENCE

Conant, J. B., Slums and Suburbs. New York: McGraw-Hill, 1961.

CHAPTER VI

SUCCESSFUL VOCATIONAL EDUCATION CURRICULUM FOR THE DISADVANTAGED

Henry E. Gilbert

Introduction

The purpose of this paper is to examine the effectiveness of different types of vocational education programs for the disadvantaged school aged students. No attempt will be made to discover how well or how poorly vocational education is meeting needs of disadvantaged students on a national basis. It is the intent of this study to arrive at conclusions of what should be included in a curriculum for the poor, inter-city ghetto, minority group, etc. students classed as disadvantaged. When establishing vocational education programs for students from areas of limited opportunities, concerns of engaging, holding and integrating the students into society as productive members must be taken into account.

We will look at several different programs designed for the disadvantaged and based on the reported success or failure of these programs, arrive at recommendations of what must be included in a curriculum for meaningful vocational education programs.

Programs for the Disadvantaged

Tapp (1969) reported students in the inter city of Chicago were unable to take advantage of Distributive Education (DE) because of their inability to obtain and hold employment. Their limited abilities in not understanding how to meet customers and employer relations appeared to be the students' major problems. In 1965 a program for prospective disadvantaged D.E. students was initiated in one inter city school, called Headstart D.E. Students expecting to enter D.E. the next year were enrolled in a summer program where they were taught basic skills in communications, respect to customers, and employee-employer relations. How to apply for employment was an important aspect of the Headstart D.E. program. This program met with almost instant success and by 1969 the program was expanded to include 15 inter city schools.

The U.S. Department of Labor (1968) reports an experimental and demonstration project, JOBS - Chicago, 1963-1964, attempted to determine the relationship between trainee success in relationship to different aspects of a training program. Seven hundred trainees were enrolled in all phases of the program, which included pre-training guidance, occupational training, group and individual counseling, personal problem assistance, and employment placement assistance. A second group of 300 trainees were enrolled but did not receive occupational training other than on-the-job

experiences, and a less intensive pre-training guidance phase. The majority of the trainees were school drop-outs, average performance on achievement tests was below the sixth grade level, and trainees had had no regular employment. Based on trainee feelings (believed the project was worthwhile), drop-out rate, past employment (number of different jobs each group obtained in a given period) and trainee initiated contacts with staff after completion of the program, those students involved in all program phases benefitted most from the program.

Scales (1969) made a study of 194 schools in California which revealed the most important curriculum factor preventing students dropping out was a diversified vocational training program geared to several ability levels. Other factors in curriculum considered but not important in preventing the school failure were work education programs geared to all students, remedial courses in the 3 R's, extracurricular activities geared to all social and ethnic groups, and core courses of elementary materials discussed in a mature way for the lower ability potential drop out Scales (1969) identified 20 of the 194 schools which had enrollments of over 2,000, with over 25 per cent of the school population Mexican-American or non-Caucasian descent and more than half the schools' population from a lower class home background. The importance of the described vocational curriculum was even more important as to

preventing drop-outs than for all schools studied. One of the major conclusions stated ". . . these young people need to have a feeling of achievement that is realistic to them; one that relates what they are doing in high school to their future, and one that gives continuity to their lives in terms of the future (Scales, 1969, p. 343)."

Reynolds (1969) indicates schools must provide special programs for youth who do not find traditional studies relevant to their needs. Dayton, Ohio public schools found a pre-vocational program oriented to industrial mass production procedures for tenth grade potential drop-out students to be effective. The program was designed to not teach specific skills, rather to concentrate on work attitudes, social attitudes, safety and to help students realize the importance of other school subjects. The program began in three schools in 1965 and was expanded to nine of the ten Dayton schools in 1969. Follow-up on students graduating from the school system in 1968 who were involved in the special program revealed:

20 are employed in manufacturing industries.
4 are employed in construction work.
3 are employed in service industries.
7 are employed in retail food establishments.
5 are employed in hospitals.
4 are presently housewives.
8 are in the armed services.
1 is unemployed.
1 no report.
1 nurse's training.
1 is a student at a four-year university (Reynolds, 1969, p. 35).

Cochran (1969) made a study of drop-out prone students in Quincy, Illinois. He found several factors which contributed to school failure. Among these were a lack of pre-vocational information, failure of education subjects to be relevant to the student, and home background. Involvement of the drop-out prone students in work study programs did improve the student's attitudes about school, increased or motivated students towards effective participation in other school programs, and provided students with adequate skills for successful work experience participation.

O'Gara and Thurston (1970) state the disadvantaged student who fails in the best schools can and will respond to a personalized program. This conclusion was drawn from results of a special program called Vocational Village low achievers, for drop-out and delinquent students in Portland, Oregon. Students in Vocational Village are allowed to progress at their own pace. Unnecessary pressures of grades are removed and the total environment is directed towards a meaningful learning situation. Students are provided individual job assignments called "behavior modification" and after completion of a specific number are given credit for a course. The school seeks out community resources which will serve the needs of students with special problems such as health services, community adjustment, etc. Instructors manage a performance curriculum rather than lecture. They work with students on a one-to-one basis and encourage

students in their efforts. Vocational Village provides most students their first chance for a meaningful education experience.

Schreiber (1964) reports the results of several work study and job upgrading programs. In St. Louis a work study reduced student drop-out rate from 35.2 percent to 11.6 percent. Detroit's job-upgrading program has met with considerable success. Students at the initial phase attend class for three weeks dealing with personal appearance and communication skills. After this phase they work three days a week at jobs as sales clerks, stockroom workers, clerical assistants etc. at a $1.00 per hour salary rate. The other two days students attend classes in marketable skills, reading, speech, mathematics and citizenship. After the program was over a year old 41 students had received one or more pay increases Only 11 students were removed from the program for various reasons. A remarkable item considering 59 students were originally enrolled when one considers the limited expectations of these students because of their background.

Students in the Detroit program are provided counseling services upon entering the program, given pre-program preparation, programmed, and are disconnected from the education setting into gainful employment.

The literature contains considerable information supporting the needs of disadvantaged students. Grote (1969) and the National Association for Public School Adult

Education (1966) indicate that skill training without social skills is failure oriented for persons without those necessary related skills of how to obtain employment or to relate his job assignment to the rest of his life. Hirst (1966) states, "youth with special needs can successfully cope with jobs--if the schools give them adequate preparation (p. 164)." Hirst further indicates 30 percent of the children in Rocky Mountain Schools of Wyoming fail to complete high school because the schools are failing to meet the students' needs.

Finch (1970) states:

> One large midwestern city established a guidance and occupational center which processed 802 out of school youth between the age of 16 and 22, from 1966 through 1968. Over 90 percent . . . had health deficiencies which inhibited their full involvement in training and employment (p. 103).

Summary

Effective vocational training programs for the disadvantaged student must be concerned with more than just skill training. The disadvantaged students are likely to be in need of health services, lack social skills, need a personalized program, benefit from pre-training counseling, need a skill training program which relates to their needs and environment, and require placement assistance. Programs which assist students financially, as in the work-study type, appear to greatly enhance student performance.

Scates (1969) study of schools in California certainly indicates disadvantaged students can and do benefit from vocational training programs which are diversified and appropriate to the student's ability.

Recommendations

Several recommendations we believe appropriate to vocational education for disadvantaged students are as follows:

1. Vocational education programs must be responsive to the needs of those students it serves.
2. Vocational education must be success oriented. That is, students must be provided successful experiences which they can understand.
3. Vocational education must make whatever effort is necessary to connect with the student.
4. Vocational education must be realistic to the student's present and future environment.
5. Students will benefit more from vocational education programs which connect students with the work world.

In summary, we might state that successful vocational education programs for the disadvantaged student are those which provide the student with skills necessary for economic efficiency, social relations, self-realization, and prepares students for acceptance of civic responsibilities.

REFERENCES

Cochran, L. H. Industrial education and the disadvantaged. American Vocational Journal, 1969, 44 (9), 23-74.

Finch, F. H. Vocational and technical education annual report fiscal year 1968. Washington, D.C.: U.S. Printing Office, 1970

Grote, C. N. Toward fulfilling a total obligation, Industrial Arts and Vocational Education, 1969, 58(5), 29.

Hirst, W. E. Vocational education-secondary school's underdog? The Clearing House, 1968, 43(3), 162-164.

National Association for Public School Adult Education. Adult basic education--a guide for teachers and teacher trainees. Washington, 1966.

O'Gara, J. C., & Thurston, R. Phototype of a 'second-chance' school for the 70's. School Shop, 1970, 29(8), 101-103.

Reynolds, J. O. Preparation for entrance to the world of work. School Shop, 1969, 27(9), 33-35.

Scales, H. H., Another look at the drop-out problem. The Journal of Educational Research, 1969, 63(8), 339-343.

Schreiber, D. An introduction to the school dropout. Guidance and the School Dropout, Washington: National Education Association, 1964.

Tapp, G. R. Headstart DE. American Vocational Journal, 1969, 44(5), 26-27.

U.S. Department of Labor. Inter-city Negro youth in a job training project. Washington, D.C.: U.S. Government Printing Office, 1968.

CHAPTER VII

COOPERATIVE AND WORK EXPERIENCE PROGRAMS FOR THE DISADVANTAGED

W. Lee Bullard

Vocational programs which provide actual work experience for the disadvantaged student are a fairly recent addition to the vocational offerings. The problems encountered by these programs are many. Research has failed to come up with many of the anticipated answers as to the benefits one can expect from a program of this type.

It is the purpose of this paper to review some of the thinking concerning work experiences for the disadvantaged and look at certain pertinent studies generally concerning this area of vocational education. Several examples of some of the various types of cooperative and work experience programs for the disadvantaged will be examined.

Types of Programs

In discussing programs which provide on-the-job experiences for students, one encounters a number of terms used to classify the program according to certain characteristics of that program.

Broadly speaking, these fall into two major groups. These, for the purpose of this paper will be called cooperative and work experience.

Cooperative. These programs provide work experience plus classroom activities which are directly related to the job skills involved in the work experience. The two phases are coordinated to provide maximum occupational training.

Work experience. The student works part time, however this is not accompanied by job skill related class work. If class work does accompany the training, it is usually involved with employability skills to help the student adjust to the world of work. It is not intended that this training lead to a specific occupation. Quite often a student is involved in this program as a pre vocational experience preceeding cooperative training. The work experience may be sheltered (in the school system) or in the business community.

An article by Bottoms and Reynolds (1969) discuss the use of work experience to modify behavior of the disadvantaged. They point out how this concept differs from some exsisting general work experience and cooperative programs. The article can be summerized with the following points.

1. Cooperative programs do not meet the needs of the disadvantaged because these students may leave school before reaching the 11th or 12th grade to enroll in these programs.

2. Cooperative programs often concern themselves with job skills which can be learned on the job rather than the development of confidence and work adjustment skills needed by the disadvantaged.

3. Work experience is in and of itself, not always productive of desirable changes, but must be accompanied by provisions for helping the students assess their own behavior needs.

4. Work experience should serve as a core around which other academic experiences can be built.

5. The work experience should be structured to assure maximum success for the disadvantaged in order to build self respect.

6. Work experience coordinators should seek out students for the program and allow them to enter at whatever level the student could benefit the most.

How Successful is Work Experience

Bottoms and Reynolds (1969) also point out that the popular belief that work experience can serve to make one's academic education more meaning ful is not founded in research.

An Illinois study by Miller (1961) investigated this aspect and found evidence that the work experience did have a positive effect on the grade point average of students classified as potential drop-outs. There was no indication, however, that work experience contributed to the holding power of the school, improved the discipline of the students in the program, or improved their attendence.

After analyzing the data by individual schools, Miller concluded that, in some schools, work experience was good for some students. This statement best summarizes research findings in this area and the experience of many of the pilot programs.

Barnstein (1968) compared boys in a co-op program for disadvantaged to a control group in order to examine the effect of participation in a cooperative program on student's work values or the change in these values over the observation period. He found little change in either measured work values or in change in these values. Information was not available, at this time, on the structure of the program, but results would seem to back up the theory of Bottoms and Reynolds mentioned above.

As will be seen in later paragraphs in this paper, programs seem to succeed in some objectives while other programs in other areas fail in the same objectives and succeed in different ones. There seems to be no statement one can make about a format that works well in all cases.

Serving the Disadvantaged with Existing Co-Op Programs

There appears to be no wholesale commitment on the part of vocational educators to serve the disadvantaged within existing cooperative education programs. A search of recent vocational research review literature (Ashman & Larson, 1970; Price & Hopkins, 1970; Wallace, 1970) fails to turn up much evidence that cooperative vocational educators are addressing themselves to this task.

A master's study done by Lee (1966) in Illinois gave some indication of the thinking concerning the involvement of the disadvantaged in cooperative business education programs. Interviews with OPE coordinators indicated that they felt that low-average and below students could definitely benefit from cooperative office education. A check of school records, however, indicated that few low achievers were to be found within the ranks of Cooperative Business Education. Three problems in working with low achievers were thought to be 1) difficulty in finding suitable placements, 2) development of appropriate personal qualities in the low student, and 3) lack of adequate instructional materials for this group.

It is suspected that this situation was not peculiar to Illinois nor to the business education discipline. Little evidence

has been provided to show that there has been much change since 1966.

There have been several suggestions brought forth as to innovations which could facilitate the absorbtion of the disadvantaged student into existing co-op programs. Two possibilities for business education were described in an article by Andrews (1969). The first was to identify limited-function office jobs which could be handled by the disadvantaged student. A second plan involved using jobs outside of the office field for a pre-vocational type of experience until the student becomes ready to function in regular part-time office jobs.

Mason & Haines (1965, pp. 340-41), in their text on cooperative education, suggest a three track distributive education program with both job training and related instruction offered on a level for low, average, and above average students. Lateral movement between tracks could be made at any time.

Work experience programs have proved that employers are willing to provide part-time training for disadvantaged students. It is hoped that cooperative educators will be stimulated to investigate the changes necessary to serve the disadvantaged. The University of Minnesota's Guide for Cooperative Vocational Education (1969, p. 113) lists "Building curricula for the disadvantaged" as a critical area for cooperative education.

The following paragraphs contain a brief review of some selected vocational programs for the disadvantaged which provide some form of job experience for the student. The studies from which the information was gathered cover the period 1966-70.

Job Upgrading in Detroit

The oldest of the programs discussed is described in the study Evaluation of the Job Upgrading Program as Expanded Through the Use of ESEA Title I Funds (1966). It has been in existance since 1949 but was expanded with the use of ESEA funds.

This program prescribed needed remedial work for high school dropouts plus provided an average of six weeks summer work and/or evening work. The goals of the program were to help develop skills and attitudes needed by dropouts to hold jobs. The program was evaluated one year after it was awarded Title I funds and it was found that, of the dropouts being served, 36% returned to school, 16% entered full time employment, 12% left the program, and 36% are still enrolled in the program.

From this it can be seen that the program has been quite successful in pulling dropouts back into school. In the cases where they failed to do this, in over half of these, the student was able to enter a full-time job.

It appears that the program had one big shortcoming. This was that students must be actually dropped from the school roles in order to participate. One of the recommendations was that the program be so structured that students could transfer in before becoming a dropout.

No further information was available to this writer as to the current status of this program. If the recommendation was followed and the program became an actual part of the school curriculum, the

program could serve as an example to others interested in providing this type of service.

Work Orientation in Illinois

A study by Cudney (1968) discusses a rather comprehensive program in a school district outside of Chicago. The program was first developed and used with no work experience. The results showed some improvement in attendence, attitude and grades of disadvantaged students enrolled in the program.

The program was expanded to offer four flexible phases. The first is a social and vocational evaluation to determine, with the individual, his needs. The next step involves a pre-vocational and in-school work experience. This includes sheltered job experiences to prepare for regular part-time training and special classroom training in technical processes. The third step involves on the job training which provides job adjustment in an unsheltered situation. Students who are too young for actual employment work on contracted projects which provide services for cooperating businesses. The participating students share in the profit from the projects. The final phase involves placement and followup.

These four phases are integrated into a curriculum which provides the academic training. This is also individually prescribed to meet the student's needs. Periodic group meetings with the parents encouraged their continued involvement.

Evaluation showed that 1) some change in vocational progress was shown, though not all positive, 2) grade point averages showed slight overall increase, and 3) the work experience appeared to contribute

toward an upward trend in attitude. Each separate participating school was evaluated and some variations were observed. This program appears to be a valuable contribution to the work experience field and further study of the complete report is recommended.

CARE in Georgia

A new program will begin this in Thomasville, Georgia. It is called Coordinating Arrangement for Retraining and Educating (1970). It is designed to provide career development for dropouts. A three phase procedure for identifying and serving the disadvantaged is proposed.

Phase I includes establishing communications with community agencies, such as Child and Family Services, in order to identify the disadvantaged. They will serve as referral resources.

Phase II involves developing or selecting an instrument to be used to identify the disadvantaged among the high school youth and to help prescribe more meaningful experiences for him.

Phase III is the implimentation of the components of change. This includes prescription of services and education. It also involves sensitizing school and community as to the major thrust of this program. Work experience is part of this prescription where deemed advisable.

The program is expected to make the following contributions:

1. Provide a positive climate for the transition into the comprehensive program.
2. Provide an awareness and a committment of service to the education of all people.
3. Create an interlock between general education and vocational education.

4. Serve as a feeder program to the new area vocational high school and the expanded offerings of the area school.
5. Reduce the waste of human resources and dignity by reducing the frequency of dropping out of school.
6. Be a pilot remedy and a potent factor in reducing the dropout rate that is so prevalent statewide. (p. 7)

The program is structured so flexibly that the coordinator may use virtually any means or service available to meet the needs of the enrollees. With this total committment, success is more likely.

Florida Work Experience Programs

In Florida, work experience programs have been operating successfully for several years. The bulletin called Work Experience Program Standards (1970) states that "This program is preventitive, preparatory and sometimes remedial in nature." (p. 5) This program is also designed for potential dropouts. It provides them with pre-vocational work experiences accompanied by a class in employability skills. Students from grades seven through ten may participate in the program by referral. After the tenth grade, the student must leave the program and find training through the regular school program. The coordinators work closely with other local social agencies to provide necessary services such as psychiatric counseling.

The program has been quite successful and now provides training for 4400 Florida Youth. More followup statistics on the program are needed, but coordinators in this program feel that often the value of this program cannot be measured statistically.

The Disadvantaged Go to Sea

An innovative program for the disadvantaged in the District of Colombia is described in an article by Panush (1970). It involves

It involves the utilization of an old oceanographic ship as a classroom for training the disadvantaged youth in skills needed for jobs as oceanographic aides.

The project was funded under MDTA so the financial gain for the participant came as a stipend instead of a salary. Much of the materials and equipment was obtained from other agencies thus keeping costs low.

Students attend class on board the partially reconditioned ship and are taken out in the Chesapeake Bay in two workboats for practical experience. Remedial subjects are taught in addition to the technical aspects.

All those completing the program were hired in oceanographic jobs. Unfortunately, since the material is quite technical, those who achieve at lower than seventh grade level have difficulty and most of this group did not complete the program.

DE Project 70001

In Delaware a unique distributive education program (McGorman, 1970) was inaugurated for 23 high school dropouts. The format of the program is much like the regular high school DE program except the students work full time during the day and attend school during the evening. The evening classes are academic but contain subject matter relevant to distribution.

The 70001 students even have their own DECA chapter which meets during lunch. The members bring their lunches. Tentative plans are being made to expand this program to other states.

Summary

In reviewing the above programs we have seen that a number of approaches have been taken, some have worked better than others. It is, at this point, still difficult to predict what method will succeed in given cases.

It does seem that a more comprehensive program, which addresses itself to providing other services in addition to work experience, stands a better chance of success. The success may small, however and those involved must be certain to allow a long enough time for a trial period. We are often quick to criticize programs which cannot show immediate statistical gains.

References

Andrews, M. The academically unsuccessful : He can succeed. Business Teacher, 1969, 2-3+.

Ashmun, R D. & Larson, R. A Review and synthesis of research on distributive education, 1966-68. (2nd ed.) Columbus: Ohio State University, 1970.

Bernstein, R. H. A study of the work values of a group of disadvantaged high school boys in a cooperative education program. Doctoral study, New York University, 1968, Dissertation Abstracts 29: 2512-A.

Bottoms, G. & Reynolds, K. Work experience programs for behavior modification, American Vocational Journal, 1969, May 24-26.

Coordinated Arrangement for retraining and education (CARE): A proposal abstract. Thomasville Georgia Board of Education, 1970.

Cudney, R. E. Work orientation program: Final report. Springfield, Ill.: Illinois Research and Development Unit, 1968.

Evaluation of the job upgrading program as expanded through the use of ESEA, Title I funds. Detroit: Detroit City Schools Research and Development Department, 1966.

Lee, C. A. A study of cooperative office education programs to determine the nature and extent to which such programs serve the needs of low and average ability students. Master's study, Northern Illinois University, 1966, as cited in Price, R. G. & Hopkins, C. P. Review and synthesis of research in business and office education. (2nd ed.) Columbus: Ohio State University, 1970.

Mason, R. F. & Haines, P. G. Cooperative education and work experience in the curriculum. Danville, Ill.: Interstate, 1965.

McGorman, G. B. Project 70001: New route for cooperative DE. American Vocational Journal, 1970, April, 60-61.

Miller, C. M. An experiment designed to determine the holding power of a work experience program for students classified as potential dropouts. Doctor's thesis, Colorado State College, 1968. Dissertation Abstracts 29:2444-A.

Panush, N. Anchored ship explores new fields. American Vocational Journal, 1970, April, 64-67.

Price, R. G. & Hopkins, C. R. Review and synthesis of research in business and office education. (2nd ed.) Columbus: Ohio State University, 1970.

Wallace, W. R. Review and synthesis of research on cooperative education. Columbus: Ohio State University, 1970.

Work experience: Program standards. Tallaheassee, Fla.: State of Florida, Department of education, bulletin BOH-1, 1970.

University of Minnesota, College of Education, Division of Vocational and Technical Education. A guide for cooperative vocational education. Minneapolis: University of Minnesota, 1969.

CHAPTER VIII

COUNSELING SERVICES IN VOCATIONAL SCHOOLS

Carolyn B. Aldman

Introduction

The counseling and guidance services in vocational schools have the potential of supplimenting a well-rounded educational program. The vocational education student is learning the skills necessary to enter into an occupation upon completion of his training. There is more however, to success in the field than the specific skills the student may learn in his classes oriented toward particular vocational competancy. The student should have the opportunity to expand his knowledge of alternate vocations, to learn to work with others, to be flexible in the demands made upon him, and to understand the emotional changes that are going on within him. Growth in these areas should be encouraged by all professional staff in the school, however, they are the main responsibilities of the school counseling team. Ideally, the team should consist of professional degree counselors, occupational specialists and teachers.

The Basic Aim of Counseling

The basic aim of guidance is clearly found in its definition. Barr (1958) writes "guidance may be defined as the process of helping individuals to assess their abilities and liabilities and to use that knowledge effectively (p. 5)."

Lodeman (1967) discusses the achievement of

> purposeful activity during self development, as
> (1) the psychology of becoming purposeful,
> (2) self and decision-making,
> (3) psychological attributes and educational, military, and occupational decision,
> (4) any needed instruction for use of the three primary data files (1-3 above), (p. 79).

In addition to the effective use of self-knowledge, the vocational education student needs a knowledge of the field to which he is considering entrance, alternate vocational choices, the philosophy of his vocation, the skills which will insure him entrance into his field and the psychological attributes which will help him be happy in his work and personal life. Since the counseling field is so broad, different members of a counseling team may opt to concentrate in these various areas.

The Teacher As A Counselor

There are several roles the teacher may take in the counseling situation with his students. A teacher often acts as a faculty advisor to many students. As a faculty advisor, his role is to help the student in several ways. The faculty advisor discusses and helps set up schedules, gets to know his counselees informally, offering opportunities for them to become comfortable with him, schedules conferences to appraise academic progress and may offer information in his vocational area of expertise.

The teacher can also utilize the classroom as a counseling workshop. Strang (1946) writes about the teacher

counselor in the following way;

> he uses the group experiences to help each individual discover what he can do and become, find good ways of meeting daily situations, and gain the affection, recognition, and security he needs. In the short, face-to-face counseling relationship, the teacher can supplement, reinforce, and further individualize the group experience (p. 257).

To be able to accomplish the above however, the teacher must first have the students enter his class. In a vocational school, the student plans his schedule around the courses necessary to complete his training program. The hoomroom however, may be assigned arbitrarily, with a mixture of students from all programs. This is especially helpful if the students come from varied backrounds. Davis and Norris (1949) consider the hoomroom to be a place where

> The teacher has a more intimate relationship with pupils than any other part of the school setup. Here they learn to live together informally, to play together, and to face together some of life's perplexities. Here is a setting conducive to friendliness, frankness, exploration, decision, and experimentation (p. 47).

It is in the classroom that pupils can learn about the qualifications other than job skills which will make them better employment choices. The employer will look for cleanliness in personal habits, a pleasing personality, enthusiasm about the job and work flexibility. The teacher can work with the class in these skills. If he expects promptness, neatness and pleasantness each day, the student can learn to internalize these habits in his daily routine in the classroom.

Evans (1970) discusses education in the classroom.

He writes

> The vocational curriculum is spotty. Sometimes it is very, very good. Too often, it is quite limited in range because some occupational fields are not prestigious enough to suit the educators (both academic and vocational), and because the students whom an expanded program would serve do not contribute measurably to the teacher's prestige. Sometimes vocational education is poor in quality (p.23).

There is no place in education for the teacher who considers the disadvantaged youth or the student who is interested in gaining vocational skills, unprestigious. This type of attitude is detrimental for the students and for the growth of the industrial complex of the country.

The Occupational Specialist as a Counselor

Florida House Bill 3898 of the Florida Legislature provides that

> Guidelines be developed to provide adequate counseling services in school districts with alternative methods of providing such services outside traditional graduate school certification requirements.

Florida House Bill 3893, which is an Act relating to Occupational became law on July 1, 1970. This Act, along with House Bill 3898, has gained a great deal of support because

> recent figures indicate an acute shortage of counselors, with an average of only one counselor for each four hundred fifty (450) students in grades seven (7) through twelve (12), and for each four thousand (4,000) students in grades one (1) through six (6), with more than one thousand five hundred (1,500) new counselors needed to bring the ratio of students to counselors within acceptable limits, and the universities are not providing sufficient graduates to meet the need. It appears that the number of new counselors is actually decreasing as course requirements become more restrictive and demanding. Counseling as a course of study is offered only at the graduate level and attempts to develop new courses of

instruction have encountered serious obstacles. There is built-in academic bias in the counselor education system, and the typical graduate has little, if any, first-hand exposure to or experience in the world of work.

The Legislature of the State of Florida (1970) has outlined the bases of selection for the vocational para-professional or occupational specialist. These requirements are as follows;

> the occupational specialists shall be selected on the bases of maturity, experience, and the ability to relate to young people. An applicant shall be twenty years of age or older, shall have had at least two cumulative years of full-time gainful work experience, shall be able to provide written evidence supporting his ability to relate to young people (e.g., statement from former employer, statement from co-workers, statements from civic or youth organizations supporting this person's ability to relate to young people).

The Legislature has also had the responsibilities of the occupational specialist outlined by the Department of Education (1970). They include the following;

> the occupational specialist shall be under the direct supervision of a certified counselor in the school. He should have a minimum of clerical responsibility. Responsibilities may include, but are not limited to: compiling and disseminating information on employment opportunities at the local, state and national levels, securing and making available prepared materials concerning employment opportunities and requirements to students, parents, teachers, administrators, and out-of-school youth and adults, preparing information on local and state jobs requirements and opportunities in cooperation with local vocational education instructors and public agencies concerned with employment, assisting in the orientation of persons to job-related preparatory training programs. He may further, assist in securing job placement for persons seeking employment upon completing or leaving a job-related preparatory training program. Also, he may assist in job adjustment.

There are various specialized assignments which the

Legislature has outlined to be followed-up by the occupational specialist. The specialist will enter into the following roles under the supervision of a certified counselor;

> identification of potential or actual school dropouts, counseling with potential or actual school dropouts and their parents or families, counseling students, teachers, and school administrators concerning available job opportunities and requirements, assisting with the planning and implementation of the vocational testing program, assisting in evaluation of the career guidance services provided by the district school board.

In the case of the universities not being able to meet the vocational counseling needs of the schools, the Florida Legislature has found a way to supply the schools with the necessary resources. Since the Bill has been passed so recently, there is as yet no confirming data on the effectiveness of having occupational specialists in the schools. It is not difficult to conjecture that there will be diverse opinions held by counselors in the field. For the counselor who is doing a great deal of personal and social counseling, the occupational specialist should be a great relief. The counselor will be able to add to the specialist's professional library all of the pamphlets, books and other vocational and occupational resource material he has collected through out the years. The specialist will have vocational information as a priority, and will have a better knowledge or how the students can best benefit from their use. Additionally, the occupational specialist will have a great deal of time to teach the student to use this material in the search for a job that will be personally satisfying to him. This

resource person can lighten the counselor's load in many ways, and should work out very well in the counseling team.

Some counselors will be upset with the entrance of para-professionals in the school. No longer will the school counselor be able to hide behing mounds of literature. He will be more closely observed in his work with students who have come to discuss their vocational aspirations, and he will be expected to work with these situations as a part of a team. The counselor will need to do real problem-solving counseling, and if he runs away from this, he will no longer be able to hide it. The occupational specialist program will be a real shot in the arm for the counseling department of many schools in the State of Florida. The counselors who cannot live up to their responsibilities to the students will quickly be discovered, and the principal that does not move to rectify a problem of this nature is shirking his duty.

The Professional Counselor

The professional counselor has received at least one year of post-graduate training in a Master's program. This training consists of core courses in counseling theory, occupational and informational training, test procedures and statistical methods and practical experience in the field. The counselor learns to lead both individual and group counseling experiences. It is this training that can be the most valuable to a to the school program that has a well-rounded and complete counseling team. The American School Counselor Association

(1967) issued a policy statement which began with the assertion that

> Counseling deals with the complete person and is thus unavoidably personal and psychological in nature. A school counselor is inevitably involved in the lives of the pupils with whom he deals....Because he deals with adolescents who attend school, belong to a family, and are members of a society the counselor must be familiar with these institutions. He must know the adolescent in terms of pressures to conform, adult attitudes toward him, and the adolescent's view of himself. Therefore his preparation must include behavioral science understandings, philosophical orientations, and psychological knowledge (p. 17).

Wrenn (1966) contends that "the counselor's responsibility goes beyond the intellectual stages of dealing with ideas and disembodied facts (p. 106)." The counselee would not have come to the counselor if he had not at least taken a look at his problems. It is at the point when the counselee realizes that he does not have the solutions, that he decides to try to resolve them by seeking the assistance of a counselor. The student should have the opinion that the counselor may be able to help him in problem solving. The counselor must come in contact with the students routinely, must offer appointment time for personal counseling if he wishes to fill this need of the students. At the present time, many counselors would like to fill this role, but hall monitoring and secretarial duties, etc., take up this valuable time. With the advent of the larger counseling team, the professional counselor may at last be able to fill these needs.

As more students become aware of a counselor with an accepting attitude, that has helped their acquaintances, the counselor's time may become overcrowded. A solution that very well might solve this dilemma would be to initiate group counseling. Bernard and Fullmer (1969) write:

> Schools and guidance counselors will gain unique opportunities to build new learning environments and enhance existing ones by getting acquainted with current knowledge of groups and by acquiring skill in capitalizing on group action (p. 285).

There are several types of groups the school counselor may wish to initiate in the school setting. In a vocational school, the group process can be used as a seminar for students who are working part time in their chosen fields. Either the professional counselor or the teacher can act as leader in this type of group. The occupational specialist might use the group setting to talk with potential drop-outs, dropouts and their parents. If these are mixed in a discussion group, perhaps a better understanding can arise. The professional counselor will act as a resource person and supervisor in this type of a group. The teacher may choose to act as a group leader in groups set up for vocational and occupational information. In the group setting the students can exchange ideas and have their enthusiam gain momentum. There are so many areas in thich group counsling can be utilized to great benefit for the school and for the individual, that it is surprising that they have not been put into action to a larger extent than

they have thus far. Fitch (1935) wrote, "Few schools make use of group counseling alone, but in many of them it is used as a preparation for the individual conference (p. 39)." He further says that

> A class in occupations may very properly be considered a form of group counseling, though in many schools groups are assembled, independently of regular classes, for vocational guidances purposes (p. 39).

It in fact, can be observed that many schools have not changed in their use of the group counseling structure in the past thirty-five years. Perhaps the advent of trained counseling teams will help to rectify this situation.

Summary

The complete educational program in vocational schools must include a counseling and guidance service. For this to be an asset to the school, a counseling team is a necessity. This team should be made up of cooperating individuals in the roles of the counseling teacher, the occupational specialist and the professional counselor. Their team effort can be successful if they each identify with the blossoming of the individual student for the student's own sake.

References

American School Counselor Association. School counseling: A view from within, 1967 Yearbook, American Personnel and Guidance Association. Cited By H. W. Bernard D. W. Fullmer, Principles of guidance: A basic text. Scranton, Penn.: International Textbook Co., 1969.

Barr, J. A. The elemenatry teacher and guidance. New York: Henry Holt, 1958.

Bernard, H. W. & Fullmer, D. W. Principles of guidance: A basic text. Scranton, Penn.: International Textbook, 1969.

Davis, F. G. & Norris, P. S. Guidance handbook for teachers. New York: McGraw Hill, 1949.

Evans, R. N. How do they exit from your program? School Shop, 1970.

Fitch, J. A. Vocational guidance in action. New York: Columbia University, 1935.

Florida Department of Education. Guidelines for identification, training and employment of occupational specialists. State of Florida, 1970.

Florida Legislature, House bills 3893, 3898. Florida, 1970.

Strang, R. The role of the teacher in personnel work. New York: Columbia University, 1946.

Tiedeman, D. V. Career decision-making and information generation: A tale of vocational education and feedforward. In V. H. Robertson (Ed.), Career counseling. Chicago: American Vocational Association, 1968.

Wrenn, C. G. Two psychological worlds: An attempted rapprochment. In J. D. Krumboltz (Ed.), Revolution in counseling: Imolications of behavioral science. Boston: Houghton Miffiin, 1966.

CHAPTER IX

OPPORTUNITIES FOR BLACK YOUTH UPON DETERMINATION OF SECONDARY VOCATIONAL EDUCATION IN SOUTHEASTERN UNITED STATES

William W. Smith

Introduction

It is the contention of this author that public vocational education can do much to alleviate the servitude, the indignity, the hunger and genral squalor of the disadvantaged. One becomes disadvantaged becuase he is deprived of something which would otherwise place him in a position of equal opportunity with others. For generations, the Black person in the United States has been socially and enconomically disadvantaged Why? Perhaps it is because he has been deprived of one thing which would help him to better help himself out of the disadvantaged state. I am suggesting that on element missing from the Black man's life is education. Not just education in general, but meaningful education toward economic improvement.

Whate does one do to help that person who has already been shuffled and shoved and generally ignored in the public schools for ten years? We suddenly seem to awaken to the fact that this person is not doing the quality of work he should be doing at that grade level. So we say, "We'd better prepare him for a job, he'll never make the college scene." So it's off to

a voctional course for him. But isn't it a little late for that? Now, in order for him to function on any job that will lift his socio-economic status to any level above that of welfare recipient, he must be able to read, write, carry on a conversation, and have a pretty good tolerance for the people he will be associating with in the day to day routine of life.

Vocational education can do much, but not enough. What happens to that Black boy or girl who is graduated from such a system as described above? Depending upon the dedication of the teachers, the degree of inattention the student has suffered in the years prior to the eleventh grade, and the conditions of the home life of the student, I shall attempt to delineate the opportunities open to the Black student upon graduation from any of the vocational courses in the secondary schools of rural Southeastern United States.

Geographical Limitations

I have chosen the rural Southeastern United Stats as the area of interest in this paper, simply because it is the area of my immediate employment. Whenever on enters into a search of the literature for information on disadvantaged Black people, he is confronted with volumes of reports on the Negro in the inner city, and all the unjustices and problems by those living in our greater metropolitan areas. However, there are vast pockets of Black poverty in the rural areas of the South, from which escape seems as remote as it does in the central city.

Many of the problems are common to both rural and urban communities, but the isolation of the rural dweller may be somewhat more of a hinderance to geographical mobility, thus limiting the rural Negro in his choice of economic opportunities.

Opportunities defined

The opportunities for the Black high school graduate are generally the same as for anyone else. However, his circumstances determine the degree of availability of these opportunities. For example, he may choose to pursue more education at the post secondary level, perhaps even the baccalaureate degree. It would be a rare case though, to find a student with the proper academic credentials for admittance to a senior college or university. So he may choose instead to attend a junior college for advanced technical or vocational training, or for remedial academic education which may get him transferred into a senior institution. (Evans, 1970)

Other opportunities to be considered for the Black high school graduate of a vocational course are: 1) the world of work or 2) unemployment.

The "world of work" may include, on a descending scale: 1) full-time employment with opportunity for advancement in responsibility and wages, 2) full-time employment in a "dead end" job with little or no opportunity for advancement,

3) part-time employment, and 4) underemployment in a job requiring less skill than the subject's education has prepared him for, or a job which pays much less wages than the going rate for subject's skill.

Finally, and the odds are high, the Black graduate may face unemployment, even though he has been well prepared for a given occupation.

Post-Secondary Education

Rupert N. Evans (1970) has said that there should be only two exits from high school--to employment and to higher education. Let us consider the Black student with aspiration to further his education, but without the financial means to do so. Perhaps vocational education could play a key role in providing that student with the means of assisting himself financially to that end. Given the academic ability and the foresight in order to plan ahead, that student might complete his academic requirements by the end of his junior year in high school and by enrolling in a vocational course in his senior year he could feasibly prepare himself to enter the labor market upon graduation from high school and continue to make use of his skills throughout his college career on a part time basis. (Day, 1970; Hicks, 1971)

It would appear that when possible the most promising avenue leading to a brighter future upon graduation from high school would be some form of post-secondary education. Rosow (1971) points out the fact that high school is completed at about age 18, but the labor market is generally closed to most under age 21. Further, U.S. Labor Department statistics show

that the rate of unemployment for Black youths under age 21 is 24% or 2.5 times that of White youth in that age range (Rosow, 1971).

Where pursuit of a degree program requiring four or more years of post-secondary education is not feasible, then certainly the non-degree seeking student should be encouraged and financially aided in pursuing advanced technical or vocational training in a junior college or other institution offering advanced training in the student's chosen field.

The World of Work

Another avenue of opportunity for the Black graduate of a secondary vocational program is immediate employment on a full time basis. Even though higher education or some other form of post-secondary education is preferrable, employment certainly is more desirable than unemployment. Unfortunately for the Black person in the rural South, employment is most difficult to come by for most. In fact, employment in any form is non-existant in many "poverty pockets" of the rural South. (Raum, 1971; Unemployment by region, 1970)

Without getting into the magnitude of Black unemployment in the South, I shall first present my findings on the availability of employment as per type, i.e. full-time, part-time, "dead-end" jobs, and underemployment.

According to a special labor force report, a "disproportionately high percentage of Southern Negroes were employed part-time and they were also more concentrated in low skill occupations." (Unemployment by region, 1970, p. 3). Also, the percentage of the Negro labor force that could find only part-time work was twice as high in the South as in the other

three regions, Northeast, North Central and West. While only 2.5% of the White labor force in the South was confined to part-time work, a majority, or 7.8% of Black wage earners were employed part-time. (Unemployment by region, 1970).

A review of the literature indicates that a very large proportion of the part-time work available to Negroes in the South is in the form of household or commercial domestic employment. (Unemployment by region, 1970; Willansky, 1969; Final progress report, Univ. of So. Fla. 1968). Full time farm labor is very nearly a thing of the past for unskilled Blacks. Many may find work on the tobacco farms four months out of the year, then there is nothing left for them, but to return to welfare. (Raum, 1971)

What little full time employment there is for the Southern Negro is "dead-end" employment. That is to say, there is little or no chance for upward mobility in wages or responsibility. This is true even after being prepared for an occupation in a secondary school vocational program. Why?

Black students who have traditionally been counselled into vocational education in the South were left to fend for themselves. Related reading and mathematical skills were not stressed. Neither was basic human relations taught or discussed. So, what have we produced? He has developed certain skills with his hands, but without the ability to relate to people on the job, without the ability to cope with greater responsibility. (Day, 1970)

This kind of training must come to an end. It can only result in dead-end jobs, if it results in a job at all.

Often, these dead end jobs are filled by persons who might be classified as the underemployed. Underemployment is a major problem faced by Southern Blacks. A common practice by discriminating White employers who are forced to maintain "equal opportunity employment" is to require unrealistically high qualifications of Negroes in order to be hired at entry level jobs. (Wilson, 1970)

Unemployment

Finally, the least desirable avenue to take from high school graduation is unemployment, not too often the case with White graduates of our vocational programs in the South. However, thousands of Negroes are turned out of secondary vocational programs each year in the South only to face that very phenomenan--unemployment. (Final progress report, Univ. of So. Fla., 1968; Rosow, 1971; Schiller, 1970)

Between 1960 and 1968, Negro employment in the South grew by only 5% compared with an average growth of 36% in all the remainder of the United States. (Unemployment by region, 1970). What's more, the chances of a young Black woman finding any job at all is only one in two. (Ewan, 1970)

At North Florida Junior College, in Madison, Florida, the Vocational Division, a designated area vocational school, offers a course in cosmetology. As of this writing, there are 14 Black high school girls enrolled in that course. Also, as of this writing, according to a private interview with each of those girls, only one has any assurance of employment upon graduation, and that will be in Fort Lauderdale, Florida.

The University of South Florida's Learning Center for

Personal Employability, in its Final Progress Report (1968) indicated that of its 56[illegible] enrollees, 5% were Negro males and 90% Negro female. Of all the enrollees, 85% had never worked in their aspirational areas and 50% had no record of previous employment.

In Gadsden County, Florida, according to a recent report in the Tallahassee Democrat, that area's leading newspaper, "Blacks make up more than 60% of this agricultural county's population..." (Baum, 1971). And of the Black population in that county, approximately 70% are recipients of welfare.

Unemployment in the predominantly rural Southeastern United States is not simply a result of periodic economic recession. It is and has been for generations a result of permanent depression caused by discriminatory hiring practices (Griffin, 1960; Wynes, 1967).

Summary

Vocational education as it now functions is doing a reasonably good job. A good job of preparing white middle class students of average or above average intelligence for taking their place in the world of work. And in-so-far as this is the case, it isn't too important that available jobs be located in the immediate vicinity of the student's present residence. He is white and relocation is not a handicap. Often it is actually desirable, as youth seeks adventure.

However, for the disadvantaged Negro the necessity of relocating is a handicap of great magnitude. It is a haunting spectre creating fears and anxieties which the free White may

not comprehend (Final report, Univ. of So. Fla., 1968; Griffin, 1960; Rosow, 1971)

So if relocation presents such a barrier, the Black Southerner, graduated from a public high school, having successfully completed a vocational course which prepared him for entry level employment may look forward to: 1) post-secondary education, hopefully toward at least a four year degree, but more likely advanced or supportive vocational or technical training at a junior college; 2) in very few in tances, full time employment with opportunities for advancement in a career; 3) more likely, underemployment in a dead-end job, or 4) most likely, if the research is accurave, unemployment if unable to relocate

Conclusions and recommendations

The prospect of a sudden revolution in employment and educational opportunities for the Southern Negro seems bleak at this time. There are and have been a multitude of programs designed to aid the disadvantaged Black person in his struggle to escape from poverty. Most of these programs make a great deal of sense in theory. But seven years after the Vocational Education Act of 1963, Hugh Calkins, chairman of the National Advisory Council on Vocational Education had this to say in addressing the Secretary of Health, Education and Welfare.

> "In this our Third Report, we have devoted our attention to one of the most glaring failures of the American educational system--its inability to effectively prepare the disadvantaged for full participation in society." (Nichols, 1970)

The most common problem we face and seem reluctant to take the steps necessary to solve is the communication problem

The need to "think Black," "think poor," develop a genuine empathy with the disadvantaged Black is of prime importance. In order to accomplish this it is necessary to involve disadvantaged or formerly disadvantaged Blacks in planning and execution of our vocational programs. They must be recruited as aides and advisors and involved in community action to create jobs and to halt discriminatory hiring practices. (Ginsberg & Shiffman, 1966)

However, we seem to work very hard at maintaining traditional barricades, preventing the involvement of the very segment of society we are spending millions of dollars to aid. I am referring of course to the certification barrier. I am not suggesting that we simply discontinue certification of teachers. I am suggesting that adjustments be made in order to certify the talented in a given area who may not have a degree or in many cases even a high school diploma.

Nichols (1970) has this to say about the "certification barrier":

> "...our certificating bodies, such as civil service and state certification boards, are reluctant to grant the needed certification to individuals who can continue to operate the programs successfully.
> This abuse of talent is a luxury we can ill afford ...the people who wind up handling them [vocational programs for the disadvantaged] are not the ones who can identify with the clientele the programs are intended tp serve/"

There must come about a total commitment on the part of education, business, and the community at large. Perhaps that sounds like quite a large order, but it is the only solution.

The Perry-Taylor County Chamber of Commerce of Taylor County, Florida is attempting to effect such a commitment at

this time. That body has planned a JOBS '70 Program (Griffin, 1971).

The JOBS '70 Program was designed by the National Alliance of Businessmen (NAB) and is directed at the private business community, both profit and non-profit. Its aim is to aid the disadvantaged in finding meaningful employment, relevant training, and advancement or upgrading once employed through continued training.

Throughout the literature that one word "commitment" kept recurring. But of course, that is the answer. Without a genuine commitment on the part of educators the disadvantaged won't be provided with necessary cognitive and motor skills. If the business community is not committed they won't discontinue their discriminatory hiring practices. And if the community at large isn't committed, sufficient industry won't be brought into the now industrially stagnated areas to provide employment opportunities.

Finally, and this is a major concern for immediate resolution, the disadvantaged Southern Negro, particularly those in the more isolated rural areas where labor is chronically surplus, must be informed of where jobs are available. They must be provided with means to relocate, must be educated to the point where they have confidence needed to adjust to a new environment. Otherwise, social, economic, and geographic mobility will be impeded. (Rosow, 1971)

References

Books

Ginsberg, M.I. & Shiffman, B. Manpower and training problems in combating poverty. In R.O. Everett (Ed.), Anti-poverty programs. Dobbs Ferry, N.Y.: Oceana Publications, 1966.

Griffin, J.H. Black like me. Boston: Houghton Mifflin Co., 1960.

Wynes, C.E. (Ed.). Forgotten voices: Dissenting Southerners in an age of conformity. Baton Rouge: Louisiana State University Press, 1967.

Periodicals

Day, H. A call for total commitment. American Vocational Journal, 1970, 45 (7), 20-21.

Evans, R.N. How do they exit from your program? School Shop, 1970, (June), 23-25.

Ewan, G.E. A new vocational education. American Vocational Journal, 1970, 45 (7), 14-16, 75.

Final progress report. The University of South Florida's Learning Center for Employability. Tampa: University of South Florida, 1968.

Griffin, M. JOBS '70 program is planned in Taylor. Tallahassee Democrat, Tallahassee, 1971, (Feb. 19), 11.

Hicks, H.E. A chance for talented Blacks in broadcasting. American Vocational Journal, 1971, 46 (1) 86-87.

Nichols, C.F. Vocational education for the disadvantaged: Seven years later. American Vocational Journal, 1970, 45 (8), 21-23.

Raum, T. Lack of jobs is mayor Quincy's problem. Tallahassee Democrat, Tallahassee, 1971, (Feb. 14), 3C.

Rosow, J.T. Human resources: Retooling our manpower. Saturday Review, 1971 (Jan. 23), 40-53.

Semiller, B.R. Stratified Opportunities: The Essence of the vicious circle. American Journal of Sociology, 1970, 76, 426-442.

Unemployment by region and in ten largest states. Monthly Labor Review, 1970, 93 (1), 3-8.

Willansky, E. In the dixie land. Vista Volunteer, 1969, 5 (8), 28-31.

Wilson, M. Merit Systems. Hiring the disadvantaged. Washington, D.C.: Social Development Corp., 1970.

CHAPTER X

EDUCATING VOCATIONAL EDUCATION TEACHERS TO WORK WITH THE DISADVANTAGED

Diane Miles

Introduction

In recent years, it has been generally felt (Davies & Ornstein, 1969), that teacher education institutions and teacher training programs have not come up with an effective approach for teaching the disadvantaged, nor have they been responsive to the problems of the disadvantaged. Training teachers to work with the disadvantaged is a monumental task and one that needs intensified attention. This report will deal with three areas related to training teachers in vocational education for working with the disadvantaged; (1) desirable qualities for such teachers, (2) exposing these teachers to the environment of the disadvantaged as a way to increase their effectiveness with this group, and (3) a discussion of some existing teacher training programs that have been effective in producing teachers who have been successful in working with disadvantaged students.

Desirable Qualities for Vocational Education Teachers Who Work With Disadvantaged Students

Although educational qualifications for teachers are fairly well standardized through-out the country, vocational education teachers must also have the added knowledge of a particular occupation. However, when working with disadvantaged students, many more factors are involved.

It has been found (Hickerson, 1966) that the culture pattern of most teachers is diametrically opposed to the culture patterns of

millions of disadvantaged children. Teachers tend to stress attaining success and prestige through academic accomplishment and book learning. However, the economically or otherwise deprived child does not understand success and fulfillment in terms of the future (Hickerson, 1966). Thus, vocational education teachers, in most instances, must be educated themselves so that they may gain a real understanding of the cultural differences between themselves and the disadvantaged students they teach.

Even if this is accomplished, an even more important factor comes into play. This is the attitude and personality of the teacher. Davies (1969) states most emphatically that the attitudes of vocational education must be changed. It is a known fact that teachers communicate their expectations, both verbally and non-verbally, to their students. The majority of teachers who work with the disadvantaged, expect the students not to do well. They honestly believe that low achievers (as are so often found in the disadvantaged group), are educable only to an extremely limited extent. If teachers have a low expectation level for these disadvantaged students, the student seldom exceeds that expectation (Hickerson, 1966).

Not only the attitude of the teacher, but her personality is extremely important when working with the disadvantaged. Studies have shown (Fantini & Weinstein, 1968), that those students classified as disadvantaged seem to respect teachers who can dominate them and who display enough strength to keep a class moving without constant disruption. Frost and Hawkes (1966) characterize the teacher who is successful with the culturally disadvantaged as being a person who respects the child as an individual.

Previous exposure to disadvantaged students while still in

college or in an occupational setting is also felt to be important if the vocational education teacher is to be effective. Without this previous experience, a teacher will, in most cases, experience very low morale, deep frustration, and find his or her patience tried to the limit. This kind of suffering on the part of the teacher can only lead to suffering on the part of the student. If this situation exists, effective teaching does not take place.

Teaching will take place and learning will occur if the vocational education teacher is able to reach the disadvantaged student. "The single, most influential factor in terms of pupil performance is the impact of the teacher." (Chaffee & Wagner, 1970. p.23). Chaffee and Wagner also feel that teachers are the most important element in the school; more important than quality of facilities, quantity of materials and equipment or level of financing. President Nixon also emphasized this same feeling in his elementary and secondary education message when he stated that the most influential element of the school is the teacher. (Chaffee & Wagner, 1970).

Because of the uniqueness of the disadvantaged student, one can see that meeting educational and occupational requirements is not enough when working with this group. In fact, this may be of secondary importance when one realizes that the attitudes and personality, ability to reach the student and previous exposure to disadvantaged groups is so essential to effective teaching. Certainly, reforms are badly needed as far as recruitment and preparation of teachers for the disadvantaged is concerned. There is little doubt that teachers of the disadvantaged must receive special training if they are to become the kind of teachers

that are needed to reach and work with disadvantaged students.

Exposing Vocational Education Teachers to the Environment of the Disadvantaged

It is not enough to simply state the desirable qualities for teachers who work with the disadvantaged. The methods necessary to acquire these qualities must be known. Attitudes toward others are often formed because of lack of knowledge or understanding. Therefore, a vocational education teacher needs to understand the life-style of disadvantaged groups.

Some of the most common features of the home life of disadvantaged students are: (1) no father, (2) both parents work, (3) parents are not working and are recipients of relief, or (4) mother works and father is disabled (Frost & Hawkes, 1966). Because of the economic deprivation of the family, the physical conditions in which the child lives are often found to be overcrowded, with poor facilities and lack of food and privacy. Education has little or no meaning when the family is struggling to survive. When a teacher is working with children from this type of environment, she must come in contact with the families and homes of her students if she is to understand the depravity her students have to endure.

Frost and Hawkes (1966) suggest that teachers of the disadvantaged develop an appreciation of other ways of living. They suggest that a teacher try living on a welfare budget, eat rice and beans every day for a week, wait with one of their students in a clinic for five hours, etc. Many of these experiences could be developed as part of the student teacher training program. This type of exposure could very well be one of the keys to developing the understanding a teacher needs in order to

work with the disadvantaged.

Criticism has also been made of the lack of exposure of student teachers in a school that consists mainly of disadvantaged students. This criticism is well founded, for most student teachers are sent to the better schools in middle-class neighborhoods. Then with their first teaching assignment, they are often given a school in a disadvantaged neighborhood and have no background to help them adjust. This is unfair to the student as well as the teacher, for only exposure in a training situation can help the teacher to deal with the many problems that have to be faced with a class of disadvantaged students.

Working with the disadvantaged student alone is not enough. The vocational education teacher must also work with the student's parents. If this can be done, it doesn't take long to recognize the cycle of hopelessness and despair that are present (Frost & Hawkes, 1966). These families tend to show resignation to their state in life, have restricted opportunities, and indicate an indifference to the value of education. The only hope for the education of their children seems to be to get these parents involved with the teacher and the school so that they might begin to understand the value of their child's education.

A successful program in the Flint, Michigan schools, utilizes the neighborhood school as a community center after school hours. The parents become as familiar with the physical facilities as the children, and take more interest in the school. Also, the parents are asked to become involved in some of the school activities and classes. Any program such as this exposes the parents to the school and the teacher, and in turn, exposes the teacher to the parents.

Another way in which the teacher can become exposed to the

environment of her disadvantaged students, is to make a practice of visiting the homes of her students. It would seem that there would be no better way to understand the disadvantaged child, than if the teacher could be exposed to the home situation. In this way, the teacher could really understand the influences present outside the school situation which influence the student's motivation and learning problems while in the classroom (Levine, 1970). Therefore, the vocational education teacher's efforts should actually focus on both the area of the student and the family as a way of understanding the disadvantaged student (Thomas, 1969).

Effectiveness of Programs That Deal With Training Teachers to Work With the Disadvantaged

Interest has grown tremendously in the area of special training for teachers who work with the disadvantaged. It is now well documented that ordinary teacher education does not appropriately prepare a teacher for working with disadvantaged students. Hickerson (1966) advocates massive in-service education programs that are concerned with education of the economically deprived. This in-service education should be for teachers, administrators and counselors now engaged in working with the disadvantaged.

Special programs to train teachers to work effectively with disadvantaged students are presently being conducted in various parts of the country.

In the Denver Public School System, teachers spend two weeks in a summer training program. During the first week, these teachers live in hotels on skid row and become familiar with the surrounding neighborhoods and the people who live there. The second week is spent in

business and industry personnel departments, where teachers observe what happens when people who are both poor and unskilled, look for jobs (VonEnde, 1970). This training program also emphasizes the need for teachers to develop relationships with their disadvantaged students on a one to one basis, and to work toward helping disadvantaged students build a positive self-concept. Disadvantaged students and their parents are involved in group sessions where they have an opportunity to openly express their feelings. The program has been successful as far as it can be determined at this point.

In the City of Baltimore, a program called KAPS (Keep All Pupils in School), has been tried and has shown much success (Levine, 1970). Community assistants are drawn from residents of the community. They are full-time salaried employees who work closely with the teachers. These community assistants find truant students, get them back in school and then establish contact with the family. The teacher and the community assistant then try to enlist the mother's help in more actively supporting her child's schooling. Also, teachers and community assistants are both involved in behavioral modification training and sensitivity training, which has been most helpful to them in enabling them to better understand their disadvantaged students.

The Office of Education's Bureau of Educational Personnel Development is to administer the Education Professions Development Act (EPDA). The goal of EPDA will be to learn about the effect of teachers and other educational personnel on student achievement. One of the main focuses will be on teachers who are trained to work with specific kinds of children in specific kinds of schools (Chaffee & Wagner, 1970). This will be of special significance for teachers who are trained

specifically to work with the disadvantaged.

These are but a few of the examples of the many programs that are presently in existence for the purpose of enabling teachers to understand the disadvantaged, teach them effectively, and give them a successful school experience. Most important for vocational education teachers, is that if the disadvantaged students can be reached by their teachers, and if they are able to achieve a successful learning program, then the chances are greatly enhanced for the disadvantaged to become useful, productive citizens.

Summary and Concluding Remarks

It is not difficult to see that a multitude of factors must be taken into consideration when training teachers for the disadvantaged. The awareness that it takes a special type of person in a specialized training program to teach the disadvantaged is a gigantic step toward remedying some of the ills that have plagued education for the disadvantaged.

Vocational education teachers who have the desire and ability to work with disadvantaged students, must learn that there is no such thing as a typically disadvantaged person (Thomas, 1969). An effective training program should show the teacher that disadvantaged students must be understood as individuals with individual needs. Vocational education teachers who work with disadvantaged students, "must shift the emphasis from teaching the job to people to teaching people so they can get jobs" (Thomas, 1969. p.27). Only through specialized teacher training which emphasizes the uniqueness of the disadvantaged learner, can we successfully reach and train disadvantaged students who are enrolled in our vocational education programs.

References

Davies, Don. "Teacher Education - Vocational and Otherwise". American Vocational Journal, February-1969, 60-61.

Fantini, Mario and Weinstein, Gerald. "The Disadvantaged - Challenge to Education". New York: Harper & Row, 1968.

Frost, Joe and Hawkes, Glenn. "The Disadvantaged Child". Boston: Houghton Mifflin Co., 1966.

Hickerson, Nathaniel. "Education for Alienation". Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966.

Levine, Richard. "Reaching Out". American Education, July-1970, 10-14.

Ornstein, Allan. "Theory Practices for Teaching Disadvantaged Youth". The Fournal of Negro Education, Winter-1969, Number 1.

Thomas, A.I. "T&I for the Disadvantaged". American Vocational Journal, February-1969, 26-29.

VonEnde, Zoe. "Denver Doesn't Quit on Problem Students". American Education, June-1970, 18-22.

CHAPTER XI

ECOLOGY AND THE DISADVANTAGED

Ken True

Introduction

Look at the smoke and smog filled air

Look at the junk yards filled to overflowing

by the hulks of rusting, rotting automobiles.

Look at our beautiful country being disgraced by the

litter at the edge of the nation's highways.

Smell the raw sewage being pumped into our lakes,

Rivers and oceans.

Smell the pollution caused by industrial con-

tamination in our rivers.

Think of the people on the rolls of the unemployment list

Think of the people perpetuating a way of life by being

clients of welfare.

Think of the wasted lives of disadvantaged Americans who

have not had an opportunity for success.

Think of America's future.

Two of the major problems facing the U.S. in the 1970's are the wasteful exploitation of our natural resources, and the wasteful disuse of our nations manpower resources.

A solution to these problems is essential if we, as Americans, plan to leave our children the same environment left to us by our parents.

I have a solution that would solve both the problem wasted resources and wasted manpower. It is, in short - putting one to work on the other; by utilizing the latent capabilities of the nations disadvantaged as a work force to clean up and recycle the currently unused scrap materials of America.

The necessary, collection agencies, transportation agencies, child care centers, raw material reproduction centers, wood reclamation centers, ecology work centers and vocational education programs would be financed by currently existing welfare appropriations and pollution taxes from industrial offenders. These expenses would obviously decrease as the program becomes more effective and by the income derived from the sale of recycled products.

Equally important intangible benefits will be not only better environmental management, but also spiritual and financial rehabilitation of our nations disadvantaged.

Educational opportunities in this program would be equally important by providing each member of the work force with a new chance in society by providing a new self-concept.

In writing this paper I will not use lengthy dissertations done by others on this topic. I will use the references made in the opening portion for all of the support necessary upon which to base my opinions. One does not need to look too far from his own environment to observe all of the aforementioned problems.

Realizing that the task of solving just one of these problems is colossal, I am attempting to design a program that will enable one problem to solve the other.

I will use the problem of wasted ecology to provide jobs and income sources for the Disadvantaged peoples of America.

Basically this is how the program could be set up.

Collection Agencies

These agencies could be started at the local level and would provide a means for collecting waste materials, sorting out usable materials, i.e., metals, woods, plastics, glass and containers. After sorting they would be sent to the appropriate work centers for reclamation and production of new raw materials. Presently our system of allowing old cars to remain in junk yards for years is very unsightly. Junk dealers say it is too costly to reprocess scrap due to high transportation costs. The transportation costs for these old cars and scrap metal could be Federally subsidized by money that was previously going into welfare payments. In the Collection Centers jobs would open up for waste collectors, truck drivers, waste sorters and Child Care

Center operators. Women could work in the centers and be assured that their children were being looked after in the free Child Care Centers. Every woman in the work center would have an opportunity to work in the child care center. The children in these centers would receive free medical and dental care, and also three square meals a day. A nursery school would be held for pre-schoolers. Job hours would be arranged so that women with school age youngsters would be home when their children were home. Payment for working at these centers would be at least twice the amount presently given by welfare.

Raw Material Reproduction Centers

These centers would work basically the same way as the collection centers with the reclaimed raw materials being sent to Ecology Work Centers. The reproduction centers would offer jobs similar to those available at smelting industries with emphasis on research and development of better and cleaner ways to reclaim used materials.

Wood Reclamation Centers

These Centers would be used to supply reclaimed lumber for Federal Building Projects. By use of electronic glueing machines almost all scrap lumber would be utilized. In most cases reclaimed lumber is better for building because it is better cured. New uses could be thought of for all wood and paper products too small to be of use for construction purposes. Styrofoam and polyfoam could be reground for insulation and plastic products.

Ecology Work Centers

These centers would be located outside major cities where the greatest number of the Disadvantaged are located.

Entire communities would spring up around these work centers. These communities would be built by Ecology workers and allow them to have an opportunity to leave the slums and ghetto areas of their previous habitation.

Products made by the people at the Ecology Work Centers would range from electric irons to tanks. To avoid a direct conflict with industry only those items to be purchased by the Federal government or to be utilized by Ecology Work Programs would be manufactured. Civilian customers would not be allowed to purchase products produced at these work centers. However, farm implements and machinery going into Foreign Aid Programs would be produced.

I have never understood why war materials such as guns, bombs, and associated expendables couldn't be made out of junk.

Education

Portions of the work centers would be utilized for continuing education of the workers. Employees with ability and desire could be sent to college to take over the managerial postions in the industries. Employees without high school edcations could receive their diplomas through night classes. Classes in vocational education could be offered to allow a person to upgrade his position with the industry or learn a new industry-related occupation.

Incentive programs would be incorporated paying employees for ideas involving new uses or methods concerning reclamation of materials. Allowing the employee to become a part of a large program with a steady job would do wonders for his or her attitude toward society.

Financing the Program

The monies for these Ecology Programs could come partially from the welfare program that would be relieved by the employment of millions of welfare recipients. Granted, some of the products would cost more than if they were manufactured out of brand new raw materials, but some day in the future we will be forced to utilize reclamation processes, so we would do well to get a head start on these processes now. By working with these types of material, industry would be forced to take a closer look at its waste products. Industry is now calling attention to Ecology in its advertising and in effect saying, buy my product because I'm not polluting your environment. I believe that studies will show that 50% of these statements are gross exaggerations and that only when all industries are forced to pay a tax per pound of waste materials emitted into the air or emptied into our waterways, will the problem see any solution. This tax could be levied as per the amount of pollution, the kind of pollution, and environmental effects caused by the pollutant source. Inspectors from the Ecology Work Centers would be trained in pollution emission analysis to

determine the amounts of pollution and the relative danger of the pollutant. Federal teams would then develop methods of taxation for the involved industry. Pollution taxes collected would go directly into the financing of operations for the Ecology Work Centers. Pollution taxing would serve a second purpose. It would provide an incentive for the offenders to develop new methods of eliminating pollution. In many cases the industry involved would have to take immediate steps to improve its pollution rate or be hit hard in the pocketbook. The tax should start out small and become progressively larger as time passes, until acceptable standards are met.

Industry has said that they can't produce without pollution for so long, they are beginning to believe it themselves. If we can go to the moon, we can stop pollution. All we require is a commitment as great as the commitment we made to be the first nation on the moon. We also need to make these kinds of commitments to solving the problems of the Disadvantaged. Why should we destroy food when we have people starving in our own country?

While I realize that the problems associated with ever getting a program such as this into operation would be many, I still feel that it would be worthwhile for a pilot study to be set up and undertaken. The Federal government may lose money on the project, but at the present time it is losing millions on welfare and producing unfulfilled Disadvantaged people.

In summation, while politically this idea may be called Socialistic in its implications, I feel that it would offer LIFE, LIBERTY AND THE PURSUIT OF HAPPINESS to many Americans who would never be able to have these essential parts of a Democratic way of life. The program would also clean up America and allow Americans to Look upon our country with pride and allow some of our Disadvantaged to get their first "Sweet Smell of Success" as useful, responsible members of our Democratic society. Think of America's future!

CHAPTER XII

VRTPF: ACRONYM FOR SUCCESS

Wanda Olson

Introduction

Economic, political and social factors have combined to bring to the attention of the public the plight of the disadvantaged. This awakening awareness has presented vocational education with a challenge. The Advisory Council of Vocational Education (1968:2) issued this challenge by saying:

> "No longer can the emphasis be on matching the best man with an existing job; it must be placed on providing a suitable job for each man or equipping the man to fill a suitable job."

If this challenge is to be met, disadvantaged persons must be convinced of the merits of vocational education through positive recruitment, relevant training, adequate placement and effective follow-up studies.

Recruitment

It is not enough for vocational education to be available for the disadvantaged, recruitment must be aimed at identifying the individuals who would profit from this type of training, and encourage enrollment in the vocational program of their choice. (Nelson:1970)

To identify these persons the educator must know how the disadvantaged differ from those who are successful in a traditional education system. It is understood that these

individuals are below average in school achievement, but Gordon (1966:11) has given other factors that help identify this person.

1. Economic deprivation attributable to an absent, nonproducing or marginally producing breadwinner.
2. Social alienation caused by racial or ethnic discrimination with all its accompanying deprivations.
3. Geographic isolation because of transiency, or residence in an area far removed from adequate educational facilities.

Because of these problems, these persons already feel like failures, and lack the drive needed to succeed. They have already come face-to-face with the values that cause conflict with the school. (Gordon:1966)

A few years ago, if you wanted to visit the vocational education classes in a typical secondary school, you headed for the basement. The students in these basement classes were rejects from academic classrooms for being discipline problems or non-learners. (Education USA:1971) This fact was well known by teachers, parents and students. This image must be changed, if disadvantaged persons are to be recruited for vocational programs.

To change this misconception, an affective public relations program must be developed. Disadvantaged students will not be attracted to vocational programs if they feel the offerings are second-best. Why shouldn't professional public relations techniques be used to publicize vocational education? To reach the disadvantaged, information presented must be comprehensive, concise, eye appealing, interesting and written

in simple language. Various forms of communication should be used to attempt to reach potential students. (Kemp: 1966)

1. Assemblies, in all schools, which emphasize the necessity for occupational training for entering any job which promises decent earnings and a future.
2. Public speaking by local school administrators before service clubs, community and civic organizations, and neighborhood groups.
3. Public service time on radio and television.
4. Feature stories for newspapers and magazine s.
5. Placards on public transportation vehicles, at terminals, and in places frequented by youth.
6. Publicizing scholarships and special projects sponsored by business, industry and trade unions.
7. Making known the availability of the school facilities for community use.

In an address before the 1970 convention of the National Association of Secondary School Principals, former U.S. Commissioner of Education James E. Allen (Education:USA:1) said, "One of the most serious flaws in our educational system has been its ironclad separation of academic and vocational education." The elimination of this barrier would be the best source of students. A curricula, based on the concept that the selection of an occupation is a continious process, could introduce the elementary and middle-school student to the world of work. The report compiled in Education USA (1971:30) stated:

> "The general pattern is to provide occupational information and develop concepts about the world of work in grades K-6, occupational exploration in grades 7-9, and career preparation from grades ten through postsecondary."

Perhaps the best way to recruit students is to have a quality program so that prestige is obtained for the school.

and for the person who attends the school. A quality program leading to a genuine enthusiam of students and alumni results in a good recruitment program.

Training

Since the Area Redevelopment Act was passed in 1961, attention has been focused on finding the most effective method of training or retraining the disadvantaged. The end result should be the development of an occupational skill for all people. A vocational program for these persons should help them gain self-confidence, motivation and knowledge. (Kemp: 1966)

Teachers must be specially qualified and highly motivated, if a training program is to succeed, in teaching the total person. The course of study should provide information in interpersonal relations, dress code in the occupation one aspires to enter, and it might even be necessary, to teach basic social skills as well as the skills of the trade. This means the teacher must find materials, methods and conditions for learning that are appropriate to the different backgrounds and learning styles of the disadvantaged.

Instruction for the disadvantaged should be highly individualized to meet the unique needs of this student. This type of instruction takes into consideration the knowledge and skill the student has when entering the program and he continues with is learning from that point. Time

limits must be removed. Individualized instruction does this. Whether it takes him one week or one month, the student must not be allowed to become discouraged and unhappy with his training program. Individualized instruction plans and conducts a program tailored to the learning needs of each student. He becomes an active participant in the learning situation, and boredom will vanish. This method of learning is adaptable to all vocational programs, whether it be auto mechanics or a secretarial course.

The disadvantaged student has a need to make real his appirations for the future while at the same time he needs a sense of independence. A work-study program may accomplish this. This may be individualized, also. The student would begin with simple jobs and advance to more complicated tasks as his ability increases. In this type of program the student learns to adapt to changing work situations while developing the ability of learning to work. (Bloom: 1966)

A training program designed to prepare students to enter the world of work must be flexible. It must be remembered that job entry skills may vary for different employers within the same occupation. (Burt: 1967) Changing technology also requires flexibility. Close cooperation with potential employers is one way for a training program to remain up-to-date.

A training program designed to prepare students for employment must consider what jobs are available, and training

must be realistic in terms of expectations of employers. (Johnson: 1970) The training must also be realistic in terms of facilities. Education should take place in situations that closely resemble actual working situations. This will make the adjustment from school to work easier to accomplish. The training must include teaching the merits of cooperative effort. Being realistic, educators must recognize this will possibly be a new mode of behavior for the disadvantaged student. He will be wary of expressed interest in his welfare. He is not accustomed to others being concerned.

When developing a vocational program for the disadvantaged several concepts must be considered: (Kemp: 1966)

1. In addition to meeting the community's economic needs, vocational educators should also be aware of the needs within the state, region and nation.
2. Quality education at any skill level must be available.
3. There should be close cooperation with employers to break down job levels and develop curriculum.
4. There should be a close relationship with trade organizations.
5. The services of the Division of Vocational & Technical Education of the U.S. Office of Education should be utilized.
6. Courses should be coordinated between Junior High, Secondary, post secondary and adult programs.
7. Basic education should be tied closely with vocational offerings.
8. Teaching techniques should be imaginative.
9. There should be constant evaluation.
10. Opportunity should be given to enable students to participate in extra-curricular activities. Here they learn citizenship responsibilities.

Placement

Vocational education can only be considered successful when it leads to employment. (Nichols:1970) Therefore,

vocational education cannot ignore the responsibility of job placement.

The President's Commission on Law Enforcement and Administration of Justice in their 1967 Task Force Report on Juvenile Delinquency and Youth Crime stated it this way. (Education USA: 1971: 53)

> "The general mandate of the schools should be broadened to include responsibility not only for preparing youth for productive, responsible, and satisfying adulthood----but for guiding them into adult positions.... The school must share the responsibility not only for training for jobs but also for job development and job placement."

The disadvantaged student may not be prepared to seek a job. Even after he has acquired a saleable skill, he may be unsure of where and how to look for employment. Therefore, the school's responsibility is not finished until he has been placed in a job for which he was trained. Various placements should be utilized to cover all possibilities. (Kemp: 1966)

1. A school placement office
2. The instructor
3. Contacts with business, industry and trade unions
4. Cooperative relationships with public and private employment agencies
5. Permanent placement as a result of work-study or cooperative program.

Objectives of a job placement program is not to place the student in the first job, but to assist him in finding the best job for him. A placement service must give the disadvantaged student a realistic knowledge of the world of work, and help him understand what will be expected of him.

Since placement on a job is the goal, the school must maintain communications with the potential employer. Texas and Florida have developed a program called "Techdays" to accomplish this communication. The program is organized and coordinated at the state level, to bring together recruiting personnel and students from vocational programs. (State Dept. of Ed.: 1969) From this encounter, the student has an opportunity to learn of all the job openings in the area, and the employers have the opportunity to interview the vocational graduates. This gives the student a choice of jobs, and he is more likely to find employment in the best job available rather than take the first one that is offered.

A new approach to job placement is being used in metropolitan areas such as Baltimore, St. Louis, San Diego. (Education USA. 1971) Job banks are coordinated by State Employment Service Offices. A listing of available positions, and the number of interviewees requested are placed on computer printouts. This service may be used by all of the placement personnel in the area, including vocational schools. All students clear through the Job bank so only the limited number of job-seekers are sent for interviews. The number of positions filled, and any new vacancies occurring are fed into the computers daily so the most recent information is available. The forty Job Banks in operation have reported increase in job placement.

Follow-Up

The final criteria for determining success of a vocational program for disadvantaged is finding if the graduates remain employed. A follow-up program is the way to discover if the graduates from a program for disadvantaged are still workers, and if they have met the expectations of the employer.

A follow-up program is evaluation-- of the teacher, of the curriculum, and of the methods used to present the material. A survey of graduates and employers will determine any weaknesses in the program and can recommend changes needed to strengthen the curriculum.

A follow-up program will determine the need for further training. If the individual recognizes the school has a continuing interest in his welfare, it will be easier for him to return for more classes.

The best way to establish a follow-up program is to maintain good rapport with the student. If classes were enjoyable, and the teacher understanding, the student will keep in touch -- to report his progress, and to seek advice with any problem.

Summary

The ultimate goal of vocational education for the disadvantaged is to provide students with means of economical independance, and this means the student must be occupationally competent. Economic independence occurs only

[illegible] is identified, and convinced of the merits [illegible] vocational education.

Training must be geared to the needs of each individual, and take into consideration how much knowledge he already has, and how much he needs to reach a job-entry level.

Vocational education is not completed when the student finishes a course, but only when he has been placed in the job been suited for him. Continued interest in the graduate as shown by follow-up studies that will demonstrate success or failure of vocational education for the disadvantaged.

Our nation cannot survive with a segment of the population maintained and unemployed. Therefore, vocational educators, working with the disadvantaged cannot assume there is a choice for anything but success. Thus, the acronym for success, vocational recruitment, training, placement and follow-up.

REFERENCES

[illegible] Council of Vocational Education, Vocational Education: [illegible] Between Man and His Work, Department of Health, [illegible] & Welfare, 1968, page 2

Bloom, B., Davis, A. & Hess, R., Compensatory Education for Cultural Deprivation, Holt, Rinehart, & Winston, 1965, page 38

Burt, S., Industry & Vocational-Technical Education, New York, McGraw-Hill, 1967, page 242

Education, U.S.A., Vocational Education: Innovations Revolutionize Career Training, Washington D.C., National School Public Relations Association, 1971, pages 1, 30, 53

Gordon, E. & Wilkerson, A., Compensatory Education for the Disadvantaged, New York, College Entrance Examination Board, 1966, page 11

Jensen, E., "Vocational Education in Washoe County: Philosophy and Program", American Vocational Journal, October, 1970, page 28

Kemp, B., The Youth We Haven't Served, Washington D.C., Department of Health, Education & Welfare, 1966, pages 9, 32, 40, 44

Nelson, R., "A Developmental Mode and Delivery System", American Vocational Journal, March, 1970, page 33

Nichols, C., "Vocational Education for the Disadvantaged: Seven Years Later", American Vocational Journal, Nov., 1970

State Department of Education, "Report of Vocational, Technical and Adult Educators Conference", Florida State Department of Education, 1969, pages 90, 91

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ESSENTIALS OF AN APPROVED EDUCATIONAL PROGRAM FOR MEDICAL ASSISTANTS.

AMERICAN MEDICAL ASSOCIATION, CHICAGO, ILL. COUNCIL ON MEDICAL EDUCATION.
AMERICAN ASSOCIATION OF MEDICAL ASSISTANTS, CHICAGO, ILL.
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DESCRIPTORS - *HEALTH OCCUPATIONS EDUCATION; *MEDICAL ASSISTANTS; *PROGRAM DEVELOPMENT; *GUIDELINES; EDUCATIONAL FACILITIES; EDUCATIONAL FINANCE; ADMISSION CRITERIA; PROGRAM ADMINISTRATION; CURRICULUM; TEACHER QUALIFICATIONS

ABSTRACT - INTENDED TO SERVE AS A GUIDE FOR THE DEVELOPMENT AND SELF-EVALUATION OF ALLIED HEALTH EDUCATIONAL PROGRAMS, THIS PUBLICATION CONTAINS ESSENTIAL REQUIREMENTS OF AN APPROVED EDUCATIONAL PROGRAM FOR MEDICAL ASSISTANTS. REQUIREMENTS ARE PROVIDED FOR: (1) INSTITUTIONAL LOCATION OF A PROGRAM, (2) CLINICAL AFFILIATIONS, (3) EDUCATIONAL FACILITIES, (4) FINANCES, (5) FACULTY QUALIFICATIONS AND RESPONSIBILITIES, (6) STUDENT SELECTION, (7) STUDENT, CURRICULUM, AND EXTERNSHIP RECORDS, (8) CURRICULUM, AND (9) PROGRAM ADMINISTRATION. IN ADDITION, MORE DETAILED GUIDELINES ARE INCLUDED FOR THE MEDICAL ASSISTANTS CURRICULUM, INCLUDING DESCRIPTIONS OF THE BASIC COURSE REQUIREMENTS AND A LISTING OF THE DUTIES OF A MEDICAL ASSISTANT. (SB)

VT 014 199

ESSENTIALS OF AN APPROVED EDUCATIONAL PROGRAM FOR MEDICAL ASSISTANTS

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June 1971
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AMERICAN MEDICAL ASSOCIATION
COUNCIL ON MEDICAL EDUCATION

in collaboration with

AMERICAN ASSOCIATION OF MEDICAL ASSISTANTS

OBJECTIVE The education and health professions cooperate in this program to establish and maintain standards of appropriate quality for educational programs in the allied health professions and services, and to provide recognition for educational programs which meet or exceed the minimal standards outlined in these *Essentials*.

These standards are to be used as a guide for the development and self-evaluation of allied health educational programs. Survey teams report on site visits, and lists of the accredited programs are published for the information of employers and the public. Students for the allied health occupations are taught to work with and under the direction of physicians in providing health care services to patients.

DESCRIPTION OF THE OCCUPATION Medical assistants are broadly defined as individuals who assist qualified physicians in their offices or other medical settings, performing those administrative and/or clinical duties delegated in relation to the degree of training and in accord with respective state laws governing such actions and activities.

Medical assistants have a wide range of duties in many aspects of the physician's practice. Their business-administrative duties include scheduling and receiving patients; obtaining patients' data; maintaining medical records; handling telephone calls, correspondence, reports and manuscripts; purchasing and maintaining supplies and equipment; and assuming responsibility for office care, insurance matters, office accounts, fees and collections.

Their medical duties include assisting with examinations and treatments; taking medical histories; performing certain diagnostic tests; carrying out those laboratory procedures that can be done in a physician's office; and sterilizing instruments and equipment. A sufficiently qualified medical assistant may be responsible for personnel and/or office management.

ESSENTIAL REQUIREMENTS

I. EDUCATIONAL PROGRAMS MAY BE ESTABLISHED IN

A. Junior and community colleges
B. Senior colleges and universities
C. Vocational/technical schools and institutions
D. Proprietary educational institutions
E. Military-based schools

The institution should be accredited or otherwise acceptable to the Council on Medical Education of the American Medical Association and the American Association of Medical Assistants. The institution must have the necessary clinical facilities and/or affiliations.

II. CLINICAL AFFILIATIONS

A. In programs where academic training and clinical experience are not provided in the same institution, accreditation shall be given to the institution responsible for the academic training--student selection, curriculum, academic credit, etc.--and the educational administrators shall be responsible for assuring that the activities assigned to students in the clinical setting are, in fact, educational.

B. The externship phase of the educational program should be conducted under competent medical direction, preferably in a physician's office, and the externs shall serve without remuneration. An effective ratio of students to supervisory personnel should be maintained.

III. FACILITIES

A. General - Adequate classrooms, laboratories, and administrative offices should be provided in accord with accepted educational standards.

B. Laboratory - Appropriate equipment and supplies for directed experience should be available in sufficient quantities for student participation.

C. Library - A library should be readily accessible and should contain an adequate supply of up-to-date and scientific books, periodicals, and other reference materials related to the curriculum.

D. Audio-visual - Adequate, up-to-date multi-media, and audio-visual equipment, models, films and other teaching aids should be available for classroom instruction.

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IV. FINANCES

A. Financial resources for continued operation of the educational program shall be assured through regular income.

B. The institution shall not charge excessive student fees.

C. Advertising must be appropriate to an educational institution.

V. FACULTY

A. Director of the Educational Program

1. Qualifications - The education of the program director shall be in accordance with state educational standards but preferably augmented by experience as a medical assistant in a physician's office.

2. Responsibilities - In addition to other assigned responsibilities, the director of the educational program should be responsible for the organization, administration, periodic review, continued development, and general effectiveness of the program.

B. Medical Advisor

The medical advisor of the program should provide competent medical direction for general clinical instruction. For each specialty offered, a specialty advisory consultant should be provided. The medical advisor and specialty consultant should also be responsible for clinical relationships with other allied health educational programs and should develop the understanding and support of practicing physicians.

C. Change of Director

If the director of the educational program, the medical advisor, or an advisory consultant of a program is changed, immediate notification should be sent to the AMA Department of Allied Medical Professions and Services. The curriculum vitae of the new director, giving the details of his training, education, and experience in the field, must be submitted, and, if the new director's credentials are in order, accreditation of the program will be continued.

D. Instructional Staff

Teaching faculty members should be qualified, through academic preparation and/or experience, to teach the subjects assigned. A planned program for their continuing education should be provided.

For a specialty curriculum, the faculty should include a nurse-coordinator with skills in administration, curriculum development, counseling and guidance.

E. Advisory Committee

An advisory committee which includes qualified physician(s), medical assistant(s), and a Certified Medical Assistant if available, should be appointed to assist the directors in continuing program development and evaluation, in faculty coordination, and in coordinating effective externship relationships.

VI. STUDENTS

A. Selection - Selection of students should be made in accordance with the generally accepted practice of the institution. Selection of students for the medical assisting program should be made by an Admissions Committee in cooperation with those responsible for the educational program.

Candidates for admission must be high school graduates or have passed a standard equivalency test or college entrance examination. A background in social and biological or natural sciences is recommended.

Typing is a prerequisite, with a proficiency of a minimum of 35 words per minute. High school courses in English, mathematics, natural sciences, foreign language and electives are recommended.

A pre-entrance examination of candidates is also recommended.

Graduates of recognized programs in other allied health professions should be given appropriate credits for courses already completed. It is also recommended that Certified Medical Assistants be given appropriate credit for such certification upon admission to the program.

Admissions data should be on file at all times in institutions sponsoring the program.

B. Health - Applicants shall be required to submit evidence of good health and successful vaccination. A student health service should be available for evaluation and maintenance of the students' health.

C. Number - The number of students enrolled in each class should be commensurate with the most effective learning and teaching practices and should also be consistent with acceptable student-teacher ratios.

D. Counseling - A student guidance and placement service should be available.

VII. RECORDS

Satisfactory records should be provided for all work accomplished by the student in the training program. Monthly and annual reports of the work of the department should be prepared and available for review.

A. Student

1. Transcripts of high school and any college credits and other credentials must be available.

2. Report of medical examination upon admission and record of any subsequent illness should be retained. A report of medical examination, including a chest film, should be kept on record.

3. A record of class and laboratory participation and accomplishment of each student should be maintained in accordance with the requirements of the institution.

4. Attendance must be suitably recorded.

5. Copies of practical and written examinations should be maintained and evaluated periodically.

B. Curriculum

1. A copy of the complete curriculum should be kept on file.

2. Copies of course outlines, class schedules, directed experience, schedules, and teaching plans should be on file and available for review.

C. Externship

1. An accurate record system of dates and location of externship should be provided.

2. A satisfactory method for evaluating the externship should be maintained.

VIII. CURRICULUM

A. The minimal length of the educational program for a medical assistant Grade I, should total one academic year or equivalent.

The minimal length of the educational program for a medical assistant, Grade II, should total two academic years or equivalent.

It is desirable that the education of a medical assistant, Grade II, include the study of the following: humanities and social sciences, English, history or Government, economics and philosophy.

Additional time may be required for certain specialty electives as prescribed in the supplemental curriculum guidelines for the respective specialty.

B. Instructions should follow a planned outline which includes:

1. Assignment of appropriate instructional materials.
2. Classroom presentations, discussions, and demonstrations.
3. Supervised practice of basic procedures.
4. Examinations, tests and quizzes — both oral and written — for didactic and clinical aspects of the program.
5. Supervised externships (see II, Part B).

C. General courses or topics of study, didactic and clinical.

(NOTE: Specific suggestions are available in Guidelines for general and/or specialty programs as a supplement to these Essentials.)

1. Anatomy and Physiology
2. Medical Terminology
3. Medical Law and Ethics
4. Psychology
5. Communications (Oral and Written)
6. Medical Assistant Administrative Procedures
7. Bookkeeping and Insurance
8. Medical Assistant Clinical Procedures
9. Externship
10. Electives

D. A synopsis of the complete curriculum should be kept on file. This instructional program should include the rotation of assignments, the outline of the instruction supplied, and lists of multi-media instructional aids used to augment the experience of the student.

IX. ADMINISTRATION

A. Catalog - An official publication including a description of the curriculum should be issued at least biennially. It should include information regarding the organization of the program, a brief description of required courses, names and academic rank of faculty, entrance requirements, tuition and fees, and information concerning physicians' offices and other facilities used for externships.

B. Accreditation - The evaluation (including survey team visits) of an institution or educational program can only be initiated by the express invitation of the chief administrator of the sponsoring institution or his officially designated representative. (This is embodied in the filing of an official application.)

C. Withdrawal - The institution may withdraw its request for initial accreditation at any time (even after evaluation) prior to final action. The AMA Council on Medical Education and the American Association of Medical Assistants may withdraw accreditation when the following conditions prevail:

1. The educational program is not maintained in accordance with the standards outlined above, or in the "Supplemental Guidelines" in the case of specialty programs, or

2. There are no students in the program for two consecutive years.

Accreditation is revoked only after advance notice has been given to the head of the institution that such action is contemplated, and the reason therefore, sufficient to permit timely response and the use of established procedures for appeal and review.

D. Re-evaluation

1. Review - The head of the institution being evaluated is given the opportunity to become acquainted with the factual part of the report prepared by the visiting survey team, and to comment on its accuracy before final action is taken.

2. Appeal - At the request of the head of the institution, a re-survey may be made. Accreditation decisions may be appealed by letter to the Council on Medical Education of the American Medical Association.

E. Reports - An annual report should be made by the institution to the AMA and the American Association of Medical Assistants. A report form is provided, which should be completed, signed by the Director of the Educational Program, and returned promptly.

F. Re-survey - The AMA and the American Association of Medical Assistants will periodically re-survey educational programs for consultation and re-evaluation.

X. APPLICATION AND INQUIRIES

A. Accreditation - Application for accreditation of a program should be made to:

Department of Allied Medical Professions and Services
Division of Medical Education
American Medical Association
535 North Dearborn Street
Chicago, Illinois 60610

B. Careers - Inquiries regarding career information should be addressed to:

American Association of Medical Assistants
1 East Wacker Drive - Suite 1510
Chicago, Illinois 60601

C. Certification - Inquiries regarding certification of qualified graduates of the accredited program should be addressed to:

Certifying Board of the American Association of Medical Assistants
1 East Wacker Drive - Suite 1510
Chicago, Illinois 60601

GUIDELINES
FOR A CURRICULUM IN MEDICAL ASSISTING
(Grades I and II)

BASIC COURSES IN MEDICAL ASSISTING

Listed below are the basic courses (1 through 9) which should be taken by all medical assisting students, whether they are enrolled in a one-year, two-year or specialty medical assisting program. Graduates of a two-year program may be expected to assume greater responsibility in the medical office than the one-year graduates.

These nine basic courses may be incorporated in a one-year program. The courses are intended to provide the student with the background and skills that will enable her*to perform a wide variety of work in a medical facility. In many instances, the ability to handle the tasks effectively will depend on the knowledge acquired in more than one course.

In a two-year program, provision should be made for courses in the humanities, social sciences and other electives leading to an associate arts degree or a two-year certificate.

It is suggested that in the second year some advanced work be offered in anatomy and physiology, medical transcription, and the development of supervisory and/or management ability. If the student wishes to pursue a specialty, electives relating to that field would be offered the second year. It is at the discretion of the school to offer the externship to two-year students in either their first or second year.

1. ANATOMY AND PHYSIOLOGY

   The student should have an elementary knowledge of the various systems of the body and principles of human physiology so that she can understand the health problems of the patient and the physician's diagnosis and treatment. In addition, this knowledge will enable her to eliminate obvious errors in the transcription of medical records.

2. MEDICAL TERMINOLOGY

   The student should have a knowledge of the basic structure of medical words, including prefixes, suffixes, roots, and combining forms and plurals. She should study the pronunciation, spelling, and definition of medical terms. Emphasis should be placed on building a professional vocabulary required for working in a medical facility concerned with diagnosis of ailments and the treatment of patients.

*Although there are a few male medical assistants, a great percentage of them are women. Therefore, the feminine pronoun has been deemed more appropriate for use here.

3. MEDICAL LAW AND ETHICS

The student should be given an introduction to medical law so that she has an understanding of the legal relationship of the physician and patient, the creation and termination of a contract, professional liability, malpractice, tort liability, breach of contract, and the Medical Practice Acts. Emphasis should be given to professional attitudes and behavior and the fundamentals of meeting the special needs of patients so that the student is aware of the physician's legal responsibilities in the practice of medicine and her own legal relationship in this area.

The student should have a general knowledge and understanding of the types of medical practice, such as individual private practice; partnerships or other group practice; and types of medical care, such as family practitioner, specialist, comprehensive care, and government medical care programs.

The student should be given a brief introduction to the history of medicine, including great men of medicine and their contributions in order to develop a kinship and pride in the medical profession.

4. PSYCHOLOGY (Human relations, patient contact, public relations)

The student should study the fundamentals of phychology which involve individual differences, emotions, motivations, frustrations, and aspects of mental health so that she will understand and inter-act properly with her physician-employer, co-workers, patients, and the public.

5. COMMUNICATIONS (Oral and Written)

The student should be instructed in the fundamentals of listening, speaking, and writing clearly and effectively; a knowledge of proper telephone techniques; and competence in taking medical histories to develop in the student quick and accurate perception and tactful, clear response.

6. MEDICAL ASSISTANT ADMINISTRATIVE PROCEDURES*

The student should develop proficiency in patient reception; appointment scheduling; handling mail, medical records and filing, business correspondence, medical dictation and/or machine transcription; office management practices; record-keeping and filing. A sufficiently qualified medical assistant may be responsible for personnel and/or office management.

7. BOOKKEEPING AND INSURANCE

The student should have a knowledge of the fundamentals of bookkeeping, including the entering of daily transactions; billing; collection and banking procedures; preparing payroll and necessary government forms such as withholding, F.I.C.A., unemployment and state disability. She sould also possess a knowledge of private, group and government insurance programs and the ability to complete the required forms.

* Typing is a pre-requisite, with a proficiency of a minimum of 35 words per minute.

8. MEDICAL ASSISTANT CLINICAL PROCEDURES

The student should study and understand the principles of microbiology, with lectures and laboratory experience in the following:

Examination Room Techniques
The student should have an understanding and proficiency in preparing a patient for examination (positioning, draping): taking and recording temperature, blood pressure, pulse, and respiration; assisting the physician with examination, treatment, and minor surgery; caring for the examining room (preparation for examination, treatment or minor surgery), and cleaning up after the doctor has finished.

Practice and Techniques of Sterilization Procedures
The student should have a knowledge of the methods of sanitation, asepsis, and sterilization, as well as practical experience to apply these principles.

Care of Equipment and Supplies
The student should know how and when to order supplies; how to store them safely and efficiently; and how and when to dispose of them safely when necessary. She should be well acquainted with the drug and narcotic laws; know how to safely store and inventory drugs; be informed about records on drugs that must be kept; be familiar with medical office equipment and know how to care for it.

Emergencies
The student should be able to recognize emergency situations, know the proper course of action with different types of emergencies, and apply first aid techniques if necessary.

Laboratory Orientation
The student should have a basic knowledge and understanding of the purpose, techniques and recording of laboratory procedures commonly performed in a physician's office, including X-rays, physiotherapy, electrocardiography, basal metabolism, and collection of specimens.

9. EXTERNSHIP

The student should have a review and rotation sequence of practical experience in offices of qualified physicians and/or accredited hospitals selected by the school. This should be a part of her total training and an evaluation of her performance with a grade should be a part of her record. The student is to receive no remuneration during this externship period.

DUTIES OF A MEDICAL ASSISTANT

Listed below are the duties performed by one or more medical assistants in the average medical office:

1. Effectively schedule appointments (in person and by telephone).
2. Pull patients' files for day's appointments.
3. Receive patients.
4. Take and record patient's statistical data and medical history at request of the doctor.
5. Prepare and drape patients for examination.
6. Take blood pressures and temperatures and weigh patients.
7. At the doctor's request and under his supervision:
   a. Collect blood samples for testing.
   b. Take ECG's.
   c. Perform basal metabolism tests.
8. Assist the doctor with patient examinations, treatment and minor surgery.
9. Give certain medications and injections under the doctor's supervision.
10. Explain the nature of examination, diagnostic tests, and/or treatment to the patient at doctor's request.
11. Know how to handle patients when doctor is away from the office.
12. Assist in the collection of specimens (Pap smears, throat cultures).
13. Set up patients' files; enter notes or make corrections on records; review them for completeness and accuracy.
14. Review, separate and purge medical record files as instructed.
15. Obtain patient's signature on permission forms (to release records, to operate, or to perform diagnostic procedures).
16. Arrange hospital admissions and/or laboratory and X-ray procedures, as requested by the doctor, and advise patients accordingly.
17. Schedule surgeries.
18. Prepare medical records from information provided by the doctor.
19. Perform simple routine laboratory procedures (urinalysis, simple blood tests); collect and prepare specimens for transportation to laboratory.
20. Record and maintain laboratory, X-ray and ECG data on patients' records.
21. Instruct patients regarding proper preparation for tests ordered by the doctor.
22. Prepare and replenish supplies in doctor's bag so that it is in constant readiness.
23. Sterilize instruments and assume maintenance of diagnostic equipment.
24. Dispose of contaminated and disposable items.
25. Receive and organize the handling of medication samples.
26. Order office, laboratory, and medical supplies, and maintain inventory of all three.
27. Handle emergencies:
    a. Know how to reach the doctor when he is out of the office.
    b. Seek help from qualified nurse or another physician.
    c. Describe nature of patient's illness or injury.
    d. Position patient in safe and comfortable position.
    e. Apply first aid if necessary.
    f. Call poison control center.
    g. Arrange for hospital emergency room treatment.
    h. Explain doctor's unavailability to patients in reception room.

DUTIES OF A MEDICAL ASSISTANT - Continued

28. Handle the telephone:
    a. Check with answering service and record messages.
    b. Make appointments.
    c. Make calls for the doctor.
    d. Receive calls from patients, laboratories, other physicians, solicitors, and the doctor's family.
    e. Answer questions concerning the patient's illness and the doctor's fees and hours.
    f. Take laboratory reports.
29. Deal with representatives of pharmaceutical companies, equipment manufacturers, other physicians, doctor's family, and other callers.
30. Handle children accompanying patients.
31. Supervise maintenance personnel (cleaning and other), and see that the office is kept in a neat, attractive and sanitary condition at all times.
32. Supervise other office personnel.
33. Handle correspondence:
    a. Incoming:
        (1) Open and sort mail, screening it in accord with doctor's wishes.
        (2) Flag important mail to his attention.
        (3) Summarize articles and other materials as requested.
    b. Outgoing:
        (1) Answer doctor's routine mail, upon instruction from him as to handling.
        (2) Take medical dictation.
        (3) Transcribe shorthand or machine dictation.
        (4) Type all correspondence, including medical reports to other doctors, insurance reports, and other types of reports.
34. File all correspondence and medical records, including X-rays, and ECG's.
35. Operate business machines and assume responsibility for their maintenance.
36. Arrange meetings, conferences and/or travel accommodations.
37. Perform daily posting of charges and collections.
38. Prepare monthly statements.
39. Handle payments by cash and/or check and make out receipts.
40. Assist with follow-up collections.
41. Handle credit arrangements with patients.
42. Keep financial records (daily record of charges and payments; records of accounts receivable; trial balance; monthly profit and loss sheet).
43. Prepare payroll and any necessary government forms (withholding, F.I.C.A., unemployment, state disability).
44. Pay professional bills.
45. Assume all banking duties (regular deposits, reconciling bank statements).
46. Prepare information for accountant for tax returns.
47. Discuss and explain doctor's fees to patients.
48. Accept, endorse and record checks received for payment on account.
49. Establish and control petty cash fund.
50. Discuss and explain insurance coverage to patients.

DUTIES OF A MEDICAL ASSISTANT - Continued

51. Complete insurance forms:
    a. Indemnity insurance forms for patients to submit his claim.
    b. Forms for filing assigned insurance claims.
    c. Medicare payment request forms.
    d. Medicaid claim forms.
    e. Workmen's compensation forms.
    f. Blue Shield payment request forms.
52. Review and, if necessary, appeal insurance disallowances to achieve satisfactory resolution.
53. Gather data to complete statutory reports for government agencies.
54. Attend meetings and participate in community activities related to the doctor's practice.

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PRESIDENT'S TASK FORCE ON HIGHWAY SAFETY,
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TRAFFIC REGULATIONS; NATIONAL NORMS;
OBJECTIVES; VEHICULAR TRAFFIC

ABSTRACT - TO ACHIEVE A NATIONAL GOAL OF
REDUCED DEATH, INJURY, AND ECONOMIC LOSS FROM
HIGHWAY ACCIDENTS, THE TASK FORCE RECOMMENDS
THAT THE PRESIDENT AND CONGRESS GIVE HIGHWAY
SAFETY A HIGHER PRIORITY. INCREASED FUNDING
OF FEDERAL-STATE AND GOVERNMENT-PRIVATE
COOPERATIVE SAFETY PROGRAMS IS NEEDED.
STRONGER NATIONAL HIGHWAY AND VEHICLE SAFETY
STANDARDS TO LESSEN ACCIDENT DAMAGE, ALONG
WITH MORE COMPREHENSIVE DRIVER LICENSING TO
IMPROVE PROFICIENCY, WOULD HELP TO REDUCE THE
NUMBER AND SEVERITY OF TRAFFIC ACCIDENTS. THE
NEED FOR NATIONWIDE UNIFORMITY MAKES HIGHWAY
SAFETY A RESPONSIBILITY OF THE FEDERAL
GOVERNMENT. (BH)

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The Report of
The President's Task Force on
Highway Safety

October 1970

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The Report of
The President's Task Force on
Highway Safety

October 1970

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PRESIDENTIAL TASK FORCE ON HIGHWAY SAFETY

December, 1969

The President
The White House
Washington, D. C.

Dear Mr. President:

In the following report your Task Force on Highway Safety undertakes to respond to your charge to it to:

> Appraise the effectiveness of present highway safety programs; Suggest how such programs might be improved or better coordinated; and Determine what actions might be taken to further increase the effectiveness of our highway safety efforts.

This report represents the conclusions of the diverse membership of the Task Force. The Task Force has approved and endorsed this report, although no single member necessarily agrees precisely with every specific statement or the precise wording of each recommendation. Although there were some differences of viewpoint within the Task Force, we arrived at essentially complete agreement. The recommendations herein represent our best judgment, after two months of intensive Task Force and staff activity. Broadly, we have concluded there is no simple answer to the problem of highway safety – nor will any single new development in technology or in social and economic organization suffice in abating the problem. However, we are convinced that significant progress can be made in improving highway safety despite the fact that the country is not, today, progressing as it should. Our report describes the steps that we consider essential to further improvement. We have further concluded that although the responsibility of the Federal government is great, Federal action alone cannot bring about improved highway safety. Rather there must be innovative action by many institutions and agencies, very importantly by government at the state and local level, and by the private sector. We have proposed many specific improvements as well as some new approaches.

We have addressed ourselves principally to the questions of objectives (or goals), policy, strategy, and broad programmatic considerations which we regard to be constructive. The report delineates a course of action which, we are persuaded, the government (Federal, state, and local) and the private sector can join. Such a joining of forces is essential to success.

We respectfully submit our report in the hope that it will be of assistance to you, to other officials, to business and civic leadership, and to the nation as a whole in improving highway safety.

George W. Barton
George W. Barton

Roy D. Chapin, Jr.
Roy D. Chapin, Jr.

John J. Conger
Dr. John J. Conger

Harmer E. Davis
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William J. Harris, Jr., Secretary

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October 23, 1969

The White House

The President today announced the establishment of another in the present series of Task Forces to assist the Administration with ideas and recommendations for 1970 and beyond. Franklin M. Kreml, Vice President of Northwestern University has been named Chairman of the Task Force on Highway Safety. The Task Force will consider the effectiveness of present highway safety programs, recommend how such programs might be improved or better coordinated, and advise on what actions might be taken to increase further the effectiveness of our nation's highway safety efforts.

The Task Force was characterized by Arthur Burns, Counsellor to the President, as a broad representative group which can greatly assist in the identification of vital problems in this critically important area and recommend realistic solutions.

The members of the Task Force on Highway Safety are:

Mr. Franklin M. Kreml, *Chairman*
Vice President
Planning and Development
Northwestern University
Evanston, Illinois

Mr. George W. Barton, President
Barton-Aschman Associates, Inc.
Chicago, Illinois

Mr. Roy D. Chapin, Jr.
Chairman of the Board
American Motors Corporation
Detroit, Michigan

Dr. John J. Conger
Vice President for Medical Affairs
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Denver, Colorado

Mr. Harmer E. Davis
Director, Institute of Transportation and Traffic Engineering
University of California
Richmond, California

The Honorable Sherman G. Finesilver, Denver District Judge
District Court
Denver, Colorado

Dr. William J. Harris, Jr. (Secretary)*
Assistant Director-Technology
Columbus Laboratories
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Mr. Harry D. Holt, President
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Dr. Ross A. McFarland
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School of Public Health
Harvard University
Boston, Massachusetts

Miss Marion E. Martin, Commissioner
Department of Labor and Industry
State of Maine
Augusta, Maine

Mr. Thomas C. Morrill
Vice President
State Farm Mutual Automobile Insurance Company
Bloomington, Illinois

Mr. Howard Pyle, President
National Safety Council
Chicago, Illinois

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* Presently Vice President—Research and Test, Association of American Railroads, Washington, D.C.

Acknowledgments

The Task Force gratefully acknowledges contributions to its work by many individuals and groups, of whom only a few can be cited personally.

Under the direction of its Secretary, a central professional staff was organized. The Columbus Laboratories of Battelle Memorial Institute provided the services of: Leonard L. Lederman, Fellow and Senior Research Advisor; Mary L. Schoene, Senior Information Scientist; John K. Wetherbee, Director—Special Projects; Margaret L. Windus, Political Scientist; and their associates. Dr. J. Stannard Baker and Mr. William G. Johnson were made available as consultants by Northwestern University and the National Safety Council, respectively.

In response to requests from the Task Force, special reports were submitted by: Robert F. Borkenstein, B. J. Campbell, Richard L. Holcomb, Newman W. Jackson, James M. Slavin and Richard Zylman and by a committee appointed by the Society of Automotive Engineers.

Advice was solicited from and provided by many individuals from state and local governments, universities, corporations, consulting groups and national organizations. Briefings to the Task Force were made by representatives of the Federal government and its major Highway and Motor Vehicle Safety Committees and by the National Conference of Governors' Highway Safety Representatives.

Without the contribution of time by these hundreds of individuals and organizations and their continuing cooperation, this report could not have been completed in a timely or comprehensive fashion.

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Executive Summary

THE PROBLEM

The highway transport system is a classic example of a technological development that results in great benefits but also creates serious problems for society. Our physical mobility derives largely from widespread ownership of motor vehicles. Vehicles have become deeply enmeshed in the total fabric of our society, important beyond the function they were designed to perform. However, motor vehicles are associated with property damage, injury, and an appalling loss of life.

In 1934, there were 16.8 fatalities per 100 million vehicle miles. By 1961, this rate had fallen to 5.16. The rate has varied within the range of 5.1 to 5.7 during the past decade, but the number of vehicle-miles driven has increased and, thus, total fatalities have increased. The number of personal injuries and the amount of economic losses have increased more rapidly than total deaths and have a major impact on the economy and on our total society.

In 1968, there were crashes involving about 26 million vehicles which resulted in 55,000 deaths. It is estimated that 2 million persons suffered physical injuries, including 170,000 permanent disabilities. The economic losses amounted to more than $10 billion, more than half of which arose from damage to automobiles.

If the current rates are maintained, there will be continuing increases in the absolute number of deaths, injuries, and economic losses.

THE DIFFUSE RESPONSIBILITY

Highway transportation is a very complex phenomenon that pervades our entire society. Responsibility for those elements that deal with highway safety rests with many levels of government and in different departments, as well as many components of the private sector.

The National Traffic and Motor Vehicle Safety Act of 1966 has empowered the Federal government to establish standards for the design and construction of safer vehicles.

The Highway Safety Act of 1966 has empowered the Federal government to assist state and local governments in their safety programs.

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State and local governments have the basic legal responsibility for most governmental operating functions associated with highway safety except for the standards controlling the original design of the vehicle. They build and maintain roads; inspect and license vehicles; educate and license drivers; establish and enforce laws; arrest, try, and sentence offenders. The management of these functions at the state and local level is dispersed and therefore difficult. As a result of Federal standards, each state now has a governor's representative for highway safety who is achieving some measure of coordination, but more remains to be done to improve management.

Manufacturers in the private sector are resposible for building vehicles; individual owners are responsible for their operation and maintenance. While compliance with standards and regulations is essential, many aspects of highway safety are dependent on public understanding and commitment—they cannot be legislated into being but may be brought about through public education.

RECOMMENDATIONS

Goals for the Nation

The national goal for the short term (about 5 years) should be:

- To prevent any further increase in the actual number of deaths and injuries resulting from highway accidents.
- To hold the growth in economic loss to a rate no greater than the rate of economic growth in the U.S.

The longer term national goal should be:

- A progressive reduction in the number of deaths and injuries and the economic losses associated with accidents.

The President and the Congress

It is recommended that:

(1) The President designate highway safety as a major national goal
(2) The President issue a special message on highway safety to the Congress for support and to the public for commitment.
(3) The President allocate adequate resources to Federal programs
(4) The Congress appropriate adequate funds for the support of programs

1. Federal-State Interaction

(1) The need for more adequate funding of the National Highway Safety Bureau and the safety programs of the Federal Highway Administration in the near term is evident. As a first step, limitations should be removed on the use of funds for which the National Highway Safety Bureau has been given obligational authority and which are within the President's recommended budget. As funds are spent at a level closer to the amount authorized, an assessment of accomplishments should enable a more realistic evaluation of the contributions to be expected from further increases in funding. Ultimately Federal, state, and local programs must be expanded if the recommended goals are to be achieved.

(2) As proved countermeasures are developed, some Federal funds now designated for the construction of new roads should be reallocated to the NHSB for highway-safety programs as well as to safety programs of FHWA in order to achieve better balance between efforts directed toward the greater convenience of the driver and those directed toward a reduction of fatalities, injuries, accidents, and resultant property damage.

(3) The severe limitation on the level of the NHSB staff is as important as the fiscal limitation. The present staff level at NHSB appears to be inadequate to carry out the responsibilities assigned. The staff has been too small to make full use of research on highway safety sponsored by the government. Approval to enhance staff size and capability now, and as the NHSB safety program levels increase, is essential if the highway-safety program is to receive adequate professional attention at the Federal level and if funds are to be used in a way that will maximize public benefits.

(4) Criteria for the allocation of Federal aid to the states for highway safety are in critical need of reexamination if the nation is to be best served with the funds available. There is good reason to believe that the present basis for such allocation leaves much to be desired in terms of improving the rate of return (safer highway transportation) on the investment of public funds. Special attention should be paid at all levels of government to:

- The increased use of objective evaluation in the operating programs
- The encouragement of new approaches, and their test and evaluation
- The encouragement of innovation through adequate flexibility in the application of standards.

(5) Study should be given to the possibility of establishing an incentive system that will relate Federal aid to some overall measure of safety improvement. Under such a system each state would be eligible to receive from Federal funds incentive payments for reduction in deaths,

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injuries, accidents, and property damage as measured by an appropriate accident index. Care must be taken to use a standard method of collecting and reporting data that are used in calculating the index. Such a system should be considered as supplementing, not replacing, existing bases for Federal payment that now require compliance with Federal standards. Such a system would require that further attention be given to the relative effectiveness of countermeasures available to the states in reducing deaths, injuries, and property damage.

(6) Consideration should be given to the establishment of an appropriate office at the state level to monitor and perform evaluation and compliance functions so as to assure that highway-safety funds are used in a way that maximizes results.

(7) Immediate action should be taken by the states and the Federal government to initiate studies of improved means to manage and administer highway-safety programs at the state and local levels.

2. Government-Private Sector Interaction

(1) Increased coordination and cooperation among the safety institutions in the private sector should be encouraged. Joint program planning should be used more often. Major funding sources should cooperate to improve and strengthen the services of the organizations they support, as well as to encourage coordinated and/or cooperative interorganizational efforts.

(2) The Federal Government should encourage private-sector organizations to engage in innovation, research, development, and the provision of training and similar services, and should enlist the cooperation and service of private organizations in the program to attain national goals for improved highway safety.

(3) Automobile casualty insurance provides some economic incentives and penalties to encourage accident-free driving and discourage driving conducive to accidents. This important educational force should be increased in effectiveness by suitable means.

3. Highways

(1) Accelerated action on safety through work in the highway area will require financial resources. These may be provided by one or more of the following alternatives:

- Increasing highway-user taxes for highway construction and their allocation to safety programs in the highway area

- Extending the deadline for completing the Interstate System, with a commensurate extension in the life of the Federal Highway Trust Fund, which earmarks Federal user taxes for highway construction and improvement
- Assigning funds for correction of highway deficiencies in order of priorities utilizing such factors as their accident record, the opportunity and feasibility of improving that record, the volume of traffic being served, the capacity of the roadway, and the anticipated accident reduction per dollars expended.

(2) Flexibility should be allowed in the application of safety-design standards to Federal-aid systems other than the Interstate System until cost-effectiveness studies establish the merit of the uniform application of these standards.

(3) Vigorous and judicious execution of the "spot improvement" program should be continued.

(4) The implementation of the TOPICS program should be expedited. This will require the enlisting of greater support from municipal governments and the greatest practicable simplification of administrative processes.

(5) Innovation in the design of urban thoroughfares should be encouraged. Innovation should be directed toward partial access control to aid in minimizing the pedestrian fatalities and toward other features of traffic operation to improve efficiency of movement as a further payoff. Innovaion should also seek to integrate the thoroughfare into the broad process of urban rebuilding so that, operating jointly with other programs (e.g., urban renewal, model cities, mass transit), it will contribute to the enhancement of the urban environment.

(6) Research, development, testing, and evaluation on highways by concerned Federal departments and by state and local governments should be continued and intensified. For example, attention should be given to improvement of information and control systems, especially along the interstate highways.

4. Vehicles

Automobiles

(1) There should be established a continuing technical-study center on motor-vehicle safety, perhaps with the advisory assistance of the National Academy of Sciences/National Academy of Engineering, to expedite the exchange of views on and the development of new devices to improve vehicle safety.

(2) A reexamination should be made of the procedures for inspection of motor vehicles in use with the objective of increasing effectiveness and decreasing costs and more nearly achieving the goal that only vehicles in safe condition are permitted to operate.

(3) Special measures should be taken by appropriate governmental agencies to certify the efficacy of equipment and devices that affect safety in vehicles used for public transport, such as buses. There should be frequent monitoring to determine their compliance with safety standards.

(4) Evaluation should be a part of future research programs of the Federal government. Much remains to be accomplished in the development of safety features and in the evaluation of their effectiveness, such as:

- The energy-absorbing steering column
- Standardization and simplification of fittings for lap belts and shoulder harnesses
- Devices which would permit the vehicle to become operational only after the restraining device has been fixed
- Passive restraint systems that would be effective without positive human action to activate the device.

(5) Reexamination of head-restraint standards is required:

- To provide an immediate basis for redesign so as to eliminate the dangers associated with improper adjustment
- To develop guidance for proper adjustment of headsets now in use.

(6) Additional government facilities, either new or adaptions of existing laboratories, should be created to facilitate government testing of vehicles and equipment to assure compliance with standards.

(7) In order that a maximum opportunity can be created for innovation, procedures for developing future standards should incorporate:

- Detailed evidence that there is a significant problem and dissemination of appropriate information with respect to the problem that the standard seeks to ameliorate
- Research, development, operational testing, and evaluation of proposed corrective measures
- Adequate dialog among all interested parties, sheltered from antitrust prosecution when the public interest is served thereby and is adequately protected
- Reliance upon performance standards instead of detailed specification standards.

(8) Without sacrifice of program objectives on the reduction of deaths and injuries, the administration of the Tariff and Motor Vehicle Act

should be extended to include program objectives for the reduction of vehicle damage, as set forth in the Highway Safety Act.

Motorcycles

(1) To prevent further increases in motorcycle fatalities, it is imperative that Highway Safety Program Standard 3 on Motorcycle Safety be implemented as the minimal program in all states. It is especially important that the wearing of helmets be encouraged.

(2) Further research on means of increasing survivability of the motorcycle driver during crashes should be undertaken.

5. Drivers

Driver Licensing

(1) Add to license examinations emergency driving to include freeway driving, handling yaw and skidding to stop from any legal speed, and driving under adverse environmental conditions. Training in these maneuvers must be available, as well as places in which to practice.

(2) Provide realistic and enforceable requirements for licensing in regard to cases involving chronic alcohol and mental disease that may affect driving capabilities.

(3) Provide realistic and enforceable standards for licensing so that each licensed driver has to demonstrate minimum proficiency as to physical and intelligence characteristics compatible with the driving requirements for an "elementary" license.

(4) Provide more advanced levels of automobile licensing, such as "Master" and "Intermediate", as drivers with an "Elementary" license demonstrate their ability to operate a wider variety of vehicles (e.g., trailer-towing) under more diverse conditions (e.g., freeway driving).

(5) Make offenses committed in any state subject to action in any other state, including reciprocity such that offenses in one state go on the record in the resident state of the driver. This could be accomplished by an expansion of the coverage and use of the National Driver Register Service.

(6) Work toward better public, driver, police, and judicial recognition that driving during a period of suspension or revocation is a very serious offense. This violation is now widely committed. This practice erodes an important aspect of the overall program of driver control and enforcement. Punishment for such offenses must be effective.

(7) Explore greater use of probationary licenses (accompanied by restrictions) as an alternative to suspension or revocation of licenses. This would give additional options to judges and/or driver-license administrators in hardship cases.

Behavioral Sciences As Related to the Driver

(8) The information derived from studies of the behavior of the driver as a part of the total highway-safety problem should be reviewed with the aim of discerning those skills necessary for safe driving and the nature of training programs that can enhance those skills.

(9) Attention should be given to the phenomenon of delayed perception and errors of response which appear to be important factors in a high percentage of accidents. The effects of such factors as the frequency and durations of period of inattention and circumstances leading to drivers falling asleep should be studied. The results of these studies may suggest training methods that will increase the degree and continuity of perception even when distracting circumstances are present.

Contributions by Employers to the Effectiveness of Drivers

(10) The Federal government should initiate a review of present programs for operation of Federally owned and operated vehicles from the standpoint of safety, and strengthen these programs as necessary. As a part of this action, accident and safety information generated should be brought to the attention of the public.

(11) The Federal government should call on governors to take similar action and to stimulate such action by local governmental agencies.

(12) The Federal government should call for national and state leadership, and cooperation from private employers with active fleet safety programs, in order to persuade additional employers to institute effective programs. Information and techniques thus generated should be shared. The Department of Transportation and the Labor Department should review all of their regulatory programs which relate to driving as a part of employment to ensure that goals are consistent and methods are effective. In particular, the departments should encourage compliance with the pertinent recommendations and standards of the National Transportation Safety Board.

(13) DOD should be encouraged to develop programs directed toward prevention of the large number of fatalities which occur among service personnel while operating private vehicles off duty.

6. Enforcement

General

(1) Specially coded license plates should be employed in demonstration programs to determine their effectiveness in controlling driving without a valid license. Such tags should enable police to identify the person convicted, while not interfering with use of the car by other family members. It is recommended that consideration be given to impounding the car or revoking the license plates of a car driven by a person without a valid license when involved in an accident.

(2) Uniform procedures for the enforcement of traffic laws should be adopted. It is recommended that uniform enforcement manuals be developed as guides to police at state and local levels. Attainment of uniformity in regulating minimum/maximum speeds for standard classes of roads should be pursued vigorously.

Police

(3) The level, quality, and uniformity of traffic-law enforcement must be raised.

(4) There is a need for demonstration projects using devices which can automatically record vehicle and traffic interactions rather than continuing to depend on the firsthand observation of driving performance by police officers, who are needed for many other functions. Technology must be used more extensively, and legislatures and the courts must be persuaded that the detection of violations by such methods and their subsequent prosecution provides a sound basis for just and equitable law enforcement. The use of presently available electronic and photographic technology should help to resolve questions of fact. Such equipment can also serve to provide a much needed traffic observational capability in support of highway safety efforts.

Courts

(5) The President and the Attorney General should convene a meeting of the Justices of the State Supreme Courts for the purpose of discussing innovative mechanisms for improving traffic-law enforcement, with emphasis upon the responsibilities of the state Justices in obtaining the cooperation and interest of judicial officials within their jurisdictions in implementing appropriate recommendations, in some instances on a state or regional test basis.

(6) There is a need to develop the computer capability for use at local levels of government for the purpose of recording the accumulated record of offenses of drivers who ignore traffic law citations—commonly called "scofflaws"—so that traffic-law enforcement action by both the police

and the court can increase its potential deterrent effect. In this way, failure to respond to police or court traffic law enforcement could ultimately lead to denial of a renewal request for vehicle tags or a driver's license. Courts should be provided with the prior conviction record of a driver after he has been found guilty of an offense as an aid in determining the appropriate sentence. The Department of Transportation should revise Highway Safety Program Standards 7 and 10 on Traffic Courts and Traffic Records so as to require each state to develop the capability of dealing more efficiently and effectively with "scafflaws".

(7) To complement the sentencing and penalty responsibilities in traffic cases, wider use of driver-improvement schools and traffic-violator schools as adjuncts to the operations of traffic courts should be explored.

7. Alcohol, Drugs, and Medications

Alcohol

(1) Interagency cooperation and coordination between the Department of Transportation and the Department of Health, Education, and Welfare must be strengthened with respect to the role of alcohol in highway safety, with HEW having prime responsibility for the public-health aspects and DOT having responsibility for the highway-safety aspects. An agreement to this effect should be promptly concluded and implemented.

(2) Highway Safety Program Standard 8 on Alcohol in Relation to Highway Safety should be given high priority. All states should bring themselves, as a minimum, into conformance with the standard.

(3) Driving when the blood-alcohol concentration is above a certain level should be made illegal without reference to "intoxication", or being "under the influence".

(4) Present implied-consent laws require that enforcement officers must charge the individual with driving while intoxicated prior to requesting breath or chemical tests. A modification should be considered that would provide a statutory basis for pre-arrest breath tests if the officer has reasonable cause to believe a driver of having a level of blood alcohol that is in violation of the law.

(5) Coordination among various public and private groups to identify drivers with drinking problems should be increased. Data should be centralized by the state licensing agency from various public bodies (e.g., alcohol-related offenses whether or not related to driving).

(6) Limitations should be placed on the driving of individuals identified as alcoholics or as having drinking problems that might adversely

affect their ability to drive. Since the majority of alcohol-related accidents occur after dark, limited licenses permitting only daytime driving should be experimented with in an effort to protect the public and yet recognize rehabilitation needs. License suspension, revocation, or denial would remain options for chronic alcoholics and repeated offenders. Periodic review of the status of such persons should be made with a view toward reducing or increasing the restrictions as warranted.

(7) Controlled experimentation should be conducted on sentencing and its effects. Penalties basing their effectiveness on severity only should be replaced by measures that take into account the degree of the alcohol problem of the offender and that are intended to prevent recidivism, including rehabilitation treatment.

(8) Intensive research on the nature and extent of the alcohol-driving problem and a substantial number of demonstration programs to evaluate and test the effectiveness of various countermeasures should be undertaken.

(9) Steps should be taken to train more people in medical and paramedical areas important to the enforcement of laws relating to alcohol and driving and the tests appropriate thereto.

(10) The public-education program to make the public more aware of the dangers of drinking and driving should be strengthened and expanded. The program should distinguish among various groups of drivers, and should convey the research findings which indicate that a majority of alcohol-related fatalities are associated with very high levels of blood-alcohol concentrations. The program should provide clear data on the relationships among the amount of drinking, blood-alcohol level, and likely effects.

(11) It is recommended that persons convicted of alcohol-related driving offenses be referred by the court for appropriate medical evaluation. More broadly, HEW should undertake a more vigorous program to deal with the general problem of alcohol, to improve measures of rehabilitation, and to cooperate with DOT on the problem of reducing the effects of alcohol on highway safety.

Drugs and Medications

(12) DOT and HEW should develop a coordinated program in cooperation with the states and local governments and the private sector to ascertain the effects of medications and drugs on driving skills so as to increase understanding of the effects of the agents on all aspects of highway accidents and to enhance the feasibility of developing suitable countermeasures.

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(13) DOT and HEW should obtain the cooperation of the medical profession to warn drivers when the medications prescribed might impair driving ability. In addition, both proprietary and prescription drugs should have warning labels when their use might impair driving ability.

8. Pedestrians

(1) It is recommended that Highway Safety Program Standard 14 on Pedestrian Safety be implemented as the minimum essential practice in all states.

9. Emergency Medical Services

(1) Emphasis should be placed on achieving the required number, positioning, and equipping of ambulances; improving first-aid training of the ambulance crew and police; improving emergency-room capability (especially, qualified doctors and supporting staff); and improving communication in all phases of EMS operations. Police communication systems should be employed so far as possible. Further, planning and programming should be fully coordinated with the police.

(2) HEW should have primary responsibility for medical aspects of EMS, while DOT should have primary responsibility for transportation and communications and command-control aspects of highway EMS under a well coordinated joint program. In some geographical areas, the DOD may be able to contribute to these programs through reserve or national-guard units.

(3) The National Highway Safety Bureau should provide increased technical assistance and support for the states and local communities in improving highway EMS.

(4) NHSB should work toward the establishment of data bases and evaluation of highway EMS experiments and demonstrations in order that cost-effectiveness comparisons can be made and payoff targets for ongoing efforts established under the widely varying conditions of urban and rural America.

(5) Experimentation with the use of medical corpsmen, communications experts, and helicopter personnel and hardware as they return to the United States should be undertaken in an effort to test the feasibility of using them for broad emergency medical services, including saving crash victims, while enhancing the training of personnel and the maintenance of standby skills.

10. Education of the Public

(1) A program of public education must focus on clear and realistic objectives for the national effort in highway safety. The goals set forth are recommended for presentation.

(2) The public should be provided with information on the countermeasures that may help to achieve these goals in the pre-crash, the crash, and the post-crash phases of accidents. The public should be provided with data and information on steps that can be taken by the public to increase highway safety.

(3) The public should be made aware of the dollar costs and the personal restrictions that are required to implement various countermeasures.

(4) There must be an improved and expanded Federal program for bringing highway-safety information to the general public, including appropriate utilization of the regional offices of Federal agencies.

11. Data and Information

(1) Priority should be given to acquiring the data necessary to evaluate the cost and effectiveness of accident countermeasures.

(2) Uniform and accurate accident and enforcement records should be compiled in each state, reported to a central state bureau, and presented in a form compatible with a national record system at the Federal level. Standardized nomenclature and methods of classifying traffic facts and accidents should be developed, especially with respect to scales of injury and vehicle damage.

(3) Additional teams representing appropriate professional disciplines should be established in many regions of the country to collect accident data, without regard to determining criminal or civil liability, in order to establish the facts regarding highway accidents.

(4) Additional exposure data should be gathered on the use of the highway system. Sampling techniques should be developed, tested, and employed.

(5) Records should be adaptable to storage and analysis by modern methods for handling large masses of data. Modern high-capacity electronic data-processing systems should be considered for efficient handling of data, rapid retrieval of information, and multivariate analyses of data for both administrative and research purposes.

(6) While individual parts of the information system exist in a useful and efficient form (e.g., National Driver Register, Highway Research Information Service) there is a compelling need to coordinate existing

information, acquire additional required information, and make such information available to potential users in an efficient and convenient manner. There has been much discussion of the need for a "national system or systems".

12. Research, Development, Test, and Evaluation

(1) Additional support should be provided for research, development, test and evaluation of elements of the highway-safety problem and of their interactions. In particular there are far too few projects to demonstrate, test, and evaluate the efficacy of various countermeasures. Positive guidance to states should be given by a standard or guideline on the need for a research capability or a university safety center closely associated with the state program. Federal action should be taken to encourage the states to develop an adequate R & D capability and program.

(2) With respect to facilities, it is evident that a great range of Federal and contractor staffs and laboratories exist. Consideration should be given to the effective use of such existing capabilities. In research leading to standards, full use should be made of the National Bureau of Standards. In addition to using such existing capabilities, there is a need for a driver-simulation laboratory and a compliance-test facility within the Department of Transportation. Funds should be provided for DOT to plan, design, construct, and operate these facilities.

13. Manpower and Technical Assistance

(1) Action should be taken, particularly by the Federal and state governments, to stimulate rapid growth in education and training opportunities on highway safety at national, regional, state, and local levels as well as to provide an opportunity for the research community and major educational institutions to play a more effective role.

(2) The Federal government, in cooperation with state governments, should take immediate steps to assist the states in the development of needed services for state and local officials, including:

- Training efforts for local officials on what needs to be done and what can be done under the adopted programs, and short courses to update local officials on techniques
- A clearinghouse for collecting information on innovations and improvements in techniques and for alerting local officials to these developments

- An advisory service on practical technical problems (e.g., analyzing a bad-accident situation on a particular section of a highway) which local officials may not be capable of handling

(3) Well maintained and properly repaired vehicles are necessary for safe driving. The efforts of automobile companies and private and public schools and training institutions to better prepare mechanics and to increase their supply are to be commended. It is recommended that steps be taken to encourage expansion of such efforts as well as to continue and extend Federal training programs for automobile mechanics. We do not recommend Federal legislation or standards on licensing of mechanics.

14. Analytical Approaches and Management for the Future

The Federal government should provide further support for comprehensive systems analyses of the highway-safety problem in order to make possible better studies of the interrelationship between elements of the problem and the relative importance of each of the elements.

15. A Longer Range Administrative View

(1) A first step in this direction would be the presidential designation of a senior White House staff member to advise and coordinate the responsibilities that each of the Departments or offices should have, taking full account of legislation in this field. Such a senior White House staff official could ensure continued efforts to achieve greater cooperation and reinforcement of the programs of one agency by those of another.

(2) While the Task Force does not wish to identify for the states any particular form of organization, the use of the concept of the transportation department illustrates an approach taken in some states which, if extended, might provide for the more effective management which is so necessary in dealing with the highway problem.

(3) It is concluded that, while action recommended earlier in this report for the development of better management approaches to deal with the highway-safety problem should be pursued, an even broader view must eventually be taken that will encompass the transportation function, the highway transportation function, and the highway safety problem. Improved management will increase the contribution to highway safety of each of the programs previously recommended and substantially enhance the impact of the total program.

The Highway-Safety Problem—The Task Force—and Goals

INTRODUCTION AND OVERVIEW

The highway*-transport system is a classic example of a technological development that results in great benefits but also creates serious problems for society. Our physical mobility derives largely from widespread owership of motor vehicles. Vehicles have become deeply enmeshed in the total fabric of our society, important beyond the function they were designed to perform.

However, motor vehicles are associated with property damage, injury, and an appalling loss of life, among other environmental problems that they create. Nevertheless, it is difficult to mobilize national opinion and action to control and ameliorate the causes and negative consequences of highway crashes. Highway safety is a very complex segment of national behavior, representing in microcosm many of the divergent motivations of people and institutions. Therefore, extraordinary efforts will be required to improve highway safety.

Programs now in progress are directed toward various phases of highway safety and can be classified as affecting the pre-crash phase, the crash phase, or the post-crash phase. In each phase it is necessary to examine the role of the human being (driver, passenger, pedestrian, cyclist, or bystander); the vehicle (including its equipment and its cargo); and the highway environment (the road surface, roadside obstacles, weather, etc.); and to identify with respect to each of these factors the steps that can be taken to improve highway safety.

In the pre-crash phase, accident avoidance is the objective. The chances of preventing accidents are increased by having a fit driver, a fit vehicle, and a fit road. In this category, the alcohol-driver problem is of particular significance. Measures to prevent drivers with high blood-alcohol levels and intoxicated pedestrians from being on the highway would lead to a marked reduction in fatalities.

Removal, relocation, or protection of roadside obstacles would also make a significant contribution to highway safety. Improvement of roads,

*As used in this report, the term "highway" includes all roadways used by vehicles in urban, suburban, and rural areas.

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particularly those not a part of the Interstate System, has fallen far behind needs. Reconstruction of hazardous stretches of these roads, based on modern design practices, would reduce the number and severity of accidents.

In the crash phase, restraint systems and other devices in the vehicle that limit the forces or reduce their effects on the driver and occupants are already reducing fatalities but are not yet at their theoretical limit of effectiveness. Safety (lap and shoulder) belts are now being installed in all production vehicles. However, until all older models are replaced (a process requiring about 10 years), such improvements will not become universal. Nor do belt/restraining systems make their full contribution in new cars when current studies indicate that only 1 in 3[15]* are used. Continued improvements in restraint systems are expected.

Vehicle damage in the crash phase is a major economic issue today. Much remains to be done to improve driver and passenger safety and at the same time to reduce vehicle vulnerability to damage.

In the post-crash phase, prompt police and medical attention is needed. The systems of emergency medical care for accident victims available in the United States fall far short of our capability. The consequences are thousands of deaths that could be prevented.

Beyond these kinds of interactions, highway transportation and its related safety aspects could be considered in terms of even broader matters relating to other modes of transportation. However, this approach has not been pursued by the Task Force.

This report offers the views and recommendations of the Task Force on steps that should be taken to increase the effectiveness of measures to improve highway safety. These recommended programs, while offering significant promise for improvement, will fall far short of their ultimate potential unless there is a high degree of driver and public acceptance of many of the countermeasures. In the face of public apathy or, in some instances, opposition, many opportunities to reduce deaths, injuries, and property damage cannot be realized. Such is largely the case today. Safety belts are not universally used. Driving while under the influence of alcohol is countenanced. Youthful drivers are not being properly trained and supervised. In general, there is little public demand for a higher quality of traffic enforcement.

To turn the corner so as to obtain public acceptance of proposed countermeasures, leadership at all levels of government is necessary, beginning at the level of the Presidency.

The National Traffic and Motor Vehicle Safety Act of 1966 [18] and the Highway Safety Act of 1966 [19] were milestones in Federal highway-safety legislation. Much desirable action at the Federal, state, and local

*Superscript numbers refer to references listed beginning on page 56.

levels followed the enactment of these laws; but more recently there has been some slowing of initiative at all levels.

The President can lead the effort to reverse this trend. Specifically, it is recommended that he:

(1) Designate highway safety as a major national goal and budget for and allocate adequate resources to Federal programs
(2) Designate a principal White House staff member to oversee coordination of federal efforts in highway safety
(3) Coordinate and assign responsibilities relating to highway safety where overlap now exists in different departments of the Federal government
(4) Issue a presidential message on highway safety and call it to public attention via the news media of television, newspapers, and journals
(5) Provide leadership through judicious use of his office to convene selected meetings of Federal, state, and local officials in order to encourage more vigorous state and local programs
(6) Use his office to stimulate the efforts of the private sector and to encourage more effective communication between the many public and private institutions concerned with highway safety.

TASK FORCE ASSIGNMENT

In establishing the Task Force on Highway Safety ". . . to assist the Administration with ideas and recommendations for 1970 and beyond", the White House announcement of October 23, 1969, stated:

> "The Task Force will consider the effectiveness of present highway safety programs, recommend how such programs might be improved or better coordinated and advise on what actions might be taken to increase further the effectiveness of our nation's highway safety efforts."

The Task Force was requested to consider current budget realities, but not to overlook major opportunities for future advances. The Task Force was given "wide discretion in determining the matters to be considered".

In defining the scope of its inquiry, the Task Force decided that:

(1) It would not make an independent inquiry into the nature and source of the highway-safety problem in view of the limited time available, but would have to rely on the relatively inadequate data and approximations presently available

(2) It would not involve itself in technical considerations, important though these are to the ultimate implementation of any highway-safety program
(3) It would address itself to goals, policy, major programs and their administration.

In the course of its deliberation the Task Force considered the information contained in the references listed in the back of this report and consulted with and digested the written opinions of many professional and knowledgeable persons and organizations.

NATURE OF THE PROBLEM

Much has been written concerning the nature of the highway-safety problem. The selected references testify to its scope and complexity. The magnitude of the problem is indicated by the following sample of data.

In 1934, there were 16.8 fatalities per 100 million vehicle miles. By 1961, this rate had fallen to 5.16. The rate has varied within the range of 5.1 to 5.7 during the past decade, but the number of vehicle-miles driven has increased and, thus, total fatalities have increased. The number of personal injuries and the amount of economic losses have increased even more rapidly than the number of deaths and have a major impact on the economy and on our total society.

In 1968, 55,000 people were killed on U.S. roads. Of these:

- About 36,400 were drivers or occupants of passenger cars
- About 9,800 were pedestrians
- About 5,600 were occupants of trucks, truck tractors, trailers
- About 1,900 were riding motorcycles, motor scooters, or motorized bicycles
- About 800 were riding bicycles
- About 300 were occupants of public vehicles; taxis (140), commercial buses (130), or school buses (30)
- About 200 were drivers of farm tractors.

In 1968, an estimated 2 million persons suffered physical injuries, of which about 170,000 represent cases of permanent disability. In 1968, an estimated 26 million vehicles were involved in crashes with an estimated economic loss of more than 10 billion dollars, including vehicle damage (more than half the total), other property damage, time lost, health and accident costs, and other associated costs.[15]

If the current rates are maintained, there will be continuing increases in the absolute number of deaths, injuries, and economic losses. It is estimated that if fatalities continue to occur at their present rate and the

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number of vehicles and miles driven increase as projected (assuming no further improvement in highway-safety countermeasures), 73,000 people will lose their lives annually by 1975, and 87,000 by 1980.[1]

Steps to reduce fatalities, injuries, and economic losses have been progressing for many decades. However, there remains uncertainty as to the relative importance of the factors that cause accidents because basic accident data are inadequate and largely unreliable. This unfortunately precludes an immediate, broad application of the systems approach to the problem, involving precise, mathematical analysis of the relative importance of all contributing factors.

A variety of countermeasures are necessary to cope with the complexity of highway crashes. Since multiple causes are involved, many-faceted programs must be pursued. Preoccupation with one or two factors cannot lead to comprehensive solutions to the highway-safety problem. However, for the immediate future, emphasis must be given to those actions with most promise, particularly in the years immediately ahead, while the systems approach is being developed. The remaining sections of this report focus on these matters.

GOALS FOR THE NATION

Goals for the nation's highway safety program must stretch technology, demand innovation, and require increased effectiveness in many programs. However, they must also be realistic and capable of achievement.

Based on these criteria, the Task Force concluded that the national goal for the short term (about 5 years) should be:

- To prevent any further increase in the actual number of deaths and injuries resulting from highway accidents.
- To hold the growth in economic loss to a rate no greater than the rate of economic growth in the U.S.

The Task Force concluded that once the escalation in highway deaths, injuries, and losses is stopped, the longer term national goal should be:

- A progressive reduction in the number of deaths and injuries and the economic losses associated with accidents.

Administrative/Organizational Elements—Recommended Action

1. FEDERAL-STATE INTERACTION

Until the enactment of the two Federal safety laws in 1966 [18, 19], the involvement of the Federal government in the promotion of highway safety had been quite limited. These two acts recognized that, if highway safety were to be improved significantly, there was need for Federal leadership, support, and coordination of the increasingly complex, growing problems. Thus the National Traffic and the Motor Vehicle Safety Act of 1966 recognized that regulation of motor-vehicle safety, design, and appurtenances must be centrally administered by the Federal government for the whole nation. Under this act, the Federal government issues and enforces automotive safety standards and interacts directly with the automobile manufacturers.

The Highway Safety Act of 1966 required that the Federal government issue standards on elements of highway safety controlled by state and local governments, where, in the last analysis, legal responsibility for governmental operating functions rests. Under this act, the Federal government can provide leadership, research, central services, coordination, and financial assistance. This can lead to an effective interaction between Federal, state, and local governments, each attentive to its functions and responsibilities.

Many agencies of the Federal government have a stake in highway safety. The medical and behavioral problems lie within the cognizance of HEW. Programs designed to increase highway safety have been developed by the Post Office Department, the General Services Administration, the Department of Defense, and other agencies. However, the principal new thrust of government in this field has been assigned to the Department of Transportation and, in turn, to the National Highway Safety Bureau and the Federal Highway Administration. Cooperation is essential among Federal agencies, especially those that relate to state programs.

It is evident that the safety acts of 1966 brought about Federal involvement and can constitute a break-through which will lead to genuine progress in highway safety. These acts and their administration provide a basis for stimulating critically important action by state and local governments and coordination of public, private, and voluntary programs.

The first phase in the life of the National Highway Safety Bureau came to an end with the promulgation of standards for the manufacture of motor vehicles and for state and local safety programs. A little later, in February, 1969, its first director resigned. Since the close of that phase, NHSB efforts have slowed down substantially because the Bureau has been handicapped by lack of funds, by the delay in selection of a director, and by confusion and uncertainty as to its future organizational status in the Department of Transportation. The effect on the programs of the several states has been stultifying.

Recent action has been taken to appoint a new director (December, 1969), to establish the National Highway Safety Bureau as a bureau reporting directly to the Secretary of Transportation, and to assign federal responsibilities to the National Highway Safety Bureau (motor vehicle and driver standards) and to the Federal Highway Administration (highway design and traffic control standards). However, during the hiatus of nearly a year, much ground has been lost at the state level. Immediate attention must be given to actions that will reinvigorate lagging programs.

At the state and local level of government, responsibility for elements of the highway-safety program has been historically fragmented. One office has responsibility for vehicle licensing and inspection; another for driver education; another for driver licensing; another for highway safety design; another for enforcement; another for emergency medical services. Recent Federal standards have encouraged the governors to appoint representatives for highway safety. These representatives have made some progress in coordination, but more is essential if the goals of the highway-safety program are to be achieved.

The standards have encouraged many state legislatures to adopt measures that otherwise would not have been considered. However, there has been a tendency in some state and local governments to assume that compliance with initial Federal standards is an adequate goal. Since the standards tend to represent experience in a few states prior to the Federal act, compliance alone should not be expected to yield significant improvements. There is an urgent need for innovation that will make possible significant advances in highway safety.

General Observations

With respect to Federal-state cooperation, the primary effort of the Federal government should be focused on:

- Continued leadership, beginning in the White House, in the establishment of plans and goals for improved highway safety

- Development of improved and realistic standards in consultation with state and local officials; development of programs for the implementation of these standards by state and local governments; and presentation of evidence that there is a significant problem that these standards seek to ameliorate
- Provision of substantial central services such as the National Driver Register[1] to assist the state and local governments in implementing and improving their highway-safety programs
- Further support of basic and applied research, development, and test and evaluation programs, including tests on human aspects, that will provide additional insight into countermeasures and their potential effectiveness before they are widely adopted. (Much can be initiated relatively soon, without additional research, through test and evaluation programs.)

The state and local governments should focus attention on:

- Effective implementation of programs through the efficient use of their basic authority to legislate, license drivers and vehicles, inspect vehicles, enforce traffic laws, educate drivers and pedestrians, and build and maintain highways and the environment thereof
- Better coordination of interstate, state, and local highway-safety efforts
- Provision of detailed data on the effectiveness of programs
- Advice with respect to requirements for new or modified Federal or state and local programs and full participation with Federal officials in the development of standards, methods, and programs.

(1) The Task Force has given attention to ways of achieving maximum results from existing programs, thus improving the effectiveness with which additional funds may be used as they become available. The need for more adequate funding of the National Highway Safety Bureau and the safety programs of the Federal Highway Administration in the near term is evident. As a first step, limitations should be removed on the use of funds for which the National Highway Safety Bureau has been given obligational authority and which are within the President's recommended budget. Both Federal and state-local efforts designed to improve highway safety have been seriously hampered by restrictions placed on NHSB and FHWA expenditures even after authorizing procedures have been completed. As funds are spent at a level closer to the amount authorized, an assessment of accomplishments should enable a more realistic evaluation of the contributions to be expected from further increases in funding. Ultimately Federal, state, and local programs must be expanded if the recommended goals are to be achieved.

(2) As proved countermeasures are developed, some Federal funds now designated for the construction of new roads should be reallocated to the NHSB for highway-safety programs as well as to safety programs of FHWA in order to achieve better balance between efforts directed toward the greater convenience of the driver and those directed toward a reduction of fatalities, injuries, accidents, and resultant property damage.

(3) The severe limitation on the level of the NHSB staff is as important as the fiscal limitation. The present staff level at NHSB appears to be inadequate to carry out the responsibilities assigned. The staff has been too small to make full use of research on highway safety sponsored by the government. Approval to enhance staff size and capability now, and as the NHSB safety program levels increase, is essential if the highway-safety program is to receive adequate professional attention at the Federal level and if funds are to be used in a way that will maximize public benefits.

(4) Criteria for the allocation of Federal aid to the states for highway safety are in critical need of reexamination if the nation is to be best served with the funds available. There is good reason to believe that the present basis for such allocations leaves much to be desired in terms of improving the rate of return (safer highway transportation) on the investment of public funds. Lack of adequate cost-effectiveness data to help program planning and decisions on allocations of resources, and inadequate attention to objective test-and-evaluation procedures are major deficiencies. Special attention should be paid at all levels of government to:

- The increased use of objective evaluation in the operating programs
- The encouragement of new approaches, and their test and evaluation
- The encouragement of innovation through adequate flexibility in the application of standards.

(5) Study should be given to the possibility of establishing an incentive system that will relate Federal aid to some overall measure of safety improvement. Under such a system each state would be eligible to receive from Federal funds incentive payments for reduction in deaths, injuries, accidents, and property damage as measured by an appropriate accident index. Care must be taken to use a standard method of collecting and reporting data that are used in calculating the index. Such a system should be considered as supplementing, not replacing, existing bases for Federal payment that now require compliance with Federal standards. It would require that further attention be given to the relative effectiveness of countermeasures available to the states in reducing deaths, injuries, and property damage.

(6) Consideration should be given to the establishment of an appropriate office at the state level to monitor and perform evaluation and

compliance functions so as to assure that highway-safety funds are used in a way that maximizes results.

(7) Historically, the overall management at the state and local levels of the complex highway-safety program has been of limited effectiveness. With the designation, by each governor, of a representative for highway safety, some progress is being made in coordination of programs which now are the responsibility of a wide variety of bureaus and departments. However, as the safety program grows, much more responsive administration and management will be required. Immediate action should be taken by the states and the Federal government to initiate studies of improved means to manage and administer highway-safety programs at the state and local levels. (See Section 15.)

2. GOVERNMENT-PRIVATE SECTOR INTERACTION

Federal legislation requires the establishment of standards for devices or design aspects of motor vehicles intended to improve safety. As indicated in the section on vehicles (Section 4), these standards do, in fact, appear to be reducing fatalities and the severity of injuries. Having started in 1966, the interaction of the Federal government and the private sector elements engaged in production of vehicles and equipment has not yet reached maturity.

The expansion of the national highway-safety effort presents challenges of both growth and change for many organizations—including the associations of public officials, professional societies, traffic and safety associations, university safety centers, scientific societies and institutions, research organizations, and consumer organizations.

These organizations represent their constituencies in national affairs and mobilize their constituencies in support of national goals, but most important, they provide services of many types (such as information, research, training, surveys, and evaluations) that are sorely needed by state and local officials.

General Observations

In recognition of the changing government role, the private agencies should reexamine and reevaluate their programs and services to assure they are fully keyed to the times and, within resources, are making maximum contribution to the national program. Many will need additional resources if they are to fulfill their potential. Coordinated or cooperative interorganizational efforts can contribute significantly to more effective interaction with the several types of state and local agencies they serve.

Recommendations

(1) Increased coordination and cooperation among the safety institutions in the private sector should be encouraged. Cooperative efforts in specific programs have been more effective than some individual activities in which the fragmentation of program goals has led to confusion and waste. Joint program planning should be used more often. Major funding sources should cooperate to improve and strengthen the services of the organizations they support, as well as to encourage coordinated and/or cooperative interorganizational efforts.

(2) At the same time, an important strength of the private sector lies in its diversity, independence, and variety of institutions which contribute to developing effective national programs. The Federal government should encourage private-sector organizations to engage in innovation, research, development, and the provision of training and similar services, and should enlist the cooperation and service of private organizations in the program to attain national goals for improved highway safety.

(3) Automobile casualty insurance provides some economic incentives and penalties to encourage accident-free driving and discourage driving conducive to accidents. This important educational force should be increased in effectiveness by suitable means. (DOT is currently sponsoring a major study on automobile insurance that may suggest additional approaches.)

Major Elements of Highway Safety—Recommended Action

3. HIGHWAYS

The evidence is incontrovertible that highways of good design contribute to highway safety. For example, fatalities on completed interstate highways occur at a frequency (per vehicle-mile of travel) which is less than half that found on the average primary highway. (It is estimated that, in 1967, the Interstate System saved about 3,200 lives [38] and that it will effect a savings of about 8,000 lives each year when completed,[39] assuming that a similar number of vehicle-miles would otherwise have been driven on less well-designed roads.) A primary highway of modern design, although lacking the full control of access present in the Interstate System, is likely to have a fatality rate only 60 to 70 percent as high as a comparable road built to comply with the design criteria of 30 or 40 years ago. Of course, the absence of pedestrians contributes to these low accident rates.

The highway aspects of the Federal safety program are useful and productive. They include support for the new "safety design standards", the "spot improvement" program, the "TOPICS" program (Traffic Operations to Improve Capacity and Safety), as well as research, safety studies, and the publication of technical manuals. The safety-design standards were initially contemplated for the Interstate System only, but are now being applied throughout the Federally-aided system, with the result that there is a significant increase in the cost of highway construction. Evidence of successful accident reduction through the spot improvement program is beginning to accumulate. Though the TOPICS program is just now gaining momentum, its contributions seem assured because it involves the application of well-established techniques to urban areas—areas of great need as evidenced by their high personal-injury and property-damage accident rates. Nearly 32 percent of motor vehicle deaths, 58 percent of the nonfatal injuries, and 72 percent of the property damage occur in urban areas.[15]

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While about 12 percent of the fatalities in 1967 took place on highways which will comprise the Interstate System when it is completed, 57 percent are occurring on the vastly greater highway mileage comprising the Federal-Aid Primary and Secondary Systems, with the remaining 31 percent occurring on non-Federally-aided roads.[38] Included in these systems are a large number of roads with bad accident records, which were built decades ago under now outmoded design standards and which are carrying traffic loads equaling or exceeding their capacity.

Safety gained through action in the highway area almost always involves a physical change. These changes, produced by building or rebuilding the highway or its appurtenances, call for the investment of very large financial resources. The extent and rapidity with which safety is to be gained through direct action on the highway will depend to a large extent on the size of the financial commitment. Consequently, an acceleration in safety payoff through action on the highway will require either an increase in the funds available or a reallocation of funds.

General Recommendation

The Federal-aid highway program should be continued but with increased emphasis upon selected elements of the Federally-aided Primary and Secondary Systems. These elements should be chosen by consideration of such factors as their accident record, the opportunity and feasibility of improving that record, the volume of traffic being served, the capacity of the roadway, and the anticipated accident reduction per dollars expended. The highest quality of professional attention to aspects of highway safety should be fostered as an integral part of the processes of planning, design, maintenance, and operation of the nation's highway system.

Recommendations

(1) Accelerated action on safety through work in the highway area will require financial resources. These may be provided by one or more of the following alternatives:

- Increasing highway-user taxes for highway construction and their allocation to safety programs in the highway area
- Extending the deadline for completing the Interstate System, with a commensurate extension in the life of the Federal Highway Trust Fund, which earmarks Federal user taxes for highway construction and improvement

- Assigning funds for correction of highway deficiencies in order of priority according to the criteria cited in the "General Recommendation" paragraph, above, rather than universally, at this time.

(2) Flexibility should be allowed in the application of safety-design standards to Federal-aid systems other than the Interstate System until cost-effectiveness studies establish the merit of the uniform application of these standards.

(3) Vigorous and judicious execution of the "spot improvement" program should be continued.

(4) The implementation of the TOPICS program should be expedited. This will require the enlisting of greater support from municipal governments and the greatest practicable simplification of administrative processes.

(5) Innovation in the design of urban thoroughfares should be encouraged. Innovation should be directed toward partial access control to aid in minimizing the pedestrian fatalities which constitute 37 percent of traffic fatalities in urban areas,[15] and toward other features of traffic operation to improve efficiency of movement as a further payoff. Innovation should also seek to integrate the thoroughfare into the broad process of urban rebuilding so that, operating jointly with other programs (e.g., urban renewal, model cities, mass transit), it will contribute to the enhancement of the urban environment.

(6) Research, development, testing, and evaluation on highways by concerned Federal departments and by state and local governments should be continued and intensified. For example, attention should be given to improvement of information and control systems, especially along the interstate highways.

4. VEHICLES

Automobiles

The motor vehicle is a pervasive means of transportation in American society. Available in a variety of sizes, shapes, and design configurations to suit a very wide range of customers, it is the subject of concerned attention by those focusing on highway safety.

Major attention was given in past decades to improvements of vehicles to decrease hazards of operation. In the 1930's, four-wheel brakes, greater body strength, improved tires, and other features contributed to highway safety. In the 1950's, as more information became available, individual manufacturers directed attention to improved locks to eliminate driver

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or passenger ejection, to penetration-resistant windshields, to energy-absorbing steering columns, to safety belts, and to other safety devices. These programs were available for substantial utilization at the time that the National Traffic and Motor Vehicle Safety Act of 1966 introduced a requirement for safety standards. Individual companies were able to provide avenues for the development and adoption of standards, based on commercially available devices. Much attention continues to be given to design aspects that can make it easier for the driver to avoid accidents. Vehicle-recall programs and periodic inspection programs are designed to control hazardous defects or conditions.

In the process of rapid development of safety devices, the dialog between government and industry has been insufficient. An adversarial atmosphere has tended to prevail in the discussions of government objectives and industrial developments. However, the degree of compliance has been significant. The goal should be a creative and constructive government-industry relationship which can increase the contributions from each while still protecting the public interest.

The cost of vehicle improvements is borne in part by the purchasers of automobiles and in part by the taxpayer through the support of NHSB. Each $10 worth of safety additions to a vehicle will cost $100 million in a 10-million-car year. Such costs could be net additions to the price of the automobile, or could be traded off against other vehicle costs, or for that matter against other highway safety costs. Because vehicle safety improvements are paid for by the consumer as a "hidden" cost, care should be taken to assure that the benefits are commensurate with the costs.

Devices added in the last few years now reduce the likelihood of death and the severity of injury at moderate impacts. Devices soon to be in production can be expected to provide substantial reduction of front-to-rear accident fatalities in cars with these devices at impact speeds up to 40 mph. Reliable data on the number of people killed under such circumstances do not exist but are roughly estimated to be 10 to 20 percent of all vehicle occupants killed. A very substantial effort will be necessary to reduce the probability of fatal injuries in front-to-rear crashes at higher speeds. Further attention should be given to rapid introduction in all vehicles of the best safety-design details of the best vehicles and to rapid development of systems necessary to achieve better protection for the driver and passengers.

By 1975 to 1980 much that is easily achievable in vehicle improvements may have been achieved in some vehicles. Continued progress can be expected because motor-vehicle producers have the necessary technical and management capability, because increasing national attention has focused on highway-safety problems, and because mandatory standards have been and will continue to be issued.

In the marketplace economy of the United States, it could be considered that safety devices might be developed as a basis for seeking a competitive sales advantage. However, safety devices and the attendant higher costs have not proved to be an attractive route to competitive advantage. In some instances, competitive pressures have contributed to the safety problem, as in the case of high performance cars of light weight. National standards are essential to avoid the competitive disadvantage associated with higher prices and to assure the public of comparable safety equipment among all of the new products available.

In accomplishing the goal of reducing deaths and injuries, the importance of minimizing vehicle damageability consistent with driver and occupant safety should not be overlooked. Even a small reduction in the rapidly growing annual economic loss of over $10 billion as a result of highway accidents would involve a considerable saving. It should be possible to increase gains in human protection and at the same time reduce the vehicle's damageability.

General Observation

All appropriate action should be taken to increase the effectiveness of the interaction among government, industry, and the safety community to utilize to the fullest the resources of the public and private sectors in the development and use of safety devices.

Recommendations

(1) There should be established a continuing technical-study center on motor-vehicle safety, perhaps with the advisory assistance of the National Academy of Sciences/National Academy of Engineering, to expedite the exchange of views on and the development of new devices to improve vehicle safety.

(2) A reexamination should be made of the procedures for inspection of motor vehicles in use with the objective of increasing effectiveness and decreasing costs in more nearly achieving the goal that only vehicles in safe condition are permitted to operate.

(3) Special measures should be taken by appropriate governmental agencies to certify the efficacy of equipment and devices that affect safety in vehicles used for public transport, such as buses. There should be frequent monitoring to determine their compliance with safety standards.

(4) Evaluation should be a part of future research programs of the Federal government. Much remains to be accomplished in the development of safety features and in the evaluation of their effectiveness, such as:

- The energy-absorbing steering column
- Standardization and simplification of fittings for lap belts and shoulder harnesses
- Devices which would permit the vehicle to become operational only after the restraining device has been affixed
- Passive restraint systems that would be effective without positive human action to activate the device.

(5) Reexamination of head-restraint standards is required:

- To provide an immediate basis for redesign so as to eliminate the dangers associated with improper adjustment
- To develop guidance for proper adjustment of headrests now in use.

(6) Additional government facilities, either new or adaptations of existing laboratories, should be created to facilitate government testing of vehicles and equipment to assure compliance with standards.

(7) In order that a maximum opportunity can be created for innovation, procedures for developing future standards should incorporate:

- Detailed evidence that there is a significant problem and dissemination of appropriate information with respect to the problem that the standard seeks to ameliorate
- Research, development, operational testing, and evaluation of proposed corrective measures (or such of these as may be necessary to make an adequate determination)
- Adequate dialog among all interested parties, sheltered from antitrust prosecution when the public interest is served thereby and is adequately protected
- Reliance upon performance standards instead of detailed specification standards.

(8) Without sacrifice of program objectives on the reduction of deaths and injuries, the administration of the Traffic and Motor Vehicle Act should be extended to include program objectives for the reduction of vehicle damage, as set forth in the Highway Safety Act.

Motorcycles

The motorcycle has come to be recognized as the most dangerous type of motor vehicle on the highway. The motorcycle death rate in 1968 was reported to be over 20 per 100 million miles compared to the overall motor vehicle rate of 5.5 per 100 million miles.[15] The victims of these accidents are predominantly young adults.

Between 1960 and 1966, the number of motorcycle, motor bike, and motor scooter deaths per year increased from 731 to 2,043, paralleling the percentage of increase in the number of vehicles of this type in use.[15] However, slight reductions in the fatalities occurred in 1967 and 1968, perhaps reflecting the initiation of special licensing procedures for motorcycle operators in some states as well as legislation making the wearing of helmets mandatory. The constitutionality of the latter standard has been challenged. In Michigan, motorcycle deaths dropped appreciably in the year following the passage of the helmet law but increased sharply after the law was declared unconstitutional. However, in Vermont, the courts have held that mandatory use of helmets is constitutional.

Recommendations

(1) If past rates continue, it is expected that the number of motorcycles will increase from 2.1 million to about 5 million by 1978.[15] To prevent further increases in motorcycle fatalities, it is imperative that Highway Safety Program Standard 3 on Motorcycle Safety be implemented as the minimal program in all states. It is especially important that the wearing of helmets be encouraged (Standard 31B).

(2) Further research on means of increasing survivability of the motorcycle driver during crashes should be undertaken.

5. DRIVERS

Of all of the elements of the highway-safety problem, the driver is, of course, the most complex. He is the element most difficult to change. Programs directed toward driver improvement, though based on considerable research, have been fragmented. Their effectiveness to date has been limited.

As the control element in the system, the driver has a responsibility for perceiving potential hazards and taking evasive action. The ability to avoid accidents depends on a number of complex psychological and psychophysiological processes: the individual must maintain an attitude of constant alertness to the external world; an ability to evaluate possible risk situations, together with the capacity to act quickly and intelligently to avoid them; and, finally, the motivation to avoid such situations. Anything that interferes with any of these processes, even temporarily, will increase the individual's accident susceptibility. Thus, such physiological influences as fatigue, illness, alcohol, and drugs may impair a person's

efficiency and consequently increase the likelihood of his having an accident. The effects of alcohol have been somewhat more adequately studied than other effects. These effects are so germane to improved highway safety that Section 7 of this report is devoted to alcohol.

Accident data by age of drivers clearly demonstrate that young drivers are a significant part of the highway-safety problem. Drivers under the age of 24 account for 34 percent of all deaths, while accounting for only 21 percent of all drivers. Motor-vehicle death rates (per 100,000 population) are 51.6 for persons 15 to 24 years old compared with 28.8 for all ages. Motor vehicles account for 45 percent of all deaths from all causes for males 15–24. Males have significantly higher accident rates than females and this combined with the age data makes the younger male driver a major target of safer driving efforts. ([15])

As a managerial element, the driver is responsible for planning a trip and executing the plan. As a member of society, the driver is influenced by attitudes toward motor vehicles and their social implications. His view of traffic enforcement is conditioned by the general behavior of his peers in this regard.

One of the ways to improve the actions of the driver is through an increase in compliance with traffic laws and regulations. The need for such improvement becomes increasingly apparent as evidence mounts that drivers are operating at speeds that are at the upper limit (and sometimes exceed) of their capability and those of the vehicle and the highway and its environment. Experience indicates that a significant increase in good-quality traffic-law enforcement increases driver compliance. Public education to increase compliance has been insufficient, in the past, to achieve this objective. (See Section 6 on enforcement.)

Definition of the driving task, including analysis of emergency procedures, is an essential first step in designing improved methods of skill acquisition, handling of skill impairments, and improvement of skill application.

New approaches to licensing and education are necessary. As an example, it is no longer adequate to issue a single type of license for operation of all private cars under all conditions. Limited licenses (e.g., for daylight driving only; for operation only of vehicles with automatic transmissions; for nonfreeway driving only) may be desirable. With more driver education and after successful testing, a more comprehensive license could be issued. The aggregate effect of present driver education and licensing is not fully understood.

Notwithstanding the difficulties of modifying the behavior of the driver, additional steps must be taken to realize more fully the potential of licensing, education, and enforcement. It is the opinion of the Task Force that

the following programs offer the most immediate promise for beneficial action while longer term efforts are being directed toward greater understanding of relevant human factors and corresponding countermeasures.

Driver Licensing

Action should be taken to initiate demonstrations and testing of programs which have potential for increasing the effectiveness of driver licensing systems.

Recommendations

(1) Add to license examinations emergency driving to include freeway driving, handling yaw and skidding to stop from any legal speed, and driving under adverse environmental conditions. (This corresponds to part of Standard 5, III A.3.) Training in these maneuvers must be available, as well as places in which to practice.

(2) Provide realistic and enforceable requirements for licensing in regard to cases involving chronic alcohol (see Section 7) and mental disease that may affect driving capabilities.

(3) Provide realistic and enforceable standards for licensing so that each licensed driver has to demonstrate minimum proficiency as to physical and intelligence characteristics compatible with the driving requirements for an "elementary" license.

(4) Provide more advanced levels of automobile licensing, such as "Master" and "Intermediate", as drivers with an "Elementary" license demonstrate their ability to operate a wider variety of vehicles (e.g., trailer-towing) under more diverse conditions (e.g., freeway driving).

(5) Make offenses committed in any state subject to action in any other state, including reciprocity such that offenses in one state go on the record in the resident state of the driver. This could be accomplished by an expansion of the coverage and use of the National Driver Register Service.

(6) Work toward better public, driver, police, and judicial recognition that driving during a period of suspension or revocation is a very serious offense. This violation is now widely committed. This practice erodes an important aspect of the overall program of driver control and enforcement. Punishment for such offenses must be effective. (This subject is also treated in Section 6, Enforcement.)

(7) Explore greater use of probationary licenses (accompanied by restrictions) as an alternative to suspension or revocation of licenses. This would give additional options to judges and/or driver-license administrators in hardship cases.

Behavioral Science As Related to the Driver

Additional and more carefully controlled and documented studies are needed relating to human behavior in the operation of an automobile in actual traffic settings.

Human-factor research has contributed to improved highway safety in various ways. These include the establishment of visibility and highway-lighting standard, improved effectiveness in highway signing, better vehicle-control design, and redesign of the automobile's interior to reduce the severity of accident injuries.

Knowledge of the human-behavior aspect of driving is fragmentary and far from complete, but such knowledge is mandatory if adequate account is to be taken of human factors in the development of measures to alleviate highway-safety problems. Recognizing the long-term potential, the Task Force recommends a substantial sharpening of the focus on human factors with the expectation that this will begin to produce more useful findings.

Recommendations

(8) The information derived from studies of the behavior of the driver as a part of the total highway-safety problem should be reviewed with the aim of discerning those skills necessary for safe driving and the nature of training programs that can enhance those skills.

(9) Attention should be given to the phenomenon of delayed perception and errors of response which appear to be important factors in a high percentage of accidents. The effects of such factors as the frequency and duration of periods of inattention and circumstances leading to drivers falling asleep should be studied. The results of these studies may suggest training methods that will increase the degree and continuity of perception even when distracting circumstances are present.

Contributions by Employers to the Effectiveness of Drivers

Since a significant number of employers (including several branches of the Federal government) maintain large fleet operations (which under

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certain circumstances may account for up to 20 percent of all vehicles in the traffic stream) these employers and their programs become potentially important sources of information and action. There are potential benefits to highway safety that might be gained by utilizing this source.

Recommendations

(10) The Federal government should initiate a review of present programs for operation of Federally owned and operated vehicles from the standpoint of safety, and strengthen these programs as necessary. As a part of this action, accident and safety information generated should be brought to the attention of the public.

(11) The Federal government should call on governors to take similar action and to stimulate such action by local governmental agencies.

(12) The Federal government should call for national and state leadership, and cooperation from private employers with active fleet safety programs, in order to persuade additional employers to institute effective programs. Information and techniques thus generated should be shared. The Department of Transportation and the Labor Department should review all of their regulatory programs which relate to driving as a part of employment to ensure that goals are consistent and methods are effective. In particular, the departments should encourage compliance with the pertinent recommendations and standards of the National Transportation Safety Board.

(13) DOD should be encouraged to develop programs directed toward prevention of the large number of fatalities which occur among service personnel while operating private vehicles off duty.

6. ENFORCEMENT

There is general understanding of the need for enforcement of traffic laws as essential to the efficient and safe movement of vehicles. Nonetheless, there is much evidence that the public, at best, does little as individuals to reflect this understanding and, at worst, does much to render it ineffective.

The public appears to regard most traffic regulations as of such little value that they can be violated at will unless there is an enforcement officer present.

When focused on locations and periods of high-accident incidence and those driver actions which appear to cause accidents, soundly administered enforcement has repeatedly been demonstrated as effective

in influencing driver performance. While clearly restrictive, and effective only as long as application of enforcement processes is continued, it is the one proved technique for affecting driver performance substantially. It is, therefore, critically important to the success of the highway-safety program. This importance is enhanced insofar as the enforcement agency conscientiously accepts its responsibility for enforcement of driver-license regulations, particularly suspensions and revocations. In the absence of adequate enforcement, corrective programs dependent on driver licensing are largely sterile.

The effectiveness of police enforcement is closely related to court disposition of the cases presented. Thus, the nation's judicial officials dealing with traffic offenses are a crucial ingredient in the success of the overall highway safety program in the United States. An indifferent, or apathetic, attitude on the part of judicial officers toward the seriousness of traffic law violations can undermine the effectiveness of safety activities. After the jury or judge has found an accused person to be guilty as charged, the judge should impose a penalty that is commensurate with the seriousness of the offense, coupled with a consideration of the driving experience, background, and attitude of the driver himself. More training programs are needed to develop this awareness in judicial officers.

Speed limits, laws, and their enforcement constitute major areas of the traffic law enforcement problem. According to figures from reporting traffic authorities, more than three out of ten of the fatal accidents in 1968 involved vehicles that were being driven faster than the speed limits or too fast for prevailing conditions. In rural areas, driving too fast was a reported factor in nearly one-third of the fatal accidents, while in urban areas, it was a reported factor in over one-fourth of such accidents.[15] Countermeasures to this speed-accident relationship relate to all elements of the highway and therefore have been discussed under the other sections of this report as well as under this section.

At this time, when more is expected from state and local governments with respect to highway safety, there has been a substantial reduction of police attention to traffic supervision. The police have been expected to respond to the escalating crime rate and to demands placed on them for riot control. At the same time, the courts have been hard pressed to deal with the large number of traffic violators. Most of the latter have been shunted into administrative bureaus or into the hands of assistant judges or referees. The administrators of these offices generally have lesser qualifications than judges but they attempt to render just decisions on hundreds of cases per day without adequate time or effective court mechanisms. Therefore, action to improve enforcement procedures must recognize needs with respect to regulations, the police, and the courts.

Recommendations

General

(1) Enforcement of the suspended or revoked driver license is virtually nonexistent for all practical purposes because of difficulties of identification. Specially coded license plates should be employed in demonstration programs to determine their effectiveness in controlling driving without a valid license. Such tags should enable police to identify the person convicted, while not interfering with use of the car by other family members. It is recommended that consideration be given to impounding the car or revoking the license plates of a car driven by a person without a valid license when involved in an accident.

(2) Uniform procedures for the enforcement of traffic laws should be adopted. The motoring and pedestrian public becomes irritated with, and nonsupportive of, traffic-law enforcement that lacks uniformity in procedures, tolerances, and emphasis. It is recommended that uniform enforcement manuals be developed as guides to police at state and local levels. Attainment of uniformity in regulating minimum/maximum speeds for standard classes of roads should be pursued vigorously. Variance now existing between jurisdictions for similar roads and environments tends to discredit established speed limits.

Police

(3) The level, quality, and uniformity of traffic-law enforcement must be raised.

(4) There is a need for demonstration projects using devices which can automatically record vehicle and traffic interactions rather than continuing to depend on the first-hand observation of driving performance by police officers, who are needed for many other functions. Technology must be used more extensively, and legislatures and the courts must be persuaded that the detection of violations by such methods and their subsequent prosecution provides a sound basis for just and equitable law enforcement. The use of presently available electronic and photographic technology should help to resolve questions of fact. Such equipment can also serve to provide a much needed traffic observational capability in support of highway safety efforts.

Courts

(5) The President and the Attorney General should convene a meeting of the Justices of the State Supreme Courts for the purpose of dis-

cussing innovative mechanisms for improving traffic-law enforcement, with emphasis upon the responsibilities of the state Justices in obtaining the cooperation and interest of judicial officials within their jurisdictions in implementing appropriate recommendations, in some instances on a state or regional test basis.

(6) There is a need to develop computer capability for use at local levels of government for the purpose of recording the accumulated record of offenses of drivers who ignore traffic law citations—commonly called "scofflaws"—so that traffic-law enforcement action by both the police and the court can increase its potential deterrent effect. In this way, failure to respond to police or court traffic-law enforcement could ultimately lead to denial of a renewal request for vehicle tags or a driver's license. Courts should be provided with the prior conviction record of a driver after he has been found guilty of an offense as an aid in determining the appropriate sentence. The Department of Transportation should revise Highway Safety Program Standards 7 and 10 on Traffic Courts and Traffic Records so as to require each state to develop the capability of dealing more efficiently and effectively with "scofflaws".

(7) To complement the sentencing and penalty responsibilities in traffic cases, wider use of driver-improvement schools and traffic-violator schools as adjuncts to the operations of traffic courts should be explored.

7. ALCOHOL, DRUGS, AND MEDICATIONS

Alcohol

A very important problem in highway safety concerns the effects of alcohol on driving. Research has demonstrated that as the alcohol content of the blood increases, the physical and mental response capabilities of the individual decrease. This is an especially critical matter in highway traffic, where appropriate physical and mental responses are vital.

Nearly one-half of drivers involved in fatal accidents have been found to have blood-alcohol levels of 0.10 percent* or more. In addition, it is estimated that about one-third of the pedestrians killed each year have been drinking heavily. Thus, the driver and the pedestrian under the influence of alcohol are very significant elements in the highway-safety problem.

All states have laws against driving while under the influence of alcohol. However, the probability of the drinking driver being apprehended

*This level of alcohol can be reached in a driver weighing 170 pounds who has consumed about four 1½-ounce drinks of 80-proof liquor in 1 hour on an empty stomach.

is very low unless he is involved in an accident or is detected in a violation. Present "implied consent" statutes in conformance with Highway Safety Program Standard 8 suffer in effectiveness from the fact that a police officer must make an arrest for driving while under the influence of alcohol before he may seek to confirm the charge through a test. Furthermore, successful prosecution on a charge of driving while under the influence of alcohol is difficult since juries—and many judges—tend to be lenient and sympathetic to the persons so charged.

Some studies have shown that a substantial majority of drivers who are involved in fatal accidents while under the influence of alcohol are alcoholics or have serious drinking problems. A smaller fraction constitutes drinkers who have overindulged but do not necessarily have a serious drinking problem. It, therefore, appears that priority attention should be given to the driver with serious drinking problems. At the same time, the problem of the social drinker who has overindulged must not be ignored.

Recommendations

(1) Interagency cooperation and coordination between the Department of Transportation and the Department of Health, Education, and Welfare must be strengthened with respect to the role of alcohol in highway safety, with HEW having prime responsibility for the public-health aspects and DOT having responsibility for the highway-safety aspects. An agreement to this effect should be promptly concluded and implemented.

(2) Highway Safety Program Standard 8 on Alcohol in Relation to Highway Safety should be given high priority. All states should bring themselves, as a minimum, into conformance with the standard.

(3) Driving when the blood-alcohol concentration is above a certain level should be made illegal without reference to "intoxication", or being "under the influence" (similar to Standard 8 I B(2)).

(4) Present implied-consent laws require that enforcement officers must charge the individual with driving while intoxicated prior to requesting breath or chemical tests. A modification should be considered that would provide a statutory basis for pre-arrest breath tests if the officer has reasonable cause to believe a driver of having a level of blood alcohol that is in violation of the law.

(5) Coordination among various public and private groups to identify drivers with drinking problems should be increased. Data should be centralized by the state licensing agency from various public bodies (e.g., alcohol-related offenses whether or not related to driving).

(6) Limitations should be placed on the driving of individuals identified as alcoholics or as having drinking problems that might adversely

affect their ability to drive. Since the majority of alcohol-related accidents occur after dark, limited licenses permiting only daytime driving should be experimented with in an effort to protect the public and yet recognize rehabilitation needs. License suspension, revocation, or denial would remain options for chronic alcoholics and repeated offenders. Periodic review of the status of such persons should be made with a view toward reducing or increasing the restrictions as warranted.

(7) The use of special, coded registration, as discussed under Section 6, Enforcement, would be especially valuable in connection with licenses suspended or revoked for alcohol-driving convictions.

(8) Controlled experimentation should be conducted on sentencing and its effects. Penalties basing their effectiveness on severity only should be replaced by measures that take into account the degree of the alcohol problem of the offender and that are intended to prevent recidivism, including rehabilitation treatment.

(9) Intensive research on the nature and extent of the alcohol-driving problem and a substantial number of demonstration programs to evaluate and test the effectiveness of various countermeasures should be undertaken.

(10) Steps should be taken to train more people in medical and paramedical areas important to the enforcement of laws relating to alcohol and driving and the tests appropriate thereto.

(11) The public-education program to make the public more aware of the dangers of drinking and driving should be strengthened and expanded. The program should distinguish among various groups of drivers, and should convey the research findings which indicate that a majority of alcohol-related fatalities are associated with very high levels of blood-alcohol concentrations. The program should provide clear data on the relationships among the amount of drinking, blood-alcohol level, and likely effects.

(12) Although the Task Force is solely concerned with highway safety, it is evident that the problem of alcohol and driving is only a part of a broader alcohol problem. It is recommended that persons convicted of alcohol-related driving offenses be referred by the court for appropriate medical evaluation. More broadly, HEW should undertake a more vigorous program to deal with the general problem of alcohol, to improve measures of rehabilitation, and to cooperate with DOT on the problem of reducing the effects of alcohol on highway safety.

Drugs and Medications

The use of medications and drugs that may affect driving skills is increasing rapidly. The effects of these factors on highway safety have not

yet been clearly shown. However, there is good reason to believe that problems associated with stimulants, depressants, narcotics, tranquilizers, and other types of drugs are likely to increase.

Recommendations

(13) DOT and HEW should develop a coordinated program in cooperation with the states and local governments and the private sector to ascertain the effects of medications and drugs on driving skills so as to increase understanding of the effects of the agents on all aspects of highway accidents and to enhance the feasibility of developing suitable countermeasures.

(14) Also, these agencies should obtain the cooperation of the medical profession to warn drivers when the medications prescribed might impair driving ability. In addition, both proprietary and prescription drugs should have warning labels when their use might impair driving ability.

8. PEDESTRIANS

The highway-safety problem includes categories of road users other than the drivers or occupants of vehicles. Chief among these are pedestrians. While the annual number of pedestrian fatalities is now appreciably lower than 30 to 40 years ago, it has been increasing slightly in recent years. Approximately 18 percent (about 9,800) of the total motor-vehicle fatalities in 1968 were pedestrians.[15]

Of the total of highway-accident fatalities involving children up to age 14 and people over age 65, pedestrian fatalities comprise a much higher fraction than the percentage incurred by the intermediate-age segments of the population. Furthermore, more than half of the pedestrian fatalities occur in these two age groups—the young and the old.[15] Among the older group, it appears that the fatalities are predominantly among males who, frequently, have been drinking heavily.

Recommendation

(1) It is recommended that Highway Safety Program Standard 14 on Pedestrian Safety be implemented as the minimum essential practice in all states.

9. EMERGENCY MEDICAL SERVICES

There is a well-documented need to improve emergency medical services (EMS) on a nationwide basis. Highway EMS, while only a part of this need, has received some attention from the Federal government and the states. The National Highway Safety Bureau has made a beginning on EMS deficiencies by: the issuance of the Highway Safety Program Standard 11 on EMS, in June, 1967; the issuance of the Highway Safety Program Standard Manual, in January of 1969; Section 402 grants to states under the EMS Standard totalling approximately $8 million; Section 403 R&D support amounting to about $850 thousand; and demonstration projects totalling about $6 million.

At present there is a lack of firm data on the extent of the EMS problem. This deficiency makes it difficult to establish a definitive course of action. Data collection provided for under Section 402 and 403 projects should correct this deficiency. Some current estimates indicate that as many as 20,000 lives might be saved annually with better attention at the scene of the accident and better transportation of injured to more adequate medical facilities. Another estimate is that 25 percent of persons permanently disabled in highway crashes would not have been crippled had adequate medical attention and transportation been available following the accident.[13]

Recommendations

(1) Emphasis should be placed on achieving the required number, positioning, and equipping of ambulances; improving first-aid training of the ambulance crew and police; improving emergency-room capability (especially, qualified doctors and supporting staff); and improving communication in all phases of EMS operations. Police-communication systems should be employed so far as possible. Further, planning and programming should be fully coordinated with the police who are usually the first to be notified, first at the scene, and responsible for protecting the accident scene and initiating further EMS action.

(2) HEW should have primary responsibility for medical aspects of EMS, while DOT should have primary responsibility for transportation and communications and command-control aspects of highway EMS under a well coordinated joint program. In some geographical areas, the DOD may be able to contribute to these programs through reserve or national-guard units.

(3) The National Highway Safety Bureau should provide increased technical assistance and support for the states and local communities in improving highway EMS.

(4) NHSB should work toward the establishment of data bases and evaluation of highway EMS experiments and demonstrations in order that cost-effectiveness comparisons can be made and payoff targets for ongoing efforts established under the widely varying conditions of urban and rural America.

(5) Experimentation with the use of medical corpsmen, communications experts, and helicopter personnel and hardware as they return to the United States should be undertaken in an effort to test the feasibility of using them for broad emergency medical services, including saving crash victims, while enhancing the training of personnel and the maintenance of standby skills.

10. EDUCATION OF THE PUBLIC

Public commitment is necessary in order to pass laws embodying countermeasures, in order to enforce those laws, and in order to support other appropriate actions. If a society is not concerned about a problem, or lacks information about it, little support will be generated for action programs. In many ways this is the situation that exists in this country with respect to highway safety. Any public-education campaign which is to have an important influence on behavior must incorporate channels of personal involvement (membership groups of all types) as well as utilize mass media, particularly television. Institutions in the private sector have and will continue to have a vital role with respect to the education of the public regarding highway safety.

Recommendations

(1) A program of public education must focus on clear and realistic objectives for the national effort in highway safety. The goals set forth on page 2 are recommended for presentation.

(2) The public should be provided with information on the countermeasures that may help to achieve these goals in the pre-crash, the crash, and the post-crash phases of accidents. The public should be provided with data and information on steps that can be taken by the public to increase highway safety (e.g., support for official programs, development of improved driving skills, the universal use of safety equipment, the reduction of the extent of driving while under the influence of alcohol, etc.).

(3) The public should be made aware of the dollar costs and the personal restrictions that are required to implement various countermeasures.

(4) There must be an improved and expanded Federal program for bringing highway-safety information to the general public, including appropriate utilization of the regional offices of Federal agencies (e.g., the Departments of Agriculture, Commerce, and Labor).

Essential Supporting Services—Recommended Actions

The preceding recommendations have focused on the major elements of the highway safety problem. The following recommendations relate to supporting services necessary to carry out the recommended programs. For some of the following areas of discussion, specific recommendations already have been set forth as they relate to the driver, the vehicle, etc.

11. DATA AND INFORMATION

As pointed out earlier, an adequate data base is essential to a better understanding of the highway-safety problem. Data and information on the causes and severity of accidents are necessary for the development and evaluation of countermeasures. Comprehensive information services are necessary to assure adequate use at the Federal, state, and local level of the findings derived from research, demonstration projects, and operational experience.

At the present time the only reasonably accurate measure of the magnitude of the traffic-accident problem is the number of persons killed each year. Otherwise, the methods for recording and reporting accidents generally have been inadequate to establish how many accidents of what types occur, and to whom, how, when, and where they take place. Information also is needed on the nature of injury and the extent of damage that results from each type of accident. It is obvious that highway-safety programs cannot be designed effectively unless more specific and reliable information is available on the magnitude and nature of the highway-accident problem. Without comprehensive records, changes and trends cannot be detected, and the effects of countermeasures cannot be evaluated. Data also are needed on a more general basis as to who uses the highway system, the miles driven, what vehicles are used (e.g., make, model, weight, horsepower), as well as when, where, and for what purposes. Such exposure data could then be analyzed in relation to accident data.

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An adequate information system must utilize modern information technology. It must also recognize the special characteristics of the sources of information and the users.

These data are now found in police records at all levels, in the files of insurance companies, in reports collected by automobile manufacturers and in studies of special groups and teams established to investigate accidents. These assorted sources are not related to a central information and data system. These data and the new data that may be derived from additional studies may have major shortcomings, but they need to be brought into focus so that they can be subjected to continuing analysis and review.

Another part of the problem relates to information on research, demonstration programs, and operational experience. Reports presenting findings of these kinds of activities need to be collected and subjected to continuing review and analysis. From data centers responsible for analyzing these reports should flow a series of newsletters, state-of-the-art reports, and other advisory services.

The user audience is extensive and varied. Therefore, data from accident investigations and reports based on research, demonstration, and operational programs must be put in forms that can be used easily by the difficult audiences—ranging from university investigators, to automobile designers, police and judicial officers engaged in enforcement, and to state highway officials.

An effective information and data system can be highly centralized or be designed as a network utilizing existing services which can be supplemented as necessary. The latter approach has many advantages in a field as complex as highway safety. The several centers can be assigned responsibilities for making thorough analyses of reports and for vigorous dissemination of their interpretive findings.

Efforts must be made to utilize to the fullest all existing information. Widely accepted beliefs should also be subjected to continuous challenge as new data or interpretations are made in order that as much rigor as feasible be introduced into the field.

Recommendations

(1) Priority should be given to acquiring the data necessary to evaluate the cost and effectiveness of accident countermeasures.

(2) Uniform and accurate accident and enforcement records should be compiled in each state, reported to a central state bureau, and presented in a form compatible with a national record system at the Federal level. Standardized nomenclature and methods of classifying traffic facts

and accidents should be developed, especially with respect to scales of injury and vehicle damage (corresponds, in part, to Standard 10 IV).

(3) Additional teams representing appropriate professional disciplines should be established in many regions of the country to collect accident data, without regard to determining criminal or civil liability, in order to establish the facts regarding highway accidents.

(4) Additional exposure data should be gathered on the use of the highway system. Sampling techniques should be developed, tested, and employed.

(5) Records should be adaptable to storage and analysis by modern methods for handling large masses of data. Modern high-capacity electronic data-processing systems should be considered for efficient handling of data, rapid retrieval of information, and multivariate analyses of data for both administrative and research purposes.

(6) While individual parts of the information system exist in a useful and efficient form (e.g., National Driver Register, Highway Research Information Service) there is a compelling need to coordinate existing information, acquire additional required information, and make such information available to potential users in an efficient and convenient manner. There has been much discussion of the need for a "national system or systems". One approach which has much to commend it is a concept of two systems. These two systems must be compatible. Each would have a central management, a group of cooperating centers, and a highly dispersed set of input and output terminals. Ultimately the systems might operate more effectively under a single management. Following is a brief description of each system:

- A National System for Basic Data on Accidents. This would require a national, uniform and mandatory plan for collecting basic data on the number and types of accidents, drivers, vehicles, and highways. It also would deal with their interaction with major safety standards. The system would include a data-processing center with dissemination through remote terminals.
- A National System for Research and Demonstration Information and Data. This would require a national plan for collecting reports, documents, and data on highway safety research and demonstration programs and related information. The system would include a center of activity to assure continuing awareness of sources, users, and developing information technology; a management concept that provides a basis for cooperation between centers; an appropriate set of technical personnel to evaluate and interpret findings and to prepare advisory reports; and an effective dissemination system.

12. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

Many elements of the highway-transportation system have benefited from extensive research and development. The automobile is heavily dependent on materials, processes, and devices that have been developed in R & D laboratories. The roadway and related design procedures have been heavily influenced by laboratory and field investigations. Inevitably, some of these factors have influenced highway safety. Nevertheless, it is quite clear that much yet needs to be done in research to contribute new ideas that can reduce accidents, deaths, injuries, and property damage. Much that has been done has not been highly effective. The objectives of research should be clearly defined.

Recommendations

(1) With deaths, injuries, and property damages from highway accidents increasing, additional support should be provided for research, development, test, and evaluation of elements of the highway-safety problem and of their interactions. In particular there are far too few projects to demonstrate, test, and evaluate the efficacy of various countermeasures. Positive guidance to states should be given by a standard or guidelines on the need for a research capability or a university safety center closely associated with the state program. Federal action should be taken to encourage the states to develop an adequate R & D capability and program.

(2) With respect to facilities, it is evident that a great range of Federal and contractor staffs and laboratories exist. Consideration should be given to the effective use of such existing capabilities. In research leading to standards, full use should be made of the National Bureau of Standards. In addition to using such existing capabilities, there is a need for a driver-simulation laboratory and a compliance-test facility within the Department of Transportation. Funds should be provided for DOT to plan, design, construct, and operate these facilities.

13. MANPOWER AND TECHNICAL ASSISTANCE

If the states are to meet the manpower requirements for the implementation of the national highway safety program, a substantial expansion of educational and training facilities is needed throughout the country. The field must be made sufficiently attractive to involve competent research groups and university and other educational facilities.

Manpower categories for which education or training is needed are: professional and technical personnel, driver-education teachers and supervisors, traffic engineers, automotive-safety engineers, highway-safety management personnel, traffic-law enforcement executives and supervisors, data processors, motor-vehicle inspectors, driver examiners, emergency medical-service personnel, and mechanics.

In addition to manpower education and training, state and local officials require information services on innovations, improvements, and in-the-field advisory services in problem analysis and program planning and implementation.

Recommendations

(1) Action should be taken, particularly by the Federal and state governments, to stimulate rapid growth in education and training opportunities on highway safety at national, regional, state, and local levels as well as to provide an opportunity for the research community and major educational institutions to play a more effective role.

(2) The Federal government, in cooperation with state governments, should take immediate steps to assist the states in the development of needed services for state and local officials, including:

- Training efforts for local officials on what needs to be done and what can be done under the adopted programs, and short courses to update local officials on techniques
- A clearinghouse for collecting information on innovations and improvements in techniques and for alerting local officials to these developments. (See Section 11, "Data and Information".)
- An advisory service on practical technical problems (e.g., analyzing a bad-accident situation on a particular section of a highway) which local officials may not be capable of handling.

(3) Well maintained and properly repaired vehicles are necessary for safe driving. The efforts of automobile companies and private and public schools and training institutions to prepare mechanics better and to increase their supply are to be commended. It is recommended that steps be taken to encourage expansion of such efforts as well as to continue and extend Federal training programs for automobile mechanics. We do not recommend Federal legislation or standards on licensing of mechanics.

Analytical Approaches and Management for the Future

14. A MORE COMPREHENSIVE APPROACH TO THE SYSTEM

The highway-transport system constitutes a significant technological development that has contributed much to the economy and to society but has created serious social problems. Those problems associated with accidents and their attendant losses can be solved, in part, by additional technology. As pointed out in Section 4 many avenues can be pursued to achieve technical improvement of vehicles. The discussion in Section 3 indicates similar technical opportunities available for further improvements of highways.

However, there is a more comprehensive and potentially more powerful way in which technology can contribute to highway safety; that is, through more extensive use of systems analysis.

The Task Force has addressed itself to a substantial number of elements of the highway-safety problem. In each of these elements and in others (e.g., size of vehicles, highway signs, relative positioning of vehicles), a large number of details must be considered in the conduct of programs. The magnitude of the problem is directly related to the variability and the complexity of the characteristics of each of the elements. However, it is obvious that the major elements are the driver, the vehicle, and the highway environment in which the vehicle operates. These major elements combine to create a large number of discrete units with widely variable characteristics which interact with each other in a continually varying environment. Few, if any, highway accidents can occur without a significant involvement of the three major elements. A traffic accident can be defined as the result of a breakdown or malfunction of one or more of the elements of the system under circumstances in which the characteristics of the others do not allow enough latitude to permit successful evasive action.

In dealing with problems of this kind, it is essential to have an adequate analysis of the factors involved so as to permit understanding of the problem and then to have management control so that resources can be allocated on the basis of their greatest cost-effectiveness. Of course, in the highway safety field cost-effectiveness is more difficult to deal with, because it is a people-oriented system and the value of a human life or the

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total costs of disabling injuries cannot be determined objectively. Nevertheless, much more attention to systems analysis is an essential ingredient. In many other problems approaching this degree of complexity, systems analysis techniques have been used to advantage. These techniques, as is well known, involve expressions of interactions in mathematical terms. These models can then be varied by adjustment of their elements in order to provide estimates of the effects of changes in one set of variables on the system. This kind of an approach can help in the comparison of safety enhancement produced by alternative approaches and expenditures in alternative sectors. For example, it can be helpful in identifying instances in which a significant expenditure in one area could bring about a real improvement while the same expenditure in a different area would produce only marginal results. Furthermore, it can help to identify those combinations of circumstances which, though extremely hazardous, occur so infrequently as not to warrant priority attention.

The difficulty in applying a rigorous systems approach to the highway-safety problem arises from the very large number of variables, the fragmentary and imprecise nature of available information and data on accidents, and the large number of human, political, and technical issues that are associated with highway safety. The first step in preparing to introduce a more rigorous analytical procedure involves a solution of the information problem. Better data are necessary. But they must be collected in a manner which is compatible with the procedures of systems analysis. These data can be collected from accidents per se, or they can be collected from experiments or studies currently in progress or contemplated. It should be possible to require that a much larger number of research and demonstration projects, including those dealing with the controlled crash of vehicles, be designed so as to yield data oriented toward the development of computer modeling techniques applicable to highway safety. As better data are available, these analytical techniques can also be utilized in cost-effectiveness analyses. There have been increasing attempts to use these approaches in recent highway-safety programs, but, again, the lack of the required data base has restricted their applicability.

Recommendation

The Federal government should provide further support for comprehensive systems analyses of the highway-safety problem in order to make possible better studies of the interrelationship between elements of the problem and the relative importance of each of the elements.

15. A LONGER RANGE ADMINISTRATIVE VIEW

While technology, including systems-analysis techniques, can be helpful in the identification of the priorities for action to deal with major problems and their solutions, there are many issues that cannot be addressed by technology. There are technical problems associated with driver performance, alcohol and driving, and enforcement, but these are predominantly social and political problems. In addition, there must be a responsive management system that can derive fuller benefit from scientific and technical innovations in the face of social and political realities. At the Federal level, a large number of government agencies play a role in highway safety. Much of the work is concentrated under the authority of the National Highway Safety Bureau, but other offices in the Department of Transportation, as well as some in several other agencies, are involved. Coordination of these efforts is essential. A first step in this direction would be the presidential designation of a senior White House staff member to advise and coordinate the responsibilities that each of the Departments or offices should have, taking full account of legislation in this field. Such a senior White House staff official could ensure continued efforts to achieve greater cooperation and reinforcement of the programs of one agency by those of another.

At the state and local level, there is a much more difficult and important management problem. There is a highly disparate and dispersed responsibility of authority for the several official functions which comprise the highway-safety program. The problems of achieving effective management and the coordinating role of the representative for highway safety recently appointed by each governor were described in Section 1. Despite progress, it is obvious that more comprehensive means of managing highway safety should be pursued. There is a strong interplay between the nature of the available transportation systems, the status of development of the highway network, and the highway-safety problem. In the future it will be highly desirable that these interrelationships be given much more attention as highway-safety programs are being established.

In some states, a transportation office or department has been created. In time, such organizations may encompass a substantial number of the highway-safety functions, including responsibility for systems and cost-effectiveness studies. Major metropolitan areas may also create transportation offices. These consolidated organizations may provide a basis for administration and management which will achieve direct control over a large fraction of significant elements of the highway-safety problem and still achieve whatever coordination is necessary with other offices.

While the Task Force does not wish to identify for the states any particular form of organization, the use of the concept of the transportation department illustrates an approach taken in some states which, if extended, might provide for the more effective management which is so necessary in dealing with the highway problem.

It is concluded that, while action recommended earlier in this report for the development of better management approaches to deal with the highway-safety problem should be pursued, an even broader view must eventually be taken that will encompass the transportation function, the highway transportation function, and the highway safety problem. Improved management will increase the contribution to highway safety of each of the programs previously recommended and substantially enhance the impact of the total program.

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Selected References

(1) *Administration of the National Traffic and Motor Vehicle Safety Act,* Message from the President of the United States Transmitting the Second Annual Report on the Administration of the National Traffic and Motor Vehicle Safety Act of 1966. U.S. Government Printing Office, Washington, D.C. (1969).

(2) *Administration of Highway Safety Act of 1966,* Message from the President of the United States Transmitting the Second Annual Report on the Administration of the Highway Safety Act of 1966, U.S. Government Printing Office Washington, D.C. (1969).

(3) Heidbreder, Elizabeth M., "Federal Motor Vehicle and Highway Safety Legislation", Library of Congress, Legislative Reference Service (April, 1967).

(4) Highway Research Board, "A Selected Bibliography on Highway Safety, Annotated", Biblio. 2, 1947, Supplement No. 1 (1949).

(5) Highway Research Board Library, "Traffic Safety Research Bibliographies and State-of-Art Reports" (April, 1969).

(6) Little, Arthur D., Inc., *Cost-Effectiveness in Traffic Safety,* Frederick A. Praeger, Praeger Special Studies in U.S. Economic and Social Development, New York (1968).

(7) Little, Arthur D., Inc., *The State of the Art of Traffic Safety,* A Critical Review and Analysis of the Technical Information on Factors Affecting Traffic Safety, Cambridge, Mass. (1966).

(8) National Committee on Uniform Traffic Laws and Ordinances, "Legal Foundations for Unification or Coordination of State Traffic Safety Programs", Traffic Laws Commentary No. 66–2, Washington, D.C. (1966).

(9) National Academy of Engineering, *Traffic Safety: A National Problem,* A Symposium held in Washington, D.C., April, 1966, Saugatuck, Conn., Eno Foundation for Highway Traffic Control (1967).

(10) National Highway Safety Bureau, U.S. Department of Transportation, "Highway Safety Literature", Compilation of Issues Numbered 1 through 52, issued December, 1967, through December, 1968 (July, 1969).

(11) National Highway Safety Bureau, U.S. Department of Transportation, "Highway Safety Literature, An Announcement of Recent Acquisitions", weekly publication (January, 1969 on).

(12) National Highway Safety Bureau, U.S. Department of Transportation, *Highway Safety Program Standards* (February, 1969).

(13) National Highway Safety Bureau, U.S. Department of Transportation, "Proceedings of National Highway Safety Bureau Priorities Seminar", held at Fredericksburg, Virginia (July 18–20, 1969), 10 volumes, as follows:

Volume 1	Expectations and Limitations
Volume 2	Alcohol and Highway Safety Countermeasures
Volume 3	Emergency Medical Services
Volume 4	Crash Survivability
Volume 5	Speed Related Accident Countermeasures and Their Priorities
Volume 6	Driver Behavior
Volume 7	Enforcement
Volume 8	Compliance
Volume 9	Data Contribution to Countermeasures
Volume 10	Public Information and Highway Safety.

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(14) National Motor Vehicle Safety Advisory Council, U.S. Department of Transportation, *1968–1969 Summary Report,* Submitted to the Secretary, Department of Transportation (May, 1969).
(15) National Safety Council, *Accident Facts,* 1969 Edition, Chicago, Illinois (1969).
(16) National Safety Council, *Guides to Traffic Safety Literature,* Vol. 10, 1955–1965, Chicago, Ill.
(17) "Proceedings of the First Department of Transportation Intra-Departmental Safety Seminar", U.S. Department of Transportation, Office of the Secretary (January, 1969).
(18) Public Law 89–563, National Traffic and Motor Vehicle Safety Act of 1966, U.S. *Statutes at Large,* Vol. 80.
(19) Public Law 89–564, Highway Safety Act of 1966, U.S. *Statutes at Large,* Vol. 80.
(20) U.S. Congress, Conference Committee, 1966, *Highway Safety Act of 1966,* Conference Report to Accompany S. 3052, 89th Cong., 2nd Sess., House Report No. 1920 (1966).
(21) U.S. Congress, Conference Committee, 1966, *National Traffic and Motor Vehicle Safety Act of 1966,* Conference Report to Accompany S. 3005, 89th Congress, 2nd Session, House Report No. 1919 (1966).
(22) U.S. Department of Health, Education, and Welfare, The Secretary's Advisory Committee on Traffic Safety, *Report of the Secretary's Advisory Committee on Traffic Safety* (February, 1968).
(23) U.S. House of Representatives, Committee on Interstate and Foreign Commerce, *Traffic Safety,* Hearings on H.R. 13228, 89th Congress, 2nd Session (1966).
(24) U.S. House of Representatives, Committee on Interstate and Foreign Commerce, *National Traffic and Motor Vehicle Safety Act of 1966,* Report to Accompany H.R. 13228, 89th Congress, 2nd Session, House Report No. 1776 (1966).
(25) U.S. House of Representatives, Committee on Public Works, *Highway Safety Act of 1966,* Hearings on H.R. 13290, 89th Congress, 2nd Session (1966).
(26) U.S. House of Representatives, Committee on Public Works, *Highway Safety Act of 1966,* Report to Accompany H.R. 13290, 89th Congress, 2nd Session, House Report No. 1700 (1966).
(27) U.S. House of Representatives, Committee on Public Works, *1968 Alcohol and Highway Safety Report,* A Study Transmitted by the Secretary of the Department of Transportation to the Congress, 90th Congress, 2nd Session (August, 1968).
(28) U.S. National Bureau of Standards, "Bibliography on Motor Vehicle and Traffic Safety", Washington, D.C. (1968).
(29) U.S. Senate, Committee on Commerce, *Safety for Motor Vehicles in Use,* A Report to the Congress from the Secretary of Transportation, Document No. 103, 90th Congress, 2nd Session (June, 1968).
(30) U.S. Senate, Committee on Commerce, *Traffic Safety,* Hearings on S. 3005, 89th Congress, 2nd Session (1966).
(31) U.S. Senate, Committee on Commerce, *Traffic Safety Act of 1966,* Report to Accompany S. 3005, 89th Congress, 2nd Sess., Senate Report No. 1301 (1966).
(32) U.S. Senate, Committee on Government Operations, Subcommittee on Executive Reorganization, *Federal Role in Traffic Safety,* Hearings, 89th Congress, 1st and 2nd Sessions, four parts (1965–1966).
(33) U.S. Senate, Committee on Government Operations, Subcommittee on Executive Reorganization, *Federal Role in Traffic Safety,* 90th Congress, 2nd Session, Senate Report No. 951 (1968).
(34) U.S. Senate, Committee on Public Works, *Highway Safety Act of 1966,* Hearings on S. 3052, 89th Congress, 2nd Session (1966).
(35) U.S. Senate, Committee on Public Works, *Highway Safety Act of 1966,* Report to Accompany S. 3052, 89th Congress, 2nd Session, Senate Report No. 1302 (1966).

(36) U.S. Department of Transportation, *Estimate of the Cost of Carrying Out the Provisions of the Highway Safety Act of 1966,* A Report to the Congress from the Secretary of Transportation (October, 1968).
(37) U.S. Department of Transportation, *Requirements for Motor Vehicle and Highway Safety Research and Test Facilities,* A Report to the Congress from the Secretary of Transportation, two vols. (October, 1968).
(38) U.S. Department of Transportation, *Fatal and Injury Accident Rates on Federal Aid and Other Highway Systems* (1967).
(39) Whitton, Rex M., "The Role of Highway and Traffic Engineering in Highway Safety", *Traffic Quarterly* (January, 1965).

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THE EFFECTIVENESS OF A CAREERS COURSE IN A SECONDARY SCHOOL.

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ABSTRACT - TO DEMONSTRATE THAT CAREERS WERE OF VALUE FROM A VOCATIONAL GUIDANCE VIEWPOINT AND TO DISCOVER IF WIDESPREAD FEEDBACK FROM SCHOOL LEAVERS WAS RELIABLE, AN EXPERIMENTAL GROUP ATTENDED A CAREERS PROGRAM ONE AFTERNOON PER WEEK FOR ONE YEAR, AND 80 BRITISH SCHOOL LEAVERS IN THE CONTROL GROUP AND 70 IN THE EXPERIMENTAL GROUP WERE TESTED AND FOLLOWED UP 18 MONTHS LATER. ANALYSIS OF THE QUESTIONNAIRES WAS MADE TO DETERMINE: (1) THE EFFECT OF THE CAREERS COURSE ON WORK ADJUSTMENT, (2) PARENTAL INFLUENCE ON JOB CHOICE, (3) RELATIONSHIP BETWEEN PARENTAL INFLUENCE AND SOCIAL ADJUSTMENT, (4) RELATIONSHIP BETWEEN SOCIAL ADJUSTMENT AND DEGREE AND TYPE OF JOB TRAINING, (5) SEX DIFFERENCES, AND (6) WHETHER STUDENTS EXPERIENCING THE CAREERS COURSE WOULD PERCEIVE THE SCHOOL AS BEING MORE HELPFUL TO THEIR VOCATIONAL DECISION-MAKING. THE CAREERS COURSE WAS FOUND TO HAVE SOME BENEFICIAL RESULT, INCLUDING: (1) INITIAL JOB CHOICE MORE CLOSELY REFLECTED MEASURED INTERESTS, (2) JOB CHANGING APPEARED TO BE MORE STRUCTURED, LESS RANDOM, (3) THERE WERE FEWER EXAMPLES OF EXCESSIVE JOB CHANGING, (4) JOBS WERE CHANGED FOR FEWER REASONS, WHICH INDICATED HASTY JOB CHOICE OR INADEQUATE OCCUPATIONAL INFORMATION, AND (5) STUDENTS FELT THAT THE COURSE HAD BEEN BENEFICIAL. (SB)

VT 014 211

VOCATIONAL GUIDANCE RESEARCH UNIT
DEPARTMENT OF PSYCHOLOGY
THE UNIVERSITY
LEEDS 2.

THE EFFECTIVENESS OF A CAREERS COURSE IN A SECONDARY SCHOOL

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Vocational Guidance Research Unit

January, 1970

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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The Effectiveness of a Careers Course in a Secondary School

Introduction

Initially there were two major reasons behind the inception of this research:

A. It is assumed in the guidance field that "careers courses" in general are "a good thing". What is usually meant by this is that they help to promote vocational awareness, to disseminate occupational information, and to crystallise the self-concepts of the students who attend them. This is an assumption to which all members of the Vocational Guidance Research Unit subscribe. We take it to be self-evident, and because of this when the sceptic demands proof of the effectiveness of these schemes the nakedness of our case is well and truly exposed. It was resolved, therefore, to attempt to discover if it was possible to show that these courses were of value from a vocational guidance viewpoint.

B. An important aspect of the vocational guidance process is the follow-up stage, at which careers staff receive feedback on the effectiveness of their guidance techniques and are also available to provide further assistance if required. The Youth Employment Service has found great difficulty in obtaining accurate feedback on their effectiveness, (only about 15 per cent of school leavers turn up to follow-up open-evenings) but in theory schools might be in a more favourable position to obtain widespread and accurate feedback as there is a higher probability that a school leaver will identify with one or more of his teachers than with a Careers Officer whom he has seen only briefly. One of the notions behind this experiment, therefore, was to discover if one could rely on widespread feedback from school leavers, and what information is the most useful to try to obtain.

Very little research has been done in Britain to measure the effectiveness of careers courses, but a considerable amount of research has been done in the U.S.A. A general summary of their findings is as follows:

1. These courses have been shown to increase subsequent job satisfaction and earning power of pupils who left school at the statutory leaving age and the academic success of those who went on to higher education.

2. The range of jobs considered by pupils is enlarged, interest in specific jobs increased, and the amount of unemployment was reduced for pupils who had attended these courses.

3. They increased the ability of students to answer questions about jobs by as little as 0 and as much as 217 per cent. Most courses in fact do seem to result in an increase of occupational information.

We were concerned to test out some of these findings on a British school population.

There were secondary points of interest that we decided to investigate.

Social Adjustment and Work Performance

We were particularly interested in what happened to the "problem child" in the work situation. Teachers can always pinpoint certain youngsters who have not 'adjusted' to the secondary school environment. By this they usually mean that a student has not adopted the prevailing ethos of the school and express this nonconformity either by hostile or unduly anxious behaviour towards the staff and/or to other students, by withdrawal, depression, poor schoolwork, general restlessness, or what would generally be classed as delinquent behaviour. Having spoken to many of these students in different schools it was felt that much of this social maladjustment did not reflect deep personality problems but instead was partly created by a clash of cultural expectations on behalf of the teachers and students. This in turn in some cases can lead to harrassment of certain students and as Rosenthal and Jacobsen's (1968) research has shown, students tend to reflect their teachers' expectations of them in their classroom behaviour. To be more explicit: much of the social

maladjustment defined by teachers is largely teacher-created. If this is the case, and it should be made clear that this is conjecture only, then when the "problem child" goes to work, his adjustment should be no different in quality from the adjustment of non-problem students. There is one complicating variable here, and that is that even if problem students did have atypical work experiences this would still not be sufficient proof in itself that the social maladjustment reflected genuine personality maladjustment. Teacher-created maladjustment could have had such an effect on the development of a student's self-concept that certain attitudes or behavioural qualities are formed that influence his expectations about work in some undefined way so that his adjustment is atypical when compared with the non-problem student.

Interests and Occupational Choice

As the Youth Employment Service has now developed its own interest inventory (Killcross and Bates 1968) which will be increasingly used in careers guidance from 1970 onwards, it seemed opportune to examine the relationship between measured interests and occupational choice. Nelson (1968) analyzed data from five thousand fifteen year olds in the National Survey of Health and Development. The Rothwell-Miller Interest Blank was administered to all of these students and the relationship between their measured interests and subsequent occupational choice was investigated. He found that young people did on the whole choose jobs in accordance with their measured interests. 71% of the boys and 65% of the girls wanted or had jobs in accordance with their measured interests. The lower figure for the girls could be due to the fact that artistic work, work with children and animals, or hairdressing, provide few opportunities compared with the demand, and few wish to do the factory work they will end up in. When all of the sample were in jobs, 61% of the boys and 55% of the girls showed accordance between their jobs and their top three interest categories.*

It was decided to repeat this procedure to discover if measured interests influenced initial job choice. The implications for guidance

* The interest data was not used for any counselling, otherwise these figures might have been much higher.

being that if there is a relationship then vocational counselling from a student's measured interests would have some valid support.

Parental Influence and Occupational Choice

Considerable research has been carried out which suggests that parental influence has a large effect on initial job choice. The studies of Wilson (1953), Jahoda (1953), Carter (1962), and Veness (1962), and Hill (1965) all show that parental influence on initial job choice is greater than any other significant figure, for example, careers officer or teacher. Palmer (1964) found a relationship between occupational adjustment and parent-child relationships. Boys' relations with their mothers were not associated significantly with any job attitude measures, but boys who had positive relationships with their fathers tended to have favourable attitudes towards their work, and towards their workmates. Also, when boys were from families in which the parents were not in conflict with each other, the boys tended to be favourable towards their work, the bosses, and the other workers. Unfortunately, she collected no data on girls. Roe (1956) postulated that a particular "family atmosphere" - and she distinguishes three: emotional concentration on the child, avoidance of the child, and acceptance of the child - result in later orientations which predispose people to choose a certain class of work.

It was decided to test the following hypotheses:

1. That a careers course has no effect on the work adjustment of school leavers who have attended the course.

2. That no relationship exists between social adjustment and degree and type of job changing.

3. That there is no clear relationship between parental influence and social adjustment.

4. That parents are the major source of influence on initial and subsequent job choice.

5. There are no sex differences in the results obtained from the careers course.

6. That those students who had experienced the careers course would not perceive the school as being more helpful to their vocational decision-making than those students who had not had a careers course.

Methodology

One secondary modern school in a low socio-economic community in the West Riding was chosen. The school had a mixed population of 500 pupils. The staff-student ratio was approximately 33:1. There was a nucleus of older staff who had been at the school for some years but a fairly high turnover of younger staff. This school was chosen because it was not outstanding in any way. If a school had been chosen for this experiment that had any real factors in its favour this would not have achieved the experiment's chief purpose, which was to show that any secondary school without any tradition in providing guidance courses could, with a minimum of effort and staff co-operation, organise a satisfactory careers course. Hence a school was chosen that was small, with no special responsibility allowance for careers staff and very little money to spend on organizing careers courses. The staff, with one or two exceptions, would not have been rated as exceptional by any set of criteria.

The local Careers Officer was exceptional, however. And he had developed good relationships with the headmaster and some of the senior staff, so much so that the headmaster had become interested in trying to provide something more ambitious for his school leavers than the statutory help given by the Youth Employment Service. It was at this stage that we suggested our project to him.

The chief difficulty of this type of educational research, that is, where the object is the assessment of a programme of instruction, is the production of a control group. Various suggestions of matching schools

were dropped owing to the enormous problems encountered when trying to find two schools which are alike in every way except for the variable that is being manipulated. As the headmaster found it difficult to fit a careers programme immediately into his curriculum, it was decided to use one final year group as the control group and the following final year group as the experimental group who would undergo the careers course. This also gave the headmaster, the staff involved with the school leavers, the Careers Officers and research staff from the Vocational Guidance Research Unit one complete year to plan the careers programme for the subsequent year. The research staff only gave advice and suggestions when asked as it was felt strongly by us that any programme imposed by outsiders could not guarantee the teachers' enthusiasm. The careers programme which resulted is shown in Appendix 1. The time allowed for this programme was one afternoon per week.

Each of the two year groups were tested and followed up eighteen months after they had ended their fourth year of secondary education, by which time 90% of the experimental group and 91% of the control group were out of full-time education. A postal questionnaire was sent to the 80 school leavers in the control group and 70 in the experimental group. The follow-up questionnaire is reproduced in Appendix 2.

Hypothesis 1

That a careers course has no effect on the work adjustment of the school leavers who have attended the course.

For this hypothesis to be tested a number of criteria of work adjustment had to be defined. The following were chosen:

(i) the number of job changes and reasons for leaving
(ii) the nature of the job changes
(iii) the degree of measured job satisfaction
(iv) degree of congruence between measured interests and initial job choice.

The number and nature of job changes: considerable research has been undertaken in an attempt to estimate the incidence of job changing

amongst school leavers (Crowther Report 1959; Ferguson and Cunnison 1951; Herford 1957; Carter 1962). The work of Maizels (1967) warrants special attention. In a follow-up study in Willesdon of 475 male school leavers she found that almost 50% changed their jobs at least once in the three years since leaving school, and that during this time the average number of jobs per leaver was 2.5. Among those who did change jobs she found that the average number of jobs was 3.9, representing over one job change each year spent at work. She also found as did the other studies mentioned above that there was a tendency for the proportions of jobs of lower skill and status to increase with changes in employment, due mainly to the dropping out of apprentices.

Some guide to the value of the careers course might be a comparison of this school's leavers with the results of these other studies. One complicating factor exists, however, concerning the reasons why school leavers change jobs. It cannot be assumed a priori that job changing is undesirable. It might be that after having an effective careers course a young worker may be more confident of his requirements and needs and is less likely to tolerate an unsatisfactory organization. One by-product of a careers course could be, therefore, an increase in early job changing. Whether the job changing is constructive or not can be estimated largely by analyzing the direction of the change. If the change is still within the young worker's chosen occupational field and is not a downgrading then this could be classed as "constructive job changing". If the change is to a completely different occupational area and is also a downgrading then this could be classed as "floundering job changing" following Super's (1963) use of the term.

To decide if a job change was within or outside of an occupational area, five judges were used. These consisted of three Careers Officers and two of the research staff of the Vocational Guidance Research Unit who were unconnected with the study. The criterion of change was agreement between four out of the five judges who were all chosen because of their factual knowledge of occupations.

The degree of measured job satisfaction: if a greater degree of job satisfaction was found in the experimental group this could be traced to the careers programme. Although many measures of job satisfaction exist, it is still the opinion of many (Crites 1966) that the Hoppock Job Satisfaction Scales have a higher validity and are easier to use than most equivalent measures. This was incorporated into the follow-up questionnaire (see Appendix 2).

The degree of congruence between measured interests and initial job choice: The Rothwell-Miller Interest Blank was administered to both experimental and control groups just prior to the end of the fourth year. Their top three interests were noted and 4 out of the same 5 judges had to agree that there was congruence between these interest patterns and the initial job choices.

On all of these measures the control and experimental groups were compared.

Hypothesis 2

That no relationship exists between social adjustment and degree and type of job changing.

The school form of the Bristol Social Adjustment Guides were filled in by the class teachers of the school leavers. They were then classified as maladjusted, unsettled, or normal, using the classifying technique reported by Chazan (1964) by which a score of 9 behavioural ratings or less = normal, 10 to 19 = unsettled, and above 20 = maladjusted.

Hypothesis 3

That there is no clear relationship between parental influence and social adjustment.

A questionnaire measuring the direction of parental identification was administered. This instrument was developed for use in American research studies and adapted for use in this country. If four or more

statements were circled under 'Mother' or 'Father', then that parent was assumed to be the one of greatest influence (Appendix 3). Everyone was classified as 'father-identifiers', 'mother-identifiers', or 'neither predominantly father or mother-identifiers'. These categories were then compared with the social adjustment ratings to see if Palmer's (1964) findings discussed earlier could be enlarged upon.

Hypothesis 4

That parents are the major source of influence on initial and subsequent job choice.

Following on from the research discussed earlier, it was decided to look for the most important influences on initial and subsequent job choices.

Hypothesis 5

There are no sex differences in the results obtained from the careers course.

For all hypotheses previously discussed any possible sex differences were looked for, especially as some of the teachers had reported that it had been more difficult to interest the girls in the careers course than it had been to interest the boys.

Hypothesis 6

That those students who had experienced the careers course would not perceive the school as being more helpful to their vocational decision-making than those who had not had a careers course.

An item was built into the follow-up questionnaire which assessed the amount of help that the school leavers felt their school had given them in helping them to make up their minds about jobs. The experimental and control groups were compared on this item:

Put a tick on the line to indicate how useful your school and the Youth Employment Service were in helping you to decide what job you wanted and in getting you it.

Very helpful	Quite helpful	Not especially helpful	Rather unhelpful	No help at all
_____	_____	_____	_____	_____

Results

Hypothesis 1

Table 1. Number of job changes in experimental and control groups:

	EXPERIMENTAL			CONTROL		
	Males	Total	Females	Males	Total	Females
1	62.5%	60%	57.83%	78.03%	56%	37.04%
2	31.25%	28.57%	26.32%	13.43%	14%	15.18%
3	6.25%	5.71%	5.26%	4.35%	16%	25.92%
4	0	2.86%	5.26%	0	8%	15.18%
5+	0	2.86%	5.26%	4.35%	6%	7.59%
		N = 70			N = 80	

From this table certain differences between the experimental and control groups can be seen in terms of overall frequency of job changing:

1. 88% of the experimental group had 1 or 2 jobs within 18 months of leaving school, compared to 70% of the control group. This is not significant at the .05 level.
2. Twice as many from the experimental group took second jobs but three times as many from the control group took third jobs

($p > .04$) ($p > .05$).

3. 58% of the experimental girls took only one job, compared to 37% of the control girls. ($p > .06$).

4. 84% of the experimental girls had 1 or 2 jobs compared to 52% of the control girls. ($p > .001$).

Table 2. Reasons for leaving jobs

N	REASONS FOR LEAVING A JOB	CONTROL			EXPERIMENTAL		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
22	Boring	0	12	12	2	8	10
20	† Generally unhappy	2	14	16	2	2	4
16	*To go to a more attractive job	4	8	12	2	2	4
16	Poor pay	4	6	10	0	6	6
12	Prospects poor	0	6	6	0	4	4
10	Disillusionment	4	6	10	0	0	0
10	† Long hours	2	4	6	0	2	2
8	Fired	2	6	8	4	0	4
4	Dislike of firm and supervisors	0	2	2	2	2	4
4	Incapable of the work itself	0	2	2	0	2	2
4	Physical conditions	0	0	0	2	2	4
4	Health reasons	0	4	4	0	0	0
2	Overworked	0	0	0	0	2	2
2	Other commitments	0	2	2	0	0	0

† = $p > .01$ * $p > .05$

From Table 2 certain differences appear between the two groups in relation to reasons given for leaving jobs. The control group were significantly more inclined to leave their jobs because:

(a) they were generally unhappy;

(b) they were going to a more attractive job;

(c) they did not like the long hours;

Certain sex differences emerged also. For both control and experimental groups girls were significantly more inclined than boys to leave their jobs because:

(a) it was boring (control $p > .001$, experimental $p > .05$)
(b) they were disillusioned (control $p > .01$, experimental $p > .05$)

Control group girls when compared to experimental group girls were more inclined to leave their jobs because:

(a) they were generally unhappy ($p > .01$);
(b) they were going to a more attractive job ($p > .05$);
(c) they did not like the long hours ($p > .01$);
(d) prospects were poor.

There were no significant sex differences between experimental and control boys.

Table 3. Congruence between first and subsequent jobs in terms of occupational area**

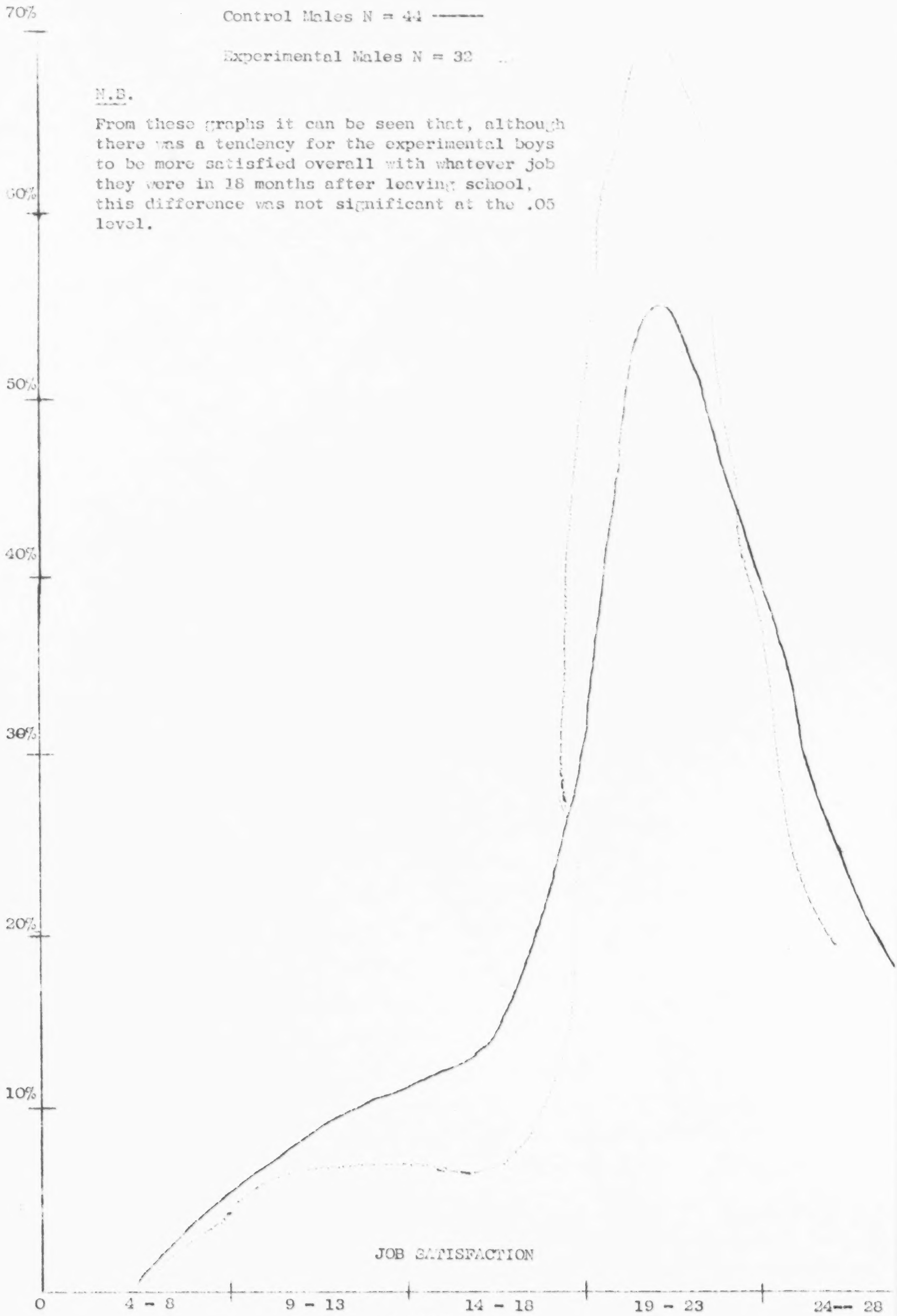
	EXPERIMENTAL			CONTROL			
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	
1st and 2nd jobs	80% (8)	70% (7)	*75%	33% (2)	50% (4)	42.5	As a PERCENTILE (Actual nos. in brackets)
2nd and 3rd jobs	50% (1)	50% (1)	50	0	14.28%	7.14	
1st and 3rd jobs	0	0	0	0	28.56%	14.28	

* = $p > .01$.

From this table it can be seen that there was significantly more congruence between first and second jobs for the experimental groups suggesting that there was a qualitative difference in the type of job changing that occurred between the two groups. It is clear also that 2 girls in the control group chose third jobs that were closely related to the first jobs, rather than their second jobs. This figure is too small to make any generalization but it does fit into the picture which emerges of the control group exhibiting more "floundering" or trial and error job changing than the experimental group.

** Agreement between 4 out of 5 judges necessary for congruence to be admitted.

Fig.1. Differences in measured job satisfaction between the male experimental and control groups



N.B.

From these graphs it can be seen that, although there was a tendency for the experimental boys to be more satisfied overall with whatever job they were in 18 months after leaving school, this difference was not significant at the .05 level.

Fig.2. Differences between the female experimental and control groups in measured job satisfaction

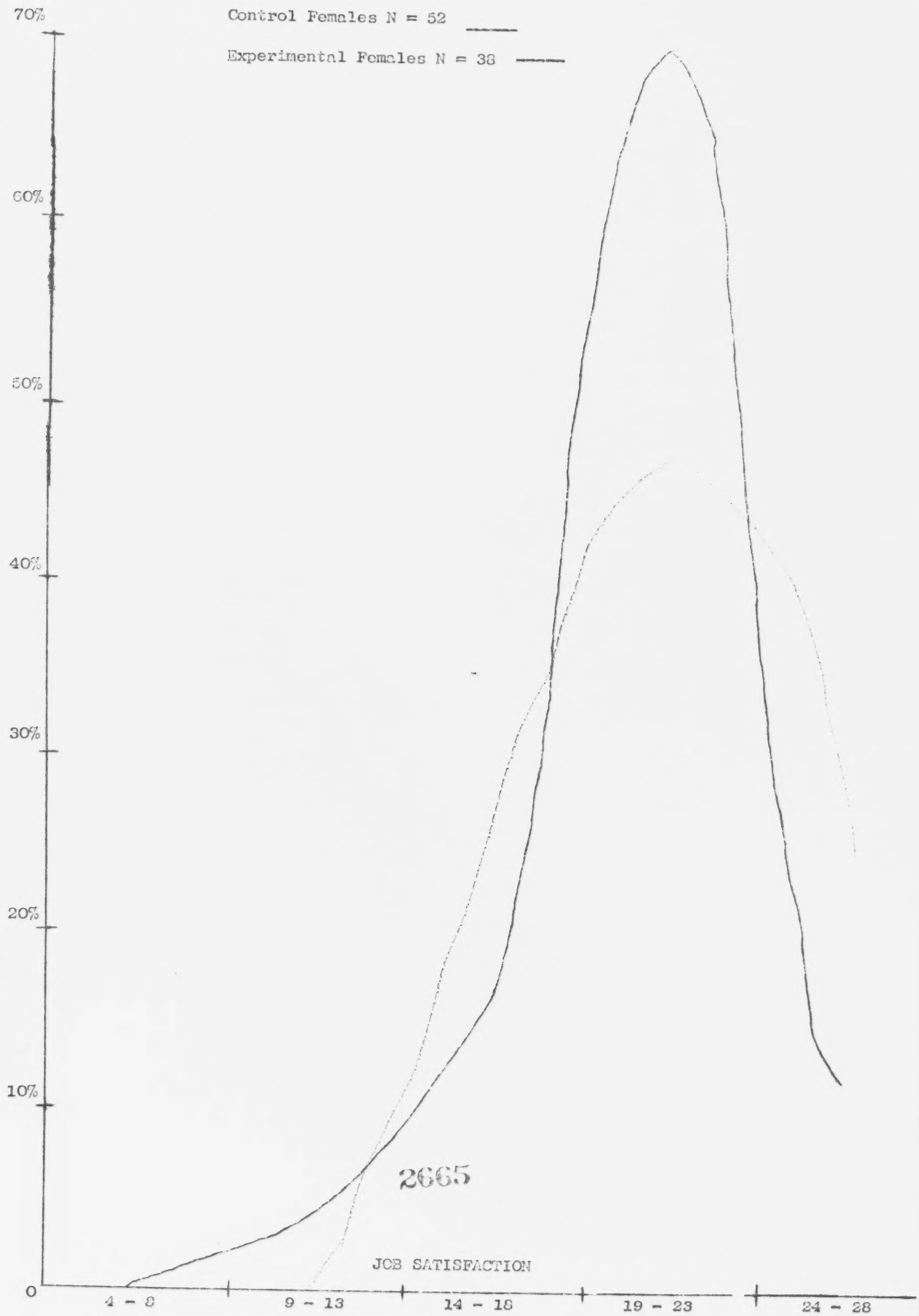


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Table 4. Congruence between first three measured interests and initial job choice

EXPERIMENTAL			CONTROL		
MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
84.37*	55.26*	68.57*	32.43	32.56	32.50
N = 70			N = 80		

* = $p > .001$.

From Table 4 it can be seen that the experimental group tended to choose jobs that were congruent with their first three measured interests, whereas the control group did not.

There was no difference in the numbers of both groups who stayed on into full-time education. 10% of the experimental group and 9% of the control group stayed on to take further examinations.

Table 5. Social adjustment of the sample

	NORMAL		UNSETTLED		MALADJUSTED		
	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	
EXPERIMENTAL	28	23	4	5	5	5	N = 70
CONTROL	30	24	7	8	6	5	N = 80

Table 6. Relationship between social adjustment and number of job changes

No. of job changes	EXPERIMENTAL			CONTROL		
	NORMAL	UNSETTLED	MALADJUSTED	NORMAL	UNSETTLED	MALADJUSTED
1	50	28	22	45	33	22
2	49	17	34	53	20	27
3	47	24	29	49	28	23
4	(Numbers in these two categories were too small to enable any statistical treatment to take place.)					
5						

(Rounded off percentages)

From Table 6 it can be seen that no clear relationship exists between the number of job changes and social adjustment. Likewise, no significant

relationship was found to exist between type of job changing and social adjustment.

Table 7. The relationship between parental influence and maladjustment.

	MALE 84			FEMALE 70		
	MOTHER	FATHER	NEUTRAL	MOTHER	FATHER	NEUTRAL
NORMAL	28.6%	66.6%	50%	55.6%	-	60%
UNSETTLED	28.6%	11.1%	25%	22.2%	-	40%
MALADJUSTED	42.8%	22.2%	25%	22.2%	100%	-

From Table 7 the following tendencies occur:

1. Unsettled boys identify with their mothers ($p > .01$) or are neutral ($p > .05$).
2. Maladjusted boys identify with their mothers ($p > .01$).
3. Normal and unsettled girls identify more with their mothers ($p > .001$) or are neutral ($p > .001$).
4. Maladjusted girls identify more with their fathers than their mothers ($p > .001$) but none were neutral.

Table 8. Sources of help in obtaining first job

CONSULTED	EXPTL. BOYS	EXPTL. GIRLS	EXPTL. TOTAL	CONTROL BOYS	CONTROL GIRLS	CONTROL TOTAL	TOTAL BOYS %	TOTAL GIRLS %
Careers Officer	30	10	20	29	20	24	30	15
Mother	22	24	23	24	21	23	23	23
Father	23	19	23	27	10	18	27	15
Siblings	4	4	4	0	5	3	2	5
Other Relations	4	4	2	0	3	2	2	4
Family Friends	0	0	0	0	1	1	0	1
Peers	4	19	12	0	3	2	2	11
Teacher	4	13	9	7	18	13	5	15
Others	4	5	5	20	17	19	13	11
No. of 'Others' category devoted to 'MYSELF'.	1	1	2	9	7	16	8%	11%

All percentages are rounded off and refer to the proportion of the total number of responses in each of the experimental and control groups.

These categories are mutually exclusive. The 'others' category was included so that an opportunity was provided for a respondent to state any unusual sources of help, but mainly to enable him to indicate that he

himself was primarily responsible. The category 'myself' was not provided, as it was thought that many respondents when faced with such a blatant question might consider it undesirable to indicate that anyone other than themselves helped them to obtain a job. It was thought that those who really did not feel that anyone else helped them would indicate 'myself' while those who were helped by others might not be as tempted to deceive without the stimulus word 'myself'. It is clear from Table 8 that the majority of 'others' responses refers to 'myself' and, therefore, a separate analysis is provided of the 'myself' responses.

From the table the following conclusions may be drawn:

Differences between the experimental and control groups:

1. The control group used a significantly larger number of people per person (1.90) in obtaining their jobs compared with the experimental group (1.14 $p > .001$).
2. Significantly more control boys chose jobs by themselves with no help compared with experimental boys ($p > .05$).
3. Significantly more control girls used the Careers Officer when compared with experimental girls ($p > .05$).
4. Significantly more experimental girls were influenced by their peers than were the control girls ($p = .01$).
5. Significantly more control girls chose jobs by themselves with no help compared with experimental girls ($p > .05$).
6. Significantly more control girls were helped by their teacher compared with experimental girls ($p > .05$).

Table 9 shows cumulative differences between the two groups in terms of the effect of the formal helping agencies against family influences.

Table 9.

HELPING AGENT	EXPTL. BOYS	EXPTL. GIRLS	CONTROL BOYS	CONTROL GIRLS
FAMILY				
PARENTS	48	43	51	31
plus siblings	52	47	51	36
PARENTS, SIBLINGS, AND RELATIVES	53	51	51	39
FORMAL				
CAREERS OFFICER AND TEACHERS	34	23	36	38

Figures in rounded-off percentages.

From this table an interesting difference appears between the experimental and control groups. For both experimental groups there is a difference at the .05 level between the influence of the total family and the formal helping agencies. This does not appear for either of the two control groups, suggesting that those students who experienced a careers course used their families more than the formal agencies, whereas those who did not have the careers course used the formal agencies more than their families. Analysis comparing parents only with the formal helping agencies produced the same results.

Overall differences between the sexes

1. Boys are more inclined to use the Careers Officer than are girls ($p > .05$).
2. Girls are more influenced by their peers than are boys ($p > .05$), although this agent of influence is, overall, smaller than most of the other agencies.
3. Table 10 presents a rank-ordering of the agents of influence in obtaining first job for both sexes.

Table 10.

BOYS	GIRLS
1. Careers Officer	1. Mother
2. Father	2. Father
3. Mother	3. Careers Officer
4. Others (Myself)	4. Teacher
5. Teacher	5. Others (Myself)
6. Siblings	6. Peers
Other Relations	7. Siblings
Peers	8. Other relations
7. Family friends	9. Family friends

Table 11. Sources of help in obtaining subsequent jobs

CONSULTED	EXPERI-MENTAL BOYS	EXPERI-MENTAL GIRLS	EXPERI-MENTAL TOTAL	CONTROL BOYS	CONTROL GIRLS	CONTROL TOTAL	TOTAL OF BOYS	TOTAL OF GIRLS
Careers officer	4	8	12	2	10	14	6	20
Mother	0	0	0	0	6	8	0	6
Father	4	2	6	2	2	4	5	4
Siblings	2	3	5	0	0	0	2	3
Other Relations	0	0	0	0	0	0	0	0
Friends of Parents	0	0	0	0	0	0	0	0
Peers	0	2	2	0	0	0	0	2
Teachers	0	0	0	0	0	0	0	0
Others	2	2	4	6	6	14	7	11
"Myself"	1	2	3	6	6	12	7	9

Actual numbers are used in this table as many of the numbers are very small, and statistical analyses between the two groups was made possible by eliminating 10 individuals from the actual control group. Of these 10, 4 took subsequent jobs, which agrees with the overall percentage of the control population who took subsequent jobs. Both groups were then of the same size (N = 70) and a direct statistical comparison was possible using the binomial distribution test.

From Table 11 the following differences between the experimental and control groups emerged:

(i) the control girls used their mother significantly more than the experimental girls ($p > .05$);

(ii) the experimental group used their siblings significantly more than the control group ($p > .05$);

(iii) the control group referred significantly more to themselves than did the experimental group ($p > .05$).

Overall comparison between the sexes show that girls used the Careers Officer significantly more than the boys ($p > .01$), and also their mothers ($p > .05$).

Table 12. A comparison of the effect of helping agents on subsequent job choice

HELPING AGENT	EXPTL. BOYS		EXPTL. GIRLS		CONTROL BOYS		CONTROL GIRLS	
FAMILY	N	%	N	%	N	%	N	%
Parents	4	20	2	13	2	25	6	23.5
Parents and siblings	6	30	5	33	2	25	6	23.5
Parents, siblings and relatives	6	30	5		2	25	6	23.5
FORMAL								
(Teacher and Careers Officer)	4	20	8	53	2	25	10	29.4

From Table 12, although the figures are too small to enable a complete statistical treatment, it is clear that for subsequent jobs parents do not appear to exercise such a dominant role as they do for first jobs when compared with the formal agencies.

To test out the sixth hypothesis concerning the amount of help which the students perceived as emanating from the school, the responses to question 14 in the follow-up questionnaire (Appendix 2) were analyzed. Each response was weighed from 1 to 5 (1 signifying most help and 5 signifying no help). The average for the experimental and control groups was calculated and the means tested for a significant difference. The mean for the control group was 3.95. The mean for the experimental group was 2.0. Using a 't' test of the significance of the difference between two means for independent samples the difference between the means was significant above the .001 level.

Discussion

Hypothesis 1 That a careers course has no effect on the work adjustment of school leavers who have attended the course.

Some evidence was found to suggest that the course did have some beneficial effects on work adjustment, namely:

1. The control group had a significantly greater proportion of the job changes after the first job change.

2. The experimental group showed significantly more congruence between the occupational areas of their first and second jobs than did the control group. This could be taken to represent more purporsive and constructive job changing. The only problem with this assumption is that some people could change their occupational area completely and still be constructive, although Super's (1980) research suggests that this is not too common an occurrence.

3. There was a significantly greater congruence between measured interests and initial job choice for the experimental group. It is interesting to compare these figures with the national figures provided by Nelson (1968). When all of his sample were in jobs, 81% of boys and 55% of girls were in jobs congruent with their measured interests on the Rothwell-Miller Interest Blank. The equivalent figures for the experimental group in this study were 84% of the boys and 55% of the girls. For the control group it was only 32% for the boys and 33% for the girls.

4. Some possible support is obtained by examining differences between the groups in reasons for leaving their jobs. The control group was much more likely to leave their jobs (first or subsequent jobs) because:

   (a) they were going to a more attractive job
   (b) they were generally unhappy
   (c) they worked too long hours
   (d) the girls left more because of poor prospects.

   The first two, (a) and (b), suggest an unfortunate initial job choice, while the latter two, (c) and (d), suggest inadequate occupational information, which if they had been on a careers course and used the careers personnel wisely, they might not have made their initial choices.

However, no support was found for the effect of the careers course on the following indices of work adjustment:

1. degree of job satisfaction;
2. amount of full-time education entered into;
3. no overall differences in the amount of job changing, although the validity of this measure has already been severely criticised. The groups as a whole compared similarly to the rates of job changing reported usually. For example, Maizels (1967) showed that almost 50% of her sample changed their jobs at least once in three years, and that the average number of jobs per leaver was 2.5. In this study, 40% of the experimental group and 44% of the control group changed their jobs at least once inside a period of eighteen months after leaving school, and the average number of jobs per leaver was 1.7.

The major difficulty in this kind of research is that so many variables by necessity remain uncontrolled. The content of the course, the quality of the teaching, the background of the students, are all variables which make generalization extremely questionable. If this course had proven to be a complete failure on all criteria then this result could not have been generalized to all careers courses, and vice-versa. We were simply trying to show that any individual school can measure the effectiveness of its own careers course, and also that if the course in this study proved to be successful it is difficult to imagine many careers courses having more factors set against them than this one did, in terms of the course content, quality of teaching, and the background of the students. As it was, in terms of the criteria of work adjustment defined here, the course was seen to have some small effect on overall work adjustment.

Hypothesis 2 That no relationship exists between social adjustment and degree and type of job changing

Table 6 shows that no clear relationship could be found between social adjustment and job changing. This in itself suggests that 'unsettled' and 'maladjusted' students do not behave any differently from 'normals' in terms of their overall job histories. Likewise, no relationship was found to exist between type of job changing and social adjustment, or the measure of satisfaction and social adjustment. Perhaps one might conclude from this that many so called "problem children" are only problems at school and that in a work situation they respond differently.

Hypothesis 3 That there is no clear relationship between parental influence and social adjustment

1. Unsettled boys were found to identify more with their mothers or to be neutral.
2. Maladjusted boys identified more with their mothers.
3. Normal and unsettled girls identified more with their mothers or were neutral.
4. Maladjusted girls identified more with their fathers than their mothers and none were neutral.

Some evidence was found to exist to support the contention that maladjustment is associated with identification with the opposite-sex parent.

Hypothesis 4 That parents are the major source of influence on initial and subsequent job choice

Some interesting differences between the experimental and control groups were found here which could be interpreted as another criterion for showing the effectiveness of the careers course.

1. The control group relied upon themselves much more than the experimental group which is to be expected if the school is not providing much help.

2. They also used a larger number of people to help them obtain their first jobs.

However, evidence also exists which would appear to contradict such a conclusion.

1. Table 9 shows that the 'family' in general and parents in particular influence the experimental group more than the formal helping agencies, but this does not apply to the control group. The strange and unexpected result is that students who have experienced the careers course are more likely to use their families than the formal agencies for help in obtaining their first job than the control group who have experienced no course.

2. More control girls used the Careers Officer and their teachers than experimental girls.

Why should the experimental group use their families significantly more than the formal agencies compared with the control group? Two suggestions are offered:

A. The relationship is spurious. The experimental group have behaved in the way noted by other studies. It is only the control group that have behaved unpredictably, and not to the extent of using the formal agencies more than their families. The direction of the relationship was towards family influence, only it was not a statistically significant direction.

B. The experimental group had been encouraged to bring their parents along to 'open evenings' when the purpose of the careers course was explained, and talks concerning the importance of wise occupational decision-making were given. This might have had the effect of making many parents more interested in their children's future and, therefore, taking a more active role in helping their children to find jobs. It is impossible to prove this without a more intensive questioning of the experimental group.

The numbers for subsequent job choice were small and little could be discovered statistically. Control girls used themselves and their mothers significantly more than the experimental girls, the latter of whom used their siblings more.

Hypothesis 5 There are no sex differences in the results obtained from the careers course

Some sex differences were, in fact, found:

1. Control and experimental girls were more likely to leave jobs because they were boring or disillusioned.

   Control girls were more likely to leave jobs because they were generally unhappy, the hours were too long, prospects were poor, or they were going to a more attractive job.

   This suggests that girls tend to be more easily bored with jobs than are boys. This could reflect a difference in the satisfactions sought from work generally by boys and girls. The teachers reported that it was much more difficult persuading the experimental girls into taking the course seriously than was the case for the boys.

2. There were sex differences in relation to parental identification and social adjustment. The data suggests that maladjustment is associated with identification with the opposite-sex parent.

3. In obtaining initial jobs boys were more likely to use Careers Officers than were the girls who were more likely to use their peers. This again would seem to reflect the different needs of the sexes at this age in relation to the world of work.

Hypothesis 6 That those students who had experienced the careers course would not perceive the school as being more helpful to their vocational decision-making than those students who had not had the careers course

The experimental group reported that they had received more help overall from their school than was reported by the control group.

Summary

The careers course was found to have some beneficial results: namely, that initial job choice more closely reflected measured interests; job changing appeared to be more structured, less random; there were fewer examples of excessive job changing; jobs were changed for fewer reasons, which indicated hasty job choice or inadequate occupational information; and the students felt that the course had been beneficial to them.

References

Carter, M.P. — Home, School and Work, Oxford, Pergamon, 1962.

Chazan, M. — "The incidence and nature of maladjustment among children in schools for the E.S.N.", British Journal of Educational Psychology, 1964, 34, p.292-304.

Crites, J.O. — "Test Reviews", Journal of Counseling Psychology, 1963, 13, p.120-122.

Crowther Report — 15-18 2 vols. Ministry of Education, Central Advisory Council for Education, H.M.S.O., 1959.

Ferguson, T. and Cunnison, J. — The Young Wage Earner, London, Oxford University Press, 1951.

Herford, M.E.M. — Youth at Work, London, Parrish, 1957.

Hill, G.B. — "Choice of career by grammar school boys" Occupational Psychology, 1965, 39, p.279-287.

Jahoda, G. — "Social class attitudes and levels of occupational aspiration in Secondary Modern School leavers", British Journal of Psychology, 1953, 44, p.95-107.

Killcross, M.C. and Bates, W.T.G. — "The APU Occupational Interests Guide: a progress report", Occupational Psychology, 1968, 42, p.119-122.

Maizels, J. — "Changes in employment among school leavers: a sample study of one cohort of secondary modern boys", British Journal of Industrial Relations, 1967, 5, p.211-221.

Nelson, D. — "The predictive validity of the Rothwell-Miller Interest Blank", Occupational Psychology, 1968, 42, p.123-132.

Palmer, V.C. — "Young workers in their first jobs. An investigation of attitudes to work and their correlates", Occupational Psychology, 1964, 38, p.99-113.

Roe, A. "Early determinants of vocational choice", Journal of Counseling Psychology, 1956, 4, p.212-217.

Rosenthal, R. and Jacobsen, L. Pygmalion in the Classroom, New York, Holt, Rinehart & Winston, 1968.

Super, D.E. "The definition and measurement of early career behaviour: a first foundation", Personnel and Guidance Journal, 1963, 42, p.775-779.

Veness, T. School Leavers, London, Methuen, 1962.

Wilson, M.D. "The vocational preferences of Secondary Modern School children, British Journal of Educational Psychology, 1953, 23, p.97-113; and p.163-179.

APPENDIX 1

CAREERS PROGRAMME

PURPOSES: To develop pupils' self-awareness, job knowledge and adjustment to work.

It is hoped that through a careers programme, children may be made to feel more adult and that school work may be given more meaning.

PROGRAMME

TERM 1

1 afternoon per week

Week No.:	Period 1	Period 2	Period 3
1.	4B) Film - Mr. Marsh) 4C) goes to school	4B Self-assessment questionnaires 4C Talk by Y.E.O.	4B Talk by Y.E.O. 4C Self-assessment questionnaires
2.	4B and 4C Girls - Talk on Nursing and slides. 4B and 4C Boys - Talk on Engineering		Complete job Questionnaire
3.	4B and 4C Boys - Building talk and film 4B and 4C Girls - Dressmaking talk and discussion		Complete job Questionnaire
4.	4B)) Textiles - 4C) joint film	Talk for Boys - Textiles Talk for Girls - Textiles	Complete job Questionnaire
5.	4B) Starting work -) The First Day 4C) Y.E.O.	The interview Personnel Officers	Teacher's discretion
6.	4B and 4C Boys Farming 4B and 4C Girls -	Horticulture talk and film Office work talk and Demonstration by Comp. School	Complete job Questionnaire
	CLASSES FORM GROUPS OF 6 - 8 CHILDREN		
7.	Discussion on what work is like (4B) - Y.E.O. Plan group visits with class 4C.	Discussion on what work is like (4C)- Y.E.O. Plan group visits with class 4B.	Joint discussion on purpose of visits from young workers. 4B and 4C
8.	Groups discussion with young workers from industry. One young worker per group. (Switch them round)		Pre-group visit briefing - what to look for, purpose of visit.
9.	1st visit	All afternoon	
10.	2nd visit	All afternoon	
11.	3rd visit	All afternoon	
12.	4th visit	All afternoon	
13.	Discussion of visits. Two groups and two Y.E.O.'s.	Talk and visit to Institute of Further Education, Shipley.	

TERM END

APPENDIX 1

TERM II

To increase self-awareness and encourage self-assessment and to give broader aspects of job knowledge - local services and jobs which entail working away from home.

Week No.	Period 1	Period 2	Period 3
1.	Detailed self-assessment questionnaire filled in. Children to try to find any four jobs which may fit into the pattern of their questionnaire. Y.E.O. to produce extra literature.		Briefing on local services by teacher (?)
2.	Talk on Retail occupations		Teacher's discretion
3. 4.	Class visits to TWO of the following - Police Station, Law Courts, Fire Station.		
5.	Talk by Y.E.B. on Electricity - how it reaches the home, and film on training for boys, mentioning girl demonstrators, etc.		Teacher's discretion.
6.	Film and talk on Gas Fitting for Boys Girls visit to P.O. Telephone Exchange		Job questionnaire Visit
7.	Talk on Merchant Navy - Boys Talk on Catering and Hotel Trade - Boys and Girls		Teacher's discretion
8.	Boys and Girls - Talk on Army		Teacher's discretion
9.	Boys and Girls - Talk on the R.A.F./ R. Navy		(?? visits)
10.	Safety at work - 4B and 4C - Factory Inspector		Teacher's discretion
11.	Discussion - Leaving school - starting work - problems, e.g. parental attitudes, handling money. Two Y.E.O.'s (separate classes)		Teacher's discretion

APPENDIX 1

TERM III

ENVIRONMENTAL STUDY

To make pupils aware of some of the social pressures which will surround them in their work-a-day life and to suggest ways in which they can find their own place in society.

(a) Work in English, based on

1. Pressures to consume - advertising, spending and saving, difficulties of choice.
2. Pressures to conform - T.V., fashions, pulp literature, the press, group "image".
3. Social pressures - friends and neighbourhood.
4. Physical pressures of environment - buildings, amenities.
5. Setting up homes.

(b) Work in Mathematics, based on -

6. Income Tax. National Insurance. Rates. Hire Purchase. Investments. Gas and Electricity Accounts, etc.
7. Holidays.
8. Running a car.

(c) Visits (followed by discussions)

1. Museums (Cartwright and Cliffe Castle)
2. Library
3. Sewage Works
4. Police
5. Hospitals
6. Town Hall
7. The Moors
8. The Y.H.A.
9. Interest classes at Technical Institute
10. Flower arrangements
11. Make-up demonstrations
12. Parks and Gardens.

APPENDIX 2

NAME: .....

ADDRESS: .....

.....

.....

AGE: Years Months

1) Please describe the job or jobs that you have done since leaving school.

	JOB DESCRIPTION	STARTING DATE	LEAVING DATE	REASONS FOR LEAVING
JOB 1.				
JOB 2.				
JOB 3.				
JOB 4.				
JOB 5.				
Anymore?				

2) If you have continued your education in any way since you left school please tick in the appropriate boxes below.

Full time education to 16 yrs. ☐ 17 yrs. ☐ 18 yrs. ☐

Part-time education to 16 yrs. ☐ 17 yrs. ☐ 18 yrs. ☐

Part-time education in technical college ☐

commercial college ☐

art college ☐

3) If you have passed any examinations (whether in or out of school) please give details below.

4) If you are studying for any qualifications please give details below.

5) Why did you choose your <u>first</u> job?

APPENDIX 2

6) What made you choose your other jobs?

JOB 2.
JOB 3.
JOB 4.
JOB 5.

7) What type of work or job would you choose if you could go into any occupation that you wished to enter, and why?

8) What type of work would you most dislike doing? (Say why)

9) Looking back, what were the main problems that you found when you began work?

10) What are the things that you like most about work? (Please write 1 for the one you like most, 2 for the one you like next best, and so on.)

Workmates ☐ Pay ☐ Security ☐ The actual work you do ☐

Prospects for promotion and getting on ☐ Supervisors ☐

The firm ☐ Any other things .....

.....

.....

APPENDIX 2

11) Which one of the following helped you to get your first job? (Please underline those that did help you.)

(a) Youth Employment Officer

(b) Mother Father Older brother Older sister

(c) Other relatives Friends of your parents

(d) Your own friends

(e) Teacher

If anyone else, say who .....

12) Did any of these people help you get your other jobs? (Please write down which.)

JOB 2.

JOB 3.

JOB 4.

JOB 5.

13) (A) Choose ONE of the following statements which best tells how well you like your present job. Please put a tick (✓) in front of that statement:

..... I hate it.

..... I dislike it.

..... I don't like it.

..... I am indifferent to it.

..... I like it.

..... I am enthusiastic about it.

..... I love it.

(B) Tick ONE of the following to show HOW MUCH OF THE TIME you feel satisfied with your present job:

..... All the time.

..... Most of the time.

..... A good deal of the time.

..... About half of the time.

..... Occasionally.

..... Seldom.

..... Never.

APPENDIX 2

(C) Tick ONE of the following which best tells how you feel about changing your present job:

..... I would quit this job at once if I could get anything else to do.

..... I would take almost any other job in which I could earn as much as I am now earning.

..... I would like to change both my job and my occupation.

..... I would like to exchange my present job for another job in the same line of work.

..... I am not eager to change my job, but I would do so if I could get a better job.

..... I cannot think of any jobs for which I would exchange mine.

..... I would not exchange my job for any other.

(D) Tick ONE of the following to show how you think you compare with other people:

..... No one likes his job better than I like mine.

..... I like my job much better than most people like theirs.

..... I like my job about as well as most people like theirs.

..... I dislike my job more than most people dislike theirs.

..... I dislike my job much more than most people dislike theirs.

..... No one dislikes his job more than I dislike mine.

14) Would you say that the school helped you:

(a) very much (b) quite a lot (c) to a small extent

(d) not very much (e) not at all, (please underline) in helping to prepare you for the world of work?

APPENDIX 3

Mother

1. My mother was more a source of encouragement to me in childhood than my father.

2. More of the family decisions were made by my mother than by my father.

3. My mother had more to do with the shaping of my ideas than my father.

4. As a child I would rather be with my mother than my father.

5. When I was away from home my mother missed me more than my father.

6. My mother expects more of me than my father.

7. I owe more to my mother than to my father.

8. I feel closer to my mother than my father.

9. It seems that I am more like my mother than my father.

10. My mother understands me better than my father.

Father

1. I was more attached to my father than to my mother.

2. My first interest in my present work was due more to my father than to my mother.

3. My father was more interested in the things I did than my mother.

4. I could have more fun with my father than my mother.

5. As a child my likes and dislikes were more like my father's than my mother's.

6. I would rather be like my father than like my mother.

7. It is more important to me to make my father proud of me than my mother.

8. If I did not do well in school, it would be a greater disappointment to my father than to my mother.

9. If I ever got in trouble, I would prefer to go to my father rather than my mother.

10. I am more like my father than my mother.

VT 014 213
THIRD ANNUAL REPORT.

OKLAHOMA STATE ADVISORY COUNCIL ON
VOCATIONAL-TECHNICAL EDUCATION, OKLAHOMA
CITY.
MF AVAILABLE IN VT-ERIC SET.
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DESCRIPTORS - *VOCATIONAL EDUCATION; *STATE
PROGRAMS; *PROGRAM EVALUATION; ADVISORY
COMMITTEES; ANNUAL REPORTS
IDENTIFIERS - *OKLAHOMA

ABSTRACT - THIS EVALUATION OF VOCATIONAL
EDUCATION PROGRAMS IN OKLAHOMA CONSIDERS
THEIR EFFECTIVENESS IN MEETING STATE PLAN
GOALS, SERVING PEOPLES' NEEDS, AND ACTING ON
1970 RECOMMENDATIONS. BOTH RECOMMENDATIONS
AND COMMENDATIONS ARE INCLUDED. (BH)

VT 014 213

THIRD ANNUAL REPORT

Oklahoma Advisory Council Vocational-Technical Education

Light a candle --

"It is better to light a candle than to curse the darkness"

OCTOBER 1, 1971

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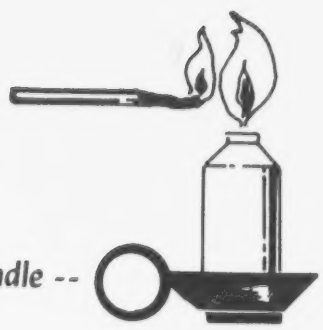

Light a candle --

2689

THIRD REPORT

Oklahoma Advisory Council
Vocational-Technical Education

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OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
FRANCIS TUTTLE, DIRECTOR • 1515 WEST SIXTH AVE., • STILLWATER, OKLAHOMA 74074 • A.C. (405) 377-2000

August 9, 1971

Dr. Sidney Marland
Commissioner of Education
Office of Education
U. S. Department of Health,
Education, and Welfare
Washington, D. C. 20005

Dear Doctor Marland:

This letter is to advise you that the members of the State Board of Vocational and Technical Education have received and have had the opportunity to study the Advisory Council's Report.

The Board has authorized me to inform you that they place a high value on the recommendations of the Advisory Council and have made a real effort to follow the recommendations that have been made in previous reports. It is the belief of this Board that they have either met or have come close to meeting all of the recommendations made in the last year's annual report of the Advisory Council. For example, we have developed new and intensified efforts in identification of potential in-school and out-of-school disadvantaged people. They also made an effort to establish Health Occupations programs at the secondary school level. Many of these programs lead into additional training at the post high school level. We have provided increased emphasis on coordination and correlation of industry in the planning of curriculum and have continued to organize some of the State Department of Vocational and Technical Education so it will be better attuned to the needs of business and industry. Efforts have recently been undertaken which will closely coordinate Title III Projects administered by the State Department of Education with the programs for the disadvantaged and handicapped in the State Department of Vocational and Technical Education. New efforts were developed this past year which placed greater emphasis on publicizing courses available in Area Schools and all communities where

programs for vocational and technical education operated. Greater emphasis was also placed on state planning which concerned the development of total vocational education programs in each community. An Industrial Arts Coordinator has been employed to work with teacher education programs and public schools in developing junior high school and senior high school industrial arts programs that are more attuned to the State Department of Vocational and Technical Education effort.

It appears to Board members that all of the recommendations made by the Advisory Council in this report are well founded and as a result of these recommendations, the State Board will immediately attempt to implement these recommendations into action programs.

In addition to the recommendations in this report, we are very appreciative of the day-to-day discussions and recommendations made by the Executive Director of the Council and members of the Council. We appreciate the very direct, professional attitude that has been developed by the Council as they have evaluated vocational and technical education programs in Oklahoma.

Sincerely,

Francis Tuttle

Francis Tuttle, State Director and
Executive Officer
State Board of Vocational and Technical
Education

FT:ew

ADVISORY COUNCIL
VOCATIONAL–TECHNICAL EDUCATION

State of Oklahoma
Office of the Governor

4901 North Lincoln Boulevard
Oklahoma City, Oklahoma 73105
AC 405 521-2236

October 1, 1971

To: Commissioner of Education
U. S. Office of Education
Department of Health, Education
and Welfare
Washington, D. C. 20202

Through: State Board for Vocational
and Technical Education
State Capitol
Oklahoma City, Oklahoma 73105

In requirement of Regulation 102.59 and pursuant to item 102.23 (c) of the Office of Education Rules and Regulations, and in compliance with Public Law 90-576, the Annual Report of the Oklahoma Advisory Council for Vocational-Technical Education for 1971 is attached.

In preparation of this narrative report its dual purpose has been observed: to provide an evaluative report on effectiveness of programs, services and activities carried out under the Oklahoma State Plan for Vocational and Technical Education for the academic year 1970-71; to publicize such a report. We have combined the purposes into one publication.

This report will be circulated to news media and through it to the general public, to school officials, to the state legislature and congressional delegation, and to laymen.

Roy Craig
Roy Craig, Chairman

Caroline E. Hughes
Caroline E. Hughes, Secretary

Goal I: State Plan Goals and Outcomes

In some of its program objectives listed in the 1971 State Plan, the Oklahoma Department of Vocational and Technical Education exceeded its goals. In others it did not quite reach an optimistic target.

In a few cases, usually requiring local sponsorship and business community support, economic conditions and to a degree late federal funding, were roadblocks. This was true especially in cooperative and work-study programs.

A follow-up to that was noted in a failure to meet numerical objectives in the two programs just above, related to the disadvantaged and handicapped, although the number of programs offered those two groups and the percentage of such persons enrolled in regular and other special programs, exceeded the stated goals appreciably.

The department sought to enroll in vocational education, 34 percent of the state's secondary school students and secured 34.3 percent of that percentage. The goal of 26.7 per cent in urban areas was more than doubled, to 57.16 percent, while the rural secondary percentage goal of 50.5 percent was missed by less than 8 percent.

The goal (24.5 percent) for secondary vocational students entering post secondary programs was just barely missed. On regular programs, with the goal first, followed by attainment, the number of programs was:

Agriculture, 390 and 387; Distributive Education, 55 and 53; Health Occupations, 22 and 18; Homemaking, 414 and 383; Office Occupations, 93 and 81; Technical Training 26 and 17; Trade and Industrial, 352 and 364.

For percentage of students, available for work, who were placed in jobs following training, the goal of 93.3 percent resulted in a figure of 94.8 percent. It was hoped that 73 percent of the vocational course completers would leave with a marketable skill. This figure rose to a commendable 80.3 percent.

(A specialized breakdown of other programs is shown by tables in Appendix A.)

The Vocational-Technical department, in the Advisory Council's opinion, in seeking to serve better its more than 103,000 clients by some 1,500 programs, had its priorities on straight. This has particular reference to accountability — not only for proper use of federal, state and local funds expended —

but in planning, programming and presenting to youths and adults the best instruction possible.

Research held a favored priority position, including evaluation of both process and product — with emphasis on the attainment of marketable, entry level skill by the end product of occupational training — and statistics bear proof of accomplishment. Evaluation included people as well as program. Dissemination of research was improved and is a valuable corollary. So is the increased attention to professional improvement of instructors and curriculum better attuned to occupational supply-demand studies.

Special attention is being given to exemplary programs such as pre-vocational programs at the junior high level, with exposure to the "world of work;" through work experience, team teaching, placement and follow-up, programs for the physically handicapped, the socially, economically and culturally disadvantaged, who represent about 62 percent of persons receiving occupational training in Oklahoma, with better identification of — and more attention to — potential dropouts.

The Oklahoma State Plan displays a pattern for progress by utilizing a variety of research resources, from the Occupational Training Information System's (O T I S) supply-demand data by state and region, to private studies in the public sector. The Plan is detailed while flexible within the context of needs of people and industry, community desires, and time elements.

In an attempt to interface programs offered with supply-demand data provided by the OTIS study, planners have an obvious initial hurdle. Of necessity, potential supply in a given trade or skill must include persons registered with the Oklahoma Employment Service as seeking work in a specified occupation. Validity of summary figures by state and region is lessened because (1) there is no way short of job experience to determine applicant's proficiency level (2) no one knows whether they are sincere in seeking work or register to obtain other benefits, and (3) how many unemployed actually register with OES, even where it maintains one of 24 field offices. Data from public and private schools and MDTA programs are more reliable.

Through Skill Centers at Oklahoma City and Tulsa, and the Rural Skill Center at Sulphur, with a flexibility to provide special training courses at request of specific incoming industries, the State Department adds dimension to its regular school related programs. A special new program also has been budgeted through state appropriation of $62,-500, under a contract with the Department of Corrections, for pre-release training at the former Jobs Corps camp at Hodgens.

Preserve individual dignity with a skill career

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Goal II: Serving People's Needs

The State Department cooperates regularly with eight state and federal agencies involved in manpower training and/or planning and consults with the private schools association.

It is indicated that of the state's total secondary school enrollment of 185,046 persons, aged 14 to 18, 65,045 will be served by vocational education in 425 secondary schools, with 15 area schools adding course offerings. Courses will be in a wide variety of program areas. There is an expansion of 10 regular programs over last year, which — with expansion permitted by secondary programs' funding of $10,397,000, contrasted to $8,665,000 last year — will permit greater attention to areas with excessive dropout rates, disadvantaged and handicapped.

It is expected that 4,747 post secondary students will be enrolled, up from 4,452 last year, in 101 regular programs, with special programs attuned to new or emerging industries. Health Occupations training will be expanded due to demand on one hand, and desire of trainees on the other, to qualify for jobs in that training cluster. Training of varied types of technicians will be stepped up as will be programs in trade and industrial education. An allocation for post secondary training — youth and adult — of $2,755,000 is indicated, contrasted to $2,505,000 last year. These funds will be approximately 65 percent state and local and 35 percent federal, a shift of two percent toward the federal side due to emphasis under 1968 Amendments to the Vocational Education Act. At that, total funding will meet but minimal needs.

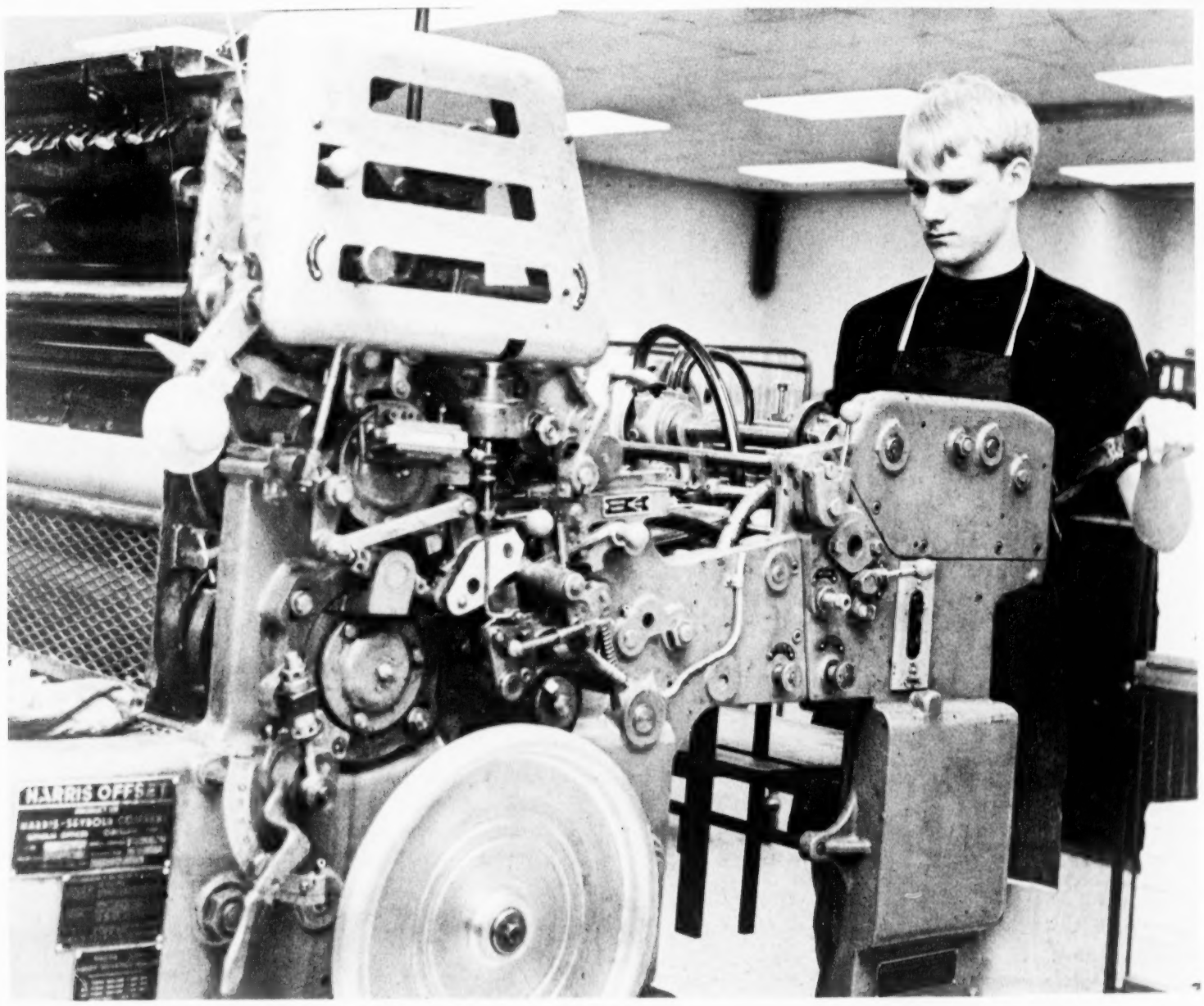
It is estimated that 35,226 adults will be given training in FY 1972, an increase of 3,247. Many of these people require retraining to get employment in a changing technology, or to upgrade skills. Adult and apprenticeship programs are to be expanded. The largest number of adults will be served in area schools although local schools in both urban and rural situations will assist. The number of disadvantaged persons expected in adult classes is 11,624, down from 19,795 last year because of a change in accounting systems. Funds of $1,105,000 will reflect a $100,000 increase over FY 1971.

The term "disadvantaged" reflects all races, where there are persons deprived of a better working opportunity for social, economic, or cultural reasons. This group includes also the elementary, high school and college dropout, the slow learners and the academically deficient, who have difficulty with regular programs. Or in the case of the three levels of dropouts from academic programs, those who lack a marketable skill. An increase of programs, by special need, will be offered these groups while those able to respond to regular program instruction will be sought and placed in them. In addition to the 11,624 adults mentioned above, the total of this category will include 1,321 post secondary students. Additional disadvantaged enrollment in regular classes is expected to total 18,122 persons. Economically depressed areas by the family income limitation — or those having high rates of unemployment — now include 45 of Oklahoma's 77 counties. They will receive priority in program funding.

There are five major areas of high population density that represent more than one-half of the state's people and about 25 percent of those families have incomes below $3,000 annually. These are in Oklahoma, Tulsa, Washington, Cleveland, and Comanche counties. Conversely, they contain also some of the more affluent citizens. In the reference frames above, and under Part B categorization of the 1968 Amendments, funds amounting to $4,510,000 are to be allocated, an increase of $410,000.

Not the least emphasis in changing trends, is attention to a Coordinated Vocational Education Training Program (CVET) which combines opportunity for acquiring a saleable skill with related instruction in basic math, science, English, and social studies. There will be 25 such programs, in 16 high schools, for a minimum of 600 students in selected state areas.

Not only by direction of the 1968 Amendments with specified percentage allocation of funds, but by state and legislative concern through special education appropriations, Vocational-Technical shares with the State Department of Education a program for the physically and mentally handicapped, where reference to vocational education is applicable. Federal funds allocated under the 1968 Amendments amount to $600,000, an increase over FY 1971 of $65,000. This will be more than matched by $2,106,000 in state and local money, up from $1,907,000. This becomes a major program in that more than normal program course planning is required. There is great need, the state's total of handicapped being estimated at 445,941 persons. Not all of them are susceptible to training, in the vocational sense, or of employment, but others whose personal deficiencies are not major barriers to gainful employment can be trained. Under its funding limitation, the State Department of Vocational and Technical Education expects to aid 8,226 handicapped persons, 5,041 of them on the secondary level, 367 on the post secondary, and 2,818 on the adult level. This represents a total increase of 3,042 persons over FY 1971, which is illustrative of concern.



Goal III: Follow-Up On 1970 Recommendations

Copies of the 1970 Report were sent to the U. S. Office of Education, the National and State Advisory Councils, the State Board, State Department, high schools, counselors, members of the state legislature, newspapers and other media. Primarily with assistance of the State Department of Vocational-Technical Education action on major 1970 recommendations can be shown or is in progress. ("State Department" as used in this report refers to the State Department of Vocational and Technical Education.)

1. Guidance and Counseling:

a. The State Department has worked with public schools, particularly the comprehensive high schools, in an effort to see that more personnel are assigned to a higher percentage of schools so more students can have access to a qualified counselor. There is very little more the State Department can do as the responsibility for providing counselors for public schools lies with the board of education of each individual school district. The State Department will continue to work in every way possible to influence local schools to employ more counselors.

b. There has been a definite effort to reduce the ratio of students to counselors in Oklahoma, particularly on an experimental basis with the Putnam City schools, in which the State Department is providing counselors for Putnam City high schools so the ratio of students to counselors is being cut approximately in half. In the seven southeastern counties the state is putting on seven counselors to work in a mobile counseling situation to assist all schools of that area in providing greater emphasis to vocational and technical counseling.

c. The State Department has worked with institutions of higher learning to see if course offerings in the training of counselors can be altered to include more than the present single course in vocational education. This recommendation has met with some success and several institutions are attempting to change it. We expect that most institutions will have it changed by the end of one additional year.

d. The State Department, through a cooperative agreement with the State Department of Education, Division of Guidance and Counseling, is holding periodic workshops for both administrators and counselors where academic credit is granted, and they have been doing this for a number of years. This project was carried on this summer and will continue for a considerable time in the future.

e. While the State Department does have an interest in the training of less than professional degree personnel in the area of guidance and counseling, such a project needs to originate from the public schools' asking for a program to provide a counselor aide, or a guidance technician. Very little progress has been made on this particular recommendation, but it will be given additional emphasis in the future.

2. Working Relationship with Basic Education:

a. A closer working relationship has been established between adult basic education and State Department (Adult Division). A number of meetings were held this year in which representatives from adult basic education were present. They also serve on adult education committees. This situation is much improved and should show additional improvement.

3. Instructional Area Cost Studies:

a. The planning unit in the Division of Research, Planning, and Evaluation is currently involved in determining the average annual operation costs of all vocational and technical programs offered in the regular secondary schools, area schools, and junior colleges in the state. Exploratory cost data is currently available for planning purposes, and it is anticipated that the final report will be completed by autumn. This information will enable the State Department to make analysis of the training programs, account for results being achieved by the programs, and assist in the planning of new programs.

4. Public Information

a. More intensive public information activities are underway, including distribution of an excellent color brochure on Vocational-Technical Education entitled " Look What's Happening." Also, a good promotional film on "Hire Education."

5. On-Site Evaluations: (Detailed later in this report.)

6. Placement Information on Graduates by Job Titles and Interfacing Supply-Demand Job Clusters With Training Programs:

a. Interfacing is based on the expert opinion of state supervisors in Vo-Tech and manpower specialists in the Oklahoma Employment Security Commission. The interfacing developed by these two programs was checked against interfacing recommended to the U.S. Office of Education, and a few discrepancies found could be attributed to the nature of Oklahoma's economy. Since there are more than 15,000 different types of occupations found in the state, it would be impossible to include every related job in the clusters; however, since most jobs are found in relatively few occupations, an ed-

ucated guess would be that 80 to 95 percent of the demand for particular types of workers is represented in the clusters. Activities that have been conducted to check the interfacing include:

1. Lonie Holms, a 1970 doctoral recipient at OSU, wrote his thesis on the validity of Occupational Training Information System (OTIS) clusters in terms of job titles of employed graduates. His findings indicated the clusters were generally valid except that vocational agriculture graduates were generally found in the trade and industrial occupations.

2. Projections of the 1970 OTIS report were checked against unfilled job vacancies that actually occurred in the projection period and the projections were found to be surprisingly accurate. Implications included the fact that the interfacing must have some degree of accuracy or the projections would not match the actual occurrences with any more than random frequency.

3. In the OTIS follow-up survey for 1970 graduates, it was determined that approximately 75 percent of those graduates who entered the labor market were employed in cluster-related occupations. This indicates that training has some relationship with jobs it is clustered against.

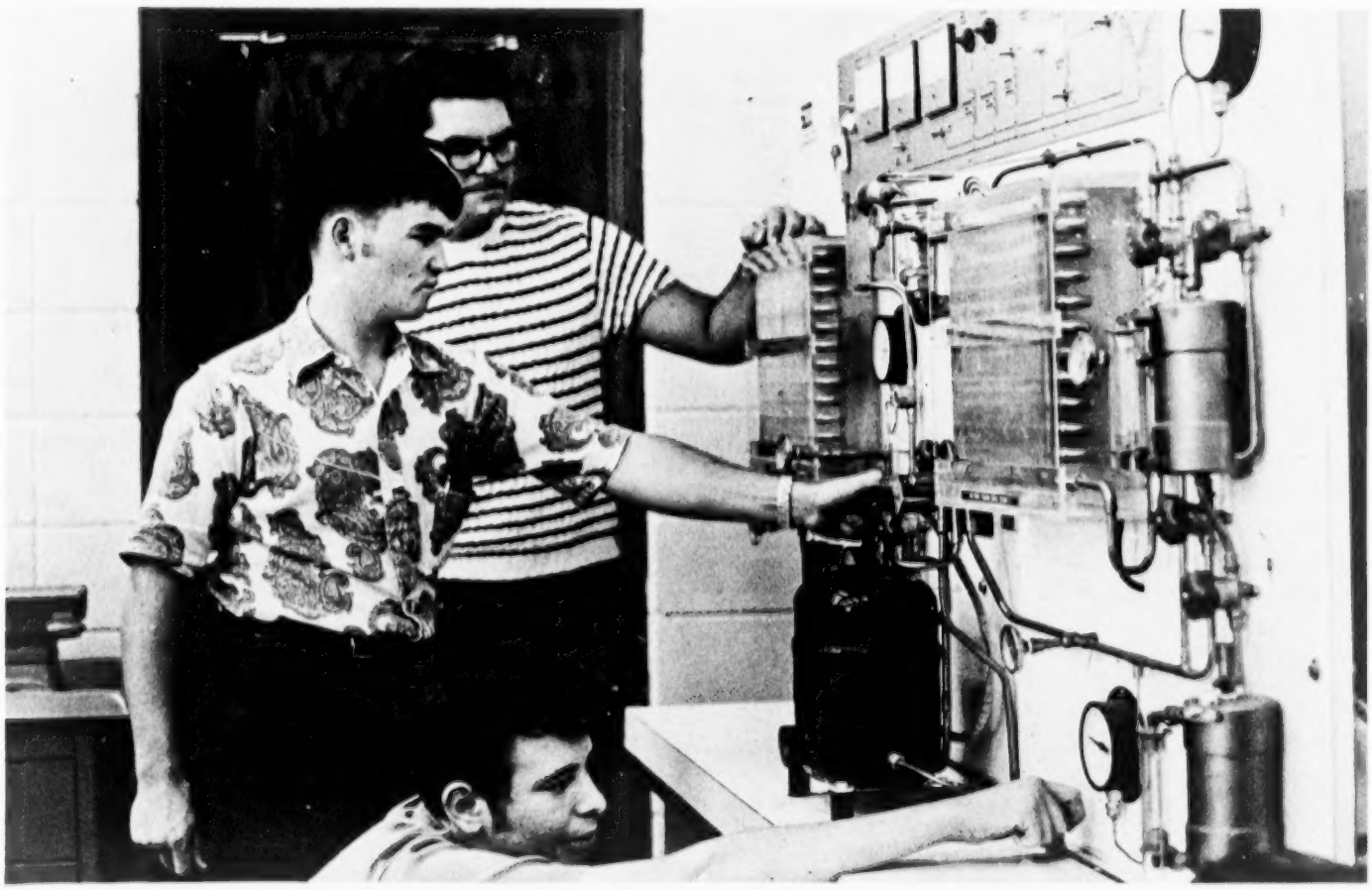
4. To enhance validity of checks on the OTIS interfacing these actions are underway:

a. i. Dr. Joseph Champain of the University of Houston proposes to conduct a series of studies for the State of Texas on accuracy of the interfacing. In addition, he may survey a job market where there is an oversupply of trained manpower as determined by OTIS, to see which types of supply of public school graduates, private school graduates, etc., are preferred. Our regional situations are similar.

b. ii. The Division of Research, Planning, and Evaluation is preparing a report, funded partially by the Council, on follow-up data which compares: (1) dropout employment patterns versus graduate employment patterns, (2) employment patterns of 1969 graduates versus employment patterns of 1970 graduates, and (3) the employment patterns of 1969 graduates after five months versus after 17 months. This study should give us some insight into the longer range effects of training and more realistic look at validity of the clusters.

7. The Council recommended a joint study by supervising and control agencies on converting an existing state institution to a residential vocational-technical school. State Senator Bob Trent, Caney, introduced SB 214, directing the Board of Higher Regents to make a feasibility study on converting Murray State College, Tishomingo, into a residential vocational school. Action is pending.

8. On efforts to identify in-school and out-of-school disadvantaged:



For more education-or work now-acquire a skill

Research and data analysis units in the Vo-Tech Division of Research, Planning, and Evaluation has developed an individual student accounting system, whereby the department is able to identify what portion of the vocational and technical enrollment in each individual program exhibits characteristics that classify them as disadvantaged students. This information enables the department to project the number and percentage of disadvantaged students being reached by vocational and technical education. Additional information has been compiled giving the number of children in each county receiving aid from the public assistance department of the state. Also, information has been obtained from each secondary school indicating the number of dropouts and the reason for their dropping out.

9. On expansion of Health Occupations training programs, due to demand-supply factors, with extension into secondary schools:

Health occupations will receive increased emphasis in Fiscal Year 1972 and over the next five-year period. Fifteen new programs (8 secondary and 7 post secondary) are planned for 1972. Forty new programs are projected to be established by 1976. A recent study on career development for supportive nursing personnel was conducted by Mrs. Pat Jamison. It is anticipated that many of the findings can be implemented into health occupations in order that trained personnel can advance up the career ladder.

10. On better correlation and coordination with industry in planning curriculum for secondary programs and beyond:

An attempt is being made to coordinate training programs with business, industry, and government service. A survey has been conducted by the Planning Unit to determine the current status of the use of advisory committees. The next step planned is to involve the vocational and technical teacher population in training programs to acquaint them with the use of craft advisory committees in order to determine the curriculum to best train their students. Another study is being conducted to gain more knowledge about the adult population that has received training in occupational education. An attempt will be made to determine the best kinds of training programs to establish in order to serve the adult population.

11. Reorganizing the state staff on a functional basis:

The State Vo-Tech staff, while it has not been reorganized completely toward the func-

tional approach, is used in functional activities; and the staff is oriented to better attune occupational training to the needs of business and industry regardless of the occupational area in which they represent.

12. On closer cooperation with the State Department of Education on Title III projects, primarily for the disadvantaged:

The State Department of Vocational and Technical Education has developed a close liaison with the Title III representative of the State Department of Education, to see that those activities designed to improve the education and training of the disadvantaged, are coordinated with the program of vocational and technical education which is also designed to work in the best interest of the disadvantaged.

13. Developing a better method of identifying the handicapped.

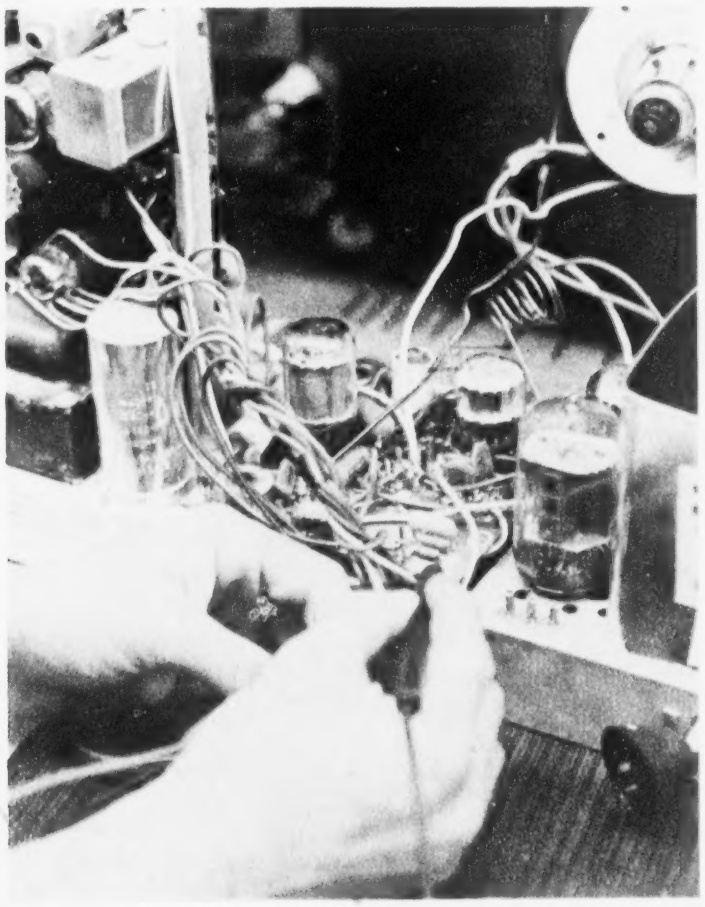
The individual Student Accounting System allows the State Department of Vocational and Technical Education to identify the handicapped students enrolled in vocational programs. The Department is still experiencing some difficulty in locating and identifying the handicapped, other than routine referrals from the Department of Public Welfare.

14. On recommending to the State Board that it seek modification of office of Education regulations on paper work requirements documenting minor reimbursements:

There has been some modification of the Office of Education's regulations so the State Department can make decisions affecting minor reimbursements. There is not as much work presently involved in documenting an annual reimbursement of $1,500 as apparently was reflected by the Advisory Council in its last annual report. Much consideration has been given this past year to developing a different program and policy regarding reimbursement. While it is not in a form to be released at this time, it is under study and if it works out could make progress regarding the Council's recommendation.

15. On more in-depth study in cooperation with local administrators and citizens to establish need for programs, the Vo-Tech department has not been idle.

Approximately 35 area school and secondary school administrators who have a large number of vocational programs in their schools, were involved in a management by objectivity workshop this summer, in Oklahoma City. In the workshop, these administrators were introduced to the concept of planning programs based on need and key results expected. Also they were exposed to the concept of allocation of resources in order to accomplish the desired outcome. This year's local applications for vocational and technical education programs were presented to school administrators at all levels, with supplemental materials to assist them in planning their programs. The supplemental materials contain: OTIS information for the



state's designated economic districts, Oklahoma City and Tulsa's Standard Metropolitan Statistical Areas (SMSA's), and the state-wide totals; dropout information; aid to dependent children for their county; future plans of their graduate population; average annual cost of vocational and technical programs; student characteristics information related to the program in their schools, and follow-up information related to their programs.

Also, the Delphi study is being used to gain information in order for the department to plan programs for the 70's. This technique involved 25 nationally recognized persons in education, industry, business, and government; 25 persons recognized in the areas previously listed in the state; and 50 lay persons composed of randomly selected people. Information gained from the Delphi technique will assist in determining the role of the state's vocational and technical education for the 70's. The vocational director of the Oklahoma City public schools has requested assistance from the planning unit to assist in examining their current program offerings and plan new programs over a long-range period. The State Department has a close coordination with area schools in determining programs that will best suit manpower and student needs. It is anticipated that the State Department can supply even a greater assistance with continued improvement of the information system being developed.

16. An important Council recommendation concerned need for improved industrial arts curriculum, especially as related to junior high, and a relationship with occupational education. From the State Department, this response:

Industrial arts is a part of the total educational program, being a study of industry and its technology, for the purpose of general and pre-vocational education. Through instructional and laboratory experiences, students learn about the industrial and technical aspects of life. The instructional content deals with origins and development of industry and the tools, materials, processes, products, energies, opportunities, organization, and the problems involved in converting the earth's resources into material goods. The junior high school or middle school industrial arts program should be diversified and should offer a variety of experience in organized laboratories.

One method used for presentation of materials is the general shop, or the general industrial arts. This method is usually found in the junior high school. Presently we have a total of 85 general shop programs in Oklahoma, however, not all of those are at the junior high school level. Recognizing the need for updating curriculum provided better exploratory programs in the junior high industrial arts curriculum introduced in the Oklahoma City school system last January.

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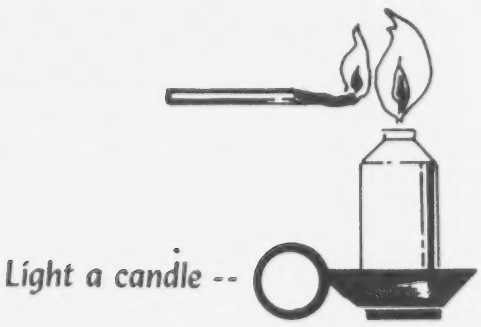
One junior high, and one middle school, was selected to implement the "World of Construction" portion of the Industrial Arts Curriculum Program (IACP) on a pilot basis. The success of these two programs will be exploited. Three additional junior high schools started IACP in the fall of 1971. Four "World of Construction" courses and two "World of Manufacturing" courses are being offered by the five schools.

Junior high school industrial arts in the Tulsa public school system consists of exploratory basic and advanced to levels one, two, and three. Students at the seventh, eighth, and ninth grade levels are usually guided through a series of introductory experiences in a variety of areas. Included in the recommended programs are industrial crafts, drafting, electricity/electronics, graphic arts, metals, power mechanics, and woods. The facilities are called limited general shop/laboratories and provide facilities for experiencing a number of closely allied activities in a single industrial arts area. For example, a metals course includes art metal, casting, finishing, forging, heat treating, metal machining, metal spinning, sheet metal, and welding activities. Special emphasis is given in grades seven, eight, and nine to help students discover and develop their aptitudes, abilities, and interests. Provision is made for development in a variety of skills and for opportunities for creative activities. An understanding of the industrial, technological world and its effect upon our society is developed, and information concerning the requirements of occupations and professions is provided.

As other examples, junior high school industrial arts in the Blackwell school system consists of exploratory units in the areas of drafting, woodworking, metals, electronics, and plastics at the eighth grade level. Seventh grade industrial arts is limited to crafts. The Ponca City public school system is in the process of developing a seventh and eighth grade program consisting of four, one-semester units in graphic arts, electricity/electronics, construction, and manufacturing processes. Industrial arts is required of seventh and eighth grade boys in the Ponca City system. A curriculum is to be developed as a pilot program to offer another method of improving industrial arts as an exploratory and prevocational general education.

These are examples of progress that have been made. They present an idea of developments that are in process toward replacement and revision of traditional industrial arts curriculums to meet the need for contemporary prevocational course offerings. There is no one curriculum that will be suitable for all schools. However, a basic curriculum will be developed that can be adapted to the one-teacher school, as well as to multiple-teacher schools.



Learning by doing leads to earning

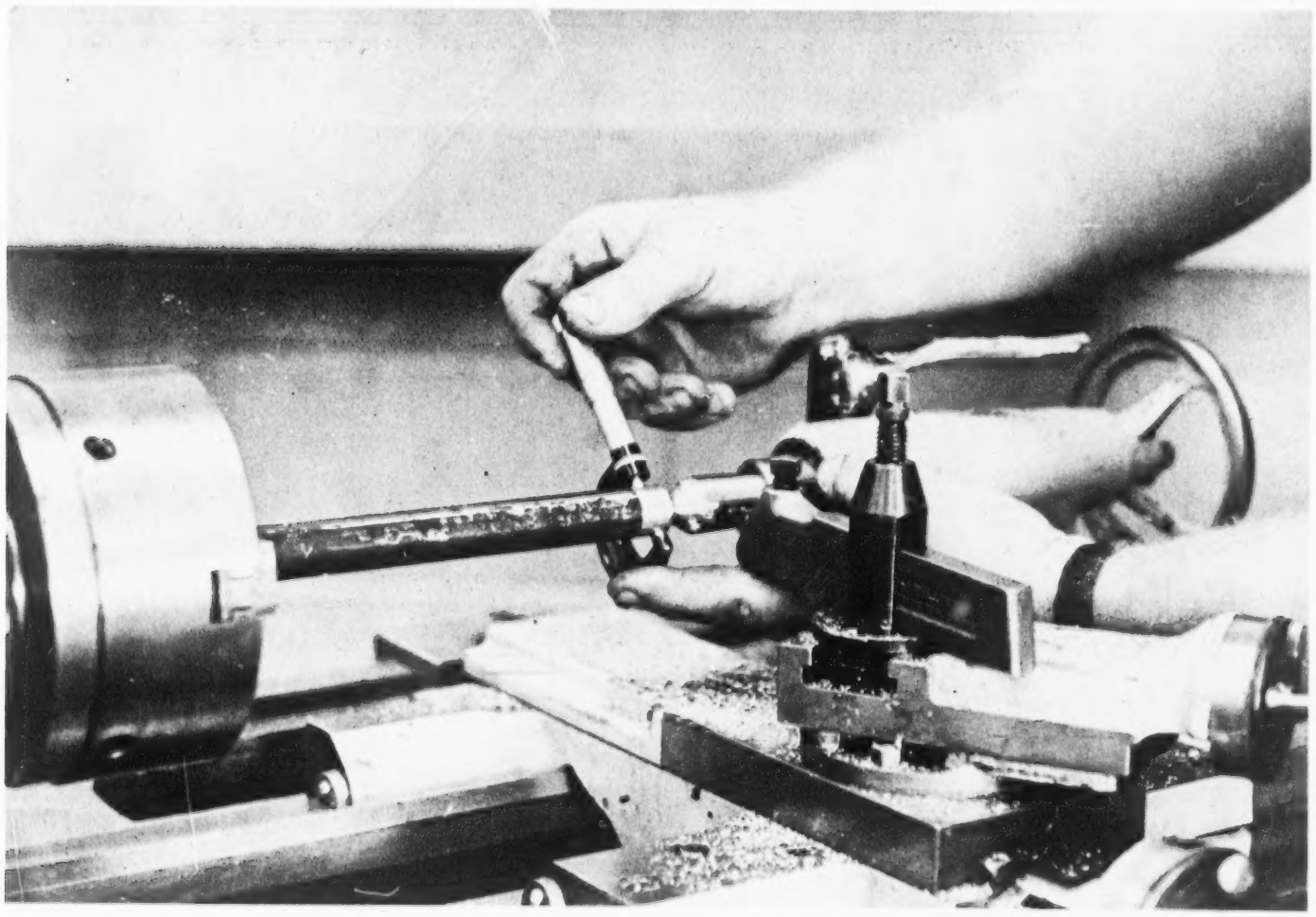
On-Site Evaluations

In its Second Report last year, the Council recommended that more on-site program evaluations be made by the State Vocational-Technical Department. A plan has been initiated on a five-year basis for evaluating 20 percent of programs each year, by the Division of Research, Planning and Evaluation. The Council provided some financial support. Instruments to be used had to be perfected and field tested, then cross checked to gain the maximum validity. Part of this remains under study. Among 72 auto mechanics programs in the state, at area schools and high schools, ten were selected by Trade and Industrial division supervisors as a cross section of good and poor programs, based on varied criteria including employability of the end product. On-site evaluations by five member teams were made. The Council staff participated. There are some standardized items on the evaluation instrument, a few altered as a result of findings. Some generalization is similar to comparing tires to valves but findings in individual programs can be compared with average norms established, hopefully for decision on continuing or eliminating reimbursement for below standard programs.

An overall average of per capita costs, for contrasts, cannot be made because at a point in time costs of equipment is figured into per capita costs by some schools. Other schools use amortization.

The highest per capita cost of $742.49 with the lowest total of auto mechanics students (19) of the ten programs checked, was in a district with the second lowest property valuation ($1,423,910), the lowest total millage levy (44), the eighth highest program expense ($8,374), the highest expense per graduate ($1,762.96), the lowest percentage of graduates available for employment, or employed as a mechanic or in a related field. The instructor has eight years teaching experience, seven in his present position, does not have a degree and updated his own skill four years ago.

Again, aside from the area school surveyed, the highest district valuation was in a metropolitan area with 100 percent disadvantaged students. The valuation was $15,319,513. This program had the largest number of students (36), the sixth highest per-student expenditure ($549.69), the sev-



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enth lowest total levy (52.15 mills), the second highest program expense ($11,894) and the fifth highest expense per course graduate ($991.17). Fifty-eight percent of its graduates were available for employment. Of that number, 57 percent were employed in a skill for which they were trained or in a related field, and 43 percent were employed in a non-related field. The instructor has a master's degree, has been teaching more than 15 years, 11 of them in his present position. He updated his skills two years ago.

Because of the area school and two metro districts, valuation averages cannot be compared but some other statistics can be related. The lowest valuation district ranked fifth in per capita expenditures, fourth from the bottom in millage levies, first in program expenditures, second in expense per course graduate and had next to the lowest number of students to graduate. The instructor has 13 years experience, eight in his present position, and had no prior management experience. Excluding the area school costs and levies, averages for the other nine programs were: Per capita expenditures, $596.57; total levies, 50.50 mills; program expense, $9,589; expense per vocational graduate, $1,112.23. Some information provided by schools prior to the on-site evaluation visit is questionable while, for comparison only, it may be checked against state norms.

Graduates shown as available comprised 39.2 percent contrasted to 53 percent; those employed in a related field averaged 61.7 percent compared to 73 percent; employed in a non-related field to that for which trained were 13.1 percent as against 24 percent; 17.3 percent of course students went to the armed forces where the norm is 12 percent; 35.2 percent were disadvantaged compared to a 31 percent state average; there was a 19.9 percent dropout rate compared to 16 percent for a state average of their peers in similar courses. Instructors' teaching experience ranged from two years to above 15, averaging 8.6 years with 7.4 years in present position.

The matter of accountability, which concerns instructional methods, curriculum and quality of the end product in relation to how dollars are expended, is as important for school administrations and the State Department as accounting for the dollars themselves.

The 58 auto mechanics programs operated last year, along with those in 14 area schools, present cases in point. Data on a state-wide basis for FY 1972 indicates a need for 1,002 auto mechanics. Supply — which is a composite of Employment Service registrations, public school and other public manpower training programs, and private schools — indicates 986 people available for a net demand of 16 persons. The five-year projection is for an additional 243.

One hears complaints from garage owners about a lack of qualified mechanics. Granted there can be local or area shortages, however, data provided from surveys of the personnel users themselves provide the broad demand picture. These are relatively high-cost programs in expenditures and in cost per graduate with a saleable entry level skill. On a random average of nine various sized programs, the average shop investment was $11,716.64 and the per graduate cost average was $1,112.23. Schools rated third, fifth and sixth in program expenditures were all in areas of negative demand.

These programs are installed as a result of local and/or area school district desires. They are granted specified reimbursement for instructors by the State Department of Vocational-Technical Education. This puts on both types of administration the burden of dual accountability. An aspect of that is duplication.

Local systems where area schools are located in five cities have high schol automechanics programs as do those area schools. These are at El Reno, Muskogee, Oklahoma City (eight) Shawnee and Tulsa (three). Eight local districts have no separate high school program where area schools exist. They are Ardmore, Bartlesville, Chickasha, Drumright, Duncan, Enid, Fort Cobb, and McAlester. Poteau has a high school program but none at the area school there. Area schools at Tulsa, Oklahoma City, Ardmore, Duncan, and Enid are part of a single local district. All others, operating and planned are multi-district organizations. Single district reimbursement for the first five area schools is slightly less than for multi-districts since existing districts already had purchasing, accounting, and other operating facilities.

2705

Recommendations

1. Proficiency Ratings

Certificates of Completion attest that a student was present physically at a course of instruction for a minimal amount of time and earned certain grade points. They do not evaluate skill proficiency of the individual or rate him in a specialty aptitude within a training cluster.

As a result, a clouded image on the merit of vocational-technical training has obscured its value — out of proportion to the examples displayed but there nevertheless — because some employers have been disappointed at skill levels expected of those hired, whose basic certification actually amounted to "he completed the course."

Capability tests can be given by some prospective employers in certain areas. In others they are difficult and time consuming enough that potential employers do not want to bother with them, relying instead on claimed experience, the very thing that a person trying to enter the labor market lacks.

The Council recommends that standardized tests be given all vocational and technical occupational course graduates, which would rate proficiency level of the individual in a particular skill, indicate areas of specialization within that general skill — if any — and place this information on a plastic, wallet-size card, with social security number, to prevent any unauthorized reproduction. The rating system, devised in consultation with advisory committees drawn from the proper occupations, trades, and organized labor, should equate an individual's skill level with his peers in secondary, post secondary, adult, MDTA, or special training.

This would be valuable to a prospective employer who must be pleased with our product to assure people an economic opportunity. Knowledge that a valid proficiency rating system indicating level of training exists in Oklahoma would be an enticement to industry's evaluation of our manpower resources. Geographic location, utilities, transportation, educational, and cultural facilities, recreation and other benefits are important to industrial location but quality of workers is paramount.

Such a rating card also would remove any illusion by a student as to his own capability, or the value of his current ability in the market place. It also would point for him the adequacy of his training or the need for continued training, aiding in prevention of future disappointment to him or an employer. Upgrading could result in a new rating on his card.

Ours is a competitive world and a selective society in which rewards go to the producers. Acceptance of that fact early in life should contribute to an individual's personal — even character — development. That remains a basic responsibility of the complete educational process, although too often ignored.

Going a bit beyond custom, a standardized rating test on proficiency also can benefit an individual by providing an open end termination to basic training, according to his talent, aptitude, interest and evidence of acceptability of instruction. That, too, would be somewhat of an innovation but this is an era of change even if at times tradition is pained. Objection to innovation is less painful than rejection of people.

2. Duplicate Mechanics Programs

The Council recommends to the State Board that it work with both sending districts for area schools and local districts to reduce duplication of auto mechanics programs through the reimbursement process.

That the Board encourage the consolidation of equipment and/or funds for equipment to provide better basic facilities and equipment for specialization in the cluster of automotive related services, to the end that more course graduates will be employable.

a. In that connection, the Council endorses and urges support for such plans as those of the Oklahoma City vocational-technical education director, to consolidate into one or more shops the eight separate school programs for reasons mentioned above, since pressure of people (youth and adult) in that area would be too great for the area school. Busing now is a fact of school life and less expensive than duplicate, high cost programs.

That more student screening be done to give priority to those who are at least initially interested in part of the automotive cluster program as a career and not merely to encourage a hobby.

3. Apprenticeship Credit

It is recommended that more intensive effort be made to secure agreements with organized labor to accept mutually agreeable levels of vocational occupational craft training, after proficiency tests, as a portion of apprenticeship requirements for craft unions.

This should be beneficial to unions by lessening criticism that organized labor keeps apprenticeship at a minimum to provide more overtime for journeymen, also bene-

Occupational training is 'Hire' education

ficial to youths who aspire to union membership but often feel rebuffed and discouraged in the belief their training had little value in securing entry level employment.

Such a plan can be aided by seeking and obtaining more cooperation from unions, acting in a consulting role in formulating courses of study, with industry, and in preparation and conduct of skill tests.

4. Vocational Graduate Follow-up Study

The Council has been concerned sufficiently to assist in funding a follow-up study with the purpose: "What has been the past training experience of graduates and dropouts of vocational and technical education? What has been the experience of those who entered the world of work? What implications does this experience have for the improvement of vocational and technical education in the future?"

The study is Supplement V of Cycle Three of the OTIS Report, dated August 31, 1971, and includes the academic years of 1968-1969 and 1969-1970, covering approximately 20,000 students, and was produced by the Division of Research, Planning and Evaluation. The Council wishes to associate itself with recommendations based upon these conclusions:

a. With exeception of graduates from the Health Occupations division, less than one-half of the graduates from vocational and technical programs attempt to use their training to find permanent employment within five months after completion of training.

Since it is far more efficient to better utilize available trained manpower than to increase trainee numbers, more effort should be made to increase the number of graduates who enter the labor force. The most practical way would be to reduce the percentage of graduates who continue their education in a field not related to their vocational or technical training. A college bound student should not be allowed to take a training slot if it prevents an employment bound student from receiving training.

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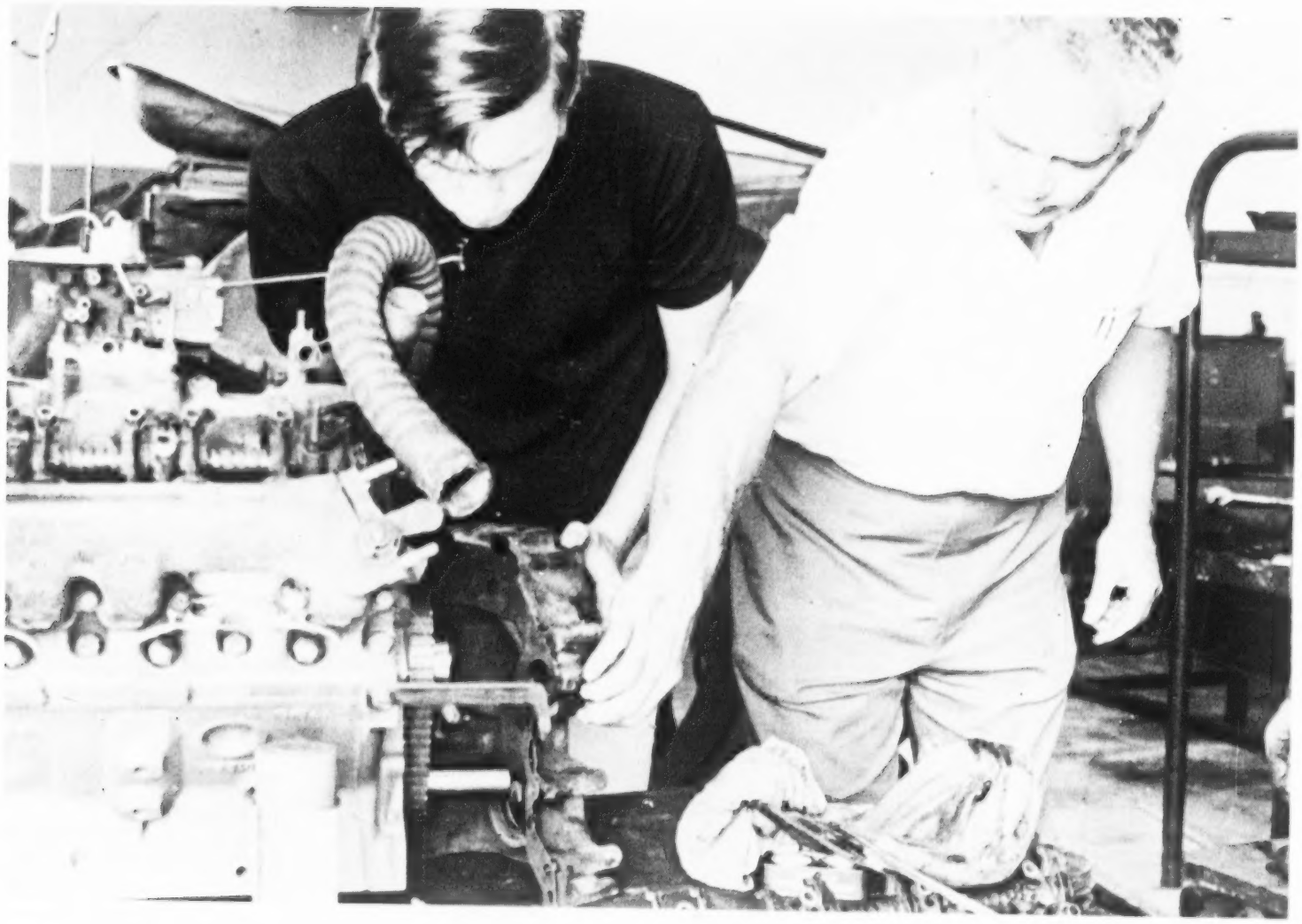


This implies selection of students in greatest need of training for employment and the counseling of graduates toward employment or further education related to the vocational program which they have completed.

b. Since many vocational or technical course graduates enter advanced schooling, but drop out within one year, the importance of placement and adequate follow-up efforts should be emphasized to vocational and technical teachers, both at preservice and inservice levels (and to counselors). Schools should be encouraged to establish placement procedures and to set responsibility for placement.

c. Follow-up data on specific program types should be considered carefully when expansion or reduction of programs is planned. Findings indicate that more than 70 percent of graduates entering the labor market were classified as "employed-related." In this category the percent of graduates was greater than the percent of dropouts who had obtained a marketable skill and were classified as "employed-related."

An interesting finding is that the percentage of graduates classified as "unemployed," five months after graduation, was considerably less than the unemployment percentage normally associated with this age group.

5. Teacher Supply and Demand

The Council has shared and expressed concern of the State Department for the need of vocational and technical education instructors for new programs; as replacements for those who die, retire, or otherwise leave the teaching profession; the projected supply of instructors in teacher training institutions that will be available to fill jobs.

The Council wishes to concur in recommendations made pursuant to findings in a study just completed on secondary and postsecondary programs under direction of the Division of Research, Planning and Evaluation, titled, "The Demand for and Supply of Vocational and Technical Teachers in Oklahoma, 1972-1976," for the seven major program areas. Highlights follow:

Vocational Agriculture — there is approximately an 18 percent oversupply of vocational agriculture teachers produced annually. It is recommended that (a) teacher training at Oklahoma State University be maintained at its present rate and (b) the teacher training program at Oklahoma State University further redirect its efforts toward training teachers for off-farm agricultural programs.

Distributive Education — there is a need for more Distributive Education teachers

than have been trained in the past few years. It is recommended that a new undergraduate program be established at Oklahoma State University in the next five years and that teacher training at Central State University be maintained.

Health Occupations Education — the most serious shortage of vocational and technical teachers is found in the Health field. It is recommended that the program at Central State University be expanded rapidly or that one institution in addition to Central State University be assigned to the responsibility of training Health teachers immediately. Additionally, it is recommended that provisions be made to admit associate degree graduates in Health programs into teacher training without significant loss of credit hours.

Home Economics Education — teacher training programs at Oklahoma State University, Oklahoma University, Langston University, and Oklahoma College of Liberal Arts are presently providing 75 percent of the Home Economics teachers needed annually. Recommendations include (a) increasing the enrollment in teacher training in these institutions or increasing the percent of graduates entering teaching by approximately 15 percent and (b) effecting a further shift in the emphasis of teacher training programs toward preparation of teachers for gainful employment.

Business and Office Education — reported data indicates that teacher training in this division produces over 200 percent of the teachers needed for vocational programs. However, while many of the graduates enter the teaching profession, they do not teach in vocational programs; i.e. they teach in general business programs. Therefore, it is recommended that teacher training in Business and Office be maintained at the present rate.

Technical Education — teacher training in Technical Education at Oklahoma State University produces only about 20 percent of the teachers needed annually since there are many lucrative fields that compete with education for these graduates. It is recommended that teacher training at Oklahoma State University be maintained at its present rate and that the feasibility of establishing new teacher training programs in an urban center such as Oklahoma City be determined.

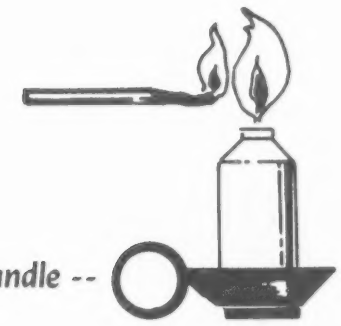
Trade and Industrial Education — teacher training at Oklahoma State University presently supplies approximately 60 percent of the trained industrial teachers needed annually. Recommendations are (a) that at least one additional teacher program be established for Trade and Industrial teachers and (b) that any additional teacher training programs be established in conjunction with an area school or Oklahoma State Tech at Okmulgee.

6. Teacher Training in Adult Education

It is recommended that a study be made on the need for teacher training in adult education, by the State Department, or in conjunction with the State Department of Education.

7. Training of Guidance and Counseling Personnel

It is recommended that continued emphasis be placed upon training of guidance and counseling personnel with a top priority assigned to such endeavor.



Light a candle --

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Commendations

1. The State Board and State Department are commended for continuing to stress all facets of guidance and counseling for both youths and adults. Especially noted is the plan to use three mobile guidance units in rural areas where such services are deficient, primarily regions designated economically depressed, and cooperation with schools, agencies and business communities of those areas.

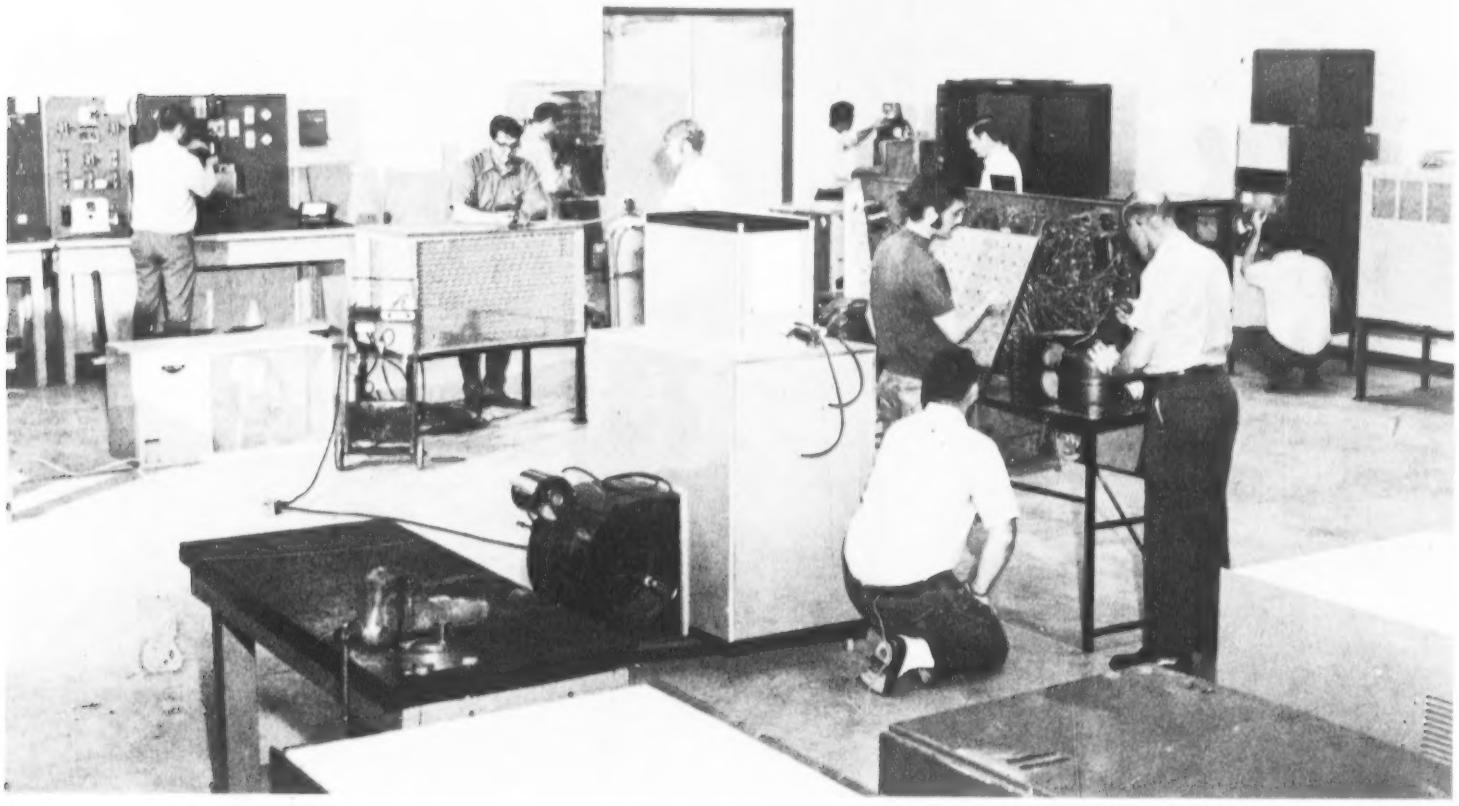
2. Also for establishment by the Vocational Guidance Department and Division of Research, Planning and Evaluation, of the "Vital Information for Education and Work" system (VIEW). Primarily through visuals, but with related material available in 32 centers across the state, this will make information related to occupations accessible to students who need help in determining an occupational choice even if that be preliminary.

3. Also for workshops including that with the Oklahoma Employment Service for training school counselors in the administration, scoring and interpretation of the General Aptitude Test Battery; one on "Management by Objective;" the Adult Education Workshop; sessions for new teachers at three locations; special programs for teachers of Indians at the Great Plains Area school; for teachers of the handicapped and the disadvantaged, and for instructors in the Coordinated Vocational Education Training Program (CVET).

4. For summer orientation programs at area schools, which permit exploration of varied programs, assisting students to make a choice and expediting autumn enrollment with fewer subsequent course changes.

5. For expansion of curriculum development by action on the assumption that each vocational course has some area of instruction common to other courses; such determinations being made by local teachers serving on a state committee, and by surveys of business and industry; with units of instruction then being developed for program areas; and a coincidental study of strengths and weaknesses in present curriculum, especially as related to the disadvantaged.

6. For planning leading toward exemplary programs in each occupational area, rather than continuing a few pilot programs, in a more positive approach to objectives and priorities. It is noted that priorities are concerned with sensitive program areas, those to meet needs of the disadvantaged, per se, and in relation to areas of high unemployment, those economically depressed, or of high population density. These are to be integrat-



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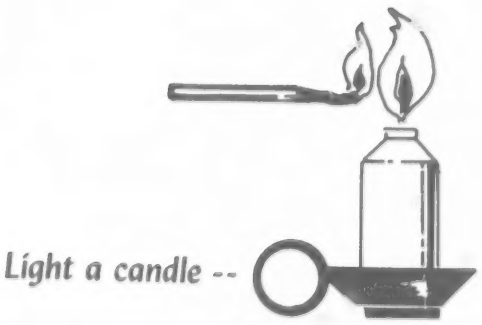
ed into existing and long range programs to a maximal amount. They must have prior approval of the state staff and advisory committees, and most meet guideline criteria which research has shown has a reasonable opportunity to succeed. Area school summer orientation programs are an example, as is placement and follow-up studies in selected schools, and evaluation studies.

7. Commendation is tendered also for creation of the extensive plan for professional personnel development of instructors and administrators by both pre-service and in-service training. Especially noted are provisions for determining areas of most critical personnel needs, including that as a priority, along with areas where teacher training programs do not now exist or are known to be inadequate, and possible realignment of the state's investment in personnel development to meet changing needs and times.

8. Deserving commendation are occupational program areas where local surveys, such as agriculture's investigation of farming and agri-business needs and opportunities, were used as a tool for redirection. Health occupations programs have engaged in a similar venture and other training areas are getting so involved. This also has led to beneficial self-evaluation, both currently and on graduate follow-ups.

9. The Council expresses its appreciation to the State Board and State Department of Vocational and Technical Education, to the Department of Education, to Governor Hall and all the respective staffs for support and cooperation in attempting to carry out its mission.



More upward by training or retraining

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Advisory Council For Vocational Technical Education

Under 1968 Amendments to the Vocational Education Act, the Congress decreed that a National Advisory Council for the U.S. Office of Education would be appointed by the president, represented by persons in 12 specified areas of experience or expertise, and the public. Similar councils were to be appointed by governors in states receiving federal funds for vocational education. The U.S. Commissioner of Education accepts or rejects the governor's certification of members.

Under PL 90-576, the councils are federally funded, with the allocation deposited in the state treasury and disbursed in the manner prescribed for state funds. The council's role is to evaluate the state's programs of vocational education, to make recommendations affecting them to the State Board, and report council findings to the U.S. Office of Education through the State Board, which may append any remarks it cares to make but cannot amend the report.

The councils, under the law, choose their own officers, decide on their bylaws, employ their professional staff, and may make contracts for research or other studies needed for the evaluative and advisory roles.

Governor David Hall appointed the present 18 member council, of whom nine are holdovers from the previous council, and nine are new appointees, one by virtue of a required category of a state industrial development agency representative.

Members of the council are:

Chairman

Mr. Roy Craig*
Clinton Production Credit Assn.
P.O. Box 157
Clinton, Oklahoma 73601

Vice Chairman

Mr. Vern Childers*
General Motors Training Center
12101 N.E. Expressway
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Secretary

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Cushing, Oklahoma 74023

Mr. Don Adams, President
Adams Hardfacing Company
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Mr. L. G. Ashley*
Superintendent of Schools
Boley, Oklahoma 74829

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*Executive Committee Member

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Oklahoma State AFL-CIO
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Oklahoma City, Oklahoma 73105

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OSU Extension Division
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Advisory Council For Vocational Technical Education

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Mrs. Elois Kirkpatrick, Secretary
4901 N. Lincoln Boulevard
Oklahoma City, Okla. 73105

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APPENDIX

1971 OBJECTIVES AND OUTCOMES

Post Secondary Vocational Education

		Goal	Outcome
a. Percentage of Population Age 15-24 Enrolled:	Urban	1.0	.63
	Rural	.4	.30
b. Percentage of PS 2-Year Students:		1.0	26.70
c. Number of Programs:		144	89
d. Percentage of Students Available for Work, Placed on Jobs:		93.0	93.0
e. Number of Programs for Emerging Occupations:		42	12
f. Vocational Student-Guidance Counselor Ratio:		450-1	500-1
g. Completion rate (percent) with Marketable Skills:		80.0	78.0

Adult Education

a. Percentage of Population Age 16-64 Enrolled:	Urban	3.5	2.2
	Rural	3.0	1.1
b. Number of Programs		1,231	1,340
c. Number of New Programs:		71	155
d. Completion Rate (percent):		80.0	79.0

Disadvantaged

a. Percentage of Population Enrolled, by Level:	Secondary	22.0	33.8
	Post Secondary	1.4	26.7
	Adult	.8	33.0
b. Number of Programs:	Regular	844	2,733
	Special	0	42
c. Students Enrolled in Cooperative Programs:		4,400	2,301
d. Students Enrolled in Work-Study Programs		728	450

Handicapped		Goal	Outcome
a. Percentage of Population Enrolled, by Level:	Secondary	15.5	33.8
	Post Secondary	1.3	26.7
	Adult	.40	.40
b. Number of Programs:		88	1,429
c. Students Enrolled in Cooperative Programs:		402	307
d. Students Enrolled in Work-Study Programs:		91	12

Consumer and Homemaking Education

a. Number of Youth Programs in Depressed Economic Areas: (Figures in parentheses counted elsewhere)	(258)	(258)
b. Number of Adult Programs in Depressed Economic Areas:	(258)	(258)

Consumer and Homemaking Education (Continued)

c. Programs Serving Youth Emphasizing Consumer Education:	346	346
d. Programs Serving Adults Emphasizing Consumer Education:	320	320
e. Exemplary Programs:	2	2

Cooperative Education (Part G)

a. Number of Programs:	235	23
b. Secondary School Programs:	215	21
c. Post Secondary Programs:	20	2
d. Employers Participating:	4,500	775
e. Percentage of Secondary Vocational Students Enrolled:	8.7	1.1
f. Percentage Post Secondary Vocation Students Enrolled:	13.3	1.6

Work Study Programs

a. Number of Secondary Offerings:	56	34
b. Number of Post Secondary	7	5
c. Percentage of Secondary Vocational Enrollees	3.4	.70
d. Percentage of Post Secondary Vocational Enrollees:	5.3	1.6

Addendum

Skill Centers Under Manpower Development And Training Act

Under federal MDTA grants, the State Department of Vocational and Technical Education has an important role that is distinguished from its normal institutional school programs at the secondary, post secondary, adult, and area levels.

The purpose is through training at the Oklahoma City and Tulsa Skill Centers, the Rural Skill Center at Sulphur and Opportunities Industrialization Center in Oklahoma City, to reduce the pool of unemployed and to advance those who are underemployed. This is a cooperative program in that persons trained are referred to the centers by the Oklahoma Employment Service. It is expected to be an approximate $2,246,316 program in Fiscal Year 1972. This is roughly one-fifth as much as federal-state funds expended on conventional programs. The State Department administers MDTA fund disbursements, develops curriculum and training programs in cooperation with industry committees, approves facilities and instructional personnel; administers, supervises and evaluates the programs.

This is an important phase of the State Department's activity and one which logically was assigned because of special needs of certain population groups in these times. In its concern for total occupational training activities, the Council earlier this year inspected facilities and training at the Oklahoma City Skill Center and the O.I.C. From the last available summary of the Skill Center, based on a 16-month training period ending in FY 1971, some interesting statistics emerge. They are averages from a rather voluminous breakdown. It should be remembered that 65 percent of these people are from the hard-core unemployed, under mandatory legislation.

Confirmed enrollment was 656 persons. Of that, 397 persons completed courses, or 60.52 percent. The number of non-completers, with respect to being available in the labor market, was 81, or 12.35 percent. There were 178 who dropped out for a percentage of 27.13. The number of completers known to be employed in February was 252 or 63.47 percent of those who finished courses. Those may be broken down by completions and employment, as follows:

Program Cluster Or Co-Op	Enrolled	Completions	Percent	Employed Number	Employed Percent
Machine Shop	64	29	45.31	13	44.82
Office Machine Repair	65	43	66.15	27	62.79
Small Engine Repair	75	40	53.33	30	75.00
Welding	102	74	72.55	41	55.40
Clerical	123	76	61.79	45	59.21
Co-Op (Work Study)	35	15	42.86	13	86.67
Dry Cleaning	127	88	69.29	66	75.00
Health Occupations	65	32	49.24	17	53.13
Totals	656	397	60.52	252	63.47

Preserve individual dignity with a skill career

The highest percentage of dropouts was in the Co-Op program, 42.85 percent, followed by machine shop, 42.19; health occupations, 35.38 (a far higher percentage than related post secondary and area school programs) small engine repair, 30.67; office machine repair, 24.62; welding, 24.50; dry cleaning, 20.47; and clerical, 18.69 percent.

MDTA deals with people who are—at the time they enter training at least — some of modern society's losers. Under the law, 65 percent of the trainees must come from the hard-core unemployed. This makes an evaluation of the training end product more interesting. From the completer attendance standpoint in this particular survey, the highest percentage, 36.78 representing 146 persons, were present from 85 to 94 percent of the time; 30.37 percent or 122 persons, attended less than 80 percent of classes; 72 people or 18.13 percent of the total 397 enrolled, made classes from 80 to 84 percent of the time.

There were 18 persons with a perfect attendance record, or 4.54 percent of the total. Two each were in welding and clerical programs, ten were in dry cleaning, with one each in four other clusters. From 95 to 99 percent attendance there were 39 persons or 9.82 percent. The largest number attending courses from 80 to 100 percent of the time were in the dry cleaning cluster.

Highest percentage in actual clock hours attended (more than 700) was 62.07 percent by machine shop trainees, followed by the same number but 41.86 percent of office machine repair students and 20 clerical workers, or 26.32 percent of those trainees. Numerically, the largest number, 151 persons, were in the 301 to 500 clock hour category, with 99 in the 501 to 700 hour bracket, and 67 with more than 700 hours. Seventy had between 101 and 300 clock hours and ten had below 100. The largest number of dropouts was in the 101 to 300 hour group at 85, with the second largest (72) at 100 hours or less. Only six dropouts made it through 500 hours.

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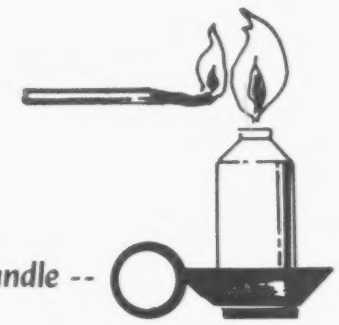
Age factors show 151 or 38.04 percent in the 23 to 32 year bracket; 144 or 36.27 percent in the 18 to 22 year group; 65 or 16.37 percent at 33 to 44 years and 37 or 9.32 percent more than age 45. Highest numbers of dropouts, at 71 each, were in the two youngest age groups. Completers were 214 males, or 53.90 percent of the total, with 183 females making up the other 46.10 percent. There were 180 married persons, 129 who had not been married, 79 who were divorced, and nine widows or widowers. There were 155 persons with no dependents, 77 with one, 68 had two, 49 had three, 25 had four, seven had five and 16 had six or more dependents. Of completers, 344 were heads of households and 53 were not.

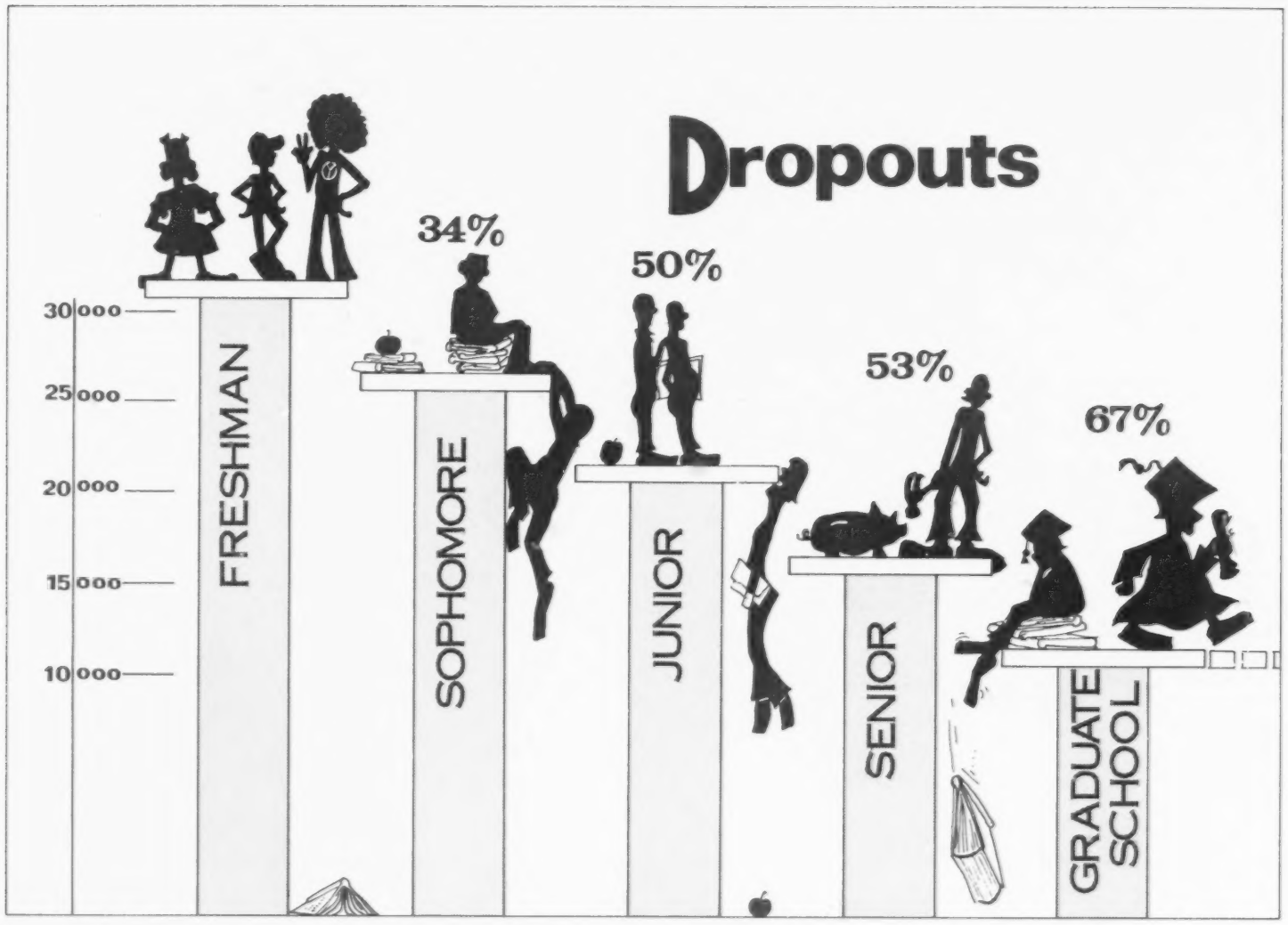
By race, 195 course completers or 49.12 percent were white with 164 or 41.31 percent black, 35 or 8.81 percent Indian and three of other races. On a percentage basis of enrollees, Negroes led in non-completions and in dropouts. (The percentage of black enrollees shows an upward trend in subsequent referrals.) There were 307 non-veterans, or 77.33 percent and 90 veterans for 22.67 percent. In the total, 337 or 84.89 percent were not public welfare recipients while 60 or 15.11 percent were. Among the dropouts 150 or 84.27 percent were not receiving public assistance. Among completers, there were 114 or 28.72 percent who were physically handicapped and 283 or 71.28 percent who were not. There were 282 or 71.03 percent of the total completers classed as disadvantaged, by federal definition, compared to 115 or 28.97 percent who were not. There were 17 persons with a conviction record while 380 had none. Educational attainment of completers revealed that the largest number, 170 or 42.82 percent, were high school graduates; 161 or 40.56 percent had from nine to 11 years schooling; 45 or 11.34 percent were in the fourth through eighth grade category, two had less than fourth grade while 19, or 4.78 percent, had more than 12 grades.

KNOWN JOB STATUS AT TIME OF COMPLETION:

Program	Training Related		Non-Training Related		Looking For Work		Not Looking for Work	
	No.	%	No.	%	No.	%	No.	%
Machine Shop	12	41.38	4	13.79	12	41.30	1	3.44
Office Machine Repair	24	55.81	5	11.63	13	30.23	0	0
Small Engine Repair	21	52.50	9	22.50	10	25.00	0	0
Welding	37	50.00	5	6.75	23	31.08	0	0
Clerical	45	59.21	2	2.63	22	28.95	5	6.58
Co-op	13	86.67	0	0	2	13.33	0	0
Dry Cleaning	65	73.87	4	4.54	15	17.05	2	2.27
Health Occupations	16	50.00	1	3.13	6	18.75	3	9.37
Totals	233	58.69	30	7.56	103	25.94	11	2.77



Learning by doing leads to earning



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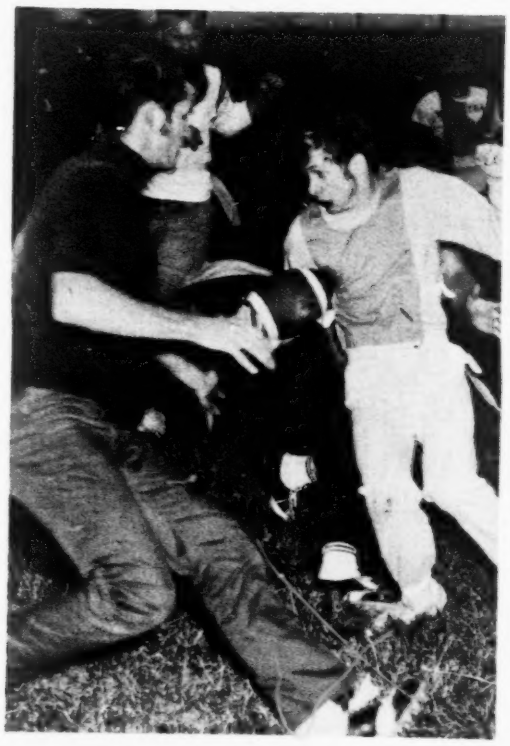
Pay later

Light a candle -- **continue your career education at Oklahoma State Tech, Okmulgee, one of the nation's outstanding residential vocational schools.**



Produced for the Oklahoma Advisory Council for Vocational-Technical Education by the Graphic Arts Department, Oklahoma State Tech.

VT 014 217
NATIONAL TERMINAL AIR TRAFFIC TRAINING PROGRAM.

FEDERAL AVIATION ADMINISTRATION, WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 22JUL71 31P.

DESCRIPTORS - *AIRPORTS; *PERSONNEL; EDUCATIONAL PROGRAMS; *INSERVICE EDUCATION; PROGRAM PROPOSALS; *PROGRAM DESCRIPTIONS
IDENTIFIERS - *AIR TRAFFIC CONTROL

ABSTRACT - THIS DOCUMENT SUMMARIZES AND SPECIFIES A PLAN FOR THE NATIONAL TERMINAL AIR TRAFFIC TRAINING PROGRAM. THE ORIGINAL TRAINING PROPOSAL IS ENCLOSED. (BH)

VT 014 217

NATIONAL TERMINAL
AIR TRAFFIC TRAINING PROGRAM

JULY 22, 1971

VT014217

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

2722

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NATIONAL TERMINAL AIR TRAFFIC

TRAINING PROGRAM

July 1971

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DEPARTMENT OF TRANSPORTATION
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WASHINGTON, D.C. 20590

DATE: 30 July 1971

IN REPLY REFER TO:

SUBJECT: National Terminal Air Traffic Training Program

TO: Regional and Center Directors (Except EU)

This amplifies and provides in-depth information on the actions being taken to implement the National Terminal Air Traffic Training Program.

The enclosed training plan and the implementing action required by the plan will conclude the second phase of the FAA's program of adopting the training recommendations made by the Air Traffic Controller Career Improvement Committee. The basic concept was developed jointly by the Office of Training, Air Traffic Service, FAA Academy and regional terminal training representatives. The new National Terminal Air Traffic Training Program provides an orderly instructional program from ECD to full performance level. The program meets the Air Traffic Service's objective of standardization of the terminal air traffic control subsystem and the Office of Training's commitment to provide a meaningful training experience at the time the trainee/development specialist needs the training for operational qualification.

In order to provide for a smooth transition from the recently cancelled Terminal Initial Training Course (50001) to the planned new National Terminal Air Traffic Training Program, we have begun an interim Terminal Training Course. The interim course consists of five weeks of primarily academic instruction designed to complement the Occupational Analysis identified in the P-2 manual. The successful trainee/developmental specialist will return to his assigned facility from the Academy with a Control Tower Operator Certificate, the Tower Visibility Certificate and after a brief training period be ready to begin Flight Data OJT as modified to his assigned facility unique operational responsibilities. The course reduction has released Academy resources for the rapid development of the new course training materials.

The basic outline of the National Terminal Air Traffic Training Program was included in the TR-1 message dated 9 July 1971, Subject: Cancellation of Terminal Initial Training Course 50001. The detailed training specification for the new program is contained in the enclosed training plan.

A copy of the training plan will be forwarded to each terminal air traffic control facility within your jurisdiction in order to communicate the intention in terminal training. In addition, we have requested the

FAA Academy to prepare a formal briefing package on the new program as the second step in communicating the philosophy and intent of the National Terminal Air Traffic Training Program to all terminal facilities. More definitive policy guidance in the form of an agency order will be forthcoming prior to implementation.

Thomas J. Creswell

THOMAS J. CRESWELL
Director of Training, TR-1

Enclosure

TRAINING PLAN

FOR

NATIONAL TERMINAL AIR TRAFFIC

TRAINING PROGRAM

TECHNICAL TRAINING DIVISION

FEDERAL AVIATION ADMINISTRATION

Washington, D.C.

July 1971

APPROVAL DATE: 7/22/71

Thomas J. Creswell

THOMAS J. CRESWELL
Director of Training, TR-1

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Office of Training

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TRAINING PLAN

FOR

NATIONAL TERMINAL AIR TRAFFIC TRAINING PROGRAM

I. PURPOSE OF THE TRAINING PLAN. This document summarizes and specifies a plan for the National Terminal Air Traffic Training Program. It has been prepared in response to a training proposal submitted by the Office of Training, dated 4 November 1970. It is a communication and coordination document and contains planning data requiring agency review and approval. When approved, the plan becomes a specification for the training program.

II. ANALYSIS OF THE TRAINING PROBLEM. This plan encompasses all facets of the training proposal and will be administered in the field and the Academy. The training proposal is enclosed.

A. Review of the Training Proposal. The training outcomes of the proposal identify the skills to be gained from each of four phases of terminal controller development: Indoctrination and Pre-Control; VFR Control; IFR Non-Radar Control and IFR Radar Control. We concur with the outcomes as proposed except Section III.B.3, which has been deleted from this plan. The knowledge items in Block 13 and Block 14 of the publication P-2 are not a requirement to perform the skills related to Phase III, VFR Control.

After the proposal was submitted and approved, further discussions were held with the Air Traffic Service and it was determined that a modification to the original proposal was necessary. Due to the wide variety of terminal control facilities and the unique requirements of each type, additional phases of training are required to meet the need for an indoctrination and pre-control training activity. Therefore, the training plan has been adjusted to reflect this need. The five phases of training are: Phase I - Indoctrination; Phase II - Pre-Control; Phase III - VFR Control; Phase IV - IFR Non-Radar Control; and Phase V - Radar Control.

B. Training Analysis.

1. Summary of Job Functions. This program includes the total training requirement of a trainee/developmental terminal air traffic specialist and is based entirely upon the job/task analysis described in the Terminal Training Program Publication P-2, dated 1 October 1969.

2. Prerequisites.

a. All trainee/developmental specialists entered into Phase I, Indoctrination of the National Terminal Air Traffic Training Program shall have met the GS-5, GS-7, or GS-9 entrance level qualifications, whichever is applicable, as stated in the latest U.S. Civil Service Commission Announcement for Air Traffic Control Specialists.

b. All trainee/developmental specialists entered into Phase II, Pre-Control shall have successfully completed Phase I.

c. All trainee/developmental specialists entered into Phase III, VFR Control, shall have successfully completed Phase I and Phase II.

d. All developmental specialists entered into Phase IV, IFR Non-Radar Control, shall have successfully completed Phase I, Phase II, and if applicable Phase III.

e. All developmental specialists entered into Phase V, Radar Control, shall have successfully completed Phase IV, or Academy prepared knowledge and performance tests indicating equivalent training and experience background.

3. Training Needed. The trainee/developmental specialists will require instruction in the applicable functions listed under Section II.B.1., of this training plan.

4. Analysis of Alternate Sources and Methods of Training. To accomplish the outcomes of the training proposal, the Air Traffic Service, Office of Training and the Academy Air Traffic Training Branch jointly developed the methods of training best suited to the individual portions of the training program. Therefore, alternate methods of training are not included in this plan. The following lists the methods of training, reasons for their use in particular parts of the program as well as their non-applicability to other portions:

a. Directed Study. For optimum learning, air traffic knowledge is best taught away from the operational quarters, followed by immediate application in a simulated or actual environment. An understanding of the role of an air traffic control specialist can be taught utilizing directed study or programmed learning methods. The first phase of training, "Indoctrination" has been developed using both of these methods.

b. Out-of-Agency Training. The nature and cost of the specialized environmental equipment and laboratory facilities required to conduct this training make it impractical for colleges or vocational trade schools to offer this training.

c. Facility Training. This method of training will be used to accomplish Phase III due to the lack of adequate VFR traffic simulation devices and those portions of Phases III and IV required to complete facility position qualification. It is the intent of this plan to remove training in actual control functions from the work environment to the maximum extent possible. Course materials prepared by the Academy will be distributed nationally for required use by training facilities.

d. Resident Training. A resident training course is recommended for Phase II, IV, and V, National Terminal Air Traffic Training Program. The following factors have been considered:

(1) A controlled training environment conductive to a standardized approach to training is available at the Academy.

(2) Trained instructors are available at the Academy.

(3) Laboratory and classroom facilities are available at the Academy. The expenditure of funds to increase these facilities in order to meet the training outcomes will be considerably less than required to install such facilities in the field.

e. Instructional Method Planned. The course presentation will be programmed to:

(1) Focus attention on need-to-know subject matter.

(2) Provide more effective communication between the instructor and the trainee/developmental specialist.

(3) Provide greater instructional efficiency.

(4) Provide a standardized approach to the subject matter.

III. COST AND BASIC ADMINISTRATIVE DATA

A. The following information includes the various portions of the program as they will be developed.

	Length In Hours	Classroom Hours	Laboratory Hours	Enrollment Per Class
Phase I - Indoctrination	40			
Facility orientation and indoctrination				
Phase II - Pre-Control				20
1. CTO Certification Examination	40	40		
2. Flight Data				
a. Developmental Procedures Training	100	50	50	
b. Position Qualification	120			
Phase III - VFR Control				
1. Developmental Procedures Training				
a. Ground Control	60	60		
b. Local Control	80	80		
2. Position Qualification	260			
Phase IV - IFR Nonradar Control				18
1. Developmental Procedures Training	240	80	160	
2. Position Qualification	*			
Phase V - Radar Control				18
1. Developmental Procedures Training				
a. Outcome IV.E.1.a.	120	40	80	
b. Outcome IV.E.1.b.	80		80	
2. Position Qualification	*			
Totals	1260	390	370	

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(CONT'D)

* The number of hours required for this outcome will vary according to the number of positions the individual is required to check out on in the facility; 80 hours will be allowed for check out on each position.

III. COST AND BASIC ADMINISTRATIVE DATA. (CONT)

B. COURSE DEVELOPMENT DIRECT COSTS	PHASE I & II INDOCTRINATION AND PRECONTROL		PHASE III VFR CONTROL		PHASE IV IFR NONRADAR CONTROL			PHASE V RADAR CONTROL			TOTALS
	LESSON PLANS	SUPPORT MANUALS	LESSON PLANS	SUPPORT MANUALS	LESSON PLANS	CONTROL PROBLEMS	SUPPORT MANUALS	LESSON PLANS	CONTROL PROBLEMS	SUPPORT MANUALS	
Developer/s man-hours (including training)	5620	5620	5600	5600	3200	2576	3,200	1600	2576	1,600	37,192
Developer/s salaries	49,590	49,590	49,406	49,406	28,227	22,721	28,227	14,114	22,721	14,114	328,116
Developer/s travel and per diem											$ 3,950
Educational Specialist											$15,545
Illustrator											$12,217
Clerical man-hours											$ 6,342
Clerical salaries											$17,412
Training Material Development and Reproduction											
- Visuals	2,273		2,366		$1,974			1,481			$ 8,094
- Printing	6564	$12,005	6,831	12,495	4,560		$18,400	4,987		$12,400	$81,242

III. COST AND BASIC ADMINISTRATIVE DATA (CONT'D)

	Required to meet outcomes IV.B.1.a, IV.D.1.a, and IV.E.1.a	Required to meet outcomes IV.B.1.a, IV.D.1.a, IV.E.1.a, and IV.E.1.b
C. Cost to conduct each Academy class		
1. Classroom and Laboratory Instruction		
Instructors, supervisors and clerical support required to conduct training	68	80
Total contact hours required for Phase II, IV & V	2,820	2960
Total Salaries	$1,171,870	$1,382,417
2. Student manual development, lesson plans and problem revision		
Present authorized instructors and supervisors	5	5
Additional instructors and supervisors	5	5
Total man-hours required	18,000	18,000
Total salaries	$87,219	$87,219

III. COST AND BASIC ADMINISTRATIVE DATA. (CONT)

	Required to meet outcomes IV.D.1.a. and IV.E.1.a.	Required to meet outcome IV.D.1.a., IV.E.1.a., and IV.E.1.b.
D. Non-Recurring Costs		
Modification of 6 existing class/labs	$25,026	
E. Student Travel and Per Diem		
Class of 18 students	($906.00 per student) $16,308	($1,662.00 per student) $29,916.00
F. Annual Equipment Maintenance Cost		
Technician man-hours	3,150	4,350
Technician salaries	19,347	31,618 (450 hrs @ $6.13 - 3900
Replacement equipment	2,900	2,900 hrs @ $7.39

NOTE: In order to maintain the high standard of instruction required to successfully implement this plan, it will be necessary to establish selection criteria for field instructors who will conduct Phases I and III. Since this is an integral part of the program field instructors who teach Phases I and III should have the same awareness of the total training program as Academy instructors, and their training and background should be comparable. Control of the quality of the training environment, as well as the instruction provided, must be maintained through regular and frequent onsite evaluation by the Office of Training and the Air Traffic Service.

IV. RECOMMENDED TRAINING

A. Phase I - Indoctrination (Course 55002)

1. Outcomes: Upon completion of this training, the trainee/developmental specialist will be able to:

a. Describe the air traffic control system, the functions of centers, terminals, and flight service stations, the applicable FARs, navigational aids and communications and the personnel policies affecting FAA employees.

2. Content:

Planned Course Outline	Tentative Hours
a. Facility orientation and indoctrination	40

3. Administration:

a. Phase I shall be conducted at the trainee/developmental's assigned facility.

b. Training Length: 40 hours

c. Class Size: Dictated by number of accessions

d. Number to be Trained: Approximately 600 in FY 72 and 1,000 per year FY 73 through FY 75

e. Class Frequency: As required

f. Schedule: Classes are expected to begin immediately.

g. Personnel: This portion of this program requires a maximum of 40 instructor contact hours.

B. Phase II - Pre-Control (Course 50011)

1. Outcomes: Upon completion of this training, the trainee/developmental specialist will be able to:

a. Successfully complete the Control Tower Operator Certification Examination.

b. Perform independently under general supervision all of the functions specified in the Air Traffic Training Handbook 3120.4B, paragraph 64L, items 1 and 2, which are the performance skills and related knowledge of Block 10 - Flight Data of publication P-2 as modified to meet specific operational requirements unique to the facility to which he is assigned.

2. Content:

Planned Course Outline	Tentative Hours
a. Pre-Control	140

(1) Control Tower Operator Certification Examination

(2) Flight Data

1 Developmental Procedures Training

a. Operate interphone system

b. Operate the flight data entry and printout equipment

c. Copy, interpret and relay flight data

d. Prepare and distribute flight progess strips

e. Operate telautograph/electrowriter

f. Receive and relay weather information

g. Receive, relay and post NOTAM and AIRAD information

h. Set up frequencies on standby radio equipment

i. Alert emergency equipment

j. Change tape reels

k. Collect, tabulate and store daily records

l. Operate ATIS equipment

c. Position Qualification 120

3. Administration:

a. Location of Training:

1. Developmental Procedure Training shall be conducted at the FAA Academy.

2. Position qualification shall be accomplished at the trainee/developmental's assigned facility.

b. Training Length: 260 hours

c. Class Size: 20

d. Number to be Trained: Approximately 600 in FY 72 and 1,000 per year FY 73 through FY 75.

e. Class Frequency: Classes will commence as required at the Academy

f. Schedule: Classes are expected to begin in the third quarter of FY 72.

g. Facilities: One classroom of sufficient size to accommodate a class of 20 is required.

h. Equipment: Each classroom should be equipped with chalkboards, tables and chairs for student work space.

i. Personnel: This portion of the program requires a maximum of 260 instructor contact hours for each class.

j. Resource and Program Adjustment: Development of instructional materials, including writing and validation will require 5,620 man-hours and 1,360 man-hours annually to maintain currency. The self-study indoctrination has been completed. Development of trainee support materials will be initiated upon completion of instructional material development. It is estimated this can be done in three years at an annual expenditure of 1,874 man-hours.

C. Phase III - VFR Control (Course 55003)

1. Outcomes. Upon completion of this training, the developmental specialist will be able to:

a. Perform independently under general supervision all of the functions specified in the Air Traffic Training Handbook 3120.4B, paragraph 64L, item (3) through (6), which are the performance skills and related knowledge of Block 11 - Ground Control (plus Clearance Delivery) and Block 12 - Local control of publication P-2 as modified to meet specific operational requirements unique to the facility to which he is assigned.

b. Qualify for all tower cab positions relating to VFR control.

2. Content. Planned Course Outline	Tentative Hours
a. Developmental Procedures Training	140
1) Ground Control	(60)
a. Read and interpret console instruments	
b. Operate radio equipment	

c. Guard assigned radio frequencies

d. Operate portable traffic control light

e. Operate airport light systems and visual aids

f. Collect, analyze and disseminate PIREPS and weather reports

g. Observe, collect, analyze and disseminate reports regarding hazards or operational status of facilities

h. Initiate and direct emergency action

i. Relay, initiate or coordinate advisories and information to other than aircraft

j. Monitor and analyze ground traffic

k. Issue taxi clearances-aircraft and vehicles

l. Perform clearance delivery functions

2) Local Control 80

a) Monitor navigational aids and operate monitor control panels

b) Observe and report weather and visibility changes

c) Assign runways

d) Determine and issue instructions relative to flight path of aircraft

e) Determine and issue landing sequence and traffic information

f) Issue landing clearance and related information

g) Issue takeoff clearance

h) Issue control instruction and/or advisories to departing aircraft

i) Instruct pilots to change radio frequencies/ beacon codes

j) Issue clearance and/or approach for special operations (low approaches, contact approaches, visual approaches, etc.).

k. Perform special VFR service

l. Operate BRITE-I equipment

b.. Position Qualification 260

1) Ground Control (100)
2) Local Control (160)

3. Administration.

a. VFR Control shall be conducted at the trainee/developmental's assigned facility

b. Training Length: 400

c. Class Size: 8 optimum

d. Number to be Trained: Approximately 600 per year FY 72 through FY 75.

e. Class Frequency: Classes will commence as required at each air traffic operational terminal training facility.

f. Schedule: Classes are expected to begin in the fourth quarter of FY-72.

g. Facilities:

1) One classroom of sufficient size to accommodate a class of eight is required for each terminal training facility.

h. Equipment:

1) Each classroom shall be equipped with carousel slide projector, overhead projector, screens, chalkboards and student response devices to use with the prepared lesson plans.

i. Personnel: This portion of the program requires instructor contact hours as follows:

1) Developmental Procedures Training 140

2) Position Qualification 260

j. Resources and Program Adjustment:

1) Development of instructional materials including writing and validation will require 5,600 man-hours. Maintenance of this material will require

1,400 man-hours annually. Development of study materials will be initiated upon completion of instructional material development. It is estimated this can be done in 3 years at annual expenditure of 1,867 man-hours.

2) Field resource requirements for manpower, facilities and equipment shall be determined jointly by the Office of Training, Air Traffic Service, and the Regions.

D. Phase IV - IFR Non-Radar Control (Course 50008)

1. Outcomes

a. Upon completion of the training, the developmental specialist will be able to control IFR non-radar traffic at a complexity factor equivalent to 15 operations per hour, under immediate supervision, all of the functions specified in Air Traffic Training Handbook 3120.4B, paragraph 64L, items 7 through 9.

b. Upon completion of facility qualification training the developmental specialist -

(1) Will be able to perform under general supervision all of the functions specified in Air Traffic Training Handbook 3120.4B, paragraph 64L, items (7) through (9), which are the performance skills and related knowledge of Block 13 - IFR Nonradar Control of the publication P-2 as modified to meet specific operational requirements unique to the facility to which he is assigned.

(2) Will be able to qualify for all IFR Nonradar positions.

Tentative Hours

2. Content

Planned Course Outline

a. Developmental Procedures Training 240

1) Operate interphone system

2) Operate FDEP equipment

3) Copy, post and relay flight data

4) Prepare and distribute flight progress strips

5) Initiate emergency notification

6) Review procedures and sequence flight progress strips

7) Review and interpret weather, PIREPS and NOTAMS

8) Analyze traffic for movement and potential conflictions

9) Initiate and issue control messages to departure and arrival aircraft or instrument clearances

10) Receive and post progress reports

11) Revise estimates and clearances

12) Coordinate inter/intra-facility

13) Provide flight assistance service

14) Operate(s) nonradar control positions(s)

b. Position Qualification 80 hours per position

1) Apply the skills acquired under Developmental Procedure Training to the facility operational environment under simulated conditions.

2) Apply the acquired skills to the facility operational environment, under actual operating conditions.

3) <u>Administration</u>

a. <u>Location of Training</u>:

1. Developmental Procedure Training shall be conducted at the FAA Academy.

2. Position qualification shall be accomplished at the trainee/developmental's assigned facility.

b. Training Length:

1) Developmental Procedures Training 240

2) Position Qualification 80 hours per position

c. Class Size: 18

d. Number to be Trained: Approximately 400 per year FY 72 through FY 75.

e. Class Frequency: Classes will commence as required at a centralized training facility.

f Schedule: Classes are expected to begin in the third quarter of FY-72.

g. Facilities: Six classrooms/laboratories equipped with desk tops convertible to flight progress strip bays.

h. Equipment:

1) To meet the outcome IV.D.1.a each classroom/laboratory shall be equipped with two way communications capability, digital clocks with on/off switches, carousel slide projector, overhead projector screen, chalkboards, student response devices and video tape playback equipment with two TV monitors.

2) To meet outcome IV.D.1.b. each facility shall have space and equipment available to conduct simulated environmental training.

i. Personnel: This portion of the program requires 3,840 instructor contact hours, of which 1,680 are required at the Academy and 2,160 at field facilities.

j. Program and Resources Adjustment:

Development of instructor lesson plans with associated visual aids and simulated control problems will be completed in the first quarter of FY 73. The original development will require 3,200 man-hours and once developed, 1,300 man-hours annually will be required for maintenance. Development of developmental specialist study manuals will commence when the original development is completed. It is anticipated this can be done in 3 years at an annual expenditure of 1,067 man-hours.

E. PHASE V RADAR CONTROL (Course 50009)

1. Outcomes. Upon completion of the training the developmental specialist will be able to:

   a. Demonstrate the ability to control air traffic by performing exercises using applicable radar separation standards, procedures and techniques.

   b. As a member of a traffic control team, control traffic at a complexity factor equivalent to 25 operations per hour, under immediate supervision, all of the functions specified in Air Traffic Training Handbook 3120.4B, paragraph 64L, items 10 through 15 with the exception of precision radar approaches in a simulated control environment.

   c. Upon completion of facility position qualification the developmental specialist will be able to:

      1. Perform under general supervision all of the functions specified in Air Traffic Training Handbook 3120.4B, paragraph 64L, items 13 through 15 as modified to meet specific operational requirements unique to the facility to which he is assigned.

2. Content

Planned Course Outline

	Tentative Hours
a. Developmental Procedures Training	200
1) Adjust radar equipment	
2) Read and interpret radar display	
3) Provide departure control service	
4) Provide arrival control service	
5) Initiate non-radar control procedures, as required	
6) Provide additional services	

b. Position Qualification - 80 hours per radar position

3. Administration

a. Location of Training:

1. Developmental Procedure Training shall be conducted at the FAA Academy.

2. Position qualification shall be accomplished at the trainee/developmental's assigned facility.

b. Class Size: 18

c. Number to be Trained: Approximately 400 per year FY-72 through FY-75.

d. Class Frequency: Classes will commence as required at a centralized training facility which coincides with the completion of Phase IV, IFR Nonradar Control.

e. Schedule: Classes are expected to begin the first quarter of FY-73.

f. Facilities:

1. Six class/labs equipped with desk tops convertible to flight progress strip bays.

2. Two radar laboratories.

3. Outcome IV.E.1.c will be accomplished in the operational environment.

g. Equipment:

1) Outcome IV.E.1.a - Same as IV.D.3.g.1 plus two radar laboratories.

2) Outcome IV.E.1.b - two radar laboratories equipped with computer driven targets and radar displays equivalent to ASR-4 radar indicators.

h. Personnel:

1) To accomplish outcome IV.E.1.a 720 instructor contact hours are required.

2) To accomplish outcome IV.E.1.b 1,200 instructor contact hours are required or a total of 1,920 hours

3) To accomplish outcome IV.E.1.c 80 instructor contact hours are required per radar position.

i. Program and Resources Adjustment:

Development of programmed instructor lesson plans and radar exercises will be completed in the first quarter of FY-73. This will require 1,600 man-hours and 400 annually for maintenance. Development of control problems will begin when capability exists at the Academy to meet outcome IV.E.1.b. This will require 2,576 man-hours. Development of study manuals will begin when the original development is completed can can be done in three years at an expenditure of 534 man-hours.

V. TIME PHASING CHART

Time Phasing Chart for Development of the National Terminal Air Traffic Training Program*

Action Required	Calendar Weeks After Approval of Training Program																														
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64
Course Content Research and Associated Travel	X	X									X													X	X	X	X	X				
Development of Programmed Lessons Phases II and IV	X	X	X	X	X	X	X	X	X	X	X	X																				
Development of Programmed Lessons Phases III and V													X	X	X	X	X	X	X	X	X	X	X									
First prototype class, for validation of Phases II and IV													X	X	X	X	X															
First prototype class, for validation of Phases III and V																								X	X	X	X	X				
Printing and Visuals Support	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Distribution of Instructor materials to training facilities																																X

* This chart is based on the availability of 13 instructors for this development.

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VI. SUGGESTED TRAINING EVALUATION PLAN

The training outcomes for the National Terminal Air Traffic Training Program identify what is expected in each of four phases of controller development, i.e, Indoctrination, Pre-Control, VFR Control, IFR Nonradar Control, and IFR-Radar Control. Monitoring programs in each of the phases of controller development will make it possible to determine the effectiveness of the methodology and instruction with regard to meeting program objectives.

The evaluation of Phase I and III will be primarily the responsibility of the training facility. Continuous feedback will be provided by field facilities to the Academy for phase review and necessary action.

The Academy phase will encompass classroom and laboratory monitoring programs to determine the extent the instruction meets stated training objectives.

Post-Academy evaluation will be primarily the responsibility of the field facility. Continuous feedback will be provided by field facilities to the Academy for review and necessary action.

The cumulative effect of the Field Training Facilities and Academy evaluation efforts provides for a comprehensive program evaluation.

TRAINING EVALUATION PLAN

1. ELEMENTS TO EVALUATE

2. METHODS OF EVALUATION

3. ACTION ASSIGNMENT

	1. Comparison with the Training Proposal	2. Comparison with the findings of educational research and the psychology of the learning-teaching process	3. Comparison with performance requirements of the job	4. Observation of Instruction	5. Questionnaire to trainees	6. Questionnaire to supervisors	7. Trainee interview	8. Supervisor interview	9. Observation of performance on the job	10. Study of records and reports	11. Performance tests	12. Analysis of problems and accidents	13. Research with matched groups (graduates and non-graduates)	14. Review of Employee Appraisal Record
1. Job Training Standard			XX											
2. The Training Need	XX													
3. Training Plan		XX												
4. The administration of the training program										XX				
5. Methodology				XX										
6. On-the-job training process									XX					
7. End of course outcomes							XX	XX			XX			
8. Performance on-the-job												XX		XX
1. Instructor														
2. Training Officer				S			S	S	S		S	P		S
3. Line Supervisor									S					S
4. FAA Academy		S	S	S							S			
5. Office of Training	P	P	P	P			P	P	P	P	P			P
6. Line Manager (office, service, region)	S		S											
7. Special survey team														

P - PRIMARY ACTION S - SUPPORTING ACTION

FAA Form 3030-2 (7-69) SUPERSEDES FAA FORM 3887

27148

TRAINING PROPOSAL

I. PROPOSED COURSE TITLE. National Terminal Air Traffic Training Program.

II. IDENTIFICATION OF THE TRAINING NEED.

A. The Air Traffic Controller Career Committee Report recommended the introduction of a new multi-phased series of classroom and on-the-job training activities which would involve instruction and simulated work practice in all phases and aspects of air traffic control work, both radar and non-radar. The prime objective would be to equip the terminal trainee to operate independently as a full performance level non-approach controller, non-radar approach controller, and/or radar approach controller depending upon the type facility to which he is assigned.

B. It is recognized that the system operated by the FAA to ensure the safe and efficient movement of aircraft in the nation's airspace is one which is labor intensive; that is, depèndence is placed primarily upon human effort rather than capital equipment. In such a system, the development of the human work force is of prime consequence. Accordingly, the training process by which the FAA develops controller capabilities is of prime importance, both to the Air Traffic Service and to the individual. For the Air Traffic Service, it is important because it affects the efficiency and the cost of its operational services. In general, operational functions are effective and efficient only to the extent that the training functions are effective and efficient. Ineffective and inefficient programs are costly. For the individual receiving the training, it is important because his ability to develop his full capabilities is limited by the effectiveness of the training program.

C. Based on this recognition and the recommendations of the Controller Career Committee, the Air Traffic Service has determined that the need is to develop a terminal training program which will enable a new hire to assimilate as rapidly as possible during his developmental stages the performance skills and related knowledge required to function as a full performance controller in the type of terminal facility to which he is assigned.

D. The terminal training program shall be designed to carry the developmental from EOD to full performance level for the various types of terminal facilities involved. To accomplish this, it should be divided into three parts: (1) non-approach control; (2) non-radar approach control; and (3) radar approach control. Each part, although related to the others, should be complete in itself so that the developmental assigned to a non-approach control facility would take only the first part, the developmental assigned to a

non-radar approach control facility would take parts 1 and 2, and the developmental assigned to a radar approach control facility would take all three parts.

E. Developmentals assigned to a non-approach control facility would not take parts 2 and 3 until such time as they were tranferred to an approach control facility. Only those transferred to a radar approach control facility would take both parts 2 and 3.

F. Developmentals assigned to TRACONS, RATTCS, RAPCONS or other strictly approach control terminal facilities should take only parts 2 and 3. If transferred to a terminal facility with tower cab positions, they would then take part 1.

G. Developmentals assigned to a CS/T should take the Flight Service Initial Training Course at the Academy first and then take parts 1, 2, and/or 3 of the Terminal Program as applicable for the type facility to which they are assigned.

III. TRAINING OUTCOMES.

A. At the conclusion of the National Terminal Air Traffic Training Program, the developmental controller shall be able to perform at the full performance level for the type of terminal facility to which he is assigned.

B. At the conclusion of Part I, Non-Approach Control, the developmental controller:

1. Shall be able to perform independently under general supervision all of the functions specified in the Air Traffic Training Handbook 3120.4B, paragraph 64L, items (1) through (6), which are the performance skills and related knowledge of Block 10 - Flight Data, Block 11 - Ground Control (plus Clearance Delivery), and Block 12 - Local Control of the publication P-2 as modified to meet specific operational requirements unique to the facility to which he is assigned,

2. shall have received position qualification for all tower cab positions, and

3. shall have learned the basic approach control procedures which are the knowledge items in Block 13 - Non-Radar Approach Control and Block 14 - Radar Approach Control of the publication P-2.

C. At the conclusion of Part II, Non-Radar Approach Control, the development controller:

1. Shall be able to perform independently under general supervision all of the functions specified in Handbook 3120.4B, paragraph 64L, items (7) through (9), which are the performance skills

and related knowledge of Block 13 - Non-Radar Approach Control of the publication P-2 as modified to meet specific operational requirements unique to the facility to which he is assigned, and

2. shall have received position qualification for Non-Radar Approach Control.

D. At the conclusion of Part III, Radar Approach Control, the developmental controller:

1. Shall be able to perform independently under general supervision all of the functions specified in Handbook 3120.4B, paragraph 64L, items (10) through (17), which are the performance skills and related knowledge of Block 14 - Radar Approach Control of the publication P-2 as modified to meet specific operational requirements unique to the facility to which he is assigned, and

2. shall have received position qualification for Radar Approach Control.

IV. PREREQUISITES.

A. All developmental controllers entered into the National Terminal Air Traffic Training Program shall have met either the GS-7 or GS-9 entrance level qualifications, whichever is applicable, as stated in the latest U. S. Civil Service Commission Announcement for Air Traffic Control Specialists.

B. In addition, all developmental controllers entered into Part II, Non-Radar Approach Control, shall have completed successfully Part I, Non-Approach Control, or shall have passed successfully Academy-prepared knowledge and performance tests indicating an equivalent training and experience background, except for those entered directly into TRACONS, RATTCS, RAPCONS, or other strictly approach control terminal facilities where there is no tower cab function.

C. Additionally, all developmental controllers entered into Part III, Radar Approach Control, shall have completed successfully Part II, Non-Radar Approach Control, or shall have passed successfully Academy-prepared knowledge and performance tests indicating an equivalent training and experience background, except for those entered directly into TRACONS, RATTCS, RAPCONS, or other strictly approach control terminal facilities where there is no tower cab function.

D. All developmental controllers entered into a CS/T terminal facility shall have completed successfully the Flight Service Initial Training Course at the Academy or shall have passed successfully Academy-prepared knowledge and performance tests indicating an equivalent training and experience background.

V. NUMBER TO BE TRAINED.

There will be approximately 1400 trainees per fiscal year for the next five years plus about 1200 developmental controllers now in the terminal training pipeline.

VI. TRAINING COMPLETIONS SCHEDULE.

Every effort should be directed toward beginning this program in the first quarter of FY-72 and accepting inputs on a regularly scheduled basis sufficient to train the required number of annual inputs.

VII. CONTACT.

Nick Vutsinas, AT-14

39263

VT 014 223
OCCUPATIONAL OPPORTUNITIES AND TRAINING NEEDS FOR AGRICULTURAL EMPLOYMENT IN SELECTED AREAS OF ARIZONA: EASTERN PART OF MARICOPA COUNTY.

ARIZONA UNIV., TUCSON. DEPT. OF AGRICULTURAL EDUCATION.
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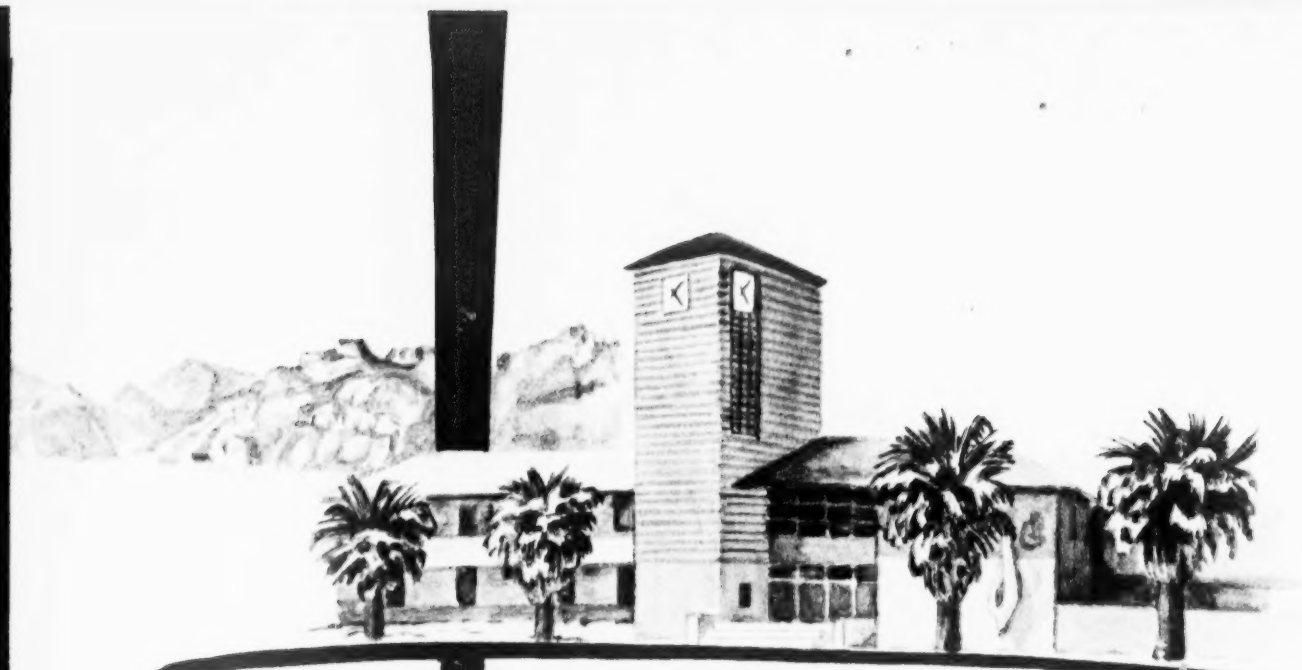
DESCRIPTORS - OCCUPATIONAL SURVEYS; *EMPLOYMENT OPPORTUNITIES; *EDUCATIONAL NEEDS; *AGRICULTURAL OCCUPATIONS; AGRICULTURAL SKILLS; *OCCUPATIONAL INFORMATION; *MANPOWER NEEDS; EMPLOYMENT STATISTICS; TABLES (DATA); OCCUPATIONAL CLUSTERS; EMPLOYMENT PROJECTIONS
IDENTIFIERS - *ARIZONA

ABSTRACT - THE PURPOSE OF THIS SURVEY WAS TO DETERMINE THE EMPLOYMENT OPPORTUNITIES AND AGRICULTURAL TRAINING NEEDED FOR AGRICULTURAL EMPLOYMENT IN THE EASTERN PART OF MARICOPA COUNTY, ARIZONA, AS THE BASIS FOR RECOMMENDATIONS FOR EDUCATIONAL PROGRAMS FOR AGRICULTURAL STUDENTS IN THE AREA. PERSONAL INTERVIEWS WERE CONDUCTED WITH REPRESENTATIVES OF 564 AREA BUSINESSES EMPLOYING 4637 PERSONS WITH AGRICULTURAL SKILLS. OCCUPATIONAL INFORMATION WAS PROVIDED FOR THE VARIOUS JOBS WHICH WERE IDENTIFIED, AND EMPLOYMENT PROJECTIONS WERE MADE FOR A 5-YEAR PERIOD. RECOMMENDATIONS FOR PLANNING AGRICULTURAL CURRICULUMS ARE INCLUDED. RELATED DOCUMENTS ARE AVAILABLE AS VT 010 366 (ARM SPRING 1971) AND 014 224 IN THIS ISSUE. (BH)

VT 014 223



Occupational Opportunities and Training Needs for Agricultural Employment in Selected Areas of Arizona

EASTERN MARICOPA COUNTY

VTC14223

2754

Research Report 264

Agricultural Experiment Station
University of Arizona
Tucson, Arizona

OCCUPATIONAL OPPORTUNITIES AND TRAINING NEEDS FOR AGRICULTURAL EMPLOYMENT IN SELECTED AREAS OF ARIZONA

Eastern Part of Maricopa County

A Research Project
of the
Department of Agricultural Education

Research

Report 264

Agricultural Experiment Station
University of Arizona
Tucson, Arizona
1971

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FOREWORD

This study is one of a series of studies being conducted by the Department of Agricultural Education, University of Arizona, in order to obtain a comprehensive analysis of the total field of agricultural occupations in Arizona. Both on-farm and off-farm agricultural occupations are being studied to determine employment opportunities and training needs in the broad spectrum of agricultural occupations.

The types of data presented herein provide a necessary basis for the planning of vocational agriculture programs on area and state bases.

Data collection instruments and interview procedures utilized in this study were developed and tested by Arizona vocational agriculture teachers, John McKee and Ronald Wolhart.

The following vocational agriculture teachers identified the population for the study within each of their respective school districts and assisted with the coordination and conduct of the interviews in the field:

Chandler - Odro Ragsdale and Philip Terrell
Gilbert - Gareth Cobb and Clifford Kinney
Mesa - Fred Amator and Randall Hatch
Mesa Westwood - Richard Heward and Richard Sawyer
Tempe - Gail Deal

The following agriculture teachers of Mesa Community College assisted in the identification of the survey population outside the above high school districts, assisted with the conduct of interviews in the field, and assisted in the overall coordination among the several high school districts participating in the study:

James Claridge
Merwin Stearns
Phillip Zurbrick

James B. Hamilton
Project Leader
Department of Agricultural Education
University of Arizona

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OCCUPATIONAL OPPORTUNITIES AND TRAINING NEEDS FOR AGRICULTURAL EMPLOYMENT IN SELECTED AREAS OF ARIZONA

Eastern Part of Maricopa County

Introduction

American agriculture is undergoing change at a rapid pace - changes brought about by technological advances, automation, varying labor and social patterns, and shifting occupational opportunities.

These changes are resulting in fewer producers of agricultural products because of larger units of operation and higher degrees of specialization on the part of producers. These trends in size and specialization are accompanied by increased demands by the producer for more highly developed agricultural services by off-farm agricultural businesses.

The changing agricultural and socio-economic conditions have strong implications for the types of training which are to be provided by the instructional programs of vocational agriculture at the high school and post-high school level.

Vocational agriculture programs directed only toward preparation of youth to enter farming or ranching as owner-operators or managers are not adequate for the present-day needs of agriculture. Vocational opportunities in agriculture now encompass many occupations in addition to farming and ranching.

The need for a broadened concept of vocational agriculture has been recognized. The Vocational Act of 1963 and the 1968 amendments to the ACT provide that federal funds are to be used to

support vocational agriculture programs that prepare students for any occupation in which knowledge and skill in agriculture is needed. What has not taken place, however, is the development of instructional programs in vocational agriculture to fit this broader concept of agriculture.

This study is one of a series of studies being conducted by the Department of Agricultural Education, University of Arizona, in order to obtain a comprehensive analysis of vocational agriculture training needs for the State of Arizona.

Purpose of the Project

The purpose of the project was to determine the occupational opportunities and agricultural training needed for agricultural employment in the eastern part of Maricopa County, Arizona, as the basis upon which to make recommendations for educational programs in agriculture to meet expanded educational needs of agricultural students in this area.

Specific Objectives of the Project

The following specific objectives were identified in order to facilitate the development of the study:

1. Determine the number and types of agricultural businesses in the eastern part of Maricopa County who employ persons requiring knowledge and skill in agriculture.

2. Determine the number of persons employed, by job title, requiring knowledge and skill in agriculture in each type of agricultural business in the eastern part of Maricopa County.

3. Determine agricultural knowledge and skills needed for clusters of occupations identified in the eastern part of Maricopa County.

4. Make recommendations for planning and conducting educational programs in agriculture to meet the expanded educational needs of agricultural students in the eastern part of Maricopa County.

Delimitations

1. The population of this study was delimited to those businesses and producers which because of name, products handled, or services provided, were judged to employ persons requiring knowledge or skill in agriculture.

2. The study was delimited to those businesses and producers whose headquarters were within the boundaries of that portion of Maricopa County lying east of a north-south line coinciding with Central Avenue in Phoenix, Arizona.

Definitions

Agricultural businesses and producers - those firms which were found to employ full-time one or more persons who needed agricultural knowledge or skill for performance of their duties.

Agricultural employee - an employee who, in order to perform the duties of his occupation, must possess knowledge or skill which requires training and/or experience in one or more of the following areas: animal science, plant science, agricultural business management and marketing, or agricultural mechanization.

Part-time agricultural employees - agricultural employees who are not regularly employed by an agricultural business or producer throughout the entire year.

Full-time agricultural employees - agricultural employees who are regularly employed by an agricultural business or producer throughout the entire year.

Agricultural training needs - agricultural knowledge and skills which employers deemed necessary for employees to possess in order to adequately carry out the duties and responsibilities of their occupation. The terms "agricultural competencies" and "agricultural knowledge and skills" are used interchangeably throughout this study.

Importance of the Project

Teachers of vocational agriculture are aware that rapid changes in agriculture are taking place and that opportunities for high school graduates to gain entrance into production agriculture are limited. The "State Summary of Final Reports" for the 1969 calendar year showing income received by students enrolled in high school vocational agriculture in Arizona reflects the growing opportunities in agriculture other than production projects on the home farm. This report shows $491,621 earned through productive enterprises of students and $894,808 earned through other agricultural occupational experience programs.[1]

In order to plan vocational agriculture programs that will meet the needs of prospective employees in the broad spectrum of agricultural occupations, it is necessary to determine what the occupations are, where they exist, and what agricultural knowledge and skills are needed for entrance into these agricultural occupations. This basic data are needed in order to determine what educational programs in agriculture should be offered. Once these basic data are obtained, then in-depth occupational analyses should be carried out for each of the major agricultural occupations identified in order to select specific subject matter to be included in the training programs.

Previous Related Studies

Several state-wide studies and surveys encompassing smaller areas have been donducted recently which were concerned with

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1. "State Summary of Final Reports, 1969 Calendar Year", State Department of Vocational Education, Phoenix, Mimeograph.

identifying types of non-farm agricultural employment, numbers of employees, and educational requirements and needs for these jobs. Such a state-wide study has not been conducted in Arizona. Most of the research of this nature has not been concerned with total agricultural employment opportunities - both on-farm and off-farm employment.

Recent state-wide studies in off-farm employment opportunities were conducted by Baker in Alabama (1965), Brum in Ohio (1965), Langdon in Michigan (1965), Warmbrod in Illinois (1966), Loreen in Washington (1967), Judge in Massachusetts (1965), Griffin in Missouri (1964), Cushman in New York (1965), Christensen in Nevada (1967), and Gadda and Pollman in South Dakota (1969).

Numerous other surveys of this nature have been completed in these and other states on less than a state-wide basis.

One recent study was conducted by Neel (1968) in which he studied only the on-farm agricultural employment in western Kentucky.

Wagley (1964) studying off-farm agricultural occupations in Yuma County, Arizona found a definite and growing need for training in these occupations. Most of the sales and service firms identified by Wagley were of recent origin and all of these agricultural businesses planned both immediate and long-time increases in their numbers of employees.

Of the research identified relating to the problem, little attention has been given to the on-farm employment opportunities in such jobs as equipment operators, equipment repair and maintenance, irrigators, managers and foremen, nor have the studies been conducted

in states in which large commercial farming makes up such a large segment of the agricultural industry as is the case in Arizona. A study of agricultural occupations in Pinal County, Arizona was completed by Hamilton (1970) in which both off-farm and on-farm agricultural occupations were studied. The Pinal County study and this study are parts of a series of agricultural occupations studies being conducted to obtain a comprehensive analysis of vocational agriculture training needs for the State of Arizona.

Procedures

Identification of the population - Identification of the agricultural businesses and producers within the eastern part of Maricopa County was accomplished by the vocational agriculture teachers in each of the five high schools within the survey area which conduct vocational agriculture programs and the agriculture teachers at Mesa Community College. The high school districts participating in the study were: Chandler, Gilbert, Mesa, Mesa-Westwood and Tempe.

The vocational agriculture teachers in these schools compiled master lists of agricultural businesses and producers for their high school districts using the telephone directory and lists of producers from the ASCS office. The agriculture teachers of Mesa Community College served in coordinating the surveys in each of the high school districts, in developing the master population list for the entire survey area, and in coordinating the surveys of the study area lying outside the five high school districts participating in the survey.

All producers and firms which were of an obvious agricultural nature due to name, products handled, or services offered were included. These master lists of agricultural businesses and producers were then modified after review by personnel of the county extension service, local businesses dealing with farmers and ranchers, community officials, and long-time residents of the area. The geographic area of Maricopa County included in the study is shown in Figure 1.

Method of data Collection - Data pertaining to the numbers of employees, occupations requiring knowledge or skill in agriculture, and the subject areas of training needed for each agricultural occupation were obtained by means of personal interviews with representatives of each of the agricultural businesses identified in each of the five high school districts and the remaining survey area included in the study. As interviews were scheduled it was requested that the individual to be interviewed in each firm be the person with the responsibility for hiring employees for the firm. These interviews were conducted by the vocational agriculture teachers and other interviewers from the University of Arizona, using Form I and Form II, found in the appendix. The interviews were conducted during the months of June through October of 1970.

Interview Procedures - All agricultural businesses and producers included in the study were contacted by letter approximately two weeks prior to the interviews to acquaint them with the purposes of the study and to solicit their participation and cooperation in the study.

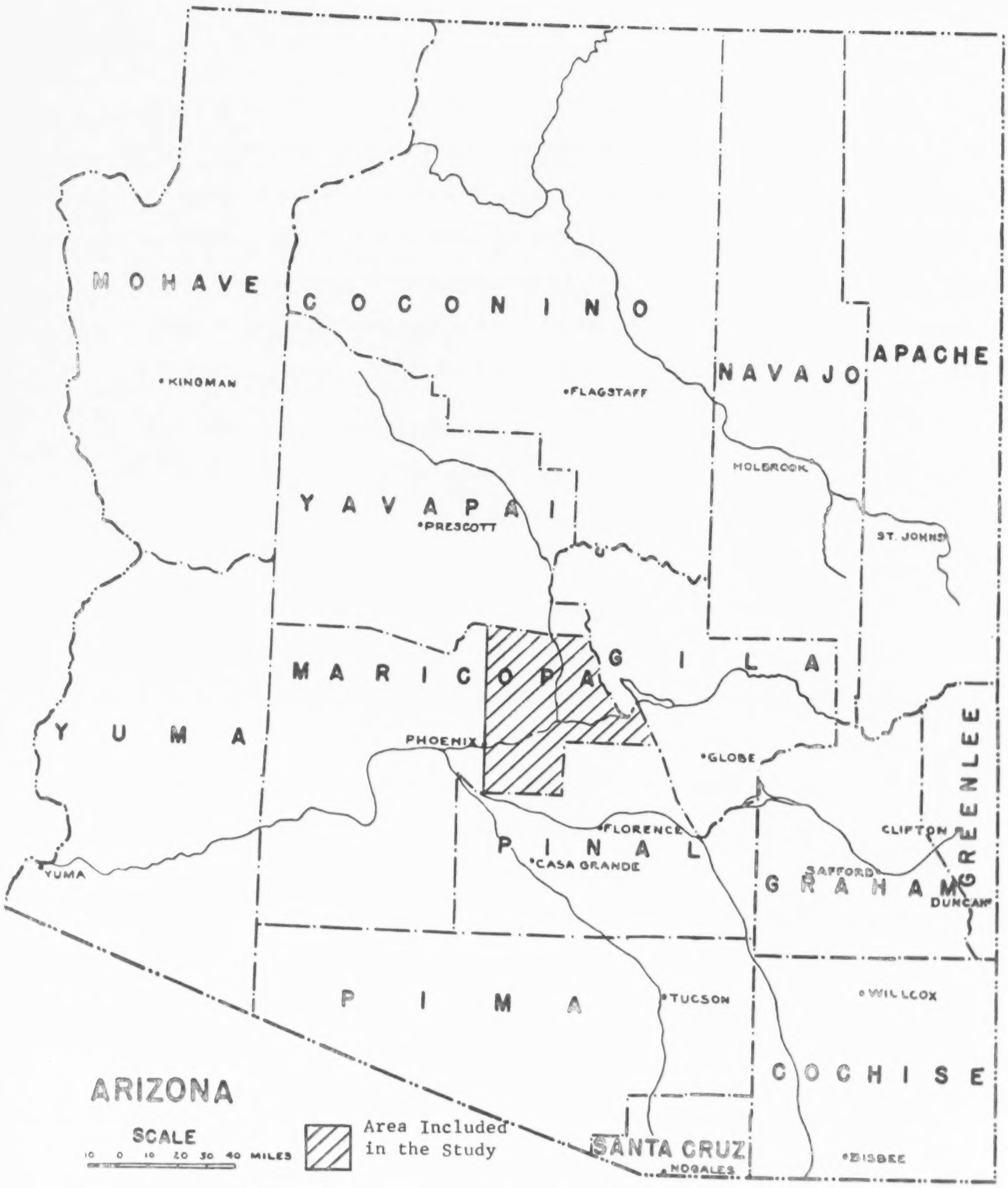

Figure 1. Location of area included in the study.

In most cases appointments were arranged by telephone each day to schedule interviews for the following day.

Treatment of Data - Data were summarized by grouping businesses and producers into similar occupational areas. Occupational areas used were adapted from those suggested by the National Center for Vocational and Technical Education. However, it was necessary to add four areas to include production agriculture.

It should be noted that data collected under part III of interview Form I was intended primarily for the use of teachers and administrators in local programs of vocational agriculture and is, therefore, not included in this report.

Agricultural Businesses, Producers, and Employees

The numbers of agricultural businesses and producers identified in the eastern part of Maricopa County are shown in Table 1 grouped by occupational areas. There were a total of 564 agricultural businesses and producers surveyed in the twelve occupational areas listed. A total of 4637 agricultural employees were employed by the 564 businesses identified.

Of this total number of agricultural employees, 3920 were employed full-time. It should be noted that this figure represents all levels of agricultural employment and is limited to those employees needing knowledge or skill in agriculture to perform the duties and functions of their respective occupations. Several hundred part-time workers who engage in production line work in the harvesting, handling, and processing of farm products were not included

TABLE 1

EMPLOYMENT IN AGRICULTURAL OCCUPATIONS BY OCCUPATIONAL AREA AND TYPE OF BUSINESS IN THE EASTERN PART OF MARICOPA COUNTY

Occupational Areas and Types of Businesses	Number of Businesses Surveyed	Number of Employees Needing Knowledge or Skill in Agriculture*		
		Full Time	Part Time	Total
Crop Production Only: (Farms producing field or vegetagle crops)	173	924	282	1206
Farm Service: (Custom tillage, harvesting, fertilizing, insect control, etc.)	52	562	114	676
Livestock Production Only: (Ranches, feedlots and dairies not engaged in crop production)	79	544	49	593
Livestock and Crop Production: (Farms engaged in the production of both crops and livestock)	51	550	26	576
Ornamental Horticulture: (Businesses engaged in the production, sales or maintenance of plants, shrubs or turf)	60	354	53	407
Citrus Production: (Farms engaged in the production of citrus only)	36	205	137	342
Agricultural Machinery Sales & Service: (Businesses which sell, repair, or maintain agricultural equipment)	28	289	3	292
Agricultural Processing: (Cotton gins, seed delinting, packing houses, etc.)	19	221	44	265
Agricultural Service: (Professional agriculturalists)	43	100	3	103

TABLE I (Continued)

Occupational Areas and Types of Businesses	Number of Businesses Surveyed	Number of Employees Needing Knowledge or Skill in Agriculture*		
		Full Time	Part Time	Total
Agricultural Research: (Businesses whose function is the improvement of crops or livestock through research)	5	89	1	90
Farm Supply: (Sales of feed, seed, fertilizers, agricultural chemicals, and livestock supplies, etc.)	17	81	5	86
Agricultural Finance: (Businesses whose function is to supply operational and capital financing to agricultural producers)	1	1	0	1
Totals	564	3920	717	4637

* It should be noted that, as defined in this study, agricultural employees are limited to those employees needing knowledge or skill in agriculture to perform the duties and functions of their respective occupations.

in the data presented in Table 1. These harvest and labor crews require little or no knowledge or skills in the area of agriculture for which prior training and/or experience are needed. Some of these workers were residents of the county; however, a large percentage were migratory workers.

It may be seen from the data presented in Table 1 that upon the basis of numbers of businesses and numbers of agricultural employees, the area of "crop production only" accounted for approximately one-fourth of the full-time agricultural employment in the eastern part of Maricopa County. One hundred seventy-three or 30.7 per cent of the 564 agricultural businesses identified concerned themselves with "crop production only" and 924 or 23.6 per cent of the 3920 total full-time agricultural employees in the survey area were employed in the area of "crop production only".

Employment in the area of "crop production only" although accounting for only one-fourth of the total agricultural employment had nearly twice the number of employees as the next highest area, that of "farm service".

In making a comparison of numbers of employees engaged in production agriculture vs other areas of agriculture it may be noted that agricultural employment in the four production areas, "crop production only", "livestock production only", "livestock and crop production" and "citrus production" combined make up a group of 2717 employees accounting for 58.6 per cent of the agricultural employment in the survey. It might also be noted that the numbers of businesses surveyed in these four production areas, 339 represented

60 per cent of the 564 agricultural businesses surveyed. In considering both numbers of employees and numbers of businesses there was a relationship of approximately three in production agriculture to two in off-farm agriculture.

Agricultural Employment by Job Title

In order to present a more detailed picture of agricultural employment in the eastern part of Maricopa County it was necssary to investigate specialization and levels of employment within each of the occupational areas. Table 2 shows the numbers of agricultural employees by job title in each of the twelve occupational areas. It may be noted that there were many different agricultural job titles in each of the occupational areas with the exception of "agricultural finance". Numbers of different agricultural job titles in an area ranged as high as fifty different job titles which are shown in the area of "farm service".

In some cases a single job title accounted for over one-half the total employment in an occupational area. The job title of "general farmhand" accounted for over one-half of the employment in the occupational area of "crop production only" and also in the area of "citrus production". In the occupational area "agricultural machinery sales and service" the job title of "farm equipment mechanic" accounted for over one-half of the employment in this area.

It should be noted that many job titles appear in more than one occupational area. An example of one such job title is that of "farm equipment mechanic" which appears in eight of the twelve occupational areas shown in Table 2.

TABLE 2

EMPLOYMENT IN AGRICULTURAL OCCUPATIONS BY OCCUPATIONAL AREA AND JOB TITLE IN THE EASTERN PART OF MARICOPA COUNTY

D.O.T No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
	Crop Production Only			
421.883	General Farmhand	429	194	623
421.181	Farm Owner-Manager	151	15	166
422.887	Irrigator	109	6	115
409.883	Wheel Tractor Operator	63	15	78
429.131	General Farm Foreman	68	-	68
409.883	Harvest Machine Operator	39	14	53
-	Plant Employees	-	31	31
409.168	Farm Manager	25	1	26
624.281	Farm Equipment Mechanic	21	2	23
906.883	Truck Driver	9	3	12
422.137	Irrigation Foreman	2	-	2
920.132	Packaging Foreman	2	-	2
-	Agric. Processing Manager	1	-	1
409.883	Crawler Tractor Operator	1	-	1
-	Farm Equipment Foreman	1	-	1
624.281	Farm Equipment Service Man	1	-	1
891.138	Farm Equipment Shop Foreman	-	1	1
-	Field Superintendent	1	-	1
525.131	Packing House Manager	1	-	1
	Sub-totals	924	282	1,206
	Farm Service			
954.782	Ditch Rider	129	-	129
-	Farm Supply Equipment Service Man	99	-	99
266.258	Fertilizer and Insecticide Salesman (Chemical)	73	-	73
409.883	Harvest Machine Operator	20	40	60
906.883	Truck Driver	24	20	44
-	Farm Service Manager	27	-	27
-	Water Master	24	-	24
421.883	General Farmhand	10	11	21
-	Pump Maintenance Man	17	-	17
-	Plant Employees	17	-	17
413.884	Cowboy	2	13	15
409.883	Crawler Tractor Operator	14	-	14
277.358	Farm Supply Salesman	11	-	11
-	Farm Service Owner	8	1	9
-	Livestock Groomer	4	5	9
013.181	Agricultural Engineering Technician	8	-	8
421.181	Farm Owner-Manager	7	1	8
624.281	Farm Equipment Mechanic	7	-	7
409.887	Flagger	-	7	7
184.168	Construction & Maintenance of Irrigation Structures	6	-	6

TABLE 2 (Continued)

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
	Farm Service (Continued)			
196.283	Sprayer Pilot	6	-	6
910.137	Yard Man	-	6	6
041.081	Entomologist	3	2	5
-	Farm Supply Plant Worker	5	-	5
409.887	Plane Loader	1	4	5
409.883	Wheel Tractor Operator	3	2	5
025.288	Hydrographer	4	-	4
624.281	Farm Equipment Service Man	2	1	3
-	Farm Tax Accountant	3	-	3
-	Field Superintendent	3	-	3
184.168	Supt. Water Control Structures	3	-	3
466.887	Cattle Feeder	2	-	2
-	Farm Supply Deliveryman	1	1	2
-	Farm Supply Foreman	2	-	2
129.131	General Farm Foreman	2	-	2
013.081	Agricultural Engineer	1	-	1
040.081	Agronomist	1	-	1
467.384	Arti icial Inseminator	1	-	1
559.138	Aviation Ground Crew Chief	1	-	1
624.281	Farm Equipment Mechanics Helper	1	-	1
812.884	Farm Equipment Welder	1	-	1
-	Farm Supply Manager	1	-	1
-	Feedlot Maintenance Man	1	-	1
407.884	Groundskeeper	1	-	1
184.168	Power Manager (Water)	1	-	1
292.358	Salesman, Driver (Deliveryman)	1	-	1
294.258	Auctioneer, Livestock	1	-	1
041.081	Maintenance Man	1	-	1
165.068	Public Relations Man	1	-	1
-	Water Master	1	-	1
	Sub-totals	562	114	676
	Livestock Production Only			
411.181	Milker	133	8	141
466.887	Cattle Feeder	60	4	64
525.887	Poultry Dresser	41	-	41
421.883	General Farmhand	27	7	34
421.181	Farm Owner-Manager	26	7	33
-	Dairyman	29	3	32
412.884	Farmhand Poultry	27	-	27
413.884	Cowboy	19	5	24
411.181	Dairy Herdsman	20	-	20
-	Poultryman	14	2	16
162.158	Livestock Buyer	5	10	15
413.181	Ranch Owner-Manager	12	2	14
789.781	Animal Keeper	11	-	11

TABLE 2 (Continued)

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
	Livestock Production Only (Continued)			
559.887	Egg Processor	11	-	11
624.281	Farm Equipment Service Man	11	-	11
356.874	Zoologist	11	-	11
349.874	Kennelman	10	-	10
419.131	Stable Owner-Manager	8	-	8
624.281	Farm Equipment Mechanic	7	-	7
409.168	Farm Manager	6	1	7
-	Feedlot Foreman	7	-	7
520.885	Feedmill Operator	7	-	7
-	Feedlot Maintenance Man	6	-	6
467.384	Artificial Inseminator	5	-	5
429.131	General Farm Foreman	4	-	4
407.884	Groundskeeper	4	-	4
906.883	Truck Driver	4	-	4
-	Feedlot Manager	3	-	3
529.132	Feedmill Foreman	3	-	3
-	Agric. Processing Manager	2	-	2
413.000	Feedlot Owner-Manager	2	-	2
413.884	Swine Feeder	2	-	2
413.181	Swine Herdsman	2	-	2
-	Farm Supply Deliveryman	1	-	1
-	Feedmill Maintenance Man	1	-	1
413.181	Ranch Foreman	1	-	1
413.181	Ranch Manager	1	-	1
169.168	Office Manager	1	-	1
	Sub-totals	544	49	593
	Livestock and Crop Production			
421.883	General Farmhand	180	16	196
421.181	Farm Owner-Manager	50	1	51
422.887	Irrigator	48	1	49
429.131	General Farm Foreman	43	-	43
411.181	Milker	37	2	39
413.884	Cowboy	36	-	36
-	Plant Employees	36	-	36
409.883	Wheel Tractor Operator	23	2	25
466.887	Cattle Feeder	23	-	23
409.883	Harvest Machine Operator	17	-	17
624.281	Farm Equipment Mechanic	7	-	7
413.181	Sheep Rancher	7	-	7
409.168	Farm Manager	6	-	6
413.887	Sheep Herder	5	-	5
409.883	Crawler Tractor Operator	2	2	4
-	Dairyman	4	-	4

TABLE 2 (Continued)

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
	Livestock and Crop Production (Continued)			
413.131	Ranch Foreman	4	-	4
906.883	Truck Driver	3	-	3
411.181	Dairy Herdsman	2	-	2
812.884	Farm Equipment Welder	2	-	2
-	Feedlot Foreman	2	-	2
869.884	Fence Builder	-	2	2
018.188	Surveyor	2	-	2
413.181	Ranch Owner-Manager	2	-	2
-	Farm Equipment Foreman	1	-	1
187.168	Farm Equipment Parts Dept. Manager	1	-	1
624.281	Farm Equipment Service Man	1	-	1
891.138	Farm Equipment Shop Foreman	1	-	1
413.000	Feedlot Owner-Manager	1	-	1
529.132	Feedmill Foreman	1	-	1
520.885	Feedmill Operator	1	-	1
419.884	Horse Trainer	1	-	1
169.168	Office Manager	1	-	1
	Sub-Totals	550	26	576
	Ornamental Horticulture			
406.887	Nursery Worker	40	20	60
407.884	Groundskeeper	49	4	53
407.181	Landscape Gardener	51	-	51
-	Nursery Salesman	36	7	43
406.168	Nurseryman	36	-	36
407.137	Greenskeeper	29	-	29
624.281	Farm Equipment Mechanic	11	8	19
019.081	Landscape Architect	14	1	15
040.081	Horticulturalist	12	1	13
409.883	Wheel Tractor Operator	11	-	11
404.884	Tree Pruner	8	2	10
406.000	Plant Propagator	7	2	9
407.138	Superintendent Greens	9	-	9
407.883	Laborer, Golf Course	8	-	8
-	Florist	7	-	7
421.883	General Farmhand	2	5	7
421.181	Farm Owner-Manager	3	2	5
422.883	Irrigator	5	-	5
233.387	Farm Equipment Partsman	3	-	3
277.358	Farm Supply Salesman	2	1	3
-	Greenhouse Manager	2	-	2
422.137	Irrigation Foreman	2	-	2
163.118	Sales Manager	2	-	2
624.281	Farm Equipment Service Man	1	-	1

Table 2 (Continued)

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
	Ornamental Horticulture (Continued)			
409.137	Harvest Crew Leader	1	-	1
-	Nursery Deliveryman	1	-	1
041.081	Plant Pathologist	1	-	1
292.358	Salesman, Driver (Deliveryman)	1	-	1
	Sub-totals	354	53	407
	Citrus Production			
421.883	General Farmhand	101	113	214
421.181	Farm Owner-Manager	26	10	36
422.887	Irrigator	15	2	17
920.887	Packer Agriculture Produce	2	12	14
409.168	Farm Manager	8	-	8
429.131	General Farm Foreman	8	-	8
-	Plant Employees	8	-	8
409.883	Wheel Tractor Operator	7	-	7
920.132	Ag. Processing Foreman	6	-	6
406.000	Plant Propagator	6	-	6
906.883	Truck Driver	6	-	6
624.281	Farm Equipment Mechanic	3	-	3
812.884	Farm Equipment Welder	2	-	2
-	Field Superintendent	2	-	2
-	Agric. Processing Office Manager	1	-	1
040.081	Horticulturalist	1	-	1
169.168	Office Manager	1	-	1
163.118	Sales Manager	1	-	1
929.138	Warehouse Supt.	1	-	1
	Sub-totals	205	137	342
	Agricultural Machinery Sales and Service			
624.281	Farm Equipment Mechanic	178	2	180
624.281	Farm Equipment Service Man	24	-	24
812.884	Farm Equipment Welder	20	1	21
233.387	Farm Equipment Partsman	18	-	18
277.358	Farm Equipment Salesman	17	-	17
-	Agricultural Machinery Sales & Service Manager	13	-	13
624.281	Farm Equipment Mechanic's Helper	3	-	3
-	Farm Service Owner	3	-	3
185.168	Farm Equipment Sales Manager	2	-	2
906.883	Truck Driver	2	-	2
184.168	Construction & Maintenance of Irrigation Structures	2	-	2
-	Farm Supply Manager	2	-	2
891.138	Farm Equipment Shop Foreman	1	-	1

TABLE 2 (Continued)

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
	Agricultural Machinery Sales and Service (Continued)			
-	Service Manager	1	-	1
-	Farm Supply Equipment Service Man	1	-	1
-	Farm Supply Foreman	1	-	1
277.358	Farm Supply Salesman	1	-	1
	Sub-totals	289	3	292
	Agriculture Processing			
421.883	General Farmhand	40	-	40
224.587	Grain Elevator Scalesman	20	10	30
-	Plant Employees	1	23	24
906.883	Truck Driver	14	-	14
920.132	Agric. Processing Foreman	15	1	16
461.885	Ginner	25	3	28
-	Field Superintendent	10	1	11
461.000	Gin Manager	23	1	24
520.885	Feedmill Operator	10	-	10
-	Agric. Processing Manager	8	1	9
525.381	Butcher	9	-	9
316.884	Meat Cutter	8	-	8
929.885	Press Man	3	4	7
529.687	Egg Candler	5	-	5
624.281	Farm Equipment Service Man	4	-	4
219.388	Gin Clerk	4	-	4
525.131	Packing House Manager	3	-	3
922.887	Warehouseman	3	-	3
-	Agric. Processing Office Manager	2	-	2
324.281	Farm Equipment Mechanic	2	-	2
040.081	Agronomist	1	-	1
419.181	Beekeeper	1	-	1
559.887	Egg Processor	1	-	1
429.131	General Farm Foreman	1	-	1
180.118	Gin Field Man	1	-	1
161.000	Gin Manager (Assistant	1	-	1
-	Gin Superintendent (Assistant)	1	-	1
521.885	Honey Extractor	1	-	1
163.118	Sales Manager	1	-	1
-	Shipping Clerk	1	-	1
929.138	Warehouse Superintendent	1	-	1
910.137	Yard Man	1	-	1
	Sub-totals	221	44	265

TABLE 2 (Continued)

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
	Agriculture Service			
073.108	Veterinarian	39	-	39
-	Veterinary Assistant	13	1	14
091.228	Vocational Agriculture Teacher	12	-	12
349.874	Kennelman	9	2	11
040.081	Soil Scientist	7	-	7
013.081	Agricultural Engineer	4	-	4
-	Farm & Ranch Consultant	3	-	3
040.081	Soil Conservationist	3	-	3
356.874	Veterinary Hospital Attendant	3	-	3
-	Soil Conservation Technician	2	-	2
040.081	Agronomist	1	-	1
294.258	Auctioneer, Livestock	1	-	1
413.684	Brand Inspector	1	-	1
162.158	Livestock Buyer	1	-	1
419.131	Stable Owner-Manager	1	-	1
	Sub-totals	100	3	103
	Farm Supply			
-	Farm Supply Salesman	33	2	35
-	Farm Supply Plant Worker	15	1	16
-	Farm Supply Manager	13	-	13
-	Farm Supply Feed Store Employee	5	-	5
-	Farm Supply Equipment Service Man	3	-	3
-	Farm Supply Foreman	3	-	3
-	Shipping Clerk	3	-	3
-	Farm Supply Deliveryman	1	1	2
906.883	Truck Driver	2	-	2
409.883	Crawler Tractor Operator	1	-	1
041.081	Entomologist	-	1	1
624.281	Farm Equipment Service Man	1	-	1
-	Farm Service Manager	1	-	1
	Sub-totals	81	5	86
	Agricultural Research			
-	Crop Research Technician	16	-	16
013.081	Agricultural Engineer	14	-	14
040.081	Crop Research Scientist	13	-	13
421.883	General Farmhand	8	1	9
040.081	Agronomist	8	-	8
041.081	Entomologist	7	-	7
040.081	Horticulturalist	5	-	5
041.081	Plant Pathologist	4	-	4
013.181	Agricultural Engineering Technician	3	-	3
162.158	Dairy Field Man	3	-	3
073.108	Veterinarian	3	-	3

TABLE 2 (Continued)

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
	Agricultural Research (Continued)			
406.000	Plant Propagator	2	-	2
096.128	County Agricultural Agent Crop Specialist	1	-	1
409.168	Farm Manager	1	-	1
429.131	General Farm Foreman	1	-	1
	Sub-totals	89	1	90
	Agricultural Finance			
186.288	Agricultural Loan Officer	1	-	1
	Sub-totals	1	-	1
	TOTALS	3920	717	4637

* It should be noted that, as defined in this study, agricultural employees are limited to those employees needing knowledge or skill in agriculture to perform the duties and functions of their respective occupations.

A total of 142 different agricultural job titles were identified in the eastern part of Maricopa County. These job titles are shown in Table 3 with the total numbers of persons employed in each job title. The majority of the job titles identified had fewer than ten employees and employment in these job titles represented six per cent of the total agricultural employment. One job title, that of "general farmhand" accounted for approximately one-fourth of the total agricultural employment.

TABLE 3

EMPLOYMENT IN AGRICULTURAL OCCUPATIONS BY JOB TITLE
IN THE EASTERN PART OF MARICOPA COUNTY

D.O.T. No.	Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture*		
		Full-time	Part-time	Total
421.883	General Farmhand	797	347	1144
421.181	Farm Owner Manager (General)	263	36	299
624.281	Farm Equipment Mechanic	236	12	248
422.887	Irrigator	178	10	188
411.181	Milker	170	10	180
409.883	Harvest Machine Operator	76	54	130
954.782	Ditch Rider	129	0	129
429.131	General Farm Foreman	127	0	127
409.883	Wheel Tractor Operator	107	19	126
-	Plant Employee	62	54	116
-	Farm Supply Equipment Serviceman	103	0	103
413.884	Cattle Feeder	85	4	89
905.883	Truck Driver	64	25	89
529.132	Cowboy	57	18	75
266.258	Fertilizer and Insecticide Salesman	73	0	73
406.887	Nursery Worker	40	20	60
407.884	Groundskeeper	54	4	58
407.881	Landscape Gardener	51	0	51
277.358	Farm Supply Salesman	47	3	50
409.168	Farm Manager	46	2	48
624.281	Farm Equipment Serviceman	45	1	46
-	Nursery Salesman	36	7	43
073.108	Veterinarian	42	0	42
525.887	Poultry Dresser	41	0	41
-	Dairyman	33	3	36
-	Nurseryman	36	0	36
224.587	Grain Elevator Scalesman	20	10	30
-	Farm Service Manager	29	0	29
407.137	Greenskeeper	29	0	29
461.885	Ginner	25	3	28
412.884	Farm Hand, Poultry	27	0	27
812.884	Farm Equipment Welder	25	1	26
920.132	Agr. Processing Foreman	23	1	24
461.000	Gin Manager	23	1	24
040.081	Water Master	24	0	24
411.181	Dairy Herdsman	22	0	22
233.387	Farm Equipment Partsman	21	0	21
-	Farm Supply Plant Worker	20	1	21
349.874	Kennelman	19	2	21
013.181	Agricultural Engineer	19	0	19
040.081	Horticulturalist	18	1	19
409.883	Crawler Tractor Operator	18	0	18

TABLE 3 (Continued)

D.O.T. No.	Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture*		
		Full-time	Part-time	Total
520.885	Feedmill Operator	18	0	18
277.358	Farm Equipment Salesman	17	0	17
-	Pump Maintenance Man	17	0	17
163.118	Field Superintendent	16	1	17
406.000	Plant Propagator	15	2	17
-	Crop Research Technician	16	0	16
-	Farm Supply Manager	16	0	16
162.158	Livestock Buyer	6	10	16
-	Poultryman	14	2	16
413.181	Ranch Owner-Manager	14	2	16
-	Landscape Architect	14	1	15
920.887	Packer, Agricultural Produce	2	12	14
-	Veterinary Assistant	13	1	14
-	Agricultural Machinery Sales and Service Manager	13	0	13
040.081	Crop Research Scientist	13	0	13
041.081	Entomologist	10	3	13
-	Agriculture Processing Manager	11	1	12
559.887	Egg Processor	12	0	12
-	Farm Service Owner	11	1	12
091.228	Vocational Agriculture Teacher	12	0	12
040.081	Agronomist	11	0	11
013.181	Agricultural Engineering Technician	11	0	11
789.781	Animal Keeper	11	0	11
356.874	Zoologist	11	0	11
404.884	Tree Pruner	10	0	10
525.381	Butcher	9	0	9
-	Feedlot Foreman	9	0	9
-	Livestock Groomer	4	5	9
419.131	Stable Owner-Manager	9	0	9
407.138	Superintendent, Greens	9	0	9
184.168	Const. & Maint. of Irrigation Structures	8	0	8
407.883	Laborer, Golf Course	8	0	8
316.884	Meat Cutter	8	0	8
466.887	Feedlot Maintenance Man	7	0	7
409.887	Flagger	0	7	7
-	Florist	7	0	7
929.885	Press Man	3	4	7
413.181	Sheep Rancher	7	0	7
040.081	Soil Scientist	7	0	7
910.137	Yard Man	1	6	7
467.384	Artificial Inseminator	6	0	6
-	Farm Supply Foreman	6	0	6
196.283	Sprayer Pilot	6	0	6

TABLE 3 (Continued)

D.O.T. No.	Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture*		
		Full-time	Part-time	Total
529.687	Egg Candler	5	0	5
-	Farm Supply Deliveryman	3	2	5
-	Farm Supply Feed Store Employee	5	0	5
409.887	Plane Loader	1	4	5
413.131	Ranch Foreman	5	0	5
413.887	Sheep Herder	5	0	5
624.281	Farm Equipment Mechanics Helper	4	0	4
529.132	Feedmill Foreman	4	0	4
219.388	Gin Clerk	4	0	4
025.288	Hydrographer	4	0	4
429.131	Irrigation Foreman	4	0	4
525.131	Packing House Manager	4	0	4
163.118	Sales Manager	4	0	4
-	Shipping Clerk	4	0	4
-	Agriculture Processing Office Manager	3	0	3
162.158	Dairy Field Man	3	0	3
891.138	Farm Equipment Shop Foreman	2	1	3
-	Farm and Ranch Consultant	3	0	3
-	Farm Tax Accountant	3	0	3
413.00	Feedlot Owner-Manager	3	0	3
-	Feedlot Manager	3	0	3
169.168	Office Manager	3	0	3
040.181	Soil Conservationist	3	0	3
184.168	Supt. Water Control Structures	3	0	3
090.228	Teacher, Junior College, (Agriculture)	2	1	3
356.874	Veterinary Hospital Attendant	3	0	3
922.887	Warehouse Man	3	0	3
294.258	Auctioneer, Livestock	2	0	2
-	Farm Equipment Foreman	2	0	2
185.168	Farm Equipment Sales Manager	2	0	2
869.884	Fence Builder	0	2	2
-	Greenhouse Manager	2	0	2
292.358	Salesman, Driver, (Deliveryman)	2	0	2
-	Soil Conservation Technician	2	0	2
018.188	Surveyor	2	0	2
413.884	Swine Feeder	2	0	2
413.181	Swine Herdsman	2	0	2
929.138	Warehouse Superintendent	2	0	2
186.288	Agricultural Loan Officer	1	0	1
461.000	Assistant Gin Manager	1	0	1
-	Assistant Gin Superintendent	1	0	1
559.138	Aviation Ground Crew Chief	1	0	1
419.181	Beekeeper	1	0	1

TABLE 3 (Continued)

D.O.T. No.	Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture*		
		Full-time	Part-time	Total
413.684	Brand Inspector	1	0	1
096.128	County Agricultural Agent (Crop Specialist)	1	0	1
-	Crop Research Foreman	1	0	1
185.168	Farm Equipment Parts Dept. Mgr.	1	0	1
-	Feedmill Maintenance Man	1	0	1
180.118	Gin Field Man	1	0	1
409.883	Harvest Crew Leader (Foreman)	1	0	1
521.885	Honey Extractor	1	0	1
419.884	Horse Trainer	1	0	1
041.081	Maintenance Man	1	0	1
-	Nursery Deliveryman	1	0	1
184.168	Power Manager (Water)	1	0	1
165.068	Public Relation Man	1	0	1
413.181	Ranch Manager	1	0	1
	Total	3920	717	4637

* It should be noted that, as defined in this study, agricultural employees are limited to those employees needing knowledge or skill in agriculture to perform the duties and functions of their respective occupations.

Agricultural Competencies Needed by Agricultural Employees

In order to plan educational programs in agriculture to prepare persons for agricultural employment, it was necessary to determine the agricultural knowledge and skills needed for entry into those occupations. Areas in which agricultural competencies were needed by persons employed in each of 67 agricultural job titles in the eastern part of Maricopa County are shown in Table 4, page 33. The 67 job titles shown in Table 4 represent those in which 10 or more persons were found to be employed in each job title. These were 75 agricultural job titles identified in the eastern part of Maricopa County in which fewer than 10 persons were employed in each job title. In order to reduce the bulkiness of an already complex table these 75 job titles were not included in Table 4. It should be noted that a total of 278 persons were employed in the 75 agricultural job titles not included in Table 4.

Clustering of Occupations

In clustering agricultural occupations in order to consider more specifically the agricultural knowledge and skills needed by agricultural employees, two factors were considered. These were: (1) those occupations with substantial numbers of employees would be considered, in that educational programs planned should be directed toward those areas of greatest employment opportunity; and (2) occupations requiring similar patterns of agricultural competency would be clustered together for consideration.

The job titles listed in Table 4 were so arranged that those job titles requiring similar patterns of agricultural competencies were clustered together to aid in the visual comparison of competencies needed.

Manager - Foremen Cluster

For the job titles and competencies shown in Table 4 it may be seen that quite similar competency patterns appear for that cluster of occupations which includes farm owner-manager, farm managers, farm foremen, and 20 additional job titles. It may be noted that the additional job titles in this cluster are largely at the manager, foreman and salesman levels. Of the above group of job titles those of farm owner-manager, farm manager and farm foreman accounted for over one-half of the employment in this cluster. The 926 farm owner-managers, farm managers, farm foremen and other agricultural employees in this job cluster made up one-fifth of the total agricultural employment in the eastern part of Maricopa County.

In summarizing the agricultural competencies needed by persons employed in the job titles shown in the manager-foreman cluster it was found generally competencies were needed by these persons in the areas of field crop production, agricultural business management, agricultural marketing and each of the several areas of agricultural mechanization. Fewer than one-half of the job titles in the cluster called for competencies in animal science, horticulture or forestry.

Agricultural Mechanization Cluster

There were eleven job titles in which 561 persons were employed for which extensive agricultural competencies were needed largely in one or more areas of agricultural mechanization. Of the eleven job titles in this cluster, as shown in Table 4, one job title, that of farm equipment mechanic, accounted for 248, or 44 per cent of the persons employed in the cluster.

Persons employed in most of the job titles in this cluster needed competencies in each of the areas of agricultural mechanization shown in Table 4 with the exception of the area of agricultural building and conveniences.

Basic agricultural shop skills were needed by persons employed in each of the job titles in the cluster with the exception of water master. Few job titles in the agricultural mechanization cluster called for competencies in the areas of animal science, plant science, agricultural business or merchandising skills.

Agricultural Machinery Operation and Irrigation Cluster

The three job titles, tractor operator, irrigator and general farm hand accounted for nearly one-third of the agricultural employment in the eastern part of Maricopa County. An examination of patterns of agricultural knowledge and skills needed by persons employed in these job titles, as shown in Table 4, does not show marked similarity. For this study employees were categorized into one of the above three job titles by correlating the description of the work

performed as given by the employer with the job description of each of these job titles.

Six additional related job titles for which needed competencies were also largely in the areas of machine operation and irrigation were also included in the machinery operation and irrigation cluster for a total of 2029 persons employed representing over 44 per cent of the total agricultural employment in the county.

From the data presented in Table 4 it may be seen that persons employed in job titles in this cluster for the most part needed to be able to operate, maintain and perform adjustment and repair on agricultural machinery.

Two job titles, those of irrigator and ditch rider did not require agricultural machinery competencies; however, competencies were needed in soil and water management.

No job titles shown in the agricultural machinery operation and irrigation cluster were found to require competencies in the areas animal science or agriculture business.

Ornamental Horticulture Cluster

Although no single job title accounted for a large proportion of employees in the ornamental horticulture cluster there were 349 persons employed in eleven job titles all of which required competencies in the area of horticulture. It may also be seen in Table 4 that persons employed in over half the job titles shown in the ornamental horticulture cluster also needed competencies in agricultural business management, agricultural marketing, agricultural machinery operation and maintenance, soil and water management and merchandising skills.

Competencies in none of the animal science areas were found to be needed by persons employed in job titles in the ornamental horticulture cluster.

Livestock Cluster

A total of 397 persons were employed in nine job titles in which competencies were needed in one or more areas of animal science. Two job titles, those of milker and cowboy accounted for 64 per cent of the employment in the job cluster.

For most of the job titles shown, rather broad competencies in animal science were needed as indicated by the numbers of different areas of animal science in which employees needed competencies.

No competencies in plant science were found to be needed by employees in the livestock cluster; however, some competencies in agricultural business management were needed for most job titles in the cluster and some job titles required additional competencies in one or more of the areas of agricultural marketing, merchandising skills, or in one or more areas of agricultural mechanics.

Numbers of Employees Needing Agricultural Competencies

In Table 4 the column headed "Number of Employees for which Competencies in Each Area Were Indicated as Needed" shows the highest number of persons for which any single one competency was needed in the area shown. Due to space limitations it was not possible to show in Table 4 the more specific single competencies within each competency area shown as are found on Form II-A of the survey instrument.

The figures in Table 4 do show that the greatest numbers of persons needed agricultural competencies in the several areas of agricultural mechanics. With few exceptions, nearly all persons employed in the job titles shown in Table 4, needed competencies in some area of agricultural mechanization. Competencies in this area were needed by employees in each occupational area and at all levels of employment.

Comparatively large numbers of persons also needed competencies in the areas of field crops production and agricultural business management. This is borne out both by numbers of persons needing competencies in these areas as well as the relatively large numbers of job titles for which competencies in these areas were required.

A more detailed presentation of numbers and percentages of persons needing agricultural knowledge and skill within each competency area may be found in Table 5. From this data it may be seen that the numbers of persons needing competencies in each of the areas shown was lowest in the area of forestry and highest in the area of agricultural power and machinery operation. Percentages of agricultural employees in this study needing each of the competencies shown ranged from a high of 57.1 per cent for operation of wheel tractors down to .5 per cent for forestry fire control.

Percentages of agricultural employees needing animal science competencies were comparatively low with percentages of persons needing competencies in this area ranging from 3.9 to 15 per cent.

In the area of plant science approximately one-third of all agricultural employees needed competencies in field crops production with a high of 37.9 per cent needing competency in plant growth.

TABLE 4

Agricultural Competencies Needed by Employees in Selected Job Titles* in the Eastern Part of Maricopa County with Numbers of Employees in Each Job Title and Total Numbers of Employees Needing Competencies in Each Area.

AGRICULTURAL COMPETENCY AREAS	CLUSTERS OF AGRICULTURAL JOB TITLES WITH NUMBERS EMPLOYED AND AREAS OF AGRICULTURAL COMPETENCIES NEEDED									
	(Number of Employees in Each Job Title)									
	MANAGER-FOREMAN CLUSTER									
	13 Ag. Machinery Sales & Service Mgr.	17 Farm Equipment Salesman	299 Farm Owner-Manager	48 Farm Manager	127 General Farm Foreman	12 Farm Service Owner	29 Farm Service Manager	12 Ag. Processing Manager	24 Ag. Processing Foreman	21 Farm Supply Plant Worker	24 Gin Manager
ANIMAL SCIENCE											
Breeding Farm Animals											
Livestock Feeding and Nurtition											
Animal Sanitation, Disease & Parasite Control											
Housing and Equipment											
Management, Processing, Marketing											
PLANT SCIENCE											
Horticulture	X	X						X		X	
Field Crop Production	X	X	X	X	X	X	X	X	X	X	X
Forestry											
AGRICULTURAL BUSINESS											
Agricultural Business Management	X	X	X	X	X	X	X	X	X	X	X
Agricultural Marketing	X	X	X	X	X	X	X	X		X	X
AGRICULTURAL MECHANICS											
Agricultural Machinery Operation	X	X	X	X	X	X	X		X		X
Agricultural Machinery Maintenance	X	X	X	X	X	X	X				
Agricultural Power & Machinery Adjustment & Repair	X	X	X	X	X	X	X	X		X	X
Agricultural Power & Machinery Overhaul	X		X	X	X	X	X				
Agricultural Electrification	X		X	X	X	X	X	X	X		X
Soil and Water Management	X		X	X	X						
Agricultural Building & Conveniences			X	X	X			X	X		X
Basic Agricultural Shop Skills	X		X	X	X	X	X	X	X		X
MERCHANDISING SKILLS	X	X				X		X	X	X	

X	X			X	X	X	X	X	X	X		X						12	Farm Service Owner
	X			X	X	X	X	X	X	X		X						29	Farm Service Manager
X	X	X		X		X			X	X		X	X					12	Ag. Processing Manager
X	X	X		X				X		X		X						24	Ag. Processing Foreman
X						X			X	X		X	X					21	Farm Supply Plant Worker
	X	X		X		X		X	X	X		X						24	Gin Manager
X									X	X								12	Egg Processor
X			X				X	X		X		X	X					13	Entomologist
X										X	X	X						16	Crop Research Technician
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		73	Fertilizer & Insecticide Salesman
X			X						X	X		X	X	X	X	X		50	Farm Supply Salesman
X	X	X	X			X	X	X	X	X		X	X	X		X	X	16	Farm Supply Manager
			X						X	X		X		X	X	X	X	17	Field Superintendent
	X			X		X	X	X	X	X				X	X	X	X	16	Ranch Owner Manager
X	X	X					X	X				X	X	X	X	X	X	22	Dairy Herdsman
X	X	X	X	X		X	X	X	X	X				X	X	X	X	36	Dairyman
X			X								X	X	X	X	X	X	X	13	Crop Research Scientist
X	X	X		X	X	X			X	X				X	X	X	X	16	Poultryman
																		(sub-total - 926)	
																			AGRICULTURAL MECHANIZATION CLUSTER
	X			X	X	X	X	X										248	Farm Equipment Mechanic
	X		X	X	X	X	X	X										46	Farm Equipment Serviceman
X	X					X	X	X	X	X								21	Farm Equipment Partsman
	X		X															17	Pump Maintenance Man
	X	X			X	X												26	Farm Equipment Welder
X	X	X	X	X	X	X	X	X				X						11	Agricultural Engineering Technician
X	X	X	X	X	X	X	X	X				X						103	Farm Supply Equipment Serviceman
	X	X		X		X		X		X								28	Ginner
	X			X											X			18	Feedmill Operator
X	X		X	X	X	X	X	X	X	X		X						19	Agricultural Engineer
X			X							X		X	X					24	Watermaster
																		(sub-total - 561)	
																			AGRICULTURAL MACHINERY OPERATION AND IRRIGATION CLUSTER
	X	X	X			X	X	X				X						1144	General Farm Hand
						X	X	X				X						126	Wheel Tractor Operator
			X				X	X										18	Crawler Tractor Operator
			X															188	Irrigator
						X	X	X										130	Harvest Machine Operator
						X	X	X										89	Truck Driver
						X		X										116	Plant Employees
	X							X										89	Cattle Feeder
X			X															129	Ditch Rider
																		(sub-total - 2029)	
																			ORNAMENTAL HORTICULTURE CLUSTER
			X				X	X									X	29	Greenskeeper
									X	X		X					X	17	Plant Propagator
X			X						X	X		X					X	19	Horticulturalist
X			X				X	X	X	X							X	51	Landscape Gardener
X	X	X	X				X	X	X	X	X						X	36	Nurseryman
X										X	X	X	X				X	43	Nursery Salesman

			X					X	X															
										X	X			X	X									
X			X							X	X			X	X									
X			X					X	X	X	X				X									
X	X	X	X					X	X	X	X	X			X									
X											X	X	X	X	X									
														X	X									
	X							X	X			X			X									
X			X					X	X		X				X									
		X	X					X		X	X	X			X									
X	X		X		X	X	X	X	X	X	X	X			X									

TABLE 5

AGRICULTURAL COMPETENCIES NEEDED BY AGRICULTURAL EMPLOYEES IN THE EASTERN PART OF MARICOPA COUNTY WITH NUMBERS OF EMPLOYEES NEEDING EACH COMPETENCY

Agricultural Competencies	Total Numbers of Employees Needing Each Competency	Per Cent of Total Agricultural Employees in Survey
Animal Science:		
1. Breeding Farm Animals		
A. Genetics	200	4.3
B. Reproductive morphology	199	4.3
C. Diseases	452	10.2
D. Breeding problems	314	6.8
E. Artificial insemination	188	4.1
F. Breeding skills	202	4.4
G. Selection of breeding stock	201	4.3
2. Livestock Feeding and Nutrition		
A. Body process of nutrition	409	8.8
B. Food nutrients and their sources	429	9.3
C. Ration formulation	365	7.9
D. Feeding systems	530	11.4
3. Animal Sanitation, Disease and Parasite Control		
A. Characteristics of healthy animals	696	15.0
B. Symptoms of common diseases and parasites	666	14.4
C. Treatment of common diseases and parasites	617	13.3
D. Environmental conditions conducive to good health	663	14.3
4. Housing and Equipment		
A. Maintenance of equipment, corrals, and fences	506	10.9
B. Construction of equipment and housing	379	8.2
C. Design and construction	349	7.5
5. Management of livestock operation	338	7.3
6. Processing of livestock products (meat, milk, wool, etc.)	281	6.1
7. Marketing of livestock products (meat, milk, wool, eggs)	181	3.9
8. Livestock handling	571	12.3

TABLE 5 (Continued)

Agricultural Competencies	Total Numbers of Employees Needing Each Competency	Per Cent of Total Agricultural Employees in Survey
Plant Science:		
1. Ornamental Horticulture		
A. Plant propagation	483	10.4
B. Greenhouse management	333	7.2
C. Soils and fertilizers, water, etc.	670	14.5
D. Control of insects	717	15.5
E. Control of diseases	713	15.4
F. Control of weeds	707	15.3
G. Marketing and management	397	11.7
H. Turf management	394	11.7
2. Field Crop Production (includes vegetable & fruit production)		
A. Plant propagation, seed production	1537	33.2
B. Plant growth	1754	37.9
C. Control of insects	1662	35.9
D. Control of diseases	1735	37.4
E. Control of weeds	1031	22.2
F. Soils	1615	34.8
G. Fertilization	1592	34.4
H. Irrigation	1048	22.6
I. Marketing and management	757	16.3
3. Forestry		
A. Establishing a stand	134	2.9
B. Managing a stand	97	2.1
C. Fire Control	24	.5
D. Control of diseases and insects	112	2.4
E. Harvesting	37	.8
F. Marketing	53	1.1
G. Pulp wood production	26	.6
Agricultural Business Management & Marketing		
A. Records and accounts	1368	29.5
B. Budgeting and analysis	851	18.7
C. Agricultural financing, credit and insurance	765	16.5
D. Farm organization and planning	808	17.4
E. Labor management	1039	22.4
F. Marketing problems and practices	826	17.8
G. Agricultural policy	811	17.5
H. Agricultural and related price analysis	717	15.5
I. Cooperative and business organization	653	14.1
J. Mechanization systems	946	20.4

TABLE 5 (Continued)

Agricultural Competencies	Total Numbers of Employees Needing Each Competency	Per Cent of Total Agricultural Employees in Survey
Agricultural Mechanics Area:		
1. Agricultural Power and Machinery Operation		
A. Tractors, wheel	2642	57.1
B. Crawler tractors	1922	41.5
C. Primary tillage equipment	2041	44.1
D. Cultivating equipment	2024	43.8
E. Harvesting equipment	2185	47.2
F. Small gasoline engines	2406	51.9
G. Materials handling equipment	635	13.7
2. Agricultural Power & Machinery Daily Care & Maintenance		
A. Tractors, wheel	2329	50.3
B. Crawler tractors	1745	37.6
C. Primary tillage equipment	1895	40.9
D. Cultivating equipment	1902	41.0
E. Harvesting equipment	2030	43.8
F. Small gasoline engines	2197	47.4
G. Materials handling equipment	906	19.5
3. Agricultural Power & Machinery Repair & Adjustment		
A. Tractors, wheel	2076	44.8
B. Crawler tractors	1708	36.9
C. Primary tillage equipment	1823	39.4
D. Cultivating equipment	1834	39.6
E. Harvesting equipment	2000	43.2
F. Small gasoline engines	2056	44.3
G. Materials handling equipment	2012	43.4
4. Agricultural Power & Machinery Overhaul		
A. Tractors, wheel	789	17.0
B. Crawler tractors	737	15.9
C. Primary tillage equipment	783	16.9
D. Cultivating equipment	753	16.2
E. Harvesting equipment	752	16.2
F. Small gasoline engines	888	19.1
G. Materials handling equipment	906	19.5
5. Agricultural Electrification		
A. Wiring	1122	24.2
B. Motors, Maintenance and Repair	1089	23.4

TABLE 5 (Continued)

Agricultural Competencies	Total Numbers of Employees Needing Each Competency	Per Cent of Total Agricultural Employees in Survey
6. Soil and Water Management		
A. Land Management	1518	32.8
B. Surveying and leveling	677	14.6
C. Irrigation systems	1844	39.8
D. Pump Maintenance	1436	31.0
E. Soil Testing	651	14.0
F. Irrigation Structures	1866	40.3
G. Water Measurement	922	19.9
H. Efficient water use	1639	35.4
7. Agricultural Building & Conveniences		
A. Design of structures	533	11.5
B. Construction	693	14.9
C. Maintenance and repair	1491	32.2
D. Water systems	1508	32.6
8. Basic Agricultural Shop Skills		
A. Arc Welding	2101	45.4
B. Acetylene welding	2090	45.2
C. Plumbing	1884	40.8
D. Hot and cold metal	1831	39.5
E. Carpentry	1656	35.7
Merchandising:		
A. Warehousing	480	10.3
B. Sales	457	9.9
C. Inventorying	524	11.3
D. Handling cash - cash register	394	8.5
E. Advising customers	629	13.6
F. Using invoices	573	12.4
G. Handling customer accounts	685	14.8
H. Dispatching, consigning and packaging of materials	461	9.9
I. Routing and delivering	471	10.2
J. Use of catalogues and ordering	463	10.0
K. Preparing displays and advertising	378	8.2

Fewer persons needed ornamental horticultural competencies with approximately 15 per cent of the agricultural employees needing several horticultural competencies. Very few persons needed any of the competencies shown in forestry.

Competency in records and accounts and labor management in the area of agricultural business management and marketing were needed by more agricultural employees than other competencies in this area. It should be noted however that each of the agricultural business management and marketing competencies were needed by at least one of seven agricultural employees.

Percentages for competencies in the agricultural mechanics area shown in Table 5 indicate that generally from one-third to one-half of all agricultural employees in the survey needed competencies in the operation, daily care and maintenance, and in the repair and adjustment of each of the types of machinery and equipment shown. From 15 to 20 per cent needed competency in overhaul of this equipment and machinery.

Considering other areas of agricultural mechanics, approximately one-fourth of the agricultural employees needed competencies in agricultural electrification and in the area of soil and water management percentages ranged from 40.3 per cent for irrigation structures down to 14.0 per cent for soil testing. Under the heading of agricultural buildings and conveniences, competencies with water systems and maintenance and repair were needed by approximately one-third of the employees. Basic agricultural shop skills were needed by from 35 to 45 per cent of the agricultural employees with arc and acetylene welding being the most needed skills.

In relation to other competency areas, with the exception of animal science, numbers of agricultural employees needing merchandising skills was quite low ranging from a low of 8.2 per cent for preparing displays and advertising to a high of 14.8 per cent for handling customer accounts.

Characteristics of Agricultural Employees and Occupations

In planning vocational education programs it is not sufficient to determine only what to teach but also decisions must be made concerning the age of students and the level at which occupational education should be provided. Agricultural employers in the eastern part of Maricopa County were asked to provide data dealing with the present age and salary of their employees. They were asked to indicate the minimum age at which they would hire an individual for each job title and also the educational level desired for each. Because of the large number of agricultural job titles identified in the eastern part of Maricopa County, only selected job titles in which ten or more persons were employed will be shown.

Educational Level Desired

The educational level which employers desired that their employees possess is shown in Table 6. The job titles shown in Table 6 are grouped the same as in Table 4 in which job titles were clustered by similar patterns of competencies needed. Data concerning the desired educational level were provided for 4359 of the 4637 employees in the 67 job titles shown in Table 6.

Manager-Foreman Cluster - The educational level desired for the job titles included in the manager-foreman cluster are shown in Table 6 on pages 41 and 42. The desired educational level for employees in this group ranged from "less than high school graduate" through "college graduate" with the level selected most often

TABLE 6

EDUCATIONAL LEVEL DESIRED BY AGRICULTURAL EMPLOYERS IN THE EASTERN PART OF MARICOPA COUNTY FOR EMPLOYEES IN SELECTED AGRICULTURAL OCCUPATIONS

Job Titles	Number of Employees Desired at Each Educational Level						
	Less than H.S. Graduate	H. S. Graduate	Post H.S. Technical	Some College	College Graduate	No Preference	Total
Manager-Foreman Cluster							
Ag. Mach. Sales & Ser. Mgr.	0	6	4	0	0	3	13
Farm Equipment Salesman	0	10	3	1	0	3	17
Farm Owner-Manager	13	116	34	39	58	39	299
Farm Manager	0	14	7	15	10	2	48
General Farm Foreman	19	64	11	7	2	24	127
Farm Service Owner	0	7	3	1	1	0	12
Farm Service Manager	1	21	2	2	1	2	29
Ag. Processing Manager	0	3	2	2	5	0	12
Ag. Processing Foreman	6	9	2	2	4	1	24
Farm Supply Plant Worker	0	21	0	0	0	0	21
Gin Manager	0	9	0	1	11	3	24
Egg Processor	0	0	1	1	1	9	12
Entomologist	0	0	6	0	7	-	13
Crop Research Technician	0	0	0	11	5	0	16
Fertilizer & Insecticide Salesman	0	0	0	72	1	0	73

28802

TABLE 6 (Continued)

Job Titles	Number of Employees Desired at Each Educational Level						
	Less than H.S. Graduate	H.S. Graduate	Post H.S. Technical	Some College	College Graduate	No Preference	Total
Farm Supply Salesman	0	26	10	2	6	6	50
Farm Supply Manager	1	3	4	2	4	2	16
Field Superintendent	0	4	0	5	8	0	17
Ranch Owner-Manager	0	9	0	1	1	5	16
Dairy Herdsman	3	9	6	2	1	1	22
Dairyman	2	11	4	5	6	8	36
Crop Research Scientist	0	0	0	12	1	0	13
Poultryman	0	5	4	5	2	0	16
Sub-totals for Manager-Foreman Cluster	(45)	(347)	(103)	(188)	(135)	(108)	(926)
Percent of Cluster	5%	37%	11%	20%	15%	12%	100%
<u>Agricultural Mechanization Cluster</u>							
Farm Equipment Mechanic	15	52	30	0	1	150	248
Farm Equipment Serviceman	1	18	24	0	0	3	45
Farm Equipment Partsman	0	18	3	0	0	0	21
Pump Maintenance Man	0	17	0	0	0	0	17
Farm Equipment Welder	1	4	2	0	0	19	26

28003

TABLE 6 (Continued)

Job Titles	Number of Employees Desired at Each Educational Level						
	Less than H.S. Graduate	H.S. Graduate	Post H.S. Technical	Some College	College Graduate	No Preference	Total
Agricultural Engineering Tech.	0	0	0	9	2	0	11
Farm Supply Equip. Serviceman	1	2	0	100	0	0	103
Ginner	0	16	1	0	0	11	28
Feedmill Operator	3	5	1	0	0	0	18
Agricultural Engineer	0	0	0	0	15	4	19
Water Master	0	24	0	0	0	0	24
Sub-totals for Ag. Mech. Cluster	(21)	(156)	(70)	(109)	(18)	(187)	(561)
Percent of Cluster	4%	28%	12%	20%	3%	33%	100%
<u>Agricultural Machinery Operation and Irrigation Cluster</u>							
General Farmhand	196	137	6	3	0	802	1144
Wheel Tractor Operator	30	38	0	0	0	58	126
Crawler Tractor Operator	13	2	0	0	0	3	18
Irrigator	44	28	3	0	0	113	188
Harvest Machine Operator	22	61	7	0	0	40	130
Truck Driver	19	41	3	0	0	26	89
Plant Employees	0	23	0	0	0	93	116

28004

TABLE 6 (Continued)

Job Titles	Number of Employees Desired at Each Educational Level						
	Less than H.S. Graduate	H.S. Graduate	Post H.S. Technical	Some College	College Graduate	No Preference	Total
Cattle Feeder	22	35	0	4	0	28	89
Ditch Rider	0	127	0	0	0	2	129
Sub-totals for Machinery Operation & Irrigation Cluster	(346)	(492)	(19)	(7)	(0)	(1165)	(2029)
Percent of Cluster	17%	24%	1%	1%	0%	57%	100%
<u>Ornamental Horticulture Cluster</u>							
Greenskeeper	4	15	0	0	0	10	29
Plant Propagator	0	13	0	2	2	0	17
Horticulturalist	0	4	1	0	10	4	19
Landscape Gardener	3	40	2	0	1	5	51
Nurseryman	1	14	5	5	7	4	36
Nursery Salesman	6	26	0	1	0	10	43
Agronomist	0	0	0	0	11	0	11
Nursery Worker	3	19	0	1	0	37	60
Groundskeeper	4	38	5	0	0	11	58
Landscape Architect	0	1	1	4	9	0	15
Tree Pruner	0	1	2	5	0	2	10

2805

TABLE 6 (Continued)

Job Titles	Number of Employees Desired at Each Educational Level						
	Less than H.S. Graduate	H. S. Graduate	Post H.S. Technical	Some College	College Graduate	No Preference	Total
Sub-totals for Ornamental Horticulture Cluster	(21)	(171)	(16)	(18)	(40)	(83)	(349)
Percent of Cluster	6%	49%	5%	5%	11%	24%	100%
Livestock Cluster							
Livestock Buyer	0	1	0	5	0	10	16
Milker	64	39	0	0	0	77	180
Cowboy	4	19	0	0	0	52	75
Farmhand Poultry	12	0	2	0	0	13	27
Veterinary Assistant	0	4	6	2	0	2	14
Veterinarian	0	0	0	0	42	0	42
Animal Keeper	0	11	0	0	0	0	11
Zoologist	0	0	0	0	11	0	11
Kennelman	0	15	0	0	0	6	21
Sub-totals for Livestock Cluster	(80)	(89)	(8)	(7)	(53)	(160)	(397)
Percent of Cluster	20%	23%	2%	2%	13%	40%	100%
Other Occupations							
Packer Horticultural Produce	0	1	0	0	0	13	14

28006

TABLE 6 (Continued)

Job Titles	Number of Employees Desired at Each Educational Level						
	Less than H.S. Graduate	H.S. Graduate	Post H. S. Technical	Some College	College Graduate	No Preference	Total
Grain Elevator Scalesman	0	30	0	0	0	0	30
Poultry Dresser	0	0	0	0	0	41	41
Vocational Agriculture Teacher	0	0	0	0	12	0	12
Sub-totals for Other Occupations	(0)	(31)	(0)	(0)	(12)	(54)	(97)
Percent of Cluster	0%	32%	0%	0%	12%	56%	100%
TOTALS FOR COMBINED CLUSTERS	513	1286	216	329	258	1757	4359
PERCENT OF TOTAL	12%	29%	5%	8%	6%	40%	100%

2807

that of "high school graduate". It may be noted, however, that upon combining the three levels beyond high school, "post high school technical", "some college" and "college graduate" that a total of 426 or approximately one-half of the employees in the manager-foreman cluster were desired with education beyond the high school level.

Agricultural Mechanization Cluster - The educational levels desired for agricultural employees in the agricultural mechanization cluster of job titles may be seen in Table 6 on pages 42 and 43. "No preference" was indicated for one-third of the employees in this cluster. The level of "high school graduate" was desired for 28% of these employees and another one-third were desired at the combined levels of "post high school technical" and "some college". Educational levels of "college graduate" and "less than high school graduate" each accounted for less than 5 per cent of the employment in the agricultural mechanization cluster of job titles.

Agricultural Machinery Operation and Irrigation Cluster - The educational levels desired for agricultural employees in the agricultural machinery operation and irrigation cluster of job titles are shown in Table 6 on pages 43 and 44. The category of "no preference" was indicated for over one-half of the persons employed in the job titles in this cluster with "high school graduate" indicated as the desired educational level for approximately one-fourth of these employees and "less than high school graduate" indicated for 17 per cent. Educational levels beyond high school were indicated for approximately 1 per cent of the employees in the agricultural machinery operation and irrigation cluster.

Ornamental Horticulture Cluster - The educational levels desired for employees in the job titles in the ornamental horticulture job cluster are shown in Table 6 on pages 44 and 45. For approximately one-half of the employees in this job cluster the educational level desired was that of "high school graduate". The category "no preference" was indicated for approximately one-fourth of the employees in the cluster. For approximately one of ten employees in the ornamental horticulture cluster the level of "college graduate" was indicated with an approximate equal number divided between the two categories "post high school technical" and "some college". Few (6 per cent) were desired with the educational level of "less than high school graduate".

Livestock Cluster - The educational levels desired for employees in the cluster of occupations which required competencies in the area of animal science are shown in Table 6 on page 45. The desired educational level for employees in this group ranged from "less than high school graduate" through "college graduate" with the category selected most often that of "no preference" followed by the level of "high school graduate" which was followed closely by the level "less than high school graduate". Desired educational levels beyond high school were largely at the "college graduate level" for which two job titles, those of veterinarian and zoologist accounted for all employees desired at this educational level. It may be noted that the two job titles, milker and cowboy, accounted for the large majority of the employees in the job title of milker also accounted for the

majority of employees for which "less than high school graduate" was indicated as desired.

Other Occupations - Desired educational levels for employees in occupations which were not clustered into one of the above clusters according to patterns of competencies required are also shown in Table 6 on pages 45 and 46. "No preference" was indicated for the majority of persons employed in these job titles. "High school graduate" was selected for nearly one-third of the employees with the remainder indicating the level of "college graduate". It may be noted that at each of the above educational levels a single job title accounted for all or the large majority of employees.

Totals for Combined Clusters - The totals for each of the desired educational levels for all employees in the job titles shown in Table 6 are shown on page 46. For two of five agricultural employees "no preference" was indicated and for approximately one-fourth to one-third of the agricultural employees "high school graduate" was indicated as the desired educational level. "Less than high school graduate" was selected for an additional 12 per cent of agricultural employees with lower percentages indicated for educational levels beyond high school. When sub-totals for the three educational levels, "post high school technical", "some college", and "college graduate" are combined it is found that education beyond high school was desired for approximately one of five agricultural employees identified. It should also be noted that when the totals for the categories "no preference" and "less than high school graduate" are compared with sub-totals in these categories for the agricultural

machinery operation and irrigation cluster, approximately two-thirds of these totals are accounted for in the agricultural machinery operation and irrigation cluster.

Age of Employees

From the data provided in Table 7 it may be seen that mean ages for employees in each of the job titles shown ranged from 21 years for kennelman to 53 years for agricultural produce packers. It may be noted, that as would be expected, generally the mean ages of employees were higher for persons in the job titles at the managerial and foreman levels than for jobs requiring lesser managerial responsibilities.

Minimum Age for Entry

The mean minimum ages at which employers would hire persons for individual job titles is shown in Table 7 also. Minimum ages for entry ranged from a mean of 17 years for egg processor and agricultural produce packer to 29 years for agricultural processing manager. The minimum ages desired for persons employed in job titles in the manager-foreman cluster were generally higher than minimum ages for job titles in other clusters. The higher minimum age for persons employed in this job cluster is no doubt a reflection of the greater amount of experience and/or education necessary for employment in these job titles. It may be noted that the minimum ages shown for most of the

job titles in the manager-foreman cluster are several years above the age of the average high school graduate.

For those job titles in the agricultural mechanization cluster, the minimum age for entry ranged from 18 to 23 years. These minimum ages for entry are consistent with the educational levels desired for employees in this job cluster. It was shown that the majority of employees in the agricultural mechanization cluster were desired at the combined educational levels of "high school graduate", "post high school technical", and "some college".

Mean minimum ages for employees in the machinery operation and irrigation cluster also ranged from 18 to 23 years with the majority of the job titles showing minimum ages of 18 and 19 years for entry. It should be noted that a mean minimum age of 18 years was indicated for the job of general farmhand which accounts for approximately one-fourth of all agricultural employees in the study.

In the ornamental horticulture cluster of job titles mean minimum ages for entry ranged from 18 to 26 years with the higher mean ages indicated for job titles at the professional level. Mean minimum ages of 18 and 19 years were indicated for most job titles in the cluster. Mean minimum ages for job entry in the ornamental horticulture cluster also appears to reflect the educational levels desired for employees in this job cluster as shown in Table 6.

Mean minimum ages for entry for job titles in the livestock cluster also appear to reflect differing educational experience levels desired for these job titles with minimum ages ranging from 18 for poultry farmhand and kennelman to 25 years for veterinarian.

TABLE 7

SELECTED CHARACTERISTICS OF AGRICULTURAL EMPLOYEES AND OCCUPATIONS IN THE EASTERN PART OF MARICOPA COUNTY

Job Titles	Mean Age of Employees	Mean Minimum Age For Entry	Mean Monthly Salary*		
			Beginning	Present	Maximum
Manager-Foreman Cluster					
Agricultural Mach. Sales & Service Mgr.	47	27	813	900	1450
Farm Equipment Salesman	44	27	689	713	1271
Farm Owner-Manager	46	24	686	903	1254
Farm Manager	43	27	644	803	1132
General Farm Foreman	42	24	466	538	691
Farm Service Owner	43	25	533	1200	1333
Farm Service Manager	40	27	513	577	788
Ag. Processing Manager	45	29	723	1255	1664
Ag. Processing Foreman	37	25	590	690	838
Farm Supply Plant Worker	36	19	389	500	491
Gin Manager	50	24	601	747	1012
Egg Processor	29	17	384	556	642
Entomologist	38	19	350	620	1800
Crop Research Technician	35	-	520	-	1070
Fertilizer & Insecticide Salesman	40	-	600	-	1000
Farm Supply Salesman	37	20	458	645	714

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TABLE 7 (Continued)

Job Titles	Mean Age of Employees	Mean Minimum Age For Entry	Mean Monthly Salary*		
			Beginning	Present	Maximum
Farm Supply Manager	41	23	636	675	1194
Field Superintendent	41	22	619	650	860
Ranch Owner-Manager	45	25	300	-	833
Dairy Herdsman	33	24	628	633	865
Dairyman	42	21	511	572	665
Crop Research Scientist	35	21	414	-	1897
Poultryman	33	26	544	563	879
Agricultural Mechanization Cluster					
Farm Equipment Mechanic	40	21	582	733	1072
Farm Equipment Serviceman	42	22	565	578	796
Farm Equipment Partsman	40	18	454	686	750
Pump Maintenanceman	31	19	620	637	638
Farm Equipment Welder	35	21	437	667	824
Agricultural Engineering Technician	30	19	520	750	862
Farm Supply Equipment Service Man	35	21	400	498	699
Ginner	47	22	515	619	645
Feedmill Operator	34	20	423	477	542
Agricultural Engineer	39	23	1146	-	2000

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TABLE 7 (Continued)

Job Titles	Mean Age of Employees	Mean Minimum Age For Entry	Mean Monthly Salary*		
			Beginning	Present	Maximum
Water Master	41	18	565	669	675
Machinery Operation and Irrigation Cluster					
General Farmhand	36	18	341	385	473
Wheel Tractor Operator	36	19	333	402	432
Crawler Tractor Operator	41	20	471	533	890
Irrigator	38	20	349	417	445
Harvest Machine Operator	34	20	399	463	492
Truck Driver	29	19	450	500	593
Plant Employees	27	23	387	406	515
Cattle Feeder	32	19	396	445	469
Ditch Rider	35	18	485	598	617
Ornamental Horticulture Cluster					
Greens Keeper	37	19	396	491	600
Plant Propagator	30	19	359	375	477
Horticulturalist	43	22	433	1200	1379
Landscape Gardener	37	18	520	705	937
Nurseryman	45	19	538	598	710
Nursery Salesman	32	19	354	417	484

TABLE 7 (Continued)

Job Titles	Mean Age of Employees	Mean Minimum Age For Entry	Mean Monthly Salary*		
			Beginning	Present	Maximum
Agronomist	39	26	987	-	1280
Nursery Worker	29	18	389	400	635
Groundskeeper	32	18	400	593	762
Landscape Architect	36	23	552	918	1120
Tree Pruner	27	22	569	-	1367
Livestock Cluster					
Livestock Buyer	41	19	317	-	-
Milker	32	19	484	552	598
Cowboy	37	21	332	419	491
Farmhand Poultry	33	18	321	342	462
Veterinary Assistant	30	20	327	501	525
Veterinarian	36	25	871	1707	2089
Animal Keeper	35	-	-	-	-
Zoologist	38	21	-	-	-
Kennelman	21	18	267	-	557

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TABLE 7 (Continued)

Job Titles	Mean Age of Employees	Mean Minimum Age For Entry	Mean Monthly Salary*		
			Beginning	Present	Maximum
Other Agricultural Occupations					
Packer Agricultural Produce	53	17	378	400	418
Grain Elevator Scalesman	30	18	250	250	300
Poultry Dresser	-	-	-	-	-
Vocational Agriculture Teacher	-	-	650	-	1000

*Cash salary only- does not include housing and utilities when furnished, transportation, insurance coverage, nor bonuses which are sometimes provided.

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Monthly Salary

It may be seen from the salary data shown in Table 7 that generally salaries increases as level of employment increased with those occupations at the managerial and foreman levels showing the higher mean salaries at the beginning, present and maximum salary levels. Mean present salaries ranged from a low of $250 for grain elevator scalesman to a high of $1707 for veterinarian.

For job titles not showing salary data in Table 7, insufficient data was supplied which prevented arriving at mean salaries for these job titles.

It should be noted that the monthly salaries as shown by mean salaries in Table 7 do not show a true picture of income for many of the occupations listed. Employees in many of the occupations shown, especially those in production agriculture, are provided housing and utilities by their employer. It was also found that employees, especially at the managerial and foreman levels, often receive bonuses, transportation and other employee benefits which are not included in the salaries shown.

Projected Changes in Numbers of Employees

Agricultural employers were asked to indicate, to the best of their ability, the numbers of persons whom they anticipated would be employed in each of the agricultural job titles in their firm five years in the future. Data presented in Table 8 is the result of the summarization by occupational cluster of employers' projections for each of the job titles within the cluster. It should be noted that data presented in Table 8 represents anticipated changes in

TABLE 8

EMPLOYERS FIVE-YEAR PROJECTED CHANGES IN NUMBERS OF AGRICULTURAL EMPLOYEES IN THE EASTERN PART OF MARICOPA COUNTY BY CLUSTER OF AGRICULTURAL JOB TITLES*

Agricultural Job Title Clusters	Number of Persons Presently Employed In Job Clusters	Projected Change In Number of Persons Employed 5 Years From Now	Per Cent Change
Manager-Foreman Cluster	926	+ 13	+ 1.4%
Agricultural Mechanization Cluster	561	+ 86	+ 15.3%
Agricultural Machinery Operation & Irrigation Cluster	2029	+ 93	+ 4.6%
Ornamental Horticulture Cluster	349	+ 86	+ 24.6%
Livestock Cluster	397	+ 13	+ 3.3%
Other Agricultural Occupations	97	- 2	- 2.0%
TOTALS	4359	+289	+ 6.6%

* Projection data is included only for those job titles in which ten or more persons were currently employed in the study area. Specific job titles included in each cluster are those shown in Tables 4 through 7 of this study.

total numbers of employees within the job clusters shown and that no effort was made to establish rates of turn-over nor numbers of new employees needed for replacement purposes.

Although an over-all percentage change showed a 6.6 per cent increase in the anticipated number of agricultural employees in five years, the percentage changes for the various job clusters varied widely ranging from a 24.6 per cent increase for the ornamental horticulture cluster to a 2.1 per cent decrease in numbers of employees in the job titles categorized as other agricultural occupations. It may be noted that with the one exception an increase in numbers of employees was projected for each job cluster.

The greatest anticipated increase in number of employees was in the agricultural machinery operation and irrigation cluster although the percentage increase was much lower than that of the next highest numerical increase which was shown for both the agricultural mechanization cluster and the ornamental horticulture cluster.

Summary of Findings

A total of 4637 persons requiring agricultural knowledge and skills was employed by the 564 agricultural businesses and procedures which were identified in the eastern part of Maricopa County. Of this number, 3920 were employed on a full-time basis.

Of the 564 agricultural businesses and producers identified, 173 were engaged in "crop production only". Agricultural employment by these 173 crop producers accounted for approximately one-fourth of the full-time agricultural employees in the survey. Other areas of agricultural employment in decreasing order of the numbers of

employees were: "farm service", "livestock production only", "livestock and crop production", "ornamental horticulture", "citrus production", "agricultural machinery sales and service", "agricultural processing", "agricultural service", "agricultural research", "farm supply" and "agricultural finance".

In considering both numbers of employees and numbers of businesses a relationship was found of approximately three in production agriculture to two in off-farm agriculture.

A total of 142 different agricultural job titles were identified among the 4637 agricultural employees in the eastern part of Maricopa County. Ten or more persons were employed in each of 67 agricultural job titles with the remaining 75 job titles accounting for a total of 278 persons employed. Numbers of different job titles in an occupational area ranged as high as 50 different job titles which were identified in the area of "farm service". Many job titles appeared in more than one occupational area and when numbers were combined for all occupational areas one job title, that of general farmhand, accounted for approximately one-fourth of the total agricultural employment.

Five occupational clusters of agricultural job titles were identified by grouping those job titles w ich required similar patterns of agricultural competencies. Clusters thus identified were the manager-foreman cluster, agricultural mechanization cluster, agricultural machinery operation and irrigation cluster, ornamental horticulture cluster, and the animal science cluster.

Twenty-three job titles, largely at the managerial, foreman and salesman levels composed the manager-foreman cluster. The 926 employees in this cluster made up one-fifth of the total agricultural employment in the eastern part of Maricopa County. These persons were found to need extensive competencies in the areas of field crops production, agricultural business management and marketing, and the several areas of agricultural mechanization.

There were 561 persons employed in the eleven job titles comprising the agricultural mechanization cluster for which extensive competencies were needed only in one or more areas of agricultural mechanization. Persons employed in most of the job titles in this cluster needed competencies in agricultural machinery operation, daily maintenance, repair and adjustment, and overhaul. They also needed competencies in agricultural electrification, soil and water management and basic shop skills.

General farmhands, irrigators and tractor operators formed the nucleus of the agricultural machinery operation and irrigation cluster. These job titles were closely related in that employees were categorized into one of these three job titles upon the basis of whether they performed the duties of the tractor operator only, the irrigator only, or if performing the duites of both they were classified as general farmhands. The inclusion of six more job titles in this cluster made a total of 2029 persons employed representing over 44 per cent of the total agricultural employment in the survey. Competencies needed by persons employed in the agricultural machinery operation and irrigation cluster were largely in the areas of operation,

maintenance, adjustment and repair of agricultural machinery and some competencies in soil and water management.

An ornamental horticulture job cluster was identified in which 349 persons were employed in eleven job titles all of which required knowledge and skill in the area of horticulture. Additional agricultural competencies needed by employees in this job cluster were largely in the areas of agricultural business management, agricultural marketing, agricultural machinery operation and maintenance, soil and water management and merchandising skills.

A total of 397 persons were employed in nine job titles in a livestock occupational cluster. Persons employed in the livestock cluster needed rather broad competencies in animal science with most needing some knowledge and skill in agricultural business management. Some job titles in the cluster called for additional competencies in the areas of agricultural marketing, one or more areas of agricultural mechanization, or merchandising skills. In plant science no competencies were indicated as needed by employees in the livestock cluster.

With few exceptions, nearly all persons employed in agricultural job titles in the eastern part of Maricopa County needed competencies in one or more areas of agricultural mechanization. Agricultural mechanization competencies were needed by employees in each occupational area and at all levels of employment. Generally from one-third to one-half of all agricultural employees in the survey needed competencies in the operation, daily care and maintenance, and repair and adjustment of agricultural machinery; agricultural building and conveniences; and basic shop skills. Approximately one of four

needed competencies in the area of agricultural electrification and soil and water management. Competencies in overhaul of agricultural power and machinery were needed by from 15 to 20 per cent of the agricultural employees.

Comparatively large numbers of persons also needed competencies in the area of field crops production and agricultural business management. Competencies in field crops production were needed by approximately one-third of all agricultural employees. Fifteen per cent needed horticultural competencies and very few needed competencies in forestry.

Competencies in records and accounts were needed by approximately 30 per cent of agricultural employees with other competencies in the area of agricultural business management required by at least one in seven employees.

Percentages of agricultural employees needing animal science competencies were comparatively low with the competency needed by most employees, that of characteristics of healthy animals, required for 15 per cent of the agricultural employees in the study.

The educational level desired for agricultural employees by their employers ranged from "less than high school graduate" through "college graduate" with "no preference" indicated for 40 per cent of the employees. "High school graduate" was indicated for 29 per cent with the remaining 19 per cent desired at educational levels beyond high school.

For employees in the manager-foreman cluster the desired educational level for over one-third of these employees was indicated

as "high school graduate" while approximately one-half were desired at educational levels beyond high school.

Desired educational levels for employees in the agricultural mechanization cluster "no preference" was indicated for one-third of the employees, "high school graduate" for over one-fourth and another one-third were desired in the combined two categories "post high school technical" and "some college".

"No preference" was indicated for the majority of employees in the agricultural machinery operation and irrigation cluster with approximately one-fourth desired at the "high school graduate" level and "less than high school graduate" indicated for most others in the job cluster.

For the ornamental horticulture job cluster "high school graduate" was indicated as the desired educational level for approximately one-half of the employees. "No preference was indicated for approximately one-fourth and one-fifth were desired at educational levels beyond high school.

Desired educational levels indicated for employees in the livestock cluster showed "no preference" for 40 per cent with the remainder approximately evenly divided between "less than high school graduate", "high school graduate", and the combined educational levels beyond high school.

Mean minimum ages at which employers would hire persons for individual job titles ranged from 17 to 29 years with minimum ages generally higher for managerial and professional job titles thus reflecting the increased responsibility or educational requirements

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for these job titles. For job titles in the manager-foreman cluster, mean minimum ages for entry were generally several years above those of the average high school graduate. Minimum ages for those in the agricultural mechanization cluster were somewhat lower, however, they were consistent with the educational levels desired which were largely at the elvels of "high school graduate", "post high school technical" and "some college". For the majority of job titles in the agricultural machinery operation and irrigation cluster mean minimum ages for entry of 18 and 19 years were indicated. Mean minimum ages of 18 and 19 years were also indicated for most job titles in the ornamental horticulture cluster with higher minimums indicated for job titles at the professional level. Minimum ages for job entry in the livestock cluster also reflected differing educational and experience levels desired with means ranging from 18 to 25 years.

It was not possible to arrive at definite and comparable salary figures for each agricultural occupation due to the many different patterns of non-cash benefits provided employees such as housing and utilities which are often provided as well as medical insurance and other benefits. Based upon cash salary only, salaries generally increased with level of employment with mean monthly cash salaries ranging from $250 for grain elevator scalesman to $1,707 for veterinarians. Generally, salaries increased as level of employment increased with those occupations at the managerial and professional levels showing the higher mean salaries at the beginning, present and maximum salary levels.

Agricultural employers projected an over-all increase of 6.6 per cent in the numbers of agricultural employees in the survey area in five years. The greatest percentage projected increase in the number of agricultural employees was in the ornamental horticulture job cluster with a projected five year increase of 24.6 per cent. Following in order by job clusters were: agricultural mechanization, agricultural machinery operation and irrigation, livestock and the manager-foreman cluster.

Recommendations for Planning Educational Programs in Agriculture for the Eastern Part of Maricopa County

Based upon the findings of this study and insight gained in the conduct of the study, the following recommendations are offered for planning educational programs consistent with the agricultural employment and training needs for employment in agricultural occupations in the eastern part of Maricopa County.

1. It is recommended that a post-secondary curriculum in agricultural business management be offered at the mid-management level with major emphasis in the areas of field crops production, agricultural business management and agricultural mechanization. Data from this study supproting the need for such a curriculum shows that:

   a. A "manager-foreman" cluster of 23 job titles was identified in which 926 persons were employed who needed extensive competencies in the areas of field crops production, agricultural business management and agricultural mechanization.

   b. Employers projected a slight increase in the numbers of persons employed within the next five years in job titles in the manager-foreman cluster.

   c. The majority of agricultural employees in the above job cluster were employed at the managerial or foreman levels.

   d. Approximately one-half of the employees in the manager-foreman cluster were desired with education beyond the high school level.

e. The mean minimum ages at which employers would hire persons for job titles in t e manager-foreman cluster were generally several years above the age of the average high school graduate.

2. It is recommended that specialized curricula in agricultural mechanization be offered at both the secondary and post-secondary levels.

   Emphasis at the secondary level should be placed upon the areas of agricultural mechanization which would provide the basic information and skills that will complement the cluster of occupations in agricultural mechanization as shown in Table 4 of this study. The secondary program should act as a "feeder" program for more specific short-term programs at the post-secondary level. A short-term program at the post-secondary level should be initiated to train farm equipment mechanics. Data from the study supporting the need for such specialized curricula are:

   a. An "agricultural mechanization" cluster of eleven job titles was identified in which 561 employees needed extensive competencies only in one or more areas of agricultural mechanization. Nearly one-half of the employees in the agricultural mechanization job cluster were employed in the job title of farm equipment mechanic.

b. Employers anticipated an increase of over 15 per cent in the numbers of employees in the agricultural mechanization job cluster within the next five years.

c. The desired educational levels indicated for employees in the agricultural mechanization job cluster were: "high school graduate" for over one-fourth of these employees, one-third at the combined levels of "post high school technical" and "some college" and "no preference" for another one-third.

d. Mean minimum ages at which employers would hire individuals for most of these jobs, however, indicated that employers would be looking for persons slightly older than the average high school graduate.

3. It is recommended that a specialized curriculum in ornamental horticulture be offered at the secondary level to provide training for entry level jobs in ornamental horticulture. Data supporting the need for such a curriculum shows that:

a. An ornamental horticulture cluster of job titles was identified in which 349 persons were employed in eleven job titles all of which required knowledge and skill in the area of horticulture.

b. Numbers of persons to be employed in the job cluster five years in the future, as anticipated by employers, showed the highest rate of increase (24.6 per cent) of the job clusters identified.

c. "High school graduate" was the desired educational level indicated for approximately one-half the employees in the ornamental horticulture job cluster with "no preference" indicated for approximately one-fourth and educational levels beyond high school generally indicated only for those job titles at the professional level.

d. Ages of 18 and 19 years were shown as the mean minimum ages at which employers would hire employees for most job titles in this cluster.

4. It is recommended that a basic secondary curriculum in vocational agriculture be offered providing instruction in broad areas of agricultural knowledges and skills needed by the greatest numbers of agricultural employees. Such a curriculum should be designed to provide basic competencies needed to pursue specialized instructional programs in agriculture at the secondary and post secondary levels or to enter employment in one of the many agricultural job titles for which a high school education is desired. Emphasis of such a program should be placed upon those areas of competency in agricultural mechanization, agricultural business management and plant science which are needed by the greatest numbers of agricultural employees. Data in support of such a program and emphasis are:

a. Competencies needed by the greatest numbers of agricultural employees were competencies in the several areas of agricultural mechanization, field crops production, and agricultural business management.

b. The desired educational level of high school graduate was indicated for 29 per cent of all agricultural employees in the survey with educational levels beyond high school indicated for 19 per cent.

5. It is recommended that a specialized short-term instructional program be initiated at the secondary level for training in agricultural machinery operation and maintenance and irrigation skills. The program should be designed to provide entry level skills to those young persons who, because of lack of interest, limited ability, or other factors, are not likely to complete the regular high school program. Data from the study supporting the need for such a program are:

a. Nearly one-half of all agricultural employees identified in this study as needing knowledge and skill in agriculture were employed in job titles in the agricultural machinery operation and irrigation cluster.

b. Employers projected the greatest increase in numbers employed within the next five years to be in the agricultural machinery operation and irrigation cluster even though the percentage increase would be relatively low.

SELECTED BIBLIOGRAPHY

Baker, Richard A. A Study of the Educational Needs for Workers Engaged in Occupations in Off-Farm Agricultural Businesses in Alabama. Auburn, Ala.: School of Education, Auburn University, 1966. 66 pp.

Brum, Herbert D. "Non-Farm Agricultural Employment Opportunities and Training Needs in Ohio. Ph.D. dissertation, The Ohio State University, 1965.

Christensen, Howard H. "Education for Off-Farm Occupations in Nevada". Doctoral dissertation. The Ohio State University, Columbus, Ohio. 1967. 265 pp.

Cushman, Harold R., Christensen, Virgil E., and Bice, Gary R. A Study of Off-Farm Agricultural Occupations in New York State. Ithaca, N. Y.: Rural Department, Cornell University, 1965. 95 pp.

Gadda, H. W. and Pollman, James. South Dakota Agricultural Off-Farm Occupational Opportunities and Training Needs. Bulletin 553. Agricultural Education Department, South Dakota State University, Brookings, S. D., 1969. 15 pp.

Griffin, W. L. Agricultural Occupations Other Than Farming in Missouri. Joint Staff Study, State Department of Education, Teachers of Vocational Agriculture, Agricultural Education Department, University of Missouri, 1964.

Hamilton, James G. Occupational Opportunities and Training Needs for Agricultural Employment in Selected Areas of Arizona - Pinal County. University of Arizona, 1970. 57 pp.

Judge, Homer V. Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Massachusetts. Boston: Division of Vocational Education, Massachusetts Department of Education, 1965. 47 pp.

Langdon, Charles L. A Survey of Agricultural Occupations in Michigan. Lansing: Michigan Department of Public Instruction, 1965. 140 pp.

Loreen, C. O. Occupational Opportunities and Training Needs of Youth for Non-Farm Agricultural Jobs in Washington State. State Staff Study. Agricultural Education Office, Washington State University, Pullman, 1967. 87 pp.

Need, C. O., Jr. Employment Opportunities and Competencies Needed in Farm Occupations in Selected Counties in Kentucky. Frankfort: State Department of Education, 1968. 69 pp.

"State Summary of Final Reports, 1969 Calendar Year", State Department of Vocational Education, Phoenix: Mimeograph.

Thompson, John F. A Guide to Surveying Your Community for Youth Employment Opportunities in Agricultural Businesses and Services. Department of Agricultural and Extension Education, University of Wisconsin, Madison: Mimeograph.

Wagley, L. A. "Educational Requirements for Off-the-Farm Agricultural Occupations in Yuma County, Arizona. Doctoral Dissertation, University of Arizona, 1964.

Warmbrod, J. R. Technical Education in and for Rural Areas: Manpower Needs and Employment Opportunities for Workers Needing Knowledge and Skill in Agriculture. Report No. 2, Urbana: Vocational and Technical Education Department, University of Illinois, 1966. 37 pp.

U. S. Department of Labor. Dictionary of Occupational Titles, Vol. I, Definitions of Titles. Third Edition, Washington, D. C.: U. S. Government Printing Office, 1965.

_____. Dictionary of Occupational Titles, Vol II, Occupational Classification, Third Edition, Washington, D. C.: U. S. Government Printing Office, 1965.

APPENDIX

SURVEY FORMS

UNIVERSITY OF ARIZONA

Department of Agricultural Education

CONFIDENTIAL

Types of employment of persons engaged in agricultural occupations in selected areas of Arizona.

Interviewer _____ Date of Interview _____

FORM I-A

I. Business or service _____
   A. Name of business or service _____
   B. Person interviewed _____
   C. Position _____
   D. Estimated per cent gross income that is agriculturally oriented.
      Per cent _____
   E. Major agricultural products and/or functions of business or service.
      _____

II. Number of employees in this business or service - (total number)_____

For employees needing competencies in agriculture, complete the following:

A. Existing job titles:	Number of Employees			
	Full-time	Part-time	Five years ago	Five years from now
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____

B. Anticipated new job titles:	Full-time	Part-time	Five years from now
1. _____	_____	_____	_____
2. _____	_____	_____	_____

Fill out a separate Form II for each job title listed above which is not on the job title list.

Complete the back of this form for all job titles listed above which are on the job title list.

III. Company willingness to participate in school-employer educational program. (Check all that apply)

_____ 1. Permit students to visit and observe operations.
_____ 2. Employ students on part-time basis during school year and during vacation periods.
_____ 3. Participate in a student's work experience a few hours a day.
_____ 4. Work with school personnel in outlining an educational program which would help prepare students for an agricultural occupation.
_____ 5. Release key employees to assist the teacher in providing instruction.
_____ 6. Not willing.

Job Titles	Number of Employees Full-time	Number of Employees Part-time	Average Age	Minimum Age for Entry	Educational Level Required* (Use item Nos. below)	Monthly Wage or Salary Beginning	Monthly Wage or Salary Present	Monthly Wage or Salary Maximum
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								

*Educational Level Required for Job Title

1. No requirement
2. Less than high school graduate
3. High school graduate
4. Post high school technical
5. Some college
6. Baccalaureate
7. Master's
8. Doctorate

THE UNIVERSITY OF ARIZONA

Department of Agricultural Education

CONFIDENTIAL

Pre-Employment and Continuing Education Needs of Persons Engaged in Agricultural Occupations in Selected Areas of Arizona.

Interviewer _____ Date of Interview _____

FORM II - A

I. Name and address of firm _____

_____

II. Job Title _____

III. Number of workers in this job title: Full-time ____ Part-time ____ Total ____

IV. Average age ____. Is there an age requirement for this job? No ____ Yes ___

Minimum for entry _____, Maximum for entry _____

V. Activities and duties of persons with this job title _____

_____

_____

VI. Agricultural areas with which worker must possess knowledge and skills to do the job:

Animal Science:	Check Abilities Needed to Perform This Job:
1. Breeding Farm Animals	_____
A. Genetics	_____
B. Reproductive morphology	_____
C. Diseases	_____
D. Breeding problems	_____
E. Artificial insemination	_____
F. Breeding skills	_____
G. Selection of breeding stock	_____
2. Livestock Feeding and Nutrition	
A. Body process of nutrition	_____
B. Food nutrients and their sources	_____
C. Ration formulation	_____
D. Feeding systems	_____

Check Abilities Needed To Perform This Job:

3. Animal Sanitation, Disease and Parasite Control
   A. Characteristics of healthy animals _____
   B. Symptoms of common diseases and parasites _____
   C. Treatment of common diseases and parasites _____
   D. Environmental conditions conducive to good health _____
4. Housing and Equipment
   A. Maintenance of equipment, corrals, and fences _____
   B. Construction of equipment and housing _____
   C. Design and construction _____
5. Management of livestock operation _____
6. Processing of livestock products (meat, milk, wool, etc.) _____
7. Marketing of livestock products (meat, milk, wool, eggs) _____
8. Livestock handling _____

Plant Science:

1. Ornamental Horticulture
   A. Plant propagation _____
   B. Greenhouse management _____
   C. Soils and fertilizations, water, etc. _____
   D. Control of insects _____
   E. Control of diseases _____
   F. Control of weeds _____
   G. Marketing and management _____
   H. Turf management _____
2. Field Crop Production (include vegetable & fruit Prod.)
   A. Plant propagation, seed production _____
   B. Plant growth _____
   C. Control of insects _____
   D. Control of diseases _____
   E. Control of weeds _____
   F. Soils _____
   G. Fertilization _____
   H. Irrigation _____
   I. Marketing and management _____
3. Forestry
   A. Establishing a stand _____
   B. Managing a stand _____

	Check Abilities Needed To Perform This Job:
C. Fire Control	_____
D. Control of diseases and insects	_____
E. Harvesting	_____
F. Marketing	_____
G. Pulp wood production	_____
Agricultural Business Management and Marketing:	
A. Records and accounts	_____
B. Budgeting and analysis	_____
C. Agricultural financing, credit and insurance	_____
D. Farm organization and planning	_____
E. Labor management	_____
F. Marketing problems and practices	_____
G. Agricultural policy	_____
H. Agricultural and related price analysis	_____
I. Cooperative and business organization	_____
J. Mechanization systems	_____

Agricultural Mechanics Area:

	Operation	Daily Care & Maintenance	Repair & Adjustment	Overhaul
1. Agricultural Power and Machinery				
A. Tractors, wheel	____	____	____	____
B. Crawler tractors	____	____	____	____
C. Primary tillage equipment	____	____	____	____
D. Cultivating equipment	____	____	____	____
E. Harvesting equipment	____	____	____	____
F. Small gasoline engines	____	____	____	____
G. Materials handling equipment	____	____	____	____
2. Agricultural Electrification				
A. Wiring		_____		
B. Motors, maintenance and repair		_____		
3. Soil and Water Management				
A. Land measurement		_____		
B. Surveying and leveling		_____		
C. Irrigation systems		_____		
D. Pump maintenance		_____		
E. Soil testing		_____		
F. Irrigation structures		_____		
G. Water measurement		_____		
H. Efficient water use		_____		

Check Abilities Needed To Perform This Job:

4. Agricultural Building and Conveniences
   - A. Design of structures _____
   - B. Construction _____
   - C. Maintenance and repair _____
   - D. Water systems _____
5. Basic Agricultural Shop Skills
   - A. Arc welding _____
   - B. Acetylene welding _____
   - C. Plumbing _____
   - D. Hot and cold metal _____
   - E. Carpentry _____

Merchandising:

- A. Warehousing _____
- B. Sales _____
- C. Inventorying _____
- D. Handling cash - cash register _____
- E. Advising customers _____
- F. Using invoices _____
- G. Handling customer accounts _____
- H. Dispatching, consigning, and packaging of materials _____
- I. Routing and delivering _____
- J. Use of catalogues and ordering _____
- K. Preparing displays and advertising _____

VII. Educational level required for job title (Check only one)

_____ 1. No requirement

_____ 2. Less than high school graduate

_____ 3. High school graduate

_____ 4. Post high school technical education

_____ 5. Some college

_____ 6. College degree: Baccalaureate ____, Master's ____, Doctorate ____

VIII. Residential background preferred: Farm _____, No preference _____

IX. Farm Experience: Needed _____ Not needed _____

X. Experience desired to enter this job title: _____

_____

XI. Wage or salary per month:

Beginning _____ Maximum _____ Present _____

VT 014 224
OCCUPATIONAL OPPORTUNITIES AND TRAINING NEEDS FOR AGRICULTURAL EMPLOYMENT IN SELECTED AREAS OF ARIZONA: WESTERN PART OF THE SALT RIVER VALLEY.

ARIZONA UNIV., TUCSON. DEPT. OF AGRICULTURAL EDUCATION.
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IDENTIFIERS - *ARIZONA

ABSTRACT - THE PURPOSE OF THIS SURVEY WAS TO DETERMINE THE EMPLOYMENT OPPORTUNITIES AND AGRICULTURAL TRAINING NEEDED FOR AGRICULTURAL EMPLOYMENT IN THE WESTERN PART OF ARIZONA'S SALT RIVER VALLEY, AS THE BASIS FOR RECOMMENDATIONS FOR EDUCATIONAL PROGRAMS FOR AGRICULTURAL STUDENTS IN THE AREA. PERSONAL INTERVIEWS WERE CONDUCTED WITH REPRESENTATIVES OF 408 AREA BUSINESSES EMPLOYING 3708 PERSONS WITH AGRICULTURAL SKILLS. OCCUPATIONAL INFORMATION WAS PROVIDED FOR THE VARIOUS JOBS WHICH WERE IDENTIFIED, AND EMPLOYMENT PROJECTIONS WERE MADE FOR A 5-YEAR PERIOD. RECOMMENDATIONS FOR PLANNING AGRICULTURAL CURRICULUMS ARE INCLUDED. RELATED DOCUMENTS ARE AVAILABLE AS VT 010 366 (ARM SPRING 1971) AND 014 223 IN THIS ISSUE. (BH)

VT 014 224

Occupational Opportunities and Training Needs for Agricultural Employment in Selected Areas of Arizona

WESTERN SALT RIVER VALLEY

VTC14224

Research Report 265

Agricultural Experiment Station
University of Arizona
Tucson, Arizona

2843

OCCUPATIONAL OPPORTUNITIES AND TRAINING NEEDS FOR AGRICULTURAL EMPLOYMENT IN SELECTED AREAS OF ARIZONA

Western Part of the Salt River Valley

A Research Project
of the
Department of Agricultural Education

Research

Report 265

Agricultural Experiment Station
University of Arizona
Tucson, Arizona
1971

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FOREWORD

This study is one of a series of studies being conducted by the Department of Agricultural Education, University of Arizona, in order to obtain a comprehensive analysis of the total field of agricultural occupations in Arizona. Both on-farm and off-farm agricultural occupations are being studied to determine employment opportunities and training needs in the broad spectrum of agricultural occupations.

The types of data presented herein provide a necessary basis for the planning of vocational agriculture programs on area and state bases.

Data collection instruments and interview procedures utilized in this study were developed and tested by Arizona vocational agriculture teachers, John McKee and Ronald Wolhart.

The following vocational agriculture teachers identified the population for the study within each of their respective school districts and assisted with the coordination and conduct of the interviews in the field:

Agua Fria Union High School - Willard Barney and Ismael Gonzalez
Dysart High School - James Watkins
Glendale High School - Dean Merrell
Peoria High School - James Brown
Tolleson High School - Tim Vensel
Washington High School - Richard Meder and Robert McNabb

The following agriculture teachers of Glendale Community College assisted in the identification of the survey population outside the above high school districts, assisted with the conduct of interviews in the field, and assisted in the overall coordination among the several high school districts participating in this study:

Clair Decker
Charles Van Meter

James B. Hamilton
Project Leader
Department of Agricultural Education
University of Arizona

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OCCUPATIONAL OPPORTUNITIES AND TRAINING
NEEDS FOR AGRICULTURAL EMPLOYMENT IN
SELECTED AREAS OF ARIZONA

Western Part of the Salt River Valley

Introduction

American agriculture is undergoing change at a rapid pace - changes brought about by technological advances, automation, varying labor and social patterns, and shifting occupational opportunities.

These changes are resulting in fewer producers of agricultural products because of larger units of operation and higher degrees of specialization on the part of producers. These trends in size and specialization are accompanied by increased demands by the producer for more highly developed agricultural services by off-farm agricultural businesses.

The changing agricultural and socio-economic conditions have strong implications for the types of training which are to be provided by the instructional programs of vocational agriculture at the high school and post-high school level.

Vocational agriculture programs directed only toward preparation of youth to enter farming or ranching as owner-operators or managers are not adequate for the present-day needs of agriculture. Vocational opportunities in agriculture now encompass many occupations in addition to farming and ranching.

The need for a broadened concept of vocational agriculture has been recognized. The Vocational Act of 1963 and the 1968 amendments

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to the Act provide that federal funds are to be used to support vocational agriculture programs that prepare students for any occupation in which knowledge and skill in agriculture is needed. What has not taken place, however, is the development of instructional programs in vocational agriculture to fit this broader concept of agriculture.

This study is one of a series of studies being conducted by the Department of Agricultural Education, University of Arizona, in order to obtain a comprehensive analysis of vocational agriculture training needs for the State of Arizona.

Purpose of the Project

The purpose of the project was to determine the occupational opportunities and agricultural training needed for agricultural employment in the western part of the Salt River Valley, as the basis upon which to make recommendations for educational programs in agriculture to meet expanded educational needs for agricultural students in this area.

Specific Objectives of the Project

The following specific objectives were identified in order to facilitate the development of the study:

1. Determine the number and types of agricultural businesses in the western part of the Salt River Valley who employ persons requiring knowledge and skill in agriculture.

2. Determine the number of persons employed, by job title, requiring knowledge and skill in agriculture in each type of agricultural business in the western part of the Salt River Valley.

3. Determine agricultural knowledge and skills needed for clusters of occupations identified in the western part of the Salt River Valley.

4. Make recommendations for planning and conducting educational programs in agriculture to meet the expanded educational needs of agricultural students in the western part of the Salt River Valley.

Delimitations

1. The population of this study was delimited to those businesses and producers which because of name, products handled, or services provided, were judged to employ persons requiring knowledge or skill in agriculture.

2. The study was delimited to those businesses and producers whose headquarters were within the boundaries of that portion of Maricopa County lying west of a north-south line coinciding with Central Avenue in Phoenix, Arizona and bounded on the west by the western boundaries of the Dysart and Agua Fria high school districts.

Definitions

Agricultural businesses and producers - those firms which were found to employ full-time one or more persons who needed agricultural knowledge or skill for performance of their duties.

Agricultural employee - an employee who, in order to perform the duties of his occupation, must possess knowledge or skill which requires training and/or experience in one or more of the following areas: animal science, plant science, agricultural business management and marketing, or agricultural mechanization.

Part-time agricultural employees - agricultural employees who are not regularly employed by an agricultural business or producer throughout the entire year.

Full-time agricultural employees - agricultural employees who are regularly employed by an agricultural business or producer throughout the entire year.

Agricultural training needs - agricultural knowledge and skills which employers deemed necessary for employees to possess in order to adequately carry out the duties and responsibilities of their occupation. The terms "agricultural competencies" and "agricultural knowledge and skills" are used interchangeably throughout this study.

Importance of the Project

Teachers of vocational agriculture are aware that rapid changes in agriculture are taking place and that opportunities for high school graduates to gain entrance into production agriculture are limited. The "State Summary of Final Reports" for the 1969 calendar year showing income received by students enrolled in high school vocational agriculture in Arizona reflects the growing opportunities in agriculture other than production projects on the home farm. This report shows $491,621 earned through productive enterprises of students and $894,808 earned through other agricultural occupational experience programs.[1]

In order to plan vocational agriculture programs that will meet the needs of prospective employees in the broad spectrum of agricultural occupations, it is necessary to determine what the occupations are, where they exist, and what agricultural knowledge and skills are needed for entrance into these agricultural occupations. These basic data are needed in order to determine what educational programs in agriculture should be offered. Once these basic data are obtained, then in-depth occupational analyses should be carried out for each of the major agricultural occupations identified in

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1. "State Summary of Final Reports, 1969 Calendar Year", State Department of Vocational Education, Phoenix, Mimeograph.

order to select specific subject matter to be included in the training programs.

Previous Related Studies

Several state-wide studies and surveys encompassing smaller areas have been conducted recently which were concerned with identifying types of non-farm agricultural employment, numbers of employees, and educational requirements and needs for these jobs. Such a state-wide study has not been conducted in Arizona. Most of the research of this nature has not been concerned with total agricultural employment opportunities - both on-farm and off-farm employment.

Recent state-wide studies in off-farm employment opportunities were conducted by Baker in Alabama (1965), Brum in Ohio (1965), Langdon in Michigan (1965), Warmbrod in Illinois (1966), Loreen in Washington (1967), Judge in Massachusetts (1965), Griffin in Missouri (1964), Cushman in New York (1965), Christensen in Nevada (1967), and Gadda and Pollman in South Dakota (1969).

Numerous other surveys of this nature have been completed in these and other states on less than a state-wide basis.

One recent study was conducted by Neel (1968) in which he studied only the on-farm agricultural employment in western Kentucky.

Wagley (1964) studying off-farm agricultural occupations in Yuma County, Arizona, found a definite and growing need for training in these occupations. Most of the sales and service firms identified by Wagley were of recent origin and all of these agricultural businesses planned both immediate and long-time increases in their numbers of employees.

Of the research identified relating to the problem, little attention has been given to the on-farm employment opportunities in such jobs as equipment operators, equipment repair and maintenance, irrigators, managers and foremen, nor have the studies been conducted in states in which large commercial farming makes up such a large segment of the agricultural industry as is the case in Arizona. A study of agricultural occupations in Pinal County, Arizona was completed by Hamilton (1970) in which both off-farm and on-farm agricultural occupations were studied. The Pinal County study and this study are parts of a series of agricultural occupations studies being conducted to obtain a comprehensive analysis of vocational agriculture training needs for the State of Arizona.

Procedures

Identification of the Population - Identification of the agricultural businesses and producers within the western part of the Salt River Valley was accomplished by the vocational agriculture teachers in each of the six high schools within the survey area which conduct vocational agriculture programs and the agriculture teachers at Glendale Community College. The high school districts participating in the study were: Agua Fria, Dysart, Glendale, Peoria, Tolleson and Washington.

The vocational agriculture teachers in these schools compiled master lists of agricultural businesses and producers for their high school districts using the telephone directory and lists of producers from the ASCS office. The agriculture teachers of Glendale Community College served in coordinating the surveys in each of the high school

districts in developing the master population list for the entire survey area, and in coordinating the surveys of the study area lying outside the six high school districts participating in the survey.

All producers and firms which were of an obvious agricultural nature due to name, products handled, or services offered were included. These master lists of agricultural businesses and producers were then modified after review by personnel of the county extension service, local businesses dealing with farmers and ranchers, community officials, and long-time residents of the area. The geographic area of Maricopa County included in the study is shown in Figure 1.

Method of Data Collection - Data pertaining to the numbers of employees, occupations requiring knowledge or skill in agriculture, and the subject areas of training needed for each agricultural occupation were obtained by means of personal interviews with representatives of each of the agricultural businesses identified in each of the six high school districts and the remaining survey area included in the study. As interviews were wcheduled it was requested that the individual to be interviewed in each firm be the person with the responsibility for hiring employees for the firm. These interviews were conducted by the vocational agriculture teachers and other interviewers from the University of Arizona, using Form I and Form II, found in the appendix. Some interviews were conducted during the months of 1968 and 1969 by the agriculture teachers of Glendale Community College, however, the majority of surveys were conducted during the calendar year 1970.

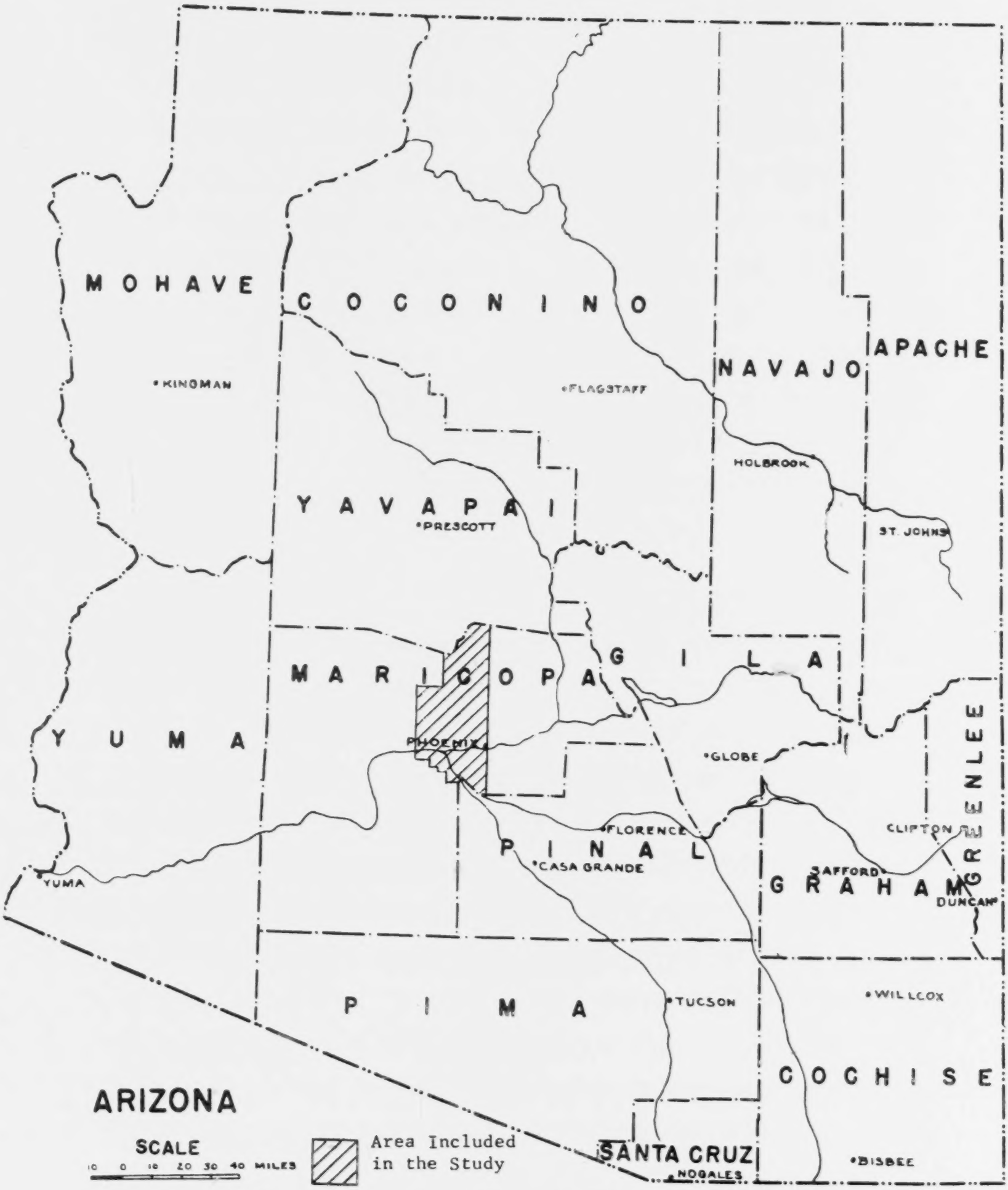

Figure 1. Location of area included in the study.

Interview Procedures - All agricultural businesses and producers included in the study were contacted by letter approximately two weeks prior to the interviews to acquaint them with the purposes of the study and to solicit their participation and cooperation in the study. In most cases appointments were arranged by telephone each day to schedule interviews for the following day.

Treatment of Data - Data were summarized by grouping businesses and producers into similar occupational areas. Occupational areas used were adapted from those suggested by the National Center for Vocational and Technical Education. However, it was necessary to add four areas to include production agriculture.

It should be noted that data collected under part III of interview Form I was intended primarily for the use of teachers and administrators in local programs of vocational agriculture and is, therefore, not included in this report.

Agricultural Businesses, Producers, and Employees

The numbers of agricultural businesses and producers identified in the western part of the Salt River Valley are shown in Table 1 grouped by occupational areas. There were a total of 408 agricultural businesses and producers surveyed in the twelve occupational areas listed. A total of 3708 agricultural employees were employed by the 564 businesses identified.

Of this total number of agricultural employees 3335 were employed full-time. It should be noted that this figure represents all levels of agricultural employment and is limited to those

TABLE I

EMPLOYMENT IN AGRICULTURAL OCCUPATIONS BY OCCUPATIONAL AREA AND TYPE OF BUSINESS IN THE WESTERN PART OF THE SALT RIVER VALLEY

Occupational Areas and Types of Businesses	Number of Businesses Surveyed	Number of Employees Needing Knowledge or Skill in Agriculture*		
		Full Time	Part Time	Total
Crop Production Only: (Farms producing field or vegetable crops)	132	1299	73	1372
Ornamental Horticulture: (Businesses engaged in the production, sales or maintenance of plants, shrubs or turf)	57	427	195	622
Agricultural Processing: (Cotton gins, seed delinting, packing houses, etc.)	27	331	18	349
Farm Service: (Custom tillage, harvesting, fertilizing, insect control, etc.)	32	300	29	329
Livestock Production Only: (Ranches and feedlots not engaged in crop production)	48	310	18	328
Livestock and Crops Production: (Farms engaged in the production of both crops and livestock	43	299	13	312
Farm Supply: (Sales of feed, seed, fertilizers, Agricultural chemicals, livestock supplies, etc.)	23	152	4	156
Agricultural Machinery Sales & Service: (Businesses which sell, repair, or maintain agricultural equipment)	12	94	11	105
Agricultural Service: (Professional Agriculturalists)	24	88	12	100
Agricultural Finance: (Businesses whose function is to supply operational and capital financing to agricultural producers)	8	16	-	16

TABLE I (Continued)

Occupational Areas and Types of Businesses	Number of Businesses Surveyed	Number of Employees Needing Knowledge or Skill in Agriculture*		
		Full Time	Part Time	Total
Citrus Production: (Farms engaged in the production of citrus only)	1	11	-	11
Agricultural Research: (Businesses whose function is the improvement of crops or livestock through research)	1	8	-	8
	408	3,335	373	3,708

* It should be noted that, as defined in this study, agricultural employees are limited to those employees needing knowledge or skill in agriculture to perform the duties and functions of their respective occupations.

employees needing knowledge or skill in agriculture to perform the duties and functions of their respective occupations. Several hundred part-time workers who engage in production line work in the harvesting, handling and processing of farm products were not included in the data presented in Table 1. These harvest and labor crews require little or no knowledge or skills in the area of agriculture for which prior training and/or experience are needed. Some of these workers were residents of the county; however, a large percentage were migratory workers.

It may be seen from the data presented in Table 1 that upon the basis of numbers of businesses and numbers of agricultural employees, the area of "crop production only" accounted for over one-third of the full-time agricultural employment in the western part of the Salt River Valley. One hundred thirty-two or 32 per cent of the 408 agricultural businesses identified concerned themselves with "crop production only" and 1299 or 39 per cent of the 3708 total full-time agricultural employees in the survey area were employed in the area of "crop production only".

Employment in the area of "crop production only" although accounting for but one-third of the total agricultural employment had over twice the number of employees as the next highest area, that of "ornamental horticulture".

In making a comparison of numbers of employees engaged in production agriculture vs other areas of agriculture it may be noted that agricultural employment in the four production areas, "crop production only", "livestock production only", "livestock and crop

production" and "citrus production" combined make up a group of 2023 employees accounting for 54 per cent of the agricultural employment in the survey. It might also be noted that the numbers of businesses surveyed in these four production areas, 224 represented 54.9 per cent of the 408 agricultural businesses surveyed. In considering both numbers of employees and numbers of businesses there was a relationship of approximately six in production agriculture to five in off-farm agriculture.

Agricultural Employment by Job Title

In order to present a more detailed picture of agricultural employment in the western part of the Salt River Valley it was necessary to investigate specialization and levels of employment within each of the occupational areas. Table 2 shows the numbers of agricultural employees by job title in each of the twelve occupational areas. It may be noted that there were several different agricultural job titles in each of the occupational areas with the exception of "agricultural finance". Numbers of different agricultural job titles in an area ranged as high as thirty-seven different job titles which are shown in each of the areas of "agricultural processing" and "livestock production only".

In some cases a single job title accounted for a relatively large share of the total employment in an occupational area. The job title of "general farmhand" accounted for one-third of the employment in the occupational area of "crop production only". In the occupational area "agricultural machinery sales and service" the job title of "farm equipment mechanic" accounted for over one-third

TABLE 2

EMPLOYMENT IN AGRICULTURAL OCCUPATIONS BY OCCUPATIONAL AREA AND JOB TITLE IN THE WESTERN PART OF THE SALT RIVER VALLEY

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
	Crop Production Only:			
421.883	General Farmhand	451	20	471
422.887	Irrigator	217	31	248
409.883	Wheel Tractor Operator	205	9	214
429.131	General Farm Foreman	167	1	168
421.181	Farm Owner-Manager	109	6	115
624.281	Farm Equipment Mechanic	38	2	40
409.168	Farm Manager	26	1	27
422.137	Irrigation Foreman	21	-	21
403.883	Vegetable Foreman	13	1	14
409.883	Harvest Machine Operator	9	2	11
409.137	Harvest Crew Leader	9	-	9
-	Farm Equipment Foreman	8	-	8
261.158	Commission Man, Agriculture Produce	4	-	4
891.138	Farm Equipment Shop Foreman	4	-	4
624.281	Farm Equipment Serviceman	3	-	3
906.883	Truck Driver	3	-	3
-	Ag. Processing Manager	2	-	2
040.081	Agronomist	2	-	2
421.883	Field Hand Laborer	2	-	2
-	Field Superintendent	2	-	2
163.118	Sales Manager	2	-	2
409.883	Crawler Tractor Operator	1	-	1
169.168	Office Manager	1	-	1
	Sub-totals	1,299	73	1,372
	Ornamental Horticulture:			
406.887	Nursery Worker	39	156	195
407.884	Groundskeeper	113	-	113
407.181	Landscape Gardener	52	-	52
-	Nursery Salesman	35	6	41
407.883	Laborer, Golf Course	37	-	37
406.168	Nurseryman	32	-	32
406.000	Plant Propagator	-	30	30
407.137	Greenskeeper	24	-	24
906.883	Truck Driver	23	-	23
407.134	Park Foreman	18	-	18
-	Florist	8	1	9
922.887	Warehouseman	7	-	7
-	Greenhouse Manager	6	-	6
407.138	Superintendent, Greens	6	-	6
409.883	Wheel Tractor Operator	6	-	6

TABLE 2 (Continued)

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
624.281	Farm Equipment Mechanic	4	-	4
-	Greenhouse Designer	3	1	4
422.887	Irrigator	3	-	3
-	Nursery Deliveryman	3	-	3
404.884	Tree Pruner	3	-	3
040.081	Crop Research Scientist	1	-	1
025.288	Hydrographer	1	-	1
019.081	Landscape Architect	1	-	1
-	Parks Supervisor	1	-	1
163.118	Sales Manager	-	1	1
929.138	Warehouse Superintendent	1	-	1
	Sub-totals	427	195	622
	Agricultural Processing:			
461.885	Ginner	36	4	40
525.381	Butcher	38	-	38
906.883	Truck Driver	29	5	34
920.132	Ag. Processing Foreman-Packaging Foreman	26	-	26
461.000	Gin Manager	26	-	26
-	Plant Employees	21	-	21
-	Ag. Processing Manager	19	-	19
520.885	Feedmill Operator	18	-	18
422.887	Irrigator	14	-	14
409.883	Wheel Tractor Operator	11	-	11
162.158	Livestock Buyer	9	-	9
461.000	Assistant Gin Manager	6	1	7
525.387	Meat Grader	7	-	7
466.887	Cattle Feeder	6	-	6
316.884	Meat Cutter	6	-	6
525.131	Packing House Manager	6	-	6
929.885	Press Man	3	3	6
624.281	Farm Equipment Mechanic	5	-	5
411.181	Milker	5	-	5
-	Agricultural Processing Field Man	4	-	4
-	Dairyman	3	1	4
529.132	Feedmill Foreman	4	-	4
262.358	Feed Salesman	4	-	4
429.131	General Farm Foreman	4	-	4
409.883	Harvest Machine Operator	4	-	4
421.883	General Farmhand	3	-	3
219.388	Gin Clerk	2	1	3
920.887	Packer, Agriculture Produce	3	-	3
-	Feedlot Manager	2	-	2
-	Feedmill Maintenance Man	2	-	2
910.137	Yard Man	-	2	2
-	Assistant Gin Superintendent	-	1	1

TABLE 2 (Continued)

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
411.181	Dairy Herdsman	1	-	1
041.081	Maintenance Man	1	-	1
162.158	Produce Buyer	1	-	1
163.118	Sales Manager	1	-	1
073.108	Veterinarian	1	-	1
	Sub-totals	331	18	349
	Farm Service:			
812.884	Farm Equipment Welder	50	1	51
906.883	Truck Driver	29	10	39
409.883	Wheel Tractor Operator	30	3	33
266.258	Fertilizer & Insecticide Salesman	27	-	27
409.887	Plane Loader	26	-	26
-	Farm Service Manager	23	1	24
421.883	General Farmhand	18	-	18
910.137	Yard Man	14	2	16
277.358	Farm Supply Salesman	11	3	14
624.281	Farm Equipment Mechanic	10	1	11
196.283	Sprayer Pilot	11	-	11
-	Farm Service Owner	9	-	9
409.883	Harvest Machine Operator	7	-	7
-	Plant Employees	6	-	6
559.138	Aviation Ground Crew Chief	5	-	5
421.883	Field Hand Laborer	-	5	5
954.782	Ditch Rider	4	-	4
409.887	Flagger	4	-	4
356.381	Horseshoer	4	-	4
409.883	Crawler Tractor Operator	3	-	3
261.158	Commission Man, Agriculture Produce	1	1	2
163.118	Sales Manager	2	-	2
-	Ag. Processing Manager	1	-	1
294.258	Auctioneer, Livestock	-	1	1
624.281	Farm Equipment Serviceman	1	-	1
-	Farm Service Engineer	1	-	1
-	Farm Supply Equipment Serviceman	1	-	1
-	Logging Owner-Manager	1	-	1
-	Stable Owner-Manager	1	-	1
184.168	Supt. Water Control Structures	-	1	1
	Sub-totals	300	29	329
	Livestock Production Only:			
413.884	Cowboy	80	2	82
411.181	Milker	41	-	41
466.887	Cattle Feeder	24	2	26
-	Feedlot Maintenance Man	23	-	23

TABLE 2 (Continued)

D.O.T No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
421.181	Farm Owner-Manager	16	-	16
421.883	General Farmhand	13	-	13
412.884	Farmhand Poultry	2	10	12
520.885	Feedmill Operator	12	-	12
906.883	Truck Driver	11	-	11
-	Dairyman	8	-	8
413.000	Feedlot Owner-Manager	8	-	8
162.158	Livestock Buyer	7	-	7
-	Poultryman	7	-	7
413.131	Ranch Foreman	7	-	7
-	Plant Employees	6	-	6
411.181	Dairy Herdsman	4	1	5
-	Feedlot Foreman	5	-	5
292.358	Salesman, Driver	5	-	5
-	Feedlot Manager	4	-	4
419.131	Stable Owner-Manager	4	-	4
409.168	Farm Manager	3	-	3
529.132	Feedmill Foreman	3	-	3
624.281	Farm Equipment Mechanic's Helper	2	-	2
624.281	Farm Equipment Mechanic	2	-	2
-	Feedmill Maintenance Man	-	2	2
413.181	Ranch Manager	2	-	2
413.181	Ranch Owner-Manager	2	-	2
-	Ag. Processing Manager	1	-	1
789.781	Animal Keeper	1	-	1
529.687	Egg Candler	1	-	1
559.887	Egg Processor	1	-	1
812.884	Farm Equipment Welder	1	-	1
419.884	Horse Trainer	1	-	1
920.887	Packer, Agriculture Produce	1	-	1
163.118	Sales Manager	1	-	1
356.874	Stableman	1	-	1
-	Veterinary Assistant	-	1	1
	Sub-totals	310	18	328
	Livestock and Crops Production:			
421.883	General Farmhand	64	4	68
422.887	Irrigator	42	-	42
421.181	Farm Owner-Manager	35	-	35
409.883	Wheel Tractor Operator	30	4	34
411.181	Milker	32	-	32
409.883	Harvest Machine Operator	20	4	24
466.887	Cattle Feeder	20	1	21
413.884	Cowboy	12	-	12
429.131	General Farm Foreman	11	-	11
624.281	Farm Equipment Mechanic	8	-	8

TABLE 2 (Continued)

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
-	Dairyman	7	-	7
409.168	Farm Manager	5	-	5
919.883	Teamster	5	-	5
413.131	Ranch Foreman	4	-	4
-	Farm Equipment Foreman	1	-	1
624.281	Farm Equipment Serviceman	1	-	1
-	Feedlot Manager	1	-	1
413.181	Ranch Manager	1	-	1
	Sub-totals	299	13	312
	Farm Supply:			
277.358	Farm Supply Salesman	56	1	57
-	Farm Supply Manager	35	1	36
922.887	Warehouse Man	10	-	10
-	Farm Supply Plant Worker	8	-	8
262.358	Feed Salesman	8	-	8
906.883	Truck Driver	6	-	6
266.258	Fertilizer & Insecticide Salesman	5	-	5
-	Farm Supply Delivery Man	4	-	4
529.132	Feedmill Foreman	4	-	4
-	Farm Supply Foreman	3	-	3
421.883	General Farmhand	3	-	3
409.883	Wheel Tractor Operator	3	-	3
-	Farm Supply Feed Store Employee	2	-	2
013.081	Agricultural Engineer	1	-	1
-	Crop Research Technician	-	1	1
624.281	Farm Equipment Mechanic	1	-	1
412.884	Farmhand, Poultry	-	1	1
409.168	Farm Manager	1	-	1
-	Farm Supply Feed Store Employee	1	-	1
165.068	Maintenance Man	1	-	1
	Sub-totals	152	4	156
	Agricultural Machinery Sales & Service:			
624.281	Farm Equipment Mechanic	33	10	43
233.387	Farm Equipment Partsman	15	-	15
277.358	Farm Equipment Salesman	13	-	13
187.168	Farm Equipment Parts Dept. Manager	10	-	10
624.281	Farm Equipment Serviceman	8	-	8
-	Agricultural Machinery Sales & Service Manager	6	1	7
891.138	Farm Equipment Shop Foreman	3	-	3
624.281	Farm Equipment Mechanic's Helper	2	-	2
185.168	Farm Equipment Sales Manager	2	-	2
812.884	Farm Equipment Welder	1	-	1
906.883	Truck Driver	1	-	1
	Sub-totals	94	11	105

TABLE 2 (Continued)

D.O.T. No.	Occupational Areas and Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
	Agricultural Service:			
349.874	Kennelman	28	4	32
073.108	Veterinarian	28	-	28
091.228	Vocational Agriculture Teacher	8	-	8
-	Veterinary Assistant	7	-	7
188.118	ASCS Supervisor	3	2	5
168.287	Plant Pest Control Inspector USDA	1	3	4
040.081	Soil Conservationist	4	-	4
168.287	Commissioner of Ag. & Hort. Dist. Supervisor	1	2	3
090.228	Teacher, Junior College (Agriculture)	2	-	2
356.874	Veterinary Hospital Attendant	2	-	2
013.081	Agriculture Engineer	1	-	1
188.118	ASCS Manager	1	-	1
041.081	Groundskeeper	1	-	1
040.081	Range Conservationist	-	1	1
-	Soil Conservation Technician	1	-	1
	Sub-totals	88	12	100
	Agricultural Finance:			
186.288	Ag. Loan Officer	16	-	16
	Sub-totals	16	-	16
	Citrus Production:			
422.887	Irrigator	5	-	5
409.883	Wheel Tractor Operator	5	-	5
525.131	Packing House Manager	1	-	1
	Sub-totals	11	-	11
	Agricultural Research:			
421.883	General Farmhand	4	-	4
-	Livestock Research Scientist	2	-	2
-	Feedlot Manager	1	-	1
-	Veterinary Assistant	1		1
	Sub-totals	8	-	8
	TOTALS	3,335	373	3,708

* It should be noted that, as defined in this study, agricultural employees are limited to those employees needing knowledge or skill in agriculture to perform the duties and functions of their respective occupations.

of the employment in the area.

It should be noted that many job titles appear in more than one occupational area. An example of one such job title is that of "farm equipment mechanic" which appears in eight of the twelve occupational areas shown in Table 2.

A total of 132 different agricultural job titles were identified in the western part of the Salt River Valley. These job titles are shown in Table 3 with the total numbers of persons employed in each job title. The majority of the job titles identified had fewer than ten employees and employment in these job titles represented less than one-tenth of the total agricultural employment. One job title, that of "general farmhand", accounted for over 15 per cent of the total agricultural employment.

TABLE 3

EMPLOYMENT IN AGRICULTURAL OCCUPATIONS BY JOB TITLE
IN THE WESTERN PART OF THE SALT RIVER VALLEY

D.O.T. No.	Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture*		
		Full-time	Part-time	Total
421.883	General Farmhand	556	24	580
422.887	Irrigator	281	31	312
409.883	Wheel Tractor Operator	290	16	306
406.887	Nursery Worker	39	156	195
429.131	General Farm Foreman	182	1	183
421.181	Farm-Owner Manager	160	6	166
906.883	Truck Driver	102	15	117
624.281	Farm Equipment Mechanic	101	13	114
407.884	Groundskeeper	114	0	114
413.884	Cowboy	92	2	94
411.181	Milker	78	0	78
277.358	Farm Supply Salesman	67	4	71
466.887	Cattle Feeder	50	3	53
812.884	Farm Equipment Welder	52	1	53
407.181	Landscape Gerdener	52	0	52
409.883	Harvest Machine Operator	40	6	46
	Nursery Salesman	35	6	41
461.885	Ginner	36	4	40
525.381	Butcher	38	0	38
407.883	Laborer, Golf Course	37	0	37
409.168	Farm Manager	35	1	36
	Farm Supply Manager	35	1	36
	Plant Employees	33	0	33
266.258	Fertilizer & Insecticide Salesman	32	0	32
349.874	Kennelman	28	4	32
406.168	Nurseryman	32	0	32
520.885	Feedmill Operator	30	0	30
406.000	Plant Propagator	0	30	30
073.108	Veterinarian	29	0	29
920.132	Agr. Processing Foreman	26	0	26
461.	Gin Manager	26	0	26
409.887	Plane Loader	26	0	26
	Farm Service Manager	23	1	24
407.137	Greenskeeper	24	0	24
	Agr. Processing Manager	23	0	23
	Feedlot Maintenance Man	23	0	23
422.137	Irrigation Foreman	21	0	21
	Dairyman	18	1	19
407.132	Park Foreman	18	0	18
910.137	Yard Man	14	4	18
922.887	Warehouse Man	17	0	17
186.288	Agr. Loan Officer	16	0	16

TABLE 3 (Continued)

D.O.T. No.	Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
162.158	Livestock Buyer	16	0	16
233.387	Farm Equipment Partsman	15	0	15
403.883	Vegetable Foreman	13	1	14
624.281	Farm Equipment Salesman	13	0	13
277.358	Farm Equipment Salesman	13	11	13
412.884	Farm Hand Poultry	2	11	13
262.358	Feed Salesman	12	0	12
413.131	Ranch Foreman	11	0	11
196.283	Sprayer Pilot	11	0	11
187.168	Farm Equipment Parts Dept. Mgr.	10	0	10
529.132	Feedmill Foreman	10	0	10
	Farm Equipment Foreman	9	0	9
	Farm Service Owner	9	0	9
	Florist	8	1	9
409.137	Harvest Crew Leader	9	0	9
	Veterinary Assistant	8	1	9
	Farm Supply Plant Worker	8	0	8
	Feedlot Manager	8	0	8
	Feedlot Owner-Manager	8	0	8
525.131	Packing House Manager	8	0	8
091.228	Vocational Agriculture Teacher	8	8	8
	Agr. Machinery Sales & Ser. Mgr.	6	1	7
461.	Assistant Gin Manager	6	1	7
891.138	Farm Equipment Shop Foreman	7	0	7
421.883	Field Hand Laborer	2	5	7
525.387	Meat Grader	7	0	7
	Poultryman	7	0	7
163.118	Sales Manager	6	1	7
261.158	Commission Man, Agr. Produce	5	1	6
	Dairy Herdsman	5	1	6
	Greenhouse Manager	6	0	6
316.884	Meat Cutter	6	0	6
929.885	Press Man	3	3	6
407.138	Superintendent, Greens	6	0	6
188.118	ASCS Supervisor	3	2	5
559.138	Aviation Ground Crew Chief	5	0	5
	Feedlot Foreman	5	0	5
292.358	Salesman, Driver (Deliveryman)	5	0	5
419.131	Stable Owner-Manager	5	0	5
919.833	Teamster	5	0	5
	Agricultural Processing Field Man	4	0	4
409.883	Crawler Tractor Operator	4	0	4
954.782	Ditch Rider (Zan Jero)	4	0	4
624.281	Farm Equipment Mechanic's Helper	4	0	4
	Farm Supply Deliveryman	4	0	4
	Feedmill Maintenance Man	2	2	4

TABLE 3 (Continued)

D.O.T. No.	Job Titles	Number of Employees Needing Knowledge or Skill in Agriculture* Full-time	Part-time	Total
409.887	Flagger	4	0	4
	Greenhouse Designer	3	1	4
356.381	Horseshoer	4	0	4
920.887	Packer Agriculture Produce	4	0	4
168.287	Plant Pest Control Inspector USDA	1	3	4
040.081	Soil Conservationist	4	0	4
168.287	Commissioner of Ag. & Hort.Dist. Supervisor	1	2	3
	Farm Supply Equipment Serviceman	3	0	3
	Farm Supply Foreman	3	0	3
219.388	Gin Clerk	2	1	3
	Nursery Deliveryman	3	0	3
413.181	Ranch Manager	3	0	3
404.884	Tree Pruner	3	0	3
013.081	Agricultural Engineer	2	0	2
040.081	Agronomist	2	0	2
185.168	Farm Equipment Sales Manager	2	0	2
	Field Superintendent	2	0	2
	Livestock Research Scientist	2	0	2
041.081	Maintenance Man	2	0	2
413.181	Ranch Owner Manager	2	0	2
090.228	Teacher, Junior College, Agric.	2	0	2
356.874	Veterinary Hospital Attendant	2	0	2
789.781	Animal Keeper	1	0	1
188.118	ASCS Manager	1	0	1
461.	Asstistant Gin Supt.	0	1	1
294.258	Auctioneer, Livestock	0	1	1
040.081	Crop Research Scientist	1	0	1
	Crop Research Technician	0	1	1
529.687	Egg Candler	1	0	1
559.887	Egg Processor	1	0	1
	Farm Service Engineer	1	0	1
	Farm Supply Feed Store Employee	1	0	1
419.884	Horse Trainer	1	0	1
025.288	Hydrographer	1	0	1
019.081	Landscape Architect	1	0	1
	Logging Owner Manager	1	0	1
169.168	Office Manager	1	0	1
	Park Supervisor	1	0	1
162.158	Produce Buyer	1	0	1
040.081	Range Conservationist	0	1	1
	Soil Conservation Technician	1	0	1
356.874	Stableman	1	0	1
184.168	Supt. Water Control Structure	0	1	1
929.138	Warehouse Superintendent	1	0	1
	TOTALS	3335	373	3708

* It should be noted that, as defined in this study, agricultural employees are limited to those employees needing knowledge or skill in agriculture to perform the duties and functions of their respective occupations.

Agricultural Competencies Needed by Agricultural Employees

In order to plan educational programs in agriculture to prepare persons for agricultural employment, it was necessary to determine the agricultural knowledge and skills needed for entry into those occupations. Areas in which agricultural competencies were needed by persons employed in each of 52 agricultural job titles in the western part of the Salt River Valley are shown in Table 4, page 30. The 52 job titles shown in Table 4 represent those in which 10 or more persons were found to be employed in each job title. These were 80 agricultural job titles identified in the western part of the Salt River Valley in which fewer than 10 persons were employed in each job title. In order to reduce the bulkiness of an already complex table these 80 job titles were not included in Table 4. It should be noted that a total of 339 persons were employed in the 80 agricultural job titles not included in Table 4.

Clustering of Occupations

In clustering agricultural occupations in order to consider more specifically the agricultural knowledge and skills needed by agricultural employees, two factors were considered. These were: (1) those occupations with substantial numbers of employees would be considered, in that educational programs planned should be directed toward those areas of greatest employment opportunity; and (2) occupations requiring similar patterns of agricultural competency would be clustered together for consideration.

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The job titles listed in Table 4 were so arranged that those job titles requiring similar patterns of agricultural competencies were clustered together to aid in the visual comparison of competencies needed.

Manager - Foremen Cluster

For the job titles and competencies shown in Table 4 it may be seen that quite similar competency patterns appear for that cluster of occupations which includes farm owner-manager, and farm foreman and 15 additional job titles. It may be noted that the additional job titles in this cluster are largely at the manager, foreman and salesman levels. Of the above group of job titles those of farm owner-manager and farm foreman accounted for nearly one-half of the employment in this cluster. The 729 farm owner-managers, farm foremen and other agricultural employees in this job cluster made up approximately one-fifth of the total agricultural employment in the western part of the Salt River Valley.

In summarizing the agricultural competencies needed by persons employed in the job titles shown in the manager-foreman cluster it was found that generally competencies were needed by these persons in the areas of field crop production, agricultural business management, agricultural marketing and in several of the areas of agricultural mechanization. Fewer than one-half of the job titles in the cluster called for competencies in animal science, horticulture or merchandising skills and more required competency in forestry.

Agricultural Mechanization Cluster

There were eight job titles in which 298 persons were employed for which extensive agricultural competencies were needed largely in one or more areas of agricultural mechanization. Of the eight job titles in this cluster, as shown in Table 4, one job title, that of farm equipment mechanic, accounted for 114 or 38 per cent of the persons employed in the cluster.

Persons employed in most of the job titles in this cluster needed competencies in each of the areas of agricultural mechanization shown in Table 4 with the exceptions of the areas of agricultural building and conveniences and soil and water management.

Basic agricultural shop skills were needed by persons employed in each of the job titles in the cluster. Few job titles in the agricultural mechanization cluster called for competencies in the areas of animal science, plant science, agricultural business or merchandising skills.

Agricultural Machinery Operation and Irrigation Cluster

The three job titles, tractor operator, irrigator and general farm hand accounted for nearly one-third of the agricultural employment in the western part of the Salt River Valley. An examination of patterns of agricultural knowledge and skills needed by persons employed in these job titles, as shown in Table 4, does not show marked similarity for all job titles. For this study employees were categorized into one of the above three job titles by correlating the description of the work performed as given by the employer with the

job description of each of these job titles.

Four additional related job titles for which needed competencies were also largely in the areas of machine operation and irrigation were also included in the machinery operation and irrigation cluster for a total of 1447 persons employed representing 39 per cent of the total agricultural employment in the county.

From the data presented in Table 4 it may be seen that persons employed in job titles in this cluster for the most part needed to be able to operate, maintain and perform adjustment and repair on agricultural machinery.

One job title, that of irrigator, did not require agricultural machinery competencies; however, competencies were needed in soil and water management.

No job titles shown in the agricultural machinery operation and irrigation cluster were found to require competencies in the areas of animal science, agriculture business or merchandising skills.

Ornamental Horticulture Cluster

Two job titles, thos of nursery worker and groundskeeper, accounted for over one-half of the 530 employees identified in the nine job titles in the ornamental horticulture job cluster. Horticultural competencies were needed by employees in each of the job titles and most also required competencies in the operation of agricultural machinery. Other competency areas in which competencies were most often needed were agricultural machinery daily maintenance and soil and water management. None of the ornamental horticulture job titles required competencies in any of the competency areas of animal science. Employees in one or more of the job titles in the ornamental horticulture

job cluster needed competencies in each of the other competency areas shown in Table 4 with the exception of forestry and agricultural power and machinery overhaul.

Livestock Cluster

A total of 328 persons were employed in nine job titles in which competencies were needed in one or more areas of animal science. Two job titles, those of milker and cowboy accounted for over one-half of the employment in the job cluster.

For most of the job titles shown, rather broad competencies in animal science were needed as indicated by the numbers of different areas of animal science in which employees needed competencies.

No competencies in plant science were found to be needed by employees in the livestock cluster; however, some competency in agricultural business management was needed for most job titles in the cluster and some job titles required additional competencies in one or more of the areas of agricultural marketing, merchandising skills, or in one or more areas of agricultural mechanics.

Numbers of Employees Needing Agricultural Competencies

In Table 4 the column headed "Number of Employees for which Competencies in Each Area Were Indicated as Needed" shows the highest number of persons for which any single one competency was needed in the area shown. Due to space limitations it was not possible to show in Table 4 the more specific single competencies within each competency area shown as are found on Form II-A of the survey instrument. The figures in Table 4 do show that the greatest numbers of persons

needed agricultural competencies in the several areas of agricultural mechanics. With few exceptions, nearly all persons employed in the job titles shown in Table 4, needed competencies in some area of agricultural mechanization. Competencies in this area were needed by employees in each occupational area and at all levels of employment.

Comparatively large numbers of persons also needed competencies in the areas of field crops production and agricultural business management. This is borne out both by numbers of persons needing competencies in these areas as well as the relatively large numbers of job titles for which competencies in these areas were required.

A more detailed presentation of numbers and percentages of persons needing agricultural knowledge and skill within each competency area may be found in Table 5. From this data it may be seen that the numbers of persons needing competencies in each of the areas shown was lowest in the area of forestry and highest in the area of agricultural power and machinery operation. Percentages of agricultural employees in this study needing each of the competencies shown ranged from a high of 45.7 per cent for operation of wheel tractors down to less than one per cent for competencies in forestry.

Percentages of agricultural employees needing animal science competencies were comparatively low with percentages of persons needing competencies in this area ranging from 3.2 to 12.8 per cent.

In the area of plant science approximately one-fourth of all agricultural employees needed competencies in field crops production with a high of 26.3 per cent needing competency in plant growth.

TABLE 4

Agricultural Competencies Needed by Employees in Selected Job Titles* in the Western Part of the Salt River Valley with Numbers of Employees in Each Job Title and Total Numbers of Employees Needing Competencies in Each Area.

AGRICULTURAL COMPETENCY AREAS	(Number of Employees in Each Job Title)															
	CLUSTERS OF AGRICULTURAL JOB TITLES WITH NUMBERS EMPLOYED AND AREAS OF AGRICULTURAL COMPETENCIES NEEDED															
	MANAGER-FOREMAN CLUSTER															
	13	166	36	183	21	14	36	32	16	26						
	Farm Equipment Salesman	Farm Owner-Manager	Farm Manager	General Farm Foreman	Irrigation Foreman	Vegetable Foreman	Farm Supply Manager	Fertilizer & Insecticide Salesman	Ag. Loan Officer	Gin Manager						
ANIMAL SCIENCE																
Breeding Farm Animals																
Livestock Feeding and Nutrition																
Animal Sanitation, Disease & Parasites Control																
Housing and Equipment																
Management, Processing, Marketing																
PLANT SCIENCE																
Horticulture																
Field Crop Production	X	X	X	X	X	X	X	X	X	X						
Forestry																
AGRICULTURAL BUSINESS																
Agricultural Business Management	X	X	X	X	X	X	X	X	X	X						
Agricultural Marketing																
AGRICULTURAL MECHANICS																
Agricultural Machinery Operation	X	X	X	X	X	X	X	X	X	X						
Agricultural Machinery Maintenance	X	X	X	X	X	X	X	X	X	X						
Agricultural Power & Machinery Adjustment & Repair	X	X	X	X	X	X	X	X	X	X						
Agricultural Power & Machinery Overhaul		X	X	X	X	X	X	X	X	X						
Agricultural Electrification		X	X	X	X	X	X	X	X	X						
Soil and Water Management	X		X	X	X	X	X	X	X	X						
Agricultural Building and Conveniences		X	X	X	X	X	X	X	X	X						
Basic Agricultural Shop Skills	X	X	X	X	X	X	X	X	X	X						
MERCHANDISING SKILLS																

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																		36	Farm Supply Manager		
X			X			X		X	X	X		X	X					32	Fertilizer & Insecticide Salesman		
									X	X		X	X					16	Ag. Loan Officer		
			X						X	X		X						26	Gin Manager		
	X	X	X	X		X	X	X		X		X	X					26	Ag. Processing Foreman		
X						X	X	X	X	X								23	Ag. Processing Manager		
X	X	X	X		X	X	X	X	X	X		X	X		X	X	X	24	Farm Service Manager		
X									X	X		X				X		71	Farm Supply Salesman		
X			X	X					X	X		X		X	X	X	X	12	Feed Salesman		
	X	X	X	X		X	X	X	X	X		X		X	X	X	X	19	Dairyman		
	X	X	X	X	X	X	X	X	X	X		X		X	X	X		11	Ranch Foreman		
																	X				
																			(sub-total 729)		
																			AGRICULTURAL MECHANIZATION CLUSTER		
	X			X	X	X	X	X										114	Farm Equipment Mechanic		
X	X		X	X	X	X	X	X										13	Farm Equipment Serviceman		
	X					X	X	X	X	X								15	Farm Equipment Partsman		
X	X					X	X	X	X	X								10	Farm Equipment Parts Department Manager		
	X	X			X	X	X	X										53	Farm Equipment Welder		
	X	X		X		X	X	X	X	X								40	Ginner		
	X			X													X	30	Feedmill Operator		
	X	X			X	X	X	X										23	Feedlot Maintenance Man		
																			(sub-total 298)		
																			AGRICULTURAL MACHINERY OPERATION AND IRRIGATION CLUSTER		
	X	X	X			X	X	X				X						580	General Farmhand		
						X	X	X				X						306	Wheel Tractor Operator		
			X									X						312	Irrigator		
						X	X	X										46	Harvest Machine Operator		
						X	X	X										117	Truck Driver		
						X		X										33	Plant Employees		
	X					X	X	X										53	Cattle Feeder		
																			(sub-total 1447)		
																			ORNAMENTAL HORTICULTURE CLUSTER		
			X			X		X				X	X					24	Greenskeeper		
		X	X	X		X	X	X					X					37	Laborer, Golf Course		
								X		X			X					18	Park Foreman		
													X					52	Landscape Gardener		
X	X		X	X		X	X	X	X	X			X					32	Nurseryman		
X							X	X	X	X		X	X					41	Nursery Salesman		
													X					195	Nursery Worker		
			X				X	X					X					114	Groundskeeper		
												X	X					17	Warehouse Man		
																			(sub-total 530)		
																			LIVESTOCK CLUSTER		
	X						X	X	X	X				X		X		16	Livestock Buyer		
														X		X		38	Butcher		
		X												X	X	X		18	Yardman		
				X	X					X				X		X	X	78	Milker		
	X						X	X		X				X	X	X	X	94	Cowboy		
X	X	X		X		X			X	X				X		X	X	10	Feedmill Foreman		
														X	X	X	X	13	Farmhand Poultry		
														X	X	X	X	32	Kennelman		

| | | |

TABLE 5

AGRICULTURAL COMPETENCIES NEEDED BY AGRICULTURAL EMPLOYEES IN THE WESTERN PART OF THE SALT RIVER VALLEY

Agricultural Competencies	Total Numbers of Employees Needing Each Competency	Per Cent of Total Agricultural Employees in Survey
Animal Science:		
1. Breeding Farm Animals		
A. Genetics	121	3.3
B. Reproductive Morphology	144	3.9
C. Diseases	252	6.8
D. Breeding Problems	194	5.2
E. Artificial Insemination	119	3.2
F. Breeding Skills	135	3.6
G. Selection of Breeding Stock	154	4.2
2. Livestock Feeding and Nutrition		
A. Body Process of Nutrition	268	7.2
B. Food Nutrients and their Sources	252	6.8
C. Ration Formulation	216	5.8
D. Feeding Systems	368	9.9
3. Animal Sanitation, Disease and Parasite Control		
A. Characteristics of healthy animals	475	12.8
B. Symptoms of common diseases and parasites	434	11.7
C. Treatment of common diseases and parasites	360	9.7
D. Environmental conditions conducive to good health	434	11.7
4. Housing and Equipment		
A. Maintenance of equipment, corrals and fences	366	9.9
B. Construction of equipment and housing	253	6.8
C. Design and construction	230	6.2
5. Management of Livestock Operation	205	5.5
6. Processing of Livestock Products (meat, milk, wool, etc.)	193	5.2
7. Marketing of Livestock Products (meat, milk, wool, eggs)	202	5.4
8. Livestock Handling	484	13.0
Plant Science:		
1. Ornamental Horticulture		
A. Plant Propagation	483	13.0
B. Greenhouse Management	152	4.1

TABLE 5 (Continued)

Agricultural Competencies	Total Numbers of Employees Needing Each Competency	Per Cent of Total Agricultural Employees in Survey
Plant Science: (Continued)		
C. Soils and Fertilizations, Water, etc.	501	13.5
D. Control of Insects	546	14.7
E. Control of Diseases	538	14.5
F. Control of Weeds	564	15.2
G. Marketing and Management	218	5.9
H. Turf Management	283	7.6
2. Field Crop Production (includes vegetable & fruit prod.)		
A. Plant propagation, seed production	671	18.1
B. Plant growth	967	26.1
C. Control of Insects	850	23.9
D. Control of Diseases	934	25.2
E. Control of Weeds	813	21.9
F. Soils	769	20.7
G. Fertilization	817	22.0
H. Irrigation	976	26.3
I. Marketing and Management	445	12.0
3. Forestry		
A. Establishing a Stand	27	.7
B. Managing a Stand	7	.2
C. Fire Control	6	.2
D. Control of Diseases and Insects	25	.7
E. Harvesting	5	.1
F. Marketing	2	-
G. Pulp Wood Production	7	.2
Agricultural Business Management and Marketing:		
A. Records and Accounts	1016	27.4
B. Budgeting and Analysis	563	15.2
C. Agricultural Financing, Credit and Insurance	501	13.5
D. Farm Organization and Planning	508	13.7
E. Labor Management	747	20.2
F. Marketing Problems and Practices	504	13.6
G. Agricultural Policy	477	12.9
H. Agricultural and Related Price Analysis	433	11.7
I. Cooperative and Business Organization	417	11.2
J. Mechanization systems	613	16.5
Agricultural Mechanics Area:		
1. Agricultural Power and Machinery Operation		

TABLE 5 (Continued)

Agricultural Competency	Total Numbers of Employees Needing Each Competency	Per Cent of Total Agricultural Employees in Survey
Agricultural Mechanics Area: (Continued)		
A. Tractors, Wheel	1649	45.7
B. Crawler Tractors	1122	30.3
C. Primary Tillage Equipment	1213	32.7
D. Cultivating Equipment	1230	33.2
E. Harvesting Equipment	1302	35.1
F. Small Gasoline Engines	1416	38.2
G. Materials Handling Equipment	275	7.4
2. Agricultural Power and Machinery Daily Care & Maintenance		
A. Tractors, Wheel	1319	35.6
B. Crawler Tractors	948	25.6
C. Primary Tillage Equipment	989	26.6
D. Cultivating Equipment	1019	27.5
E. Harvesting Equipment	1133	30.6
F. Small Gasoline Engines	1146	30.9
G. Materials Handling Equipment	185	5.0
3. Agricultural Power & Machinery Repair & Adjustment		
A. Tractors, Wheel	1385	37.3
B. Crawler Tractors	1123	30.3
C. Primary Tillage Equipment	1216	32.8
D. Cultivating Equipment	1211	32.6
E. Harvesting Equipment	1274	34.4
F. Small Gasoline Engines	1346	36.3
G. Materials Handling Equipment	1402	37.8
4. Agricultural Power and Machinery Overhaul		
A. Tractors, Wheel	406	11.0
B. Crawler Tractors	381	10.3
C. Primary Tillage Equipment	396	10.7
D. Cultivating Equipment	341	9.2
E. Harvesting Equipment	359	9.7
F. Small Gasoline Engines	374	10.1
G. Materials Handling Equipment	474	12.8
5. Agricultural Electrification		
A. Wiring	533	14.4
B. Motors, Maintenance and Repair	526	14.2
6. Soil and Water Management		
A. Land Measurement	546	14.7
B. Surveying and Leveling	306	8.3
C. Irrigation Systems	1042	28.1

TABLE 5 (Continued)

Agricultural Competencies	Total Numbers of Employees Needing Each Competency	Per Cent of Total Agricultural Employees in Survey
Agricultural Mechanics Area: (Continued)		
D. Pump Maintenance	646	17.4
E. Soil Testing	331	8.9
F. Irrigation Structures	1048	28.3
G. Water Measurement	544	14.7
H. Efficient Water Use	920	24.8
7. Agricultural Building and Conveniences		
A. Design of Structures	360	9.7
B. Construction	319	8.6
C. Maintenance and Repair	594	16.0
D. Water Systems	556	15.0
8. Basic Agricultural Shop Skills		
A. Arc Welding	1048	28.3
B. Acetylene Welding	1047	28.3
C. Plumbing	727	19.6
D. Hot and Cold Metal	727	19.6
E. Carpentry	687	18.5
Merchandising:		
A. Warehousing	225	6.1
B. Sales	365	9.8
C. Inventorying	268	7.2
D. Handling Cash - Cash Register	223	6.0
E. Advising Customers	284	7.7
F. Using Invoices	239	6.5
G. Handling Customer Accounts	236	6.4
H. Dispatching, Consigning & Packaging of Materials	199	5.4
I. Routing and Delivering	195	5.3
J. Use of Catalogues and Ordering	220	5.9
K. Preparing Displays and Advertising	168	4.5

Fewer persons needed ornamental horticultural competencies with approximately 15 per cent of the agricultural employees needing several horticultural competencies. Very few persons needed any of the competencies shown in forestry.

Competency in records and accounts and labor management in the area of agricultural business management and marketing were needed by more agricultural employees than other competencies in this area. It should be noted, however, that each of the agricultural business management and marketing competencies were needed by at least one of nine agricultural employees.

Percentages for competencies in the agricultural mechanics area shown in Table 5 indicate that approximately one-third of all agricultural employees in the survey needed competnecies in the operation, daily care and maintenance, and in the repair and adjustment of each of the types of machinery and equipment shown with the exception of materials handling equipment. Approximately one employee in ten needed competency in overhaul of this equipment and machinery.

Considering other areas of agricultural mechanics, approximately one of seven agricultural employees needed competencies in agricultural electrification and in the area of soil and water management percentages r nged from 28.3 per cent for irrigation structures down to 8.3 per cent for surveying and leveling. Under the heading of agricultural buildings and conveniences, competencies with water systems and maintenance and repair were needed by approximately one of seven employees. Basic agricultural shop skills were needed by one of four or five agricultural

employees with arc and acetylene welding being the most needed skills.

In relation to other competency areas, with the exception of animal science, numbers of agricultural employees needing merchandising skills were quite low ranging from a low of 4.5 per cent for preparing displays and advertising to a high of 9.8 per cent for sales competencies.

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Characteristics of Agricultural Employees and Occupations

In planning vocational education programs it is not sufficient to determine only what to teach but also decisions must be made concerning the age of students and the level at which occupational education should be provided. Agricultural employers in the western part of the Salt River Valley were asked to provide data dealing with the present age and salary of their employees. They were asked to indicate the minimum age at which they would hire an individual for each job title and also the educational level desired for each. Because of the large number of agricultural job titles identified in the western part of the Salt River Valley, only selected job titles in which ten or more persons were employed are shown.

Educational Level Desired

The educational level which employers desired that their employees possess is shown in Table 6. The job titles shown in Table 6 are grouped the same as in Table 4 in which job titles were clustered by similar patterns of competencies needed. Data concerning the desired educational level were provided for 3155 of the 3708 employees in the 52 job titles shown in Table 6.

Manager-Foreman Cluster - The educational level desired for the job titles included in the manager-foreman cluster are shown in Table 6 on pages 38 and 39. The desired educational level for employees in this group ranged from "less than high school graduate" through "college graduate" with the level selected most often that of "high

TABLE 6

Educational Level Desired by Agricultural Employers in the Western Part of the Salt River Valley for Employees in Selected Agricultural Occupations

Job Titles	Number of Employees Desired at Each Educational Level						
	Less than H.S. Graduate	H.S. Graduate	Post H.S. Technical	Some College	College Graduate	No Preference	Total
Manager-Foreman Cluster							
Farm Equipment Salesman	-	4	2	6	1		13
Farm Owner-Manager	6	85	3	30	27	10	161
Farm Manager	1	12	2	6	9	6	36
General Farm Foreman	5	90	2	7	8	70	182
Irrigation Foreman	3	8	0	0	3	6	20
Vegetable Foreman	0	1	0	0	2	8	11
Farm Supply Manager	0	15	3	2	13	2	35
Fertilizer & Insecticide Salesman	0	0	2	30	0	0	32
Ag. Loan Officer	0	7	0	1	8	0	16
Gin Manager	0	19	1	2	4	0	26
Ag. Processing Foreman	0	3	0	2	0	21	26
Ag. Processing Manager	0	11	10	0	0	2	23
Farm Service Manager	0	2	0	0	3	18	23
Farm Supply Salesman	0	19	4	6	41	1	71

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TABLE 6 (Continued)

Job Titles	Number of Employees Desired at Each Educational Level						
	Less than H.S. Graduate	H.S. Graduate	Post H.S. Technical	Some College	College Graduate	No Preference	Total
Feed Salesman	0	4	0	0	8	0	12
Dairyman	0	8	2	4	2	2	18
Ranch Foreman	0	10	0	1	0	0	11
Sub-totals for Manager-Foreman Cluster	(15)	(298)	(31)	(97)	(129)	(146)	(716)
Percent of Cluster	2%	42%	4%	14%	18%	20%	100%
<u>Agricultural Mechanization Cluster</u>							
Farm Equipment Mechanic	0	57	18	8	0	31	114
Farm Equipment Serviceman	1	10	0	0	0	1	12
Farm Equipment Partsman	0	10	0	3	1	1	15
Farm Equipment Parts Dept. Mgr.	0	5	4	0	0	1	10
Farm Equipment Welder	1	0	0	0	0	51	52
Ginner	0	6	0	0	0	22	28
Feedmill Operator	14	5	0	0	0	11	30
Feedlot Maintenance Man	0	1	7	0	0	14	22
Sub-totals for Ag. Mech. Cluster	(16)	(94)	(29)	(11)	(1)	(132)	(283)
Percent of Cluster	6%	33%	10%	4%	1%	46%	100%

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TABLE 6 (Continued)

Job Titles	Number of Employees Desired at Each Educational Level						
	Less than H. S. Graduate	H.S. Graduate	Post H.S. Technical	Some College	College Graduate	No Preference	Total
Agricultural Machinery Operation and Irrigation Cluster							
General Farmhand	31	149	1	0	0	283	464
Wheel Tractor Operator	17	30	0	0	0	225	272
Irrigator	9	28	0	0	0	246	283
Harvest Machine Operator	0	7	0	0	0	39	46
Truck Driver	5	37	0	26	0	48	116
Plant Employees	0	6	0	0	0	21	27
Cattle Feeder	15	16	0	0	0	22	53
Sub-totals for Agricultural Machinery Operation and Irrigation Cluster	(77)	(273)	(1)	(26)	(0)	(884)	(1261)
Percent of Cluster	6%	22%	-	2%	-	70%	100%
Ornamental Horticulture Cluster							
Greenskeeper	2	2	0	0	0	20	24
Laborer, Golf Course	10	0	0	0	0	27	37
Park Foreman	0	18	0	0	0	0	18
Landscape Gardener	1	3	40	7	0	1	52

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TABLE 6 (Continued)

Job Titles	Number of Employees Desired at Each Educational Level						
	Less than H.S. Graduate	H.S. Graduate	Post H.S. Technical	Some College	College Graduate	No Preference	Total
Nurseryman	1	19	3	0	6	3	32
Nursery Salesman	6	18	3	10	1	3	41
Nursery Worker	143	24	1	0	0	27	195
Groundskeeper	60	44	0	0	0	10	114
Warehouse Man	0	7	0	0	0	10	17
Sub-totals for Ornamantal Horticulture Cluster	(223)	(135)	(47)	(17)	(7)	(101)	(530)
Percent of Cluster	42%	26%	9%	3%	1%	19%	100%
Livestock Cluster							
Livestock Buyer	0	1	7	4	4	0	16
Butcher	32	6	0	0	0	0	38
Yardman	16	0	0	0	0	2	18
Milker	7	42	0	1	0	28	78
Cowboy	18	16	0	0	0	60	94
Feedmill Foreman	1	8	0	1	0	0	10
Farmhand, Poultry	9	0	0	1	0	3	13

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TABLE 6 (Continued)

Job Titles	Number of Employees Desired at Each Educational Level						
	Less than H. S. Graduate	H.S. Graduate	Post H.S. Technical	Some College	College Graduate	No Preference	Total
Kennelman	25	6	0	0	0	1	32
Veterinarian	0	0	0	0	29	0	29
Sub-totals for Livestock Cluster	(108)	(79)	(7)	(7)	(33)	(94)	(328)
Percent of Cluster	33%	24%	2%	2%	10%	29%	100%
<u>Other Occupations</u>							
Sprayer Pilot	0	7	0	1	0	3	11
Plane Loader	0	26	0	0	0	0	26
Sub-totals for Other Occupations	(0)	(33)	(0)	(1)	(0)	(3)	(37)
Percent of Cluster	-	89%	-	3%	-	8%	100%
TOTALS FOR COMBINED CLUSTERS	439	912	115	159	170	1360	3155
PERCENT OF TOTAL	14%	29%	4%	5%	5%	43%	100%

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school graduate". It may be noted, however, that upon combining the three levels beyond high school, "post high school technical", "some college" and "college graduate" a total of 257 or over one-third of the employees in the manager-foreman cluster were desired with education beyond the high school level.

Agricultural Mechanization Cluster - The educational levels desired for agricultural employees in the agricultural mechanization cluster of job titles may be seen in Table 6 on pages 38 and 39. "No preference" was indicated for 46 per cent of the employees in this cluster. The level of "high school graduate" was desired for one-third of these employees and approximately one in seven were desired at the combined levels of "post high school technical" and "some college". Educational levels of "college graduate" and "less than high school graduate" each accounted for very low percentages of the employment in the agricultural mechanization cluster of job titles.

Agricultural Machinery Operation and Irrigation Cluster - The educational levels desired for agricultural employees in the agricultural machinery operation and irrigation cluster of job titles are shown in Table 6 on page 39. The category of "no preference" was indicated for 70 per cent of the persons employed in the job titles in this cluster with "high school graduate" indicated as the desired educational level for approximately one-fifth of these employees and "less than high school graduate" indicated for 6 per cent. Educational levels beyond high school were indicated for approximately 2 per cent of

the employees in the agricultural machinery operation and irrigation cluster.

Ornamental Horticulture Cluster - The educational levels desired for employees in the job titles in the ornamental horticulture job cluster are shown in Table 6 on pages 40 and 41. Forty-two per cent of the employees in the job cluster were desired at the educational level of "less than high school graduate". It may be noted that two job titles, those of nursery worker and groundskeeper accounted for most of the employees desired at the educational level of "less than high school graduate". For approximately one-fourth of the employees in this job cluster the educational level desired was that of "high school graduate". The category "no preference" was indicated for approximately one in five of the employees in the cluster. For approximately one of eight employees in the ornamental horticulture cluster, educational levels beyond high school were indicated.

Livestock Cluster - The educational levels desired for employees in the cluster of occupations which required competencies in the area of animal science are shown in Table 6 on pages 41 and 42. The desired educational level for employees in this group ranged from "less than high school graduate" through "college graduate" with the category selected most often that of "less than high school graduate" followed by the category "no preference" which was followed closely by the level "high school graduate". Desired educational levels beyond high school were largely at the "college graduate" level for

which one job title, that of veterinarian accounted for most employees desired at this educational level. It may be noted that the two job titles, milker and cowboy, accounted for the majority of the employees in the two categories "high school graduate" and "no preference".

Other Occupations - Desired educational levels for employees in occupations in which ten or more persons were employed were not clustered into one of the above clusters according to patterns of competencies required are also shown in Table 6 on page 42. "High school graduate" was indicated for the majority of persons employed in these job titles.

Totals for Combined Clusters - The totals for each of the desired educational levels for all employees in the job titles shown in Table 6 are shown on page 42. For two of five agricultural employees "no preference" was indicated and for approximately one-fourth to one-third of the agricultural employees "high school graduate" was indicated as the desired educational level. "Less than high school graduate" was selected for an additional 14 per cent of agricultural employees with lower percentages indicated for educational levels beyond high school. When sub-totals for the three educational levels, "post high school technical", "some college", and "college graduate" are combined it is found that education beyond high school was desired for approximately one of seven agricultural employees identified. It should also be noted that when the total for the category "no preference" is compared with the sub-total

in this category for the agricultural machinery operation and irrigation cluster, approximately two-thirds of this total is accounted for in the agricultural machinery operation and irrigation cluster.

Age of Employees

From the data provided in Table 7, it may be seen that mean ages for employees in each of the job titles shown ranged from 18 years for poultry farmhand to 50 years for feedmill operator. It may be noted that, as would be expected, the mean ages of employees were generally higher for persons in the job titles at the managerial and foreman levels than for jobs requiring lesser managerial responsibilities.

Minimum Age for Entry

The mean minimum ages at which employers would hire persons for individual job titles is shown in Table 7 also. Minimum ages for entry ranged from a mean of 13 years for poultry farm hand to 35 years for agricultural loan officer, agricultural processing foreman and livestock buyer. The minimum ages desired for persons employed in job titles in the manager-foreman cluster were generally higher than minimum ages for job titles in other clusters. The higher minimum age for persons employed in this job cluster is, no doubt, a reflection of the greater amount of experience and/or education necessary for employment in these job titles. It may be noted that the minimum age shown for most of the job titles in the manager-foreman cluster are

TABLE 7

Selected Characteristics of Agricultural Employees and Occupations in the Western Part of the Salt River Valley

Job Titles	Mean Age of Employees	Mean Minimum Age For Entry	Mean Monthly Salary*		
			Beginning	Present	Maximum
Manager-Foreman Cluster					
Farm Equipment Salesman	43	24	471	1406	1825
Farm Owner-Manager	45	26	556	564	894
Farm Manager	42	27	778	1007	1416
General Farm Foreman	40	22	502	547	753
Irrigation Foreman	45	22	458	625	800
Vegetable Foreman	28	21	600	616	1000
Farm Supply Manager	38	21	555	917	1361
Fertilizer & Insecticide Salesman	39	21	638	800	1588
Ag. Loan Officer	38	35	754	-	1350
Gin Manager	41	24	500	703	722
Ag. Processing Foreman	41	35	600	600	820
Ag. Processing Manager			642	-	950
Farm Service Manager	41	27	850	-	1147
Farm Supply Salesman	37	21	572	598	1160
Feed Salesman	33	23	525	725	1000
Dairyman	44	28	538	600	898
Ranch Foreman	42	28	525	-	875

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TABLE 7 (Continued)

Job Titles	Mean Age of Employees	Mean Minimum Age For Entry	Mean Monthly Salary*		
			Beginning	Present	Maximum
Agricultural Mechanization Cluster					
Farm Equipment Mechanic	41	20	480	529	741
Farm Equipment Serviceman	47	24	480	567	800
Farm Equipment Partsman	31	23	417	480	700
Farm Equipment Department Manager	40	27	475	-	-
Farm Equipment Welder	30	-	480	620	720
Ginner	41	24	500	703	722
Feedmill Operator	50	23	495	496	724
Feedlot Maintenance Man	36	20	440	560	648
Machinery Operation and Irrigation Cluster					
General Farmhand	34	18	350	392	502
Wheel Tractor Operator	33	17	356	406	439
Irrigator	41	18	359	438	451
Harvest Machine Operator	37	19	361	387	555
Truck Driver	37	21	504	666	747
Plant Employees	-	-	350	476	600
Cattle Feeder	39	17	318	393	530

TABLE 7 (Continued)

Job Titles	Mean Age of Employees	Mean Minimum Age For Entry	Mean Monthly Salary*		
			Beginning	Present	Maximum
Ornamental Horticulture Cluster					
Greenskeeper	36	25	-	766	-
Laborer, Golf Course	25	18	420	579	624
Park Foreman	30	21	500	-	584
Landscape Gardener	30	21	494	-	634
Nurseryman	41	22	409	603	614
Nursery Salesman	28	17	430	698	709
Nursery Worker	29	16	312	313	370
Groundskeeper	29	17	452	500	630
Warehouse Man	-	-	-	-	-
Livestock Cluster					
Livestock Buyer	48	35	933	960	1820
Butcher	-	-	453	520	653
Yardman	42	16	391	-	480
Milker	39	24	415	491	625
Cowboy	34	18	425	479	600
Feedmill Foreman	39	25	667	825	913
Farmhand Poultry	18	13	328	336	384

TABLE 7 (Continued)

Job Titles	Mean Age of Employees	Mean Minimum Age For Entry	Mean Monthly Salary*		
			Beginning	Present	Maximum
Livestock Cluster (Continued)					
Kennel Man	22	18	285	-	500
Veterinarian	31	25	907	-	-
Other Agricultural Occupations					
Sprayer Pilot	34	21	733	874	1333
Plane Loader	21	18	440	480	499

* Cash salary only - does not include housing and utilities when furnished, transportation, insurance coverage, nor bonuses which are sometimes provided.

several years above the age of the average high school graduate.

For those job titles in the agricultural mechanization cluster, the minimum age for entry ranged from 20 to 27 years. These m nimum ages for entry are consistent with the educational levels desired for employees in this job cluster. It was shown that approximately one-half of the employees in the agricultural mechanization cluster were desired at the combined educational levels of "high school graduate", "post high school technical", and "some college".

Mean minimum ages for employees in the machinery operation and irrigation cluster also ranged from 17 to 21 years with all but one of the job titles showing minimum ages of less than 20 years for entry. It should be noted that a mean minimum age of 17 and 18 years were indicated for the job titles of general farmhand, wheel tractor operator and irrigator, which account for approximately one-third of all agricultural employees in the study.

In the ornamental horticultural cluster of job titles mean minimum ages for entry ranged from 16 to 25 years with the higher mean age indicated for job title of greenskeeper. Mean minimum ages less than 19 years were indicated for four job titles in this cluster and and minimum ages of over 20 years for another four job titles. Mean minimum ages for job entry in the ornamental horticulture clusture also generally appear to reflect the educational levels desired for these job titles as shown in Table 6.

Mean minimum ages for entry for job titles in the livestock cluster also appear to reflect differing educational and experience levels desired for these job titles with minimum ages ranging from

13 for poultry farmhand to 35 years for livestock buyer. It should be noted, as shown in Tables 2 and 3, that most employees in the job title of poultry farmhand were part-time employees.

Monthly Salary

It may be seen from the salary data shown in Table 7 that generally salaries increased as level of employment increased with those occupations at the managerial and foreman levels showing the higher mean salaraies at the beginning, present and maximum salary levels. Mean present salaries reanged from a low of $313 for nursery worker to a high of $1406 for farm equipment salesman.

For job titles not showing salary data in Table 7, insufficient data was supplied which prevented arriving at mean salaries for these job titles.

It should be noted that the monthly salaries as shown by mean salaries in Table 7 do not show a true picture of income for many of the occupations listed. Employees in many of the occupations shown, especially those in p oduction agriculture, are provided housing and utilities by their employer. It was also found that employees, especially at the managerial and foreman levels, often receive bonuses, transportation and other employee benefits which are not included in the salaries shown.

Projected Changes in Numbers of Employees

Agricultural employers were asked to indicate, to the best of their ability the numbers of persons whom they anticipated would be employed in each of the agricultural job titles in their firm five

TABLE 8

EMPLOYERS FIVE-YEAR PROJECTED CHANGES IN NUMBERS OF AGRICULTURAL EMPLOYEES IN THE WESTERN PART OF THE SALT RIVER VALLEY BY CLUSTERS OF AGRICULTURAL JOB TITLES*

Agricultural Job Title Clusters	Number of Persons Presently Employed In Job Cluster	Projected Change In Number of Persons Employed 5 Years From Now	Per Cent Change
Manager-Foreman Cluster	729	+ 137	+ 18.8%
Agricultural Mechanization Cluster	298	+ 76	+ 25.5%
Agricultural Machinery Operation & Irrigation Cluster	1447	+ 191	+ 13.2%
Ornamental Horticulture Cluster	530	+ 157	+ 29.6%
Livestock Cluster	328	+ 26	+ 7.9%
Other Agricultural Occupations	37	+ 2	+ 5.4%
TOTALS	3369	+ 589	+ 17.5%

*Projection data is included only for those job titles in which ten or more persons were currently employed in the study area. Specific job titles included in each cluster are those shown in Tables 4 through 7 of this study.

years in the future. Data presented in Table 8 are the result of the summarization by occupational cluster of employers' projections for each of the job titles within the cluster. It should be noted that data presented in Table 8 represent anticipated changes in total numbers of employees within the job clusters shown and that no effort was made to establish rates of turn-over nor numbers of new employees needed for replacement purposes.

Although an over-all percentage change showed 17.5 per cent increase in the anticipated number of agricultural employees in five years, the percentage changes for the various job clusters varied widely ranging from 29.6 per cent increase for the ornamental horticulture cluster to a 5.4 per cent increase in numbers of employees in the job titles categorized as other agricultural occupations. It may be noted that an increase in numbers of employees was projected for each job cluster.

The greatest anticipated increase in number of employees was in the agricultural machinery operation and irrigation cluster although the percentage increase was much lower than that of the next highest numerical increase which was shown for the ornamental horticulture cluster.

Summary of Findings

A total of 3708 persons requiring agricultural knowledge and skills was employed by the 408 agricultural businesses and producers which were identified in the western part of the Salt River Valley. Of this number, 3335 were employed on a full-time basis.

Of the 408 agricultural businesses and producers identified, 132 were engaged in "crop production only". Agricultural employment by these 132 crop producers accounted for over one-third of the full-time agricultural employees in the survey. Other areas of agricultural employment in decreasing order of the numbers of employees were: "ornamental horticulture", "agricultural processing", "farm service", "livestock production only", "livestock and crops production", "farm supply", "agricultural machinery sales and service", "agricultural service", "agricultural finance", "citrus production", and "agricultural research".

In considering both numbers of employees and numbers of businesses a relationship was found of approximately six in production agriculture to five in off-farm agriculture.

A total of 132 different agricultural job titles were identified among the 3708 agricultural employees in the western part of the Salt River Valley. Ten or more persons were employed in each of 52 agricultural job titles with the remaining 80 job titles accounting for a total of 339 persons employed. Numbers of different job titles in an occupational area ranged as high as 37 different job titles which were identified in each of the areas of "agricultural processing" and "livestock production only". Many job titles appeared in more than one occupational area and when numbers were combined for all occupationsl areas one job title, that of general farmhand, accounted for one-third of the total agricultural employment.

Five occupational clusters of agricultural job titles were identified by grouping those job titles which required similar

patterns of agricultural competencies. Clusters thus identified were the manager-foreman cluster, agricultural mechanization cluster, agricultural machinery operation and irrigation cluster, ornamental horticulture cluster, and the animal science cluster.

Seventeen job titles, largely at the managerial, foreman and salesman levels composed the manager-foreman cluster. The 729 employees in this cluster made up approximately one-fifth of the total agricultural employment in the western part of the Salt River Valley. These persons were found to need extensive competencies in the areas of field crops production, agricultural business management and marketing, and the several areas of agricultural mechanziation.

There were 298 persons employed in the eight job titles comprising the agricultural mechanization cluster for which extensive competencies were needed only in one or more areas of agricultural mechanization. Persons employed in most of the job titles in this cluster needed competencies in agricultural machinery operation, daily maintenance, repair and adjustment, and basic shop skills. They also needed competencies in agricultural electrification, soil and water management and basic shop skills.

General farmhands, irrigators and tractor operators formed the nucleus of the agricultural machinery operation and irrigation cluster. These job titles were closely related in that employees were categorized into one of these three job titles upon the basis of whether they performed the duties of the tractor operator only, the irrigator only, or if performing the duties of both they were classified as general

farmhands. The inclusion of four more job titles in this cluster made a total of 1447 persons employed representing 39 per cent of the total agricultural employment in the survey. Competencies needed by persons employed in the agricultural machinery operation and irrigation cluster were largely in the areas of operation, maintenance, adjustment and repair of agricultural machinery and some competencies in soil and water management and field crops production.

An ornamental horticulture job cluster was identified in which 530 persons were employed in nine job titles all of which required knowledge and skill in the area of horticulture. Additional agricultural competencies needed by employees in this job cluster were largely in the areas of agricultural machinery operation and maintenance and soil and water management.

A total of 328 persons were employed in nine job titles in a livestock occupational cluster. Persons employed in the livestock cluster needed rather broad competencies in animal science with most needing some knowledge and skill in agricultural business management. Some job titles in the cluster called for additional competencies in the areas of agricultural marketing, one or more areas of agricultural mechanization, or merchandising skills. In plant science no competencies were indicated as needed by employees in the livestock cluster.

With few exceptions, nearly all persons employed in agricultural job titles in the western part of the Salt River Valley needed competencies in one or more areas of agricultural mechanization. Agricultural mechanization competencies were needed by employees in each

occupational area and at all levels of employment. Generally one-third of all agricultural employees in the survey needed competencies in the operation, daily care and maintenance, and adjustment and repair of agricultural power and machinery. Competencies in overhaul of agricultural power and machinery were needed by approximately one in ten agricultural employees. Approximately one of four needed competencies in the areas of soil and water management and basic agricultural shop skills with one of seven needing competencies in the areas of soil and water management and basic agricultural shop skills with one of seven needing competencies in agricultural electrification and agricultural building and conveniences.

Comparatively large numbers of persons also needed competencies in the area of field crops production and agricultural business management. Competencies in field crops production were needed by approximately one-fourth of all agricultural employees. One of seven employees needed horticultural competencies and very few needed competencies in forestry.

Competencies in records and accounts were needed by 27 per cent of agricultural employees with other competencies in the area of agricultural business management required by at least one in nine employees.

Percentages of agricultural employees needing animal science competencies were comparatively low with the competency needed by most employees, that of livestock handling, required for 13 per cent of the agricultural employees in the study.

The educational level desired for agricultural employees by

their employers ranged from "less than high school graduate" through "college graduate" wi h "no preference" indicated for 43 per cent of the employees. "High school graduate" was indicated for 29 per cent with the remaining 14 per cent desired at educational levels beyond high school.

For employees in the manager-foreman cluster the desired educational level for over two-fifths of these employees was indicated as "high school graduate" while approximately one-third were desired at educational levels beyond high school.

Desired educational levels for employees in the agricultural mechanization cluster "no preference" was indicated for nearly one-half of the employees, "high school graduate" for one-third and approximately one in seven were desired in the combined two categories "post high school technical" and "some college".

"No preference" was indicated for the majority of employees in the agricultural machinery operation and irrigation cluster with approximately one-fifth desired at the"high school graduate" level and "less than high school graduate" indicated for most others in the job cluster.

For the ornamental horticulture job cluster "less than high school graduate" was indicated as the desired educational level for approximately two-fifths of the employees and one-fourth were desired at the "high school graduate" level. "No preference" was indicated for approximately one in five and one in eight were desired at educational levels beyond high school.

Desired educational levels indicated for employees in the

livestock cluster showed less than "high school graduate" for one-third with the categories of "no preference" and "high school graduate" each accounting for approximately one-fourth of the employees. One in ten were desired at the "college graduate" level.

Mean minimum ages at which employers would hire persons for individual job titles ranged from 13 to 35 years with minimum ages generally higher for managerial and professional job titles thus reflecting the increased responsibility or educational requirements for these job titles. For job titles in the manager-foreman cluster, mean minimum ages for entry were generally several years above those of the average high school graduate. Minimum ages for those in the agricultural mechanization cluster were somewhat lower, however, they were consistent with the educational levels desired which were largely at the levels of "high school graduate", "post high school technical" and "no preference". For the majority of job titles in the agricultural machinery operation and irrigation cluster mean minimum ages for entry of 17 and 18 years were indicated. Mean minimum ages from 16 to 25 years were indicated for job titles in the ornamental horticulture cluster. Minimum ages for job entry in the livestock cluster also reflected differing educational and experience levels desired with means ranging from 13 to 35 years.

It was not possible to arrive at definite and comparable salary figures for each agricultural occupation due to the many different patterns of non-cash benefits provided employees such as housing and utilities which are often provided as well as medical insurance and other benefits. Based upon cash salary only, salaries generally increased with those occupations at the managerial and professional

levels showing the higher mean salaries at the beginning, present and maximum salary levels.

Agricultural employers projected an over-all increase of 17.5 per cent in the numbers of agricultural employees in the survey area in five years. The greatest percentage projected increase in the number of agricultural employees was in the ornamental horticulture job cluster with a projected five year increase of 29.6 per cent. Following in order by job clusters were: agricultural mechanization, manager-foreman, agricultural machinery operation and irrigation, and the livestock cluster.

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Recommendations for Planning Educational Programs in Agriculture for the Western Part of the Salt River Valley

Based upon the findings of this study and insight gained in the conduct of the study, the following recommendations are offered for planning educational programs consistent with the agricultural employment and training needs for employment in agricultural occupations in the western part of the Salt River Valley.

1. It is recommended that a post-secondary curriculum in agricultural business management be offered at the mid-management level with major emphasis in the areas of field crops production, agricultural business management and agricultural mechanization. Data from this study supporting the need for such a curriculum shows that:

   a. A "manager-foreman" cluster of 17 job titles was identified in which 729 persons were employed who needed extensive competencies in the areas of field crops production, agricultural business management and agricultural mechanization.

   b. Employers projected an 18.8 per cent increase in the numbers of persons employed within the next five years in job titles in the manager-foreman cluster.

   c. The majority of agricultural employees in the above job cluster were employed at the managerial or foreman levels.

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d. Approximately one-third of the employees in the manager-foreman cluster were desired with education beyond the high school level.

e. The mean minimum ages at which employers would hire persons for job titles in the manager-foreman cluster were generally several years above the age of the average high school graduate.

2. It is recommended that specialized curricula in agricultural mechanization be offered at both the secondary and post-secondary levels.

Emphasis at the secondary level should be placed upon the areas of agricultural mechanization which would provide the basic information and skills that will complement the cluster of occupations in agricultural mechanization as shown in Table 4 of this study. The secondary program should act as a "feeder" program for more specific short-term programs at the post-secondary level. A short-term program at the post-secondary level should be initiated to train farm equipment mechanics. Data from the study supporting the need for such specialized curricula are:

a. An "agricultural mechanization" cluster of eleven job titles was identified in which 298 employees needed extensive competencies only in one or more areas of agricultural mechanization. Nearly one-half of the employees in the agricultural mechanization job cluster were employed in the job title fo farm equipment mechanic.

b. Employers anticipated an increase of over 25 per cent in the numbers of employees in the agricultural mechanization job cluster within the next five years.

c. The desired educational levels indicated for employees in the agricultural mechanization job cluster were: "no preference" for nearly one-half of these employees, one-third at the "high school graduate" level and approximately one in seven were desired in the combined two categories of "post high school technical" and "some college".

d. Mean minimum ages at which employers would hire individuals for most of these jobs, however, indicated that employers would be looking for persons a few years older than the average high school graduate.

3. It is recommended that a specialized curriculum in ornamental horticulture be offered at the secondary level to provide training for entry level jobs in ornamental horticulture. Data supporting the need for such a curriculum shows that:

a. An ornamental horticulture cluster of job titles was identified in which 530 persons were employed in nine job titles all of which required knowledge and skill in the area of horticulture.

b. Numbers of persons to be employed in the job cluster five years in the future, as anticipated by employers, showed the highest rate of increase (29.6 per cent) of the job clusters identified.

c. "High school graduate" was the desired educational level indicated for approximately one-fourth of the employees in the ornamental horticulture job cluster with "less than high school graduate" indicated for approximately two of five and "no preference" for one of five. Educational levels beyond high school were indicated for one of eight employees in the ornamental horticulture job cluster.

d. Ages of 16 to 18 years were shown as the mean minimum ages at which employers would hire employees for the job titles accounting for the majority of employees in this cluster.

4. It is recommended that a basic secondary curriculum in vocational agriculture be offered providing instruction in broad areas of agricultural knowledges and skills needed by the greatest numbers of agricultural employees. Such a curriculum should be designed to provide basic competencies needed to pursue specialized instructional programs in agriculture at the secondary and post secondary levels or to enter employment in one of the many agricultural job titles for which a high school education is desired. Emphasis of such a program should be placed upon those areas of competency in agricultural mechanization, agricultural business management and plant science which are needed by the greatest numbers of agricultural employees. Data

in support of such a program and emphasis are:

a. Competencies needed by the greatest numbers of agricultural employees were competencies in the several areas of agricultural mechanization, field crops production, and agricultural business management.

b. The desired educational level of high school graduate was indicated for 29 per cent of all agricultural employees in the survey with educational levels beyond high school indicated for 14 per cent.

5. It is recommended that a specialized short-term instructional program be initiated at the secondary level for training in agricultural machinery operation and maintenance and irrigation skills. The program should be designed to provide entry level skills to those young persons who, because of lack of interest, limited ability, or other factors, are not likely to complete the regular high school program. Data from the study supporting the need for such a program are:

a. Nearly 40 per cent of all agricultural employees identified in this study as needing knowledge and skill in agriculture were employed in job titles in the agricultural machinery operation and irrigation cluster.

b. Employers projected the greatest increase in numbers employed within the next five years to be in the agricultural machinery operation and irrigation cluster even though the percentage increase would be relatively low.

APPENDIX

SURVEY FORMS

SELECTED BIBLIOGRAPHY

Baker, Richard A. A Study of the Educational Needs for Workers Engaged in Occupations in Off-Farm Agricultural Businesses in Alabama. Auburn, Ala.: School of Education, Auburn University, 1966. 66 pp.

Brum, Herbert D. "Non-Farm Agricultural Employment Opportunities and Training Needs in Ohio. Ph.D. dissertation, The Ohio State University, 1965.

Christensen, Howard H. "Education for Off-Farm Occupations in Nevada". Doctoral dissertation. The Ohio State University, Columbus, Ohio, 1967. 265 pp.

Cushman, Harold R., Christensen, Virgil E., and Bice, Gary R. A Study of Off-Farm Agricultural Occupations in New York State. Ithaca, N. Y.: Rural Department, Cornell University, 1965. 95 pp.

Gadda, H. W. and Pollman, James. South Dakota Agricultural Off-Farm Occupational Opportunities and Training Needs. Bulletin 553. Agricultural Education Department, South Dakota State University, Brookings, S. D., 1969. 15 pp.

Griffin, W. L. Agricultural Occupations Other Than Farming in Missouri. Joint Staff Study, State Department of Education, Teachers of Vocational Agriculture, Agricultural Education Department, University of Missouri, 1964.

Hamilton, James G. Occupational Opportunities and Training Needs for Agricultural Employment in Selected Areas of Arizona - Pinal County. Tucson: Research Report 262 Agricultural Experiment Station, University of Arizona, 1970. 57 pp.

Judge, Homer V. Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Massachusetts. Boston: Division of Vocational Education, Massachusetts Department of Education, 1965. 47 pp.

Langdon, Charles L. A Survey of Agricultural Occupations in Michigan. Lansing: Michigan Department of Public Instruction, 1965. 140 pp.

Loreen, C. O. Occupational Opportunities and Training Needs of Youth for Non-Farm Agricultural Jobs in Washington State. State Staff Study. Agricultural Education Office, Washington State University, Pullman, 1967. 87 pp.

Need, C. O. Jr. Employment Opportunities and Competencies Needed in Farm Occupations in Selected Counties in Kentucky. Frankfort: State Department of Education, 1968. 69 pp.

"State Summary of Final Reports, 1969 Calendar Year", State Department of Vocational Education, Phoenix: Mimeograph.

Thompson, John F. A Guide to Surveying Your Community for Youth Employment Opportunities in Agricultural Businesses and Services. Department of Agricultural and Extension Education, University of Wisconsin, Madison: Mimeograph.

Wagley, L. A. "Educational Requirements for Off-the-Farm Agricultural Occupations in Yuma County, Arizona. Doctoral Dissertation, University of Arizona, 1964.

Warmbrod, J. R. Technical Education in and for Rural Areas: Manpower Needs and Employment Opportunities for Workers Needing Knowledge and Skill in Agriculture. Report No. 2, Urbana: Vocational and Technical Education Department, University of Illinois, 1966. 37 pp.

U. S. Department of Labor. Dictionary of Occupational Titles, Vol. I, Definitions of Titles. Third Edition, Washington, D. C.: U. S. Government Printing Office, 1965.

_____. Dictionary of Occupational Titles, Vol II, Occupational Classification, Third Edition, Washington, D. C.: U. S. Government Printing Office, 1965.

UNIVERSITY OF ARIZONA

Department of Agricultural Education

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Types of employment of persons engaged in agricultural occupations in selected areas of Arizona.

Interviewer _____ Date of Interview _____

FORM I-A

I. Business or service _____
   A. Name of business or service _____
   B. Person interviewed _____
   C. Position _____
   D. Estimated per cent gross income that is agriculturally oriented.
      Per cent _____
   E. Major agricultural products and/or functions of business or service.
      _____

II. Number of employees in this business or service - (total number)_____

For employees needing competencies in agriculture, complete the following:

A. Existing job titles:	Number of Employees			
	Full-time	Part-time	Five years ago	Five years from now
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____

B. Anticipated new job titles:	Full-time	Part-time	Five years from now
1. _____	_____	_____	_____
2. _____	_____	_____	_____

Fill out a separate Form II for each job title listed above which <u>is not</u> on the job title list.

Complete the back of this form for all job titles listed above which <u>are</u> on the job title list.

III. Company willingness to participate in school-employer educational program. (Check all that apply)

_____ 1. Permit students to visit and observe operations.
_____ 2. Employ students on part-time basis during school year and during vacation periods.
_____ 3. Participate in a student's work experience a few hours a day.
_____ 4. Work with school personnel in outlining an educational program which would help prepare students for an agricultural occupation.
_____ 5. Release key employees to assist the teacher in providing instruction.
_____ 6. Not willing.

Job Titles	Number of Employees Full-time	Number of Employees Part-time	Average Age	Minimum Age for Entry	Educational Level Required* (Use item Nos. below)	Monthly Wage or Salary Beginning	Monthly Wage or Salary Present	Monthly Wage or Salary Maximum
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								

*Educational Level Required for Job Title

1. No requirement
2. Less than high school graduate
3. High school graduate
4. Post high school technical
5. Some college
6. Baccalaureate
7. Master's
8. Doctorate

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THE UNIVERSITY OF ARIZONA

Department of Agricultural Education

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Pre-Employment and Continuing Education Needs of Persons Engaged in Agricultural Occupations in Selected Areas of Arizona.

Interviewer _____ Date of Interview _____

FORM II - A

I. Name and address of firm _____

_____

II. Job Title _____

III. Number of workers in this job title: Full-time ____ Part-time ____ Total ____

IV. Average age ____. Is there an age requirement for this job? No ____ Yes ___

Minimum for entry _____, Maximum for entry _____

V. Activities and duties of persons with this job title _____

_____

_____

VI. Agricultural areas with which worker must possess knowledge and skills to do the job:

Animal Science:	Check Abilities Needed to Perform This Job:
1. Breeding Farm Animals	_____
A. Genetics	_____
B. Reproductive morphology	_____
C. Diseases	_____
D. Breeding problems	_____
E. Artificial insemination	_____
F. Breeding skills	_____
G. Selection of breeding stock	_____
2. Livestock Feeding and Nutrition	
A. Body process of nutrition	_____
B. Food nutrients and their sources	_____
C. Ration formulation	_____
D. Feeding systems	_____

Check Abilities Needed To Perform This Job:

3. Animal Sanitation, Disease and Parasite Control
   A. Characteristics of healthy animals _____
   B. Symptoms of common diseases and parasites _____
   C. Treatment of common diseases and parasites _____
   D. Environmental conditions conducive to good health _____
4. Housing and Equipment
   A. Maintenance of equipment, corrals, and fences _____
   B. Construction of equipment and housing _____
   C. Design and construction _____
5. Management of livestock operation _____
6. Processing of livestock products (meat, milk, wool, etc.) _____
7. Marketing of livestock products (meat, milk, wool, eggs) _____
8. Livestock handling _____

Plant Science:

1. Ornamental Horticulture
   A. Plant propagation _____
   B. Greenhouse management _____
   C. Soils and fertilizations, water, etc. _____
   D. Control of insects _____
   E. Control of diseases _____
   F. Control of weeds _____
   G. Marketing and management _____
   H. Turf management _____
2. Field Crop Production (include vegetable & fruit Prod.)
   A. Plant propagation, seed production _____
   B. Plant growth _____
   C. Control of insects _____
   D. Control of diseases _____
   E. Control of weeds _____
   F. Soils _____
   G. Fertilization _____
   H. Irrigation _____
   I. Marketing and management _____
3. Forestry
   A. Establishing a stand _____
   B. Managing a stand _____

	Check Abilities Needed To Perform This Job:
C. Fire Control	_____
D. Control of diseases and insects	_____
E. Harvesting	_____
F. Marketing	_____
G. Pulp wood production	_____
Agricultural Business Management and Marketing:	
A. Records and accounts	_____
B. Budgeting and analysis	_____
C. Agricultural financing, credit and insurance	_____
D. Farm organization and planning	_____
E. Labor management	_____
F. Marketing problems and practices	_____
G. Agricultural policy	_____
H. Agricultural and related price analysis	_____
I. Cooperative and business organization	_____
J. Mechanization systems	_____

Agricultural Mechanics Area:

	Operation	Daily Care & Maintenance	Repair & Adjustment	Overhaul
1. Agricultural Power and Machinery				
A. Tractors, wheel	____	____	____	____
B. Crawler tractors	____	____	____	____
C. Primary tillage equipment	____	____	____	____
D. Cultivating equipment	____	____	____	____
E. Harvesting equipment	____	____	____	____
F. Small gasoline engines	____	____	____	____
G. Materials handling equipment	____	____	____	____
2. Agricultural Electrification				
A. Wiring			_____	
B. Motors, maintenance and repair			_____	
3. Soil and Water Management				
A. Land measurement			_____	
B. Surveying and leveling			_____	
C. Irrigation systems			_____	
D. Pump maintenance			_____	
E. Soil testing			_____	
F. Irrigation structures			_____	
G. Water measurement			_____	
H. Efficient water use			_____	

Check Abilities Needed To Perform This Job:

4. Agricultural Building and Conveniences
   - A. Design of structures _____
   - B. Construction _____
   - C. Maintenance and repair _____
   - D. Water systems _____
5. Basic Agricultural Shop Skills
   - A. Arc welding _____
   - B. Acetylene welding _____
   - C. Plumbing _____
   - D. Hot and cold metal _____
   - E. Carpentry _____

Merchandising:

- A. Warehousing _____
- B. Sales _____
- C. Inventorying _____
- D. Handling cash - cash register _____
- E. Advising customers _____
- F. Using invoices _____
- G. Handling customer accounts _____
- H. Dispatching, consigning, and packaging of materials _____
- I. Routing and delivering _____
- J. Use of catalogues and ordering _____
- K. Preparing displays and advertising _____

VII. Educational level required for job title (Check only one)

_____ 1. No requirement

_____ 2. Less than high school graduate

_____ 3. High school graduate

_____ 4. Post high school technical education

_____ 5. Some college

_____ 6. College degree: Baccalaureate ____, Master's ____, Doctorate ____

VIII. Residential background preferred: Farm _____, No preference _____

IX. Farm Experience: Needed _____ Not needed _____

X. Experience desired to enter this job title: _____

_____

XI. Wage or salary per month:

Beginning _____ Maximum _____ Present _____

VT 014 235
CRAWFORD, EVERETT
PUBLIC SERVICE EMPLOYMENT PROGRAMS: AN OPPORTUNITY AND A CHALLENGE.

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IDENTIFIERS - *EMERGENCY EMPLOYMENT ACT; EEA

ABSTRACT - THE EMERGENCY EMPLOYMENT ACT WILL PROVIDE 130,000-150,000 JOBS AND WILL SERVE AS A NATIONAL DEMONSTRATION ON THE VIABILITY OF PUBLIC SERVICE EMPLOYMENT FOR THE UNEMPLOYED. THE PROGRAM WILL PROVIDE INCOME MAINTENANCE, TRAINING, AND WORK EXPERIENCE FOR ENROLLEES, AND IT WILL FURNISH THE MANPOWER NEEDED TO HELP MEET THE PRESSING SOCIAL NEEDS OF STATE AND LOCAL GOVERNMENTS AND DEPRESSED AREAS. THIS REPORT OUTLINES THE WAYS IN WHICH GOVERNORS AND LOCAL OFFICIALS CAN PLAN AND ADMINISTER THEIR PROGRAMS. (BH)

VT 014 235

PUBLIC SERVICE EMPLOYMENT PROGRAMS

AN OPPORTUNITY AND A CHALLENGE

by Everett Crawford

VT014235

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Pamphlet No. 8

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FOR IMMEDIATE RELEASE

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The manner in which the Emergency Employment Act (EEA) is implemented and administered may well play a significant role in the development of future public service employment and revenue sharing programs.

This is the conclusion of Public Service Employment Programs: an Opportunity and a Challenge, a report by Everett Crawford released today by the Center for Governmental Studies, a private nonprofit research organization located in Washington, D. C..

The emergency employment program will produce between 130,000 and 150,000 jobs, which will have only a modest impact on unemployment. But the program can have a broader purpose of serving as a national demonstration on the viability of public service employment. If successful, this approach can become a permanent feature of national manpower policy aimed at full employment.

Like other manpower programs, public service employment can be used a pursue a number of goals and purposes. The report lists three kinds of benefits for enrollees: income

maintenance, training, and work experience. It also suggests several public benefits of such programs: aid to state and local governments and depressed areas; developing approaches to unmet public needs; economic benefits in terms of helping to put a ceiling on the unemployment rate and generating additional GNP.

The bulk of the report is concerned with outlining the ways in which governors and mayors and other local sponsors of public service employment programs would go about planning and administering their programs.

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PUBLIC SERVICE EMPLOYMENT PROGRAMS:

an opportunity and a challenge

by
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CENTER FOR GOVERNMENTAL STUDIES
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FOREWORD

With astonishing regularity during the nineteen-sixties, special commissions of the federal government advocated public service employment as one part of the solution to the problem they were studying: National Commission on Technology, Automation, and Economic Progress in February 1966; President's Commission on Law Enforcement and Administration of Justice in February 1967 (for youth); National Advisory Commission on Food and Fiber in July 1967 (for rural areas); National Advisory commission on Civil Disorders in March 1968; and President's Commission on Income Maintenance Programs in November 1969.

In Congress the Senate Subcommittee on Employment, Manpower and Poverty recommended in 1964 that "Federal, State and local governments should undertake a joint program to directly employ the hard-cord unemployed in poverty-stricken areas, both rural and urban." The same subcommittee developed the "Emergency Employment Act of 1967," which came within five votes of passing the Senate. In that and the following years public service employment bills were introduced in the House of Representatives but never came out of committee. Finally in December 1970, Congress enacted a public service employment program as part of a comprehensive reorganization of manpower programs, but this bill was vetoed by President Nixon. This year Congress tried again and passed the "Emergency Employment Act of 1971," which the President signed on July 12.

The implementation of this program is a major challenge to federal, state, and local officials who will be responsible for carrying it out. Everett Crawford has written this pamphlet to assist them by pulling together available practical knowledge about public service employment. He draws upon both the experience of the thirties with the WPA and of the sixties with such manpower programs as the Neighborhood Youth Corps, Operation Mainstream, and New Careers. He also relies upon his extensive knowledge of the operations of state and local government, and particularly a study by the Center on decentralization of manpower programs.

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Howard W. Hallman
President

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I. INTRODUCTION

Public service employment is now becoming part of national manpower policy, and it is likely to remain so for some time to come. During the 1960s, sometimes called the "manpower decade," manpower policy emphasized training, education, and other measures to improve the employability of those who were unemployed or working at extremely low wage levels.

The manpower decade started with relatively high average annual unemployment, 5.5 percent in 1960, and it ended with a relatively low annual figure, 3.5 percent in 1969. Unemployment, however, rose sharply in 1970. Although the average annual rate for 1970 was 4.9 percent, the year ended with a rate of 6.2 percent in December, and during the first six months of 1971 the monthly unemployment rates averaged about 6 percent.

Unemployment has been a recurring problem in our recent history. There were two recessions in the post-Korean war period in the 1950s, and the 1960s began with the economy sluggish and unemployment high. Various measures were undertaken to tackle the problem of unemployment. First a tax cut and then increased federal spending provided economic stimulus and, by adding to aggregate demand for goods and services, created more jobs. Simultaneously regional economic development and manpower programs attacked unemployment resulting from structural and technological changes in the economy. These combined measures worked, for the economy underwent a prolonged expansion starting in about 1962 and lasting until 1969. Unemployment responded to these changes and began to drop at mid-decade: 4.5 percent in 1965, 3.8 in 1966 and 1967, 3.6 in 1968 and 3.5 in 1969.

However, inflation became an increasing problem as the Viet Nam war was partly financed through deficit spending. The economic policies of 1969-71 aimed at curbing inflation have reduced the pace of economic growth and caused rising unemployment.

Even when unemployment was being reduced in the sixties it became clear that the residual unemployment was not falling equally

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throughout the entire population. Joblessness was heaviest among residents of urban ghettoes and depressed rural areas. Its impact fell mainly on blacks, Chicanos, poor southern and Appalachian whites, American Indians, and other minorities. It affected both younger workers, 16 to 21, and older workers, those over 50. These comprised the groups we came to refer to as the "hard core" unemployed, or the "disadvantaged."

Two schools of thought, not necessarily incompatible, emerged as to the nature of the problem and the appropriate solutions to it. One held that the employment problems of the hard core were primarily due to deficiencies in their employability and that the appropriate response for manpower policy would be to stress programs designed to overcome their shortcomings. This meant training, education, counselling, and services designed to improve the quality of this potential labor supply. The other school of thought held that although the employability of the hard core might be impaired, the primary problem was that there were not enough jobs. Not enough jobs overall, and not enough jobs in locations where these people could take advantage of them. From this point of view, job creation must be an integral part of the solution. Adherents to this school believe that job creation through economic development is part of the answer but that a substantial program of public service employment is necessary if significant reductions are to be made in the number of hard core unemployed.

To some extent national manpower policy followed both schools of thought although by far the largest federal investment was put into programs designed to improve the employability of the hard core unemployed. However, such programs as the Neighborhood Youth Corps, Operation Mainstream, the resident employment provisions of the Community Action Program, and New Careers can be classified as job creation programs, though most are justified on other grounds. But these were considered insufficient by many, and there have been persistent recommendations for major public service employment programs from many quarters—including some from the Congress itself—since the mid-1960s.

These pressures heightened in 1970 as unemployment increased, hitting not only the hard core but also affecting blue collar and professional workers in the aerospace and defense related industries and returning veterans of the Viet Nam war.

Manpower reform legislation containing a public service employment component was passed but vetoed in 1970. By now, however, there seems to be wide agreement on the necessity for a program of public service employment, and several different approaches are before the nation. The Nixon Administration has proposed a Manpower Revenue Sharing bill which authorizes a program of transitional public service employment. The Opportunities for Families Program of the welfare reform act (H.R.1) negotiated between the Administration and the House Ways and Means Committee contains an $800 million public service employment component. On July 1, 1971, the Congress approved S. 31, the Emergency Employment Act, which authorized $1.75 billion for transitional public service employment during fiscal years 1972 and 1973 which will support an estimated 200,000 jobs. This was signed by the President on July 12, as Public Law 92-54.

A feature common to all of these approaches is the fact that the programs will be run by state and local governments, which will have considerable discretion as to the use of funds. Except for the few small programs mentioned earlier, public service employment is to a large extent a new and uncharted area for the nation—there have been no large programs since the 1930s. It will be a challenge for everyone involved, especially the state and local sponsors. The purpose of this pamphlet is to examine the issues which state and local sponsors must consider in designing and administering their public service employment programs.

(NOTE: This pamphlet was completed during the period of final passage of the Emergency Employment Act. This was before the development of guidelines for the Act by the Department of Labor. Throughout the pamphlet, the term "state or local sponsor" is used to denote the state or local agency which would apply to the federal government for public service employment funds and be responsible for their state or local administration. Tentative guidelines developed by the Department use the term "program agent." That term appears to have the same general meaning as sponsor. In the interest of expeditious publication, the original terminology of the pamphlet has been retained.)

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II. PURPOSES OF PUBLIC SERVICE EMPLOYMENT

DUALITY OF PURPOSES IN MANPOWER PROGRAMS

In terms of goals and purposes, manpower programs, as they evolved in the 1960s, have always tried to serve two general purposes: (1) to provide services and benefits to individual participants enrolled in the various programs; and (2) to achieve or to facilitate the achievement of some putative public good. Specific goals and purposes may vary from program to program, but the general principles appear to hold true for all.

For example, the New Careers Program was designed to provide training in a career field and some income maintenance for persons selected from disadvantaged groups. Income maintenance, in the form of training stipends, was to provide immediate tangible assistance to enrollees, while the training was supposed to have more long term benefits for them. In theory, at least, the training program was supposed to be a beginning of a career in a human service field.

The public good intended to result from the New Careers Program was a reform of personnel management in the civil service and private nonprofit sectors. New Careers is supposed to bring about job restructuring and the development of a group of paraprofessional workers to share the workload of professionals, who are in short supply in many human service programs.

NATIONAL PURPOSES OF PSE

Looking at the recently adopted Emergency Employment Act and the other proposals, we find that public service employment (PSE) programs likely will have to serve a variety of purposes. Although public service is a manpower program, it can be much more.

PSE BENEFITS TO ENROLLEES

The most immediate benefit of a PSE program to any enrollee is *income maintenance.* Public service employment will provide an income

to any unemployed person enrolled in the program whether such a person is temporarily out of work because of economic conditions, or whether he or she is one of the long-term unemployed. If the work performed is generally considered (by both the enrollee and the public) to be socially useful, income maintenance will have some by-products which are socially desirable. It allows the enrollee the dignity of work, which is still held in high esteem in this nation, and if wages approach adequacy of need, it at least holds down public assistance costs in terms of recipients of both full and supplemental assistance.

Other benefits to enrollees may accrue, depending upon the kinds of programs established and the types of persons enrolled. If such programs have substantial *training* components, they can be of considerable benefit to disadvantaged enrollees whose employability is marginal. Programs may assist non-disadvantaged workers to retain their skills. Some types of projects may also be useful in providing *work experience* to teen-age enrollees. Even highly labor intensive projects involving nothing more complicated than rakes, shovels, and wheelbarrows can supply useful work experience for such youngsters. It is generally accepted that the labor market is not especially hospitable to the very young, and through PSE they could gain some work experience and income, but the principal value would be derived from the opportunity to develop sound work habits and mature in a job situation.

The issue of the relative emphasis as among the three goals or benefits to enrollees–income maintenance, training, and work experience–will vary according to place, economic conditions, and the composition of the unemployed population. Moreover, the emphasis on benefits to individual enrollees may also be modified by choices among public benefits to be derived from PSE programs.*

PUBLIC BENEFITS OF PSE

In drawing a distinction between the benefits to enrollees and the public benefits of PSE, we do not intend to suggest that the total

*Government sponsored employment for the physically or mentally handicapped who are unlikely to ever become competitive in the labor market can be a useful part of PSE as the European experience has shown. Sheltered workshops and similar activities are, however, beyond the scope of this paper.

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benefits to enrollees do not add up to a public benefit. Income maintenance for substantial number of people who perform useful services is a public good. Contributing to the upgrading of the workforce through training and work experience is a public good. But as we conceive of a major PSE program, it is more than either an income support program or a manpower program. There are four kinds of public benefits to be derived from PSE (not necessarily in the order to importance):

Aid to state and local governments and depressed areas. On the one hand, many state and local governments are now, for various reasons, caught in a revenue squeeze, and some local governments and states have made or are facing cuts in essential services. And on the other hand, some areas of the nation have experienced depletion of natural resources and high unemployment and substantial out-migration of their population because of the lack of employment opportunities. Public service employment programs can be used as a means of bringing federal assistance to both impoverished local governments and depressed areas, but the uses would be different in each type of locale.

PSE used in aid of state and local governments can be considered a form of revenue sharing. Funds for public service employment could be used to allow state and local government to employ the personnel necessary to maintain public services which have been reduced or are in danger of reduction because of the revenue crisis. Funds going to aid depressed areas would be used for job creation purposes in the economic sense. For the need in such areas as Eastern Kentucky and many other places in Appalachia—as well as in some equally depressed urban ghettoes—is for jobs. Used in creative combination with other federal and state programs, PSE might have a significant impact on the employment situation in depressed rural areas, and the combination might be used to influence regional growth patterns.

Unmet public needs. The catalogue of unmet public needs is long. Health care and the environment are the fields receiving the most prominent attention at present, but there are many others, such as education, park development, housing, and transportation. The national interest in all of them is strong. PSE can be used to support activities already under way in these fields and can by used to stimulate development of local programs.

Economic effects of PSE. The question of the economic effects of public service employment programs has not been fully explored by professional economists. For example, there seems to be no detailed study of the economic effects of the WPA, the Works Progress Administration—a major federal employment program established in the depression of the 1930s.*

Yet two things seem reasonable. Unemployment at this writing is near six percent of the labor force, and many economists predict that it will continue at this level for sometime to come in spite of current expansionary government fiscal and monetary policies. To the extent that people are put to work under PSE programs, such programs will begin to put a ceiling on the unemployment rate. Moreover, the wages paid to unemployed persons hired on PSE projects can be expected to go into immediate circulation—not under mattresses or into savings accounts—and these funds should have generally stimulating effect on the economy. Bennett Harrison of the University of Maryland** has developed figures to show that each dollar invested in a new public service worker from an urban ghetto will result in the generation of extra Gross National Product (GNP) in a range of $4.23 to $12.10 over a five year period. Harrison's work is an extension of U. S. Department of Commerce studies of the GNP contributed by all government workers at all levels during the period 1946-1965.

We think that the economic effects of PSE constitute an important public benefit of such a program, but knowledge of this subject is limited. It is an area ripe for further research.

Stimulating institutional change. Institutional change is still a goal of many social programs, and it is still needed in the field of public employment. Just about every piece of manpower or public service employment legislation introduced during the past five years has made reference to the need to remove "artificial barriers to employment." The goal continues to elude us. We still have discrimination on account of age, color, and sex. And in many cases we still have archaic civil

*For a brief description of WPA see Alden F. Briscoe, "The WPA: What is to be Learned?", a Center for Governmental Studies Issues Paper (Washington 1971).

**"Public Service Jobs for Urban Ghetto Residents," *Good Government,* Washington, D.C.: National Civil Service League, Fall 1969 pp. 16-18.

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service requirements and personnel management practices which contribute to discrimination and inefficient management.

Some inroads have been made in these areas with existing programs but more is needed. PSE offers an opportunity to stimulate further change.

PSE PURPOSES AND THE LOCAL SPONSOR

As indicated above, the legislation establishes broad, general national goals for the public service employment program. Implementing regulations or guidelines, adopted by the Department of Labor, will to some extent limit the broad statements of purpose and will sharpen the focus of the national program. They will define the boundaries of choice and discretion open to the state or local sponsor. But state and local sponsors will be the ones who determine the direction of the programs in their areas. The sponsors will have to establish which benefits for unemployed persons will be stressed and which public goals are to be pursued.

The kinds of analysis and planning necessary to go about establishing priorities and goals for a public service employment program are different from those previously required of state and local units of general government. (Local government's planning for community action and model cities programs is somewhat analogous, however.) The elements of these activities are discussed in the sections which follow.

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III. PLANNING FOR LOCAL PUBLIC SERVICE EMPLOYMENT

GENERAL

Sponsors of public service employment programs will have a large number of the usual administrative functions to perform in securing funds for and in conducting their projects. It is not our purpose here to discuss those functions in any detail. Rather our purpose is to consider the hard decisions which governors, mayors, and boards of county commissioners must make before they establish machinery for the sponsorship structure and begin the process of applying for funds.

The federal authority for public service employment programs will be broad; there is a large "laundry-list" of acceptable areas in which projects may be undertaken. Federal law says that unemployed and underemployed people will be eligible for employment; special consideration will be asked for unemployed veterans of the war in Indochina and for "graduates" of manpower training programs for whom employment is otherwise not available. The rub will come when appropriations are made and funds are allocated to the states and jurisdictions within states.* The funds made available will not be sufficient to support a program to tackle the total unemployment problem in any service area, and sponsors—while operating within the general statements of federal policies—will have to establish priorities as to who will be employed and the program goals to be pursued.

These decisions will influence not only the kinds of projects to be developed, but they may also affect the nature of the sponsoring mechanism itself. This will be discussed in more detail in a later section.

DEVELOPING A PROFILE OF THE UNEMPLOYED

One of the first activities the sponsor must undertake is an analysis of the unemployment which exists in the jurisdiction it serves.

*Funds will be allocated to the states and local areas by formula. It is assumed that sponsors' planning will proceed on the basis of general knowledge as to the amounts of funds available to them.

Although unemployment is high nationally, conditions tend to vary widely between states and sometimes within states. It will be necessary for the sponsor to identify the character of the unemployment in its service area. For some areas, the unemployed population may still be made up principally of the hard core whom we described earlier. But for other communities, the unemployment profile includes many people with useful skills, good work habits, and strong attachment to the labor force. By now almost all communities have appreciable numbers of unemployed veterans of the Viet Nam conflict. Conditions will vary between larger cities and rural areas and small towns. Youth unemployment, for example, will run highest in urban ghettoes while unemployment among older workers will be highest in the less populated regions.

Development of the profile of unemployment will be a new challenge for some areas of general government while for others it will not be. The mayors and other chief elected officials of the cities which received manpower planning grants in 1970 should have already done most of the required analysis or at least know where to gain access to the necessary data.

The following discussion of the national unemployment figures will illustrate the kind of analysis that would be useful in developing the profile of unemployment.

Official statistics show more than five million persons unemployed on a national basis, but this understates the problem. To determine total need, we should add those who are not in the labor force by conventional definition of unemployment because, even though able to work, they have become discouraged with prospects and have quit looking for jobs. Also, there are the underemployed, that is, persons working only part-time but prefering full time work and persons working full time at wages below the poverty level. These groups altogether constitute the universe of potential individual beneficiaries of public service employment programs. Numerically, the universe of the unemployed and underemployed is well in excess of five million persons. But that number standing by itself is not instructive as to the kinds of programs and policies which might be developed under the general heading of public service employment programs. Disaggregation of the unemployment data will help to sharpen some of the issues regarding program needs.

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UNEMPLOYMENT BY AGE, SEX, AND COLOR

Average unemployment during the first quarter of 1971 was of 4.9 million, distributed in the manner shown in the following table.

TABLE 1*

UNEMPLOYMENT 1st QUARTER 1971
BY AGE, SEX, AND COLOR
(figures in thousands)

	Total Unemployed	Both Sexes 16–19 years	Men over 20 years	Women over 20 years
Total	4,972	1,309	2,036	1,628
White	4,092	1,060	1,716	1,316
Nonwhite**	880	249	320	312

When translated into rates these unemployment figures tell a more revealing story. Unemployment still falls heaviest on the young and the black, although during 1970 the rates of increase in unemployment was slightly higher for whites than nonwhites.

In the 16-19 age group, the first quarter 1971 unemployment rate for whites was 15.7 percent and for nonwhites was 31.8 percent. For white men in the over-20 age group, the rate was 4.0, but for nonwhite men the rate was 6.7. Rates for women over 20 years of age were somewhat higher: white women 5.3, nonwhite women 8.3.

Further detail is available as to unemployment rates by age and sex

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* The sources for this table and other statistics in this section unless otherwise specified are the "Current Labor Statistics" for June 1971 found in *Monthly Labor Review* June 1971 (U.S. Department of Labor, Bureau of Labor Statistics), pp. 105 ff.

** Primarily black, but includes a small number of members of other nonwhite minorities.

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but is not broken out by color. The following table shows this information for April 1971:

TABLE 2

UNEMPLOYMENT RATES BY AGE AND SEX,
April 1971
(Percent)

	Total	Male	Female
Total 16 years or over	6.1	5.3	7.3
16–19 years	17.2	16.5	18.2
16–17	18.3	18.5	17.9
18–19	15.8	14.9	16.9
20–24 years	10.4	10.5	10.3
25 years and over	4.0	3.5	5.0
25–54	4.2	3.4	5.5
55 and over	3.6	3.7	3.4

When arrayed according to the gross characteristics of age, sex, and color, the unemployment data show several things, most of which are not new. Unemployment is highest among young people; 17.5 percent for those 16 to 19 years of age and almost 10 percent for those 20 to 24. Rates drop off sharply for those in the prime working ages 25 to 54. Unemployment is almost twice as heavy among blacks as whites. And except for the older age group (above 55) unemployment is higher for women than men.

Information is available nationally on unemployment by marital status and the unemployeds' status as head of household.* The data show that overall the unemployment rates for married people are much lower than those for single people, and that overall heads of households have a somewhat lower unemployment rate than the total unemployed population. However, current data show that younger heads of households (16-24 years of age) have substantially higher rates of unemployment than those over 24 years of age, and that female heads

See "Household Data" (Tables A-8 and A-9) in *Employment and Earnings* published monthly by the U. S. Department of Labor, Bureau of Labor Statistics.

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of household are experiencing much higher rates than male heads.

The Department of Labor (BLS) also maintains information on he duration of unemployment. Between June 1970 and June 1971 the percentage of short term unemployment (less than five weeks) dropped from 62.6 percent to 54.2 percent, and there was a sharp increase in the longer term unemployment (15 weeks or more). Data on the duration of unemployment are also provided in terms of age, sex, color, and marital status. These data should provide an important input to planning. Sponsors will want to make analyses of such data for their own labor market areas. This information may have an important bearing on the establishment of local priorities.

Other kinds of disaggregation are possible and help to add further dimension to the problem.

UNEMPLOYMENT BY OCCUPATION AND INDUSTRY

In recent months, the press has given considerable attention to rising unemployment among professionals and blue collar workers in aerospace and defense-oriented industries. Since aerospace especially was the glamor industry of the 1960s, hard times in that field have heightened general interest in the unemployment problem. During 1970 unemployment did go up substantially among occupational groups thought to have strong attachments to work. The following table shows unemployment rates for major occupational groupings in April 1971 and the annual averages for 1969 and 1970.

Table three shows an appreciable increase for each of these groups between 1969 and the end of the first quarter 1971. Data from earlier years show much lower unemployment rates for the general categories "white collar workers" and "blue collar workers." In 1967, for example, the rate for the former was 2.2 percent and for the latter 4.4.*

A review of unemployment by industrial groupings during 1970 shows substantial increases in almost every category. Overall unemploy-

*U. S. Bureau of the Census, Statistical Abstract of the United States: 1970. (91st edition) Washington, D.C., 1970, p. 216.

TABLE 3

UNEMPLOYMENT RATES BY PRINCIPAL OCCUPATIONAL GROUPS, APRIL 1971 AND ANNUAL AVERAGE FOR 1970 and 1969

OCCUPATION	April 1971	Annual 1970	Average 1969
White Collar Workers	3.8	2.8	2.1
Professional & Managerial	2.6	1.7	1.2
Clerical Workers	5.2	4.0	3.0
Sales Workers	4.5	3.9	2.9
Blue Collar Workers	7.4	6.2	3.9
Craftsmen & Foremen	4.5	3.8	2.2
Operatives	8.6	7.1	4.5
Nonfarm Laborers	10.2	9.5	6.7
Service Workers	6.3	5.3	4.2

ment among nonagricultural private wage and salary employees increased from 3.5 percent to 6.4 percent. In the construction industry unemployment rose from 6.0 to 11.0 percent. Unemployment in manufacturing rose from 3.3 to 7.6 percent at the end of 1970 (although that increase may have been somewhat exacerbated as a result of the effects of the General Motors strike in the fall of 1970).

UNEMPLOYMENT BY LOCATION

The unemployment increase which occurred during late 1969 and during 1970 has hit unevenly around the country. That unemployment has been severe in aerospace and defense-oriented industries is well-known. Thus, such areas as Seattle, Washington; Southern California; the Cape Kennedy area of Florida; and certain areas of Texas have experienced high unemployment among highly qualified professional and technical workers–unemployment that has been highly publicized.

But, in addition to these areas whose local economies depend

substantially on aerospace and defense spending, a number of rural and urban poverty areas—already plagued by high unemployment—also have appreciably higher rates. These would include Appalachia, and rural south and areas like Watts in Los Angeles, the Bedford-Stuyvesant area of New York City, and other urban ghettoes.

Recently issued data on "The Employment Situation and Urban Poverty Neighborhoods," Fourth Quarter 1970,"* show that the unemployment increase in such neighborhoods** followed the same trends as national averages. Since, however, these rates were starting from a much higher base, their overall rates are almost twice as high as the national figures. As might be expected unemployment was highest among black and other nonwhite, urban teenagers (44.2 percent as against 32.0 percent national average).

Using Bureau of Labor Statistics data on labor market areas and unemployment insurance data from the state employment security agency, local sponsors will be able to make similar analyses for their own local areas. The importance of the data analysis is stressed here for purposes of program planning. No inferences should be drawn to the effect that the data for such analyses can be used to establish either sponsor or participant eligibility. That will depend upon DOL guidelines.

DESIGNING LOCAL PROGRAM MIX

The local program mix will be determined by two major factors: The local profile of the unemployed and local public needs.

UNEMPLOYED POPULATION

The profile of the unemployed population will have a number of important implications for development of a public service employment policy on both the national and local levels.

On a national basis about three-fifths of the unemployed population

*BLS Washington, D.C., January 25, 1971.

*Urban poverty neighborhoods in the 100 largest SMSAs.

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would appear to be made up of the disadvantaged persons who comprised the bulk of the unemployed population during the 1960s. The other two-fifths consists of the newly unemployed. The former group, the disadvantaged, consists of several subgroups: young people, aged 16-19; older workers over 55 years of age; and workers in the prime working age group 20-54 who have marginal employability due to inadequate skills, obsolescent skills, and limited opportunities for work. The latter group, the newly unemployed, also consists of a number of subgroups: teenagers 16-19 years of age just entering the labor force; young adults, primarily young men age 20-24 reentering the civilian labor force after military service; and a number of people in the prime working age group with good attachment to work (including a substantial number of professionals) who are experiencing unemployment in the durable goods manufacturing industry due to the slow down in the economy and the reduction in defense and aerospace spending.

On a local basis, the mix of unemployed may well vary from the three-to-two ratio described here. Consequently, local analyses will be required for planning purposes.

But even the gross analysis set forth above does suggest certain program goals to be kept in mind with regard to the various subgroups. That all need some form of income maintenance is obvious, but beyond this, needs vary according to group.

The teenagers, age 16-19, regardless of whether they are advantaged or disadvantaged, need work experience and the beginning of skills training. Some may need other things, such as basic education, health care, and other supportive services.

The next group of young people, many of them Viet Nam veterans, will have varying needs. Some will have had as little work experience, aside from military experience, as the teenage group. Emphasis in this group, however, probably will be on skills training and the development of job opportunities.

In the next age group—those 25-54—we will find a number of subgroups, each with somewhat differing needs. One subgroup consists of those who are out of work because of changes in the economy; for

most of them earning money during an interim period will be the primary need. Most can and will return to regular employment as the economy regains forward momentum. But some may remain unemployed because of a lessening demand for their skills, in which case retraining may be required. A second subgroup consists of those who live in depressed areas where there are few job opportunities; their needs may be more complex. Job creation and economic development may help people in such areas, but these efforts likely will require the support of skills and other training. If local job creation is not possible, some of these may ultimately need to relocate. In which case, skills training and much of the package of manpower-related supportive service may be required.

The third subgroup in the prime working age group consists of those who are generally disadvantaged in terms of their employability. Their needs, in addition to income maintenance, involve the entire range of manpower services.

Public service employment programs can be used to try to meet many of the needs of the unemployed, but for those living in distressed and depressed areas, PSE must be conducted in concert with more comprehensive manpower programs in order to meet training and supportive service needs.

LOCAL PUBLIC NEEDS

State and local sponsors of public service employment projects have a much better understanding of local public needs than anyone from the outside. Those jurisdictions which have experienced lay-offs in regular city agencies and have reduced public services because of local fiscal crises have a special kind of problem and restoring those services probably will have first priority. They will wish to use some part of their PSE allocations to restore public services to more adequate levels. This may mean rehiring sanitationmen, policemen, or firemen or hiring other unemployed persons to fill job slots in the affected agencies. In these situations, attention needs to be given to assure that productivity is high among both the rehired workers and those who have remained on the job.

In addition, all communities—including those which have undergone

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reductions in force–will have other needs high on their lists of priorities. These may include projects in the fields of environment and health, or they may involve such work as repairing streets and curbs or sewer mapping and construction or the construction, repair and/or beautification of parks and recreational areas.

Projects in fields such as those mentioned make it possible to design programs which can offer some employment opportunities to the full range of the unemployed population. The City of Cleveland, for example, has undergone a reduction in city employment and would undoubtedly want to use a substantial portion of its PSE funds to restore that employment. But the Cuyahoga River and Lake Erie are dangerously polluted and the city wants and needs to do something to reduce this pollution. PSE may offer some help.

A project in the pollution field could employ highly skilled people to design and supervise the project, skilled workers to collect samples and perform analyses, and unskilled people to do much of the clean up work involved. Similar kinds of programs, using the mix of unemployed persons could be conceived of in the other substantive areas mentioned.

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IV. ORGANIZING FOR A PUBLIC SERVICE EMPLOYMENT PROGRAM

Details of the administration of PSE programs will, of course, be spelled out in the laws and implementing regulations. But there are some general areas of administrative choice which the local sponsor may wish to take into consideration as it begins to plan its program.

DIRECT OPERATION OR DELEGATION?

State and local organization for the operation of manpower programs has been a subject of general discussion for the past two or three years. A number of proposals have been offered for the development of comprehensive local programs operating under prime sponsors. And so it has been with the various public service employment proposals put forward during that time. But in the Emergency Employment Act, the Congress provided that any unit of general government—cities, counties, states, federal institutions, and public agencies and institutions which are subdivisions of state and local government—may be eligible to apply for public service employment funds. In the words of Senator Gaylord Nelson, one of the principal architects of the legislation:

> Rather than undertake the development of a new system of prime sponsorship as proposed in comprehensive manpower reform legislation, this legislation emphasizes the eligibility of a broad array of public sponsors so as to achieve the quickest possible implementation of the act, and the maximum benefit toward easing the Nation toward more normal employment levels.

But even within the constraints of the Act, there is an issue as to whether the sponsoring government will want to administer the program directly or delegate (or subcontract) such administration to some other agency. There are advantages and disadvantages to each approach and several options within each.

DIRECT OPERATION

If a state, city, or county government elects to operate its public

service employment program directly, several approaches may be followed. The chief elected officials of sponsoring governments may want to maintain fairly close supervision of the program's operation, in which case management could be carried out through organizations which are part of the executive apparatus. These would include governors' manpower staff, mayors' manpower organizations (such as the Manpower Commission in Indianapolis or the Office of Urban Development and Manpower Programs in the Office of the Mayor of Los Angeles), staff in the office of city manager, and special organizations set up under boards of county commissioners.

Another approach that could be followed by sponsoring governments could be assignment of the management of PSE programs to one or more line agencies. A state, for example, could decide to turn over its operations to the employment security agency, or it could decide to concentrate its efforts in the institutional field. In Pennsylvania, for example, most of the state's direct operations in manpower programs, including New Careers and Public Service Careers, already are run through the Department of Public Welfare, which operates the state's network of hospitals. A public works or park department might also handle PSE.

A third approach is the operation of PSE programs by agencies such as civil service commissions or departments of personnel. Many of the Public Service Careers programs are run through this means, and these agencies are now beginning to develop a body of experience in the operation of public service projects for the disadvantaged.

DELEGATION

State and local sponsors of public service employment projects will wish to consider whether they want to delegate all or part of their program components to delegate agencies (subcontractors). Such a decision, of course, will be based upon a number of factors: the nature of the program components being funded, the availability of staff to supervise such programs, or the location of work or project sites.

State governments, for example, which are likely to receive the funding for PSE programs in rural and other nonmetropolitan areas, may wish to delegate or subcontract operation of some parts of their

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programs to local governments, special districts, or to such agencies as multicounty Concentrated Employment Programs. City and county governments likewise may wish to delegate parts of their PSE projects to other agencies.

Delegation, by any sponsor, may be considered for a variety of reasons: the administrative convenience of the sponsor; because a contractor has competence in a program field, such as environment, health, education, etc., or because of its experience in operating manpower programs; and the ability of a particular delegate agency to deal with a special clientele (such as the delegation of youth components to an agency having special qualifications in dealing with youth or the delegation of a component designed to serve a particular community to the community corporation of the area). Delegation sometimes also provides a means of circumventing overly rigid civil service procedures.

PROJECT MANAGEMENT APPROACH

The Emergency Employment Act (PL. 91-54) is temporary legislation designed to provide transitional public service employment.* The public service employment section of the welfare reform bill (H.R.1) is designed to provide temporary employment for certain of the welfare recipients receiving manpower services. It is clear that while public service employment is becoming part of manpower policy, there is still considerable sentiment both for and against the development of permanent PSE assignments. Since the Emergency Employment Act is temporary legislation, many jurisdictions will wish to avoid the establishment of regular governmental bureaucracies and the implied long term commitment to retirement and other costs to PSE enrollees.

What public administration theorists call the project management approach may provide a means of accomplishing program objectives while avoiding the undesirable effects just mentioned. Under the project management approach, programs are organized and funded on a

*In presenting the Conference Committee report on this legislation, Congressman Carl D. Perkins offered the following explanation of "transitional": Transitional, he said does "not describe the nature of the job, nor the duration of the time the enrollee may keep the job. The word is merely descriptive of the fact that this is an emergency program which has been authorized for only two years." (Congressional Record, July 1, 1971, p. H6225.)

project basis–projects with definite goals and with definite timetables. Thus, programs of agencies are allowed to expand and contract without severe stress to ongoing operations. While this model probably is not an efficient way to organize to provide ongoing services, such as police and fire protection and sanitation services, many of the projects in the environmental and certain other fields can be so organized. For example, a project to clean up the shoreline could be designed on a project management basis; so could a project to repair or replace a specified number of miles of streets and curbs. Many other examples could be added: the construction of paths and trails in parks, conducting special inspection and surveys.

The project management approach permits a relatively small central staff to manage multiple projects. Thus, for example, the Bureau of Special Services in the Pennsylvania Department of Public Welfare uses a small core staff (paid by state funds) to administer a sizeable group of state and federally-supported manpower training and direct employment programs. Through the use of contracts and delegation agreements, the Bureau can expand or contract its programs according to the availability of resources. Some planning and staff work for the Bureau is also secured through these means.

Although the National Aeronautics and Space Administration offers the best example of the project management approach, it is clear that the method is also appropriate for the management of state and local governmental programs including manpower.

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V. ADMINISTRATIVE POLICY ISSUES

There are certain basic administrative issues which need to be considered in any public service employment program. Some of them are pointed up the pertinent provisions of the Emergency Employment Act, and state and local sponsors of PSE programs have some, though not unrestricted, policy options.

ELIGIBILITY FOR PUBLIC SERVICE EMPLOYMENT

One of the problems to be faced in any public service employment program is the question of who is to be enrolled. As this is written unemployment nationally is in excess of five million. The Emergency Employment Act is expected to provide up to 200,000 jobs–jobs for no more than four percent of the unemployed.* The law provides some criteria, and Department of Labor regulations will add others, but the critical rules and decisions will be made by the state and local PSE sponsors.

The law authorizes federal assistance for unemployed and under--employed persons. It defines unemployed persons as:

(a) persons who are without jobs and who want and are available for work; and

(b) adults who or whose families receive money payments pursuant to a State plan approved under. . (various titles of the Social Security Act). . . (1) who are determined by the Secretary of Labor, in consultation with the Secretary of Health Education and Welfare, to be available for work, and (2) who are either (i) persons without jobs, or (ii) persons working on jobs providing insufficient income to enable such persons and their families to be self-supporting without welfare assistance. . .

*This estimate is based on average annual unit cost of $5000 per job. Many, including some officials of DOL, believe the unit cost figure to be too low. The total number of jobs therefore may fall below the estimated total.

Underemployed persons are defined as:

(a) persons who are working part-time but seeking full-time work;

(b) persons who are working full-time but receiving wages below the poverty level determined in accordance with criteria as established by the Director of the Office of Management and Budget.

In addition to the definitions, the law asks that "special consideration" be given to unemployed veterans who served in Indochina or Korea on or after August 1964, and that "due consideration" be given to persons who have participated in manpower training programs for whom employment opportunities would not otherwise be available.

After these standards are applied, a fairly large universe of potential enrollees will still remain. Although we expect that DOL regulations will do some tightening, the final cut will be the sponsors'. How will they pick and choose? In reviewing the literature on public service employment programs we looked at the record of the WPA and at studies of the European program, but neither offers a great deal of guidance on this point. The basic eligibility criteria for employment on WPA projects were "need and employability."* These criteria were established nationally, along with other more minor criteria, and administered locally. Local administration led to charges of political abuse which apparently had foundation in fact in some places. In today's parlance, WPA projects tended to "cream" in that they employed people—primarily white adult males in the prime working age group—who had skills and good work records.

The experience of the European programs seems to be a bit difficult to apply to the United States, especially in light of the current economy. With greater state planning for their economies, they generally do not have unemployment at anywhere near the levels now being experienced in the United States. In Sweden, Germany, Holland, and the United Kingdom unemployment above one to one and one-half

*See Center for Governmental Studies Issue Paper No. 2, "The WPA; what is to be Learned?," by Alden F. Briscoe Washington, D.C., February 1971 pp.9-10.

percent is considered disastrously high. So their programs are designed primarily for those with social, mental, and physical handicaps; to some extent the programs also provide employment services to ethnic minorities such as we generally understand the term, no European program attempts to provide them services.*

The overall mix of enrollees in public service employment programs should reflect the general mix within the unemployed population. There should, of course, be some room for flexibility; a city such as Seattle with well in excess of 10 percent of its workforce unemployed may need to take some special measures to alleviate the problems of such great displacement in its basic industry.

A second suggestion would be that first priority go to 1) unemployed heads of families who are not covered by unemployment compensation or who have exhausted their Unemployment Insurance benefits; 2) returning veterans; and 3) persons on public welfare. The distinctions here are somewhat artificial for it is conceivable that one person could meet all three criteria. The point is that the criteria are indications of need.

One would suspect that use of these criteria would exhaust most of the public service positions authorized under any program that might be passed by the Congress. And two very large groups would be left out—t he young people between 16 and 19 years of age, and the older workers over 55.** To treat these groups separately might be well to the good. The youth could receive jobs and training under the Neighborhood Youth Corps, and the older workers could receive employment through programs like Operation Mainstream but probably not at present program levels. (If comprehensive manpower legislation is enacted with fewer categorical programs, local sponsors may have greater flexibility in program mix.)

*Beatrice G. Reubens, *The Hard to Employ: European Programs,* New York and London: Columbia University Press 1970, Chapter XIV passim.

**Unless they fit the head of family criteria, in which case they should be in the appropriate priority category.

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WAGES AND HOURS

The act provides that public service employees will receive the highest of: (a) the federal minimum wage: (b) the state minimum wage for the most nearly comparable covered employment: or (c) the prevailing rates of pay for persons employed in similar public occupations by the same employer.

The prevailing wage concept could result in a relatively small number of high paying jobs. A person, for example, on a job whose prevailing rate is $4.00 per hour could earn $160 for a 40-hour week. There is a question as to whether the prevailing wage concept might limit the number of people who might receive some income under PSE, and some have suggested that work might be shared so that more than one person could receive income and benefits. The hypothetical $4.00 per hour job could be divided into two 20 hour per week jobs, and each employee would receive $80 per week, an amount appreciably higher than the average weekly unemployment insurance benefit or welfar grant.

It does not appear to us that the act anticipates such splitting of regular full time jobs, but such as approach might be used under some future variation of PSE.

Meanwhile, if a local sponsor did decide that one of its objectives was to maximize the number of people receiving some income under the program, it might look to assignments in those jobs where part-time work is traditional such an library and recreation aides and various kinds of community projects.

PERSONNEL MANAGEMENT

Recruitment, appointment, retention or dismissal, and promotion are all elements of the personnel management process and provision must be made for them in PSE. While a number of approaches may be possible, we suggest the following for consideration.

RECRUITMENT

First, we assume that there will be more applicants than jobs in most

state and local PSE programs. An initial task will be the need to insure that applicants are eligible in terms of federal and local criteria, and that the first step for the applicant would be securing what is in effect a "certificate of eligibility." The logical certifying agency would be the local office of the Employment Service. ES will have access to information on unemployment insurance and veterans' status and should be able to readily secure information on public assistance. Other arrangements are possible but it seems to us that in most places the kind of task described here could be handled well by the ES.

APPOINTMENT

After the applicant secures his eligibility certificate, he would then go to the intake office of PSE sponsor where he would be further screened. If he is tentatively accepted at this point, he would be referred to the organization or agency tentatively selected for his work assignment. There he would be interviewed and accepted or rejected.

If the applicant is accepted he then would be appointed to some kind of civil service status. This likely will pose a problem for many jurisdictions, because, in the past, most have found it difficult to assign regular, budgeted civil service slots to people who are employed on temporary federally-supported programs. Some jurisdictions–our first hand knowledge is limited to the Commonwealth of Pennsylvania and the County of Los Angeles, California–have created special trainee classifications in cooperation with their civil service systems for New Careers and Public Service Careers employees. Trainees in such classes are not members of the civil service but they have enjoyed all of the privileges and fringe benefits of regular employees except tenure and participation in the retirement systems.

The whole area of civil service laws is one that will require early attention from sponsors. Additional clarifications will be needed in federal regulations, but, by and large, jurisdictions will have to operate within the boundaries of their own civil service laws and regulations.

RETENTION OR DISMISSAL

Rules will be needed for the retention or dismissal of PSE enrollees. If something like the trainee classifications discussed above is employ-

ed, or if such enrollees are employed on a probationary status, then it would seem that retention would be based on good behavior and competent performance and dismissal would be based on failure to meet such standards. To the extent that the disadvantaged are employed in such programs there may be a need to adjust performance and behavior standards pending the improvement of such workers' employability.

PROMOTION

The act provides that PSE enrollees are to have the same promotional opportunities as other employees. At this point we can only flag this as a problem requiring considerable ingenuity. Civil service regulations and union agreements have built a fortress of rules and procedures around promotions, and it would seem that extraordinary measures will be required to change this.

Previous experience with New Careers is only partially instructive because in the main New Careers training, where it in fact resulted in a job, led to the first rung on the civil service ladder. And the former New Careerists then took their place on the regular civil service promotional ladders.

TRANSITION—TO WHAT?

While "transitional" describes the temporary nature of the Emergency Employment Act, it also describes the desire that enrollment in the PSE program be a transition to a permanent job. As the Senate-House conferees put it:

> For individuals employed under the program, it is the intention of the Conferees that public service employment jobs lead wherever possible to permanent position in the public or private sector.

Fulfilling this intention is going to be a difficult assignment for sponsors, but it is one of the functions which must be designed into local programs initially. To accomplish this objective job finding, training, placement, and counselling must be built into PSE programs

from the beginning. Since limitations are placed on the amounts to be expended on manpower services related to PSE, other manpower programs will have to be relied upon for some of these services.

RELATIONSHIP OF PSE TO OTHER MANPOWER PROGRAMS

PSE is a new part of manpower policy and it should be closely related to other phases of manpower. We have already suggested that the Neighborhood Youth Corps and Operation Mainstream, where appropriate, be used to provide employment and income for youth and older persons respectively. We can foresee other possible interrelationships.

It is clear that some manpower training programs are being used to provide income maintenance to trainees for whom jobs are not available. Some jobs now will become available through PSE, and it would seem desirable to transfer some of the trainees to PSE jobs. This would free up some training slots for use by the disadvantaged. Close cooperative relationships should be worked out between PSE sponsors and the operators of manpower training programs so that the jobs can go to those who are most nearly ready for them and so that institutional and other training programs can be used for those disadvantaged who have impaired employability.

A further interrelationship involves the use of manpower training programs to supplement the necessary training and supportive services associated with PSE. This would include the job finding, placement and counselling functions mentioned earlier. Only 15 percent of PSE funds can be used for training and related manpower services, and there will be a need for supplementation from other sources.

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VI. CONCLUSION

Public service employment is becoming part of national manpower policy. But its intent is different from the manpower programs of the 1960s. Public service employment programs will be funded through state and local units of general government. As adopted the Emergency Employment Act is a form of revenue sharing as well as a manpower measure. It offers an opportunity for improving the capacity of many local governments to improve services and to begin to tackle the agenda of unmet public needs.

Although the program is a relatively large one—one that will be operative throughout the nation—it can be viewed almost as a national demonstration. The manner in which this act is implemented and administered may well play a significant role in the development of future public service employment and revenue sharing programs. Effective operation will be a challenge to all who are involved.

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New Approaches in Meeting Manpower Needs

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PREFACE

The United Nations has been conducting surveys of training for social work in accordance with the Economic and Social Council resolutions 1139 (XLI) and 1406 (XLVI). These surveys have so far resulted in the adoption of varying approaches to the study of education for social work in different countries. The first 1/ and second 2/ surveys dealt primarily with courses of social work organized at the undergraduate and graduate levels. In the third 3/ survey problems of training for social work were analysed and assessed particularly in relation to content and methodology. The fourth 4/ survey tried to identify some significant developments and trends in training for social work at all levels, including training of auxiliaries and in-service training.

The fifth survey represents a departure from the earlier in this series in two ways: firstly, the emphasis here is on new approaches, experiments or innovative attempts in training personnel for social welfare as distinct from the four general surveys of development in the field of training made previously; secondly, the study is not confined to social work training as usually understood but to the training of personnel for social welfare, thus extending the field of study to training institutes in social welfare. A number of important considerations prompted this departure.

In 1965, a report on the Reappraisal of the United Nations Social Service Programme (E/CN.5/AC.12/L.3/Add.1) was prepared for the ad hoc working group on social welfare appointed by the Social Commission. Though this was done specifically with reference to only a small number of countries that were visited, the study was also based on reports from other countries receiving United Nations assistance in social welfare. While, on the whole, this report emphasized training as a very important factor in the contribution that social welfare makes to national development, it questioned the effectiveness of existing training programmes and called for newer approaches to training, more realistically in keeping with national needs.

The Secretary-General, in his report on "The training of social welfare personnel" (E/CN.5/AC.12/L.6) to the Social Commission's ad hoc group the same year, recommended: "In order to strengthen the United Nations assistance to Governments interested in systematic study and experimentation in new approaches

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1/ Training for Social Work: An International Survey, (United Nations publication, Sales No.: 50.IV.1).

2/ Training for Social Work: Second International Survey, (United Nations publication, Sales No.: 55.IX.9).

3/ Training for Social Work: Third International Survey, (United Nations publication, Sales No.: 59.IV.1).

4/ Training for Social Work: Fourth International Survey, (United Nations publication, Sales No.: 65.IV.3).

to training, and in order to assemble information relevant to the development of international welfare policy, the Commission may wish to have this area in mind in determining the focus for the Fifth Survey of Training for Social Work. In the opinion of the Secretary-General, intensive study over a four year period aimed at the development of a new outlook on social welfare training, including training for social work, would offer possibilities for a more constructive and timely contribution to achievement of the objectives of the Development Decade than another descriptive survey of training development."

The change of emphasis from training for social work to training of personnel for social welfare brings the relationship between social work and social welfare closer. Previously, social work was recognized as the principal method of implementing some of the welfare provisions particularly those calling for remedial or preventive services (other than health and educational services). Today, however, several other professions and disciplines are involved in the development and implementation of social welfare programmes. It was felt that with reference to the needs of national development, a look at manpower for social welfare would better reveal the developing role of social welfare and the new approaches to training being elaborated in different parts of the world as distinguished from training programmes which are confined to the traditional practice of social work. It has been attempted to make the study specific and meaningful in terms of social welfare training, as well as manageable in size. For this, careful definition and delimitation of the subject under study were essential. This aspect is discussed elsewhere in this Introduction under the heading "Nature and scope of the survey".

Finally, reference must be made to the Proceedings of the International Conference of Ministers Responsible for Social Welfare, which took place in September 1968. In the recommendations of this conference the importance of meeting manpower needs for social welfare was recognized and duly emphasized. In this context it was suggested that "new experiments and training innovations and regional co-operation among social welfare training institutions should be encouraged." 5/ This study was conceived as an attempt to answer, however partially, that objective and it is hoped that it may lead to further progress in this field.

Many persons have collaborated for the preparation of this report. Our thanks are chiefly due to the following: the respondents who so willingly supplied data; the International Association of Schools of Social Work who collaborated closely with the Secretariat; the United Nations regional economic commissions and offices in Africa, Asia, Europe and the Middle East; and the consultants employed specially for this study, to supply information about developments in their own country or region and to whose reports frequent reference has been made; they are Mr. Kurt Reichert in the United States of America, Miss Luz E. Rodriguez in Panama, Mr. Seyoum Selassie in Ethiopia, Miss Ludmila Vavrová in Czechoslovakia, Mr. A.K.S. Yadava in India and Dame Eileen L. Younghusband in the United Kingdom. Some of them provided willing and valuable assistance at various times during the project, upon request, Consultants are referred to as special correspondents, to avoid confusion with the United Nations consultants in the field. The final analysis and report has been prepared by the Secretariat of the United Nations.

5/ Proceedings of the International Conference of Ministers Responsible for Social Welfare (United Nations publication, Sales No. E.69.IV.4), p. 21.

INTRODUCTION

The need for innovations

It is generally accepted that in many parts of the world the development of social welfare has reached a critical stage. As a result of the rapid increase of population, important demographic changes have taken place. Especially noteworthy is the high proportion of youth in the total population. The rising expectations of these youths have been a factor of major importance in many countries and in order to meet them a wide range of social development programmes are necessary. Many countries find it difficult to establish or maintain such programmes, however, since the economically productive members of the countries constitute comparatively smaller numbers. Urbanization and industrialization, though necessary in themselves, have brought about, as a result of unplanned migration, a lack of community cohesion and other unanticipated, and undesirable consequences. Unemployment, underemployment, shortage of housing or sub-standard housing, inadequate facilities for health, education, and welfare afflict most countries of the developing world, both in the urban and in the rural areas.

In view of this situation and in the light of the experience of the First Development Decade, the United Nations, in its proposals for the Second Decade, has stressed the need for "pervasive social reforms and institutional changes in developing countries to create an environment conducive to rapid development.... It cannot be overemphasized that what development implies for the developing countries is not simply an increase in productive capacity but major transformations in their social and economic structures". 1/ Authorities responsible for sectors of development other than that of social welfare are no doubt also involved in responding to this challenge. In this context, the training of personnel for the planning and implementation of social welfare programmes and also for the basic formulation of policies for such programmes, assumes an importance which is increasingly realized by many countries. Social welfare has been recognized as having a crucial part to play in ensuring that the social objectives of national development be kept in focus at many regional conferences held under the auspices of the United Nations, including the Conference of Ministers Responsible for Social Welfare held in 1968.

In this study of new approaches to training of social welfare personnel, it is assumed that the impact of developmental strategies and the need to meet the conditions outlined in the preceding paragraphs, must affect the training system in several significant ways. However, change may be slow due to certain conditions prevailing in developing countries such as the slow acceptance of social work as a profession and the lack of resources to launch any extensive training programmes to meet social welfare needs. How is social welfare training

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1/ Towards Accelerated Development, Proposals for the Second United Nations Development Decade (United Nations publication, Sales No.: E.70.II.A.2), page 5.

undertaken in cases where an effort is made to respond realistically to the problems of the nation at large? For what functions in particular are training programmes designed? How are such training programmes organized and implemented? A study of innovatory measures, it was thought, would indicate the way in which such questions were being answered.

Innovations are, in general, a reflection of a quest for ways to meet needs more satisfactorily. A study of new approaches in social welfare training would therefore indicate the nature of problems facing training in this field and the attempts made to overcome them. Such a study could induce countries to share their experiences and to initiate efforts in order to find new ways of overcoming training problems in the field.

The findings of the survey could also be useful in determining the orientation of future assistance on the part of the United Nations itself and help to strengthen international co-operation in social welfare. It is likely that information on new approaches and experiments will help to identify the priority areas for further international assistance, in keeping with national concerns. Such information will also help to determine the nature of international and regional co-operation most likely to provide effective support for efforts at the national level.

Social welfare in the context of the survey

With the change in approaches to national development in a number of countries, new roles for social welfare emerge. As the social objectives and components of development are formulated, social welfare programmes tend to be seen as an integral part of the over-all development strategies. With the emphasis on its preventive and developmental functions, social welfare is no longer limited to a segmental or residual role to be discharged in a narrow field of activities, as in the past.

These growing dimensions of social welfare have been recognized at several national and international meetings. It may be pertinent to refer at least to statements made at two such meetings held under the auspices of the United Nations. At the Interregional Expert Meeting on Social Welfare Organization and Administration, in 1967, social welfare was described as an organized function which "is regarded as a body of activities designed to enable individuals, families, groups, and communities to cope with the social problems of changing conditions. But in addition to, and extending beyond the range of its responsibilities for specific services, social welfare has a further function within the broad area of a country's social development. In this larger sense, social welfare should play a major part in ensuring that the human and material resources of the country are effectively mobilized and deployed to deal successfully with the social requirements of change and thus contribute to nation-building." 2/ At the Conference of Ministers Responsible for Social Welfare the developmental

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2/ Report of the Inter-regional Expert Meeting on Social Welfare Organization and Administration. (United Nations publication, Sales No.: E.68.IV.8), p. 7.

aspects of social welfare as distinct from and in relation to preventive and remedial social welfare, were emphasized within the framework of national planning. "Social welfare, whatever the precise meaning given to its function and programmes in different States, was an essential component force to such development objectives. Its contributions were manifold. They could be characterized as developmental, preventive and remedial. They might also be supportive to other services. Those functions, however, were not disparate. They reinforced one another, and at any one time a given programme might embody several of those characteristics, but the emphasis given to those functions would vary within countries and in the same country at different times. To achieve an appropriate balance, social welfare policy needed to be consciously wrought, within the framework of total national planning.

The development function in social welfare gave recognition to the place of man in development. It was fundamentally engaged in the development of human resources, including the strengthening of family life and the preparation of people, especially children and youth, to improve their own lives as they contribute to national development. Social welfare contributed its particular expertise to planning and to the formulation of social policy, including the design of needed legislation. Its programmes aided in constructive forward movement to desired social and economic progress by stimulating co-operation, participation and the acquisition of patterns of life consistent with such movement, for instance, by community development activities and improving the social and cultural infrastructure." 3/

Actually it is no easy task to try and define social welfare particularly when it has different connotations, both in concept and in practice in different countries. As far as possible, however, both a theory and a working definition of social welfare have to be formulated, in order to serve as a guide to the discussion of what pertains to social welfare, particularly when social welfare planning is increasingly regarded as a necessary component of planning for national development. 4/ In view of the limitations with which this task is fraught, an attempt is made here to identify the most important characteristics of social welfare particularly as they relate to national development and are relevant to the purposes of this study. This is to be regarded as no more than an expansion of the concepts already expressed in the reports of meetings mentioned earlier.

Social welfare concerns itself with those activities which improve the social functioning of people as individuals, as members of families, or of other social groups, or as they relate to the society at large.

While other sectors or disciplines such as health and education may also be contributing to social functioning, social welfare may be distinguished from these related sectors by the holistic and integrated approach it adopts for the

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3/ Proceedings of the International Conference of Ministers Responsible for Social Welfare (United Nations publication, Sales No.: E.69.IV.4), p. 6.

4/ See Social Welfare Planning in the Context of National Development Plans (United Nations publication, Sales No.: E.70.IV.11).

solution of problems of human behaviour, for meeting needs and in dealing with people and institutions in relation to each other. Social welfare attempts to meet such needs more directly than do related sectors, which are concerned with equally important ends, as, for example, health which concentrates on physical well-being, or housing which concentrates on shelter, or education which is concerned with teaching for achieving mental growth, socialization and acquiring needed basic knowledge and skills. While such related activities may ultimately lead to better social functioning, their immediate objectives are different from those of social welfare which is directly concerned with the sum of those activities. The field of social welfare may then be regarded as a complex of institutions, services and processes delivered through specific programmes to meet the needs of people in a manner that is socially satisfying and conducive to better social functioning.

Social welfare acquires developmental characteristics when it is considered that besides its preventive and remedial functions it is also required to create a milieu, suitable for the development of potentials and the conditions for improved social functioning. The formulation of objectives, the planning and organization of content, the integration of the welfare programmes with other sectors and the administration and implementation of such programmes calculated to foster growth and development all combine to give social welfare its developmental characteristics.

It is evident that developmental social welfare has to be intersectoral in its planning and execution. Planning for social welfare should involve representatives of the different sectors of development where social welfare roles and functions are identified and agreed upon. It may be carried out within a national context in deciding on allocations taking into consideration priorities, strategies for balanced and optimum development, economic use of resources and in the framework of the philosophy and policy of the Government. Co-ordination of all these elements is necessary before a Government decides to implement a social welfare programme. Such an intersectoral approach will doubtless call for new patterns of social welfare intervention with significant implications for training.

It is hardly necessary to say that the field of social welfare is not the monopoly of what is considered as professional social work. The latter has brought together a body of skills and knowledge derived from several disciplines, for the solution of social problems. It may be claimed that social work has developed professional methods and thus made a notable contribution to the task of promoting social welfare. This was achieved mainly through training, research, planning and the administration and implementation of social welfare programmes. Training for social development and for social planning both in developing and in developed countries has been given in schools of social work which are a far cry from the schools of ten years ago which were casework oriented. In the context of national development, social welfare goals are expressed and programmes are implemented, chiefly by staff graduating from these institutions in the fields of community development, housing, health, agriculture, co-operatives, etc. On the other hand, it must be added that the schools of social work seem to have been able to broaden their field of vision due to the experience and challenge offered by community development, social planning and social change in general.

If such are the characteristics of social welfare and of social work practice, they must lead to a profound reappraisal of the system and of the processes of training personnel for social welfare.

Nature and scope of the survey

Area of inquiry

It was hoped that in the context of social welfare as described in the preceding paragraphs a study of innovations in training would reflect the nature of the response to the changes taking place in the social system.

For the purpose of the survey, social welfare tasks have been defined as those which involve the improvement of social functioning and social relationships in meeting social needs at individual, group or community levels. Such tasks consist of providing services in order to meet social needs or solve problems; foreseeing the emergence of such situations and taking preventive measures against their occurrence; helping to create conditions conducive to social development.

In the course of this study it is hoped to encompass manpower policies and provisions for social welfare tasks in all sectors of national development. Some of these tasks may be the concern of governmental or other agencies, active primarily in the social welfare field. In other instances, they may be performed as secondary activities by agencies concerned with health, education, housing, or even industrial or agricultural development and land reform.

Some guiding criteria

The information gathered for the survey included the broad area of social welfare manpower policies and training. Within this area, however, only developments of an innovating character were selected for consideration.

The survey was concerned with new approaches and experiments to develop manpower for tasks at different levels ranging from policy making, planning, administration, education and supervision to a variety of field activities for the delivery of services. The developments covered in this study took place principally, though not exclusively, during 1960-1969.

It was difficult to indicate in the clearest terms what exactly could be considered as a new or an innovative approach. On the whole, if the development reported could be regarded as a significant departure from known practices or procedures in the field of training for social welfare (as for instance the way old or emerging training problems were overcome) it was considered relevant for the study.

Methods of procedure

For reasons beyond control, it was not possible to send out a structured questionnaire covering the areas of inquiry. However, the following alternatives were adopted:

(a) A circular letter was sent embodying the areas of inquiry to (i) all schools of social work affiliated with the International Association of Schools of Social Work; (ii) schools or institutions of social welfare, social development or community development (whether government, university or voluntary) not affiliated with the IASSW. The first group was approached through the co-operation of the IASSW. The second group was approached mainly through the United Nations experts and social development staff of the Regional Commissions. The circulars were sent out in English, Spanish and French. In some cases a second stage of inquiry was undertaken to obtain further information from the same respondents. It was hoped that this approach would invite responses from as many training institutions as possible, regardless of the operating auspices or length of the training programme.

(b) Information was obtained from regional offices and advisers in the field, some of whom were met in person either at their own location or during debriefings at Headquarters. It may be added here that there was no provision for travel to any countries selected on a sample basis and reporting new developments.

(c) A report on new training developments was solicited from consultants in Czechoslovakia, Ethiopia, India, Latin America, the United Kingdom and the United States. It is only in the case of the latter that information from the region was also obtained in addition to the consultants' own country which in this case was Panama. (Acknowledgement is given to these and other sources in the preface to this survey.)

(d) Information from available published reports and current literature.

Through these methods it was hoped to collect as much data as possible. No attempt was made to select respondents except in the third category. In that case it was thought that countries which were chosen would also reflect some of the problems and developments encountered in their neighbours. No special criteria were adopted for such a selection. Resources did not permit the use of additional consultants in this manner, though this was desirable.

The response

Responses were received from over 130 sources representing thirty-eight countries. Over 300 letters of inquiry were sent out to possible respondents. This does not include information obtained from individuals interviewed personally. With reference to the letters of inquiry, there were two problems which affected the data collection. In the first place, it was difficult to communicate and interpret the concept of innovation. Not unexpectedly, various interpretations were given. Consequently not all the information supplied was relevant to the subject of the survey. It was also found that a good number of the cases reported were in the early stages of development and could not be evaluated. Nevertheless, most of this information was regarded as useful in helping to identify what was suggested as a new approach and to understand the background in which such innovations took place.

Secondly, the very methods adopted for data collection set some limitations which had to be contended with. While, on the whole, some very worth-while data was received which constitutes the bulk of this study, the report could have been appreciably improved if the selected responses to the inquiries could have been followed up by an on-the-spot evaluation.

Notwithstanding the above limitations, this may be regarded as an important initial attempt to find solutions to the problems raised in the study. It is hoped that the next survey in this series may continue this approach and enter into a wider and deeper exploration of some of the innovations reported here.

It may be interesting to mention that, at the time of planning the survey, it was thought that innovations may be more readily forthcoming in countries where resources for manpower training are small. It was expected that such countries would be challenged to innovate. In reality it was found that the old notion that necessity is the mother of invention was not necessarily true. There were countries in the developing world that had a serious lack of resources. Among them some had impressive innovations to their credit, others simply did not. In some European countries and in the North American continent, where resources were at least available in the larger system if not in social welfare itself, innovations were even more prevalent than in the countries with fewer resources. No easy generalizations seem to be possible. Apparently there were several other significant variables which accounted for this situation. Though this is not the subject of the study, it may be generally surmised that leadership, organization, the impact of international developments or assistance, and certain precipitating factors sometimes relevant and and at other times incidental to the problem, were responsible for the presence or absence of innovations.

It may be appropriate to add that a study of the conditions which encourage innovations essential for promoting change, would be a profitable field of exploration with reference to training for social welfare.

Main findings

For greater convenience a brief outline of the main findings of the survey is presented below as drawn from chapters I, II and III which contain the details with respect to these findings. Some concluding observations arising from these findings are to be found in chapter IV.

Manpower policy for social welfare

(a) attempts to formulate policies with reference to the number of personnel needed for specific welfare programmes within a specified period of time;

(b) assessment of social welfare functions as a basis for estimating personnel needs for social welfare programmes;

(c) setting up of structures for studying manpower needs and establishing standards and procedures for the development of social welfare manpower;

(d) special measures taken to ensure the development and use of needed manpower for social welfare, e.g. financing policies, legislation, or employment policies.

Organizing training procedures and resources

(a) recruitment policies and measures to ensure the availability of personnel for needed areas: (i) for meeting local needs through local training facilities, locally directed recruitment and through local curriculum orientation; (ii) recruitment policies aimed at special groups such as minorities, or recruitment by sex according to the specific needs of a situation; (iii) the early introduction of social work courses into university programmes to induce enrolment;

(b) centralized intra- and inter-regional training to economize on training resources and to multiply training opportunities within the countries in order to serve as wide a region as possible, and planning at an international level to serve several countries within a region;

(c) diversification of training levels as a departure from earlier established levels, and the attempt to make such training levels (including training of volunteers, indigenous workers, and social welfare consumers) part of an integrated training plan to facilitate mobility from one level to another the increasing role of higher education in such training;

(d) accelerated training programmes for increased manpower availability; extended facilities for training outside regular periods; re-training opportunities for re-entrance into social welfare;

(e) sharing of resources and mutual service arrangements by institutions to economize on training effort and meet training needs more satisfactorily.

Realizing curriculum objectives

(a) student participation with faculty and alumni in changing goals and methods of social work education; student responsibility for teaching;

(b) realizing multiple objectives in meeting training and community needs;

(c) expansion of field training to include a wide range of experiences and new skills reflecting all aspects of the curriculum;

(d) increase in the development of local teaching materials to meet local needs;

(e) increasing use of audiovisual aids for more specific training and greater diffusion of curriculum objectives; the use of correspondence courses to supplement training;

(f) adaptation of new teaching methods such as sensitivity training or individualized field learning to ensure more effective realization of curriculum objectives;

(g) increasing incidence of the training of trainers ranging from full-time university training to special sessions for shorter periods of time;

(h) curriculum change for new roles and functions such as social policy making and social planning (family planning, community resettlement);

(i) increasing use of social welfare knowledge and skills in the training for other professions and services;

(j) attempts to integrate social work methods of intervention, instead of confining teaching to one or two methods taught as separate entities;

(k) evolving of a curriculum content more consonant with developmental goals and programmes requiring appropriate knowledge, and of intervention strategies;

(l) response to the need for an intersectoral social welfare approach through attempts at interprofessional and interdisciplinary training and practice.

Plan of the report

Owing to the difference in the types of reports received from the consultants and because of their total length, it was not possible to publish them in full, together with this report on the survey. However, relevant parts of the consultants' reports have been included in the various chapters and referred to as coming from the special correspondents. In some cases where the passages are important enough for further consideration, they are included in the Appendices.

As indicated in the Contents the remaining chapters of this report which cover the findings have been divided into three parts: national development and manpower policies for social welfare (chapter I); planning and organizing training procedures and resources, (chapter II); realizing curriculum objectives (chapter III). A brief review and analysis is presented at the end of each chapter. Some observations are based on the comments of the respondents or those of the special correspondents.

In chapter IV, an attempt has been made to examine the significance of the expanding concept of social welfare and the implications of its developmental aspects discussed in the Introduction against the background of the findings. The relevance of these findings with reference to manpower policies, for curriculum development, international assistance, and the need for further study, are discussed.

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I. NATIONAL DEVELOPMENT AND MANPOWER POLICIES FOR SOCIAL WELFARE

The concept of manpower for social welfare is itself a new one. It has to be admitted that until very recently, training for social welfare in the large majority of countries was not even considered a matter of importance; still less has the question of planned manpower led to the establishment of professional training institutions; and hardly ever has manpower for social welfare been considered a matter of sufficient importance to deserve a place in the national plan. In fact one can go further and say more simply that manpower planning in general has only very recently assumed national importance and the concept of manpower for social welfare is a very late development in a few countries.

The request for information pertaining to manpower for social welfare, in a large number of cases evoked the response that the question had yet to be raised as a seriously felt issue though it was agreed that it was an important one. In dealing with the limited response to this question an attempt was made to understand the different ways of expressing the need for social welfare manpower. The results of this inquiry have been arranged into four categories: (a) the formulation of manpower policies for social welfare in a national context; (b) the assessment of social welfare functions; (c) structuring for manpower planning; (d) supportive measures to facilitate manpower utilization.

There were no cases where all these four measures were consistently put into effect, though some countries had developed a number of them more than others. They are all no doubt, important aspects of a manpower policy. The items are not presented in any order of importance. In fact it may be said that measures covered under (b) or (d) may assume more importance than those grouped under (a) which in many cases may yet have to be implemented. Nevertheless all these elements represent a significant step towards a manpower policy even if they still need to be put into effect. The references are to all levels of training whether professional or non-professional, short-term or long-term training, under government, university or other auspices. It must also be noted that the four categories are interdependent but for the purpose of analysis it has been useful to consider these expressions of manpower for social welfare as four different aspects where in fact this was done by the countries concerned. Reference to sources of information, where available as published reports, has been made in foot-notes; where no foot-notes appear, the information may be regarded as coming from the respondents only.

It is necessary to keep in mind that the following are examples resulting from the survey. It is, no doubt, likely that there are several other projects related to one or more aspects of manpower formulation, assessment, structural arrangement, or support for social welfare manpower at professional, non-professional, and different educational levels.

Formulation of manpower policies for social welfare in a national context

The cases grouped under this category are examples of attempts to formulate at least some aspects of a manpower policy having reference to a specified number of personnel for a particular period of time and for carrying out various types of social welfare activities already identified. These cases also show attempts to formulate a manpower policy for the country as a whole, made by the Government, as part of its plans, or instigated by the Government outside the national plan, or by voluntary bodies working at the national level.

Iran 1/ seemed to be the only country in Asia which had estimates of personnel needed for social welfare at all levels of the country's welfare service programmes. These were included in their Five-Year Plan with definite provisions for implementing the Plan. In the Fourth Plan, Iran had made provisions for 850 social workers at the graduate and postgraduate level, for 1,400 persons in fields pertaining to welfare activities at the post-secondary level of education, and for 1,300 at the secondary school level and for the expansion of research in the field of social problems. The personnel to be trained were to work primarily in the fields of child and family welfare, welfare of children without parents, rural welfare and the welfare of other special groups. It was mentioned in the Plan that as the expansion of welfare services would depend on the availability of technical and specialized personnel, on-the-job training as well as the training of new entrants would be pursued. According to the latest reports available on the evaluation of the first year's results, this initial effort had taken longer to implement than had been projected. It is hoped, however, to improve on the implementation procedures on the basis of the experience gained.

The First National Development Plan of Zambia 1966-1970 2/ contains provisions for the utilization of trained personnel in every district within the country, through the offices of the Ministry of Labour and Social Development. According to manpower projections for all government projects, 215 unskilled workers and 534 skilled workers are indicated for the period of the plan. Estimates and recurring costs are given for training, salaries, service projects and for the buildings needed to house the programmes. The items under training for social welfare and youth are listed as Youth Service Corps, Citizenship College, Rural Youth Work and Training, Urban Community Development Training, Schools for the Blind, Farm Training and Settlement.

Chad 3/ has made similar provisions of 106 workers for the period 1966-1970 in training personnel to man the existing social welfare institutions.

In Botswana the present activities of the Community Development Department are based on approximately thirty Community Development Assistants in the field, supervised by four Assistant Community Development Officers. The long-term objective is to have one Community Development Assistant per 5,000 people. The

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1/ The Imperial Government of Iran, "Plan organization", Fourth National Development Plan, 1968-72 (Teheran, 1968), pp. 313-330.

2/ Zambia, Office of National Development and Planning, First National Development Plan, 1966-1970 (Lusaka, 1966), pp. 282-283.

3/ Ministère du plan et de la cooperation, Premier plan quinquennal de développement économique et social, 1966-70, pp. 247-248.

target set in this national plan is to double the present field staff within five years. This will give an approximate coverage of one Community Development Assistant per 10,000 people. 4/

Burma, in its Second Four-Year Plan of 1961-1965, included estimates for the training of fifty persons annually at the Social Welfare Training Centres, to cope with the increase in services in the community development programmes. Social welfare training centres for at least 2,500 voluntary leaders were to be opened in eighty-eight townships. 5/

Uganda has made projections of manpower for social development for the period 1968-1971 to be carried out by the Ministries of Culture and Community Development, Labour, Internal Affairs, Urban Welfare Services, and Voluntary Agencies. The total number of social welfare personnel needed has been estimated at 967. Details of educational levels needed are included in these projections with an emphasis on increasing the number of supervisory personnel to direct service workers in the field.

Ethiopia's manpower projections for social welfare and community development for the period 1960 to 1965 included, among others, eighty-two trained social workers of which twenty-two were at the undergraduate level.

Pakistan's Five-Year Plan of 1955-1960 included some policy statements for ensuring the availability of trained personnel for social welfare. "Sufficient provision for social welfare training must be made... measures should combine to establish a corps of qualified workers upon which can be based a constructive programme of social welfare." Later, in the Third Five-Year Plan (1965-1970), a 100 per cent increase in training of social workers for social welfare agencies and related fields of activity is outlined. In order to provide personnel for lower-category jobs and others who would serve as feeders to colleges and university departments, social work is to be an elective subject at an increased number of colleges. Specific centres for training personnel in collaboration with the universities are also to be set up. Nearly 2,000 workers are to be trained in this way to man programmes in social welfare, family planning and related fields.

Though India has never actually implemented its policies uniformly at a national level, the problem has been given much thought and consideration in connexion with the country's Five-Year Plans. It was admitted that accurate forecasting was not possible due to the absence of precise data on staffing patterns of social welfare programmes and patterns of development programmes for welfare envisaged under the 1961-1966 Third Five-Year Plan. In 1965, a special committee assessed the manpower requirements for the Fourth Five-Year Plan. This Committee made recommendations for 1,800 senior supervisory workers, 3,400 at the intermediate level, and 11,000 at the field level. The positions to be manned included family and child welfare, welfare of the handicapped, social defence, welfare of slum dwellers and youth welfare. A separate assessment of psychiatric social workers was also made. It was estimated that during the Fourth Five-Year

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4/ Botswana, National Development Plan 1968-1973 (Gaberones), p. 63.

5/ Second Four-Year Plan for the Union of Burma, 1961-1962 to 1964-1965 (Rangoon 1961), p. 166.

Plan the total numbers of personnel for medical social work, psychiatric social work and medical social work aides needed, would be 465, 200 and 1,000 respectively.

A study carried out in the West Indies showed that approximately 485 social work posts in twenty-five different settings exist in Jamaica today. The survey indicated that 60 per cent of the posts are available to persons who either have, or will have to acquire on-the-job community development and group-work skills, while a further 6 per cent of the posts demand primarily community development skills but have a group-work component. 3.3 per cent of the posts require persons knowledgeable in group work and 28 per cent are for persons who practise case work, although nearly half of the latter group require skills in one other method. 1.3 per cent of the posts demand persons who are knowledgeable in all three major methods. The remaining 1.3 per cent of the posts are in teaching and/or administration.

In Norway, the Ministry for Church and Education took the initiative in conducting three studies with a view to understanding the need for manpower in social welfare. These studies were: (a) a survey of social workers with an analysis of the needs for the 1960s; (b) a survey of in-service arrangements; and (c) a survey of the job attitudes of social workers. On the basis of these studies it was found that 1,000 social workers had to be trained in the period 1960-1970. It was assumed that 700 new posts would have to be established in fields usually filled by social workers. At the end of 1968, about 630 had been trained altogether.

The Ministry of Culture, Leisure and Social Work in the Netherlands gave attention to the need of manpower for 1975 and forecast an increase of 80 per cent enrolment in the social academies on the basis of 1968 needs.

The Social Committee of the Health Council at the National Assembly of Czechoslovakia stipulated in 1966 an increase in the numbers of social workers for the legal protection of children and youth. This committee estimated that there should be one social worker for 30,000 citizens, one for every 4,000 aged persons, and one for every 3,000 persons with serious problems of adjustment. It was calculated that by 1980,3,400 social workers would be needed. Of this number, 10-12 per cent or 400-500 were to be at the baccalaureate level discharging social policy functions.

In the United Kingdom, the Seebohm Report 6/ recommended that all the social work elements in different local authority departments should be brought together in one comprehensive social service providing a community-based, family-oriented service, available to all. It suggested that in each local authority, teams of at least ten-twelve social workers would be sufficient to serve populations of 50,000 to 100,000. On this basis over 30,000 workers were needed for the 48.5 million population living in England and Wales in 1968. These figures did not include headquarters staff in the services, nor social workers on probation, after-care, or the hospital services, in youth and community work. The Committee

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6/ Report of the United Kingdom Committee headed by Frederick Seebohm, appointed in December 1965 to review the organization of the local authority personal social services in England and Wales, and to recommend desirable changes. See Report of the Committee on Local Authority and Allied Personal Social Services, Cmmd. 3703, H.M.S.O., London, July 1968.

considered it essential that a central government department, in co-operation with the proposed central advisory council, should be responsible for making such estimates, for keeping them under continuous review and for planning training resources, including field work training over a given period, so that, at a reasonably appointed date, it should be possible to ensure that all untrained entrants shall receive appropriate training.

There has been an increasingly significant commitment to the development of a manpower policy for social welfare on the part of key institutions in the United States. The Department of Health, Education and Welfare set up a Task Force on Social Work Education and Manpower in 1963. Its report published in 1965 "Closing the Gap in Social Work Manpower" 7/ became the first major national report recommending a manpower policy for social welfare. The President of the United States publicly recognized the critical shortage of social workers in a message to Congress in 1966. For the period 1969-1973, manpower needs have been estimated at 600,000, comprising 100,000 professional social workers, 300,000 social welfare workers with undergraduate degrees, and 200,000 social service technicians with less than college education. 8/

In all the above cases there has been an attempt to think in terms of social welfare manpower at a national level. In some of them, the numbers hardly indicate the country's real needs but they do reflect the reality of limited resources. On the other hand, some of the figures represent only projections which need to be revised in relation to other competing needs for national allocations. Except where it has been explicitly stated, it is not known how many of these policies or plans have been actually implemented. What is significant for our purpose here is that the countries concerned have begun to think in this direction of placing needs for social welfare manpower within the national context.

The information reported under the category of manpower formulation may be considered as a reflection of government responsibility for social welfare not merely for carrying out specific welfare programmes as in the past, but as an expression of a stronger commitment for the integration of social welfare with developmental strategies within the national framework. It marks the point in the case of the developing countries where social welfare is regarded as being one of the means used to accelerate development as well as to ensure, strengthen and maintain the social development goals of economic progress. In the case of the developed countries, such a commitment may indicate the recognition of the need to co-ordinate more closely programmes which have grown sectorally under state or even voluntary auspices and to accept a stronger national responsibility for them. In both worlds these attempts point the way towards greater intersectoral co-operation and the need to approach social welfare, planning, implementation and training as interdependent activities.

It is perhaps understandable why so many of the developing countries have addressed themselves to the question of social welfare manpower in the framework of national planning. These are comparatively new nations, in the process of forging

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7/ United States Department of Health, Education and Welfare: Closing the Gap in Social Work Manpower, Report of the Departmental Task Force on Social Work Education and Manpower, Washington, D.C., 1965, p. 3.

8/ See United States Report to Conference of Welfare Ministers", 1968, (E/Conf.55/7/Add.6), p. 30.

new institutions and organizations, which place them on the road towards mature nationhood and a more fully developed economy. While social welfare commands interest as a worth-while strategy for achieving other development objectives, most of the developing nations have not been able apparently to carry through the implications of such manpower policies consistently. Progress has been slow, or further implementation, postponed due to lack of resources and more pressing priorities. Support for social welfare has been weighed against economic development goals and the former has been reduced considerably. The need for the social prerequisites and the infrastructures of development is a recurring theme and the fact that national recognition of the problem has been achieved in the case of these countries signals hope for the implementation of the earlier commitment.

Among the developed countries, politically older nations have inherited certain bureaucratic practices which make the implementation of manpower policies for social welfare difficult. The observations of the special correspondent from the United States provide a good illustration of some of the problems which retard policy formulation and which have to be overcome before social welfare could emerge as an integral and essential component of national development.

Social welfare has emerged as an essential and integral component of national development. An important task force on social work education and manpower in the United States Department of Health, Education and Welfare, reporting in 1965, attributed this to several major factors: the complexities of contemporary society which require institutionalized methods of facilitating social adjustment and of intervening in social dysfunction; the steadily rising level of expectations of the general population that has brought about greater demand for the utilization of social welfare services by all socio-economic groups; the aspirations for full political democracy and universal educational opportunity which demand social services to cope with community and individual problems arising from discrimination, deprivation and ignorance; and the development of scientific knowledge which has added impetus to the development of social programmes. Important legislation creating or expanding progress of social welfare has been enacted during this decade in almost every session of the United States Congress and in many State legislatures. Emphasis in legislation has been on basic provisions in such areas as income maintenance, employment, vocational education, urban renewal, health, mental health, day care; the rights of ethnic and racial minorities; the creation of opportunities for the disadvantaged to participate in bureaucratic and political decision-making processes; the strengthening of co-ordination and planning in various aspects of social welfare.

These developments, while reflecting important changes in the conception and role of social welfare, did not emerge without intense effort and they are often deficient in significant respects. Historically, the social welfare system has developed in a rather haphazard pattern, under both governmental and voluntary auspices, to serve a particular population or meet a particular need at a particular time. The resulting overlaps and inconsistencies have not been adequately dealt with, in spite of the long-term trend toward planning. Traditionally also, certain aspects of social welfare legislation have been and continue to be predicated on the archaic economic assumption that the poor create their own problems and the equally archaic psychological assumption that less than adequate assistance will spur them to help themselves. Finally, progressive legislation

too often does not carry sufficient fiscal appropriation to become fully effective when and where it is needed. Frustrations arising from the struggle for improvements in welfare legislation have contributed to the development of new movements to find improved solutions to social problems, such as the Welfare Rights Organization of public assistance recipients, a movement which has received significant support from many segments of the social work profession.

In spite of the growing importance of social welfare in national development and the manpower crisis in this field, there is no comprehensive social welfare manpower policy in the United States. Generally, in this complex, heterogeneous society, national policies emerge only after a prolonged process in which interested groups and individuals inside and outside the Government begin to perceive the dimensions of some problem necessitating a policy, after there is a coalescence of interests and influence, after the possibilities and feasibility of the policy have been tested through trial-and-error, through partial implementation and research.

An added factor delaying the development of a manpower policy in social welfare has been the heterogeneity in this field. Social welfare is not confined to one institutional complex but permeates many societal institutions in fields such as health, mental health, education, urban development, employment. While this is an essential aspect of the role of welfare in national development, paradoxically it militates against the development of a comprehensive common social welfare manpower policy.

The assessment of social welfare functions

In this category are to be found cases where attempts have been made to analyse the social welfare tasks as a preliminary step in estimating personnel needed for social welfare programmes. Such an analysis helps to determine the categories of social welfare workers needed for the different programmes, the salary conditions, the training needs, and the resources needed for implementing the social welfare programmes.

Italy has attempted to analyse at various levels the work of all the professions engaged in social welfare in order to assess the country's manpower requirements. One project which is worthy of mention is a study of the functions of social welfare workers, carried out by CEPAS on behalf of the National Research Centre. The aims of the research were: to analyse, at various levels, the work of all the professions engaged in the social welfare field, with a description of their functions, and to collect the preliminary data needed for a full study of manpower requirements. The study included: monographs on individual types of social welfare workers; foreign material relating to similar professional figures; identification and classification of the places where social workers are employed; bibliography on both the social worker and the higher officials in the social services; job analyses.

While hope has been expressed that the regional studies concerning the nature of social welfare functions would come nearer than before to offering some solutions towards formulating a national policy, some pertinent observations have also been made with reference to problems of assessment. It has been felt that

Italy (like several other countries) has not yet acquired a modern concept of social welfare and of its role in an integrated development process. Consequently, it has been difficult to make consistent choices for a general design of social services, and for norms concerning their distribution and employment of service personnel, which are all prerequisites for a sound estimate of the personnel required. According to figures contained in the national economic development plan, there are some 200,000 persons engaged in social welfare activities of whom 6,000 are social workers, holders of various diplomas.

In Sweden, the National Association of Social Workers carried out a study in 1968 of the kind of tasks that some categories of social workers perform. It indicated the need for adequate data-gathering before venturing into any statements about manpower required for the different levels.

For the first time in 1966, Switzerland carried out a study of manpower needs for a ten-year period (1967-1977) in the canton of Zurich, for the field of social work including institutions for child care. An analysis of social work jobs was also done in Berne and they were rated in relation to (a) other professions and (b) to the structure of the public administration of the city of Berne. Among other things the results indicated the low status of the social worker and the need, therefore, to formulate new policies in the training and use of social welfare personnel. A manpower survey was therefore initiated and research conducted into questions of desirable qualifications and deployment of personnel.

For the first time in Canada a conference at the national level on manpower and education needs in the field of social welfare was held in November 1966, to decide on specific measures to meet Canada's manpower needs for social welfare which are now in the process of being implemented.

The assessment of social welfare functions calls for sophisticated procedures of analysis and study which the developed countries are able to command more easily. On the other hand the European countries have not yet been able to extend these studies and use them in a significant way for manpower planning. It is likely that this will become a reality in some of the smaller countries where the total socio-economic situation is more managable than elsewhere.

Some of the difficulties and problems of assessment are identified by the special correspondent from the United Kingdom:

"(i) Insufficient data exist about the true incidence of any given need. This may vary in different parts of the country and, moreover, total incidence alone would not show the most effective form and range of services, nor the extent of the need for social work intervention, whether short term, intermittent or long term.

(ii) There is no analysis of what constitutes good standard of services nore what this means in terms of skills, related services and time. Indeed, social workers are asked to undertake tasks which are both comprehensive and diffuse and to achieve results which are not clearly defined. Thus, for example, it is easier to recognize an excessive than an optimum work load under differing circumstances.

(iii) If total populations 'at risk' could be identified under preventive services instituted, this might in the short term uncover many more potential clients needing services. Experience shows that unmet need is so great that any increase in services or better deployment of social workers produces more users.

(iv) Forecasts made by local health and welfare authorities (1966) showed an estimated range in the percentage of social workers likely to be needed per 1,000 of the population (by 1975) from 0.02 to 0.24. This variation is not based on objective assessment of need or desirable standards of service. Similar variations are found in the child-care services.

(v) Shifts of population or demographic changes, new legislation, or changes in social habits may affect the incidence of social need in unforseen ways.

(vi) The more efficient use of social work staff, e.g. by provision of better clerical and transport facilities and better deployment may in effect increase their number."

Structuring for manpower planning

Under this category are to be found efforts on the part of national governments or nationally constituted non-governmental bodies to set up structures for studying manpower needs and for establishing standards and procedures for the development of social welfare manpower.

In India, the training of voluntary workers was to be undertaken through the collaboration of three organizations: the Council for Social Development, the Delhi School of Social Work and the Indian Institute of Public Administration. Such collaboration between government and voluntary agencies was considered essential if implementation of welfare programmes was to achieve desired results.

In Latin America, the first Assembly of Voluntary Service Organisations (ALOSEV) met in Argentina in 1967 and created a regional centre for voluntary services for better training. A co-ordinating agency for volunteers (ACOVOL) was created in Colombia in 1964 to train qualified personnel, to avoid duplication of services and to canalize efforts through the co-ordination of the social welfare institution.

In Europe, the Scandinavian countries have combined their efforts for planning and carrying out a manpower policy. The Nordic Council is primarily a co-ordinating committee for social welfare legislation. One of its sub-committees devotes itself to the planning of manpower for the field of social welfare in Scandinavia. The committee consists of two representatives from each country, the head of a school of social work and another member of a different profession. While this co-ordinated approach is still evolving in scope and objectives the countries concerned are also individually making their own efforts at developing a manpower policy.

A co-ordinating committee has been set up under the Department of Education of Sweden in order to attend to the budgeting and curriculum needs of the five state schools of social work and public administration. Sweden has also made a distinction between the needs of the big cities and those of smaller towns. In the case of the latter, an association of local authorities has been formed to provide a social welfare orientation for local councils, boards, committees, administrators and social workers in agencies run by the local authorities.

The Norwegian parliament has authorized the establishment of a Council for the Training of Social Workers under the Ministry of Church and Education. This Council consists of seven members with knowledge of pedagogical questions and of the needs of social work occupations and also experience of practical social work and social welfare administration.

In Czechoslovakia, a committee appointed by the Ministry of Labour and Social Affairs submitted a plan for the analysis of social welfare manpower. It was recognized that the tasks of social policy and social welfare could only be performed by those workers who are educated and professionally trained for concrete services. As the School of Social Welfare and Law alone could not meet all the needs of social welfare training, additional schools were recommended at a university level, in addition to social workers with other educational qualifications. Three levels were proposed: a Bachelor's Degree level for training in policy-making or for research, consultations and teaching for social welfare; a middle level degree for other professional activities in the field pertaining to preventive, therapeutic or research activity: and a basic degree for auxiliary social welfare functions such as home help services assistance in child welfare, and services for the aging and disabled.

In the United Kingdom (England) manpower policies have been steadily evolving even though the basis for forecasting needed social welfare manpower would have to be revised in order to secure a more accurate and meaningful account of the welfare system. There are three publicly financed training councils in the United Kingdom: the Advisory Council for Probation and After Care (England and Wales, 1936); the Central Training Council in Child Care (England and Wales, 1947) and the Council for Training in Social Work (England, Wales, Scotland and N. Ireland, 1962). The first two Councils are under the auspices of the Home Office and staffed by civil servants, some with professional qualifications. The third has its own secretariat and is publicly financed. All these three Councils aim to secure the provision of adequate social work training. The Seebohm Committee 9/ reporting in 1968 recommended the integration of the three Councils in order to secure a more effective use of social work training resources. This has been accepted and a Central Council for Education and Training in Social Work is to be set up under the Local Authority Social Services Act, 1970.

In Australia, the Council of Social Services, the Associations of Teachers in Schools of Social Work and the Association of Social Workers have taken the initiative in establishing a joint committee on social welfare education. Its objectives are to establish appropriate planning machinery and procedures on a national level which will provide the means of national over-all planning and

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9/ See foot-note 6.

optimal utilization of resources in Australian social welfare education, by continuing examination of related manpower issues including the functional classification of social welfare manpower, the determination of supply and demand ratios, and other related tasks for mobilizing the necessary resources.

The Canadian Welfare Council established a Commission on Education and Personnel in 1960. This Commission was to act as a clearing-house for information, to promote a better understanding of the dimensions of the problem and to create an interest for positive action so as to improve matters pertaining to social welfare manpower. It adopted the idea that there was no single level of education specifically called for, and no single line of action that could be adopted to meet the needs.

In these examples specific action has been taken to study the question of manpower further or to organize resources for implementing some aspects of manpower policies. The establishment of appropriate structures for the study or implementation of manpower policies may be regarded as an important measure for carrying out such a responsibility.

It may be noted that only two examples have been cited from the developing countries. This is probably due to the fact that in the developed countries recognizable sectors of social welfare practice have already been identified and it is therefore possible to structure related bodies for studying or implementing manpower provisions. In the developing countries, however, the formulation of manpower policies for social welfare within the context of a national development plan, have more direct intersectoral implications which yet remain to be worked out fiscally and administratively before specific responsibilities could be identified and assigned, as in the case of the developed countries. While this may be a plausible explanation, it would be safe to assume that it is probably not the only reason for the difference between the two groups of countries with respect to the structuring of instruments for the study and implementation of aspects of manpower policies for social welfare.

Supportive measures to facilitate the development and use of social welfare manpower

Finally, in this category are grouped cases where attempts have been made to promote the development or use of trained manpower through financial provisions, legislation or administrative policy.

In India, the State of Madras has recently prescribed that a degree or a diploma in social work is a necessary qualification for the post of probation officer. Ceylon too has recognized officially the need for social work training for the probation service. The Philippines has gone a step further in legislating that all social work practitioners must be registered as professional social workers with a prescribed period of training. Since 1965 the Department of Social Welfare uses a roster of registered social workers for the recruitment of its personnel. The Department of Justice of the Philippines has also prescribed that youth-welfare officers employed by its Department of Probation and Delinquency Control should be qualified social workers. Similar legal enactments have been made in various parts of the United States where those practising as social workers are required to have a certificate of registration. France, Greece, Israel, Italy, Japan and

some Latin American countries are examples where social workers are included in the list of registered public servants. In Norway some important legislation for social reform pertaining to public welfare, rehabilitation, social insurance and family counselling, during the years 1960-1968, also stipulated that qualified personnel was to carry out the social welfare functions at administrative and field levels. There is no doubt that there are many other countries which have stipulated similar requirements.

In Panama, the Council of Social Welfare and Community Development approves financial assistance to organizations provided that, among other things, such organizations have a commitment for training their personnel. An interesting case has been reported in connexion with a dialogue between the Inter-American Bank and the Latin American Association of Schools of Social Work. The Bank made a statement in 1966 that all loans for various urban and housing projects should also carry a built-in provision for meeting associated social requirements including the employment and training of social welfare personnel and other professionals to carry out the urban development programmes. Unfortunately, the proposal was not followed through to the point of implementation.

In the Philippines the Department of Social Welfare facilitates its personnel to avail themselves of study grants for professional training. This is done by allowing field workers to be transferred temporarily to field office areas where there are schools of social work in which they could be accepted for enrolment either outside working hours, or during regular hours on certain days during the week.

To meet the acute shortage of personnel for day nurseries and children's residential institutions, the Government of Japan has initiated a policy of providing local governments with subsidies for the cost of training facilities and for granting scholarships. The Tokyo Metropolitan Advisory Committee on Social Welfare has recommended that local governments recruit welfare officers among graduates of schools of social work and that schools should make their curriculum practical and more up to date.

Cameroon, Jordan and Turkey have made provisions in their national plan for institutions which are to train personnel either with their own resources, or with additional help from bilateral sources, the United Nations and specialized agencies, though such provisions do not specifically deal with social welfare personnel needed for their countries as a whole.

While academic centres and training councils have been the responsible bodies for training social welfare manpower in nearly all countries, the trade unions carry this responsibility in the Soviet Union. In 1965, of the country's trade union budget of 10.5 billion roubles 1.8 million was allocated for training, and personnel and social insurance education. Even though the emphasis has largely been on the administering of social insurance, there has been an increase in the number of various short courses and seminars organized by trade unions to train personnel for social welfare functions. This trend has been increasing since January 1961 when the Ministers of Social Welfare for the fifteen republics wrote that training personnel, improving their qualifications and raising their professional and political levels was a major task. 10/

10/ B.Q. Madison, Social Welfare in the Soviet Union (Stanford, Stanford University Press, 1968), pp. 90-105.

In 1962 the Department of National Health and Welfare of Canada set up a national welfare training and research grants programme. It recognized the need for both professional and non-professional training, as well as for research in the field and provided important financial support.

In the United States financial provision for social work education was, until recently, available mostly for particular fields of service like mental health, or areas of practice like family service. With the passing of a new legislative amendment in 1967, such support has been extended to a wide variety of manpower training for social welfare ranging from the baccalaureate to what are known as indigenous non-professional levels discussed in the following chapter, in the section dealing with the diversification of training levels.

The preceding examples illustrate the supportive character of administrative, financial or legislative provisions, together with employment policies for specific purposes. They are to be distinguished from the attempts in the first category which are on the whole meant to identify needed manpower for social welfare in the context of national planning.

In some cases, as in the administrative policy regulation requiring training for employment in certain welfare positions, the supportive measures for the use and development of manpower for social welfare have been the end of the wedge in extending this requirement ultimately to other welfare activities. On the other hand, legislation regarding the registration or licensing of social workers may restrict recognition of the profession to the more easily identified social welfare tasks. Whether this is desirable in view of the changing nature of social work practice may be disputed by many.

Finally, in relation to the question why some countries with several years of professional social work education have not given social welfare appropriate recognition at the national level, the following observations from the special correspondent from India have relevance for many other countries as well.

As a profession, social work is of recent origin. While this is the case generally in the world, it is more so in India. There is a basic doubt in the minds of many as to whether there is a distinct body of theoretical concepts and knowledge which professional social work can claim as its own. The emergence of a profession and therefore of a group of persons who earn their living by their work was looked upon as a somewhat unorthodox, if not hostile, development. While this is not unique to India, either, the difference lies in the fact that the profession of social work in India has developed at a time when the change from the familial to the contractual society has not progressed very far. While the profession of social work has grown considerably, the concept of social work as a profession did not take roots in India but rather was grafted on to Indian life by a process of cultural borrowing that has had consequences for its development.

The situation may be further explained if we consider the following:

(i) There is no well-defined manpower policy in the country as a whole and in the field of social welfare, even less.

(ii) This notwithstanding, a very large number of holders of the Master's Degree in social work join the profession as Personnel Officers, Labour and/or Welfare Officers and Industrial Relations Officers. It may be safely said that about one-third of the others do not take up jobs in the field of social welfare. This is specially true of women, a majority of whom, after marriage, settle down as housewives and do not use their training in this field.

(iii) The development of social work education in the country may be said to be unco-ordinated and unplanned. The existing social welfare situation in India is such that a much greater number of undergraduate trained social workers is needed than holders of the Master's Degree. However, social work education in India is still imparted mainly at the Master's level. Only very recently a few institutions have set up programmes of undergraduate education in social work and there is an urgent need for more.

(iv) Though some years have passed since the introduction of the social work profession from the West, social workers in the country have not yet been able to make their discipline accepted in the institutional framework of the country. One of the main reasons for this has been the fact that they have not so far produced sufficient academic material based on local conditions. This is also related to the low status accorded to social work as a profession in the country. As a result, the quality of students attending schools of social work in India is usually not very high; the best among them choose medical, engineering or administrative careers offered in government or private organizations. The others (including of course the handful who may be really committed to social welfare), often prefer to join a school of social work. Further, there is a lack of uniformity in the standards for admission among the various schools of social work. It may also be mentioned here that in the absence of any linkage between undergraduate and post-graduate training in social work, the former is often superfluous.

(v) While field work training provided in a school of social work is usually at the service/implementation level, the jobs taken by post-graduate degree holders are often at the executive, supervisory or administrative level. This creates frequent difficulties of adjustment to the job and consequent poor job performance. The fact that concurrent field work is missing from the curriculum of certain schools of social work, is detrimental to the quality of the social workers they produce.

(vi) It is estimated that the country has more than 6,000 trained social workers to date (holders of the Master's degree). However, not more than 600 are enrolled as members of the only professional organization, the Indian Association of Trained Social Workers which was started in 1961. Lack of sufficient support on the part of trained social workers has often made it difficult for this organization to further their interests.

While some countries have made efforts to develop all aspects of manpower for social welfare in the context of the four categories outlined above, others have distinguished themselves in one or two aspects. Sometimes more was gained through the adoption of one method rather than another. A developed country for example may ultimately move closer to a national commitment through sectoral financial provisions for social welfare than a developing country through national planning which may slow down owing to lack of resources. All these four aspects of manpower development however contribute to place social welfare in its rightful place in relation to integrated national development.

Lastly, there is another important group of variables that must be recognized as contributing to a national policy of manpower for social welfare. These are the availability and quality of professional leadership, the voluntary organizations and the impact of professional associations. Such are, associations of schools of social work for professional workers, councils of social welfare and social work, education and other regional organizations at the government and the community level, working together for the realization of mutually beneficial goals. In the third category in this chapter there were some examples of such co-operation. It is likely that in other cases not mentioned here, the same variables have been at play.

II. THE ALMINISTRATION OF TRAINING PROGRAMMES

In implementing manpower policies for social welfare, those responsible for administration and for the organization and use of resources for training have been constantly challenged by the dilemma of a low priority for social welfare in the context of national planning, while on the whole the strategic value of social welfare has not been denied. Training levels have been diversified to suit the needs of the personnel with varying educational background. Various measures have been taken to accelerate training programmes or to extend training resources in order to increase the number of trained personnel and make them available as soon as possible. Several ways have been tried to achieve collaboration between training resources in order to improve the total learning content as well as particular learning experiences in the field. They all represent different organizational and structural arrangements for training.

Recruitment policies and related measures to ensure manpower supply

The paucity of personnel in certain important areas had led to the adoption of new recruitment procedures to cope with the problem. It has been extremely difficult for rural social welfare departments and other local service organizations to retain trained personnel, as they have been constantly drifting towards the cities in search of better jobs, better social amenities and other advantages of urban life. In another area welfare programmes have suffered because of lack of personnel to cater for certain special groups characterized by needs arising from their ethnic background, language, religion or sex. Social work does not usually attract the best students in schools of social work or the largest number. In meeting such problems the following attempts have been made by a number of countries:

Responding to local needs

In the United Kingdom, a number of social work courses have been started in colleges of further education to cope with the difficulty of attracting sufficient trained workers to the North of England, parts of Wales and to industrial areas with inadequate social amenities.

In another case in the United Kingdom, where the need for additional child care staff was great, recruitment for the course was shared between the employing bodies i.e. local authorities and voluntary societies. The Central Training Council invited requests for a certain number of places for the course. These places were allocated according to the ascertained needs for staff in the different parts of England and Wales, so that departments with few qualified staff were given priority over others. At the first stage of selection applicants were interviewed by employing agencies. At the second stage those offered conditional employment had a training interview. Candidates finally accepted received tuition and full maintenance grants in the first year and supervised employment or salary in the second year.

The Central Training Council considered that the scheme had several merits: (i) it had given priority to those authorities which hitherto had few or no qualified staff; (ii) employing bodies who sponsored a student, gained a student/employee after the first year of training and a qualified member of staff after a second year of supervised work; (iii) no demands were made on existing practical work placements; (iv) a group of 90-100 students made it possible to use existing teaching resources economically and the teaching staff benefited from being members of a large supporting group. Following on the success of this experiment similar courses are being contemplated.

Local recruitment to suit local needs has been the characteristic of a project for immigrants in Israel where it was necessary to recruit personnel from the same local areas corresponding as far as possible with the ages of the local population being served. Israel seems not only to have selected personnel from local areas to solve this problem but has also insisted on locating training centres in the home areas of the candidates to ensure the practice of locally trained personnel (and therefore apparently more effective and relevant to local needs) for services in local areas.

Another effective device tried by Israel has been the use of mobile training units which travelled to various centres in the rural areas. The use of such units is also reported from Kenya, Libya, Pakistan, the Philippines, and the Republic of Viet-Nam.

Similar objectives have been kept in mind in India in recommending that new training institutions should be located within easy reach of rural areas to provide the necessary orientations for the trainees. Tanzania too has emphasized decentralized training.

Kenya and Uganda tried to meet the same problem by recruiting personnel not only on the basis of educational attainment, age and evidence of maturity, but also on the basis of the candidate's closeness to his home area. By selecting those persons with considerable experience in their home areas, it was hoped to ensure their return home after training.

Meeting other special needs

It is fairly common in many countries to give importance to the recruitment of groups not adequately represented in the educational institutions. Some special problems have to be faced however in ensuring that persons recruited are in fact eligible for admission to the training institutions. In reconciling this dilemma of extending enrolment possibilities to minority groups and at the same time ensuring that they meet admission standards, the United States has made several significant experiments. A report on one such experiment in a school of social work describes an attempt to provide special training opportunities during the summer months to a small group belonging to the black community. This was a seven-week pilot programme specifically aimed at increasing the number of minority group members, particularly of lower socio-economic background entering and completing graduate social work training. It was recognized that several applicants for admission were rejected from minority groups on the basis of their poor academic background, although they possessed other useful attributes. It was

felt that a brief summer experience could not compensate for this limitation. The programme was therefore designed not as a remedial one but as a preparatory one, for admission to the school. The course focused on selected social work and mental health concepts which, as experience had shown, were not easily assimilated by students with inadequate undergraduate training. Thus, to the six candidates selected, the programme served as an introduction to certain concepts and as a test of their ability to master them. In effect, the recruitment device here was to try to raise the standard of these applicants from an ethnic minority and make them eligible for admission.

The need for men or women, according to special needs, has affected recruitment policies in a number of countries. Uganda has tried to recruit an increasing proportion of women students. In the Ivory Coast women candidates are given priority. Mali, Togo and Senegal are some of the countries which are adopting similar measures to meet the need for women workers in the promotion of rural development programmes, which are considered essential in conjunction with economic development efforts at the national level. In Libya field placements are deliberately arranged in high schools for girls with the hope of inciting interest in enrolment in the school of social work.

In Latin America, however, there is a deliberate effort to attract men to enter the profession, for work involving social change at the community level, following a shift of emphasis in policy from direct service programmes which did not attract men. "While heretofore, the schools were almost exclusively for women, more and more men are now seeking admission, introducing a more aggressive and at the same time more practical and objective element. Some universities, wishing to attract still more men are exploring the possibilities of changing the academic degree in name, if not in essence, from licenciatura en trabajo social (or servicio social as the case may be) into something like 'licenciatura en administración social' on the grounds that the latter signifies executive responsibility and action in a broader sense and suggests higher prestige." 1/ These observations are reflected in some of the reports from the Latin American schools. Colombia, for example, has reported that in providing new social work perspectives in the task of reorganizing the curriculum to correspond with the country's developmental needs, one of the major tasks proposed for implementation is the encouragement of men to enter the profession.

Early introduction of social work courses in the university curriculum

In Japan, as in several other countries, it has been noted that young college students often have no definite ideas about their field of employment or interests upon graduation. In response to this situation, the authorities postponed the time required for selecting the major subjects until the second year of studies. This enabled students to have a better idea of what professional choices were open to them, thus ensuring a percentage of

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1/ Virginia A. Paraiso, "Selecting students: Requisites of current social work Responsibilities", International Social Work, vol. X, No. 1 (January 1967), p. 25.

preference for the social work careers. The problem of students who entered the social work field with unclear minds about its appropriateness for them, and later dropped out, was thus largely eliminated. Another device was to offer social work courses for sociology students in their second year so that many students began to develop an interest in social work and were willing to study for the additional number of years necessary in preparing for the profession. Some schools in the universities of Uganda, the United Kingdom and Zambia seem to have made similar attempts.

In the United Kingdom a number of universities offer a full professional social work training combined with an undergraduate degree course in social science. The intention is to attract those very able students, some of whom have in the past been deterred by having to wait until they were 23 before beginning professional training. It is also aimed at bridging the gap between theoretical social science and social work. The outcome would seem to justify the experiment. Increasing numbers of students apply for the course and it is generally recognized that they are some of the most able students in the university.

Localized recruitment and related training, and curriculum arrangements are an important recognition of people's needs particularly in the developing countries where most of the deprived population live. It is now being increasingly recognized that programmes of welfare in the rural areas are as important as those in urban areas. The fact that in the developing countries most people live in rural areas and that preventive programmes with reference to some of the urban problems must begin at the source, in the rural areas, make the strategy of localized recruitment an important one.

The involvement of local organizations in recruitment raises the question as to what extent this might also affect the very content of the curriculum which should be designed to bring about needed change in local systems of welfare. On the other hand, where an urgent need exists, experiments of this nature, as in the case of the United Kingdom, need to be tried out and evaluated. It is likely that such attempts have been successful only where the training was at a subprofessional or non-university level.

Even in such cases, the authorities are satisfied when only a fair number of the trainees remain with the local areas. Drift towards urban areas or towards other professions cannot be entirely avoided or prevented. Nevertheless, some measure of success has been achieved by policies which ensure continued service.

Recruitment for minority groups represents part of the commitment of the social work profession and of government responsibility to serve all groups of the national community and to take those measures necessary for providing the most effective kind of service, appropriate to the needs and desires of minority groups. Such pioneering efforts, as represented by the example of the United States, seem to need persistence and a willingness to do the utmost in carrying out the objectives of the project. Its lessons need to be carefully learnt for better and wider application.

It seems somewhat surprising that there is so little evidence of curriculum reorganization in order to induce candidates to enter the social work profession. Some of the Latin American countries have begun to make efforts in this direction. It is possible that, in developing countries, the difficulty of ensuring adequate employment for social work graduates does not stimulate any curriculum reorganization likely to affect suitable personnel, other than the regular updating of courses offered in the schools. The example from Japan is more an instance of a strategic offer of the social welfare course in the early undergraduate years to invite professional interest, rather than an offer of an exciting curriculum to invite enrolment. Nevertheless, this is an interesting example, which has been found to be successful in a few other countries too.

Regional training centres

While localized training has been directed to meeting special needs, centralized training at regional and inter-regional levels are being regarded as an important way of economizing on national or regional resources in meeting crucial training needs.

Ceylon, India and Pakistan have established training centres on a regional basis in an effort to centralize training staff and other resources for the development of needed personnel for social services or community development activities.

In the Republic of Viet-Nam, where communications are difficult, between the 44 provinces particularly in the present war conditions, the creation of pilot training centres has been proposed for four main regions with the aim of ultimately establishing permanent regional training centres.

In response to the needs stated at several international meetings the subject of regional training for a group of several countries is now receiving increasing attention. In the Philippines, with the help of the United Nations a proposal is being worked out to serve the needs of Asia with a training centre for social welfare and community development. Similarly, there are efforts to set up regional centres for training in the Mediterranean and in Africa, where the creation of sub-regional centres has also been proposed. These developments are chiefly a result of the 1968 Conference of Ministers Responsible for Social Welfare at which it was recommended to explore the feasibility of developing international and regional facilities for advanced training including research, teacher training and the production of indigenous teaching materials.

In the developing world, training has, for too long a time, followed western models and educators have been influenced by these models, thus neglecting the local socio-cultural environment. The existing, and the proposed regional centres, will facilitate thinking in indigenous terms, which is fundamental to the need for professional integration in the local context. A new leadership in social welfare, appropriate to the region and local needs, will no doubt be forthcoming in the sharing of experiences common to the region and in the evaluation and understanding of needs unique to the participating countries.

Diversifying training levels

For a long time, many countries have tended to look upon social work training as consisting mainly of one level which was considered basic for practice. This was due to several factors such as the need to correspond with other professional requirements, financial limitations, etc. Thus in Canada, India and the United States social work training has been at the Master's level in a university or institutions of an equivalent level. In Latin America and in a number of Asian and African countries it has been at the undergraduate level. In a number of other countries in the developing world, including some Eastern European and Western European countries, a basic training for social work practice has been given at the Secondary level, or even lower.

More recently, however, a diversification of training has been observed at different educational levels, in recognition of varying social welfare functions and of the needs of different types of service programmes. At the same time it is attempted to make such training levels part of an integrated plan to facilitate graduation from one training level to another, or progression from one career level to another.

Canada and the United States in particular, have had a series of interesting developments in breaking away from the tradition of employing holders of Master's degrees only and are now using social work technicians, social work aides, and indigenous workers at the undergraduate level. Career ladders have been worked out to permit promotion to the higher levels after adequate training.

In Canada there has been an important change in the form of two major additions to the usual social service education provided by institutions: the undergraduate first professional degree and the technological social services qualifications. Eleven universities are now introducing first professional degree programmes of undergraduate studies for social work. These programmes require four to five years of education at the post secondary level. The qualification for technological social services is offered outside the universities in approximately thirty programmes of social service education at the post secondary level initiated by institutes of technology, community colleges, etc. The aim of these programmes, which usually last from two to three years, is to produce a non-professional worker able to provide social services to citizens.

In the United States an increasing number of graduate schools are developing four-year social welfare programmes at the undergraduate level, and play a leading role in the development of four-year or two-year undergraduate programmes in their state or region. At least one-fourth of the schools are engaged in short training programmes for non-professionals. Almost all the schools are conducting continuing education programmes, ranging from a university extension with 80 offerings annually, to a school offering one workshop of short duration. 2/

2/ See Contemporary Education for Social Work in the United States (New York, Council for Social Work Education, 1966).

In India, undergraduate training in social work and certificate courses at the high school level are now being regarded as appropriate and necessary for carrying out functions in the nation's system for welfare services. During the past decade, a few universities and rural institutes sponsored by the Ministry of Education have started undergraduate education for social work. One of these institutes conducts a three-year semi-professional programme at the undergraduate level which provides courses in social sciences methods and skills of social work and in field work. The course has been so designed, as to ensure that a student after graduation may be able to work in the social welfare field at the intermediate level or, in the alternative, continue his education either in social work or in one of the social sciences.

In Ghana, Tanzania, Uganda and Zambia the need for an intermediate level has been recognized in order to bridge the gap between those working at the administrative level with undergraduate degrees and those discharging welfare functions at the community level. These intermediate level personnel function as supervisors and junior administrators. In Ghana the intermediate level is for those who have not yet graduated from high school. Civil servants who have had an experience of five years or more in the social welfare department receive the training necessary to prepare them for university as well as for a supervisory position, to serve as a link between field personnel and higher administrators with undergraduate qualifications. It must also be added that, along with the training of intermediate level workers in many African countries, there is also a trend to raise training to higher educational levels. Ethiopia, Uganda, the United Arab Republic and Zambia now have Bachelor's degree programmes, while Ghana and the United Arab Republic also have programmes beyond the Bachelor's level.

Courses for the intermediate level of practice have also been introduced in some Latin American countries for well defined functions. In Brazil, a pilot project is in operation to train social work technicians at the intermediate level (to be distinguished apparently from the professionals with a Bachelor's degree) to meet the needs arising from the development of the Amazon region. It was undertaken under the joint sponsorship of the regional development project, the State, the Municipality and the University. The course provided training in the social sciences and social work techniques and lasted twenty-five months. Unless the qualifying students enrolled immediately for the Bachelor's level, they were expected to work for at least three years in one of the cities in the interior of the country.

In a university in Venezuela, three different levels of training have been integrated to permit educational as well as professional movement from one level to another. At first there had been only programmes for social work training at the Bachelor's level as in most other Latin American countries. The need for a high professional level and for social welfare personnel at lower than Bachelor's level, to cater for the wide range of service needs, prompted this integrated system of training. A similar approach to social work training has been initiated at a university in Chile.

Malaysia has prepared a five-year in-service training plan at the post high school level for all welfare personnel without professional qualifications, and given it a first order of priority, before venturing into higher educational levels. This integrated plan ensures training at entry into the service, in the middle of a career, and later for a refresher as part of a department policy for career development and the improvement of public administration.

Other in-service courses have ranged from four months in the West Indies, nine months in Sweden to two years in Jordan. In the case of Sweden a permanent school for in-service training has been set up since 1963. In Jamaica the university has been responsible for in-service training for the West Indies. University participation in in-service and other levels of training besides the regular undergraduate or graduate levels has been a growing characteristic feature in most parts of the world, a distinct departure from what was considered mostly appropriate ground for voluntary organizations, nationally instituted councils or government training bodies.

The training of volunteers has also been taking place at different operational levels. Volunteers who serve as board members of welfare organizations are to be distinguished from volunteers who perform various kinds of direct service. This category also includes indigenous workers, some of whom, like other volunteers, are paid allowances to meet travelling or other personal costs involved. The training of such volunteers is an essential part of the social welfare programmes in Ghana, Kenya, Tanzania, Uganda, the United Arab Republic and Zambia. An agency for the co-ordination of volunteer work in Latin America (ACOVOL) was created in Colombia in 1964. 3/

In West Pakistan, a university together with a welfare council have worked out a scheme for training of volunteers at the local and the national level. Similarly in Brazil, a university has undertaken the training of volunteers in collaboration with community agencies. In Bolivia volunteers for social service at the university have been trained by the students of the school of social work.

The training of indigenous workers for work in their own neighbourhoods has been a marked characteristic of the new anti-poverty programmes of the United States. In some cases they have been regarded as the first steps to a development programme for social work as a career. Many universities have also been involved in such training both in urban and in rural poverty stricken areas, in such fields as housing, child welfare and recreation. Very often, the term non-professional training has been used to describe these programmes.

Similar innovations have taken place in the recruitment of personnel among the consumers of social services in the same anti-poverty context. Indigenous community workers in ghettos and housing schemes, unmarried mothers, other family members on public welfare from the hard core of unemployed or under-employed and minority groups have been recruited into various welfare programmes and social services. Hong Kong, India, Mexico and the Philippines also report the use of such non-professionals who are usually the beneficiaries of various welfare services.

3/ See Chapter I.

In the Philippines, the Bureau of Family Welfare has used members of the client communities to provide needed auxiliary services, in an attempt to bridge the gap in manpower needs. These members of the client communities are called resident volunteers in view of the fact that they reside in the communities being served and they render services without receiving any remuneration. They are recruited among the civic-minded "natural" leaders of the community who show considerable interest in helping their communities. Their involvement in community activities attest to their potential for a greater commitment to the improvement of the community. Training is meant to give them the broad philosophy and teach them the goals of community welfare services and of volunteer work, as well as equip them with the basic skills to enable them to render their services effectively. They are considered as auxiliary staff members of the community centres and serve as liaison with the community. Development of local leadership is included in the programme of the community centre, in order to serve as a continuation of the training of volunteers.

In most cases special training is provided for the proper utilization of such personnel; where it is possible the training of these para-professionals, or social work aides is designed to permit further movement up the career ladder. This feature makes such volunteer training distinctly innovative.

In response to various requests the United States has tried several experiments in the use of social work personnel trained at different levels, as part of a team approach. One school reports a social work team-approach which consists of graduates, undergraduates, and various other non-professional indigenous levels collaborating and making a flexible use of available competence and expertise to attain common professional goals. These goals are determined by the professional member of the team, namely the graduate who acts as team leader but the rendering of services may be assigned to various members of the team including those at the undergraduate level. Though this is a flexible arrangement and teams in various agencies and research projects differ in composition, the team always consists of at least one graduate and one or more social service personnel who do not have such training. The advantages of such a team approach are many. Apart from the flexible use of skills, one person need not be all things to his client as the "case approach" requires. In addition, the team approach brings into the system of service delivery the professional "know-how" and value orientations, so that the undergraduate or other levels of sub-professional personnel need not be expected to have completely assimilated the profession's value system and fully mastered the body of knowledge required to meet the wide range of needs clients may bring to the agency. At least two other similar attempts have been reported in the field of family and child welfare services. The anti-poverty programme launched in the sixties provided the impetus and the resources for such experimentation.

One important consequence of the diversification of the levels of training has been the tendency to examine more critically than before the content of each level and its relationship to the other levels. This has led both to a more accurate focus of course-content and to better planning of the curriculum as a whole. There is now a greater understanding and agreement of what needs to be done for different levels of practice and how the functions of the aide could

be distinguished from those of the technician, and the technician's from those of the professional. Earlier, in the developed countries it was thought that professional education was only possible at the Master's level and in the developing, that the welfare systems and the educational systems must continue at the levels to which they had confined their efforts. Sheer necessity on the part of the developing countries and the research experience of the developed have made the departures possible.

Another important result has been the institutionalization of the different levels of practice, not as isolated levels but as levels which have significant connexions for the integrated and differential use of manpower as well as for the opportunity provided for professional development from one level to another. At the same time, each level could be pursued as an end in itself by those who do not wish to go any further. Such a planned and interconnected concept of training helps to reinforce a sound manpower policy as this is based on an analysis of functions and resources.

Here it may be relevant to refer to some of the problems experienced in a few countries where the diversification process has been slow. Understandably enough, in some cases at least, there has been a tendency for the professional levels to guard their prerogatives jealously and prevent the other levels from acquiring their knowledge and skills. This has been done on the mistaken notion that such a diffusion of knowledge would lead to confusion about their own professional roles and to quackery on the part of the sub-professional levels. However, such a diversification, backed by sound analysis and research, has strengthened the professional role and its relationships with the other levels. A want of the required scientific attitude and of critical examination may lead to an isolation of the different levels, thus defeating the purposes of diversification.

The association of the university with training for non-professional roles must be regarded as a development in the right direction. It enables the university to continue its curriculum research in the community and to form a valuable relationship with it, both functions being vital factors in the development of university and community, as well as in furthering the professional objectives of the discipline.

Perhaps a few words need to be said about the significance of the newly emerged indigenous level of practice. There are both volunteers and paid workers in this category. It marks an important turning point in the history of the social work profession. This is a service profession and it is only natural that consumers should be involved in improving their own condition and that of their fellow-men. Such an attitude helps to dissolve the cloud of pseudo-mysticism under which the profession had defensively taken cover in the past. It gives the profession a chance to examine itself occasionally from within its own ranks, seeing them as consumers and as practitioners at different but none the less important levels within the training system.

Training measures for increased manpower availability

By reducing the total time required for the Master's or Bachelor's degree programme and by increasing the curriculum content, schools in Canada and the United States have accelerated the process of graduation. In the United States quite a few such experiments have been carried out. This has usually been done by using the vacation months for additional field practice and seminars. However, either because of the limited period of time available for the experiment, or because the innovation was too demanding these projects have not been continued. None the less, some serious propositions have been advanced for reducing the time span of the professional programmes under certain conditions.

Expanding training facilities

In a number of countries, an extended system has been elaborated in order to facilitate training outside regular hours. In the United States two schools have joined together in providing such an extension programme outside regular school hours to enable students to obtain their Master's degrees. It has been designed specially to meet the needs of local students, unable for reasons connected with their work schedules, to enroll in the regular programme. A few other schools in the same country also provide similar facilities. The Council of Social Work Education has approved of a programme of training for married women under 30 who have home responsibilities. The course requires a short work day and lasts from two and a half to three years.

In the Netherlands, employees of social work agencies seeking professional degrees are permitted to do so on an extended four-year programme, consisting of in-service training and part-time attendance at the schools before obtaining diplomas.

Retraining opportunities

A source of recruitment and an opportunity for training has been provided by a variety of retraining schemes for those who have dropped out of the profession for various reasons, as reported from Finland, the Netherlands, Sweden, the United Kingdom and the United States. During 1965-68, four courses were conducted in Sweden for married women wishing to return to the field of social welfare. Sixty women were retrained in this way and all expenses were met by the Government. In the United Kingdom, probation committees have begun retraining married women to work part-time or full-time, in order to relieve their full-time employees.

The various measures adopted for accelerating and extending training, as well as for retraining cannot all be regarded as permanent features of the system. At best, accelerated programmes are appropriate ad hoc strategies to cope with special problems and needs. In fact, the experience gained from such measures should be combined with that of regular training in order to secure adequate numbers of personnel without resorting to crash programmes. Similarly, appropriate schemes of recruitment may be the answer to the drop-out rates both among women and among men. Retraining and extended training will

probably continue to be important sources for ensuring adequate manpower. Both these devices give a flexibility to the training system which is an important asset for the development of the curriculum as well as that of the profession.

Pooling of training resources

Collaboration among schools is rather a common feature in trying to economize on resources for organizing training or for the development of courses. Two universities in the United States report the organizing of a social welfare policy course at the undergraduate level which is held alternately in each school and is open to students from both. Similarly, an international social welfare course is being conducted jointly by two universities.

Faced with the problem of meeting the needs of rural areas in the United States, the universities of three different States are planning to organize a common school of social work which will focus specially on the education of personnel for rural social work.

The schools in Kenya, Uganda and Zambia have accepted students from each other's territory in recognition of the fact that certain aspects of the curriculum were better provided in one than in the other. This, however, has led to the problem of offering field instruction in a language that can be understood by the student from a different country. The problem has been solved by a co-operative arrangement between the schools, which accepted the return of the students to their respective countries of origin for field instruction supervised by the school in that country. A similar collaboration exists between some schools in India, the Ivory Coast and Tunisia. Such collaboration is a source of strength for the development and utilization of resources as well as for professional and community ties that are affected in the process. The university, the state, the community and its institutions could critically evaluate one another's roles and functions and contribute to the improvement of the community's welfare system of which training is an important part.

III. REALIZING CURRICULUM OBJECTIVES

A

In implementing manpower policies for social welfare, many changes are reflected at the level of curriculum organization and training. Every resource that could add more purpose and meaning is put to use. Students and faculty may contribute to the development of curriculum goals and also put them into effect. Field practice is made to serve general objectives. It is broadened to include new skills and an integrated curriculum. Teaching methods are devised and resources are found locally to meet indigenous needs, and modern aids are used. Programmes are planned and carried out for training of faculty in order to cope with major changes in social work education.

Student participation

Contribution to the formulation of training goals and methods

Student participation has been increasingly accepted in the reformulation of social work training goals and methods of teaching.

Student groups, alumni and faculty of schools in Colombia and Mexico have collaborated in reorienting the curriculum of their school towards national development goals. In Chile, faculty and students have been working together for the development of the curriculum and evolving an integrated social work method. In a number of countries in Latin America, a few highly motivated and capable students have formed groups in order to work for the reform of the educational programme and the advancement of the profession. Such action has been variously directed either in favour of a more liberal, instead of a paternalistic, administration or in favour of a more academic curriculum, or more orientation towards research and administration, or of better qualified professors and better school premises. 1/ In Canada and the United States an increasing number of schools has developed structures for the involvement of students in the planning and delivery of educational programmes. Such attempts have led to a better integration of the total curriculum and a more effective learning and teaching experience. Such student participation has been made official by the inclusion of a section on "Student Rights and Responsibilities" in the "Manual of Accrediting Standards" of the Council of Social Work Education. In one of the clauses the schools are explicitly encouraged to establish procedures enabling the students to contribute to the formulation of institutional policy affecting academic and student affairs.

Student participation in teaching

One of the serious problems felt in professional social work education is the dearth of qualified instructors to undertake the responsibility of teaching

1/ Virginia A. Paraíso, op. cit., p. 25.

in the field. As a partial solution to this problem, in some countries senior students were trained to undertake the responsibility of providing field supervision and instruction for freshmen students or other trainees of a lower academic level.

In Ethiopia social work students at the under-graduate level offer field supervision for trainees of a community development school. Similarly, under-graduates of a school of social work in Uganda provide field supervision for a training school of community development. In Iran a plan has been developed for final-year students to supervise freshmen. The senior student supervisors attend the freshmen classes to acquaint themselves with their problems and needs. Once a week they are, themselves, supervised for direction and training by faculty members. This is in addition to their own normal work-load. Such supervision offered by students serves also as training for those who wish to become social work teachers. In this way a great shortage in qualified instructors is also met because the experience does not end as a project at the school.

Such experience is not confined to the developing countries. A project with similar characteristics is carried out in the United States. In order to meet an acute shortage of casework supervisors a six-month course on supervision and consultation is provided for second year casework students. They supervise Bachelor's degree students known as social technicians. The purpose of this course is to prepare experienced students for the supervision of professional or non-professional staff. Similarly, in another United States school, senior graduate students acted as field instructors of senior under-graduate students in mental health work, with the purpose of promoting the field experience of senior students and of providing undergraduate students with training in field work methods. The graduate students met with their own field instructors every week to discuss problems and developments. Both private discussions and group conferences were held. The graduate students made progress both in their field learning and in class instruction. The undergraduates made better contributions in their field seminars and showed substantial identification with the social work profession.

The involvement of students in the training programmes as planners and evaluators and not as passive consumers of training is as important as the involvement of the indigenous workers. Such student co-operation is most effective when there is prior agreement on the goals to be accomplished. Where these conditions are not present the results could have a disruptive effect. The trend for a continuous dialogue which has begun, cannot be reversed, if the improvement of our society is the chief goal to be reached.

Broadening field experience

Research and service projects for the community, undertaken by the university in collaboration with governmental and other organizations, have been used to meet multipurpose objectives. Under the joint auspices of a Canadian university and other local agencies, an Urban Social Redevelopment project has been set up and has been used by the school of social work for field experience for its trainees in the areas of research, mental health, housing and community development.

In the Philippines, summer camps have been used as a service to children, as field training and as a workshop in supervision. This pattern of using one

resource for several purposes has been tried elsewhere. Similar examples are schools in Pakistan and Uganda, where demonstration projects have been set up to serve the community while at the same time they are being used for field experience. In some cases the pattern has been reversed and schools set out to offer a field experience while serving a community that needs help and, at the same time, demonstrate the use of trained personnel and the appropriateness of social planning or community development. Schools in Ceylon, India and the Philippines have carried out such projects. In one of the Indian schools, a trainee was given responsibility to carry out a group project with sighted children from a technical school and blind children with interests in science. Besides providing a field experience in working with the blind, this was also meant to demonstrate that education and service objectives can be combined in finding new ways of helping the blind.

In Australia the lack of qualified personnel in agencies in the field has been met by school staff assuming ad hoc positions at the agencies to supervise their own students. This has enabled the agencies to appreciate the value of professional training. It has also enabled the faculty to integrate classroom and field experience more easily than if they had responsibilities only in the field or only in the classroom. Such integration of class and field experience has also been effected in the Philippines by the use of field work supervisors as lecturers in the classroom and as thesis advisers for the students' research. The same levelling of distinctions has been adopted by a school in Peru where the same teachers are employed in the field and in the classroom.

Many schools in the United States have been experimenting for some time with the concept of a training centre where all aspects of learning taught in the classroom could be integrated through field practice without confining field teaching exclusively to any one or more methodological skills, in any particular agency. Such a training centre is a comprehensive approach to the application of all classroom learning to a variety of real situations in the field, like policy, planning, administration and even legislative and political processes in addition to the usual basic skills.

One of the important developments of the 1960s is the greater integration of class and field experiences which recognizes that it is possible to learn theory in the field as much as practice in the classroom. There was hitherto a rather artificial distinction between theory and practice with respect to the different methods. But now the tendency is to develop a live and realistic curriculum which is reflected in the total social welfare practice and not simply in a single method approach. Field experience, therefore, can no longer be confined to a particular agency where the lines of operation are rigid. Various integrative measures have been tried with the purpose of welding class and field into one dynamic unit to promote greater professional depth and experience. This search for and analytical refinement of experiences is still very much in a pioneering phase. There is also no reason why field experience should not be made to yield other advantages, such as furthering the goals of the agency, aiding the community and the school in the need to economize on resources and to play a more effective role through a broadened concept of field experience.

Indigenous teaching resources

For a long time, many of the schools of social work outside Europe and the United States have been without teaching materials of their own. There has been a heavy reliance on books published in these two regions, meant mainly for the developed economies. It has taken a long time for the schools in the developing countries to produce teaching materials relevant to their own socio-economic situation.

Many significant beginnings have been made in editing of student experiences such as case materials for teaching courses on methods in particular. India has issued an Encyclopedia of Social Work in three volumes and schools in that country have published case records in group work and community organization. Other countries have been developing materials out of their experience in the rural communities they serve.

UNICEF assistance has been used by some countries in selecting and editing student materials for teaching purposes. Schools in Ethiopia, Ghana, the Philippines, Uganda, the United Arab Republic, Zambia, and in some of the latin American countries have done their best to exploit this resource.

In Iran, the faculty, trainees and field instructors of the School of Social Work have co-operated to produce not only a student handbook for each level of methods training, but also a Method Instructors Handbook together with a bibliography and a glossary.

In Uganda, UNICEF help has been utilized to conduct a training course on supervision for schools in this and in neighbouring countries. These sessions have been published to provide some content and guidelines for the supervisors of this part of Africa. A training centre for community development has long been engaged in the production of a variety of training materials. The value of such attempts can be appreciated when it is realized that these resources are meant for use at various levels below that of the undergraduate. Where American or European texts would be unsuitable even for the undergraduate programmes in the developing countries, it has been even more difficult to find suitable teaching material for various types of training for social welfare at lower levels. The need to innovate has been very great and many efforts in this area have been made in response to a variety of needs. This training centre has produced handbooks for community development workers, for nursery teachers, for social welfare and probation workers, and materials on teaching adult-club groups and on child care.

To encourage this trend and provide the necessary guidance, the Social Development Division of the United Nations Regional Commissions in Africa and Asia has been promoting a vigorous policy of producing indigenous teaching resources. Firstly, several regional seminars and conferences have taken place to look into this problem and to find some solutions: the attempt made in Uganda and mentioned earlier has been one of the results. In Bangkok, ECAFE has been publishing a newsletter and promoting national committees for the production of indigenous teaching materials. In latin America the office of social development of the United Nations, once more with UNICEF resources, has been carrying out a study of indigenous teaching materials in the region, in co-operation with the Latin American Association of Schools of Social Work.

So far, the production of indigenous teaching methods in the developing countries has mostly been confined to much needed local literature. This has been modelled far too much on the western case records for teaching case-work practice. Far more exciting and meaningful work yet remains to be done, in terms of what the developing countries really need in the fast changing social context.

Teaching methods and aids

Modern media of communication have naturally been put to good use by countries which have had the resources to do so.

The television and the cinema have been used to convey the importance of professional training in Canada and in the United States. Among the developing countries, Thailand has begun to experiment with the television medium by introducing basic social work concepts to the community at large. Schools in the United States are exploring the telelecture method of having lecturers address a class over the telephone system. At one of the schools consideration is given to a proposal for providing field supervision to students in a rural area 200 miles away from the university centre, through the telelecture system which also permits questions and answers.

The Social Development Division of the United Nations Regional Commission in Asia has been instrumental in focussing attention on schools in this region for drawing on indigenous artforms and local literature (including newspapers and magazines) and for selecting those aspects of the social milieu which have relevance for the understanding of local problems and situations. Puppets for training rural workers have been used by schools in India and Jordan.

Training by correspondence has been carried out in a few African countries with seminars in the training of personnel for social welfare. In the United States, a correspondence course in child welfare has been instituted by the extension service of one of the universities. This method of training, as a complement to short-term seminars and evening programmes, is also being carried out in the Byelorussian SSR, the Ukrainian SSR and the USSR.

Various methods have been tried as a departure from the usual methods used for more productive teaching, particularly in the United States. More emphasis has been placed on self and peer-group teaching. Group supervision has been introduced to have a larger number of students trained by each instructor.

What is known as sensitivity training, involving laboratory training approaches in human relations to increase awareness and increase the human potential, has been attempted in the schools of social work in the Philippines, the United Kingdom, the United States and in at least one instance in Latin America.

A school in Iran reports a flexible field learning plan. Different levels of field learning have been identified for different levels of practice with different field instructors. The idea behind this is to provide a planned educational service for the student, so that he consciously progresses from one level to another when he is ready and confident enough to go further in his experience and learning.

Staff development

Staff development here refers to a variety of training procedures for school or agency staff: the training of social work educators before and after entry into training institutions; the training of supervisors either as field instructors for schools of social work, or as supervisors of social service agencies responsible for the training of agency personnel.

Latin America has been more concerned than any other region about training of faculty for schools of social work owing, no doubt, to the fact that the training of social workers is mainly at the undergraduate level. Those who aspire to be educators at this level, therefore, have had to be provided with special training before and during employment as faculty personnel. Such training is also provided at the advanced level for teaching faculty through seminars during the long vacation months. The Mexican Association of Schools has been organizing training courses for teachers in the methods and theory of social work. A year's training for social work educators under the auspices of the Brazilian Association of Schools of Social Work and UNICEF has been organized in Brazil. The Association also opened up communications and exchange of information and views among teachers spread out over a wide region in the country. This spurred several participating universities into initiating independent training courses for social work educators. Training courses of a shorter duration have also been conducted through a co-operative agreement between UNICEF and the regional planning bodies of the Amazon Development Region and the south of the country. A common feature of these training programmes was the reorientation of social work knowledge and methods towards the needs of Brazilian society, and the relevance of such methods in a context of great social change.

A faculty development seminar in Colombia was organized by the universities in Colombia in 1969 with assistance from the United States. The purposes of the seminar were to help young teachers gain more understanding of social work theory and social work education, including specific understanding of how to develop curriculum and how to work on teaching methods; to increase communication and co-operation among the leaders in the social work schools of the various regions of the country in order to provide a basis for more interchange in the future, to provide opportunities for concerted work on the problems and issues facing Colombian social workers today and to examine the role of the schools in promoting professional growth and in providing leadership in various aspects of social development in Colombia.

In the African and Asian countries the regional offices of the United Nations have been organizing several training seminars for educators and supervisors in the field of social work and community development for their respective areas. In addition to such efforts, the countries have organized their own training for individual schools as well as for meeting intraregional needs.

Tanzania has held short-term seminars for rural development officers and wardens on how to conduct district training centres. They have been provided with techniques in data gathering, setting up of priorities and attainable targets, making rural development plans and mobilizing and allocating resources for action.

In Uganda, a training course on supervision has been organized with assistance from UNICEF. In the Sudan, a two-month supervision course has been undertaken at the University of Khartoum.

Ethiopia reports a two-weeks seminar for its graduates, for continued supervision after graduation. Such a programme was designed to stimulate professional growth among the graduates and to create channels of communication within the small nucleus of trained personnel, as such opportunities were lacking in the agencies.

In order to meet an acute shortage of supervisors, an experimental training programme for supervisory staff was carried out in Israel. The social welfare services in Israel had been hurriedly set up under the pressure of mass immigration. The most qualified people went to work directly in the field. The teaching aspect of supervision had been ignored as a luxury compared with the demand of the flow of immigrants for integration with the existing population. The need for family welfare as such, emerged only after the slowing down of immigration. In an effort to meet qualitative and quantitative needs of the personnel of public welfare agencies, the Ministry of Social Welfare embarked on a project of training a corps of supervisory personnel. The basic assumption of this course was that supervisors could be trained even if they had not been subject to supervision in the past. The first year of training was devoted mainly to the theory of supervision, psychology and the basic methods of social work. The second year was spent mostly on learning the functions of a supervisor by means of a variety of field experiences and on identifying with the total field of social welfare.

In India, Iran and Pakistan education for social work has been included in the curriculum at the graduate and undergraduate levels in order to train interested students in curriculum planning, supervision and evaluation.

In Greece, the faculty of social work is given four hours a week to work in social agencies and gain experience in order to qualify as field instructors. A result of this project has been to foster a closer understanding between students, agencies and faculty and to raise standards of practice. In France, too, a national scheme has been in operation for the training of field work teachers. One of the characteristics of this scheme has been the adoption of the method of team teaching.

In the United States, federal funds have been made available since 1962 for faculty expansion in the field of education for social work. It has been a common practice in Canada and in the United States to utilize the summer months for a variety of faculty sessions aimed at professional growth and development. In Canada, an advanced diploma in social work is offered to graduates who have had experience, for assuming responsibilities in field instruction, in supervision in staff development.

Three municipalities in Sweden have set up field work units with a staff of instructors in order to meet the problem of shortage of supervisors. In Switzerland, schools in Geneva and Zurich are offering one-year courses in giving and receiving supervision. So far, however, much of the course content is in relation to casework. Training of supervisors in the other methods will begin in the near future.

It is strange that in a profession concerned with human service much of this education has been left to voluntary planning or to the process of socialization within the profession. What is more remarkable is that little thought has been given to the professional preparation of educators. A change, however, is now

taking place as a result of increasing realization of the importance of the educational role, at a time when the concept of social welfare in the context of national development is changing.

B

Changes in society are reflected in the curriculum. The emergence of new problems and needs, changing values, the process of identification and the formulation of national development goals must necessarily have an impact on curriculum organization. Such changes, whether they consist of a radical reorganization, additional content, or a reorientation towards new definitions of purpose and objectives have been regarded here as representing different types of innovations in the area of curriculum. Just as manpower policies affect curriculum, the latter may also affect the former. Curriculum is, therefore, an important part of the whole manpower system for social welfare, particularly as it contributes to efforts for national improvement through training for social development.

Curriculum change for new roles and functions

Changes have been made in the curriculum for the training of personnel for new roles and functions. By far the most widespread change seems to have occurred in the development of social policy and planning functions. This has sometimes been described as training for social administration, legislative action and other related tasks. Whatever the name of the course or specialization, the subjects covered have included modern organization theories, social policy, planning and administration, innovations and leadership for a changing society, community power, people's participation, politics, the machinery of government and the nature and development of institutions.

In the developing countries, in particular where social welfare has been recognized as an intrinsic part of development efforts, planning for social welfare has emerged as a major task for which training has to be provided. In countries like Ethiopia, Ghana, India and the Philippines, however, the pressure of other immediate needs has confined such training to short-term sessions.

In China (Taiwan), Ethiopia, the Philippines and Thailand a new impetus has been given to both the graduate and undergraduate levels with the reorganization of the content of curriculum in social policy and planning for social welfare.

In India, a governmental body responsible for training in public administration, offers courses in social planning and policy making, social change and developmental administration for directors of departments of social welfare.

Such a trend is also discernible in Latin America. An institute of social service in Chile was created in 1967 to train workers specializing in particular fields of activity. Its programme has included training in social planning at the Master's level.

In the United States the major change in curriculum revision at the graduate level has been in relation to the preparation of personnel for functions in social policy and planning. Courses provided under this subject, in many cases

also cover social welfare planning, strategies for social action, and social policy analysis. While a number of schools concentrate on social policy, planning and action as the major thrust for those graduates who do not seek clinical practice, others reorganize their curriculum to expose all students to some aspects of societal work at least. In this context some of the reorganization of the curriculum has been concentrated in the areas of rural or urban social problems. In recent years, there has been a sharp increase in specialization in community organization reflecting the growth of interest in social planning and structural change. Enrolment in community organization has increased from forty in 1965 to 937 in 1969. More than two thirds of the accredited schools in the United States now offer concentrations in community organization with a social policy and planning content.

Universities in the United Kingdom (England) play a leading role in advanced training for social planning, for leaders of social service departments at the local, the regional or the central government level. Such training in planning and management of social services is expected to contribute to the administration of social welfare by government. The Netherlands has long been promoting training programmes varying from six-month courses for top-level administrators to twelve-month or two-year courses in policy making for administrators of social welfare, particularly from the developing countries of Asia, Africa and Latin America and also from more economically advanced countries. A two-year course in social policy for key administrative promotions, has been introduced since 1962 at the Free Polish University.

While changes in curriculum for new functions in social policy and planning are fairly common in several countries, there is also a variety of examples of training for widely different specialized functions. Since 1961 family planning has been recognized as an important field of work for today's social workers and schools in India, Iran, Pakistan, the Philippines, Taiwan and countries in Latin America. In the same countries, facilities for special training have been set up in schools of social work and in health and population agencies, which collaborate to provide the necessary training, usually under the leadership of the health authorities. Social workers have been in demand for extension service education and research in the field of family planning. As a result, training in this field has been intensified in most schools of social work. In India, in particular, the concept of family planning is gradually moving away from birth control and spacing of children, to more comprehensive concepts of family welfare planning with the over-all needs of the family becoming the focal point of service. The need for a multidisciplinary approach to the problem has been recognized and so has the need for training for different levels of practice. In the United States also, the problem has begun to arouse interest; this became apparent in the recent conference of social work educators held in Hawaii in 1970.

In some of the African and Asian countries, special programmes for the development of women concentrating on community involvement and family welfare, are considered of vital importance for progress in other areas of national life. Some training programmes which were begun specifically for that purpose, later expanded into training for other roles in social welfare, as well.

Labour welfare has long been recognized as a field for social work practice in India. However, some questions have been raised on whether a Master's degree in social work really equips a person to discharge functions in labour welfare and personnel management. More recently, training in labour welfare has been

reorganized in recognition of a more dynamic role that a welfare or personnel worker must perform in industry. More emphasis is being laid on courses in industrial psychology and industrial sociology in addition to the inclusion of other labour welfare and personnel management courses. A pioneer school of social work is now granting a Master's degree in Labour Welfare and Personnel Management to those specializing in this field. A similar development is reported in the United Arab Republic and in Latin America.

Social problems and needs in the field of housing and community resettlement have generated new approaches to curriculum in both the developing and the developed countries. In Colombia, special training has been provided for personnel entrusted with helping communities to solve their own problems of housing, in co-operation with government agents, and to develop a sense of community among the new residents. Hong Kong, which faces serious problems due to the constant stream of refugees from China (mainland) has started a programme of training for community development as part of the undergraduate social work degree in order to cope with the problems of resettlement. It is interesting to observe in this connexion that no distinctions have been made with reference to functions or training, between social workers and workers in urban community development. A university in the United States has been providing a special training for those working in housing management and in rendering services to the elderly.

Training in social welfare with a focus on problems of resettlement and reconstruction is reported from Nigeria, as a means of dealing with the results of the recent civil war. War emergencies have similarly called for the training of personnel to rehabilitate victims in the Republic of Viet-Nam and in China (Taiwan).

There are at least two reports on providing training for workers among migrants. The Federal Republic of Germany has been training Greek social workers to serve Greek workers who come into Germany. Switzerland has been giving special attention to training social workers who will attend to the problems of foreign workers in the country.

Other special needs are being met through relevant changes in the curriculum. In India, a National Service Corps Scheme has recently been introduced for undergraduate college students in order to provide them with opportunities to serve the community and to participate in social welfare activities. This is a voluntary programme and any undergraduate student who wants to volunteer for social service can join the National Service Corps in his or her college. The Scheme is also intended to enrich the student's personality and deepen his or her understanding of the social environment. Ethiopia is another country which has a national youth service that requires university graduates to serve the community in some way before becoming regularly employed. Schools of social work in these countries and also in countries in Latin America have the task of providing the knowledge and skills for such community service.

Racism has been given considerable attention in schools of social work in the United States. As this problem is particularly acute in the fields of housing, education and employment, an intersectoral approach has been adopted in the development of the curriculum.

Another important aspect of planning the curriculum in order to meet special needs has been the provision of courses in schools of developed countries, which cater for the interests of students from developing countries. Conversely, such courses enable students from the developed countries to understand social problems in the developing world. One of the schools of social work in the United States organized a course in social policies and services in world social welfare on the subject of planned social change in relation to the values of a society. In this course for graduate students, attention was given to values and to social, economic, religious and political forces that influence social welfare in a national and international context. Other schools in Northern America as well as in Europe, also attempt to make special provisions to help students of developing countries to function satisfactorily in their own welfare systems.

Introduction of social welfare and social work in the training for other professions

A trend observed in the relationship between social welfare and other disciplines, is the increasing use which is made of the knowledge and methods of social welfare in the curriculum for training in other professions and services Our interest here is in the nature and incidence of social welfare and the social work methodology being complementary or secondary to the curriculum of another discipline or to the training programme of another sector.

One of the most common instances of social welfare being taught as a secondary subject is in the fields of health, law and education. In South Africa social work is introduced during the third year of the Bachelor's degree in nursing and during the first year of the diploma in nursing. In the Philippines, it is part of the curriculum for nurses while it is also taught to teachers and sociologists. In the United States, social workers have assumed a teaching role in hospitals. Doctors are also taught a minimum of skills and concepts of social work, of relevance to medical practice. Social welfare is also taught as part of the curriculum in the law school in the Congo and in some Eastern European countries including Czechoslovakia and Romania. In the latter, social welfare is also included in the training for the medical, sanitary, pedagogical and town planning professions. Ceylon has been conducting training for health workers who would practice in community centres. There are also instances of social work being taught to army personnel, as in Israel and Venezuela, both for the administration of social welfare among army personnel and in order to teach supervision, group relations and other social work techniques. In the United Kingdom (England), social work has been offered as an optional course for teacher trainees. Social work and community development are being increasingly taught to Buddhist clergy in Thailand and other Asian countries. It is also included in the curriculum of Christian seminars in some developed countries as for example, in the United States.

Integrated methods

A large number of schools have tried to introduce more than one method in teaching skills for social work, both in the classroom and in the field. This has been accompanied by demonstrations in the field in order to provide appreciation for the development and practice of several skills, to the agencies

used to the conventional single method approaches. Such attempts have been carried out in schools of both developing and developed countries at all levels of training.

In Iran, general training for the social worker is provided at the undergraduate level. According to the observation of a United Nations consultant in the country, by teaching the methods in an integrated seminar where field experience is discussed, the previous breakdown of professionals into caseworkers, group workers and community organizers is overcome, as each new group of trained workers have learned now to use the different methods appropriate to a given situation.

The decision to train generic social workers in Uganda was made in order to equip workers with the skills which enable them to work in different situations, in whatever part of the country they may be employed. These workers were trained in all three methods of case, group and community work. It was reported that in Kenya, experience during the last few years had shown that generic training was most appropriate for workers employed both in the urban and in the rural areas, at pre-university levels.

Schools in countries of Latin America are trying to develop a realistic approach to the problems of the region. A school from Colombia reported its intention to integrate completely the direct methods and techniques (case, group and community) in the teaching of social work, and to build up theory in search of new techniques for the solution of social problems in the light of local characteristics. At the same time it had been decided to end field work practice where research and methods of case work, group work and community work were used in an isolated manner, and to make social work an integrated process which attempts the solution of problems at the macro level.

The basic method as proposed by a school of social work in Chile, is learning of skills which enable the worker to face different situations within the general context of development. The specific points which such a reorganization of the curriculum seeks to correct are: (a) excessive differences and a lack of co-ordination in the teaching and practice of the three methods; (b) utilization by a social worker of those methods which he knows best and not of the method presented by the situation; (c) the social workers' lack of knowledge of appropriate methods to meet new situations; (d) methods of social work which are inadequate for the requirements of developing countries.

Since 1961, when the Fourth Pan American Social Work Congress was held in Costa Rica, there has been a restlessness among the faculty in Latin America for an identification of a professional theory. The case of Latin America speaks for other developing regions as well, when in 1966 it was said that "the social work theory was developed in highly industrialized countries from Western Europe and North America. The teaching materials used in Latin America come from those countries... the techniques being taught now were developed as an answer to needs and problems of industrialized societies and even though they could be of universal application, the techniques and concepts, in order to be of real significance must be taught and adapted in terms of philosophy, value systems, social organization and needs of each country". Since such thinking began, associations of schools and faculty have been seriously applying themselves to the challenge of evolving an indigenous philosophy and approach to the problems of social intervention in the Latin American region.

The Brazilian schools have issued a monograph in which it is stipulated that the integrated system would be the basic method for social work, which would combine the philosophical and scientific principles and the practical norms of the three operational processes. Similar developments have also been reported from Guatemala.

In the developed countries there has been the same tendency towards an integrated methods curriculum. This is, however, less pronounced in Europe than in Northern America. Nevertheless there are significant changes to be reported from Greece, the Netherlands and the United Kingdom.

In the Netherlands and in other European countries a trend towards less emphasis on specialization has been replaced by training of agents of change and of social actionists instead of general helpers of individuals and groups. The issue has been expressed by a respondent from the same country as follows: "Is casework or group work the real answer to social problems today?... Social work has to lay off its adaptative character and has to be the courageous champion for justice with the risk that it loses its good will in society". According to this respondent students are being trained in social observation and diagnosis as distinct from the focus on personal problems, taught in former years. However, it must be noted that this is only an emerging trend and that the major emphasis is still on training for conventional case work roles.

In the United Kingdom (Scotland) the accent on existing specialization in various types of individual services is to be modified in recognition of the common basic content of social work training. One university in the United Kingdom (England) has begun to teach all three methods instead of concentrating exclusively on casework, as before. Our special correspondent from that country reports that there has been a steady move away from specialization in basic training. Even though the three training councils, the Institute of Medical Social Workers and the Association of Psychiatric Social Workers are primarily responsible for sponsoring training for their different branches of social work, yet the actual curricula of these different courses are fundamentally the same.

The Seebohm Report (United Kingdom) 2/crystallizes much current thinking when it points to the need for staff trained in the principles and skills common to all forms of social work with individuals and families. It also suggests that there is room for experiment with a wider concept of generic training which aims to equip students to work with individuals, groups and communities as appropriate. The justification of this approach is the belief that the division between different methods of social work are as artificial as the difference between various forms of casework and that in his daily work the social worker needs all these methods to enable him to respond accordingly to social problems which involve individual, family, group or community aspects. A number of universities in the United Kingdom (England) are reorganizing their social work curriculum in response to the Seebohm recommendations.

Emphasis on more than one practice method in keeping with combined or integrated practice methods and approaches to social problems is widely prevalent in Canada and the United States in as many as twenty-eight schools of social work.

2/ Report of the Committee on Local Authority and Allied Personal Social Services, Cmnd. 3703, H.M.S.O., London, July 1968.

Developmental trends

The attempts described earlier to deal with the greater problems of society through an integrated, basic or generic methods curriculum, inevitably led to further changes in the curriculum in recognition of the importance of social welfare in national development. A tendency towards developmental objectives in social welfare, corresponding with the objectives of national development began to emerge particularly in developing countries.

In view of the fact that the Philippines offer an example representative of developments in other countries as well, the following paragraphs are devoted to events in this country. The Philippines reports that change in their curriculum for social work were consequent upon the need to introduce human and social factors to economic development, particularly with reference to (i) the rate of economic growth, (ii) the optimum rise in the standard of living, (iii) the equitable distribution of the national product, (iv) the creation of optimum conditions for the cultural well-being of the people and for their happiness in freedom and dignity.

The reorganization of the curriculum for social work followed upon changes in the nation's legislature the purpose of which was to deal with the social aspects of economic development. Legislative measures pertaining to land reform, urban and community development, low-cost housing, squatter relocation, rural resettlement, the reorganization of the national governmental structure, local participation, medical care, magna cartas for labour and students, and manpower development scheduled to accelerate availability of trained manpower for national development, had serious implications for the preparation of a more appropriate curriculum for social welfare.

The increasing recognition that community development is, on the one hand an effective means to initiate reforms at the grassroots level, especially in rural areas, and, on the other, effective in counteracting social unrest, as well as its need for a methodology, led to the merger of two institutions responsible for social work on the one hand and community development, on the other. Moreover, since the expressed goal of the national community development programme was to develop self-reliant and responsible citizens, capable of self-government, the merger of the two institutions thus embodied economic, political and cultural goals.

The newly merged institution was meant to "give form and substance to the vital link between social work and community development and make possible continuous, systematic attention to such important tasks as: (i) preparation of the manpower needed to perform these functions by drawing upon the total resources of the University, (ii) generation of the knowledge needed for policy making and support of effective professional practice through on-going research and (iii) extension of consultative services to the community in balancing economic and social planning".

A school of social work and community development in the Philippines was created by Congressional Act of June 1968. This raised the status of social work and community development in the country. This development was the result of requests from community development workers who, for various reasons, felt the need for more knowledge and skills in this field. There was agreement between

social work and community development workers that social work which has a strong academic base, had definite contributions to make to community development. Earlier, the only training given to community development workers was a six months' pre-service training in the College of Agriculture. It was felt that community development could best acquire an academic base in close association with the social work discipline.

In Iran, a United Nations adviser to the school of social work comments that the field instruction as part of the total curriculum reflects the social, economic and cultural environment of the country. The emphasis is on broad community programmes for large groups in the community. Remedial and rehabilitation service is included but emphasis is laid on improving the social functioning of urban and rural populations. This is done by means of programmes which emphasize participation through education and other services, preparation for work roles and provision of their own manpower as for example in neighbourhood groups. Individual and group interests are seen from the perspective of the larger system.

The same trend is observable in other Asian and in African countries. Malaysia has recognized that: "The strategy of the social work approach to national development is to intervene professionally at strategic points and situations in the total programme so as to ensure that the maximum possible returns in terms of human development are forthcoming where heavy investment of resources is concentrated. For this strategy of implementation to be effective, the goals of social work are being harmonized with those of national development and practical methods evolved to bring about fuller participation of the people for whom the benefits of the development projects are intended. In this way, the major responsibility of social work within the context of national development is to help bring about the realization of development goals through the elimination of mass poverty, improvement of educational levels and health standards that are the basic causes of existing social problems and which act as constraints to development."

"In Malaysia the movement towards a broader concept of welfare services as a multipurpose community service has begun and it is expected that this trend will continue with more rapid momentum in the future. This is beginning to be reflected through subtle changes going on in the understanding and meaning of social work training. There is already more liberalism with regard to the curricula and method of teaching employed and greater emphasis given to versatility and flexibility of training to produce the manpower to meet developmental needs and problems. The new functions require the competence of generalists whose knowledge cuts across the various sections of national development and who have particular skills in fact-finding and analysis, development evaluation of policy alternatives and preparation of plans which are integrated with the broader development planning of a nation. This raises the question of considering whether specialized training for social welfare should move in a different direction to meet long-term needs for planners, policy makers, social developers and social researchers as opposed to specialists in child welfare, medical social work, juvenile delinquency and other traditional social work specializations. The primary issue is not whether these specializations are useful in themselves but whether, under given conditions from the social work point of view, they provide more flexibility at the operational level and,

thereby, are more realistic, more effective, and make a bigger impact on programmes of national development than of the other alternatives." 3/

Jordan recognized the same development when it declared that the scope of training should be broadened so that social workers are trained to contribute to social development in its broader sense.

In the African countries there is great interest in giving social work a perspective that will encompass country-wide change in keeping with the objectives of national development. In the Upper Volta, staff for community and regional development have been trained on the basis of a curriculum the aim of which is to integrate social work and community development. In the United Republic of Tanzania the emphasis of the programme is on social development. Ghana, Kenya, Togo and Uganda have reorganized their curriculum in the light of the same objective.

In Ethiopia, since 1968 questions on the kind of training the school of social work was providing led to modification in the curriculum. In the course of proposals for a revision, it was observed that the school should train personnel not only for existing positions but also for future roles in policy making and administration. The role of the contemporary social worker in a developing society should be seen as one of bringing about institutional and organizational reform in the economic and social structures in which the workers operate. This called for the inclusion of more social sciences in the curriculum and also for a more interdisciplinary approach.

Schools in Latin America are earnestly following the same trend. Our special correspondent for Latin America stated that the concept of community development as a democratic process is evident in the content of many training programmes. Community development continues to be considered as a method of the profession.

The Director of a school at Arequipa in Peru writes that, from direct experience and sheer necessity it would seem more valid to dedicate one's efforts to group work and community development in the task of promoting social change.

A school of social work in the public education system of Mexico was involved in what proved to be an educationally rewarding effort when it decided to carry out a study of drop-outs from a technical scheme in co-operation with that school. An attempt was made to find a solution through a programme of community development involving both the school of social work and the technical school which mainly concerned itself with training for building and construction. It was found that the social workers who participated, including teachers and students, acquired a better understanding of the value of the profession, and of social phenomena, as well as of their participation in the provision of social welfare. It was found that in order to achieve community welfare and the integration of the social worker's professional role with national development, studies should be made of the environment, of how individuals live, and of their social stratification and standards of living. The experiences of many schools in Latin American countries as in Argentina, Brazil, Chile, Venezuela, are comparable to those of the Mexican experiment.

3/ International Conference of Ministers Responsible for Social Welfare, Statements prepared by Governments (Malaysia, 1968) (E/CONF.55/7), pp. 11 and 23.

Thirty-eight social workers representing different regions in Brazil met at a seminar and examined the role of social work and its importance to the development of Brazil. The following are some relevant excerpts from the report issued at the end of this seminar:

"In its intrinsic dynamism social work is challenged by the difficulties of the development process. Through continuous revisions of its objectives, roles, functions and methodology, it has been searching for a way to integrate in this changing situation and become an efficient instrument in helping all men to fully attain the human condition.

"To analyse the objective of Social Work it is necessary to distinguish between the remote and the operational objectives.

"The remote objective of social work can be considered as the provision of indispensable resources to the development and evaluation of the man and the improvement of the human conditions, harmonizing universal values with cultural and individual values. These values function as a point of reference of desirable goals both tangible and intangible which constitute the operational plan of social work.

"The operational objectives may be stated as follows: (a) to identify and focus problems or residual distortions that impede individuals, families, groups, communities and populations from reaching social and economic patterns compatible with human dignity and stimulate the continuous upgrading of these standards; (b) to gather elements and elaborate data referring to problems or dysfunctions requiring social reform; (c) to create conditions to make effective the conscious participation of individuals, groups, communities and populations by either promoting its integration in the conditions resulting from change, or by provoking the necessary change; (d) to implant and dynamize systems and equipment in order to reach these objectives.

"The functions of social work in different levels of activity result from its nature and objectives: (a) social policy: motivate the formulation of social policy when it does not exist, activate it when it is inoperative, and provoke its reformulation when necessary; offer help, within a comprehensive perspective, to the formation of such a policy; create systems, channels and other conditions for the participation of those affected by the measures of this policy; (b) planning: with the experience gained by considering changing needs, expectations, values, attitudes and behaviour of the communities and population, contribute to the reformulation of objectives and establishment of goals; contribute to the creation of conditions that may permit the participation of the people in the planning process; (c) administration of social welfare: promote and participate in operational research; elaborate micro-planning; implement, administer and evaluate social welfare programmes; encourage the beneficiaries to participate in programming the services; (d) services of direct assistance, of corrective, preventive and promotional type, destined to help individuals, groups, communities, populations and organizations: work with individuals who present problems or difficulties of social integration, through the mobilization of their individual potentialities and the full utilization of the resources of their environment; promote group life particularly in that relating to the practice of tasks inherent in social life; enable the community to integrate itself in the development process through organized action, with a view to

meeting its needs and realizing its ideals; work with organizations with a view to adapting their objectives and methods to the needs of the social situation and their integration in a development perspective.

"In analysing the nature of the various activities of social work, it is inferred that they comprise two levels of operation: micro-operation and macro-operation.

"The level of micro-operation comprises the functions of social work at the levels of administration and execution of direct services.

"The level of macro-operation comprises the integration of the functions of social work at the level of policy and planning for development. This integration presupposes participation in planning, in implantation and in the best utilization of the social infrastructure.

"The social infrastructure is herein understood as 'basic social provisions' and health services which are as important to the soundness of any society as its economic and physical infrastructure. In addition: (a) there should be a high job-potential for people from different socio-economic groups; (b) the land should be used, whether by local government or by private enterprise, in a manner which benefits the whole population; (c) there should be an adequate network of communication, not only in the physical sense of telephone, radio, and so on, but also in terms of the social channels through which groups communicate with each other; (d) there should be ample provision for such socio-cultural facilities as educational, religious, social and recreational institutions.

"The community development process is equally employed at both levels. On the level of macro-operation this process is inserted in national or regional systems of planning as an instrument for the establishment of channels of communication with the population and to promote its participation in the planning process.

"At the level of macro-operation the modus operandi of social work consists of: (a) participation in all phases of programming for the macro-plan; (b) formulation of the methodology and action strategy to elaborate and implant social policy; (c) planning and implementation of the social infrastructure.

"These levels of operation form the professional pyramid necessary to social work for the realization of its remote objective and operational objectives." 4/

In Europe and in the United States, the acquisition of community development interests by social work is not apparent, but there is a clear tendency towards developmental objectives. A number of European countries have been promoting community development. Italy, the Netherlands and the United Kingdom (England) have some significant developments to report. While the efforts are not always in direct association with schools of social work, in the United Kingdom (England), the National Institute of Social Work Training has sponsored a community

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4/ Brazilian National Committee of the International Council on Social Welfare, First seminar on the theory of social work (Araxá - Minas Gerais, Brazil, 1967), Agenda Exhibit No. 4 (unpublished).

development project, aimed both at serving selected neighbourhoods and at providing teaching materials and student placements. An institute of social studies in the Netherlands has been following a consistent policy of organizing curricula in keeping with the national goals of both developing and developed countries.

In the United States, the problems of urban slums and deteriorating rural regions have motivated several schools in the country to include community development as a major field of interest or as an intervention model to be integrated with the methodology courses. According to the curriculum study by the Council on Social Work Education there are several schools of social work offering courses in theory or methods oriented to objectives of social development of the society at large. In redefining social welfare and social work, several schools and social work educators have taken note of this trend.

The interdisciplinary approach

The examples that follow represent various efforts to construct a curriculum which would meet realistically the demands of social welfare within the programmes of national development. The apparent inadequacy of the methodology of social work and the relevant parts of the curricula have generated further experimentation characterized by an interdisciplinary approach to the problems of development. There are two aspects to this: an interdisciplinary approach for intersectoral or interprofessional functioning in the field, whether for planning, policy making, and analysis, or intervention strategies in response to the needs of people at implementation or service levels, involving interprofessional training, and interdisciplinary curriculum arrangements.

The United Arab Republic carried out an interdisciplinary project to train students of social work, nurses and home economists in community work. This was based on the idea that team work would provide an effective means for integrated intervention thus avoiding a splintering of community interests and effort resulting from diverse and unco-ordinated approaches to the community. This is but a start in interdisciplinary work. Training for rural development in the United Arab Republic has generally adopted this approach.

The Economic Commission for Africa of the United Nations has noted a wide prevalence of such interdisciplinary training in the whole African region. At the time of writing of this report, Ethiopia was about to begin an interesting experiment in interdisciplinary training on the assumption that development is a function of interdisciplinary effort. It has been proposed that a new college of social sciences and development administration be created in order to reorganize the curriculum of social work to meet the national needs of social development.

The reports from Asia are not directly related to interdisciplinary training though there are relevant implications in the new roles ascribed to social work practice in the preceding section. The following observation in the case of Malaysia has direct relevance in terms of interdisciplinary functioning: "Initial involvement in Malaysia suggests that a distinctive role will emerge within the team-work approach that has been established for the implementation of Five-Year Plans as an integral part of the administrative system beginning from grass-roots levels. This approach is based on the realization of the essentially composite and interrelated character of development and has led to a pragmatic approach to

problems of development in a more systematic and radical manner and in all related aspects than has been the case hitherto. Planners, policy makers and administrators are now turning to professional social workers for advice and guidance in the formulation and implementation of plans that involve the people with whom social workers deal with and understand. Working with groups of specialists is not altogether new to social workers. The nature of the contact in working with planners, administrators and other professionals as members of composite teams of specialists is new, more comprehensive and complex than in the past and therefore calls for attitudes and skills of a different kind." 5/

In Latin America, also, there is active engagement in various interdisciplinary experiments which have been generated by efforts to orient the curriculum towards developmental objectives. At a school of social work in Bogota, an interdisciplinary practice in the field has been carried out with the faculties of architecture, engineering and sociology. In an effort to improve field work training and instruction sociologists, anthropologists, physicians, economists, lawyers and psychologists together with other related specialists, have been working with teachers of social work to prepare them for an interdisciplinary approach to social intervention. A similar experiment at a university in Chile led to changes in both theory and practice of the curriculum and to the adoption of interdisciplinary approaches.

Apart from such projects involving several disciplines, there are examples of others, smaller in scope and confined to working with one other discipline but with significant implications for further development. In Guatemala the joint training of medical and social service students was carried out in 1963 by a medical school and a social service school. At a university in Lima, social work and family education are conducted as two separate training programmes in the classroom, but they work together in the field.

Such interdisciplinary collaboration, particularly between law and social welfare, or health and social welfare is to be found in Czechoslovakia and other countries of Eastern Europe. In the United Kingdom (England), an interprofessional working party has been established to improve the welfare of children. They have been urging for the pooling of experiences, for assessing areas of common ground covered by teachers and social workers in their respective courses, and for the development of experimental courses that would incorporate these common elements in the early stages of training, while allowing for later specialization. The concept of joint training has been put forward by at least three social work reports in that country (the Younghusband Report in 1959, the Seebohm and the Gulbenkian Reports in 1968) and in three education reports (the Newsom, the Robins and the Plowden Reports).

In Canada, interdisciplinary co-operation takes place mostly in the field of health. While the same applies to the United States, some departures from this practice are worthy of note. There are cases of co-operation with the school of law as, for example, carried out by a university school of social work the field practice in one of the deprived areas. Another school of social work reports the provision of placements in the field, where students could work with other disciplines like business administration, nursing, medicine, psychology, sociology, political science and law. Yet another school puts forward training for social administration as the means for making the broadest impact on society. In making this proposal the school has outlined interdisciplinary

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5/ International Conference of Ministers Responsible for Social Welfare. Statements prepared by Governments (Malaysia, 1968), (E/CONF.55/7), p. 17.

training in three schools, namely those of social work, business administration and commerce; the students would be enrolled in any one of these schools according to major professional interests. It stresses that in outlining its proposals the school has made a case for such training: in view of the close interrelation of the social services with other major service systems of the modern urban industrial community, it is essential that the interactions and interconnections of these various human services should be studied; and practitioners of administration in all of them need to be prepared to work with full knowledge and understanding of the interrelated services, particularly those of health, welfare and education. The values of interdisciplinary training and comparative research are particularly notable in this connexion. For example, among the most pressing needs of staff in all of the human services are a sound grasp of the character and problems of a modern urban society, social and intergroup tensions, and the need to provide for citizen participation in the operation of service delivery systems; there must also be study and development of effective methods to ensure the interdependence and interrelation of services in the complex modern urban society.

Our special correspondent from the United States observes that interdisciplinary emphasis in service, teaching, and research is becoming a universal feature in all practice of social work, where earlier collaboration with other disciplines was only characteristic of such social work activities as in the fields of health, mental health, public education and correction. In developing the base of knowledge of social work, an earlier sense of isolation from the social, behavioural and biological sciences is gradually giving way to utilization of theories and concepts from many fields.

In education, these trends are beginning to be reflected in the greater use of teaching staff from various academic and professional disciplines, in the participation of schools of social work in joint teaching and research projects together with other professional schools and university departments, in greater availability of elective course for social work students in other departments, in the use of social work courses as electives for students from other departments, and in shared field experiences for students of social work and of other disciplines. These developments, which are a result of the increased complexity in human affairs and of the rapid development of new knowledge will, unquestionably, continue.

Training for new roles

A review of the changes reported primarily in the curriculum of schools of social work and of other training institutions for social welfare functions reveals the following main characteristics: (a) the emergence of new areas of content reflecting a movement away from the traditional fields of social work practice; (b) the introduction of knowledge concerning social welfare and social work into the curricula of other disciplines; (c) the trend towards a curriculum of integrated methods; (d) curriculum objectives that go beyond the remedial and the preventive; (e) the involvement of several disciplines and sectors of development together with social work, in the training of personnel for social welfare as well as in the modes of social intervention for the improvement of human conditions.

The rapid rate of social change, the trend towards industrialization, the great increase in the size of the population, the rate of migration to the cities and other related factors have affected both the developed and the developing countries, to an extent that has brought intense soul searching to many of the existing institutions, not excluding that of social welfare and the training of personnel for the development of human resources.

Needs in social policy and planning (including social welfare planning), social administration for social development and legislation for social reform are being urgently met, in order to ensure the provision of better social welfare services, and to bring about a fundamental change in the relationship of social welfare to national development.

Schools have developed special courses to cover rural and urban social problems. These are efforts designed to give a comprehensive understanding of the problems that beset our modern urban and rural areas. As in the case of social policy and planning, these are all indications of the desire to reach as wide a population as possible and to make a decisive impact on the welfare of the population.

In some of the developing countries, national-wide approaches to family planning, youth welfare, child welfare, and special programmes for improving the welfare of women have led to considerable changes of the curriculum. It is to be noted that these are crucial areas for social change in countries struggling to maintain adequate standards of living. Involvement in any of these areas inevitably leads to close association with several other sectors of development and either conflict or co-operation with many existing institutions.

Labour welfare or social work in industry is connected with several key institutions in urban areas, as well as some in rural areas from which many workers migrate. Training for labour welfare has necessitated the collaboration with a number of other sectors affecting the lives of the industrial working population. In Europe the welfare of workers has assumed a similar significance for schools of social work as a result of labour migration into the capitals and large cities.

Housing and community resettlement have assumed great importance as programmes of welfare necessitating an intersectoral approach for the solution of related problems. Whether housing is meant for those in need of homes as a result of the increase of population, or for the dispossessed following political upheavals or natural disasters, or whether it is a matter of new schemes of land development, such projects are usually on a large scale and demand the active concern of all sectors of development.

Schools which have tried to provide training for these new roles in social welfare have been compelled to make fundamental changes in their approach to usual curriculum problems so that social welfare service might make a meaningful contribution to national development.

When training personnel for other disciplines and professions in the skills and methods of social welfare, schools of social work have had to collaborate closely with these disciplines and professions. Social work is part of the training of doctors, home economists, priests, lawyers, nurses, teachers, town

planners, public health workers, and even of army personnel, in both the developed and the developing countries. We are thus witnessing on the one hand, the growing involvement of social work educators in the preparation of curricula for training in other professions and vice versa, and, on the other, the equipment of the other professions with relevant knowledge of social welfare or social work skills. Both these trends help to promote professional and interdisciplinary collaboration which is essential to the task of national development.

Courses in methodology have been taught, in which the three methods of social work practice, usually taught separately in the schools, were combined. In most cases, they have been termed courses in basic methods, in integrated methods, or in generic methods. This integration has been achieved, apparently, more in the classroom or in the theoretical teaching, than in the field. The reason is that agencies usually render services in the community as casework, group work or community organization, unless a comprehensive approach and integrated measures are indicated when, for example, an agency is involved in community development, social policy and planning, or in a project of development in which the agency has a strategic role to play. The application of the integrated methods has therefore been confined to experimental cases or to cases involving basic reforms in society or comprehensive services, such as the programmes dealing with poverty in the United States.

Even in the developing countries pockets of development in the urban areas have produced situations not different from that which the conventionally structured agencies of the developed countries face. In the case of these urban pockets, most of the urban agencies have not provided scope for the practice of integrated methods. However, in programmes for the development of urban communities and most parts of the rural areas where the majority of people live, there have been opportunities to attempt a generic or integrated approach to social problems. In the case of the latter, it has been easier to attempt an integrated approach in the field than to develop such methods in the classroom due to the pressure of developmental programmes in the field and the slowness of theory teachers to evolve curriculum concepts in keeping with the field demands of the developing regions.

In most of the developing countries the integration of methods has been largely left to the student in the classroom, while opportunities for practice are provided in the field. The courses are taught separately, but all three methods are included in the curriculum with opportunities for integration during seminars, when problems emerging from field experience are presented and discussed, occasionally with the participation of field instructors and classroom faculty. More recently, however, the teaching of the three methods separately, while still continuing, is increasingly being replaced for all the students by a course in integrated methods, a trend which is now increasingly adopted in the developed countries.

Another indication of the merging of methods has been the tendency towards less emphasis on specialization as reported in the Netherlands and in the United Kingdom (England). Specialization in child welfare or in medical social work has, most often, meant case work or sometimes group work. The trend away from specialization has brought on a tendency to acquire skills for social action, for reform and social change, for the promotion of social development and for dealing with more fundamental problems of society. For such tasks there has been

less emphasis on the individual approach to persons in need. Similarly, in the United States, courses in comprehensive methods, urban social work and polyvalent approaches have necessitated a departure from the single methods and the adoption of an integrated approach to problem solving.

In some cases, these changes in the curriculum were made to prevent the fragmentation of the profession into different methodological orientations. In almost all cases the drive has been to provide comprehensive skills to social workers who would thus address themselves to social problems and to the needs of a situation instead of being limited in their response to needs, conditioned as they are by a training in the traditional methods. It was recognized that intervention was necessary not only at the local level but also at the regional or national where fundamental changes had to be made if a more meaningful service was to be provided. Curriculum changes reflected the need to extend social welfare for the whole urban and rural population, taking into consideration the indigenous needs of a variety of population groups. Finally, a better use of time and resources demanded basic changes in particular in courses on methods.

The trend towards the integrated methods curriculum has led to the recognition of the broader goals of social welfare. Like every other sector of development, social welfare has been called upon to contribute to the implementation of national goals. Schools of social work have been drawn into this effort with the mission of evolving appropriate strategies for this end.

The most common and at the same time the least positively oriented activity has been perhaps the attempt to cope with the ill effects of economic development. Quite often, industrialization and migration from the rural to the urban areas has been accompanied by this organization of the family or by personal or community maladjustments which have nullified efforts at economic development. While in the past the role of social welfare had been to deal with the results of such ill effects, its current role is not only to prevent their occurence, but also to promote conditions which will safeguard and maximize the desirable consequences of development and reduce the chances of the undesirable.

It is thus possible to distinguish two major roles for social welfare: (a) it contributes to the integration of the social and economic factors of development and (b) it concerns itself with the social aspects of development. Changes in the curriculum have been designed to prepare personnel in the task of improving the social functioning of urban and rural populations through popular participation, community education and preparation for work roles. The general aim has been to make social welfare an instrument for initiating change, as in the basic reform of institutions or in the development of new ones, rather than to confine efforts merely to accepting change imposed by authorities with whom the people have had little contact. In response to the needs of the population as a whole and to the needs of national development, there has been a search for a model of intervention beyond the remedial and the preventive level.

The basic content of such curriculum changes has been concerned with the acquisition of more knowledge and with the development of appropriate skills with a view to bringing about change in society, in its institutions, and in the attitudes of the people. This has, to a large extent been reflected in the tendency of schools of social work, in both the developed and the developing countries, to seek administrative integration with schools of community development,

or curricular integration between the two, or to make other attempts at integrating components of social development. In the developed countries, similar co-operation has also taken place between social work and other disciplines.

The changes in curriculum content or restructuring of curriculum for the training of personnel for social welfare are no doubt indications of the inadequacy of existing patterns of training. All the attempts referred to so far have been expressions of the need to integrate the social with the economic aspects of development. In developing countries the schools of social work in particular, have begun to recognize the implications of having to cope with development in a context where most people do not have the basic means for adequate economic and social functioning. And yet, the methods of social work practice have been borrowed from a context where for a long time a minority has been the focus of welfare programmes.

The challenge has really been to find a model that will go beyond the remedial and even the specifically preventive and to come out with a broader and more positive kind of intervention that will embrace the majority of the population in the developing countries. It is necessary not only that they be relieved of immediate needs and stresses but also that their standard of living be raised to such a level that will permit them to participate in, and contribute to national development.

Such attempts were made to some extent by schools of social work that had not accepted the western experience of the conventional social work methods, without discussion. Sheer necessity had compelled some schools to address themselves to the needs of the majority of the population, or at least to some members of this majority. Thus, in the countries of Africa, Asia and Latin America we find some examples where the schools have been concentrating on providing their students with experience in promoting the improvement of whole communities who needed, not only to be rescued from poverty, but also to be helped to develop their own resources for continued development. In fact they were promoting programmes of community development and social change beyond the welfare of any one community as working at the local level demonstrated the need for change at the regional and national level. On the other hand, schools definitely committed to community development or holding courses which had adopted a community development methodology, were also evolving a method of response to multiple needs for whole communities. Where this took place in a training institution committed to community development, a more complex educational challenge emerged. The social work methods were re-adapted, or new procedures of intervention were evolved with or without reference to experiences of social work.

In reality, both were searching for a methodology with a more comprehensive approach to social welfare in the context of national development needs and goals. In some cases the educational problems at least came nearer to solution through the integration of courses of social work with community development, or through the integration of a school or institute of social work with a school of community development. In some cases they became aware of the complementary role of both and they acted in close relation with each other, though remaining separate training programmes or institutions.

Aware of this necessity of providing a training to enable personnel to tackle complex problems of community or society, schools were inevitably led to a critical evaluation of the limitations of conventional training. It is true that the concepts of social work were derived from other social sciences, mainly psychology and sociology, from medicine and, to some extent, from economics and political science. In reality, however, an attempt has been made to use these sciences in specific methods of social work confined to narrow areas of service provided by social welfare agencies. In the developed countries, such practice, confined to well defined treatment oriented areas of casework or group work, has not encouraged a further growth in the use and development of knowledge and skills from other disciplines and professions. This has not been so in certain endemic areas where there has been concern about the complexity of urban problems or the breakdown of institutional life in rural areas. But the reality of developmental social welfare has proved the inadequacy of the kind of integration of the curriculum generally adopted in the western systems and schools in the developing countries. Social welfare personnel in the developing and, to some extent, in the developed countries have had to (i) work with personnel from other sectors and disciplines, either as part of a given plan, or as a result of an action planned to meet the growing and complex needs of society, and (ii) identify related problems and decide which content or programme sector should be stressed in a strategy for social development. The result has been a search for the most economic and effective type of intervention.

Training schools for community development have taken for granted that their task must be interdisciplinary from the very beginning and have tried to respond to the need for curriculum development and for practice in the same way as the schools of social work. However, in institutions which were not aware of, or rejected the social work methodology, there has been much search for a conceptual scheme relevant to the practice of developmental social welfare. Where there has been an appreciation of social work, of its advantages, its strengths and its weaknesses, there has also been a struggle to adapt the known methodology to interdisciplinary needs. The results have not yet been assessed adequately enough to learn from the wide spectrum of curriculum experiments, ranging from the rejection of known methodology to the too eager adaptation of existing methodology.

Interdisciplinary training may have the following objectives:

(i) A comprehensive understanding of interrelated aspects of social problems and needs.

(ii) The diagnosis of a need situation and identification of what is more clearly social and its relationship to other needs.

(iii) The development of a strategy that is appropriate in terms of developmental social welfare; this may be a social welfare strategy per se; a social welfare strategy in combination with others; a non-social welfare strategy. Ultimately all these strategies are meant to secure socio-economic objectives; hence, whatever the strategy, there will be implications for a particular kind of social welfare role or approach.

(iv) Co-operation with other sectors of development and the use of interdisciplinary knowledge and skills involving a team approach in collaboration with other professions.

There are two problems here that concern educators engaged in training personnel for developmental social welfare: (i) planning of the curriculum for interdisciplinary functioning; (ii) development of a model of intervention for interdisciplinary functioning.

It appears that there have been several successful attempts in the interdisciplinary training of teachers and social workers, and of social workers and health personnel. But these have been made with reference to specific problems confined to well defined sectors of development. Further, they have not comprised the whole range of needs encountered in social change or community development programmes and which call for the involvement of several sectors of service besides health and education, in association with social welfare. What is more, such training has not produced, so far, a satisfactory model for community intervention.

Interdisciplinary training is probably carried out in several countries more than is apparent. However, it appears that it is still in the experimental phase and satisfactory solutions have yet to be found for interdisciplinary functioning. It is likely that at the time of writing this report and by the time it is published, significant progress may have been made in this direction.

The following patterns of development have been noted with reference to interdisciplinary training: (i) training the different professions together as, for example, social workers with home economists, agriculturalists and nurses in community work; social workers with sociologists, anthropologists, psychologists, economists, lawyers, and physicians; or social workers with one of the following: nurses, lawyers, teachers, education personnel for family life and doctors. It must be mentioned that such training has been confined to short periods of time except in the case of social workers being educated with teachers and nurses, where the period was extended; (ii) introducing an interdisciplinary content into the curriculum of social work by bringing in representatives of the different disciplines or sectors of development. This has been by far the most prevailing pattern.

At the same time with such teaching in the classroom and in the field, actual interventions at the community level have also been attempted by teams of workers representing different disciplines. Such team work has helped the community to react as a social unit and to provide a basis for integrated intervention. These approaches are confined to a few countries in the developing world. They are regarded as experimentations or special strategies for development in several countries of Africa, Asia and Latin America. The impact of urban and rural problems has given rise to comparable events in the developed countries also.

In conclusion, it may be said that these curriculum changes are significant because: (i) they indicate an awareness of the need for the integration of social welfare with national development efforts; (ii) there is a necessity for social work to integrate its knowledge and skills with the different disciplines and professions relevant to all the sectors of national development; (iii) they provoke search for satisfactory models of intervention involving an interdisciplinary approach by teams of different professions for the realization of the social welfare objectives of programmes for national development; (iv) training for such intervention may no longer be considered as a monopoly of schools of social work, though their special contribution should be recognized; (v) these developments have implications also for the length of training , the prerequisites, the organization of teaching resources and the levels of training.

IV. CONCLUDING OBSERVATIONS

A variety of new approaches (in the context of our definition given in the Introduction) in meeting manpower needs for social welfare, has been reviewed in chapters I, II and III. This chapter deals with their significance and offers some concluding observations based on the findings and supported by recent literature and reports in the field of social welfare. 1/

Manpower policies for social welfare

There is not enough evidence in any one country for the existence of a comprehensive manpower policy. On the other hand, the need for such a policy as part of a national development plan has been felt and expressed in varying degrees by both developing and developed countries, in their efforts to formulate policies and project manpower needs in assessing the nature of social welfare functions to provide a basis for manpower planning in building instruments for the study and planning of manpower and finally various supportive measures to facilitate the growth and expansion of manpower development and utilization for social welfare manpower.

The combination of all these different efforts would indicate a movement towards a comprehensive manpower policy for social welfare. However, each of these separately has its own contribution to make to the development of an over-all social welfare manpower policy. Here it may be appropriate to say a few words about the nature of social welfare.

Developmental social welfare

In mobilizing a country's resources for development, there is greater acknowledgement of the most important factor of all - people - who are both the end and the means of development. It is evident from the study of relevant literature and available data that social welfare is not only regarded as an instrument of development but also as the goal of development itself. However, there is no consistent pattern in the expression of such a belief, owing to many difficulties

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1/ ECA, "Report of consultant team for the study of schools of social work in Africa", (E/CN.14/SWSA/3/Add.1, 1964), "Report of the seminar on the relationship of social work education to developmental needs and problems in the ECAFE region" (E/CN.11/SD/DNP/L.2), "Report of the first national workshop on social work education" (Manila, Social Welfare Board, 1967), Virginia A. Wolfe, "Functions of contemporary social work in Latin America", paper presented at the Seminar of Latin American Schools of Social Work held in Venezuela, 1968, Virginia A. Paraiso, "Social service in Latin America: its functions and relationships to development", Economic Bulletin for Latin America, vol. IX, No. 1 (United Nations publication, Sales No.: 66.II.G.7), Mitchell I. Ginsberg, "Changing Values in Social Work (New York, Council for Social Work Education, 1968) Transcript No. 69-340-26, "Trends in social work education in Asia", Indian Journal of Social Work, vol. 28, No. 1 (April 1967).

arising from the history of social welfare, the profession of social work and the struggle for the achievement of economic development as offering more immediate gain.

It may be claimed that the role of social welfare in the context of national development is supported on the whole by the trends and innovations reported particularly in chapters I and III. However, the reason for the only partial support for social welfare in all its developmental implications may be found simply in the lack of employment opportunities and in the limited resources available for social welfare. There is a variety of proportionate investments in the remedial and preventive aspects of social welfare, depending on the resources available, on the value attached to a national commitment on social welfare, and on social and professional leadership.

In the light of the attempted definition of social welfare in the developmental context in chapter I and of the findings under review, the following additional observations may be made about the characteristics of social welfare, in order to understand its importance for the development of a manpower policy.

It would appear that the findings on curriculum outlined in chapter III point more definitely than anything else to the trend towards developmental social welfare. Further to the observations made in the Introduction, developmental social welfare may seem to have the following characteristics: (a) it is positive in its objectives; (b) it is comprehensive and related to all sectors of need; (c) it covers all relevant sections of the population; (d) it meets the needs of the target population and develops their potentials; this contributes to the improvement of the social functioning of the population as a whole and, consequently, to the realization of developmental goals on a national scale.

Developmental social welfare generally consists of the following tasks: (a) relating the social functioning of the target population to national development; (b) co-ordinating the different sectoral services or disciplines which contribute to social functioning; (c) guiding the actions of the population so that they may contribute to the improvement of the community; (d) creating or modifying institutional processes for change conducive to national development and eliminating those which are detrimental to it.

Specific forms of developmental social welfare activities are for example: the development of leaders and of institutions of social change for the improvement of community life and of social functioning; providing services and strengthening existing institutional processes, if not creating new ones, not only in order to cope with the disadvantages of urbanization and to prevent dysfunctions but also, to develop positive urbanization processes in the wake of or as alternatives to, migration. Land reform may be regarded as an agricultural or economic measure. But it may become an object of developmental social welfare in that people are brought together and called upon to adopt a different pattern of land use and ownership, and. consequently, better or different social relations and functioning must be evolved in the management of land and in the share of its produce. Such tasks, however, may involve a variety of disciplines and professions and make it necessary for developmental social welfare to be intersectoral in its planning and execution.

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Since manpower policies for social welfare are a part of social welfare planning, it may be useful to mention here that planning for developmental social welfare could be done with one of the following approaches: (a) an analysis of the national community system with the emphasis on planning social welfare for national development; (b) an analysis of selected social problems or needs identified as presenting by far the greatest barriers to development with an emphasis on selected strategies for social welfare in the context of national development; (c) an analysis of existing social welfare programmes and emphasis on making such programmes more developmental in scope and impact; planning for future programmes, according to available resources, in order to contribute to national development goals.

The new approaches to social welfare training reviewed and discussed in this survey may be considered as a reflection of the emerging trends in the implementation of social welfare. It must be emphasized, however, that while such trends are apparent, they do not necessarily represent the commencement of a completely new era for social welfare. The present developments are, no doubt, a continuation in the evolution of social welfare, in response to new situations. There will be continued investments in the preventive and the remedial, to which the developmental approach may gradually be applied, as more personnel and resources become available and as the attitudes of the professions evolve and they attempt to come nearer to the realization of the socioeconomic goals of national development.

Prerequisites for a manpower policy for social welfare

The data presented in chapter I may be considered as illustrations of various aspects of a manpower policy for social welfare which have also featured in current literature 2/ on the subject. Assuming that there already is a general policy for social welfare with defined objectives and strategies for implementation, some of the important prerequisites for a manpower policy may be identified as: (i) existence of a general manpower policy; (ii) assessment of the social welfare system; (iii) acceptance of social work as a profession; and (iv) existence of supportive interrelated activities essential to a manpower system. A short elaboration of each of these four points seems appropriate.

(i) Existence of a general manpower policy. A manpower policy for social welfare can only exist in the context of a wider policy for the utilization of a nation's manpower. In many developed countries such a policy is implied in the allocations for the different sectors. The politically and industrially older nations have developed such extremely complex bureaucratic systems that their programme allocations may have more implications on the development of a general manpower policy than any over-all formulation embracing all sectors. In a number of developing countries, where the political framework is still being built, it may

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2/ See among others: Arnulf M. Pins, "Social work education and social welfare manpower. The United States Picture", International Social Work, vol. IX, No. 1, January 1966, pp. 6-11. United Nations Expert Group on Manpower Needs in the Social Welfare Field and Implications for Training Programmes (Denmark), 1969, (SOA/ESDP/1969/2). Werner Boehm, "Manpower planning in social welfare". Journal of Social Work Education, (New York 1970), pp. 11-20. "Meeting the Social Welfare Manpower Needs", International Conference on Social Welfare, Tokyo Seminar Proceedings, (Bombay), 1967.

be easier to formulate an over-all manpower policy. In either case, a consideration of the nation's manpower potentials must necessarily be the context in which a manpower policy for social welfare could be further elaborated.

(ii) Assessment of the social welfare system. A manpower policy has to be based on the study of the system existing, or in the course of development in the country. Social welfare roles and functions will have to be analysed and the number and type of personnel needed for the various functions will have to be estimated in terms of both present and future needs. There are many difficulties involved in such a study apart from the statistical computations and projections, as reported in chapter I A thorough understanding of social welfare's dynamic contribution towards development is necessary, particularly in the light of changing concepts and realiti s, though current assessments of social welfare priorities or tasks may not reflect developmental functions.

(iii) Acceptance of social work as a profession. However important it may be to develop a new discipline or a methodology to implement the goals and objectives of social welfare, this would have to be done within the framework of the local cultural and socio-economic system. The institution of a profession for human service, whether it is social work or related to it, must be relevant to developing local conditions. While as a profession social work has basic characteristics which supersede time and place, its techniques and fields of application must necessarily be localized.

(iv) Existence of supportive interrelated activities essential to a manpower system. Defining social welfare, planning for it, research, delivery of service and training for social welfare are four major interrelated activities which must help to shape a manpower policy. There has to be a definition of social welfare and a plan for it before manpower could be assigned to implement the welfare programme. Research is a major instrument for the analysis of social welfare and for a social welfare plan. The way in which social services are delivered or should be delivered, will affect the nature of the plan for social welfare. Finally, the way personnel are trained and made available for manning the welfare system will determine how they could be utilized for implementing a manpower policy. These four interrelated, supportive activities together with the other requisites already outlined are vital for the formulation of a manpower policy.

Manpower planning and implementation

From a study of the data received in response to this survey and from a review of related literature, it would seem that, ideally, the planning and implementation of a manpower policy for social welfare would consist of the following four stages:

(a) A plan based on an analysis of the existing social welfare system, for the mobilization of training resources and the provision of linkages among the various levels of training;

(b) Formulation of policies for allocation of training resources, taking into account the academic or operational levels and types of training programmes that should be given priority in the light of national development goals for a specified period.

(c) Formulation of appropriate recruitment policies and ensuring standards of admission to meet national needs. (For instance, more men or more women needed for certain tasks; more personnel for certain local areas, more personnel for certain levels or functions.)

(d) Ensuring through proper recruiting procedures, promotion and financial inducements, and satisfactory working conditions, that a majority, if not all of those trained, will man the social welfare system.

(e) Provision of a sound training programme which comprises: (i) theoretical learning inclusive of practice; (ii) practical learning inclusive of theory; (iii) curriculum development in consonance with national needs; (iv) the development of needed faculty and other related personnel essential for learning.

Structural arrangements for training

Recruiting procedures

Recruiting procedures exercise an important control both on the quality and on the quantity of manpower for social welfare. The findings reported in this connexion refer particularly to recruiting for local needs or minority needs and to recruiting men or women, according to the needs of a given situation.

(a) Attention is now paid to localized recruitment, after years of catering only for the large urban centres. A planned recruitment to ensure that trained personnel will work in areas where they are most needed, calls for local structuring of training centres, local partnerships in planning and carrying out recruitment, a local curriculum orientation and the selection of trainees interested in serving local communities. In the case of developing countries, certain important safeguards appear to be necessary. On the one hand, while training may be localized, it need not become less professional; in fact, even in non-professional training there must be some professional elements to facilitate advancement to higher levels of training practice. On the other hand, such training must not only provide skills for coping with current needs but also for contributing to change by providing a more satisfactory response to needs. Could such a focus be reconciled with a professional orientation if not a professional core of knowledge, attitude and skills necessary for higher levels? In an earlier United Nations publication on Training for Family and Child Welfare, such an approach has already been emphasized. 3/ The findings discussed under diversification of training point to the increasing opportunities for career development.

Another issue that must be raised here is the dilemma between recruiting for local needs and the right of personnel to move into more urbanized or other areas in pursuance of professional and other interests. Certain built-in provisions in conditions of employment are, no doubt, necessary, to ensure a person's service for a reasonable period of time, but there should also be provisions for career alternatives and further professional development.

3/ A Handbook of Training for Family and Child Welfare (United Nations publication, Sales No.: E.69.IV.1), p. 23.

(b) There is no question that special ad hoc measures need to be adopted in order to redress unsatisfactory situations that have been neglected for too long, and to plan for preventing their occurence in the future. This preoccupation has led to recruitment from minority groups. One of the examples cited with reference to recruitment indicates the scrupulous attention paid to ensuring desirable standards even though certain concessions may be made in recruiting from neglected minority groups. On the other hand, it may reasonably be asked whether these good standards are always relevant. Should the minority group be made to follow the existing standards or should these standards be thoroughly revised in the light of current and emerging needs? A variety of alternatives should be examined when recruiting in minority groups.

(c) The special recruitment of men or women has always been in response to particular programme needs. In certain cases the growth of the programme itself and its success has depended on such planned recruitment. The problem is now being felt even among developed countries, in welfare programmes where the early preponderance of women has still not changed in spite of the need for more men in particular regions. Programme needs and employment opportunities, more than anything else, will determine the practice of such recruitment policies.

Regional training centres

Regional training, whether within a country to serve domestic needs or organized interregionally to serve countries within a larger region, could be both economical in the use of resources as well as professionally enriching. It has definite advantages for both the developing and developed parts of the world. Such training is most useful when common training needs and special features which one unit could contribute to the others have been identified and when the necessary related structures have been established and the areas defined for the regional experience to be followed up by localized or in-service training and for further advanced training.

The practice of sending students to countries outside the region must be contingent on the training needs and resources within the region. While this practice will be necessary for certain specialized and advanced programmes the number of students going abroad will become smaller as a result of the leadership and resources of intraregional and interregional training centres. Most foreign schools are hardly equipped to cater for students from the developing countries at a sustained level and with the appropriate focus. There are some recent exceptions to this however owing to the increasing attempts to understand the needs of the developing world. Such attempts necessarily involve collaboration between the developed and the developing countries concerned.

Training for different levels of practice

(a) The expansion of social work education at all levels has compelled all levels of practice to sharpen their focus and broaden their scope. Some confusion will no doubt prevail where careful analysis of curriculum and practice has not been made. It would be most important to identify the core of the curriculum at all professional levels of training and practice and to define the differences and the links between them. This is not to say that all training must be professional, yet the career ladder has to be within the reach of those wishing further professional development.

(b) The various attempts at a differential use of manpower seem to indicate the need for restructuring service agencies so that they respond to problems differentially. Thus, an agency may conceivably consist in the near future of teams of personnel representing different expertise at various levels. After review by the team, problems may be referred to the responsible team members for intervention. In some countries such a development may already have begun. An example is the concentration of multiple services in some of the United States anti-poverty agencies. It is also met in some community development situations in developing countries. There is no indication yet in urban agency structuring that team intervention is prevalent or that it could easily develop. However, family planning, urban development and housing programmes do foster such approaches.

(c) The involvement of higher institutions of learning in the training of volunteers and of indigenous workers, and in in-service training has proved to be an enriching experience for the university as well as for the collaborating local communities or agencies. Some interesting and desirable side effects may accrue from this participation even at the risk of mutual criticism. It could, on the contrary, be more helpful than harmful if it is made in the framework of clearly defined goals and areas of co-operation and in a sincere effort to serve. Such an extension of the university's function and purpose would also contribute to diminishing the gap between theory and practice.

(d) Similarly, the collaborative use of resources among universities, both in supplementing or in complementing one another's training programmes, brings about a healthy interprofessional and interdisciplinary co-operation, to the advantage of the social welfare personnel trained under these auspices.

Increased facilities for training

The demand for trained manpower in social welfare has resulted in a flexibility in the training system. While this is not a common trend, it indicates a responsiveness to urgent needs. Care has to be taken that measures which are meant to meet quantitative needs do not affect the quality of training adversely. It is for this reason that ad hoc arrangements need strictly to be regarded as such, unless it is proved that they could in fact achieve a better quality than the regular programme. Such a possibility should not be ruled out.

On the other hand, provisions for retraining would be needed as a regular feature of the training system, based on a study of those who leave the social work profession. Apparently, such a need has not yet been felt in the developing countries, where trained manpower cannot yet be absorbed by adequate employment opportunities.

The role of students

Student participation in the evaluation and reformulation of training policies, goals, content and in actual teaching responsibilities is increasingly regarded as a permanent feature of the training system. In several cases students have proved to be a valuable resource for improving the quality of training. Though reports to the contrary have not been received, it is certain that not every such instance of participation will be of practical benefit or relevance to the school's

purpose. Well-defined goals and appropriate relationships could offer students the opportunity to play a significant part in the development of the school's programme, in their own right as consumers who are concerned about future professional responsibilities. It is noteworthy that the questioning of philosophies and goals of education by students has been observed in Europe, Latin America and Northern America. Nothing as significant has been reported from Africa and Asia.

Field practice

Until recently there has been a dichotomy between the teaching of methods and practice in the field by "field instructors", on the one hand and the teaching of theory and concepts by regular and more fully qualified higher-ranking instructors in the classroom on the other. This dichotomy is now disappearing in the face of the realization that theory and practice ought to be integrated at every stage of learning, that the total classroom experience must be reflected in the field and that teachers in both areas, are important and must have equal status, as far as possible.

Such a change in attitude also promotes intervention in responding to changing needs and problems. It also emphasizes the fact that social work is constantly changing and growing. To be an effective profession it has to be dynamic in its thinking and approach to problems. There is always a wide scope for experimentation and evaluation of results. Field practice serves teaching goals and could also serve the public and the agencies. While this is not its primary purpose, there is no reason why both should not be attempted, wherever possible. This is particularly true of the developing countries if the students are to have the experience of working under agency auspices.

Indigenous resources

(a) It is important that more and more schools of the developing world have begun to train their own teaching resources in the light of local conditions. This requires ingenuity and a high degree of professional skill in identifying and ranking the content of teaching in a sequential learning process. Close co-operation between classroom and field is necessary for the selection of potentially good teaching resources. Seminars or study groups in which learning situations are compared and reassessed, provide a useful critical function, after an initial selection of materials has been made by qualified personnel.

With more and more countries developing their own language medium of instruction, there is an increasing demand for such teaching personnel. As professional education cannot be imparted through any one set of materials alone, there is a continuous need for the production of indigenous teaching resources. It may be an extremely expensive item on the budget of the training system and international assistance could be fruitfully deployed here. This is one of the reasons for the establishment of regional training centres.

Priority should be given to the availability of international publications and journals in order to enrich local learning, to correct perspectives and to stimulate the sharing of experience. It would be necessary to translate such materials into the local language.

(b) Teaching through such aids as television and radio, has a very strong impact. Caution is therefore necessary when using these media in order not to create erroneous impressions. It is particularly easy to stress certain types of situations or methods more than others and this ease may prove detrimental to social work if facile impressions are given of its functions instead of insisting on its fundamental roles. The use of such teaching media is expensive and care has to be taken that such expense is justified by presenting a true picture of the field of social welfare and of the functions of the social work profession.

(c) There is no end to the variety of teaching methods that a good teaching environment could generate. What is current or usual is not, necessarily, the most effective teaching method. A good teaching method must be a disciplined attempt to convey in an interesting and effective manner any set of knowledge, values, attitudes and skills. Thus, while role playing or sensitivity training may be excellent in themselves they may be thoroughly unsuited for different cultures, different stages of maturity of the learning group or for situations with given time-limits.

(d) It is interesting to note that the teaching of social work by correspondence is only undertaken as a complement or supplement to a regular personal experience of direct teaching. The need for more personnel gives rise to new solutions, governed, however, by a real understanding of the potentials and limitations of the task to be performed.

Training of trainers

It is rather surprising that this task has not been given, until now, the importance it has been increasingly assuming. Very few professions pay due attention to the formal preparation of personnel for teaching and social work seems to have been effected by this trend. The training of such key individuals as social work educators cannot only be left to socialization through professional colleagues. In view of the task to be performed in the coming years, educators need more than short-term courses unless these are parts of an integrated programme with well-determined objectives. They need particularly to have a philosophy of social welfare and social work practice in changing situations that demand sensible innovations, both at the micro and macro levels.

Given the changing nature of social work practice, should not the education of social work teachers be an important item in the social welfare system? This is a question to which regional centres should address themselves. Reference has previously been made to planning, administration, research and training as the main components of professional growth. The training of trainers has to be regarded as an important additional sector of training and its interdisciplinary or interprofessional aspects deserve increasing attention.

Reformulation of curriculum objectives

In the following paragraphs, it is endeavoured to describe briefly the major characteristics of intervention in the field of social welfare, as reflected in the different attempts at curriculum reorganization. They follow the more thorough discussion in section B of chapter III.

Goals and objectives of intervention

As described earlier in this chapter under manpower policy, the objectives are more developmental rather than specifically preventive or remedial, though the latter are not necessarily excluded.

Methods of intervention

Major changes or meeting basic needs cannot be effected without involving the various sectors concerned. Intervention methods therefore, have to be intersectoral. As knowledge and skills from different areas will be needed, an interdisciplinary approach is adopted. Finally, such an approach involving the different sectors and disciplines is possible only when workers collaborate as members of a team.

Implemenation levels

These developmental methods are applied at the level of policy making, of planning and of implementation. Moreover, a team approach of an intersectoral and interdisciplinary nature, is used.

Intervention strategy

This will depend on the area defined for intervention. Where problems have to be met at the level of the community, as a whole (local, regional or national) a comprehensive over-all strategy should be adopted covering a wide range of needs and problems. Where one or more important problems have been identified for attention, the strategy will still be comprehensive but will be confined to a limited network of needs or problems. This is a selected problems approach. Finally, there is the task of improving what already exists, or making existing remedial programmes as developmental as possible by reordering of existing resources, or a reallocation of functions.

Implications for training

(a) The resources for developmental intervention would more easily be found in the milieu of a university where several disciplines are represented. (One such example was given by the United States). It should be remembered, however, that the needs of the community are best understood while working in the field. Thus, whether training is conducted in a university or in other institutions, there should be close co-operation between sectors, disciplines and professions in organizing and structuring training programmes.

(b) The curriculum must integrate the different approaches and not simply synthesize them. No doubt, a certain amount of basic knowledge and skills will be a synthesis of the different elements that comprise developmental social welfare. However, a different kind of integration will be necessary for interdisciplinary, intersectoral, or team functioning. This will involve a knowledge of the expertise which other members of the team may offer and provision of expertise by one member to another. In addition, the social worker may have, at times, to let the other members of the team operate without his intervention.

It becomes a challenge for educators to provide the necessary experience both in theoretical and in field learning, through team teaching or team preparation.

(c) It would seem that as long as sessions are of short duration and well planned with regard to objectives, content and methods, interprofessional training could be an important component of training for developmental social welfare.

Team functioning, as discussed here, will best be achieved through an interdisciplinary planning and preparation of the curriculum. Team presentations would be important though not the sole method of instruction in such a curriculum in order to provide the trainees with the ability to analyse as members of a team and to intervene accordingly while maintaining their approaches as social workers.

It is also important to consider here the fact that the social worker will not be the only professional working in the field of social welfare. Home economists, doctors, agricultural and adult education workers and many others may be participating in social work either in a primary or in supportive or complementary capacity. This fact should be taken into consideration in the theory and practice of social work for developmental social welfare.

Implications for international assistance

Following the report on new approaches in this survey, some suggestions may be made in terms of future developments and assistance. It would seem that consultants or technical experts for such tasks as social welfare planning, administration of social welfare services, or training personnel for social work and social welfare in the context of national development, could offer timely and effective assistance in accelerating the processes of general development by paying particular attention to the following:

The planning and implementation of manpower policies for social welfare

(a) as an essential part of national development planning and where there are national development programmes;

(b) where social welfare planning is in operation or is recognized as a need;

(c) where there is a scheme for the training of social welfare personnel or where such a need has been recognized; in this connexion, an integrated plan

for training, covering all levels and types of programmes for a locality, region or country within a given or possible system of resources, or failing this, as comprehensive a plan as possible, should be given important consideration.

The use and development of resources with a view to implementing manpower policies for the training of social welfare personnel

(a) by organizing international regional centres for training of key personnel, in relation to special needs of countries in the region, including social work educators and the development of indigenous teaching methods and resources, and the integration of theory and practice for different levels of training;

(b) by developing centralized training with due recognition of local needs in countries where it is important to organize such centres;

(c) by setting up resources on a basis of collaboration, both inside developing countries and between them and also between developed and developing countries, in order to meet needs as economically as possible.

Curriculum planning for developmental social welfare

(a) with particular attention to training for interprofessional or team work, involving intersectoral and interdisciplinary approaches to social change and to the resolution of social problems and needs;

(b) with equal attention to teaching resources and structures for training with a view to promoting processes characteristic of developmental social welfare;

(c) recognizing the need to train faculty and related personnel to develop and teach an appropriate and relevant curriculum.

Research, study and seminars

(a) it is suggested that research, study and seminars be conducted in relation to the needs mentioned in the preceding paragraph,

(b) it is also suggested that it would be useful and timely if the next survey of training for social welfare is a study in depth of the implications of developmental social welfare for training of personnel could be conducted in selected developing and developed countries. Very naturally, the subject of the different aspects of interdisciplinary training, including intersectoral and team functioning would be subjected to detailed examination regarding its practicability and relevance. As reported in this survey, there are some countries which seem to have developed programmes that would merit such a study; it would have great practical value since, in order to cope with the problems of national development, social welfare has an important role to play in furthering change. New ways of social work intervention and training have to be adopted to help achieve national purposes and to satisfy the national community. An in-depth study of some of the innovations reported would have great value in clarifying the nature of such new approaches and the principles to be followed in the interest of economy and efficacy.

It would also be important to learn about conditions that are most conducive to the development of manpower policies and about the methods of implementation and their applicability in the developing countries.

Manpower for social welfare in the developing and the developed regions

Though the findings reported in this survey may not be spectacular, particularly in terms of quantity, they do however indicate some significant developments, however recent and in the very early phases of growth in the field of social welfare.

These findings may seem disappointing or surprising to those who expect striking differences among countries in the concept of social welfare, in social work methodology and in training, because of the differences between the developing and the developed countries and of the need for more appropriate means of dealing with social change and with current social problems. In order to appreciate the nature of the innovations reported, it may be useful here to consider briefly some of the differences between the two types of countries.

Some characteristics of the developing and developed countries relevant to social welfare.

If there is one factor that predominantly distinguishes the developing world from the developed it is that of the large numbers and high rate of population growth. In 1950, the population in Africa, Asia and Latin America was estimated at 222, 1,381 and 163 millions respectively. In 1968, it was 336, 1,946 and 267 millions respectively. In contrast the population for Europe, North America and the USSR was estimated at 392, 218 and 180 millions respectively in 1950 and at 455, 309 and 238 millions respectively in 1968. The developing world has 66 per cent of the world's population and the developed world 34 per cent. The rate of increase has been 2.4, 2.0 and 2.9 per cent for Africa, Asia and Latin America respectively between the years 1960-1968, and 0.8, 1.8 and 1.1 per cent for Europe, North America and the USSR respectively for the same period. 4/ It is no wonder that Lester B. Pearson wrote: "The acceleration of population growth is straining against the absorptive capacity of many societies and nullifying much of the development effort. In supplying such facilities as schools, hospitals, and urban housing, even a holding operation to keep standards from slipping is often difficult". 5/ The problem of a growing needy population, alone, is one that affects social welfare greatly.

Secondly, the population in the developing world lacks basic human needs. The total gross national product for the developing countries is only 12.5 per cent of the world total. 6/ Food and housing are not available, at a

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4/ The figures in this and subsequent paragraphs have been taken from the Statistical Yearbook 1969 (United Nations publication, Sales No.: E/F 70.XVII.1).

5/ Lester B. Pearson, Partners in Development. Report of the Commission on International Development, New York, (Praeger Publications, 1969), p. 12-13.

6/ Ibid., p. 24.

satisfactory level for most people. Earning capacities are extremely low and the low per capita income makes it impossible for the majority to obtain satisfactory living conditions. "Unemployment and under employment have reached critical proportions in many developing countries and will probably grow worse in the 1970s. Out of one hundred children entering primary school in the developing countries, only thirty finish, and those who graduate from this or from higher levels of schooling frequently fail to find the employment they expect. Education is still far from making the contribution to modernization that it is capable of making." 7/

While such large population groups are in need of health, education and welfare services there is strong competition for other basic needs like food and shelter. With extremely tenuous budgets which are dependent on an unsatisfactory economy and on the generosity of the developed countries, situations like inadequate housing, low food production, unemployment and under employment, poverty, illiteracy, bad health and environmental conditions, etc. challenge politicians and development experts to find satisfactory solutions.

Thirdly, while such basic needs are seriously felt by the majority of the population in the developing world, another interesting and significant fact is that most of these people live in the rural areas. In Africa, Asia and South America 84, 82 and 63 per cent respectively live in "rural areas" (localities with less than 20,000 people) according to 1969 estimates. By contrast, the figures for Europe, North America and the USSR are 54, 38 and 58 per cent respectively for 1969. In these rural areas of the developing countries characterized by a subsistence agricultural economy, there are few facilities for meeting the socio-economic needs of the population. The best health, education and welfare services are concentrated in the cities, and so are the opportunities for economic and social advancement. In other words, in the developing countries a minority of the population enjoys the most advantageous resources, while the majority in the rural areas suffer from severe lack of basic needs.

Fourthly, most of the developing countries have either acquired political independence recently or are going through country-wide processes of modernization. Over sixty-six countries in Africa and Asia which acquired political independence since the founding of the United Nations in 1945, are no doubt affected by this process. 8/ Even though the countries in the Latin American region have been politically independent for a long time they may be regarded as going through the same processes of modernization if by this term we mean "the process of social change whereby less developed societies acquire characteristics common to more developed societies." 9/ or "the total transformation of a traditional or pre-modern society into the types of technology and associated social organization

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7/ Ibid., p. 13.

8/ See S.H. Steinberg and John Paxton, (eds), The Statesman's Yearbook 1969-1970, (London, Macmillan and Co. Ltd., 1969).

9/ See Daniel Lerner, "Modernization: Social aspects", International Encyclopaedia of Social Sciences, vol. 10 (New York, Crowell, Collier and Macmillan, 1968) pp. 386-394.

that characterize the advanced, economically prosperous and relatively politically stable nations of the Western World." 10/ Whether these countries have acquired political independence only recently or much earlier, in both groups the modernization process has meant the struggle to evolving new forms of political, economic, and social institutions in order to raise the standards of living and to meet the long neglected needs of a majority of the population with the accompanying tensions and frustrations which need to be understood and resolved. To some extent some aspects of modernization are synonymous with development which "involves profound changes in national behaviour and often creates threats to national unity and cohesion which may require strong appeals to each nation's unique historical experience. Economic organization, social policy and the mobilization of the will to break with the past will often require pragmatic policies appropriate to local circumstances ..." 11/

Finally, it should be stressed that in developing countries, though the social aspects of development are not denied at least in principle, the fact is that development is almost entirely concerned with economic production in order to sustain the masses at tolerable standards of living. In this context, social welfare has the responsibility of initiating strategies for ensuring the success of economic development, one of the goals of which is ultimately social progress. In the developed countries, social welfare is not, on the whole, very concerned with economic development, since the factors necessary for progressive economic development are largely and consistently present there. Moreover, these countries are not faced with the problems of large populations in rural areas, lack of basic needs, and modernization.

The slow response to changing needs

Considering the importance of these differences and the urgency of finding remedies, it appears that, on the whole, there has been a rather slow change from the earlier, almost wholesale acceptance of social work training, modeled after Western concepts and organized to serve the needs of marginal population groups in urban areas.

Generally, social welfare programmes in the developing countries have flourished in pockets of urban development. Their purpose is to prevent and remedy situations arising from migration to the cities, of people without adequate skills and resources to earn satisfactory wages and enjoy a satisfactory standard of living. The workers, the delinquent, the disorganized family and the physically, mentally or socially handicapped have been the main object of welfare programmes, and social work training has addressed itself to needs in these areas, following almost the same pattern as the West. The major differences between the two regions have been practically ignored until very recently.

Even where claims were made that local socio-cultural needs were being increasingly emphasized there was a tendency to mould such needs in a Western cast, both from the point of view of knowledge content and of a methodology of social work practice. Even currently, some attempts to refashion social work

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10/ Wilbert E. Moore, Social Change. Foundation of Modern Sociology Series (New Jersey, Prentice Hall, 1963), p. 89.

11/ Pearson, op. cit., p. 7.

training and practice in the developing countries, are only thinly related to the characteristics and needs of the local milieu. Problems pertaining to the difficult conditions in which expertise is sometimes offered and used have often been expressed by representatives of host countries. 12/

The reasons for the slow or inadequate response to social welfare needs in the developmental context on the part of those entrused with manpower policies or training of personnel, have already been discussed in earlier chapters, particularly in chapter I. It may be sufficient to repeat very briefly here that, in the case of the developing countries, this inadequacy or slowness is due to the fact that the concept of social work is still evolving and that it has not been adapted to the particular needs of a local milieu and also to the lack of resources and perhaps the lack of adequate professional leadership in keeping with the demands of the times. The same reasons may have a negative influence on the progress of social welfare in the developed countries. To these we may add the adverse effects of the rigidity of long established bureaucratic systems and ways of procedure that make the initiation and application of new approaches difficult. It is also necessary to keep in mind the limitations of the research procedures adopted in carrying out this survey which may also partly explain the lack of extensive data on innovations.

There are a number of other explanations. It is likely for example, that the full extent of the innovations is not given in this study, owing to several reasons. Social welfare tasks and training for such tasks may be undertaken at various levels by many more institutions or units in the different sectors than are immediately apparent; channels of communication or media may have as yet not been developed adequately enough to provide the necessary information or exchange of views even within the same administrative area; many of the respondents, under the impression that they had nothing very new to report, may have been inhibited to write about developments in their area. Lack of resources, particularly in the case of the developing countries, may have been responsible for the absence of an adequate presentation of interesting innovations that may have been taking place.

Notwithstanding the problems and shortcomings of the survey, there is no doubt about the importance of what has been reported and about its significance for manpower policies and training for social welfare, with respect to two major areas at least: the increasing commitment of social welfare at the national level and the change in emphasis from the remedial to the developmental. It was found that, in the developed countries, some aspects of manpower policies were dealt with by sector or in connexion with certain strategic programmes. In other cases, some of the supportive tasks related to manpower formulation and the incremental nature of several widespread manpower activities gave rise to significant developments in manpower policy, though not always formally articulated. Such activities had ultimately, a major impact, at the national level.

In developing countries manpower policies have become part of national policies. Though, owing to financial and other reasons, implementation and further development has often been impeded, a general climate has been created for the

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12/ See for example, David Macarov, Ali Akbar, Dattatreya V. Kulkarni, and Mordecai Wertheimer in "Consultants and consultees: the view from within" in Social Service Review, vol. 41 (Chicago, September 1967), pp. 283-297.

strategic role of social welfare in development and for the formulation of a manpower policy for social welfare which would take into account its intersectoral nature.

With respect to the changing emphasis from the remedial to the developmental, social welfare now assumes important tasks with respect to socio-economic integration, raising standards of living, economizing in the use of national resources, popular participation, and intersectoral approach to social development. In the developed countries the tendency towards the developmental has grown due to the increasing inadequacy of remedial programmes and the need for comprehensive strategies to raise the standards of living of deprived segments of the urban population. Even though these findings may not be so widely prevalent as to merit the term "trend" and even though much of the information reported has not been examined in depth, as they are still in the early stages of development, the innovations reported have implications for the future of social welfare manpower, for methods of social work intervention and for patterns of international assistance.

The responsibility of training institutions

It is apparent from the findings reviewed in chapter I, that manpower policies for social welfare have been more the concern of Governments than of the training institutions which develop manpower for social welfare. This is no doubt as it should be. However, there can be no denying the fact that schools or other bodies responsible in various ways for the development of manpower may have played some part in the formulation of such policies.

Firstly, it is an important social, professional and educational responsibility for schools to initiate actively and to influence Governments and other national bodies to formulate a social welfare manpower policy in the context of national plans of development. In many ways those concerned with training personnel should be involved in the development of national social welfare policies. Secondly, there should be an awareness of the important need for a social welfare manpower at the national level. The curriculum should be planned in relation to national needs. Areas of emphasis and the recruitment of students and faculty, the size and relationship of the different levels ranging from the non-professional, the undergraduate to the graduate and postgraduate, have to be considered in relation to national needs and to an economic use of resources. Ideally, the programme of every school should be helping to meet what in fact may be a real manpower need, whether this has been formulated at the national level or not. Thirdly, the study of manpower should be included in the curriculum in order to demonstrate the role of manpower in the implementation of social welfare goals. More particularly, social research, on the one hand and social welfare policy and services on the other, offer a more appropriate medium for the introduction of manpower study than other areas of the curriculum.

The role of training institutions in responding to the need for developmental social welfare

The participation of social welfare in development calls for an intersectoral approach which involves interdisciplinary training. There are several important tasks for those responsible for training *per se*, whether it pertains to policy making, planning, research, programme implementation or training.

Today, a vast amount of knowledge necessary for an understanding of social welfare is available. The problem is to select what is relevant and can be used in forging an interdisciplinary approach to problems concerning social welfare. This is not one man's task. The interdisciplinary approach to social welfare as discussed in section B of chapter III requires team work even in bringing together what is relevant and in using this knowledge in various ways according to different types of social work intervention. In this respect, the developed countries are in a position to command more resources than perhaps they are ready to use. In the developing countries, however, due to the lack of resources for research and to problems of communication, such interdisciplinary knowledge is theoretically slower to acquire and less extensive, though the material may exist. Whether it is a question of research, planning, policy making, programme implementation or training, such interdisciplinary co-operation is necessary at various levels and phases in the implementation of social welfare. Such an attitude must be part of a regular policy in all important decisions in relation to training. As a next step, interdisciplinary functioning should be promoted in all aspects of training, whether in the field, or in the classroom.

In reality, there is probably more interdisciplinary practice in training than has been recognized. Many social work positions, though they are not necessarily called so, involve interdisciplinary functioning whether at the planning, policy making, administrative or direct service levels. On the other hand, many social work functions may be diminishing in importance and effectiveness due to the absence of interdisciplinary work where this is hindered by a rigid bureaucracy or by the lack of necessary initiative and enterprise. Chapter III, B, records several instances to show that the emergence of interdisciplinary functioning presupposes the existence of several new developments the emergence of new areas of emphasis which have a strategic value for development programmes with strong intersectoral implications; the introduction of knowledge of social welfare and of social work methodology in other disciplines and areas of professional practice; the reorientation of remedial and preventive programmes to the developmental approach. Both the developing and the developed countries have reported significant examples of this, though few have been included in the report itself. Such interdisciplinary approaches must be taken into consideration in the development of social welfare manpower.

Co-operation between the developing and the developed countries

It is apparent from this review of developments that there exist in the two groups of countries certain distinctly complementary features which facilitate an interregional co-operation in order to meet the needs of manpower for social welfare in the context of national development.

While manpower policies have generally been included in national plans in the developing countries, various aspects of such policies are in the process of being implemented in the developed countries. While the developmental, intersectoral and interdisciplinary approaches to social welfare and social work practice are actually being implemented in various ways in a few developing countries, the developed countries have organized relevant bodies of knowledge and and are working on conceptual frameworks which may facilitate the practice of developmental social welfare and the interdisciplinary approach.

In the developing countries, changes in training for social welfare have largely been brought about in response to pressures arising from adverse conditions affecting the country as a whole. In developed countries, however, the impetus for change has been provided by the recognition of problems affecting deprived sectors of the urban population. Innovations in the two groups of countries, have been reflected in the various attempts at manpower policy formulation and in the curricula of educational institutions as indicated in the earlier chapters.

There is no doubt that there is a valid complementary role to be played both by the developing and by the developed countries in answering the challenge of national development, in this case, through the strategies appropriate to social welfare and the corresponding practice of social work. International assistance through the United Nations or other organizations and patterns of co-operation must take these facts into consideration in ensuring that the complementary assistance potentials of co-operating nations could be fulfilled for the mutual benefit of the developing and of the developed countaies. The role that the developed countaies are playing and what they could still do, has been recognized. What is more important perhaps and necessary at the present time, is to stress the necessity of a joint enterprise of the developing and the developed countries that will be mutually gratifying, in the context of the Second Development Decade.

EXPLANATION OF TERMS USED

The terms as used in this report are generally explained in the course of the text. Some of the more commonly used terms are listed here with an explanation of their usage for convenient reference where it is not easily apparent in a particular context.

Social welfare. Social services and enabling processes for the promotion of personal welfare aimed at better social functioning and social relationships at individual, group, community, institutional, or societal levels. As used here health, or formal educational services are excluded from the scope of this study.

Social welfare functions. The different activities carried out by persons engaged in the field of social welfare.

Social welfare's functions. The functions or role expectations of social welfare regarded as an institution in society.

Social welfare personnel. Personnel engaged in carrying out the various activities in this field. They may or may not include persons with formal social work training.

Social work. A professional methodology of operating in the field of social welfare in helping people to satisfy their social needs guided by a discipline based mainly on a body of knowledge, methods and philosophy derived from the social and other sciences and supported by educationally recognized programmes of training and research in social development. In this sense other service personnel whether in the fields of housing, health, education or community development, etc. are also considered as engaging in social work when in fact this is being done.

Social work personnel. Personnel carrying out professional social work activities as distinguished from social welfare activities. In this sense while all social work personnel are also social welfare personnel not all social welfare personnel are necessarily social work personnel.

Social work aides or auxiliaries. Workers employed to assist professional social workers. These aides may or may not have professional training.

Indigenous worker. Workers recruited from local communities to serve their own communities. They are not considered as professional workers though some professional elements may constitute part of their training. They may or may not be paid workers.

Intermediate level. The level of social welfare practice between an administrative level at a higher policy, planning supervisory or executive level, and direct service in the field. It generally involves supervisory functions.

Undergraduate level. Education equivalent to the bachelor's degree programme of 3-4 years duration following completion of senior secondary school or high school education.

Graduate. Master's level following the undergraduate degree.

Generic social work method. A basic methodology for social work practice, not involving specialization.

Integrated social work method. A method for social work practice which consists in a combination of the traditional methods.

BIBLIOGRAPHY

United Nations, ECOSOC resolutions 1139 (XLI) and 1406 (XLVI).

United Nations, Training for Social Work. An International Survey, New York, 1950. Sales No. 1950.IV.II.

United Nations, Training for Social Work. Second International Survey, New York, 1955, Sales No. 1955.IX.9.

United Nations, Training for Social Work. Third International Survey, New York, 1958, Sales No. 59.IV.1.

United Nations, Training for Social Work. Fourth International Survey, New York, 1964, Sales No. 65.IV.3.

United Nations, Reappraisal of the United Nations Social Service Programme Addendum, New York, 1965, E/CN.5/AC.12/L.3/Add.1.

United Nations, The Training of Social Welfare Personnel. Report by the Secretary-General, New York, 1965, E/CN.5/AC.12/L.6.

United Nations, Proceedings of the International Conference of Ministers Responsible for Social Welfare, New York 1969. Sales No. E.69.IX.4.

United Nations, 1970 World Social Situation, New York, E/CN.5/455.

United Nations, Towards Accelerated Development, Proposals for the Second United Nations Development Decade, New York, Sales No. E.70.11.A.2, 1970.

United Nations, Report of the Inter-regional Expert Meeting on Social Welfare Organization and Administration. Sales No. E.68.IV.8, 1968.

United Nations, Social Welfare Planning in the context of National Development Plans, New York, Sales No. E.70.IV.11, 1970.

The Imperial Government of Iran, Plan Organization. 4th National Development Plan 1968-72. Teheran, 1968.

Republic of Zambia, Office of National Development and Planning, Lusaka, 1966.

Republique du Tchad, Ministère du Plan et de la Cooperation. Premier Plan Quinquennal de développement économique et social 1966-70.

Republic of Botswana, National Development Plan 1968-73, Gaberones.

Second Four Year Plan for the Union of Burma (1961-62 to 1964-65), Rangoon 1961.

Report of the Committee on Local Authority and Allied Personal Social Services, Cmnd. 3703, H.M.S.O., London, July 1968.

U.S. Department of Health, Education and Welfare, Closing the Gap in Social Work Manpower. Report of the Departmental Task Force on Social Work Education and Manpower (Washington, D.C., 1965).

U.S. Report on Conference of Welfare Ministers, UN Document E/CONF.55/7/Add.6.

B.Q. Madison. Social Welfare in the Soviet Union. Stanford University Press. Stanford, California 1968.

Virginia A. Paraiso "Selecting Students: Requisites of Current Social Work Responsibilities", International Social Work, Vol. X, No. 1. January 1967.

See Contemporary Education for Social Work in the United States, Council for Social Work Education, N.Y. 1966.

United Nations International Conference of Ministers Responsible for Social Welfare. Statements prepared by Governments. Malaysia (E/CONF.55/7).

Brazilian National Committee of the International Council on Social Welfare, First Seminar on the Theory of Social Work, Araxá - Minas Gerais, Brazil, Agenda Exhibit No. 4, 1967 (mimeographed).

UN Report of Consultant Team for the Study of Schools of Social Work in Africa, 1964, ECA (E/CN.14/SWSA/3/Add.1).

UN Report of the Seminar on the Relationship of Social Work Education to Developmental Needs and Problems in the ECAFE Region, New York, (E/CN.11/SD/DNP/L.2).

Social Welfare Board, Philippines, Report of the First National Workshop on Social Work Education, Manila, 1967.

Virginia A. Wolfe, "Functions of Contemporary Social Work in Latin America", presented at the Seminar of Latin American Schools of Social Work, Venezuela, 1968.

"Social Service in Latin America: Its Functions and Relationships to Development", Economic Bulletin for Latin America, United Nations, New York, 1966.

Mitchell I. Ginsberg, Changing Values in Social Work, Council on Social Work Education, Transcript No. 68-340-26, New York, 1968.

"Trends in Social Work Education in Asia", Indian Journal of Social Work, Vol. 28, No. 1, April 1967.

Arnulf M. Pins: "Social Work Education and Social Welfare Manpower. The United States Picture", International Social Work, Vol. IX, No. 1, January 1966.

UN Expert Group on Manpower Needs in the Social Welfare Field and Implications for Training Programmes (Denmark), New York, 1969, (SOA/ESDP/1969/2).

Werner Boehm: "Manpower Planning in Social Welfare", Journal of Social Work Education, Spring 1970, New York.

International Conference on Social Welfare: "Meeting the Social Welfare Manpower Needs", Tokyo Seminar Proceedings, Bombay, 1967.

A Handbook of Training for Family and Child Welfare (Sales No.: E.69.IV.1), United Nations, New York.

Statistical Yearbook 1969. United Nations, New York 1970. Sales No.: E/F 70.XVII.1.

Lester B. Pearson: Partners in Development Report of the Commission on International Development. Praeger Publications, N.Y. 1969.

S.H. Steinberg and John Paxton, eds. The Statesman's Yearbook 1969-70. Macmillan and Co. Ltd. 1969. London.

International Encyclopaedia of Social Sciences Vol. 10. Modernization: Social Aspects by Daniel Lerner. Crowell, Collier and Macmillan, N.Y. 1968.

Wilbert E. Moore: Social Change. Foundation of Modern Sociology Series. Prentice Hall, New Jersey, 1963.

David Macarov, Ali Akbar, Dattatreya V. Kulkarni and Mordecai Wertheimer in "Consultants and Consultees The View from Within" in Social Service Review, Chicago. Vol. 41. September 1967.

Supplementary References*

Joint Committee on Social Welfare Education, Australia: "Report on Progress", Kew, Victoria, 1969.

Orgão do comité Brasiliero de Conferancia Internacional de Servicio Social: Debates Sociales Especial Documento de Araxá No. 4 Ano 111 Rio Maio 1967.

The British Committee for the International Exchange of Social Workers. "The Functions and Preparation of Voluntary Social Workers in the Social Services". Report of a United Nations Study Group. London, 1967.

Herbert Bisno: "A Theoretical Framework for Teaching Social Work Methods and Skills with particular reference to Undergraduate Social Welfare Education", Journal of Education for Social Work. Council of Social Work Education. New York. Fall 1969.

Werner W. Boehm: "The Differential Use of Personnel - The Contribution of Education". Child Welfare. Vol. XLVII No. 8, October 1968.

Canadian Committee of the International Council on Social Welfare. "Social Development in Canada". Ottawa, 1970.

---

* Other references are indicated in the foot-notes.

German National Committee of International Council on Social Welfare. "New Strategies for Social Development, Role of Social Welfare". Frankfurt Am Main, 1970.

Social Welfare Department, Government of Hongkong: "Report of the Workshop on Professional Education for Urban Community Development". Hongkong, 1964.

Dag Hammarskjold Foundation: "Africa Regional Conference on Integrated Approach to Rural Development". Draft Final Report, New York, 1969.

Planning Commission of India: Encyclopaedia of Social Work in India, Vols. 1-111. Delhi, 1968.

International Council on Social Welfare, Regional Office for Europe and Middle East: "Social Welfare in Integrated Development". 5th European Symposium, Zurich, 1969.

Ministry of Social Welfare, Israel: "Research Project on Training Social Workers for Rural Areas. Final Report". Jerusalem, July 1968.

Japanese National Committee of International Council of Social Welfare: "New Strategies for Social Development". Tokyo, 1970.

Kenya, School of Social Work: "The Role of Social Workers in a Developing Kenya". Machakos, 1967.

Makerere University College: "Regional Seminar on Social Work Training Needs in East Africa". Kampala, Uganda, 1967.

Edward E. Schwartz ed. Manpower in Social Welfare: Research Perspectives. National Association of Social Workers. New York, 1966.

Report of the Inter-Regional Meeting of Experts on the Training of Social Welfare Personnel for Participation in Development Planning: ST/SOA/97, New York, 1970.

Eileen L. Younghusband D.B.E. "A Comparative View of Manpower Problems: The British Approach", International Social Work, Vol. IX No. 1, January 1966.

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JOHNSON, MARJORIE
INTEGRATING DIET THERAPY IN A DIPLOMA NURSING PROGRAM; THE METHOD DEVELOPED AT NORTHWEST TEXAS HOSPITAL SCHOOL OF NURSING.

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ABSTRACT - TO PLAN AND IMPLEMENT LEARNING EXPERIENCES INTO EXISTING NURSING COURSES THAT WOULD ENABLE THE STUDENTS TO EFFECTIVELY MEET THEIR PATIENTS' NUTRITIONAL NEEDS, TWO QUESTIONNAIRES WERE DEVELOPED, ONE FOR EMPLOYED REGISTERED NURSES AND THE OTHER FOR NURSES WHO HAD GRADUATED FROM A HOSPITAL'S NURSING SCHOOL WITHIN THE PREVIOUS SIX YEARS. DATA FROM THE EMPLOYED NURSES WERE CONCERNED WITH INVOLVEMENT IN ADMINISTRATIVE ASPECTS OF DIETARY PROBLEMS AND NURSE-PATIENT RELATIONSHIP CONCERNING DIETARY PROBLEMS, WHILE DATA FROM THE RECENT GRADUATES WERE CONCERNED WITH EVALUATION OF THEIR TRAINING CURRICULUM IN THE AREA OF NUTRITION AND DIET THERAPY. ON THE BASIS OF THE QUESTIONNAIRE DATA AND THE PHILOSOPHY AND OBJECTIVES OF THE HOSPITAL'S NURSING SCHOOL, IT WAS PLANNED THAT THE TEACHING DIETITIAN WOULD HOLD CONFERENCES WITH EACH INSTRUCTOR TO DEVELOP OBJECTIVES, COURSE CONTENT, AND LEARNING EXPERIENCES FOR DIET THERAPY THAT WERE PERTINENT TO EACH COURSE. FORMAL CLASSES, CLINICAL EXPERIENCES, AND PATIENT-CENTERED CONFERENCES WERE THE METHODS PLANNED TO IMPLEMENT THE INTEGRATION OF DIET THERAPY INTO THE CURRICULUM. A SUMMARY OF THE INTEGRATED CONTENT, METHODS FOR EVALUATING THE PROGRAM AND STUDENTS' KNOWLEDGE, AND PERSONNEL NEEDED FOR IMPLEMENTATION ARE INCLUDED IN THIS REPORT. (SB)

3062

VT 014 245

The League Exchange

Number 94

INTEGRATING DIET THERAPY IN A DIPLOMA NURSING PROGRAM

by

Marjorie Johnson

NATIONAL LEAGUE FOR NURSING

1971

VT014245

3063

League Exchange Number 94

INTEGRATING DIET THERAPY IN A DIPLOMA NURSING PROGRAM

The Method Developed at
Northwest Texas Hospital School of Nursing

by

Marjorie Johnson, Project Director

This project was supported by Training Grant number 5-D10-NU 00231 from the Division of Nursing, National Institutes of Health, U. S. Public Health Service

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THE LEAGUE EXCHANGE

The League Exchange was instituted as one means for the sharing of ideas and opinions. Many other means are, of course, available--notably, biennial conventions, national and regional conferences, and meetings of state and local leagues for nursing. Further opportunitities for the exchange of knowledge and information are afforded in Nursing Outlook, the official magazine of the National League for Nursing, and in other professional periodicals.

It is recognized, however, that the time available at meetings and the pages of professional magazines are limited. Meanwhile, the projects in which NLN members are engaged and which they should be sharing with others are increasing in number and scope. Many of them should be reported in detail; yet, such a reporting would frequently exceed the limits of other media of communication. The League Exchange has been instituted to provide a means for making available useful materials on nursing that would otherwise not be widely available.

It should be emphasized that the National League for Nursing is merely the distributor of materials selected for distribution through the League Exchange. The views expressed in League Exchange publications do not represent the official views of the organization. In fact, it is entirely possible that opposing opinions may be expressed in different articles in this series. Moreover, the League assumes responsibility for only minor editorial corrections.

It is hoped that NLN members will find the League Exchange useful in two ways: first, that they will derive benefit from the experience of others as reported in this series, and second, that they will find it a stimulus to the dissemination of their own ideas and information. There are undoubtedly many useful reports that are as yet unwritten because of the lack of suitable publication media. NLN members are urged to write these reports and submit them for consideration for publication as a League Exchange item.

To the extent that all NLN members draw from, and contribute to, the well of nursing experience and knowledge, we will all move forward together toward our common goal--better nursing care for the public through the improvement of organized nursing services and education for nursing.

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PREFACE

Our project proposal, "Integrating Diet Therapy in a Diploma Nursing Program," was written in 1966. This was a time when nutrition courses were being deleted as a requirement for nurses. Diet-therapy concepts were sparse in nursing course syllabi. Instructors in nutrition and diet therapy, or teaching dietitians, were a rarity in the area. In our school, we had tried several plans for integrating this content, but were not satisfied with our students' achievements. As we have worked on the project, it has been gratifying to see the emphasis placed on nutritional needs in the new health care programs.

With the advent of the White House Conference on Food, Nutrition, and Health in December, 1969, many Americans have become concerned about the nutritional status of all citizens. In the opening address at the conference, President Nixon said, "This meeting sets the seal of urgency on the national commitment to put an end to hunger and malnutrition due to poverty in America." From this meeting came many recommendations for attacking hunger and malnutrition. What will the nurses' role be? Barbara G. Schutt, editor of the American Journal of Nursing, wrote in the January, 1970, issue:

> It's quite possible that some nurses know what it's like to face hunger. Most nurses must have seen signs of starvation in patients. Certainly all nurses know the physical price of chronic hunger and malnutrition. Yet how many know the extent of hunger in their own communities . . . ?
>
> The problems of hunger in America are everyone's problem. Few, however, have better reasons or more opportunities to find out and do something about hunger than nurses. Such action can range from asking questions in one's own community, through functioning as an informed, concerned person in the nursing role, to being part of a political action group which supports the five priorities which came out of last month's White House Conference on Food, Nutrition, and Health.[1]

We feel our graduates will be capable of doing their part to meet the challenge. It is our goal that these guidelines be of value in helping other nursing programs plan and implement integrated diet-therapy content.

--Marjorie Johnson

Amarillo, Texas
July, 1971

1. Barbara G. Schutt. "What Do You Know About Hunger?" Amer. J. Nurs.: 70:65, Jan. 1970.

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The project director wishes to express gratitude and appreciation to the Administration of Amarillo Hospital District and the Nurse Training Grant Section, Division of Nursing, National Institutes of Health, U.S. Public Health Service, for making this project possible.

Without the excellent cooperation of the entire faculty and administrative staff of the Northwest Texas Hospital School of Nursing, the project would have been impossible. In reality, the success of integrating course content depends upon the individual instructor in each area.

We wish to give special thanks to Emily Earthman, instructor of Nursing Science 302, for permitting us to include materials from her course in this report.

--Marjorie Johnson

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INTRODUCTION

Meeting the demands of our society for quality nursing care and utilizing the advances of medical science are major challenges to nurse educators today. The curricula of diploma nursing schools have been carefully scrutinized this past decade, a major objective being to graduate qualified nurses who can perform effectively.

The philosophy of Northwest Texas Hospital School of Nursing defines professional nursing as "a progressive, changing art and science dedicated to the service of humanity; it is primarily the direct personal care of individuals and families with the basic purpose of alleviating discomfort due to physiological or psychological stress, promoting health, and preventing illness."

Using this definition as a guide and a challenge, the faculty made a major revision in our curriculum. One part of this revision was to integrate diet therapy in the nursing course.

In our school the curriculum is organized to offer the basic physical, biological, and social science courses as prerequisites to the clinical nursing courses. The nursing courses are designed to provide a patient-centered curriculum, emphasizing all aspects of patient care, with core content areas integrated throughout the curriculum.

A basic nutrition course is prerequisite to the nursing courses. Diet-therapy content is now included in each nursing course as a result of this project.

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NEED FOR THE PROJECT

Through the years, many changes have evolved in the nursing profession and the nursing school curriculum. Let us reminisce briefly concerning the nurse's responsibilities in the area of nutrition and diet therapy. Florence Nightingale was vitally interested in her patients' food intake. In her Notes On Nursing, she commented that "incomparably the most important office of the nurse, after she has taken care of the patient's air, is to take care to observe the effect of his food, and report it to the medical attendant."[1] For many years, the nursing profession was responsible for the dietary department, and in some small hospitals today a registered nurse may have management responsibilities in this area. Nurses who graduated 15 to 20 years ago often recall diet kitchen experience that included long hours in the food-preparation area preparing food for modified diets, passing trays, and serving food on the tray line, as well as formal courses in nutrition and diet therapy. Newton's study of nutritional aspects of nursing care states: "Nurses on all levels report negative reactions to their educational experience in nutrition and/or diet therapy."[2] Perhaps there is some justification for these feelings. The current trend is to integrate nutrition and diet therapy throughout the nursing program. Abdellah identifies meeting the patient's nutritional needs as one of the basic nursing problems.[3]

Since 1959, we have tried various methods for integrating diet-therapy content in our school. The theory was first taught by the hospital therapeutic dietitian, and the clinical experience consisted of working with the dietitian in her office. Later, a part-time dietitian taught the theory, with the nursing instructors responsible for the clinical experience. The common fallacy of these methods was that diet therapy became somewhat set apart from nursing courses, and the students did not identify meeting the patient's nutritional needs as part of comprehensive patient care.

The major objective of our project was to plan and implement learning experiences that would enable the student to effectively meet her patient's nutritional needs and ultimately provide quality nursing care.

References

1. Florence Nightingale. Notes on Nursing: What It Is, and What It Is Not. London, Harrison, 1859 (facsimile by J. B. Lippincott, Philadelphia), pp. 42-43.

2. Marjorie E. Newton and others. "Nutritional Aspects of Nursing Care." Nurs. Research 16:46-49, Winter 1967.

3. Faye G. Abdellah and others. Patient-Centered Approaches to Nursing. New York, Macmillan, 1960, p. 16.

PRELIMINARY SURVEY

Before planning the curriculum, we asked ourselves, "What are the nurse's responsibilities in meeting the patient's nutritional needs? How does she do this?" We felt we should get the answers to these questions from nurses who were working each day in their profession and could give us pertinent information about their daily experiences. We developed two questionnaires, one for the registered nurses employed in our hospital and another for registered nurses who had graduated from our school within the previous six years.

The questionnaire for the registered nurses working in our hospital was planned to determine their responsibilities to the doctor, the patient and his family, and the dietary department. (See Appendix B, Table 1.) The first five questions were planned to determine the involvement in administrative aspects of dietary problems. This included taking diet orders from doctors, informing doctors of problems, and notifying the dietary department of diet orders, changes, and problems. The results indicated that all the respondents took diet orders from doctors and a majority "routinely" or "sometimes" performed the task of making diet changes and reporting dietary problems. (Some respondents who checked "never" or did not answer indicated that they worked nights in the newborn nursery or in the emergency room and therefore the question did not apply.)

The remainder of the questions were planned to determine the nurse-patient relationship concerning dietary problems. Again, we found that the majority of the respondents did perform tasks that were important in meeting the patient's nutritional needs. (See Appendix B, Table 1.) We were particularly interested in the fact that 33 percent indicated that they explained the reason for a modified diet to the patient or his family and 40 percent indicated that they explained why a certain food was not allowed. We felt this was strong support for the need to include nutrition and diet therapy in our curriculum! Responses to the question ". . . do you give discharge diet instructions to a patient?" were surprising, as 5 percent indicated that they did this "routinely" and 40 percent indicated that they did it "sometimes." While this is a function of the hospital's therapeutic dietitian, the nurse may be asked to accept the responsibility in her absence.

For the registered nurse graduates from our school, the questionnaire was modified, as we wanted more detailed information to use in curriculum planning. The questions concerning responsibilities in the area of nutrition and diet therapy were limited. (See Appendix B, Table 2.) The answers were similar to those of the registered nurses employed in the hospital: 61 percent "routinely" take diet orders from the doctor; 54.3 percent "routinely" report dietary problems to the doctor; 44.1 percent "routinely" explain the reason for the diet to the patient and his family. The question ". . . do you give diet instruction to a patient?" was answered with "routinely" by 25.4 percent and with "sometimes" by 50.9 percent.

We asked our graduates to "list the modified diets which you feel should have been stressed more" and had 25 different responses, which ranged from "the difference between full and surgical liquids" to "diets for combat situations"! However, the most

frequent response was the need for more emphasis on planning diabetic diets. Our graduates who were not working in hospitals indicated that they answered questions concerning diets, gave diet instruction, and taught patients, families, and friends.

Since our school is located in a city with a population of 130,000 and we are approximately 250 to 300 miles from a metropolitan area with a medical center, we have had a tendency to think in terms of our graduates' working in small hospitals. Regarding the 46.5 percent of graduates who answered the questionnaire, we found that this was a false assumption, as 74 percent indicated that they work in hospitals that have more than 50 beds and 30 percent work in hospitals that have 250 beds or more.* In all of these hospitals, a dietitian or a consulting dietitian was employed.

Recent legislation concerning health needs has resulted in the employment of more dietitians, which has relieved the nurse of most of the responsibilities in the area of food-service management.

Our major conclusion from the survey was this: The registered nurse does identify and accept her responsibility to help meet the patients' nutritional needs. As faculty members of a diploma school, we must make sure our curriculum is so planned that the graduate can effectively perform in this area.

---

*According to our alumni files, many of our graduates do, in fact, work in small hospitals; these graduates, however, did not respond to the questionnaire.

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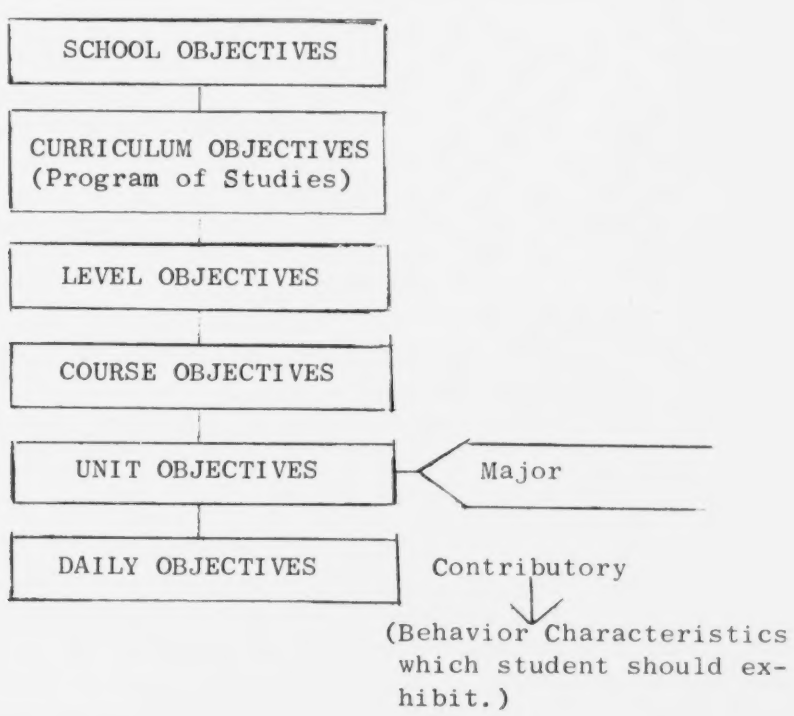
DEVELOPING COURSE CONTENT

The philosophy and the objectives of a school provide the basis for the curriculum. The Faculty Organization is responsible for developing and revising the philosophy and the school objectives at Northwest Texas Hospital School of Nursing. The teaching dietitian is an active member of the Faculty Organization and has participated in the study of the philosophy.

Using the "Instructor's Guide in Use of Objectives" developed by the director of nursing education at the school (Figure 1), instructors are able to identify each learning experience as a step in helping the student become a registered nurse.

In essence, the course content is developed by asking, "What should the student know in order to meet the objective?" This can be demonstrated by the example in the following section, which illustrates the correlation of the objectives of the School of Nursing with the objectives of the basic nutrition course.

Figure 1. INSTRUCTOR'S GUIDE IN USE OF OBJECTIVES



NUTRITION COURSE CONTENT

A basic nutrition course is a prerequisite for the nursing course in our school. Most of our students take the course in Amarillo College during the first year they are enrolled in the School of Nursing. The correlation of the course objectives to specific objectives of the School of Nursing is shown graphically below:

Northwest Texas Hospital School of Nursing

School objective:

The objectives of the school are to guide students in realizing their potentialities as persons, citizens, and registered nurse practitioners who are prepared to:

practice quality nursing, including the ability to

a. apply principles essential to a dynamic theory of nursing
b. demonstrate increasing competence in performing nursing skills
c. maintain effective interpersonal relationships based on knowledge of human relationships
d. demonstrate basic techniques in teaching and directing less prepared personnel

↓

Northwest Texas Hospital School of Nursing

Curriculum objective:

The nursing curriculum is planned and implemented so that the graduate can be expected to:

identify and apply the principles of physical, biological, social and medical sciences which are necessary to administer effective nursing care and health

↓

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Northwest Texas Hospital

Curriculum objective:

Level I

recall requirements for normal nutrition and evaluate nutritional adequacy of diets

↓

Principles of Nutrition (taught in college, first year)

Course objectives:

Major objective: The nutrition course is planned to provide opportunities for the student to acquire knowledge of the principles of normal nutrition.

Contributory objectives: Upon the completion of the course, the student should be prepared to:

apply the principles of normal nutrition in selecting his personal diet

identify the essential nutrients and describe their role in maintaining normal nutrition throughout life

answer questions concerning normal nutrition and the nutritive value of foods

identify factors in a person's socio-economic background which influence his food habits

utilize reliable sources of information and reference materials in the area of food and nutrition

read and discuss selected reports of current nutrition research

evaluate food misinformation and fad diets

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Principles of Nutrition

Unit objective:

Identify and describe the role of the energy nutrients in maintaining normal nutrition

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Excerpt from daily objectives:

differentiate between protein, fats, and carbohydrates according to chemical composition.

state the reason for including a source of complete protein in each meal

identify foods which are sources of complete protein

recite the recommended protein requirements for a normal adult

Developing the content from specific objectives makes for better organization and continuity throughout the program. For a sample page of the Principles of Nutrition course syllabus and a topic outline, see Appendix C.

NUTRITION AND DIET-THERAPY CONTENT IN THE NURSING COURSES

Nutrition is a building block of knowledge "essential to a dynamic theory of nursing," to quote our curriculum objective. In the nursing courses, the student is expected to utilize this knowledge as the basis for learning modifications of normal nutrition that may have a vital role in the patient's treatment and recovery.

The chairman and the instructors in each teaching department (Medical-Surgical, Maternal and Child Nursing, Psychiatric Nursing, and Leadership in Nursing) develop objectives for the specific courses. These objectives are approved by the Committee on Academic Affairs. The teaching dietitian holds conferences with each instructor to develop the objectives, course content, and learning experiences for diet therapy that are pertinent to the course. The approximate number of clock hours required to cover this material is also determined. A summary of the integrated content is shown in Table 1, pages 10, 11, and 12.

These plans are implemented by three methods:

Formal classes

The formal classes provide opportunities for the student to learn principles of diet therapy for a specific nursing science course. Lecture, discussion, demonstrations, use of visual aids, and tasting parties are the teaching methods employed.

Clinical experience

A major portion of diet therapy is taught in Levels I and II; therefore, planned clinical experience is scheduled at these levels. The nursing instructor is responsible for making patient assignments. This instructor leaves the list of assignments with the teaching dietitian, who checks with the hospital's therapeutic dietitian as to the patients our students will be assigned to care for the next day. This serves two purposes: the therapeutic dietitian gives a brief report of the dietary needs of the patients and she assumes the students or teaching dietitian will be responsible for the patients' selective menu forms for the next day. She may also suggest other opportunities for diet-therapy experience in the clinical area.

The student is responsible for discussing the patient's diet with him and assisting in marking his selective menu form for the next day. (All our patients receive a selective menu form.) The instructors keep a record of the assignments each student has and make every effort to provide a variety of learning experiences. A majority of the assignments are for patients with therapeutic diets; however, we stress the importance of adequate nutrition for every patient.

The teaching dietitian "makes rounds" on the clinical units to discuss the patient's dietary needs with each student and the patient when necessary. Group conferences for all students on the unit may be held when valuable learning experiences are presented.

In Level III courses, the teaching dietitian is "on call" for clinical experience; instructors or students may request a conference to discuss a diet problem.

Patient-Centered Conferences

The patient-centered conference is a problem-solving activity in which a student or group of students do a comprehensive study of a patient's or a group of patients' nursing needs. The teaching dietitian attends these conferences when requested by the student or the instructor. In the role of a resource person, she may answer or ask questions or emphasize important points. (These conferences also provide an excellent opportunity for evaluating the student's knowledge of diet therapy.)

In addition to the integrated content that is identified, there are "threads" throughout the curriculum that the nursing instructors teach. For example, we do not allot time for a lecture in the unit "The Patient with an Infectious Process," but the instructor does point out the increased caloric requirements, anorexia problems, fluid requirements, et cetera, which are factors to be considered.

Table 1. INTEGRATED DIET THERAPY IN NORTHWEST TEXAS HOSPITAL SCHOOL OF NURSING

Level	Course	Time	Content
I	Nursing Science 200	1 hr. lecture and discussion	Objectives for meeting patients' nutritional needs (basic hospital diets)
	Nursing Science 201	1 hr. lecture and discussion 1 hr. lecture and discussion Approx. 1 hr. each week (total 8 hrs.) Attend patient-centered conference	Meeting the needs of the patient with nutritional impairment(hunger, anorexia, nausea, and vomiting) Meeting the nutritional needs of the surgical patient Conferences on unit each Friday a.m. to discuss dietary problems of assigned patients Act as a resource person as requested by instructor or students
II	Nursing Science 202	5 hrs. lecture and discussion 3-6 hrs. weekly	Meeting the nutritional needs of the patient with fluid and electrolyte imbalance Meeting the nutritional needs of the patient with nutrition problems Conference in clinical unit to discuss dietary problems of assigned patients Act as a resource person at patient-centered conference as requested by instructor or students
	Nursing Science 203	3 hrs. lecture and discussion Tasting party Slide presentation	Meeting the nutritional needs of the patient with problems of oxygen and blood to the tissues (cardiovascular, anemia)

--continued

Table 1(Continued)

Level	Course	Time	Content
II	Nursing Science 203 (continued)	Approx. 3-6 hrs. weekly	Conference in clinical unit to discuss diet problems of assigned patients Act as a resource person at patient-centered conference
	Nursing Science 204	4 hrs. lecture and discussion Demonstration and practice in meal planning with exchange list Approx. 3-6 hrs. weekly	Meeting the nutritional needs of the patient with disorders of chemical regulation Metabolic disorders Conference and individual assistance in clinical unit to discuss patient's dietary problems. Practice in writing diabetic diets for patients Act as a resource person at patient-centered conferences
	Nursing Science 205	1 hr. lecture and discussion	Dietary problems and nutritional needs of the mental patient
	Note:--Plans for individual and group conferences in clinical area are made by nursing instructors and teaching dietitian. Time spent depends on student assignments.		
III	Nursing Science 300	2 hrs. lecture and discussion	Meeting the nutritional needs of the patient who requires total physiological and psychological rest (review dietary problems of critically ill, tube feedings and problems in diets for cardiac patients) Act as a resource person when needed on clinical unit and for patient-centered conference
	Nursing Science 301	3 hrs. lecture and discussion (Demonstrate calculations of formula needs. Evaluating dietary intake)	Meeting the nutritional needs of the pregnant woman Meeting the nutritional needs of the newborn infant
	Nursing Science 302	4-6 hrs. lectures and discussion	Meeting the nutritional needs of children at various age levels Specific nutritional needs due to inborn errors of metabolism. Conference and individual assistance on clinical unit to discuss patients' dietary problems (parents and child attend when possible) --continued

Table 1 (Continued)

Level	Course	Time	Content
III	Nursing Science 302 (continued)	Approx. 1-2 hrs. weekly	Conference to review observations of children's food intake: nursery and public school Resource person for patient-centered conference and on clinical unit
	Nursing Science 303	2 hrs. lecture and discussion	Management of Dietary Department and problems that influence Nursing Service; newer trends in diet therapy Disaster feeding--factors to be considered in meeting nutritional needs

AN EXAMPLE OF INTEGRATED DIET-THERAPY CONTENT IN A NURSING COURSE

To illustrate integration of diet therapy in a nursing course, we have selected Nursing Science 302--Nursing of Children, a Level III course, as an example.

The objectives for the Nursing of Children course were derived from the curriculum objectives. As with the nutrition course, the correlation between the school, curriculum, level, and course objectives can be identified. One can see implications for the Nursing of Children course in each of the curriculum objectives; however, for this illustration, only one will be used.

Northwest Texas Hospital School of Nursing

School objective:

The objectives of the school are to guide the students in realizing their potentialities as persons, citizens, and registered nurse practitioners who are prepared to:

practice quality nursing, including the ability to

a. apply principles essential to a dynamic theory of nursing
b. demonstrate increasing competence in performing nursing skills
c. maintain effective interpersonal relationships based on knowledge of human relationships
d. demonstrate basic techniques in teaching and directing less prepared personnel

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Curriculum objective:

utilize opportunities for health teaching

Level III objective:

utilize basic principles of patient teaching

utilize opportunities for informal, spontaneous bedside teaching

plan structured teaching to meet individual patient's and/or family's needs

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Nursing of Children (Nursing Science 302)

Major objectives:

identify and meet the basic nursing needs of children and families for maternal and child health

meet the needs of the hospitalized child and his family

participate in community health care of the child and his family

Contributory objectives:

demonstrate knowledge, insight, and skills in providing individualized nursing care

contribute to the total care of the patient by providing a link in the continuity of care through assessment of needs, planning, recording, consulting, and reporting

stimulate patients' confidence by teaching parents and children, giving appropriate factual information, demonstrating techniques, and lending support

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Unit objectives:

recall and acquire knowledge of the growth and development process of childhood through adolescence

apply his knowledge of growth and development in meeting the needs of well and ill children

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Excerpts from daily objectives:

expand knowledge of nutritional needs of children

identify the role of good nutrition in normal growth and development

through discussion, identify how eating patterns of children are influenced by parental attitudes and cultural patterns

From the objectives, the course content and learning experiences are planned and identified in the course syllabus. (See the sample page of the course syllabus, page 16.) This is used in developing the lesson plan for the formal class entitled "Meeting the Nutritional Needs of Children." (See Sample Lesson Plan, page 18.)

The class presentation is based on a discussion of a slide series, "Nutritional Needs of Children," developed as a part of the project. We know the student has a basic knowledge of the nutritional requirements; therefore, emphasis is on foods needed to supply the nutrients, behavioral patterns that affect intake, current surveys, et cetera. Mimeographed handouts supplement the slide series.

The teaching dietitian does not have formal classes in each subject area--in gastrointestinal conditions, for example--as the basic principles have been taught in the Level II courses. Content on inborn errors of metabolism, protein-calorie malnutrition, and vitamin deficiencies is presented in detail.

Clinical experience is closely correlated with course content. The students' nursing care plans include detailed information concerning the patient's nutritional needs. (See Nursing Care Plan, Appendix E.) The teaching dietitian is available to help the students with dietary problems and often confers with the patient, his parents, and the student. As noted in our objectives, we stress health teaching and strongly believe the student should be able to develop and administer an effective plan of care that includes these aspects of patient care.

In addition to learning experiences in the hospital setting, we utilize several community agencies to broaden the students' experience. Our students visit a first-grade classroom in the public schools and eat lunch with the children. This provides an excellent opportunity for the student to observe eating patterns, the Type A School Lunch Program, home-packed lunches, et cetera. The students also visit a school for the handicapped for a similar observation period. Another valuable experience is attending specific programs of the Amarillo Lay Diabetes Association concerning the juvenile diabetic.

SAMPLE PAGE OF COURSE SYLLABUS

NURSING SCIENCE 302--NURSING OF CHILDREN

UNIT I: GROWTH AND DEVELOPMENT OF THE CHILD FROM INFANCY THROUGH ADOLESCENCE

OBJECTIVE: 1. Recall and acquire specific knowledge of the growth and development process of childhood through adolescence

2. Apply his knowledge of growth and development in meeting the needs of well and ill children

EXPECTED BEHAVIORAL CHANGES	COURSE CONTENT	HOURS	METHODS OF INSTRUCTION	LEARNING EXPERIENCE	METHOD OF EVALUATION
1. Expand knowledge of nutritional needs of children 2. Identify the role of good nutrition for normal growth and development 3. Observe and discuss the nutritional status of children 4. Apply knowledge of nutrition in teaching children and/or families 5. Utilize knowledge of nutrition in selection of food for self and/or patient 6. Identify how eating patterns of children are influenced by parental attitudes	Nutritional Needs A. Criteria for evaluating nutritional status B. Nutritional status of children in U.S. 1)National Nutrition Survey 2)Earlier surveys C. Nutritional needs for specific groups D. Behavioral changes which influence eating patterns E. The National School Lunch Program	2 hrs.	Presentation and discussion of slides showing nutritional requirements for growth and development and eating patterns of children (Teaching Dietitian) Handouts: sample daily menu for each age group Film: "Food as Children See It" Discussion and Evaluation with Dietitian: 1.Food served to school children, type and servings 2.How food met nutritional requirements 3.Eating patterns Complete study questions on nutrition and diet in pediatric workbook. In patient-centered conference, discuss: 1.Patient's diet.	In preparing patient care plan, include: 1.Patient's diet--purpose and response. 2.Dietary habits. Discover the importance of food in physical and psychological development. List foods you like and dislike. Decide why you feel this way. Have lunch with school-age children in school cafeteria --conference with Teaching Dietitian. In caring for hospitalized children: 1.Ask parent about child's food preferences and eating habits.	Check care plans of student. Students' evaluation of field trips Students' overt responses Observing students Responses Patient-centered conferences

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and cultural patterns.			2. Reason for specific diet. 3. Response to diet. 4. Nutritious food for patient's specific age group. 5. Eating patterns peculiar to patient and specific age group.	2. Assist child and/or parent in selection of nutritious food. 3. Identify parental attitudes toward food and eating habits. 4. Confer with Teaching Dietitian regarding nutritional requirements of patients. 5. Attend conference with Teaching Dietitian, parent, and/or child.	Scoring test items

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SAMPLE LESSON PLAN

NURSING SCIENCE 302--NURSING OF CHILDREN

UNIT I: Growth and Development in Childhood and Adolescence

LESSON: Meeting the Nutritional Needs of Children

TIME: 2 hours

OBJECTIVES: To provide the student with opportunities to:

1. expand his knowledge of the nutritional needs of children
2. identify the role of good nutrition for normal growth and development
3. discuss methods of evaluating the nutritional status of children
4. identify factors that influence development of good food habits

METHOD: Lecture and discussion with visual aids

MATERIALS: Mimeo handouts on normal nutrition for children--condensed from Guthrie's and Robinson's nutrition texts

AUDIO-VISUAL: "As the Child Grows--Nutritional Needs of Children"--slides developed at Northwest Texas Hospital School of Nursing

Film: "Food as Children See It"

ACTIVITIES: Field trip to visit and eat lunch with first-grade children in public school (planned for later, not as part of this 2-hour time block)

CONTENT:

I. Review infant nutritional needs
II. The infant's diet from 6 to 12 months of age
III. Transition from infant to toddler
IV. Criteria for evaluating status
  A. Observations a mother might make
  B. Growth and development charts
  C. Physical and dental exams
V. Nutritional status of children in the United States
  A. National nutrition survey
  B. White House Conference, December 1969
VI. The toddler and preschool-age child
  A. Nutritive needs
  B. Factors influencing food habits
VII. The school-age child
  A. Nutritive needs
  B. Factors influencing food habits
  C. The National School Lunch Program
VIII. The teen-ager
  A. Review research studies on nutrition of teen-agers
  B. The nutritive needs
  C. Factors that influence food habits
  D. Areas for improvement

METHODS USED IN TEACHING DIET THERAPY

The nursing students today have a varied background. We have young high school graduates as well as mature men and women; therefore, learning experiences must be planned to meet the individual needs. In addition to lecture and discussion, we use the methods listed below to make the learning experiences more meaningful for all concerned:

- Exhibits and demonstrations--such as portion sizes and examples of special diet foods.
- Tasting parties--including low-sodium foods, diabetic foods, and unfamiliar foods.
- Mimeographed handouts--abstracts and materials condensed from various sources.
- Films and slides--particularly on vitamin deficiencies, which are somewhat uncommon in our area.
- Video tapes--some of which we have produced.
- Overlays for the overhead projectors.

One of the original objectives of the project was to develop visual aids for each unit of study. We soon found this was a very idealistic objective! We had planned to develop several slide series using animated characters. This required a commercial artist plus hours of research work by the teaching dietitian. We did develop a 39-slide series on restricted sodium diets, which has been well accepted by the students. In addition to the disadvantages of time and cost, we find that two short years later the students are amused by the uniforms and skirt lengths. Times do change rapidly! We also have developed a slide series on the "Nutritional Needs of Children." Though we are pleased with the series, this was a very time-consuming part of the project, requiring appointments, written releases of persons involved in the pictures, and painstaking efforts to capture the desired effect in the photographs.

We feel our most successful visuals are those made with the use of the overhead projector. Cost is much less--nonprofessionals can create acceptable products and the planning and production time are greatly reduced.

Commercially produced visual aids are improving, and we have purchased several slide series that help meet our course objectives.

We are still amateurs with the video tape productions, but we have made several tapes. We are particularly proud of a taped interview with the parent of a child who has phenylketonuria.

Our major conclusion in regard to visual aids for teaching diet therapy is that the clinical setting offers the best possible experiences. The aids produced by the project director and staff meet the needs of our school,and we plan to continue to work in this area.

METHODS USED FOR EVALUATING THE STUDENTS' KNOWLEDGE OF INTEGRATED CONTENT

The philosophy of Northwest Texas Hospital School of Nursing states, "Learning is a persistent change of behaviors resulting from experience, interaction, and personal associations." In evaluating our students, we strive to determine what changes of behaviors have taken place. We have established in our level objectives the expected behavioral outcomes, and these objectives are used to evaluate student performance. As the objectives are written, the content, learning experiences, and evaluation methods are planned. (See sample page of the Nursing of Children syllabus, page 16.)

The evaluation methods for our school were developed by a special Faculty Committee on Evaluation, and all faculty members are expected to identify the method used for evaluating specific objectives in their course syllabi.

In the basic nutrition course, major emphasis is placed on teacher-constructed tests: pretests, daily quizzes, unit examinations, and the final examination. Written assignments, projects, and reports of current research are also considered in determining the students' achievement.

The integrated content of diet therapy in the nursing courses is evaluated not only by testing but also by student performance in the patient-centered conferences, the nursing care plans, and performance in the clinical area.

The diet-therapy test items are included in the nursing course examinations. The teaching dietitian writes the items, and the nursing instructors determine the placement of the items in the examinations. The unit and final examinations consist of situation-type, multiple-choice items.

The teaching dietitian does evaluate specific assignments, such as exercises in writing low-sodium diets and fat-controlled diets and in using the diabetic exchange lists. These are considered part of the students' daily grade.

The clinical evaluation is determined by the student's performance in the clinical area. The teaching dietitian does not give a grade per se, but confers with the nursing instructor and writes anecdotal notes as necessary. The nursing instructors and the teaching dietitian are particularly concerned to see that each student has a variety of learning experiences.

An effective method for determining the student's problem-solving ability is the use of our "situation" files. These consist of situations or problems that the student may encounter and are used to stimulate student participation in the classroom, in conferences, or on the clinical unit. Our faculty feels this is an excellent way to help the student utilize the problem-solving approach. Situations relating to diet therapy are color-coded on green cards for easy reference. Some examples of situations used in Nursing Science 302 are included in Appendix H.

The students write summary reports of their field trips and observations, but these are not used for evaluating the student as much as they are used to help the instructor evaluate the learning experience. (See the example of the School Lunch Evaluation Summary in Appendix F.)

EVALUATION OF THE INTEGRATED DIET-THERAPY CONTENT IN THE CURRICULUM

Our project will be officially completed August 30, 1970; therefore, a complete evaluation cannot be made at the time of this writing. However, we have many tools that will help us determine the extent of integration:

All course syllabi have been or are in the process of being revised and each contains diet-therapy content.

Verbal communications and suggestions from the therapeutic dietitian, nursing service personnel, and nursing instructors have been helpful in planning learning experiences.

The nursing care plans used in all levels contain questions or statements concerning the patient's dietary needs.

Patient-centered conference guidelines contain information on diet therapy.

All courses have "situation" files that contain examples of dietary problems.

All final examinations and a majority of the unit examinations contain test items on diet therapy.

Student-instructor evaluations made upon the completion of levels and courses contain a statement concerning the ability of the student to meet the patient's physical needs.

Instructors were asked to evaluate the progress of the project at the beginning of the last year and suggestions were made for completing the integrated content in each area.

Senior students evaluate the entire curriculum prior to graduation and five years after graduation.

The Committee on Academic Affairs reviews the program of studies each year, identifying areas of the curriculum for improvement in the total program and thereby facilitating progress toward our ultimate goal of producing graduates who can provide quality nursing care.

PERSONNEL FOR IMPLEMENTING THE INTEGRATION OF CONTENT

The teaching dietitian at Northwest Texas Hospital is a part-time employee. She is considered a member of the Faculty Organization and is eligible to hold membership on committees. She participates in planning sessions with the chairman of the department and/or instructors. Formal classes are scheduled for each Nursing Science course well in advance to afford maximum utilization of time. Clinical assignments are scheduled during the Level I and Level II courses, as explained previously.

The teaching dietitian should establish rapport with nursing service personnel, the dietary department personnel, and all members of the school staff. (For job description and a sample month's schedule, see Appendixes I and J.)

The time devoted to formal classes in diet-therapy instruction is approximately 28 hours for the entire curriculum. Time spent in conferences and on the clinical unit varies with the courses taught. The major portion of the clinical experience is during the Level II courses, and the teaching dietitian spends from 3 to 8 hours per week in the clinical area at this time. Planning and time spent in committee meetings vary with specific assignments and responsibilities.

If it is not feasible to have a teaching dietitian, two alternatives are suggested:

1. Arrangements could be made with the hospital therapeutic dietitian to give the formal lectures and participate in teaching in the clinical area. Effective bedside clinics, ward conferences, and patient-centered conferences may be arranged for maximum use of time for the dietitian and students. Job descriptions should specify functions and time to be spent in teaching and in the clinical area.

2. The nursing instructors may be responsible for teaching diet therapy in their area. Planning conferences with the hospital dietitian or a consulting dietitian might be arranged at regular scheduled intervals to evaluate diet-therapy content.

APPENDIX A

BIBLIOGRAPHY

Abdellah, Faye G., and others. Patient-Centered Approaches to Nursing. New York, Macmillan, 1960.

Bloom, Benjamin S., ed. Taxonomy of Educational Objectives. Handbook I: Cognitive Domain. New York, McKay, 1956.

Bogert, L.J., Briggs, G., and Calloway, D. Nutrition and Physical Fitness, 8th ed. Philadelphia, Saunders, 1966.

Eppright, E., Pattison, M., and Barbour, H. Teaching Nutrition, 2d ed. Ames, Iowa, Iowa State University Press, 1963.

Guthrie, Helen Andrews. Introductory Nutrition. St. Louis, Mosby, 1967.

Mager, Robert F. Preparing Instructional Objectives. San Francisco, Fearon, 1962.

Mitchell, H. I., and others. Cooper's Nutrition in Health and Disease, 15th ed. Philadelphia, Lippincott, 1968.

Newton, Marjorie E., and others. "Nutritional Aspects of Nursing Care." Nurs. Research 16:46-47, Winter 1967.

Nightingale, Florence. Notes on Nursing: What It Is, and What It Is Not. London, Harrison, 1859 (facsimile by J. B. Lippincott, Philadelphia).

Robinson, C. H. Proudfit-Robinson's Normal and Therapeutic Nutrition, 13th ed. New York, Macmillan, 1967.

Wohl, Michael G., and Goodhart, Robert S. Modern Nutrition in Health and Disease, 4th ed. Philadelphia, Lea & Febiger, 1968.

APPENDIX B

TABLE 1. DUTIES PERFORMED BY NORTHWEST TEXAS HOSPITAL REGISTERED NURSES AREA OF NUTRITION AND DIET THERAPY

DUTY	RESPONSE			
In your present position, do you:	Routinely	Sometimes	Never	No Answer
Take diet orders from doctors?	*40 66.6	20 33.3	0 0	0 0
Take changes in diet orders from doctors?	35 58.3	22 36.6	3 5.0	0 0
Notify the diet kitchen of diet changes?	19 31.7	34 56.6	7 11.6	0 0
Report a patient's dietary problem to his doctor?	29 48.3	24 40.0	5 8.3	2 3.3
Chart a patient's dietary problem?	23 38.3	28 46.7	7 11.7	2 3.3
Explain to a patient or his family the reason for his modified diet?	20 33.3	36 60	4 6.7	0 0
Explain to a patient or his family why he cannot have a certain food?	24 40	34 56.6	0 0	2 3.3
Give discharge diet instructions to a patient?	3 5.0	24 40.0	32 53.3	1 1.7
Feed a patient?	6 10.0	43 71.6	10 16.7	1 1.7
Teach a less trained person how to feed a patient?	8 13.3	40 66.7	12 20.0	0 0
Answer the question "How long will I be on this diet?"	16 26.6	32 53.3	12 20.0	0 0
Answer any questions about in-between-meal feedings?	14 23.3	37 61.6	9 15.0	0 0
Help a patient with his selective diet?	5 8.3	36 60.0	19 31.6	0 0
Help a patient or other employee identify an unfamiliar food on the menu? (For example: What is ambrosia?)	8 13.3	36 60.0	15 25.0	0 1.7

*Top figure denotes number, bottom figure denotes percentage.

TABLE 2. DUTIES PERFORMED BY GRADUATES OF NORTHWEST TEXAS HOSPITAL SCHOOL OF NURSING IN THE AREA OF NUTRITION AND DIET THERAPY

DUTY	RESPONSE			
In your present position, do you:	Routinely	Sometimes	Never	No Answer
Take diet orders from doctors?	*36 61.0	17 28.8	5 8.5	1 1.7
Report a patient's dietary problem to his doctor?	32 54.3	23 30.5	6 10.2	3 5.0
Explain to a patient or his family the reason for his modified diet?	26 44.1	23 39.0	7 11.9	3 5.0
Give diet instructions to a patient?	15 25.4	30 50.9	10 17.0	4 6.7
Answer the question "How long will I be on this diet?"	15 25.4	29 49.2	11 18.7	4 6.7
Help a patient select his food from a selective menu?	5 8.5	31 52.6	19 32.2	4 6.7

*Top figure denotes number, bottom figure denotes percentage.

APPENDIX C

SAMPLE PAGE OF NUTRITION SYLLABUS FOR HOME ECONOMICS 231

EXPECTED BEHAVIORAL CHANGES	COURSE CONTENT	NO. OF HOURS	METHODS OF INSTRUCTION	LEARNING EXPERIENCE	EVALUATION
Define specific terms used in study of energy metabolism	Energy Metabolism I. Food as the source of energy A. Photosynthesis B. Metabolism 1. Definitions: Anabolism, catabolism, energy, and energy metabolism 2. Unit of heat measurement 3. Calorie	2	Lecture	Textbook assignment--Chap. 5, pages 71-91	Written tests
Calculate calorie values of a given list of foods	II. Measuring food calories A. Using the bomb calorimeter or oxycalorimeter B. Physiological food values C. Calculating caloric values of foods		Demonstration of methods of calculating calorie content of food	Calculate caloric values of specified foods. Check calculations with Food Composition Table in the text	Written exercise
Define BMR, involuntary work of body	III. Measuring energy expended A. Definition: Basal metabolism B. Involuntary functions of the body include: 1. Maintaining muscle tone				

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	2. Circulatory system 3. Respiration 4. Digestive processes 5. Other glandular and cellular activities				
Identify factors which influence basal metabolic needs	C. Factors which influence basal rate: 1. Surface area 2. Sex 3. Age 4. Body composition 5. Endocrine glands				
Estimate your BMR	D. Estimating basal rate 1. 25 calories/kg/day 2. Calorie/kg/hour		Demonstrate method for estimating BMR	Estimate basic metabolic rate	Problems on calculating BMR Written tests

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APPENDIX D

PRINCIPLES OF NUTRITION COURSE--EXAMPLE OF TOPIC OUTLINE

Unit I: Introduction

I. Reasons for teaching nutrition
   A. Relationship of health to good nutrition
   B. Personal health of student
   C. Therapeutic aspects
   D. Community nutrition programs
   E. Worldwide scope of nutrition problems
   F. Current problems which challenge nutritionist

II. Development of nutrition as a science

III. Essential terminology and definitions
   (See supplementary list of terms)

IV. Functions of food
   A. Physiological needs
      1. Produces energy
      2. Builds and maintains tissues
      3. Regulates body processes
   B. Psychological needs
      1. Effect on physiological functions
      2. Love
      3. Punishment

V. Factors influencing food acceptance
   A. Hunger
   B. Psychological state
   C. Food habits
   D. Economic factors
   E. Availability
   F. Race and religion
   G. Family environment
   H. Advertising
   I. Industrial programs

VI. Basis for science of nutrition
   A. Physiology
   B. Biochemistry
   C. Cellular biology

VII. Determining nutritional needs
   A. Laboratory analysis
   B. Surveys of availability and consumption
   C. Animal research
   D. Historical developments

VIII. Evaluating nutritional status
- A. Physical examination
- B. Weight and height
- C. Dietary records
  - 1. Food history
  - 2. Recall
- D. Chemical studies

IX. Dietary standards
- A. NRC standards
- B. MDR standards
- C. Daily food guide
- D. Checklist

Unit II: The Energy Nutrients--Carbohydrates, Fats, and Proteins

Carbohydrates

I. Introduction
- A. Main source of energy
- B. Calorie value
- C. Availability
  - 1. American diet
  - 2. Use in foreign countries
  - 3. Distribution in foods
- D. Economic aspects
- E. Storage

II. Chemical composition and classification
- A. Compounds of C, H, and O
- B. Photosynthesis
- C. Classification and characteristics

III. Functions of carbohydrates in the body
- A. Provide fuel and energy
- B. Reserve supply of energy
- C. Lactose found in human milk
- D. Galactosides
- E. Role in utilization of protein and fat
- F. Blood sugar level
  - 1. Normal 70-100 mg./100 cc
  - 2. Factors affecting blood sugar level in a normal person

IV. Food sources of carbohydrates
- A. Sugars and syrups 80-100%
- B. Cereals 50-80%
- C. Fruits and vegetables 3-25%
- D. Other foods containing carbohydrate

V. Digestion and absorption of carbohydrates

VI. Metabolism of carbohydrates
   A. The formation of glycogen
   B. The breakdown of glycogen
   C. Glucose produced from noncarbohydrate sources
   D. CHO oxidation

VII. Cookery of CHO foods

Fats

I. Introduction
   A. Occurrence in American diets
   B. Fat content in dietaries of other countries
   C. Availability and cost

II. Chemical Composition

/Topics of remaining units are: III. Energy Metabolism; IV. Minerals, Vitamins, and Water; V. Practical Application of the Principles of Nutrition./

APPENDIX E

NORTHWEST TEXAS HOSPITAL
SCHOOL OF NURSING

NURSING CARE PLAN

Nursing Science 302
Pediatrics

Student Diane Thompson

Date of Care April 15, 16/1970

Patient's Name B.C.

Age: 13 Sex: Male

Weight:
On Admission 92#
At present

Height: 5' 5"

Temperature:
On Admission 99°

Family History (siblings, parents):

Parents, brothers 18, 16, and 11 years old.

Socioeconomic Level:

Middle socioeconomic level.
Appear well educated and well dressed.
Occupation of middle-class status.

Diagnosis (Explain briefly):

On Admission

Multiple fractures and lacerations due to motorcycle accident. Patient was hit by car and dragged with leg under cycle.

Final

Compound fracture of right tibia and fibula. Multiple lacerations of right hip. Many skin grafts to right leg.

--continued

3402

Nursing Care Plan (Continued)

Patient's Name B.C.

Normal growth and development of child this age:	Development of patient as compared with normal:
Tries to build a sense of identity of his own, may tend to separate himself from his family.	Evident; B. tries to build a sense of identity and wants to be recognized for himself.
Begins preadolescent growth spurt.	Growth spurt evident; some slowing appears, due to anemia and prolonged hospitalization. No secondary characteristics visible.
Period of conflict, stress, and anxiety as well as one of self-realization and accomplishment. (Battles for recognition of his adulthood, and yet, at the same time, desires unconsciously to remain a child.)	Period of conflict very evident. He likes to be independent, yet is very dependent on parent. Acts very mature at times and very immature at other times.
Becomes more adaptable, approaching his peer group and problem situations at home and at school with greater confidence.	Appears to adjust very slowly to new situations, but shows confidence in self after initial adjustment.
He enjoys games involving physical skill and team cooperation.	Parents stated B. was very active in physical activities. Owned the motorcycle.
Revival of love for parent of opposite sex; argues with parents.	Very attached to mother, but does argue continually with her.
Parents may not have same values.	Values expressed are in conflict with mother's.
Interest in dating and talking about girls.	Not evident--has never talked about girls.
Parents can reason with him and come to some kind of solution for their problems.	Parent does seem to be able to reason with B.; however, gives in to him most of the time (this could be due to his hospitalization, however).

3103

Nursing Care Plan (Continued)

Patient's Name B.C.

Factors contributing to present health problem

Date Admitted 1/31/70

How admitted Ambulance

History of previous hospitalizations:

None stated

History of previous illnesses:

Usual

Immunizations:

Usual

Dietary habits:

Questionable--appears a very poor and picky eater, but this could be due to prolonged hospitalization. Likes cokes.

Present Diet Order--Purpose and response:

High protein diet due to need for tissue repair. Also provides essential nutrients for growth and development. Improves anemic condition.

Factors Contributing to Present Health Problem:

Accident--patient hit by female motorist while crossing a street. Patient was riding a motorcycle at the time and was thrown under the cycle and dragged with leg on the pavement. Leg fractured, and skin grafts done.

Future Health Problems that May be Encountered Due to this Hospitalization:

Regression and dependency on parents to meet his needs. Immature behavior will result.

Slowed growth and development, both physically and emotionally.

Difficulty socializing with peers and girls.

May have feelings of inferiority and insecurity if patient unable to completely recover physically without limp or handicap.

Physical skills may be delayed.

3104

Nursing Care Plan (Continued)

Patient's Name B.C.

Summary of Present Health Problem (Early Symptoms, Course of Illness, Physical Findings, and General Appearance):

Compound fractures, lacerations with resultant grafts and plate (lower right leg). Patient appears to be slowly recovering from accident physically. Grafts have replaced lost skin to the legs and healing is progressing. Patient appears physically immature for age. Skin is pale to white and patient appears very anemic and weak. He has begun crutch walking and physical therapy, which have improved his muscle and motor ability, but progress is slow. He does crutch walk with help but without weight bearing on right leg as yet. So far, no further surgery is indicated.

Laboratory Findings

Normal:		Patient's:
RBC	4.6-6.2	3.9
Hgb	14-18	10.6
Hct	42-52	32.3

Urinalysis normal.

X ray showed fracture--compound--right leg.

Reason for Different Findings:

Anemic condition due to loss of blood and additional demands produced by stress and trauma to tissues--loss of fluid and electrolytes. Also due to poor nutritional status of patient, poor appetite, and poor intake of nutritional, adequate foods.

3105

Nursing Care Plan (Continued)

Patient's Name B.C.

Patient Problem (please number):	Nursing Intervention	Scientific Principle	Evaluation of Nursing Intervention
#1 Prolonged bed rest--fractured leg.	#1 1. Maintain good hygiene and physical comfort.	1. Providing supplies and promotes good hygiene and maintains patient's independence. Good oral hygiene rids mouth of bacteria and uncomfortable taste.	Very cooperative. Hygiene good and no sign of tissue breakdown.
	2. Provide towels and linen and allow patient to assist in a.m. care.	2. Gives patient feeling of importance, provides patient with degree of privacy. Rids body of bacteria and body odors; provides comfort measure; prevents infection where resistance is low.	
	3. Change bed and use sheepskin pad, bed boards, etc.	3. Frequent linen changes and use of sheepskin help promote comfort and lessen chances of tissue breakdown. Bed boards prevent foot drop.	
	4. Make as comfortable as possible by helping patient turn and position; continuous good body alignment.	4. Turning prevents tissue breakdown and promotes circulation. Good alignment prevents deformities and contractures.	
#4 Fractured leg and multiple skin grafts.	#4 1. Good body mechanics and prevention of deformities. Turn frequently.	1. Promotes circulation to tissues and prevents skin breakdown and development of pressure areas.	

3106

Nursing Care Plan (Continued)

Patient's Name B.C.

Patient Problem (please number):	Nursing Intervention	Scientific Principle	Evaluation of Nursing Intervention
#4 (continued)	#4 (continued) 2. Use of footboards and tire. 3. Leg exercises.	2. Footboards and tire prevent foot drop. The tire removes pressure from heal area where healing is taking place. 3. Leg exercises increase circulation and prevent deformities and contractures from unused muscles.	Very cooperative. No contractures noted and exercises have improved muscle tone and strength.
#6 Poor appetite and eating habits.	Facilitate the maintenance of nutrition to body tissues. 1. Encourage to eat; explain importance of protein. 2. Discourage in-between-meal cokes and crackers. 3. Compliment efforts.	1. Knowledge will facilitate understanding of diet and increase desire to get well. 2. Snacks have little nutritive value and spoil appetite at regular mealtime. 3. Complimenting gives feeling of accomplishment and, hopefully, patient will continue to eat well.	Some improvement over 1st day. He seemed really proud that he ate his lunch the 2d day.
#9 Dependent on staff and parent.	Accept the optimum possible goals. 1. Encourage independence by teaching patient to apply own dressings.	1. Allows independence and recognition of abilities. Gives patient sense of accomplishment and satisfaction; also strengthens muscles of arms and legs in the process.	Slow to adjust to new situation, but very determined to prove his ability.

3107

Nursing Care Plan (Continued)

Patient's Name B.C.

Patient Problem (please number):	Nursing Intervention	Scientific Principle	Evaluation of Nursing Intervention
#9 (continued)	#9 (continued)		
	2. Provide essentials close to bedside and allow and encourage patient to care for self.	2. Recognizing patient's abilities for self-care promotes good mental health and sense of responsibility.	
	3. Encourage patient to turn wheel on wheelchair.	3. Allows patient to be independent and also strengthens arms, fingers, and muscles.	
	4. Encourage occupational and physical therapy.	4. OT and PT aimed at strengthening unused and damaged muscles; promote circulation to arm and lessen physical disability.	
	5. Compliment patient for all effort toward self-care.	5. Complimenting patient for effort promotes sense of well-being and accomplishment. Encourages further independence.	
#12 Immature behavior.	Identify and accept negative feelings or reactions.		
	1. Show acceptance.	1. Acceptance lets patient know you understand and accept him despite behavior and fears.	Very willing to be independent if given chance.
	2. Encourage and promote independence by letting patient do self-care.	2. Recognizing him as an individual with special needs promotes relationship of trust.	
	3. Compliment for effort.	3. Complimenting patient for independence helps channel goals in more constructive direction.	

3108

Nursing Care Plan (Continued)

Patient's Name B.C.

Adjustment to Hospital (Emotional and Social Problems):

Appears to have adjusted slowly but adequately. Now becoming very dependent on staff and parent in constant attendance.

Play or Recreational Activities:

Plays with models, participates in Occupational Therapy projects; looks at comic books and TV. Also does schoolwork before teacher visits. Now goes to sun deck.

Health Teaching (Child and Parents)

1. Importance of high-protein diet and what protein does to help healing (both child and mother).
2. Encourage parent to discontinue snacks between meals in order to help increase appetite at meals.
3. Taught sterile application of dressings so that patient could apply them himself without contaminating.
4. Taught sterile application of gloves to parent and child.
5. Discussed with parent importance of encouraging independence in child.

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APPENDIX F

NORTHWEST TEXAS HOSPITAL
SCHOOL OF NURSING
Nursing Science 302

SCHOOL LUNCH EXPERIENCE EVALUATION

1. Do you feel that the lunchroom environment was conducive to a pleasant mealtime? (Cite examples if possible.)

2. Were you aware of a time element? (That is, were the children hurried or rushed or slow and "piddling" about eating?)

3. Did you observe any teaching or learning activities during the lunch period? If so, describe them.

4. Did the lunch meet the Type A Criteria below?

	Met	Not Met
1/2 pt. whole milk		
2 oz. protein food		
3/4 cup vegetable and/or fruits (in 2 servings)		
1 slice bread or the equivalent		
2 tsp. butter or margarine		

5. In addition to meeting the nutritional criteria for the Type A Lunch, did the lunch qualify as "considerate of local cultural patterns, palatably prepared, and attractively served"?

APPENDIX G

NORTHWEST TEXAS HOSPITAL SCHOOL OF NURSING

EVALUATION OF DIET-THERAPY CONTENT

Purpose: You are aware that this is the final year of the Nursing Training Grant for integrating diet therapy into the nursing curriculum. All of the course content has been revised and the procedure for clinical experience has been planned.

Would you please review the diet-therapy content in your course and answer the following open-end statements. Please return to my mailbox by November 20. Thank you. -- M. Johnson

1. The nutrition and diet-therapy knowledge of a graduate of NWTH should enable her to:

2. The diet-therapy content in my course is:

3. The clinical experience in diet therapy is:

4. The diet-therapy content would be more meaningful if:

5. Please make any other comments about the project--include anything you would like to have done as part of the grant this year.

APPENDIX H

SAMPLES FROM SITUATION FILE

Nursing Science 302

Example 1

Nursing Science 302 Emergency Food Poisoning

Mr. and Mrs. X and two children, aged four and six, were on their vacation. They had ham salad sandwiches and cokes in Vernon. They were all ill with nausea and vomiting and stomach cramps by the time they arrived in Amarillo. They were brought to the emergency room at Northwest Texas Hospital.

The doctor who saw them suspected staphylococcal food poisoning. Why?

Example 2

PKU Patient Teaching

You are a dietitian and have worked with Mrs. X, who has a PKU child, aged four, that has been on a low phenylalanine diet since birth. Mrs. X has read extensively about PKU. She brought you an article quoting an outstanding doctor in a distant state who questioned the need for a strict diet. She asked you, "Would you write for his diet and materials?" What would you do?

Example 3

Nursing Science 302 Diabetes Diet Instruction
Socioeconomic Problems

Mary Sanchez, aged 15, is a new diabetic. She is one of nine children. The family income is $300 per month. You are the dietitian. How would you teach her about her 1800-calorie diabetic diet?

Example 4

Diabetes

Mary Allen, aged six, a known diabetic, has been hospitalized for convulsive reactions in the afternoon. Mary's parents are very apprehensive about her condition. She is taking _____U of Semi-Lente insulin. Her diet order is for 1600 calories per day, including a bedtime feeding. Her meals are divided into 1/5 - 2/5 - 2/5 and a bedtime feeding.

Problems include:

1. Mary receives "too much food" at noon and at night. What can be done about this?
2. The parents are very apprehensive. What can be done about this?
3. Mary's symptoms are not "classic" for insulin reaction. How can you determine if she is having insulin reaction? What action would you take as her nurse?
4. Mary has many food preferences. How can this be handled without interfering with her diet?
5. Mary complains of being hungry in the a.m. How can this be handled?
6. Mary has a birthday next month and she wants a party. Her mother has offered many bribes as substitutes. What advice would you give the mother?
7. Mary's next-door neighbor frequently invites her to spend the night. Her mother refuses to let her go. She asks your advice. What would be your response?
8. Mary's condition was diagnosed by means of which tests?
9. When told that Mary had diabetes mellitus, her mother asked, "Who do you think she caught this disease from?" What would your response be?
10. Her next question was, "How long does it take to get over this?"

For further discussion:

1. Why is low blood sugar dangerous for the juvenile diabetic?
2. Why is it important for the juvenile diabetic to be active while being regulated?
3. How does the juvenile diabetic differ from the adult diabetic? What is the difference in the management of the condition?
4. Should Mary be taught about her disease? What would you teach her?
5. Do you know a community agency which might help the Allens adjust to Mary's condition?
6. Assuming Mary has good control of her diabetes, what problems may she encounter later on in life? As she enters adolescence, what problems might arise?

APPENDIX I

NORTHWEST TEXAS HOSPITAL	Subject	POSITION DESCRIPTION
STANDARD PRACTICE INSTRUCTIONS	Instructor Nutrition and Diet Therapy	PUBLICATION DATE: 1970

I. TITLE: Instructor--Nutrition and Diet Therapy

II. DEFINITION: One who is responsible for the instruction in Nutrition and Diet Therapy, including laboratory experience

III. QUALIFICATIONS:

A. General Education
A broad general education which includes the study of the humanities and the biological, physical, and social sciences

B. Professional Education
1. Master of Science in Home Economics preferred; Bachelor of Science acceptable
2. Current registration with American Dietetic Association

C. Professional Experience
Experience in therapeutic dietetics and teaching preferable

D. Abilities and Characteristics
1. A well-integrated personality, an understanding and appreciation of good mental and physical health
2. A sincere interest in nursing education
3. Good judgment and sincere interest in and understanding of people
4. Cultured and refined; a neat appearance and pleasant manner
5. Personal qualities: integrity, stability, resourcefulness, imagination
6. Active participation in appropriate organizations
7. The ability to:
   a. Elicit cooperation and maintain a good working relationship among instructional personnel, students, hospital personnel, and members of the medical staff
   b. Stimulate learners, maintain interest and motivate them
   c. Coordinate clinical and classroom learning
   d. Deal constructively with suggestions and criticism

IV. RESPONSIBILITIES:

A. Responsible to Director of Nursing Education

V. FUNCTIONS:

A. Administration
1. Assist in developing the philosophy and objectives of the educational program
2. Assist in determining nutrition and diet-therapy content of the program

3. Joint planning with the Dietary Department of the hospital for learning experiences of students so that maximum learning opportunities are provided

B. Organizing
   1. Assist instructors in selecting and organizing learning experiences in keeping with the stated philosophy and objectives of the school
   2. Cooperate with instructors in planning class schedules and patient-centered conferences to afford maximum integration of nutrition and diet-therapy content

C. Instruction
   1. Assume responsibility for nutrition and diet-therapy content in course syllabi
   2. Serve as a teaching model for the nursing students in every act involving nursing care
   3. Provide a creative learning environment by demonstrating clinical competence in the areas of:
      a. Observation of behavioral patterns as a basis for making appropriate judgments
      b. Application of concepts and scientific principles to a variety of clinical situations that are constantly changing
      c. Performance of technical skills with flexibility allowing for modifications to meet the immediate needs of the situation
      d. Selecting, organizing, and directing various levels of personnel and disciplines in implementing learning experiences to meet the needs of patients
      e. Establishment of effective communications and interpersonal relationships to provide desired learning milieu

D. Research
   1. Constantly review literature to keep course syllabi up to date

E. Controlling
   1. Records and reports
      a. Keep accurate, up-to-date record of student grades on assignments
      b. Keep record of clinical experience in diet therapy

VI. CONDITIONS OF EMPLOYMENT:
   See Personnel Policy Manual

VII. PROFESSIONAL AFFILIATIONS:
   A. American Dietetic Association
   B. Local League for Nursing
   C. Membership in community social and civic clubs

VIII. JOB RELATIONSHIPS:
   A. Supervised by: Director of Nursing Education
   B. Work supervised: Professional Students

IX. FUNCTION GUIDE:
   A. Assume responsibility for organizing and teaching nutrition and the diet-therapy content of each course
   B. Cooperate with instructors for effective team teaching
   C. Work with instructors in revisions of teaching tools
   D. Cooperate with instructors in planning and supervising diet-therapy experience of students in the clinical area
   E. Utilize a variety of teaching methods in presenting course content
   F. Accept responsibility for care of equipment utilized in course presentation

APPENDIX J

SAMPLE OF TEACHING DIETITIAN'S SCHEDULE
(February, 1970)

Feb. 2	N.S.* 204 - "Miscellaneous Metabolic Disorders" (1 hr.) N.S. 202 - "Meeting the Nutritional Needs of G-I Patients" (1 hr.) N.S. 303 - "Dietary Problems and Nutritional Needs of the Mental Patient" (1 hr.) Test-Construction Committee (1 hr.) Academic Affairs Committee (1½ hrs.)
Feb. 3	Clinical Unit with N.S. 202 students (30 minutes) N.S. 304 - "Trends in Diet Therapy and Dietary Department Management" (1 hr.)
Feb. 4	Staff-Development Meeting (1 hr.)
Feb. 5	N.S. 301 - "Infant Nutrition" (1 hr.) N.S. 204 - Clinical Unit with N.S. 204 and N.S. 302 (2 hrs.)
Feb. 6	N.S. 204 and N.S. 301 - Clinical Unit (1 hr.)
Feb. 9	N.S. 202 - "Meeting the Needs of Patients with G-I Impairments" (1 hr.) N.S. 204 - "Meeting the Nutritional Needs of the Diabetic" Patient-Centered Conferences (2 hrs.) Subcommittee on Planning (30 minutes) Academic Affairs Committee (1½ hrs.)
Feb. 12	N.S. 204 - Clinical Unit (1 hr.)
Feb. 13	N.S. 204 - Clinical Unit (1 hr.) N.S. 202 - Patient-Centered Conference, "Patient with Ulcers" (1 hr.)
Feb. 16	N.S. 204 - "Meeting the Nutritional Needs of the Diabetic" (1 hr.) N.S. 202 - "Vitamin Deficiencies" (1 hr.) Test-Construction Committee (1 hr.)
Feb. 17	N.S. 302 - "Inborn Errors of Metabolism" (2 hrs.)
Feb. 18	Staff-Development Meeting (1 hr.) Faculty NLN Evaluation Study (1 hr.)
Feb. 19	N.S. 204 - Clinical Unit (1½ hrs.)
Feb. 20	N.S. 204 - 302 - Clinical Unit (½ hr.) Committee on Academic Affairs--Review Syllabus 304 (1 hr.)
Feb. 25	N.S. - Nursing Education Coordinating Meeting (1 hr.)
Feb. 26	N.S. 204 - Clinical Unit (1 hr.)
Feb. 27	N.S. 204 - Clinical Unit (30 minutes) Faculty Meeting (1½ hrs.)
	TOTAL TIME: 33 hours

*Nursing Science

VT 014 247
LET'S BE PRACTICAL ABOUT A NURSING CAREER WITH A LIST OF STATE-APPROVED SCHOOLS OF PRACTICAL NURSING.

NATIONAL LEAGUE FOR NURSING, NEW YORK, N.Y.
DEPT. OF PRACTICAL NURSING PROGRAMS.
MF AVAILABLE IN VT-ERIC SET.
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DESCRIPTORS - *PRACTICAL NURSING; *HEALTH OCCUPATIONS EDUCATION; *DIRECTORIES; *SCHOOLS; ACCREDITATION (INSTITUTIONS)

ABSTRACT - INTENDED PRIMARILY AS A GUIDE TO PROSPECTIVE PRACTICAL NURSING STUDENTS, THIS BOOKLET DESCRIBES THE ROLE OF THE PRACTICAL NURSE, THE NATURE OF PRACTICAL NURSING PROGRAMS, AND THE PROCESS OF SELECTING A SCHOOL. PROGRAMS ARE LISTED ALPHABETICALLY BY STATE, AND INFORMATION INCLUDES THE ADDRESS AND AN INDICATION OF ACCREDITATION, WHERE SUCH EXISTS, BY THE NATIONAL LEAGUE FOR NURSING. THIS IS A REVISION OF VT 008 019 (ARM SUMMER 1970). (SB)

VT 014 247

Let's Be Practical About a Nursing Career

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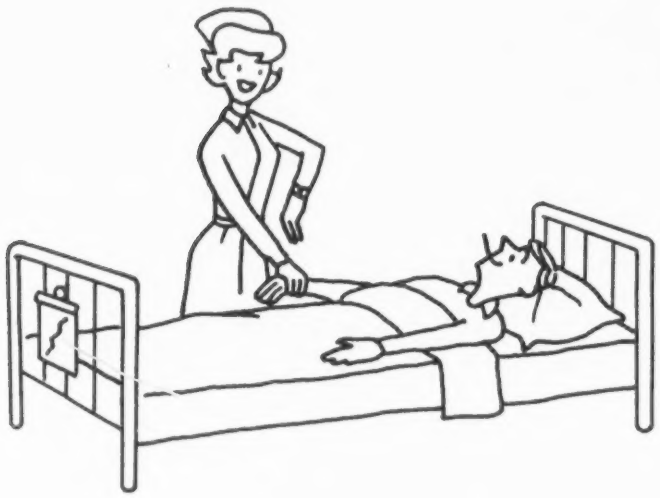

With a List of State-Approved
Schools of Practical Nursing

NATIONAL LEAGUE FOR NURSING • 1971

VT014247

3118

Let's Be Practical About a Nursing Career

WITH A LIST OF STATE-APPROVED SCHOOLS OF PRACTICAL NURSING

NATIONAL LEAGUE FOR NURSING
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3119A

Let's Be Practical About a Nursing Career

Practical nursing programs are one of four types of programs that prepare for nursing. Preparation for registration as a nurse—R.N.—is in the four-year baccalaureate degree program, the three-year diploma program, and the two-year associate degree program. Preparation for licensure as a practical nurse—L.P.N.—is usually in a one-year program. Be sure that you give careful consideration to the selection of the type of program that best meets *your* desired goal. Moving from one type of program to another is time-consuming, costly, and difficult.

PRACTICAL NURSING

As a career, practical nursing offers you the rewards and satisfactions that come only from helping others. Practical nursing education, too, is an excellent preparation for living—at home, at work, in the community.

Practical nursing programs prepare men and women to give nursing care, under the supervision of a registered nurse or physician, to patients in simple nursing situations. In more complex situations, the licensed practical nurse functions as an assistant to the registered professional nurse.

3119B

PRACTICAL NURSING EDUCATION

Practical nursing programs are approximately one year in length. In some states they are longer, and a few programs are shorter.

Each program establishes its own admission requirements. The majority of practical nursing programs accept both men and women who have good health and are interested in a service career. The academic requirements vary from state to state, so it is important that you contact the state board of nurses in the state of your choice for accurate information about academic admission requirements. Addresses of state boards of practical and vocational nursing are listed in the back of this pamphlet.

Tuition and other fees vary from program to program. If you feel you should work at a part-time job while attending a practical nursing program, consult the counselor in the program of your choice. Scholarships are sometimes available for deserving students; the counselor can advise you regarding scholarships and loans in your geographical area.

Most practical nursing programs require full-time attendance. This will include classes, practice of nursing procedures, and supervised learning experiences with real patients in a hospital.

CHOOSING A SCHOOL

Start your selection of a program early by writing to several programs in your area to request their brochures. Be sure you choose a program that is approved by the state board of nursing of the state in which it is located.

NLN-accredited programs, which are shown in heavy type, have met high educational standards.

Satisfactory completion of a state-approved program in practical nursing is required before you are permitted to take the examination for licensure. The examination is given by the particular state board of nursing. When you have successfully passed the examination, that state board of nursing will license you as an L.P.N. or as an L.V.N.

THE FUTURE

Licensure as a practical or vocational nurse gives the person the legal right to practice as a licensed practical or vocational nurse in the state in which the license *was issued*. Each state, through its state board of nursing, sets the legal minimum requirements for licensure. A practical nurse who is licensed in one state but wishes to work in a second state must apply to the state board of nursing in the second state for licensure. The requirements vary slightly between states. Usually, licensure in another state is not difficult to obtain and does not require the writing of an examination. Upon licensure, the L.P.N. should become a member of her national organization, the National Federation of Licensed Practical Nurses.

The licensed practical nurse is employed in nursing homes, hospitals, clinics, and other health-care facilities.

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TO UNDERSTAND THE LIST OF SCHOOLS

NLN-Accredited Schools

The names of schools that have been accredited by the National League for Nursing are printed in heavy type.

Abbreviations

BOCES Board of Cooperative Educational Services
L.P.N. Licensed Practical Nurse
L.V.N. Licensed Vocational Nurse
MDT Manpower Development Training
MDTA Manpower Development Training Act

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SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
ALABAMA—29 Programs in 29 Schools		
Harry M. Ayers State Trade School	P. O. Box 1647	Anniston 36201
Bessemer State Trade School	P. O. Box 308	Bessemer 35020
Birmingham Metropolitan Area Skill Center	3420 2nd Ave., N.	Birmingham 35222
Birmingham Public Schools Department of Vocational Education	2015 7th Ave., N.	Birmingham 35203
Wenonah State Vocational-Technical School	Route No. 10, P. O. Box 474	Birmingham 35211
N. F. Nunnelley State Trade School	P. O. Box 389	Childersburg 35044
John C. Calhoun State Vocational-Technical School	P. O. Box 548	Decatur 35601
George C. Wallace State Technical Junior College	Napier Field	Dothan 36301
Chauncey Sparks State Trade School	P. O. Box 56	Eufaula 36027
Ed E. Reid Vocational-Technical School	Route 2	Evergreen 36401
Gadsden State Technical Trade School	600 Valley St.	Gadsden 35901
Butler County School	P. O. Box 160	Greenville 36037
Northwest Alabama State Trade School	P. O. Box 9	Hamilton 35570
George C. Wallace State Trade School of Cullman County	P. O. Box 250	Hanceville 35077
J. F. Drake State Technical School	3421 Meridian St., N.	Huntsville 35811
Carver State Vocational-Technical School	P. O. Box 7175	Mobile 36607
Southwest State Technical Institute	925 Dauphin Island Pkwy.	Mobile 36605
Council Trenholm State Trade School	1225 Air Base Blvd.	Montgomery 36113
John M. Patterson State Vocational-Technical School	P. O. Box 6199	Montgomery 36106
St. Jude's School	St. Jude's Catholic Hospital, W. Fairview Ave.	Montgomery 36108
Muscle Shoals Technical Institute	P. O. Box 2025	Muscle Shoals 35660
Opelika Vocational and Technical School	P. O. Box 2126	Opelika 36801
MacArthur Technical Institute	P. O. Box 247	Opp 36467
Phenix City Practical Nursing School	Cobb Memorial Hospital	Phenix City 36867
William R. King State Trade School	P. O. Box 758	Selma 36701
Walker County State Trade School	Drawer L	Sumiton 35148
Richard P. Hobson State Trade School	P. O. Box 425	Thomasville 36784
Shelton State Vocational-Technical School	Drawer J, East Side Station	Tuscaloosa 35404
Tuscaloosa State Trade School	P. O. Box 2270	Tuscaloosa 35402
ALASKA—1 Program in 1 School		
Anchorage Community College	2533 Providence Ave.	Anchorage 99504
AMERICAN SAMOA—1 Program in 1 School		
L.B.J. Tropical Medical Center	Fagaalu	Pago Pago 96960

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
ARIZONA—8 Programs in 6 Schools		
Central Arizona College, Signal Peak Campus	Woodruff at Overhill Rd.	Coolidge 85228
Mesa Community College	1833 W. Southern Ave.	Mesa 85201
Phoenix Union High School	512 E. Van Buren St.	Phoenix 85004
Prescott High School	P. O. Box 1231	Prescott 86301
Tucson Public Schools, Education Center	1010 E. 10th St.	Tucson 85717
Yuma Union High School	400 6th Ave.	Yuma 85364
ARKANSAS—20 Programs in 20 Schools		
Foothills School	580 Vine St.	Batesville 72501
Red River Vocational-Technical School	P. O. Box 698	Camden 71701
Oil Belt School	P. O. Box 1777, Highway East	El Dorado 71730
Sequoyah School	Route 2, Old Farmington Rd.	Fayetteville 72701
Crowley's Ridge Vocational-Technical School	Interstate 40 at Newcastle Rd.	Forrest City 72335
Fort Smith School No. 1	815 S. 14th St.	Fort Smith 72901
Fort Smith School No. 2	1610 South B St.	Fort Smith 72901
Twin Lakes Vocational-Technical School		Harrison 72601
Phillips County Community College	P. O. Box 785	Helena 72342
Red River Vocational-Technical School	Highway 29 South	Hope 71801
Ouachita Memorial Hospital		Hot Springs 71901
Ouachita Vocational-Technical School	120 Chestnut St.	Hot Springs 71901
Jonesboro School	1300 S. Church St.	Jonesboro 72401
Baptist Medical Center School	1920 W. 13th St.	Little Rock 72202
Little Rock School	14th and Scott Sts.	Little Rock 72202
St. Vincent Infirmary	Markham and University	Little Rock 72201
Petit Jean Vocational School		Morrilton 72110
Arkansas Valley Vocational-Technical School	P. O. Box 214	Ozark 72949
Pines Vocational-Technical School	2220 W. 18th St.	Pine Bluff 71601
Foothills Vocational-Technical School		Searcy 72143
CALIFORNIA—82 Programs in 80 Schools		
Chaffey College	5885 Haven Ave.	Alta Loma 91701
Cabrillo College	6500 Soquel Dr.	Aptos 95003
Citrus College	18824 E. Foothill Blvd.	Azusa 91702
Bakersfield College	1801 Panorama Dr.	Bakersfield 93305
Barstow College	2700 Barstow Rd.	Barstow 92311
Southwestern College	5400 Otay Lakes Rd.	Chula Vista 92010
Columbia Junior College	P. O. Box 1849	Columbia 95310
Compton College	1111 E. Artesia Blvd.	Compton 90221

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SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
CALIFORNIA (Continued)		
Culver City Adult School	4401 Elenda St.	Culver City 90230
De Anza College	21250 Stevens Creek Blvd.	Cupertino 95014
Butte Junior College District	P. O. Box 566	Durham 95938
Eureka Evening High School	1915 J Street	Eureka 95501
Fresno City College	1101 University Ave.	Fresno 93704
Fullerton Junior College	200-300 E. Chapman	Fullerton 92634
Mount San Jacinto College	P. O. Box 248	Gilman Hot Springs 92340
Gavilan Junior College	5055 Santa Teresa Blvd.	Gilroy 95020
Glendale College	1500 N. Verdugo Rd.	Glendale 91208
Hanford Adult School	120 E. Grangeville Blvd.	Hanford 93230
Hayward Adult and Technical School	P. O. Box 5000	Hayward 94544
Golden West College	15744 Golden West St.	Huntington Beach 92647
Imperial Valley College	P. O. Box 158	Imperial 92251
College of Marin		Kentfield 94904
Grossmont Adult School	5345 Timken St., Suite F	La Mesa 92041
Antelope Valley College	3041 W. Avenue K	Lancaster 93534
Livermore Valley Adult School	71 Trevano Rd.	Livermore 94550
Loma Linda University Hospital	11234 Anderson St.	Loma Linda 92354
Long Beach City College	1305 E. Pacific Coast Hwy.	Long Beach 90806
East Los Angeles College	5357 E. Brooklyn Ave.	Los Angeles 90022
Los Angeles City Adult School	450 N. Grand Ave.	Los Angeles 90012
Los Angeles Trade-Technical College	400 W. Washington Blvd.	Los Angeles 90015
Vocational Nursing School of California	2503 W. 7th St.	Los Angeles 90057
White Memorial Medical Center School	1720 Brooklyn Ave.	Los Angeles 90033
YWCA Job Corps Center for Women	1106 S. Broadway	Los Angeles 90015
Yuba College	Beale Rd. at Linda Ave.	Marysville 95901
Merced Junior College	P. O. Box 1270	Merced 95340
Holy Cross Hospital	15031 Rinaldi St.	Mission Hills 91340
Modesto Junior College		Modesto 95350
Napa Junior College	2277 Napa-Vallejo Hwy.	Napa 94558
Valley College of Medical Dental Assistants	11316 Magnolia Blvd.	North Hollywood 91601
Cerritos College	11110 E. Alondra	Norwalk 90651
Peralta Colleges, Laney College	1001 3rd Ave.	Oakland 94606
Mira Costa College	Barnard Dr.	Oceanside 92054
College of the Desert	43-500 Monterey	Palm Desert 92260
Pasadena City College	1570 E. Colorado Blvd.	Pasadena 91106
Pittsburg Unified School District	1201 Stoneman Ave.	Pittsburg 94565
Diablo Valley College	321 Golf Club Rd.	Pleasant Hill 94523
Porterville College	900 S. Main	Porterville 93257
Shasta College	Old Oregon Trail	Redding 96001
Riverside City College	3650 Fairfax Ave.	Riverside 92506

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
CALIFORNIA (Continued)		
Sierra College	5000 Rocklin Rd.	Rocklin 95677
Golden Key College	1501 28th St.	Sacramento 95816
Sacramento City College	3835 Freeport Blvd.	Sacramento 95822
Hartnell College	156 Homestead Ave.	Salinas 93901
San Bernardino Valley College	701 S. Mount Vernon Ave.	San Bernardino 92410
United Nursing School of the Inland Empire	289 West Base Line	San Bernardino 92410
San Diego City College	1425 Russ Blvd.	San Diego 92101
San Diego Mesa College	7250 Artillery Dr.	San Diego 92111
College of California Medical Affiliates	636 Van Ness Ave.	San Francisco 94102
Galileo Adult School	Bay St. and Van Ness Ave.	San Francisco 94109
Letterman General Hospital (For Army personnel only)	Presidio of San Francisco	San Francisco 94129
Manpower Skill and Training Center	1485 Market St.	San Francisco 94103
San Jose Unified School District	1457 Keoncrest Ave.	San Jose 95110
College of San Mateo	1700 W. Hillsdale Blvd.	San Mateo 94403
Contra Costa College	2600 Mission Bell Dr.	San Pablo 94806
Neumiller Hospital School		San Quentin 94964
Santa Barbara City College	Cliff Dr. at Leadbetter Dr.	Santa Barbara 93105
Allan Hancock College	800 S. College Dr.	Santa Maria 93454
Santa Monica City College	1815 Pearl St.	Santa Monica 90405
Santa Rosa Junior College, Santo Rosa Branch	1501 Mendocino Dr.	Santa Rosa 95401
West Valley Junior College	14000 Fruitvale Ave.	Saratoga 95070
Simi Valley Unified School District, Simi Valley Adult School	930 Chambers Lane	Simi 93065
San Joaquin Delta College	3301 Kensington Way	Stockton 95204
El Camino College	16007 S. Crenshaw Blvd.	Torrance 90506
Santa Rosa Junior College, Ukiah Branch	333 Laws Ave.	Ukiah 95482
Solano County College	Whitney at Mini Dr.	Vallejo 94590
Los Angeles Valley College	5800 Fulton Ave.	Van Nuys 91401
Ventura College	4667 Loma Vista Rd.	Ventura 93003
College of the Sequoias	Mooney Blvd.	Visalia 93277
Mount San Antonio College	1100 N. Grand Ave.	Walnut 91789
Rio Hondo Junior College	3600 Workman Mill	Whittier 93454
Los Angeles Harbor College	1111 Figueroa Pl.	Wilmington 90744
COLORADO—15 Programs in 15 Schools		
Boulder Valley School	P. O. Box 186	Boulder 80304
El Paso Community College	5 W. Las Vegas Ave.	Colorado Springs 80903
Delta-Montrose School	Delta Junior High School	Delta 81416
Emily Griffith Opportunity School	414 14th St.	Denver 80204

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
COLORADO (Continued)		
Fitzsimons General Hospital, Clinical Specialist Course (For Army personnel only)	Peoria and Colfax Sts.	Denver 80240
Porter Memorial Hospital	2525 S. Downing St.	Denver 80210
St. Anthony Hospital	4001 W. 16th Ave.	Denver 80204
Durango Public School District 9R	P. O. Box 181	Durango 81302
Poudre School District R1	317 S. College	Fort Collins 80521
Morgan County Community College (For waivered L.P.N.s only)	300 Main St.	Fort Morgan 80701
Mesa College	1120 North Ave.	Grand Junction 81501
La Junta Medical Center	Miller Hall, 12th and Carson	La Junta 81050
Southern Colorado State College	900 W. Orman Ave.	Pueblo 81005
Northeastern Junior College		Sterling 80751
Trinidad State Junior College		Trinidad 81082
CONNECTICUT—10 Programs in 10 Schools		
Bullard Havens Regional Vocational-Technical School	Palisade Ave.	Bridgeport 06610
Henry Abbott Regional Vocational-Technical School	Hayestown Rd.	Danbury 06810
Eli Whitney Regional Vocational-Technical School	Jones Rd.	Hamden 06516
A. I. Prince Regional Vocational-Technical School	500 Brookfield St.	Hartford 06106
Vinal Regional Vocational-Technical School	60 Daniels St.	Middletown 06457
E. C. Goodwin Regional Vocational-Technical School	735 Slater Rd.	New Britain 06053
Norwich Regional Vocational-Technical School	590 New London Tpk.	Norwich 06360
J. M. Wright Regional Vocational-Technical School	Woodside Park	Stamford 06902
Kaynor Regional Vocational-Technical School	43 Tomkins St.	Waterbury 06708
Windham Regional Vocational-Technical School	210 Birch St.	Willimantic 06226
DELAWARE—4 Programs in 4 Schools		
Sussex County Vocational-Technical Center		Georgetown 19947
Delcastle Vocational-Technical High School	1417 Newport Rd.	Wilmington 19804
New Castle County Vocational-Technical School District	1424 Chestnut St.	Wilmington 19805
Kent County Vocational-Technical Center	P. O. Box 97	Woodside 19980
DISTRICT OF COLUMBIA—7 Programs in 3 Schools		
Anna Burdick Vocational High School	1300 Allison St., N.W.	Washington 20011
Hannah Harrison School	4470 MacArthur Blvd., N.W.	Washington 20007

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
DISTRICT OF COLUMBIA (Continued)		
Margaret Murray Washington Vocational High School	O Street and N. Capital St., N.W.	Washington 20011
FLORIDA—29 Programs in 27 Schools		
Polk Vocational-Technical Center	Route 1, P. O. Box 71 E	Bartow 33830
Manatee County School	215 Manatee Ave., W.	Bradenton 33505
Daytona Beach Junior College	P. O. Box 1111	Daytona Beach 32015
Lake County Program	2001 Kurt St	Eustis 32726
Broward County Program	1350 S.W. 2nd Court	Fort Lauderdale 33312
Lee County School	3800 Michigan Ave.	Fort Myers 33905
Indian River Junior College	3209 Virginia Ave.	Fort Pierce 33450
Santa Fe Junior College	723 W. University Ave.	Gainesville 32601
Hialeah Hospital	651 E. 25th St.	Hialeah 33013
Florida Junior College at Jacksonville	4501 Capper Rd.	Jacksonville 32218
Suwannee-Hamilton Vocational-Technical Center	415 S.W. Pinewood Dr.	Live Oak 32060
North Florida Junior College	Turner Davis Dr.	Madison 32340
Chipola Junior College		Marianna 32446
Lindsey Hopkins Education Center	1410 N.E. 2nd Ave.	Miami 33132
Miami-Dade Junior College	11380 N.W. 27th Ave.	Miami 33167
Collier County Program	Board of Public Instruction	Naples 33940
Florida Hospital	601 E. Rollins Ave.	Orlando 32803
Orange County Vocational School	325 N. Palmetto Ave.	Orlando 32801
Tom P. Haney Vocational-Technical Center	P. O. Box 666	Panama City 32402
Pensacola Junior College, Vocational-Technical Division	1000 College Blvd.	Pensacola 32504
St. Augustine Program	P. O. Box 500	St. Augustine 32084
School of Practical Nursing, Pinellas County	296 Mirror Lake Dr.	St. Petersburg 33701
Seminole Junior College	100 N. Mellonville Ave.	Sanford 32771
Sarasota County Vocational-Technical School	4748 Beneva Rd.	Sarasota 33581
Lively Area Vocational-Technical School	P. O. Box 1026	Tallahassee 32304
Hillsboro County School	105 W. Ross Ave.	Tampa 33602
Palm Beach County Program	810 Gardenia St.	West Palm Beach 33401
GEORGIA—48 Programs in 48 Schools		
Albany Area Vocational-Technical School	1800 S. Slappey Dr.	Albany 31705
Monroe Vocational School	800 Lippett Dr.	Albany 31705
South Georgia Vocational School	P. O. Box 560	Americus 31709
Athens General Hospital	797 Cobb St.	Athens 30601
MDTA School of Practical Nursing	1230 Baxter St.	Athens 30601

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SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
GEORGIA (Continued)		
Atlanta Area Technical School	1560 Stewart Ave., S.W.	Atlanta 30310
Augusta Area Technical School	1539 White Rd.	Augusta 30904
Augusta MDTA Program	3146 Lake Forest Dr.	Augusta 30904
Augusta Vocational School	3112 Lake Forest Dr.	Augusta 30904
North Georgia MDTA Program	P. O. Box 343	Blairsville 30512
Brunswick Vocational School	Jane Macon Campus— Temporary Bldg. 17	Brunswick 31520
Gordon Hospital School	Pine Street	Calhoun 30701
Carroll County Vocational School	P. O. Box 548	Carrollton 30117
Bartow MDTA Center	109 N. Bartow St.	Cartersville 30120
North Georgia Vocational School		Clarkesville 30523
DeKalb Area Technical School	495 N. Indian Creek Dr.	Clarkston 30021
Columbus Area Vocational-Technical School	4460 River Rd.	Columbus 31904
Columbus MDTA School	318 11th St.	Columbus 31901
Northern Heights School	6th and 3rd Sts.	Cordele 31015
Paulding Memorial Hospital	P. O. Box 156	Dallas 30132
Dalton Vocational School	P. O. Box 1168	Dalton 30720
Adult Education Center	P. O. Box 936	Douglas 31533
Laurens-Dublin MDT Center	Court Square St., P. O. Box 2128	Dublin 31021
Eastman MDT Center	Dodge County Hospital	Eastman 31023
Elbert County Vocational School	548 Jones St.	Elberton 30635
Ben Hill County Hospital	515 W. Magnolia St., Drawer 538	Fitzgerald 31750
Ben Hill Irwin Vocational-Technical School	P. O. Drawer M	Fitzgerald 31750
U. S. Army Hospital, Clinical Specialist Course (For Army personnel only)		Fort Gordon 30905
Griffin Spalding County Area Vocational-Technical School	P. O. Box 131	Griffin 30223
Pickens Vocational-Technical School		Jasper 30143
Adult Education Center	Wayne Memorial Hospital, P. O. Box 547	Jesup 31545
Troup County Area Vocational-Technical School	Route 2, Whitesville Rd.	La Grange 30240
Macon Area Vocational-Technical School	940 Forsyth St.	Macon 31201
Marietta-Cobb Area Vocational School	980 S. Cobb Dr.	Marietta 30060
Baldwin Vocational School	P. O. Box 690	Milledgeville 31061
Walton County Hospital	330 Alcova St.	Monroe 30655
Walton County MDTA School		Monroe 30655
Moultrie Area Vocational School	Lenox Post Rd.	Moultrie 31768
Coosa Valley Vocational School	112 Hemlock Ave.	Rome 30161
Dudley M. Hughes Vocational School		Sandersville 31082
Memorial Medical Center	Waters at 63rd St.	Savannah 31405
Savannah Area Vocational-Technical School	2001 Cynthia St.	Savannah 31401

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
GEORGIA (Continued)		
Swainsboro Vocational School	201 Kite Rd.	Swainsboro 30401
Upson County Vocational School	P. O. Box 6	Thomaston 30286
Thomas Area Vocational School	P. O. Box 257	Thomasville 31792
Valdosta Vocational School	Route 1, P. O. Box 211 A	Valdosta 31603
Waycross Adult Education	Drawer 920	Waycross 31501
Waycross Vocational School	1701 Carswell Ave.	Waycross 31501
GUAM—No Schools		
HAWAII—4 Programs in 4 Schools		
Hawaii Community College	1175 Manono St.	Hilo 96720
Kapiolani Community College, Health Service Educational Division	620 Pensacola St.	Honolulu 96814
Castle Memorial Hospital	640 Ulukahiki St.	Kailua, Oahu 96734
Kauai Community College	R.R. No. 1, P. O. Box 216	Lihue, Kauai 96766
IDAHO—13 Programs in 12 Schools		
School District 55	Bingham Memorial Hospital	Blackfoot 83221
Boise State College	St. Luke's Hospital, 1907 Campus Dr.	Boise 83706
School District 151	Cassia Memorial Hospital, P. O. Box 638	Burley 83318
School District 132	Caldwell Memorial Hospital, 300 E. Logan St.	Caldwell 83605
North Idaho Junior College	Voc-Tech Area School, 1000 W. Garden Ave.	Coeur d'Alene 83814
School District 221	Walter Knox Memorial Hospital, 1202 E. Locust St.	Emmett 83617
School District 91	Idaho Falls L.D.S. Hospital, 900 Memorial Dr.	Idaho Falls 83401
	Sacred Heart Hospital, 2525 S. Boulevard	Idaho Falls 83401
Lewis-Clark Normal School	Voc-Tech Area School, Fourth Ave. and 6th	Lewiston 83501
School District 281	Gritman Memorial Hospital, 710 S. Main	Moscow 83843
School District 131	Mercy Hospital, 1512 12th Ave., S.	Nampa 83651
Idaho State University	Voc-Tech Area School	Pocatello 83201
College of Southern Idaho	Voc-Tech Area School, 650 Addison Ave., W.	Twin Falls 83301
ILLINOIS—40 Programs in 36 Schools		
F. W. Olin Vocational School	2512 Amelia St.	Alton 62002
Bloomington School	709 S. Clinton	Bloomington 61701
Adult and Vocational Center–Cairo	1615 Commercial St.	Cairo 62914
Southern Illinois University, Vocational-Technical Institute		Carbondale 62901
Champaign School	103 N. Prospect Ave.	Champaign 61820

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
ILLINOIS (Continued)		
Chicago Public Schools	1820 W. Grenshaw St.	Chicago 60612
Chicago Public Schools	2913 N. Commonwealth	Chicago 60657
St. Frances X. Cabrini School	811 S. Lytle St.	Chicago 60607
Danville Junior College	2000 E. Main St.	Danville 61832
Decatur School	Gastman School Bldg., 210 W. North St.	Decatur 62523
Sauk Valley College	River Campus Route 1	Dixon 61021
Illinois Central College	P. O. Box 2400	East Peoria 61611
East St. Louis School	905 Ohio Ave.	East St. Louis 62201
Carl Sandburg College	P. O. Box 470	Galesburg 61401
College of Lake County	19351 W. Washington St.	Grayslake 60030
Southeastern Illinois College	333 W. College	Harrisburg 62946
Thornton College	150th and Broadway	Harvey 60426
Hinsdale Hospital and Sanitarium	120 N. Oak St.	Hinsdale 60521
Jacksonville School, Jacksonville Board of Education, District 117	504 E. Court St.	Jacksonville 62650
Joliet Township High School	201 E. Jefferson	Joliet 60432
Kankakee Community College	P. O. Box 888	Kankakee 60901
St. Mary's Hospital	1015 O'Connor St.	La Salle 61301
Kishwaukee College		Malta 60150
Lake Land College		Mattoon 61938
Black Hawk College	6600 34th St.	Moline 61265
Oakton College	7900 N. Nagel	Morton Grove 60053
Wabash Valley College	220 College Dr.	Mount Carmel 62863
Rend Lake College	315 S. 7th St.	Mount Vernon 62864
Harper College	Algonquin and Roselle Rds.	Palatine 60067
Pekin School	East Campus, Pekin Community High School	Pekin 61554
Quincy School	820 Vermont	Quincy 62301
Triton College	2000 N. 5th Ave.	River Grove 60171
Rockford School	201 S. Madison St.	Rockford 61101
Springfield School	1101 S. 15th St.	Springfield 62703
Streator Township High School	600 N. Jefferson	Streator 61364
Shawnee Community College	Shawnee College Rd.	Ullin 62992
INDIANA—18 Programs in 14 Schools		
Anderson Public Schools	528 W. 11th St.	Anderson 46016
Indiana Vocational-Technical College, White River Valley Regional Institute	619 W. 1st St.	Bloomington 47401
Bartholomew Consolidated School Corporation	2650 Home Ave.	Columbus 47201
Evansville School, Evansville-Vanderburgh School Corporation	1216 E. Illinois St.	Evansville 47711
Fort Wayne Community Schools	203 E. Douglas St.	Fort Wayne 46802

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SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
INDIANA (Continued)		
Purdue University, Calumet Campus	2233 171st St.	Hammond 46323
Indianapolis Public Schools	26 N. Arsenal Ave.	Indianapolis 46201
Kokomo School, Kokomo Center Twp., Consolidated School Corporation	1104 N. Bell St.	Kokomo 46901
Indiana Vocational-Technical College, Tippewa Regional Institute	2316 South St.	Lafayette 47904
Marion Community School	716 W. 26th St.	Marion 46952
Indiana Vocational-Technical College, Northwest Regional Institute	301 Homer St.	Michigan City 46360
Muncie School	Ball Memorial Hospital, 2300 W. Gilbert St.	Muncie 47303
New Albany-Floyd County Consolidated School Corporation	4202 Charlestown Rd.	New Albany 47150
Richmond School	Reid Memorial Hospital, Spring Grove	Richmond 47374
Indiana Vocational-Technical College, St. Joseph Valley Regional Institute	1534 W. Sample St.	South Bend 46619
Vigo County School Corporation	1421 2nd Ave.	Terre Haute 47807
Vincennes University		Vincennes 47591
IOWA—23 Programs in 18 Schools		
Des Moines Area Community College	1125 Hancock Dr.	Boone 50036
Southeastern Iowa Area Community College, Burlington Campus	720½ Jefferson St.	Burlington 52601
Area One Vocational School	142 Main St.	Calmar 52132
Des Moines Area Community College, Carroll Campus		Carroll 51401
Kirkwood Community College	6301 Bowling St., S.W.	Cedar Rapids 52406
St. Luke's Methodist Hospital	1026 A Avenue, N.E.	Cedar Rapids 52402
Indian Hills Community College, Lake Rathbun Campus	117 E. Washington	Centerville 52544
Cherokee School	101½ E. Main St.	Cherokee 51012
Iowa Western Community College, Clarinda Campus		Clarinda 51632
Eastern Iowa Community College, Clinton Campus	Lincoln Blvd.	Clinton 52732
Iowa Western Community College, Council Bluffs Campus	225 Harmony St.	Council Bluffs 51501
Southwestern Community College	P. O. Box 458	Creston 50801
Eastern Iowa Community College, Davenport Campus	627 W. 2nd St.	Davenport 52801
Des Moines Public School	1440 Center St.	Des Moines 50314
Dubuque Public Schools	1500 Locust St.	Dubuque 52001
Iowa Lakes Community College		Emmetsburg 50536
Iowa Central Community College		Fort Dodge 50501
Iowa Western Community College, Harlan Campus		Harlan 51537
Marshalltown Community College—Merged Area VI	113 N. 1st Ave.	Marshalltown 50158
North Iowa Area Community College	220 E. State St.	Mason City 50401

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SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
IOWA (Continued)		
Indian Hills Community College, Iowa Tech Campus		Ottumwa 52501
Western Iowa Tech	222 S. Floyd Blvd.	Sioux City 51102
Hawkeye Institute of Technology	2800 Falls Ave.	Waterloo 50701
KANSAS—11 Programs in 11 Schools		
Chanute School	400 S. Evergreen	Chanute 66720
Colby Community College	1255 S. Range	Colby 67701
North Central Kansas Area Vocational-Technical School	135 W. 8th St.	Concordia 66901
Dodge City Community College	1000 2nd Ave.	Dodge City 67801
Flint Hills Area Vocational-Technical School	3015 W. 18th Ave., P. O. Box 279	Emporia 66801
University of Kansas Medical Center, Florence Cook Department	39th and Rainbow	Kansas City 66103
Haskell Indian Junior College		Lawrence 66044
Manhattan Area Vocational-Technical School	3136 Dickens	Manhattan 66502
McPherson School	P. O. Box 484	McPherson 67460
KAW Area Vocational-Technical School	5724 Huntoon	Topeka 66604
Wichita School	AVTS Central School, 324 N. Emporia	Wichita 67202
KENTUCKY—16 Programs in 15 Schools		
Ashland Area Vocational School	Winslow Rd., Route 1, P. O. Box 520A	Ashland 41101
Northern Kentucky State Vocational School	Amsterdam Rd.	Covington 41011
William Booth Memorial Hospital	323 E. 2nd St.	Covington 41011
Danville School		Danville 40422
Glasgow School	P. O. Box 199	Glasgow 42141
Greenville School	440 Hopkinsville St.	Greenville 42345
Hazard School	647 N. Main St.	Hazard 41701
Jefferson County School	3101 Bluebird Lane	Jeffersontown 40029
Appalachian School	123 Warren Court	Lexington 40508
Madisonville School	200 N. Main St.	Madisonville 42431
Murray School	805 Poplar St.	Murray 42071
Owensboro School	1501 Frederica St.	Owensboro 42301
Western Baptist Hospital	2501 Kentucky Ave.	Paducah 42001
Mayo State Vocational School		Paintsville 41240
Pineville School	543 Tennessee Ave.	Pineville 40977
LOUISIANA—23 Programs in 21 Schools		
Gulf Area Vocational-Technical School	P. O. Box 878	Abbeville 70510

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
LOUISIANA (Continued)		
Alexandria Trade School	P. O. Box 5698	Alexandria 71302
Baton Rouge Vocational-Technical School	3400 Winbourne Ave.	Baton Rouge 70805
Capitol Area Vocational School	P. O. Box 2993	Baton Rouge 70802
Sullivan Vocational-Technical School		Bogalusa 70427
Southwest Louisiana Vocational-Technical School	P. O. Box 820	Crowley 70526
North Central Area Vocational-Technical School	P. O. Box 548	Farmerville 71241
Hammond Area Vocational School	P. O. Box 489	Hammon 70401
South Louisiana Trade School	P. O. Box 1330	Houma 70361
Sowela Technical Institute	501 Broad St.	Lake Charles 70601
Sabine Valley Vocational-Technical School, Natchitoches Trade School	P. O. Box 721	Many 71449
Jefferson Parish Vocational-Technical School	925 Labarre Rd.	Metairie 70121
Delta Area Trade School	P. O. Box 1321	Monroe 71201
Young Memorial Vocational-Technical School		Morgan City 70380
Teche Area Vocational-Technical School	P. O. Box 1057	New Iberia 70560
New Orleans Public Schools		
Booker T. Washington High School	731 St. Charles Ave., Room 338	New Orleans 70130
L. E. Rabouin Program	4211 S. Miro St.	New Orleans 70130
Orleans Area Vocational-Technical School	P. O. Box 8202	New Orleans 70122
T. H. Harris Vocational-Technical School	358 E. Laurent St.	Opelousas 70570
West Side Vocational-Technical School	P. O. Box 733	Plaquemine 70764
Shreveport-Bossier Vocational-Technical Center	2010 N. Market St.	Shreveport 71107
Ouachita Valley Vocational-Technical School	P. O. Box 546	West Monroe 71291
MAINE—5 Programs in 5 Schools		
Central Maine Vocational-Technical Institute	1250 Turner St.	Auburn 04210
St. Joseph Hospital	297 Center St.	Bangor 04401
Maine School, Portland	79 Bramhall St.	Portland 04102
Northern Maine Vocational-Technical Institute	33 Edgemont Dr.	Presque Isle 04769
Maine School, Waterville	Highwood St.	Waterville 04910
MARYLAND—22 Programs in 20 Schools		
Anne Arundel General Hospital	Franklin and Cathedral Sts.	Annapolis 21401
Baltimore City Hospitals	4940 Eastern Ave.	Baltimore 21224
Baltimore City Schools	School 456, North Ave. and Calvert St.	Baltimore 21218
Johnston School, Union Memorial Hospital	220 E. 33rd St.	Baltimore 21218
South Baltimore General Hospital	3001 Hanover St.	Baltimore 21230
University of Maryland	624 W. Lombard St.	Baltimore 21201
Suburban Hospital	8600 Old Georgetown Rd.	Bethesda 20014

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
MARYLAND (Continued)		
Cambridge-Maryland Hospital	300 Byrn St.	Cambridge 21613
Eastern Shore State Hospital	Route 2	Cambridge 21612
Queen Anne's County High School		Centreville 21617
Prince George's General Hospital, Adult and MDTA Program		Cheverly 20784
Sacred Heart Hospital		Cumberland 21502
Cecil County Vocational-Technical Center	Booth Street Center	Elkton 21921
Frederick County School	115 E. Church St.	Frederick 21701
Washington County Vocational-Technical Center	Robinwood Dr.	Hagerstown 21740
Harford Memorial Hospital		Havre de Grace 21078
St. Mary's County Vocational-Technical Center	P. O. Box 446	Leonardtown 20650
Wicomico County Vocational-Technical Center		Salisbury 21801
Springfield State Hospital		Sykesville 21784
Washington Sanitarium and Hospital	7600 Carroll Ave.	Takoma Park 20012
MASSACHUSETTS—39 Programs in 36 Schools		
Beverly Hospital	Herrick and Heather Sts.	Beverly 01915
Boston Trade High School for Girls	73 Hemenway St.	Boston 02115
City of Boston Department of Health and Hospitals	818 Harrison Ave.	Boston 02118
Shepard-Gill School, Massachusetts General Hospital	226 Newbury St.	Boston 02116
Upper Cape Cod Regional Vocational-Technical School	220 Sandwich Rd.	Bourne 02532
Youville Hospital	1575 Cambridge St.	Cambridge 02138
Soldiers' Home	100 Summit Ave.	Chelsea 02150
Essex Agricultural and Technical Institute	562 Maple St.	Danvers 01937
Diman Regional School	Stone Haven Rd.	Fall River 02723
Montachusett Regional Vocational-Technical School	Nichols Rd.	Fitchburg 01420
Massachusetts Department of Mental Health, Norfolk Division	Foxboro State Hospital	Foxboro 02035
Gardner State Hospital	P. O. Box 488	Gardner 01440
Addison Gilbert Hospital	298 Washington St.	Gloucester 01930
Haverhill Trade High School	61 Brown St.	Haverhill 01830
Holyoke Trade High School	325 Pine St.	Holyoke 01040
Cape Cod Hospital	27 Park St.	Hyannis 02601
Lemuel Shattuck Hospital	170 Morton St.	Jamaica Plain 02130
Leominster Trade High School	Granite St.	Leominster 01453
Lowell Trade High School	64 John and Paige Sts.	Lowell 01852
Charles H. McCann Regional Vocational High School	Hodges Cross Rd.	North Adams 01247
Massachusetts Department of Mental Health, Pioneer Valley Division	Northampton State Hospital	Northampton 01060

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SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
MASSACHUSETTS (Continued)		
Smith's Vocational High School	80 Locust St.	Northampton 01060
Henry O. Peabody School for Girls	Peabody Rd.	Norwood 02062
Pittsfield Vocational High School	East St.	Pittsfield 01201
Quincy Vocational-Technical School	Woodward Ave.	Quincy 02169
North Shore Children's Hospital	57 Highland Ave.	Salem 01970
Southeastern Regional Vocational-Technical School	250 Foundry St.	South Easton 02375
Springfield Trade High School	1300 State St.	Springfield 01109
Taunton Vocational High School	25 N. Pleasant St.	Taunton 02780
Tewksbury Hospital	East St.	Tewksbury 01876
Northeast Metropolitan Regional Vocational School	P. O. Box 238	Wakefield 01880
Pondville Hospital	P. O. Box 111	Walpole 02081
Massachusetts Department of Mental Health, Middlesex Division	Metropolitan State Hospital, P. O. Box 349	Waltham 02154
Waltham Trade High School	Hope Ave.	Waltham 02154
Lawrence Vocational School	57 River Rd.	West Andover 01810
Massachusetts Department of Mental Health, Assabet Valley Division	Westborough State Hospital, P. O. Box 288	Westborough 01581
Western Massachusetts Hospital	E. Mountain Rd.	Westfield 01085
Winthrop Community Hospital	40 Lincoln St.	Winthrop 02152
David Hale Fanning Trade High School	Chatham and High Sts.	Worcester 01608
MICHIGAN—34 Programs in 34 Schools		
Alma Education Center	300 S. Warwick Ave.	Alma 48801
Ann Arbor Education Center	401 N. Division St.	Ann Arbor 48104
Kellogg Community College	450 North Ave.	Battle Creek 49016
Lake Michigan College	2755 E. Napier Ave.	Benton Harbor 49022
Ferris State College		Big Rapids 49307
Oakland Community College	2480 Opdyke Rd.	Bloomfield Hills 48013
Mercy School	815 Oak St.	Cadillac 49601
Glen Oaks Community College	R.R. No. 1	Centreville 49099
South Central Michigan School	15 E. Washington St.	Coldwater 49036
Detroit Board of Education	8741 John C. Lodge Expwy.	Detroit 48202
Detroit Practical Nurse Center	453 Stimson	Detroit 48201
Shapero School	6801 W. Outer Dr.	Detroit 48235
Southwestern Michigan College	Cherry Grove Rd.	Dowagiac 49047
Bay de Noc Community College	S. 12th St.	Escanaba 49829
Bay City Practical Nurse Center	564 W. Hampton Rd.	Essexville 48732
Genesee Community College	1401 E. Court St.	Flint 48503
Grand Rapids Junior College	148 Ransom Ave., N.E.	Grand Rapids 49503
Pine Rest School	6850 Division St., S.	Grand Rapids 49508

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
MICHIGAN (Continued)		
McPherson Community Health Center	620 Byron Rd.	Howell 48843
Gogebic Community College		Ironwood 49938
Jackson Community College	2111 Emmons Rd.	Jackson 49201
Kalamazoo Practical Nursing Center	727 Lane Blvd.	Kalamazoo 49001
Lansing Community College	419 N. Capitol Ave.	Lansing 48914
Schoolcraft College	18600 Haggerty Rd.	Livonia 48151
Northern Michigan University		Marquette 49855
Midland Hospital	4005 Orchard Dr.	Midland 48640
Macomb County Community College	16500 Hall Rd.	Mount Clemens 48043
Mid-Michigan Community College	1213 South Dr.	Mount Pleasant 48858
Muskegon County Community College	221 S. Quarterline Rd.	Muskegon 49443
St. Clair Community College	323 Erie St.	Port Huron 48061
Saginaw School	420 S. Warren St.	Saginaw 48607
West Shore Community College	P. O. Box 277	Scottville 49454
Montcalm Community College		Sidney 48885
Northwestern Michigan College	200 College Dr.	Traverse City 49684
MINNESOTA—27 Programs in 27 Schools		
Alexandria Program	16th and Jefferson	Alexandria 56308
Anoka-Hennepin Program	TEC, P. O. Box 191	Anoka 55303
Austin School	203 4th St., N.W.	Austin 55912
Bemidji Area Vocational-Technical School		Bemidji 56601
Brainerd Program	300 Quince St.	Brainerd 56401
Detroit Lakes PN Program, Vocational-Technical School		Detroit Lakes 56501
Duluth School	2101 Trinity Rd.	Duluth 55811
Eveleth Area Technical School	402 Roosevelt Ave.	Eveleth 55734
Faribault School	Rice County District No. 1 Hospital	Faribault 55021
Fergus Falls Program	P. O. Box 485	Fergus Falls 56537
Grand Rapids Program	Itasca State Junior College	Grand Rapids 55744
Hastings Program	9th and Ramsey	Hastings 55033
Meeker County School	Meeker County Hospital	Litchfield 55355
Mankato Area Vocational-Technical Institute	1920 Lee Blvd.	Mankato 56001
Minneapolis Vocational School	1101 3rd Ave., S.	Minneapolis 55404
New Ulm School	7 South and Broadway	New Ulm 56073
Red Wing School	1407 W. 4th St.	Red Wing 55066
Rochester Area Vocational School	1926 2nd St., S.E.	Rochester 55901
Rochester School	St. Mary's Hospital, 1216 2nd St., S.W.	Rochester 55901
St. Cloud Program, Area Vocational-Technical School	1601 N. 9th Ave.	St. Cloud 56301
Bethesda Lutheran Hospital	570 Capitol Blvd.	St. Paul 55103

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
MINNESOTA (Continued)		
Miller Hospital	125 College Ave., W.	St. Paul 55102
St. Paul Technical-Vocational Institute	235 Marshall Ave.	St. Paul 55102
Thief River Falls School	P. O. Box 150	Thief River Falls 56701
Willmar Program, Area Vocational-Technical School		Willmar 56201
Winona Technical School	1250 Homer Rd.	Winona 55987
Worthington State Junior College		Worthington 56187
MISSISSIPPI—19 Programs in 19 Schools		
Northeast Mississippi Junior College		Booneville 38829
Clarksdale Public Schools		Clarksdale 38614
Columbia City Schools		Columbia 39429
East Mississippi Junior College	c/o Golden Triangle Vocational-Technical Center, P. O. Box 171	Columbus 39701
Jones County Junior College		Ellisville 39437
Holmes Junior College		Goodman 39079
Forrest County General Hospital		Hattiesburg 39401
Methodist Hospital		Hattiesburg 39402
Houston Public School		Houston 38851
Mississippi Baptist Hospital		Jackson 39201
Meridian Junior College		Meridian 39301
Mississippi Delta Junior College		Moorhead 38761
Mississippi Gulf Coast Junior College		Perkinston 39573
Pearl River Junior College		Poplarville 39470
Hinds Junior College		Raymond 39154
Northwest Mississippi Junior College		Senatobia 38668
Southwest Mississippi Junior College		Summit 39666
Itawamba Junior College	c/o Vocational-Technical Center	Tupelo 38801
Copiah-Lincoln Junior College		Wesson 39191
MISSOURI—27 Programs in 26 Schools		
Brookfield School	200 Linn St.	Brookfield 64628
Columbia Public School	University of Missouri Medical Center	Columbia 65201
Mineral Area College	10 Lake Dr.	Flat River 63601
Hannibal Public School	4500 McMasters Ave.	Hannibal 63401
Jennie Lund School	101 N. Forest	Independence 64050
Jefferson City Public School	315 E. Dunklin	Jefferson City 65101
School District of Joplin, R-VIII	2020 Iowa Ave.	Joplin 64801
Kansas City Board of Education	1514 Campbell	Kansas City 64108
Kirksville Public School	401 E. McPherson	Kirksville 63501

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
MISSOURI (Continued)		
Marshall Area Vocational-Technical School	900 W. Vest	Marshall 65340
Northwest Missouri State College		Maryville 64468
Mexico Public School	Audrain Hospital	Mexico 65265
Moberly Junior College	211 Clark	Moberly 65270
Crowder College		Neosho 64850
Nevada Public School	Moore Bldg.	Nevada 64772
Poplar Bluff School District, R 1	Area Vocational School, P. O. Box 47	Poplar Bluff 63901
Rolla Public Schools	405 E. 7th	Rolla 65401
N. S. Hillyard Technical School	1000 S. 9th St.	St. Joseph 64503
St. Louis Board of Education	5101 Northrup Ave.	St. Louis 63110
St. Mary's School	6420 Clayton Rd.	St. Louis 63117
State Fair Community College	1900 Clarendon Rd.	Sedalia 65301
Sikeston Public Schools	1008 N. Main	Sikeston 63801
Springfield Board of Education	815 N. Sherman	Springfield 65802
Trenton Junior College	101 E. 8th St.	Trenton 64683
Washington School	P. O. Box 357	Washington 63090
South Central Area Vocational-Technical School		West Plains 65775
MONTANA—8 Programs in 8 Schools		
Billings Vocational-Technical Center		Billings 59102
Bozeman School	P. O. Box 148	Bozeman 59715
Butte Vocational-Technical Center		Butte 59701
Great Falls School	Great Falls Public Schools	Great Falls 59401
Northern Montana College		Havre 59501
Helena Vocational-Technical Center		Helena 59601
Flathead Valley Community College	P. O. Box 1174	Kalispell 59701
Missoula Technical Center	909 South Ave., W.	Missoula 59801
NEBRASKA—7 Programs in 7 Schools		
Alliance Vocational School	St. Joseph Hospital, 416 W. 11th St.	Alliance 69301
Columbus School	Platte College	Columbus 68601
Central Nebraska Technical College	2315 4th Ave.	Kearney 68847
Lincoln Public School	1100 S. 48th St.	Lincoln 68510
Norfolk Vocational School	510 Phillip Ave.	Norfolk 68701
Omaha Public School	4822 Dodge St.	Omaha 68132
Nebraska Western College	c/o St. Mary's Hospital	Scotts Bluff 69361
NEVADA—9 Programs in 9 Schools		
Sierra Nevada School	110 N. Nevada	Carson City 89701
Elko School		Elko 89801

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
NEVADA (Continued)		
Lahontan School	Churchill County H.S., 650 S. Maine St.	Fallon 89406
Southern Nevada School	So. Nevada Memorial Hospital, Charleston Blvd.	Las Vegas 89102
Sunrise School	Sunrise Hospital, P. O. Box 14157	Las Vegas 89114
Reno V.A. Program	1000 Locust	Reno 89502
St. Mary's School	St. Mary's Hospital, 235 W. 6th St.	Reno 89503
Washoe Western School	Washoe Medical Center, Mill and Kirman Sts.	Reno 89502
Lyon School	114 Pearl St.	Yerington 89447
NEW HAMPSHIRE—5 Programs in 5 Schools		
New Hampshire Vocational-Technical College, Berlin	Milan Rd.	Berlin 03570
New Hampshire Vocational-Technical College, Claremont	Hanover Street Extension	Claremont 03743
Moore General Hospital	R.F.D. No. 2	Goffstown 03045
St. Joseph's Hospital	5 Woodward Ave.	Nashua 03060
New Hampshire Vocational-Technical College, Portsmouth	150 Greenleaf Ave., Junction U.S.R. 1 Bypass	Portsmouth 03801
NEW JERSEY—35 Programs in 31 Schools		
Atlantic City High School Technical Center	41 N. Illinois Ave.	Atlantic City 08401
Bayonne High School	30th St. and Avenue A	Bayonne 07002
Cumberland County Vocational School	Landis Ave.	Bridgeton 08302
Camden High School	Baird Ave. and Park Blvd.	Camden 08103
Cape May County Vocational-Technical Institute	Franklin St.	Cape May 08204
Morris Knolls High School	Franklin Ave.	Denville 07834
Hunterdon Central High School	Route 69	Flemington 08822
Monmouth County Vocational School District	P. O. Box 838	Freehold 07728
Jersey City Board of Education	100 Newkirk St.	Jersey City 07306
Jersey City Job Corps Center for Women	391 Montgomery St.	Jersey City 07302
St. Barnabas Medical Center	Old Short Hills Rd.	Livingston 07039
Camden County Vocational and Technical High School	6008 Browning Rd.	Merchantville 08109
Millville Senior High School	Wade Blvd.	Millville 08332
Morristown High School	Early St.	Morristown 07960
Burlington County Vocational and Technical Schools	Woodlane Rd.	Mount Holly 08060
Essex County Adult Technical School	300 N. 13th St.	Newark 07107
New Careers Program	32 Green St.	Newark 07102
Newark Skills Center	Broadway and 4th Ave.	Newark 07104

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
NEW JERSEY (Continued)		
Sussex County Vocational-Technical Schools	18 Church St.	Newton 07860
Bergen Pines County Hospital	Ridgewood Rd.	Paramus 07652
Salem County Technical Institute	Golf View	Penns Grove 08069
Princeton Hospital	253 Witherspoon St.	Princeton 08540
Somerset County Vocational-Technical School, No. 2 Annex	Route 28	Raritan 08869
Union County Technical Institute	1776 Raritan Rd.	Scotch Plains 07076
Overlook Hospital	193 Morris Ave.	Summit 07901
Ocean County Vocational-Technical School	W. Water St.	Toms River 08753
Mercer County Vocational School	Health Occupation Center—Klempner Bldg.	Trenton 08619
Vineland High School	W. Landis Ave.	Vineland 08360
Warren County Vocational School and Technical Institute	151 W. Washington Ave.	Washington 07882
Passaic County Technical and Vocational High School	Route 23	Wayne 07470
Middlesex County Vocational-Technical High School	Convery Blvd. and Florida Grove Rd.	Woodbridge 07095
NEW MEXICO—5 Programs in 5 Schools		
Indian School	1015 Indian School Rd., N.W.	Albuquerque 87107
Presbyterian Hospital	1100 Central Ave., S.E.	Albuquerque 87106
Carlsbad School	103 W. Hagerman St.	Carlsbad 88220
McCurdy Schools	P. O. Box 127	Espanola 87532
St. Vincent Hospital	210 E. Palace Ave.	Santa Fe 87501
NEW YORK—107 Programs in 97 Schools		
Albany Board of Education, MDTA	45 Columbia St.	Albany 12207
Albany School	470 Myrtle Ave.	Albany 12208
Amsterdam School, MDTA	43 Division St.	Amsterdam 12010
Cayuga County Program	234 South Street Rd.	Auburn 13021
Catherine McAuley Program, St. Jerome Hospital	211 E. Main St.	Batavia 14020
Steuben County BOCES Program	47 W. Steuben St.	Bath 14810
Binghamton School	164 Hawley St.	Binghamton 13901
		Bronx (See under New York)
		Brooklyn (See under New York)
Buffalo School, Board of Education, MDTA	City Hall	Buffalo 14202
Edna G. Dyett School, Millard Fillmore Hospital	3 Gates Circle	Buffalo 14209
Erie County BOCES, First Supervisory District	705 Potter Rd.	Buffalo 14224

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
NEW YORK (Continued)		
Fosdick Masten Vocational High School	North St. and Masten Ave.	Buffalo 14204
Mary McClellan Hospital		Cambridge 12816
State University	Agriculture and Technical College	Delhi 13753
Chataugua County BOCES Program, MDT	108-110 E. 4th St.	Dunkirk 14048
Geneva School	196-198 North St.	Geneva 14456
Community Hospital at Glen Cove	St. Andrew's Lane	Glen Cove 11542
Lewis County Area Program	Lewis County Area Occupational Center, Route 12	Glenfield 13343
Glens Falls Hospital		Glens Falls 12801
Vocational Education and Extension Board, Nassau County School, MDTA	67A Nichols Court	Hempstead 11550
Hornell School	39 Main St.	Hornell 14843
Schuyler Chemung Tioga BOCES Program	431 Philo Rd.	Horseheads 14903
Tompkins-Cortland Community College	1287 Trumansburg Rd.	Ithaca 14850
Jamestown School	Jefferson Jr. High School, Camp and Mays Sts.	Jamestown 14701
Nassau County BOCES Program	125 Jericho Tpk.	Jericho 11753
BOCES Hamilton-Fulton and Montgomery County Program	P. O. Box 665	Johnstown 12095
Ulster County BOCES School	29 Grand St.	Kingston 12401
Lewis A. Wilson Technological Program, MDTA	Lindenhurst Annex, 301 W. Hoffman Ave.	Lindenhurst 11757
North County Community College	Park Street School	Malone 12953
Massena School	166 Maple St.	Massena 13662
Orleans and Niagara County Program	Salt Works Rd.	Medina 14103
Orange County School, MDTA and BOCES	Fortune Drive West, R.D. No. 6	Middletown 10940
Herkimer County BOCES Program	100 E. Main St.	Mohawk 13407
Sullivan County Program	Monticello High School	Monticello 12701
State University, Agricultural and Technical College		Morrisville 13408
Mount Vernon School	56 S. 3rd Ave.	Mount Vernon 10550
New Rochelle High School	265 Clove Rd.	New Rochelle 20804
		New York—Includes schools located within the five boroughs: Bronx, Brooklyn, Manhattan, Queens (Long Island City, Jamaica), and Richmond (Staten Island).
Brooklyn YWCA School	30 3rd Ave.	New York Brooklyn 11217
Caledonian Hospital	10 St. Paul's Pl.	New York Brooklyn 11226
Central School	Draper Hall, 1918 1st Ave.	New York Manhattan 10029
Clara Barton Vocational High School	901 Classon Ave.	New York Brooklyn 11225
Columbia Presbyterian School	Columbia Presbyterian Medical Center, 622 W. 168th St.	New York Manhattan 10032

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
NEW YORK (Continued)		
Curtis High School	Hamilton Ave. and St. Mark's Pl.	New York Staten Island 10301
Dodge Vocational High School	189th St. and Crotona Ave.	New York Bronx 10458
Eli Whitney Vocational High School	257 N. 6th St.	New York Brooklyn 11211
Helene Fuld School, Hospital for Joint Diseases	1919 Madison Ave.	New York Manhattan 10035
Hospital for Special Surgery	535 E. 70th St.	New York Manhattan 10021
Jamaica Vocational High School	162-02 Hillside Ave.	New York Jamaica 11432
Jane Addams Vocational High School	900 Tinton Ave.	New York Bronx 10456
Julia Richman High School	317 E. 67th St.	New York Manhattan 10021
Mabel Dean Bacon Vocational High School	127 E. 22nd St.	New York Manhattan 10010
Morris High School, School of Practical Nursing for Boys	166th St. and Boston Rd.	New York Bronx 10456
New York City Board of Education Program, MDT	Brooklyn Adult Training Center 475 Nostrand Ave.	New York Brooklyn 11216
Queens Vocational High School	37-02 47th Ave.	New York Long Island City 11101
School for Practical Nursing at Willowbrook		New York Staten Island 10314
Washington Irving High School	40 Irving Pl.	New York Manhattan 10003
Wyckoff Heights Hospital	374 Stockholm St.	New York Brooklyn 11237
Newburgh Free Academy	Fullerton Ave.	Newburgh 12550
Newburgh School, Board of Education, MDTA	Newburgh Free Academy, 98 Grand St.	Newburgh 12550
Trott Vocational High School	11th St. and Ashland Ave.	Niagara Falls 14301
Phelps Memorial Hospital	N. Broadway	North Tarrytown 10593
North Tonawanda School, MDTA	236 Goundry St.	North Tonawanda 14120
Ogdensburg Program, Board of Education, MDTA	George Hall Junior High School, State St.	Ogdensburg 13669
St. Francis Hospital	2221 W. State St.	Olean 14760
Otsego Area School	290 Chestnut St.	Oneonta 13820
Oswego BOCES School	201 West St.	Oswego 13126
Mid-Suffolk High School	201 Sunrise Hwy.	Patchogue 11772
John W. Harrold Education Center	48 Riley Ave.	Plattsburgh 12901
Dutchess County BOCES Program	105 Dutchess Tpk.	Poughkeepsie 12603
Poughkeepsie School, Board of Education, MDTA	11 College Ave.	Poughkeepsie 12603
Eastern Suffolk School, MDT	205 Osborne Ave.	Riverhead 11901

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
NEW YORK (Continued)		
Riverhead Area Occupational Education Center	201 Howell Ave.	Riverhead 11901
Isabella Graham Hart School, Rochester General Hospital	1425 Portland Ave.	Rochester 14621
Rochester High School	359 E. Main St.	Rochester 14604
Rochester Manpower Skill Center	242 Main St., W.	Rochester 14614
State University Urban Center, Rochester	50 W. Main St.	Rochester 14614
Saratoga County Occupational Education Program	Henning Rd.	Saratoga Spa 12866
Schenectady Cooperative Program	Linton High, The Plaza	Schenectady 12308
Newfield High School	Marshall Dr.	Selden 11784
Finger Lakes Occupational School	R.D. No. 2	Stanley 14561
Syracuse Central High School	717 S. Warren St.	Syracuse 13202
Syracuse School, MDT 1	917 Madison St.	Syracuse 13210
Utica BOCES Program, Area Occupational Center	14 Arnold Ave.	Utica 13501
Utica Manpower Development School	366 Columbia St.	Utica 13502
Utica School	405 Wetmore St.	Utica 13503
Grasslands School, Grasslands Hospital		Valhalla 10595
Mid-Westchester Program	14 Legion Dr.	Valhalla 10595
West Oneida and Madison County BOCES Program	John D. George, Sr., Elementary School, Main St.	Verona 13478
Jefferson Vocational-Technical School	Case Junior High School	Watertown 13601
Watertown School, MDTA	Case Junior High School	Watertown 13601
Rockland County BOCES School	61 Parrot Rd.	West Nyack 10994
East Meadow W. Tresper Clarke High School	Edgewood Dr.	Westbury 11590
White Plains School	228 Fisher Ave.	White Plains 10606
Wayne County BOCES Program, District No. 2	539 E. Ridge Rd.	Williamson 14589
Rensselaer County Area Occupational School	138 Main Ave.	Wynantskill 12198
St. Joseph's Hospital	127 S. Broadway	Yonkers 10701
Yonkers Board of Education Program, MDT	145 Palmer Rd.	Yonkers 10701
Northern Westchester BOCES Program	845 Fox Meadow Rd.	Yorktown Heights 10598
NORTH CAROLINA—43 Programs in 43 Schools		
Roanoke-Chowan Technical Institute	P. O. Box 548	Ahoskie 27910
Anson Technical Institute	P. O. Box 68	Ansonville 28007
Randolph Technical Institute	Drawer 1009	Asheboro 27203
Asheville-Buncombe Technical Institute	340 Victoria Rd.	Asheville 28801
Banner Elk-Caldwell Community College and Technical Institute		Banner Elk 28209
Technical Institute of Alamance	411 Camp Rd.	Burlington 27215

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
NORTH CAROLINA (Continued)		
Central Piedmont Community College	P. O. Box 4009	Charlotte 28204
Sampson Technical Institute	303B E. Rowan St.	Clinton 28328
Haywood County Technical Institute	P. O. Box 457	Clyde 28786
Durham Technical Institute	11307 E. Durham Station	Durham 27703
Watts Hospital	Broad St. and Club Blvd.	Durham 27701
College of the Albemarle		Elizabeth City 27909
Fayetteville Technical Institute	P. O. Box 5236	Fayetteville 28303
Womack Army Hospital (For Army personnel only)		Fort Bragg 28307
Gaston Memorial Hospital		Gastonia 28053
Wayne Community College	Drawer 1878	Goldsboro 27530
Pitt Technical Institute	P. O. Box 7007	Greenville 27834
Richmond Technical Institute	P. O. Box 1189	Hamlet 28345
Vance County Technical Institute	406 Chestnut St.	Henderson 27536
Catawba Valley Technical Institute		Hickory 28601
Coastal Carolina Community College	222 Georgetown Rd.	Jacksonville 28540
Guilford Technical Institute	P. O. Box 309	Jamestown 27282
James Sprunt Institute	P. O. Box 398	Kenansville 28349
Lenoir Caldwell Community College	P. O. Box 600	Lenoir 28645
Carteret Technical Institute	P. O. Box 550	Morehead City 28577
Craven County Technical Institute	P. O. Box 885	New Bern 28501
W. W. Holding Technical Institute	Route 10	Raleigh 27603
Nash Technical Institute	P. O. Box 1627	Rocky Mount 27801
Robeson Technical Institute	P. O. Box 98	St. Pauls 28384
Rowan Technical Institute	P. O. Box 1555	Salisbury 28144
Central Carolina Technical Institute	Route 2, P. O. Box 27	Sanford 27330
Cleveland County Technical Institute	137 S. Post Rd.	Shelby 28150
Johnston County Technical Institute	P. O. Box 29	Smithfield 27577
Southwestern Technical Institute	P. O. Box 95	Sylva 28779
Edgecombe Technical Institute	P. O. Box 277	Tarboro 27886
Montgomery Technical Institute	P. O. Drawer 579	Troy 27371
Beaufort County Technical Institute	P. O. Box 1069	Washington 27889
Halifax Technical Institute	P. O. Drawer 808	Weldon 27890
Southeastern Community College	Columbus County Hospital	Whiteville 28472
Wilkes Community College	P. O. Box 151, Drawer 120	Wilkesboro 28697
Cape Fear Technical Institute	411 N. Front St.	Wilmington 28401
Wilson Technical Institute	902 Herring Ave.	Wilson 27895
Forsyth Technical Institute	2100 Silas Creek Pkwy.	Winston-Salem 27103
NORTH DAKOTA—4 Programs in 4 Schools		
Lake Region Junior College		Devils Lake 58031
St. Joseph's Hospital	7th Street, W.	Dickinson 58601

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
NORTH DAKOTA (Continued)		
North Dakota State School of Science		Wahpeton 58075
University of North Dakota	Williston Center	Williston 58801
OHIO—38 Programs in 36 Schools		
Akron School	Leggett School, 619 Sumner St.	Akron 44311
Belmont County Joint Vocational School	4570 Harrison St.	Bellaire 43906
Bowling Green Area School	140 S. Grove St.	Bowling Green 43402
Canton City Schools	2600 6th St., S.W.	Canton 44710
Timken Mercy Hospital	2015 12th St., N.W.	Canton 44708
Cincinnati Public School	635 W. 7th St.	Cincinnati 45203
St. Francis Central School	1860 Queen City Ave.	Cincinnati 45214
Central School of Practical Nursing, Inc.	3300 Chester Ave.	Cleveland 44114
Jane Addams School	2373 E. 30th St.	Cleveland 44115
Columbus Public School	1485 W. 5th Ave.	Columbus 43212
Tri-County School	301½ Main St.	Coshocton 43812
Cuyahoga Falls High School	2300 4th St.	Cuyahoga Falls 44221
Dayton School	301 Lowes St.	Dayton 45409
Elyria School	6th and Middle Ave.	Elyria 44035
Lorain County Community College	1005 N. Abbe Rd.	Elyria 44035
Euclid School	551 E. 200th St.	Euclid 44119
Marymount School	12300 McCracken Rd.	Garfield Heights 44125
Hamilton Program	1008 Cereal Ave.	Hamilton 45013
Lakewood School	1456 Warren Rd.	Lakewood 44107
Lima School	Nurses' Home, Memorial Hospital	Lima 45804
St. Joseph Hospital	205 W. 20th St.	Lorain 44052
Mid-Ohio Program	205 W. Cook Rd.	Mansfield 44907
Marietta Area Technical School	Fort Square	Marietta 45750
Marion General Hospital	McKinley Park Dr.	Marion 43302
Southeastern Ohio School	Route 1	Nelsonville 45764
Parma School	6726 Ridge Rd.	Parma 44129
Portsmouth City Schools	1241 18th St.	Portsmouth 45662
Hannah E. Mullins School	1926 E. State St.	Salem 44460
Sandusky School	407 Decatur	Sandusky 44870
Wayne Program	P. O. Box 378	Smithville 44691
Springfield and Clark County Vocational School District	1901 Selma Rd.	Springfield 45505
Northwestern Ohio Practical Nursing Training Center	Chase and Chicago Sts.	Toledo 43611
Warren City Schools	Warren Western Reserve H.S., 200 Loveless, S.W.	Warren 44485
Willoughby-Eastlake School	37047 Ridge Rd.	Willoughby 44094
Choffin School	E. Wood and Walnut Sts.	Youngstown 44503
Muskingum Area Vocational School	400 Richards Rd.	Zanesville 43701

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
OKLAHOMA—18 Programs in 18 Schools		
Ada Vocational School	1300 E. 6th St.	Ada 74820
Ardmore City Schools, Southern Oklahoma Area Vocational-Technical Center	Highway 70E	Ardmore 73401
Tri-County Area Vocational-Technical School District 1 Center	P. O. Box 3325, East Side Station	Bartlesville 74003
Blackwell General Hospital	13th and W. Ferguson Sts.	Blackwell 74631
Clinton Vocational School	P. O. Box 218	Clinton 73601
Central Oklahoma Area Vocational-Technical School District 3	Drawer 1237	Drumright 74030
Canadian Valley Area Vocational-Technical School	P. O. Box 579	El Reno 73036
O. T. Autry Area Vocational-Technical School	1201 W. Willow	Enid 73701
Great Plains Area Vocational-Technical Center	P. O. Box 148	Lawton 73501
Kiamichi Area Vocational-Technical School, McAlester Vocational-Technical Center	P. O. Box 308, Voc-Tech Dr.	McAlester 74501
Northeastern Oklahoma A and M College	2nd and I Streets, N.E.	Miami 74354
Midwest City Public Schools	P. O. Box 10630, 213 Elm Dr.	Midwest City 73110
Indian Capital Area Vocational-Technical School	300 Rockefeller Dr.	Muskogee 74401
Norman Vocational School	P. O. Box 1308, 901B N. Porter	Norman 73069
Oklahoma City Vocational School	521 N.W. 6th	Oklahoma City 73102
Gordon Cooper Area Vocational-Technical School	P. O. Box 396	Shawnee 74801
Tulsa Vocational School	P. O. Box 45208	Tulsa 74114
Woodward Vocational School	P. O. Box 489	Woodward 73801
OREGON—13 Programs in 13 Schools		
Central Oregon Community College	230 E. 6th St.	Bend 97701
Southwestern Oregon Community College	P. O. Box 509	Coos Bay 97420
Lane Community College	4000 E. 30th St.	Eugene 97405
Portland Community College	Forest Grove Center	Forest Grove 97116
Mt. Hood Community College	26000 S.E. Stark St.	Gresham 97030
Southern Oregon School, Medford Public Schools	500 Monroe	Medford 97501
Treasure Valley Community College	650 College Blvd.	Ontario 97914
Clackamas Community College	19600 S. Molalla Ave.	Oregon City 97045
Blue Mountain Community College	P. O. Box 100	Pendleton 97801
Portland Adventist Hospital	932 S.E. 60th St.	Portland 97215
Portland Community College	12000 S.W. 49th St.	Portland 97219
Umpqua Community College	P. O. Box 699	Roseburg 97470
Chemeketa Community College	4389 Satter Dr., N.E.	Salem 97303

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
PENNSYLVANIA—57 Programs in 57 Schools		
Lehigh County Community College	507 N. 19th St.	Allentown 18104
Altoona Area Vocational-Technical School	Whittier School, 5th Ave. and 41st St.	Altoona 16602
Bethlehem Area Vocational-Technical School	Broughal Jr. High School, 125 W. Packer St.	Bethlehem 18015
Carlisle Hospital	220 Wilson St.	Carlisle 17013
Franklin County Area Vocational-Technical School	Route 6	Chambersburg 17201
Chester School District	147 W. 5th St.	Chester 19013
Central Chester County Vocational-Technical School	1635 E. Lincoln Hwy.	Coatesville 19320
Danville Area School District	R.D. No. 2	Danville 17821
Camillus Catholic School	14th and Lansdowne Ave	Darby 19023
Eastern Northampton County Area Vocational-Technical School	25th and William Penn Hwy.	Easton 18042
School District of the City of Erie	3325 Cherry St.	Erie 16508
Bucks County Technical School	Wistar Rd.	Fairless Hills 19030
Community College of Beaver County	609 3rd Ave.	Freedom 15042
Greensburg-Salem School District	4th Street School	Greensburg 15601
Hanover Borough School District	190 E. Walnut St.	Hanover 17331
Harrisburg Steelton Highspire Area Vocational-Technical School	3001 N. 2nd St.	Harrisburg 17110
Hazleton Area Vocational-Technical School	23rd and McKinley Sts.	Hazleton 18201
Fayette County Area Vocational-Technical School	Paull St., P. O. Box 326	Hopwood 15445
Indiana Area School District	Indiana Hospital Grounds	Indiana 15701
Carbon County Area Vocational-Technical School	13th St.	Jim Thorpe 18229
Greater Johnstown School District	c/o Osborne School Bldg., 51 Akers St.	Johnstown 15905
North Montco Area Vocational-Technical School	Sumneytown Pike	Lansdale 19446
Lebanon County Area Vocational-Technical School	833 Metro Dr.	Lebanon 17042
Juniata-Mifflin Counties Area Vocational-Technical School	Pitt St. and Bellevernon Ave.	Lewistown 17044
Crawford County Area Vocational-Technical School	860 Thurston Rd.	Meadville 16335
Lawrence County Area Vocational-Technical School	750 Wood St.	New Castle 16101
New Kensington-Arnold School District	954 5th Ave.	New Kensington 15068
Sacred Heart Hospital	1400 DeKalb St.	Norristown 19401
Venango County Area Vocational-Technical School	I.O.C.F. Bldg., Rms. 333-334	Oil City 16301
Upper Bucks County Area Vocational-Technical School	Star Route	Perkasie 18944
Lankenau Hospital	City Line Ave. and Lancaster Pike	Philadelphia 19151

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SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
PENNSYLVANIA (Continued)		
Mercy Catholic Medical Center, Misericordia Division	54th St. and Cedar Ave.	Philadelphia 19143
Philadelphia College of Osteopathic Medicine	4150 City Ave.	Philadelphia 19131
Presbyterian-University of Pennsylvania Medical Center	51 N. 39th St.	Philadelphia 19104
St. Mary Hospital	1755 Frankford Ave.	Philadelphia 19125
School District of Philadelphia	Richmond and Ontario Sts.	Philadelphia 19134
Thomas Jefferson University, Health Sciences	11th and Walnut Sts.	Philadelphia 19107
Valley Forge General Hospital (For Army personnel only)		Phoenixville 19460
Alvernia School, St. Francis General Hospital	45th St. off Penn Ave.	Pittsburgh 15201
Catherine McAuley School, Mercy Hospital	1401 Boulevard of the Allies	Pittsburgh 15219
North Hills Passavant Hospital	9100 Babcock Blvd.	Pittsburgh 15237
Pittsburgh Public Schools	Health Training Institute, 345 Hemlock St.	Pittsburgh 15212
Centre County Area Vocational-Technical School		Pleasant Gap 16823
Schuylkill County Area Vocational-Technical School	Pottsville Hospital	Pottsville 17901
Reading-Muhlenberg Vocational-Technical School	P. O. Box 3068	Reading 19604
Jefferson County-DuBois Area Vocational-Technical School	E. Main St., Drawer 100	Reynoldsville 15851
Mercedian School, Mercy Hospital	512 Stafford Ave.	Scranton 18505
Scranton School District	U.S. Grant School, 1246 Short Ave.	Scranton 18508
Sharon School District	54 S. Sharpsville Ave.	Sharon 16146
Somerset Area School District	Scull Bldg., 3rd Fl., 124 N. Center Ave.	Somerset 15501
Torrance State Hospital (For hospital employees only)		Torrance 15779
Greene County Area Vocational-Technical School	R.D. No. 2, P. O. Box 141D	Waynesburg 15370
Wilkes-Barre City Schools	669 N. Washington St.	Wilkes-Barre 18705
Williamsport Area Community College	Campbell and Edwin Sts.	Williamsport 17701
Eastern Montgomery County Area Vocational-Technical School	175 Terwood Rd.	Willow Grove 19090
Lancaster County Area Vocational-Technical School	1730 Hans-Herr Dr., P. O. Box 322	Willow Street 17584
York County Area Vocational-Technical School	2179 S. Queen St.	York 17402
PUERTO RICO—16 Programs in 16 Schools		
Jose de Diego Vocational High School		Aguadilla 00603
Aibonito High School		Aibonito 00609
Antonio Luchetti Vocational High School		Arecibo 00612

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SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
PUERTO RICO (Continued)		
Tomas C. Ongay Vocational High School	P. O. Box 254	Bayamon 00619
Marta del Rio School	P. O. Box 263, 40 Padial St.	Caguas 00625
Republica de Costa Rica Vocational High School	Gurabo Rd.	Caguas 00625
Santiago Veve High School		Fajardo 00648
Rafael Lopez Landron High School		Guayama 00654
Ryder Memorial Hospital	Humacao Rd. to Las Piedras	Humacao 00661
Dr. Pedro Perea Vocational High School		Mayaguez 00708
Bernardino Cordero Vocational High School		Ponce 00618
Centro Especial Vocacional Hostos	Constitucion and Campeche Sts.	Puerto Nuevo 00919
Escuela Vocacional Metropolitana Miguel Such	P. O. Box 21837, U.P.R. Barbosa Ave.	Rio Piedras 00921
Hospital de la Concepcion		San German 00753
Roman Baldorioty de Castro Vocational High School	151 Tanca St.	San Juan 00901
Luis Munos Rivera High School	Calle Dr. Cueto	Utuado 00761
RHODE ISLAND—2 Programs in 2 Schools		
Our Lady of Fatima Hospital	200 High Service Ave.	North Providence 02904
Rhode Island Vocational-Technical School, Providence Division	Corliss Park	Providence 02909
Rhode Island Vocational-Technical School, Warwick Division	Long St.	Warwick 02879
SOUTH CAROLINA—33 Programs in 30 Schools		
Aiken County School		Aiken 29801
Anderson School		Anderson 29621
Marlboro Vocational Center	Fayetteville Avenue Extension	Bennettsville 29512
Kershaw County Hospital		Camden 29020
Charleston County Program	150 Ashley Ave.	Charleston 29401
Medical University of South Carolina, College of Allied Health	80 Barre St.	Charleston 29401
Roper Hospital	316 Calhoun St.	Charleston 29401
Chester Area Vocational Center	P. O. Box 370	Chester 29706
Clinton Program	Drawer 647	Clinton 29325
Baptist Hospital		Columbia 29201
Columbia Schools	2020 Hampton St., Columbia Hospital Div.	Columbia 29204
Wilson Vocational Center	Route 3, Highway 1 North, P. O. Box 271	Columbia 29206
Conway School		Conway 29526
Pickens County Vocational Center	Route 6, P. O. Box 333	Easley 29640
McClenaghan High School, Florence Program		Florence 29501

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
SOUTH CAROLINA (Continued)		
Saunders Memorial Hospital	513 S. Dargan St.	Florence 29501
Cherokee School		Gaffney 29340
Georgetown County School		Georgetown 29440
Greenville Technical Health Education Center	205 Anderson St.	Greenville 29601
Greenwood School, District 50	P. O. Box 248	Greenwood 29646
Hartsville Area School		Hartsville 29550
Lancaster School		Lancaster 29720
Marion-Mullins Program		Marion 29571
R. D. Anderson Vocational Center	P. O. Box 248	Moore 29369
Orangeburg District 5		Orangeburg 29115
Oconee Vocational Education Center	Route 4	Seneca 29678
Spartanburg County School	Spartanburg General Hospital	Spartanburg 29303
Sumter School, District 17	16 W. Calhoun St.	Sumter 29150
Walterboro School	P. O. Box 413	Walterboro 29488
Fairfield County Vocational School		Winnsboro 29180
SOUTH DAKOTA—5 Programs in 5 Schools		
Mitchell Area Vocational-Technical School	1100 E. 5th Ave.	Mitchell 57301
Pierre School	803 E. Dakota	Pierre 57501
Black Hills Area Vocational-Technical School	1200 44th St.	Rapid City 57701
Sioux Falls School	Summit Ave. and 18th St.	Sioux Falls 57104
Lake Area Vocational-Technical School		Watertown 57201
TENNESSEE—11 Programs in 10 Schools		
Chattanooga Public Schools	400 Chestnut St.	Chattanooga 37402
Takoma Hospital		Greeneville 37743
Johnson City Vocational School	Memorial Hospital, 222-224 E. Myrtle Ave.	Johnson City 37601
Kingsport City Schools	Holston Valley Community Hospital	Kingsport 37662
Knoxville City Schools	1807 E. Vine Ave.	Knoxville 37915
Memphis City Schools	2597 Avery Ave.	Memphis 38112
Metropolitan Nashville Schools	205 Hume Fogg Bldg., 700 Broadway	Nashville 37203
Riverside Sanitarium and Hospital	800 Youngs Lane	Nashville 37207
Tennessee State Board of Vocational Education	207 Cordell Hull Bldg.	Nashville 37219
Jessie Holman Jones Hospital	P. O. Box 669	Springfield 37172
TEXAS—145 Programs in 142 Schools		
Mary Meek School	Hendrick Memorial Hospital	Abilene 79601
Alpine Public Schools	P. O. Box 180	Alpine 79830

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
TEXAS (Continued)		
Amarillo College	P. O. Box 447	Amarillo 79105
Permian General Hospital	P. O. Box 2108	Andrews 79714
Jones County School	Anson General Hospital	Anson 79501
Arlington Memorial Hospital	800 W. Randol Mill Rd.	Arlington 76010
Henderson County Junior College		Athens 75751
Brackenridge Hospital	15th and East Ave.	Austin 78701
Central Texas College in Austin	3301 Kim Lane	Austin 78705
Ballinger Memorial Hospital	P. O. Box 69	Ballinger 76821
Lee College	P. O. Box 818	Baytown 77521
Lamar School	Lamar State College of Tech., P. O. Box 430	Beaumont 77704
Bee County College	Route 1	Beeville 78102
Howard County Junior College	Birdwell Lane	Big Spring 79721
North Plains Hospital	200 S. McGee	Borger 79007
Heart of Texas Hospital	1310 S. High St.	Brady 76825
Blinn College		Brenham 77833
Brownfield General Hospital		Brownfield 79316
Texas Southmost College	84 Fort Brown	Brownsville 78520
Brownwood School	Slayden at 10th	Brownwood 78701
Bryan School	Travis Elementary School, P. O. Box 953	Bryan 77801
Shepperd Memorial Hospital		Burnet 78611
St. Edward's Hospital	908 N. Crockett	Cameron 76520
Panola County School	Panola College	Carthage 75633
Cisco Junior College, Cisco Branch		Cisco 76437
Red River County Hospital	201 E. Baker	Clarksville 75426
Johnson County Memorial Hospital	P. O. Box 118	Cleburne 76031
Cleveland School	P. O. Box 307	Cleveland 77327
Goodall-Witcher Hospital Foundation		Clifton 76634
Overall-Morris Memorial Hospital		Coleman 76834
Conroe School	Drawer AD	Conroe 77301
Del Mar Technical Institute	Del Mar College, 4101 Old Brownsville Rd.	Corpus Christi 78404
Navarro Junior College		Corsicana 75110
Greenbelt School	Crowell Public Schools	Crowell 79227
Dallas Osteopathic Hospital	5003 Ross Ave.	Dallas 75206
Dallas Vocational Nursing Program	2222 Ross Ave.	Dallas 75201
Doctors Hospital Foundation	9323 Garland Rd.	Dallas 75218
El Centro College, Dallas County Junior College District, Paramedics Div.	Main and Lamar	Dallas 75202
John Buist Chester Hospital	3330 S. Lancaster	Dallas 75216
Del Rio Independent School District	300 W. Barton	Del Rio 78840
Grayson County Junior College	P. O. Drawer 979	Denison 75020

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
TEXAS (Continued)		
Denton School	530 Wye St.	Denton 76204
Winter Garden School	P. O. Box 29	Dilley 78017
Plains Memorial Hospital		Dimmitt 79027
Dublin Hospital	205 N. Patrick	Dublin 76446
Memorial Hospital	224 E. 2nd St.	Dumas 79029
Maverick County Hospital District	P. O. Drawer 1470	Eagle Pass 77434
El Paso School	El Paso Tech., 2231 Arizona Ave.	El Paso 79930
William Beaumont General Hospital, Clinical Specialist Course (For Army personnel only)		El Paso 79920
Brooke General Hospital, Clinical Specialist Course (For Army personnel only)	Brooke Army Medical Center	Fort Sam Houston 78234
All Saints Episcopal Hospital	1400 E. Enderly Pl.	Fort Worth 76101
Fort Worth Technical Institute	1510 St. Louis St.	Fort Worth 76104
Harris Hospital	1423 Pruitt St.	Fort Worth 76104
St. Joseph's Hospital	1401 S. Main St.	Fort Worth 76104
Hill Country Memorial Hospital	P. O. Box 835	Fredericksburg 78624
Gainesville Memorial Hospital		Gainesville 76240
Galveston Community College	Ashbel Smith Bldg., Rm. 210	Galveston 77550
Mauritz Memorial Jackson County Hospital		Ganado 77962
Coryell Memorial Hospital	211 N. Lutterloh St.	Gatesville 76528
Georgetown Medical and Surgical Clinic	605 E. 12th	Georgetown 78626
Cisco Junior College, Graham Branch	P. O. Box 837	Graham 76046
Greenville School	3611 Texas	Greenville 75401
Dr. John V. London School	P. O. Box 250	Groom 79039
Hi Plains Hospital		Hale Center 79041
Renger Memorial Hospital	414 S. Main St.	Hallettsville 77964
Hamilton Hospital	400 N. Brown	Hamilton 76531
Valley Baptist Hospital		Harlingen 78550
Henderson Memorial Hospital	622 N. High St.	Henderson 75652
Grant and Buie Medical Center		Hillsboro 76445
Bellaire General Hospital	5314 Dashwood	Houston 77036
Hermann, Texas Medical Center	6411 Fannin	Houston 77025
Houston Public Schools	1205 Holman Ave.	Houston 77004
St. Luke's/Texas Children's Hospital	P. O. Box 20269	Houston 77025
Huntsville Memorial Hospital	P. O. Box 432	Huntsville 77340
Irving School	901 O'Connor Rd.	Irving 75060
Jacksonville School	501 S. Ragsdale St.	Jacksonville 75766
Jasper Memorial Hospital	1275 S. 2nd St.	Jasper 75951
Mercy Hospital	P. O. Box 422	Jourdanton 78026
Kaufman Hospital	405 N. Washington	Kaufman 75142

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
TEXAS (Continued)		
Kermit School	Memorial Hospital	Kermit 79745
Sid Peterson Memorial Hospital		Kerrville 78028
Medical Arts Hospital		Lamesa 79331
Mercy Hospital	1515 Logan St.	Laredo 78041
South Plains College		Levelland 79336
Llano Memorial Hospital		Llano 78643
Longview Public School	P. O. Box 151	Longview 75601
Lubbock School	610 Q Avenue	Lubbock 79401
Memorial Hospital	P. O. Box 1447	Lufkin 75902
Marlin School	322 Coleman	Marlin 76661
Marshall School	Memorial Hospital	Marshall 75670
McAllen Independent School District	110 S. 10th St.	McAllen 78501
Collin Memorial Hospital	1800 N. Graves St.	McKinney 75069
Hall County Hospital		Memphis 79245
General Mexia Hospital	600 S. Bonham	Mexia 76667
Midland College	1801 W. Wall St.	Midland 79701
Mineola General Hospital	P. O. Box 248	Mineola 75773
Mineral Wells Independent School District	P. O. Box 40	Mineral Wells 76067
Memorial Hospital	1204 Mound St.	Nacogdoches 75961
New Braunfels School	P. O. Box 1061	New Braunfels 78130
Odessa College	P. O. Box 3752	Odessa 79760
George B. Hamilton School	P. O. Box 158	Olney 76374
Orange Memorial Hospital		Orange 77630
Palestine School	Anderson County Memorial Hospital, 900 S. Sycamore	Palestine 75801
Highland General Hospital	P. O. Box 2217	Pampa 79066
Pasadena School	302 S. Shaver	Pasadena 77502
Plainview School	1900 N. Austin	Plainview 79072
Park Place Hospital	3050 39th St.	Port Arthur 77642
Champ Traylor Memorial Hospital		Port Lavaca 77979
Polly Ryon Memorial Hospital		Richmond 77469
San Angelo School	100 N. Magdalen	San Angelo 76901
St. Philip's College	2111 Nevada St.	San Antonio 78203
San Antonio Vocational-Technical School	237 W. Travis	San Antonio 78205
Hays Memorial Hospital	P. O. Box 767	San Marcos 78666
San Saba Memorial Hospital		San Saba 76877
Seymour Hospital Authority	P. O. Box 351	Seymour 76380
U.S.A.F. Medical Service School (For Air Force personnel only)		Sheppard Air Force Base 76311
Hansford Hospital		Spearman 79081
Stamford Memorial Hospital	519 E. Gould St.	Stamford 79553
Stephenville Hospital	Tarleton and Belnap Sts.	Stephenville 76401

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
TEXAS (Continued)		
Sulphur Springs School	611 N. Davis St.	Sulphur Springs 75482
Sweetwater School	Simmons Memorial Hospital	Sweetwater 79556
Johns Community Hospital	813 N. Main	Taylor 76574
King's Daughters' Hospital		Temple 76501
Terrell School	206 W. High, P. O. Box 333	Terrell 75160
Texarkana College		Texarkana 75501
Galveston County Memorial Hospital	P. O. Box 127	Texas City 77568
Trinity Hospital	P. O. Box 471	Trinity 75862
Medical Center Hospital	P. O. Box 3277	Tyler 75701
Mother Frances Hospital	825 E. Houston	Tyler 75701
Southwest Texas Junior College	P. O. Box 70	Uvalde 78801
Wilbarger School	920 Hillcrest Dr.	Vernon 76384
De Tar Hospital	506 San Antonio	Victoria 75142
Victoria College	2200 E. Red River St.	Victoria 77901
Hillcrest Baptist Memorial Hospital	P. O. Box 5100	Waco 76708
W. C. Tenery Community Hospital	1405 W. Jefferson	Waxahachie 75165
Campbell Memorial Hospital	104 E. Throckmorton St.	Weatherford 76086
Knapp-Methodist Memorial Hospital	1300 E. 6th St.	Weslaco 78596
Wharton County Junior College		Wharton 77488
Whitney School	Whitney Hospital	Whitney 76692
Bethania Hospital		Wichita Falls 76300
Wichita Falls I.S.D. Program	1609 Blonde St.	Wichita Falls 76301
Tyler County Hospital		Woodville 75979
Huth Memorial Hospital	303 Hubbard St.	Yoakum 77995
UTAH—4 Programs in 4 Schools		
Weber State College	St. Benedict's Hospital, 3000 Polk Ave.	Ogden 84401
College of Eastern Utah	451 E. 4th North	Price 84501
Utah Technical College at Provo	1395 N. 150th East, P. O. Box 1009	Provo 84601
Utah Technical College at Salt Lake	431 S. 6th East	Salt Lake City 84102
VERMONT—3 Programs in 3 Schools		
Henry W. Putnam Memorial Hospital		Bennington 05201
Thompson School	30 Maple St.	Brattleboro 05301
Fanny Allen Memorial School	101 College Pkwy.	Winooski 05401
VIRGIN ISLANDS—3 Programs in 2 Schools		
St. Croix Central High School	Kingshill Post Office	St. Croix 00850
St. Thomas School	Charlotte Amalie High School	St. Thomas 00801

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
VIRGINIA—54 Programs in 49 Schools		
Washington School	Washington County Technical School	Abingdon 24210
Alexandria City Schools	George Washington H.S., 1005 Mt. Vernon Dr.	Alexandria 22301
Bedford County Schools	Bedford County Memorial Hospital	Bedford 24523
Lee County Vocational School		Ben Hur 24218
Albemarle High School	Martha Jefferson Hospital	Charlottesville 22901
University of Virginia Hospital		Charlottesville 22903
Chesapeake School	1617 Cedar Rd.	Chesapeake 23320
Piedmont Vocational School	P. O. Box 855	Culpeper 22701
Danville Community College	Bonner Ave.	Danville 24541
New River Community College		Dublin 24084
Greensville County Schools	Greensville Memorial Hospital	Emporia 23847
Fairfax County Schools	9525 Main St.	Fairfax 22030
Southside School		Farmville 23901
Valley Vocational-Technical School		Fisherville 22939
De Witt Army Hospital, Clinical Specialist Course (For Army personnel only)		Fort Belvoir 22060
Southampton Memorial Hospital		Franklin 23851
Fredericksburg Area School	Martha Washington Hospital	Fredericksburg 22401
Carroll-Grayson School		Galax 24333
Buchanan County School		Grundy 24614
Vocational-Technical Center	Dixie Hospital, 3120 Victoria Blvd.	Hampton 23361
Independence High School		Independence 24348
Rockbridge County Schools	Stonewall Jackson Hospital	Lexington 24450
Lynchburg General-Marshall Lodge Hospitals		Lynchburg 24504
Prince William County Schools	P. O. Box 389	Manassas 22110
Smyth County School		Marion 24354
Martinsville-Henry County Schools	Memorial Hospital of Martinsville and Henry County	Martinsville 24112
Triplett Business and Technical Institute	Shenandoah County Memorial Hospital	Mount Jackson 22842
Northampton-Accomack County Schools	Northampton-Accomack Memorial Hospital	Nassawadox 23413
New Careers School	3001 Jefferson Ave.	Newport News 23607
Newport News Public Schools	Riverside Hospital	Newport News 23606
Norfolk City Schools	Leigh Memorial Hospital, Mowbray Arch	Norfolk 23507
	Norfolk General Hospital, 620 Colley Ave.	Norfolk 23507
Norfolk Technical-Vocational Center	1330 N. Military Hwy.	Norfolk 23502
S.T.O.P. New Careers School	712 Duke St.	Norfolk 23510
Giles County Vocational School		Pearisburg 24134

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
VIRGINIA (Continued)		
Petersburg City Schools	Petersburg General Hospital, 801 S. Adams St.	Petersburg 23804
Portsmouth School	Craddock High School	Portsmouth 23701
Radford City School	3rd Ave. and Downey St.	Radford 24141
Tazewell County Schools	Clinch Valley Clinic Hospital	Richlands 24641
Henrico Public School	St. Mary's Hospital	Richmond 23226
Richmond City Schools Technical Center	2020 Westwood Ave.	Richmond 23230
Lucy Addison High School	Burrell Memorial Hospital	Roanoke 24017
Roanoke City Schools	Roanoke Memorial Hospital	Roanoke 24014
Roanoke County Educational Center	Community Hospital of Roanoke Valley	Salem 24153
Halifax County High School	Halifax Community Hospital	South Boston 24592
Brunswick-Lunenburg-Mecklenburg County Schools	Community Memorial Hospital	South Hill 23970
Suffolk Public Schools	Louise Obici Memorial Hospital	Suffolk 23434
Waynesboro School		Waynesboro 22980
Clarke-Frederick-Warren County-Winchester City School	Winchester Memorial Hospital	Winchester 22601
Wise County Technical School		Wise 24290
WASHINGTON—23 Programs in 23 Schools		
Grays Harbor College	College Heights	Aberdeen 98520
Green River Community College	12401 S.E. 320th	Auburn 98002
Bellingham Technical School	3028 Lindbergh Ave.	Bellingham 98225
Olympic College	1519 Chester Ave.	Bremerton 98310
Centralia College	P. O. Box 639	Centralia 98531
Clarkston Public Schools	P. O. Box 89	Clarkston 99403
Everett Community College	801 Wetmore Ave.	Everett 98201
Grandview School District	P. O. Box 10	Grandview 98930
Clover Park Vocational-Technical School	4500 Steilacoom Blvd., S.W.	Lakewood Center 98499
Lower Columbia College	1600 Maple	Longview 98632
Big Bend Community College	P. O. Box 1547	Moses Lake 98837
Skagit Valley College	2405 College Way	Mount Vernon 98273
St. Peter Hospital	420 S. Sherman	Olympia 98501
Columbia Basin College	2600 N. Chase	Pasco 99301
Peninsula College	Lauridsen and Ennis	Port Angeles 98362
Seattle Community College	1718 Broadway	Seattle 98122
Spokane Community College	E. 3403 Mission Ave.	Spokane 99202
L. H. Bates Vocational-Technical Institute of Tacoma	1101 S. Yakima	Tacoma 98405
Madigan General Hospital, Clinical Specialist Course (For Army personnel only)	P. O. Box 19	Tacoma 98431
Clark College	1925 Fort Vancouver Way	Vancouver 98663

SCHOOL OF NURSING — L.P.N./L.V.N.	STREET ADDRESS	CITY or TOWN and ZIP CODE
WASHINGTON (Continued)		
Walla Walla Community College	362 S. Park St.	Walla Walla 99362
Wenatchee Valley College	1350 5th St.	Wenatchee 98801
Yakima Valley College	16th and Nob Hill Blvd.	Yakima 98901
WEST VIRGINIA—16 Programs in 16 Schools		
Raleigh County Vocational-Technical Center	229 2nd St.	Beckley 25801
Kanawha County Vocational School	422 Dickinson St.	Charleston 25301
Clarksburg School	Harrison County Schools	Clarksburg 26301
Davis Memorial Hospital		Elkins 26241
Fayette County Program	Fayette County Board of Education	Fayetteville 25840
B. M. Spurr School	800 Wheeling Ave.	Glen Dale 26038
Summers County Vocational School	P. O. Box 430	Hinton 25951
Huntington East High Vocational-Technical School	2800-2850 5th Ave.	Huntington 25702
Logan County Vocational School	Logan County Board of Education	Logan 25601
Berkeley County Vocational School	515 W. Martin St.	Martinsburg 25401
Monongalia County Vocational Program	263 Prairie Ave.	Morgantown 26505
Wood County Vocational School	2101 Dudley Ave.	Parkersburg 26102
Mercer County Vocational-Technical Center	Route 5, P. O. Box 3A	Princeton 24740
Central School	C Street	South Charleston 25302
McDowell County Technical-Vocational School	Drawer V	Welch 24801
Mingo County Vocational School	P. O. Box 816	Williamson 25661
WISCONSIN—12 Programs in 12 Schools		
Fond du Lac Technical Institute	805 E. Johnson St.	Fond du Lac 54935
Northeast Wisconsin Technical Institute	200 S. Broadway	Green Bay 54303
Kenosha Technical Institute	3520 30th Ave.	Kenosha 53140
Western Wisconsin Technical Institute	6th St.—Vine to Pine	La Crosse 54601
Madison Area Technical College	211 N. Carroll St.	Madison 53703
Milwaukee Area Technical College	1015 N. 6th St.	Milwaukee 53203
Sacred Heart School	1442 S. 92nd St.	Milwaukee 53214
Fox Valley Technical Institute	410 S. Commercial St.	Neenah 54956
Lakeshore Technical Institute	843 Jefferson Ave.	Sheboygan 53081
Mid-State Vocational-Technical School, District 14	933 Michigan Ave.	Stevens Point 54481
Superior Technical Institute	805 Belknap Ave.	Superior 54880
Waukesha County Technical Institute	222 Maple St.	Waukesha 53186
WYOMING—2 Programs in 2 Schools		
Casper College		Casper 82601
Laramie Vocational School	Junior High School Bldg.	Laramie 82070

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VT 014 255
THOMPSON, JOHN F.
PILOT PROGRAMS IN VOCATIONAL AGRICULTURE.
REPORT NO. 4, AN ANALYSIS OF STUDENT
CHARACTERISTICS--THE THIRD YEAR.

WISCONSIN UNIV., MADISON. DEPT. OF
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PLANNING; OCCUPATIONAL ASPIRATION; CAREER
CHOICE; VOCATIONAL INTERESTS; JOB SKILLS;
VOCATIONAL APTITUDE
IDENTIFIERS - WISCONSIN

ABSTRACT - DATA ON STUDENT CHARACTERISTICS,
STUDENT ATTITUDES, CAREER PLANS, OCCUPATIONAL
ASPIRATIONS AND EXPECTATIONS, VOCATIONAL
MATURITY, INTERESTS, SKILLS, AND APTITUDES
WERE OBTAINED FOR 312 STUDENTS ENROLLED IN 14
WISCONSIN VOCATIONAL AGRICULTURE PILOT
PROGRAMS. A FORMATIVE EVALUATION YIELDED
THESE MAJOR CONCLUSIONS: (1) THE PILOT
PROGRAMS HAVE GROWN IN NUMBER AND SIZE DURING
THE FIRST 3 YEARS OF OPERATION, (2) NON-FARM
STUDENTS COMPRISE 72 PERCENT OF THE TOTAL
ENROLLMENT, (3) FARM STUDENTS MAKE HIGHER
GRADES IN THE PILOT PROGRAM COURSES THAN DO
NON-FARM STUDENTS, (4) OCCUPATIONAL
EXPERIENCES HAVE SHIFTED FROM BEING QUITE
DIVERSE TO BEING VERY INTENSIVE FOR ONE IN
FOUR STUDENTS OR NEARLY ZERO FOR THE OTHERS,
(5) RESIDENCE HAD A NOTICEABLE EFFECT ON
CAREER PLANS, WITH FARM STUDENTS TENDING TO
SELECT PRODUCTION AGRICULTURE OR NON-
AGRICULTURE JOBS WHILE NON-FARM STUDENTS
PREFER CONSERVATION AND RESOURCE JOBS IN
AGRICULTURE AND NON-AGRICULTURE JOBS, (6)
STUDENT CAREER ASPIRATIONS WERE HIGHER THAN
THEIR EXPECTATIONS, AND (7) OVER THE 3-YEAR
PERIOD, THE STUDENTS ATTRACTED TO THE PILOT
PROGRAMS HAVE SHOWN THE SAME GENERAL LEVEL OF
VOCATIONAL MATURITY. RELATED DOCUMENTS ARE
AVAILABLE AS VT 014 256 IN THIS ISSUE AND ED
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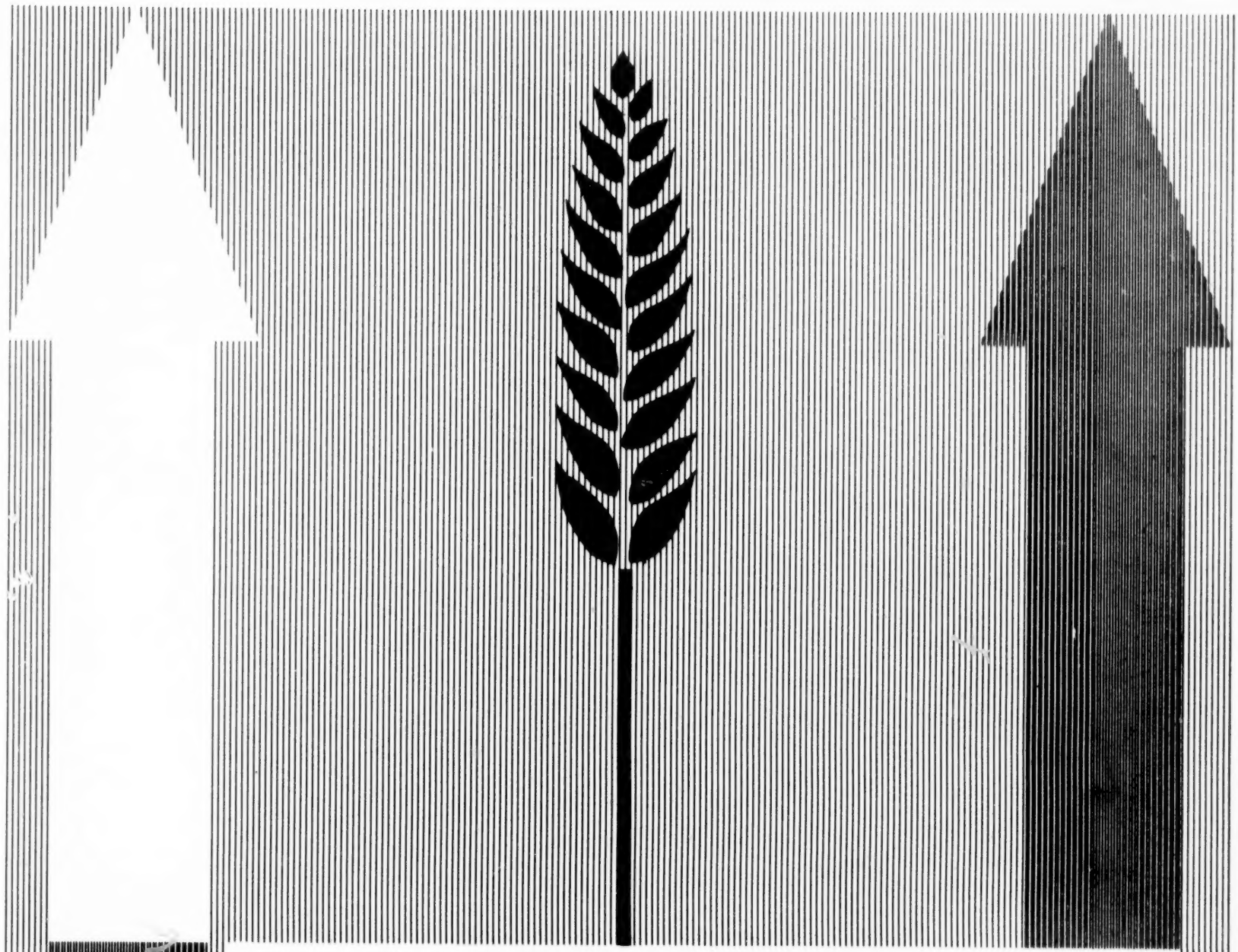

PILOT PROGRAMS IN VOCATIONAL AGRICULTURE

By John F. Thompson

REPORT NO. 4

AN ANALYSIS OF STUDENT CHARACTERISTICS--

THE THIRD YEAR

ED014255

Department of Agricultural
and Extension Education
University of Wisconsin
Madison, Wisconsin 53706

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* * * * *

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INTRODUCTION TO THE WISCONSIN PILOT PROGRAMS

The Committee For Pilot Vocational Agriculture Programs in Wisconsin was appointed in October, 1967, by the Wisconsin Department of Public Instruction. The committee was charged with the responsibility of drafting guidelines, initiating proposals from Wisconsin high schools, and selecting programs which test a new idea in a realistic setting. Local schools were encouraged to be innovative and be imaginative in their proposals. Though given less than six weeks to formulate ideas, 24 proposals were received by the committee. Nine programs were developed the first year. These were Barron, Cameron, Janesville, Jefferson, Oshkosh, Plymouth, Rosholt, Verona, and Waterloo. A description of the nine programs, their objectives, curriculum outlines, is contained in Research Report No. 1. Each school was quite different. Some involved classes at the senior grade level, some involved a curriculum revision covering three or four years and one is a cooperative program between three schools. The committee did not possess the resources to provide any summative evaluation. The best it could hope to do was to gather data along the lines of student characteristics, student plans, and employment histories. Such data would be helpful to each school as well as being helpful to other teachers in the state. The committee continues to encourage each local teacher to evaluate the new program and make judgments about how well it is achieving the stated goals and how well the new program compares to the former program.

Five additional pilot programs were developed during the 1969-70 school year. These were located at the schools of Bloomer, Independence (involving the schools of Independence, Taylor, Whitehall, Arcadia, and Blair), Green Bay East, Sauk Prairie, and Southern Door. A description of each of these programs is found in the appendix of report No. 3. One school, Antigo, was added in 1970-71.

In this report, an analysis of the student characteristics during the first three years is presented. It is the final such report to include the original schools. Additional reports soon to be issued include the student characteristics for the disadvantaged programs, a follow-up of graduates, and special reports on each school after three years on the program.

EVALUATION--THEORETICAL CONSTRUCTS

Evaluation may be formal, informal, sensitive, abstract, adequate, good, etc. It may be any or all of these at the same time. But regardless, when blended into the background system of purposes and values, it controls the next step. This is a simple fact of life; all our decisions concerning what we should do next are controlled by our feedback system. Evaluation is value-ing. To report actual outcomes provides only a description of what happened. Evaluation requires making a judgment about the outcomes.

Program evaluation may be "formative" or "summative." Formative evaluation aids in the process of developing or improving a program. Summative evaluation estimates an operational program's overall effectiveness. A researcher employing formative evaluation attempts to answer questions such as: How well is the program accomplishing what it set out to do? How can it be improved? Summative evaluation attempts to provide a basis for choosing among programs. It answers questions such as: Which of the two programs would be best in my situation? Is this program different from the one I currently have? What would I gain if I implemented this new program?

The Pilot Programs in Vocational Agriculture are evaluated using a formative framework. It is known that each of the fourteen pilot programs began with a different written set of expected outcomes. Also it is anticipated that many changes will be made in the content of the programs as they are developed, evaluated, re-taught, and re-evaluated. The ultimate evaluation will be made by each instructor of the respective program. The researcher and author of these research reports attempts to provide answers to questions like: Who is attracted to the pilot programs? How do the clients like them? Was it, in the students' opinion, helpful to them? Would they recommend it to their fellow students? What do the seniors plan to do as they graduate? What were the seniors doing six months after high school graduation?

FACTUAL SUMMARY

1. The pilot programs have grown in number and size during the first three years of operation.

2. Two out of three junior-seniors are seniors.

3. Girls continue to be attracted to the program. Girls in the total enrollment has increased from 4 to 11 percent.

4. Non-farm students comprise 72 percent of the total enrollment. This figure tended to increase slightly over the three years.

5. The majority of the students have only recently become interested in vocational agriculture. Fifty-six percent of the students have had one or less years of vocational agriculture with 50 percent taking vocational agriculture for the first time.

6. Farm students make higher school grades in the pilot program courses than do non-farm students. We don't know if this is a natural advantage that farm students have due to the content or if the non-farm students attracted to the pilot program are average or below in scholastic ability.

7. The typical student reports average grades in academic courses and average grades in vocational agriculture. The above average student in vocational agriculture is as likely to be average as above average in academic courses.

8. Occupational experience has shifted from being quite diverse to being (1) very intensive for one in four students or (2) nearly zero for the others.

9. Non-farm students are reporting much more extensive occupational experience in agriculture than they did three years ago. This is likely due to the exposure that the students are getting during grades 9, 10, and 11 in some of the programs.

10. One in three students participate in both school and community organizations while one in two students confine their participation to school organizations.

11. Farm youth participate in extra-curricular activities more intensively than do non-farm students.

12. Six in ten students enrolled in the pilot programs for exploratory reasons. This 6-4 exploratory/definite ratio has held constant for all three years of the program.

13. There is a slight tendency for those enrollees who had occupational experience prior to the pilot program to enroll for definite career reasons. This tendency is less now than it was three years ago.

14. Residence did not effect the reason for enrolling.

15. Once enrolled, two in three students express exploratory reasons as their personal objectives for the pilot program. This has been true all three years. More farm students are now electing the course for exploratory reasons than they were the first year of operation. Also, the number of non-farm students electing the course to help them qualify for an area of work already chosen has increased.

16. There is some tendency for those who have had occupation experience prior to the pilot program to have personal objectives for the course that "help them qualify for an area of work already chosen." This tendency has been there all three years. However, the majority of both the experienced group and the non-experienced group enroll in the pilot programs for exploratory reasons.

17. Students at the age and grade level studied were aware of the need to decide on an occupation. Their desire to enroll in the pilot program to explore an occupational area was the result of that awareness, and thus the pilot programs are serving student needs.

18. Throughout the three year period approximately 50 percent of the students have indicated a preference for agricultural jobs.

19. Residence had a noticeable effect on career plans. Farm students tend to select production agriculture or non-agricultural jobs. Non-farm students prefer conservation and resource jobs in agriculture and non-agricultural occupations.

20. The longer a student has studied vocational agriculture the more likely he is to select an agricultural career. One in three students taking agriculture for the first time indicated a career that could be classified as agricultural. However, two in three of those students who had studied agriculture for three years, indicated a preference for agricultural careers.

21. When asked to consider a list of three occupations that they would consider entering, only 24 percent of the students identified a consistent set. Consistency was defined in terms of the jobs requiring the same general educational level, the same type of work, or the same pay level.

22. Student career aspirations were higher than their expectations. One student in two aspired to an agricultural job but one in three expected to attain them. Approximately two-thirds of the students expect to attain the same level of socio-economic job that they aspire to. The aspiration and expectation level of farm students is closer than is the non-farm group.

23. Half of the juniors and seniors in this study had limited their career choice to a cluster of occupations.

24. Over the three year period the students attracted to the pilot programs have shown the same general level of vocational maturity. Farm students showed higher vocational maturity scores than did their non-farm counterparts. The students, then, that are attracted to these special junior-senior year courses represent a wide spectrum of the phases and stages of the vocational development process.

STUDENT CHARACTERISTICS

Grade

An analysis of student characteristics reveals significant facts, and it is necessary to keep these facts in mind while reading this report, concerning the first three years of the pilot programs. Over the three years there has been a steady increase in the number of students enrolled in the pilot program. Table 1 shows that there were 312 eleventh and twelfth grade students enrolled in the twelve regular pilot programs their third year of operation. (The programs serving disadvantaged students will be described in a separate report.)

The growth of the programs has occurred in two ways. Additional programs at Bloomer, Green Bay East, Independence, Southern Door and Antigo during the second and third years. These programs tend to be larger than were the original nine schools in their first year of operation. The other area of growth is within each of the original programs. These programs now average 27 students while their average during the first year of operation was 22 students.

These data also show three large programs located in urban settings comprise the majority of the enrollment. The program at Janesville, Oshkosh and Green Bay East account for 59 percent of the students. Data have been carefully analyzed and size of school does not influence the data reported in this study. Other variables such as residence and occupational experience explain the differences among students.

The information in Table 1 indicates that 63 percent of the students were seniors and 37 percent juniors for the current year. The trend for the three years is for the seniors to make up about two-thirds of the junior-senior total.

Sex

Table 2 indicates that there has been a steady increase in female enrollees over the three year period. Thirty-five females were members in the pilot program this year making up 11 percent of the total enrollment. Girls comprised four percent of the enrollment during the first year of the program.

Residence

Since the beginning of the pilot program, the bulk of the students have had a non-farm background. The data in Table 3 indicates the percentage of non-farm students enrolled in the pilot programs is at its peak, 72 percent in the current year.

TABLE 1: PILOT PROGRAM ENROLLMENT BY SCHOOL, GRADE, AND YEAR

Grade/Year	SCHOOL														TOTAL	
	Barron	Cameron	Janesville	Jefferson	Oshkosh	Plymouth	Rosholt	Verona	Waterloo	Bloomer	Green Bay	Independence	Southern Door	Antigo	Number	Percent
11	0	X	53	0	14	X	0	0	9	1	18	9	10	0	114	37
12	14	X	35	8	20	X	16	10	11	10	44	0	18	12	198	63
Total for 70-71	14	X	88	8	34	X	16	10	20	11	62	9	28	12	312	100
* * *

TABLE 2: PILOT PROGRAM PARTICIPANTS ACCORDING TO SEX

	1970-71		1969-70		1968-69	
Sex	Number	Percent	Number	Percent	Number	Percent
Male	277	89	249	93	190	96
Female	35	11	20	7	8	4
Totals	312	100	269	100	198	100

TABLE 3: PILOT PROGRAM PARTICIPANTS ACCORDING TO RESIDENCE

	1970-71		1969-70		1968-69	
Residence	Number	Percent	Number	Percent	Number	Percent
Farm	88	28	82	31	67	34
Non-Farm	224	72	187	69	131	66
Totals	312	100	269	100	198	100

Prior Experience in Vocational Agriculture

The majority of the students enrolled in the pilot programs are familiar with vocational agriculture according to data shown in Table 4. Although this is true, the percentage has decreased over the last three years. A total of 112 non-farm students were taking vocational agriculture for the first time. These comprised 50 percent of the non-farm total. Fifty-six percent of the pilot program students have had one or less years of experience taking vo-ag courses. This indicates that a significant number of students have only recently become interested in the vocational agriculture program.

Scholastic Performance in Vocational Agriculture*

The data in Table 5 reveals that a higher percentage of farm residents reported above average grades in agriculture than did non-farm students. A majority of the non-farm students report average grades in agriculture. We may conclude from these data that residence does have an effect on

*These data in previous years were labeled "Scholastic Performance in Prior Vocational Agriculture." Data for 1970-71 were gathered well into the second semester (February and March of 1971) and the students obviously reported their work during the fall semester of school. In prior years these data were gathered in the fall of the year.

TABLE 4: PRIOR EXPERIENCE IN VOCATIONAL AGRICULTURE BY RESIDENCE

Years of Vo.Ag. Completed	Residence Farm Number	Residence Non-Farm Number	Total	Percent
No Ag.	21	112	133	43
1 Year	12	29	41	13
2 Years	21	55	76	24
3 Years or More	34	28	62	20
TOTALS	88	224	312	100

TABLE 5: RELATIONSHIP OF RESIDENCE TO SCHOLASTIC PERFORMANCE IN PREVIOUS VO. AG.

Scholastic Performance in Vo. Ag.	Residence Farm Number	Residence Farm Percent	Residence Non-Farm Number	Residence Non-Farm Percent	Group Totals Number	Group Totals Percent
Above Ave. Grades	49	60	88	41	137	46
Ave. Grades	32	39	113	53	145	49
Below Ave. Grades	1	1	14	6	15	5
Sub-Totals	82	100	215	100	297	100
Not Reported	6		9		15	
TOTALS	88		224		312	

performance in vocational agriculture, to the extent that farm residents are scholastically superior in agricultural courses to non-farm students. Another way to interpret these data is that the pilot programs appeal to the non-farm student of average ability, while also attracting above average students who have taken prior agricultural courses and/or have a farm background. This evidence has been consistent over the three year period.

TABLE 6: PAST GENERAL SCHOLASTIC PERFORMANCE OF PILOT PROGRAM PARTICIPANTS, BY GRADES IN VOCATIONAL AGRICULTURE, AND YEAR OF PROGRAM

Scholastic Performance in Vo. Ag.	General Scholastic Performance: Percent when N=312			Total Percent		
	Above Average	Average	Below Average	1970-71 (N=312)	1969-70* (N=269)	1968-69 (N=198)
No Prior Vo. Ag.	1	4	0	5	37	42
Above Ave.	20	24	0	44	26	18
Average	2	41	3	46	32	36
Below Ave.	0	3	2	5	6	4
TOTALS 1970-71	23	72	5	100		
TOTALS 1969-70	17	68	16		101	
TOTALS 1968-69	12	79	9			100

*Not equal to 100 due to rounding errors

Scholastic Performance in Prior Academic Courses

On the basis of academic grades reported by the students (Table 6) the members of the pilot programs are largely students of average scholastic ability (72 percent). The percent of individuals reporting average grades in academic work has tended to increase throughout the three years. The student getting above average grades in vocational agriculture reports a 50 percent likelihood of maintaining above average grades in adademic courses. The reverse is not true. The student getting above average grades in academic courses reports nearly a 100 percent chance of getting above average grades in vocational agriculture. The relationship seen here suggests that students with a wide range in scholastic ability are being drawn to the vocational agriculture pilot program courses.

Occupational Experience

Table 7 indicates the background that the pilot program students had in terms of occupational experience. Determination of extensive experience was largely a value judgment to identify well-developed occupational experience programs. An example of a well developed occupational experience program includes ownership of crops or livestock programs that have been developed past the initial stages, and shows potential as an enterprise. Occupational experience requiring an average of 20 hours or more per week was also considered extensive.

TABLE 7: PERCENT OF STUDENTS POSSESSING OCCUPATIONAL EXPERIENCE BY YEAR

Occupational Experience	Year					
	1970-71		1969-70		1968-69	
	Number	Percent	Number	Percent	Number	Percent
Extensive in Agriculture	74	24	52	19	30	15
Some Agriculture	50	16	69	26	97	49
Sub Total Students Having Prior Experience in Ag.	(124)	(40)	(121)	(45)	(127)	(64)
Non-Ag Occup. Experience	67	22	56	21	9	5
Occupational Exper. for this Course First they are to have	113	36	92	34	62	31
Sub Total: Students Without Prior Ag Experience	(180)	(58)	(148)	(55)	(71)	(36)
Not Reported	8	2	X	X	X	X
Totals	312	100	269	100	198	100

There has been a sharp decline in the percent of students reporting prior occupational experience in agriculture over the three year period. Concurrently there has been a sharp increase in the percent of students possessing non-agricultural occupational experience. Table 7 indicates that only 40 percent of the students reported prior occupational experience in agriculture in 1970-71 compared to 64 percent in 1968-69. There has also been an increase in the percentage of students with extensive experience in agriculture. Thus, the current students tend to be either neophytes or very experienced in agricultural work. For the most part, these data reveal that those students enrolling for the third year of the pilot programs report less total occupational experience and far less experience in agriculture than did the second year students. This occurred even to a greater degree over the first year students.

Additional insight in occupational experience of the students is gained from the data in Table 8 where the influence of residency is shown. The pilot program, it should be remembered, are of three years duration. It can be observed that non-farm students report a sharp increase in the percent of extensive vo-ag experience. The pilot program, it should be

TABLE 8: INFLUENCE OF RESIDENCE ON OCCUPATIONAL EXPERIENCE PRIOR TO ENROLLING IN THE PILOT COURSE

Occupational Exper. Prior to Participating in the Pilot Course		Residence: Farm Number	Farm Percent	Non-Farm Number	Non-Farm Percent	Totals Number	Totals Percent
Extensive Experience in Ag.	1970-71	51	69	23	31	74	100
	1969-70	44	85	8	15	52	100
	1968-69	25	83	5	17	30	100
Some Experience in Ag.	1970-71	18	36	32	64	50	100
	1969-70	22	32	47	68	69	100
	1968-69	34	35	63	65	97	100
Some Non-Ag Work Experience	1970-71	2	3	65	97	67	100
	1969-70	1	2	55	98	56	100
	1968-69	0	0	9	100	9	100
No Previous Occupational Experience	1970-71	17	14	104	86	121	100
	1969-70	15	16	77	84	92	100
	1968-69	8	13	54	87	62	100

remembered, are of three years duration. Some of the programs are for students less than grade 12. The senior non-farm students three years ago could report no occupational experience in agriculture. Now as seniors this group may be reporting extensive experience in agricultural occupations. This change may be credited to the exposure they gained in pilot programs prior to their senior year. Expressed in a different way, the data as analyzed in Table 8 does not control for years in the pilot program. Some of the urban programs enroll students for more than one year.

It can be seen from the data that there is a very diversified group of students in the pilot programs.

Extra Curricular Activities

Student distribution among seven levels of extra curricular involvement is displayed in Table 9. These levels of extra curricular involvement were classified as follows:

1. Intensive--Two or more activities in school and one or more out (or reverse) plus officer.

2. Active--Two or more activities in school and one or more out (or reverse).

TABLE 9: PARTICIPATION IN EXTRA CURRICULAR ACTIVITIES REPORTED BY PILOT PROGRAM PARTICIPANTS, BY RESIDENCE AND YEAR

Extra Curricular Activities	Residence		Year Total Percent		
	Farm Percent	Non-Farm Percent	1970-71	1969-70	1968-69
Intensive	23	12	15	18	14
Active	17	15	16	12	20
Intensive in School	12	4	6	6	8
A Little Active In School	38	45	43	46	37
Extensive out of School	1	1	1	X	X
A Little Active Out of School	7	8	7	5	X
No Activity Reported	2	15	12	13	13
Total Percent	100	100	100	100	92

3. Intensive in school--Two or more activities in school plus officer.

4. A little active in school--One or two organizations or activities in school.

5. Extensive out of school--Two or more organizations or activities, plus officer.

6. A little active out of school--One or two organizations or activities out of school.

7. No activity reported.

In general, the students in the pilot program were active. Nearly one third of the total enrollment were involved in both school and out of school activities, while approximately one-half confined their activities to one or two organizations in school. These data are very similar to the data received the previous two years. There was a larger percentage of farm students reporting in the intensive and active categories (40 percent) than there were of non-farm (27 percent). Farm youth were involved in more extra curricular activities than were non-farm

students. To further support this conclusion, only 2 percent of the farm students reported no activity, while 15 percent of the non-farm students reported being involved in no extra curricular activities.

REASONS FOR PARTICIPATING

This section provides information concerning two questions. These are: (1) What was the most influential reason in the students decision to enroll in the pilot programs? (2) What objectives do the students establish for these courses and what type of help do they expect?

The questionnaire included three objective or fixed alternative type questions which became the source of data for this section. Responses to these three questions very consistently pointed to the conclusion that the majority of students have not entered a realistic stage of occupational choice and as such are primarily interested in exploring occupations and the world of work.

Factors in the Students Decision to Enroll

Each student was asked to make one selection from the list in Table 10 as his primary reason for enrolling in the pilot program. The responses indicate that the students enrolled on an elective basis as shown by the fact that almost all students enrolled as a result of their own choice. During the current year, 61.5 percent of the students enrolled for exploratory reasons. Selection number three is attractive to students having definite or career preparation objectives. In the current year 39 percent of the students chose this reason, showing very little change over the past three years. This 6-4 ratio of students enrolling for exploratory/definite reasons is similar to the previous two studies, thus helping to confirm the 6-4 exploratory/definite ratio.

Reasons for Enrolling in Relation to Previous Occupational Experience

It will be recalled that students were assigned to the following categories to explain prior occupational experience: 1. extensive experience in agriculture, 2. some occupational experience in agriculture, 3. some non-agricultural work experience, 4. no occupational experience prior to enrolling, and 5. no response. Categories one and two can be combined to form a group having had occupational experience in agriculture; while three, four, and five make up the group without prior occupational experience in agriculture. Table 11, compares the reasons for enrolling to the two categories of occupational experience and reveals the slight influence that occupational experience has on the student to enrolling for definite reasons. Over the three year period there has been a decline in the percentage of students with experiences in agriculture enrolling for career preparation. Of the students having experience in agriculture, 42 percent enrolled in the pilot program for career preparation rather than career exploration during the current year. In 1969-70 this figure was 49 percent and in 1968-69 it was 63 percent.

TABLE 10: REASONS FOR ENROLLING IN THE PILOT PROGRAM

Reasons For Enrolling in This Vocational Course	Student Response					
	Numbers			Percent		
	1970-71	1969-70	1968-69	1970-71	1969-70	1968-69
1. Was assigned to the course	1	0	1	.3	0.0	0.5
2. There weren't any other courses I wanted to take	10	16	19	3.2	6.0	10.0
3. It fits into my career plans for the future	120	105	74	38.5	39.0	27.0
4. My friends are taking it	6	1	2	1.9	0.5	1.0
5. I was advised by the guidance counselor to take it	6	16	5	1.9	6.0	3.0
6. I was urged by the instructor of the course to take it	3	6	2	1.0	2.0	1.0
7. I really don't know why I am taking it	14	4	2	4.5	1.5	1.0
8. To find out what it would be like to follow this kind of work	108	96	92	34.6	36.0	46.0
9. Other	44	25	1	14.1	9.0	0.5
TOTALS	312	269	198	100.0	100.0	100.0

TABLE 11: REASONS FOR ENROLLING EXPLAINED IN RELATION TO PREVIOUS OCCUPATIONAL EXPERIENCE

Reasons for Enrolling in This Vocational Course	Prior Experience in Agriculture		First Experience in Agriculture		Totals	
	Number	Percent	Number	Percent	Number	Percent
It fits into my career plans for the future	52	42	68	36	120	38
To find out what it would be like to follow this kind of work	42	34	66	35	108	35
Other Reasons	30	24	54	29	84	27
Totals	124	100	188	100	312	100

Table 12 compares the reason for enrolling with residence. From this data we can observe that residence had little, or no, influence on reason for enrolling.

Student Objectives--Exploration or Career Preparation

Once enrolled, what general objectives did the students have for the pilot courses? What did they hope the course would do for them? This discussion is concerned with summarizing and explaining the results when students were asked whether they had established career exploration or career preparation as the general objective for this vocational course. In Table 13 these alternatives are listed as they were phrased in the questionnaire. Number one represents an exploratory objective and number two includes students with objectives involving occupational preparation. The students choice between these alternatives was a matter of deciding on his personal objectives for the course, based largely on where he finds himself in the process of occupational choice. Sixty-six percent of the students had exploratory objectives. These data are consistent with the 6-4 exploratory/definite ratio discussed previously (Table 10) and indicates one type of validity for the instrument. These data presented in Table 13 are identical to that of the preceding years.

When considering residence, (farm and non-farm) the majority of both groups enrolled for exploratory reasons (66 percent in each group). This indicates that residence had nothing to do with their personal

TABLE 12: INFLUENCE OF RESIDENCE ON REASON SELECTED FOR ENROLLING

Reasons for Enrolling in the Vocational Course	Residence: Farm Number	Farm Percent	Non-Farm Number	Non-Farm Percent	Totals for Group Number	Totals for Group Percent
1. It fits into my career plans for the future	33	37.5	87	39	120	38
2. To find out what it would be like to follow this kind of work	33	37.5	75	33	108	35
3. Other	22	25	62	28	84	27
Totals	88	100	224	100	312	100

objectives for the course. There has been, however, some shifting of the responses. More farm students are now choosing the pilot programs for exploratory reasons and the number of non-farm students enrolling for definite career objectives has increased steadily over the three years. These trends may be observed in Table 13.

When these objectives were compared with those students who report prior occupational experience and those who report no occupational experience (Table 14), the majority of both groups entered the pilot programs for exploratory objectives. The students with prior occupational experience were more likely to enroll for definite reasons than those with no prior experience, as shown by the 40 percent with prior experience, and 29 percent without prior experience. The categories "prior experience" and "no prior experience" were obtained by combining the categories presented in Table 8.

The Type of Help Students Expect

A third question in this series accumulated data on more specific objectives, or what may be called needs that students expected their respective courses to meet. Students were able to select one or more of the eight alternatives that are seen listed in Table 15. The same consistent ratio between responses to exploratory and career objectives is evident here and needs little explanation. Alternative number one represents a common exploratory objective and number two was one of the most popular career preparation objectives. The alternatives were ranked in nearly identical order to the two previous years.

TABLE 13: STUDENTS OBJECTIVES BY RESIDENCE AND YEAR

Questionnaire Alternatives	Year	Residence: Farm Number	Farm Percent	Non-Farm Number	Non-Farm Percent	Total Number	Total Percent
1. Help to make a decision in regard to choosing an occupation	1970-71	58	66	147	66	205	66
	1969-70	49	60	137	73	186	69
	1968-69	38	57	99	76	137	67
2. Help to qualify in an area of work already chosen	1970-71	30	34	74	33	104	33
	1969-70	33	40	50	27	83	31
	1968-69	28	41	28	21	56	29
3. No Response	1970-71	0	0	3	1	3	1
	1969-70	0	0	0	0	0	0
	1968-69	1	2	4	3	5	2
Totals	1970-71	88	100	224	100	312	100
	1969-70	82	100	187	100	269	100
	1968-69	69	100	131	100	198	100

TABLE 14: EXPLORATORY AND CAREER OBJECTIVE GROUP EXPLAINED IN TERMS OF PREVIOUS OCCUPATIONAL EXPERIENCE

Student Objectives	Occupational Experience: Prior Experience in Agriculture Number	Prior Experience Percent	No Prior Experience in Agriculture Number	No Prior Experience Percent	Totals Number	Totals Percent
1. Help to make a decision in regard to choosing an occupation	74	60	131	70	205	66
2. Help to qualify in an area already chosen	50	40	54	29	104	33
3. None reported	0	0	3	1	3	1
Totals	124	100	188	100	312	100

TABLE 15: SELECTION OF ONE OR MORE SPECIFIC NEEDS THE COURSE IS EXPECTED TO MEET, BY YEAR

Questionnaire Alternatives	Number of Responses 1970-71	1969-70	1968-69
1. Making it easier for me to make a wise decision when choosing an occupation	158	115	100
2. Learn knowledge and skills for capability in a specific job to be taken after high school	131	107	74
3. Help to prepare for a post high school vocational technical course	83	67	46
4. Learn good work habits	82	61	44
5. Help to locate a job after graduation from high school	67	80	56
6. Help understand how to get a good job	62	57	30
7. Help to make my other courses more meaningful	33	24	14
8. Help to get ready for an apprenticeship	12	18	18
Total number of respondents	312	269	198

It seems that a fitting summary to this section on reasons for participation, is that students at the age and grade level studied were acutely aware of the need to decide on an occupation. The need for a means to explore occupational areas was the result of that awareness, and thus the pilot programs are serving student needs.

CAREER PLANS

Type of Career Planned

The questionnaire included a series of four subjective or open ended items to supply data on students' career plans. The first in the series was a question asking them to state their preference if they were absolutely free to go into any occupation. Responses to this question were placed in agricultural or non-agricultural groups, with the agricultural interests being classified according to categories set by the U.S. Office of Education. The agricultural interests were classified as belonging to one of the following occupational categories: Conservation, Production,

Supplies, Mechanics, Products, Horticulture, Resources, Forestry, other agriculture. Table 16 indicates that approximately 50 percent of the students identified careers that were classified as agricultural, and 50 percent non-agricultural. This ratio has been constant throughout the three year period.

To help clarify this entire section on career plans, it should be pointed out that a rather rigid approach was taken by the researcher in classifying agricultural occupations. This may be the main reason for the high level of non-agricultural interests. However, many of the occupations in this section considered non-agricultural by the researcher have a potential for becoming agricultural related or agri-business jobs. Examples of these would be the many respondents who indicate an interest in working as a plumber, carpenter, welder, mechanic, truck driver or other similar occupations. These could be agricultural jobs if such jobs were located in an agricultural business.

TABLE 16: AGRICULTURAL CAREER INTERESTS BY RESIDENCE

Agricultural Careers	Residence				Group Totals	
	Farm		Non-Farm			
	Number	Percent	Number	Percent	Number	Percent
Agricultural Conservation	5	6	26	12	31	10
Agricultural Production	29	33	16	7	45	14
Agricultural Supplies	1	1	0	0	1	1
Agricultural Mechanics	2	2	5	2	7	2
Agricultural Products	0	0	0	0	0	0
Ornamental Horticulture	0	0	4	2	4	1
Agricultural Resources	4	5	28	13	32	10
Forestry	4	5	21	9	25	8
Other Agriculture	3	3	15	7	18	6
Non-Agricultural	40	45	109	48	149	48
Totals	88	100	224	100	312	100

TABLE 17: INFLUENCE OF ENROLLMENT IN AGRICULTURE PRIOR TO PILOT PROGRAM ON CAREER PLANS

	Years of Agricultural Study									
	None		One		Two		Three		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1. Agricultural Conservation	12	9	9	22	7	9	3	5	31	10
2. Agricultural Production	6	4	2	5	20	26	17	27	45	14
3. Agricultural Supplies	0	0	0	0	0	0	1	2	1	1
4. Agricultural Mechanics	2	2	0	0	1	1	4	6	7	2
5. Agricultural Products	0	0	0	0	0	0	0	0	0	0
6. Ornamental Horticulture	2	2	1	2	0	0	1	2	4	1
7. Agricultural Resources	13	9	1	2	11	14	7	11	32	10
8. Forestry	13	9	6	15	2	3	4	7	25	8
9. Non-Agriculture	79	61	19	47	31	41	20	32	149	48
10. Other Agriculture	6	4	3	7	4	6	5	8	18	6
Totals	133	100	41	100	76	100	62	100	312	100

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A students career plans can be influenced by characteristics in his background. Residence had a noticeable influence. From the residence-career plans relationship as it is explained in Table 16 the following generalizations can be made:

1. Farm students seem to be making a choice between either agricultural production (farming) or non-agricultural occupations. Seventy-eight percent of the farm students are included in these two categories.

2. Non-farm students appear to be making a choice among agricultural conservation, agricultural resources, and non-agricultural occupations. Seventy-three percent of the non-farm students are included in these three categories.

Some other interesting insights are provided by the data in Table 17. These were: 1. As the number of previous years in agriculture increased, the tendency for a student to plan an agricultural career increased. 2. Forty-five students preferred careers in farming. Thirty-seven of these had two or more years in a vocational agriculture program. This then points up the conclusion that more years of agriculture strengthened the tendency for a student to plan on an agricultural career.

It has been difficult to point out any characteristic that has a direct influence on career plans. Previous occupational experience had only a slight influence on students plans. Numbers of years in vocational agriculture had some effect. There was a tendency to show that the longer a student took vocational agriculture, the more apt he was to plan a career in farming.

Consistency of Career Plans

Had the student's thinking on career matured to the point that it had narrowed to a related cluster of occupations? Or, are they still considering a wide range of jobs, as is characteristic of the early teenage years? To answer this we analyzed the second question in the series on career plans. The students were requested to do more specific thinking in this case, as each student was asked to list three occupations that he was seriously considering entering. The three occupations were compared and rated as consistent or inconsistent. The researcher used his personal judgment in determining if the responses were consistent or inconsistent. If a student has as follows: teacher, doctor, engineer, he would be rated as consistent. A student listing truck driver, welder, and architect, would be inconsistent. Responses could be consistent in the following ways: require the same level of education; perform the same type tasks, such as working with people; or earn the same level of pay. The researcher rated the responses consistent if two out of three responses could be fitted in one category.

The results show that 24 percent of the students had consistent occupational objectives at the time the study was made. This does not agree with the trend over the past two years, where 38 percent in 1968-69, and 55 percent in 1970-71 represented the consistency (Table 18).

TABLE 18: CONSISTENCY OF OCCUPATIONS BEING CONSIDERED, BY YEAR

Level of Consistency	Group Results					
	Number			Percent		
	1970-71	1969-70	1968-69	1970-71	1969-70	1968-69
1. Consistent	74	148	75	24	55	38
2. Inconsistent	192	119	119	62	44	60
3. No Response	46	2	4	14	1	2
Totals	312	269	198	100	100	100

OCCUPATIONAL ASPIRATIONS AND EXPECTATIONS

To provide data on occupational aspriations, each student was asked to state the type of work he really hoped (aspiration) to get in the future. The next and last question in the series on career plans asked for the type of work he really expected (expectations) to get. Differences between these two classifications reflects what one would really like to do for a living, and what he really expects to do. Normally a teenagers aspirations are higher than his expectations. Table 19 presents the analysis when aspirations and expectations are classified according to the U.S. Employment Service scheme, which is a socio-economic scale.

Table 19 presents a comparison of aspirations and expectations. The table reveals the following points:

1. The responses to the question on expectation show a general downward shift in comparison to aspiration. That is, most of the students aspire to higher socio-economic positions than they expect to obtain.

2. One student in two aspired to a career in agriculture, but one in three expected to achieve this aspiration.

3. Eight percent aspired to professional and management occupations, but only 4 percent expected to reach that goal.

4. The unskilled and no-response categories appear to have absorbed a larger number of the students who expected to obtain occupations lower than their aspirations. Only six percent of the students aspired to unskilled jobs but fifteen percent had that level of expectation.

To provide a meaningful description of differences between aspiration and expectation, it was necessary to consider the responses of each student, and decide whether his aspiration was higher than, the same as, or lower than his expectation. Table 20 reveals that in about 2/3 of the cases the students showed some maturity. On the basis of these results, we can assume the students in this group (64 percent) are ready to make a realistic career plan.

TABLE 19: OCCUPATIONAL ASPIRATIONS AND EXPECTATIONS OF PILOT PROGRAM ENROLLEES

Occupational Level	Percent of Total					
	Aspiring To			Expecting To		
	1970-71	1969-70	1968-69	1970-71	1969-70	1968-69
1. Professional & Management	8	10	9	4	5	5
2. Clerical & Sales	2	4	4	2	5	5
3. Service Occupation	9	10	5	7	10	7
4. Agricultural Occupations	46	36	49	34	28	37
5. Skilled Occupations	18	24	19	15	23	19
6. Semi-Skilled Occupations	6	4	9	9	2	15
7. Unskilled Occupations	6	3	0	15	11	1
No Response	5	9	5	14	16	11
Totals	100	100	100	100	100	100

TABLE 20: SUMMARY OF ASPIRATION--EXPECTATION DIFFERENCES

Aspiration Expectation Comparison	Percent of Total		
	1970-71	1969-70	1968-69
1. Aspiration higher than expectation	30	25	36
2. Aspiration same level as expectation	64	69	54
3. Aspiration lower than expectation	5	6	6
4. No response	1	—	4
Totals	100	100	100

Table 21 reveals an interesting fact of the lack of difference between aspiration and expectation levels within the group of farm boys who planned for agricultural occupations. In contrast is the 43 percent of non-farm students who aspired to an agricultural occupation, but with only 30 percent expecting to achieve this goal. The aspiration and expectation levels of farm students seem to be closer related than they are in the non-farm group.

RELATEDNESS OF ALL INDICATED CAREER PLANS

As each student replied to the series of questions on career plans, he developed his own list of six career and occupational interests. The list of responses from each student was studied and classified in terms of relatedness. The researcher used the following categories:

TABLE 21: AFFECT OF RESIDENCE ON OCCUPATIONAL ASPIRATIONS AND EXPECTATIONS

Occupational Level	Percent Response			
	Farm		Non-Farm	
	Aspired to	Expected	Aspired to	Expected
1. Professional & Managerial	5	5	9	3
2. Clerical & Sales	2	1	2	2
3. Service Occupations	7	5	10	9
4. Agricultural Occupations	53	45	43	30
5. Skilled Occupations	19	18	18	14
6. Semi-Skilled Occupations	5	5	7	10
7. Un-Skilled Occupations	5	10	6	17
8. No Response	4	11	5	15
Totals	100	100	100	100

1. highly related workwise (5 out of 6)

2. highly related educationally (5 out of 6)

3. highly related income wise (5 out of 6)

4. some work relationship (4 out of 6)

5. some education relationship (4 out of 6)

6. some income relationship (4 out of 6)

7. little or no relationship

Group totals for this classification are found in Table 22. On the basis of these data, 51 percent of the students in the pilot programs had already limited their plans to a related cluster of occupations. Twenty of these forty-five had limited their plans to highly related occupations.

Farm students indicated a more limited plan of occupations (59 percent) than did the non-farm students with 48 percent.

TABLE 22: RELATEDNESS EVIDENT AMONG THE STUDENTS RESPONSE TO CAREER PLANS QUESTION SERIES

	Residence				Group Totals	
	Farm		Non-Farm			
Relatedness	Number	Percent	Number	Percent	Number	Percent
1. Highly related work wise	13	15	35	16	48	15
2. Highly related educationally	3	3.5	8	4	11	4
3. Highly related income wise	2	2	2	1	4	1
4. Some work relationship	31	35	48	21	79	25
5. Some educational relationship	3	3.5	12	5	15	5
6. Some income relationship	0	0	2	1	2	1
7. Little or no relationship	36	41	117	52	153	49
Totals	88	100	224	100	312	100

VOCATIONAL MATURITY

A vocational maturity score was calculated for each student. It was possible for him to accumulate a maximum of eight points. The following qualifications were based on questionnaire responses, and were necessary to earn points toward their score:

Extensive occupational experience in agriculture--award one point.

Intensive participation in extra-curricular activities--award one point.

Selection of career preparation as a general objective--award one point.

Indication of career plans as the basis for their decision to enroll--award one point.

Indication of career plans as the basis for their decision to enroll--award one point.

Indicate preparation for a career or post-secondary course as the type of help expected from the pilot program--award one point.

Expect an occupation on the same socio-economic level to which they aspired--award one point.

All indicated career plans classified as highly related--award two points.

All indicated career plans classified as related in some way but not highly related--award one point.

Total possible--eight points.

Use of these criteria distributed the students about equally in the one through five score range, with 9 percent of the students having a zero score, and limited numbers having scores 6, 7, or 8 (Table 23). The mean vocational maturity score was 3.19, contrasted to 3.33 last year, and 2.97 two years ago. The higher the score, the more vocationally mature the respondent is thought to be.

The students vocational maturity score was a function of the eight integral parts already explained. Tables relating those variables or characteristics to maturity scores, therefore, showed a strong positive correlation in every case. More meaningful data was provided by studying relationships between students' scores and other characteristics that were not factors in that score. Residence had a very obvious influence on vocational maturity scores. In relating residence to the vocational maturity scores (Table 24) it was revealed that one-half of the farm students received scores of four and above, while only one-third of the non-farm students were in that score range. The mean vocational maturity

score for students from farms was 3.72, while for non-farm students it was 2.92.

Grade in school did not influence the vocational maturity level (Table 25).

To summarize, the wide distribution of scores seems to be the dominant point of this section. This underscores the idea that these courses are being challenged to meet the needs of students representing all phases and stages in the vocational development process.

TABLE 23: DISTRIBUTION OF VOCATIONAL MATURITY SCORES

	Students Receiving					
	Number			Percent		
Score	1970-71	1969-70	1968-69	1970-71	1969-70	1968-69
0	29	16	17	9	6	9
1	38	47	34	12	17	17
2	62	38	42	20	14	21
3	57	45	32	18	17	16
4	43	41	29	14	15	15
5	41	39	20	13	15	10
6	26	25	16	9	9	8
7	10	14	7	3	5	3.5
8	6	4	1	2	2	.5
Totals	312	269	198	100	100	100
Mean Score	3.19	3.33	2.27			

TABLE 24: VOCATIONAL MATURITY SCORES DESCRIBED ACCORDING TO RESIDENCE

Score Range	Residence																	
	Farm						Non-Farm						Group Totals					
	Number			Percent			Number			Percent			Number			Percent		
	70-71	69-70	68-69	70-71	69-70	68-69	70-71	69-70	68-69	70-71	69-70	68-69	70-71	69-70	68-69	70-71	69-70	68-69
Receiving Scores 0-3	45	29	34	51	35	51	141	117	91	63	63	63	186	146	125	60	54	63
Receiving Scores 4-8	43	53	33	49	66	49	83	70	40	37	37	37	126	123	73	40	46	37
Totals	88	82	67	100	101	100	224	187	131	100	100	100	312	269	198	100	100	100

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TABLE 25: DISTRIBUTION OF VOCATIONAL MATURITY SCORES AS TO YEAR IN SCHOOL

Vocational Maturity Score	Year in School			
			Seniors	
	Number	Percent	Number	Percent
0	17	15	12	6
1	13	11	25	13
2	18	16	44	22
3	19	16	38	19
4	12	11	31	16
5	19	16	22	11
6	10	9	16	8
7	3	3	7	4
8	3	3	3	1
Totals	114	100	198	100
Mean Score	3.01	3.13		

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THOMPSON, JOHN F.
PILOT PROGRAMS IN VOCATIONAL AGRICULTURE.
REPORT NO. 5, PILOT PROGRAMS IN AGRICULTURE FOR THE DISADVANTAGED STUDENT--A SUMMARY OF RESEARCH FINDINGS.

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IDENTIFIERS - WISCONSIN

ABSTRACT - DATA ON STUDENT CHARACTERISTICS, STUDENT ATTITUDES, CAREER PLANS, OCCUPATIONAL ASPIRATIONS AND EXPECTATIONS, VOCATIONAL MATURITY, SKILLS, AND APTITUDES WERE OBTAINED FOR 90 DISADVANTAGED STUDENTS ENROLLED IN SEVEN WISCONSIN VOCATIONAL AGRICULTURE PILOT PROJECTS. A FORMATIVE EVALUATION YIELDED THESE MAJOR CONCLUSIONS: (1) THE MAJORITY OF THE DISADVANTAGED STUDENTS WERE NEW TO VOCATIONAL AGRICULTURE PROGRAMS, (2) THE STUDENTS OF THE DISADVANTAGED PROGRAMS SHOWED VERY LITTLE PARTICIPATION IN EXTRA-CURRICULAR ACTIVITIES, (3) THE DISADVANTAGED STUDENTS WERE IN THE PROCESS OF EXPLORING CAREER POSSIBILITIES RATHER THAN IMPLEMENTING A DEFINITE CAREER AREA, (4) BOTH FARM AND NON-FARM DISADVANTAGED STUDENTS INDICATED A PREFERENCE FOR NON-AGRICULTURAL OCCUPATIONS, (5) MOST OF THE STUDENTS ASPIRED TO AND EXPECTED TO OBTAIN JOBS AT THE SKILLED LEVEL OR BELOW, (6) THE VOCATIONAL MATURITY OF THE DISADVANTAGED STUDENTS WAS JUDGED TO BE LOW, AND (7) NO CONSISTENT PATTERN WAS EVIDENCED WHEN VOCATIONAL MATURITY SCORES WERE RELATED TO GRADE IN SCHOOL. RELATED DOCUMENTS ARE AVAILABLE AS VT 014 255 IN THIS ISSUE AND ED 035 742 (VT 010 116, ARM SUMMER 1970). (SB)

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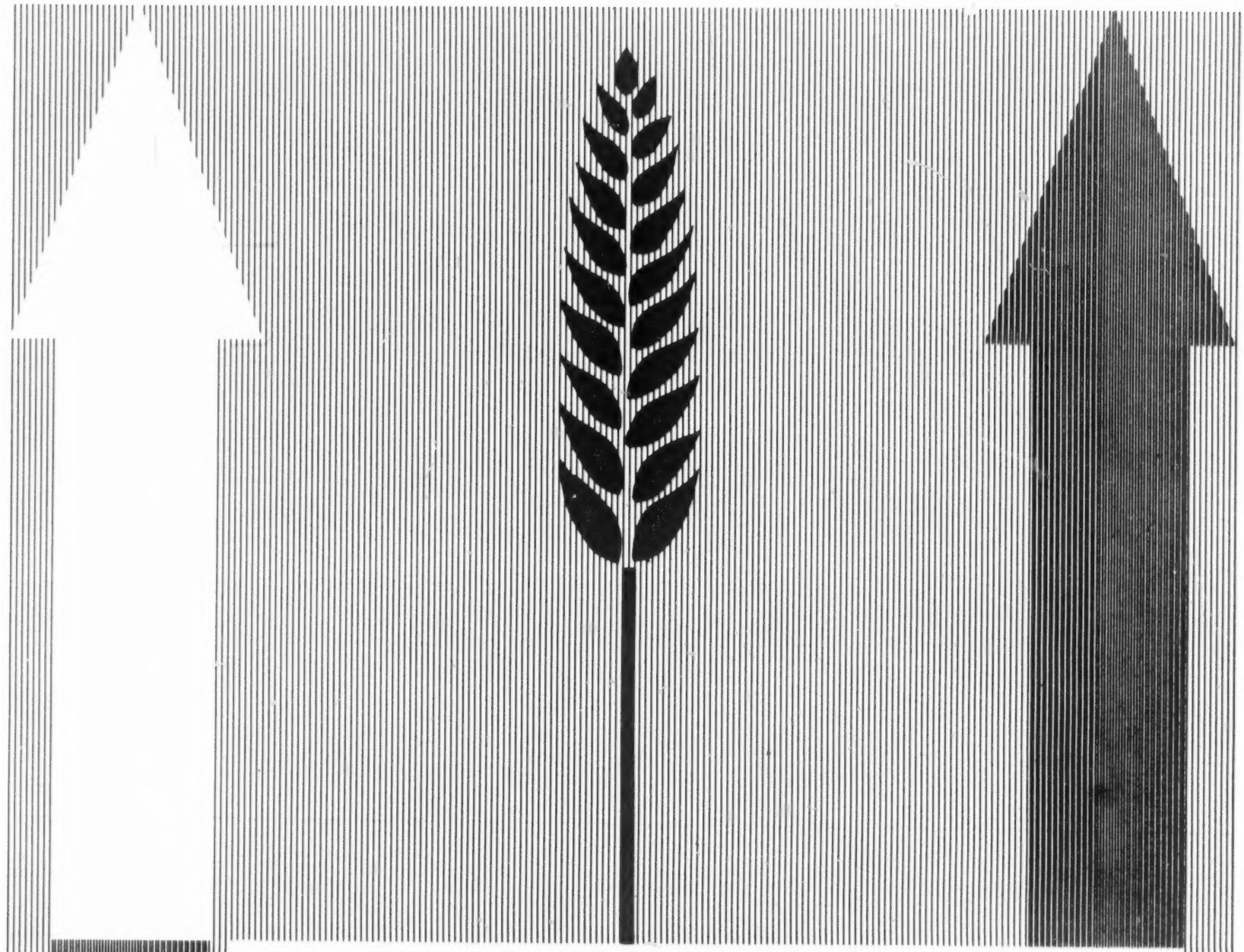

PILOT PROGRAMS IN VOCATIONAL AGRICULTURE

By John F. Thompson

REPORT NO. 5

PILOT PROGRAMS IN AGRICULTURE

FOR THE DISADVANTAGED STUDENT

A SUMMARY OF RESEARCH FINDINGS

Department of Agricultural
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INTRODUCTION

The pilot program in agriculture effort began with the first programs in 1968. Additional schools were added in 1969, 1970, and 1971. One of the programs in 1969 and six in 1970 were designed to serve the disadvantaged student. Recognizing that these programs serve a unique clientele group, it was decided to publish a separate report of them. The data were gathered using the same forms (E-VAPP-1) that was used for the other programs.

Although these programs serve the disadvantaged student, these programs reflect their own unique diversity of students. At the time of this research, a disadvantaged student in Wisconsin has been defined as:

1. Persons who are under-achievers:
   a. whose achievement level is more than one grade below their normal class placement,
   b. whose grades in general are D or lower,
   c. who are two years or more behind normal grade placement based on chronological age.

2. Persons with borderline or defective intelligence above EMR level or 50-70 I.Q. and below 90 I.Q.

3. Persons who are identified as potential dropouts by pupil services personnel (or a committee established for identification purposes).

4. Persons who are alienated or have personal relationship problems as identified by pupil services personnel (or a committee established for identification purposes).

5. Persons who have dropped out of school.

6. Persons who are members of families on welfare or AFDS aids.

7. Persons who have adverse records with police, detention personnel, etc.

8. Persons who are members of families which are below the poverty level in terms of income as defined by generally acceptable criteria.

9. Persons who are members of migrant worker families.

10. Persons who are linguistically isolated from the population at large.

11. Persons who are members of racial minority groups and who attend inner-core schools.

12. Persons who are residentially or geographically restricted or isolated.

13. Persons who have other identified disadvantagements such as, health, nutrition, broken homes, unwed pregnancies, underemployment, etc.

No attempt was made to classify the students into the above categories.

FACTUAL SUMMARY

1. The seven disadvantaged programs served 90 students with 51 percent of the enrollees being seniors.

2. Twelve of the 90 students (13 percent) were females.

3. One in three students resided on farms.

4. The majority of the disadvantaged students were new to vocational agriculture programs.

5. Thirty-eight percent had had no previous occupational experience.

6. Nearly all of the students who possessed previous occupational experience were farm students.

7. The students of the disadvantaged programs showed very little participation in extra-curricular activities. Farm students showed more extra-curricular activity than did non-farm students.

8. One student in four was "assigned" or "advised" to take the course.

9. The disadvantaged students are in the process of exploring career possibilities rather than in the process of implementing a definite career area.

10. Those disadvantaged students with occupational experience prior to the Vo-Ag pilot program were far more likely to enroll for definite career implementation than were those who had no occupational experience.

11. The students personal objectives for the course were also classified as career exploration. The students responses seemed to indicate that the course, in their mind, might make it a little easier for them to get employment after high school.

12. Both farm and non-farm students indicated a preference for non-agricultural occupations. A substantial majority of the students had not narrowed their occupational choices to a cluster of similar occupations.

13. Most of the students aspired to and expected to obtain jobs at the skilled level or below.

14. Thirty-eight percent of the students had career plans that had been refined to a cluster of related occupations.

15. On an eight point scale, the mean vocational maturity score was 2.71 This was judged to be low. Farm students had a higher vocational maturity score (mean of 2.94) than did the non-farm student (2.57).

16. No consistent pattern was evidenced when vocational maturity scores were related to grade in school. This reflects the wide range of students that were present in the disadvantaged programs.

STUDENT CHARACTERISTICS

Grade

A total of 90 students were served by the disadvantaged programs in seven schools. The students of the disadvantaged programs are predominantly upper classmen, with 51 percent of the group being classified as seniors, and 21 percent as juniors. Only two schools (Waupaca and Lake Geneva) serve exclusively ninth and tenth graders. We can also see from Table 1 that the seven schools involved in the disadvantaged program had for the most part, relatively equal enrollments.

Sex and Residence

Table 2 indicates that there were 12 females enrolled in the program. This is above the average female enrollment in all agricultural courses. Since the beginning of the pilot programs, the bulk of the students have had a non-farm background. The data in Table 2 indicates that 63 percent of the students came from non-farm backgrounds.

Prior Experience in Vocational Agriculture

Most of the students are new to agricultural programs. Seventy-one percent of the 90 students have had from zero to one year of vocational agriculture courses. Of the 64 students new to agriculture, 49 (77 percent) were non-farm residents (Table 3).

Occupational Experience

The background that the disadvantaged pilot program students had in terms of occupational experience is explained in Table 4. Determination of extension experience was largely a value judgment to identify well-developed occupational experience programs. An example of a well-developed occupational experience program includes ownership of crops or livestock programs that have been developed past the initial stages, and shows potential as an interprise. Occupational experience requiring 20 hours or more per week was also considered extensive.

Thirty-eight percent of the students reported no previous occupational experience in agriculture. In Table 3 we found that 38 percent of the students were not enrolled in agriculture prior to this course. This indicates that the 34 students not previously enrolled in agriculture are completely unfamiliar with agriculture, and they bring little or no related background and experience to the pilot programs.

TABLE 1: DISADVANTAGED PROGRAMS IN AGRICULTURE BY SCHOOL AND GRADE

School	Grade 9th Number	9th Percent	10th Number	10th Percent	11th Number	11th Percent	12th Number	12th Percent	Percent of Row	TOTAL Number	TOTAL Percent
Sauk Prairie	0	0	0	0	7	36	13	64	100	20	22
Denmark	0	0	0	0	1	7	13	93	100	14	16
Lake Geneva	0	0	14	100	0	0	0	0	100	14	16
Oregon	0	0	3	30	6	60	1	10	100	10	11
Reedsville	0	0	0	0	0	0	12	100	100	12	13
Wabeno	0	0	0	0	5	42	7	48	100	12	13
Waupaca	5	62.5	3	37.5	0	0	0	0	100	8	9
Total	5	6	20	22	19	21	46	51		90	100

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TABLE 2: PILOT PROGRAM PARTICIPANTS ACCORDING TO RESIDENCE AND SEX

	Sex					
	Female		Male		Total	
Residence	Number	Percent	Number	Percent	Number	Percent
Farm	1	1	32	36	33	37
Non-Farm	11	12	46	51	57	63
Totals	12	13	78	87	90	100

TABLE 3: PRIOR EXPERIENCE IN VOCATIONAL AGRICULTURE BY RESIDENCE

Years of Vo. Ag. Completed	Residence		Total	
	Farm	Non-Farm	Number	Percent
No Ag.	5	29	34	38
1 Year	10	20	30	33
2 Years	4	2	6	7
3 Years	12	3	15	17
4 Years	2	3	5	5
Total	33	57	90	100

Table 4 also illustrates that farm residents were more likely to have had occupational experience than were non-farm residents. In fact 90 percent of those students getting their first exposure to occupational experience as a result of the pilot program were non-farm students.

Extra-Curricular Activities

Student distribution among seven levels of extra-curricular involvement is displayed in Table 5. These levels of extra curricular involvement were classified as follows:

1. Intensive--Participation in two activities in school and one out (or reverse) plus officer.

2. Active--Two activities in school and one out (or reverse)

3. Intensive in School--Two or more activities in school plus officer.

TABLE 4: OCCUPATIONAL EXPERIENCE PRIOR TO ENROLLING IN THE PILOT PROGRAM BY RESIDENCE

Occupational Experience	Residence: Farm		Residence: Non-Farm		Totals	
	Number	Percent	Number	Percent	Number	Percent
Extensive	21	64	2	4	23	26
Some in Ag.	7	21	13	23	20	22
Some non-ag.	2	6	11	19	13	14
First obtained in this course	3	9	28	49	31	35
None Reported	0	0	3	5	3	3
Totals	33	100	57	100	90	100

TABLE 5: PARTICIPATION IN EXTRA-CURRICULAR ACTIVITIES BY RESIDENCE

Extra Curricular Activities	Residence: Farm		Residence: Non-Farm		Totals	
	Number	Percent	Number	Percent	Number	Percent
Intensive	3	9	0	0	3	3
Active	6	18	3	5	9	10
Intensive in School	5	15	2	4	7	8
Little Active in School	11	33	29	51	40	44
Extensive Out of School	0	0	1	2	1	1
Little Active Out of School	3	9	3	5	6	7
No Activity Reported	5	16	19	33	24	27
Total	33	100	57	100	90	100

4. A Little Active in School--One or two organizations or activities in school.

5. Extensive Out of School--Two or more organizations or activities, plus officer.

6. A Little Active Out of School--One or two organizations or activities out of school.

7. No Activity Reported.

In general the students in the disadvantaged pilot programs expressed little extra-curricular activity. There was a larger percentage of farm students reporting in the intensive and active categories (27 percent) than there were of non-farm (5 percent). Sixteen percent of the farm students reported no activity, as compared to 33 percent of the non-farm students. After considering the data we can see that although neither group was very active in extra-curricular activities, farm youth were more involved in extra-curricular activities than were non-farm students.

REASONS FOR PARTICIPATING

This section provides information concerning two questions: (1) What was the most influential reason in the students decision to enroll in the pilot programs? (2) What objectives do the students establish for these courses, and what type of help do they expect.

The questionnaire included three objective or fixed alternative type questions which became the source of data for this section.

Factors in the Students Decision to Enroll

Each student was asked to make one selection from the list shown in Table 6 as their primary reason for enrolling in the pilot program. The enrollment was based primarily on an elective basis by the individual student, but 1/4 of the group entered the course because of someone else. This was not true of the students enrolled in the regular pilot programs (see report No. 4).

The students seem to be enrolling for exploratory reasons, as illustrated by only 29 percent selecting alternative three (a definite career plan).

Table 7 is included to show relationships existing between factors in the students decision to enroll and occupational experience.

It will be recalled that students were assigned to the following categories to explain prior occupational experience:

1. extensive experience in agriculture

2. some occupational experience in agriculture

TABLE 6: REASONS FOR ENROLLING

Reasons for Enrolling in this Course	Student Response Number	Student Response Percent
I was assigned to the course	10	11
There weren't any other courses I wanted to take	4	4
It fits into my career plans for the future	26	29
Someone said I had to take it	0	0
My friends are taking it	1	1
I was advised by the guidance counselor to take it	4	4
I was urged by the instructor to take it	8	9
I really don't know why I am taking it	1	1
To find out what it would be like to follow this kind of work	20	22
Other (no response)	16	18
Total	90	99*

*Not equal to 100 percent due to rounding errors.

3. some non-agricultural work experience

4. no occupational experience prior to enrolling

5. no response

Categories one and two can combine to form a group having had occupational experience in agriculture; while three, four and five make up the group without prior occupational experience in agriculture. In Table 7 the reasons for enrolling are compared with the two categories of occupational experience, and reveals that occupational experience influences the student to enroll for definite reasons. Of the students having experience in agriculture, 37 percent enrolled in the pilot program for career preparation rather than career exploration. Of the students having no prior experience, 21 percent enrolled for career preparation rather than career exploration.

TABLE 7: REASONS FOR ENROLLING EXPLAINED IN RELATION TO PREVIOUS OCCUPATIONAL EXPERIENCE

Reasons For Enrolling in This Course	Prior Occupational Experience					
	Experience in Ag.		First Exper. in Ag. as Part of This Course		Totals	
	Number	Percent	Number	Percent	Number	Percent
It fits into my career plans for the future	16	37	10	21	26	29
To find out what it would be like to follow this kind of work	14	33	6	13	20	22
All Other Reasons	13	30	31	66	44	49
Totals	43	100	47	100	90	100

Student Objectives

What general objectives did the students have for the pilot course after they were enrolled? This discussion is concerned with summarizing and explaining the results when students were asked whether they had established career exploration or career preparation as the general objective for the vocational course. In Table 8 these alternatives are listed as they were phrased on the questionnaire. The students' choice between these alternatives was a matter of deciding on his personal objective for the course, based largely on where he find himself in the process of occupational choice. Sixty-six percent of the students had exploratory objectives.

As we examine each group (farm and non-farm) separately, we see that the majority of both groups enrolled for exploratory reasons, and the farm students did so at a higher rate (76 percent) than did the non-farm group (59 percent).

The Type of Help Students Expect

A third question in the series accumulated data on more specific objectives, or what may be called needs that students expected their

TABLE 8: PERSONAL OBJECTIVES BY RESIDENCE

	Residence					
	Farm		Non-Farm		Totals	
Student Objectives	Number	Percent	Number	Percent	Number	Percent
Help to make a decision in regard to choosing an occupation	25	76	34	59	59	66
Help to qualify in an area already chosen	8	24	19	34	27	30
No Response	0	0	4	7	4	4
Total	33	100	57	100	90	100

respective courses to meet. The students could choose one or more of the eight alternatives listed in Table 9. The four responses checked most frequently when taken together suggests that the disadvantaged students hoped that the pilot program would "teach me something now so that I might be able to get a job a little easier when I get out of school.

CAREER PLANS

Type of Career Planned

The questionnaire included a series of four subjective or open ended items to supply data on students career plans. The first in the series was a question asking them to state their preference if they were absolutely free to go into any occupation. Responses to this question were placed in agricultural or non-agricultural groups, with the agricultural interests being classified according to categories set up by the U.S. Office of Education. They are: Conservation, Production, Supplies, Mechanics, Products, Horticulture, Resources, Forestry, Other Agriculture. Table 10 indicates that 37 percent of the students identified careers that were classified as agricultural, and 63 percent non-agricultural.

To help clarify this section on career plans, it should be pointed out that a rather rigid approach was taken by the researcher in classifying agricultural occupations. This may be the main reason for the high level of non-agricultural interests. However, many of the occupations considered non-agricultural by the researcher have a potential for becoming agricultural relatedor agri-business jobs. Examples of these would be the many respondents who indicate interest in working as a plumber, carpenter,

TABLE 9: SELECTION OF ONE OR MORE SPECIFIC NEEDS THE COURSE IS EXPECTED TO MEET

Questionnaire Alternatives	Number of Responses
Helping me locate a job after I graduate from high school	30
Learning knowledge and skills that will make me more capable in a specific job I will take after high school	51
Helping me get ready for a post-high school vocational or technical course	12
Helping me get ready for an apprenticeship	6
Teaching me good work habits	45
Helping me understand what I must do to get a job	44
Helping me to make my other courses more meaningful	6
Making it easier for me to make a wise decision when choosing an occupation	49
Total	243

*2.7 alternatives chosen/student

welder, mechanic, truck driver, etc. These could be agricultural jobs if they were located in the agricultural business.

Residence seemed to have little influence on the students career plans. In Table 10 we can observe that the number one choice for farm and non-farm alike was non-agricultural occupations (61 percent and 65 percent respectively). The number two choice for both was agricultural production (21 percent for farm students, and 11 percent for non-farm students).

Consistency of Career Plans

Had the students thinking on career matured to the point that it has narrowed to a cluster of occupations? Or, are they still considering a wide range of jobs, as is characteristic of the early teenage years? To answer this we analyze the second question in the series on career plans. The students were requested to do more specific thinking in this case, as each student was asked to list three occupations that he was seriously

TABLE 10: AGRICULTURAL CAREER INTERESTS BY RESIDENCE

	Residence				Totals	
	Farm		Non-Farm			
	Number	Percent	Number	Percent	Number	Percent
Agricultural Conservation	1	3	3	5	4	4
Agricultural Production	7	21	6	11	13	14
Agricultural Supplies	0	0	0	0	0	0
Agricultural Mechanics	2	6	0	0	2	2
Agricultural Products	0	0	0	0	0	0
Ornamental Horticulture	1	3	3	5	4	5
Agricultural Resources	0	0	1	2	1	1
Forestry	2	6	3	5	5	6
Non Ag.; not sure; no answer	20	61	37	65	57	63
Other Agriculture	0	0	4	7	4	5
Total	33	100	57	100	90	100

considering entering. The three occupations were compared and rated as consistent or inconsistent. The researcher used his personal judgment in determining if the responses were consistent or inconsistent. If a student had as follows: teacher, doctor, engineer, he would be rated as consistent. A student listing truck driver, welder, and architect, would be inconsistent. Responses could be consistent in the following ways: require the same level of education; perform the same type tasks, such as working with people; or earn the same level of pay. The researcher rated the responses consistent if two out of three responses could be fitted in one category.

The results show that only 21 percent of the students had consistent occupational objectives. Eighteen percent of the students had only one entry hindering the researcher's ranking the level of consistency. (Table 11)

TABLE 11: CONSISTENCY OF OCCUPATIONS BEING CONSIDERED

Level of Consistency	Group Results Number	Percent
Consistent	19	21
Not Consistent	55	61
Only One Entry	16	18

OCCUPATIONAL ASPIRATIONS AND EXPECTATIONS

To provide data on occupational aspirations, each student was asked to state the type of work he really hoped (aspiration) to get in the future. The next and last question in the series on career plans asked for the type of work he really expected (expectation) to get. Differences between these two classifications reflects what one would really like to do for a living, and what he really expects to do. Table 12 presents the analysis when aspirations and expectations are classified according to the U.S. Employment Service schemes which is a socio-economic scale.

Table 12 reveals the following points:

1. The responses to the question on expectation show a general downward shift in comparison to aspiration. That is, most of the students aspire to higher socio-economic positions than they expect to obtain.

2. Twenty-seven percent aspired to skilled occupations, but only 19 percent expected to reach that goal.

3. Nine percent aspired to service occupations, but only four percent expected to reach that goal.

4. The unskilled and no-response categories appear to have absorbed a large number of the students who expected to obtain occupations lower than their aspirations. Twenty percent of the students aspired to unskilled, or made no response, as compared to the thirty-five percent expecting to achieve the same.

5. Most of the students aspired to and expected to obtain jobs at the skilled, semi-skilled and unskilled levels.

To provide a meaningful description of differences between aspiration and expectation, it was necessary to consider the responses of each student, and decide whether his aspiration was higher than, the same as, or lower than his expectation. Table 13 reveals that in 57 percent of the cases the students had expectations that were on the same general level as their aspiration.

TABLE 12: OCCUPATIONAL ASPIRATIONS AND EXPECTATIONS BY RESIDENCE AND OCCUPATIONAL LEVEL

Occupational Level	Residence: Farm Aspir.	Farm Expect.	Non-Farm Aspir.	Non-Farm Expect.	Total Aspir.	Total Expect.
	(Percent of Total)					
Professional & Management	0	0	1	5	1	3
Clerical & Sales	9	0	0	2	3	1
Service Occupations	3	3	13	5	9	4
Agricultural Occupations	40	43	24	16	30	26
Skilled Occupations	12	6	35	26	27	19
Semi-Skilled Occupations	15	9	7	14	10	12
Unskilled Occupations	12	30	11	23	11	26
No Response	9	9	9	9	9	9
Total	100	100	100	100	100	100

TABLE 13: SUMMARY OF ASPIRATION-EXPECTATION DIFFERENCE BY RESIDENCE

Aspiration-Expectation Comparison	Residence: Farm Number	Farm Percent	Non-Farm Number	Non-Farm Percent	Total Number	Total Percent
Aspiration higher than Expectation	11	33	20	35	31	34
Aspiration same as Expectation	20	61	31	54	51	57
Aspiration lower than Expectation	2	6	6	11	8	9
Totals		100		100		100

RELATEDNESS OF ALL INDICATED CAREER PLANS

As each student replied to the series of questions and career plans, he developed his own list of six career and occupational interests. The researcher used the following categories to classify the lists of responses in terms of relatedness:

1. Highly related work wise--(5 out of 6)
2. Highly related educationally--(5 out of 6)
3. Highly related income wise--(5 out of 6)
4. Some work relationship--(4 out of 6)
5. Some educational relationship--(4 out of 6)
6. Some income relationship--(4 out of 6)
7. Related in work and education--(4 out of 6)
8. Related in work and income--(4 out of 6)
9. Related in education and income--(4 out of 6)
10. Little or no relationship--(3 or less)

Table 14 reveals that 38 percent of the students in the disadvantaged program had already refined their career plans to a related cluster of occupations.

VOCATIONAL MATURITY

A vocational maturity score was calculated for each student. It was possible to accumulate a maximum of eight points. The following qualifications were based on questionnaire responses, and were necessary to earn points toward their score.

Extensive occupational experience in agriculture--award one point.

Intensive participation in extra-curricular activities--award one point.

Selection of career preparation as a general objective--award one point.

Indication of career plans as the basis for their decision to enroll--award one point.

Indicate preparation for a career or post-secondary courses as the type of help expected from the program--award one point.

TABLE 14: RELATIONSHIP EVIDENT AMONG THE STUDENTS RESPONSE TO ALL QUESTIONS IN THE CAREER PLAN SERIES

Relatedness	Percent of Total
Highly related workwise (5 out of 6)	16
Highly related educationally (5 out of 6)	1
Highly related income wise (5 out of 6)	0
Some work relationship 4/6	16
Some educational relationship 4/6	2
Some income relationship 4/6	1
Related in work and education 4/6	1
Related in work and income 4/6	1
Related in education and income 4/6	0
Little or no relationship (3 or less)	62
Total	100

Expect an occupation on the same socio-economic level to which they aspired--award one point.

All indicated career plans classified as highly related--award two points.

All indicated career plans classified as related in some way--award one point.

Total possible--eight points.

Use of these criteria distributed the students about equally in the one through four range, with six percent of students having a zero score, thirteen percent having a score of above four, (Table 15). The mean vocational maturity score was 2.71. The higher the score the more vocationally mature the respondent is thought to be.

The students vocational maturity score was a function of the eight integral parts already explained. Tables relating those variables or characteristics to maturity scores, therefore, showed a strong positive correlation in every case.

TABLE 15: DISTRIBUTION OF VOCATIONAL MATURITY SCORES

Score	Students Receiving Number	Percent
0	5	6
1	19	21
2	17	19
3	21	23
4	16	18
5	9	10
6	2	2
7	1	1
8	0	0
Totals	90	100
Mean = 2.71		

More meaningful data was provided by studying relationships between students' scores and other characteristics that were not factors in that score. Table 16, relating residence to vocational maturity scores reveals that 36 percent of the farm students received scores of four and above, while only 28 percent of the non-farm students were in that score range. The mean vocational maturity score for students from the farm was 2.94, while for non-farm students it was 2.57.

Vocational maturity level showed no consistent pattern when related to grade in school (Table 17). Ninth grades and seniors had the highest with juniors having the lowest. This is another indication of the very wide range of student characteristics that are reflected in the disadvantage program.

To summarize the wide distribution of scores seems to be the dominant point of this section. This underscores the idea that these courses are being challenged to meet the needs of students representing all phases and stages in the vocational development process.

TABLE 16: VOCATIONAL MATURITY SCORES BY RESIDENCE

Score Range	Residence: Farm Number	Farm Percent	Non-Farm Number	Non-Farm Percent	Group Totals Number	Group Totals Percent
0-3	21	64	41	72	62	69
4-8	12	36	16	28	28	31
Total	33	100	57	100	90	100
Mean	2.94		2.57			

TABLE 17: VOCATIONAL MATURITY BY GRADE

Vocational Maturity Score	Grade in School: 9th Number	10th Number	11th Number	12th Number	Total Number
0	0	3	2	0	5
1	1	5	6	7	19
2	0	2	3	12	17
3	0	5	5	11	21
4	3	3	2	8	16
5	1	1	1	6	9
6	0	0	0	2	2
7	0	1	0	0	1
8	0	0	0	0	0
Totals	5	20	19	46	90
Mean	3.6	2.4	2.1	3.0	2.7

ADDENDUM

A very brief description of the tentative plans formulated by each school before the program was implemented is included here. These statements were selected from the schools application to the pilot program committee to give the reader a very general feeling for the plans of each program. We have not checked at this point with any of the schools to see how the program differed at the end of one year from the plans presented. A description of the Sauk Prairie program is contained in Pilot Program Report Number 3.

DENMARK COMMUNITY SCHOOLS

Denmark community schools plan to implement a program for the disadvantaged student in the field of agri-business. The vocational agriculture instructors will seek cooperation from local businesses and industry through a cooperative educational training experience. Some of the ag-related fields involved in the program will be: feeds, seeds and chemicals, and machinery set up and maintenance.

There are several opportunities for employment in the agri-business field locally, and with Green Bay only 15 miles away many other opportunities can be seen for post-high school employment.

The program is open to students who qualify as disadvantaged, and it is hoped that these students will be stimulated to do quality work and to develop an interest in occupations of prime importance in agriculture.

Students who enter this program will be better able to prepare for job entry after high school, and will also be better prepared, than some other students that are not disadvantaged for the job they enter.

BADGER HIGH SCHOOL--LAKE GENEVA

Badger High School intends to offer programs that will allow students with different career objectives and needs to obtain varying experiences that will prepare them for the future better than existing programs do.

1. Students entering the labor market after graduation will be able to receive more technological and practical experience related to their job interest.

2. Students planning to enter a post-secondary educational institution will be able to supplement his agricultural experience with a greater degree of scientific and economic aspects of agriculture.

3. Disadvantaged students interested in a career in production agriculture will receive experiences that will help them become useful and efficient employees for local farms. Through their employment and by keeping them in school it is hoped they will become better citizens.

There are eighteen farms available for cooperative programs and there should be others available as they are needed. The students work on Saturdays and some through the week during school months and full-time in the summer.

OREGON CONSOLIDATED SCHOOL

The agriculture-related program for the disadvantaged provided by the vocational agriculture department has for its main purpose "The improvement of the students self image by learning to know himself better, the improvement in the students skills in getting along with others, and becoming aware of vocational possibilities and requirements."

The program is aimed at providing a different kind of school experience for potential dropouts, persons who have dropped out and are behind in grade placement, and the disruptive student. The intent is to provide, through the team effort of agriculture, distributive education, english and industrial art teachers, and high school counselors, an individual program of studies for each student in the program.

Occupational experience will be provided as the students advance in the program. Through supervision and coordination with cooperating classrooms, the instructors will be better able to identify when the student is ready for the work experience.

It is hoped the students will be able to improve their self-image and identify vocational opportunities in a rural-urban community such as Oregon. Another way the program plans to help meet this goal is through a resource center for the disadvantaged. The resource center is space where the disadvantaged individuals can better identify with school and its relationship to their productive future.

REEDSVILLE HIGH SCHOOL

This program is very similar to the Denmark program in that it is an agri-business program for the disadvantaged. (see Denmark Community Schools Program)

WABENO HIGH SCHOOL

Vocational courses presently offered at Wabeno High School, other than vocational agriculture, are trades and Industry and business education. The basic intent is to prepare students for entry employment after high school graduation and to improve the community status for these students in their adult life. The vocational agriculture department proposes a program in Forestry and Conservation since the area is fitted to this type of program, and the community needs trained personnel in the area.

Some of the related activities used by the program will be: U. S. Forest Service--Department of Natural Resources, Fish and Game Division, Job Corp, Resort Management and Maintenance, Winter Sports, and Public Relations.

WAUPACA UNIFIED SCHOOLS

Vocational courses presently offered (in addition to vocational agriculture) are: home economics, industrial arts, business education, and trades and industry. The vocational agriculture department feels it is not meeting the needs of a certain group of students--the disadvanteged.

As there are opportunities for placement in the community in the area of horticulture (example, local green houses, local parks, local school, Grand Army Home) the department plans to provide an opportunity for the disadvanteged students to get training in school and on the job. The program will be open to individuals (interested in the area of horticulture) 15-16 years old who have an IQ in the range of 70-90.

Through this program the staff intends to help the educationally disadvanteged gain some feelings of accomplishment and to give him a chance to contribute to the school and community.

It is hoped that the individual needs of the enrollees will be more adequately met and that through their development they will become more independent.

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OCCUPATIONAL EDUCATION FACES THE FUTURE.

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ABSTRACT - THIS PUBLICATION CONTAINS PAPERS DELIVERED AT ONE OR MORE OF THREE CONFERENCES DEVOTED TO ASSESSING NEEDS AND PROBLEMS IN OCCUPATIONAL EDUCATION IN THE 1970'S. CONFERENCE ACTIVITIES WERE DEVOTED TO ANALYSIS OF THESE PAPERS: (1) "FORECASTING MANPOWER NEEDS IN THE 1970'S" BY K. MCLENNAN, (2) "LABOR MARKETS IN THE SEVENTIES" BY P. PUNTER, (3) "ISSUES IN OCCUPATIONAL EDUCATION" BY J.J. KAUFMAN, (4) "THE CIVIL RIGHTS MOVEMENT AND OCCUPATIONAL EDUCATION" BY W. ROBINSON, (5) "WOMEN'S LIBERATION AND OCCUPATIONAL EDUCATION" BY G. HALL, (6) "THE ROLE OF PRIVATE ENTERPRISE IN OCCUPATIONAL EDUCATION" BY J.M. SHOSTAK AND N. WILLARD, (7) "EARLY RETIREMENT AND SECOND CAREERS: IMPLICATIONS FOR VOCATIONAL-TECHNICAL EDUCATION" BY D. HIESTAND, (8) "INSTRUCTIONAL CONCEPTS FOR OCCUPATIONAL EDUCATION" BY L. WEST, (9) "OCCUPATIONAL LICENSING AND OCCUPATIONAL EDUCATION" BY B. SHIMBERG, (10) "NEW DIRECTIONS FOR OCCUPATIONAL EDUCATION" BY A.H. FISHKEN, (11) "OCCUPATIONAL EDUCATION AND THE LEGISLATURE" BY T. LAVERNE, AND (12) "AGENDA FOR THE FUTURE" BY E. COHEN. (SB)

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OCCUPATIONAL EDUCATION

FACES THE FUTURE

Myron Lieberman - Editor

City University of New York

June 30, 1971

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Introduction

The papers in this volume were delivered at one or more of three conferences on occupational education sponsored by the City University of New York under a grant from the New York State Education Department. These conferences, which were conducted in May and June, 1971, were devoted to assessing needs and problems in occupational education in the 1970's. Conferees included a wide range of leaders in occupational education in the State of New York. Conference discussions were devoted, in large part, to analysis of the papers in this volume. We regret that we were unable to publish all the papers and the discussions which contributed a great deal to clarification of the problems facing occupational education in the 1970's.

Much credit for the success of the conferences goes to Dr. Donn Billings, Office of Teacher Education, The City University of New York. Dr. Billings was ably assisted in all aspects of conference operations by George Johnson and Ralph Benson, also of the CUNY staff. The initiative for the conferences, however, must be credited to Dr. Benjamin Rosner, University Dean of Teacher Education, CUNY. The support and assistance of the State Education Department, especially the Bureau of Occupational Education, is also gratefully acknowledged.

As will be evident from the papers themselves, the conferences explored several major aspects of occupational education in the 1970's. Emphasis was accorded the impact of various social movements on occupational education, but attention was also given to the practical problem of practitioners as well as the longer-range issues. The pages are published to make them available to a wider state and national audience.

Myron Lieberman

Conference Chairman

FORECASTING MANPOWER NEEDS IN THE 1970'S

Kenneth McLennan

The problem of forecasting manpower needs, even in a very short period of time, presents a number of very difficult problems. The magnitude of error in predictions about the labor market a decade from now is likely to be quite substantial. This paper discusses briefly some of the problems and techniques used in forecasting, as well as some of the forces shaping labor markets in the seventies.

Forecasting Periods: Short Run and Long Run Differences

During the short-run period (up to five years), the major influences which affect the labor requirements are the demand for labor. This includes the level and composition of aggregate demand for goods and services, and it is fairly safe to assume that the production techniques and labor force requirements for these techniques will remain unchanged. If, however, we wish to examine a longer-run forecast, say for example, over a five-year period, supply considerations become much more crucial because, in the long run, it is likely that there will be changes in production techniques and wage rates. These changes are likely to affect the outcome of any forecast of manpower requirements, since industry may produce the product or service by more capital intensive methods and, consequently, reduce the labor requirements per unit of production. These changes in production techniques are difficult to predict.

Projection Procedure

The first major piece of information required in developing a forecast is to get some estimate of the projected level of output in the target year of the forecast. Secondly, it is necessary to know the expected level of output per work hour. By dividing the level of output by output per man hour, it is possible to estimate the number of workers required. This is a simplified version of the basic structure of a forecast. However, if a forecast is to be of any value, more information than the number of workers is required. The labor force is not a homogeneous group of individual workers. The quality of the labor force varies from individual to individual and this is represented in a complex occupational and skill hierarchy. For this reason, it is necessary to have some idea of the occupational distribution of workers in the labor force. Another important type of information needed is the educational level associated with each occupational group in the projected labor force. It is important, for example, to know whether or not the occupational requirements of industry are going to increasingly demand a higher proportion of managerial and professional technical workers or whether or not we are going to have a greater need for blue collar skilled workers, etc. In the long-run forecast, period production techniques are likely to change and. as a result of these changes, the occupational structure of the labor force is likely also to change much more than in the short-run. The future occupational structure is likely to be affected by a number of other factors. If, for example, the social policy in the nation emphasizes more education for reasons of social acceptability, that is, if it becomes desirable for non-economic reasons to have a college education, then the educational requirements associated with the future labor requirements

will be reflected by an extremely well trained labor force at most occupational levels, even though these requirements may not be necessary to perform the job.

Methods of Making Projections

There are several approaches to the producing of a set of projections of the labor force in the decade ahead.

A. Survey of Employers

It is possible to simply ask employers what their needs are going to be in the years ahead, either in the short run or in the long run. The problem with this approach is that it is in the interest of the respondents to overestimate the number and quality of the future labor force requirements.

B. Structural Changes in Technically Advanced Sectors of the Economy

A second approach to estimating the future manpower needs is to study the structural changes which are occurring in each industry. In this way, the most advanced sectors of each major industry can be studied on the assumption that, in the years ahead, most other firms in the industry (the less advanced sectors of that industry) will develop similar methods of production and have similar manpower requirements in the future. It is possible, for example, to select the "advanced" firms in each industry according to proportions of their income spent on research and development. The major problem with this approach is that the largest firms and most well known firms in the industry are not necessarily the most progressive in terms of innovations. Consequently, the method of selecting firms becomes crucial to the reliability of the forecast.

C. Analysis of Historical Trend

The last major approach to making the projection is to use historical analysis of what has happened in the previous decade and make

certain adjustments based on the trends which appear to be occurring. This is probably the most frequently used method for making projections. This method usually utilizes the following approach. There is likely to be a relationship between output and the capital inputs in the economic system. For example, it may be that a one per cent increase in output results in a one-half per cent increase in employment. If this has occurred in the past, it may be assumed that this relationship will hold in the future. This permits the output and employment five or ten years in advance to be predicted. The obvious problem with this approach is that the relationship between output and the employment changes associated with an increase in output may not be stable over time. These, then, are some of the approaches to projections and are influential in determining what may occur in labor markets in the 1970's.

Dimensions of Future Manpower Needs

Manpower needs in the future have three major dimensions. Manpower needs have geographical, industrial and occupational dimensions.

A. Geographic Trends

During the 1960's, the geographical characteristics of the labor force in the United States have gone through some major changes. One of the most dramatic geographic changes which occurred during the 1960's was the very rapid movement of families from the farm to urban areas. This movement from the farm varied by racial characteristics of the migrants. Whites have tended to move shorter distances than non-whites and whites have also tended to move to smaller urban areas than non-whites. Black migration has tended to follow fairly well defined geographic routes to the major urban areas in the United States. One flow of black migrants from the rural south has been along the eastern seaboard to the metropolitan areas of the New York area and, to a lesser extent, Washington

and Philadelphia. The western flow of southern black migrants has been along the west coast areas into major metropolitan areas in the Los Angeles and San Francisco areas. A third flow has been up through the midwest to the northern states,in areas such as Detroit and Chicago.

These geographic shifts change the potential supply of labor and have implications for the nature of labor markets in the 1970's. There will be a large supply of non-white labor available, mostly for unskilled and low-skilled occupations. They will usually be low-income residents, so that their mobility within an urban area may be much less than higher-income groups of workers. This will be particularly important for the location of firms in and around metropolitan areas, since the availability of low-skilled labor will be greatest in the inner part of these metropolitan areas.

B. Industrial Employment Trends

The manpower requirements of the 1970's also, of course, have industrial dimensions. The 1960's produced very rapid changes in the industrial distribution of the labor force in this country. Table I indicates the change which has taken place during the decade of the 1950's and 1960's. An examination of the changes which have taken place in the 1960's shows significant shifts in employment among industries. During the 1960's, the non-agricultural labor force of this country increased by about 29 per cent. The employment in many industries did not expand as rapidly as this average increase. As can be seen in Table I, some industries have not grown as rapidly as others. Some have even had an absolute decline in employment; this occurrence is very difficult to achieve. For example, the mining industry has had almost a 12 per cent decline in employment during the 1960's. This, of course, has been due to competition from other industries, the petroleum industry for example,

and also from changes in the technology used in mining coal. Other industries which have grown below average include the construction industry and, notably, the manufacturing industry. The industries which have been growing around the average rate for the country have been the wholesale and retail trade, finance, insurance and real estate. The industries of services and the government sector have grown much faster than most industries. It is interesting to note, however, that the importance in terms of number of employees of the federal government has not increased at a rate greater than the average increase of agricultural employment in the country. The large increase in government employment has been primarily at the state and local level. This would include the occupations of firemen, policemen, and teachers.

C. Occupational Employment Trends

Table II shows the occupational employment distribution for the years, 1950, 1960, 1965 and 1969. The shift in relative importance of occupations in the labor force is clearly seen in this table. One of the dramatic shifts, of course, has been the increasing importance of white collar occupations. Among these white collar occupations, the most rapid increase has occurred among clerical workers. In 1969, over 17 per cent of employees in this country were employed in clerical occupations. This is something which no one in the 1950's would ever have predicted, given the tremendous increase in automation in office work and services. Another very rapid change in occupations in the 1960's was the growth of professional and technical managerial types of occupations. In fact, it is interesting to note that almost 14 per cent of the labor force are now in professional and technical occupations. This is, in fact, a larger absolute number of employees than the number of craftsmen and foremen in

the blue collar segment of the labor force. This is also something which would not likely have been predicted in the 1950's. There has not been any increase in the importance of operators, that is, those employed in the mass production-type industries. In fact, there has been a slight decline in their relative importance. The slow growth in the blue collar jobs has resulted in a white collar labor force which has meant that many of the new jobs emerging over the last decade require different skills and knowledge. Such changes in requirements should influence programs in vocational and technical education.

From these results, it is possible to predict some of the training in the manpower needs in the 1970's. It is likely, for example, that there will be increasing need for white collar workers, especially in the professional - technical occupations. It is also expected that the growth in clerical workers may not rise so rapidly, but the demand will continue to expand. It is also predicted that the role of farm occupations will continue to decline slowly and that the need for service workers is likely to expand at a gradual rate of increase. Other socio-economic changes in society may modify the nature of labor supply and demand in the 1970's.

Changes in the Labor Force Participation Rates

The labor force participation rate is the proportion of the population actively seeking employment. This rate varies among demographic groups in the labor force. One of the most dramatic changes which occurred in the past decade has been the rapidly increasing participation rate of women in the labor force. It is predicted that, in the 1970's, the increasing rate of women entering the labor force is likely to continue - and may even accelerate. This increasing rate is likely to be partially attributable to the social importance of women's liberation and other groups actively encouraging women to enter the labor market and to receive

equal treatment with male participants in the labor force. One important result of this trend is going to be the increasing demand by women for services associated with their new employment status. The most obvious need will be the increasing demand for day care services. This is likely to be very dramatic in the 1970's and, in fact, government policy is already moving in the direction of providing such facilities for low-income families and, in particular, welfare recipients. This development will increase the number of job opportunities for women to operate and provide the ancillary services necessary for such centers.

Additional job opportunities are in other sectors of the service industry. The delivery of health services is an example of an expanding service industry. It appears as part of our national policy that the benefits of medical science and technology are likely to be more widely distributed among the population than in the past. There is an increasing tendency to provide medical care delivery systems to low-income groups of the population who, up until now, have generally not been receiving or able to demand adequate health care facilities.

There are, of course, likely to be other areas of increasing occupational opportunities in the service areas. This is because future technological change will probably continue to be concentrated in those areas of the economy in which it is most easy to introduce innovations. It is not particularly easy to introduce technological changes in industries which are oriented toward services where the presence of a face-to-face relationship with people is required.

Changes in Attitude Toward Work

There is some social pressure to reduce the work week and change attitudes toward work. The more radical views are unlikely to prevail,

although there may be some minor changes in the work week. Any substantial reduction in the work week (without a similar reduction in wages) is likely to cause an increase in the cost of producing goods and services, and this would be reflected in a lower real wage or real income among individual employees. It does not appear that employees are willing to trade off more leisure for less real income and that any of the changes which occur are likely to be marginal. Nevertheless, changes such as going to a four-day, 40-hour week instead of a five-day, 40-hour week may occur, and this will cause an increasing demand for leisure services which will increase the number of job opportunities in this sector of the economy.

In conclusion, it may be said that the major feature of the demand for labor in the 1970's will be the increasing importance of the service sector of the economy. Secondly, the importance of professional and technical occupations is likely to increase. Third, the importance of clerical occupations will remain high, but will be at a slower growth rate. Fourth, the changes in the geographic and demographic distribution in the supply of labor will cause some segmentation of labor markets, especially urban labor markets. There will be a concentration of unskilled employees, mainly black, in the inner core of the metropolitan area. The new role of women in the labor force will also change the nature of labor supply. These changes will, undoubtedly, create difficulties for educators as well as for public officials. The changes, however, are not likely to be so dramatic that public policy cannot find solutions to these problems.

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TABLE I

TOTAL EMPLOYMENT ON PAYROLLS OF NON AGRICULTURAL ESTABLISHMENTS, BY INDUSTRY DIVISION ANNUAL AVERAGES
(In Thousands)

Year	Total	Mining	Contract Construction	Manufacturing			Transport & Public Ut.	Wholesale & Retail Trade			Finance Insurance Real Estate	Services	Government		
				Total	Durables goods	Non durables		Total	Wholesale	Retail			Total	Federal	Local
1950	45,222	901	2333	15,241	8,094	7,147	4,034	9,386	2,518	6,868	1,919	5,382	6,026	1,928	4,098
1960	54,234	712	2885	16,796	9,459	7,336	4,004	11,391	3,004	8,388	2,669	7,423	8,353	2,270	6,083
Pct.Chg. 1950-60		-9.8	23.6	10.2	16.8	2.6	-0.7	21.3	19.3	22.1	39.0	37.9	38.6	17.7	48.4
1969	70,139	628	3410	20,121	11,881	8,240	4,449	14,644	3,768	10.876	3,558	11,102	12,227	2,756	9.471
Pct.Chg. 1960-69		-11.7	18.1	19.7	25.6	12.3	11.1	28.5	25.4	29.6	33.3	49.6	46.4	21.4	55.7
							Percent Distribution								
1950	100.0	2.0	5.2	33.7	17.9	15.8	8.9	20.8	5.6	15.2	4.2	11.9	13.3	4.3	9.1
1960	100.0	1.3	5.3	31.0	17.4	13.5	7.4	21.0	5.5	15.5	4.9	13.7	15.4	4.2	11.2
1969	100.0	.9	4.9	28.7	16.9	11.7	6.3	20.9	5.4	15.5	5.1	15.8	17.4	3.9	13.5

TABLE II

PERCENT DISTRIBUTION AMONG OCCUPATION GROUPS
EMPLOYED PERSONS 16 YEARS AND OVER

	1950	1960	1965	1969
White Collar Workers	36.6	43.4	44.8	47.3
Professional, Technical	8.6	11.4	12.5	13.8
Managers, officials & proprietors	8.6	10.7	10.3	10.2
Clerical workers	12.3	14.8	15.7	17.2
Sales work rs	7.0	6.4	6.3	6.0
Blue Collar Workers	41.1	36.6	36.9	36.2
Craftsmen, foremen	14.2	13.0	13.0	13.1
Operatives	20.4	18.2	18.8	18.4
Non-farm laborers	6.5	5.4	5.2	4.7
Service Workers	10.5	12.2	12.6	12.2
Private household workers	2.6	3.0	2.8	2.1
Other service workers	7.9	9.2	9.8	10.1
Farm Workers	11.8	7.9	5.7	4.2
Farmers and farm managers	7.4	4.2	3.1	2.4
Farm laborers and foremen	4.4	3.6	2.6	1.9

LABOR MARKETS IN THE SEVENTIES

Percival Punter

The labor markets in the 1970's are subject to two types of predictions. One is related to its general size and shape. The other relates to the internal mix and the relationship between industries and occupations. The first belongs to the class of forecasts that one can make in relative safety. Government statisticians, economists and others tell us that by 1980 our labor force will reach 100 million or more. By 1985 it will reach 107 million or more. The number of teen-agers looking for work each year will decline sharply. Who will be working or looking for work is related to population patterns and the pattern changes. The number, age and sex of those looking for work are readily predictable 5, 10, 15 or 20 years ahead.

What the labor force will be doing is not easy to predict. The work future can only be described in broad terms.

It appears that employment in state and local government will increase by more than 50 per cent in the 1970's. As the urbanization and suburbanization characteristic of our population increases, redeployment of individuals has one common element -- increased population density. Density, in turn, increases the need and cost for local government services. These services become more complex in a high land use setting. The employees, consequently, need more and better training. To whom are they turning? More and more, government is seeking the assistance of the professional educator.

It appears, also, that white collar workers will outnumber blue collar workers by more than 50 per cent before the next ten years are up. The number of white collar workers exceeded the blue collar workers some years back. Just as significant as the changing ratio of white to blue collar is the prediction that before the end of the decade the professional and technical workers alone will be as numerous as the blue collar workers.

Student potential will not be determined objectively by educators. Rather, student potential will be assumed to be present by aspirants and their parents from every income and educational level in our society. As a result, educators will be expected to teach them in order for them to get various licences. That it can be done is not the question. The question is will they? And will they be able to obtain the public support that they will need to meet this demand of the labor market?

The farm and industrial laborer are disappearing. They will continue to decline in absolute numbers. It takes a tiny fraction of the work force to produce all the food we need. Brawn is rapidly become obsolete in the production of consumer goods.

Labor markets can be viewed in terms of the adversary relationships between workers and employers. The drive for improved pension benefits, some coupled with social security benefits, fail to upset any predictions about the incidence of part-time workers in the work force. It is also bringing about the institutionalization of the second career. Some observers of the labor scene see the pension drive as potentially disruptive. As collective bargaining and other pressures push the time to be served downward, workers will be leaving jobs at the peak of their efficiency and usefulness. One horrible example frequently cited is the plight of the New York City subways. The twenty years half pay and out at, I believe, age 50 has left the system chronically short of experienced men. Chronically short. What is certain about the effect of pensions relates to the rate of labor turnover. Non-economic terminations and accessions will be more readily predictable - and educators can then plan more accurately for the phenomenon of retraining many workers who won't need jobs for subsistence but who will want them for personal satisfaction. A second example of the result of the adversary nature of the labor market is the drive to improve income maintenance.

The principal base for income maintenance is unemployment insurance. When an auto or steel worker is laid off - between his state unemployment insurance and his union contract benefits, he loses practically no income for 6 to 9 months.

The Manpower Development and Training Act provides unemployed workers with a weekly benefit equal to the average unemployment payment in their state. What is particularly significant is that workers who have been laid off and who are drawing full benefits may also take training on their own and not lose benefits because they are not in the labor market. The worker has obtained a right to schooling which he may exercise in ways which we cannot now foresee.

What we can foresee as a result, however, is the need for a different kind of manpower training skill center.

1. It must be completely open-ended - taking in workers for training at the time each one becomes unemployed - and keeping him until the individual acquires the particular skill.
2. It must be capable of organizing a course quickly.
3. It must have the capacity to move from its own center to an industrial setting for upgrading.
4. It must do all this without regard to normal hours and show great ingenuity in the development and use of training equipment.
5. It must be willing to train anybody at any age and at any skill level.

In short, the trends will depend more upon political factors and political accident than any purposeful effort of ourselves. Employing practices will evolve from technological advances such as television or nuclear energy; social forces as the militant civil rights movement; war or the preparation for war; employer ingenuity; and dissemination of labor market information.

Future trends include:

1. Income for all members of a family for the lifetime of each.
2. Child allowances.
3. Women will work as a matter of course.
4. Complete disappearance of the welfare system.
5. Emergence of business and industry as quasi-public instruments for non-profit as well as profit-oriented activities.
6. Disappearance of sex differences in career choices and placement.
7. Unfettered mobility of the work force.
8. Complete disappearance of race, religion and other irrelevant factors as significant deterrents to career development.

ISSUES IN OCCUPATIONAL EDUCATION

Jacob J. Kaufman

Why is there such an increasing interest in the results of education, in general, and in occupational education, in particular? Why are people asking questions of this type? One reason, perhaps, is that the general public is increasingly dissatisfied with education. I'm not saying that the public is right or wrong about that. I'm simply saying that the public is increasingly dissatisfied with education, in general, including elementary, secondary and higher education. I think the reasons are very clear.

First of all, we find that expenditures are rising constantly without any increase in productivity. This raises some very serious problems. Also, we notice that, at the state level, education takes approximately 55% of the state budget. New revenues are very quickly sopped up by education, so that alternative programs in the field of education just don't get a chance to grow. If we look at this problem, going back many years, we find that there weren't many claims on state budgets in the past, e.g., health, welfare and pollution control. Today, we find these programs are making increasing demands on state budgets. The general public is looking for quality education for even less money, if possible, so that we will have more money for other things.

Over the years, people - particularly in education - have responded to the question of what we are investing in education, in terms of inputs. A lot of people are asking what we are getting from it. What is this youngster like when he graduates from school, whether it's elementary, secondary, or even college or university? More and more people are raising the question of outputs. Now, we not only have a problem of what goes into education but what comes out of it. Why is it that education has never been forced to produce information on the results? I might ask why virtually no other public activity has been asked. The reason for it has been that it operates in what we call the public

sector. It really does not operate in a competitive economy that forces those in charge to analyze what they're doing.

Let me use a very trite illustration of this situation. We have in our town a so-called beauty academy. A lot of young girls pay tuition, graduate and, presumably, get jobs. Now, the Penn State Beauty Academy has done so well that another so-called beauty academy came into being. Now, the first private beauty academy would have to go out of business if its tuition were too high, if its costs were too high, or if it produced a poor product, e.g., graduates who could not get a job or who would last only one week because they were incompetent. In this situation, we have the pressures to provide education at a low cost - education that will turn out a product that will compete in the market and be successful. If the costs were higher and the graduates were not successful, the academy could not survive.

Now, ten miles away there is a vocational education school that might offer a course called, "Cosmetology," and I would ask the question, "What pressures really exist on that Director of Vocational Education or the persons in charge of the Cosmetology program to see to it that the costs of running that operation are as low as possible and the results are as effective as they could possibly be?" I would argue that, for many years, there were no pressures of any sort of the type that we find in the private sector. Therefore, in the field of vocational education, I would assert that it is essential to re-examine the whole process of vocational education so that we could turn out better students for less money.

In my opinion, there are two types of outputs that ought to be measured. One is the end result of the educational process. I like to put it in terms of the day the student graduates. Then, there is the output of what happens to him after he leaves school. Of course, the more time he spends out in the labor

market, the less we know whether or not what happens to him is a function of what took place in school or of something else that took place on the outside.

In a study that we did on cost effectiveness, we didn't look at what most people do. We were interested in what we call the extra costs. What did vocational education cost over and above the non-vocational education? The student would have had to go through some education program, so we looked at the extra costs. From the point of view of earnings and the point of view of employment, measured over a six-year period as the proportion of time on the job as against being unemployed, the extra gains of students from vocational education were greater than the extra costs.

We also tried to measure something called, "citizenship" and "community participation." We went to a very competent psychologist and said, "Look, we are economists - we don't know anything about the question called, "citizenship" - but, as a result of your studies, what are the best measures of citizenship"? And he told us we should ask three questions: "Are you a registered voter?" "Did you vote in the presidential election?" "Did you vote in the primaries?" We found no difference between vocational graduates and non-vocational graduates. We tried to measure something called, "community participation," and we found little difference.

Other research in the field of vocational education calls into question many things that most of us formerly thought were important in terms of success in the labor market. Some of the things that were of virtually no significance were as follows: The up-to-dateness of the equipment; the number of years of training of the teacher; the size of their classes; the salary of the teacher; the number of years the teacher had been in his job; the size of the city; and whether or not the teacher was affiliated with an organization. All of the things that so many of us would say make a difference and cost money really made no difference. What does make a difference is basically the characteristics of the youngsters themselves.

I also want to refer to a study done in higher education, written by an affiliate of the American Council of Education. The researcher tried to find out whether or not the traditional criteria of a good university made any difference upon the scholastic or intellectual achievement of a college student. Some of these traditional criteria are: salaries of the professors (as anyone knows, if you pay higher salaries, it must be a better university), class size, the expenditures per student, the size of the library, and the number of PhD's. The study showed that intellectual achievement in the four years of college was largely a function of the characteristics that the youngster had the day he entered college.

What one can assert, and I'm perfectly willing to do so, is that there is a certain quality of a teacher that makes all the difference in the world. I think that what does made a difference is the extent to which a teacher can relate to his student, and can develop a program within the classroom which the student relates somehow, to his experiences. The teacher's understanding of individual differences and of the process of learning are also important. If you picked 100 teachers at random and asked them to explain the theory of learning, the theory of child development under which they function, I would bet that 98 out of 100 would leave blank books.

Let me cite one other study which questions the conventional wisdom in vocational education. We ran an experimental program for school dropouts. Our hypothesis was that, if we could give the youngsters a high school diploma, they would have the credential to get a job. We've all heard how the lack of a high school diploma is the greatest deterrent to getting a job. In our study, we had a small sample. We compared those who went through our program and got their diploma against those who did not have a diploma, and followed up the two groups over several years. Our study indicated that the diploma made no difference in a tight labor market. What made the difference were the characteristics

of the youngster, his attitudes toward a job, and so on. These were the crucial things.

All of these studies point in a certain direction. Vocational educators stop looking at vocational education as an end product but start looking at it as a means by which youngsters are educated, in general. This is why I have often thrown out the challenge to vocational educators: they have the greatest potential for making the greatest inroads into the total educational system, if they could only devise a curriculum by which to educate youngsters toward certain goals. We should use vocational education or skill training, or whatever you want to call it, as a vehicle through which we educate youngsters. And that is why the National Advisory Council on Vocational Education several years ago suggested that we ought to get rid of general curriculum, the academic curriculum, the vocational curriculum, and talk about one curriculum in which occupational education is the vehicle for all other education.

It is not enough to develop simply a new curriculum. I have recently been arguing that we must look at the school as a total social system. It can no longer be regarded as a collection of individual constituencies, each of which goes its own way. The parents go one way, the administrators go another, the teachers go still another, and the students another, again. We should work toward a social system in which teachers work with other groups in planning, in which teachers understand that youngsters are different and have different experiences and different interests. We must develop a system in which youngsters have an opportunity to pick and choose, recognizing that they have strengths in some areas and weaknesses in others. Career development should be one important element in such a system.

OCCUPATIONAL EDUCATION
THE IMPACT OF THE CIVIL RIGHTS MOVEMENT

William Robinson

Since the beginning of our country we have had the following two values deeply incorporated into our social structure. One is the unfettered right of a property owner to do with his property as he sees fit, or alternatively stated, the unfettered right of a businessman to conduct his business any way he pleases. Justice Oliver Wendell Holmes stated this value in 1911 just as bluntly: the most enlightened judicial policy is to let people manage their own business in their way. Of course, we all know that this unfettered right of businessmen to conduct their business in any way they want to has led to a number of abuses throughout the history of business in America. For many years we saw horrible sweat-shops where owners of property exploited male labor, female labor and child labor. Gradually our government began to put certain fetters on how a man runs his business. We can add the trade union movement and the laws that protected the trade union movement into that whole process of limiting the right to do business as one sees fit.

Shortly after 1935 and the New Deal, we could say that business and management together had a largely unfettered right to conduct their business in any way that they pleased. And, of course, one of the ways in which they conducted business as they saw fit was to incorporate into it a pervasive degree of racial discrimination in employment.

The second historic value that is relevant to our topic today is the moral right of an individual to work in any field that he chooses with the right of advancement subject only to the limits of his individual talents. Of course, for the most part, this second basic value has been given little attention. One period in which it did receive attention was around the late

1860's, when Congress passed civil rights acts which might have had some impact on racial discrimination in employment. Unfortunately, the Supreme Court of the United States quickly struck down the chief provisions in those civil rights acts as being unconstitutional and nothing happened. Then in 1964, Congress passed the 1964 Civil Rights Act. In doing so, I think we can say that it wrote into law that second basic value, the right of an individual to work in any field he wants to with the right of advancement subject only to the limits of his individual talents.

Let me now turn to three cases relating to what constitutes racial discrimination. The first case concerned seniority in employment. I think it is fair to say that most of industry utilizes the seniority system.

Until very recently the plant manager could walk into the plant, look at the assembly line smoothly functioning, look to his left and see his black workers with their brooms in hand, look to his right and see his white workers working on his assembly line and murmur to himself -- Ford is in his flivver and all is well with the world. Basically, what plant managers did, with the cooperation of the unions, was to organize their plants into black departments and white departments with lines of progression. Black lines of progression would essentially be labor and maintenance while white departments would essentially be operations. And then superimposed on that, they would erect a departmental system of seniorities. Since the Civil Rights Act of 1964, however, an employer may no longer discriminate on the grounds of race; ergo, the organization of the plant into black departments and white departments is now unlawful and the black employee may now compete with whites for jobs in the normally all-white line of progression (which was, of course, the higher paying line of progression).

The difficulty was that the departmental system of seniority inhibited an employee from transferring into another line of progression. If he transferred, he lost all his seniority. As a result, whenever there was the

smallest bump, then the employee who transferred, with perhaps fifteen years of seniority went out the gate. On the other hand, the person with two years of seniority in that department stayed. Also, the top job in the black line of progression was a low paying job. The worker frequently found that it paid more than a job at a lower level in the white line. Additionally, I have been assuming that this line of progression was indeed a series of functionally related jobs, each of which provided training for the next job.

We followed this situation in several cases and persuaded courts that Title Seven of the Civil Rights Act of 1964 not only prohibited further discrimination but also prevented the present effects of past discrimination. When Congress passed the act, it did not intend that a whole generation of blacks would fail to reveive the benefits of it.

So the courts were confronted with the question not of whether or not there was discrimination in this situation. We persuaded the courts to adopt a system of plant-wide as opposed to departmental seniority, so that any one of these black workers could transfer into the white line of progression, protected by their plant-wide seniority. In the event of a bump-back, black workers with greater plant-wide seniority were not the ones to lose their jobs. And next we persuaded the courts to order red circling of wages, i.e. a man could transfer and not take a cut in pay until such time as he reached a position in his new line of progression which was equal to the wage he earned in his old line of progression. Then he was on his own.

We also attacked, with fair success in some of these cases, the line of progression itself. We argued that some of these jobs were not functionally related to the job above it. Rather, the line of progression was simply an agreement between management and union on how they would structure the plant. The promotional opportunities had nothing to do with what a man was required to

know or be able to do before he had an opportunity to transfer into the next job. Indeed, in some instances, the black employee was enabled to transfer to a new position immediately, because the content of the job was such that he could do it.

One problem is that lawyers and judges are trying to define the legitimate job content and what skills are really necessary. Obviously, we tend to make mistakes when we start making that kind of an analysis. That is certainly not what we want to do, and yet we are the people who have had to try to do it. Management perhaps is the best able to do this kind of an analysis, and unions are perhaps the second best group to do it. Sometimes we find that we've overlooked some things, which means that an employee can't get really from here to here even though we have put him on a new job. We try to keep in mind legitimate business needs, such as safety and efficiency, in effecting these transfers. Then again we frequently try to restructure lines of progression. We need training programs. We have a whole generation with the legal right to advance as fast as their talents will carry them, and we do not have any training program. Nobody has taken a look at how we can provide employees the skills that they need so that they can use the legal leverage they have. And if you can help us in defining how we train disadvantaged employees and what is the minimum time needed for training, then we would seek to incorporate your training programs and your minimum residence periods in our legal efforts.

Even without the assistance of management, the unions have instituted a number of practices which have the effect of discriminating on the basis of race. For example, Local 53 of the Heat, Frost and Asbestos Workers, an all-white union, maintained the rule of sons and close relatives who live with the member as a membership or admission policy. Their apprenticeship rules required

four years experience before an employee in the industry reached the journeyman level. That led us to take a close look at the qualifications that are necessary according to legitimate business needs i.e. safety and efficiency. Immediately, we found that if you have worked in a related trade, such as plasterers or bricklayers, it required virtually no training at all for a journeyman to get a referral out and do the work very efficiently in the asbestos trade. So our first criteria was that if you are a journeyman in a related trade, you shall be referred out as a journeyman in the asbestor trade. That didn't help us a lot.

We set up a little training program. Paul Vogler, who happens to be a white man and who assisted in bringing the lawsuit, claimed that he could train anybody but an imbecile to function at a third year apprenticeship level in six weeks. Vogler did train a lot of people and he trained them in approximately six weeks. Some took a little longer. These men could go out into the trade safely and efficiently. As soon as we demonstrated that, we asked the court to order Local 53 to admit them as journeymen, which the court did. The problem, of course, is that this is not a very good way. We do not want to have to create our own training programs, and to have a journeyman teach potential employees identified by the Legal Defense Fund and the Equal Opportunities Commission. Rather, we should take a close look at union membership requirements throughout the construction industry and find out what training is really necessary for a man to perform safely and efficiently. Clearly, it does not take a four year apprenticeship program in the asbestos workers' union, in the carpenters' union, plumbers' union, sheetmetal workers' union or any other. The air force trains jet pilots in twelve months, and I don't see why it should take any longer to train a journeyman in any trade.

The next case that I want to discuss is Griggs vs Duke Power. This is the testing case that many of you might have read about in the newspapers a few months ago. Griggs vs Duke Power involved the question whether or not an employer could give phychological or aptitude tests for promotion or as an employment screening device. The tests excluded a disproportionate number of blacks, and there had been no evidence that the tests were job related or predicted whether or not an employee could or could not do the job in question. The court held that where a test excluded a disproportionate number of blacks and is not shown to be job related, then it constitutes virtual discrimination and cannot be used as a potential screening device for employment of for promotions.

The testing implications are rather obvious. The decision calls into question the use of every test which excludes a disproportionate number of blacks. It also goes further and calls into question any exclusionary device, whether it be an employment test or an age requirement, in a union. The Supreme Court, in grappling with this problem, simply endorsed the guidelines on selection and testing procedures promulgated by the Equal Employment Opportunities Commission. Essentially those guidelines define what validation of a test means, and I'm sure educators know the difficulties that are inherent in any validation process. The guidelines, however, do something else. They erect a standard of validation which is so tough that frequently unions and employers are not going to meet it. Parenthetically, one might ask whether it is fair to impose a test or standard that the employer or its union cannot meet. In answering the question, I would say that it is fair, given a history of discrimination and the employers complete inability to indicate that their tests actually do what they claim to do. Tests just aren't now and never were a feasible means of assessing competence on the job. When industrial psychologists started using tests to choose the best man, I think they went off on the wrong track. They can't demonstrate that any test does that.

Taking the three cases and putting them together, let me conclude by suggesting a need for several things. First, there is need for the creative design of vocational educational programs to follow up on the work of the courts and the legislatures. This includes retraining a substantial segment of American labor, so that men who have previously been excluded from a number of jobs can now move into those jobs as quickly and efficiently as possible.

Secondly, I see a need to define training in such a way that we get rid of all the unnecessary criteria for employment or promotion. We must know when a man can do a job and when he can't, and give him the opportunity to work as soon as he is able to do so. Thirdly, occupational educators need to take a look at the standards of admission to various programs of occupational education.

WOMEN'S LIBERATION AND OCCUPATIONAL EDUCATION

Guin Hall

Introduction

No subject has been more frought with misunderstandings, myths, fears and unconscious biases than that of the so-called "Women's Liberation" movement. But whatever its drawbacks, it has created new awareness among many of the unequal opportunities available to both women and girls. Teachers' attitudes and opinions about what girls need have a strong impact on the entire careers of women. Equal pay for equal work is now law. But women and girls need to be prepared to compete.

I. Check Your Own Attitudes About Women

1. Do you believe men and women should receive equal pay for equal work?
2. Do you feel vocational education for girls should be different than that for boys?
3. Do you believe women have unfair treatment?
4. Do you feel preparation for holding a job should be part of every girl's education?
5. Do you feel boys as well as girls should be trained to manage a home and raise children?

II. Women's Liberation

There's more to women's liberation than a small group of bra burning, emasculating, radical young women. That is the side the press likes to show. It is actually a growing movement with many parts and many ages and degrees of conservative-to-liberal viewpoints. Many average women were in the August 26th march down Fifth Avenue. All have as the basic tenet, however, the recognition that women do not have the options for living that men do and that the reasons used are assumptions, not fact.

Women's liberation results from, and seeks to eliminate, several myths and erroneous assumptions about women in our society. Let me suggest three at this point.

Myth 1 - Virtually all girls will marry and get pregnant.

Not all girls will marry, and not all who do will start immediate families. Of those who do, many will arrange for child care and continue working.

Myth 2 - A women's income is usually the second income in the family, so she is expendable.

Actually, many women provide the only income in the family. Regardless, what right has anyone to decide whether a family should have one or two incomes, or whose is more important? Furthermore, widows and divorcees must usually take care of themselves.

Myth 3 - Women never had it so good

This myth assumes that the good women want to be screened out of opportunities. It is one thing for a woman to choose a career as a homemaker, and a different thing to be restricted thereto.

Girls and boys still do not have equal opportunities for careers

For example, there is still a quota enrollment for girls in some graduate schools. Unequal pay still exists for women. Most girls and women are at the lower end of the job scale. A small percentage of women are promoted past first supervisory levels in industry. Females are still not admitted to some professional associations, or given opportunities for leadership roles on the job.

As a result of these and other practices, many professions are now taking a new look at the status of women in their organizations, e.g.:

Professional Women's Caucus

Five organizations of nuns

American Association of Law Schools

American Association of University Professors

National Vocational Guidance Association

American Anthropological Association

American Chemical Society

American Historical Association

American Psychological Association

American Sociological Association

Staying home because you have no choice is not the same as choosing this life style from among many options. Men and women should both have such options. The Women's Liberation Movement and equal rights legislation have helped to create new awareness among employers and new jobs for women. They are also stimulating changes in pension and insurance limitations, more attention to needs for day care of children, flexible work hours and experiments in pairing of jobs. What girls need now is equal preparation which will prepare them to compete all the way up the career ladder.

III. Women in the labor force

Perhaps the following statistics will help to provide some perspective on the problems.

1. Labor Force (16 years and over)

   A. 43% of all women over age 16 are in the labor force.

   B. Women comprise 38% of state and national labor force (30.5 million in U.S.)

   C. The median age of working woman is 39.

   D. 60% of women over 16 are married and living with their husbands.

E. The age 45 - 54 age bracket shows the greatest increase (40% of women over 16 are over 45).

F. 41% of women over 16 have children under 18.

G. 5.4 million working women are heads of their families.

2. Life Style

Girls marry at 18 (boys at 22). They typically have their last child at age 32. Their life expectancy is increasing; girls born today will live to be 75. They can also expect to work from 25 - 40 years of their lives for an income.

3. Comparative Salaries

Women earn less than men and the gap is wider today than in the late 50's. In 1969 women's wages were 60.5% of men's; in 1955, they were 64%. Only 6% of men earn less than $3,000, but 14% of women do. Only 5% of women earn over $10,000, but 35% of men do. These figures reflect unequal pay in some cases, but also the fact that women are in the lower paying jobs.

4. Education of Working Women

One out of 10 women in the labor force has less than 8 years of schooling. Seven out of 10 have a high school diploma. One out of 10 has 4 or more years of college. Overall, more girls drop out of college than boys, and do so without a job skill.

5. U.S. Occupations (16 years and over)

	Girls	% Total - All Workers
Clerical	34.3%	17.2%
Sales	7 %	6 %
Operatives	15.5%	18.4%
Service	21 %	12.2%
Professional % Technical	14 %	13.8%
Managers Officials, Proprietors	4 %	10.2%

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As is apparent, the greatest gap is in the management area, and the high number of girls in the clerical field suggests we are overemphasizing the education of girls in these skills. Why not encourage more boys to enter the clerical field?

IV. Problems of Women Returning to Work

Let me turn next to the problems of your girl students in another 10 to 15 years. First, they will often need more education or skill training. Many didn't finish high school or complete a college degree or learn a job skill. Frequently, they received no guidance at any stage of their education.

Most women do not want the same kind of work they had before marriage. The woman returning to the labor force feels her qualifications are now broader. She often wants to help people or work with children, i.e. "wants something satisfying and to work with people."

The needs for income will vary according to the situation: Some will be self-supporting (widowed, divorced, or single). Some will be assisting in a family financial crisis (health care, prolonged illness of husband, extra dependents). Some will be assisting in extra major family expenditures (college education, purchase of new home, special vacation, etc.) Others will be returning permanently after their children are in school. The latter group may need flexible hours at first if child care services aren't available.

Women returnees often need refresher courses in any skill or training not used in several years. They are afraid of going directly on the job without this, and many nurses have not returned for this reason. They know they are so badly needed that they would be put right to work, using equipment completely strange to them.

Some returnees are completely lacking in confidence, afraid to take a test. They cannot face failure, and must have straight A's in school. Such women need help in adjusting. Many women have difficulty adjusting to taking orders instead of giving them, as at home, and experience the most trouble if their supervisor is the age of their children. A problem here is that some women have had little responsibility at home that developed their ego. They relied more upon expectations than "respect" to get action. Their work at home was not creative or mind-expanding - baby talk, small talk, just pushing buttons and adding water.

Women returning to the labor force often have no idea of what they are capable of doing, what is available today, or how to get the answers. Employment offices don't have the time to guide the applicant who "drops the dishtowel to run down and see what jobs are available for a woman who'll do anything." Is it not the job of education to prepare girls to cope with these career needs?

V. How Educators Put Girls Down

Educators don't prepare girls for life as it really is. Education provides job skills, if any, only as a pre-marriage stopgap. Homemaking is regarded as a 24-hour lifetime occupation, with no recognition of the long work period after 35 or the intermittent work periods in between. Education buries girls' aspirations. The criteria for a girl's success in marriage is, "Your husband will support you. Be a mommy and have children. If you must work and if you're good at math, teach it, but don't be an engineer. If you're interested in law, be a legal secretary, not a lawyer. If you like medicine, be a nurse, not a doctor." These attitudes help to explain why women comprise only 1% of engineers, 2% of lawyers, and 7% of doctors. Yet society needs more of all three. (Do we encourage little boys to "be a daddy and have children"?)

The girls and women in a group are always asked to take the minutes, sew on a button, make the coffee, stuff the envelopes -- in other words, serve the men. Too many educators assume that girls won't need as much income as boys. There is too much emphasis upon the immediate instead of the long-range work patterns of girls and boys. The tendency is to judge vocational training values by only the early years for a girl (which are not her best work years), whereas her longest work period may be after the age of 35, with several temporary periods in between when supplementary income is needed.

Education also fails by not seriously accepting the fact that girls will work. As a result, it reinforces their lack of interest in developing a financially rewarding skill. It also discourages girls from taking traditionally boys' occupations.

VI. The Future for Jobs

Ten years from now, most jobs will be ones unknown today. The best preparation is multiple skills. Training for a single skill is unrealistic, e.g. (look what wigs did to the beautician's career.)

Women will move higher up the career ladder. Many industries are exploring this now. Expanding job fields are in recreation, retirement living, urban planning, consumer education, communications, automation (push button grocery shopping and meal planning), social needs, health, education, welfare, and housing.

Dr. Herman Kahn suggests this is the third major era in mankind's history. It is concerned not so much with agricultural or industrial growth as in the past, but with the social, mental, and physical needs of people. These are the areas in which women have been traditionally involved. But they must be taught a "family of skills" with all of the modern technologies to make them marketable in an everchanging labor market.

How can occupational training for girls be improved? There must be more role models available. Former girl students must speak to classes, and students must visit to see girls at work.

More efforts must be made to expand the kinds of skills for which girls are trained.

Action is needed to eliminate barriers that prevent boys and girls from training in each other's traditional skills. We must develop more work - study programs which give girls a better idea what a job is about. In addition, we need career pamphlets and films and slide presentations showing girls working in many kinds of careers to provide the broadest possible job horizons for girls.

Job orientation courses should be available to all vocational students to provide all the things important to a job seeker besides skill on the job. For example, students should know how to write a resume, how to manage a home and family along with a job, how to figure the cost of working, how to apply for a job, and where to look for jobs. We should plan for comprehensive education centers available to any ~~aged~~ person over 16 years old. Such centers could offer a wide variety of occupational training and could be intermingled with a job, providing flexibility in changing curriculum as career interests focus.

My last question is this: Who is to lead the way to wider job opportunities for girls? Occupational educators or industry? Right now, each is leaving the responsibility to the other, and little is being done.

THE ROLE OF PRIVATE ENTERPRISE IN OCCUPATIONAL EDUCATION

J. M. Shostak

It is the purpose of this paper to explore the role of private enterprise in occupational education. If in this exploration leaders of the educational process discover recognition of a specific curriculum need, the paper will have succeeded in obtaining change. And that is the frame of reference to which we address ourselves - one side of the triangle being definition of terms, the second side being an understanding of the young and young adults in occupational education, and to close the form an application of specific factors of the educational principles which the private sector identifies as:

1. Communication skills
2. Problem solving
3. Creativity
4. Effective utilization of available resources
5. Human relationships
6. Leadership
7. Adaptability to adversity
8. Judgment
9. Conceptal recognition
10. Application of detail understanding to the broad view
11. Evaluation of process

We shall return to these characteristics as they surface into the perspectives of our definitions.

A draft version of a U.S. Office of Education position paper on secondary vocational education identifies vocational education as:

". . .a convenient umbrella phrase which roughly identifies an aspect of education, and it means very different things to different people. For some, the term is used to refer to a group of federally supported programs meeting prescribed minimum standards which provide students with marketable skills. Others use the term to embrace any program - public or private, intensive or superficial - which professes to impart vocational skills or attitudes." Garth Mangum, in his contribution to Functional Education for Disadvantaged Youth, states a variation: "Educators have been reluctant to place primary emphasis on the preparation for employment, fearing that it would want the more general goal of education for "life," usually meaning citizenship, culture, social skills, and pursuit of learning for learning's sake."

At how many meetings, conferences, conventions have we heard the terms, "vocational education," "occupational education," and, now, "career education" - and immediately define them in our minds as skill training or employment at a job entry level, or as upgrading for a greater skill of increased responsibility? How many of us can rattle off the categories identified as vocational education? Do we think of agriculture? Trades and industry? Business occupations? Distributive education? This is the pattern of administrators, teachers and students. This is the second part of the two major problems in the field. This is to be deplored. It is not even professional - for the careful use of chosen words, the thought-out understanding of the phrase would demand recognition that vocational education is education first - and vocational second. And, here, "vocational" is used to mean skill. And skill can mean "engineer," "lawyer," "doctor," "teacher."

Is MIT a vocational school? Are law schools, medical schools, teacher preparatory institutions vocational schools? Is preparation for a profession a vocational education? At the same time - is a top toolmaker a professional?

He certainly makes more money than most of us do, working fewer hours each day. The thrust of this concept is not to denigrate professional contributions to our society. It is my purpose to raise a question, that question being: What is the purpose of education?

Most educational administrators agree that a school district budget reflects the purpose of education. Consider, if you will, the budgetary process. The teacher requests an item to improve the quality of the classroom learning process. The supervisor, department chairman, dean or principal applies his knowledge and experience to the request and approves the request. The principal or superintendent evaluates and determines the priority of expenditure of available resources and includes the line item. The policy-making board evaluates within the concept of the recommendation of the superintendent and their purpose for the schools. And the community approves the budget.

A simple process? Far from the truth. There are state regulations, federal guidelines, and judgments made at various levels beyond the structure of the schools. There is the final factor of student acceptance or rejection. It is difficult to define the purpose of public education.

This observer has probed the question with educational leaders, government officials, university professors and administrators, classroom teachers, and others. There is a pattern to the answers. At this point in time, and in our society, the consensus seems to be that the purpose of education is "to increase the options of the individual." This is the answer of Harold Howe II, Rupert Evans, Grant Venn, and Leon Minear, as expressed verbally and in their writings. However, Kenneth Clark and Charles Silberman, in tandem, present a different version. Clark states: "the defects and failures of the slum schools are but an exaggeration of what's wrong with all schools." And Charles Silberman states the defined purpose of education to be an output of: "men educated to feel, and to act as well as to think." This philosophical concept, when put

within the pragmatism of Clark's criticism of public education, can serve as a thought-provoking evaluation of the purpose of education. Specifically, your individual consideration of your own responsibility to the students that you serve - your decisions, your application of available funds - should be placed in a clear perspective of daily purpose.

Data reinforces the fact that the majority of school populations are now in the urban centers. And, of this majority, those with the greatest need from the schools are the eight out of ten students who never do receive a college degree before entering that sector known as private enterprise. This is the group that requires a clear purpose for persons exercising a leadership role. Returning, once again, to the report being prepared by USOE, we are able to focus on this group as follows:

"Beginning with the first position held for at least six months, the typical member of the labor force without a college education, to cite a current estimate, holds 12 different jobs in a 46-year working life. Only one man in five can anticipate remaining in the same major occupational category for his entire life. Excepting persons in the skilled crafts, and some of the service and white collar occupations, most workers in the non-college group do not have careers. They usually hold a series of jobs which are likely to be unrelated, or loosely related to each other. Education and training, to be significant for these persons, must attempt to provide the individual with skills and attitudes necessary to cope with such changes, and to increase the options available to individuals in a changing society, as well as seeking to provide training for the first or second job."

Here, in clear language, is the defined need. (You will, undoubtedly, notice the wording, "to increase the options.") And, once again, there is a call to broaden the base of vocational education. One is prone to ask - "Can it be done?" And, secondly, "Is there a profile of the vocational education student -

the student for whom it could be done?" We ask these questions from our perspective since any businessman who would conduct his affairs in flagrant disregard of his market would be in bankruptcy in short order.

The Profile of the Student in Vocational Education

Looking at the second question, we know this about the student:

1. Secondary school vocational students come from the population at large, rather than from any specific socio-economic groups.
2. Ethnic data show that minority participation (Negro and other) of secondary enrollees in vocational education courses was slightly higher than their proportion in the corresponding population group and those enrolled in school.
3. Family income data show concentration of vocational students in the $6,000-$10,000 range. Median family income was $8,500.
4. Dropouts from school among vocational secondary students were about 5 per cent, similar to the proportion of all dropouts from secondary school programs in any one year.
5. About half the vocational students worked at least part-time, about the same proportion as for the total teen-age work force.
6. About half the vocational students plan to seek employment once they have concluded their vocational preparation.
7. About 41 per cent of those scheduled to graduate in 1972 looked forward to continuing their education.*

This observer has been alert to the research done on the ability - intellectual capability - of vocational students for some time and still is not satisfied that the conclusions are definitive. An HEW Task Force report (Sept. 1970) states:

* Vocational Education Characteristics of Teachers & Students, 1969, USOE

"Over the last few years, considerable attention has been given to unpublished project TALENT data which indicate that very large percentages of vocational students--78 per cent of the vocational students, 87 per cent of the agricultural students, and 67 per cent of the commercial students--are below average in ability according to their test scores. The validity of this data has been questioned by some because of sampling and definitional problems. More important, special analyses of the Survey on Equal Opportunity (Coleman) indicate that the way in which vocational students are identified, the way in which questions are asked and the way in which data are subsequently tabulated can support or refute this picture."

It is important for our understanding, however, that a current thrust is leading toward programming vocational education down to the primary grades (K-6). This will then encompass the total student populations from those who accept the purposes of the school to those who reject any educational structure. This, then, will include a range of students from the gifted to those of low ability. There is, at the same time, a continuing thrust to expand the upgrading and specialization offerings at the two-year college level.

With this foundation of approach - a definition of the purpose of education, including vocational education as a part of the purpose of education of the total student, a summary of data that indicates to us that we are viewing an average population - not confined solely to any specific socio-economic group, perhaps slightly lower in ability, and, finally, vocational education now being programmed to total school populations, the private sector is in a position to evaluate its potential role in vocational education.

What is the role of private enterprise?

The question of contribution to the educational process is narrowed to this view of purpose. "What does industry and commerce want from the schools?" Shall this sector address itself to revision of teacher training, effective

utilization of financial resources, a systems approach to educational administration, attitudinal and image change, or the level of educational structure? Should private enterprise answer the major question asked by educators - "You, as one sector of the community, what output are you seeking from the schools?" It is the posture of this paper that the private sector should focus its answer to this question on a revised curriculum, one that is transitional in nature, and which is not a part of current education.

The objective of this curriculum revision is not to seek a major change in substance of course offerings at all levels. Its purpose is to graduate students prepared with a job-entry skill who have these identified traits:

1. Communication Skill - Initiates and maintains effective, two-way channels of communications with subordinates, peers and superiors. Develops, organizes and articulates ideas effectively.
2. Identifying Problems - Diagnoses complex systems to identify problems and initiate effective corrective action.
3. Creative Management - Identifies and/or creates opportunities for innovations that contribute to the selection or realization of corporate aims.
4. Provides Direction - Develops measurable and challenging goals and establishes appropriate priorities. Effectively utilizes and integrates the human, financial, material and technological resources within or outside the company to achieve these goals.
5. Collaborative Relations - Effectively secures effort of other individuals or groups in support of his responsibilities as well as decisions or policies considered necessary by higher management.
6. Developing Subordinates - Provides the climate and experiences that foster growth in his subordinates and makes accurate assessments of their performance and potential.

7. Long-Range Planning - Perceives, plans and initiates effective action to enhance the long-range strength of the company.
8. Balancing Responsibilities - Accurately perceives and effectively balances multiple, and sometimes contradictory, responsibilities to enhance the company's social, governmental, technological, service and economic goals.
9. Effectiveness Under Adverse Conditions - Maintains sustained management effectiveness to carry out plans and realize goals under conditions which involve taking calculated risks, making decisions with ambiguous or limited information, or working under pressure.
10. Social Involvement - Effectively contributes to the betterment of society consistent with corporate objectives.

To those who are uninitiated in the jargon of private enterprise, these are descriptive terms used by one of the three major employers in the private sector in their screening process for employees. The Western Electric Company personnel staff look for any combination of these traits in those who are hired for employment. Recommendations by supervisors for upgrading employees are placed within these frames of reference. In-house training programs are geared to these factors. Off-campus college courses offered to employees in a plant are related to these characteristics. Work - study programs, with secondary-level students, attempt to foster the development of these in combination with entry-level skills. The Western Electric Company is not alone in searching out the individual who possesses them. Of note - they apply to the beginner as well as the professional.

Let us now clarify the liaison between the schools and the private sector of industry and commerce. What follows is my suggested answer to educators when they ask - "What do you want from the schools?"

1. Communication Skill - This is an obvious term to educators - to develop skill in verbalizing and writing to an effective degree. We emphasize "effective degree" since there are various languages, including the black dialect, regional dialects and idioms. We also include the utilization of arithmetical symbolism.
2. Identifying Problems - Translated into the world of education, this becomes problem solving and is easily identified with self-paced instruction. It is this trait which could serve as the medium for curriculum revision at all grades of elementary and secondary education. Let us learn from the experiences of Nova, Newton, and the street academies, to mention just a few. Let us broaden the implementation base that was proven in the Job Corps. Brazil, Israel and Yugoslavia have shown that this approach can be applied to occupational education with a high degree of success.
3. Creative Management - The key word of creativity should be emphasized. This observer rejects the structure of any classroom or any teacher who stifles the natural curiousity of the young. It is felt that this practice is a terrible waste of human potential. Visualize the impact of the bright child who is forced to stand in line and feed back only that which is taught when he may well want, with a high degree of will, to broaden his understanding of a unit of classroom work.
4. Provides Direction - Basic to this trait, skill is self-developed motivation and the ability to establish possible objectives - realistic to age level of mental and physical capabilities. Self-realization of limited abilities leads to the other person's limiting factors. Although it is felt that you will think of any number of intellectual limitations by grade and age grouping, this

trait can easily be illustrated by physical variations within such groups and comparative recognitions by the students themselves.

5. Developing Subordinates - There are some whose thinking denies this as a role of the schools. But are you not doing this constantly? Does not teacher training start in the primary grades? This does not mean "subordinate to." It does mean tutoring, apprenticeship - the one-to-one relationship.

6. Long-Range Planning - The educational philosophy primarily known as "building blocks of knowledge" is something that you are currently doing. The student must take algebra before geometry, geometry before trignometry, etc. Although the principle is traditional, this observer is aware that, when creativity is combined with this trait, the posture may be questionable.

7. Adaptability to Change - The rigidity of the schools - Grades 1, 3, 5, 8, 11 - the lock step of daily routine where, like Pavlov's animals, the bell rings and the mind tunes out arithmetic and opens another pigeon hole for social studies - to this, we say in an unscholarly manner to you scholars, "Stop, please. Educate to flexibility."

8. Balancing Responsibility - Educate, train, develop your students in an interdisciplinary curriculum. Why should not the economic geography teacher correlate his weekly lesson plans with the science teacher, the mathematics teacher, the sociology and anthropology departments. It is being done - and successfully. It relates highly to self-directed study under the guidance of the singular teacher who relates to a high degree to the student.

9. Effectiveness Under Adverse Conditions - The schools are operating effectively under severe adverse conditions. However, it is a poor

administrator who, given a staff and some funds, is not able to cope with the daily problems. It is urged that you identify this skill and train your students to its characteristics. Those students in the inner city have the right to claim this of you. Teach them how to meet adversity.

10. Social Involvement - Citizenship training, civics (do you remember that one), the newer offering of educational sociology - these are required by regulations of the state. But the state is saying to you, "Train the total citizen."

In summary, what is being sought is a recognition of human traits and subsequent revision of priorities in the classrooms of the public schools. For it is believed that these three quotations are completely true:

H. G. Wells, The Outline of History

"Human history becomes more and more a race between education and catastrophe."

Benjamin Disraeli, Prime Minister of Great Britain

During the year 1874, the Prime Minister addressed the House of Commons:

"Upon the education of the people of this country the fate of this country depends."

Kuang-Hsu, Emperor, Manchu Dynasty, China

"When planning for a year, sow corn.
When planning for a decade, plant trees.
When planning for life, train and educate people."

THE ROLE OF PRIVATE ENTERPRISE IN OCCUPATIONAL EDUCATION

Norman Willard

Before I present what I think the role of private enterprise should be, perhaps it would be wise to review three dimensions of the problem: first, those factors that constrain the private sector as potential employers; secondly, those issues impinging on the student, the young adult, the person seeking employment and, finally, those problems perceived by the educator, who must develop people to an initial level of competence and assure that the options of development to one's full potential remain open to each individual.

Today's businessman has come to expect people who exhibit little or no specific skills to dominate the manpower pool. It's almost impossible to find potential employees with highly developed, special clerical, mechanical or technical skills unless these were developed under programs of the Armed Services or by another employer. However, this problem is a very old one. It probably just must stay where it is. In large bulk, it must rest with the employer in any free society. But if that same society is to assist its individual members in securing economic security, it must assume the responsibility to assist each individual to gain skills of the widest possible utility.

Much has been said about reading as one of these general skills. In my work, I find that today's job applicant is woefully weak in this non-specific area. Thus, the private sector is faced with a new and unexpected human resource development burden. Many other problems face employers. One is the habits of performance possessed by the new work force. There are grave concerns about the absence of a sense of responsibility in a new employee. Basic patterns of reliability in industry are missing in today's job applicant. Whether these habits are assumed to be a product of home, family, or the school

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is not the key question concerning the business community. Rather, it is our hope that these habits will be maintained and reinforced by each of society's institutions, including the schools. One additional attitude would strengthen our entire society, both private and public, if most people -- whether technical or professional -- whether labor or management -- whether private or public -- were committed to excellence as a standard of performance. If mastery were the conventional passing grade, the result would move our industry move our economy, move our nation forward.

The hypothetical potential of new attitudes is far overshadowed by the stark realities of technological change and economic fluctuations. With technological change comes technological displacement, and with economic recession comes economic displacement. Displacement requires adaptation to new conditions and new demands. If adaptation is very difficult, those who are displaced withdraw and become inert, as many of those on welfare are now doing. Or they may arise and aggress against the source of frustration, as some of our young are doing. To forestall these consequences of change, it is essential to educate and train the manpower of our nation so that they may adapt to change with ease and efficiency. In general, we find that the current crop of employees have not been adequately prepared to work in a changing evnironment.

Shifting our focus from the employer to the potential employee, we get an entirely different view. In the urban setting, the student and the recent graduate have a common problem -- and that is their financial plight. The relationship between the need for money and dropping out of school has been widely discussed. In an attempt to solve this problem, there have been a wide range of proposals. Obsiously, part-time employment is the traditional option for students. In an attempt to regularize the available work opportunities and maximize their educational value, co-operative or work-study programs

have been established. I mistrust O.J.T. on practical grounds. We all know, also, too well that both part-time work and work-study programs are subject to fluctuations in the economy.

Other factors in the school shape the nature and attitudes and the style of incoming employees. One is the degree to which a school represents the establishment to the student. If contempt and avoidance have become adaptive responses to the schools, the same responses are likely to be exhibited on the job. In addition, and apart from these anti-system attitudes, there are a family of shortcomings which inhibit the student in his attempt to adjust to adult society as a productively employed citizen. The limitations of occupational and vocational counseling have been well documented. It has been pointed out that few counselors have had significant experience in the world of work beyond the school yard. Thus, when students graduate with little or no knowledge of the mores of industrial environment, it comes as no surprise. Even more serious is the fact that these same students possess very little awareness of the characteristics of the occupational, vocational, or recreational options that are available to them. Their perception is more influenced by TV than reality, or even school counseling. They know little about the aptitude or ability requirements of the few jobs of which they have heard. They know almost nothing about compensation patterns in employment options. As a result, they enter the labor force with erroneous expectations, assuming a rapid rise to a position with decisions, or even policy-making responsibility, and wages to match. Such expectancies can lead to internal organizational pressures and often intolerable frustrations, leading to a great increase of employee dissatisfaction and turmoil. This situation heightens unemployment, welfare costs, and job training expenditures, and thereby weakens our national economy.

It would be unfair to discuss these problems which plague the employers and the employees and not review those problems faced by the public school system. Three issues warrant special attention. They are the relation of educa- to community needs, the credentialism hang-up, and what I call exploitation anxiety. The first of these is an issue wherever educational goals or training aims are set. Schools have not sought mechanisms for sensing the needs or interests of the community. I often remind friends that business is a member of the community. Their needs and interests warrant careful consideration.

The second issue can be closely related to the first. The administrative and regulatory agencies are slow to adapt in schools and in business and often end up supporting practices based upon credentials rather than validity. The recent decision of the Supreme Court indicated that the validation of creden- tials as criteria for selection and placement must also be determined. This decision will force on all of us the challenge to review the requirements for credentials and may be the most important court decision of the century, for it will deal with the ultimate question of the realization of full human potential without prejudice.

The third issue is the one that I label exploitation anxiety. In the interaction between members of the business community and the school system, my colleagues and I have noted an increasing fear that the governmental, indus- trial complex is lurking in the shadows adjacent to the school, with but one purpose -- to enslave the graduates as servants in the contemptible caverns of commerce. This exploitation anxiety confuses me because I have always felt that the possession of a marketable skill was the soundest foundation upon which to build a sense of personal worth. And a valid sense of personal worth is essential for freedom from fear, and freedom from exploitation. But marketable skills imply that there is a marketplace and that each of us may achieve self- realization in commerce with that marketplace. Surely the great majority of

those in our public schools will spend some portion of their life as productive citizens within some aspect of the world's economy. If the corporate members of that structure differ in their value to and respect for mankind, that can be regulated by enlightened consumers, but to cast suspicion upon the system by which people serve each other's needs is to undermine that essential human process which defines society. Given the conditions just reviewed, I see several things that the private sector can do in the area of human resource development. I have purposely chosen the phrase, "human resource development," as a substitute for the words, "occupational education." I hope my reasons become evident as I discuss what I think the business community can and must do.

First, there are a series of actions which must be initiated immediately. These might be labelled, "remedial", since they are focused on correcting existing conditions. As many of you are aware, the National Alliance of Businessmen joined with the Department of Labor to develop a program to hire, train and retrain the disadvantaged of our cities. This program was conceived and implemented in 1968, and its effectiveness has been described. The focus on the disadvantaged highlighted the need for mediation in the areas of basic education. At First National City Bank, we were committed to hire and train over 1,500 disadvantaged members of our society. We have an unfortunate problem in that, because of national regulation, no one can be employed in a national bank who has committed a crime of dishonesty. The rule does not apply to persons who have committed a crime of violence; banks make a lending officer out of that kind of person. Because we cannot employ anyone convicted of a crime of dishonesty, we get a heavily female population from the disadvantaged segments of our society. In our particular program, 84 per cent of the participants were female. Seventy-five per cent were black, 20 per cent Puerto Rican, and 5 per cent other. Sixty-five per cent were high school drop-outs. Fifty-three per cent were welfare recipients at the time they began the program. Forty-six per cent -- remember, 84 per cent were female --

46 per cent were head of households. The most interesting statistic really is derived from the next three. Eight-eight per cent had previously been employed. Seventy-eight per cent were unemployed at the time they arrived for our program. Almost 90 per cent had had a chance, had had employment, but 80 per cent unemployed -- and these statistics were really derived not from the current economy but from an economy that was a very vibrant, alive economy. If you take those two figures and do a little simple arithmetic, you come up with an estimate that probably 20 per cent of these people have something different about them. And if you look at the records, you find that 17 per cent of this population had previously been enrolled in a job skill program. That's all. Those are the ones who either survived or who did not get into the labor market but came directly to our kind of program.

First, recognizing that there was a need for remediation in reading and arithmetic, we developed a program for remediation which employed the functional concept. In an attempt to stimulate student achievement, we employed contingency management by establishing a point system and relating the points to reliability and classroom performance. The points were redeemable for desirable privileges. In addition to the point system, we employed special counselors who assisted the student in the transitional pattern of unreliability and inability to deal with the problems associated with succeeding in the world of work, and provided a service that dealt with a variety of problems which might affect job attendance and job performance. We attempted to assist trainees in coping with marital, financial, housing, child care, and on-work problems. Our object was to teach those whose family, student or work district had been full of defeat and frustration to solve problems which arise from normal, day-to-day living. Development of these skills is just as important to job success as the possession of special skills required by a job.

Apart from remediation in the development of skills, in dealing with problems of daily living, much effort was directed at the development of job-related skills. Emphasis was placed on small instructional steps so that success would be easily achieved and, in keeping with the concept of developing marketable skills, we set high standards and strove to prepare the trainee for job success. By concentrating on job skills and adjustment skills, and relegating basic education to third place in importance to earn priority status we have put classical education in the category of not quite relevant. Our involvement in this program stems from the conviction that skill-building can reduce the welfare burden and can increase the pool of effective, productive citizens. This type of perception and commitment should not be restricted to the private sector. In times of reduced need for employees within the private sector, the requirements of continued development of our human resources, and to employ them productively, does not then diminish. Therefore, I would endorse public works programs reminiscent of the W.P.A. as an employer of last resort. Most of you also recognize the role the Army has played in developing our manpower. The combination of public and private effort to train people for productive roles in society is essential, if we are to solve the social problems without creating large, frustrating, demented or aggressive groups. However, the type of training so often reflected in public programs can only lead to further frustration. Training must be focused on a clear and useful work opportunity.

There is an interesting incongruity developing in our society. A generation ago, research and development was the activity of universities and other educational institutions. Only selected and very forward-looking companies had active research divisions in either basic or applied research. However, today most major companies have research divisions and much of the very best applied research and even some of the better basic research is springing from corporate laboratories and proving grounds. In my field, which is human learning, this has been uniquely true. The best practitioners of the techno-

logy of education and training in America today are those who sharpened their skills in military or corporate training environments. This leads me to another role which I believe a private sector must assume in occupational education. I believe that the industry based educational technicians must train the teachers in the public schools in the modern techniques of modifying behavior. The simple application of the systems approach to the development of an instructional program would affect great changes in our public education. I should like to describe an example of the foregoing relationship as it exists in four high schools in New York at this time. Under the general leadership of the Economic Development Council of New York, a group of business executives decided to study the feasibility of establishing a school-industry partnership. The study began on the premise that industry must clearly understand the needs of the school if it is to help. To learn about the needs, a committee of teachers, students, school administrators, union and business representatives began to meet regularly. A list of priority problems and a plan of attack was developed. The business representatives offered manpower, expertise, and techniques. Today's projects range from building rehabilitation to curriculum revision. Teachers are being trained. Administrative procedures are being revised. And hope is being rekindled in four inter-city schools. We brought 26 teachers -- 22 from one school -- right here to this building, and a staff of industrial trainers began the process of retraining those teachers. We tried to teach them the systems approach to planning, decision-making and all of its implications.

I will conclude with a discussion of what the private sector must do in the decade ahead. First, I believe that it's essential that each major type of industry begin immediately attempting to describe its skill needs for the remainder of the decade of the 1970's. It's unrealistic to expect schools to develop this information. The task is huge and the necessary information

resides in the offices and shops of industry. We, in the banking field, have begun this effort. Tomorrow I am to meet in Washington with several of my colleagues to evaluate our first step toward this goal. We have selected eleven functional areas within banking and we propose to describe the jobs, tasks, and separate elements within each of these areas in behavioral terms. We plan to attain minimum performance standards for each task and thereby establish an educational or training objective which can be communicated unequivocally to any institution. We hope that the public schools, community colleges, universities and textbook publishers will all find this information helpful.

Early in this paper, I discussed the difference between the requirements for general and specific skills. I have just cited an effort by the banking industry to describe its specific skill requirements. Hopefully, other industries will do the same thing, as they attempt to predict their future skill requirements. When they do, there must be a program to extract the common or general skills from the many in industry. These general skills would obviously have the broadest utility or the greatest transfer ability and, therefore, be prime candidates for inclusion in the curricula of public schools. Included on this list would be such mundane skills as oral and written communication, reasoning, the principles of extrapolation or generalization -- these may sound a little high-flowing, but I really mean how to solve problems, how to deal with what is going on in the world around you. In addition to that challenging list, I believe that we should provide each young person with a much wider and deeper view of the occupational options open to him. Each youngster should also be given the skills that will aid him in inter-personal relationships. He should recognize individual differences, rights and needs, but perhaps, most of all, the young person should recognize his obligation to the total society in terms of his responsibility to contribute regularly, reliably, and to the best of his ability. These latter behavior patterns have not been taught well in the

home. Therefore, the job must be assumed by the school, and by the private sector. And the development of these patterns must begin as early as possible and continue as long as possible.

Finally, I believe that all of our educational efforts must include training in how to cope with the complexity and stress of our society. If you and I, and our fellow citizens, cannot cope with the operation of day-to-day living, then our society will not advance. Indeed, it will not succeed. If we can achieve the objectives that I cited above in the decade of the 1970's, our country will prosper.

EARLY RETIREMENT AND SECOND CAREERS
IMPLICATIONS FOR VOCATIONAL-TECHNICAL EDUCATION

Dale Hiestand

Early retirement is becoming increasingly common for American workers. However, retirement from an employer does not mean that a worker will leave the labor force. Rather, retirement entitles them to an income, a pension. They then face the question: Shall this pension be my only income? Or shall I seek a second income and perhaps a second pension after a second retirement?

There are several classes of early retirees: One comprises a group of civil servants who may retire after 20 or 30 years, e.g., policemen, firemen, and military officers and enlisted men. Indeed, the allowable retirement ages of other civil servants, such as teachers and sanitation men, seem to be getting lower and lower.

A second group are the employees of private firms who are released because of mergers, reductions in force, or the relocation of plants or offices. Some will be given pensions if they cannot relocate. Also, there has been a slow trend toward vested pension rights, usually after age 40 with 10 or 15 years of service. About one-third of all workers age 50 or more now have vested pension rights.

The disabled form a third group. Disability is often specific, with respect to a particular job or employer. A person who becomes disabled may still be able to work, and thus may be seeking a second career. Disability becomes increasingly common after about age 40.

These developments are part of a complex of significant changes in the character of middle age which we can identify. We need to examine them carefully, for we know very little about middle age. The significance of different events in childhood and early adulthood have been well researched. We have well developed theories of the developmental processes affecting children and young

adults. We have also studied older people very intensively. Their withdrawal from work and life have been well researched.

But the middle years have been essentially unexplored. We seem to assume that no change or development occurs between about ages 20 and 60. But a little reflection suggests that a great deal of change occurs in the middle years. Moreover, studies based on the experiences of middle-age people in the past may not be relevant. We live in a progressive and rapidly changing society. We cannot assume that those now in or entering middle age will have experiences like those of their parents.

These considerations lead me to speculate on the occupational and skill problems of middle age. In particular, because people who retire from one employer are increasingly not retiring in actuality, I would rather not use the term, "early retirement", because it is misleading. Rather, I think we need to focus our attention to new directions in middle age.

There is a problem in defining middle age. For present purposes, it may be defined as that period after a person seems to have become established in a career or as a regularly employed person, but before he is ready to leave the labor force. By these criteria, middle age surely begins by age 45, and perhaps as early as 35 or 40. It usually reaches an end at about ages 60 to 65.

The occupational changes in middle age present significant problems. Some people are given a chance to make a change. Others are forced to make a change. As noted earlier, early retirees may want to or may need to seek a new direction. Those who are displaced because of mergers, consolidations, and cut-backs form a growing group. Federal and state programs are very unstable. At the present time, great numbers of aerospace workers need to find new fields, for their field promises to be much smaller in the future. Aerospace engineers are becoming service station managers, for instance.

At various times, federal and state programs expand rapidly, and create unexpected opportunities for middle-age people. This has been true, or may be true in the future, in such fields as poverty services, health services, pollution control, urban reconstruction, and the like.

New opportunities appear for other reasons. Technological change creates new sub-specialties or new fields, or raises the need for new skills in old fields. The growth of consumer demand in such fields as travel and recreation also creates new opportunities.

There are other specific groups for whom new skills may be necessary. The return of women to the labor force in middle age is now commonplace. Many older blacks who were passed over in the past due to discrimination represent a group whose potential can be tapped in the light of today's attitudes. There are also many entering middle age who concentrated on making money when they were young, but who now want to perform a service. Such people are often willing to take some reduction in income for a different style of life and work.

Many other changes occur at about age 40 to 50 in the lives of individuals which may lead them to reconsider their occupation. For some, their children grow up, and family expenses are reduced. Some are divorced or widowed, and they may reassess their lives. Some men and women settle for never marrying, and begin to wonder whether they want to stay in the field they selected when they assumed they would marry. Still others decide they have achieved all they want in their original field of work and set out along new routes. Some are simply bored with their work, while others more positively desire continual development and new experiences.

What are the implications for vocational and technical education of these changes which are occurring in the lives of an increasing number of persons? First, we should recognize that the need for skill acquisition by adults is not a new concept in vocational education. Currently, some 40 per cent of vocational

students are adults. Personally, I have always been more impressed with the adult educational aspects of vocational education than with the daytime programs for high school students. Night school programs for adults have been especially important in the trades and industry, and the distributive education programs.

Those with strong occupational orientations are likely to think that the skill training needs of middle-age persons with their desires to set off in new directions are the result of poor occupational choices and a lack of guidance when they were young. Rather, these middle-age changes occur because it is hard to really foresee when you are young what your needs and opportunities will be like when you are middle age. Also, some people continue to develop their interests and ambitions throughout their lives. No amount of guidance can really provide for the unexpected and continued development of such needs, opportunities, and interests.

This discussion points to several different themes which can be more fully explored. First, vocational educators will obviously continue to be concerned with the re-employment of the middle-age unemployed. Secondly, they will be concerned with upgrading and provision of new skills for those already employed and who want to stay in their field.

Third, vocational and technical education will have to be increasingly concerned with providing new career training for those who are "early retirees" or those who want to seek out new and rapidly expanding fields. Some of these new fields have almost become traditional "retirement" occupations, such as motel and resort management, operation, and service. The rapidly expanding fields which afford opportunities for new careers include not only tourism, but also the health fields; pollution; urban reconstruction; clerical and office occupations in general; technical occupations, such as finance; appliance repair; and office and home cleaning services. A very rapidly growing sector is the suburban business services to serve the expansion of business and

corporate offices outside the central city, including typewriter and other equipment repair, reproduction services, and messenger services.

Vocational educators may also find an increased supply of teachers coming from among early retirees or those forced to leave other fields, such as aerospace engineers, policemen, firemen, military officers, or airline pilots. It might even be helpful to vocational education if some of those who presently teach in the field were to seek some other second career. At least, they would open up opportunities for others in the field to advance.

I must enter one note of caution. I am not saying that everyone must be prepared for two or more careers. Many people will work their entire life in one organization and occupation. All I am saying is that some of the more adventurous set out to explore new directions. Secondly, I am saying that it is important that we keep the options open for those who wish or need to seek new skills or new careers to do so.

Also, I do not think I would agree with the Advisory Council on Vocational Education, which urged the development of "a pattern of life-long learning." Many persons do not need such constant education, and would be appalled at the idea that they should always be in school. A great many learn in response to felt or anticipated need, and I, for one, believe this is a legitimate stance toward the future. It may turn out that they are engaged in "life-long learning", but each learning experience is entered on its own terms because it seems directly useful.

The clearest implication of all the uncertainty which I see for many during their middle years is that each educational, training, and employment system must remain open and flexible to new opportunities and new needs. I am very impressed with ad hoc programs, precisely because we do not seem to be very good "planners", for the future always unfolds in unexpected ways.

There is one other point I want to make clear. I am not saying that it is the job of vocational education, alone, to meet the need for training middle-age persons. The training can be provided by a variety of systems. Educational institutions will play a part, with programs in high schools for some, and in community colleges for a great many others. However, many middle-age persons will utilize commercial schools, correspondence courses, and self-instruction. Employers will also provide a great deal of the needed training. Vocational education has its role to play in meeting the growing need for mid-career training, and vocational educators should be alert to their opportunities.

I should also report that my research indicates that those who start off in new directions in middle age are not unstable in any pejorative sense. Most people don't make radical shifts. Rather, they make a partial change in how they utilize what they know by entering a field which relies heavily on many of the skills they already have, including avocational skills. They often have to acquire new skills in order to be fully competent in their new occupation.

Most career changers don't quit one field and look blindly for another unless they are forced out of a job by a layoff or compulsory retirement. Rather, they usually leave their original field to enter a new field in which manpower is short. Therefore, they can feel reasonably sure they will be able to get a job in their new field. Usually, moreover, they are competent enough so that they feel reasonably sure that they can get a job in their former field if their new efforts do not work out satisfactorily. This emphasizes again the ad hoc nature of changing careers in the middle years. It all depends on the person, the fields, the time, and the place.

During any time period, there seems to be a significant number of people changing careers, but economic conditions determine who is changing careers - and why. If the economy is rapidly growing, if jobs are plentiful, and if governmental and employer support for training programs is liberal, then many

middle-age people will shift to new jobs because they want to advance, because they want to try something exciting, because they want to grow. If the economy is lagging, and if jobs are becoming scarce, and support for retraining has been cut back, then most who shift do so involuntarily. There is a profound difference in their psychology. Those who shift in prosperous times are hopeful and optimistic, while those who shift due to being laid off are discouraged and unsure of themselves. The latter often resist changing their fields. With either group, a career change may lead to a somewhat lower income. Those who shift into fields more meaningful to them are often entering a service field where pay rates are lower. Those who are displaced by economic reverses also often must accept a lower paying job, but they do it with difficulty since they did not want to change their occupation.

Basically, I have been making a plea for keeping our educational, training, and employment systems open and flexible. It is a plea to not arbitrarily foreclose people from opportunity because they are middle age. It is a plea that we give them the chance to use themselves well. I believe that if we rely on people to utilize themselves effectively, most of them will.

Finally, one senses a new desire for freedom, self-determination, and self expression on the part of the middle age. Many obtain these satisfactions as a normal part of their work lives. In recent years, women have gained a great deal of freedom in middle age because they at least have the choice of working or not working. The notion that a man might be open to new possibilities in middle age is emerging. One does not have to wait until one is too old to enjoy it to make adjustments in one's work life which yield greater satisfactions.

Instructional Concepts for Occupational Education

Leonard J. West

There is a comment I have heard numerous times at professional meetings during recent years that serves as a springboard for my present topic. We are told by representatives of the Black community that the white, middle-class teacher has failed with the disadvantaged youngsters in our schools because he does not "understand" them, because he cannot empathize with them, because their background is alien to his experience. The indifferent success of white, middle-class instruction of disadvantaged youngsters is only too apparent--in relation to the outcomes in what some people call "the good old days." But I doubt that the difficulties lie in understanding, empathy, or alienation. I submit, instead, that they lie in weakness of instructional techniques, in lack of sophistication about the processes by which skills, knowledges, understandings, and attitudes are acquired.

The sins of teacher education have come back to haunt us; the sick bird of conventional instructional practices has come home to roost. The educational outcomes of earlier years are attributable, I think, not to any marked correspondence between instructional behaviors and the real requirements for learning but, more probably, to the fact that the middle-class child's background often permits him to overcome or to compensate for some instructional deficiencies--usually by some form of self-teaching or with the help of parents or older siblings, as in your families and mine.

In more recent years we have been faced with youngsters whose preschool and later deprivations often preclude the remedying of instructional weaknesses by students themselves or with familial assistance. Such youngsters show up starkly what was hidden in former years by a good student body, namely, deficiencies in instruction. Our major difficulties lie, I think, in amateurish and superficial, rather than sophisticated and precise, understandings about learning processes among teachers. Our problems make apparent what has always been true: much folklore and little fact underlying educational practices. B. F. Skinner, the Harvard psychologist, has observed that "teachers have been less given to teaching than to holding students responsible for learning" and that "In spite of discouraging evidence to the contrary, it is still supposed that if you tell a student something, he then knows it" (Skinner, 1954).

No! The middle-class teacher of disadvantaged persons has had limited success not because he is uncaring, unloving, unsympathetic--but because he is "unknowledgeable." I do not mean knowledge about learning <u>theory</u>, but about concrete, explicitly specifiable instructional practices based on or derived from experimentally established theory. I mean a <u>technology</u> of education, and I shall shortly turn to a number of the major components of an educational technology, ones which seem to me seriously weak in conventional instruction.

The middle-class teacher has not had poor attitudes toward his disadvantaged students. If anything, he may be said to have "given his guts" to teaching. He tries hard; then he tries harder, and then harder still--doing with increasing emphasis essentially what he has always done. Such modifications as he

does make, judging from the results, are probably not consequential ones. When nothing one does seems to have the desired effects, teaching becomes a punishing experience. I do not doubt that some teachers have simply given up on instruction.

What is required, I contend, is more light and less heat, more mind even at the expense of some heart. The need is for simple competence, for surefooted management of the conditions necessary for learning, to the extent that those conditions have been reliably identified. "Dedication," whatever that may mean, is not something we can crank out to order, and cool know-how is to be preferred to dedicated uncertainty about the conduct of instruction. The dedicated Black or Spanish-speaking teacher will not, by reason of greater dedication or empathy, succeed where others have failed. It is know-how, not dedication, that counts most. As for "warmth" and "creativity," those other two poetic characterizations of a good teacher, no one has ever shown that learning is associated with temperature, emotional or otherwise; and I remind you that tests of creativity tend to consist of items such as "How many different uses can you think of for a brick?"

Now I do not mean to suggest by this prologue that the clientele for occupational education is confined to urban disadvantaged students. In fact, the new term, Career Education, applies to all sorts of students at all school levels, reaching down, for example, into the elementary schools for orientation to the world of work in general. But realism compels, I think, a recognition that those of us whose past associations have been with occupational education will continue to be predominantly concerned with training for what has been called the "less than baccalaureate world of work." We are not going to be asked to train persons for professional occupations.

We can't rationalize away our failures. We can't paper over our difficulties with vague poetry, but must instead come to grips with the kinds of students we do have. Accordingly, especially in the urban centers, our teaching task is a particularly difficult one, requiring uncommon expertise resting on a corpus of experimental evidence about learning processes that is far from being common knowledge among teachers. Conventional instructional practices are not good enough for the demands of the 1970's and future years. There exists a sound psychology of learning that has never really been widely applied to educational practices. Consider with me, then, just a few of the dominating concepts for learning, and let us ask ourselves to what extent conventional instruction is in keeping with those concepts.

First, the concept of <u>motivation</u>. Some persons suffer from the delusion that a person can learn anything provided he is motivated, and some rationalize poor teaching by saying that the student did not learn because he was not motivated. To most teachers, motivation has to do with a state of wanting or desiring or eagerness to learn. Motivation appears as an early heading in a lesson plan and tends to consist of some sort of pep talk designed to arouse interest. When that step is completed, the teacher goes on to other things. But the foregoing characterizations are wide of the mark, not in agreement with the real meaning of motivation, as revealed experimentally. Motivation has little to do with wanting or desiring. Few of us are driven by a thirst for knowledge. As Bugelski (1956, p. 460) has pointed out: "What is important is that the learner be set to react to stimuli and if this is done without his wish it makes little

if any difference." Motivation, in short, is attention to stimuli. Close attention is wanted throughout a lesson and is not likely to result from an early pep talk alone. Two other agents are more powerful. These are: (1) suspense, discovery, curiosity and (2) reinforcement.

Suspense, Discovery, Curiosity. Berlyne (1965) has pointed to discovery methods involving surprise, doubt, perplexity, and bafflement as important intrinsic motivators, whose effects may lie not so much in independent solution as in the arousal and subsequent relief of curiosity. We ought in education to take more advantage of the curiosity motive. We ought to do a great deal less telling and a lot more asking. Typically, the teacher "tells" or demonstrates and then asks the student to "tell it back" or to do what the teacher has demonstrated--either right away or later. Instead, by skillful teacher questioning, the learner should be led to identify, to discover, to arrive at answers and solutions--rather than merely parroting back the ready-made answers and actions that the teacher has earlier given or demonstrated. Much teaching should consist of questions on the order of: What do you suppose would happen if . . . ? or If you wanted to do thus and such, how would you go about it? or Suppose thus and such happened, what would you do about it? and so on in this vein. Questions like these should often introduce new learning, with answers given by students, rather than by the teacher in advance. And the kinds of questions asked can range from very easy ones to ones that elicit a good deal of stumbling. The objective in arousing curiosity is to establish high interest in correct solutions, high attention when the right answer or solution appears, whether brought to light by some student or, eventually, by the teacher. In short, the teacher should get out of the bind of first telling and then asking back.

Introduction of new learning by the arousal and subsequent relief of curiosity is one important motivational tactic. More pervasive, because it applies throughout instruction, is reinforcement for correct responses or, more generally, prompt knowledge of results.

Reinforcement. The most powerful motivator for learning is success at the task. The instructor who teaches in such a way that students make large numbers of right answers has no motivational problems. And success at the task depends not on preachments, pep talks or threats but overwhelmingly on feedback, on informing the learner (or providing him with a way to inform himself) about the correctness of his responses and actions. First of all, as Marx (1960, p. 896) has stated in his summary of the research on reinforcement as a motivational variable, knowledge about the correctness of one's responses "is often necessary to gauge and adjust performance; this is most apparent in regard to the improvement of motor skills." Secondly, the promptness or immediacy of knowledge of results is crucial, in view of "the experimental literature which rather uniformly suggests time intervals on the order of seconds. The reinforcing value of a high grade given at the end of a semester can have little or no direct effect on the learning of skills or content during the semester" (Bugelski, 1956, p. 463). In motor or manipulative skills, "in which motions take place in fractions of a second and cannot be reconstituted later on, knowledge of results that is delayed more than fractions of a second loses its value" (West, 1969, p. 448).

In conventional instruction, I think we tend to be weak in two ways. We

do not regularly or frequently enough provide the learner with knowledge of results and, in motor or manipulative skills in which immediacy is crucial, we do not provide that information within seconds of the learner's response. The motivational requirement of many successes by the learner means two things: that the sequencing and pacing and clarity of the instruction be such as to maximize the number of right answers and, also, that mistakes be swiftly identified and corrected. Both require frequent and prompt knowledge of results. It serves as a corrective for wrong responses and as reinforcement for correct responses. Let us then examine our instruction with a view to identifying ways to let the learner know about the correctness of his behavior--not merely at the end of each lesson or via periodic, formal tests, but moment by moment throughout instruction.

Error Correction. In connection with student errors, by the way, it was William James who said that to form a habit, never suffer an exception to occur. To which one might respond: "Nice work if you can do it" and also "Sometimes you want errors to occur." The student pilot, for example, intentionally sideslips the aircraft or stalls the motor in order to learn the actions necessary to pull the plane out of a sideslip or stall. The child learning to ride a bicycle must be allowed to fall off or nearly fall off a number of times in order to identify those sensations in his muscles that signify imminent falling off and to practice the corrective muscular movements. The student driver should skid a number of times in order to learn what to do in a skid. Your carpentry students have to use a plane and a saw at the wrong angle, not only to see at first hand the consequences of such misbehavior, but also to sensitize them to the muscular sensations that go with right and wrong ways to handle a plane or saw. No doubt, gouged wood and ripped lumber occur aplenty at the start, without the teacher's deliberate intent. The point of these illustrations is merely to suggest that the important errors should deliberately be made to occur, so that their consequences become vivid to the learner and so that corrective actions can be learned. Not all conceivable errors should be made to happen, but only those that have important consequences. Tying the principle of deliberate errors to the curiosity motive mentioned earlier, whenever health and safety are not at stake or the destruction of materials too costly, perhaps one should often assign a new task without any prior instruction, in expectation that the desired errors will occur or that the problem at issue will not be solved. The learner's resulting annoyance or perplexity can serve as excellent springboards for leading him into the desired responses.

Guidance or Prompting versus Confirmation Techniques. The previous illustration is a special instance of a more general phenomenon that has pervasive implications for the conduct of instruction, implications that tend, I think, to be outrageously violated in much conventional instruction, especially of low-ability students. The general phenomenon bears the label "guidance or prompting versus confirmation techniques." Guidance or prompting refers to telling or showing the learner in advance of his response what response you want him to make. That's what teachers generally do. They do not permit the learner to draw a breath or make a move until they have shown him how to breath and move. The opposed tactic, called "confirmation," consists of requiring a response by the learner without prior guidance and of informing him, only after he has responded, as to the correctness of his response. A large volume of experimental evidence on the relative merits of prompting vs. confirmation tactics points uniformly in one direction, expressed in the following generalization: Prompting or guidance is more powerful than confirmation when used in very small

amounts entirely confined to the earliest stages of learning any new thing. Too long continued into later stages of learning or practice, or given in large amounts, it is harmful (Bugelski, 1956; Stolurow, 1959). Confirmation is vastly the superior tactic once past the earliest learning stages.

In the face of that established generalization about the conduct of instruction, I suspect that many teachers, in their eagerness to have learners perform without mistakes, lead him by the hand interminably, giving him even at late stages of learning or practice detailed instructions and a variety of hints or guides. The consequence often is inability to perform the task when the umbilical cord is cut. Cut the umbilical cord early. Let the learner early stand on his own feet--but be swift with confirmation, quick to give him an assessment of his efforts. Responses that are not followed by swift knowledge of results are learned slowly at best, and sometimes not at all.

Successive Approximations to the Desired Behavior. In connection with assessment of student responses, one important thing to guard against is too early use, as a criterion of acceptability, of the behavior expected of the fully trained person. Skinner has aptly referred to the shaping of behavior, to accepting from the learner as the training proceeds successively closer approximations to the skilled responses and finished products that represent the terminal objectives of a given unit of instruction. However, vagueness in identifying the step-by-step approaches to a fully adequate product will not do. Instead, the need is to specify quantitatively, in measurable amounts, the size of the improvement in responses that is expected as the learning proceeds. One might expect a skilled auto mechanic to replace a fan belt on a certain model of car in, say, 30 minutes; but during training it is wise to specify a series of work-time goals eventually reaching 30 minutes, such as: 50 minutes at the first trial, 40 minutes by the third trial, and so on. The skilled carpenter should be able to square an edge so that no light shows through when a tri-square is laid over it. But the trainee might be allowed a 3-mm. gap at the outset, later on a 2-mm. gap, and so on. At every stage of learning the learner should have some way of assessing his performance, measurably, in relation to what is expected of him at that stage. Precise feedback, not general judgments, are required.

The precision of these sample standards of acceptability lead me to another concept having to do with specification of lesson objectives and assessment of their achievement.

Specification of Lesson Objectives and Assessment of Their Achievement. A lesson plan is an agenda for the teacher, so it is easy to understand why lesson objectives have traditionally been stated in terms of what the teacher wants to accomplish. But that's wrong. Whether for a single lesson, a weekly unit of instruction, or an entire course of instruction, it is infinitely preferable to state objectives in terms of learner behavior. A well stated instructional objective specifies, in behavioral terms, what the learner is to be capable of doing upon completing some specified unit of instruction. In a very early typewriting lesson a teacher objective might be "To teach the keyboard letters i, f, t, s." Properly written in terms of learner behavior the objective might be: "To type for 2 minutes words and phrases using the letters i, f, t, and s at a rate of not less than 10 words per minute with no more than 4 errors." Or, compare: "To teach fan belt replacement" with "To replace a fan belt in car X in

30 minutes." The latter statement mandates a measure of fan belt replacement speed among students, thereby providing a check on the achievement of the objective. The alternative--the objective stated in terms of teacher behavior--too often leads to instruction in which the achievement of objectives is uncertain, because undetermined. The test of a good lesson is not what the principal or department chairman or other qualified observer thinks of a teacher's procedures, but what learners are able to do upon completion of the lesson. Therefore write lesson objectives that specify student behaviors in measurable terms. In contrast to the difficulties of specifying the hallmarks of "appreciation" in a course in music appreciation, occupational education lends itself very well to precise specification of objectives in terms of learner behaviors, and our instruction would be greatly sharpened were we to do so routinely. Robert Mager's classic little paperback (1962) may be consulted as a guide on the writing of instructional objectives.

Generalization and Discrimination. My final point has to do with characteristics found in every learning task under the sun, from learning to tie your shoelaces to mastering Chinese metaphysics. The reference is to the terms stimulus generalization, response generalization, stimulus discrimination, response differentiation--terms that I suspect are pure Greek to most teachers. Yet those terms drive right to the heart of the prominent learning difficulties. Stimulus generalization refers to the tendency to perceive two different stimuli as alike, so that one makes the same response to the different stimuli. Sometimes, that's what you want, as in making the same oral reading response to to, too, and two. At other times you want the learner to discriminate among similar stimuli so that he can make a different response to each. Many beginning readers confuse b with d and read bare for dare and vice versa. The person learning to receive Morse Code often confuses the signal for A from the signal for N. At the response end, the typist strikes r for t and vice versa because they are adjacent on the typewriter keyboard. Every learning task, without exception, has elements that tend to be highly confusable to learners, ones that experienced teachers are well aware of. But what teachers are not aware of is that there are explicit techniques for producing generalization when that is wanted and for producing discrimination when that is wanted. One speaks of "generalization training" and of "discrimination training." To illustrate the latter, consider the Morse Code confusion of A and N. Discrimination training consists of sending many pairs of these letters in all possible combinations, viz., A-A, A-N, N-A, N-N, in random order. The learner's first task is merely to respond "same" or "different" after each pair of signals is sent. Only when he can dependably identify when the members of each pair are the same and when different--only when he can tell the sounds apart--is he then taught that dih-dah is A and dah-dit is N. Identical tactics apply to teaching the beginning reader to distinguish a small b from a small d. Reading also makes a convenient illustration of generalization training. A longhand r, a lower-case small printed r, and an upper-case capital R all have to elicit the same vocal sound. Three different visual stimuli are to elicit the same vocal response. The training tactic consists of confirming or reinforcing the desired vocal response when it is made to the appropriate stimuli, and the stimuli are to be presented in sets whose members sometimes call for a common response, sometimes not.

As I have said, experienced teachers are keenly aware of the prominent difficulties in the tasks or subject matters they teach. Instead of living with those difficulties indefinitely, they can be overcome swiftly and permanently by employing the techniques of generalization and discrimination training.

Which twin wears the Toni? Is this olive oil or peanut oil? Does a clogged whatchamacallit make the automobile motor sound this way? or this way? Here are two fabric swatches; are they the same (both orlon? both nylon? or what?)? Often, one must start with pairs of items which are greatly different, progressively thereafter narrowing the difference until fine discriminations are required and established. The same applies to generalization training. The typist or secretary or teacher must learn to decipher (i.e., make the same responses to) all sorts of longhand from an elegant Spencerian script to a nearly impenetrable scribble.

Summary. I have suggested in this paper that we stop rationalizing away our failures and that we move from the ineffective folklore on which much instruction has traditionally been based to a sound psychology of learning. The particular concepts discussed here lead to eight recommendations, as follows:

1. Instructional objectives should specify measurable learner behaviors, not teacher activities.

2. Take advantage of curiosity as an intrinsic motivator.

3. Teachers should do more asking and less telling.

4. Learners' responses should be followed by swift and precise knowledge of results.

5. The important errors--the ones that have serious consequences--should be made to occur, so that corrective actions can be learned.

6. Shape behavior through a series of successive approximations to the eventual terminal behavior by specifying in measurable terms the standard of acceptability at each stage of learning.

7. Teacher guidance of the learner should be given in small amounts entirely confined to early learning stages; confirmation of unprompted responses should characterize the vast bulk of instruction.

8. Attack the confusable elements in a learning task by conducting explicit generalization or discrimination training, as applicable.

There are other major concepts besides those listed above, and under each there is a myriad of details. Nothing mentioned here is exclusive to occupational education, but is applicable to all instruction of all persons. However, in contrast to what one might mean by appreciating music or being an effective citizen, occupational tasks lend themselves much more readily to precise specification of objectives and to precise measurement of learner performances. Thus, the opportunities in occupational education are so challenging that, with the infusion of a genuine psychology of learning, occupational education could lead the way for the rest of education.

References

1. Berlyne, D. E. Curiosity and education. In J.D. Krumboltz (Ed.) Learning and the educational process. Chicago: Rand McNally, 1965. Pp. 67-89.

2. Bugelski, B. R. The psychology of learning. New York: Holt, Rinehart & Winston, 1956.

3. Mager, R. Preparing instructional objectives. Palo Alto (Calif.): Fearon Publishers, 1962.

4. Marx, M. H. Motivation. In C.W. Harris (Ed.) Encyclopedia of educational research. (3d ed.) New York: Macmillan, 1960. Pp. 888-901.

5. Skinner, B. F. The science of learning and the art of teaching. Harvard Educational Review, 1954, 24, 86-97.

6. Stolurow, L. M. The psychology of skills--Part II: Analysis and implications. Delta Pi Epsilon Journal, 1956, 11, 16-31.

7. West, L. J. Acquisition of typewriting skills. New York: Pitman, 1969.

OCCUPATIONAL LICENSING AND OCCUPATIONAL EDUCATION

Benjamin Shimberg

Why should vocational educators be concerned with licensing? Occupational licensing affects vocational education because licensing inhibits the entry of people into certain types of work and inhibits the free movement of people from place to place.

While licensing has been sold to legislative bodies and to the public as something necessary to protect the public, such protection is largely mythical. Licensing, by and large, exists to protect certain vested interest groups. If one studies the history of licensing one does not find the public clamoring to license certain groups. Instead one finds various groups clamoring to get licensed because they want the benefits licensing gives them. First of all, it gives them prestige and status. Secondly, licensing provides an opportunity to regulate supply and consequently demand in the particular field and, therefore, licensing has real economic benefits. Licensing legislation determines who may practice a profession or trade and defines what individuals need to know to practice. This, of course, has implications for training.

Very little research has been done on licensing, although The Council of State Governments periodically mails questionnaires on the subject. Educational Testing Service received a small grant from the Department of Labor to do a feasibility study on licensing in five states. There was much more local licensing than we had expected. Originally, we thought that most licensing was carried on at the state level.

Subsequently, Educational Testing Service applied for another grant to make a rather definitive study of licensing in eight states: New York, Illinois, California, Arizona, Texas, Oklahoma, Florida and Alabama. The five

large states were selected since they are the largest states in each of five regions, and the three smaller states are small states that are contiguous to large ones. This enabled us to look at the inter-state mobility problems. In addition, three cities in each state were visited.

We talked with licensing officials, vocational educators, apprenticeship program administrators, union officials, employers and representatives of the Workers' Defense League, the Urban League and the NAACP, since it's very difficult to find minority people who have been through the licensing process. Approximately 250 people were interviewed.

The following questions were asked:

1. Which occupations are licensed?
2. In what geographical areas are various occupations licensed?
3. Who is responsible for the licensing?
4. What is the composition of the membership of licensing boards?
5. What activities do licensing boards engage in besides licensing?
6. What are the requirements for licensing of different occupations?
7. Are the specific requirements for licensing necessary and reasonable?
8. How is competency tested?
9. How valid are the tests used?
10. Who constructs the tests used in licensing?
11. What happens to people who fail the test that they took in order to get licensed?
12. What appeal do people have who fail licensing exams?
13. What reciprocity exists between states in the licensing field?
14. How does licensing affect members of minority groups?

The theme running through the whole study is -- If it's important to be licensed in one place, that trade or profession ought to be licensed universally! Licensing, in recent years, is being used increasingly as a device for consumer protection. This is another misuse of the licensing concept, because consumer protection can be accomplished in other ways. If licensing was used as a device to protect the public, periodic re-examination should be utilized to determine that competency has been maintained. In fields where people leave the rendering of direct services to go into management, they lose their skills. Although these persons are no longer practicing their trade or profession they are licensed and, theoretically, could provide you with their services.

In Bedford-Stuyvesant we heard a very interesting story from people from the Workers' Defense League. A man who had worked for ten years in New Your City went to fill out his application form to become a plumber. He learned that he had to have signed affidavits from each of his former employers to show that he had worked for ten years. But each of those former employers must have been a licensed plumbing contractor. He discovered that the contractor whom he had worked for his first five years had not been a licensed plumbing contractor. A licensed plumber was willing to purger himself by stating that the man had worked for him. When the man finally became licensed he said, "Ever since then, I've had no hesitancy signing false papers for other people." This type of situation should not exist.

We learned of another incident about the licensing of stationary engineers. In New York City, you must have ten years of experience as a stationary engineer and seven of the ten years must be in New York City under a licensed stationary engineer. This requirement is unfair and should be abolished.

The Union League in Chicago said that licensing was not the major problem, but the problem was getting men into apprenticeship programs. The Union League also stated that they did not have enough applicants to fill apprenticeship programs when vacanices occured because the youngsters who were bright enough to pass the apprenticeship exams wanted to go to college and not into the trades. The gentleman at the Urban League also told us that anybody with plumbing skills in Chicago doesn't need to worry about being licensed. He can't work on high-rise construction, but he can make a very good living working in the ghetto because officials are not concerned about licensing in the ghetto.

In Alabama a black plumbing contractor had a couple of apprentices working for him, but he wasn't sure that they would ever be able to become licensed because the licensing board required character affidavits from two licensed plumbers in the city. He was the only black one and he had no assurance that he could get a white plumbing contractor to sign these affidavits, which meant that these youngsters were being trained, but they might never be able to get licensed.

A black member of the Black Equal Opportunities Commission in California received complaints that a chain of barber colleges were maintaining segregated training. Black students were allowed to work only on black people's hair and white students were allowed to work only on white people's hair. This situation made it possible for a white barber to quite truthfully say to a black customer, "I'm sorry, I don't know how to cut black hair." The same situation existed in the field of cosmetology. The cosmetology board which sets the curriculum for all cosmetology schools made hair straightening mandatory in black schools but optional in white schools. The Commissioner put pressure on the barber board and the cosmetology board and was able to get regulations issued which made the schools train all barber students to cut both white and black hair; all white

cosmetologists learn hair straightening; and all balck cosmetologists learn to give permanent waves.

In Tulsa, Oklahoma a law says that the only requirement that a person need have to be licensed as a journeyman electrician is to pass a written test. There is no experience requirement and no performance testing. An electrician with some initiative has set up the "Tulsa Electrical College," located in Broken Arrow, a town just outside of Tulsa. In about ten weeks the director of this school can take any reasonably intelligent person and teach them the electrical code. There are no shops and the trainees do not use tools. After the ten week course, the enrollees can pass the Tulsa Electrical Board's examination and become licensed electrical journeymen. Again the public is completely unprotected.

Our first recommendation to licensing boards is that they improve communication with applicants. When a person wants to be licensed, he very often has difficulty finding out which agency has charge of his trade or profession. Some states have a highly centralized licensing system. In these states it is possible for an individual to go to one place and get all the information desired. Very few boards give the candidate any real idea of what he should expect on his examination. The only way a person can find out what will be on the examination is to take it once and fail. In many cases where there is a very high initial failure rate on licensing exams, the people who took it didn't expect to pass. Taking the examination was the only way they could find out the areas that they had to study. It should be possible to prepare a booklet which outlines what each test includes and which gives a bibliography. Boards are often quite insensitive to applicants. A board may decide to hold an examination in a state capital. This location is very convenient for the board members, but it is very inconvenient for an applicant who lives a distance from the state capital. If an applicant seeks a license in the field of cosmetology, barbering, or dental hygiene, he must bring a model with

him which doubles his expenses. The applicant may also have to stay in a hotel overnight. The hidden costs can be far greater than the initial fee which might be quite modest. Some states do make an attempt to conduct examinations at places that are reasonably close to candidates.

Boards should be more sensitive to language problems. In many states, boards are perfectly willing to allow the use of interpretors when a person has a language problem, as long as the interpretor is not a member of the same trade or profession as that of the applicant. In some states, as in Florida, the barber board will, for a small additional fee, translate the test into another language. In New York State no provisions are made for non English-speaking applicants despite the large Spanish-speaking population. Applicants must take the examination in English even though it is not necessary for the person to be proficient in English to perform his trade or to practice his profession.

We found very few places that have ever done a good job analysis as a basis for developing tests. Board members with no training in item writing are doing item writing. Few board members know what constitutes a good test question. Oftentimes no standards exist for administration of tests. Licensing boards ought to seek professional consultation. It may be that the best solution lies in greater reliance on national testing programs.

Candidates for licensing who have taken a licensing examination ought to have the opportunity to discuss the results of their examination with representatives of licensing boards. This discussion should take place at a convenient location for the candidates. Licensing boards should develop comprehensive recordkeeping systems. Most boards possess virtually no data baseline upon which to make decision. In some communities, statistics are not even available regarding the number of individuals in a trade or profession. Board members are paid on a per diem basis and inefficiency abounds. Laborious methods are used to justify days of work.

Legislatures should establish commissions to examine the various aspects of licensing. Criteria must be established to determine what trades should be licensed. Occupations should be licensed only where it is necessary to protect the public health, safety and welfare. Licensing should be refused if the intent is merely to enhance the professional or economic status of the group to be licensed. Licensing should not be utilized when other methods of regulation will suffice.

To set standards without putting restrictions on individual freedom is possible. Establishments can be licensed rather than individuals. For example, California has a system for licensing radio, television and hi-fi repair establishments. A legitimate basis for licensing is when the public has no other way of identifying a competent practitioner and where the potential for harm is so great that the public must be protected. Under this concept we would license doctors, pharmacists and dentists because the public doesn't know who are the competent practitioners. Various assistants, working under the direct supervision of a licensed person probably don't need to be licensed themselves. An example is a dental hygienist.

Licensing should eliminate requirements that are not directly related to competency. Some requirements that ought to be reviewed are the following:

1. Age of the individual
2. Amount of formal education required
3. Literacy requirement
4. The whole question of what constitutes good moral character

Greater administrative control is needed over the power licensing boards can exercise. Now the boards are a law unto themselves. Currently the only way to have a decision considered by a licensing board is to go to court. The amount of autonomy and tyranny that can be carried on by these boards is

directly proportional to their independence. The public interest on licensing boards should be represented by a member of one or more of the agencies that are most closely related to the functions of that board. For instance, on a plumbing board it would be desirable to have a representative from a department of engineering. If the board takes a position that is contrary to the public interest, the representative can take it back to the head of his agency, which has the resources to pressure the board to act in a manner consistent with good public policy.

To facilitate interstate and intrastate mobility, people should be judged in terms of their own competency. States should preempt all licensing that is currently conducted by municipalities. If there is a sufficient need for an occupation to be licensed in one municipality, there ought to be equally compelling reasons for licensing by all municipalities within the state and for that matter, anywhere in the country. The federal government should establish a national information center pertaining to licensed occupations.

In many cases, we find licensing boards carrying out functions that should be carried out by state departments of education. I would prefer to see the state legislatures put the responsibility for certification of licensing of all vocational teachers in state departments of education. If teachers in public schools are going to be held to certain standards, then private vocational school teachers should be held to the same standards.

There should be federal guidelines for apprenticeship training programs in licensed occupations. It has been proposed that a federal licensing program be developed. The possession of a federal license would signify that a person met minimum training qualifications. Additionally, this credential would have to be accepted on any federally funded construction in the United States.

New Directions for Occupational Education

Allen H. Fishken

When one surveys the occupations in which people earn their livlihood,[1] he will find that a limited number of them still have their roots in the guild system that preceded the Industrial Revolution. In auto mechanics, machine shop practice, and certain construction trades, for example, one finds traces of the apprentice-journeyman-master mechanic hierarchy.

But even in these occupations the system is crumbling before the onslaught of specialized labor made necessary by an increasingly complex technology. The all-round auto mechanic, who once was competent to service any component of the vehicle, is becoming an anachronism. In today's auto trades one finds such jobs as tune-up specialist, front-end specialist, and make-ready man, with the result that many "auto mechanics" are highly competent in one or two of these job titles, but relatively inadequate in most others - unless they receive special training.

The guild concept, as has been noted, is still found in situations where employment is thought of in terms of trades, rather than jobs. Yet closer examination shows that these trades are in reality clusters of jobs requiring either different skills or similar skills organized in different contexts. There are deep and far-reaching implications in this statement, which is supported by feedback from employers indicating that for entry-level workers, particularly, there is more opportunity for those who have specific skills applicable to a job title as opposed to those who have the rudiments of the skills related to a trade.[2]

In spite of these considerations, we find that most of our effort in vocational education is based on the apprentice-journeyman-master mechanic concept and very little is geared to the needs, interests and abilities of those who should be prepared for specific jobs. This kind of effort results in many serious problems for students, educators and the community in general. Among these is the inability of many people, youths and adults to find appropriate programs of skill development,

(1) Vocational Education and Occupations U.S.O.E., Washington, D.C., 1969

(2) 1000 Employers Look at Occupational Education. Martin Hamburger and Harry Wolfson, New York City Board of Education, Brooklyn, N. Y. 1969.

high rates of drop-out and push-out from on-going programs, the failure to establish relevance of school programs to the world of work, and the number of graduates from established programs who do not seek or cannot find employment in the trades for which they were trained.

In those instances when programs are planned and curriculums tailored to meet the broad range of needs, interests and abilities of the people who need occupational education, educators are left with the uneasy feeling that they have watered down their courses, lowered their standards, and opened the doors to those who cannot hope to become the competent craftsman that their teachers are. On the other hand there are programs in some communities, successful in terms of their objectives, which adhere to the apprenticeship concept. The success of these programs is predicated on the selection of applicants who present clear evidence of potential leading to journeyman or master mechanic status, and, indeed, attainment of such status is the stated objective. But, in a broader sense, these programs are failures for those who, at the time of selection, do not present clear evidence of such capacity and may in fact never attain more than modest levels of competence. As a result, the people in this group generally have little or no preparation for entry jobs when they have completed their formal education.

One recognizes that these considerations led to the current legislation for vocational education, and were stated or implied in the testimony that led to the Vocational Education Amendments of 1968. Furthermore, the national conferences that were held to disseminate information concerning the Amendments and the exploration leading to their enactment into law demonstrated beyond doubt the need for changes in philosophy and program implementation in occupational education. The necessary changes are clearly away from the apprenticeship concept, and mandate a re-direction of our occupational education effort to meet the needs of those for whom services are now inadequate.

The forms of such re-direction will depend on the specific needs of the people to be served, and the basis might well be the factors relating to the populations delineated in VEA '68, namely, secondary school youth, regular and disadvantaged, adults in these categories, and the physically, mentally, or severely emotionally handicapped. While curriculum content is mandated by the needs of the jobs for which training is given, the possibility of creating jobs to suit the needs of the worker must not be overlooked, a possibility which must be considered very seriously when dealing with the handicapped in particular. Furthermore, new and emerging occupations are creating new job titles, so that curriculum content must be regarded as a fluid matter in need of constant re-examination and reorganization.

That methodology is the bridge between content and learning is not a startling revelation. It seems logical that if content, or subject matter, is to be reorganized to meet the needs of persons who have not heretofore been given adequate service, then methodology must also be subjected to critical analysis.

And if both content and methodology are found to be in need of significant change, it follows that those factors needed for their implementation may in turn need changing, so that the physical sites in which instruction is carried forward need to be re-evaluated. Critical and necessary as these activities are, there are still other areas that may transcend them in importance, namely, learning theory as applied to occupational education, and behavior syndromes involved in the utilization of manipulative skills.

The need for re-examination of programs of occupational education is brought home by the mandate that the states establish Advisory Councils, carefully structured and with specified duties, if the states are to be eligible for VEA '68 funds. The need for new directions is pointed up by allocation of these funds for experimenting with new and hopefully, better ways to get occupational education to the people who need it, and the provision of funds for research into the problems of vocational education. Nor should the importance of availability of funds for retraining staff so that needs may be perceived with greater clarity, new concepts met with greater acceptance, and changed procedures implemented with greater effectiveness be underestimated.

Interesting new concepts in curriculum organization are currently under investigation and implementation. One of those which appears to be meeting with wide acceptance is the modular approach.[3] The basic notion is that each job title presupposes mastery of certain basic skills, but if these skills were examined in detail, one would find that they are not unique to the job title, but apply to many, and sometimes unrelated, titles. It is not a difficult matter, then, to analyze a trade into skill modules, and select the necessary modules, assembled in appropriate contexts, to create a curriculum leading to preparation for the desired job title. Some thought has been given, as well, to the analyses of the modules themselves into "unit skills" which may be applicable to a number of modules.[4]

Experimental programs designed to implement this concept have demonstrated the need for significant changes in organization of the in-school plant in order to parallel the conditions found in industry. If it is agreed that the school situation should be as nearly as possible as that found in industry, why not conduct the program, or at least the advanced portions of it, in the industrial site? While on-the-job training is not a new idea, the notion of conducting programs on-site under the combined aegis of school and industry has not been widely implemented. Three programs of this nature are being carried forward in New York City, and the results are encouraging.

Another program design which breaks with tradition is the establishment of a satellite school in or near the premises in which the student will be given on-site experiences, with all of his school work geared to development of personal competence in the context of employability.

(3) This concept was presented by the writer to a committee organized in 1967 by the New York State Department of Education to re-examine automotive trades curriculums. It was presented as a "Super-Market Curriculum for Auto Trades", in which the modules, or units of skill development could be assembled in appropriate contexts to prepare the trainee for specific job titles.

(4) A program based on this concept, designed by the writer, is presently under way at the George Westinghouse Vocational-Technical High School, Brooklyn, New York.

Cooperative education programs are also in need of new direction. They have always been the bridge between school and the world of work, but many of the values implicit in them have not been realized. More work is needed in remediation and reorientation for pupils who do not meet with success in their jobs; closer articulation between the school and the employer is indicated; the opportunity for up-dating the skills of teachers through the learnings in cooperative education programs has not been fully realized; and, finally, advantage has not been taken of the opportunity to revise curriculums by involving employers of cooperative education pupils in this effort.

Just as new directions are needed for curriculum content and organization and for the learning situation in order to establish relevance and articulation between school and work, so is it necessary to re-examine the teaching-learning process for manipulative skill development. Most of the methodology in vocational education seems to have been borrowed from that which is used to teach the academic subjects. Is there real reason to believe that techniques for teaching and learning subject matter which is largely symbolic or abstract in nature are suitable for manipulative skill development?

Success in employment depends on appropriate overt behavior, and much attention has been given to establishing behavioral objectives for programs of occupational skill development. If the outcomes of instruction are to be evaluated in terms of overt behavior, then the process must be appropriate to the purpose, and there is reason to believe that the process borrowed from the teaching of academic subjects may not meet this specification.

One conceptual frame of reference for the syndrome leading to overt behavior is stimulus-perception-affect-cognition-conation. The organism becomes aware of a change in the environment to which it must respond, sees this change in terms of its experiential or organismic status, reacts to the change emotionally, then logically, and finally takes what it considers to be appropriate action to effect the change.

In the context of employability, this is not an open-ended system as it is when dealing with abstractions. The overt behavior is carefully prescribed, and the affective portion of the syndrome, which is here synonymous with attitudes, does not permit wide variations in discrete situations. In a job-oriented situation, this syndrome may become:

Stimulus	-	Deviation from normal operating characteristics, need for service procedure or new units to be produced.
Perception	-	Recognition of deviation as malfunction, or immediacy of need for service procedures or units to be produced.
Affect	-	Acceptance of task in terms of self-image as worker and interpersonal relationships.
Cognition	-	Diagnostic formulation, consideration of alternatives, review of processes and procedures for accomplishing purpose.
Conation	-	Overt activity leading to service or production.

A theoretical or conceptual formulation uniquely suited to occupational skill development is particularly important if we are to provide the service needed by individuals with a broad range of abilities and with the varied backgrounds implicit in the populations delineated in VEA '68. Group instruction will need to be de-emphasized, in favor of individualized instruction.

The work done in providing learning situations geared to individual needs points in the direction of both hardware and software that can be used by an individual learner as it is needed. In one experimental program now under way, such software has been developed and appears to be meeting with reasonable success. The implications in the conceptual frame of reference outlined above have been incorporated into this software, albeit in a rudimentary way, and there is reason to believe that a more rigorous adherence in their design and execution will render them even more effective.

For example, the stimulus and perception factors must be developed in motivational terms. The affect section needs to be developed in its relationship to development of sound attitudes, and the cognitive phase seems to indicate the need for some form of programed instruction. The conative section presents some difficulties, for here one recognizes that a trial-and-error, or perhaps a tentative-evaluative-redirected mode of behavior is necessary for the learner. Here, it is necessary to guide him through the process of applying criteria and using alternatives.

But individualized instruction of this nature will have another important outcome in the change in pupil-teacher relationship. The teacher will no longer be the didactic presenter of information, and will relinquish, perhaps, some of his status as the authoritative figure. Instead, he will become a cooperator, facilitator and supporter of the pupil as he goes through the learning process.

The students' role will change as well. He will have a fuller measure of choice in selecting and carrying forward his work, and will have to accept a greater degree of responsibility in its execution. In the light of current trends in education, this will be a necessary activity that educators must accept, and should, perhaps, welcome.

This presentation has attempted to analyze some of the factors leading to present systems of occupational education. Without denigrating these systems, the position has been taken that change in needed because the traditional apprenticeship training concept, while it applies to certain pupils as they prepare for a limited number of occupations, cannot be used for many more persons who need programs of occupational skill development.

The implications of such change, as they relate to curriculums, to training sites and methodology were mentioned briefly. If there is any validity in the material presented here, then the message is clear: we must initiate such change, using the broad base of experience that we, collectively, can bring to bear in effecting it, or give way to others who will do it and jeopordize occupational education through their lack of know-how.

OCCUPATIONAL EDUCATION AND THE LEGISLATURE

Senator Thomas Laverne

Too often -- especially on manpower programs -- we spend money when times are good, or when there is a shortage of labor. The fact of the matter is that we have a greater responsibility in the manpower field when employment is not high, because we are trying to train people for jobs that may be created or jobs that need to be filled. And yet, we have a paradox this year, with the financial crunch, of cutting the manpower training commitment of the State of New York from $24.5 million back down to $4.5 million. Seven or eight years ago, when I tried to get a real commitment to manpower and occupational training, the total state commitment was $1,000,000. The rest was federal funds coming in rather haphazardly in demonstration programs that were badly disoriented in terms of their objectives and their length. It was truly a chaotic situation. The people who were out to criticize the programs had plenty of reason to criticize.

As a matter of fact, the manpower programs were resoundingly criticized by an appraisal committee of the Senate Finance Committee. In my judgment, however, the committee did not quite appreciate what was happening. There are very little funds for vocational education. If the federal government keeps them coming, some of the manpower programs will continue; otherwise, their future is rather glum.

We must make a total commitment to our people for re-education and retraining during their entire lives. Current education is not adequate because of the fact that it's very difficult for people to go straight through school and come out at the end of the line with a job. One of the great problems in the job market today is the fact that there are too many jobs that are so dead-end that they have absolutely no interest. Nobody's going to work, for example, as

a bus boy in a restaurant if that's going to be the end of his career. The idea of a man becoming a bus boy and then a waiter and then moving into some other phase of the restaurant industry must be encouraged. We must encourage people to constantly improve their skills. For this, we should have a good counselling system. Some vocational and manpower training has to be funded by other than tax sources because (as I predicted three years ago) as soon as money gets tight, the manpower programs are cut out. Many of us have recommended that, since manpower training is so related and so important to industry, it might be wise for the Federal government to take a figure - say 1/10 of 1% on the unemployment taxes collected - and set up a national trust fund for vocational training. The money should be returned to the state of its source. If this happened, New York State would have $33 million more in the manpower vocational field. If we had such a steady source of funds, we could really set up some sophisticated programs of manpower training, programs that might meet some of the needs that we have talked about. Interestingly enough, industry has been slow to recognize this and, yet, industry would benefit most from this type of program. The revenues to support it should come from a national, not a statewide, tax because of the fact that a tax of even 1/10 of 1% would make New York State, or any state, less attractive to industry.

As you know, we have been talking about the reorganization of our school system. Discussions have come about from the need to find new sources of financing for education. All of us are aware of the fact that dependence upon the real estate tax is a great handicap to education. As a matter of fact, I have said - and I think it's an absolute fact - that the taxpayers' reluctance to support school budgets is not because they have any less a concern about education, but because they feel that real estate taxes must not go any higher. While we were studying regional financing and the possibility of substituting an income tax base for the real estate tax base, we ran into some real problems

in terms of the politics of the situation. If you try to level off the tax base, the districts that include a large industrial complex are not going to be terribly anxious to share their tax base with their neighbors.

Many of us have begun to think in terms of how education should be restructured. During the last forty years, the trend has been toward centralization. We know now that centralization is dead, and that it isn't a good idea. However, because of the many consequences of centralization, you're just not going to get larger districts. As a matter of fact, the Commissioner recently ordered two different units in two different areas to combine, and he was overruled by the people protesting in three regions. They just refused to combine even though, from every rational method of delivering educational services, it made sense.

We should regionalize our school system and decentralize the Department of Education. I think there should be more local involvement in the educational system. Those who say that the educational system should be supported entirely out of Albany or the federal government or that we should break it up into big districts and run it out of Albany are making a serious mistake. On the other hand, I think we need a regional system that would be able to deliver special educational services. The present local school district can still deliver basic education. Admittedly, there are several disadvantages to this. The schools can eliminate all the special educational problems as the Catholic schools do. The Catholic schools have done a great job with forty pupils in the classroom because they didn't have the problems of pupils with special, hence costly, educational needs. But we could have the regional systems co-existing with regular districts. There could be 40 to 50 regional districts. The Educational Conference Board concept of levelling off the real estate tax and making it standard throughout the state is very possible here because the costs are more

regulated and the responsibilities which are related to costs are going to be less complex. This will reduce the cost per pupil very substantially on a local level. In that case, there would be less pressure on the real estate tax. Educators could do a better job from the point of view of not having to spend so much of their time trying to convince people that they should vote for school budgets; they can spend more of their time in educating. This would be a welcome development.

AGENDA FOR THE FUTURE

Eli Cohen

In this article, I want to suggest where we have been in vocational or occupational education, where we are now, what the unfinished business is, and where we have to go. Obviously, we've come a long way in occupational education, but we still have a long way to go. From 1917, when Congress passed the Smith Hughes Act and appropriated seven million dollars for vocational education, we have come to 1970 when we spent $365,000,000 federal dollars and about $1.6 billion in total federal, state and local funds while enrolling 8,600,000 students.

On the way, we moved from an economy that was largely rural and agricultural to one that is urban with a sophisticated technology and a continuing massive migration from the farms to the cities. We moved from a labor situation that placed a premium on brawn or unskilled labor to one that values skill. An outmoded vocational education system prompted the enactment of the Vocational Education Act of 1963. It provided a vast expansion of funds and coverage. It changed goals from a concern with employers' needs to a focus upon the needs of people. The legislative intent was not so much to produce trained manpower for industry, valuable as that was, but to meet the needs of people who were not being served and could not be served by the programs as they were then constituted - the special needs group, the handicapped and the disadvantaged.

The 1963 Act was full of good intentions and provided a lot more money, but it just did not do the job it was intended to do. It bogged down, saddled with the old program categories, found itself incapable of turning the situation around, without the support and leadership it needed from the U.S. Office of Education.

Congress acted again in 1968. The 1968 amendments removed the restrictive categories, broadened the coverage, stressed innovation, and compelled attention to special needs by earmarking percentages of the appropriations to specified groups, and attempted to strengthen federal leadership and state planning.

Today, after several years' experience with the 1968 amendments, what has been accomplished? We have moved from offering training in a few occupations to a wide diversity. Even old-line occupations are being modernized. Examples of the many ways occupational education has been strengthened include: apprenticeship training in the classroom; co-operative or school-work programs; counselling of vocational education students; an increase in area vocational schools over the country from 405 in 1965 to 1,296 in 1969; authorization of residential vocational schools; unprecedented funding for exemplary programs, research, teacher training, and curriculum development; focus upon the special needs groups; and a start upon a serious effort to establish accountability through evaluation and the establishment of advisory councils at the national and state levels.

During this period, occupational education has demonstrated other positive aspects. There has been less student unrest in vocational high schools compared to the academic ones. There is a growing body of evidence that vocational education as a pedagogical technique (learning by doing) is a superior teaching method, especially for inner-city students. Other studies reveal that, compared to academic and general curriculum graduates, vocational education graduates felt better prepared for work and were more easily placed by the school.

The list of accomplishments is impressive, but the problems and unfinished business indicate that more needs to be done.

1. Vocational schools have a much higher dropout rate than academic or neighborhood schools. It is 45% nationally and about 55% in New York City, whereas for all schools the national rate is around 30% - and growing larger. A high school diploma is less crucial in the vocational program, for most students are not going on to college. Moreover, vocational students are considered more job and income-oriented. Many are alarmed at what seems to be an unduly high rate. They overlook the fact that, sometimes, the decision to drop out is an intelligent one for those students who no longer seem to be getting anything more out of school. What is regrettable is the lack of opportunity to return to school at some later date. Co-operative education holds promise for better school retention, but we really need to examine the whole concept of dropping out and perhaps find ways of legitimizing it.

2. We are highly sensitive over our inferior status as a "dumping ground." The reality is that the United States is a country with middle-class values. The jobs with status are those that derive from a college education. The middle-class values are too ingrained to be overcome by public relations techniques. We are chasing a mirage if we seek to put vocational education on the same plain, image-wise, with a college education. Instead of competing, we would do much better to focus upon serving those who need us and especially those whom we have not served before. We ought to be trying to make the jobs for which we train as attractive as possible, and helping to upgrade vocational students who seek to enroll in college.

There is a growing trend for vocational high school graduates to go on to college--in most cases, to a two-year community college. In some New York City vocational high schools, graduates enrolling in college are close to 50%. We need to strengthen the academic work in vocational high schools to assure these youngsters of greater success in college. We would do well to try to

articulate and correlate the training they get at the secondary level with that of higher education institution.

3. We seem to be suffering from some imbalance between training and job opportunities. While training is being carried out in a great many occupations, there is still proportionately too much training in declining fields such as agriculture, and not enough in new and growing fields, as in the health occupations, data processing, and human service fields.

4. We are still struggling with the problem of whom to train. On the one hand, vocational education is accused of being a dumping ground; it takes too many poor students and too many minority group students. On the other hand, we are accused of being elitist in entrance examinations while competing with the colleges for the same superior student. Actually, both statements are true. Vocational education does serve all groups, including the college-bound, and there is no single pattern of student population throughout the country. Potentially, our clientele is the five out of six students who do not graduate from college. While we have a wide range of potential students, the priority is clear - vocational education must work with the special needs group. Unfortunately, there has been no discernible increase in the number of special needs persons served since the passage of the 1968 Amendments.

We are discriminating against girls in our training programs. Girls certainly abound in the health occupations, office work, and cosmetology, but we are excluding them from the types of occupations in which we train boys. We must forget the past stereotype that women come into the labor market, leave to get married, raise a family, and do not return. They do return. They want and need careers after marriage.

5. There is a rigidity in our curricula related to the duration of training in any skill. All courses seem to fit into the same time mold of four periods a day, five days a week - for three years. It is hard to believe that

it takes the same amount of time to train for every single occupation. The student preparing to work in a service station should not need the same amount of time as one training to be a draftsman. Studies are needed to individualize occupaticnal training. We need to make a determination of what a student really needs to learn in order to enter a given job.

6. At what level of skill should our training aim? It seems to me that we have three alternatives. The first is not to teach any skills at the secondary level, but to provide the student with a good basic education and good work habits and attitudes. The second alternative is to train at the secondary school but to train in clusters or families of skills. The third alternative is to teach specific skills in high school which qualify for entry level employment. The confusion is compounded by employers who disagree over whether they or the schools should do the training. The large employers have some capacity to do their own training, but the smaller ones need to hire employees already trained. Probably what is needed is a pluralistic approach. We seem to be getting away from training an all-round craftsman. We need to emphasize short-term courses which are put together in an upgrading sequence so that one skill can be built upon another.

7. When to train? There is a range of views. Some believe after high school. Others say training should take place in the 11th and 12th grades on the assumption that the student should have a saleable skill when he finishes school if he is not going to college. And, finally, some people believe the training should occur at the 9th and 10th-grade levels. Most of us, in the past, have opposed the last because it requires a premature occupational choice. But, since many students drop out before reaching the 11th grade, they do need some minimal skills for employment. There is no agreement on the best approach. It would seem that a pluralistic approach is best.

8. Counselling in vocational education is conspicuous by its absence. Counsellors seem to prefer to work with college-bound youngsters, and are insufficiently job-oriented to help vocational students.

9. I used to think that the schools should not be responsible for job placement. The State Employment Service was supposed to offer that service. I am not too sure that the State Employment Service has done what is needed. If the schools take on the responsibility for placement, they can be made more accountable for their results and there will be more reality to their programs because of their association with the job market.

10. Co-operative education is a most promising development which is, as yet, largely unrealized. By spending part of his day or week on the employer's premises, the student receives realistic training. Yet, federal expenditures for this program in 1970 amounted to only $4.25 million for 21,250 students.

11. Vocational education needs to get a deeper commitment and fuller co-operation from employers. The schools are not their only source of skilled labor, even though employers do relatively little training of their own. Their recent interest in minorities and the disadvantaged is cooling with the onset of the recession. Perhaps we need a more drastic program like the one instituted in England that places a special tax on employers and uses the funds collected to underwrite acceptable training programs.

12. Another area of concern is working with community groups. The minority groups, particularly those in the inner-city areas, are angry, suspicious and hostile. In the past, they have tended to see vocational education as a dumping ground. As a result, they are now looking at college as a better alternative for their youngsters. We need to discover how to involve them in supporting our programs.

13. The greatest threat to vocational education, in my judgment, is the continuing dichotomy of academic education and vocational education. As long as this continues, we are building in the inferiority of a second-class citizenship for the vocational education program. This locks the vocational students into a fixed program from which it is difficult to move upward. The challenge is to develop a more flexible system.

Let's turn to the future. What, for example, will employers do about discrimination against the disadvantaged? Credentials are now being used as inexpensive screening devices. They do not measure whether an individual is equipped to perform a particular job. Will employers commit themselves to employing the graduates of your programs?

Also affecting the future will be developing trends in the schools themselves. Will college enrollments continue to grow? As a result of the increasing financial burden of education, will the educational system become elitist? And will funding sources accept the fact that occupational education is more expensive than academic programs, and will, then, someone be willing to spend the additional money? How creative and adaptable will our school bureaucracy be? What government does in the future will also be significant. The direction that youth culture takes in the future will have an impact.

For myself, I would like to see in the future a reorganization of the schools so that no youngster could leave without being prepared either for higher education or a saleable job skill, or both. Also, I would like to see a tremendous expansion and improvement in the co-operative program. My vision is the establishment of a comprehensive high school system that truly integrates the academic with the vocational. In such a system, no youngster would be locked into a track but, instead, would be on a continuum, with no fixed terminal point. Students could move from school to job and back to school.

With a non-linear system of education, a youth can leave at the 10th grade, not have the stigma of being a dropout, and return to school whenever he is ready. We need a system for vocational and occupational education that will run from elementary school through college.

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ROLE OF THE ORGANIZATION IN MOTIVATION: STRUCTURING REWARDING ENVIRONMENTS.

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ABSTRACT - IN THE FUTURE, ORGANIZATIONS CAN AND SHOULD ASSUME A MORE VIGOROUS AND IMAGINATIVE ROLE IN CONTRIBUTING TO EMPLOYEE MOTIVATION THAN THEY HAVE IN THE PAST. IT IS EXPECTED THAT ORGANIZATIONS CAN DO THIS IN SUCH A WAY THAT WILL CONTRIBUTE TO MAKING THE WORK SITUATION BOTH MORE REWARDING AND SATISFYING FOR INDIVIDUAL EMPLOYEES AS WELL AS MORE OF AN AID IN ORGANIZATIONAL GOAL ATTAINMENT. THE MECHANISM PROPOSED IS THE ACTIVE STRUCTURING OF REWARD ENVIRONMENTS, AND IT IS BASED ON THE ASSUMPTIONS THAT BOTH THE BEHAVIOR OF THE INDIVIDUAL AND THE WORK ENVIRONMENT ARE MODIFIABLE. THE POSSIBILITIES AND PROBLEMS OF UTILIZING REWARDS MORE CREATIVELY ARE ILLUSTRATED BY AN INTENSIVE ANALYSIS OF THE MOTIVATIONAL SITUATION FOR MARGINAL MEMBERS OF THE WORK FORCE, SINCE THIS GROUP CURRENTLY REPRESENTS COMPLEX MOTIVATIONAL CHALLENGES FOR THE ORGANIZATION. SOME EXAMPLES OF MORE EFFECTIVE REWARD CONTINGENCIES ARE: (1) ALLOWING EMPLOYEES TO SCHEDULE THEIR OWN HOURS OF WORK, (2) REDISTRIBUTING JOB DUTIES, (3) OPPORTUNITY TO CHOOSE ANY AREA OF THE ORGANIZATION IN WHICH TO WORK FOR A LIMITED PERIOD OF TIME, (4) ON-THE-JOB NON-WORK ACTIVITIES, AND (5) ACCRUAL OF TIME OFF. IMPLEMENTATION OF THE REWARD ENVIRONMENT REQUIRES SPECIFICATION OF PERFORMANCE OBJECTIVES, METHODS OF PERFORMANCE MEASUREMENT, AND METHODS TO INSURE AN OPPORTUNITY TO RECEIVE REWARDS. (AUTHOR/SB)

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13. ABSTRACT

The theme of this paper is that, in the future, organizations can and should assume a more vigorous and imaginative role in contributing to employee motivation than they have in the past. It is expected that organizations can do this in such a way that will contribute to making the work situation both more rewarding and satisfying for individual employees as well as more of an aid in organizational goal attainment. The mechanism proposed is the active structuring of reward environments, and it is based on the twin assumptions that: (1) the behavior of individuals is modifiable, and (2) the work environment is modifiable.

The possibilities and problems of utilizing rewards more creatively are illustrated in this paper by an intensive analysis of the motivational situation for marginal members of the work force, since this group currently represents complex motivational challenges for the organization. The analysis is then extended to "regular" or non-marginal employees. The paper concludes with several speculations about possible long-range implications beyond the 1970's.

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THE ROLE OF THE ORGANIZATION IN MOTIVATION: STRUCTURING REWARDING ENVIRONMENTS

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Introduction

The basic theme of this report is that in the future, organizations can assume a much more vigorous and imaginative role in contributing to employee motivation than they have to date. They can do this in a way that will make the work situation both more rewarding and more satisfying for individuals as well as more of an aid in organizational goal attainment. The mechanism involves the active structuring of reward environments.

In order for the organization to undertake this more energetic role in influencing employee behavior it must make and act upon two assumptions: (1) the behavior of individuals is definitely modifiable; (2) the work environment is definitely modifiable. With regard to the first of these assumptions--that individual behavior can be modified--most organizations implicitly believe this and yet fail miserably to draw explicit action conclusions from it. At best, they adopt some sort of formalized training program designed to take the new member and convert him into a minimally qualified employee for the organization. Most of such training focuses on limited objectives and is often designed in

rather pedestrian fashion, at least from the perspective of motivation and behavior change. Furthermore, much of the training is concentrated on an extremely short segment of time during the initial few days or weeks of employment and produces nothing in the way of behavioral effects beyond that period. It is as if the organization accepts as a fait accompli that from that time on, the individual is unchangeable (except to the extent that he "grows" in his jobs).

At worst, some organizations, particularly smaller ones, do not even bother with a formalized training program. They simply show the individual how a certain job is to be carried out, give him a copy of company rules and regulations, and put him to work, usually telling him he will learn the ropes as he goes along. In these kinds of organizations, the possibilities of behavior change, even of a limited amount, are ignored. Everything depends on the adequacy of selection, and since that is often haphazard in such firms, it means that the match between organizational needs and employee behavior is often not much better than chance.

Turning to the other basic assumption that organizations will need to make if they are to assume a greater role in impacting employee behavior--the assumption that the work environment is definitely modifiable--we find considerable adherence to this in terms of the technological or physical engineering aspects. That is, organizations do not hesitate to substitute

a more efficient machine for a less efficient one, or to change the routing of marketing data in response to a formal systems analysis. However, when it comes to altering the work environment to aid in changing or modifying employee behavior, particularly of a motivational sort, such changes are either overlooked entirely, met with passive indifference, or else torpedoed with massive resistance. Somehow, we have come to believe that such things as systems of compensation, time off schedules, performance feedback measures, and other similar elements of the work situation are sacred cows that must not be tampered with lest they create worse problems than those they were designed to solve. One can speculate on how fast organizations, and indeed the national economy, would have developed had this attitude toward the unmodifiability of the work environment extended to the technological side.

All of the above is designed to suggest the possibility that both human behavior and work environments involve much more plasticity than is commonly recognized. If one accepts this premise, the question then arises as to what the role of the organization could be in the future in terms of influencing human behavior. The answer involves this: concentrated attention on making the work environment more rewarding. In other words, organizations will need to develop sophistication in the understanding and application of reward contingencies--the connection of rewards to specific work behavior. This, of course,

they are doing in a general way at the present time. Generally, however, it is done with great imprecision and with much less than full potential. The task of utilizing reward contingencies more effectively will not be easy, but the opportunities for results will be great.

As an illustration of the possibilities--and problems--of employing rewards more creatively in influencing work behavior in the future, we propose in the next section to make an extended analysis of the situation involving the motivation of marginal members of the work force. This group currently presents one of the stiffest motivational challenges to organizations, and if progress can be effected with them, then it should be even more feasible to bring about changes with other groups of so-called "regular" or non-marginal employees. Thus, in the section following the discussion of the case of the marginal work force member, we will attempt to extend our analysis to the broader employment scene. Finally, we will offer a few speculations about possible implications for the year 2001.

The Use of Rewards in Motivating Marginal Members of the Work Force

Recent social developments in this country have increasingly focused attention on marginal members of the employed work force. These are individuals who in the past have not held positions of employment on any regular basis, yet who are presumed to be capable of developing into at least minimally

adequate work performers. (A more complete definition will be given later in this section.) In order for such individuals to become "minimally adequate performers," effort on the part of government, work organizations, and individuals will be required on a number of fronts: recruitment, skill training, and motivation. Present consideration will be limited to the latter aspect of the situation: on-the-job motivation. More specifically, we will concentrate on the application of rewards in this context.*

This section does not constitute a review of the literature, as such, on this topic. Rather, it is designed to utilize existing literature in general psychology, social psychology, and organizational psychology to develop some potentially applicable approaches to the use of rewards in connection with the motivation of marginal work force members. Such issues as the cost, feasibility, difficulties, and so forth, of these ideas are purposely relegated to secondary importance; the primary aim is to highlight and stress what is possible, from a psychological point of view.

Definitions of Terms

The remainder of this section will involve the consistent use of several terms, including: "marginal worker," "motivating," and "rewards." It is therefore useful to provide definitions

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* The author wishes to acknowledge the valuable assistance of Michael Harrington in collecting basic source material for this section of the paper.

of these terms as they are used here.

"Marginal Worker." For our purposes, a marginal worker (MW) will be defined as an individual who in the past has failed to demonstrate consistent work attendance and/or has failed to meet organizationally defined standards or levels of adequate performance. For an individual to be considered non-marginal, he must meet both criteria. If he meets one, but not the other, he will be considered in the "marginal" category. By this definition, the term "marginal worker" is taken as somewhat broader than the term "hard-core unemployed." The latter usually implies that the person has a record of little, if any, steady employment, thereby stressing the attendance aspect. Under our use of "marginal worker," we would include not only the hard-core unemployed, but also those who may have had relatively steady employment but who are rather chronically on the borderline of, or below, the level of "adequate" performance as defined by the organization. Obviously, if the marginal worker is consistently and decisively below the "adequate" threshold for any extended period of time he will be separated by the organization and will become unemployed. If the same pattern of behavior develops in succeeding organizations that might be induced to hire him, he would become a member of the hard-core unemployed. Nevertheless, it is useful to keep in mind that there are some individuals who can manage to stay employed more-or-less consistently but who are so close to the performance threshold that they must be classified as MWs.

The definition adopted for MW also serves to stress that there are two distinct aspects of marginality that must be considered in any discussion of the effects of rewards on motivation: attendance and performance. While there are some rewards and reward situations that can be assumed to affect both types of behavior, there are other rewards and methods of administering rewards that may have an effect on one but not the other. Any discussion of the use of rewards must take account of the fact that these two aspects of performance are frequently not highly correlated with each other (March and Simon, 1958, p. 92).

"Motivating." The term "motivating" will be defined as bringing about the desire on the part of the individual to meet organizational requirements for attendance (i.e., non-turnover and low absenteeism and tardiness) and performance (e.g., output). The definition implies that a "motivated" individual in a work context is one who exerts effort, mental and physical, to be in attendance regularly and to perform at an adequate level of output.

"Rewards." Following from the above definition, rewards are defined as positively valued (or desired) goal objects. Such goal objects or events are considered "reinforcing" to the extent that they increase the frequency of the responses they follow. Whether rewards in fact serve as reinforcers depends upon the manner in which they are administered as well as the strength with which they are desired. This potentially "reinforcing" aspect of rewards will be a major focus of later discussion in this section.

Types and Sources of Possible Rewards

A major proposition of this chapter is that the methods of administering rewards deserve as much or more attention than do the types of rewards that can be offered. This is particularly true if one is considering the motivation of marginal workers, or any employee, for that matter. Nevertheless, before the question of administration of rewards can be discussed, it is necessary to specify the standard types of rewards that are possible and appropriate for MWs and also indicate the major sources of these rewards.

A simple scheme for listing or enumerating rewards, classifying them by type and by source, is given in the accompanying chart (Figure 1).

Types and Sources of Possible Rewards in Work Situations

Type	Source			
	Organization	Supervisor	Work Group	Individual
I. Financial				
1) Wages	X			
2) Fringe Benefits	X			
II. Interpersonal				
3) Status	X	X	X	
4) Recognition (Praise)	X	X	X	
5) Friendship		X	X	
III. Intrinsic to Work				
6) Completion	(X)	(X)		X
7) Achievement	(X)	(X)		X
8) Energy expenditure	(X)	(X)		X
IV. Developmental				
9) Skill acquisition	(X)	(X)		X
10) Personal growth	(X)	(X)		X

Key: X = direct source
(X) = indirect source

Figure 1.

Brief speculative attention will be given to the probable role of the ten listed rewards in motivating the MW. (For a more definitive discussion of some of these rewards, see Vroom, 1964.)

(1) Financial: Wages. A recent article by Opsahl and Dunnette (1966) provides an extensive review of the basic literature concerning the role of financial compensation in industrial motivation. In concluding their review these authors state that "although it is generally agreed that money is the major mechanism for rewarding and modifying behavior in industry, we have seen that very little is known about how it works." They further point out that "the principal research problem is to discover in what way money motivates employees and how this, in turn, affects their behavior." In a statement particularly applicable to the question of the motivation of MWs, they stress that "money's incentive character, to be fully understood, must also take account of the perceptions of money by the recipient."

Since money typically can be used as a means of satisfying many needs, particularly those associated with (but not limited to) basic necessities of life, wages would seem to be an obvious and potentially powerful reward in motivating the MW. However, it would appear that several conditions would need to exist before the NW would see a given wage as a motivator. First, it would have to exceed the amount of money he can currently gain from other sources (e.g., welfare, gifts, non-legitimate 'work' activities, etc.). Second, he presumably would have to

see some connection between an action on his part (e.g., coming to work on a regular basis) and the attainment of the wages. The less precise and more nebulous this connection (such as the payment of wages even when attendance or promptness is irregular, or the separation of the payment in time from the behavior), the weaker the effect on the motivation. MWs, in particular, would seem to be--because of their current environment and past experiences--quite prone toward not seeing connections between their own behavior and the attainment of wages. Finally, money must have some value for the individual. To the extent that the individual feels that he will not be able to use money to obtain other things that he wants, he is not likely to be motivated by wages. Again, this may be the case for some MWs in some circumstances (e.g., where they desire to obtain certain kinds of interpersonal responses from others that have little if anything to do with the amount of money earned).

(2) Financial: Fringe Benefits. Although fringe benefits are not exclusively finacial (as, for example, the provision of company-sponsored athletic teams), they tend to have a strong financial component and are listed under this category. As with wages, the source of fringe benefits is the formal organization.

Perhaps the major fringe benefit in most organizations is the company-financed (often including contributions from the employee) pension or retirement plan. For the typical middle class employed worker, the opportunity to participate in this plan (by continuing employment with the organization) is likely

to be a key factor in organizational attendance. For the MW, however, the reward--income during retirement--is so far distant from current behavior, it is unlikely to have much impact. The same element--distance in time--applies to other fringe benefits such as vacations and hospitalization, though to a lesser extent.

A further aspect of fringe benefits (that must be considered in motivating MWs of the organization) is that fringe benefits are seldom contingent upon the quantity or quality of performance. Instead, they are based on seniority or continued attendance. Thus, at best, they could contribute to the solution of only one part of the marginality problem.

(3) Interpersonal: Social Status. The social status of an MW can be thought of in two senses: his status in the employing organization and his status off the job. His status in the organization can stem from formal organization actions, from actions from his immediate supervisor, and from actions and reactions from his fellow workers. His status off the job will often be a function of the on-the-job status, but there is no necessary correlation between the two (e.g., as when a newly-employed MW receives some modicum of status in the new work situation but is scorned by some of his off-the-job companions who themselves are not employed).

The organization has some, but still limited, power to administer the reward of status. By its actions in assigning individuals to jobs, the organization can attempt to confer a formal type of status on the individual. If other workers,

however, do not believe the individual merits a particular position, it is not likely that the individual will receive social cues that he has status. Therefore, he is not likely to see such an organizational action as rewarding. For many, if not most MWs, it is unlikely that the organization will be able to assign high status positions until the person is well along in the organization in both job tenure and performance, and hence out of the MW category.

The supervisor and work group, separately or together, have the power to confer status upon the individual even if the organization does not or cannot. Again, however, in many job situations the supervisor and/or the work group peers (of non-MWs) will not confer status until it is earned. This may take quite some time for the initially marginal employee, and long before he has earned it he will have departed the scene.

As noted above, even if the MW achieves some minimal status within his work organization, his status outside the organization may continue to be low. To the extent that he associates with others who de-value regular employment, he is likely to be accorded low status off the job. Thus, organizational and supervisory efforts in this area of rewards are frequently attenuated by outside influences essentially beyond their control.

(4) Interpersonal: Recognition. Much of what was said above for status applies to this type of reward, since the two are often linked together in practice. Recognition, as used here,

refers to the explicit acknowledgement of achievement that may or may not result in a change in social status. Such recognition can come from the formal organization, from the supervisor, or from the work group. (The term, as we use it, includes praise and expressions of approval.)

The extent to which recognition is motivating depends, as do other rewards, on its perceived value and on the connection the individual sees between it and behavior on his part. Frequently in work situations, recognition from one source is accompanied by disinterest or disdain from other sources, and hence the total value for the individual is often less than those who give recognition realize. In the case of MWs, attempts by the organization or the supervisor to confer recognition might be expected to be undercut by the actions and expressed attitudes of non-MW peers if they feel there is any unwarranted aspect of the recognition.

In the past, it would appear probable that MWs have received little if any explicit recognition from either organizations or peers. The reason, of course, is that in most instances they very early failed to meet organizational standards of attendance and performance, and therefore the organization (including the immediate supervisor) did not find it possible or appropriate to give recognition. (This point will become particularly important in the next sub-section on Methods of Administration of Rewards when we discuss "shaping" and "successive approximations.")

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(5) Interpersonal: Friendship. There are two particular features of this reward that should be noted, namely that the organization *per se* has a relatively small role (except in an indirect sense) in providing friendship, and that the reinforcing effects of friendship are confined almost exclusively to the attendance rather than the performance aspect of work behavior.

For the MW, the major question is whether he can obtain more of this reward by entering and staying with a job or by staying out of the work force. Presumably, at his initial entrance into an organization from his non-work environment he will suffer something of a decrease in this reward. The degree to which he can, in the job situation, equal or exceed the amount of the reward he was previously obtaining will in large part depend upon the efforts of the immediate supervisor and members of the immediate work group. Often, it will take the new organization member (whether MW or non-MW) some time to learn whether and to what extent others feel friendly toward him. Furthermore, the cues may be indistinct and indirect. These factors would seem to make this a relatively weak reward in the early phases of an MW's affiliation with an organization unless some quite explicit indications of friendship are provided.

(6) Work Intrinsic: Completion. There is considerable evidence that many individuals will make strong efforts to complete tasks that they have begun and that the act of completion provides a rather strong reinforcing experience. Obviously, this is a reward that the individual supplies to himself (as self-

administered), and even though others may believe and communicate that an individual has completed a task, the sense of completion involves internalized feelings. The organization and the supervisor can play a major role in facilitating this reward by creating the conditions wherein it is reasonably probable that the individual will indeed be able to experience a sense of completion.

MWs, at least initially, may have relatively weakly developed drives to complete tasks. It is reasonable to assume that their past experiences have tended to deprive them of many opportunities to experience the feeling of completion that would be typical in the pre-work history of the non-MW. In other words, if they have not actually followed through on many tasks to the point of completion, they are unlikely to have been reinforced very often in this respect. Hence, in dealing with MWs, organizations, especially in the person of the immediate supervisor, should be careful not to assume that the MW will exert any extra effort in order to carry through a task to the completion point.

(7) Work Intrinsic: Achievement. This is a self-administered reward that is similar to completion, but is defined as being somewhat broader. It is the feeling associated with goal attainment of a particular character, i.e., attaining or reaching a difficult or meritorious goal.

The extensive work of McClelland and his colleagues would seem to show that there is considerable variation in the extent

to which individuals will strive for achievement. This indicates that experiences associated with attainment of difficult goals are quite rewarding for some workers but not others. McClelland's work also indicates, however, that certain types of training apparently can increase an individual's achievement motivation (or desire).

The above characteristics of the "sense of achievement" reward would seem to have some obvious implications in motivating the MW. Because of past experiences, a high percentage of MWs are likely to enter the work force with relatively little desire for achievement. Thus, the offering of difficult or tough goals to them early in their work career is likely to have very little impact. Later on in the work experience, it is possible that achievement opportunities will be perceived as more rewarding. (As was the case with several previously mentioned rewards, the concept of "shaping" to be discussed in the next sub-section is relevant here.)

(8) Work Intrinsic: Energy Expenditure. Although the expenditure of energy is often regarded as dissatisfying rather than satisfying, there is, as Vroom points out, evidence to indicate that the opportunity to expend energy (presumably in reasonable amounts) is often seen as rewarding. That is, activity is often preferred to inactivity.

In considering this as a possible reward for MWs, one must be careful not to assume that because MWs have shown relatively weak desires for steady, adequately performed work that

they necessarily must regard energy expenditure as inherently distasteful. That is, the observation that an individual seldom works, or seldom performs adequately when he does work, is not sufficient evidence to determine that he does not like to expend energy. The reasons, instead, may lie in the previous pattern of reinforcements and non-reinforcements the person has received for expending energy. The MW, in all probability, has received little if any reinforcement for merely being active. Quite the contrary, he probably has had reinforcement withdrawn if that were the only thing that he was doing. Thus, he may have learned that in order to enjoy expending energy for its own sake, one must do it off the job rather than on it.

From a positive point of view, the rewarding experience from expending energy is not something that the organization or the supervisor can guarantee. All that they can do is set up the conditions such that an individual has an opportunity to expend a reasonable amount of energy on his job. Whether the spending of the energy is then rewarding depends upon how the individual experiences it. Presumably, however, jobs that are designed at the extreme ends of the continuum--offering very little opportunity to expend energy or requiring that very large amounts be expended--are less likely to yield rewarding experiences than jobs that offer moderate opportunities for energy expenditure.

(9) Developmental: Skill acquisition. The opportunity to increase one's skills is a reward that is often offered to the average or better-than-average member of the work force. It is probably infrequently offered to the MW, other than the

training necessary to place him in his initial job. Yet, if the amount and spacing (timing) of this reward were adjusted to the MW's gradually developing work behavior and expectations, it might become an influential reinforcer. At the present time, research knowledge concerning the use of skill acquisition as an incentive is largely lacking.

(10) Developmental: Personal Growth. Skill acquisition refers to specific competences, but another reward of the developmental type can be thought of as the opportunity for personal growth in the larger sense. Here again, the experience of personal growth is an individual one, and cannot be conferred by the organization or supervisor. But, just as in several of the preceding rewards, organizations and supervisors have an important role to play by the way in which they enlarge (or decrease) opportunities to experience this feeling. Where these opportunities are present and the individual experiences the sense of growth, the results may be beneficial to both attendance and performance. The difficulty with respect to the MW is that he may find it much more difficult to experience such feelings in situations that might normally elicit them in the average non-MW due to the fact that he has for so long not seen the work situation as in any way connected with his own self-development. Thus, for opportunities for personal growth to be rewarding for the MW, it is likely that the organization (supervisor and others) will need to help the individual to see himself as capable of

growth (such a view being long since extinguished in many MW individuals), and the work situation as capable of providing explicit opportunities.

Methods of Administration of Rewards

The preceding sub-section has discussed the range of rewards that are possible in most work situations, with particular focus on their presumed applicability to the MW. We now shift our attention to the question of how to administer these rewards. As indicated previously, how rewards are administered and dispensed is often as crucial as their overall size or amount. Insofar as MWs are concerned, administration aspects may be especially critical because the typical MW often poses a more severe motivational "problem" from the point of view of the employing organization.

In this sub-section three major approaches to, or facets of, reward administration will be reviewed. These are: (1) operant conditioning; (2) modeling and social imitation; and (3) expectancy theory. While each of these three approaches will be discussed separately, it is well to keep in mind that each of them has certain ties to the other two approaches. We shall point out some of these interrelationships as we proceed, but no attempt will be made to supply an exhaustive cataloguing of such relationships.

Operant Conditioning. The basic features of operant conditioning stem from the work of Skinner and many others, and

are probably sufficiently well-known so that elaboration on operant contitioning principals is not necessary. The aim, instead, will be to show how some of the methods of operant conditioning might well be utilized--albeit in modified form--by the organization to enable the MW to develop and use the full set of his capabilities.

The basic process in operant conditioning that is involved in bringing about the acquisition of desired behavior is shaping, i.e., the selective or differential reinforcement of already existing responses in the individual's repertoire. Essentially, shaping involves rewarding the individual in such a manner that he makes successive approximations toward the desired behavior. This comes about by initially rewarding almost any response--thereby increasing the general response activity of the individual--and then progresses by requiring certain approximations of the end behavior to be exhibited before reward is given. Thus, the criterion becomes "tougher and tougher" in that the individual must demonstrate behaviors that are successively closer approximations to the designated "correct" behavior in order to obtain rewards.

In considering the situation involving MWs, it is probably safe to assume that in the past, many organizations and supervisors have followed just the opposite policy from what would be implied by a shaping or successive approximations approach. That is, newly-hired employees were given relatively short time spans to produce exactly the desired behavior. Very little

reward was given in the absence of the exact required behavior (i.e., consistent attendance and performance at or above some standard), whereas full reward was given if the exact required behavior happened to be exhibited. Given the typical background of many MWs, it is highly unlikely that they can produce the required behavior in the time required for the average new non-MW employee to reach a satisfactory level of performance and under the working conditions ordinarily present. Thus, many MWs will never (or virtually never) receive any rewards because they fail to exhibit the attendance and performance behavior the organization considers necessary. And, failure to receive any reinforcement is likely to drive the MW back to his non-work status and confirm his learned belief that the work situation offers nothing for him.

Occasionally, in their desire to be of assistance to MWs (especially where such assistance is seen as part of community or social service) some supervisors and organizations will adopt an opposite policy. This policy, which is just as non-shaping as the one described above, involves the unconditional reinforcement of all behavior. That is, the MW is continually rewarded for behavior that is quite divergent from the desired end responses as well as being rewarded for behavior that might approximate the desired. The problem with unconditional reinforcement is that discriminations between acceptable and unacceptable behavior are seldom or never learned. Thus, being completely supportive in response to any and all behavior by the MW is unlikely to be helpful in advancing him into the non-MW category.

From a positive point of view, we are suggesting that careful attention to the principles of shaping by "significant others" (i.e., individuals who are particularly influential with the person in question) with whom the MW comes into contact may be a powerful way to help him transform his actions into those which are considered normally acceptable employment behavior. It is important to stress here that such "shaping" is equally applicable to both the attendance and the performance aspects of the MW's behavior. For example, with reference to attendance, rewards initially could be given for simply showing up for work whether or not tardiness or some degree of previous absenteeism is associated with it; as time goes on and as the MW has had the opportunity to experience some rewards, the basis for their being dispensed could shift more and more to a criterion of regular attendance with minimal tardiness. Yet to be worked out with MW populations is the question of the appropriate rates of change in shifting reward contingency to closer and closer approximations of the final desired behavior. Also, unspecified in the principle of shaping is the designation of which rewards will or can be used to accomplish shaping. We would suggest that wage payments, recognition and approval, and completion opportunities would be among the most appropriate rewards because they can be dispensed relatively quickly and often.

While shaping is a useful operant conditioning method of aiding an individual to acquire or learn some kind of desired

behavior, other methods or principles need to be employed in helping the individual to maintain desired patterns of behavior. These involve the scheduling of reinforcements or rewards. Such schedules are of five basic types: 1) continuous reinforcement (for every correct response or set of desired behaviors); 2) fixed-ratio (the reinforcement of every n^{th} response); 3) fixed-interval (reinforcement after regularly specified periods of time); 4) variable-ratio (the ratio of reinforcements varies around some mean value); and 5) variable-interval (reinforcements are given at time intervals that vary around some mean value).

Each of the above-mentioned schedules has been shown (see Reynolds, 1968; and Bandura & Walters, 1963) in laboratory-type situations to produce different rates of responding and different resistences of the responses to extinction. (Such evidence is too detailed to report here.) The important question is this: Have employing organizations adequately explored the possible consequences of different types of reinforcement and reward schedules for regular employees, let alone MWs? The answer is clearly "no." We do not know, for example, whether various ratio or mixed ratio-interval schedules of reinforcements would work better than the currently universally-used fixed interval schedules. We can speculate that they, indeed, would.

As just one illustration of the possibilities in adapting reward schedules to the needs and development of MWs, one can

conceive of paying them with wages at the end of each day, for at least the first seveal weeks or months on the job. Such an interval would be considered cumbersome and unnecessary for use with the average non-MW, but it might very well be a useful method with specialized MW populations. Another possible experiment with reinforcement schedules might be to pay the MW a specific bonus for regularity of attendance (e.g., a bonus at the end of the week for appearing for work on at least four out of the five days that week, or a bonus--on a fixed ratio schedule--for every n^{th} day of attendance). (See Lawler & Hackman, 1969, for a description of the implementation of an attendance bonus with a group of workers who were semi-MW.) While these examples involve the reward of wages, there is no necessary reason to confine thinking about reinforcement schedules only to this reward. It does seem apparent, though, that reinforcement schedules make the most sense for those kinds of rewards that can be made precisely and quickly contingent upon certain kinds of behavior.

There are other aspects of operant conditioning that could well be investigated for their usefulness in helping develop strong motivation on the part of the MW. These would include the process of counter-conditioning to reduce fears or anxieties to specific aspects of the work situation, procedures of extinction to reduce or eliminate undesired behaviors, and discrimination learning to assist in the acquisition of skill competence.

In short, operant techniques offer a fertile field for both research and application in the work setting.

Modeling - Social Imitation. A second approach to modifying behavior through the use of rewards involves modeling or social imitation. This involves the target person (i.e., the MW in this case) observing the actions of another person (i.e., the "model"), and, particularly, observing the consequences that the other person receives from the environment as the result of his behavior. (The modeling or social imitation approach is succinctly described in Bandura and Walters (1963), and the details of it can be gained from their book.)

As these researchers point out, the key feature of modeling from the point of view of motivation is the vicarious reinforcement that the individual receives by observing the actions of the model. In other words, what happens to the model is not "lost" on the observer. Thus, if we are interested in developing positive work motivation on the part of the MW, the "models" would have to be observed receiving reinforcements that the MW considers highly desirable.

Three somewhat different effects are presumed to be possible when this approach to behavior modification is utilized. First, the target person may acquire responses that are relatively or completely new to him by observing the model exhibit such responses. Second, the target person may learn to strengthen or weaken inhibitory responses that already are a learned part of his own behavior. If the model exhibits such an inhibited

response without receiving punishment and instead receives reward, this presumably may serve to weaken the observer's inhibitory tendencies; likewise, if the target person tends to express a non-useful response, the inhibition of it could be strengthened by observing the model receiving unfavorable consequences from making a similar response. Third, modeling can sometimes simply serve as a cue to elicit previously learned but now forgotten (but not inhibited) responses which the observer is already capable of making.

Much of the research on social imitation has been carried out with children, juvenile delinquents, and adults in psychotherapy. There would seem to be no reason why such methods might not be usefully employed with MWs in the work situation. It would be incumbent, of course, upon researchers or organizations to investigate the various parameters of the situations that would result in effective modeling, i.e., the type and position of the individual(s) who serve as models, the specific context in which the modeling takes place, the nature of the immediately prior events, the nature of the responses to be modeled, and so forth.

Expectancy Theory. In using the term expectancy theory we are talking about the general motivational theory developed and elaborated by Atkinson, Peak, Vroom, and Porter & Lawler, among others. Basically, this view of motivation (sometimes

called a path-goal view of motivation) states that the effort a person expends to perform some task is a joint function of the valence or value the individual attaches to the rewards obtainable in the situation and the expectation (or perceived probability) that he holds concerning whether expending a certain amount of energy will result in the reward(s) actually being obtained. Holding ability constant, the knowledge of these two variables should enable one to predict the level of performance of an individual. More importantly for our purposes here, this approach specifies two key factors that must be influenced if effort is to be increased: (1) the value the individual puts on certain rewards; and (2) his expectations concerning whether he can obtain them by effort.

In considering how this approach might apply to the MW, it would seem to be critical to know what kinds of rewards the MW desires <u>and</u> to attempt to generate increased desire for some of the rewards (such as a sense of achievement, or friendship) that are potentially available in the situation. It is probably a common occurrence for the MW to be treated by the organization and supervisors as if he put roughly the same value on various rewards that a typical non-MW member of the work force does. Because the MW is likely to have had rather different previous life and work experiences from the average worker, the assumption concerning his reward values is probably in error. At any rate, a first step is to attempt to find out what the values are. A second step might be to provide MWs

with information that would serve to increase some of the values.

The other critical factor that needs attention from the organization, given this conception of motivation, is the set of expectations or beliefs that the MW holds concerning whether his actions will in any way affect his chances of obtaining desired rewards. Here, again, his past experiences are likely to have "trained" him to be quite cynical (i.e., to hold low expectations) about whether he can have much impact on obtaining desired rewards from the organization (including supervisors and peer group members). Thus, a major reason for an initial low motivation level would be his extremely low perceived effort-reward probabilities. Since actions, indeed, "speak" louder than words in changing these perceived probabilites, we return to operant conditioning and reward contingencies. Shaping, through differential reinforcement, becomes extremely important in altering the individual's conception of whether effort on his part will have any effect on obtaining rewards. Of course, provision of monetary or other tangible rewards can be accompanied by "words" that attempt to stress the connection between the two (effort and rewards). Verbal statements and explanations can serve mutually to reinforce other reward action.

A relatively large number of studies have demonstrated the utility of this conceptualization of motivation for making predictions of performance in the work situation. Given this

pattern of findings, there would seem to be solid empirical support for attempting to develop some action guidelines for motivating MWs that would be consistent with the theory.

Summary

At this point, let us try to summarize our analysis of the motivational situation for the MW, and what role the organization can play in this regard:

MWs potentially can be motivated by rewards coming from several distinct sources in the work situation: the formal organization, the supervisor, the work group, and from the individual himself. Different rewards may be differentially effective with respect to the two aspects of the individual's work marginality, his attendance and his performance. Rewards such as status, energy expenditure experiences, and personal growth opportunities can be presumed to affect both attendance and performance. Others, such as wages (base rate), fringe benefits, and friendship will primarily affect attendance; still others, such as wages (incentive pay), recognition, completion, and achievement experiences will primarily affect performance.

The MW's initial work behavior, both attendance and performance, is likely to be below organizationally desired standards. Consequently, if he is to remain in the work situation (i.e., not voluntarily leave), he will need some early reward experiences. Some rewards, such as wages, recognition, and completion experiences, will be especially useful for this because

they can be given quickly and often, and can be made directly contingent upon the MW meeting certain minimum behavioral "shaping" requirements. Particularly important will be the schedule by which the MW is rewarded, and this may have to be modified considerably from the ordinary reward schedules applicable to other (non-MW) employees.

It can be assumed that the MW will be highly observant of people and events around him, and will be highly sensitive to the slightest cues concerning the impact of his own behavior on others and theirs on him. This situation will, however, provide good opportunities for the organization to capitalize on some form of behavioral modeling such that the MW will receive vicarious reinforcements for observing effective employee performance.

Since the MW is likely to enter the work situation with a different pattern of reward values than many of the non-MWs in the work force, it behooves the organization to make an explicit canvass of the rewards it has available to motivate the MW while keeping in mind that such rewards can come from several different sources. The organization will need to concentrate on developing methods for reinforcing successive approximations to ultimately desired performance, and will need to experiment with different types of rewards schedules. In so doing, it should bear in mind that the average MW is likely to enter the work situation with very weak beliefs that effort on his part will lead to positive experiences or rewards that he does value;

thus, the organization will need to try to develop an increased awareness on the part of the MW of the reward possibilities in the situation and of the connection between his efforts and the attainment of rewards. In addition, the organization will need to provide some socially powerful "models" who can exemplify the type of work behavior that is organizationally desired. Particular consideration will need to be given to the selection of individuals with whom the MWs will be able to identify, and to the circumstances under which observation will take place. Finally, the organization may want to consider providing some basic training in and understanding of the principles of operant conditioning, behavior modeling, and motivational theory for supervisors and others who will work directly with MWs.

Applicability of Work Environment Structuring to the Regular Employee

Under the best and most sophisticated handling, MWs will always present difficulties for the organization. However, if some of the approaches discussed in the preceding section prove to have some degree of effectiveness with that group, then they should have even more potential for regular members (i.e., non-MWs) of the work force. In the remainder of this section we shall examine some of the problems and possibilities in extending the notion of structuring the reward environment to these other categories of employees.

In many respects, it should prove to be far easier to utilize reward contingencies with regular organization members as compared to MWs. For one thing, the average non-MW employee

is already typically emitting work behavior that approaches acceptable if not outstanding performance. The organization ordinarily does not have to wait a long time for the employee to exhibit responses that show some approximation to that which is considered desirable and necessary. In other words, the "correct" task behavior is fairly high in the employee's existing (following initial training) repertoire of actions. The gap between where the employee is now and where the organization ideally would like him to be is not a chasm, only a fissure. (Naturally, there is a range in the size of the present/ideal gap across a sample of employees.) For another thing, the ordinary employee is more likely to respond to a wider variety of potential rewards. He also will have some capacity to tolerate reward delays and will often be responsive to less tangible and more abstract types of rewards. All of this means that the organization has available to itself a considerably greater flexibility in how it structures the work environment to provide rewards.

In other respects, however, the regular employee may present some problems for the organization that are more severe than in the case of the MW. This will be especially so to the extent that the non-MW employee is highly educated and the possessor of high-level, widely transferrable, and highly-prized skills. These characteristics provide such a person with substantially greater opportunities for inter-organization

mobility. This kind of employee will present a real challenge to organizations to obtain his commitment. Since present trends indicate that there will be an increasing percentage of this kind of "knowledge worker" in the future, organizations will be hard pressed to retain the best of these individuals. Therefore, this implies that those organizations that are able to develop and implement imaginative reward contingencies for continued, committed service will have a distinct advantage over other organizations.

In order for organizations to take steps to implement a more effective reward contingency policy, they must first explore these questions: What is rewarding (to the individual) about continuing to work here when he easily could take his skills to another organization, and what really happens to a person or work group when he (they) perform exceptionally well? Most organizations have not honestly faced up to these questions. They have given the standard reward packages administered in the standard fashion that everyone else uses. They have structured their reward environments, as we have indicated in the introduction, with all of the imagination of sheep grazing in a pasture. If this were not the case, we would see much more variation in reward policies, practices, and scheduling than can currently be found across a broad spectrum of American business and public enterprises.

"New-Style" Rewards

What is possible? Let's let our imagination go for a moment--without worrying about all of the possible impedimenta

that will always have to be dealt with--and speculate on what kinds of "new-style" rewards might be made contingent on continued commitment to the present organization or on especially meritorious performance. These rewards are to be considered in addition to, or beyond, the standard ones discussed in the preceding section, and we will deliberately concentrate only on those rewards over which the organization will have more or less direct control in their scheduling. They will be ordered, roughly, from those relating to, or associated with, the immediate job outward to those relating to activities beyond the organization boundary. Some will be more applicable to individuals, and others to work groups:*

(1) Opportunity to schedule own hours of work. This would be granted in those cases where the individual employee or a work group has a target date for completion of some block of work but where it is not essential as to which hours of the day (or night) the work is carried out. The best current example of this in practice is the situation for computer programmers, many of whom seem to prefer to work from 10 p.m. to six a.m., or around the clock in bursts longer than eight hours. Obviously, employees on many types of jobs need to mesh their efforts with other employees on other jobs so that it would not be practical to permit self-determination of work scheduling for everyone who earned it. However, it is highly likely that this is a feasible alternative for many more groups of workers than just programmers, and that for a number of individuals this would be a highly desired reward.

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*Ideas concerning several of the following rewards were stimulated by a working paper prepared by Ray Olsen of TRW Systems. Specifically, Nos. 2, 5, 8, and 9 are adapted from Olsen's paper.

(2) Redistribution of job duties. This reward would take the form of allowing the individual to "spend" his time on various tasks that constitute his job in proportion to his own desires as long as necessary specified tasks were accomplished. Such a reward would probably work out most effectively if applied to a group, such that group members would be allowed self-determination to redistribute tasks among themselves.

(3) Opportunity to create new jobs. Individuals who reach especially high performance goals would be given time, and perhaps other resources (such as the help of another employee), to invent new jobs within the organization that would contribute to its overall progress while at the same time providing a chance for the worker to be an innovator.

(4) Opportunity to participate in bonus drawings. This reward could be administered to take advantage of a variable ratio schedule. Employees performing above an agreed-upon standard would have their names entered in a drawing. If their names were drawn, they would receive a bonus proportionate to the amount their performance exceeded the standard. The variations on this idea are numerous and could be adapted to the special circumstances of the organization.

(5) Opportunity to choose any area of the organization in which to work for a limited period of time. The nature of this reward is obvious, and its method of administration could be (but would not have to be) similar to that of the bonus drawing mentioned above. That is, all individuals exceeding performance

norms would participate in a drawing in which the winners would receive the opportunity to choose their work place in the organization for a period of time proportionate to the amount of their over-norm performance.

(6) On-the-job non-work activities. This reward is probably most applicable for a work group, rather than an individual. It would involve the opportunity for work groups that meet certain performance objectives by a specified time to engage in various non-work, social-type activities at the place of work. Such activities might include parties, speaker forums, recreation (e.g., bridge playing), etc. Organizations already foster or sponsor many of these activities in off-the-job hours in a non-reward-contingent manner. Except for the fact that this idea appears to violate cannons of the Protestant ethic, would the organization not perhaps benefit by utilizing non-work activities in a reward-contingent fashion?

(7) New organization ventures. This reward would apply to work groups. In return for a high ratio of productive operations, groups would be considered eligible (again, selection might be by lottery) to have the opportunity to try to organize new ventures or tasks for the organization to undertake. In profit organizations this could involve being "staked" with some capital as a resource to develop a new venture. In non-profit organizations it would involve the resource of time to spend on finding exciting (to the employees) new contributions the organization could make to society. Obviously, any such

newly created ventures would need to be made compatible with the already existing tasks of the organization; however, some of the new ones might turn out to be so valuable that they would be a source of organizational regeneration.

(8) Accrual of time off. Under this system, an employee who achieved certain performance levels would accrue "time off units" that could be spent at his discretion (within some set of organizational constraints). In effect, this is what most organizations do at the present time insofar as attendance is concerned: employees accrue additional vacation time the longer they remain with the organization, i.e., two weeks per year up to 10 years, three weeks per year from 10 to 15 years, and so forth. However, few if any organizations make such a time off type of reward contingent upon certain levels of performance. It thus is currently administered on a constant interval (for length of service basis) rather than on a ratio (for performance per unit of time) schedule of reinforcement, thereby reducing some of its possible impact on employee behavior.

Two variations of the accrual of time off could be the following:

(8a) Educational leave. This would involve the accrual of time-off credits (for performance) that could be spent for the specific purpose of the employee furthering his education. Administration could be on a ratio schedule of reinforcement as discussed above.

(8b) Civic activity leave. Again, a reward involving the accrual of performance time-off credits for a specific purpose: the participation of the individual in civic or governmental activities.

(9) Inter-company exchange of employees. For some individuals the opportunity to spend a temporary amount of time in some other organization could be an effective incentive. The length of time allotted to the individual for this "inter-company sabbatical" could be made proportionate to the degree of exceptional performance. The major feasibility problem, of course, would be the integration of this plan with that of other cooperating organizations and would undoubtedly involve reciprocity agreements among them.

The above list of "new-style" rewards is obviously not meant to be exhaustive. Readers will wish to think of their own insightful additions to the list. What is important is for organizations to begin to think about (1) rewards and incentives ordinarily excluded from consideration in today's homogenized set of available components of compensation; and (2) reinforcement schedules and practices that operate in other than a simple fixed interval manner.

Conditions for Implementation

Innovative restructuring of the reward environment suggested by the above examples will require some hard work by organizations to develop the following:

(1) Specification of performance objectives. Organizations, far more than they are now (even under most programs of "management by objectives"), will need to specify precisely what objectives the organization, and units within it, want to accomplish. No fuzzy-minded "broad goals" will do, if many of the new reward practices are to work.

(2) Specification of methods of measurement of performance. Along with specification of objectives will be the necessity for the organization to distinguish "incorrect" from "correct" responses. That is, criteria of reaching an objective will need to be determined explicitly in advance so that the individual will know whether he is moving toward or away from the opportunity to receive a highly significant reinforcement.

(3) Methods to insure an opportunity for receipt of rewards. Note that we are saying "opportunity for receipt" rather than receipt per se. This is because some of the kinds of rewards we have outlined utilize adaptations of a variable ratio reinforcement schedule in which the individual is guaranteed the chance to participate in the receipt of special types of rewards following a certain level of performance but is not necessarily guaranteed a reward every time he exceeds performance norms. In any event, the key point is that organizations must make sure that they do not fail to follow through on giving some rewards in accordance with the details of the nature of the reinforcement schedule. The individual's belief in the linkage

between performance and rewards must be maintained and strengthened above all else. If this belief disappears, brilliantly-conceived reward strategies will come to naught.

Toward 2001

Some of the ideas we have been talking about in this chapter are already here or on the immediate horizon. For example, the problems involved in influencing the MW toward acceptable attendance and levels of performance are already with us. Improved methods of attack on this kind of problem are certainly not far off. By the year 2001, if some of these approaches are successful, the problem may be greatly diminished if not wholly solved.

What we do not expect to be diminished to any great degree within the next three decades are the organization's problems in fully utilizing the human resources of their employees. One of the factors that will make this a sticky problem, at least for the next 10 to 20 years, will be the increasing diversity of the composition of the work force. No longer will the great bulk of organizations be employing predominantly white adult males. Increasingly, the work force will become less homogenized with the inclusion of more women (especially in supervisory type roles), more minority members who have grown up in specialized types of cultures, more youths with different value systems, and so forth. The import of this trend, in terms of our topic here, is that motivational and reward practices that were reasonably effective in the past will probably not be very effective in the

future. Thus, whether organizations want to or not, they will be forced to restructure their reward environments. Some organizations will be smarter about this than others. Some organizations will still be around by 2001. Some won't.

Probably, some of the ideas concerning new types of rewards that were presented in the preceding section seem far-out when considered in the context of the beginning of the '70's. Some probably will not work out. Others, perhaps, are really much too conservative for the dynamic requirements of the last decades of this century. But there is one feature of several of the ideas that we feel will be a prominent aspect of work organizations in 2001: work and "fun" activities will be <u>combined together on the job</u>: People will <u>not</u> have to go off the job to obtain real enjoyment. This merger will not, however, occur at the expense of organizational performance! Far from it. Rather, through the effective restructuring of the reward environment, high levels of organizational performance can become the means for direct, personal gratification. Just as visitors to present-day gambling casinos do not seem to mind at all, in fact, appear to enjoy, pulling the lever of slot machines, employees of progressive organizations of the future will be eager to perform. The age of Skinner and Las Vegas will have dawned for the work organization.

References

1. Bandura, A. and Walters, R. H. Social Learning and Personality Development. New York: Holt, Rinehart & Winston, Inc., 1963.

2. Galbraith, J. and Cummings, L. L. An empirical investigation of the motivational determinants of task performance: Interactive efforts between instrumentality-valence and motivation-ability. Organizational Behavior and Human Performance, 1967, 2, 219-236.

3. Georgopoulos, B. S., Mahoney, G. M., and Jones, N. W. A path-goal approach to productivity. Journal of Applied Psychology, 1957, 41, 345-353.

4. Hackman, J. R. and Porter, L. W. Expectancy theory predictions of work effectiveness. Organizational Behavior and Human Performance, in press.

5. Lawler, E. E. and Hackman, J. R. Impact of employee participation in the development of pay incentive plans: A field experiment. Journal of Applied Psychology, 1969, 53, 467-471.

6. Lawler, E. E. and Porter, L. W. Antecedent attitudes of effective managerial performance. Organizational Behavior and Human Performance, 1967, 2, 122-142.

7. March, J. G. and Simon, H. A. Organizations. New York: John Wiley & Sons, Inc., 1958.

8. McClelland, D. C. The Achieving Society. Princeton, N.J.: D. Van Nostrand Co., Inc., 1961.

9. Opsahl, R. L. and Dunnette, M. D. The role of financial compensation in industrial motivation. Psychological Bulletin, 1966, 66, 94-118.

10. Porter, L. W. and Lawler, E. E. Managerial Attitudes and Performance. Homewood, Ill.: R. D. Irwin, 1968.

11. Reynolds, G. S. A Primer of Operant Conditioning. Chicago: Scott, Foresman & Co., 1968.

12. Skinner, B. F. Science and Human Behavior. New York: Free Press, 1967.

13. Vroom, V. H. Work and Motivation. New York: John Wiley & Sons, Inc., 1964.

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VT 014 268
THE JOB BANK; USING A COMPUTER TO BRING PEOPLE AND JOBS TOGETHER.

MANPOWER ADMINISTRATION (DOL), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 71 17P.

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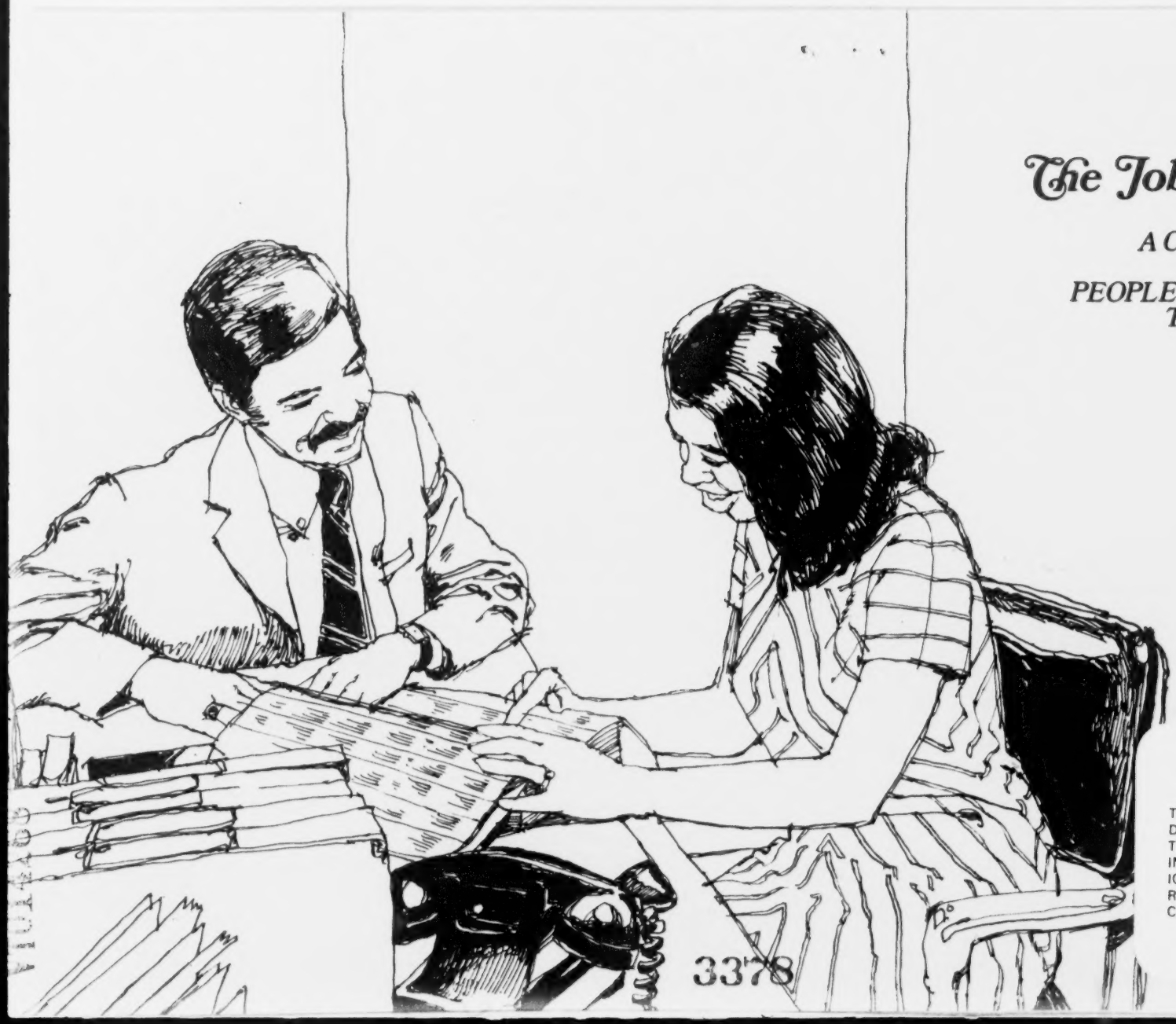
IDENTIFIERS - *JOB BANK

ABSTRACT - THIS BOOKLET DESCRIBES THE USE OF COMPUTERS IN MATCHING JOB VACANCIES WITH APPLICANTS. THE DEVELOPMENT OF THE JOB BANK NETWORK SINCE ITS BEGINNING IN BALTIMORE IN 1968 IS TRACED. WITH JOB BANKS ALREADY SERVING ALL MAJOR CITIES, IT IS LIKELY THAT AN INTEGRATED NETWORK OF STATE SYSTEMS WILL BE REALIZED BY 1976. (BH)

VT 014 268

The Job Bank

USING A COMPUTER TO BRING PEOPLE AND JOBS TOGETHER



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The Job Bank

USING A COMPUTER TO BRING PEOPLE AND JOBS TOGETHER

U.S. DEPARTMENT
OF LABOR
J.D. Hodgson,
Secretary

MANPOWER
ADMINISTRATION

1971

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Preface

The President has called for a national computerized system to match jobseekers with job vacancies. In his Manpower Message he describes the process that would operate in each State:

"The computers of the Job Bank would be programmed with constantly changing data on available jobs. A job seeker would tell an employment counselor his training or employment background, his skills and career plans, which could be matched with a variety of available job options. This would expand the potential worker's freedom of choice and help him make best use of his particular talents."

This booklet tells what the employment service is doing to make this goal a reality. It is about job banks and the way they are transforming the process of bringing people and jobs together. And it is about the results—employers more likely to hire the workers they need, disadvantaged people no longer jobless but started on a lifetime career of work that uses and develops their potential talents.

ents, U.S. Government Printing Office

A few blocks from home, a jobless black youth talks with a neighborhood worker and finds out about all the jobs he might get anywhere in the city, its suburbs, and outlying areas.

An employer makes one telephone call to give his job order, and placement interviewers all over the city look for the workers he needs.

An older worker, discouraged by a long, fruitless search for work, visits the employment office near his home and discovers that a suburban employer needs workers with his skills.

All are profiting from the quiet revolution computer technology is working in the placement activities of the Federal-State employment service system.

In cities across the country, computerized job banks are changing the traditional process of bringing people and jobs together. They use a fairly simple computer operation—a daily print out of all job openings in a metropolitan or larger

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ut of all job openings in a metropolitan or larger

area. Early every morning copies of the job bank book are distributed to interviewers, counselors, and outreach workers. In this way, a job bank brings up-to-the-minute information on all openings in the area to people looking for work at employment offices and centers in all parts of the city.

The result is more effective service to employers. An employer who needs scarce talents has a better chance of finding them—without costly recruitment on his own or valuable time spent giving the same order to a number of employment offices.

The result too is better service to applicants of all sorts. The highly skilled professional worker profits—as does the worker with no job skills or experience. In city after city disadvantaged workers are visiting centers in their own neighborhoods—and finding out about opportunities that even local outreach workers never knew existed. And more potential workers are moving into the jobs and training that mean a better life for them and their families.

The Paperwork Process

Traditionally, employment service placement was a manual and localized process that relied heavily on interviewers with a specialized knowledge of a small group of employers and their needs. From the 1930's up to recent times, this process adequately served the country. But as the demand for employment services grew—and brought mounting loads of paperwork for local offices to handle—and as the Nation became increasingly aware of the job needs of disadvantaged workers, its limitations became glaringly apparent.

Over the years, matching people and jobs worked like this: Employers called the employment service to describe their job needs, and the office listed and filed their orders. When a jobseeker came in, he filled out a form describing his background. An interviewer then searched the office files, looking for a job listing that matched the applicant's qualifications. If he found one, he referred the jobseeker.

This system had several shortcomings. First, it limited the choices of jobseekers and employers. One local office might check with others to find a suitable job for an applicant or locate workers with the qualifications an employer needed, and some agencies had regular arrangements for matching certain categories of workers with openings listed in other offices. Bu
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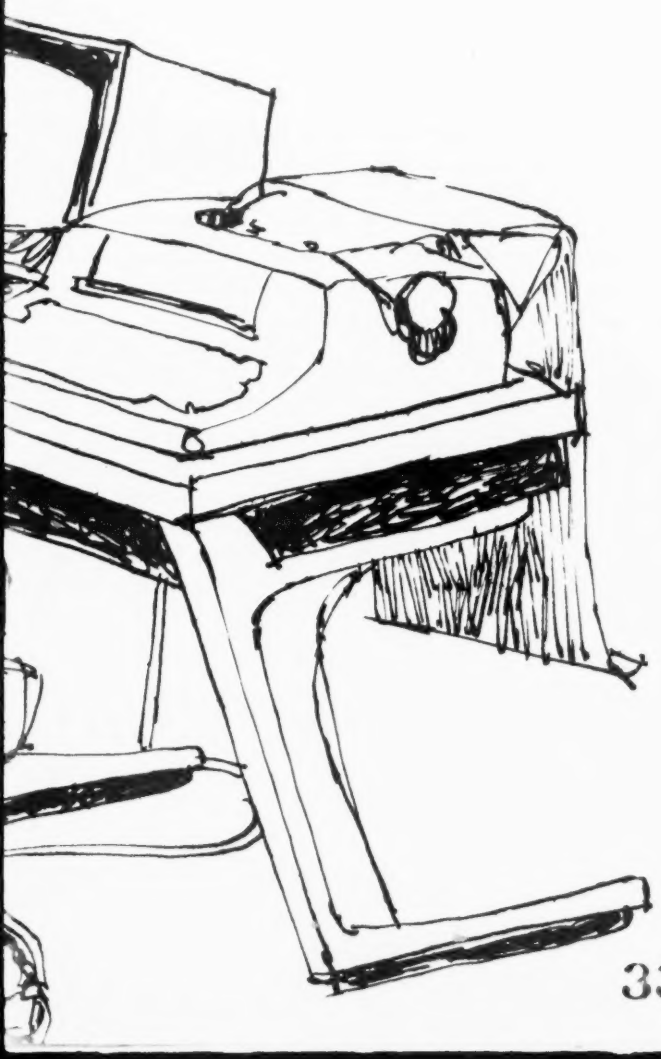
Second, it was highly centralized geographically. When applications and job orders are matched from a single set of files, the operation must be performed at one place or split by occupational or industrial classification among a few locations. As a result, workers usually had to go downtown to apply for work. For the growing numbers living in outlying areas, this meant great inconvenience. For inner-city residents, it meant that centers trying to serve them in their own neighborhoods could offer only limited job opportunities.

Third, the manual operation was slow. And it forced employment specialists to devote many hours to routine tasks such as checking and rechecking files—hours better spent in working with applicants to assess their capabilities and developing jobs for them.

What the employment service needed was a labor-saving method of offering complete, current job information at centers convenient to every jobseeker. The system that meets that need—and offers other advantages as well—is the computerized job bank.



The Job Bank Process

Job banks harness computers to do a job that is beyond the capacities of a manual operation: Turning out a daily list of all job openings in a metropolitan or larger area which can be widely distributed to bring complete, up-to-the minute job information to all jobseekers. In the average city, such a list contains thousands of job entries with needed details on each one; in a large metropolis, it may run to 200 pages or more. Obviously, compiling this mass of information by hand would take days—and a daily listing is out of the question, except in small job markets with limited employment activity. But a computer—with the unique ability to process information at tremendous speeds—can do the job in minutes.

The computerized job bank process works like this:

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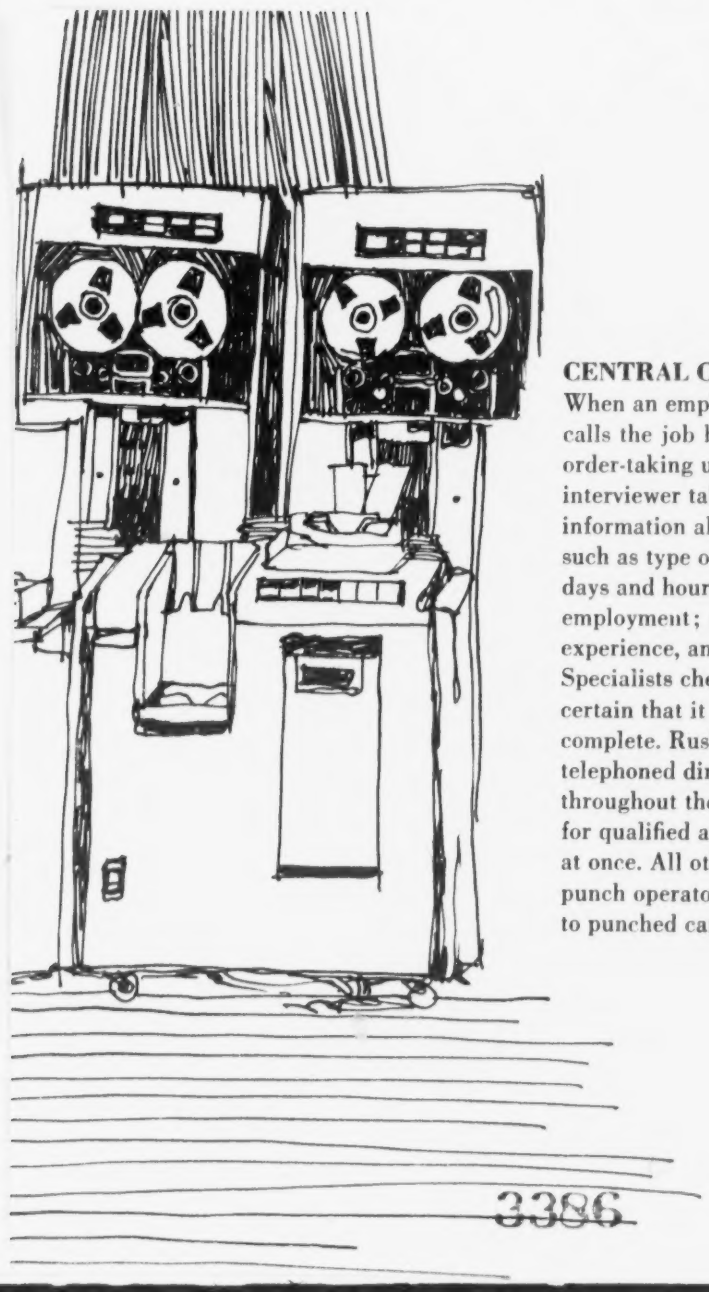

CENTRAL ORDER TAKING— When an employer has jobs to fill, he calls the job bank's central order-taking unit. Here, an interviewer takes down all relevant information about his openings—such as type of work; salary; days and hours of work; place of employment; and the education, experience, and abilities required. Specialists check each order to make certain that it is accurate and complete. Rush orders are telephoned directly to offices throughout the city so that the search for qualified applicants can start at once. All other orders go to key-punch operators, who transfer them to punched cards.

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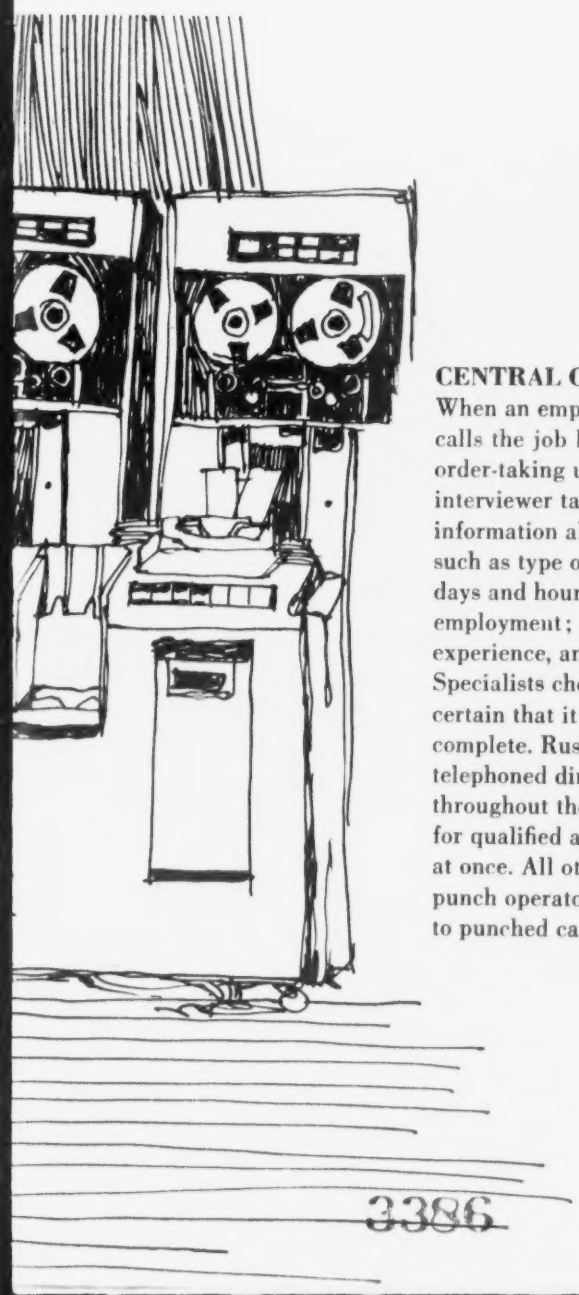

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DAILY COMPUTER PRINTOUT —At the end of each working day, cards for all new job orders are entered into the computer. At the same time the orders already stored are edited—that is, the computer is instructed to delete jobs that were filled or cancelled that day and make any other changes needed to keep every order up to date. Overnight it prints out a fresh list of all openings in the entire job bank area. It may list 10,000 or more jobs. Each is classified by type of work so that interviewers can quickly find the openings that match a particular jobseeker's qualifications.

UPDATED BOOKS FOR EVERY OFFICE—Enough copies of the computer printout are reproduced to supply the needs of every employment service office and cooperating community agency in the area. One large job bank turns out some 250 copies daily. In some cities the lists are issued as job bank books; in others, they are put on microfilm or microfiche that is read from special viewers. Early every morning copies are hand distributed. By starting time each day, a fresh job bank book is available to every interviewer in the city.

CHOOSING THE RIGHT JOB— When a jobseeker comes to the employment office in his neighborhood, its staff is ready to help him find the best fit among all jobs currently open in the city. Before his interview, he fills out an application listing all pertinent information about himself. If he needs help with this form, employment specialists are ready to assist him. Next, he talks over his background and job preferences with an interviewer. Together, they select from among the openings in the job bank book the one that matches his requirements best.

COORDINATING REFERRALS —Since interviewers all over the city are using the same book, coordination is essential to make sure that too many applicants are not sent to apply for one job while a similar opening has no takers. The nerve center of the job bank is central control, the busy unit that keeps track of all referral activity in the area. Before an interviewer makes a referral, he checks with central control: Is the job still open? How many applicants have already been referred? Employers see only the number of applicants they request. Jobseekers are spared the time, expense, and disappointment of applying for jobs that are already filled.

BRINGING PEOPLE AND JOBS TOGETHER—Once central control gives a go-ahead, the jobseeker is referred. His interviewer arranges an appointment for him and gives him a slip that introduces him to his prospective employer. If he is hired, his employer notifies the job bank and the order is dropped from the next day's job book.

The process ends with a worker on the job—an applicant who had a better chance of finding a good job fit, and finding it fast, through his job bank.

COORDINATING REFERRALS—Since interviewers all over the city are using the same book, coordination is essential to make sure that too many applicants are not sent to apply for one job while a similar opening has no takers. The nerve center of the job bank is central control, the busy unit that keeps track of all referral activity in the area. Before an interviewer makes a referral, he checks with central control: Is the job still open? How many applicants have already been referred? Employers see only the number of applicants they request. Jobseekers are spared the time, expense, and disappointment of applying for jobs that are already filled.

BRINGING PEOPLE AND JOBS TOGETHER—Once central control gives a go-ahead, the jobseeker is referred. His interviewer arranges an appointment for him and gives him a slip that introduces him to his prospective employer. If he is hired, his employer notifies the job bank and the order is dropped from the next day's job book.

The process ends with a worker on the job—an applicant who had a better chance of finding a good job fit, and finding it fast, through his job bank.

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Key to success of the job bank system is wide exposure of job information through the job bank book. The book each employment interviewer receives lists jobs suitable for applicants with a wide variety of skills: It contains openings for administrative assistants, architects, bank tellers, bricklayers, and so on through mechanics, teachers, typists, waiters, and many other occupations. For easy reference and exact definition, each opening is listed by code numbers from the Department of Labor's *Dictionary of Occupational Titles*. The *Dictionary* defines over 35,000 jobs, each classified by a code entry. A sample page from a job bank book (with only the names and addresses of employers changed) looks like this:

RM— 1 P— 0 REF— 3 OPN— 1 STS— CD— CLS—RL/DATE—

079.378 048623 08/24/70 CT-A
NURSE LIC PRAC
KIND CARE NURSING LOC-0130
2100 PLEASANT LANE S/D-4339
ANYTOWN, US 09241 SIC-8092
490-625-4980 119
MRS GRAHAM SPCL

WK/WK—FULL PAY— 2.25— 3.00/PER HR
**CALL FIRST HRS/WK—40 PAY PD—BI-WEEK
DURATION—PERM TST/RQ—N/A TST/BY—N/A
JOB REQUIRES—EDUC—13 MTH/EXP—12 AGE—18-99
PHY/DMD— WK/COND— MAR/SIN.

NURSE LIC PRAC
HRS 7AM-3PM MUST OWN TRANS WILL GIVE MEDICI
VISE NURSING PERSONNEL

RM— 0 P— 0 REF— 4 OPN— 1 STS— CD— CLS—RL/DATE—

160.188 048713 08/26/70 CT-A
ACCOUNTANT 160.1
BUTLER RUBBER CO LOC-0110
MILLER CREEK ROAD S/D-2625
ANYTOWN, US 09241 SIC-3069
490-713-5068 051
MR JAMES PARSONS SPCL

WK/WK—FULL PAY— 3.00— 4.00/PER HR
HRS/WK—40 PAY PD—WEEKLY
DURATION—PERM TST/RQ—N/A TST/BY—N/A
JOB REQUIRES—EDUC—13 MTH/EXP— AGE—21-99
PHY/DMD— WK/COND— MAR/SIN.
WILL ACCEPT—TRAINEE.

ACCOUNTANT
8 TO 5PM MON THRU FRIDAY MAINTAIN RECORDS O
LIABILITIES AND FINANCIAL TRANSACTIONS PREFER EX
ING WILL ACCEPT TRAINEE WHO HAS 2 OR MORE Y
ACCT COURSES

RM— 0 P— 0 REF— 6 OPN— 3 STS— CD— CLS—RL/DATE—

209.388 049000 08/31/70 CT-A
CLERK TYPIST 209.3
CITY LIFE INSURANCE LOC-0130
CITY LIFE BLDG S/D-1518
ANYTOWN, US 09241 SIC-6312
490-621-3114 119
MRS COHEN M/M SPCL

WK/WK—FULL PAY— 76.00-99.00/WEEKLY
**CALL FIRST HRS/WK—40 PAY PD—BI-WEEK
DURATION—PERM TST/RQ—N/A TST/BY—N/A
JOB REQUIRES—EDUC—12 MTH/EXP—36 AGE—18-99
PHY/DMD— WK/COND— MAR/SIN.
WILL ACCEPT—TRAINEE.

CLERK TYPIST
WORK 8 TO 445 5 DAYS TYPE 40 WPM ACCURATE
VARIED DUTIES ONE TO WORK 9 TO 3PM 5 DAY WI
TRAIN TO RELIEVE ON PBX

RM— 0 P— 0 REF— 3 OPN— 1 STS— CD— CLS—RL/DATE—

289.458 048819 08/27/70 CT-A
SALESPERSON GENERAL 289.4
ANYTOWN DEPARTMENT STORE LOC-0130
FIFTH AND MAIN S/D-3188
ANYTOWN, US 09241 SIC-5311
490-621-9382 119
MISS PERKINS M/M SPCL

WK/WK—FULL PAY— 1.70— /PER HR
HRS/WK—40 PAY PD—WEEKLY
DURATION—PERM
JOB REQUIRES—EDUC—10 MTH/EXP—24 AGE—18-99
PHY/DMD— WK/COND— MAR/SIN.

SALESPERSON GENERAL
HOURS VARY 5 DAYS WORK SAT SELLING HOUSEWAR
SMALL APPLIANCES PREFER MATURE PERSON WITH

RM— 14 P— 0 REF— 25 OPN— 15 STS— CD— CLS—RL/DATE—

715.381 046249 09/01/70 CT-A
WATCH ASSEMBLER 715.38
RIGHT TIME CORP LOC-0130
FOURTH AND CARSON S/D-2443
ANYTOWN, US 09241 SIC-3871
490-189-3006 119
MR MILLER M/M

WK/WK—FULL PAY— 1.60-2.30/PR HR
HRS/WK—40 PAY PD—WEEKLY
DURATION—PERM TST/RQ—SATB TST/BY—E.S.
JOB REQUIRES—EDUC—08 MTH/EXP— AGE—18-99
PHY/DMD— WK/COND— US/CIT.
PHYSICAL
WILL ACCEPT—TRAINEE. HANDICAP
BENEFITS—INS. HOSP. SCKLV. VAC.

WATCH ASSEMBLER
ASSEMBLES COMPLETE WATCH MOVEMENTS USE TW
HAND TOOLS WORK UNDER MAGNIFYING LAMP INSPE
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HAVE GOOD FINGER DEXTERITY 20/20 VISION RIGHT
CARE ARRANGED

0 REF– 3 OPN– 1 STS– CD– CLS–RL/DATE– 9
WK/WK–FULL PAY– 2.25– 3.00/PER HR NURSE LIC PRAC 079.378026 048623
**CALL FIRST HRS/WK–40 PAY PD–BI-WEEK HRS 7AM-3PM MUST OWN TRANS WILL GIVE MEDICINES AND SUPER-
DURATION–PERM TST/RQ–N/A TST/BY–N/A VISE NURSING PERSONNEL
130 JOB REQUIRES–EDUC–13 MTH/EXP–12 AGE–18-99
139 PHY/DMD– WK/COND– MAR/SIN.
092

PCL

0 REF– 4 OPN– 1 STS– CD– CLS–RL/DATE– 8
WK/WK–FULL PAY– 3.00– 4.00/PER HR ACCOUNTANT 160.188010 048713
HRS/WK–40 PAY PD–WEEKLY 8 TO 5PM MON THRU FRIDAY MAINTAIN RECORDS OF ASSETS AND
DURATION–PERM TST/RQ–N/A TST/BY–N/A LIABILITIES AND FINANCIAL TRANSACTIONS PREFER EXP IN ACCOUNT-
110 JOB REQUIRES–EDUC–13 MTH/EXP– AGE–21-99 ING WILL ACCEPT TRAINEE WHO HAS 2 OR MORE YEARS IN COLLEGE
625 PHY/DMD– WK/COND– MAR/SIN. ACCT COURSES
69
WILL ACCEPT–TRAINEE.

PCL

0 REF– 6 OPN– 3 STS– CD– CLS–RL/DATE– 5
WK/WK–FULL PAY– 76.00-99.00/WEEKLY CLERK TYPIST 209.388022 049000
**CALL FIRST HRS/WK–40 PAY PD–BI-WEEK WORK 8 TO 445 5 DAYS TYPE 40 WPM ACCURATE
DURATION–PERM TST/RQ–N/A TST/BY–N/A VARIED DUTIES ONE TO WORK 9 TO 3PM 5 DAY WILL
130 JOB REQUIRES–EDUC–12 MTH/EXP–36 AGE–18-99 TRAIN TO RELIEVE ON PBX
518 PHY/DMD– WK/COND– MAR/SIN.
312
WILL ACCEPT–TRAINEE.

PCL

0 REF– 3 OPN– 1 STS– CD– CLS–RL/DATE– 7
WK/WK–FULL PAY– 1.70– /PER HR SALESPERSON GENERAL 289.458014 048819
HRS/WK–40 PAY PD–WEEKLY HOURS VARY 5 DAYS WORK SAT SELLING HOUSEWARES COOKWARES
DURATION–PERM SMALL APPLIANCES PREFER MATURE PERSON WITH SALES EXPER
130 JOB REQUIRES–EDUC–10 MTH/EXP–24 AGE–18-99
188 PHY/DMD– WK/COND– MAR/SIN.
311

PCL

0 REF– 25 OPN– 15 STS– CD– CLS–RL/DATE– 4
WK/WK–FULL PAY– 1.60-2.30/PR HR WATCH ASSEMBLER 715.381010 046249
HRS/WK–40 PAY PD–WEEKLY ASSEMBLES COMPLETE WATCH MOVEMENTS USE TWEEZERS AND OTHER
DURATION–PERM TST/RQ–SATB TST/BY–E.S. HAND TOOLS WORK UNDER MAGNIFYING LAMP INSPECT MOVEMENT OF
130 JOB REQUIRES–EDUC–08 MTH/EXP– AGE–18-99 PARTS REPLACE DEFECTIVE PARTS CLEAN ADJUST AND OIL MUST
143 PHY/DMD– WK/COND– US/CIT. HAVE GOOD FINGER DEXTERITY 20/20 VISION RIGHT HANDER CHILD
371 PHYSICAL CARE ARRANGED
WILL ACCEPT–TRAINEE. HANDICAP
BENEFITS–INS. HOSP. SCKLV. VAC.

Each listing tells all a jobseeker needs to know about his prospective employment—such as type of work, salary, days and hours of work, place of employment, education, and other requirements. The fifth listing, for example, says that Right Time Corporation, at Fourth and Carson Streets in Anytown, has 15 openings for watch assemblers, full-time, permanent jobs paying from $1.60 to $2.30 a hour, and wants to see 25 applicants. Job benefits are insurance, hospitalization, sick leave, and vacation. Applicants must be U.S. citizens of 18 or over with an eighth-grade education and good finger dexterity and vision. No previous experience is required; the firm will train suitable applicants, including handicapped workers, and arrange for day care of workers' children if it is needed.

Since printouts of job orders such as this one—and thousands of others—are in every office and outreach station, interviewers throughout the city work to fill each job order and to offer a wide choice to each applicant. As a result, employers have a greater chance of hiring the best qualified jobseekers; workers are more apt to find a good job fit.

A job bank is a better system of bringing people and jobs together; but obviously, a job bank cannot work miracles. It must operate within the economic climate of its area and

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better system of bringing people and jobs
bviously, a job bank cannot work miracles. It
ithin the economic climate of its area and

base its referrals on job requirements. Among the things it does *not* do are:

- A job bank does not create jobs. The number of openings in a particular area depends upon the level of economic activity, labor turnover, technological innovations, and other developments. A job bank has no control over these factors.

- A job bank does not put a person in a job for which he is unqualified. A jobseeker may yearn to be an airline stewardess or a bank executive, but if his qualifications do not match the requirements of these jobs, he will not be referred to them.

- A job bank does not guarantee that a worker will get the job to which he is referred. It sends him to apply for a suitable position, but only the worker himself can convince an employer to hire him.

What a job bank *does* do is to enable jobseekers to find out faster about the vacancies that do exist—whether they are at nearby businesses or at firms across the city or in the suburbs. Whatever the economic climate in which a job bank operates,

workers and employers reap better results from the wider choices it offers.

What a job bank also does is to help each applicant select the job that best fits his background, aptitudes, and interests. If he does not presently qualify for the sort of job he wants, it can refer him to the training he needs or help him find work which can give him the experience required for his career goal. If he needs help with his résumé or tips on making a good impression at his job interviews, he can receive them. And if he does not get the first job he is referred to, the job bank will send him to apply for another suitable one.

Service Wher

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employment offices—and in
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disadvantaged workers find
number of community agen
jobs for their clients rather t
service for job information.
listings; repeated solicitatio
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limited time and resources le
Despite these efforts, few job
agency.

Service Where It Counts

A job bank means better service to disadvantaged workers. It brings to poverty neighborhoods complete, current information on regular jobs—and on training opportunities in a wide variety of manpower programs as well.

Setting up an outreach station is easy: With a job book, a telephone, and a desk, an employment interviewer is in business—anywhere in the city. Even trucks can be employment offices—and in some job bank cities they are. With the unique advantage of mobility, such offices cruise to urban districts and rural areas not served by regular employment centers and bring complete job bank services to people in far flung areas.

Through their ability to reach out to jobless workers, job banks are forging a unified effort from diverse endeavors to help disadvantaged workers find jobs. Before the job bank, a number of community agencies worked on their own to find jobs for their clients rather than relying on the employment service for job information. The results were competition for job listings; repeated solicitation of the same employers by different groups; and intensive efforts devoted to job development, with limited time and resources left for other types of help. Despite these efforts, few jobs could be offered by any one agency.

A job bank ends the need for separate job solicitation. Instead, community workers are bringing their clients to outreach stations or using job bank books to give them complete job information. For the first time, they are offering really effective employment assistance—to the great gain of disadvantaged workers.

Among the agencies participating in job banks are the Urban League; Opportunities Industrialization Centers; departments of corrections; public welfare and vocational rehabilitation agencies; vocational training centers; alcoholic rehabilitation clinics; and a variety of local Black, American Indian, Chicano, and other self-help groups.

Computers sometimes evoke an image of coldly efficient, dehumanized service. But their use in job banks has the opposite result: more personal assistance where it counts. By eliminating time-consuming paperwork, they free employment specialists to spend more time on needed services—helping disadvantaged workers solve their job-related problems and move into training or a job, offering guidance to young people planning their careers, counseling older workers, and the like. Veterans are assisted by specialists familiar with the problems they may face in entering the
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they may face in entering the civilian work force. They have priority in referral to all openings; and if no suitable jobs are open when they apply, their cards are checked daily against new job bank listings.

Job Bank Gains

The first job bank opened in Baltimore in May 1968. As an experiment in computer-based job placement, it quickly proved itself through better service to both employers and applicants. Its most promising result was a dramatic increase in the number of disadvantaged workers finding jobs through the employment service—from less than 20 percent of all placements before the job bank started to over 40 percent after it was in operation.

With the success of the Baltimore model, job banks were opened in eight cities during 1969. In 1970 the pace quickened; by year's end 49 more cities had job banks. They operated in metropolitan and larger areas of 35 States and the District of Columbia, bringing job banks services to areas in which nearly half the Nation's labor force live. By mid-1971, job banks will serve all major cities and a number of smaller ones.

Beyond the Job Bank

Even though job banks are transforming the placement process in cities across the country, they are only the first step in bringing computerized employment services to the Nation. Citywide job banks are already being expanded to cover larger geographic areas and are beginning to be linked statewide. In some small States this may mean a single bank covering the entire State; in others, banks serving different cities will be linked to form statewide networks. Experiments to develop such networks are currently underway in several places, and by the end of fiscal 1972, a statewide job bank should be operational in every State. The next step will be linking job banks regionally and then nationally.

Yet even while this national job bank network is being installed, the Manpower Administration is working with the States to test more sophisticated uses of computer technology. Job banks involve a fairly simple operation—one that taps only a fraction of a computer's capacity to process job and applicant information at tremendous speeds. In a fully developed "matching" system, a computer can store information on applicants as well as on all current job orders in a State. On request, it can compare both files and search out at electronic speeds the best matches for any jobseeker or opening in the State.

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The Manpower Administration is testing four different experimental job-matching designs. In 1969 Utah and Wisconsin started experimental job matching, and California installed a completely revised system, building on experiments begun in 1962. Early in 1970 New York started testing a job-matching design. In addition, during 1971, 10 other States will conduct experiments on various computer applications. These experiments will test techniques and vocabularies that can later be added to the job bank network to provide even more effective service to jobseekers and employers.

The problems to be worked out are great. A variety of complicated choices must be weighed and designs tested before a final model for matching systems is selected. However, an integrated network of State matching systems serving the Nation

by 1976 is a major goal of the Manpower Administration. The present experiments show promise that this goal will be attained. In only a few years, a laid-off factory worker on the West Coast may be paired in minutes with an opening in his skill in Ohio or Illinois. A Florida employer searching for professional talents scarce in his State may find them in Minnesota, Massachusetts, Texas, or anywhere in the country.

Achievements such as this graphically point up a matching system's capacity as a potent tool in meeting the Nation's manpower needs more adequately. Speeding up the placement process means that applicants are out of work for shorter periods. Improving man-job fits means greater job satisfaction for workers and reduced turnover for employers. Broadening the job search for the disadvantaged means new opportunities that can be the start of productive careers. If, as early results indicate, computer job matching can reduce unemployment—even by a fraction of a percent—the Nation will gain from greater production and from unemployment insurance and welfare payments no longer needed. The gains to workers no longer jobless are incalculable.

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WHERE TO GET MORE INFORMATION

For more information on manpower programs and services in your area, contact your Regional Manpower Administrator at the address listed below or the nearest office of your State employment service.

Location	States Served		
John F. Kennedy Federal Bldg. Boston, Mass. 02203	Connecticut New Hampshire	Maine Rhode Island	Massachusetts Vermont
341 Ninth Avenue New York, N. Y. 10001	New Jersey Virgin Islands	New York	Puerto Rico
P. O. Box 8796 Philadelphia, Pa. 19101	Delaware Virginia	Maryland West Virginia	Pennsylvania
D.C. Manpower Administrator 14th and E Streets, NW. Washington, D. C. 20004	District of Columbia		
1371 Peachtree Street, NE. Atlanta, Ga. 30309	Alabama Kentucky South Carolina	Florida Mississippi Tennessee	Georgia North Carolina
219 South Dearborn Street Chicago, Ill. 60604	Illinois Minnesota	Indiana Ohio	Michigan Wisconsin
1100 Commerce Street Dallas, Tex. 75202	Arkansas Oklahoma	Louisiana Texas	New Mexico
911 Walnut Street Kansas City, Mo. 64106	Iowa Nebraska	Kansas	Missouri
Federal Office Bldg. 1961 Stout Street Denver, Colo. 80202	Colorado South Dakota	Montana Utah	North Dakota Wyoming
450 Golden Gate Avenue San Francisco, Calif. 94102	Arizona Nevada Trust Territories	California American Samoa	Hawaii Guam
Arcade Plaza 1321 Second Avenue Seattle, Wash. 98101	Alaska Washington	Idaho	Oregon

VT 014 270
AN OVERVIEW OF THE THREE PHASE SYSTEM FOR STATEWIDE EVALUATION OF OCCUPATIONAL EDUCATION PROGRAMS.

ILLINOIS STATE BOARD OF VOCATIONAL EDUCATION AND REHABILITATION, SPRINGFIELD. VOCATIONAL AND TECHNICAL EDUCATION DIV.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - ND 18P.

DESCRIPTORS - *VOCATIONAL EDUCATION; *PROGRAM PLANNING; *PROGRAM EVALUATION; *EVALUATION TECHNIQUES; *CONCEPTUAL SCHEMES; PROGRAM EFFECTIVENESS; TECHNICAL EDUCATION; PROGRAM IMPROVEMENT

ABSTRACT - THIS PUBLICATION SUMMARIZES "THREE PHASE SYSTEM FOR STATEWIDE EVALUATION OF OCCUPATIONAL EDUCATION PROGRAMS" WHICH IS AVAILABLE AS VT 014 271 IN THIS ISSUE. (SB)

VT 014 270

OCT 29 1971

AN OVERVIEW OF THE

THREE PHASE SYSTEM For Statewide Evaluation Of Occupational Education Programs

VT0 1070

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THREE PHASE SYSTEM for Statewide Evaluation of Occupational Education Programs

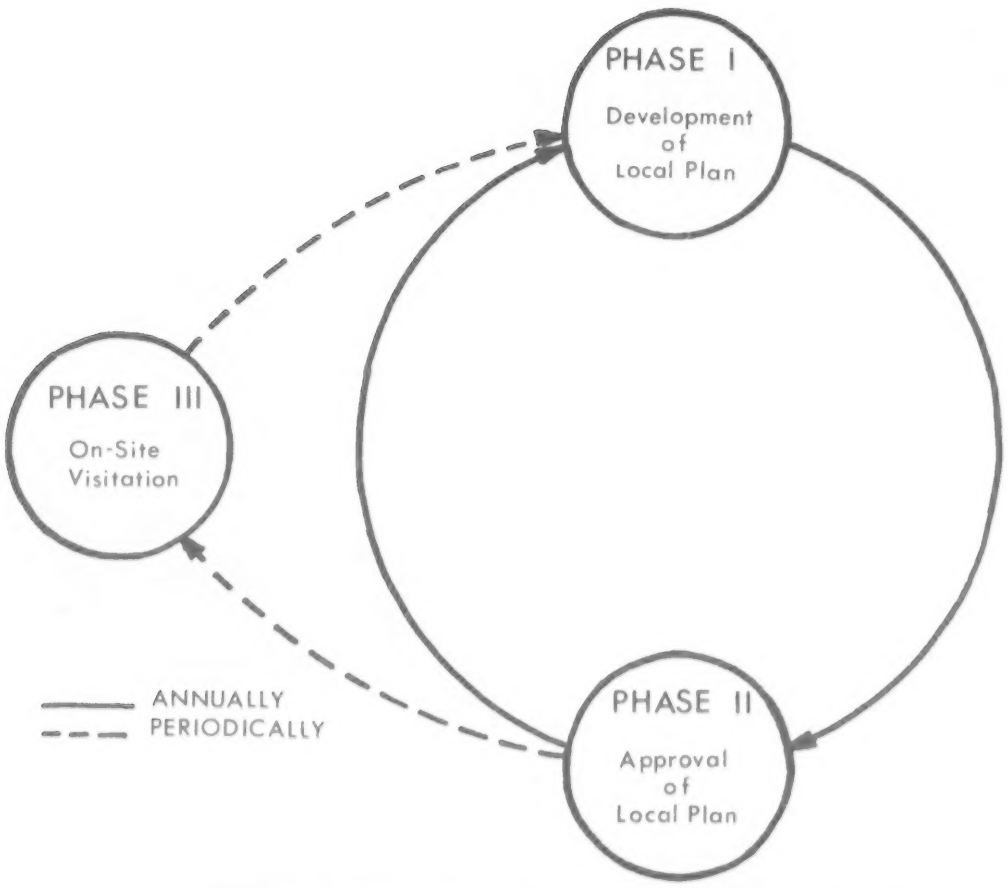


Figure 1. Schematic of Three Phase for Statewide Evaluation of Occupational Education Programs.

In compliance with the Vocational Educational Amendments of 1968 and the Illinois State Plan for the Administration of Vocational and Technical Education, the Illinois Division of Vocational and Technical Education has established a system to continuously evaluate local district progress and periodically conduct on-site visitations of occupational programs. This system is referred to as the Three Phase System for Statewide Evaluation of Occupational Education Programs. The goals of the System are:

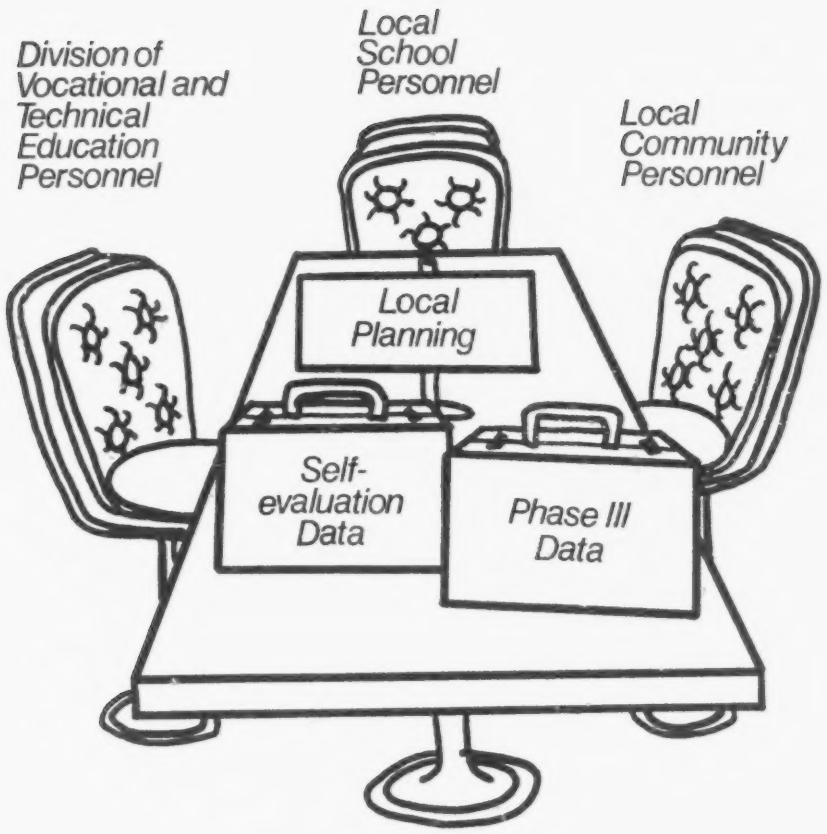
1. To promote and assist with the development of quality occupational programs at the local level.

2. To provide the Division of Vocational and Technical Education with data upon which state-wide planning of occupational programs can be based.

3. To help assure accountability of Federal and State funds allocated to local occupational programs.

The System is depicted in Figure 1. Phases One and Two are conducted annually as local district plans are developed and approved. Phase Three is not an annual occurrence but is conducted periodically depending upon the size and needs of the local district.

Throughout the various phases of this System the focus of attention is directed toward the **total occupational program** offered by the local district.


Division of Vocational and Technical Education Personnel
Local School Personnel
Local Community Personnel
Local Planning
Self-evaluation Data
Phase III Data

PHASE 1

PURPOSE

The Three Phase System for Statewide Evaluation of Occupational Educational Programs begins with the staff of the local educational agency. Phase One incorporates the findings of the district's self-evaluation process, the visitation report prepared during Phase Three and efforts exerted by the local district's school and community personnel into the planning of the district's occupational programs. The local plan is designed to serve two basic purposes. They are:

1. To promote good program planning at the local level.

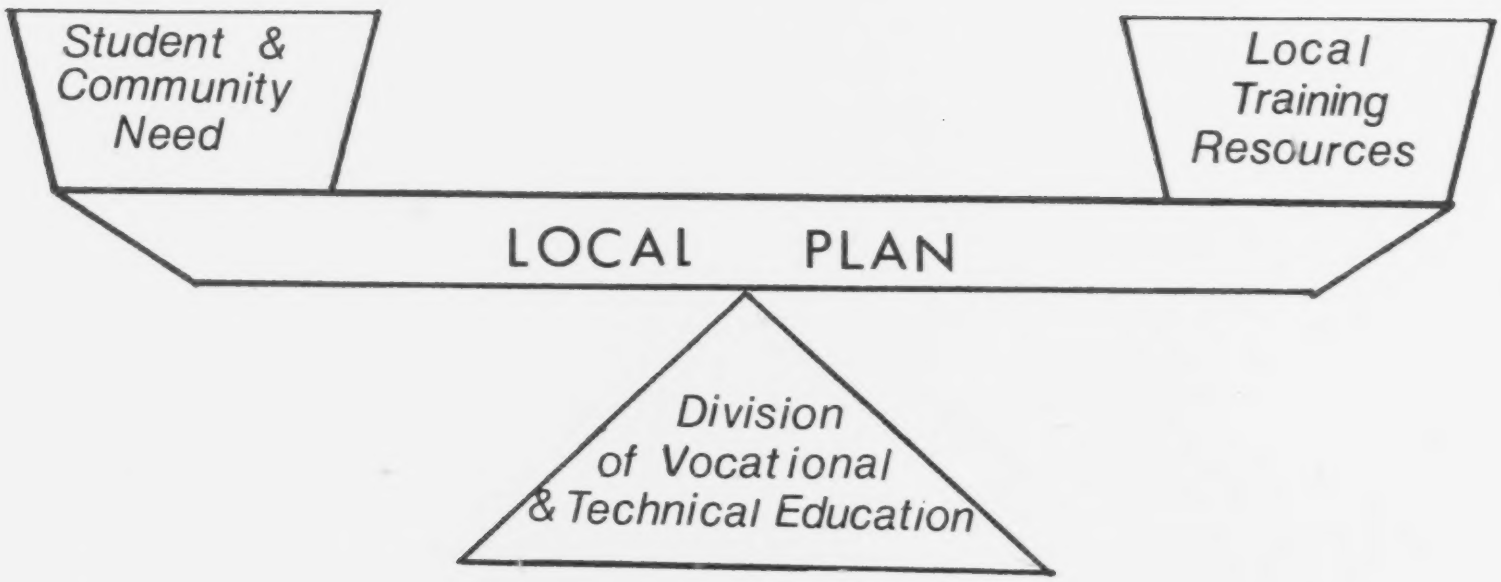
2. To provide a base for a contractual agreement between the local district and the Division of Vocational and Technical Education.

PROCEDURE

The key to Phase One is the planning process conducted by local district personnel. Effective planning entails the use of a continuous locally-directed evaluation system which has been designed to provide data on which future program plans can be based. The use of this system by the district in evaluating their ongoing occupational programs, either formally or informally, must become an integral part in planning for immediate and long-range program implementation or improvement. Local school and community personnel as well as personnel from the Division of Vocational and Technical Education should be utilized as resources during this phase. Through this type of planning process, the local district can be assured that it is offering relevant occupational programs designed to meet the needs of the students and of the community which it serves.

OUTCOME

The result of Phase One is a Local District One and Five Year Plan for Vocational and Technical Education.


Student & Community Need
Local Training Resources
LOCAL PLAN
Division of Vocational & Technical Education

PHASE 2

PURPOSE

Phase Two of the System is devoted to the review and evaluation of the Local Plan submitted by the district. The responsibilities involved in Phase Two lie with the Division's Program Approval and Evaluation Unit.

PROCEDURE

After the Local Plan has been prepared by the district and approved by the local governing board, it is transmitted through the Superintendent of Educational Service Region or the Illinois Junior College Board to the Division. Staff of the Division's Program Approval and Evaluation Unit, with assistance from other resource personnel, are responsible for the evaluation of the Local Plan and for recommending approval of the occupational programs offered in the district by the State Director of Vocational and Technical Education.

This evaluation is designed to assess the degree to which the local district has adequately planned their programs in light of the occupational needs of individuals within the community. Although uniform standards are not established for districts, a certain degree of excellence and continuity is sought in the establishment of all planned activities. Each district is considered separately as it strives to fulfill the potentials existing within its own surroundings.

OUTCOME

The outcome of Phase Two is an approval status given to each of the occupational courses offered by the district as well as an overall approval status given to the total Local Plan. The approval status given the Local Plan by the State Director will fall into one of the following categories: Approved, Conditionally Approved, or Not Approved.

Local
Occupational
Program
Community
Data
School
Data
Interview
Schedule
Local
Plan

PURPOSE

Phase Three has been designed to provide the local district with a profile of their total occupational program as supplied by individuals from outside the district. These individuals, include educators, business and industrial personnel, and occupational students. This phase is designed to provide data to improve total occupational planning within the district as well as within the State.

Assessing the district's total occupational program, suggesting areas for improvement, and projecting a program profile to determine concurrence with the district's Local Plan are the foremost goals of Phase Three.

PROCEDURE

The goals of Phase Three are accomplished through an on-site visitation to the local district by a team of individuals selected from outside the district. The team has the responsibility for gathering and analyzing data concerning the district's total occupational program offerings.

Visitation Team. The staff of the Division's Program Approval and Evaluation Unit will be responsible for selecting qualified team leaders and team members for the visitation teams. All team members will come from outside of the district being visited.

The size of the occupational program being visited will govern the size of the visitation team. The following groups will be represented by the team:

1. A team leader selected for having a broad background and knowledge of occupational education.

2. A practicing educator who has demonstrated teaching and/or administrative expertise in occupational education.

3. A business, industry or labor representative who has shown concern for and a basic understanding of occupational education.

4. A recent occupational education student.

PHASE 3

Areas of Concern for Evaluation. In collecting data concerning the district's total occupational program, the team will be investigating eight specific areas of concern:

Area of Concern	Team Objective
Administrative Organization:	Determine the effectiveness of the occupational education administrative organization.
Personnel:	Determine the qualifications of the occupational administrative and instructional staff.
Objectives:	Determine how comprehensive program objectives are developed and utilized and how reflective they are of the local program.
Evaluation:	Determine the effectiveness of the evaluation system used by the local district.
Occupational Programs:	Determine the effectiveness of the District's occupational education programs in providing comprehensive training for all students.
Resources Utilized:	Determine how effectively the local district utilized internal and external school resources.
Guidance Services:	Determine the effectiveness of the Guidance Services provided to aid students in career planning.
Students Served:	Determine the effectiveness of the occupational programs in meeting the needs, interests, and abilities of all students.

Data Sources. The team will utilize several data sources during Phase Three. They will include:

a) The District's One and Five Year Plan for Vocational and Technical Education.

b) Demographic data concerning the school and community.

c) Preliminary visitation data collected from the district's occupational administrators, instructors, and students.

d) Interviews with local school personnel, community representatives, business, industry and labor representatives and students.

e) General observations by the team.

Schedule of Events. The length of the visitation will vary somewhat depending upon the size of the district being visited? however,visitations should average about three days.

Prior to their arrival within the district, each team member shall recieve a packet of information concerning the school and community. The purpose of this information is to better acquaint the team with the district and the packet shall include, among other things, the Local District One and Five Year Plan.

During the evening prior to the first visitation day, the team shall assemble within the community for the purpose of becoming acquainted, reviewing the mechanics of the visitation, receiving their specific interview assignments, and reviewing and discussing the information previously received concerning the district and its occupational program.

On the morning of the first visitation day, prior to the start of school, a meeting of the visitation team and the district's occupational administrative and instructional staff will be held. The length of this meeting shall be limited to 30 minutes. The objectives of this meeting are:

a) Introduction of the visitation team to the staff and

b) Presentation of a brief overview of the district and its occupational program by the district representative.

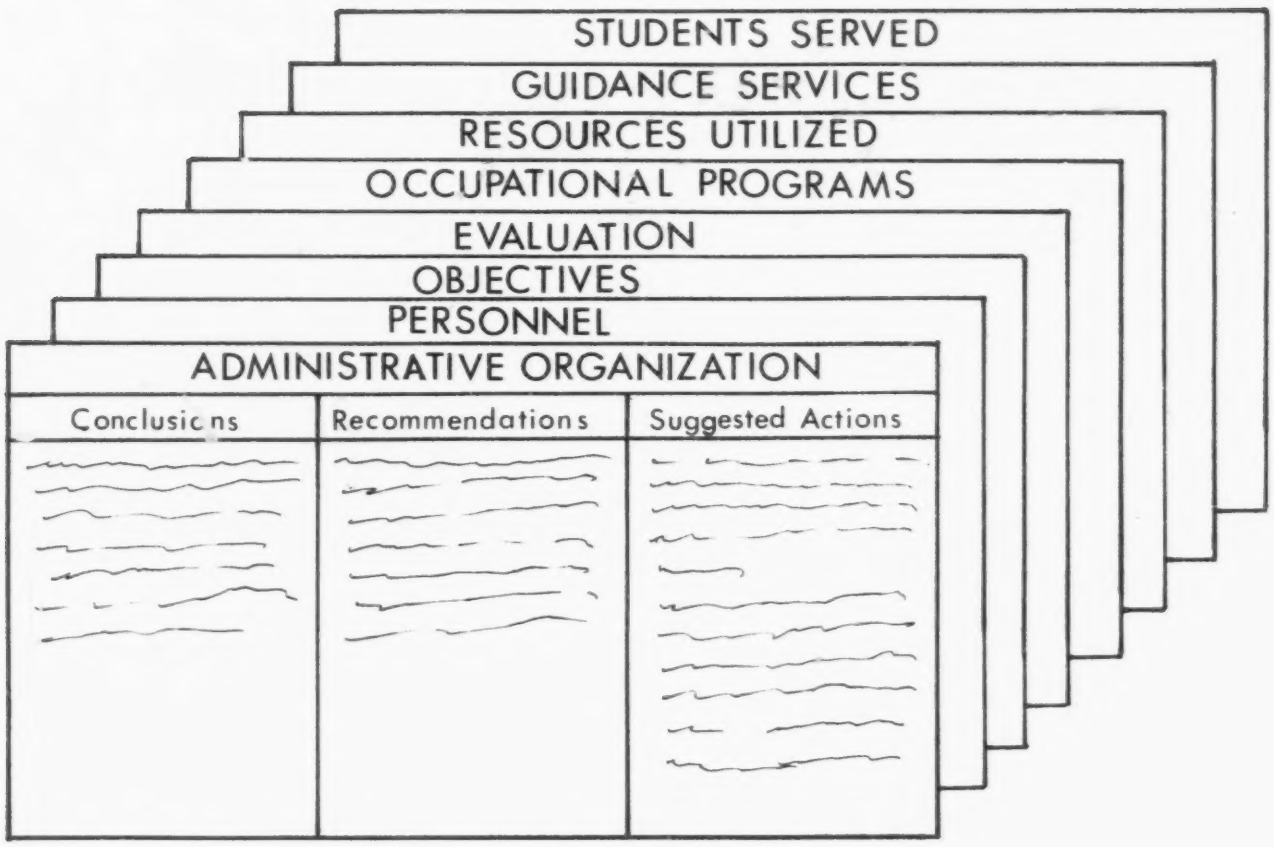


Figure 2. Final Report Format

Immediately following this meeting, the team as a group will spend approximately one-half hour with the Chief School Administrator concerning the information previously presented and other areas of concern.

The remainder of the school day shall be devoted to scheduled interviews within the district. The actual interview schedule will be worked out with the school in order to keep confusion and conflict to a minimum. For instructors, the interviews should require less than 45 minutes. Each team member is charged with interviewing certain individuals and drawing conclusions from the interviews which will culminate in a rating of the appropriate Areas of Concern for each interview.

Since Phase Three is concerned with the total occupational program of the district, the team will interview persons from outside the school environment as well as those within. The team will contact the following types of persons in their quest for information:

a) Administrators b) Instructors—all vocational and some non-vocational c) Guidance personnel d) Business and industrial personnel e) Students

Interviewers of district educators will cover all eight Areas of Concern for Evaluation during the interview while the student and business and industrial team members will concentrate on those areas related to the persons whom they are interviewing.

On the evening of the first day, the team will meet to discuss the information collected during the day's interviews. This information will be structured into the format of the preliminary visitation report. At this time, those areas in which more information is needed can be identified for pursuit during the interviews scheduled for the morning of the second day.

The afternoon of the second day shall be concerned with the completion of the preliminary Evaluation Report. This report shall represent a consensus of the findings of the team based on the information collected. The heart of the report is a set of written conclusions, recommendations and suggested actions

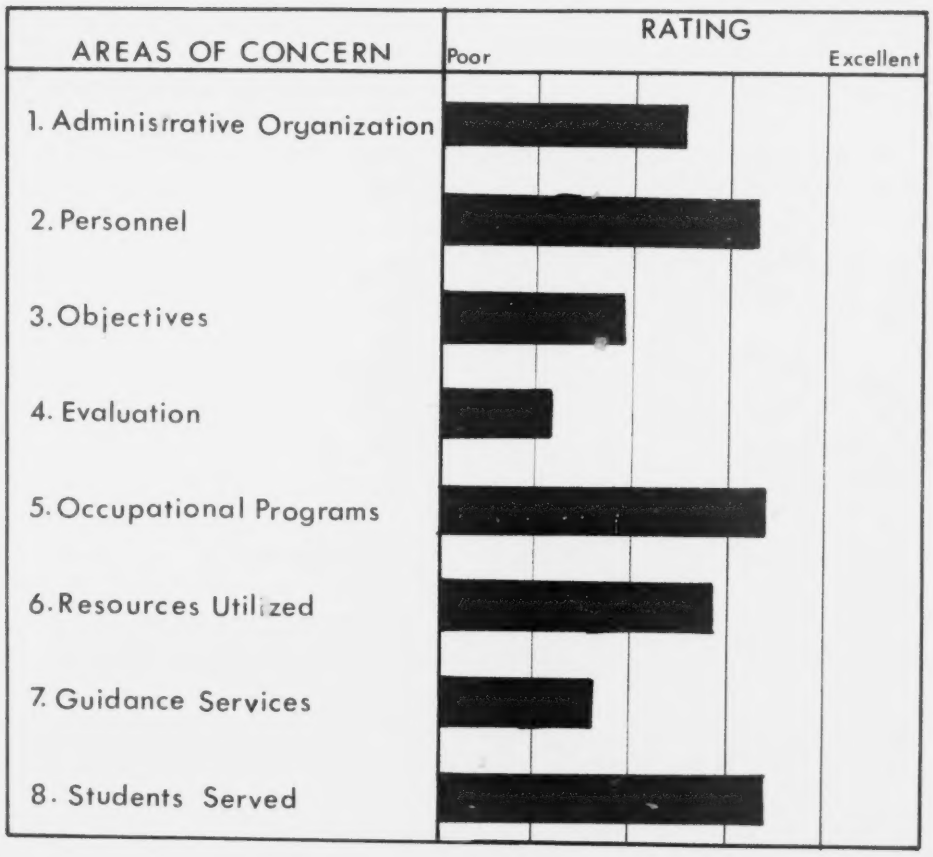


Figure 3. Example of Bar Graph in Evaluation Report

for each of the eight Areas of Concern for Evaluation (Figure 2). In order to quickly ascertain a profile of the program's performance in all eight areas, a bar graph will also be prepared (Figure 3).

When the preliminary Evaluation Report has been prepared, the team leader will present it during the Summary Conference scheduled for the morning of the third day. Three groups will be represented at this meeting. They will include the visitation team, the Illinois Division of Vocational and Technical Education, and the local district. The team will be represented by the team leader and the Division by the Regional Vocational Director. The Chief School Administrator shall be responsible for selecting individuals to represent the district. District representatives should include:

a) Superintendent of Educational Service Region b) Board of Education member c) Advisory Committee member d) Administrative staff representatives e) Other selected school personnel

The purpose of this meeting is to relate the findings of the team to the administration of the local educational agency. This meeting will provide an opportunity for the administrators to discuss the findings of the team and to make known any limitations which the district might have in meeting any of the team recommendations. The outcome of this conference is a report which is truly representative of the district's total occupational program and a set of recommendations which are realistic in nature and understood by all.

Upon completion of the Summary Conference, the visitation report shall be finalized and forwarded to the Division for typing and reproduction. As soon as possible, copies of the completed report will be returned to the Chief School Administrator of the local district who shall schedule a series of meetings to discuss the report with the occupational administrative and instructional staff, the Board of Education and the Advisory Committee. The visitation results, along with self-evaluation data, become primary data resources to be utilized in program planning conducted during Phase I.

Program
APPROVAL
and
EVALUATION
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3423

VT 014 271
THREE PHASE SYSTEM FOR STATEWIDE EVALUATION OF OCCUPATIONAL EDUCATION PROGRAMS.

ILLINOIS STATE BOARD OF VOCATIONAL EDUCATION AND REHABILITATION, SPRINGFIELD. VOCATIONAL AND TECHNICAL EDUCATION DIV.
MF AVAILABLE IN VT-ERIC SET.

BULL-35-971
PUB DATE - ND 34P.

DESCRIPTORS - *VOCATIONAL EDUCATION; *PROGRAM PLANNING; *PROGRAM EVALUATION; *EVALUATION TECHNIQUES; *CONCEPTUAL SCHEMES; STATE PROGRAMS; PROGRAM EFFECTIVENESS; TECHNICAL EDUCATION; PROGRAM IMPROVEMENT

ABSTRACT - IN AN ATTEMPT TO INSURE OPTIMUM UTILIZATION OF STATE AND FEDERAL FUNDS AND TO PROMOTE SUPERIOR PLANNING AND OPERATION OF LOCAL PROGRAMS, A 3-PHASE EVALUATION SYSTEM WAS DEVELOPED THROUGH A COOPERATIVE EFFORT OF LOCAL DISTRICT PERSONNEL, INDIVIDUALS FROM HIGHER EDUCATION, BUSINESS AND INDUSTRIAL REPRESENTATIVES, STATE ADVISORY COUNCIL MEMBERS, AND STATE OFFICE PERSONNEL. PHASE 1 OF THE SYSTEM BEGINS WITH PROGRAM PLANNING DECISIONS MADE BY LOCAL DISTRICT PERSONNEL BASED ON RESULTS FROM THE CONDUCT OF PROGRAM EVALUATIONS CULMINATING IN A 1 AND 5-YEAR PLAN. PHASE 2 INCLUDES THE ANNUAL MONITORING OF PROGRAM CHANGES AND PROGRESS REFLECTED IN THE DISTRICT'S 5-YEAR PLAN FOR VOCATIONAL-TECHNICAL EDUCATION BY STATE STAFF PERSONNEL. PHASE 3 PROVIDES FOR AN ON-SITE VISITATION OF LOCAL PROGRAMS BY A TEAM CONSISTING OF EDUCATORS, BUSINESS AND INDUSTRIAL REPRESENTATIVES, AND RECENT STUDENTS OF OCCUPATIONAL PROGRAMS AND RESULTS IN THE IDENTIFICATION OF OCCUPATIONAL PROGRAM EXEMPLARY QUALITIES AND DEFICIENCIES WITH SPECIFIC RECOMMENDATIONS FOR PROGRAM IMPROVEMENT WHERE NEEDED. A DETAILED DESCRIPTION OF THE SEVEN STAGES INVOLVED IN PHASE 3 IS INCLUDED, AND A SAMPLE FORMAT FOR A LOCAL PLAN AND EVALUATION REPORT ARE APPENDED. A SUMMARY OF THIS PUBLICATION IS AVAILABLE AS VT 014 270 IN THIS ISSUE. (SB)

VT 014 271

OCT 29 1971

THREE PHASE SYSTEM for Statewide Evaluation of Occupational Education Programs

BULLETIN NO. 35-971

State of Illinois
BOARD OF VOCATIONAL EDUCATION AND REHABILITATION
DIVISION OF VOCATIONAL AND TECHNICAL EDUCATION
1035 Outer Park Drive
Springfield, Illinois 62706

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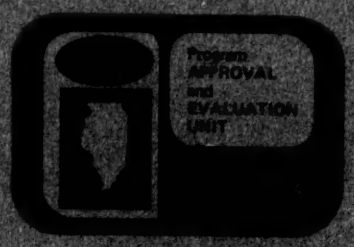

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OVERVIEW

The assessment and determination of the worth of American Educational processes and products has received increased emphasis in recent years. There has been more focus on evaluation of educational programs during the past decade than in the previous fifty years combined. In the future, the continuation of this trend can be expected.

Two factors have contributed greatly to the increased concern for evaluation: relevancy of educational training and accountability of funds. Evaluation of educational programs is now a matter of public concern. The tax paying public has supported education for years and is now demanding to know the outcome of its investments. Occupational education has not been ignored in this specific vein. Evaluation is not only designed to show the public what has or has not been accomplished, but has a major role in identifying strengths and weaknesses for educators at various levels to aid in Federal,State, and local planning.

Since the launching of Sputnik in 1957, the need for persons with higher levels of technical skills has been noted by our country's leaders. This need led to the Vocational Education Act of 1963 and the subsequent Amendments of 1968. The Vocational Education Amendments of 1968 represent the most recent plan for expanding and improving programs in occupational education to meet the identified need. The mandate for state and local evaluation to determine whether the intentions of the legislature are being met was clearly spelled out in this document. The Illinois Division of Vocational and Technical Education has established a system designed to accomplish the mandate for evaluation.

THE ILLINOIS SYSTEM

INTRODUCTION

The State of Illinois is responsible for the annual distribution of over 30 million dollars in State and Federal funds to help support over 8,000 specific occupational education programs. In an attempt to 1) insure optimum utilization of these State and Federal funds and to 2) promote superior planning and operation of local programs, an evaluation system has been developed which is referred to as the Three Phase System for Statewide Evaluation of Occupational Education Programs. The System was developed through a cooperative effort of local district personnel, individuals from higher education, business and industrial representatives, State Advisory Council members and State Office personnel. Development was accomplished by conducting several workshops, correspondence with individuals, and the involvement of individuals in a pilot test of the on-site phase of the System which led to many stages of refinement.

The resultant System incorporates the tasks of accountability, planning, and improvement of programs. The goals of the Evaluation System are as follows:

1. to promote and assist with the development of quality occupational education programs at the local level,

2. to provide the Division of Vocational and Technical Education with data upon which better statewide planning of occupational education programs can be based, and

3. to help assure accountability of Federal and State funds allocated to local occupational education programs

An initial step in establishing the above goals was the determination of the objectives for occupational education in Illinois. This task was accomplished through the contact of individuals throughout the State. These individuals were selected from groups of secondary, post secondary, university and business and industrial personnel. Once a bank of objectives was identified, a subsequent request was made of individuals to rank the goals in order of priority. The resultant objectives selected as first and second priority for the coming years are as follows:

A. First Priority Objectives

1. Occupational programs offered should be realistic in terms of current and projected manpower needs.

2. The needs of all students (including target populations) desiring vocational training should be adequately met by the occupational programs offered.

3. The total education of students desiring occupational training should be an articulated effort from kindergarten through adult education (occupational information, occupational orientation, and occupational training.)

4. Adequate ancillary services (guidance, placement, follow-up, student organizations, etc.) should be provided by local programs of occupational education.

5. Occupational education should adequately equip students with job entry skills required to enter the world of work.

B. Second priority objectives

6. Program planning should be adequate enough to ensure appropriate occupational programs.

7. Adequate facilities should be available for the occupational programs being offered.

8. Staff qualifications should be appropriate for occupational areas taught.

9. Community resources should be utilized in planning and implementing local programs of occupational education.

The Three Phase System of Evaluation has been designed to assess the extent to which the above objectives are being met. Each of the three phases has a specific function:

PHASE 1. Utilization of self-evaluation data in program planning by the local district culminating in the development of a One and Five Year Plan.

PHASE 2. Program approval by staff of the Illinois Division of Vocational and Technical Education.

PHASE 3. External evaluation by a visiting team to develop a profile of the local program with conclusions and recommendations to the local district.

Figure 1 presents the System in schematic form with a feedback loop between Phase Three and Phase One. This feedback allows for a built-in followup of changes recommended by the team for the following year's Local Plan. Phases One and Two are annual processes while the third phase occurs every two to five years or as warranted.

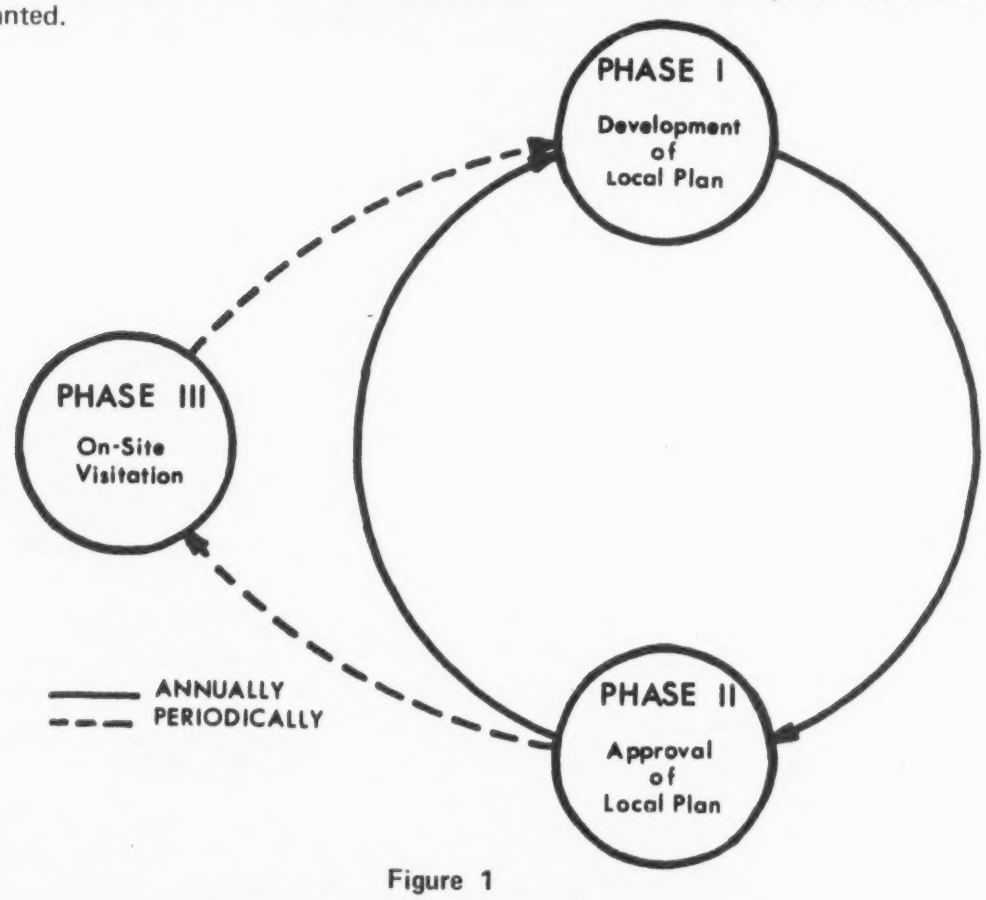
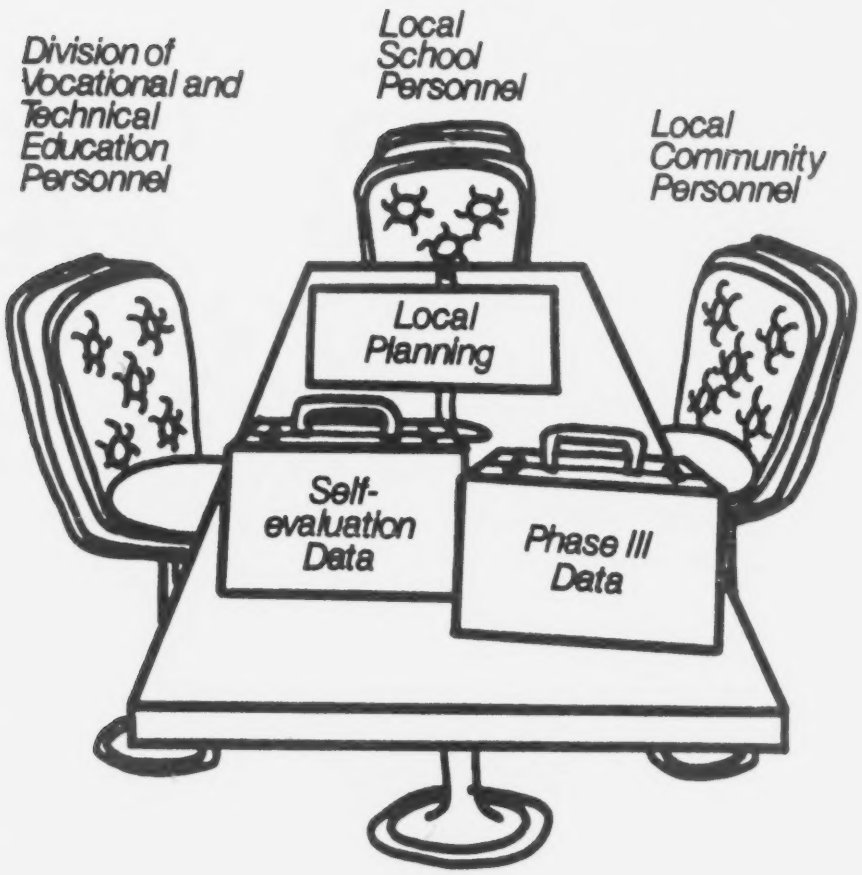


Figure 1
Schematic of Three Phase System for Statewide Evaluation of Occupational Education Programs

PHASE ONE



Purpose

Phase One of the Three Phase System for Statewide Evaluation of Occupational Education Programs is initiated by the staff of the local educational agency. It is this phase which incorporates the findings of the district's self-evaluation and the evaluation conducted by a visiting team (when available) in planning the district's occupational programs.

Procedure

The key to Phase One is the planning conducted by local district personnel. Effective planning entails the use of a continuous evaluation system which has been designed to provide data on which program planning decisions can be based.

A commitment to planning and evaluation by the local administration is essential. Planning must be a joint effort between local staff and community business and industry representatives (local advisory council members) under the direction of a good leadership team. Sufficient allowance of time to accomplish the planning tasks is essential. A potential solution to the time problem would be the utilization of institute days authorized by the School Code to conduct organized self-evaluation and planning processes.

The success of Phase One is very dependent upon the program evaluation and planning skills possessed by local district personnel. The Division of Vocational and Technical Education has placed emphasis on improving these skills. The development and distribution of a self-evaluation handbook and the offering of workshops on evaluation and planning have been two such efforts. Both of these efforts stress the need for local evaluation of the product (students) and the processes (program operation).

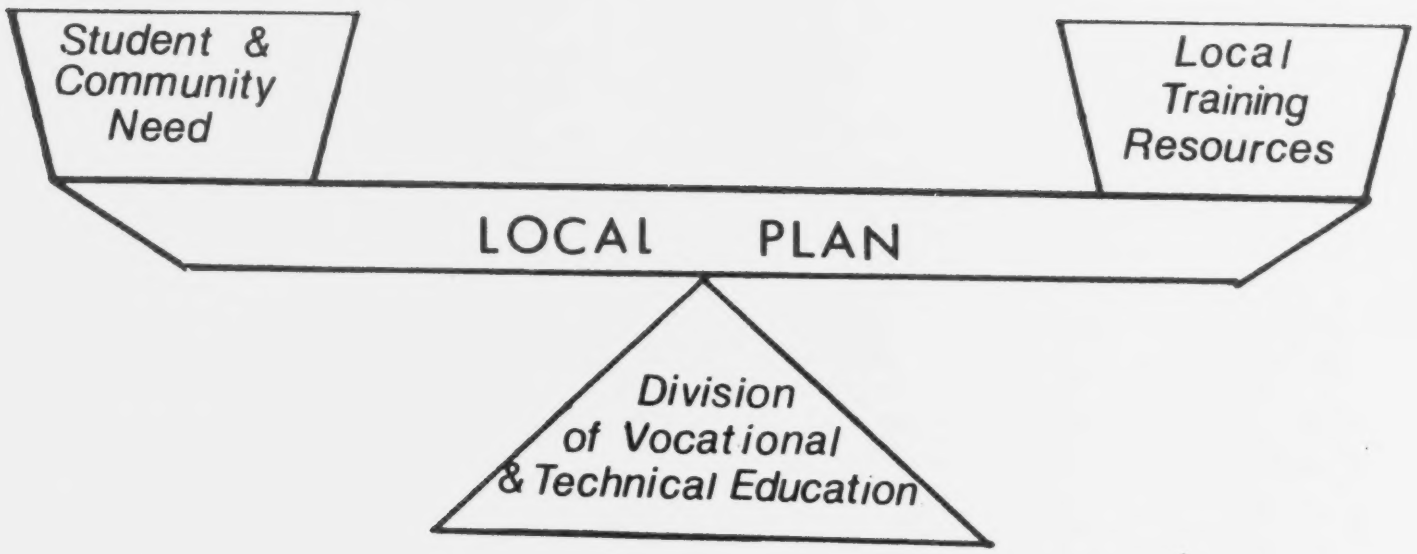
Particular attention should be paid to product evaluation at the local level. This would include the follow-up of former students, interviews with employers of former students and ratings of training received by former students.

The program processes to be evaluated by the local district should be comparable to the Areas of Concern For Evaluation identified during Phase Three of the state-wide system. Local evaluating teams consisting of students, teachers, administrators, employers, employees, local advisory council members, etc. should be organized. The following Areas of Concern For Evaluation should be looked at in detail by the local team: administrative organization, personnel, program objectives, evaluation processes, resources utilized, occupational programs, guidance services and students served. The information provided from the local self-evaluation would provide adequate background data upon which to base decisions regarding short-range and long-range program plans and priorities.

Outcome

The outcome of Phase One is a document which serves as a contractual agreement with the Division of Vocational and Technical Education as well as a planning aid to the local district. The division has prepared a set of Guidelines and a Format for developing the Local Plan. The Plan contains eight sections: A) General Information, B) Administrative Organization, C) District Objectives, Policies, and Program Description, D) Proposed One-year Plan, E) Long-range Plan, F) Financial, G) Summary, and H) Signature Page for the Chief School Administrator. A more detailed description of the Local Plan may be viewed in Appendix A.

PHASE TWO



Purpose

Phase Two of the evaluation system is devoted to the review and evaluation of the Local District One and Five Year Plan for Vocational and Technical Education by the staff of the Division's Program Approval and Evaluation Unit.

Procedure

Following preparation of the Local Plan, it is reviewed and approved by the local governing board and transmitted through the Superintendent of Educational Service Region or the Illinois Junior College Board to the Division of Vocational and Technical Education. Staff of the Division's Program Approval and Evaluation Unit with assistance from other state staff members are responsible for evaluating the Local Plan and making recommendations regarding approval of occupational programs offered in the district to the State Director of Vocational and Technical Education.

A certain degree of excellence is sought in the narrative part (Section C) of the Local Plan. Uniform standards for all schools are not established. Each school must be considered separately as it exists within its own community. Such things as past performance, population, financial support and training opportunities must be taken into account. If portions of this section of the Local Plan are not clearly explained, the local district is asked to provide further information. Possibly of greater concern during Phase II is the assessment of the local educational agency's progress and improvements shown from one year to the next.

The Local Plan also provides a form on which to report occupational education programs offered by the local district. The staff of the Program Approval and Evaluation Unit make approval recommendations to

the State Director regarding each of the courses offered. If sufficient information is not available to make a decision regarding specific programs or courses, the Unit may request more detailed course descriptions from the local district.

Outcome

The outcome of Phase Two is an approval status given to each occupational course by the State Director as well as an overall approval status of the Local Plan which may fall in one of the following categories: Approved, Conditionally Approved, or Not Approved.

PHASE THREE

Purpose

Phase Three has been designed to provide a local district with a profile of their total occupational program through the utilization of a visitation team comprised of external business and industrial representatives (management, labor and others), vocational educators and students from outside the district. This profile can be compared to the profile developed by the local district personnel in Phase One (Local District Plan). The results of this phase are designed to provide data to improve total occupational education program planning in the local district and in the State as well as provide for the accountability of funds allocated to that district.

Procedure

This phase is accomplished through on-site visitation by a team of individuals not associated with the district. The team has the responsibility of gathering and analyzing data concerning the district's total occupational programs. These data are collected through analysis of the Local District Plan; analysis of certain demographic data provided by the local school; administration of a preliminary evaluation questionnaire to administrators, teachers, counselors, and students; interviews with the above mentioned groups and business and industrial representatives of the community; general observations; and ratings by the team.

All of the data collected are compiled to make overall ratings as well as conclusions, recommendations and suggestions for action with regard to eight Areas of Concern For Evaluation relating to total occupational programs. The eight areas and the related objective of each are as follows:

CONCERN	TEAM OBJECTIVE
Administrative Organization:	Determine the effectiveness of the occupational education administrative organization.
Personnel:	Determine the qualifications of the occupational administrative and instructional staff.
Objectives:	Determine how comprehensive program objectives are developed and utilized and how reflective they are of the local program.
Evaluation:	Determine the effectiveness of the evaluation system used by the local school.
Occupational Programs:	Determine the effectiveness of the District's occupational education programs in providing comprehensive training for students.
Resources Utilized:	Determine how effectively the local school utilized internal and external resources.
Guidance Services:	Determine the effectiveness of the Guidance Services provided to aid students in career planning.
Students served:	Determine the effectiveness of occupational programs in serving all students' needs, interests and abilities.

These Areas of Concern For Evaluation provide the primary focus of the visitation. The length of the visitation will vary with schools of extreme size (very large or very small), but the average visitation will require two days in the district for interviews and observations by the team and part of a third day for a Summary Conference to present the findings to the local district administration.

The procedures of the visitation can be broken into seven specific stages:

1. Pre-visitation Preparation

   The district to be visited will be notified of the visitation dates and the names of visitation team members. A request for specific demographic data on the school and community will also be included.

2. Orientation of School Personnel

   A slide-tape presentation regarding the purpose, description and schedule of events for Phase III will be shown by a state staff member to the local district occupational education personnel. Preliminary Evaluation Instruments will be administered at this time to gather specific evaluative data relating to the district's total occupational program.

3. Orientation of Team Members

   The philosophy of the visitation, the mechanics involved, and the review and discussion of available information will be covered with the visitation team by the team leader.

4. Team Exploration

The visitation team will conduct interviews with local district staff, students, and community representatives.

5. Final Report Preparation

Composite team ratings, observations, and the synthesis of available data will be organized in a report format and presented to the district. This report will contain both positive and negative conclusions with recommendations and suggested actions for each total program area of concern.

6. Summary Conference

The team leader will present the visitation team's conclusions, recommendations, and suggested actions for each total program area to the local district administrators. This meeting, with the Regional Vocational Director in attendance, will determine the feasibility of fulfilling the recommendations presented.

7. Implementation of Suggested Actions

The local district will implement the appropriate action to remedy the deficiencies identified by the visitation team.

Outcome

The outcome of Phase Three is an evaluation report with a projected profile of the local district's total occupational education program. This report stresses recommendations and suggested actions which are commensurate to the specific district's ability to achieve them. The report is duplicated and sent to the local chief school administrator for distribution to and discussion with the local staff.

SUMMARY

The need for a system designed to continuously evaluate local district total programs of occupational education was most apparent to the Illinois Division of Vocational and Technical Education. It was essential that the evaluation system include both program product and program process assessment. To meet these needs, the Three Phase System for Statewide Evaluation of Occupational Programs was formulated.

Phase One of the System begins with program planning decisions made by local district personnel based on results from the conduct of program self-evaluations. The results of this planning are reflected in the Local District One and Five Year Plan for Vocational and Technical Education which is prepared annually and sent to the Division of Vocational and Technical Education. Phase Two of the System includes the annual monitoring of program changes and progress reflected in the district's Plan by state staff personnel. Phase Three provides for an on-site visitation of local programs by a visitation team consisting of educators, business and industrial representatives and recent students of occupational programs. Phase Three results in the identification of occupational program exemplary qualities and deficiencies with specific recommendations for program improvement where needed.

The interrelatedness of Phase Three to Phase One is the essential aspect of the Evaluative System. The Local Plan prepared following the on-site visit provides immediate follow-up of the local district progress toward remedying the occupational program deficiencies identified during Phase Three.

DETAILED DESCRIPTION OF PHASE THREE

STAGE 1
PRE-VISITATION PREPARATION

IDENTIFICATION OF SCHOOLS

Schools to be visited will be identified by the Illinois Division of Vocational and Technical Education. Selections will be made by a sampling procedure designed to identify a representative sample of the schools within the state so that each year a number of secondary schools, area vocational centers, and post-secondary institutions will be visited.

NOTIFICATION OF VISITATION

Each school to be visited will be notified by the Superintendent of Educational Service Region or the Junior College Board during the spring of the year preceding the visitation. Mailed with the notification will be materials for the local district and a request for additional information.

Materials to be mailed to each district scheduled for a visitation will include the following:

1. A statement of visitation purpose
2. Notification of exact dates for the visitation
3. A set of self-evaluation materials (HANDBOOK) for self-evaluation of occupational programs for local school use
4. A schedule of events for the visitation
5. Notification that later contact will be made to establish a date for the orientation of local district personnel involved with the occupational program

The local district personnel will be requested at the time of notification to provide the following information in sufficient quantity that each team member may be provided a copy of each:

1. Local District One and Five-Year Plan for Vocational and Technical Education
2. Demographic data from the school including:
   a. School enrollment
   b. Occupational program enrollment (unduplicated)
   c. Total budget
   d. Occupational budget
   e. Results of local self-evaluation study
   f. Description of district's testing program
   g. Description of placement activities
3. Class Schedule
4. Building floor plan (if available)
5. Student handbook (if available)

6. Program of studies or occupational course description

7. List of local advisory council members, their occupations, and dates of meeting

8. A community map or directions indicating school location and parking accomodations.

VISITATION TEAM

The staff of the Division's Program Approval and Evaluation Unit will be responsible for selecting and appointing qualified team leaders and team members to school visitation teams. All team personnel will be from outside the district to be visited.

The number of teachers employed in an occupational program will determine the size of the visitation team. A tentative guide to the number of team members is as follows:

Number of Occupational Teachers	Number of Team Members
5 - 10	- 3 -
11 - 15	- 4 -
16 - 20	- 5 -
21 +	- 5 + 1 for each additional 5 teachers

The team will be comprised of a team leader and members representing these three specific groups:

1. Educators

2. Business and Industry personnel

3. Former occupational students

Team Leader. The team leader will have the primary responsibility of organizing the visitation. His or her duties will include orienting the team, scheduling interviews, coordinating the visitation, preparing the final report with the aid of the team, and presenting the visitation findings to the local district personnel.

The following criteria will be used in the selection of team leaders:

1. Experience or background in occupational education,

2. Familiarity with the needs of various size schools,

3. Competence as perceived by colleagues, and

4. Availability to serve.

Team leaders will participate in an orientation workshop sponsored by the Division which is designed to prepare them to conduct several visitations during the school year. Such an activity stipulation is conducted in an effort to insure the uniformity of visitations. The final requirement of team leaders is participation in a two-day workshop to be held at the end of each evaluation year. This workshop will have two basic functions: the summarization of the year's findings and the refinement of the Evaluation System for use in subsequent years.

Educators. The educators to serve on the visitation team will be selected by the Division's Program Approval and Evaluation staff. A letter of request and an accompanying response form will be mailed to chief school administrators in the state who are responsible for reimbursed programs of occupational education. This letter will request that the administrator submit the names of individuals from the local district whom he or she would recommend to serve on a visitation team. The responses to this request will furnish the Division with a bank of names from which to draw team personnel for visitations. As soon as dates are finalized for each visitation, individuals will be selected from the bank of names and letters will be sent to request their services for that visitation.

Several criteria will be used in both the request for names and in the actual selection of educators for team members. The criteria are:

1. Knowledge of occupational programs,

2. Teaching or administrative expertise in occupational education,

3. Recommendations by colleagues, and

4. Availability to serve.

Information regarding the visitation procedures will be mailed to team members. This will be supplemented by an orientation session conducted by the team leader upon the group's arrival at the visitation site.

Orienting the team to the art of interviewing and to efficient use of available data will be a responsibility of the team leader. The educators on the team will spend the majority (70%) of their exploration time interviewing educators within the school, with the remainder being spent interviewing students (20%) and surveying business and industrial personnel of the community (10%).

Representatives of Business and Industry. Representatives of the business and industrial community will be selected by the staff of the Division of Vocational and Technical Education. The source of business and industrial representatives will be established in the same manner as the bank of educators; a request made to chief school administrators Names will be selected from the list and personal contact will be made with each individual by the Division.

Criteria for the selection of business and industrial representatives are listed below:

1. Concern for and basic understanding of the goals of occupational education,

2. Recommendation by colleagues, and

3. Availability

Business and industrial representatives will be selected several months prior to a particular visitation, and invitations to serve will be mailed to each. Additional information regarding the visitation will be mailed to business and industrial representatives and will be supplemented by the team leader during the orientation.

The business and industrial representatives will spend approximately 70% of their time in the community talking with employers and other people who have contact with current students, former students, or directly with the school. The remainder of their exploration time will be devoted to interviewing and observing vocational educators within the school (20%) and interviewing students (10%).

Former Students. Former students of occupational education programs from outside the district will be selected to serve as team members. These team members will be able to gather pertinent information from presently enrolled students which may be inaccessible to educators or business and industrial representatives.

Selection of former students will be made from a list of names supplied by local secondary and post-secondary institutions. The Division staff will ask that the following criteria be utilized in selection:

1. Ability to relate to both students and adults,

2. Enrollment in a secondary or post-secondary occupational program within the past three years, and

3. Availability to serve.

Each former student team member will be paired with a student currently enrolled in the occupational program who has been released from classes for the day or for a portion of the day. The currently enrolled student will act as a guide and as a facilitator for the former student's interviews with other students within the school. The former student will spend approximately 80% of his time interviewing students while the remainder will be spent with teachers and counselors.

Former student team members will also receive a mailing of information regarding the evaluation system and a description of his or her role within the system.

STAGE 2
SCHOOL PERSONNEL ORIENTATION

Approximately one month prior to each visitation an orientation presentation will be made to the local district personnel. This presentation will be given by a staff member of the Division of Vocational and Technical Education at a location designated by the chief school administrator from the district to be visited.

To insure uniformity among presentations, and to consume a minimum of staff time, all such presentations will be made through a slide-tape medium. The actual presentation, following the introduction of the state staff member will take approximately twenty minutes.

The presentation will stress certain aspects of the Three Phase System for Evaluation, and will explain the purpose of the visitation, the structure of the visitation team, the mechanics of data collection, the eight areas of concern for evaluation, the format for the final report, and the Summary Conference. Each of the three phases will be described and examined. The state staff member will leave a copy of a brochure summarizing the presentation with every staff member. Upon completion of the audio-visual presentation, the state staff member will entertain any questions from the staff regarding the Evaluation System.

A second major task to be completed at the time of school personnel orientation is the administration of Preliminary Evaluation Instruments to all occupational education instructional and professional supportive staff. These instruments are designed to collect preliminary data regarding the local occupational education program to aid both the team and the State Division. The instruments consist of four specific forms, each designed for a specific group of individuals: teachers, administrators, counselors or students. Each of the four instruments are based upon the eight areas of concern for evaluation which were identified and briefly described in a previous section. The Preliminary Evaluation Instruments will be administered to all staff who fall in the above categories and a sample population of students enrolled in occupational courses. The responses to these instruments are sent to the State Office by the state staff member for tabulation and summarization. Results will be distributed to the team visiting that particular school.

Most of the orientation time will be spent discussing the mechanics of the visitation. The primary goal is to make sure each team member understands his or her role and is prepared to fulfill that role. The team leader will stress the eight areas of concern for evaluation and will make some basic suggestions concerning the assessment of these areas through interviews and observation. The team leader will also verify the time and place of interviews for each team member. The format for the final report will be reviewed to guide team members in the writing of their comments which result from interviews and observations.

The remainder of the orientation meeting will be spent discussing the information which is already available from the local district and the Division. At this time, the team will discuss important points resulting from the review of the Local District Plan, results of the Preliminary Evaluation Instruments, and course descriptions. At the same time, the team members will discuss specific concerns which they have formulated through a review of the information packet received prior to the orientation meeting.

STAGE 3
TEAM ORIENTATION

Orientation of team members begins with the mailing of certain information to each member prior to the visitation. Material submitted to the Division by local districts will be placed in a packet along with additional information provided by the Division. This packet will contain:

1. The Local District One and Five Year Plan for Vocational and Technical Education,
2. A program of studies or occupational course descriptions,
3. A list of local advisory council members, their occupations and the dates of their meetings,
4. A community map or directive indicating school location and parking accomodations,
5. A floor plan of the school,
6. The results of the Preliminary Evaluation Instruments,
7. A publication describing the philosophy and mechanics of the evaluation,
8. A schedule of events for the specific evaluation at hand, and
9. A set of interview recording forms.

This packet will give the team information regarding the Evaluation System prior to the visitation as well as specific information about the local school to be visited.

The team leader will have the responsibility of conducting the team orientation. Orientation will involve three major areas of discussion: the philosophy of evaluation, the mechanics of the visitation, and a review and discussion of available information.

A discussion of the philosophy of evaluation will be led by the team leader. The slide-tape presentation which was used in the local district orientation by the Division staff will be utilized to present general information and to stimulate discussion.

STAGE 4
TEAM EXPLORATION

Stage four involves the on-site visitation of the local district by the team which will gather additional data to assess the program with regard to the eight areas of concern for evaluation: administrative organization, personnel, objectives, evaluation, occupational programs, resources utilized, guidance services, and students served. Each team member is charged with interviewing individuals and drawing conclusions from the interviews which culminate in the rating of each of the eight areas of concern for evaluation. Individuals interviewing educators within the school will cover all eight areas in their interviews, while the former student and business and industrial team members will concentrate on areas related to the personnel which they will be interviewing.

Stage four begins on the morning of the first day following the evening orientation. Prior to the start of school on that morning, a meeting of the visitation team with the school administration and occupational education instructional staff will be held. This meeting, which will last approximately thirty minutes, will involve two components: the introduction of the visitation team to the staff and a presentation given to the team by the chief school administrator or his designee.

The following questions will act as a guide for the presentation to the team:

1. What occupational programs are currently offered and what part do they play in the district's total education of students?

2. What major changes have been made in occupational programs during the last two years?

3. What are the future projections for occupational programs in the district, including maintenance of programs, extension of programs, improvement of programs, and new program projectives?

4. What are the limitations facing the occupational programs which are classified as internal (physical and financial) and external (community and state)?

5. How does the district currently evaluate the ongoing occupational education program?

Following the presentation by the chief school administrator, the staff will be dismissed to begin the school day while the visitation team spends an additional twenty to thirty minutes asking questions or discussing matters of concern with the administrator.

Upon completion of the discussion with the administrator, the team will meet for a brief coordination meeting. The team leader will review the duties of the team members with them and check to see that each member clearly understands the tasks of the day.

Individual interviews will begin following this meeting (approximately at the beginning of the second school period). A special type of interview schedule will be used which gives the primary objective and sources of data for each of the eight areas of concern (see Figure 2 for an example).

Unlike a formal interview questionnaire in which a standardized list of questions is asked, the interviewer will work from a group of general inquiries in each area of concern for evaluation which he must respond to at the conclusion of the interview. This procedure requires the interviewer to formulate his own specific questions to derive answers to the general inquiries.

EVALUATION

CONCERN	COMMENTS	INTERVIEW RATINGS
Primary Objective Determine the effectiveness of the evaluation system used by the local school. **Interview data** What groups of people are involved in the local evaluation system? How are programs or courses measured against their objectives? What use is made of the local evaluation results? (Including Follow-up results) **Data from other Sources** The existing system for evaluating the total occupational program would be classified as: Formal _____ Informal _____ Is a follow-up of former occupational students conducted? Yes _____ No _____ Frequency _____	POSITIVE NEGATIVE RECOMMENDED CHANGES	POOR / BELOW AVERAGE / AVERAGE / ABOVE AVERAGE / EXCELLENT 1. ☐ ☐ ☐ ☐ ☐ 2. ☐ ☐ ☐ ☐ ☐ 3. ☐ ☐ ☐ ☐ ☐ 4. ☐ ☐ ☐ ☐ ☐ 5. ☐ ☐ ☐ ☐ ☐ 6. ☐ ☐ ☐ ☐ ☐

FIGURE 2
Example of Recording Form for One Area of Concern for Evaluation

The general questions are given below the primary objective under the heading of "Interview Data." Following the interview data on the form is the section entitled "Data from Other Sources." This section includes answers to questions or data which have been gathered through other means, i.e. Preliminary Evaluation Instrument results, local plans, demographic data, etc. During the team orientation, the team leader will go through each of the eight areas with the team and fill in the data from other sources.

Upon completion of each interview, the interviewer is given time to write comments on the recording form regarding each of the areas considered. Also, the intervewer will make a rating for each of the eight areas of concern for evaluation for each interveiw. At the end of the interview day, the comments and ratings can be compiled to aid in the writing of the Evaluation Report.

Individuals to be interviewed fall into one of the following categories:

1. Teachers

   a. all occupational education teachers
   b. a sample of academic teachers

2. Administrators

   a. Board of Education members
   b. Chief school administrator
   c. Curriculum director
   d. Business manager
   e. Vocational director
   f. Building principals or deans
   g. Department chairmen
   h. Other administrative personnel

3. Guidance personnel

   a. Director and/or chairman of guidance personnel
   b. Guidance Personnel

4. Business and Industrial Personnel

   a. Advisory Council members
   b. Representatives of community agencies such as: Illinois State Employment Service, Chamber of Commerce, etc.

5. Students

   a. A random sample of students from occupational education classes.

Interviews with faculty members within the school will be held on an individual basis or conducted in small groups. Business and industrial members of the community can most effectively be interviewed through a small group meeting involving three or four members. In terms of the amount of time required of the community people, this type of interview has proven most efficient. Formal interviews with students will also be conducted in small groups. Students appear to be more open in their comments in small groups as compared to individual interviews. Individual contact with students will be made by team members on an informal basis throughout the day.

The length of interviews within the school will be somewhat governed by the length of a given class period. However in most cases, the interview should last for at least thirty to forty minutes with an additional twenty minutes made available to the interviewer for recording comments and ratings. Student interviews will be held on approximately a thirty minute schedule while the interviews with community representatives should require approximately one hour.

STAGE 5
PREPARATION OF THE EVALUATION REPORT

The Evaluation Report is a document prepared by the team to reflect their assessment of the local occupational education program in total. The report is organized to correspond to the primary focus of the evaluation—the eight areas of concern for evaluation. A separate section of the report is devoted to each of the eight areas and includes conclusions, recommendations, and suggested actions for each. Figure 3 gives an example of one section of a final report.

CONCLUSIONS AND RECOMMENDATIONS

PROGRAM COMPONENTS	PROFILE CONCLUSIONS	RECOMMENDATIONS	SUGGESTED ACTIONS
Local Evaluation	1. No formal system for total periodic program evaluation exists although informal evaluation was evidenced among some staff. 2. The visitation team felt that the yearly teacher self-evaluation system is quite effective. 3. There is little evidence of a student performance centered evaluation although those types of objectives have been prepared which could easily be evaluated. 4. A number of teachers are not basing evaluation on criteria which is measurable and related to standards expected in world of work. 5. The visitation team feels there is little student input into the evaluation system both in terms of total program and individual curricula. 6. Follow-up studies and procedures used by selected teachers provided a sound slant to building an effective evaluation system.	1. A formal total program evaluation based on a systematic process should be developed. 2. Individual curriculum evaluation should be conducted periodically. 4. The behavioral approach to planning evaluation should be pursued by the staff. 5. Develop into the total and individual curriculum a provision for student evaluation on a continuous basis.	1 & 2. (a) Use 1 and 5 year Local Plan as a basis for system. (b) Use staff representation to plan system of evaluation. (c) Conduct staff in-service training sessions to train all staff in implementing the behavioral approach to planning and evaluation. (d) Establish a method by which respective program advisory committee members conduct periodic evaluation of existing occupation programs. 4. Involve students as well as industry representatives in developing measures. 5. Include students in the planning and implementation of a format to evaluate programs, courses and instructors.

Figure 3
Example of One Final Report Area of Concern for Evaluation

The report will be prepared through a cooperative effort involving all team members, with the team leader acting as discussion leader and recorder. It is the team leader's responsibility to place the report in proper order and format.

On the evening of the first day of interviewing, the team will meet to discuss the results of the day's interviews. An effort will be made at this meeting to begin forming conclusions for the final report. Areas that require further search before definite conclusions can be reached will also be identified at this time. The following morning will be spent interviewing more individuals with the intent of supplementing those areas deficient in data. The team leader will spend a portion of that morning writing up the results of the previous evening's discussion. This allows the team to make additions and corrections to statements during the afternoon report-writing session. This time schedule allows each team member to contribute to the report and review it before he leaves the visitation site. A final part of the report will be the compilation of all of the ratings in the eight areas of concern. The combined ratings will be displayed in the report in the form of a bar graph (See Figure 4).

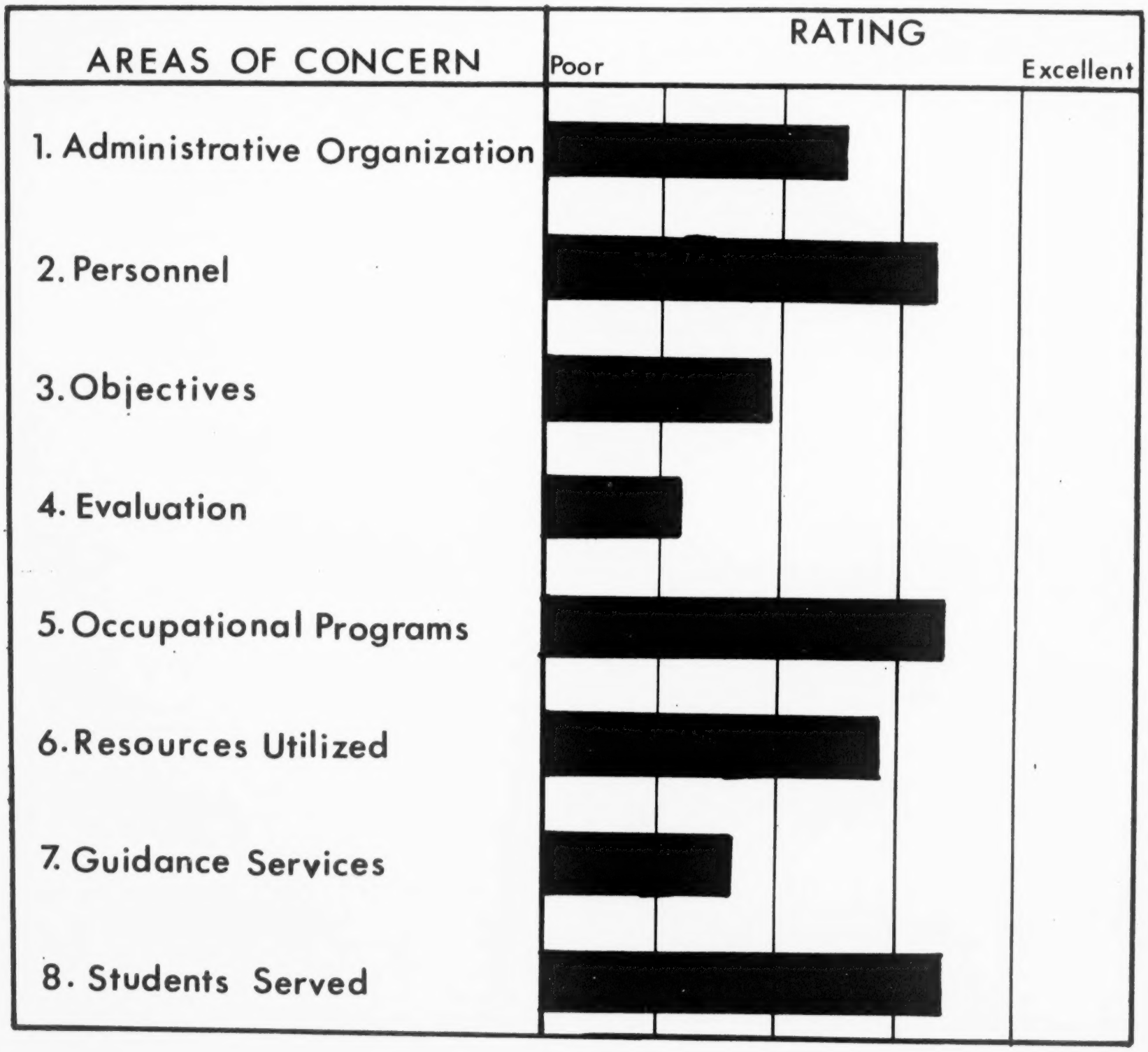


Figure 4
Example of Bar Graph in Evaluation Report

The Format for the complete evaluation report can be viewed in Appendix B.

STAGE 6
SUMMARY CONFERENCE

A Summary Conference will be held upon completion of the evaluation report for the purpose of communicating the team's findings to the administrators of the local educational agency. This meeting will provide an opportunity for the administrators to discuss the findings and to make known any limitations the district may have in implementing the recommended changes.

Three groups of individuals will be represented at the Summary Conference: the visitation team, the local district, and the Illinois Division of Vocational and Technical Education. The team leader will represent the team, the chief school administrator will appoint representatives of the local district, and the Regional Vocational Director will represent the Division. A suggested list of individuals who may represent the local district includes:

1. Superintendent of Educational Service Region,
2. Board Member,
3. Administrative staff,
4. Advisory council member, and
5. Other selected school personnel if desired.

The summary group should be of a size which can be accomodated in a small conference room to promote more effective discussion.

The Regional Vocational Director will serve as the moderator of the Summary Conference. It will be his responsibility to reinforce the objectives of the meeting and to coordinate the meeting in terms of those objectives. The team leader will present the findings of the team to the local personnel. He or she will include presentation and discussion, taking each area of concern separately. Major emphasis will be placed on areas which can be improved, as compared with "exemplary" areas.

The meeting will be limited to a two-hour period and it is the responsibility of the Regional Vocational Director to insure sufficient progress toward the covering of all necessary information within the time period.

Following the Summary Conference, the team leader and the Regional Vocational Director will make any necessary changes or corrections in the evaluation report. The report then will be transmitted to the State Division through the Regional Vocational Director for typing and reproducing. The State Division will mail the evaluation reports to the chief school administrator for distribution to the staff, board members, and advisory council members. Copies will also be distributed to team members, the Regional Director, the State Board, the State Advisory Council, and the Division Director's Office, and a copy will be placed in the Division's Local Plan file.

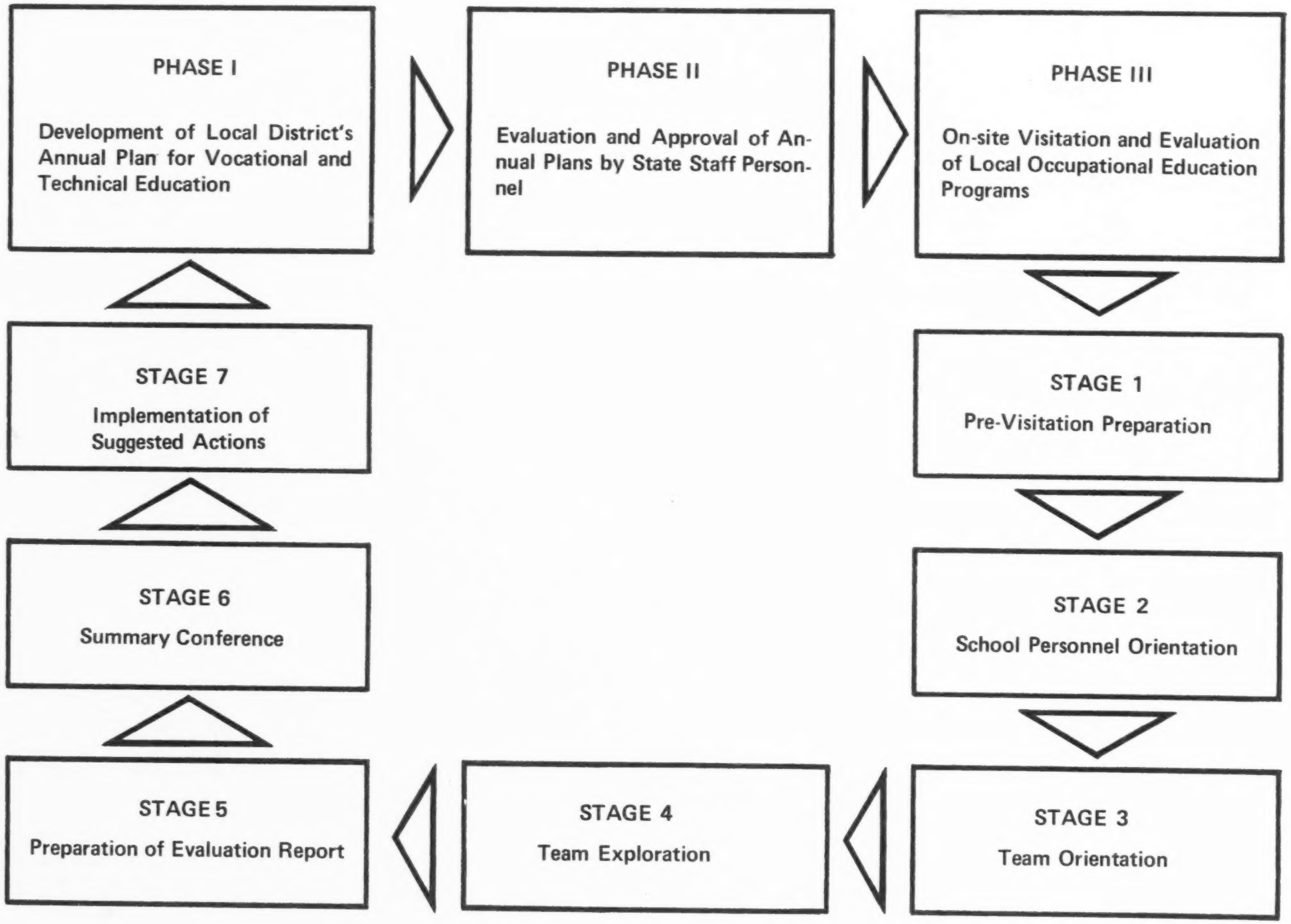
It is the responsibility of the chief school administrator to present the Evaluation Report to the staff, board, and advisory council for discussion.

STAGE 7
IMPLEMENTATION OF SUGGESTED ACTIONS

Stage seven is a very important link in the entire Three Phase System. Without this stage, the effort expended during the other stages is futile. This stage begins with a meeting within the local district held by the chief school administrator or his designee for the purpose of discussing the findings of the visitation team.

Consultant help should be sought from the Division of Vocational and Technical Education or from other sources when needed. These resource personnel should be utilized in the planning and actual implementation of changes in the local programs.

This stage is tied directly to Phase One of the Three Phase System which has the primary function of planning. The on-site evaluation, or Phase Three, is only the beginning of the improvement of programs. It is necessary that the local school continuously conduct self-evaluations to aid in their planning.


PHASE I
Development of Local District's Annual Plan for Vocational and Technical Education
PHASE II
Evaluation and Approval of Annual Plans by State Staff Personnel
PHASE III
On-site Visitation and Evaluation of Local Occupational Education Programs
STAGE 1
Pre-Visitation Preparation
STAGE 2
School Personnel Orientation
STAGE 3
Team Orientation
STAGE 4
Team Exploration
STAGE 5
Preparation of Evaluation Report
STAGE 6
Summary Conference
STAGE 7
Implementation of Suggested Actions

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APPENDIX A

FORMAT FOR LOCAL PLAN

The local plan consists of eight specific sections which are identified by the letters A through H. Each section is identified and briefly described below.

Section A – General Information. Section A consists of certain vital or demographic information related to the local school district and community. Included are items such as legal name of school, name of Local Chief School Administrator, size and tax information of the district, average expenditures of district, and estimated student population of the school.

Section B – Administrative Organization. Section B requests a description of the administrative structure and organization of the Vocational and/or Technical Division of the local district as well as the organizational structure of any joint agreements in which the district is participating. This organization is described in a brief narrative with a supplemental chart if necessary. In addition, specific questions are asked regarding the organizational structure.

Section C – District Objectives, Policies, and Program Description. Section C requests a narrative describing how the local plan was developed, the needs that it attempts to fill, the students that are to be reached, the local plan for evaluating the program and plans for the future to improve both the number of offerings and the quality of vocational and technical education in the district. Seven specific questions must be answered by the local school personnel in this section. They include:

1. What are the objectives of your proposed vocational and technical program?
2. How will proposed program objectives and goals meet the needs of all youth and adult students?
3. What community resources were used and how were they used in planning and implementing your proposed program?
4. What ancillary services are being provided in the proposed vocational-technical program?
5. How do you plan to evaluate your proposed program?
6. What is the proposed improvement for the coming year?
7. How do you propose to improve program quantity within five years?

Section D – Proposed One-Year Plan. Section D consists of two major parts–the first part is used for recording all credit programs taught in high schools and junior colleges. The second part is used for reporting elementary programs and/or non-credit programs (often called adult programs) offered by high schools and junior colleges. An example of section D is shown in figure 1A.

Section F. – Financial. Section F requests a tentative budget to indicate the sources of income and the major categories of expenditures for the proposed program. Separate spaces are provided for different types of districts and area vocational centers. An estimate of per credit cost is also requested.

Section G – Summary. Section G is a summary of enrollments at various educational levels for three years along with a listing of vocational administrators, instructors, and guidance coordinators. The actual enrollments for the last school year, the actual enrollments for the current year, and the projected enrollment for the next school year are included. Head count enrollment figures (unduplicated) will be used.

Section H – Signature Page. Section H provides a record of signature for a Board Officer, Local Chief School Officer, and the Superintendent of Educational Service Region.

	1	2	3		4	5	6	7	8	9	10	11	12	13	14	15	16
	Occupational Curricula (or program) Indent list in sequential order Individual courses below each curricula (One course per line)	O. E. Code Number	Check if course qualifies as		Course Credit Assigned For The Yr. H. S. Units or Cr. Hr.	Estimated Enroll By Individual Courses	Estimated number of students by grade level							Est. No. of students		Number of Students Expected to Enroll From Other Districts	For State Office Use
			Special Organization	Initial Program			Occupa. Orientation		Occupat'l Exper. (Typically 11 & 12)		Post-Secondary (Typically 13 & 14)		Adult Training For Credit	Disadvantaged	Handicapped		
							9	10	11	12	13	14					
1	SECRETARIAL TRAINING	14.0702															
2	Shorthand II	14.0702			½	15			15					5		5	
3	Typing II	14.0702		x	½	30			30						2		
4	Business Machines	14.0702			½	15				15					15	5	
5	Office Practice	14.0702			½	30				30						10	
6	Shorthand I	14.0702			1	20		15	5								
7	Typing I	14.0702			1	50	50							10			

EXAMPLE

Figure 1A
Example of Section D

APPENDIX B

FORMAT FOR EVALUATION REPORT

Title Page. The title page includes the legal name of the school district, the dates of the visitation, and the names and titles of the team leader and other team members.

Introduction. This section gives a statement of intent of the local evaluation by the Division of Vocational and Technical Education.

General Conclusions and Determinations. This section is devoted to a narrative description of the exemplary qualities of the occupational education program and the major deficiencies that were determined.

Total Occupational Program Proficiency Profile. This section includes a bar graph which yields a quick reference profile of the total occupational program of the local district.

Conclusions and Recommendations for Each Area of Concern for Evaluation. This portion of the Evaluation Report is divided into the eight Areas of Concern for Evaluation. Within each area three categories of information are provided: Profile Conclusions, Recommendations, and Suggested Actions. Profile conclusions may indicate either exemplary or deficient program characteristics. Recommendations and Suggested Actions are provided for only the Profile Conclusions related to deficiencies.

VT 014 316
UPGRADING THE UNDEREMPLOYED IN THE PLANT ENVIRONMENT. STATUS REPORT, PART I (SEPTEMBER 1, 1969-FEBRUARY 28, 1971).

HUMANIC DESIGNS CORP., MANHASSET, N.Y.
MANPOWER ADMINISTRATION (DOL), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 28FEB71 105P.

DESCRIPTORS - *INPLANT PROGRAMS; ON THE JOB TRAINING; *UNSKILLED WORKERS; MANPOWER NEEDS; PRODUCTIVITY; IMPROVEMENT PROGRAMS; OCCUPATIONAL MOBILITY; LABOR TURNOVER; EMPLOYMENT PRACTICES; *LABOR UNIONS; *DEMONSTRATION PROGRAMS; *FEDERAL PROGRAMS; MANPOWER UTILIZATION
IDENTIFIERS - HIGH INTENSITY TRAINING; HIT; PROJECT UPGRADE; MODEL CITIES PROGRAM

ABSTRACT - THIS PROGRESS REPORT DESCRIBES THE FIRST 18 MONTHS OF OPERATION OF A MULTI-PART UPGRADING PROGRAM INCLUDING: (1) TWO DEMONSTRATION UPGRADING PROGRAMS, INCLUDING A MANPOWER LABORATORY FOR AMERICAN TELEPHONE AND TELEGRAPH COMPANY (AT&T) AND A MODEL CITIES PROGRAM IN COLUMBUS, OHIO, PROJECT UPGRADE, (2) A UNIVERSITY IMPLEMENTATION PROGRAM AT NORTHWESTERN UNIVERSITY, (3) AN ANALYSIS OF THE LONG-RANGE EFFECTS OF HIGH INTENSITY TRAINING (HIT), AND (4) TECHNICAL SUPPORT FOR OTHER UPGRADING ACTIVITIES. DURING THIS PERIOD, SEMINARS ON UPGRADING WERE HELD FOR UNION AND MANAGEMENT REPRESENTATIVES. THE FINDINGS INDICATE THAT LABOR MARKET FORCES AND THE CONCEPT OF INVESTMENT IN HUMAN CAPITAL HAVE LESS EFFECT ON EMPLOYMENT AND UPGRADING PRACTICES AND POLICIES THAN DO OUTSIDE LEGAL, ECONOMIC, AND COMMUNITY PRESSURES. THE EVALUATION OF HIT SHOWED THAT ITS VALUE IN TERMS OF WAGES AND MOBILITY WAS QUESTIONABLE, ALTHOUGH SUPERVISORS WERE FAVORABLE TOWARD ITS EFFECTS ON PRODUCTIVITY AND WORKER BEHAVIOR. (BH)

VT 014 316

VT014316

Humanic Designs Corporation

3460

STATUS REPORT

UPGRADING THE UNDEREMPLOYED IN THE PLANT ENVIRONMENT

September 1, 1969 -
February 28, 1971

U.S. DEPARTMENT OF HEALTH, EDUCATION, & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

U.S. Department of Labor
Manpower Administration
Part I:
Contract No. ML-82-34-70-04

STATUS REPORT

UPGRADING THE UNDEREMPLOYED

IN THE

PLANT ENVIRONMENT

This report of a special manpower project was prepared under a contract with the Manpower Administration, U.S. Department of Labor, under the authority of the Manpower Development and Training Act. Organizations undertaking such projects under Government sponsorship are encouraged to express their own judgment freely. Therefore, points of view or opinions stated in this document do not necessarily represent the official position or policy of the Department of Labor.

Humanic Designs Corporation
1615 Northern Boulevard
Manhasset, New York 11030

U.S. Department of Labor
Manpower Administration
Part I:
Contract No. ML-82-34-70-04

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SECTION 1

OVERVIEW OF 1969-71 ACTIVITIES

OBSERVATIONS AND FINDINGS

Introduction

During the past eighteen-month period Humanic Designs Corporation (formerly Skill Achievement Institute) was contracted to perform the following key activities:[1]

- Design and implement experimental and demonstration upgrading programs through two vehicles to be selected from among:
  - government agencies
  - international labor unions
  - trade, business and professional associations
  - large private corporations;
- Plan a University Implementation Program in concert with a Graduate School of Business;
- Design and implement an analytic program to study the long-range effects of the HIT model;
- Continue to provide technical support to other upgrading activities.

During this period, Humanic Designs Corporation (HDC) participated in the planning and design of:

- A Manpower Laboratory for the American Telephone and Telegraph Company;
- An upgrading project linked with a concept of community education within the Model Cities Demonstration Agency in Columbus, Ohio;

1/ U.S. Department of Labor Contract, Manpower Administration, R&D, 1969-1971, Contract No. ML-82-34-70-04.

- A University Implementation Program for Northwestern University, Graduate School of Business Administration;

- Two seminars on upgrading, one with labor union representatives and the second with corporate managers;

- An analysis of some of the effects of HIT approximately one year after upgrading the employee in Baltimore, Newark and Cleveland.

Technical support activities during this period included:

- Research design support for the American Institute of Aeronautics and Astronautics in its program to assist displaced engineers and technicians from the aerospace industry;

- Assistance in the design of a pilot upgrading program to be administered by the State Employment Service in selected states;

- Assisting the Cleveland upgrading project in the design of a new multi-step experimental model and its analytic component.

During the contract period, HDC prepared "A Handbook for Upgrading Low-Skill Workers," a technical manual for employers and trainers who plan to institute in-plant upgrading systems.

Observations and Findings

The following offers a summary of the observations and findings during the past eighteen months. Some of the collective judgments "skate on empirically thin ice," and others are more firmly grounded. These findings are discussed in greater detail in later sections of this report.

- As a consequence of a high unemployment rate due to economic downturn, many organizations do not

suffer significant skill shortages and are consequently not generally receptive to upgrading programs;

- The costs of force loss, absenteeism and low productivity do not seem sufficient to induce a large organization to alter its promotional and training policies in order to assure the upward mobility of low-skill workers.

- The concept of "investment in human capital" — developing of workers' skill and knowledge — has not been widely accepted by organizations. For example, high turnover, although expensive in terms of direct replacement costs to the operating companies of the Bell System, and in their service to customers, was not related by management to a need for developmental programs similar to those implemented for the sake of maximizing investments in equipment and plant facilities.

  However, outside legal, economic, and community pressures (and a tight labor market) may have an impact on employment policies and practices.

- There is a lack of adequate mechanisms for identifying problems involving manpower utilization or in developing efficient solutions to those problems which are identified.

- In organizations into which High Intensity Training (HIT) was introduced by the Three City Projects, under HDC systems management, an in-house training capability was left in 25% of the organizations. It appears that small organizations do not feel they can afford to free a competent staff member for training sessions and follow up. Thus the "multiplier" effect is largely inhibited.

- Nevertheless, the general perception of managers and first-line supervisors was that HIT had a positive impact on productivity and worker behavior.

- On the average, HIT trainees received an 8-10% raise in salary upon graduation. However, comparison of HIT graduates in manufacturing industries with other workers in the same occupational category in their cities indicates that HIT graduates' mean wage rates were lower, and their rate of increase in wage rate, subsequent to the post-HIT increase, was about the same as that of these other workers, so they were not catching up.

- Workers who left their organizations following HIT but remained in the labor force were found not to have improved their financial position. It seems that employees who went through the HIT process did not achieve accelerated upward mobility by moving to other organizations.

SECTION 2

DEVELOPING UPGRADING

APPROACHES IN TWO SITUATIONS

Developing Upgrading Approaches In Two Situations

The introduction to this report indicated that two employee development programs emerged as operational realities: AT&T as a corporate situation and the Columbus, Ohio, Project Upgrade, Model Cities Program, a community/government situation.

Other institutions were examined as potential developers of intra-organizational worker upgrading activities. A logical choice from among institutions with this potential was the international labor union. Although no formal program with a labor organization was realized, the program design and negotiating experiences which resulted from contacts with the leadership of international labor organizations led to HDC's becoming more knowledgeable about the structures within which labor union leaders function.

Marketing was initiated with two affiliates of the AFL-CIO, the International Union of Electrical, Radio, and Machine Workers (IUE) and the Human Resources Development Institute (HRDI), AFL-CIO. Officials of labor unions which might become one of the two situations in which an upgrading capability could be established were first contacted at the AFL-CIO convention of 1969.

International Union of Electrical, Radio and Machine Workers (IUE) - AFL-CIO

Worker upgrading was not a new concept for the IUE. The union, representing a broad spectrum of workers at various skill levels in the electrical and electronics, manufacturing and service industries, has, over the years, incorporated upgrading provisions into its contracts.1/

1/ Even prior to the October 1969 AFL-CIO Convention, at which contact was made by HDC with the IUE's president and ranking officials, the U.S. Department of Labor had made a grant to the International Union for purposes of upgrading up to 10,000 of its members. Educational and skills training programs were to be established under the terms of the grant in eight United States cities. One of the particular incentives for the IUE request for Department of Labor funding was the Union's recognition that opening new jobs for the unemployed necessitated advancing in skill and salary levels the members of the IUE who remained at entry-level or low-skill jobs.

When discussions were held with the union, the participants focused on ways in which HDC would assist IUE in establishing the upgrading capability which was the objective of the U.S. Department of Labor grant. HDC suggestions related to two issues.

- Approaches to organizations regarding other types of upgrading than provisions for tuition remission, which had constituted IUE's previous experience in employee upgrading efforts;

- Trainee Selection and Training Processes which select workers and train them for specific target jobs within the plant setting.

The intent of negotiations was to establish an intra-union capability to negotiate with employing organizations and to broach the trainee selection issue in a manner which meets union commitments to seniority considerations, while honoring employers' interests in economies in filling skills shortages.2/

2/ In November 1969, IUE called a strike at General Electric and further discussions between HDC and IUE were postponed while the International's leadership engaged in collective bargaining negotiations. Following the end of the strike in February 1970, another meeting was held with IUE leadership, and the initial design of an HDC-IUE-Employer collaborative effort was revised to a four-way cooperative venture, including the IUE, HDC, the Employer and a University. Both IUE and HDC had previously established relationships with universities which had indicated interest in partnership arrangements relating to worker upgrading programs. By this juncture, however, HDC was immersed in its corporation situation at the Manpower Laboratory of the American Telephone and Telegraph Company and in promising negotiations for a second situation, with a government supported program in Columbus. IUE depended upon HDC to continue further discussions, suggesting that HDC approach General Electric. This possibility was not further developed at that time. Contact was maintained with IUE, however, and the Union's President attended HDC's seminar for Labor Union leaders on worker upgrading.

The Human Resources Development Institute - AFL-CIO

Formed in the last quarter of 1968, the Human Resources Development Institute (HRDI) has, as a primary objective, the stimulation of, and assistance to, organized labor's participation in national manpower development programs. This objective is carried out through 48 field representatives. At the point of initial contact, the Human Resources Development Institute was involved in the NAB-JOBS program to bring unemployed disadvantaged persons into jobs with the cooperation of unions and management. HRDI was, at that time, engaged in a training program, through which established union members would undertake a "buddy" responsibility for entering employees placed on the job through NAB-JOBS.

HRDI was also thinking ahead to the upgrading options which were a natural sequel to their activities with respect to entry-level workers.

A concept paper which was forwarded to HRDI made the following points in relation to labor union activity in upgrading employees:

- A labor union can stimulate employing organizations to introduce the concept of upgrading;
- The union can assist in implementing upgrading training by providing an instructional capability;
- Introducing upgrading can be justified on the basis of the benefits to accrue to both employer and worker;
- The anticipated proposal would relate to HRDI's introducing a systematic training and upgrading program that will provide union and company representatives with the capability of performing such tasks as the following:

- identifying potential occupational areas for worker upgrading,

- analyzing jobs to be filled,

- preparation of curricula, and

- selection and training of the underemployed worker.

Although HRDI responded positively to the concept paper, the uncertainty of their own funding postponed discussions indefinitely.

The Large Corporation: American Telephone and Telegraph Company (AT&T)

The Chairman of the Board of AT&T announced the establishment of a Department of Environmental Affairs, stating that:

> The Bell System's commitment to a continually improving communications service requires that our planning and operations be effectively related to the environment in which our service is provided and used.3/

Examining a variety of problems accompanying the changes which have occurred in the United States, especially the growth of the central cities and suburban development, with population shifts which have begun to alter the composition of the Bell System's operating company work forces, the Department of Environmental Affairs focused on the following problems:

- The central cities of the United States in terms of demographic characteristics and deficiencies in public service facilities;
- Human resources and the changing ethnic composition of the System's work force;
- Urban education;
- Corporate responsibilities, in relation to the nation's physical environment and the problem of pollution.

HDC entered into an agreement with AT&T to provide the necessary personnel, design assistance and other technical support for the establishment of a Manpower Laboratory, within the Department of Environmental Affairs. The Manpower

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3/ H.I. Romnes (announcement August 1969); AT&T, Annual Report of the Department of Environmental Affairs, August 1970, Introduction.

Laboratory was described as "an experimental and demonstration vehicle with the mission to help increase the Bell System's capacity to obtain, develop, effectively utilize and retain the needed human resources to provide continually improved communication services."

The Manpower Laboratory

The overall purpose of the laboratory is the development of program designs which will assist in attempting to solve many of the human resource problems of the Bell System. Among the specific objectives identified were the following:

- Systematically identify the manpower problems which diminish Bell System's capacity to provide high quality service;
- Analyze the inter-dependency of these problems;
- Develop a priority scheme for attacking these problems;
- Inventory, evaluate and test present approaches and techniques being used in the Bell System and other organizations;
- Develop program designs — experimental prototypes — which may help solve Bell System's manpower problems;
- Field test the prototypes in company locations to further evaluate their effectiveness and applicability;
- Generalize from the findings so that they may apply in other organizations nationally.

HDC saw the opportunity to work within the AT&T System as a means of gaining a greater understanding of how large business structures operate, while establishing a mechanism within the organization which would have the capacity to induce changes in that System. AT&T's heavy financial commitment to the Manpower Laboratory seemed to indicate a readiness

to seriously examine and deal with the problems affecting employee behavior and performance and, hence, customer service.

In developing the plan of work for the Manpower Laboratory, HDC and AT&T Department of Environmental Affairs management agreed that the manner in which work is planned and accomplished should itself constitute an experiment. Manpower Laboratory staff, with AT&T and HDC personnel functioning in interchangeable roles, initiated Problem Identification activities.

Problem Identification. The first stage involved detailed interviews with representatives of five departments:

- Personnel, which is responsible for Research, Employment, Manpower Planning, Minority Group issues and Management Training;
- Commercial, which handles contacts with the public through the business offices, sells services, establishes rates, forecasts telephone growth and publishes telephone directories;
- Traffic, comprised largely of operators who place calls, which also determines the types and amounts of equipment needed for adequate service;
- Plant, which provides exterior equipment and handles customer installations;
- Comptroller, which is responsible for billing customers.

The group outlined several problems: inadequate worker skills, poor motivation, employee dissatisfaction, union turmoil and ethnic conflict. The operating departments stressed two possible underlying factors: the wage scale and the management reward system. The latter concept was developed in terms of:

- The need for changes in the reward system affecting all levels of management, so that supervisors would be rewarded for developing and promoting staff rather than for mere monitoring activities;

- An apparent dissonance between policy concerning development of employees and good customer service, on the one hand, and, on the other hand, what is implicitly demanded by the indexes[4] of worker performance;

Consequently, it was suggested that the Manpower Laboratory:

- Make root causes known to management;

- Obtain the commitment to necessary organizational appraisal and subsequent revision.[5]

Manpower Laboratory staff concluded that new programs alone would not constructively deal with the problems cited. Institutional changes were required to affect the causes of poor worker performance.

At this juncture, however, Manpower Laboratory management decided to terminate the activities of the Problem Identification Task Force. This decision made it more difficult to design effective approaches to manpower problems within AT&T.

4/ The AT&T indexes are used especially in evaluating telephone operators and service representatives. The referred to "dissonance" relates to the criteria used; for example, operators and service representatives are rated for courtesy to the customer and, at the same time, for the number of calls completed within a given span of time. Thus, courtesy may suffer in an operator's brusqueness with a customer due to the rating assigned to rapidity in completing calls.

5/ Manpower Laboratory, "Draft Report on Task Force, Stage 1-Problem Identification," p. 7, unpublished document.

In terminating Problem Identification efforts, the Task Force categorized the acquired data into three broad classifications: getting people, maintaining people and developing people. Priority was then placed on the initiation of a Manpower Techniques Inventory, designed to compile a record of many of the manpower techniques employed by Bell System operating companies, in dealing with the cited problems of force loss and poor performance.[6/]

Manpower Programs Inventory. The purposes of the Inventory as defined in the initial concept paper, are:

- To provide background data from which to develop new models for problem solving in the manpower field;

- To provide a knowledge base on current Bell System programs, so that as Manpower Laboratory staff began work on particular problem areas, sources of information on what was already being done would be available.

The initial method was to interview staff from the New York Telephone Company and in four of the other key Central Cities' operating companies of the System. From these interviews, four major categories of manpower program data emerged:

- Counseling: Little or no formal counseling was conducted within the Bell System. However, it was found through field visits and a counseling workshop that many of the operating companies maintained counseling programs — especially for the disadvantaged or special program employee.

6/ However, Task Force members concluded at an early stage that compilation of a Manpower Techniques Inventory was not practicable, since the data available through the operating companies did not lend itself to technical classification. Consequently, the effort was retitled Manpower Programs Inventory, and it was decided that sources outside of, as well as within, the Bell System would be requested for information.

- Upgrading: As a term, this was subject to considerable misunderstanding. It was considered by some respondents to be the System's normal advancement process. However, there was little evidence of formal training linked to specific jobs. The best opportunities of this type appeared to exist in the Plant Department.

- Remediation: It was found that the basic education, speech improvement, world of work and inter-personal relations programs which were classifiable as remedial are linked primarily to pre-training rather than to promotion or mobility processes.

- Training: This was considered only in relation to telephone operators. Operator training was found to be consistent among the operating companies, following a centrally developed programmed format.

As the abbreviated findings suggest, the counseling activities of the Bell System operating companies seemed to indicate concern for the problems of force loss and worker performance. It was found that the activities of the operating companies were almost universally unevaluated or uncosted, and conducted by personnel with undefined objectives and little formal training. The problem orientation of counseling activities suggested that the operating companies of the System had introduced stop-gap programs whose objectives were unclear, but which were formulated to alleviate crisis situations.

Ideally, the Manpower Programs Inventory components which were internal to the Bell System should have been formally evaluated, with the assessments used as input for the development of new models. Plans to evaluate the ongoing programs of the Bell System had been developed tentatively but were not implemented.

Direction of Problem-Resolution Efforts

The inventory of some of the System's manpower programs led to conclusions similar to those of the Problem Identification effort, among them:

- New programs are not the answer. Additional programs would repeat the error of addressing limited symptoms rather than underlying causal variables;

- New machinery for analyzing and planning for human resources is needed — new institutional entities capable of continuous response to change;

- The focus must be on developing non-management personnel; the focus of the past, on management development programs, must be reversed;

- Any immediate action or program must have the potential for long-range impact.[7/]

However, the management of the "Lab" perceived itself as under stress to produce a visible program which would have some immediate appeal for the operating companies.

Responding to this pressure, the staff of the Manpower Laboratory was asked to experiment with the problem of force loss among employees having six months or less of tenure with the company. A broad range of underlying causes was suggested by Manpower Laboratory staff in planning a new procedure for dealing with the problem.

7/ The AT&T Department of Environmental Affairs, Annual Report, August 1970, cites each of these four conclusions as outcomes of the Manpower Laboratory's Manpower Programs Survey of the Bell System operating companies.

In particular, staff members sought to introduce a mechanism which would isolate critical points appearing to indicate imminent dismissal or resignation of the new employees. The process would institute action to avert the possible termination. Such a mechanism implied carefully monitoring the new employees during their first months with the company. A second concern was the development of an evaluative capacity within the process in order that "hard data" could be assembled to indicate the success or failure of the experiment in terms relating to AT&T interests. The new process was referred to as the Employment, Training and Retention Process (ETRP).

Employment, Training and Retention Process (ETRP)

An experimental approach to employing and orienting persons within the Bell System, ETRP involved primarily a different starting point in the employment process and a systematic effort to ensure job retention. Thus, ETRP sought to:

- Employ people for a range of jobs rather than filling the jobs available with applicants who are found qualified;

- Match new employees, during a two-day orientation process, to jobs according to their abilities, interests and preferences, with consideration given to the counseling and remediation required to prepare employees for effective performance on the job;

- Track new employees during their first six months on the job

  - to assess performance and

  - to recycle employees in different jobs if their performance were not satisfactory.

The Experimental and Demonstration Area (EDA), Pacific Telephone and Telegraph Company (PT&T)

Manpower Laboratory staff met with PT&T executives to plan establishment of a Human Resource Center (HRC) made up of full-time staff who would be responsible for working jointly with the Manpower Laboratory staff in meeting the following objectives:

- Design and implement models which would have a positive effect on non-managerial as well as managerial employees;
- Through experimentation and demonstration, develop methods for effecting individual as well as structural change;
- Interface many of the techniques for developing employees in a systematic manner and, hence, begin to provide innovative methods in the areas from recruiting to retaining;
- Begin to develop relationships with the community in order to provide additional employee services and to determine the advantages of this type of partnership.

A preliminary analysis of the Webster-Wilshire District of Los Angeles was prepared, since that area seemed an appropriate first Experimental and Demonstration Area. One reason for the selection of this district was that it is the locus of four major departments: Plant, Traffic, Commercial and Switching. Although ethnically heterogeneous, the District manifested considerable imbalance in terms of the levels of jobs allocated to minority-group members. Lateral and vertical mobility were rare.

Analysis of the demographic and work force movement factors uncovered in the Webster-Wilshire District contributed to further development of a set of "Guidelines for An

Experimental and Demonstration Area." The Guidelines state that the program of experiment and demonstration should result in a "personnel system" responsive to:

- The educational and vocational needs and aspirations of the employee;
- The needs of the Bell System to provide continually improved communication service; and
- The social and cultural environment in which the employees of the Bell System function.

The Guidelines also state that the Human Resource Center (HRC) to be established within the EDA should be responsible for:

- Design of manpower components, such as remediation, counseling and skill training;
- Implementation or testing of relevant designs;
- Evaluation, by means of pre- and post- measures, of the effects of experimental designs on the individual and the organization.

A series of organizational meetings followed completion of the Guidelines, and the Human Resource Center was officially established. Technical assistance is provided to the HRC by the Manpower Laboratory in New York. Data collection began with a compilation of demographic information on the Webster-Wilshire District, relating ethnic and job mobility factors, residency patterns, and worker behavior in terms of tardiness and absenteeism. The data collected are all derived from standard personnel records but are analyzed comparatively as a first step in the process of defining possibly discriminatory promotion patterns.

Although an evaluative activity is built into the design of the Human Resource Center, AT&T Manpower Laboratory management decided, even before the HRC was fully staffed, that a formal analytic study of the HRC and its impact on the corporation, the worker and the community was warranted. Initially, it was thought that a small group separate from the staff of the HRC would be more suitable for carrying out this analysis than the staff of the HRC itself.

Consequently, the AT&T Manpower Laboratory submitted a proposal which was accepted by the U.S. Department of Labor, Manpower Administration, to fund the analytic study of the HRC.

Assessment of HDC Involvement with AT&T and Bell System Operating Companies

As a result of its experiences in the AT&T Manpower Laboratory, HDC came to certain conclusions about the functioning of policies of AT&T and the Bell System. These are admittedly somewhat impressionistic since the truncating of the problem identification phase inevitably prevented the collection of "hard" data. However, it may be of value to convey these impressions in the Report, with the caveat that they are not based on a formal evaluation of Bell System manpower programs or policies.

- AT&T's influence over the manpower policies of operating companies within the Bell System tends to be limited.

- Operating companies are aware of their manpower problems; some are attempting to solve them, but most are using a "band-aid" approach (e.g., the introduction of "counseling and remediation packages").

- Within the Bell System, the opportunity structure is not equal for all races and both sexes.[8]

8/ Source: EEO-1 data in the possession of EEOC cited in the EEOC "Petition for Intervention of EEOC v. AT&T," filed with the Federal Communications Commission, December 10, 1970.

- There appears to be a lack of an adequate mechanism for identifying problems involving manpower utilization or in developing efficient solutions to those problems which are identified. Research and Development (R&D) in technical fields is very well established in the Bell System — indeed the Bell Laboratories are highly esteemed the world over — but R&D in the manpower field scarcely exists.

  While the Manpower Laboratory is undoubtedly an effort in this direction (as is the Human Resource Center in Los Angeles) the System as a whole lacks an R&D capability in this field. It is tempting to speculate that there is a lack of motivation to achieve this capability and to solve some of the pressing manpower problems of the System by new approaches. On the other hand, it may be that there just are not enough qualified staff and technique available to achieve much in the short time that AT&T and the Bell System have been aware of the need for such approaches. Recognition of this need was made public by the formation of the Department of Environmental Affairs and the Manpower Lab within the department.

- There is a long-extant personnel department (within AT&T) which plays a conservative role within the System. It is significant that AT&T did not place its new manpower utilization and development component (which became the Lab) in that department, so presumably the conservatism is recognized. This department still has more influence in the System than has the Lab.

The Community Agency: Development of an Upgrading Capability

HDC's commitment to design and partially implement an upgrading capability in a second situation has been met by Project Upgrade, a program of the larger Model Cities Manpower and Economic Development effort in Columbus, Ohio. The project operates under the aegis of the Concentrated Employment Program (CEP) serving the Model Neighborhood, and was originally funded for $650,000 by City of Columbus, City Development Agency, with the authorization of the Department of Housing and Urban Development and the approval of the Columbus, Ohio, Model Neighborhood Assembly. At the original funding level, the program was designed to upgrade 250 underemployed workers through in-plant training programs, and to enroll 200 underemployed model neighborhood residents in a combined program of vocational counseling and part-time institutional training. If successful in the first cycle, the program will be expanded and incorporated in the five-year plan for the Columbus Model Cities Area.

HDC's involvement with the Columbus Model Cities effort began in late 1969, when the Director of Job Development for the CEP program requested a series of meetings to discuss the feasibility of a community agency undertaking an in-plant upgrading effort similar to those conducted in Baltimore, Cleveland and Newark. On the basis of those discussions, HDC staff assisted CEP and Columbus Metropolitan Area Community Action Organization (CMACAO) in the design of the Project Upgrade proposal.

The flexibility of Model Cities funding permitted the design of an experimental upgrading approach which would not have been possible under more rigid discrete program guidelines. The organizational model and staffing pattern of the Columbus project parallels those experimented with in the Three-City effort, but the addition of vocational counseling outside of the plant, an institutional training component, and a unique schedule of tuition and incentive payments renders the program substantially different from those experimented with earlier.

Although operating on a small scale, Project Upgrade may effect program results of considerable import to national manpower policy and programming. The testing of various incentive and tuition schemes and the feasibility of attaching

an area residency requirement (as well as an income requirement) to trainee selection for in-plant upgrading would have particular significance for manpower programming.

Project Organization

Project Upgrade consists of two basic program components:

- In-plant skill upgrading;
- Vocational counseling and part-time institutional training.

While the intent of locating Project Upgrade within the CEP structure was to coordinate essential information and referral resources, the special nature of the program (i.e., an in-plant upgrading service to employers), and the fact that it must be totally responsive to its funding source (the Model Neighborhood Assembly) tend to isolate the project from the mainstream of manpower services. The extent to which its present locus within the organizational structure of the Columbus Manpower program affects the project's operations will have to be closely examined during the remaining months of the first cycle.

The present organization differs in some essential respects from the proposed design. The original plan for a Marketing Director was found to be less functional than the team effort headed by the Project Manager. Comparable director level positions for the heads of the two components were also eliminated in favor of supervisory level positions which also carry the operational responsibilities indicated above. Also, the proposed design called for staff who would serve as both trainers and counselors in the two components. The scarcity of staff with the dual skills required and the staggering of the starting dates for the two components resulted in the present arrangement of single-line responsibilities.

HDC was able to draw upon the organization's experiences in the Three-City HIT projects to help shape the present structure of Project Upgrade.

The Program Components: In-plant Upgrading

Marketing. The in-plant upgrading component of Project Upgrade was modeled after the three projects in Cleveland, Baltimore and Newark. Because of its funding and locus in a

community agency, Project Upgrade's in-plant upgrading component most closely approximates the organization of Skill Upgrading in Cleveland which is discussed in a later section of this report.

Originally scheduled to upgrade 250 workers, the training objectives of the in-plant component have been reduced to upgrading 100 workers, due to a funding lag and an extended tooling-up period. The constraints on trainee selection, once training begins, include a mandatory requirement that workers to be upgraded are underemployed and that a negotiated percentage of the workers be residents of the Model Neighborhood. The latter constraint has several implications for the marketing of in-plant programs.

Unlike the marketing plans for the Three-City projects, the Project Upgrade marketing plan had to take into account whether or not the industries and firms selected employed a sufficient number of model neighborhood residents. Access to CEP referral and placement files provided some information applicable to the requirement of model neighborhood residency within the marketing plan. As discussed later, the data are inadequate and there are considerable difficulties in marketing upgrading programs restricted to Model Cities residents.

In-plant Training Methodology

The model for in-plant programs is a modification of the High Intensity Training (HIT) approach which was used in the Three-City Projects. However, the following changes in that approach will substantially improve the quality of in-plant programs in Columbus:

- The general job analysis method of the previous HIT model has been replaced by the Job Task and Requirements Analysis Methodology outlined in HDC's Handbook for Upgrading Low-Skill Workers. The new methodology permits a more refined analysis of knowledge and skill requirements for purposes of curriculum development and of worker aptitude requirements for purpose of trainee selection.

- The curriculum development methodology within the program model has also been improved. The more systematic approach detailed in HDC's Handbook will be utilized. The new methodology directly translates the results of the job task and requirements analysis into curriculum design and content and allows for the scaling of tasks to be learned in the order of the complexity of their skills and knowledge requirements.

- The analysis of the human relations requirements of the various job tasks has also permitted a more accurate specification of "human skills development" content, formerly known as the curriculum "constants" within the previous HIT model.

- A more systematic training approach (also detailed in the Handbook) will be used which takes into account the difficulties which occurred in the skills training components of the Three-City projects.

Staff of the Columbus project have been trained in the use of each of these innovations in the basic program model.

The Counseling and Tuition Incentives (CTI) Payments Component

The CTI component of Project Upgrade represents the most unique departure from previous upgrading programs for the underemployed worker. The primary goal of the component is to reach the underemployed residents of the Model Neighborhood and to upgrade them through out-of-plant institutional training and education programs. An experimental system of incentive and tuition payments will be used to attract and hold underemployed workers in the program.

An additional goal of the component is to provide continuing vocational counseling and institutional training program referrals to upgrade workers completing in-plant programs. It is hoped that a continuous upgrading effect for in-plant trainees can be achieved through these services. Payments for attending vocational counseling sessions will be offered as an incentive to in-plant upgrades.

The experimental incentives and tuition payments formula for underemployed model neighborhood residents is as follows:

- Each eligible applicant receives an initial payment of $2.45/hour for time spent in the enrollment interview.

- Enrollees receive $2.45 per session for up to ten vocational counseling sessions, during which vocational education and training needs will be assessed, and referrals made to certified public and private institutional education and training programs.

- CTI enrollees who have been certified for enrollment in an institutional training and education program receive up to $500 toward tuition costs. (Project Upgrade will pay the tuition directly to the enrolling program.)

- CTI enrollees who have been enrolled in institutional programs receive payments of $2.45/hour for each hour they are attending classes up to 400 hours.

The incentive formula for underemployed residents who have completed in-plant upgrading programs will be a payment of $2.45 per session for up to ten vocational counseling sessions, during which the enrollees' potential for further

advancement within their occupations and/or the plant of their employers will be assessed. The same institutional education and training program referral service offered to non-in-plant upgrading program enrollees will be available to the upgraded enrollees.

The matching of individual enrollees to the most suitable education and training programs will be performed through the use of a descriptive certified program bank developed and utilized jointly by CEP and Project Upgrade staff. Each of the programs listed will have been evaluated by staff and arrangements made with each program's administration for the receipt of tuition payments and the certification of attendance.

Criteria for eligibility of enrollees will be as follows:

- Must be a resident of the Model Neighborhood.
- Must be earning less than a moderate income based on number of dependents and local poverty indices or cost of living indices for low and moderate living standards.
- Must be presently employed at least on a part-time basis, or have been regularly employed within the last 60 days.

The results of the experimental tuition and incentive payments scheme will be carefully evaluated in the coming months for its implications for national upgrading programs attempting to upgrade underemployed workers outside of the plant.

Current Status

As of the end of February 1971, 147 Model Neighborhood residents are enrolled in the CTI component of the Project. Approximately 90 have been placed in certified institutional training programs. The relative ease of implementing the CTI component accounts for the actual level of program activity which is not matched by the upgrading component.

Within the upgrading component, however, the following crucial activities have been completed:

- A marketing plan which isolates specific employees as targets;
- The methods and field training of in-plant training consultants;
- Preliminary arrangements with the Chamber of Commerce and the local NAB to support and endorse the in-plant program; and
- Preliminary negotiations for the conduct of a model pilot program for several major employers in Columbus.

Other activities which relate to both components and which have also been completed include:

- The design of a management information system, including forms and instruments;
- The development of administrative budgeting and reporting procedures with sponsoring agencies.

HDC's Role In Project Upgrade

HDC is responsible for the following:

- Assist CMACAO management in setting hiring criteria and in selecting senior professional staff for the project.
- Assist Project Upgrade management in setting hiring criteria and in selecting professional level staff.
- Design and assist in the implementation of a management information system for Project Upgrade.

- Assist in the design and implementation of accounting procedures for the incentive and tuition payment elements.

- Design and implement an orientation and training program for senior Project Staff.

- Design and assist in implementing an orientation and training program for professional staff.

- Assist Project Upgrade staff in the design of a marketing plan.

- Assist Project management in the development of operations guidelines and procedures.

Training sessions conducted at HDC Headquarters concentrated on the following areas: marketing and program management; methodologies for training in-plant staff; job task analysis, and curriculum development. Field training, is presently being conducted in Columbus to refine and apply the skills learned by participants in these sessions. HDC will continue to provide assistance to Project Upgrade in the marketing and implementation of in-plant programs and the tuition and incentives program.[9/]

Because of the extent of the tooling-up period for Project Upgrade, it is still too early to draw firm conclusions. Some interim findings can, however, be cited. As anticipated at the inception of the program, marketing is complicated by the requirement that in-plant upgrading be conducted within organizations employing a representative number of Model Neighborhood residents. CEP data on the work place of Model Cities clients were incomplete and in any case not updated, so that there is little information on the organizations to which one should address marketing activities. Much wasted effort is inevitable in the absence of such data.

9/ Copies of the Project's Management Information System, Staff Development Curricula, and its Marketing Plan which were developed by HDC, will be available upon request.

It is becoming increasingly obvious that the number of Model Cities residents employed in smaller organizations is too few for in-plant training programs to be economic. (A much larger population than that of the Columbus Model Cities area would naturally produce a different situation; the comment applies only to Model City populations of similar size to that of the Columbus area.) The larger organizations are resistant to any intervention from outside; even when they know they do not have a capability for upgrading, they seem reluctant to admit this.

A further point to be stressed is that due to the economic downturn, most manufacturing organizations in the area are not interested in upgrading programs, especially if a pay increase is guaranteed to the trainees. They are becoming much "tighter" financially, while at the same time they are not experiencing any labor shortages. Large organizations may be publicly committed to the social goal of hiring and upgrading minority group workers, but as pointed out in the previous paragraph, they are unwilling to utilize an outside resource.

Project Upgrade is, therefore, designing a different strategy from that originally recommended, (and which was based on the Three Cities HIT Upgrading model), namely that an 8-10% pay increase was guaranteed on graduation of each trainee and that this was written into a letter of agreement, along with the number of workers to be upgraded. Project Upgrade is experimenting with the strategy of offering a two-week analysis of the organizations' manpower problems, if any, and then making recommendations as to what should be done. If it is found that upgrading or skill training is an answer, then hopefully, the organization (if small to medium in size) would accept the offer of Project Upgrade help. If no upgrading or skill training need is found, then no further work is conducted. No letter of agreement is called for, and even if training takes place, so that the employee is prepared for a higher paying job, he is not necessarily moved to it immediately and paid more. He may be held as a more developed "human resource" to be utilized when appropriate vacancies occur.

At the time of preparing the report, the strategy has not been implemented so no evaluation is possible.

SECTION 3

A UNIVERSITY IMPLEMENTATION PROGRAM:

HDC SEMINARS ON WORKER MOBILITY

University Implementation Program (UIP) Development

One deliverable item to which HDC committed itself in the 1969-71 contract with the U.S. Department of Labor was the planning of a University Implementation Program in concert with a Graduate School of Business Administration. The long-range goal of the University Implementation Program was the achievement of a working relationship with managers and trainers in business organizations in order to achieve a "multiplier effect," whereby managers would be knowledgeable about upgrading systems and their beneficial outcomes for the worker and the organization. The immediate objectives of establishing a working relationship with management were:

- To demonstrate the effectiveness of working in depth with management and training staff;

- To attempt to alter some of the traditional attitudes of the business school faculty toward training and upgrading.

One formal proposal resulted from HDC discussions with representatives of the University Graduate Schools of Business Administration, specifically:

- A joint HDC-Northwestern University Proposal, including the following elements:

  - Establishment of curriculum and instructional capability within the University to train present and future managers in the concepts of human resource development;

  - An experimental design within which the University capability for instructing present and future managers in the concepts and technology of employee upgrading systems could be developed and tested.

In addition, a series of concept papers was prepared for the Graduate Business School of Wayne State University. These were reviewed by the Department of Labor, and the latter recommended that submission of a proposal be postponed.

Analysis of the two UIP efforts indicates that, while both build on the HIT experience of HDC, the experimental perspectives of the two designs differ. The Northwestern proposal stressed experimentation to determine the conditions under which organizations will be likely to introduce worker upgrading programs, while the Wayne State concept papers addressed themselves to the content of upgrading programs, in terms of the appropriate mix of vocational and human development skills instruction, the training of trainers and the processes by which an upgrading capability can be established within organizations.

At the suggestion of the U.S. Department of Labor, Manpower Administration, Northwestern University submitted a revised version of the proposal and was awarded an experimental grant for a one-year effort having more confined dimensions than the proposal previously submitted jointly with HDC. The approved program, entitled "An Experimental and Development Proposal to Enhance Worker Mobility and Job Opportunity through Design and Redesign of Organizations and their Environments," is of ten months' duration.

Essentially, the funded Northwestern program is framed as an intensive analysis of existing mobility systems within two organizations, each of which has a planned system and one of which has recently introduced new worker mobility practices. The following account of the U.S. Department of Labor "Statement of Grant" further describes the Northwestern University Proposal.

Statement of Grant Project

The objective of this project is to determine types of activities in upward mobility programs existing in two midwestern plants: to determine the types of programs used and why they were designed as they were, in order to increase information available in this area.

To this end the Grantee will (1) conduct an intensive analysis of at least two companies which have planned mobility systems. If possible, one should be a company

introducing new internal mobility practices. The analyses should examine the way the mobility system functions, why it was designed as it was, reasons for limitations in its operations, and other factors that the analysts believe relevant for the end objective of gaining understanding of the barriers to broad internal mobility programs; (2) provide initial findings of these analyses which would be used as the basis for seminars for these companies, selected other companies, and selected academic personnel to develop a final paper on (a) conclusions which appear to have some applicability to certain types of companies, and (b) specifications for types of changes or new efforts that the two studied organizations, or other companies in the seminar might be willing to introduce or test as specific new approaches; and (3) produce a document of what happened during the course of the grant, one part of which can list the next steps.

Seminars on Upward Mobility For Underemployed Workers

The objective of these seminars was the interchange of information on upgrading theory and practice, contributing to the development of new concepts and to manpower policy insofar as relevant new findings emerged.

The seminars were designed to involve professional staff of HDC, faculty of selected schools of business administration together with (on one occasion) union leaders and (on another occasion) representatives of private corporations.

The business school faculty component was intended to provide a more detached and analytic approach than was likely to be the case with union or corporate officers and to challenge many assumptions of these organizations and, indeed, HDC itself. Business school faculty, if of sufficient prestige, could also lend a special authority to the interpretation of the proceedings. Finally, the dissemination of any relevant findings would be improved if business schools were involved.

Participants from unions and corporations were selected on the basis of recent experience and/or professional concern with upward mobility of low-skill workers.

Two seminars were sponsored by HDC. The first was attended by representatives of labor unions; the second was attended by executives of corporations which were actively engaged in manpower development and training programs.[1/]

Labor Unions and Worker Upgrading[2/]

Although a general statement of issues to be discussed was prepared and distributed prior to the meeting, most of the

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1/ A separate report on the proceedings is being prepared for the U.S. Department of Labor, Manpower Administration.

2/ For list of participants and other details, see Appendix B.

topics for discussion emerged from the concerns of the labor union representatives participating and from several papers submitted to HDC by participants, prior to the seminar. Copies of the Comprehensive Manpower Act (H.R. 19519) were made available to the participants, and some discussion related to the terms of the proposed Act.

The central theme suggested for the seminar on Labor Unions and Upgrading was: "Continuous Upward Mobility Processes," and the following issues were presented for discussion:

- Upgrading and Upward Mobility in a Period of Economic Downturn, raising the question of whether labor union leaders were specifically redirected in their planning for worker upgrading by the state of the economy and employers' current retrenchment rather than expansionary policies;

- An Improved System of Labor Market Analysis, related to the first item but suggesting the variances among industrial and occupational categories which relate to expansion/retrenchment characteristics and their implications for worker upgrading;

- Trainee Selection Procedures with respect to the seniority issue as critical to union concerns;

- Who Pays and How? Planned as a treatment of several sub-topics-

  - The merits of the proposed Comprehensive Manpower Act and its implications for U.S. Department of Labor policy on upgrading;

  - The role of labor unions vis a vis employers in sponsorship of worker upgrading programs;

- Contractual inputs into collective bargaining agreements with respect to worker upgrading.

As the discussion subsequently demonstrated, the foregoing items proved to be the major concerns of the union leaders present. The participants tended to recount their organizations' experiences in worker development and upgrading within the general framework of these issues. The major conclusions of the seminar discussants will be presented within the above general outline.

Upgrading and Upward Mobility in a Period of Economic Downturn

The IUE representative pointed out that upgrading had come about through the impetus of the OJT and NAB-JOBS programs for recruiting and training minority group unemployed persons for entry-level jobs in IUE shops. The new employees were assisted in adjusting to both work conditions and job tasks by IUE members through a "buddy" system. The need for creating new entry-level positions, to meet older employees' dissatisfaction over the equivalent positions granted to new workers and the needs of expanding employer organizations for skilled workers were factors which indicated the advisability of upgrading programs for long-term employees.

Mr. Jennings of the IUE stated unequivocally that in a faltering economy it is impossible to motivate employers to sponsor worker upgrading programs.

For the Hospital Development Program of the American Federation of State, County and Municipal Employees (AFSCME), a similar pattern was traced. The development of the Public Service Careers Program (PSCP) made upgrading of current union members an urgent problem. Increased funds for health services and advances in medical technology created intra-institutional needs for manpower at intermediary skill levels. Moreover, the shortage of registered nurses necessitated reassignment of some tasks traditionally the province of the registered nurse, to other levels of staff. It was stated that the economic downturn has not yet affected the hospitals. However, as staff turnover diminished due to a high unemployment rate, the hospital administrations could be expected to lose interest in upgrading workers.

Other participants commented on this question, and the economists from university faculties who were present agreed that without economic growth continued planning for worker upgrading was illusory.

Improved Labor Market Analysis

The participants failed to reach any consensus on methods of labor market analysis, although all the labor union representatives agreed that advances in this area were essential. The university participants present did not deal with the issue at any level of depth, but indicated that some work was being done to improve labor market analysis and forecasting.

In terms of the intra-organizational forecasting capabilities of the unions themselves, the structural characteristics of the unions represented were cited as factors negatively affecting their ability to project skilled job needs for the future. With relatively weak "Internationals" and strong locals as district/regional affiliates, the attendees at the seminar indicated that little leverage could be exerted by the International, as a consequence, for assessing skills needs at regional or district levels.

Trainee Selection Procedures

Although participants in the seminar granted that workers selected for upgrading should be chosen on the basis of their aptitudes for the job, they strongly adhered to the principle of selection on the basis of seniority. First priority, it was thought, must be given to older union members. AFSCME and IUE spokesmen both maintained that in a systematic, long-term program, each worker knows that precisely because of seniority provisions, his turn for advancement will come.

As stated in a paper shared by AFSCME with the seminar participants, drawn from testimony before the Subcommittee on Employment and Poverty, 3/ the union's position is:

3/ Jerry Wurf, "Statement Before the Subcommittee on Employment and Poverty of the Senate Committee on Labor and Public Welfare Regarding S 2838 Proposed Manpower Training Act," p.4.

- ...One of the terms which has an ominous sound to us is "leap frogging." When workers are given the opportunity for training to a job above the level of present employees, we create a situation fraught with danger to job security and morale. In our program the workers are selected for the upgrading training on the basis of seniority.

- Because training is in each instance for the next step upward, we do in fact manage to reach those workers in the minority groups who might otherwise not be selected for promotional positions...

Discussion of trainee selection procedures touched at several points upon the question of qualifications assessment. Mrs. Betty Miller, citing AFSCME's evaluation of the organization's hospital development program, stated that standard qualifying criteria, such as educational attainment and reading levels, had no greater validity as predictors of success than seniority or job tenure considerations.

AFSCME and IUE both affirmed the value of task performance criteria to determine successful completion of training, as distinguished from oral or written examinations, reinforcing the union's position that experience on the job exceeds formal academic criteria in importance for success in the target job. Job Task Requirements Analysis as a means for determining employee aptitudes for performance in the target job was not discussed.

Who Pays and How?

Several interesting issues were raised in the course of this discussion, in relation to the collective bargaining process and to the institutional concerns of the unions themselves.

Dr. Doeringer framed the question in terms of costs: if the unions negotiate for provision of upgrading training within the collective bargaining process, this 'costs' the members who are not upgraded, because other possible benefits are "traded off" for the training costs. The participants responded variously, but the question was not resolved, it seemed, to their satisfaction. The issue is obviously one

which induces the labor organizations committed to worker upgrading to look to outside sources of funding in the foreseeable future.

Institutionally, expenditures by the unions which are not directly related to increasing membership and/or adding to members' incomes may be unacceptable to the members. As Dr. Doeringer pointed out, the economic considerations are such that the higher the "pay-off" to members, in the form of substantial job title and wage advances, the narrower the range of members to whom these opportunities are accessible; the higher the employer and, therefore, union trade-off requirements, the lower will be the acceptance of the trade-off to union membership. Once again the union participants reiterated their awareness that economic expansion is an essential prerequisite for any effective upgrading program, beneficial to the members and minimizing pressures on the unions. None of the participants cited examples of union-assisted programs of any major scale that did not include at least partial Federal funding. However, AFSCME affirmed that the principle exists in the form of management training programs which are standard practice in large corporations, involve training on company time, immediate movement to the target job upon satisfactory completion of training and simultaneous increases in salary. The problem is extending the principle to the low-skill, low-wage worker who, perhaps, is most in need of such considerations.

Corporate Management Seminar[4/]

The second seminar was entitled "Investments in Human Capital: The Corporate Management Viewpoint." Executives from both large and medium-sized companies who had budget responsibilities related to labor force investments were invited to attend the meeting or send a representative. Participants were told that the theme of the one-day session was to discuss the position of corporate management with regard to the broad question of investing in human resources and to define the conditions under which returns could reasonably be expected to equal or exceed the value of the investment itself.

In order to focus the discussion on issues pertinent to the development of a national upgrading policy, participants were asked to read excerpts of the Comprehensive Manpower Act (H.R. 19519) passed by the U.S. House of Representatives, especially the provisions concerning upgrade training set forth in Title II of the Bill. Given these provisions as background material for the discussion, three questions would be explored.

- What conditions of labor supply and demand must exist in order to prompt employers to undertake the upgrading of workers without reimbursement?

- If private employers accept the analogy between investments in capital and investments in human resources, what guarantees of returns are needed from upgrading workers to stimulate the investment itself? (This appeared to be a critical issue given the proposed requirement that upgrade training programs undertaken with Title II monies must be general and qualify the trainee for employment with other employers in the industry.)

- Is the level or nature of the proposed reimbursement described in Title II sufficient for private organizations

4/ For list of participants and other details see Appendix B.

to take on the cost and trouble of systematically upgrading their workers?

The companies represented at the meeting had experience in upgrading workers below the management level.5/ Each of the corporate officers was asked to briefly describe the upgrading schemes they were undertaking. Once the participants had outlined the extent of their involvement in upgrading, the discussions focused on the three questions proposed as the meeting's agenda. Several of the major discussion points of the day are presented below.

Conditions for Prompting the Upgrading of Workers

Basic to the discussion of the conditions which prompted the corporations present at the meeting to undertake upgrading activities, was the general belief that organizations (especially those located in large urban areas) must respond to the demands of a changing labor force. This new labor supply represents a change in workers' perceptions of the value of work. In some cases the work force drawn upon for entry-level employment does not fulfill the educational expectations employers have for the position, whether or not the educational achievement levels desired are essential job performance criteria.

Most of the corporate representatives indicated that this new labor supply constitutes a constraint on management to fill personnel and skill shortages in a different manner.

The corporate representatives identified the continuing growth of their organizations as a common reason for prompting training and upgrading activities. If companies are interested in growth, then there must be a labor supply capable of moving up into an increasing hierarchy of jobs. Given shortages of available skilled manpower outside of the organization, it is necessary to upgrade the skills of those employed within the organization.

5/ For the purpose of the discussion, upgrading was defined as a planned management decision to move employees below the management level to jobs at higher pay, and which may involve greater skills and responsibilities. The management plan may or may not involve training or other preparatory actions.

As one participant stated: "It's not that I like it, it's not that I want it, it's a necessity because it's the only way my company can grow and I intend to grow!"

In describing his experiences in marketing an experimental employer incentive program for worker upgrading, the representative of the Institute of Public Administration indicated that most employers who enrolled in the program were attracted by the incentives. The employers were willing to admit that they had personnel problems, and they had hopes that the program would meet these short-run needs. Essentially the majority of firms had high turnover and skilled level shortages. Many were expanding and had made a decision to stay in New York City. The problem remained, however, of getting employers to see the value of addressing long-range needs as well as short-run needs. Employers basically enrolled in the program for short-run reasons and short-run gains.

The representative of Pacific Telephone & Telegraph Company stated that growing turnover costs were forcing his organization to re-examine its traditionally large-scale investment in occupational training. He estimated that in 1969 turnover might have cost PT&T in the area of 30 million to 35 million dollars. Although a certain amount of turnover is expected in several job categories, e.g., telephone operators, the problem they are now experiencing is high turnover in normally career-oriented positions where there is a substantial human resource investment. In order to solve these problems, increased amounts of money must be spent for research and development activities in human resource development in an attempt to substantially diminish turnover costs.

There was one significant area inherent in the question of identifying the conditions which prompt employers to make labor force investments which the discussion group had difficulty responding to. Specifically, this was the question of how companies make the decision to invest, and why. One participant stated that he had heard "programmatic" responses to the question but not what the decision-making problem is. What happens when you can show that the benefits of making labor force investments outweigh the costs, but the negative decision is still made? In response, it was suggested that decisions of this kind are often not made logically. The participants were, in fact, unable to describe the rationale of decision making in this area.

Returns on Human Capital Investments

The representative from Texas Instruments, Inc., indicated that major investment undertakings in human resource development always incur the risk of the investor losing the results of his investment to a competitor for a higher dollar figure. Despite this obvious risk, the corporation has continued to make considerable dollar investments in its people. The result has been that in some cases they have lost people to competitive aerospace firms. But despite these losses, the need for manpower to achieve both short- and long-term corporate growth objectives makes it absolutely necessary that increasing amounts of money will continue to be spent in training and upgrading all levels of personnel.

Although the training and upgrading of semi-skilled and entry-level personnel at Texas Instruments is a relatively new undertaking, the representative from Pacific Telephone and Telegraph claimed that traditionally the operating companies of the Bell System have promoted an "up-from-the-ranks" personnel policy. However, he indicated that large scale investments in occupational skills training and the upgrading of workers can be undertaken because skills trained for have limited application in other industries. Occupations within the structure are firm-specific and in general non-exportable. Therefore, human capital investments can be made with reasonable assurance that personnel will not move to another industry group following training.[6/]

In general, the conference group believed that most organizations begin training and upgrading programs in response to a series of specified problems. The hope of improved employee performance, self-motivation and reduced turnover has stimulated most employer investments in training, but few employers have thought about it in terms of a long range investment. As Dr. James indicated, "Investments in training are generally considered to be operating expenses rather than long-term capital investments."

6/ This, it should be noted, is apparently at variance with the high force loss earlier reported and the need to reduce this. The interpretation would seem to be that the PT&T spokesman was referring to the generally accepted philosophy of the Bell System but, as he had said earlier, PT&T at least had recognized the need to reexamine its traditional training and promotional approaches, since they were no longer retaining the supposedly "captive" workers.

Government Reimbursement for Upgrading

In response to the question of whether or not private organizations would undertake upgrading workers under the reimbursement levels proposed by Title II, all of the corporate representatives indicated that the reimbursement provisions would be a sufficient incentive to continue or enlarge the scope of upgrading activities in their organizations. There was expressed, however, considerable doubt as to whether it would be possible to accurately assess training costs for reimbursement purposes. The representative of Boise Cascade stated that, with experience, the accounting of training costs was growing more specific and some norms were in the process of being developed. But they are by no means sophisticated enough at this time to account for all training expenses incurred under a Title II program.

The representative of Sloan Supermarkets indicated that small or medium size firms simply do not have the accounting time or access to figures required to compute accurate training costs.

Despite these problems, it was generally felt that government funds had enabled them to do much more in the area of staff development, and for this reason their companies would continue to utilize them. It was pointed out that greater experimentation in programming became possible when outside monies were introduced, and the effectiveness of programs improved. In addition, the job of writing a government contract forces an employer to plan his training program better than he might otherwise.

SECTION 4

LONG-TERM FOLLOW-UP ON

IMPACT OF HIT

Introduction

To further the concept and methods of upgrading, Humanic Designs Corporation (HDC) established, under an earlier U.S. Department of Labor contract, three urban upgrading projects and served as the technical advisor and systems manager to these projects. The projects, which were located in Baltimore, Cleveland and Newark, were primarily concerned with upgrading low-skill, minority-group workers. The basic upgrading curriculum that was used in each project was High Intensity Training (HIT), a 40-hour program that provides for both vocational and human development training.[1/]

The short-term impact of HIT was reported in Volume 4 of The Final Report to the U.S. Department of Labor on completion of Contract No. 82-34-68-19 (Upgrading the Underemployed in the Work Environment). This short-term impact was measured within about two weeks of the end of training. Subsequent studies were carried out by the Projects in each of the three cities, measuring a more restricted set of variables concerning the effects of HIT on trainees and the perceptions of supervision and higher management three to five months after training.

The current investigation is concerned with the longer term effects of HIT, i.e., 7-12 months after training. It is particularly concerned with the wages of HIT trained workers who had left the organization in which they were trained; the educational experience of those who had earlier expressed an intention to continue with their education in institutional settings; and with management perceptions of productivity or productivity-related changes, possibly attributable to HIT training.

A monograph presenting the findings of the HDC analytic study of the long-range effects of HIT is being prepared. The monograph, including the interview questionnaires utilized in the study, will be issued independently.

1/ See Managing a Three-City Upgrading Configuration: A Coordinated Approach, Skill Achievement Institute; U.S. Department of Labor Contract No. 82-34-68-19, January, 1968, for a comprehensive statement of the philosophy behind, and definitions and methods of, upgrading as used by HDC.

Rationale

The previous studies had been concerned with short- and medium-term effects of HIT. In certain respects it was thought necessary to re-examine the situation twelve months after completion of the first cycle of training.[2/] This was particularly the case with wages in order to see how trainees had faired in comparison with other workers.

It was also considered important to see whether trainees who, after training, had expressed a desire to further their education had, in fact, done so, and how successfully, and whether trainees who were no longer with the same employer had subsequently achieved a higher status for a more lucrative job than the one into which they had been upgraded (so continuing their upward mobility). This group had never been followed up and it was hypothesized that it might represent the most successful of the trainees who used the HIT training as a springboard for a developing career, overcoming obstacles to upward movement in their original organization by changing employers.

From the viewpoint of the employer, although previous studies had shown that supervisors and managers were well disposed to HIT, there were a number of specific areas relating to required worker qualifications, job structure and supervisory style which had not been explored and which were deemed to be important, as well as some performance data, such as material waste, which had not been previously collected.

It was also thought important to know how many further HIT (or HIT-influenced) upgrading programs employers had run, given an approximately 12-month opportunity, since this information would provide an index of satisfaction considerably more meaningful than mere expressions of good will or intent.

2/ Due to irregular phasing of training cycles, it turned out that in the study a small proportion of organizations and trainees had been trained 7-8 months prior to interview.

Sample

The target population of the current investigation was selected from the sample used in the three Projects' analytic studies, i.e., organizations and individual trainees who had been involved in the first HIT cycle and interviewed 3-5 months after training was completed.

Twenty-nine organizations were selected for the current management interviews and two managers were interviewed in each organization. One manager was either the president or vice president of a firm and the second was from first-line supervision.

The upgraded workers who were selected for the wage survey were workers who had been upgraded by the three Projects during the first half of 1969 and who had participated in the three Projects' analytic studies. The upgraded workers selected for the "educational aspirations" study were persons who had indicated, in the Projects' interviews, a desire to further their education. The individuals selected for the "workers who left jobs" study were persons who had been selected for the Projects' analytic studies, but who had left before their post-upgrading interviews.

The characteristics of the sample, including a description of the employment situation in the three cities, are described in detail in Appendix C.

Approach

Interview Schedules

Four interview schedules were developed. The first schedule, Manager I, was designed for the top management (organization presidents, vice presidents, and personnel directors); the second schedule, Manager II, was designed for first level supervision; the third schedule, Educational Aspirations, was designed for those persons who had previously indicated a desire to further their education; and the fourth schedule, Persons Who Left Jobs, was designed for persons who had participated in an upgrading program, been upgraded, and had then left their place of employment. A wage survey form was also developed to collect the wage history of those workers who had been upgraded and who had stayed with their organizations.

The Manager I and II schedules were developed and field tested in organizations in New Jersey and Long Island which had participated in HIT upgrading programs. As a general rule, the Manager I schedule was responded to in less than 20 minutes and the Manager II schedule was responded to in less than 15 minutes.

To develop the Educational Aspirations schedule, a series of questions was written to determine the extent to which the individual had pursued his educational plans and to explore, if he had not pursued his plans, his reasons for not doing so. Similarly, to develop the Persons Who Left Jobs schedule, questions were written focusing on the reasons why the individual had left his organization, his current employment status and, if employed, the relation between his upgrading training and his new job.

Interview Administration

Prior to the management interviews, top management received a letter comprehensively explaining the scope and purpose of the investigation. For the most part, the participating managers were cooperative and willing to participate in the investigations.

An interviewing/data processing firm was contracted to conduct all the interviews and to collect the wage survey information. Thus, different types of interviewers conducted each of the four sets of interviews. This was of particular importance in the Persons Who Left Jobs interviews as it was possible to use Black interviewers, familiar with the specific "inner city" to track down the interviewees. This matching of interviewer to interview situation undoubtedly contributed to the success of the interviews and probably allowed for greater openness in the interviewee's responses.

The Manager I and Manager II interviews were face-to-face interviews conducted during business hours. The Educational Aspiration interviews were primarily conducted over the phone, and the Persons Who Left Job interviews were face-to-face interviews conducted in the individual's home. The wage survey information was obtained through organization personnel files.

Findings from Management Interviews

Top Management Interviews

Of the 53 organizations which had been involved in the first HIT cycle in the three cities, 29 were included in the current sample. One member of senior management who could speak for the corporation's perception of the HIT program was interviewed for each organization.

One of the most meaningful indications of satisfaction with the HIT approach is the continuation of HIT type training programs after the first cycle. In the 12-month period subsequent to the end of the first cycle, 25 of the 29 organizations in the sample (86%) had conducted at least one additional HIT program[3/] (Table 1.1a). Furthermore, in the 29 organizations, 51 programs of the HIT type had been implemented against 17 programs which were non-HIT, a ratio of 3 to 1. (Other programs were largely for management employees.) In other words, organizations which had had initial experience in HIT had implemented an average of something under two similar programs during the year, i.e., about one every six months, and these constituted the vast majority of their non-management training programs.

Most organizations (60%) in the sample were employers of under 500 workers, but in any case there was no significant variation in number of HIT programs run with respect to organization size.

The Multiplier Effect

An aim of the HIT program was to create an "in-house" capability for training in accordance with this approach. As Table 1.1b shows, this was not accomplished to the extent intended — about six in ten of the HIT type or HIT programs were not conducted by organization personnel.

It was found that only 7 of the 25 which conducted at least one HIT program after the initial cycle used an organization trainer to conduct any programs; i.e., of the sample of organizations into which HIT had been introduced

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3/ Of the 51 HIT programs, 45 were true HIT programs; of the remaining six, the nature of the HIT influence varied but in three cases the influence was in the area of "improved personal lives."

(including those who had not implemented further programs) it appears that only 25% had been left a demonstrable in-house capability.

This study does not provide data as to why this happened, but Project staff have not been unaware of this situation, especially since they were themselves conducting the subsequent programs. The staff impression is that small organizations do not feel they can afford to free a sufficiently competent member of their staff for the training sessions, least of all for job-task analysis and curriculum design for new target jobs. It could be that in cost-benefit terms this might be a wise investment even for a small organization, but no convincing data have been acquired on this aspect of HIT.

Reasons Advanced for Using HIT and Ways That It Influenced Training Programs

Tables 1.2 and 1.3 contain the data on reasons for using HIT and its effect on other training programs. They are self-explanatory.

HIT as an Intervention to Effect Organizational Climate

An assumption was made that the approach to HIT might influence organizations to review the "real" requirements and qualifications necessary to perform the job. The impressions coming out of the three cities after analysis of the participating organizations was that most educational skills and requirements were unrealistic. It was found that there had been little change; only four organizations had reduced educational requirements for any low- or semi-skilled jobs and one had increased them. Only two required less work experience for such jobs and two had increased requirements.

At the time of this study minor changes were observed in the hiring of minority-group people. Five organizations had opened some low- and semi-skilled jobs to Blacks and Puerto Ricans, and three had opened some skilled management jobs. There is serious question as to the change that HIT might have made on organizational climate and manager attitudes toward upgrading and the hiring of minority-group workers. Certainly this is a complex issue, but the evidence, both empirical and impressionistic, seems to point out that while low-skill employees were upgraded and given an increase in salary and a different job, the outside HIT trainer did not have the political skills, time required or even access to

the decision making group necessary to effect change. However, even if all of these conditions were ideal the techniques for introducing change and altering the organizational climate were limited.

The report moves now to the area of the job itself: changes in structure (Table 1.4) and changes in worker performance. It was assumed that some changes in the task composition of lower-level jobs would have taken place as a result of the job task analyses conducted for HIT programs — the simplification of jobs and the redistribution of tasks so that some would have tasks added and others have fewer tasks. Managers were asked about changes after the first HIT cycle, i.e., changes which could have occurred as a result of further job analyses (whether for HIT programs or otherwise). The results are meager; in the low/semi-skilled categories four organizations made modifications, among the 29 companies, and in each case tasks had been added. No task elimination was reported in such jobs.

In skilled jobs no changes were reported. Among supervisory jobs, four organizations reported adding some tasks and eliminating some.

An assumption was made that HIT would have effected some improvements in the extent of lateness and absenteeism, in wastage of material, in safety consciousness and, overall, in productivity, and that while collection and analysis of hard data (with the necessity of a pre- post-design and a control group) was outside the scope of the study, managers' opinions would have some validity. The questions specifically asked about departments with HIT trained workers, and the results are encouraging. In over half the sample, lateness and absenteeism were reported as reduced; there was no reporting of any increase. A third reported a decrease in waste (a negligible proportion reported an increase), and one third reported an increase in safety consciousness, with no converse cases at all (Tables 1.5 and 1.6).

As one might expect from this favorable perception of improvements in specific areas, the overall productivity is thought to have risen by the majority of managers — nearly seven in ten. HIT is, therefore, seen not only as a way of filling jobs which might be difficult to fill from outside but also as positively beneficial in terms of performance. As described later, this perception is shared by first line supervisors as well.

Table 1.1a
Number of Training Programs for Employed Workers Conducted in the Organizations After the First HIT Program and Use of HIT in These Programs

Q 1(d)-1(e) How many programs conducted? Did program use HIT approach/influence?	Baltimore	Newark	Cleveland	Total[1]
Yes, HIT Used	17	20	14	51(75)
No, HIT Not Used	7	2	8	17(25)
Don't know	0	0	0	0(00)
Total	24	22	22	68(100)

[1] Note that many organizations had more than one training program. Percentages corresponding to the subtotals are in parentheses.

Table 1.1b
Use of Organization Personnel to Teach Training Programs That Used HIT[1]

Q 1(h) Did organization personnel teach program?	Baltimore	Newark	Cleveland	Total[2]
Yes	7	9	4	20(39)
No	9	11	10	30(59)
Don't know	1	0	0	1(02)
Total	17	20	14	51(100)

[1] This table is a breakdown of the "Yes" responses to Q 1(d) and 1(e); see Table 2.1a.
[2] Note that many organizations had more than one training program. Percentages corresponding to the subtotals are in parentheses.

Table 1.2
Reasons for Using the HIT Approach[1]

Q 1(i) Why was HIT approach used?	Baltimore	Newark	Cleveland	Total[2]
HIT seemed to work & it was available to use	5	5	2	12(52)
Easier to use HIT than to write a new program	1	0	0	1(04)
HIT worked better than any of our other programs	0	1	0	1(04)
HIT offered solution to Black/Puerto Rican problems	0	1	0	1(04)
Programs were funded by DOL and thus inexpensive	1	0	0	1(04)
HIT offered comprehensive program in short time period	1	0	2	3(13)
Cooperating with city politics	0	0	1	1(04)
Needed skilled workers	0	0	3	3(13)
Total	8	7	8	23(100)

[1] This table is a summary of the comments of those persons who responded "yes" to Q 1(d).
[2] The percentages corresponding to the subtotals are in parentheses.

Table 1.3
Ways HIT Influenced Training Programs [1]

Q 1 (j) How did HIT influence your training programs?	Baltimore	Newark	Cleveland	Total [2]
Ideas for instructional materials	0	0	1	1 (17)
Ideas for teaching workers how to improve personal lives	0	1	2	3 (50)
Pointed out areas in which workers needed elementary skill training	0	1	0	1 (17)
Gained greater understanding of how to teach minority groups	1	0	0	1 (17)
Total	1	2	3	6 (100)

[1] This table is a summary of the comments of those managers who responded "yes" to Q 1 (e).
[2] The percentages corresponding to the subtotals in parentheses.

Table 1.4
Type of Job Change

Q 3(c)-3(e) 4(c)-4(e) Have tasks been added to or eliminated from jobs?	Baltimore			Newark			Cleveland			Total [1]			
	Low-Skilled	Semi-Skilled	Skilled, Mgmt./Prof.	Low-Skilled	Semi-Skilled	Skilled, Mgmt./Prof.	Low-Skilled	Semi-Skilled	Skilled, Mgmt./Prof.	Low-Skilled	Semi-Skilled	Skilled, Mgmt./Prof.	Total
Tasks Added	1	0	3	0	1	2	0	1	1	1	2	6	9(82)
Tasks Eliminated	0	0	0	0	0	1	0	0	1	0	0	2	2(18)
Total Change	1	0	3	0	1	3	0	1	2	1(09)	2(18)	8(73)	11(100)

[1] The percentages corresponding to the subtotals are in parentheses.

Table 1.5
Changes in Productivity, Waste, Lateness, and Absenteeism [1]

Q 7(a), 7(b), 8(a), 8(b). Has there been a change in:?	Baltimore			Newark			Cleveland			Total [2]			
	Increase	No Change	Decrease	Increase	No Change	Decrease	Increase	No Change	Decrease	Increase	No Change	Decrease	Total
Productivity	5	4	0	4	3	0	7	1	0	16(67)	8(33)	0(00)	24
Waste	0	5	2	0	4	2	1	3	3	1(05)	12(60)	7(35)	20
Lateness	0	3	6	0	2	4	0	6	4	0(00)	11(44)	14(56)	25
Absenteeism	0	3	6	0	3	4	0	7	3	0(00)	12(46)	14(54)	26

[1] This table does not reflect responses of managers who did not or were not able to answer the questions.
[2] The percentages corresponding to the subtotals are in parentheses.

Table 1.6
Changes in Safety Consciousness

Q 9(a); 9(c) Has safety consciousness of HIT trained workers[1] or supervisors changed?	Baltimore		Newark		Cleveland		Total[2]		
	Workers	Supervisors	Workers	Supervisors	Workers	Supervisors	Workers	Supervisors	Total
Safety consciousness not a problem with job	0	0	1	3	0	0	1 (25)	3 (75)	4
Become more safety conscious	3	2	4	2	2	3	9 (56)	7 (44)	16
No change in safety consciousness	6	4	4	1	8	2	18 (72)	7 (28)	25
Become less safety conscious	0	0	0	0	0	0	0 (00)	0 (00)	0
Don't know	1	1	0	0	0	1	1 (33)	2 (66)	3

[1] "Workers" refers to the organization's low-skilled, semi-skilled or skilled workers.
[2] The percentages corresponding to the subtotals are in parentheses.

Table 1.7
Supervisor Relations with Workers

Q6(b) Supervisors Requested to Interact with Workers Differently		Baltimore	Newark	Cleveland	Total[1]
Asked to:	Discipline workers in more polite manner	0	2	3	5(20)
	Be stricter in enforcing organization rules/procedures	0	1	0	1(04)
	Be more tolerant of worker behavior	0	1	1	2(08)
	Spend more time informally socializing	0	0	1	1(04)
	Spend less time informally socializing	0	0	0	0(00)
	Have workers pay greater attention to safety	0	0	1	1(04)
	Have workers pay greater attention to waste	0	2	1	3(12)
	Take greater interest in worker's personal problems	0	3	2	5(20)
	Discover reasons behind worker's job problems	1	2	1	4(16)
	Be more patient and detailed in explaining jobs	0	2	1	3(12)
	Total	1	13	11	25(100)

[1] The percentages corresponding to the subtotals are in parentheses.

Table 1.8
Employee Services

Q10(a)-10(b) Does organization provide this service? Was it introduced/extended after HIT?	Baltimore		Newark		Cleveland		Total 1/	
	Now Provide	Introduced/ Extended	Now Provide	Introduced/ Extended	Now Provide	Introduced/ Extended	Now Provide	Introduced/ Extended
Counseling Services	6	1	8	3	7	3	21	7(37)
Assistance finding transporation to work	4	0	6	1	6	2	16	3(16)
Contribution to day care center costs	0	0	2	0	1	1	3	1(05)
Remedial English classes	2	2	3	0	2	0	7	2(11)
Credit union or loan services	7	2	6	0	4	1	17	3(16)
Periodic health examinations	4	1	5	0	2	0	11	1(05)
Assistance locating housing	6	1	7	1	3	0	16	2(11)
Assistance completing high school	0	0	1	0	0	0	1	0(00)
Discounts on merchandise	1	0	0	0	0	0	1	0(00)

1/ The percentages corresponding to the subtotals are in parentheses.

Senior Management's Requests for Different Supervisory Approach and Additional Services Offered to Employees

The data presented in Table 1.7 indicates that HIT has had some effect on the way workers are supervised, primarily with respect to greater politeness and attempts to understand their problems.

Overall, one can see evidence of some lasting impact, assuming that the changes reported are attributable at least in part to HIT, which seems a plausible conclusion.

There is also evidence (Table 1.8) that in a small but not trivial proportion of companies, in which HIT had been used, new employee services (such as counseling) had been introduced, or existing services extended.

First Line Supervision

To a large extent the interviews with supervisors, in the same organizations as the top managers, covered much the same ground. It was considered desirable to do this because the perceptions of senior management are quite often different from those of first line supervisors. Both are important since a program's success depends on support at both levels. As to whether the perceptions are valid reflections of objective facts is another matter, but it is reasonable to assume greater probability of this if the two sets of judgments agree with each other.

It can be stated at the outset of this section that there does seem to be some general agreement. As with senior managers, respondents were asked if there had been changes in the qualifications or characteristics needed for jobs in their departments — education, prior work experience, dress/appearance or race. In low-/semi-skilled jobs, three supervisors (10%) reported a lowering of previous work experience requirements and of racial restrictions. There had also been a raising of educational, prior experience and dress requirements for skilled/managerial jobs, according to the same supervisors.

Thus the impression gained from senior managers is confirmed; few or no changes in requirements took place after HIT was introduced.

The same picture emerges for changes in job complexity as was found from the senior manager interviews — eight supervisors (28%) said that there had been changes in some low-/semi-skilled jobs.

Supervisory style was investigated (as reported by the supervisors themselves, which may not be accurate but presumably indicates what they want to do, even if not what they are actually doing), and the general impression is that since the first HIT, about half the supervisors have made some changes in their way of interacting with their workers; all supervisors interviewed had some HIT workers in their departments. Some spent more, some less time, but the general movement was toward giving more attention to details and in discussions rather than just lecturing them (Tables 2.1, 2.2, and 2.3). Table 2.3 shows, that while there had been little change in disciplinary practices, such change as there was inclined toward a more understanding mode of behavior.

There was also, apparently, more time spent talking informally with the workers and attending social activities, by about a quarter of the sample (Tables 2.4 and 2.5).

HIT does seem to have had some beneficial effect on supervisory style. It is in line with their perception of their own greater understanding that many supervisors think that workers in their departments, subsequent to the first HIT program, are more cooperative. Disruptive behavior (arguing, conflicts) was also thought to be reduced (Tables 2.6 and 2.7). A question on worker safety consciousness also showed that four in ten supervisors thought workers in their departments were more safety conscious — no reduction in safety consciousness was observed.

These questions related to the department as a whole — which included HIT workers, but were by no means composed entirely of them. It was considered possible that the apparently preferential treatment given to some workers (by putting them through the trainee program) could itself cause dissent and lack of cooperation among other workers not so trained; apparently this was not the case.

A specific question on the comparative cooperativeness of HIT workers and non-HIT workers showed that about half their supervisors thought HIT workers to be the most cooperative; the other half thought there was no difference. No tendency to a less cooperative attitude was seen (Table 2.9).

Table 2.1
Changes in Time Supervisors Spend Giving Instructions to Their Workers

Q 4a Changes in amount of time spent explaining work instructions	Baltimore	Newark	Cleveland	Total[1]
Spend more time	2	3	2	7 (24)
No change in time	2	5	4	11 (38)
Spend less time	4	1	2	7 (24)
Don't know/spend no time	2	0	2	4 (14)
Total	10	9	10	29 (100)

[1] The percentages corresponding to the subtotals are in parentheses.

Table 2.2
Changes in Ways Supervisors Give Instructions

Q 4 (b) Changes in way instructions are given	Baltimore	Newark	Cleveland	Total[1]
Give more attention to instruction details	2	2	1	5 (17)
Give written and verbal instructions	0	0	1	1 (03)
Give visual and verbal instructions	0	1	0	1 (03)
Involve workers in the organizing problems which relate to them	1	0	0	1 (03)
Involve workers in discussions of instructions rather than just lecture	0	1	1	2 (07)
No change	7	3	4	14 (48)
Don't know/Don't give instructions	0	2	3	5 (17)
Total	10	9	10	29 (100)

[1] The percentages corresponding to the subtotals are in parentheses.

Table 2.3
Changes In Supervisors' Disciplinary Practices

Q 4 (c) Changes in manner in which supervisors discipline workers	Baltimore	Newark	Cleveland[1]	Total[2]
Discipline workers only in private	1	0	0	1 (03)
Discipline workers only for major problems	0	1	0	1 (03)
Discipline workers for major & minor problems	0	1	0	1 (03)
Discipline workers immediately after problem occurs	0	0	1	1 (03)
More controlled/polite with workers	0	0	2	2 (07)
Try to discover problem leading to worker's misbehavior	0	0	2	2 (07)
No change	8	7	6	21 (71)
No response	1	0	0	1 (03)
Total Organizations	10	9	9	28 (100)

1/ One manager in Cleveland gave two responses to this question.

2/ The percentages corresponding to the subtotals are in parentheses.

Table 2.4
Changes in Time Supervisors Spend Socializing with Workers

Q 4 (d) Change in amount of time spent informally talking with workers	Baltimore	Newark	Cleveland	Total[1]
Spend more time	2	1	4	7 (23)
No change in time	8	8	5	21 (72)
Spend less time	0	0	1	1 (03)
Total	10	9	10	29 (100)

1/ The percentages corresponding to the subtotals are in parentheses.

Table 2.5
Changes in Time Supervisors Spend in Social Activities

Q 4 (e) Change in amount of time spent attending social activities with workers	Baltimore	Newark	Cleveland	Total[1]
Spend more time	2	1	4	7 (23)
No change in time	8	8	5	21 (72)
Spend less time	0	0	1	1 (03)
Total	10	9	10	29 (100)

1/ The percentages corresponding to the subtotals are in parentheses.

Table 2.6
Supervisors' Perceived Changes in Worker Cooperativeness

Q 5 (b) Changes in amount of cooperation from workers in your department	Baltimore	Newark	Cleveland	Total[1]
Workers more cooperative	7	7	6	20 (69)
No change in cooperation	3	1	3	7 (24)
Workers less cooperative	0	1	0	1 (03)
Don't know/no response	0	0	1	1 (03)
Total	10	9	10	29 (100)

[1] The percentages corresponding to the subtotals are in parentheses.

Table 2.7
Supervisors' Perceived Changes in Worker Arguing And/Or Fighting

Q 5 (a) Changes in amount of arguing or fighting among workers in your department	Baltimore	Newark	Cleveland	Total[1]
Decrease in arguing/ fighting	2	3	5	10 (34)
No change in arguing/ fighting	1	2	2	5 (17)
Increase in arguing/ fighting	0	0	0	0 (00)
Workers never argued/ fought & still do not	5	2	2	9 (31)
Don't know/no response	2	2	1	5 (17)
Total	10	9	10	29 (100)

[1] The percentages corresponding to the subtotals are in parentheses.

Table 2.8
Supervisors' Perceived Changes in Worker Safety Consciousness

Q 5 (c) Changes in degree of attention workers in your department give to personal safety on job	Baltimore	Newark	Cleveland	Total[1]
More safety conscious	7	2	3	12 (41)
No change	3	6	7	16 (55)
Less safety conscious	0	0	0	0 (00)
Have always been safety conscious & still are	0	1	0	1 (03)
Total	10	9	10	29 (100)

[1] The percentages corresponding to the subtotals are in parentheses.
Some managers were responsible for more than one group of upgraded workers.

Table 2.9
Supervisors' Perceptions of Differences in Cooperativeness Between HIT and Non-HIT Trained Workers

Q 6 (a) Differences between HIT & non-HIT trained workers in your department in degree of cooperativeness	Baltimore	Newark	Cleveland	Total[1/]
HIT trained workers more cooperative	6	6	2	14 (48)
No difference	3	2	6	11 (38)
HIT trained workers less cooperative	0	0	0	0 (00)
Don't know or no response	1	1	2	4 (14)
Total	10	9	10	29 (100)

1/ The percentages corresponding to the subtotals are in parentheses.

Table 2.10
Supervisors' Perceptions of Differences in Absenteeism Between HIT and Non-HIT Trained Workers

Q 6 (c) Differences between HIT and non-HIT trained workers in your department in rate of absenteeism	Baltimore	Newark	Cleveland	Total[1/]
HIT workers absent less	5	3	1	9 (31)
No difference	4	5	9	18 (62)
HIT workers absent more	0	1	0	1 (03)
Don't know or no response	1	0	0	1 (03)
Total	10	9	10	29 (100)

1/ The percentages corresponding to the subtotals are in parentheses.

Table 2.11
Supervisors' Perceptions of Differences in Tardiness Between HIT and Non-HIT Trained Workers

Q 6 (b) Differences between HIT and non-HIT trained workers in your department in rate of lateness to work	Baltimore	Newark	Cleveland	Total[1/]
HIT workers late less	4	3	1	8 (28)
No difference	5	5	6	16 (55)
HIT workers late more	0	1	1	2 (07)
Don't know or no response	1	0	2	3 (10)
Total	10	9	10	29 (100)

1/ The percentages corresponding to the subtotals are in parentheses.

It would certainly seem, then, that the supervisors on the whole feel that a better relationship exists between themselves and their workers, and among the workers themselves as a result of HIT.

Absenteeism and tardiness were also perceived to be less prevalent among HIT workers compared with non-HIT workers, by about one in three of the supervisors interviewed. The vast majority of the remainder see no difference (Tables 2.10 and 2.11).

It is interesting that the supervisors in Baltimore, in answering these worker attitude and behavior questions, seemed to be more likely to give answers indicating favorable change than those in Cleveland where a "no difference" response is most common. Newark tends to be intermediate in these respects.

It should be observed that these questions on absenteeism and tardiness compare HIT and non-HIT workers; it does not necessarily follow that because two-thirds of supervisors see no difference in, say, absenteeism between the two groups, that they have not seen an overall improvement in both groups. This seems to be what is happening in the case of "cooperativeness." Seven in ten supervisors said their group of workers was more cooperative compared with five in ten who said HIT workers were more cooperative than non-HIT. The supervisors' responses regarding reduced absenteeism and tardiness might well have corresponded with their senior managers' perceptions had the questions been phrased in the same way. The differences in the proportions between senior manager and supervisor responses should not, therefore, be interpreted as implying different evaluations of the effects of HIT.

Wage Survey

Although letters of agreement with employers in whose organizations HIT upgrading took place guaranteed an 8-10% increase on graduation above pre-training rates, there was no knowledge of what happened to trainees' incomes in the longer run. The follow-up study, therefore, set out to find the wages of these trainees some nine months after graduation and compare them with their pre-training wages. Had there been any further income increases above the initial 8-10% which, as the projects had already reported in their Final Reports, were awarded in nearly every case? And, in any case, how were these workers doing when compared with their peers who had not been through a HIT course?

The latter question obviously could not be answered precisely because the nature of the organizations involved generally precluded the existence of a control group of equivalent, but non-HIT, workers. The follow-up study could, however, find out whether the HIT workers were experiencing pay increases of at least the same proportion as other workers in the same city, over the same time interval.

The Wage Survey, therefore, became formally designed as a comparison of wages before training (January 1969 in most cases) and from seven to twelve months[4/] after training (May 1970) of a sample of HIT trainees in a sample of organizations in each city. Wage data for manufacturing workers in each city were compared with HIT manufacturing workers' wages to ascertain percentage increases from the pre-training point in January 1969 to the follow-up date of May 1970. This interval, although approximate, was used for comparison purposes. Data for other categories of workers were not available.

The original design called for a wage survey of ten organizations from each city, i.e., a total of 30 selected at random from a total of 56 organizations in which HIT had been introduced in its first cycle. One organization could not be located, and a little over half the remainder refused to give current wage data, stating that it was against their policy. While the original plan would have provided a valid sample of the population of "HIT organizations," this

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4/ Twelve months in most cases.

self-selection process which thus became involved may have led to some bias. There is no reason to believe this is so, but the possibility should be borne in mind in interpreting the results.

For the 13 organizations which supplied wage data, complete data on 78 individuals were available. This was a complete "census" of all HIT trainees who were currently working in the organization.

A sample of workers who had left their organizations was also followed up, and the results are described in the section below. At this point it will suffice to say that so far as wages are concerned there is no evidence that those who were in other employment at the time of the interview were better off, financially, than those who had stayed with their original organizations.

The data for the 78 individuals and 13 organizations are shown in accompanying tables. Collectively, they show the following:

- On average, HIT trainees received their guaranteed 8-10% raise on graduation.

- In May, 1970, they were still apparently not earning the mean rate as a comparable group (in terms of a broad industrial classification — manufacturing — which was the only group for which roughly comparable data could be obtained). The sample of individuals from the manufacturing organizations (24) is, however, small and the usual cautious attitude should prevail in interpreting these data.

- The gap in wages (for the group of 78) had narrowed between January, 1969 and May, 1970 but:

- This was largely due to the initial 8-10% raise on graduation. Subsequently, their rate of increase was less; in the post-HIT period (an

approximate 12-month period in Baltimore and Newark and nine-month period in Cleveland) raises were:

- 8.7% in Baltimore, where the original HIT incomes had averaged 16.6%; 4.9% in Newark compared with a 13.4% HIT raise; and 4.6% in Cleveland compared with a 7.9% HIT raise.

A comparison of the manufacturing workers' pay increases with those for all manufacturing industry workers in the respective cities, treated as a percentage increase over a comparable period, is interesting, even allowing for the small size of the sample of HIT workers. The HIT sample gained at a rate of about 0.6% per month after training and the original raise on graduation; all manufacturing workers, in a roughly equivalent time period, in the same cities averaged a little under 0.4% per month. Allowing for the considerable sampling variance (and possible bias) inherent in the trainee data, the best conclusion to be drawn from this comparison is, probably, that HIT manufacturing industry trainees who stayed in their organizations received about the same rate of pay increase as the manufacturing industry workforce as a whole.

WAGE DATA

Table 3.1a
A Comparison of Trainee Wages (Mean Basic Wage Per Hour) Before HIT, Immediately After HIT Was Completed, And From 7-12 Months Later.

	Baltimore			Newark			Cleveland		
	Before HIT 1/	Immediately After HIT 1/	7-12 Months Later 1/	Before HIT 2/	Immediately After HIT 2/	7-12 Months Later 2/	Before HIT 3/	Immediately After HIT 3/	7-12 Months Later 3/
Non-Manufacturing	$1.79	$2.13	$2.15	$2.83	$3.30	$3.45	$2.55	$2.73	$2.83
Manufacturing	$2.02	$2.31	$2.63	$2.38	$2.59	$2.64	$2.50	$2.75	$2.87
TOTAL	$1.87	$2.18	$2.37	$2.68	$3.04	$3.19	$2.53	$2.73	$2.85

n's =23 and 9 for non-manufacturing and manufacturing organizations respectively, in Baltimore; 19 and 9 in Newark and 12 and 6 in Cleveland.

Table 3.1b
% Increase of Wages (Mean Basic Wage Per Hour) Immediately After HIT And 7-12 Months Later.
(See footnotes for each City) as % of Pre-HIT Wage)

	Baltimore		Newark		Cleveland	
	Immediately After HIT 1/	7-12 Months Later 1/	Immediately After HIT 2/	7-12 Months Later 2/	Immediately After HIT 3/	7-12 Months Later 3/
Non-Manufacturing	18.9	20.1	16.6	21.9	7.0	11.0
Manufacturing	14.3	30.1	8.8	10.9	10.0	14.8
TOTAL	16.6	26.73	13.4	19.0	7.9	12.6

1/ Before HIT - 1/69; Immediately After HIT - 5/69; 7-12 Months Later - 5/70; with the exception of one organization where Before HIT=9/09 and Immediately After HIT=10/69.

2/ Before HIT - 1/69; Immediately After HIT - 5/69; 7-12 Months Later - 5/70.

3/ Before HIT; - 5/69; Immediately After HIT - 9/69; 7-12 Months Later - 5/70 with the exception of two organizations where Before HIT=1/69 and Immediately After HIT=5/69.

Table 3.2
Mean Hourly Earnings of Manufacturing Workers In The Three Cities:

	Baltimore 1/2/	Newark 3/	Cleveland 4/	Weighted Average 5/
January, '69	3.21	3.24	3.66	3.34
March, '70	3.46	3.43	3.80	3.52
% Increase from 1969-1970	7.8%	5.9%	3.8%	5.4%

1/ Does not include workers not covered by unemployment insurance.

2/ Data obtained from Baltimore Bureau of Employment Service, Department of Research.

3/ Data obtained from Newark Bureau of Employment Service, Department of Labor Analysis.

4/ Data obtained from Cleveland Bureau of Employment Service.

5/ These average wages are weighted on the basis of the number of manufacturing workers in the city at the time that the average wage was computed.

HIT Trainees Who had Quit the Organizations in Which They Were Trained

Of the population of 249 HIT trainees being followed up in this study, 52 (21%) had left their organizations within ten months of training. It was not known whether they had improved their financial and social status by moving to other jobs, building on the HIT experience to develop themselves, or whether they had become disgruntled at their lack of further progress within the organization. The evaluation of HIT would clearly be influenced by what had happened to one fifth of the trainees of whom nothing was known. It was decided to follow up as many of the 52 as was possible within budget constraints.

A random sample of 38 individuals was selected from the 52, (proportional numbers in each city) to be followed up, if practicable, in their homes. Three interview attempts were made for each individual, even if he or she had moved to another part of the country.

Given the nature of the sample being interviewed -- resident in the inner-city but quite likely to have moved to another city or back to a rural community -- a maximum response rate of 50 percent was anticipated. The sample representativeness is inevitably in question, when half the desired sample cannot be interviewed, but this had been recognized at the outset, and it had been decided that some conclusions could be drawn even from such incomplete data.

The present report is on seventeen individuals. Of these:

- one had been fired from the organization in which he had been trained;
- four had left for health reasons — three were pregnancies;
- eight had left for reasons connected with the job — disliked the tasks/supervisor or found the pay too low; and
- four had left because they had found a "better" job.

Excluding the "health reason" cases, about two-thirds of the job-leavers had done so because of dissatisfaction.

If we apply the data from these seventeen individuals in proportion to the original population of HIT trainees, we find that about 1% would be fired, 5% quit on health grounds, 10% quit because they disliked the job and 5% quit to go to a better job. Whether it is legitimate to project from so small a sample is open to question, but if the data are treated as indicators, not precise statistics, it would still appear that only a very small proportion of trainees moved on to better opportunities.

The data on the wages of those who were employed at the time of interview do not suggest that they were doing better than the trainees who had stayed in the original organizations.

The group of employees who had left their original organization after HIT training had been, on average, receiving less per hour prior to training than had the other HIT trainees ($2.10 per hour compared with $2.60 per hour).5/ Although they received their 10% raise on graduation, they were therefore still earning less than the mean of post-HIT earnings for trainees as a whole. At the time of interview (about May 1970) the "leavers" were earning, on the average, about $2.70 per hour; the comparable group of trainees who had not moved were earning $3.50 on the same date.

With such small samples, one markedly deviant value can distort the overall picture. One individual had moved from $2.64 per hour after training to $6.25 per hour in his new job (as a railroad brakeman). If he is removed from the sample, the mean wage drops to $2.20 per hour. This, in fact, is a slightly lower wage than the mean wage for this "leaver" group (the same individual being excluded) just after HIT graduation if the same individual is omitted. There is, therefore, no evidence that these individuals who are currently in work have done any better than their colleagues and so far as the present sample is concerned, they have slipped back in terms of remuneration whereas their peers have at least had pay increments proportional to the general increases in pay in their area.

5/ Since only one Baltimore trainee was interviewed in this sample of "leavers," these comparisons are based on Cleveland/Newark trainees only.

There are also the unemployed, the 15% who were in the labor market and not working. This puts the mean earnings of the entire group still lower — half the unemployed were receiving welfare payments and half were dependent on their spouses' income or on "odd-jobs" so that their earnings were minimal.

Questions were asked of the employed members of the group about the effect of HIT on getting their present job, or working in their present job. The results are tabulated below and speak for themselves.

Effects of HIT Program:

Helped to get present job	4
Did not help or effect not known	7
	6
Helps in present job	6
Does not help in present job	5

These 17 "job leavers" were asked about future job expectations as a result of HIT training. Twelve said they were more hopeful. On the whole, it would seem that the effect of HIT on the morale of these ex-trainees was beneficial, even if the material benefits were not.

HIT Trainees Who Had Indicated "Educational Aspirations" A Few Months After Training

This section is concerned with a follow-up of trainees who, in the Project's own studies, 3-5 months after trainee graduation, had been recorded as intending to continue with their education in an institutional setting.

Fifty-one trainees were selected at random from the group (of 121) who had originally expressed these educational aspirations. This group represented above 50% of the total number of trainees interviewed by the Project studies. Only 20 of the present sample of 51, when interviewed, reported that they had actually done something concrete and only 16 had been, or were now, attending a formal education course, i.e., about one-third of those who said they were going to do something about further education (Tables 4.1a/4.1b).

Projecting this proportion to the original total number of trainees upon whom they were drawn, it appears that only about 15% of HIT trainees actually did attend a formal course of further education.

It is important to attempt to compare this figure with the best estimate obtainable of what percentage of the worker population from which HIT trainees were drawn would have attended some course without the intervention of this training. As part of the analytic design for measuring the immediate impact of HIT[6/] 40 individuals who had been selected for training in the same or similar organizations to those from which the current sample was drawn were interviewed on their educational intentions. These individuals came from the same work population as the present sample, and were enrolled in the same cycle of training. Prior to that training, 5% had enrolled in an educational institution. Given the different interviewing circumstances of the two studies, and the small sample size, the observed 10% difference could not be regarded as statistically significant at the conventional levels. The conclusion drawn, however, is that there is an

6/ Skill Achievement Institute. Upgrading the Underemployed in the Work Environment: An Analysis of the Short-Range Impact of High Intensity Training. July 31, 1969, Vol. 4 Contract No. 82-34-68-19.

indication of some effect on educational aspirations among low-level workers, although it cannot be claimed that the one-step model serves as a catalyst or motivator to the employee in encouraging him/her to go on for additional formal education.

Various types of institutions were specified by the 16 who said they had attended or were enrolled in school. Five said they were attending colleges or universities, eight said technical schools or community colleges, two said "Federal Programs," and one said he was attending high school. These statements could not be 100% confirmed. The named institutions were followed up but confirmation was available for only nine individuals. In the remaining cases there was either insufficient information or the institution refused to divulge the information.

About 60% of the sample had not done anything about their earlier stated intent to pursue further education. The most common reason (from 71% of respondents) was lack of money — which suggests the advisability of tuition payments and perhaps even an incentive payment, as in Project Upgrade in Columbus. Lack of time and conflict with family responsibilities also loomed quite large — each mentioned by about a third of the sample (Table 4.2).

Almost all of these workers said they were still thinking about furthering their education, mostly in trade, technical or business schools or community colleges (Tables 4.3a/4.3b). Given their past record, the probability of these aspirations being realized would seem to be small.

Among those who had, apparently, taken action to implement their plans, 12 of the 16 (75%) expressed an intent to proceed still further. This group, incidentally, is much more college oriented, two thirds saying they were planning to go to college (Tables 4.4a/4.4b).

Table 4.1a
Action Taken Toward Improving Education

Q 3 (a) Have you done anything about getting more education: ?	Baltimore	Newark	Cleveland	Total[1]
Yes	6	7	7	20 (39)
No	11	10	10	31 (61)
Total	17	17	17	51 (100)

[1] The percentages corresponding to the subtotals are in parentheses.

Table 4.1b
Type Of Educational Action Taken

Q 3 (b) What have you done about improving your education	Baltimore	Newark	Cleveland	Total[1]
Inquired, nothing else	0	0	1	1 (05)
Applied, accepted, did not attend	0	0	3	3 (15)
Applied, attended, dropped out	0	0	0	0 (00)
Applied, attending	1	5	1	7 (35)
Applied, attended, completed	5	2	2	9 (45)
Total	6	7	7	20 (100)

[1] The percentages corresponding to the subtotals are in parentheses.

Table 4.2
Reasons For Not Furthering Education

Q 4 (a) - (c) Why didn't you get the education you desired?	Baltimore	Newark	Cleveland	Total[1]
Lack of money	9	3	10	22 (72)
Lack of time	1	3	7	11 (36)
Conflict with family responsibilities	3	3	3	9 (29)
Difficult to get to school	1	1	2	4 (13)
Too tired after work	2	0	1	3 (10)
Anticipated language difficulties	1	0	0	1 (3)
Didn't think could succeed	1	0	0	1 (3)
Friends against idea	0	1	0	1 (3)
Undecided as to type of education desired	0	0	1	1 (3)
Supervisor didn't recommend training	0	1	0	1 (3)
Number of respondents	11	10	10	31(100)

[1] Some workers gave more than one response.
The percentages corresponding to the subtotals are in parentheses.

Table 4.3a
Educational Aspirations Of Workers Who Did Not Pursue Further Education

Q 5 (a) Are you still thinking about furthering your education?	Baltimore	Newark	Cleveland	Total[1]
Yes	9	7	12	28(90)
No	1	1	1	3(10)
Number of respondents	10	8	13	31(100)

[1] The percentages corresponding to the subtotals are in parentheses.

Table 4.3b
Anticipated Educational Plans Of Workers Who Did Not Further Pursue Their Education

Q 5 (b) What type of education do you plan to pursue?	Baltimore	Newark 1/	Cleveland	Total 2/
Trade/Technical School	5	3	3	11(40)
Business School	1	2	4	7(25)
Junior College	0	3	3	6(22)
High School	1	0	1	2(08)
Adult Education	1	0	0	1(04)
College	1	0	0	1(04)
Graduate School	0	0	1	1(04)
Number of respondents	9	7	12	28(100)

1/ Some workers gave more than one response.
2/ The percentages corresponding to the subtotals are in parentheses.

Table 4.4a
Educational Aspirations Of Workers Who Did Pursue Further Education

Q 6 (a) Do you plan to continue to further your education?	Baltimore	Newark	Cleveland	Total 1/
Yes	5	5	2	12 (75)
No	0	2	0	2(13)
Don't know/no response	1	0	1	2(13)
Number of respondents	6	7	3	16 (100)

1/ The percentages corresponding to the subtotals are in parentheses.

Table 4.4b
Anticipated Educational Plans Of Workers Who Furthered Their Education

Q 6(b) What kind of education are you planning to pursue?	Baltimore	Newark	Cleveland 1/	Total 2/
College	4	3	1	8(67)
Business School	0	2	0	2(17)
Adult Education	0	0	1	1(08)
High School	0	0	1	1(08)
Graduate School	1	0	0	1(08)
Number of respondents	5	5	2	12 (100)

1/ One worker gave more than one response.
2/ The percentages corresponding to the subtotals are in parentheses.

APPENDIX A

TECHNICAL SUPPORT ACTIVITIES

During the funding period, technical guidance activities included the assistance given to the Advanced High Intensity Training (A-HIT) program implemented by Skill Upgrading in Cleveland and funded by the U.S. Department of Labor. This program and the nature of HDC's role in its development are described in this section of the report.

Other technical guidance functions included the following:

- Participation in a Task Force of the United States Training and Employment Service (USTES) for development of a pilot upgrading program to be administered by a State Employment Service on a statewide basis;

- Assistance to a U.S. Department of Labor-funded program conducted by the American Institute of Aeronautics and Astronautics (AIAA) for assisting technical and professional level personnel displaced by cutbacks in Department of Defense programs to secure employment in other industries;

- Participation in a Task Force of the United States Training and Employment Service to provide technical assistance for the Public Service Careers Program administering agencies in six Department of Labor regions.

These three technical assistance projects are briefly discussed first in the following pages of the report. A description of support activities in conjunction with Skill Upgrading in Cleveland (SUIC) follows.

At the request of the U.S. Department of Labor, Manpower Administration, HDC prepared A Handbook for Upgrading Low-Skill Workers. The Handbook, which is a reference guide for organizations engaged in worker upgrading and training, is discussed in the final section of this Appendix.

Pilot Upgrading Program - United States
Training and Employment Service Task Force (USTES)

The responsibility of the USTES Task Force[1/] was to set out the objectives and guidelines for a pilot program to be implemented in selected states as a means of assessing the capability of the State Employment Services to implement worker upgrading programs. At first, the Task Force envisioned that six states would be selected as sites of the pilot programs. Subsequently, the number of states to be involved was reduced to three and then to one.

HDC participated in Task Force meetings from the initial stages and assisted in the preparation of concept papers and statements of objectives for the pilot program. The concept is principally based upon the New Jersey Employment Service upgrading project, Industrial Training Services.

The Task Force on Upgrading submitted a proposal to the Department of Labor for implementation of the pilot program.

An HDC memorandum, accepted by the Task Force, outlined the parameters of the vertical and lateral upgrading approaches envisioned in the pilot effort. There would be two programs as described below:

1/ Given the potential impact of the legislation proposed, the Task Force evolved two approaches to upgrading: vertical upgrading and lateral upgrading. The definitions of these terms are those currently used by USTES: "Vertical Upgrading" - the movement of an employee upward in an establishment of his present employer. "Upward" movement means a higher skill level job and either immediate pay increase or placement on a professional "ladder" of automatic increases in specified times which will take him higher than he could go in his previous pay-grade classification; "Horizontal Upgrading" - the lateral movement in the Labor Market by an employee to some other employer's establishment, where there is the promise or reasonable expectation of a higher wage and skill opportunity.

- Lateral Upgrading, related primarily to the working poor, who would become eligible under the proposed Family Assistance Plan (FAP). Apart from a test of overall feasibility, there would be the following secondary objectives of the pilot study of this program:

  - Test of a voluntary enrollment system,

  - Determination of the most effective means of acquainting the working poor with the opportunities offered by the program,

  - Experimentation with various incentives to induce enrollment,

  - Assessment of administrative/coordinating mechanisms for linkages with public and private institutional training capabilities,

  - Testing the effects of various labor demand conditions on program feasibility, and

  - Determination of alternate program elements required to introduce horizontal or lateral upgrading under varying conditions.

- Vertical Upgrading, for selected employees, a percentage of whom should be the "working poor." This program ...focuses on the capacity of the State Employment Service to provide employer assistance in the areas of: Manpower Requirements Analysis, Job Task Analysis, Curriculum Design, Consulting Training Services, Follow-up and Evaluation, and Supervisory Orientation and Training.

The pilot vertical upgrading programs of the State Employment Services would accomplish demonstration of the overall feasibility of the Vertical Upgrading program and provide:

- A test of the effects of industry, occupational and geographic variables on the feasibility of introducing vertical upgrading for employees,

- A determination of other factors which affect an employer's decision to upgrade his present work force,

- A determination of the most effective incentive or technical service schemes which can induce employers to upgrade workers,

- A test of the feasibility of introducing multi-step upgrading and isolation of factors affecting its feasibility,

- Determination of the mechanisms needed to utilize community, public and private institutional training resources to support one-step and/or multi-step upgrading.

American Institute of Aeronautics and Astronautics (AIAA)

AIAA received U.S. Department of Labor funds for the purpose of holding a series of 20 employment workshops in areas characterized by high unemployment in these industries. HDC's role was to provide general assistance in analyzing the effects of the workshops on AIAA members' employment status.

Public Service Careers Program

HDC was requested by the U.S. Department of Labor, Manpower Administration, to participate in the preparation of guidelines for technical assistance services by the United States Training and Employment Service to the state and local government districts responsible for implementation of the Public Service Careers Program (PSCP).

Multi-Level Upgrading: Skill Upgrading in Cleveland (SUIC)

Selected findings from the final and follow-up reports of the three cities and from the HDC Analytic Study support the following generalization from these upgrading experiences:

- In all three cities, HIT-trained workers advanced to, and performed successfully in their target jobs. However, progress beyond the job for which they were prepared by the HIT method occurred only rarely, raising the possibility that the HIT method simply trained workers for new "dead-end jobs."

Skill Upgrading in Cleveland grasped the logical post-HIT step as an effort to systematically institute within employing organizations a multi-step upgrading program, Advanced High Intensity Training.

Cleveland Follow Through on HIT

Advanced HIT has the following goals:

- Involvement of at least four organizations;
- Enrollment of 80 workers earning, at the inception of the program, less than $6,000 per year;
- The training, job promotion and wage increases outlined below in the discussion of Advanced HIT's modifications of the HIT design.

The Advanced HIT method builds on the HIT concept, encompassing several important modifications, including the following:

- In lieu of the 40 hour training span employed in HIT, SUIC provided for a 100 to 300 hour training period, depending upon the knowledge/skill requirements of the target job;

- Advanced HIT would raise workers from 30 to 50% in basic wages and several levels in occupational status;

- The human relations component would be given even greater emphasis in A-HIT operations and would affect supervisory and management level personnel;

- Greater stress would be placed on the selection and training of a company trainer to assure continuity of the program.

These modifications arise from SUIC's previous experience with marketing HIT to employers in Cleveland who recognized the value of High Intensity Training for the low-skill or entry-level worker. SUIC's analysis of the organizations participating in HIT led to the conclusion that the workers advanced one or two steps through HIT would remain in the target jobs unless training and promotions at higher levels opened new positions to them.

HDC Role

Humanic Designs Corporation assisted in preparing the Advanced HIT proposal. Technical assistance is being provided on an as-needed basis by HDC. Thus far, the technical assistance activities of HDC have focused on the analytic component of the program.

A Handbook For Upgrading Low-Skill Workers

A technical manual synthesizing and expanding upon five years of experience in upgrading the low-skill worker in the plant setting was completed. The Handbook has four major divisions:

- An introduction to the Handbook, including a discussion of the in-plant upgrading concept, its similarities to traditional practices of filling skilled jobs by training and promoting workers from within the company, and its distinguishing characteristics;

- Guidelines for Program Planning and Development describing the importance of involving management and supervisory personnel in the program, the general manpower needs analysis, job task and requirements analysis, trainee selection, curriculum development and job restructuring.

- Program Operations, presenting guidelines for training methodologies and processes; schedules of rewards for workers; program administration;

- Evaluation, outlining alternative evaluation methodologies and the anticipated report outcomes.

An appendix on marketing, including an outline of market analysis and suggested sales approaches, concludes the instructional content of the Handbook. A second appendix, presenting a sample of forms to be used in job task analysis and skill requirements analysis, concludes the volume.

The value of the Handbook for HDC staff, especially in the conduct of in-service training for staff members of projects to which HDC is providing technical assistance, has been considerable. Even prior to final preparation of the revised draft, sections on the concept of Upgrading, the material on marketing and the operations guidelines had been used in

training the marketing and counselor/trainer teams of Project Upgrade, Columbus, Ohio. To some extent, the experience with Project Upgrade staff was fed back to the Handbook preparation effort, in the revisions effected within the Job Task and Requirements Analysis section of the Handbook's chapter on program planning and development. This aspect of the Handbook is worthy of particular note. Job Task Analysis had been employed as a technique in the High Intensity Training (HIT) programs conducted by Humanic Designs Corporation (HDC) during the years 1966-69.2/ At the conclusion of HDC's eighteen-month contract for Experimental and Demonstration activities in managing the three-city High Intensity Training program involving Newark, Baltimore and Cleveland, HDC published a four-volume report on the cumulative experience of four years of upgrading low-skill workers in the plant environment. Volume III of the report3/ defines a job task analysis methodology. However, the differences between the two earlier volumes cited above, on the one hand, and the presentation of Job Task Analysis in the Handbook, on the other, are radical. In the Handbook for Upgrading Low-Skill Workers,4/ a JTA methodology is outlined within four basic steps:

- Defining the Job, initially by listing the component tasks. A technical definition of task is used: "that set of activities, all of which would be needed to produce an identifiable output which would be used, acted upon, or advanced in production by an individual who may or may not be the performer."5/

2/ See, for example: Skill Advancement, Inc., Upgrading the Low-Wage Worker: An Ergonomic Approach. Volume II. (August 31, 1967) pp 5-3 to 5-9.

3/ Skill Achievement Institute, Upgrading the Underemployed in the Work Environment: "High Intensity Training Methodology," pp 43-57.

4/ Humanic Designs Corporation, A Handbook for Upgrading Low-Skill Workers, October 1970. "The Job Task and Analysis Requirements" pp II-4 to II-12

5/ As cited in the Handbook, the definition is that used by Eleanor Gilpatrick and Irene Seifer, "A Re-test Manual for Scaling Task Dimensions (Working Paper #7) Draft," Health Services Mobility Study, January, 1970. pp 3-2 and 3-3.

- Identifying tasks by cross-checking the lists prepared in the first step through interviews with supervisors and refining the lists.

- Describing the tasks separately on individual worksheets along the following dimensions:

  - tools, equipment and material used;

  - details on what the worker actually does;

  - duration of task and frequency of performance; and

  - performance criteria associated with task execution.

- Determining Task Requirements, an assessment of the worker traits needed to perform the task in terms of knowledge, skills and aptitudes.

APPENDIX B

PARTICIPANTS IN HDC

SEMINARS ON UPGRADING

Participants in HDC Seminars on Upgrading

Labor Union Seminars

The labor union seminar on upgrading was a two-day conference meeting at HDC headquarters in Manhasset, New York, on Octber 22 and 23, 1970. In attendance were:

- Mrs. Betty Miller, Director of the Hospital Development Program, American Federation of State, County and Municipal Employees (AFSCME) - AFL-CIO;
- Mr. Paul Jennings, President, International Union of Electrical, Radio and Machine Workers (IUE) - AFL-CIO;
- Mr. Felix G. Bach, Director of OJT, IUE;
- Mr. Joseph Munyan, OJT Coordinator, District 3, IUE;
- Mr. Richard E. Murphy, Assistant to the General President, Service Employees International Union;
- Professor Lois Gray, Cornell University, Center for Industrial and Labor Relations;
- Mr. Arthur W. Kirsch, E.F. Shelley and Co., Inc.;
- Mr. Donald Cook, E.F. Shelley and Co., Inc.;
- Mr. Charles Lucas, Coalition/JOBS;
- Professor Quinn Mills, Department of Economics, Massachusetts Institute of Technology;
- Professor Peter B. Doeringer, Department of Economics, John F. Kennedy School of Government, Harvard University;
- Mr. Jesse Simons, Labor Mediator.

Corporate Seminar

The Corporate Seminar was held on December 3 at the Gramercy Park Hotel in New York City. Dr. Marks chaired the meeting, and Professor Charles Myers of the Massachusetts Institute of Technology and Chairman of the National Manpower Policy Task Force acted as a primary resource to the discussion group. Attending the meeting were:

- Mr. Doug Cambern, Assistant Vice-President of Personnel, Pacific Telephone and Telegraph Company.
- Dr. Ronald James, Manager of Corporate Manpower Training, Texas Instruments, Inc.
- Mr. Arthur Kirsch, E. F. Shelley and Company, Inc.
- Mr. Charles Lucas, Coalition Jobs
- Mr. Oliver Niehouse, Executive Vice President Polypump, Ltd.
- Mr. Charles Rippey, United States Training and Employment Service
- Mr. Julius Rose, Executive Vice-President, Sloan Supermarkets, Inc.
- Mr. Peter Seitchik, Institute of Public Administration/Training Incentive Payments Program
- Mrs. Josephine Stuker, Administrative Assistant, Boise Cascade

APPENDIX C

CHARACTERISTICS OF THE SAMPLES

The Samples

Overall Design

As described in detail below, organizations were selected at random from the population of organizations into which HIT had initially been introduced, in the three cities of Baltimore, Newark and Cleveland. A first-line supervisor of a department with HIT trained workers was interviewed in each selected organization and also a representative of senior management, to provide data on the organization's reactions to HIT.

A sample of trainees who had left their initial organizations was selected at random from the company records of such "leavers," and an attempt made to follow them up by interviewing them at their current place of business.

A further sample of trainees who had expressed the intention of furthering their education, at the time of the 3-5 month follow up by the Projects, was selected at random. These trainees came from the same organizations as were originally included in the Project's 3-5 month studies.

Wages of individual trainees who had participated in the Project's 3-5 month studies were traced in as many of the organizations as were willing to open their files.

In the following pages, the characteristics and selection procedures for the cities, organizations, managers and workers that participated in this investigation are described.

The Cities

Baltimore, Newark, and Cleveland were chosen as upgrading centers as each has a large non-white, low-skilled population (Table 1.1). At the time of the selection of cities, the reported unemployment rate of non-whites was at least eight percent while that of whites was considerably lower (less than four per cent). Further, the unemployment rate of Blacks living in the inner cities' ghettoes was, in Baltimore and Cleveland, between ten and 22 percent. In Cleveland, of the unemployed poor, 60 percent were Black. In each of these cities, Blacks comprise at least one-third of the population. Thus, there was a definite need in each city for programs to increase the vocational potential of

Labor Statistics of Baltimore, Newark, and Cleveland at Time of City Selection

Labor Statistics for the Late 1960's in Baltimore Newark, and Cleveland	Baltimore	Newark	Cleveland
Unemployment 1967 Nonwhite White Average Black City Ghetto	 8.3%[1] 2.3 3.8 10-15% (males) 22% (females)	 10.5%[3] 3.8 4.8 N.A.	 8.9%[6] 2.7 3.8 15.5% (males and females)
Black Population	1967: 40%[2]	1967: 34%[4]	1966: 34%[7]
Mean Earnings	1967: $118.67/week Average factory worker earnings.[1]	1967: $120.60/week Average factory worker earnings. $119.66 Average production worker earnings.[3]	1964: $101.16/week Median ghetto family income.[6] 1967: Average laborer's earnings $112/80 [8]
Other Information	Black population 19.1% in 1950 and 41.1% in 1966.[2]	1967: of unemployed poor, 60% Black, 20% Puerto Rican, 20% White.[5]	1970: Black population has grown to 40%.[7]

1/ United States Department of Labor Release, January 4, 1968, No. 3027.

2/ Internal Research Conducted by HDC.

3/ United States Department of Labor Release, January 4, 1968, Northeastern New Jersey, No. 3028.

4/ County and City Data Book, 1967, A Statistical Abstract Supplement, U.S. Department of Commerce. 1967.

5/ Smith, G. M., On the Welfare, Institute of Management and Labor Relations, Rutgers, New Brunswick, New Jersey, May 1967.

6/ Internal Research Conducted by HDC.

7/ Cleveland In-Plant Training and Upgrading Project, Skill Achievement Institute. June 24,1968. Technical Memorandum 1200.6.

8/ Area Wage Survey: Cleveland, Ohio, Metropolitan Area, September, 1969. USDOL, Bul. 1660-22. February, 1970.

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minority workers. Although the HIT programs were directed at the low-skilled employed, rather than unemployed, the high unemployment among the Blacks in these cities indicated that there probably was a large population of low-skilled, minority workers in the cities.

Besides having many individuals who would benefit by upgrading, each of the cities was politically receptive to manpower programs for minority groups. Also, each city has specific racial problems that affected the worker. Baltimore has many of the social and labor problems of a large southern industrial city in which racial discrimination is strong among certain segments of the white population; Newark has been the scene of numerous racial riots and has significant non-white poverty problems, and Cleveland has labor unions known for their discriminatory racial policies.

Thus, each of these cities exhibited a need for a program that could improve the skills of its low- and semi-skilled workers.

The Organizations

Within each city, the organizations which were chosen for the Project's research studies were primarily those organizations in which initial marketing efforts had been successful. These same organizations were again used in the current investigation for the manager interviews and the wage survey.

Originally, ten organizations from each city were chosen for the current investigation; however, it was not possible to contact one organization in Newark and the final sample was comprised of 29 organizations, ten organizations from Baltimore and from Cleveland and nine organizations from Newark. Under the systems management of HDC, 17 organizations in both Baltimore and Newark, and 19 organizations in Cleveland participated in upgrading programs conducted by the projects. Thus, in each city, over half the organizations are represented in the sample of the current investigation.1/

In Table 1.2, a summary of the types and sizes of the organizations which participated in the current investigation

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1/ The projects conducted two or more upgrading programs in several of the organizations.

Table 1.2
Description of Organizations Which Participated in Upgrading Programs[1/]

	Type of Business	Number of Employees	Number of Upgraded Workers	Job Title Prior to Upgrading	Job Title Post Upgrading	Weekly Salary Prior to Upgrading	Weekly Salary Post Upgradir
BALTIMORE							
Organization A	Government-local; Education Services	N.A.	9	Varied among unskilled jobs	Glazier	varied	105
Organization B	Government-state; Health services	1400	9	Kitchen Aide	Food Supervisor	70	90-100
Organization C	Service-Health; Hospital	480	16	Varied	Food Service Supervisor	61	67
Organization D	Service-Industrial Services	135	8	Varied	Machine Operators	106-112	117-12
Organization E	Service-Health; Hospital	4100	11 13	Supervisor I Nurse Asst.	Supervisor II Nurse Asst. I	70-108 64	73-112 68
Organization F	Manufacturing, non durable goods	172	7	Hand Packers	Machine Operators	110	119
Organization G	Wholesale & Retail Trade--Retail	3000	8	Warehouse Attendant	Assistant Supervisor	60-70	64-74
Organization H	Manufacturing, non durable goods	250	8	Varied	Machine Operators	66-72	76-86
Organization I	Manufacturing, non durable goods	N.A.	7	Laborer	Machine Attendant	102-116	110-116
Organization J	Manufacturing, non durable goods	120	8	Lab Technician	Senior Lab Technician	70-92	77-101
Total Number of Workers			104				

1/ Note that the organizations cited in this table refer only to those which participated in the current investigation. These are also the organizations selected for the project's research studies. The upgrading programs cited are only the initial programs in each organization; workers participating in these programs formed the data base for the projects' research studies.

Table 1.2
Description of Organizations Which Participated in Upgrading Programs

	Type of Business	Number of Employees	Number of Upgraded Workers	Job Title Prior to Upgrading	Job Title Post Upgrading	Weekly Salary Prior to Upgrading	Weekly Salary Post Upgrading
NEWARK							
Organization K[2/]	Government-local	1157					
Department 1	Housing Services Maintenance	450	16	Laborer	Building Maintenance Worker	90-101	96-111
Department 2	Community Service	70	8	Junior Aide	Senior Aide	107-146	113-152
Organization L	Government-state; Education	1600	8	Varied	Records Clerk	Varied	63-126
Organization M	Government-local; Health Services	539	12	Clerk	Secretary	80	84
Organization N	Service Health Hospital	9000	10	Clerk	Clerk/Typist	63	73
Organization O	Service-Food Services	300	10	Kitchen Helper II	Kitchen Helper I	N.A.	N.A.
Organization P	Manufacturing, non Durable goods	6000	15	Custodian	Machine Operator	95-100	117
Organization Q	Manufacturing, durable goods	500	7	Assembler	Machine Operator	75	82
Organization R	Manufacturing, durable goods	1000	5	Varied	Mechanical Assembler	N.A.	N.A.
Total Number of Workers			91				

2/ Organization K is a large organization. Departments 1 and 2 are located in different buildings and each has an independent, almost completely autonomous management. Therefore, for the practical purposes of this investigation, they are regarded as two different organizations.

Table 1.2

Description of Organizations Which Participated in Upgrading Programs

	Type of Business	Number of Employees	Number of Upgraded Workers	Job Title Prior to Upgrading	Job Title Post Upgrading	Weekly Salary Prior to Upgrading	Weekly Salary Post Upgrading
CLEVELAND							
Organization S	Government-local; Sanitation	532	14	Operator II	Operator I		134
Organization T	Service	100	8	Laborer	Assistant Washman or Packer	50-68	56-76
Organization U	Manufacturing, non durable goods	78	7	Varied	N.A.	N.A.	N.A.
Organization V	Manufacturing, durable goods	675	9	Varied	Welder, Helper, Laborer	101	141
Organization W	Manufacturing, durable goods	130	8	Varied	Inspector o: Supervisor	70-104	76-110
Organization X	Wholesale & Retail Trade, Retail	191	12	Clerk	Advanced Clerk	66-88	71-93
Organization Y	Wholesale & Retail Trade, Retail	35	12	Clerk, Cashier or Cutter	Advanced Clerk or Supervisor	78-190	86-209
Organization Z	Wholesale & Retail Trade, Retail	60	11	Clerk	Advanced Clerk	72	80
Organization YY	Wholesale & Retail Trade, Retail	6000	7	Cashier	Advanced Cashier or Asst. Manager	102-150	112-165
Organization ZZ	Transportation, Communication, Public Utilities; Communications	6500	12	Varied	Operator	41(part-time)	81(full-time)
Total Number of Workers			100				

is presented. The table also includes a description of the job titles and salaries before and after upgrading, of workers who were trainees in the organization's first upgrading programs. The sample in each city includes government, service, and manufacturing business and, in Baltimore and Cleveland, wholesale and retail trade businesses. The Cleveland sample also includes a communciations business. Thus, a diversity of businesses were sampled.

An examination of Table 1.2 also indicates that most of the workers were in upgrading classes of seven to sixteen persons and were upgraded from low- or semi-skilled positions to semi-skilled or skilled positions.

The Managers

Within each of the 29 organizations selected for study, two managers were interviewed. In each organization a top-level manager (such as a president, vice president, or, in a large organization, a personnel manager) and a lower-level manager (a first-line supervisor responsible for a department with HIT trained workers) were interviewed. All managers had held their positions for at least one year.

Wages of Upgraded Workers

Under the systems management of HDC, totals of 214, 362 and 282 workers were upgraded in Baltimore, Newark, and Cleveland, respectively.

The samples of these trainees, used for the Project's 3-5 month follow up, form the basis for the Wage Tracking sample of the present study (see Table 1.3).

The wages of workers who participated in the Project's analytic studies were traced from January, 1969 to May, 1970. The interviewers were successful in obtaining the wage data from 13 of the 29 organizations; the remaining 16 organizations had policies prohibiting the release of employee wage data.

Persons Who Left Their Organization After Upgrading

Of the 249 persons in the projects' analytic studies, 52 persons (21 percent of the workers) who received upgrading training left their organizations within ten months after the training. Of these individuals, 14 were from Baltimore, 18 from Newark, and 20 from Cleveland. To investigate their

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Table 1.3

Race and Sex of Upgraded Workers in Projects' Research Studies

Used for Current Wage Tracking Study

Race and sex of workers in three project research studies	Baltimore	Newark	Cleveland	Total 2/
White Males	10	2	6	18(07)
White Females	6	9	6	21(08)
Total White	16	11	12	39
Nonwhite Males 1/	31	14	36	81(33)
Nonwhite Females	52	46	31	129(52)
Total Nonwhite	83	60	67	210
Total	99	71	79	249

1/ All nonwhite members of the sample were Black except for one Puerto Rican in Newark and one in Cleveland.

2/ The percentages corresponding to the subtotals are in parentheses.

current activities and their reasons for leaving, a random sample of 38 persons (73 percent of the total who left) was selected for interviewing. The sample for each city, proportionate to the number of workers in that city who left their jobs after upgrading, was drawn. Of the 38 persons, the interviewers were able to locate 17. A maximum of three interview attempts were made to contact each potential interviewee, even if he had moved to another part of the country. In view of the degree of transience that characterizes this population and the fact that the stranger to the ghetto neighborhood (in this case our interviewer) is almost always regarded with suspicion, this interview return (45 percent) should be regarded as quite successful.

Workers with Educational Aspirations

During the interviews conducted by the three cities, 121 of the 249 workers interviewed (approximately 40 workers from each city) indicated a desire to further their education. To determine the action that these workers had taken to actually fulfill these desires, a random sample of 51 of these workers (42 percent) was interviewed. Seventeen workers from each city were interviewed.

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EMPLOYMENT IN PERSPECTIVE: THE NEGRO
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ABSTRACT - THIS REPORT ANALYZES RECENT
DEVELOPMENTS IN THE LABOR FORCE STATUS OF
BLACKS AND EXAMINES THEIR JOB STATUS RELATIVE
TO WHITES. DATA ON EMPLOYMENT, UNEMPLOYMENT,
LABOR FORCE PARTICIPATION, AND FULL-OR PART-
TIME STATUS ARE BROKEN DOWN BY RACE, AGE,
SEX, AND OCCUPATION. THESE DATA SHOW A
REDUCTION OF THE BLACK/WHITE UNEMPLOYMENT
RATIO BELOW 2:1 FOR THE FIRST TIME SINCE
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Employment
in Perspective:

The Negro Employment Situation

REPORT 391

U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
1971

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1971

U.S. DEPARTMENT OF LABOR
J. D. Hodgson, Secretary

BUREAU OF LABOR STATISTICS
Geoffrey H. Moore, Commissioner

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Preface

This report is the latest in the Bureau of Labor Statistics series on Employment in Perspective. The earlier publications include Employment in Perspective: An Examination of Recent Developments in the Labor Force, Employment, and Unemployment, BLS Report 380, June 1970, and Employment in Perspective: Youth Job Situation in Summer 1970, BLS Report 383, August 1970. The present report analyzes recent developments in the labor force status of Negroes and examines their job situation relative to whites.

This report was prepared in the Bureau's Office of Manpower and Employment Statistics, Division of Employment and Unemployment Analysis, by Gloria P. Green, under the supervision of John E. Bregger.

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Employment in Perspective: The Negro Employment Situation

Introduction

The recent slowdown in economic activity has had serious repercussions for Negro workers.[1] However, their employment situation did not deteriorate quite as much as it had during previous economic declines, and their unemployment rate rose at a slightly slower pace, proportionally, than did the rate for white workers.

Both Negro and white unemployment rates in 1970 were at their highest annual levels since 1964. The Negro jobless rate increased from 6.4 to 8.2 percent between 1969 and 1970, while the white rate increased from 3.1 to 4.5 percent. The advance in the Negro rate was relatively less than the rise in the white rate. As a result, the ratio of Negro-to-white jobless rates, which had not been below 2 to 1 at any time since 1953, fell to 1.8 to 1 in 1970.

Early in 1971, the relative position of Negro-to-white joblessness remained essentially as it was during 1970. The Negro jobless rate was 9.5 percent in the first quarter, compared with a rate of 5.5 percent for white workers. The ratio between the two rates was 1.7 to 1, slightly below the 1970 ratio.

This report examines recent developments in the employment and unemployment situation of Negroes and provides some possible explanations for the recent behavior of the Negro jobless rate.

Labor Force Status

The Negro civilian labor force continued to expand in 1970 at a fast pace despite the reduced availability of jobs. (See table 1.) At 9.2 million, the Negro labor force was up 250,000 from the 1969 level, the largest annual advance since 1960. Three-fifths of the 1969–70 expansion occurred among adult men, primarily in the 20 to 34 year-old category. A large part of the adult male increase reflected the return to civilian life of young men separated from the Armed Forces during the year. The adult female labor force rose somewhat less, and the teenage labor force showed no growth over the year.

Continuing the trend which has been in evidence for the past decade, the Negro labor force participation rate registered a small decline in 1970. However, the reduction in participation was comparatively smaller than in the past several years. This decline continued to be particularly evident among males, primarily teenagers and young men 20 to 24 years of age. (See table 2.) However, the 1969–70 decline in participation rates for 20 to 24 year-old Negro males occurred at a time when the participation rate for young adult white males was rising. For the latter group, the rise in participation rates represents a reversal of trend, because rates for both Negro and white men in this age group had been declining since the mid-1960's, although the decline for whites had been at a somewhat slower pace than that for Negroes. Labor force participation among Negro female teenagers and young women 20 to 24 years of age also declined in 1970; in contrast, among white women, participation rates for both age categories increased significantly in 1970. This declining participation among young Negroes became pronounced in the third quarter of 1970, and corresponded with an upsurge in their jobless rate; this rise suggests increased discouragement over job prospects in the last half of the year.

Employment

Negro employment, at 8.4 million in 1970, rose 60,000 or nearly 1.0 percent from 1969 to 1970. This change compares with a much larger employment increase (215,000) in the previous year. The 1969–70 job growth, which was proportionately about equal to the rise in white employment, was divided evenly between adult men and women, as the number of employed teenagers changed little over the year. In contrast, the gain in white employment occurred almost entirely among adult women.

Full- and part-time employment. The relatively small over the year increase in Negro employment occurred exclusively in part-time employment, as was the case

[1] Statistics for members of Negro and other minority races—called "Negro and other races"—are used to indicate the situation for Negro workers. Negroes constitute about 92 percent of this larger group.

among white workers. The number of Negroes on part-time schedules rose about 90,000. Most of these persons were involuntary part-time workers, i.e., those who had taken a part-time job only after failing to find full-time work or whose workweek was reduced to less than 35 hours because of unfavorable economic factors. The number of workers on full-time schedules (working 35 or more hours a week) fell slightly in 1970. (See table 3.) By contrast, more than four-fifths of the 215,000 increase in Negro employment in 1969 had been accounted for by workers on full-time schedules.

Occupational changes. During the decade of the 1960's, Negro employment in the better-paying occupations had risen rapidly, while employment in the lower-paying, less secure occupations declined.[2] In 1970, despite the economic slowdown, Negroes continued to make further progress up the occupational ladder.

Table 4 shows the number of Negroes employed in each occupational group and the extent of change between 1969 and 1970. Although the rise (60,000) in total Negro employment was small, the number of Negroes employed in white-collar occupations rose 7 percent, or 160,000. This increase primarily reflected a significant advance in the number of Negroes securing jobs in the professional, technical, and managerial fields. As a result, the proportion of all Negro workers who were employed in white-collar jobs reached 28 percent in 1970 compared with 26 percent in 1969. Nevertheless, the proportion of Negroes in white-collar jobs still remained well below that of white workers, of whom 50 percent were in white-collar jobs in 1970. However, younger Negro workers (the newer jobholders) were concentrated more heavily in these jobs than older Negroes; the same was true among whites but to a much lesser degree.

Within the blue-collar sector, Negro employment was essentially unchanged over the year. Consistent with recent trends, employment of farm and private household workers continued to decline in 1970.

Table 5 shows the distribution of Negroes and whites among occupation groups.[3] Only 13 percent of the employed Negroes held professional, technical, and managerial positions in 1970 compared with 26 percent for whites. Similarly, among skilled craftsmen and foremen, the proportions were 8 percent for Negroes and 14 percent for whites. Twenty-two percent of all employed Negroes were engaged in private household work, farm, and laboring jobs, more than twice the proportion for whites (9 percent). However, in 1960, the proportion of Negroes employed in these jobs had been much higher—40 percent. The extent of Negro penetration in the major occupational categories also is highlighted in table 6, which indicates the relative share of the Nation's jobs held by Negroes in each occupation. Overall, although Negro employment gains for the year were achieved in the higher-skill, higher-level occupations, Negroes still constitute a disproportionate share of the workers in most low-paying occupations.

Unemployment Developments

Despite the fact that they represent only 11 percent of the civilian labor force, Negroes or members of other minority races were 18 percent (750,000) of the Nation's 4.1 million jobless workers in 1970; they were 20 percent of the total (570,000) in 1969.

Age-sex distribution. Between 1969 and 1970, unemployment among Negro adult men rose much more sharply than among adult women or teenagers. Their unemployment increased about 60 percent, and their unemployment rate rose from 3.7 to 5.6 percent, reaching its highest point since 1965. Joblessness among Negro adult women and teenagers increased somewhat less rapidly (about 20 percent each). The jobless rate for adult women rose from 5.8 to 6.9 percent, while the teenage rate increased from 24.0 to 29.1 percent.

[2] For a long-term analysis of the occupational advances of Negroes, see Claire Hodge, "The Negro Job Situation: Has It Improved?" Monthly Labor Review, January 1969, pp. 20–28.

[3] Statistics based on major occupational groupings mask important differences within the groups. Within any of the broad occupation groups for which data are available, there are occupations with a wide range of earnings levels and status, and Negroes may have entered the lower levels in greater proportions than they have entered the higher levels. Moreover, differences in pay exist even within a specific occupation, and these too could result in a greater degree of occupational inequality than is apparent from the broad occupational group data.

Of the 750,000 jobless Negroes in 1970, about 265,000 were adult men, 250,000 were adult women, and 235,000 were teenagers. About three-fifths each of the jobless adult men and women were in the central age group—25 to 54 years of age. Joblessness among teenagers in 1970 was distributed about equally between boys and girls. Most of the unemployed adult men had lost their previous jobs, the majority of the jobless adult women were returning to the labor force after a period of absence, and most of the teenagers were seeking their first jobs.

Full time, part time. The increase in Negro joblessness over the year was concentrated among adult male full-time jobseekers. The rate for all Negro full-time jobseekers increased from 5.8 to 7.7 percent, while the rate for Negro part-time workers rose at a somewhat slower pace—from 10.0 to 11.5 percent.

Despite the reduced availability of jobs, more than four-fifths of the jobless Negro workers in 1970 were seeking a full-time job. These included 250,000 unemployed adult men (nine-tenths of all unemployed adult men), 215,000 adult women (four-fifths of all unemployed adult women), and 155,000 teenagers (two-thirds of all unemployed teenagers). Teenagers comprised about three-fifths of the 140,000 Negro part-time jobseekers in 1970.

Duration of unemployment. The incidence of joblessness among Negroes in 1970 was primarily of a short-term nature. Among those Negroes unemployed at any point of time in 1970, the average length of time they had been unemployed through the reference week of the survey, was 9.0 weeks in 1970; this number was up only moderately over the 1969 level of 8.5 weeks. These figures compare with an average duration of unemployment for whites of 8.7 and 7.8 weeks in 1970 and 1969, respectively. (See table 7.)

In the average week in 1970, about 380,000, or one-half of the jobless Negro workers, had been unemployed for 1 month or less, while 250,000 or one-third had been jobless 5 to 14 weeks. At the other extreme, however, 125,000, or 16 percent, were among the long-term unemployed, that is, had looked for work for 15 weeks or longer. About 50,000 of these long-term unemployed were household heads.

Occupational distribution. Among the major occupation groups, Negroes last employed in blue-collar occupations experienced the sharpest rise in unemployment over the year. The jobless rate for Negro blue-collar workers rose from 5.7 to 8.6 percent. Within the blue-collar group, operatives and unskilled laborers posted the largest increases; the rate for operatives increased from 5.9 to 8.9 percent, while the rate for laborers climbed from 7.4 to 10.5 percent. Within the white-collar group, clerical workers experienced the biggest rise in joblessness. In general, the increases in occupational unemployment were not substantially different among white workers, except for the large advance in joblessness in the professional and technical category, which was almost entirely among whites.

As a whole, unemployment among Negroes was most prevalent among lesser skilled workers in 1970. Unskilled laborers, service workers (private household and other), and semiskilled operatives together represented more than three-fifths of the experienced unemployed Negroes, about equal to their proportion of total employment.

Comparative Unemployment Trends

One way of looking at comparative unemployment trends between black and white workers is to examine the relative unemployment rates of the two groups. In doing this, it must be required that the comparison of overall rates is affected by the age-sex composition of the two groups, since women and youth tend to have higher rates than adult men, and the age-sex composition of the Negro and white labor force is both different and changing over time. It also must be recognized that changes in labor force participation rates are sometimes associated with changes in unemployment: When unemployment rises, some people tend to drop out of the labor force.

As indicated earlier, the number of both Negro and white jobless workers rose sharply during 1970. Between 1969 and 1970, Negro unemployment increased by 180,000 (31.9 percent) and joblessness among whites rose by 1.1 million (47.6 percent). As a result, the ratio of Negro-to-white jobless rates, which

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had averaged 2 to 1 or higher every year since 1953, dropped from 2.1 to 1 in 1969 to 1.8 to 1 in 1970.

The narrowing of the differential between the two rates began to take place around mid-1969, when the first employment effects of the slowdown became noticeable, and the differential continued to edge downward throughout 1970 and early 1971. To illustrate these developments more clearly, table 8 shows the seasonally adjusted quarterly rates for Negro and white workers from 1969 through the first quarter of 1971. As the table indicates, the Negro jobless rate (seasonally adjusted) moved down from 6.6 percent in the second quarter of 1969 to 6.3 percent in the fourth quarter, while the rate for whites inched up from 3.1 to 3.3 percent. As a result, the differential fell from 2.1:1 to 1.9:1. As joblessness for both Negro and white workers continued to rise in 1970 and early 1971, the relative increase for Negroes continued to be smaller than for whites. The ratio reached 1.7 to 1 by the fourth quarter of 1970 and remained at this level in the first quarter of 1971. Nevertheless, since the fourth quarter of 1969, the ratio of Negro-to-white joblessness has been below the 2-to-1 pattern that had prevailed for more than a decade. This narrowing in the Negro-white jobless rate ratio was caused exclusively by further comparative improvements in the job situation among adult Negroes. As shown in table 8, the ratio of Negro-to-white joblessness for adult men was 1.8 to 1 in 1970 compared with 1.9 to 1 in 1969. For adult women, the differential dropped from 1.7 to 1 in 1969 to 1.6 to 1 in 1970.

A lowering of the Negroes' jobless rate relative to that for whites first became apparent for adults in the mid-1960's; for example, in 1964, the Negro-white ratios were 2.3 to 1 for adult men and 2.0 to 1 for adult women, at a time when the overall ratio was 2.1 to 1. By 1969, these ratios had dropped to 2.0 to 1 for men and 1.7 to 1 for women, whereas the overall ratio remained unchanged at 2.1 to 1. The reason for this shift is that the unemployment rate for Negro teenagers deteriorated considerably relative to that for whites over this period at the same time that teenagers were becoming a larger proportion of total unemployment.

For Negro teenagers, the jobless rate in 1970 (29.1 percent) continued to be more than double the rate for white teenagers (13.5 percent), and the ratio of their unemployment rates was not significantly changed during the economic slowdown. The ratio of Negro-to-white teenage joblessness was last below 2 to 1 in 1964 (1.8:1). In 1965, the Negro teenage rate rose to double the white rate, and by 1967, it was 2.4 times as high. In both 1969 and 1970, the rate for Negro teenagers was about 2.2 times as high as that for white teenagers.

The problem of joblessness among Negro teenagers continued to be most serious among girls. In 1970, the unemployment rate for Negro teenage girls increased from 27.6 to 34.4 percent, while the rate for Negro teenage boys rose from 21.2 to 24.9 percent. Thus, although the 1970 ratio of Negro-to-white joblessness among male teenagers dropped below the 2-to-1 pattern that had held since 1965 (1.8 to 1), the ratio of Negro-to-white jobless rates of female teenagers increased from 2.4 to 1 in 1969 to 2.6 to 1 in 1970.

Some Factors in the Declining Ratio of Negro-White Joblessness

To understand better the 1969–70 change in the ratio of Negro-white unemployment rates, it is necessary to bear in mind that Negroes and members of other minority races historically have constituted a disproportionate share of the unemployed. Prior to the fall of 1969, Negroes made up 2 out of every 10 of the total unemployed, twice their proportion of the civilian labor force. During the period of rising unemployment, the number of Negroes added to the swelling jobless total continued to exceed their 1 to 10 labor force ratio. They accounted for approximately 1½ out of every 10 persons added to the unemployed rolls, although this figure is less than the historical 2 out of 10 proportion. Therefore, the "narrowing" in Negro-white joblessness differentials in recent months was not quite as dramatic as might appear at first glance. Proportionate to the size of their labor force, more Negroes than whites still became unemployed in 1970.

A number of factors may have played a part in the narrowing of the Negro-white

unemployment rate differential. First, the industrial distribution of Negro employment appears to have played a major role. The narrowing of the ratio between the two rates first began to take place around mid-1969, when the slowdown in employment growth generally was confined to a few "sophisticated" industries where the work force was disproportionately white. In particular, substantial job cutbacks in defense and aerospace industries—mainly in ordnance and aircraft—tended to exert upward pressure on the white unemployment rate but had little or no effect on the rate for Negroes, who are not employed in these industries in large numbers.[4] Conversely, relatively few cutbacks occurred in the service industries and government, where many Negroes are employed. This explanation is supported by the fact that most of the narrowing of the black-white jobless ratio took place prior to 1970.

Second, as mentioned earlier, labor force participation rates for Negro youth between the ages of 16 and 24, particularly among males, fell at the same time that rates for white young persons were rising. This decline was an indication that a disproportionate number of young Negro workers were becoming discouraged over job prospects and leaving or refraining from entering the labor force. These differential movements in labor force participation appear to have had some effect upon the narrowing in the Negro-white jobless rate ratio, particularly during the latter half of 1970 when the discouragement became more pronounced, since it is generally assumed that higher participation for this age group would partially be reflected in higher unemployment.

Third, it is possible that employers have become more conscious of both public and private efforts to alleviate the social and economic ills of Negroes. To the extent that they are aware of these moves, they have made special efforts to improve hiring standards for Negroes and to retain them or at least to refrain from laying them off discriminately during periods of employment reductions. However, there is no clear statistical evidence to support this contention.

Finally, the long-term rise in the levels of education and skill among Negroes has enabled many to enter occupations where joblessness tends to be lower than in those where Negroes were employed earlier. Moreover, the effect of the government manpower programs have permitted large numbers of Negroes to move into, and gain some seniority in, better-paying jobs. Nonetheless, as indicated earlier, Negroes remain concentrated heavily in comparatively low-paying jobs within the service-producing industries, which, in any case, have been less affected by the slowdown in economic activity.

Some Additional Considerations

The relatively slower upturn of the Negro jobless rate during the past year and a half also has given rise to some hopes of a permanent narrowing of the Negro-white unemployment differential. Although the above factors appear to have contributed to the recent narrowing of the Negro-white unemployment rate ratio, during previous cyclical economic swings short-lived narrowings of the ratio also have taken place in the initial stages of the slowdown. During the recovery phases, the ratio typically reverted to its previous pattern. In none of the previous slowdowns, however, did the ratio remain below 2 to 1 for an extended period.

A brief examination of the 1960–61 recession may serve to clarify the point. In May of 1960, the cyclical peak of economic activity had been reached and the Nation was about to enter its third recession in less than 10 years. As seen in table 9, the jobless rate and level for white workers, after remaining stable during the first half of 1960, edged up in the third quarter and rose substantially in the fourth quarter. In contrast, the jobless rate and level for Negroes remained stable for the first three quarters of 1960 and rose only in the fourth quarter. As a result, the jobless rate differential fell from 2.2:1 in the first quarter of 1960 to 1.9:1 in the third quarter. The fourth quarter rise in Negro joblessness, however, caused the ratio to edge back to 2.0:1. As the 1960–61 recession deepened, jobless levels and rates for both Negroes and whites rose by a similar degree, as they have during much of 1970. By the second quarter of 1961, unemployment for both whites and Negroes had peaked, but in the ensuing recovery

[4] See Employment In Perspective, BLS Report 380, June 1970.

Negro unemployment declined at a much slower pace than white unemployment. Consequently, the differential rose from 2.0 to 1 in the second quarter of 1961, when unemployment rates for both whites and Negroes were at their highest level, to 2.2:1 the fourth quarter of 1961 and 2.4:1 in the second quarter of 1962.

* * *

The Negro-to-white jobless rate differential narrowed markedly during the 1970 slowdown in economic activity, as the ratio fell below 2 to 1 for the first time since 1953. However, earlier experience would suggest that a permanent reduction of the ratio of Negro and white jobless rates cannot be verified until the recovery phase of the current slowdown is passed.

Table 1. Civilian labor force, employment, and unemployment by color, sex, and age, annual averages, 1969–70

(Numbers in thousands)

Employment status, sex, and age	Negro and other races				White			
	1970	1969	Change		1970	1969	Change	
			Number	Percent			Number	Percent
Civilian labor force	9,197	8,954	243	2.7	73,518	71,779	1,739	2.4
Men, 20 years and over	4,726	4,579	147	3.2	42,463	41,772	691	1.7
Women, 20 years and over	3,664	3,574	90	2.5	24,616	23,839	777	3.3
Both sexes, 16–19 years	807	801	6	.7	6,439	6,168	271	4.4
Employed	8,445	8,384	61	.7	70,182	69,518	664	1.0
Men, 20 years and over	4,461	4,410	51	1.2	41,093	40,978	115	.3
Women, 20 years and over	3,412	3,365	47	1.4	25,521	23,032	489	2.1
Both sexes, 16–19 years	573	609	−36	−5.9	5,568	5,508	60	1.1
Unemployed	752	570	182	31.9	3,337	2,261	1,076	47.6
Men, 20 years and over	265	168	97	57.7	1,371	794	577	72.7
Women, 20 years and over	252	209	43	20.6	1,095	806	289	35.9
Both sexes, 16–19 years	235	193	42	21.8	871	660	211	32.0
Unemployment rate	8.2	6.4	1.8	28.1	4.5	3.1	1.4	45.2
Men, 20 years and over	5.6	3.7	1.9	51.4	3.2	1.9	1.3	68.4
Women, 20 years and over	6.9	5.8	1.1	19.0	4.4	3.4	1.0	29.4
Both sexes, 16–19 years	29.1	24.0	5.1	21.3	13.5	10.7	2.8	26.2

Table 2. Civilian labor force participation rates [1] by color, sex, and age, annual averages, 1960–70

Sex and age	Negro and other races				White			
	1970	1969	1965	1960	1970	1969	1965	1960
Total	61.8	62.1	62.9	64.5	60.2	59.9	58.5	58.8
Males								
16 years and over	76.5	76.9	79.6	83.0	80.0	80.2	80.8	83.4
16–19 years	47.3	49.5	51.3	57.5	57.5	56.8	54.1	55.9
20–24 years	83.5	84.4	89.8	90.4	83.3	82.6	85.3	87.8
25–54 years	91.9	92.3	94.1	94.8	96.3	96.5	97.0	97.3
25–34 years	93.7	94.4	95.7	96.2	96.7	97.0	97.4	97.7
35–44 years	93.2	92.7	94.2	95.5	97.3	97.4	97.7	97.9
45–54 years	88.2	89.5	92.0	92.3	94.9	95.1	95.9	96.1
55–64 years	79.2	77.9	78.8	82.5	83.3	83.9	85.2	87.2
65 years and over	27.4	26.1	27.9	31.2	26.7	27.3	27.9	33.3
Females								
16 years and over	49.5	49.8	48.6	48.2	42.6	41.8	38.1	36.5
16–19 years	34.1	34.6	29.5	32.8	45.6	44.6	39.2	40.3
20–24 years	57.7	58.6	55.2	48.8	57.7	56.4	49.2	45.7
25–54 years	59.1	59.2	57.9	56.3	48.8	47.8	43.6	41.3
25–34 years	57.6	57.8	54.0	49.7	43.2	41.7	36.3	34.1
35–44 years	59.9	59.5	59.9	59.8	49.9	48.6	44.3	41.5
45–54 years	60.2	60.8	60.2	60.5	53.7	53.0	49.9	48.6
55–64 years	47.1	47.5	48.9	47.3	42.6	42.6	40.3	36.2
65 years and over	12.2	11.9	12.9	12.8	9.5	9.7	9.7	10.6

[1] Percent of the civilian noninstitutional population in the civilian labor force.

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Table 3. Full- and part-time labor force status of Negroes and other races by sex and age, annual averages, 1969–70

(Number in thousands)

Full- and part-time status	Total		Men, 20 years and over		Women, 20 years and over		Both sexes, 16–19 years	
	1970	1969	1970	1969	1970	1969	1970	1969
Full time								
Civilian labor force	8,018	7,813	4,491	4,380	3,010	2,922	517	510
Employed	7,402	7,357	4,244	4,228	2,797	2,742	362	387
Full-time schedules	6,872	6,898	4,032	4,042	2,550	2,531	291	325
Part time for economic reasons	530	459	212	186	247	211	71	62
Unemployed, looking for full-time work	616	456	248	152	214	180	155	124
Unemployment rate	7.7	5.8	5.5	3.5	7.1	6.1	29.9	24.4
Part time								
Civilian labor force	1,179	1,141	235	199	654	652	290	291
Employed, voluntary part time	1,043	1,027	217	183	615	622	210	223
Unemployed, looking for part-time work	136	114	18	16	38	29	80	68
Unemployment rate	11.5	10.0	7.5	8.1	5.9	4.5	27.5	23.5

Table 4. Employment of Negroes and other races by occupation, annual averages, 1960–70

(Number in thousands)

Occupation	1970	1969	1965	1960	Change					
					1960–69		1965–69		1969–70	
					Number	Percent	Number	Percent	Number	Percent
Total	8,445	8,384	7,643	6,927	1,457	21.0	741	9.7	61	0.7
White-collar workers	2,356	2,197	1,493	1,113	1,084	97.4	704	47.2	159	7.2
Professional and technical	766	695	524	331	364	110.0	171	32.6	71	10.2
Managers, officials, and proprietors	297	254	204	178	76	42.7	50	24.5	43	16.9
Clerical workers	1,113	1,083	630	503	580	115.3	453	71.9	30	2.8
Salesworkers	180	166	135	101	65	64.4	31	23.0	14	8.4
Blue-collar workers	3,561	3,591	3,133	2,780	811	29.2	458	14.6	–30	–.8
Craftsmen and foremen	692	709	521	415	294	70.8	188	36.1	–17	–2.4
Operatives	2,004	2,004	1,646	1,414	590	41.7	358	21.7	0	0
Nonfarm laborers	866	877	966	951	–74	–7.8	–89	–9.2	–11	–1.3
Service workers	2,199	2,239	2,419	2,196	43	2.0	–180	–7.4	–40	–1.8
Private household	652	714	963	982	–268	–27.3	–249	–25.9	–62	–8.7
Other	1,546	1,525	1,456	1,214	311	25.6	69	4.7	21	1.4
Farm workers	328	356	599	841	–485	–57.7	–243	–40.6	–28	–7.9
Farmers and farm managers	87	84	138	219	–135	–61.6	–54	–39.1	3	3.6
Laborers and foremen	241	272	461	622	–350	–56.3	–189	–41.0	–31	–11.4

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Table 5. Occupational distribution of employment by color, annual averages, 1960–70

Occupation	Negro and other races				White			
	1970	1969	1965	1960	1970	1969	1965	1960
Thousands of employed persons	8,445	8,384	7,643	6,927	70,182	69,518	63,445	58,850
Percent distribution	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White-collar workers	27.9	26.2	19.5	16.1	50.8	49.8	47.9	46.6
Professional and technical	9.1	8.3	6.9	4.8	14.8	14.5	13.2	12.1
Managers, officials, and proprietors	3.5	3.0	2.7	2.6	11.4	11.1	11.2	11.7
Clerical workers	13.2	12.9	8.2	7.3	18.0	17.7	16.6	15.7
Salesworkers	2.1	2.0	1.8	1.5	6.7	6.5	6.9	7.0
Blue-collar workers	42.2	42.8	41.0	40.1	34.5	35.5	36.4	36.2
Craftsmen and foremen	8.2	8.5	6.8	6.0	13.5	13.6	13.7	13.8
Operatives	23.7	23.9	21.5	20.4	17.0	17.8	18.4	17.9
Nonfarm laborers	10.3	10.5	12.6	13.7	4.1	4.0	4.3	4.4
Service workers	26.0	26.7	31.6	31.7	10.7	10.5	10.3	9.9
Private household	7.7	8.5	12.6	14.2	1.3	1.3	1.6	1.7
Other	18.3	18.2	19.1	17.5	9.4	9.2	8.7	8.2
Farm workers	3.9	4.2	7.8	12.1	4.0	4.2	5.4	7.4
Farmers and farm managers	1.0	1.0	1.8	3.2	2.4	2.5	3.3	4.3
Laborers and foremen	2.9	3.2	6.0	9.0	1.6	1.7	2.1	3.0

Table 6. Employment of Negro and other races as a percent of total employment in major occupation groups, annual averages, 1960–70

Occupation	1970	1969	1965	1960
Total	10.7	10.8	10.8	10.5
White-collar workers	6.2	6.0	4.7	3.9
Professional and technical	6.9	6.5	5.9	4.4
Managers, officials, and proprietors	3.6	3.2	2.8	2.5
Clerical workers	8.1	8.1	5.7	5.2
Salesworkers	3.7	3.5	3.0	2.4
Blue-collar workers	12.8	12.7	11.9	11.6
Craftsmen and foremen	6.8	7.0	5.7	4.9
Operatives	14.4	13.9	12.3	11.8
Nonfarm laborers	23.3	23.9	26.2	26.8
Service workers	22.6	23.5	27.1	27.4
Private household	41.8	43.8	49.2	49.8
Other	19.0	19.3	20.9	20.1
Farm workers	10.5	10.8	14.8	16.2
Farmers and farm managers	5.0	4.6	6.2	7.9
Laborers and foremen	17.6	18.8	25.4	25.9

Table 7. Unemployed persons by color and duration of unemployment, annual averages, 1969–70

Duration	Negro and other races				White			
	Level, in thousands		Percent distribution		Level, in thousands		Percent distribution	
	1970	1969	1970	1969	1970	1969	1970	1969
Total	752	570	100.0	100.0	3,337	2,261	100.0	100.0
Less than 5 weeks	379	315	50.4	55.3	1,758	1,314	52.7	58.1
5 to 14 weeks	248	176	33.0	30.9	1,041	651	31.2	28.8
15 weeks and over	124	79	16.5	13.9	538	296	16.1	13.1
15 to 26 weeks	77	50	10.2	8.8	350	192	10.5	8.5
27 weeks and over	47	29	6.3	5.1	188	104	5.6	4.6
Average (mean) duration, in weeks	9.0	8.5	-	-	8.7	7.8	-	-

Table 8. Unemployment rates and ratios by color, sex, and age, 1969 to first quarter 1971

Color, age, and sex	Annual averages		Seasonally adjusted quarterly averages								
			1971	1970				1969			
	1970	1969	1st	4th	3d	2d	1st	4th	3d	2d	1st
Total:											
White	4.5	3.1	5.5	5.4	4.8	4.3	3.8	3.3	3.3	3.1	3.0
Negro and other races	8.2	6.4	9.5	9.3	8.5	8.2	6.9	6.1	6.5	6.7	6.2
Men, 20 years and over:											
White	3.2	1.9	4.0	4.0	3.5	3.1	2.6	2.1	2.0	1.8	1.8
Negro and other races	5.6	3.7	6.7	6.8	6.1	5.6	4.4	3.9	3.8	3.6	3.5
Women, 20 years and over:											
White	4.4	3.4	5.3	5.2	4.6	4.2	3.8	3.5	3.4	3.3	3.3
Negro and other races	6.9	5.8	8.3	7.4	7.0	7.1	6.0	5.3	6.2	6.2	5.7
Both sexes, 16–19 years:											
White	13.5	10.7	15.7	15.8	13.8	13.1	12.1	10.8	11.1	10.5	10.6
Males	13.7	10.0	15.3	15.6	14.3	13.6	11.6	10.3	10.4	9.5	10.2
Females	13.3	11.5	16.3	16.0	13.1	12.4	12.7	11.4	11.9	11.7	11.2
Negro and other races	29.1	24.0	31.8	32.8	29.8	27.7	25.3	24.0	23.3	25.4	23.4
Males	24.9	21.2	30.2	28.7	26.0	24.1	20.8	21.2	21.2	22.1	20.5
Females	34.4	27.6	33.9	38.3	34.4	32.2	31.5	27.9	26.1	29.5	27.2
	Ratio of Negro-to-white jobless rates										
Total, both sexes	1.8:1	2.1:1	1.7:1	1.7:1	1.8:1	1.9:1	1.8:1	1.8:1	2.0:1	2.2:1	2.1:1
Men, 20 years and over	1.8:1	1.9:1	1.7:1	1.7:1	1.7:1	1.8:1	1.7:1	1.9:1	1.9:1	2.0:1	1.9:1
Women, 20 years and over	1.6:1	1.7:1	1.6:1	1.4:1	1.5:1	1.7:1	1.6:1	1.5:1	1.8:1	1.9:1	1.7:1
Both sexes, 16–19 years	2.2:1	2.2:1	2.0:1	2.1:1	2.2:1	2.1:1	2.1:1	2.2:1	2.1:1	2.4:1	2.2:1
Males	1.8:1	2.1:1	2.0:1	1.8:1	1.8:1	1.8:1	1.8:1	2.1:1	2.0:1	2.3:1	2.0:1
Females	2.6:1	2.4:1	2.1:1	2.4:1	2.6:1	2.6:1	2.5:1	2.4:1	2.2:1	2.5:1	2.4:1

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Table 9. White and Negro employment status during 1960–61 recession

(Numbers in thousands)

Color, sex, and age	Seasonally adjusted quarterly averages									
	1962		1961				1960			
	2d	1st	4th	3d	2d	1st	4th	3d	2d	1st
White										
Civilian labor force	62,595	62,520	62,503	62,579	62,759	62,696	62,345	62,117	61,965	61,304
Employment	59,612	59,449	59,083	58,804	58,830	58,877	58,831	58,981	59,079	58,494
Unemployment	2,983	3,071	3,420	3,775	3,929	3,819	3,514	3,136	2,886	2,810
Unemployment rate	4.8	4.9	5.5	6.0	6.3	6.1	5.6	5.0	4.7	4.6
Negro										
Civilian labor force	7,830	7,833	7,841	7,812	7,754	7,796	7,849	7,789	7,713	7,495
Employment	6,939	6,949	6,906	6,835	6,753	6,829	6,962	7,036	6,946	6,743
Unemployment	891	884	935	977	1,001	967	887	753	767	752
Unemployment rate	11.4	11.3	11.9	12.5	12.9	12.4	11.3	9.7	9.9	10.0
Negro-to-white jobless rate differential	2.4:1	2.3:1	2.2:1	2.1:1	2.0:1	2.0:1	2.0:1	1.9:1	2.1:1	2.2:1

	Percent changes			
	1961–62 4th to 2d quarter	1961 2d to 4th quarter	1960–61 4th to 2d quarter	1960 1st to 3d quarter
White				
Civilian labor force	0.1	−0.4	0.7	1.3
Employment	.9	.4	0	.8
Unemployment	−12.8	−13.0	11.8	11.6
Unemployment rate	−12.7	−12.7	12.5	8.7
Negro				
Civilian labor force	−.1	1.1	−1.2	3.9
Employment	.5	2.3	−3.0	4.3
Unemployment	−4.7	−6.6	12.9	0
Unemployment rate	4.2	−7.8	14.2	−3.0
Negro-to-white jobless rate differential	-	-	-	-

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VT 014 354
GOLDSTEIN, HAROLD M.; HOROWITZ, MORRIS A.
PARAMEDICAL MANPOWER: A RESTRUCTURING OF OCCUPATIONS.

NORTHEASTERN UNIV., BOSTON, MASS. DEPT. OF ECONOMICS.
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ABSTRACT - THIS STUDY ANALYZED THE JOB REQUIREMENTS IN PARAMEDICAL OCCUPATIONS AT THE CAMBRIDGE HOSPITAL, WITH RECOMMENDATIONS FOR IMPROVED MANPOWER UTILIZATION. A DETAILED ACCOUNT WAS KEPT OF THE EASE AND DIFFICULTIES INVOLVED IN IMPLEMENTING THE CHANGES, AND THE RESULTING CHANGES IN THE QUALITY AND QUANTITY OF MEDICAL SERVICES WERE MEASURED. IN-DEPTH INTERVIEWS WITH SUPERVISORS AND PARAMEDICAL PERSONNEL PROVIDED TWO SETS OF JOB DESCRIPTIONS WHICH WERE THEN COMPARED TO PROVIDE A SINGLE LIST. THE STUDY FOUND THAT HIRING STANDARDS WERE TOO HIGH, AND SKILLED PERSONNEL WERE UNDER-UTILIZED. RESTRUCTURING PARAMEDICAL OCCUPATIONS AND LOWERING HIRING STANDARDS WERE RECOMMENDED TO IMPROVE HOSPITAL EFFICIENCY, PROVIDE CAREER LADDERS, IMPROVE MEDICAL SERVICES, AND IMPROVE EMPLOYMENT OPPORTUNITIES FOR DISADVANTAGED GROUPS. (BH)

VT 014 354

PARAMEDICAL MANPOWER:

A RESTRUCTURING OF OCCUPATIONS

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HAROLD M. GOLDSTEIN & MORRIS A. HOROWITZ

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PARAMEDICAL MANPOWER: A RESTRUCTURING OF OCCUPATIONS

by

Harold M. Goldstein and Morris A. Horowitz

This article is a summary of the findings and recommendations of a research project sponsored and financed by the U.S. Department of Labor, Manpower Administration.[1]

OBJECTIVES

The principal objectives of this research project, entitled Restructuring Paramedical Occupations, are the following:

1. To study and analyze the hiring-in requirements and the duties and functions of paramedical personnel in a single hospital;

2. To recommend changes to restructure occupations and to improve the utilization of manpower in that hospital;

3. To evaluate the successes and failures involved in the implementation of the recommendations;

4. To measure changes in quantity and quality of medical services resulting from the implementation of the recommendations; and to relate changes in service to such factors as changes in hiring-in standards, job duties and functions, and job structure.

The duration of this project was two and one-half years from June 1969 to November 1971. Our greatest research effort was devoted to objectives one and two listed above. While the major set of recommenda-

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1. The material presented in this paper was gathered under a project with the Office of Research and Development, Manpower Administration, U.S. Department of Labor, entitled, Restructuring Paramedical Occupations, by Harold M. Goldstein and Morris A. Horowitz, Department of Economics, Northeastern University, November 1971 (Contract No. 41-9-004-23). We gratefully acknowledge the cooperation of Dr. Howard Rosen and Mr. Joseph Collins of the Manpower Administration, and Dr. James Hartgering, Commissioner of Health for the City of Cambridge.

tions was made to The Cambridge Hospital in December 1970, other recommendations had been made prior and subsequent to December. Finally we had to determine the impact our recommendations had on solving the hospital's shortage of paramedical personnel and on the delivery of health services to the community.

An additional objective of the project was to study and analyze the problems encountered when a hospital introduces some basic changes in its occupational structure. Such an analysis may help determine whether obstacles to implementation are unique to a specific hospital or are basic to all hospitals. After we recommended changes, our main effort was to aid the hospital to implement the recommendations and to maintain a detailed account of the ease and difficulties encountered in the efforts at implementation. Implementation by one hospital could have a "demonstration" effect upon all other hospitals which have the same or similar problems with paramedical personnel and with the delivery of quality medical service to the community. Also, our findings can point up the legal, institutional and other barriers that have impeded the recommended changes in The Cambridge Hospital and are likely to impede similar changes in other hospitals.

Our interest was to develop recommendations that would be applicable to and implemented by many hospitals across the nation. It was therefore important to select a hospital that was somewhat typical or representative of many others in the United States and that was prepared to cooperate in our research project. The following criteria were developed

for the selection of a hospital:

1. A modest size hospital;

2. A hospital with progressive and forceful administration;

3. A hospital administration with a genuine interest in efficiency, equitable employment opportunities and, most importantly, the delivery of quality service to the public for a reasonable and equitable cost.

Crucial to the research was the complete and enthusiastic cooperation of a hospital with characteristics such as those listed above. We found such a hospital in The Cambridge Hospital, Cambridge, Massachusetts, which is under the supervision of Dr. James Hartgering, Commissioner of Health, Hospital and Welfare for the City of Cambridge.

We should not leave the impression that, because the administration of The Cambridge Hospital and several of the professional organizations, unions and physicians cooperated in this project, there was or is now complete harmony at the institution. The Cambridge Hospital faces problems similar to those of most hospitals in this country; and since it is a city hospital, many of its problems are compounded. Unlike many hospitals, The Cambridge Hospital and its administrators were willing to cooperate in the study, and from the start they indicated a willingness to implement recommended changes.[2]

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2. Before this project received assurance of federal funding, a hospital had to be found that would cooperate in the project. This was a difficult task. We were refused entry by several hospitals on the grounds that the project "would be disruptive," "would create tension among various factions within the hospital," or "would bring undesirables into the area."

METHODOLOGY

A. Methodology Used in Gathering Initial Basic Data

1. In-depth interviews were held with supervisors of the eleven paramedical categories included in this study in order to elicit from them a complete and exact list of assigned tasks and responsibilities of the employees under their jurisdiction (the terms function and task are used interchangeably throughout this study). Table 1 indicates, for each occupation, the number interviewed, the total number of persons employed and the percentage interviewed.

2. In-depth interviews (ranging in time from 1½ to 2½ hours each) were held with several paramedical employees in each of the eleven occupational categories to elicit from them a complete and exact list of performed duties, tasks and responsibilities.

3. These two independently arrived at job descriptions were then compared. If one included a task or an element of a task not described by the other, it was checked (e.g., the hematology technician under your jurisdiction states that he operates an autoclave; you, his supervisor, did not list this task at all in our interview. Does he or does he not use the autoclave?).

4. After analyzing and cross-checking the results for each occupational category, the tasks were then compared with the lists of functions compiled in our pilot study, Hiring Standards for Paramedical Manpower. The listed functions in that study were the result of detailed interviews with approximately 450 performers and 150 supervisors, specialists, administrators and pathologists.

5. To be certain that each interviewer and each performer would interpret each task in the identical way, we defined each task in terms of the elements of every function. This proved to be an enormous project. With the aid of private consultants and of senior nursing and administrative personnel at The Cambridge Hospital, each task was defined in detail. The interviewer then had an accurate description of each task.

Table 1 Number and Percentage of Personnel Interviewed by Occupation

OCCUPATION	NUMBER INTERVIEWED	TOTAL NUMBER EMPLOYED	PERCENTAGE INTERVIEWED
Registered Nurse	45	51	88.2
Licensed Practical Nurse	10	17	58.8
Nurses' Aide	28	31	90.3
Orderly	8	8	100.0
Ward Secretary	6	9	66.7
Surgical Technician	7	8	87.5
Psychiatric Attendant	7	7	100.0
X-Ray Technician	12	12	100.0
EKG Technician	1	1	100.0
Inhalation Therapy Technician	4	4	100.0
Neighborhood Health Worker	1	1	100.0
Laboratory Technician:			
1. Hematology Technician	2	2	100.0
2. Blood Bank Technician	2	3	66.7
3. Bacteriology Technician	2	2	100.0
4. Cytology Technician	1	1	100.0
5. Histology Technician	2	2	100.0
6. Urinalysis and Parasitology Technician	1	1	100.0
7. Chemistry	2	2	100.0
Administrative and Supervisory Personnel	38	42	90.5
TOTAL	179	204	87.7

6. All the specific functions for each of the occupations studied were ranked in order of difficulty, using such criteria as practical experience, educational exposure and general responsibilities. This ranking was completed by the researchers with the assistance of supervisory personnel (both nursing and medical) at The Cambridge Hospital and at several other medical centers. Further, a sample of the performers was also asked to aid in this ranking.

7. The interview formats were then prepared, and all responses were obtained and recorded by the interviewer. No performer was asked to fill out or in any way complete a questionnaire. Each performer was shown the list of functions and asked if they represented 95 percent of the tasks he or she performed over an average workweek. In several instances we found that performers could add one or two new items. However, significant additions to the interview format were made in only two areas - the psychiatry department and the ward secretaries.

8. On the possibility that some individual performers might tend to exaggerate their own areas of authority and responsibility, observations of approximately 50 percent of the sample were made. These observations were made by a graduate registered nurse and our research assistant. At times, one performer was observed for a period of four to five hours. However, in most cases, two or three performers in one ward or unit were observed by both the registered nurse and our research assistant for a period of four or five hours. Approximately 300 hours of observations were conducted during a two month period at The Cambridge Hospital. The graduate registered nurse was an outside consultant to the project, not an employee or former employee of the hospital.

9. Because it was difficult for each performer to estimate the amount of time he or she spent in the average week on each of the more than sixty functions, we developed the code indicated below to make this selection somewhat easier and more accurate.

Time Spent/Week (40 Hours)	Percent
Under 30 minutes	Less than 1
30 minutes - 2 hours	1 - 5
2 hours - 4 hours	6 -10
4 hours - 6 hours	11 -15
6 hours - 10 hours	16 -25
Over 10 hours	Greater than 25

In estimating time spent on each function, performers were asked to make their estimates in hours or percentages, whichever they found easier. Any performer who estimated "over 10 hours" or "greater than 25 percent" was asked to be more specific (e.g., "Would you estimate 20 hours out of 40 hours or 50 percent of your time?"). A specific number of hours over 10 or a specific percentage of time over 25 percent was finally obtained from each performer.

10. Table 2 averages all performers' time, whether they perform the function or not, and therefore, should add up to 100 percent. We assumed that there was not disproportionate bias, and we adjusted proportionately the amount of time spent on each group of functions so that the total adds up to 100 percent. Group 6 was not adjusted since lunch and breaks are specifically allocated periods of time.

The functions are separated into six groups as follows:

Group	Functions
1	1 - 18
2	19 - 30
3	31 - 47
4	48 - 63
5	64 - 69
6	Lunch and breaks

It is impossible to differentiate between the degree of difficulty of function 1 and function 2. We can differentiate the degree of difficulty between group 1 and group 2, or between group 3 and group 4. No comparison will be made using groups 5 and 6 since group 5 comprises several specific departments (Pediatrics and Labor and Delivery) and group 6 represents lunch and breaks.

ANALYSIS OF DATA

Almost all persons in the four occupations (RNs, LPNs, NA, Orderlies) perform the easiest functions. For example, the function, straightening up and cleaning patient's immediate furniture, is performed by:

Table 2 Average Percent of Time Spent on Six Groups of Functions by Registered Nurses, Licensed Practical Nurses, Nurses' Aides and Orderlies[1]

I. General Nursing[2]		R.N.	L.P.N.	Nurses' Aide	Orderly
Groups of Functions (Ranked From Easiest to Most Difficult)	Functions				
1	(1-18)	24.7	31.5	40.8	40.8
2	(19-30)	26.3	28.2	38.2	26.1
3	(31-47)	20.3	22.5	6.4	15.6
4	(48-63)	16.6	8.8	3.0	3.1
5	(64-69)	3.1	0.1	2.7	5.2
6	Lunch & Break	8.8	8.8	8.8	8.8

II. Surgical Unit		R.N.	L.P.N.	Nurses' Aide	Orderly
Groups of Functions (Ranked From Easiest to Most Difficult)	Functions				
1	(1-18)	21.6	28.0	39.4	36.7
2	(19-30)	31.3	33.7	41.9	29.1
3	(31-47)	22.8	17.2	7.9	16.5
4	(48-63)	14.7	12.0	1.6	1.5
5	(64-69)	0.8	0.3	0.3	7.5
6	Lunch & Break	8.8	8.8	8.8	8.8

III. Medical Unit		R.N.	L.P.N.	Nurses' Aide	Orderly
Groups of Functions (Ranked From Easiest to Most Difficult)	Functions				
1	(1-18)	23.4	27.4	36.3	39.0
2	(19-30)	27.4	28.9	47.2	27.7
3	(31-47)	20.6	28.6	4.5	15.2
4	(48-63)	18.8	6.2	0.5	3.8
5	(64-69)	0.8	----	2.7	5.6
6	Lunch & Break	8.8	8.8	8.8	8.8

IV. Pediatrics Unit		R.N.	L.P.N.	Nurses' Aide	Orderly
Groups of Functions (Ranked From Easiest to Most Difficult)	Functions				
1	(1-18)	32.8	42.9	51.7	----
2	(19-30)	23.7	21.5	24.2	----
3	(31-47)	17.6	12.7	7.4	----
4	(48-63)	12.6	12.0	4.8	----
5	(64-69)	4.9	2.0	3.1	----
6	Lunch & Break	8.8	8.8	8.8	----

See footnotes at the end of table.

Table 2 (cont.) Average Percent of Time Spent on Six Groups of Functions by Registered Nurses, Licensed Practical Nurses, Nurses' Aides and Orderlies

V. Labor and Delivery Unit		R.N.	L.P.N.	Nurses' Aide	Orderly
Groups of Functions (Ranked From Easiest to Most Difficult)	Functions				
1	(1-18)	19.4	----	35.4	----
2	(19-30)	15.4	----	25.9	----
3	(31-47)	17.3	----	7.5	----
4	(48-63)	19.6	----	6.7	----
5	(64-69)	19.5	----	15.7	----
6	Lunch & Break	8.8	----	8.8	----

VI. Emergency Unit		R.N.	L.P.N.	Nurses' Aide	Orderly
Groups of Functions (Ranked From Easiest to Most Difficult)	Functions				
1	(1-18)	----	39.1	----	43.2
2	(19-30)	----	23.6	----	21.4
3	(31-47)	----	20.2	----	20.5
4	(48-63)	----	7.8	----	5.9
5	(64-69)	----	0.4	----	----
6	Lunch & Break	----	8.8	----	8.8

VII. Out-Patient Department		R.N.	L.P.N.	Nurses' Aide	Orderly
Groups of Functions (Ranked From Easiest to Most Difficult)	Functions				
1	(1-18)	26.5	----	49.5	----
2	(19-30)	24.3	----	30.5	----
3	(31-47)	21.3	----	10.2	----
4	(48-63)	17.0	----	0.9	----
5	(64-69)	2.0	----	----	----
6	Lunch & Break	8.8	----	8.8	----

1. This table is the average of all performers' time whether they perform the function or not; therefore, it should add up to 100 percent. These figures were adjusted proportionately to add up to 100 percent because we felt that there was no reason to believe that disproportionate bias occurred in estimation of time for each group as a whole. Group 6 was not adjusted because this is a specifically allocated period of time.

2. This section is a summary of all specific units, i.e., Surgical, Medical, Pediatrics, Labor and Delivery, Emergency and Out-Patient Department. The R.N. column also includes I.C.U., Recovery Room and "floats."

91 percent of the RNs interviewed;
100 percent of the LPNs interviewed;
96 percent of the NAs interviewed;
100 percent of the orderlies interviewed.

The RNs and LPNs spend a larger percentage of time on this easiest function than NAs and orderlies. For example, for those who perform the function, the following average time is spent on that function:

RNs, 7.5 percent;
LPNs, 9.2 percent;
NAs, 6.0 percent;
Orderlies, 4.9 percent.

If we then go on to a more difficult function, demanding more skill and training, we find that the function "discontinuing I.V. service" is performed by all the LPNs, almost all the RNs, and slightly more than half of the NAs and orderlies. For those who perform this difficult function the following average time is spent on that function:

RNs, 5.1 percent;
LPNs, 5.1 percent;
NAs, 1.9 percent;
Orderlies, 2.7 percent.

The groupings in Table 2 indicate that (for I. General Nursing) on the simplest functions (1-18):

RNs spend 24.7 percent of their time;
LPNs spend 31.5 percent of their time;
NAs spend 40.8 percent of their time;
Orderlies spend 40.8 percent of their time.

If we now go to the more "difficult" functions (ones that are not supervisory), such as Group 3 (31-47), we see that on such functions:

RNs spend 20.3 percent of their time;
LPNs spend 22.5 percent of their time;
NAs spend 6.4 percent of their time;
Orderlies spend 15.6 percent of their time.

From these statistical data we reached the following conclusions:

1. There is indeed a great deal of overlap in the performance of various functions irrespective of the degree of difficulty and the educational exposure, formal or otherwise, by various categories of paramedical personnel (RNs, LPNs, NAs and orderlies) at The Cambridge Hospital.

2. Although the "more difficult" functions do tend to be performed more by personnel with higher levels of professional training and knowledge, the lesser-skilled paramedical employee does perform these functions more than occasionally.

3. The more highly-skilled persons in this sample do spend large blocks of their time on functions they themselves and most other authorities consider to be well below their technical capabilities.

4. All four of these paramedical occupations (RNs, LPNs, NAs and orderlies) perform most of their high level functions during shifts other than the day shift. This is especially true of the LPNs, NAs and orderlies. During the shift from 11 p.m. to 7 a.m., RNs, LPNs, NAs and orderlies are called upon to perform functions that only physicians or RNs would normally perform during the day.

The above analysis of nursing occupations covers over 60 percent of the employees in the occupations of interest to this research project. A similar analysis was made for the other occupations (listed in Table 1) and can be found in the original report of the research.

PHASE II RECOMMENDATIONS TO THE CAMBRIDGE HOSPITAL

In our judgment, the objectives of the health resources of any city should include the following:

1. To minimize the discomfort and costs of hospitalization of patients, by the dissemination of preventive medicine information through the city's Public Health Service and the city's medical facilities.

2. Once a patient is admitted to the hospital, the principal aim should be to make this stay as comfortable, brief, inexpensive and successful as medical technology and human patience can achieve.

The City of Cambridge recently replaced the main hospital complex with a twelve million dollar facility, and we believe the City's objectives do include those listed above. There are no indications that any attention was given to the possibility of eliminating dead-end, low-paying jobs or of creating occupational ladders for paramedical personnel.

This project is concerned with the problem of operating a city hospital efficiently and humanely by utilizing its manpower in the most effective manner possible. Based upon our analysis of the information collected through Phase II, we made the following recommendations to The Cambridge Hospital in January 1971:

Recommendation 1. The hospital has no personnel director, and personnel structure is extremely informal and haphazard. When a supervisor, physician, director of nursing or the hospital director has a request or sees a need for a new position or a replacement, each becomes his own personnel administrator. Four or five separate files exist in the hospital for each employee. No formal and systematic employee performance review exists. The precious and costly time of many in the hospital is spent in duplicative and, quite often, unproductive personnel work. When an employee has a problem or question, she quite often goes for advice to the person she knows best, and frequently the answers received are wrong, misleading or distorted.

We, therefore, recommend that a permanent personnel office be established at the hospital with a personnel director at its head. He should be responsible directly to the administrator of the hospital. No additional funds would be required to set up this office and position since there are presently at least three unrelated positions in the hospital which have personnel responsibilities. This personnel director should maintain the only complete set of records for each employee in the hospital. This personnel director should have a voice, if not control, over:

a. Setting up hiring standards in conjunction with supervisors of the appropriate departments;

b. Conduct of personnel;

c. Orientation of new personnel;

d. In-service and OJT programs;

e. Performance reports at least once each year on each employee;

f. The initial contact with all prospective employees (obviously, the final approval of any employee would be made by the supervisor or physician for whom she or he would work);

g. Keeping all employees of the hospital informed of their rights, privileges, and obligations.

Recommendation 2. Lines of authority are not well known nor are they publicized in the hospital. No formal organization charts indicating lines of authority and responsibility exist. We recommend that a formal organization chart for The Cambridge Hospital be developed.

Recommendation 3. Our data indicate that various categories of paramedical personnel at The Cambridge Hospital are underutilized and numerous functions are misallocated. The most frequently mentioned

reasons for these conditions are tradition and the unwillingness of supervisory personnel to allocate more sensitive and responsible functions to persons considered untrained or insufficiently trained.

In some instances the concern on the part of supervisory personnel appears to be justified. On the other hand, in many instances responsible and sensitive functions are now being performed by nurses' aides, orderlies, inhalation therapy technicians, surgical technicians, psychiatric attendants and corpsmen-types at the hospital. The question to answer is how can we eliminate the apprehension of supervisory personnel while allocating to all categories of paramedical personnel responsibility commensurate with their present or post-training capabilities? We believe that the best route to this goal is threefold: (a) the establishment of three new paramedical occupations at The Cambridge Hospital; (b) the restructuring of four existing occupations at the hospital; and (c) the establishment of formal training programs for the three new occupations and four existing occupations.

a. New Paramedical Occupations

The new paramedical occupations we recommend are: Nursing Assistant; Medical Assistant (Medics); and Physician's Assistant. Persons employed in these occupations could be male or female.

The nursing assistant would be trained to perform some of the moderately sophisticated functions now performed by LPNs and RNs and some of the more sophisticated functions

now performed by NAs. The minimum entrance requirement for the nursing assistant training program should be the equivalent of a five-week training program as a nurses' aide.

The medical assistants, including corpsmen-types, should be divorced from the Nursing Department and placed in the Department of Medicine. The medical assistants (and physician's assistants) should be under direct control of the medical staff who would be responsible for their training and supervision. After their formal training program, medical assistants would be in a position to aid substantially the medical staff in functions now normally performed by physicians. The minimum entrance requirements for the medical assistants should be the equivalent of the successful completion of a nursing assistant program.

The physician's assistant should be one level above the medical assistant. After being exposed to a two-year training program, the physician's assistant would be in a position to substantially assist the physician in some of the more sophisticated functions traditionally performed by physicians alone. Specific training programs for physician's assistants have recently been instituted in several states with promising results. We suggest that the "Medex" training program at the University of Washington

or the "Physician's Associate Program" at Duke University could be used as a basis for training the physician's assistant.

b. Restructuring of Occupations

In order to provide a better quality of medical care within the hospital and to carry out the three occupations suggested above, we recommend restructuring the positions of nurses' aide, ward secretary, licensed practical nurse and registered nurse. The specific changes in functions for each of these occupations are noted in the training programs, descriptions of new occupations and examples of training programs.[3]

In summary, we are recommending a downgrading of nurses' aides and an upgrading of ward secretaries, licensed practical nurses and registered nurses.

c. Training Programs

The seven training programs recommended are the following:

i. NURSES' AIDES - a five-week training program for entry-level personnel, consisting of one hour of lecture and six hours of supervised work per day. It makes little sense in terms of delivery of quality medical care to allow entry-level personnel to wander about the hospital with no exposure to some basic policies and medical procedures within their occupation. Entry requirements for this position should be set so as to include those with no previous medical training and high school diploma.

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3. See complete study "Restructuring Paramedical Occupations," Appendix E.

ii. NURSING ASSISTANTS - a twelve-week training program for persons completing the nurses' aide program or its equivalent, consisting of one hour of lecture and six hours of supervised work per day.

iii. MEDICAL ASSISTANTS - a twelve-week training program for persons completing the nursing assistants program or its equivalent, consisting of one hour of lecture and six hours of supervised work per day.

iv. PHYSICIAN'S ASSISTANTS - a two-year training program for persons completing the medical assistants program or its equivalent.

v. WARD SECRETARIES - an eight-week training program for entry-level personnel with some basic reading and writing skills. The program should consist of one hour of lecture and six hours of supervised work per day.

In the past, orientation for ward secretaries was minimal. A large majority of this group felt a definite need for training in their present function. RNs, LPNs and NAs now spend considerable time on non-nursing functions which should be assigned to ward secretaries. Head nurses and supervisors indicate a reluctance to allow ward secretaries more non-nursing, administrative responsibilities. Very often, the lack of experience and training of ward secretaries is given as the reason for this condition. We believe the eight-week training program for ward secretaries would be appropriate in an attempt to alleviate the above-mentioned condition.

vi. LICENSED PRACTICAL NURSES - an ongoing, in-service education program consisting of one class hour per week.

vii. REGISTERED NURSES - an ongoing, in-service education program consisting of one class hour per week.

At present, no in-service education is offered LPNs and RNs; we recommend such a program be established. In light of

all the new techniques and tools that are being developed in this field, RNs and LPNs who have no ongoing, in-service education will soon find themselves and their previous training inadequate for delivering quality medical care.

It would be best to begin the seven above-mentioned programs in selected wards or units simultaneously and as soon as possible.

The training program should be designed to extend the knowledge and to give assurance to those already performing high-level functions in their respective fields. In this way, each performer will be more readily accepted in his or her respective department with some degree of confidence not now existing among superiors and supervisors.

A small committee of qualified personnel should shoulder the responsibility of sifting through all candidates to determine their qualifications and acceptability. We see no need to place any formal educational requirements on a prospective applicant. Each applicant should be judged on his own merits, capabilities and recommendations.

Recommendation 4. We strongly recommend that RNs be eased out of Group I functions (functions 1-18, Table 2) as soon as possible.

During our interviews, RNs claimed they did perform all the functions in group I (General Nursing, functions 1-18, the least difficult tasks,

time spent - 24.7 percent), and our observations substantiated this claim. We believe these functions can be readily assigned to either nurses' aides or nursing assistants. We do not believe that any additional training of other paramedical personnel at the hospital is needed to effect this reassignment.

Recommendation 5. In order to motivate personnel to undertake and complete training programs, some monetary incentive must be offered, in addition to a certificate and a title. We, therefore, recommend that a salary differential be established for those who complete training and are advanced to a higher position.

Recommendation 6. We recommend that the training programs be well publicized throughout the hospital and that qualified paramedical personnel be encouraged to enroll, but absolutely no pressure should be used to enroll candidates.

Recommendation 7. We recommend that the interview formats used in this study be used as a basis for a detailed job description of each of the eleven paramedical occupations. It is true that the same list of functions was constructed for RNs, LPNs, NAs and orderlies; however, this was done to determine any degree of overlap of functions. This overlap does exist, and all four occupations do perform all the functions with only several exceptions out of the sixty items.

The real difference in the performance of these functions by the performers mentioned above is the degree of authority and responsibility each performer carries. This degree of responsibility should also be explicitly noted in the job descriptions which the hospital will use.

Recommendation 8. We recommend the elimination of the job category of orderly. The functions normally performed by the orderly can easily be done by nurses' aides or nursing assistants.

Recommendation 9. We recommend that periodic updating of radiological techniques be permanently established at the hospital; a minimum of one hour per month should be set aside so that the radiologist in charge may present the technicians with new techniques in the field.

The complete qualifying program for a radiological technician is spread over two years. The majority of the 12 X-ray technicians at the hospital are products of a two-year program at Northeastern University - The Cambridge Hospital. During the first year, for every two weeks spent at the University, four weeks are spent at the hospital on OJT. The second year is spent entirely at the hospital on OJT. The didactic portion of the entire program is only sixteen weeks. This division seems reasonable, and we believe that it should be maintained.

Recommendation 10. The sole EKG technician at the hospital covers her responsibilities 37 hours per week. There is an obvious need for increased coverage in this area. We recommend that the in-service education programs for RNs and LPNs include EKG training. We also recommend that training programs for the nursing assistant, medical assistant and physician's assistant include EKG training.

Recommendation 11. There is presently only one neighborhood health worker under the jurisdiction of The Cambridge Hospital. Her work does appear to aid the RNs and public health nurses at the Center. We recommend that additional NHWs be used at the two new centers, provided that

meaningful functions can be prescribed. Many of the functions at the new centers have been inappropriately assigned.

Recommendation 12. The unstructured OJT program in inhalation therapy should be improved. Experience with U.S. Navy corpsmen at the U.S. Naval Medical Center indicates that a three-year, full-time program for the inhalation therapy technician is unnecessary. We recommend that trainees in inhalation therapy be encouraged to enroll in a more formal program, similar to one offered by the United States Navy.

Recommendation 13. A private laboratory originally performed routine chemistry, hematology and esoteric tests for The Cambridge Hospital. At the present time, The Cambridge Hospital laboratory under the direction of its new pathologist performs all hematology work plus some of the chemistry. This turnabout has occurred because the hospital is now in a position to do this work as well or better, in the same time or less and for the same price or less than the private laboratory. The floor space allocated to the hospital laboratory has very recently been doubled. The new pathologist has purchased or leased all the automated equipment he felt was needed.

The pathologists who were consultants for this study indicated that a 200-bed hospital, such as The Cambridge Hospital, is not large enough to maximize the use of an efficiently run laboratory. There are several hospitals in the immediate area of The Cambridge Hospital that maintain laboratories without the services of a full-time pathologist.

We recommend that The Cambridge Hospital laboratory actively seek the laboratory work of Holy Ghost Hospital (one block in distance - 290 beds, recently renamed Youville Hospital) and Sancta Maria Hospital (1 mile in distance - 124 beds), both of which have no full-time pathologist and less than adequate laboratory facilities. If The Cambridge Hospital laboratory did obtain this additional laboratory work, it would then be feasible to restructure the laboratory occupations.

SUMMARY

The hierarchy in general nursing at The Cambridge Hospital and at most other hospitals in the United States, whether they be governmental, private, non-profit, or proprietary, is as follows:

Group A	1)	Nurses' Aide
	2)	Orderly
Group B	3)	Licensed Practical Nurse
	4)	Registered Nurse; Graduate Registered Nurse
Group C	5)	Head Nurse
	6)	Nurse Supervisor
	7)	Director of Nursing
Group D	8)	Interns
	9)	Residents
	10)	Chiefs of Medicine

With few exceptions, there is no vertical mobility whatsoever among Groups A, B, C, and D. Should a nurses' aide or an orderly have the desire and ability to rise to the position of LPN, his or her previous training and experience cannot be credited towards the requirements of the higher occupation. Should an LPN have the desire and ability to

become a registered nurse or any of the occupations in Group C, her previous training and experience are of no formal value. The LPN must start from scratch at a traditional school of nursing in order to earn her degree as a registered nurse or graduate registered nurse.[4] Should a person in Group C have the ability and desire to become a physician, he is given no credit for his previous formal training and experience.

Our findings in this research project lead us to the conclusion that this lack of vertical mobility is inefficient and wasteful in terms of use of medical manpower.

Our specific recommendations to The Cambridge Hospital were aimed at alleviating lack of vertical mobility. Specifically, we recommended:

1. An increased use of lower level personnel such as nurses' aides and nursing assistants to complement and, to a certain extent, supplant the use of registered nurses and LPNs on lower level, "easy" functions;

2. A restructuring of the jobs of RNs and LPNs, so they would perform fewer of the lower level, "easy" functions;

3. In-service training which would allow nurses' aides to advance to the position of nursing assistant;

4. In-service training which would allow a nursing assistant to rise to the position of medical assistant;

5. In-service training which would allow a medical assistant to rise to the position of physician's assistant.

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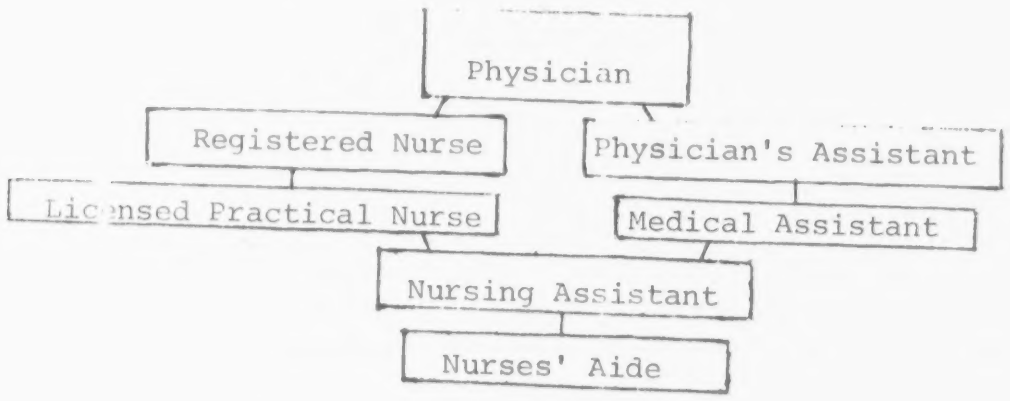
4. There are several programs in the United States which do give advanced credit to LPNs who wish to become RNs. One such program has recently been started at Northeastern University; however, the program is very limited (15 students). In general, such programs are full-time and require the participants to give up their jobs.

In effect, our recommendations included a new occupational ladder parallel to the traditional occupational hierarchy of the hospital, in order to utilize more efficiently the talents of various categories of paramedical personnel. This new occupational ladder would allow for the transfer of training and experience by establishing the following occupational hierarchy:



A person with desire and ability could follow the left-hand track by leaving his or her position and starting formal training all over again in order to climb successive steps. The alternative would be to follow the right-hand track, continue at his or her job, and receive in-service training and education with no loss of income and no duplication of formal training.

As of the end of August 1971, the state of our thirteen formal recommendations was as follows:

1. A hospital personnel director will be requested from the City of Cambridge by the hospital, and a personnel department will be established;

2. An organizational chart had been accepted by the administration of the hospital. It will be used in structuring future staffing policy;

3. An in-service training program will begin in September 1971 to upgrade nurses' aides, who are entry-level personnel, to the new occupation of Nursing Assistant.

   The position of physician's assistant had been established in the medical department of the hospital and by August three ex-corpsmen were receiving in-service training for this new occupation. The Cambridge Hospital had given letters of intent to employ the physician's assistants who successfully complete the 18-month training program at Northeastern University. In-service education programs had been instituted, as recommended, for RNs and LPNs;

4. RNs were performing fewer Group I functions ("easy" functions), while a significant number of nurses' aides had been hired to perform these tasks;

5. Approval had been given to provide increases in salary for all those paramedical personnel who successfully complete any in-service, upgrading program;

6. The AFSCME union, representing the nurses' aides and orderlies, had strongly endorsed the proposal for training and upgrading paramedical employees;

7. The hospital administration will combine this study's detailed interview formats with the less detailed job descriptions arrived at by the hospital's Job Description Committee;

8. Orderlies at the hospital were being phased out;

9. The radiological technicians were attending weekly conferences of surgeons to receive explanations of new procedures and techniques;

10. A number of various paramedical employees (RNs, LPNs) had been exposed to previously non-existent training in the use of EKG equipment;

11. An additional neighborhood health worker had been employed and several others will be employed by the fall of 1971;

12. The inhalation therapy technicians were exposed to occasional lectures on techniques by the department head. However, no formal, in-service training program had been instituted as yet;

13. The hospital's laboratory had actively sought the laboratory work of neighboring institutions, and this effort had been successful.

Over this two-year period, 1968-1970, hospital costs and utilization at The Cambridge Hospital have changed as follows:

1. A 19.7 percent increase in bed complement;

2. A 38 percent increase in in-patient days;

3. A reduction of the average length of stay from 9.6 to 9.3 days;

4. A 34 percent increase in out-patient clinic visits;

5. A reduction of the hospital's loss as a percent of expenses from 23 percent to 4.3 percent.

Employment of paramedical personnel at the hospital and percentage change from 1969 to 1971 are shown in Table 3. Of significance are:

1. The substantial change in the distribution of RNs, LPNs, NAs, orderlies, and ward secretaries employed in general nursing between 1969 and 1971. Over this period, the number of orderlies decreased from 14.5 to 3 (FTE - Full-Time Equivalent). The number of RNs increased by only 6.7 percent, while NAs experienced the largest percentage increase -- 70.9 percent.

2. During these two years, the hospital doubled its number of laboratory personnel.

3. There was a significant increase in the number of psychiatric attendants, from 6 in 1969 to 11 in 1971.

Table 4 shows salary scales at The Cambridge Hospital for various paramedical occupations for 1969 and 1971. These figures were used to calculate the general nursing wage bill shown on Table 5.

One can legitimately ask what has been the financial impact of the significant change in the staffing pattern in General Nursing which now uses a greater percentage of personnel with less formal training and

Table 3 Number and Percent of Persons and Percentage Change in Various Paramedical Occupations Employed at The Cambridge Hospital -- 1969, 1971

OCCUPATIONS (FTE = Full-Time Equivalent)	October 1969		June 1971		Percentage Change
	No.	%	No.	%	
General Nursing:					
RN	67	47.0	71.5	40.9	+ 6.7
LPN	20	14.0	33.5	19.1	+ 67.5
NA	31	21.7	53	30.3	+ 70.9
Orderly	14.5	10.1	3	1.7	- 383.3
Ward Secretary	10	7.0	14	8.0	+ 40.0
General Nursing Subtotal	142.5	100.0	175.0	100.0	+ 22.8
Laboratory:					
General Lab Technician	11	73.3	14.5	49.2	+ 31.8
Lab Specialist (Senior Technician): Chemistry Bacteriology, Cytology, Blood Bank Supervisor	2	13.3	4	13.6	+ 100.0
Lab Specialist: Hematology, Histology	1	6.7	2	6.8	+ 100.0
Clinical Lab Supervisor	1	6.7	2	6.8	+ 100.0
Medical Technologist, MT (ASCP)	0	-	7	23.7	Not relevant
Laboratory Subtotal	15	100.0	29.5	100.0	+ 96.6
X-Ray Technician	12		11		- 9.1
Head X-Ray Technician	1		1		-
EKG Technician	1		1		-
Inhalation Therapy Technician	4		5		+ 25.0
Surgical Technician	8		7		- 14.3
Neighborhood Health Worker	1		2		+ 100.0
Psychiatric Attendant	6		11		+ 83.3
Physician's Assistant	0		3		Not relevant
TOTAL (FTE)	190.5		245.5		+ 28.9

Table 4 Weekly Salary Scales at The Cambridge Hospital 1969, 1971

	1969 Weekly Salary			1971 Weekly Salary		
	Minimum	Maximum	Mid-Point	Minimum	Maximum	Mid-Point
Head Nurse	$152.31	$194.69	$170.50	$181.31	$231.15	$206.23
R.N.	141.73	184.04	162.89	168.74	218.59	193.67
L.P.N.	122.00	146.00	134.00	144.94	173.45	159.20
Nurses' Aide	86.25	92.02	89.14	102.06	113.65	107.86
Orderly	94.52	100.67	97.60	111.84	125.03	118.44
Ward Secretary	86.25	92.02	89.14	102.06	109.35	105.71
Surgical Technician	100.00	115.00	107.50	118.80	136.62	127.71
Psychiatric Attendant	122.00	146.00	134.00	144.94	173.45	159.20
X-Ray Technician	115.19	126.73	120.96	136.87	150.57	143.72
EKG Technician	100.77	110.00	105.39	119.73	130.64	125.19
Inhalation Therapist[1]	134.61	146.15	140.38	159.92	173.62	166.77
Inhalation Technician[1]	105.77	117.30	111.54	125.65	139.35	132.50
Lab Technicians (Chiefs) Bacteriology Hematology Chemistry Cytology	132.40	143.94	138.17	157.32	171.03	164.18
Lab Technician	115.38	126.92	121.15	137.07	150.57	143.82
Medical Technologist[2]				162.00		
Physician's Assistant[3]	122.00	146.00	134.00	144.94	173.45	159.20

1. Position was established in 1969.

2. Position was established in 1970. The salary range for Medical Technologists has not yet been established. All technologists presently employed are being paid at the rate of $162.00 per week.

3. One corpsman was employed as a medical technician in the Department of Nursing during the latter part of 1969. It was not until 1971 that the group of corpsmen was transferred to the Department of Medicine and given the title of Physician's Assistant.

Table 5 General Nursing Wage Bill Comparisons - 1969, 1971

	Number of Personnel (FTE)		%	%	Midpoint of Weekly Salary Ranges		1971 Total Empl. Allocated According to % Distribution of 1969 Employment	1969 Weekly Wage Bill (Using 1969 Employment and 1969 Salary)	1971 Weekly Wage Bill (Using 1971 Employment and 1971 Salary)	Calculated Wage Bill for 1971, Assuming Occupation Distribution of 1969
	1969	1971	1969	1971	1969	1971				
	A	B	C	D	E	F	G	H (Column AxE)	I (Column BxF)	J (Column FxG)
RN Head Nurse	6	6	4.2	3.4	173.50	206.23	7.4	$1,041.00	$1,237.38	$1,526.10
Registered Nurse	61	65.5	42.8	37.4	162.89	193.67	74.9	9,936.29	12,685.39	14,505.88
LPN	20	33.5	14.0	19.1	134.00	159.20	24.6	2,680.50	5,333.20	3,916.32
NA	31	53	21.7	30.3	89.14	107.86	38.1	2,763.34	5,716.58	4,109.47
Orderly	14.5	3	10.1	1.7	97.60	118.44	17.8	1,415.20	353.32	2,108.23
Ward Secretary	10	14	7.0	8.0	89.14	105.71	12.3	891.40	1,479.94	1,300.23
TOTAL	142.5	175.0	100.0	100.0			175.1	$18,727.73	$26,805.81	$27,466.23

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few license requirements? If General Nursing personnel were still distributed (in 1971) according to the 1969 pattern, the wage bill (using the mid-point of the 1971 salary ranges) would have amounted to $27,466.23 (Table 5, column J). We then calculated the 1971 weekly wage bill using the 1971 (FTE) personnel distribution and the mid-point of the 1971 salary ranges (Table 5, column I). This wage bill amounted to $26,805.81. A comparison of these two wage bills (columns I and J, Table 5) indicates that as a result of the structural personnel changes from 1969 to June 1971, the wage bill was 2.5 percent lower.

During the period from September 1969 to June 1971 the following job requirements were changed:

1. The requirement of a high school education for NAs was dropped;

2. Specialized practical experience for a hematology laboratory specialist was reduced from two to one year;

3. Psychiatric attendants no longer require a high school education;

4. Entry requirements were established for physician's assistants;

5. Entry requirements for all paramedical personnel included in this study were reviewed by the newly-formed Job Description Committee.

During the period (1965-71) when changes in wage and occupational structures were taking place, the mortality rate at the hospital changed as follows:

Mortality Rate	Percentage of All Patients Discharged
1965	5.4
1966	5.5
1967	5.3
1968	5.2
1969	5.8
1970	3.6
January 1 to May 30, 1971	3.5

Infant Mortality	Percentage of All Newborns Discharged
1965	2.5
1966	2.1
1967	0.9
1968	1.7
1969	2.2
1970	1.7
January 1 to May 30, 1971	1.0

CONCLUSIONS

In summary, the use of hospital facilities has increased, the quality of medical care has probably increased, and at the same time there has been a disproportionate increase in the use of paramedical personnel with little formal training. The following general conclusions can be drawn from our research and experience:

1. Hiring-in standards at The Cambridge Hospital were unnecessarily high. Employees with less than the specified required experience and training were found to be sufficiently competent to perform functions of a difficult nature, not commonly associated with entry-level occupations.

2. Those paramedical employees with more sophisticated training and experience (i.e., RNs, LPNs, ex-corpsmen) were found to be under-utilized. A re-shuffling of their functions (i.e., elimination of "easy" tasks) led to a more efficient utilization of their training and experience.

3. Restructuring paramedical occupations can lead to greater hospital efficiency, the elimination of possible shortages of paramedical personnel, and the minimization of dead-end, entry-level jobs.

4. A liberalization of hiring-in requirements and the establishment of vertical mobility (with in-service training) should make possible greater utilization of minority and disadvantaged groups.

5. Realistic career ladders are possible once the traditional hospital hierarchy has been short-circuited. For example, in-service education and training for nursing assistants, medical assistants, and physician's assistants can provide entry-level personnel with attainable upward mobility.

6. The end result of successful restructuring of paramedical occupations could mean a more efficient health care delivery system, i.e., increased quality and quantity.

7. Restructuring the occupations of paramedical personnel ought to begin with the physician. Unless his functions are clearly delineated and perhaps modified, it is somewhat difficult to define and restructure the remaining functions that can be performed more efficiently by the other paramedical occupations.

8. Operational statistics during the period 1968-1970 indicate a substantial increase in the utilization of the hospital's facilities. At the same time, the day-to-day functioning of the hospital has become more hectic. Administrative problems are frequently arising over the efficient utilization of manpower and administrators must have greater leeway in utilizing hospital manpower.

9. The time available to measure and evaluate the changes in the hospital resulting from the implementation of our recommendations appears short. The changes take time, and many of the results, as measured by the delivery of service, will not become apparent for a year or two after the changes are made.

RECOMMENDATIONS

1. Where licensing is deemed necessary, we recommend a national licensing law, which would allow for increased labor mobility.

2. We recommend that the federal government help finance the training of the newer paramedical occupations, such as physician's assistants. There is little likelihood that in the near future this nation will train or acquire a sufficient number of physicians to meet its health care needs.

3. A national performance review should be established to oversee the rate setting policies of hospitals. At The Cambridge Hospital, approximately 75 percent of the hospital bills are paid by third-party payers (a substantial increase over two years ago). During the same period, the hospital's losses have decreased from approximately $1.5 million (1968) to $.8 million (1970).

4. Few doctors are attracted into the practice of family or general medicine. Because of greater earning opportunities as a specialist and because some stigma is attached to being a general practitioner, the vast majority of medical students specialize. We recommend that the federal government financially encourage medical schools to train "people doctors" (or family physicians) who would be principally a combination of those specialties that would increase the number of physicians at the primary entry points.

   These federally financed grants, made either directly to medical students or to medical schools, should be conditional. The principal condition should be two or four years of public service employment after graduation in areas of the nation experiencing the greatest shortages of physicians, e.g., rural communities and urban ghettos.

5. We recommend that the federal government financially support the hiring of consultants, who have expertise in implementing new occupational patterns, for hospitals. Hospital administrators generally do not have much knowledge of this special area of manpower utilization.

6. We recommend that commissioners of health, chiefs of medicine and hospital administrators carefully study these recommendations to determine the feasibility of implementing some or all of them in their own hospitals.

7. Since there is a relative shortage of RNs and LPNs, we recommend that these two occupations be eased out of low-level functions in general nursing; these functions should be performed by persons in occupations requiring less education and training.

8. Since thr traditional occupational hierarchy prohibits vertical mobility, hospitals should juxtapose an alternative which permits upward mobility through in-service training and education. Such alternatives could include the establishment of new paramedical occupations, such as nursing assistant, medical assistant, and physician's assistant.

9. Hospitals should re-examine their paramedical occupational structure to determine realistic job requirements for each occupation.

10. Hospitals should establish hiring-in standards that are relevant to the functions to be performed by each occupation. Arbitrary licensing and unnecessary education requirements should be eliminated.

11. Hospitals should expand their in-service training programs for selected paramedical employees where it is clear that these employees can be trained for better paying positions. For paramedical occupations, in-service training is likely to be more efficient and economical.

12. Hospitals should improve their in-service education programs for paramedical and medical workers, in order to permit them to keep abreast of the constantly changing techniques and technology.

13. In many instances hospitals find themselves insufficiently financed or too small to assume the financial burden of in-service training and education. In these cases, we recommend that hospitals should provide in-service training and education through arrangements with neighboring hospitals and educational institutions on a cooperative basis.

88. "Economics of Scale and Cash Balances," by Bruce C. Cohen, Journal of Bank Research, Vol. 1, No. 2, Summer 1970

89. "Die Europäische Währungsordnung Utopie oder Möglichkeit," by Gustav Schachter and Bruce C. Cohen, Wirtschaftsdienst, Vol. 50, No. 1, June 1970

91. "International Aspects of Tax Reform in Canada," by Peggy Musgrave, Contribution to the "1970 Budget" Conference on the White Paper on Proposals for Tax Reform. Reprinted from the 1970 Conference Report on the White Paper on Proposals for Tax Reform Canadian Tax Foundation, October 1[illegible]

92. "Gli Aerrati Accettarlo in Piemonte nel secolo XVIII," by Giuseppe Pellegrini and "La Compagnia Genovese delle origini di Nostri (1819-1867)," by Mario Talassi, reviewed by Gustav Schachter, The Journal of Economic History, Vol. XXX, No. 3, September 1970

93. "The Student's t Test in Multiple Regression under Simple Collinearity," by Bruce Cohen and Dwarkar Gujarati, Journal of Financial and Quantitative Analysis, Vol. V, No. 3, September 1970

96. "Private Industry and Manpower Planning in India: A Study of the Calcutta Engineering Industry," by David R. Fisher, Indian Journal of Industrial Relations, Vol. 5, No. 4, April 1970

95. "Demand for Money, Required Balances and the Pricing of Demand Deposits," by Bruce C. Cohen, Reprinted from Staff Economic Comment, No. 52, December 1969, Federal Reserve System, Washington, D.C.

96. "The Prohibition of Interest Payment on Demand Deposits: A Time for Re-examination," by Bruce C. Cohen, Reprinted from Staff Economic Comment, No. 43, Board of Governors, Federal Reserve System, January 1970.

97. "Demand Deposit, Interest Elasticity, and Bank Service Charges," by Bruce C. Cohen, Reprinted from Staff Economic Comment, No. 44, May 1970, Federal Reserve System, Washington, D.C.

98. "Oil Gives Libyan Aid But Not Open," by Gustav Schachter, Reprinted from Intereconomics, Hamburg, Germany, No. 12, December, 1970.

100. "The Role of the Public Sector in Industrial Investment of Developing Areas in Southern Europe," by Lucas T. Brockins, Gustav Schachter, Rivista Internazionale di Scienze Economiche e Commerciali, Milan, Italy, Anno XVII, 1970, No. 12.

102. "Zu Gegenwart und Über Zukunft," by Gustav Schachter, Wirtschaftsdienst, Hamburg, Germany, February, 1971.

103. "The Elevation of Demand Deposit Interest Prohibition," by Bruce C. Cohen, The Quarterly Review of Economic and Business, Vol. 11, No. 2, September 1971.

104. Export Tariffs in Underdeveloped Central African Countries, by Bruce Cohen, Herbert Marks, Gustav Schachter, Intereconomics, Hamburg, Germany, September, 1971.

PUBLICATIONS*

1. The New York Hotel Industry: A Labor Relations Study, by Morris A. Horowitz, Harvard University Press, Cambridge, Massachusetts, 1960 $6.60

2. Structure and Government of the Carpenters' Union, by Morris A. Horowitz, John Wiley and Sons, 1962. $8.95

5. Changes in the Skill Requirements of Occupations in Selected Industries, the Employment Impact of Technological Changes, Appendix Vol. II, by Morris A. Horowitz and Irwin L. Herrnstadt, Technology and the American Economy, The Report of the Commission, Studies Prepared for the National Commission on Technology, Automation and Economic Progress, U.S.G.P.O., Washington, D.C., February 1966

9. Los Recursos Humanos de Nivel Universitario y Técnico en La República Argentina, by Morris A. Horowitz, Instituto Torcuato di Tella, Buenos Aires, Argentina, 1963

13. The Italian South Economic Development in Mediterranean Europe, by Gustav Schachter, Random House, 1959

14. Harmonization of Direct Taxes in Common Markets in Volume 2 of Fiscal Harmonization in Common Markets, by Peggy Musgrave, edited by Carl Shoup, Columbia University Press, 1966

16. The Demand for Higher Education in the Parkersburg, West Virginia Region, by Douglas Brown, Office of Research and Development, West Virginia University, 1966

17. The Social and Economic Impact of the Substitution of Low Sulfur Coal for High Sulfur Coals: A Pilot Study of Monongalia County, West Virginia, by Frederick Deller, Will Smith, Samuel Brock, and Douglas Brown for the United States Bureau of Mines, 1968

18. U.K. Fiscal Policy in Britain's Economic Prospects, co-authored by Peggy Musgrave, edited by E. Cavee, Brookings Institution, 1968

19. United States Taxation of Foreign Investment, Issues and Arguments, by Peggy Musgrave, Harvard Law School, International Tax Program, 1969

20. Dynamics of Development, Polarization and Spread Effect in Underdeveloped Regions, by M.E. Fox and Gustav Schachter, Bolt, Beranek and Newman, Cambridge, Massachusetts, 1970. $2.35

*For copies, contact publisher directly.

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VT 014 356
TWENTY-FIVE BARRIERS THAT RESTRICT THE EFFECTIVE RECRUITMENT, TRAINING AND UTILIZATION OF ALLIED HEALTH MANPOWER IN THE STATE OF ILLINOIS.

INTERIM ORGANIZATION FOR CHICAGO AREA ALLIED HEALTH MANPOWER, ILL.
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IDENTIFIERS - *ILLINOIS

ABSTRACT - THIS REPORT IDENTIFIES THE EDUCATIONAL, ADMINISTRATIVE, ECONOMIC, AND LEGAL BARRIERS WHICH PREVENT ILLINOIS COMMUNITIES FROM DEALING EFFECTIVELY WITH THE ALLIED HEALTH MANPOWER CRISIS. THE EFFECTS OF EACH BARRIER ARE DESCRIBED, ALONG WITH THE ACTIONS NEEDED TO OVERCOME THEM. (BH)

VT 014 356

The Interim Organization for Chicago Area Allied Health Manpower

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TWENTY-FIVE BARRIERS

THAT RESTRICT THE EFFECTIVE RECRUITMENT, TRAINING AND UTILIZATION OF ALLIED HEALTH MANPOWER IN THE STATE OF ILLINOIS

August 1971

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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VT014356

A consortium of health, manpower and educational agencies and community organizations working together to support and strengthen the recruitment, education and effective utilization of allied health manpower in the Chicago Metropolitan area

THE INTERIM ORGANIZATION FOR CHICAGO AREA ALLIED HEALTH MANPOWER is a voluntary coalition of the following member agencies and consultants. It was established in November 1970 in order to provide the machinery for inter-agency planning and action to improve the recruitment, training and utilization of allied health manpower.

Chicago Board of Education
- -Bureau of Health Occupations
- -Health Occupations Careers

Chicago Board of Health

Chicago Committee on Urban Opportunity

Chicago-Cook County Council #19
American Federation of State, County & Municipal Employees, AFL-CIO

Chicago Medical School

Chicago Hospital Training Directors Assn.

City Colleges of Chicago

Comprehensive Research & Development (COMPRAND)

Cook County Dept. of Public Health

Cook County Hospital School of Nursing

Council for Bio-Medical Careers

Developmental Program for Comprehensive Health Planning

Health and Hospital Governing Commission of Cook County

Health Careers Council of Illinois

Illinois Bureau of Employment Security
Illinois State Employment Service
Human Services Manpower Career Cent.

Illinois Nurses Assoc.-Chicago District

Institute of Medicine of Chicago

New Careers Council of Metropolitan Chicago, Inc.

Mid-Southside Health Planning Org.

Moraine Valley Community College

No. Suburban Assn. for Health Resources

Office of the Mayor
- -Model Cities Program
- -Special Assistant for Manpower

Prairie State College

Rehabilitation Institute of Chicago

Southern Christian Leadership Conference
- -Operation Breadbasket

The Woodlawn Organization

Thornton Community College

Welfare Council of Metropolitan Chicago

Westside Health Planning Organization

YMCA Community College

STAFF OF THE FOLLOWING SERVE AS CONSULTANTS:

American Hospital Association

Illinois Regional Medical Program

Presbyterian St. Luke's Hospital

U of C Hospitals & Clinics

U of C, Pritzker School of Medicine

U of I, Medical Center

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INTRODUCTION

In June of 1970 the Illinois State Employment Service, the Human Services Manpower Career Center, the Chicago Area Comprehensive Health Planning Agency, representatives of its sub-regional health planning organizations and the Chicago Department of Human Resources sponsored a conference to consider their mutual interest in developing an inter-agency consortium for program planning and manpower development in the allied health field. From this conference has evolved a partnership of thirty-nine agencies committed to working together to strengthen the planning, recruitment, training and utilization of allied health manpower in the Chicago Metropolitan Area.

From its inception the Interim Organization for Chicago Area Allied Health Manpower has recognized that certain education, administrative, economic and legal barriers exist which seriously inhibit the City of Chicago and other Illinois communities from dealing effectively with the allied health manpower crisis. At the first official meeting of the Interim Organization on November 2, 1970 the membership body created a task force to consider and recommend steps toward the removal of these barriers. Lou House, Executive Director for the Council for Bio-Medical Careers, agreed to serve as Chairman of this study group and was joined in this effort by Theresa White, Director of the Volunteer Bureau, Welfare Council of Metropolitan Chicago; Helen Dulick, Administrative Assistant of the North Suburban Association for Health Resources, Terry Donnelly, Associate Planner, Comprehensive Health Planning, Inc., and Thomas Marsh, a member of the staff of the Human Services Manpower Career Center.

Contributions to this study came from the following sources: 1) eighteen

persons selected by the task force on the basis of their comprehensive knowledge, experience and leadership in the Illinois health manpower field. Nine of these persons were personally interviewed; nine submitted written documents containing their views and recommendations. The names of these individuals are listed in Appendix I; 2) A study of the extensive literature dealing with this subject matter, selected references from which are contained in Appendix II.

During the five-month period in which this study was being completed, a consortium of State agencies and voluntary organizations concerned with health manpower came together to form the Illinois Inter-Agency Task Force on Health Manpower. This group, of which the Chicago Interim Organization is a member, undertook to identify its tasks and priorities. The product of this effort was a comprehensive inventory of the specific actions we need to take if we are to solve the most critical problems facing the State in the recruitment, training and utilization of health manpower. In completing this document, we have drawn upon the work of the Illinois Inter-Agency Task Force which is still in process. In virtually each case, we have been able to match the various barriers identified in our own study with the tasks set forth by the Illinois Inter-Agency Task Force. Both pieces of work, it has turned out, are highly congruent and reinforce one another.

On April 1, 1971, Governor Richard B. Ogilvie, in his health message to the General Assembly, called for

> " ...a moratorium on creating additional licensing and certification categories for health professions this year...I urge this Legislature to establish a commission with adequate appropriations to perform the evaluation and planning that is needed. This will include review of the existing laws, regulations and administrative procedures for licensure and certification. It will examine and recommend the relaxation of administrative regulations to remove existing barriers to competent individuals..."

On April 20th, the Illinois Inter-Agency Task Force on Health Manpower accepted the invitation of the Governor's Office of Comprehensive State Health Planning to collaborate in identifying specific ways in which the recruitment, training and effective utilization of health manpower can be strengthened now within present statutory requirements. This investigation can proceed at once while the General Assembly considers appropriate legislative action to bring about needed statutory changes.

In view of these recent developments and the continuing urgency of the health manpower crisis, we believe this is a timely document and one which can contribute to the removal of these restrictive barriers.

Myrna Bordelon Kassel

Myrna Bordelon Kassel, Ph.D.
Chairman, Interim Organization
for Chicago Area Allied Health Manpower

DATA FOR PLANNING

THE BARRIER

Planning for the allied health occupations is severely inhibited by the lack of information available for assessing current, intermediate and long range manpower needs within the State. Current labor market information, including occupational studies and forecasts, is incomplete and too general to assist the State, local governments and health-related agencies in developing sound plans.

THE RESULT

Since no effective overall planning is presently taking place, health service institutions, educators and manpower authorities are presently operating independently and without reference to any mutually understood set of goals or priorities for the State.

WE NEED

A centralized health manpower data bank for planning purposes. Such a data bank will involve comprehensive studies of present and projected needs for health manpower within the State. It will be necessary to obtain information on current and projected numbers and kinds of personnel employed in all health settings, including the new emerging community health care facilities.

TODAY'S VACANCIES

THE BARRIER

No effective machinery has been developed for identifying current job vacancies in the health service institutions in specific labor market areas or for matching these available jobs with applicants. The Job Bank, operated by the Illinois State Employment Service in the Chicago area, is not fully utilized by the health care institutions and the jobs which are listed are generally those in lower-pay entry level positions.

THE RESULT

Independent recruitment efforts by each employer are costly and inefficient. Qualified applicants, even those with scarce skills, are often compelled to shop around needlessly looking for work.

WE NEED

A consolidated system of health industry recruitment and job referral in communities which have large numbers of health care institutions.

MACHINERY FOR HEALTH MANPOWER PLANNING

THE BARRIER

While the State and the Chicago Metropolitan Area have established machinery for comprehensive health planning, models for effective health manpower planning within the framework of overall health care planning are still undeveloped.

THE RESULT

The lack of machinery for State and local health manpower planning contributes to ineffective recruitment, inadequate training capability, job development and placement services. At the local level the necessary linkages between the community organizations who can help in recruitment, the schools who can provide the training and the service institutions who provide the jobs are not developed. These factors discourage potential workers from entering the health field, leave many students to drop out of training and cause others who have completed training to withdraw from the health labor market.

WE NEED

Sound models for effective health manpower planning at the State and local levels to guide health planning authorities in evaluating their needs and marshalling their resources to meet them. Such models should provide operational links between community, professional and labor organizations, schools, hospitals, manpower programs, employers and others. In large metropolitan areas this machinery needs to be established on a sub-regional basis in order that it may remain closely related to local education resources and potential trainees and employers.

A MANPOWER PLAN TO ACCOMPANY ALL PROGRAM PROPOSALS

THE BARRIER

State and local authorities who are responsible for approving program proposals and/or granting funds to support health care programs do not always insist on the inclusion of a realistic and well designed manpower and staffing plan.

THE RESULT

Many programs which are approved and funded fall short of their objectives as the result of an inadequate or inappropriate manpower development and utilization plan.

WE NEED

To require that a set of manpower and staffing plans be included as an integral part of any proposal submitted by a health facility in which approval of local planning bodies and/or State funding are required.

TRAINING AVAILABILITY

THE BARRIER

Persons seeking training in the health occupations have no central resource available to them for obtaining information on existing training programs. The lack of such comprehensive information is a handicap to school counselors, employment counselors, educators planning new training programs and employers seeking continuing education opportunities for their employees.

THE RESULT

Some training resources are under-utilized because they are relatively unknown. Others are not developed to their full capabilities because the demand has never been fully expressed by applicants.

WE NEED

To establish and maintain a complete inventory of health occupations training opportunities throughout the State and a centralized information clearinghouse on available student slots.

To develop an information distribution network which will channel this information to all potential users of training resources.

LOCATION OF TRAINING AND TESTING SITES

THE BARRIER

Decisions made concerning the location of training programs do not appear to be based on considerations of need for specific kinds of trained manpower or the accessibility of the training program to the trainee population. Despite the acute need for dental technologists, for example, we have only three programs in the entire State, two in Chicago and one in Carbondale. Examinations for licensure for several health occupations are also inconveniently located.

THE RESULT

Costly and time-consuming transportation discourages persons from enrolling in training programs, particularly those who must continue working and cannot afford the loss of time away from their jobs. Similarly, the trip into Chicago which every person taking the Licensed Practical Nurse exam must make is an unnecessary burden on downstate persons, especially those with low incomes, work or household responsibilities.

WE NEED

To locate training programs in areas where 1) the highest priority of need for trained personnel exists; 2) facilities are easily accessible by available mass transit; and 3) a pool of potential manpower supply presently exists, can be developed or deployed.

To offer examinations in many locations throughout the State on the basis of their convenience and accessibility to the persons attempting to take these examinations.

POTENTIAL TRAINEE

THE BARRIER

We lack information about the potential manpower pools; that is, which kinds of youths and adults are motivated to enter the health occupations and why. We are equally uninformed about the effectiveness of various recruitment strategies and their effect on student retention.

THE RESULT

Recruitment efforts in the health occupations are not effective in obtaining the numbers and kinds of students needed,

WE NEED

A comprehensive study of student interest in the health occupations; an examination of current recruitment mechanisms and strategies as they relate to student retention and an evaluation of the cost effectiveness of these methods.

PEOPLE EXCLUDED

THE BARRIER

Partial or absolute blocks restrict the entry into certain health occupations of 1) disadvantaged persons and minority group members who cannot afford to pay for training or whose sub-standard basic education presently disqualifies them; 2) health workers who are performing competently on the job but do not have the prescribed academic degrees; and 3) women, older persons seeking second careers, ex-prisoners, ex-patients and others whose potential contribution is overlooked or underdeveloped.

THE RESULT

We pay the price for these discriminatory practices in an enormous waste of human resources. We also intensify the maldistribution of health manpower in inner city and under-serviced areas by neglecting to recruit from the economically and socially deprived populations.

WE NEED

To express and implement our full commitment at State and local levels as well as in the educational and health care systems to open opportunities for these groups by designing and mounting programs of intensive recruitment to bring these individuals into the health occupations.

To provide funds which will support the in-training, upgrading and maintenance of these workers in training through scholarships, loans, living allowances and work-study arrangements.

To make supportive services available including counseling, tutoring, day care and health services to help trainees remain in and complete their training programs.

TRAINING DESIGN

THE BARRIER

The design of training in the health occupations continues to place an undue emphasis on traditional liberal arts contents, primarily to insure the transferability of the student's credits to institutions of higher learning. For the majority of students, however, completion of high school associate of arts degrees constitutes terminal education. In view of this fact, the issue of transferability of credit to senior institutions should not be the major focus of curriculum design.

THE RESULT

The student who does not wish or cannot afford to continue with bachelor's level or graduate work loses valuable training time that could be used more appropriately in preparing him for the world of work and the earning of a livelihood.

WE NEED

The schools, in collaboration with their advisory boards and the accrediting authorities, to redevelop and revise undergraduate education in the allied health occupations to provide a more judicious mix of general and technical education, one which conforms more closely to the actual labor market demands which will be made upon the individual after his graduation.

OVER-TRAINING AND UNDER-UTILIZATION

THE BARRIER

Training programs are designed by educational institutions to meet the standards set by professional groups and accrediting associations whose general tendency has been to raise requirements for entry and upgrading in the health occupations.

THE RESULT

Workers are over-trained for the actual jobs to be performed, resulting both in a wastage of scarce skills and training resources as well as the failure to fully utilize new workers who can perform lesser skilled jobs competently.

WE NEED

To perform a functional analysis of the work skills actually required at each level and to gear the content and duration of training programs to actual job requirements.

OBSOLETE TRAINING TECHNIQUES

THE BARRIER

We continue to use archaic training techniques in preparing workers for the allied health occupations. Programs are often unnecessarily lengthy, expensive to administer and overly-wedded to use of lecture methods and mere acquisition of information. We continue to adhere to fixed semester periods irrespective of the ability of many students to learn more rapidly or the needs of employers to enroll workers at times more convenient to the needs of the health service institution.

THE RESULT

We are wasting teaching and fiscal resources as well as the time of instructors and students, thus reducing the potential output of existing training programs. Furthermore, while didactic teaching methods may produce graduates who have extensive factual information, it is equally important that workers acquire a repertoire of flexible skills and positive attitudes towards service to people.

WE NEED

To introduce modern technological tools, such as closed circuit television,programmed instruction and other audio-visual equipment for classroom work, tutorial programs and individual home study.

To give greater emphasis to skill practice and development within the context of client and community needs.

To gear the length of a training program to the capability of the individual trainee to acquire the necessary knowledge and skills.

To set up programs at times that are responsive to the needs of the health care institutions who are collaborating with the college in a specific training program.

COMPETENCE TESTING

THE BARRIER

Under present Illinois statutes and educational practice, it is not possible for competent workers in certain allied health occupations to enter into training programs or to qualify for licensure or certification without having completed a prescribed academic training program.

THE RESULT

Large numbers of workers who have acquired knowledge and skill in ways other than academic training are excluded from advancement and/or official status in their occupation. These practices prevent employers from fully utilizing and giving appropriate compensation to competent workers who are capable of performing more responsible tasks. Educators waste scarce training resources by compelling workers to learn all over again what they already know.

WE NEED

To develop a battery of proficiency examinations for statewide use such as those developed by the State of New York. These examinations should be 1) available in many geographical locations; 2) acceptable to all educational institutions; and 3) designed to test performance capabilities rather than mere technical knowledge.

TEACHER SHORTAGES

THE BARRIER

We do not have enough qualified teachers to meet the needs in the allied health occupations for training staff. Under existing statutes, as well as regulations promulgated by State, local and professional agencies, academic requirements for instructors are set so high that competent potential teachers cannot be utilized in training programs.

THE RESULT

The shortage of accredited teachers makes it impossible for us to significantly expand our present training capacity in the State. The skills of many potential instructors are wasted under present restrictive regulations.

WE NEED

To increase and accelerate the training of allied health instructors.

To reduce the academic requirements specified for allied health instructors.

To build preparation for teaching others into training programs at all levels so that knowledge and skills can be shared by competent workers with trainee groups.

CONTINUING EDUCATION

THE BARRIER

Persons presently licensed or certified are assumed to remain competent workers on the basis of having passed a once-in-a-lifetime examination. The health care industry and the health care professions have not invested adequate resources in staff development for existing personnel.

THE RESULT

In view of the knowledge explosion and the rapidly changing technology in medical care, the failure to provide all health care workers with opportunities for continuing education contributes to the obsolescence of staff skills and consequently a deterioration of health care services.

WE NEED

An immediate expansion of continuing education for existing health care practitioners through in-service training programs as well as linkage with outside educational institutions.

A commitment on the part of employers to provide release time and to support the cost of such continuing education and maintenance of student and employee.

The development and implementation of standards which will require the demonstration of the continuing competence of a health worker as a criterion for renewing his licensure or certification.

ATTITUDES OF ADMINISTRATORS

THE BARRIER

While health is one of the prime growth industries in this country and therefore one of the fields which should carry high priority within the educational system, educational administrators are generally unfamiliar with the existing and emerging allied health occupations. This lack of knowledge and awareness is combined with the general tendency of educators at all levels to downgrade vocational programs as second-class education for second-class students.

THE RESULT

If we were earnestly to attempt to recruit and train the numbers and kinds of allied health workers we need now, the lack of available training resources in most communities would constitute a critical bottleneck. Even today, with recruitment and available funds far below the level of need, a serious shortage of training programs exists.

WE NEED

To encourage, through the State Board of Vocational Education, the Higher Education Board and the various educational associations, educational administrators 1) to become familiar with the rapidly expanding allied health field; 2) to increase the number of vocational counselors within the secondary system; and 3) to give health education programs high priority as well as full and equal treatment as first-class careers for first-class students.

VOCATIONAL EDUCATION UNNECESSARILY DELAYED

THE BARRIER

Vocational and technical education in the health occupations starts too late. We do not expose the high school student to career opportunities in the health field early enough nor do we provide training which will give him upon graduation the opportunity to work in the health care field at an attractive entry level salary.

THE RESULT

A serious loss of manpower potential, a waste of education, human and fiscal resources and a high dropout rate because education is regarded as irrelevant by the student or because he cannot afford to continue going to school.

WE NEED

To expand vocational education programs in health at the high school level to equip students with marketable skills upon graduation.

To articulate high school programs with community college programs so that training received in the high school provides opportunity for advanced placement in a two-year program.

To enlarge the health occupations consultant staff of the State Board of Vocational Education and Rehabilitation so that more communities may receive help in planning and implementing secondary school programs in health education.

PERSONNEL STRUCTURES AND STANDARDS

THE BARRIER

The health service institutions, particularly the hospitals, have not exercised their responsibilities as employers to develop industry-wide job classifications, personnel policies and standards which can best achieve their service objectives.

THE RESULT

Serious inequities in wages, working conditions, employer expectations and training requirements persist among health manpower users in the same community. Since training programs provided in one institution may not be acceptable in another, workers are often required to re-enter entry level training programs when they move into the same job in a new institution. This results in a waste of valuable staff time and the acceleration of training costs for which the consumer must ultimately pay.

WE NEED

The health service institutions to begin applying the techniques of systems analysis and functional job analysis in an industry-wide effort in each labor market area. This will require each institution to make a careful analysis of its functions and the levels of skill and training required to perform these functions. The goal is to identify the commonalities which exist and to encourage local inter-institutional compacts with respect to job descriptions, training requirements and basic conditions of work.

VERTICAL MOBILITY

THE BARRIER

Health educators in Illinois have not developed the inter-institutional agreements which will enable persons who have successfully completed training for one rung of the education ladder to proceed from that rung directly up to the next level of training in that occupation. In most communities in Illinois, for example, a Licensed Practical Nurse entering into an associate degree nursing program in the community college does not receive any credit or reduction in the time requirement. The same lack of articulation between training programs inhibits Dental Hygienists from moving up to becoming Dentists, Physical Therapy Assistants from becoming Physical Therapists and Medical Laboratory Technicians from becoming Medical Technologists.

THE RESULT

Forcing persons to repeat the same training they have already assimilated reduces motivation for entering advanced training programs and represents an unsupportable waste of scarce manpower, training resources and funds.

WE NEED

The community colleges, the four-year colleges and the universities to proceed immediately to implement genuine education ladders which will enable workers who have completed one level of training to move directly into the next, receiving full credit for their prior education. Since most students will have already successfully mastered portions of the advanced training program, such agreements should result in a considerable shortening of the length of time required to complete the advanced training.

HORIZONTAL MOBILITY

THE BARRIER

Health educators and professional groups have failed to identify the basic background of knowledge and skill which is common to all health workers. Each specialty has developed its own set of requirements independently of the others. Health workers attempting to move from one specialty into another, therefore, find that they must start from the bottom again.

THE RESULT

Practices which tend to freeze a worker into a single specialty limit his career options and his ability to adapt to changes in medical technology which may make his specialized skills obsolete. The educational costs involved in providing unique training programs for each specialty are excessive.

WE NEED

The educational institutions in Illinois to agree upon and establish basic health core curricula for the training of health workers at each academic level irrespective of specialty. Training to provide highly specific knowledge and skills should be conducted primarily in clinical training settings and on the job training sites.

The professional groups to begin developing inter-disciplinary agreements which can then be implemented by the educational institutions to enable workers to move from one health occupation into another with maximum transferability of credits for prior academic work and experience.

HIGH TURNOVER AND ATTRITION RATES

THE BARRIER

The health industry and the quality of health care suffer from an excessive turnover of hospital workers and a high attrition rate of trained personnel in certain occupations. Among the contributing factors are low entry level wages, poor working conditions, lack of opportunity for upward mobility and the insufficient motivation of many newly trained persons to remain in the health occupations.

THE RESULT

The costs, both monetary and social, to keep recruiting and training a continuing in-flow of new workers cannot be justified. In the interim the potential of presently employed and dedicated workers is grossly neglected.

WE NEED

To examine present attrition and turnover rates in the health fields and develop programs which will improve the retention and the morale of workers through changes in the reward and opportunity system as well as the conditions of work.

To open and accelerate programs to train and upgrade persons already employed, persons who are more mature, geographically stable and already committed to employment in the health care field.

HEALTH TEAM

THE BARRIER

Although health practitioners are aware that the effective delivery of services to clients requires the interaction and collaboration of many disciplines and skilled workers in the "health care team," the health industry remains one of the most hierarchic in contemporary society. Each level of worker is preoccupied in defending his status vis-a-vis those below and each specialty organizes separately to enhance its own interests.

THE RESULT

This climate does not support a rational division of labor or effective interdisciplinary teamwork based on the needs of the client. It is highly questionable whether we are in fact making best use of the manpower now employed or the scarce skills of highly trained specialists in present patterns of manpower utilization.

WE NEED

To design and demonstrate new models of staff utilization based upon the needs of clients and full commitment to the health care team concept.

PROGRAM FUNDING

THE BARRIER

Health agencies and community organizations who are eager and committed to the development of innovative service and training programs lack information about available funding resources. They are severely hampered in their efforts to secure multiple funding support by the incredible complexities of the procedures which are most frequently involved.

THE RESULT

Too many casualties of excellent program proposals occur as a result of the battle fatigue induced by efforts to obtain funding information or to put a package together involving more than one funding source.

WE NEED

To develop and make available to agencies an inventory of major funding sources, their policies and procedures. Such an inventory should lead to specific recommendations for greater simplification and clarity in approaching the funding agencies best equipped to handle specific program proposals.

PROFESSIONAL VERSUS PUBLIC INTEREST

THE BARRIER

Many professional groups continue to exert strong pressures to raise the educational requirements for entry into and mobility within the health occupations. Their primary concern seems to focus on "quality of care" as perceived and rendered by the particular professional group rather than by the relevancy of what is received by the community.

THE RESULT

Since the quality of service received by the community is not guaranteed by the standards set for itself by a particular professional group, professional control of the education and utilization of health manpower has restricted 1) the delegation of tasks which can be competently performed by lesser trained individuals; and 2) the optimum use of the human, fiscal and training resources available to achieve higher levels of health care for all persons in the community.

WE NEED

To document the activities of professional organizations and to suggest appropriate changes in procedures and policies that affect the production and utilization of health manpower.

To implement changes which will provide legitimate representation and utilization of professional groups, while at the same time protecting the community from the control of public policy by specialized interest groups.

LIMITATIONS ON THE NUMBER AND KINDS OF TRAINING PROGRAMS

THE BARRIER

There is a common perception that the Department of Registration and Education restricts the number and kinds of training programs which can be offered in a specific location. It appears to individuals and agencies that many of these decisions are made arbitrarily, without reference to local needs or capabilities and sometimes in opposition to the expressed wishes and priorities of local communities.

THE RESULT

It has been extremely difficult to obtain clarification as to the precise scope of the authority of the Department of Registration and Education in these matters, particularly in view of the conflicting interpretations which emanate from various representatives of the Department with respect to which actions require its official sanction. The effect has been to make trainers extremely apprehensive about effecting even the most minor changes in programs already approved, such as expanding or modifying programs to meet the needs of specific trainee groups and employers. This results in a failure to make full use of the training capabilities which are presently available in many communities throughout the State.

WE NEED

To proceed at once to obtain a clear statement from the Board of Registration and Education indicating who has final authority to determine the size and kind of training programs to be offered in a specific community. Such a statement should be widely distributed so that every training institution can proceed to exercise its legitimate decision-making authority within the framework of State law. As a general rule, programs should be authorized wherever local education authorities in consultation with employers and other community groups demonstrate their commitment, their training capability and the availability of jobs for graduates.

STATE LICENSURE AND CERTIFICATION

THE BARRIER

Licensure and certification procedures have been allowed to circumscribe the route a worker must take into the health occupations if he is to achieve any status in the system. Since the administration of these licensure and certification procedures is dominated by professional groups with specialized interests, the health occupations have become fragmented and over-specialized. Consumer participation is conspicuously absent in the shaping of public policy.

THE RESULT

Competent workers are prevented from moving vertically or horizontally in the health occupations because they lack the specific credentials specified by the Department of Registration and Education. Employers are inhibited from flexible use of the work force. While mandatory licensing measures are theoretically designed to protect the public, there is little evidence to show that they have actually contributed substantially to the quality of care and the public safety. Because present licensure proceedings contribute to the fragmentation of the health occupations, they have discouraged experimentation with new and more generic types of health workers.

WE NEED

A comprehensive inquiry into our present licensure and certification system to be followed by implementation of needed changes. In such an inquiry high priority should be given to 1) the restructuring of the State Department of Registration and Education to secure broad consumer participation in the development of public policy relating to the licensure and certification of the health occupations; and 2) an intensive investigation of the relevance of mandatory licensure and certification to health manpower production and the quality of health care.

II. BARRIER REMOVAL: A STATEMENT OF PROGRESS

What progress has been made in Illinois in removing the twenty-five barriers that restrict the effective recruitment, training and utilization of allied manpower?

The following summary is a response to this question. Its purpose is to cite, illustratively not exclusively, specific examples of progress Illinois is making in relation to each barrier.

The examples of progress cited reflect some change in attitude, intent and commitment to more effective allied health manpower planning, training, and utilization. The majority of these efforts, however, represent potentialities rather than actualities. The hope of actualizing these potentialities lies in the careful examination of each of these barriers and in the prompt and appropriate action to remove them.

A. DATA AND MACHINERY FOR PLANNING

(1 and 3)* Data and Machinery for Planning

In its January 1971 progress report, the Illinois Hospital Association listed the existence of forty (40) local comprehensive health planning organizations, associations, or agencies. The potential machinery for health planning is beginning to emerge.

On the state level, the Comprehensive State Health Planning Agency (CHPA) is federally mandated to function as the permanent machinery for such comprehensive health manpower planning. It is presently working in close conjunction with the Illinois Department of Public Health in developing a Total Health Information System (THIS) whose unique feature will be area profiles. The profiles will include essential data for manpower planning and development. As of September, 1971 the Physician and Nurse Manpower Registrar will be implemented.

*Numbers cited here and on the following pages refer to the numbers assigned to specific Barriers in Part I.

The State Comprehensive Health Planning Agency was also one of the originators of the Illinois Inter-Agency Task Force on Health Manpower and Education. The four other originating agencies include the Chicago Comprehensive Health Planning Organization, the Health Education Commission, the Illinois Regional Medical Program and the Health Careers Council of Illinois. These five agencies and the other agencies represented among task force members constitute a potentially innovative framework for manpower planning in Illinois. One of the Task Force's major objectives is to initiate and/or assist efforts to coordinate the collection and maintenance of data relevant to health manpower and education needs, production and utilization.

Also on the state level, the Health Education Commission (HEC) of the Illinois Board of Higher Education, in conjunction with the Rand Corporation and with the cooperation and prior efforts of professional and allied health associations has made progress in surveying present and projected manpower needs within discrete health fields. It is also developing a model for future health manpower need and utilization in Illinois (refer also to Training Availability 5).

On the local levels, federally empowered Comprehensive Health Planning Agencies (CHP Agencies) are the machinery for manpower planning. In the Chicago area, for example, the Metropolitan Comprehensive Health Planning Agency and its subarea planning bodies are involved in the Interim Organization for Chicago Area Allied Health Manpower. This organization is a successful effort to form a viable transitional machinery for health manpower planning until the permanent machinery is established.

CHP (b) in conjunction with Argonne Laboratories and the CONSAD Corporation is applying for federal and foundation monies to establish a comprehensive health data system for the Metropolitan Chicago area. If granted, this data

system could provide the operational base for coordinating, generating, and processing health manpower data.

Mid-Southside Health Planning Organization, a sub-area planning of CHP (b), in October 1970 completed a two year manpower survey of its planning area: Community areas 33-42. The survey included an inventory of health facilities, budgeted positions and vacancies, the potential community manpower pool, and the present and projected community based training programs. A Federal Grant is now pending to establish a sole purpose, not-for-profit corporation to operate a comprehensive Mid-South Allied Health Manpower Program. The corporation is designed to link the community organizations who will be responsible for recruitment with the local hospitals and schools who can provide the training. Finally it will link students who have successfully completed the training programs to the local health facilities who have committed jobs. Its on-going data base, employment registry and job bank information could be fed into a metropolitan manpower data system such as has been described.

The Mid-South model, <u>if</u> replicated in the three other sub-area planning units of CHP (b), might provide the beginnings of a permanent structure for health manpower planning in the Metropolitan Chicago area.

(2) <u>Today's Vacancies</u>

The Cooperative Area Manpower Planning System (CAMPS) was discussed as a potential permanent <u>structure</u> for a comprehensive job vacancy information system. The Chicago area CAMPS organization is composed of some 25 government agency representatives from state, county, and municipal governments. The agencies represented are mainly those whose interests in manpower development are strong. CAMPS has health manpower as a high priority. It is involved in an effort to integrate health care system planning with comprehensive manpower planning. At present, CAMPS is in a process of

reorganization. The future capability will depend to a large extent on federal manpower legislation now under consideration.

In February 1971, the Human Services Manpower Career Center conducted a feasibility study into the formation of such a job vacancy data gathering system. The initial focus of the system would be human service jobs including health within the public sector. The Interim Organization is presently working on plans to establish such a reporting system for job vacancies in health for the Chicago area. A sample questionnaire has already been constructed to determine budgeted vacancies and training programs in health care facilities, including nursing homes, group practices, solo practioners, public health agencies, laboratories, clinics and hospitals.

(4) Manpower Plan to Accompany All Program Proposals

Pending Illinois Health Facilities and Services Planning Act (HB2653) makes it mandatory for any new health facility proposal to include a manpower staffing plan.

B. TRAINING

Upon the recommendations of the Master Plan for Higher Education for a state survey of health manpower education, the Board of Education published in 1968 Education in the Health Fields for the State of Illinois, more commonly referred to as the Campbell Report. As a result, the Health Education Commission (HEC) was formed to "mobilize and coordinate" educational resources in order to increase the production of health care manpower. The Rand Corporation was consequently contracted to assist HEC in developing analytical tools to better insure effective health education planning.

Rand is currently doing research in health manpower requirements, education, and information system design. The emphasis is on the analysis of health manpower supply.

(5) Training Availability

In April, 1971, Rand issued a working draft of a Health Education File for the state. The file contains approximately 2000 cards, each representing one program per school. About 1400 distinct programs are classified, covering a variety of educational levels, the majority baccalaureate and occupation-oriented.

The Health Careers Council of Illinois (HCCI) maintains a comprehensive current inventory on all present and proposed training programs in the health fields. Its records formed the substance of the State Health Education File. The American Medical Association also publishes a Directory of Accredited Allied Medical Education Programs in the United States.

Although significant progress has been made in maintaining a central information system of existing training programs, more thought has to be given to putting this information in more usable form and making it more known to all interested parties. Little progress has been made in centralizing an information clearinghouse on available student slots. The Health Careers Council of Illinois, however, has announced in its April 1971 newsletter that it will conduct a study to develop a coordinated system of student recruitment and referral in the Metropolitan Chicago area among its allied health institutions.

(6) Location of Training and Testing Sites

Present and projected allied health programs that are in the community college system offer an added degree of accessibility to the trainee population. This accessibility has been coupled with some efforts to recruit from minority

groups who have previously been severely restricted from entry into certain health fields.

However, little or no progress has been achieved in improving the accessibility of testing sites. The Illinois Nurses Association is trying to increase the frequency of the Licensed Practical Nurse examinations as a first step toward expanding the number and location of testing sites. This present effort is particularly timely because the National Testing Board is unfortunately contemplating a reduction in the number of tests given annually from four to two.

(7) Potential Trainee

(8) People Excluded

The Board of Education, the Division of Health Occupation Careers, is active in recruiting among the minority groups. It also provides pre-vocational training as an integral component of the overall program.

(9) Training Design

(10) Over Training and Under-Utilization

(11) Obsolete Training Techniques

(12) Competence Testing

In the area of competency testing the progress is also slow and marginal. No statewide development of proficiency examinations in the health fields is in

sight. There are signs of progress. Seven out of ten collegiate nursing programs in Illinois provide challenging examinations which allow students to place out of certain courses. Policies, however, vary from school to school. Olive-Harvey campus of the Chicago City Colleges in collaboration with the University of Chicago Hospitals and Clinics will introduce proficiency examinations for a group of LPN's employed by the U. of C. This effort is an attempt to reduce the length of the standard two-year program. The directors of all the Chicago City College nursing programs have recently met to discuss this same type of examination.

(13) Teacher Shortages

Significantly, teacher shortage has been made the top priority issue by manpower experts in Illinois. This awareness is in itself a sign of progress. The Illinois Nurses Association is seeking additional state and federal funds for accelerated training in nursing to increase the number of nurses for teaching and leadership positions. This allocation would be used primarily to raise the diploma R.N. and the baccalaureate R.N. to the baccalaureate and M.A. levels respectively.

The University of Illinois Center for Medical Education and Training under a Kellog Grant is developing a teacher training program for practicing physical-therapists. The training program will increase the number of part-time teachers on the junior college level.

(14) Continuing Education

The continuing education of health care workers will contribute to increasing teacher supply, decreasing high turnover rates, and securing the continued high quality of health care. The wider adoption in Illinois of the American

Medical Association's policy on Peer Review and the membership of Illinois in the Midwest Continuing Professional Education for Nurses are examples of the growing commitment to continuing education in the health fields.

The Illinois Regional Medical Program (IRMP) has continuing education and training as its primary educational intent. Its purpose is to maintain and update knowledge and skill in order to improve the level of already qualified health professionals. It provides some funding to the Center for Educational Development's Division of Continuing Education at the University of Illinois Medical Center. The Division has been involved in consulting professional and allied health educators and organizations since 1969. As a necessary step toward making concrete the need for continuing education in health, they are in the process of developing and subscribing Illinois physicians to self-assessment procedures. At the Illinois State Medical Society's May 1971 meeting, they conducted a volunteer program of assimilated self-testing and evaluation for the attending physicians.

C. ADMINISTRATION- UTILIZATION

(15) Attitudes of Administrators

On the state level there is evidence of some improvement in attitudes toward allied health education. The establishment of HEC in 1969 and its work is one example. The State Board of Vocational Education and Rehabilitation has officially declared health occupations education to be the top priority item for 1971-1972. The State Board of Vocational Education has required, since 1969, evidence of a local plan for Vocational Information. It is encouraging that this requirement applies to the elementary as well as the secondary grades.

(16) Vocational Education Unnecessarily Delayed

(17) Personnel Structures and Standards

(18) Vertical Mobility

Since the health industry has failed to develop industry-wide job classifications and personnel policies and standards, horizontal mobility into a new health profession is severely impeded. More efforts are being exerted to develop mobility within a single discipline. The University of Chicago Hospitals and Clinics has a pending proposal for upgrading Nurse Aides to LPNs and LPNs to RNs as well as entry level to Basic Hospital Science to Certified Laboratory Assistant to Medical Laboratory Technician and entry level to clerical jobs. This might initiate a significant breakthrough for vertical career mobility in Illinois (refer to Competence Testing (12).

The Chicago Medical Schools Physical Therapy and Medical Technology Programs also intend to employ a closely inter-related training design that ensures the maximum credit in moving from the aide to assistant and assistant to therapist levels.

(19) Horizontal Mobility

The proposed Dermatological Assistant Program, a cooperative effort of the University of Chicago Hospitals and Clinics, and the Central YMCA College, might provide an opportunity for horizontal mobility. The trainee would first complete the Medical Laboratory Technician (MLT) program and then take more specialized courses that would qualify him as a dermatological assistant.

HB2157- This bill allows medical schools to admit with advanced standing students who have had accredited training in health related fields. Under this legislation, it will be possible for such students with prior training to complete their M.D. in less than 36 months.

(20) High Turnover and Attrition Rates

(21) Health Team

(22) Program Funding

The Health Careers Council of Illinois, and more recently the Interim Organization for Allied Health Manpower, sponsor seminars on funding sources and procedures. In view of the past and projected demand for their important service, a more sustained effort is needed to provide this type of assistance.

D. LICENSURE

(24) Limitations on the Number and Kinds of Training Programs

(23 & 25) Professional vs. Public Interest/State Licensure and Certification

The Illinois Inter-Agency Task Force on Health Manpower in concord with other health associations supported Governor Ogilvie's request for a moratorium on additional licensing and certification categories for health professions.

This declared moratorium is a concrete illustration of commitment to health manpower redefinition within Illinois. The Inter-agency Task Force has also accepted the invitation of the Governor's Office of Comprehensive State

Health Planning to collaborate in a short-term investigation of more creative and effective interpretations of the existing statutes affecting the recruitment, training, and utilization of health manpower.

The Illinois Hospital Association's May 1971 Document and Recommendations on Licensure in Illinois and House Bill 854 A (the Katz Bill) asking for a three-year commission to investigate licensure are also significant beginning stages of progress in overcoming barriers to a more rational health manpower development.

APPENDIX I

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APPENDIX II

SELECTED ILLINOIS GOVERNING STATUTES THAT NEED TO BE REEXAMINED

1. The Illinois Chiropody or Podiatry Law, Ill. Rev. Stat. 1969, Ch. 91, Sec. 73-89

2. The Illinois Dental Practice Act, Ill. Rev. Stat. 1967, Ch. 91, Sec. 56 a - 72h

3. The Illinois Medical Practice Act, Ill. Rev. Stat. 1967, Ch. 91, Sec. 1-39

4. The Illinois Nursing Act, Ill. Rev. Stat. 1967, Ch. 91 35.32 to 35.56

5. The Illinois Optometric Practice Act, Ill. Rev. Stat. 1969, Ch. 91 Sec. 105.1

6. The Illinois Pharmacy Practice Act, Ill. Rev. Stat. 1967, Ch. 91, Sec. 55.1 to 55.63

7. The Illinois Physical Therapy Registration Act, Ill. Rev. Stat. Ch. 91, Sec. 22.1 - 22.29

8. The Illinois Psychologist Registration Act, Ill. Rev. Stat. 1967 Ch. 91½, Sec. 401 - 427

9. The Illinois Veterinary Medicine and Surgery Practice Act, Ill. Rev. Stat. 1967, Ch. 16 3/4 Sec. 124.1 to 124.12

10. The U. S. Vocational Education Act, 1963, as amended 1968

APPENDIX III

SELECTED REFERENCES

American Hospital Association. Statement on licensure of health care personnel. Chicago, 1970.

American Medical Association, Council on Health Manpower. Resource paper. Chicago, 1970.

American Medical Association, Dept. of Health Manpower. Health manpower progress report. Chicago, 1969

American Medical Association, Dept. of Health Manpower. Licensure of health occupations. Chicago, 1970.

Blum, H. L. F. Wahl, G. M. Lemon, R. Jornlin and G. W. King. The multipurpose worker and the neighborhood multiservice center: Initial experiences and implications of the Rodeo Community Service Center. American Journal of Public Health, Vol. 58, No. 3, March, 1968, p. 458-468.

Broadwell, Lucille. Overcoming barriers to health occupations education. Board of Education, Chicago, 1970.

Campbell, James A. A report on education in the health fields for State of Ill. Board of Higher Education, Vol. II. Chicago, 1968.

Grossmont College Conference on Bio-Medical Technology and Manpower. American Assoc. of Junior Colleges. Washington, D. C., 1970.

Health Administration Program. Barriers to manpower mobility and utilization. Univ. of Calif., Berkeley, 1971.

Hull, John T. An overview and analysis of factors contributing to present and future health manpower needs. Health Career Council of Ill., Chicago, 1966.

Ill. Comprehensive Health Planning Advisory Council, Health Manpower Committee. Resolutions concerning interagency health manpower committee. Chicago, 1970.

Ill. Interagency Task Force on Health Manpower. Tasks for the task force, Chicago, 1971.

Ill. Study Commission on Nursing Fact Book. Springfield, 1966.

Institute for Interdisciplinary Studies. The need for legislative change. Comprehensive Health Planning Agency of Minnesota, Minneapolis, 1970.

National Congress on Health Manpower. Summation of task group reports. American Medical Association, Chicago, 1970.

Report of the National Advisory Commission on Health Manpower. Appendix I, Vol. 1. U. S. Govt. Printing Office, Washington, D. C., Nov., 1967.

APPENDIX III

SELECTED REFERENCES (cont.)

Rosen, Sumner M. Change and resistance to change. Social Policy, Vol. 1, No. 5, Jan./Feb., 1971. p. 3-5, 15-25.

The Carnegie Commission on Higher Education. Higher education and the nation's health. Washington, D. C., Oct., 1970. p. 49-55.

U. S. Dept. of Health Education and Welfare. Public Health Services, Health Manpower Source Book, Section 2. Nursing personnel. U. S. Govt. Printing Office, Washington, D. C., 1953.

U. S. Dept. of Labor. Occupational licensing and the supply of nonprofessional manpower. Manpower Research Monograph No. 11, Washington, D. C., 1969.

Williams, Grier. Needed: a new strategy for health promotion. New England Journal of Medicine, Vol. 279, Nov., 7, 1968. p. 1031-1035.

VT 014 382
EVALUATING MDTA PROGRAMS; WORKSHOP
PROCEEDINGS AND PARTICIPANT FOLLOW-UP.

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BUREAU OF VOCATIONAL EDUCATION
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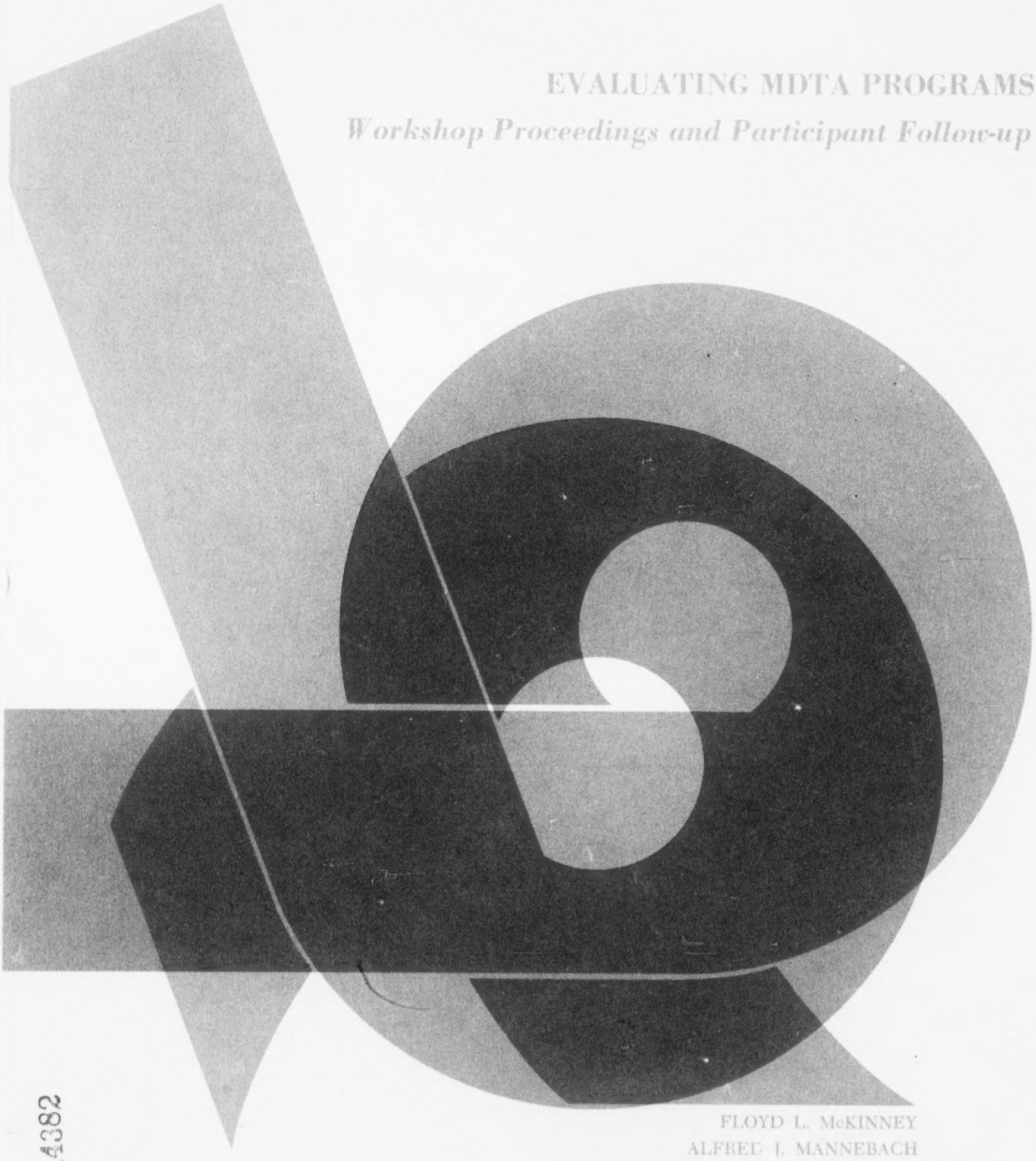
ABSTRACT - THIS WORKSHOP WAS CONDUCTED TO
ASSIST MANPOWER DEVELOPMENT AND TRAINING ACT
AND ECONOMIC SECURITY PERSONNEL IN KENTUCKY
IN EVALUATING MANPOWER DEVELOPMENT TRAINING
PROGRAMS. THIS REPORT PRESENTS ABSTRACTS OF
THE WORKSHOP PRESENTATIONS COVERING
EVALUATION, OBJECTIVES, ORGANIZATION,
ADVISORY COMMITTEES, FOLLOWUP INSTRUMENTS,
ELECTRONIC DATA PROCESSING, ASSISTANCE
AVAILABLE FROM OUTSIDE AGENCIES, AND
INTERPRETATION AND IMPLEMENTATION OF
FINDINGS. FUTURE WORKSHOPS WERE RECOMMENDED
IN EVALUATION AND OTHER AREAS. (BH)

VT 014 382

EVALUATING MDTA PROGRAMS

Workshop Proceedings and Participant Follow-up



FLOYD L. McKINNEY
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VT014382

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EVALUATING MDTA PROGRAMS

Workshop Proceedings and Participant Follow-up

May 18-22, 1971
Seelbach Hotel
Louisville, Kentucky

PROJECT DIRECTORS

Dr. Floyd L. McKinney

Dr. Alfred J. Mannebach

October, 1971

Dr. Clayton P. Omvig, Director
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Department of Vocational Education
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WORKSHOP SPONSORS

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State Program Evaluation
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Kentucky Department of Economic Security

United States Office of Education

BUREAU OF ADULT, VOCATIONAL AND LIBRARY PROGRAMS

Division of Manpower Development and Training

PREFACE

This publication is a report of a workshop conducted to assist MDTA and Economic Security personnel in the State of Kentucky to evaluate manpower development training programs. Included in this report is a follow-up of all participants attending the workshop, as well as a complete report of the workshop proceedings.

It is hoped that the materials included in this report will serve as a reference source for those individuals interested in program evaluation. The follow-up results reported by the workshop participants should provide inspiration for those initiating evaluation efforts.

ACKNOWLEDGMENTS

The project directors wish to express their sincere appreciation to C. O. Neel, James McGown and Lyle Neikirk for their valuable advice and assistance in planning and conducting the workshop. The assistance and encouragement of the Kentucky State Evaluation Task Force for Vocational Education was most helpful in assuring the success of the workshop.

Special appreciation is expressed to the small group leaders: Mary Lois Williamson, Lyle Neikirk, Charles Wade and Steven Gyuro. To an outstanding group of consultants the project directors are most grateful.

Sincere thanks are also extended to the Kentucky Research Coordinating Unit staff members, research assistants and secretaries for their support throughout this project.

Finally, the project directors wish to express the greatest appreciation to a most dedicated and sincere group of workshop participants. It is ultimately their efforts that will make this workshop worthy of the expended resources.

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CHAPTER I

INTRODUCTION

Statement of Problem

The Manpower Development and Training Act, enacted by Congress in 1962, established the Nationwide Federal program to provide institutional and on-the-job training for unemployed and underemployed persons. Training under this Act is designed to provide workers with new skills where needed, to upgrade their present skills and to meet the job needs of workers displaced by automation, technological changes, geographic relocation of industry, and shifts in labor market demands. Eligible trainees receive weekly training allowances. Persons to be trained must have reasonable expectations of employment or must give assurance of their willingness to accept employment outside of their area of residence. The Act is designed primarily for the training of unemployed and disadvantaged persons to provide them a salable skill to make them employable.

The program is a cooperative effort between the Department of Health, Education and Welfare and the Department of Labor on the federal level and between Vocational Education and Economic Security on the state and local levels. Each agency plays a vital role and each has its own responsibility under the Law. No one agency could operate without the other. The institutional training programs are developed and implemented by the local vocational schools. Thus far, approximately 16,000 persons have been trained in MDTA programs in Kentucky. About eighty per cent of those that have completed MDTA courses, in Kentucky, have been employed in jobs related to their training.

Few follow-up studies have been conducted to determine whether or not MDTA programs are meeting the need of those persons that they are designed to serve. Under existing law, an evaluation of MDTA programs must be conducted to determine the degree of success of the programs.

Persons conducting, administering, and coordinating MDTA programs have had little concern for program evaluation in the past. Little attempt has been made to evaluate MDTA programs and MDTA personnel have had little experience in evaluation. Because evaluation of MDTA programs is now mandated by law, coordinators and administrators of MDTA programs must know the latest procedures and techniques in evaluation, an inservice educational program was considered essential to prepare administrators and coordinators of MDTA programs in the latest procedures and techniques in evaluation.

The major problem for the project was: Can administrators and coordinators of MDTA programs and other selected staff members of the State Bureau of

Vocational Education develop a follow-up instrument and gain the expertise to write performance objectives and conduct program evaluations in a four-day workshop utilizing consultant leadership and professional education assistance?

Objectives

The objectives for the workshop, as stated in the original proposal, were as follows:

1. At the completion of the workshop the participants will be able to:

   a) write performance objectives for local MDTA programs;

   b) identify the essential elements of a product-oriented program evaluation effort;

   c) write a product-oriented evaluation plan for the local MDTA program;

   d) administer follow-up instruments according to successful practices as evidenced by research; and

   e) analyze follow-up data and to develop recommendations based upon the analysis of the data.

2. The workshop participants will develop a follow-up instrument to be used in the evaluation effort.

General Plan of Operation

The project involved planning, conducting and evaluating a four-day workshop held in Louisville, Kentucky, May 18-22, 1970. The workshop program was planned so as to actively involve the participants in a variety of activities specifically designed to promote the achievement of the objectives for the workshop. The workshop program focused on the presentation of procedures and techniques of evaluation which have proven effective in obtaining the kinds of information needed for decision-making regarding program improvement.

Following major presentations the participants met in small group sessions where they discussed the points presented and made use of selected evaluation procedures and techniques in developing an evaluation plan related to the MDTA program in the region in which they worked.

CHAPTER II

METHODS AND PROCEDURES

Selection of Participants

Prior to the funding of the workshop the following groups of people who are directly concerned with evaluation of MDTA programs or the evaluation of programs of vocational education in the State of Kentucky were indentified as groups of individuals who should be represented at the workshop:

1. MDTA Selection and Referral Officers,
2. MDTA Coordinators,
3. MDTA State Staff,
4. Economic Security State Staff,
5. State Vocational Education Evaluation Task Force, and
6. Selected Administrators in the Kentucky Bureau of Vocational Education.

State MDTA Directors in Region No. 4 were also extended invitations to attend the workshop.

Shortly after official notification that the workshop was funded, letters announcing the workshop were sent to selected individuals. Letters going to MDTA personnel were signed by James McGown, Director, Interagency Relations (MDTA), Bureau of Vocational Education, Kentucky State Department of Education, Frankfort. Prospective participants employed by the Kentucky Department of Economic Security received letters signed by Charles Furr, MDTA Representative, Kentucky Department of Economic Security, Frankfort.

The next mailing, regarding the workshop, received by the prospective participants was a flyer and pre-registration form from the workshop directors. The flyer provided information about the time, location, and objectives of the workshop. See Appendix A and B for copies of the flyer and pre-registration forms.

A list of the workshop participants giving their name, professional title and office address is contained in Appendix C. Also included in Appendix C is a listing of the workshop consultants and staff members.

Planning the Workshop

The workshop directors worked closely with C. O. Neel, Coordinator, State Program Evaluation, Kentucky Bureau of Vocational Education and James McGown and Lyle Neikirk, Interagency Relations (MDTA), Kentucky Bureau of Vocational Education in making the final plans for the workshop. This group concurred with the workshop objectives, content topics, general procedures and potential consultants as outlined in the workshop proposal. The workshop directors with the advisement of this group were able to refine and finalize the workshop program. Recommendations were also made regarding the presentation of topics and the organization of the small group meetings.

Three meetings were held with the small group leaders to orient them to the materials to be used and the procedures to be followed during the workshop. Lyle Neikirk, Mary Lois Williamson, Charles Wade and Steven J. Gyuro served as small group leaders for the workshop. General topics discussed in the pre-workshop meetings of the small group leaders included the role of the samll group leader, outline for the small group sessions, development of the regional evaluation plan and evaluation of the small group sessions. Agenda for the small group leaders meetings are in Appendix D.

All individuals pre-registered for all workshop sessions and those registered for only the Monday sessions and luncheon received a workshop program and letter from the workshop co-directors prior to the workshop. Copies of these letters are in Appendix E.

Conducting the Workshop

The workshop opened with registration at 9:30 a.m., Monday, May 18, 1970, in the Seelbach Hotel, Louisville, Kentucky. A complete copy of the workshop program appears in Appendix F.

In general, the workshop format consisted of major presentations followed by reaction panels and/or questions (see Appendix P) from the participants. Opportunity was provided in small group sessions for the participants to discuss the ideas presented by the speakers and to apply the ideas in the development of a regional MDTA evaluation plan.

The workshop headquarters in the Seelbach Hotel was open at all times with secretarial and research assistants available to assist the workshop participants in performing the duties expected of them.

All participants and guests registered in the Colonial Room of the Seelbach

Hotel. Appendixes G and H provide the workshop registration card and a refreshment preference sheet each participant and guest were asked to complete.

All workshop participants, consultants and staff members were provided a three-ring notebook and a packet of selected references. The references dealt with citizen advisory committees, objectives, follow-up studies and procedures and techniques for evaluating programs of vocational education. A complete listing of reference materials is provided in appendix I.

At the opening session of the workshop all participants responded to a thirty item "Con ept of Evaluation Inventory". This instrument was given as a pre and post-test to the workshop participants in an attempt to measure participant opinions regarding evaluation. A copt of the instrument can be found in Appendix J. Analysis of the participant responses can be found in Chapter IV.

Dr. Howard A. Matthews, Director, Division of Manpower Development and Training, Bureau of Adult, Vocational and Library Programs, U. S. Office of Education was the guest speaker at the Monday Luncheon. Dr. Matthews was introduced by Wendell P. Butler, Kentucky Superintendent of Public Instruction. A copy of the luncheon program is in Appendix K.

Each workshop participant was assigned to one of four small groups. The small group leaders were Mary Lois Williamson, Charles Wade, Lyle M. Neikirk and Dr. Steven J. Gyuro. Resource persons for the small groups were Dr. Floyd L. McKinney, Dr. Alfred J. Mannebach, C. O. Neel and James McGown.

Each small group was composed of participants from three of the State's vocational education regions. These regional groupings represented sup-groups within each small group.

An attempt was made to assign to the small groups individuals with a variation of backgrounds and responsibilities. The regional grouping within each small group was somewhat of a limiting factor in securing individuals with a diversity of roles in each small group.

Each of the regional groups in a particular small group possessed geographical proximity. This kind of grouping contributed to a cohesiveness of the group and a similarity of problems and concerns. A breakdown of the small groups appears in Appendix L.

In Appendix M is the outline for the small group meetings. This outline was developed by the workshop directors in cooperation with the small group leaders. It was not the intent of the workshop staff to so structure the small group sessions that freedom of expression was stifled. However, it was felt that a "plan of action" was necessary for the small groups if the workshop was to accomplish the objectives. Prior to the workshop it was felt that the small group meetings would be the real work sessions of the workshop and this was

definitely the conclusion of the workshop staff at the end of the workshop.

Each workshop participant received a copy of the small group meeting outline. This outline identified the objectives of each session, provided a list of references and a suggested procedure to follow in each session. Each small group was free to vary from the suggested outline, as long as the objectives were accomplished.

The guidelines for the participants evaluation plan is provided in Appendix N. An evaluation plan was developed by each regional group to meet the MDTA evaluation needs of that region. The evaluation plan was developed step by step throughout the workshop. Phases of the regional plans were submitted periodically so that the secretaries could type, duplicate and distribute the plan to the regional participants. In order to provide some structure and consistency to the regional evaluation plans an outline was suggested for each region to follow. The outline is in Appendix N.

The evaluation plans were submitted to readers for reaction to the writers on the last day of the workshop. Readers and the assignment of regional groups for reader reactions are listed in Appendix O.

Several instructional aids were used during the workshop. A complete listing of these aids appears in Appendix Q. Several of the workshop participants attended optional evening sessions for the viewing of a videotape showing the evaluation procedures and techniques used in the public schools at Blooming Prairie, Minnesota and the Vimcet filmstrips on educational objectives.

Evaluating the Workshop

Four techniques were used to evaluate the workshop while it was in progress. Six workshop participants were chosen by the project staff as interpreters. The interpreters were chosen so as to represent the different groupings of individuals attending the workshop. They were also judged to be capable of grasping the significance of evaluative types of comments made by the workshop participants. The interpreters usually met once a day with the workshop staff to provide feedback regarding changes that should be made in the workshop.

The second form of evaluation during the workshop was the evaluation of the small group meetings by the workshop participants. The form used for this purpose can be found in Appendix R. An analysis of the information from these forms is in Chapter IV.

The third form of evaluation used during the workshop was the "Concept of Evaluation Inventory" described in this chapter in the section, Conducting the Workshop. This instrument (see Appendix J) was used as a pre and post-test. The results obtained from this insturment are analyzed in Chapter IV.

At the concluding session of the workshop each participant responded to a workshop evaluation scale (see Appendix S). The responses of the participants are analyzed in Chapter IV.

Six months following the completion of the workshop a follow-up instrument was mailed to all of the workshop participants. The follow-up instrument was designed by the project directors in an attempt to determine activities in which the participants had engaged since attending the workshop. The follow-up instrument is provided in Appendix T.

Enclosed with the follow-up instrument was a letter from the project directors (see Appendix U). A thank you-reminder card (see Appendix V) was mailed to all workshop participants. The thank you-reminder card was signed by James McGown, Director, Interagency Relations (MDTA), Kentucky Bureau of Vocational Education. The final contact with the workshop participants was a second follow-up instrument and letter from the project directors (see Appendix W). The final mailing was sent only to those who had not returned the first follow-up instrument.

Follow-up items followed a ten to fourteen day interval with the following order of items being mailed to the workshop participants.

1. Follow-up instrument, addressed-postage paid return envelope and a cover letter signed by the workshop directors.

2. Thank you-reminder card signed by James McGown.

3. Second follow-up instrument, addressed-postage paid return envelope and a letter from the project directors.

Publicity

Mary Alta Tucker, Coordinator of Information Services for the Kentucky Bureau of Vocational Education, assisted in providing publicity for the workshop. Pictures were taken by the official photographer for the Kentucky State Department of Education.

News releases concerning the workshop appeared in the "Vo-Ed Highlights," "Kentucky Department of Education Weekly News," the "University of Kentucky Communi-K," the "Kentucky Department of Education School News," and various State newspapers.

Workshop Pictures

Dr. Steven J. Gyuro, center, confers with Workshop Directors Dr. Floyd L. McKinney, left, and Dr. Alfred J. Mannebach.

Registering for the workshop are, left to right, Dr. Howard A. Matthews, Luncheon Speaker; C. O. Neel, Coordinator, State Program Evaluation; and James R. McGown, Director, Interagency Relations (MDTA), Kentucky Bureau of Vocational Education.

The Workshop secretaries register Fred Martin, Director, Trade and Industrial Education, Kentucky Bureau of Vocational Education. Carolyn Bryan, left, and Jo Bradley served as staff secretaries.

Left to right: Wendell P. Butler, Kentucky State Superintendent of Public Instruction; Dr. Gene Love, Associate Professor, University of Missouri-Columbia and Workshop Consultant; Dr. Harold M. Byrom, Professor, Michigan State University, East Lansing and Workshop Consultant; and W. C. Montgomery, Director, Agricultural Education, Kentucky Bureau of Vocational Education.

Bobbie Grogan, Deputy Director, Kentucky Bureau of Vocational Education, and James R. McGown confer with Warren A. Seeley, MDTA Program Officer, U.S. Office of Education

Dr. Carl F. Lamar, Assistant Superintendent for Vocational Education, Kentucky State Department of Education, welcomes participants to the Workshop.

Members of one of the Workshop Reaction Panels were, left to right: Lyle Neikirk, Kenneth Carter, W. C. Montgomery, Clayton P. Omvig and John Wismann.

CHAPTER III

ABSTRACTS OF WORKSHOP PRESENTATIONS

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LUNCHEON ADDRESS

Howard A. Matthews

Dr. Matthews focused his address on identifying some of the factors that the education community and the employment security community should consider during the workshop.

Accountability is vital, especially in the area regarding students who tend to drop out of the educational system. What are we doing for them?

Effective evaluation was viewed as identifying and focusing upon the underlying benefits of the educational system. The evaluation of the multiplier effect of manpower programs was encouraged.

Traditional education models or myths were also discussed. It was urged that we evaluate traditional models because educational programs should be designed to serve the people. In the traditional sense, educators have formulated divisions between groups, education programs have been designed to fit poorly planned buildings, and attendance at school has been misunderstood. Attendance at school every day will not ensure attendance at work. Attendance laws were originated to get children out of the labor market, not to get more money for the schools.

Dr. Matthews next centered on motivators for evaluating programs. In vocational education, orientation to the work world is stressed; however it seems that the motivator for work is no longer the reward of job satisfaction. After all, people can now follow a sequence of enjoy now, pay later, which makes work a psychological punishment.

Dr. Matthews urged that those responsible for program planning and evaluation become involved with all governmental agencies concerned with the programs being planned.

WHY EVALUATE?

Harold M. Byram

Dr. Byram stated several reasons why manpower or vocational education programs should be evaluated. First, the program belongs to the citizens it serves; therefore, citizens should be involved in evaluating the program. Since many manpower trainees will be hired by local employers, there is justification for these employers to evaluate the training being given. It is also important for citizens to consider how "their" money is being spent.

Next, educators have a responsibility in evaluation. They will be held accountable for the outcomes of the program, namely, the skills, attitudes, and abilities of the students.

Dr. Byram emphasized that it is important that the evaluation of on-going MDTA programs be conducted to determine whether or not the program is meeting previously established goals and objectives.

Several principles of sound evaluation were presented. The evaluation should be conducted by those responsible for improvement of the program and by those affected by it. It is important to start with program goals and objectives which are stated in performance or measurable terms. The concern should be with the product of the program; the knowledge, skills, and attitudes of the trainees after completion of the program.

Desired outcomes should be identified in terms of standards based on past experience or comparisons with successful groups. Any research effort made must be based upon sound techniques. Evaluations should provide the information necessary for program improvement and program planning.

The evaluation process or model was then presented. The process involves identifying needs, stating objectives, asking criterion questions, obtaining evidence about the attainment of the objectives, formulating answers to criterion questions, and making decisions based upon the evidence collected.

WRITING OBJECTIVES IN PERFORMANCE TERMS

Gene Love

Dr. Love stated several reasons why objectives should be written in performance terms. First, it is important to remember when writing objectives that the learner is the most important consideration. There is no teaching if there is no learning. The student must be involved in specifying the terms of the learning contract; that is, developing the objectives. Carefully written objectives make the evaluation of teaching and learning a much easier task.

Second, the criteria outlined by Robert F. Mager facilitate the specification of objectives in performance terms. These criteria, used as guidelines, help the writer indicate (1) what the learner will be doing when he demonstrates that he has reached the objective, (2) under what conditions the desired behavior will be expected to occur, and (3) at what level the learner will need to perform.

Third, the first-order classifications in the three taxonomies of educational objectives as edited by Bloom, Krathwohl, and Simpson are useful in selecting the desired type and level of behavior in writing performance objectives. The classifications may be used as checklists to assist in the specifications of the desired level of performance.

Fourth, the writing of objectives in performance terms is, in the final analysis, a matter of commitment. Those who want to be better teachers can and do write objectives which clearly communicate desired behavioral outcomes.

ORGANIZING FOR EVALUATION

Harold M. Byram

Dr. Byram centered his attention on three basic aspects of organizing for evaluation. The first is the theory and practice of involvement in local program evaluation. In this section it was assumed that there is an acceptance of the premise that staff and citizens should be involved in evaluation. Citizens have an interest in evaluation because of their role as parents and/or employers. They are a good resource for advice because of their past work experience. It is most important for a citizens advisory committee to be composed of responsible citizens that are representative of the community.

As with the citizens advisory committee, the organization of a staff committee facilitates the pooling of knowledge and experiences. In many cases, staff members have not given much thought to the total program. They have concentrated on the subjects they were to teach. Therefore, it is important to include them in the evaluation effort and capitalize on their knowledge.

Dr. Byram next concentrated on selecting, organizing and using a staff committee. A leader or leaders must be appointed to head the staff committee to work on the evaluation project. The size of the committee will vary with the size of the manpower program and the purpose of the evaluation. The staff committee should be oriented to the purpose of the evaluation project so they can develop a plan for conducting the evaluation. The evaluation plan should be written and should include as a minimum the following:

--the purposes of the evaluation effort
--the scope and duration of the study
--the organization and function of the staff committee
--the organization and purposes of the citizens advisory committee
--the proposed major activities to be conducted
--the schedule of activities
--the plan for disseminating and implementing the findings
--the budget

The final area discussed dealt with the relationship of state and local leadership teams. Local educators should not work independently from a team conducting a statewide evaluation of MDTA or vocational education programs. It is vital that the state and local leaders discuss the kind of coordination needed. Goals and objectives should be set up at both levels. Eventually, a determination should be made of what minimum data and information are needed. Each local group can then determine what additional information might be needed for re-planning and improving the local program.

ORGANIZING AND USING CITIZENS ADVISORY COMMITTEES

Floyd L. McKinney

Dr. McKinney introduced the paper by emphasizing the need to involve citizens in program evaluation. The remaining part of the paper focused on the purposes, the selection, the organization, and the functions of a citizens advisory committee.

A statement of policy concerning citizens advisory committees should be developed by the board of education if one does not already exist. The policy statement should be brief and should include the purposes and functions of the committee, the number of members, the method of selecting the members, the length of term of the members, and the communication procedures to be used.

The primary purpose of the citizens advisory committee is to provide ways and means by which citizens can participate effectively in the program of MDTA or vocational education. Several general purposes were suggested for the citizens advisory committee.

Citizens advisory committees can be categorized as independent citizens committees and school initiated committees. School initiated committees are most effective in program evaluation because of the greater cooperation with school personnel.

Several factors were suggested for consideration in the selection of advisory committee members. For general committees, ten to fourteen members have proved desirable while for departmental and craft committees, five to nine members was suggested. Potential members should be viewed in terms of their interest in the vocational or manpower education program, their honesty, their willingness to work, and their knowledge of the world of work.

The school staff should suggest the names of possible members of the citizens advisory committee. The board of education should then select from the list of names submitted the citizens who are most likely to make the most valuable contribution to the committee.

Committee members should be appointed for a definite length of time. Three-year terms were suggested. Terms should be staggered, and replacements should be selected by the same process as the original committee members.

Committee organization is vital in order to achieve success. The organization of a citizens advisory committee centers around the formulation of a constitution and by-laws. Orientation of the committee members as to the purposes of the committee and their responsibilities in the evaluation process will help insure a clear understanding of the committee effort.

A school representative should be on the citizens advisory committee. His responsibility is to keep the members informed on vocational education objectives, on local, state and federal policies, and on trends in evaluation procedures.

Recommendations formulated by the committee should be made available in writing. An important function of the committee is to assist in interpreting the evaluation findings to other citizens in the community. Citizens committees can also assist in writing or revising statements of philosophy and objectives, identifying manpower needs, and interpreting evaluation data that has been collected.

DEVELOPMENT OF FOLLOW-UP INSTRUMENTS

Max U. Eninger

Dr. Eninger initiated his discussion with the basic premise that no matter what system one is trying to evaluate, the first step must be to establish the basic objectives of the system.

There are a number of ways to derive the objectives. One way is to develop a theoretical model which can be used to generate certain objectives that the system must have. An example of secondary education in major cities concerned with vocational education was presented. The model showed unskilled manpower being converted, through private and public education plus industry training, into skilled manpower. From this model, the basic program objectives can be derived; the need for increased enrollment, the need for increased course offerings, and the need for increased holding power of the programs. The use of this model can be tied to a second method of establishing the objectives of the program, the use of a consensus of experts. Another method of establishing objectives is through the use of research findings.

The second step is to identify the objectives that require a follow-up. Objectives requiring follow-up include areas such as former student post-school or post training experience, student attitudes about the system through which they passed, and student assessment of their own knowledges and skills. Data on independent variables should be collected so that group analysis can be made on the basis of sex, race, etc.

A third step involves the development of a classification scheme for the follow-up data. Moving from the basic classification, questions should be formulated which relate to the classification categories and also to the objectives. Dr. Eninger feels it is best to formulate these questions within the basic format of the questionnaire. In this manner, the questions fit the space allotted and do not require re-editing. The questions should be organized into logical sections and a logical sequence of items should be followed. The basic format should be designed for either key punching, optical scanning, or mark sense scoring.

Several problems arise when developing follow-up instruments. One problem concerns the amount of information we want versus the chance of a good response. Space requirement difficulties and the cost element of certain instruments must also be considered.

The decision to prepare one mail out or a multiple mail out must also be made.

A final step involves the preparation of a dummy questionnaire and the conduction of a pilot application of the instrument. This can be done either by mailing out questionnaires to a sample population to see if the instructions are understandable or by selecting a samll number of people for an interview situation in which the questionnaire is given and then reviewed with the people.

SUCCFSSFUL PROCEDURES AND TECHNIQUES IN USING FOLLOW-UP INSTRUMENTS

Max U. Eninger

Dr. Eninger stated that many things have a bearing on the rate of return of a follow-up instrument. First, the design of the questionnaire is important. Some rules to follow regarding the design of the instrument include (1) obtaining a professional job of styling and printing, (2) allowing adequate space and not asking for too much information, (3) selecting legible type, (4) incorporating the instructions into the questionnaire, (5) avoiding personal items unless it is absolutely necessary, (6) avoiding excessive length, and (7) sending a letter with the questionnaire explaining its purpose. Many times, by using a psychological approach or incentive appeals in the letter, one can attain a higher rate of return of the instruments.

Humor can have a bearing on the rate of return of the instruments. Humor can be introduced into the letter which is sent out or it can be used in a orientation program of students before they leave the MDTA program. An orientation to the forthcoming follow-up questionnaire is a third way to maximize returns.

Another method of maximizing returns is to use multiple mailouts. There are several factors to consider when using multiple mailouts; how many, when to send, when the questionnaire should arrive, and the type of envelopes to send on each mailing.

Dr. Eninger concluded his presentation with a discussion of whether or not there is a need for a high rate of return. Generally, he feels this need will vary depending on the size of the group to be followed-up.

THE USE OF ELECTRONIC DATA PROCESSING SYSTEMS IN AN EVALUATION EFFORT

Steven J. Gyuro

Dr. Gyuro began his presentation with a brief history of data processing. He pointed out that data processing has existed since pre-Egyptian times. However, the advent of computerized data processing stems from the 1940's. It was also pointed out that changes are still taking place.

Next, definitions of data processing terms were presented. This section served to provide a common base of understanding for the participants.

After the terms were identified and defined, the concept of and rationale for electronic data processing centers was explained. The basic concept of EDP Systems centers around the flow of data. The rationale presented dealt with man's need to manage information in order to do a better job in achieving his goals.

The characteristics of an EDP System were discussed. Attention was given to five important factors; speed, memory, accuracy, automation and an increase in information. Each of these factors was discussed as it related to each other in the system.

The basic types of EDP Systems were then discussed. The two basic types discussed were the unit record system and the computerized system. Each was presented as a separate entity and also as a part of a larger system.

At this point, the basic components of an EDP System were discussed. The role of each component was outlined. The relationship between components and the flow of data was presented. The types of media in use were discussed relative to which components are tied to what media forms.

The preceeding remarks were presented as background information before the discussion of the use of EDP Systems in an evaluation effort. This discussion started with a presentation of six considerations to be studied when using an EDP System. If the evaluator finds that, after all considerations have been studied, he needs an EDP System, he then must cope with certain concerns relative to implementing the system.

From considerations and concerns, the discussion turned to the procedures for employing an EDP System in an evaluation effort. The procedures were listed and described.

Finally, there was a discussion of what actually happens in an EDP System. Here, some information was followed, step-by-step, through an EDP System.

INTERPRETING EVALUATION FINDINGS

J. Robert Warmbrod

Dr. Warmbrod focused his presentation on determining to what extent we can believe evaluation findings. His primary question was whether or not the program outcomes we observe can be attributed to the educational program experienced by vocational education students or manpower trainees. Did the program really make the difference in the capabilities or the level of performance of those who have completed or left the program?

The intent or purpose of evaluation was then discussed. Decisions must be made regarding whether the intent of the evaluation is to describe, to study relationships between inputs and outcomes, or to ascertain cause-effect relationships. Another decision must be made regarding whether or not to use comparison groups.

Dr. Warmbrod then pointed out that there are seven factors which can produce results which may be mistaken for the results produced by the educational program being evaluated. The factors include how students are selected, contemporary history, omission of non-completers, normal growth and development, measurement and observation, test-wiseness, and extreme cases. The evaluator as well as the user of evaluation findings should be aware of these possible threats to valid findings. Evaluative studies which do not use comparison groups are particularly vulnerable.

In addition to making decisions about the validity of evaluation findings, the interpreter must also make some decisions about the extent to which the findings can be applied to other groups, situations, measures, and times. What effect does the initial characteristics of the trainees, the nonresponse to test items, the Hawthorne Effect, the test sensitization, and other outcome measures have on the generalization of the results?

Dr. Warmbrod concluded that the next time you read a report of the findings of an evaluation study of a vocational education or manpower program, you should ask the following questions. To what extent did participation in the program produce the results observed? If you are satisfied on that question, then ask: To what populations, situations, measures, and periods of time can the findings be applied?

IMPLEMENTATION OF FINDINGS

Art Gallaher

Dr. Gallaher initiated his presentation by stating that an anthropologist views evaluation as either periodic stock-taking or as a continuous activity. He prefers to view evaluation as a continuous activity so that feedback can be made continuously and adjustments can be incorporated into the system. Making the adjustments to modify direction is thus, evaluation.

According to Dr. Gallaher, changes can be of two kinds. Genuine changes are valued by the target, spurious changes are not valued by the target. Both types of change can be effective, however, once the stimulus in spurious change is removed, the target, by not valuing the change, is apt to revert to the prior condition. Our concern is to make sure that genuine change is affected.

Dr. Gallaher then discussed communication, variables associated with the target which lead him to accept or reject an innovation, and the process of implementation. Communication is essential. Informal or personal communication may be more effective in influencing change than formal or non-personal communication. Feedback channels should always be established.

A large volumn of research literature is available to indicate that people more readily accept innovations if they have had a hand in planning them. The changes must be relevant to the people and they must be able to understand the effects of the changes. Acceptance of change also depends on the target's dependence on authority, security, group solidarity, and logical compatibility. Unforseen circumstances is also an important factor in the acceptance of changes by the target.

The process of implementation can occur in three ways. One process is alternatives. A is alternative to B. Another process is replacement. This is a situation in which A is a replacement for B. Replacement is usually quite threatening for the target. The third process is called syncretic. A syncretic process is to blend A and B to produce C. You end up with neither A nor B but something new, C. Changes may take place by either of these three processes and each can be effective in the appropriate setting. The characteristics of the population into which the change is to be introduced is an important factor to consider when determining which process to use in initiating change. Any of the three processes may work in a given situation.

USING AND BEING A CONSULTANT

Alfred J. Mannebach

Dr. Mannebach began his presentation by concentrating on three dimensions of consultation. First, consultation was discussed in general as it relates to the evaluation concept; second, factors to consider when using a consultant; and third, principles to follow when being a consultant.

Consultation was described as a method of communicating information directly from one party to another. Three advantages of using consultation were presented. First, the source of information is present. Second, a direct channel between the source and the user is opened. Third, consultation is efficient as a means of communication.

Basic to using consultants is the felling of the individual or group that there is a need for the services of a consultant. Consideration must be given as to when consultant services would be most beneficial; in the planning stage, the implementation stage, or the analysis stage of the evaluation.

The consultant can be viewed as an expert, a resource person, a process person, or any combination of the three. A major concern is identifying who can fulfill the consultation purposes of a group most effectively. Desirable personal characteristics in a consultant must be considered. A consultant can serve as an advisor, an arbitrator or an innovator.

The preparation necessary for the visit of a consultant is another important concern. This preparation involves soliciting the cooperation of local staff members in working with the consultant, obtaining living quarters, and supplying the necessary supplies and information for the consultant to complete his task.

When being a consultant, emphasis is placed upon the experience and knowledge of a person in a particular field. Diplomacy, tact, and communicative ability are also essential. Cooperation, leadership, and the ability to share knowledge are also essential characteristics of being a consultant.

ASSISTANCE AVAILABLE FROM STATE AGENCIES AND ORGANIZATIONS

Charles Wade

Mr. Wade discussed the agencies and organizations that are available to assist in evaluation efforts. There are two agencies relating to MDT programs; the Division of Interagency Relations in the Bureau of Vocational Education, and the Employment Service, Department of Economic Security.

There are several groups at the State level who are available to assist in evaluation. The State Program Evaluation Unit within the Bureau of Vocational Education, the State Evaluation Task Force, and the State Advisory Council for Vocational Education and Manpower Development and Training provide evaluation services.

Another division capable of assisting with evaluation are research agencies: the Kentucky Research and Coordinating Unit and all of the institutions with teacher education programs in vocational education.

A final division offering assistance includes groups such as Spindletop Research, the area development district boards, the local and state Chambers of Commerce, Associated Industries of Kentucky, the State Department of Commerce, industrial development committees, the CAMPS agency, and other inner-agency groups and local school districts.

The type of assistance which would be available from the above agencies might be in the form of funds to conduct an evaluation or technical assistance. These agencies can also supply information and assist in contacting people who should be involved in the evaluation effort.

CHAPTER IV

EVALUATION

Five techniques were used to evaluate the workshop. Evaluation procedures were used to aid in making needed adjustments in the program while the workshop was in session and to determine the effectiveness of the workshop after its completion. The five techniques used in evaluating the workshop were the use of interpreters, the evaluation of small group meetings, the administration of the "Concept of Evaluation Inventory", the use of a workshop evaluation scale, and the administration of a workshop follow-up instrument.

Use of Interpreters

Six workshop participants were chosen by the project staff as interpreters. The interpreters were chosen so as to represent the different groups of individuals attending the workshop. They were also judged to be capable of grasping the significance of evaluative types of comments made by workshop participants. The interpreters usually met once a day with the workshop staff to provide feedback regarding changes that should be made in the conduct of the workshop. Several minor adjustments of time schedules, organization within small groups, and opportunity for interaction of participants were made at the suggestion of the interpreters.

Evaluation of Small Group Meetings

An evaluation form was used by each small group leader at the end of each small group session to determine whether or not the participants were satisfied with the content and progress in the small groups. The form was designed to give the participants an opportunity to provide feedback to the small group leaders. The participants responded to seven questions as either excellent, good, fair, or poor. This rating by the participants gave the small group leader an indication of how the activities in the small groups were processing The scale was also designed to allow the participants an opportunity to elaborate on any of the ratings assigned. A copy of the form for evaluating the small group meetings is found in Appendix R.

The small group leaders analyzed the responses after each small group session. Changes resulting from the small group evaluations included obtaining additional rooms for regional group conferences, stating and explaining the objectives of each small group session more explicitly, and stressing to the resource persons that their presence in the small groups was needed. The written responses of the participants on each item on the evaluation form is shown in Table I.

TABLE I

RESPONSES OF THE WORKSHOP PARTICIPANTS ON THE FORM[1]
USED TO EVALUATE THE SMALL GROUP MEETINGS
AT THE MDTA EVALUATION WORKSHOP

Questions	Responses
1. Were the objectives of this small group meeting clear to you? If not, what was lacking?	"By passing out information - also the explanation of the leader helped." "Not stated in performance terms that can be specifically analyzed." "Highly." "Some general session speakers did more to confuse than help. Some speakers were not relevant to topic." "Yes, very much so." "Detailed explanations of items in outline could have been more in depth to limit long discussions when small groups assembled." "You keep improving as the conference proceeds." "Speakers presented material well." "Yes, the evaluation must be made in light of the objectives." "Made the objectives of the regional group clearer." "Suggest that guidelines should be covered." "Would have preferred more elaboration on some points." "I don't know if I would have understood if they were clearer."
2. Was this discussion suitably held to the topics covered by the preceding presentations in the workshop?	"Did not attend preceding meetings." "As much as possible considering the full load presented during the previous sessions in full meetings." "Too much material for the allotted time." "As much as possible." "By showing and explaining objectives." "Wednesday a.m. small group was off the subject." "The afternoon general session had little relevance to the objectives of the afternoon small-group meetings. The general session in the morning should have preceded the small group discussions."

[1]A copy of the form can be found in Appendix R.

"It was explained."
"Very helpful, had a clearer picture of what was expected."

3. Did the discussion leader initiate interaction between individuals?
"After initial introduction, group was divided into actual work groups."
"Yes."
"She spoke as speaking to each person individually."
"Each of the small groups was asked to report at intervals."
"Not enough time."
"This was not necessary."
"Not needed."
"Some time was wasted on individual detail."
"Each group seemed to react well together."
"Did very good on this item."
"Didn't have enough background information."

4. Was each participant given adequate opportunity: To ask questions?
"Floor was open to questions."
"Yes"
"She asked the same. Many questions were asked and she answered them satisfactorily."
"Too many in the same room."
"More time needed to go into details."
"Leader answered questions asked or allowed others in the group to respond."
"Not enough time."
"By responses."
"The group leader was involved almost to the exclusion of others."
"Very good."

5. Was each participant given adequate opportunity: To express ideas or suggestions?
"Too early in small group meeting."
"Needed more time."
"Really too early to say, I think so though."
"Yes, difinitely."
"Yes, the floor was available to anyone with an idea."
"Too many in the same room."
"Each suggested or expressed ideas."
"Good give and take on alternatives."
"Didn't like the suggestion of splitting the group."
"Helpful."

6. Was group cohesiveness maintained while allowing viewpoint difference?

"Definitely."
"They stuck to the program well."
"By group leader and chairman."
"Didn't know each other well enough."

7. Did the resource persons provide adequate information?

"Time limited."
"Yes, although I feel too much material is expected this early in the session."
"There was some confusion as to what should be accomplished."
"Very helpful in pulling together ideas."
"Never met him."
"Never showed up."
"None."
"Who? Never showed up."
"Could have been more specific in explanation."
"I haven't seen much of him."
"Lots of good ideas and suggestions were given."
"Not present."
"Didn't speak this time."
"Not present."

8. What other specific comments register your evaluation of this discussion session?

"A most informative meeting, really appreciated the promptness of all activities, starting on time and staying on schedule."
"Too many large words used in program material for some of us trainees."
"No comment."
"Too many large words used, get down to the level of the trainee."
"Tried to cover too much in too short a time."
"More room needed to work with materials and avoid noise and confusion."
"Not enough time was allocated for group work."
"Too little time in small groups."
"Progressing according to schedule."
"Very good, no suggestions for improvement."
"There is not enough time for small group meetings to do an adequate job to develop the components needed in a good evaluation model. This will, I am sure, be reflected in our material presented."
"The small group work was most enjoyable. Much good came out of these meetings."

"Development of insight, challenge to continue."
"Superior interchange of ideas."
"The next time we do this lets have the work broken down and not so much duplication."

Concept of Evaluation Inventory

The Concept of Evaluation Inventory was developed cooperatively by the co-directors of the workshop. The inventory, a summated rating scale, was developed to determine the attitudes that the participants had toward various procedures and techniques of MDTA program evaluation. The Concept of Evaluation Inventory was developed by writing statements related to procedures and techniques of evaluating MDTA programs. The statements developed were presented to a panel of small group leaders for the workshop and members of the Kentucky Research Coordinating Unit to determine whether or not they included activities associated with the evaluation of MDTA programs. The suggested changes of the panel were incorporated into the instrument.

Thirty statements were selected to be included in the inventory. Approximately half of the selected statements were favorable. The other half consisted of unfavorable statements. The reason for having both kinds of statements represented in the final scale was to minimize possible response sets of participants that might be generated if only favorable or unfavorable statements were included in the scale. A panel of small group leaders for the workshop completed the instrument to serve as the basis for scoring a response as either favorable or unfavorable.

Participants who were present at the final session of the workshop and who had completed the pre-test during the first session of the workshop were included in the analysis of data. The workshop co-directors, the small group leaders, and others not in regular attendance at the workshop were not included in the analysis. Pre-test and post-test inventories from fifty participants were collected for analysis.

At the first session of the workshop, the Concept of Evaluation Inventory was administered as a pre-test. Participants in the workshop were asked to respond to the statements as either

Strongly agree	5
Agree	4
Undecided	3
Disagree	2
Strongly Disagree	1

At the end of the workshop, during the last general session, the inventory was administered again as a post-test. The purpose of the instrument was to determine whether or not any change had occurred in the attitudes of the partici-

TABLE II

MEAN PRE-TEST AND POST-TEST SCORES ON ITEMS OF THE CONCEPT OF EVALUATION INVENTORY[1] OF THE FIFTY PARTICIPANTS COMPLETING THE MDTA EVALUATION WORKSHOP

Attitudinal Statements	Mean Scores Pre-test N=50	Mean Scores Post-test N=50	t-Ratio	Level of Significance[2]
1. + Evaluation should be an integral part of any program of vocational education.	4.68	4.78	1.698	.048*
2. + Teachers and school administrators should consider evaluation to be a part of their job.	4.56	4.74	2.641	.005**
3. - An organized plan for evaluating programs of vocational education is not essential.	4.50	4.62	0.973	.168
4. + It is impossible to determine whether or not an MDTA program is successful unless it is evaluated.	3.90	3.98	0.423	.337
5. - Evaluation of MDTA programs should be conducted solely for the purpose of satisfying the requirement for evaluation by the federal government.	4.32	4.46	1.477	.073
6. + Evaluation results should be considered in planning programs of vocational education.	4.36	4.52	1.212	.116
7. - Evaluation of programs of vocational education is a waste of time and money.	4.64	4.56	-0.850	.199
8. - Citizen advisory committees have no role in conducting evaluations of programs of vocational education.	4.16	4.22	0.465	.322

Table II (continued)

Attitudinal Statements	Mean Scores Pre-test N=50	Mean Scores Post-test N=50	t-Ratio	Level of Significance[2]
9. + Citizen advisory committees should assist in formulating objectives for programs of vocational education.	3.98	4.16	1.703	.047*
10. + Citizen advisory committees should assist vocational educators in making recommendations based on the data secured in local program evaluations.	4.02	4.28	2.449	.009**
11. - Citizen advisory committees should administer programs of vocational education.	4.42	4.66	2.585	.006**
12. + Citizen advisory committees should assist in planning programs of vocational education.	4.10	4.16	0.518	.303
13. + One of the best reasons to evaluate is for program improvement and program planning.	4.30	4.52	2.526	.007**
14. + Plans for new vocational education programs should include provisions for evaluation.	4.40	4.54	2.189	.017*
15. + Employers are concerned primarily with the product or output of vocational education programs.	4.26	4.12	-1.225	.013*
16. - Programs of vocational education should be compared with similar programs in other vocational schools.	2.60	2.56	-0.389	.350
17. - The best evaluations are conducted by teams of "experts".	3.80	3.98	1.542	.065
18. - An interview with a former student will elicit less objective information than a questionnaire that is mailed to the former student.	3.58	3.78	1.278	.104

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Table II (continued)

Attitudinal Statements	Mean Scores Pre-test N=50	Mean Scores Post-test N=50	t-Ratio	Level of Significance[2]
19. - Dropouts of vocational education should not be included in follow-up studies.	4.16	4.32	1.135	.131
20. - "Eye Appeal" has little influence on the percentage of questionnaires returned by former students.	3.78	4.14	4.523	.000***
21. + Written results of an evaluation of the vocational education program should be made available to all concerned.	4.04	4.40	3.174	.001***
22. - Objectives are statements that describe the methods by which a student can achieve a goal.	2.98	3.06	4.531	.300
23. + Objectives should describe the desired student outcomes.	4.04	4.36	2.762	.004**
24. + Objectives should be written so as to describe minimum standards of acceptable student performance.	3.64	3.62	-0.119	.453
25. - The working of items on follow-up questionnaires is not important in the analysis of the data.	4.16	4.40	2.585	.006**
26. - "Acquiring meaningful data on employment" is a well-stated objective to be included in an evaluation of the vocational education program.	2.66	2.92	1.542	.065
27. + Objectives should be so stated that anyone familiar with the subject area can recognize the successful attainment of the objective.	4.22	4.28	0.724	.236

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Table II (continued)

Attitudinal Statements	Mean Scores Pre-test N=50	Mean Scores Post-test N=50	t-Ratio	Level of Significance[2]
28. + Students in vocational education courses should receive orientation toward and preparation for follow-up programs.	4.24	4.32	0.727	.235
29. + A guidance program in a vocational school should include effective student follow-up services.	4.46	4.46	0.000	.500
30. - The proportion of people who engage in an occupation in a field in which they were trained is a poor measure of the training effectiveness of a program.	3.92	3.96	0.330	.371
TOTAL FOR ALL ITEMS	120.96	124.90	4.886	.000***

1 A copy of the Concept of Evaluation Inventory can be found in Appendix J.
2 One tail test of significance
* Significant at the .05 level.
** Significant at the .01 level.
*** Significant at the .001 level.
\+ Favorable statement.
\- Unfavorable statement.

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pants toward evaluation on individual items of the scale. All of the data were collected by the workshop co-directors during a workshop session. Each participant completed the instrument and returned it to the co-directors at the end of the testing session. A copy of the instrument can be found in Appendix J.

Each item on the Concept of Evaluation Inventory was scored on the degree to which the participants agreed with the statements rated favorable by the panel of judges and on the degree to which the participants disagreed with the statements rated unfavorable by the panel. Scores of five, four, three, two, and one were given to favorable statements with responses of strongly agree, agree, undecided, disagree, and strongly disagree respectively. The scoring scale was reversed for statements rated unfavorable by the panel. The data were then summarized, processed and analyzed. The correlated-t test was used to determine whether or not there were any significant differences in the mean scores of the participants from pre-test to post-test.

Data in Table II refer to the research hypothesis formulated and tested in the study. The research hypothesis stated that the mean post-test scores of the participants completing the workshop program should be significantly higher on each item and the total for all items of the Concept of Evaluation Inve tory than their mean pre-test scores. The null hypothesis tested was that there is no significant difference between the mean pre-test scores of the participants on each item and the total for all items of the Concept of Evaluation Inventory and their mean post-test scores.

Congruent with the data shown in Table II, significant differences were found between the mean pre-test and the mean post-test scores on twelve of the thirty items in the inventory. Significant differences, in accordance with the research hypothesis, were also found between the mean pre-test and the mean post-test scores of the total inventory. Of the significant differences found on the twelve individual items, eleven were found to be in accordance with the research hypothesis. On the eleven items, the mean post-test scores of the participants were significantly higher than their mean pre-test scores. On the other item, statement number fifteen in the Concept of Evaluation Inventory, the mean pre-test scores of the participants were significantly higher than their mean post-test scores. No significant differences were found in the other items in the inventory.

The analysis of item number one indicated that the workshop participants felt more strongly that evaluation should be an integral part of any program of vocational education after the workshop than before. The mean post-test scores of the participants on item number one were significantly higher than their mean pre-test scores at the .05 level of significance.

Item two stated that teachers and school administrators should consider evaluation to be a part of their job. As shown by the data in Table II, the mean pre-test score of the participants was 4.56 and the mean post-test score

was 4.74. The t-ratio of 2.641 was significant at the .01 level. This finding indicated that both teachers and administrators believed more strongly after the workshop than before that they should consider evaluation to be a part of their job.

Significant differences were found between the mean pre-test and post-test scores of the participants on three statements regarding citizens advisory committees. The participants agreed more strongly at the end of the workshop than at the beginning that citizens advisory committees should assist in formulating objectives for programs of vocational education and that citizens advisory committees should assist vocational educators in making recommendations based upon the data secured in local program evaluations. Significant differences on items nine and ten were found at the .05 and .01 levels respectively. The workshop participants also disagreed more strongly after the workshop than before on the negative statement that citizens advisory committees should administer programs of vocational education. This finding was significant at the .01 level. These findings indicated that the workshop participants had a clearer concept of the role and function of citizens advisory committees at the end of the workshop than at the beginning.

Item thirteen stated that one of the best reasons to evaluate is for program improvement and program planning. The mean pre-test scores of the participants on this item was 4.30 while the mean post-test score was 4.52. The difference was significant at the .01 level. This finding indicated that the workshop participants believed more strongly after the workshop than before that program improvement and program planning are the best reasons to evaluate.

According to the analysis of item fourteen, the participants felt more strongly on the post-test than on the pre-test that plans for new vocational education programs should include provisions for evaluation. The t-ratio of 2.189 was significant at the .05 level.

Item fifteen stated that employers were concerned primarily with the product or output of vocational education programs. The panel of small group leaders and members of the KRCU generally agreed with this statement and it was rated as a favorable statement. The participants also agreed with the statement, however the degree of agreement of the participants tended to be less from pre-test to post-test. The mean pre-test score of the participants was 4.26 and the mean post-test score was 4.12. The negative t-ratio of -1.225 was significant at the .05 level. This finding indicated that the participants felt less strongly at the end of the workshop than at the beginning that employers are concerned primarily with the product or output of vocational education programs.

Significant differences were found between the mean pre-test and post-test scores on item twenty which stated that "eye appeal" has little influence on the percentage of questionnaires returned by former students. As shown by the

data in Table II, the participants disagreed more strongly with this statement at the end of the workshop than at the beginning. The t-ratio of 4.513 was significant at the .001 level.

Also significant at the .001 level was the difference between the mean pre-test and post-test scores of the participants on item number twenty-one. The participants agreed more strongly at the end of the workshop than at the beginning that written results of an evaluation of the vocational education program should be made available to all concerned.

The analysis of item twenty-three indicated that the participants agreed more strongly at the end of the workshop than at the beginning that objectives should describe the desired student outcomes. The mean pre-test score of the participants was 4.04 and the mean post-test score was 4.36. The t-ratio of 2.762 was found to be significant at the .01 level.

The last individual item found to be in accordance with the research hypothesis was item twenty-five. The item stated that the wording of items on follow-up questionnaires is not important in the analysis of the data. The mean pre-test score of the participants on this item was 4.16 while the mean post-text score was 4.40. The difference was significant at the .01 level. This finding indicated that the participants disagreed more strongly at the end of the workshop than at the beginning that the wording of items on follow-up questionnaires is not important in the analysis of the data.

An analysis was made of the total for all items on the Concept of Evaluation Inventory. The mean pre-test score of the participants on all items was 120.96 while the mean post-test score was 124.90. The t-ratio of 4.866 was significant at the .001 level. This finding indicated that on the inventory as a whole, the attitudes of the participants were significantly more favorable on the positive statements and significantly less favorable on the negative statements at the end of the workshop than at the beginning. This finding offers evidence that the workshop did have a positive effect on changing the attitudes of the participants on several issues regarding the evaluation of programs of vocational education.

Workshop Evaluation Scale

A workshop evaluation scale was administered to all participants present at the concluding session of the workshop. The scale was designed to assess the strengths and weaknesses of the workshop and to provide insight into the conduct of similar workshops in the future

The scale, adapted from the scale developed by Weldon[2], was administered to fifty-six participants during the final session of the workshop. Responses of the workshop co-directors, the small group leaders, and others not in regular attendance at the workshop were not included in the analysis. Each item on the workshop evaluation scale was scored on the degree to which the participants agreed with the favorable statements and on the degree to which they disagreed with unfavorable statements. Scores of five, four, three, two, and one were given to favorable statements with responses of strongly agree, agree, undecided, disagree, and strongly disagree respectively. The scoring scale was reversed for statements rated unfavorable. The data were then summarized and analyzed and are presented in Table III.

As shown by the data in Table III, the participants tended to agree with the favorable statements and disagree with the unfavorable statements. The mean for all items was 4.24. This mean rating indicated that, as measured by the items on the workshop evaluation scale, the participants were highly satisfied with the conduct of the workshop.

Follow-up of Workshop

During the month of November, approximately six months after the workshop was conducted, a brief follow-up instrument was sent to each of the seventy-two participants enrolled as full-time workshop participants. The follow-up was conducted to determine how the workshop participants had modified and/or expanded evaluation activities following the workshop. The participants were asked to indicate whether or not they had conducted or assisted with other educational programs on evaluation since the workshop, and to indicate what other workshops, institutes, or conferences they had attended on evaluation. The workshop participants were also asked to check the degree to which they had been able to initiate and implement the "Plan of Action" developed at the workshop. Additional comments about the MDTA Evaluation Workshop were also solicited.

The follow-up instrument, a cover letter signed by the project co-directors, and a pre-addressed stamped envelope were sent to each participant. One week later, a thank-you reminder card was sent to all participants by the State MDTA Director. After another one week interval, a second follow-up instrument, along with a pre-addressed stamped envelope and a second letter from the porject co-directors, was sent. A copy of the follow-up instrument used is found in Appendix T. Copies of the letters sent by the project co-directors and a copy of the thank-you reminder card can be found in Appendices U, V, and W.

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[2]Adapted from instrument designed by Eugene J. Weldon for use in V. S.O.E. supported (Project No. ERD 444-65): The Further Development of Research Competencies in Vocational Education Research and Development, Charles W. Hill, Director, 1966.

TABLE III

NUMBER AND MEAN RESPONSES ON THE WORKSHOP EVALUATION SCALE[1] ADMINISTERED TO FIFTY-SIX PARTICIPANTS COMPLETING THE MDTA EVALUATION WORKSHOP

Statement	Number of Responses					Mean
	SA	A	U	D	SD	$\bar{X}$
1. + The purposes of this workshop were clear to me.	12	42	0	2	0	4.14
2. - The objectives of this workshop were not realistic.	0	1	1	42	12	4.16
3. + Specific purposes made it easy to work efficiently.	9	44	2	1	0	4.09
4. + The participants accepted the purposes of this workshop.	11	43	2	0	0	4.16
5. - The objectives of this workshop were not the same as my objectives.	0	0	4	42	9	4.09
6. - I didn't learn anything new.	0	1	0	21	34	4.57
7. + The material presented was valuable to me.	29	26	1	0	0	4.50
8. - I could have learned as much by reading a book.	0	0	1	30	25	4.43
9. + Possible solutions to my problems were considered.	8	44	2	1	0	4.07
10. - The information presented was to elementary.	1	0	1	31	22	4.33
11. + The speakers really knew their subjects.	23	29	3	1	0	4.32

Table III (continued)

Statements	Number of Responses SA	A	U	D	SD	Mean $\bar{X}$
12. - The discussion leaders were not well prepared.	2	2	1	32	19	4.32
13. + I was stimulated to think objectively about the topics presented.	13	42	0	1	0	4.20
14. + New acquaintances were made which will help in my future work.	21	34	1	0	0	4.36
15. + We worked together as a group.	21	35	0	0	0	4.38
16. - We did not relate theory to practice.	0	1	2	42	10	4.11
17. + The sessions followed a logical pattern.	15	41	0	0	0	4.27
18. - The schedule was too fixed.	0	3	1	39	13	4.11
19. + The group discussions were excellent.	11	38	6	0	0	4.09
20. - There was very little time for informal conversation.	1	9	1	41	4	3.68
21. - I did not have an opportunity to express my ideas.	0	2	0	32	22	4.32
22. + I really felt a part of this group.	18	37	0	0	0	4.33
23. + My time was well spent.	25	29	2	0	0	4.41
24. + The program met my expectations.	18	32	4	1	0	4.22
25. - I have no guide for future action.	0	3	0	35	18	4.21

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Table III

Statements	Number of Responses SA	A	U	D	SD	Mean $\bar{X}$
26. - Too much time was devoted to trivial matters.	0	2	0	32	22	4.32
27. - The information presented was too advanced.	0	2	2	43	9	4.05
28. - The content presented was not applicable to occupational programs.	0	0	1	44	11	4.18
29. + Workshops of this nature should be offered again in future years.	26	28	2	0	0	4.43
30. - Workshops such as this will contribute little to my work.	0	1	1	28	26	4.41
31. + The research findings presented were useful to me in my job.	17	35	2	1	0	4.24
32. - The references available to participants were not appropriate.	0	2	0	36	18	4.25
Total Mean For All Items						4.24

[1]A copy of the Workshop Evaluation Scale can be found in Appendix S.

+ Favorable Statement

- Unfavorable Statement

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Sixty-four of the seventy-two participants returned the follow-up instrument for a response of eighty-nine percent. Of the eight participants not returning the instrument, two wrote notes indicating that their attendance at the workshop was too limited to respond. Another participant wrote that he had changed positions since the workshop, therefore he saw no relevance in his response. No response was obtained from five workshop participants.

Because a diverse group of people with varying responsibilities regarding evaluation were present at the workshop, it was not the expectation of the workshop co-directors that all groups would become involved in all activities. The responses obtained on the follow-up instrument are largely dependent upon the roles and responsibilities of the participants. Some participants had ample opportunity to initiate or modify certain evaluation activities, others had little opportunity. For summary purposes, the number of activities reported by each group are presented. No attempt was made to ascertain the quality of the activities reported by the participants and it cannot be concluded that all activities reported are a direct result of the workshop. It is assumed, however, that the workshop had a direct influence on some of the activities reported and that it may have influenced to some extent all of the activities reported.

The first question on the follow-up instrument asked, "Which of the following evaluation activities have you modified and/or initiated since your participation in the MDTA Evaluation Workshop?" A list of sixteen activities was developed in accordance with the activities suggested in the guidelines for the local evaluation plan. Participants were asked to check all of the activities in which they had engaged. Data in Table IV show the number of participants in each category who participated in each activity listed.

As can be seen by the data presented in Table IV, the Regional MDTA Coordinators, the MDTA Selection and Referral Officers, and the State and Regional Evaluation Task Force members were most active in the first three activities listed. Several members of these groups indicated that they had established a leadership team for evaluation, a staff committee on evaluation, and citizens advisory committees. Only three individuals, each representing a different group, had established a student committee on evaluation.

Several individuals within each group indicated that they had either written or revised the program philosophy or objectives since the conduct of the MDTA Evaluation Workshop. Twenty-seven individuals had written or revised the program philosophy and forty-four had written or revised the program objectives since the workshop. Regional MDTA Coordinators, State MDTA Staff, and State and Regional Evaluation Task Force Members were the most active in these activities.

Many of the participants indicated that they had conducted surveys of some type since the workshop. Sixteen participants conducted employment opportunity surveys, twenty-one conducted employer surveys regarding the performance of

former student follow-up surveys, five conducted cost-effectiveness studies, and seven participants reported that they had conducted studies of student characteristics. The Regional MDTA Coordinators and the MDTA Selection and Referral Officers were most active in these endeavors.

Nine of the thirteen Regional MDTA Coordinators surveyed reported that they were orienting present students to the importance of follow-up. A schedule of evaluation activities had been developed by twenty-six of the sixty-four participants. Eleven participants reported that a budget for evaluation had been developed. The Regional MDTA Coordinators and the State MDTA Staff were most active in disseminating the results of the evaluation effort. Ten participants reported that they were assessing the effect of the evaluation effort. Detailed presentation of the number of activities accomplished by different groups is shown in Table IV.

The second question on the MDTA Workshop Follow-up Form asked, "What type of educational programs on evaluation have you conducted or assisted with since the MDTA Evaluation Workshop?" Thirty-four or fifty-three percent of the sixty-four participants who returned the follow-up form indicated that they had conducted or assisted with some kind of educational programs on evaluation since the workshop. Examples of the type of educational programs conducted included offering inservice educational programs on evaluation for teachers in the region, conducting meetings on evaluation of MDTA programs at the State and regional levels, assisting local teachers to conduct evaluations of MDTA projects, assisting MDTA teachers to write and revise philosophy and objectives, and participate in the Kentucky Vocational Conference and the Central Kentucky Vocational Education Evaluation Project. Several participants reported that the evaluation materials obtained at the workshop had been shared with others in the region. Reports of the MDTA Evaluation Workshop were also made to other vocational educators throughout the region. Thirty or forty-seven percent of the participants responding on the follow-up form indicated that they had not conducted or assisted with any kind of educational program on evaluation since the workshop.

The third question on the follow-up form was, "What other workshops, institutes, or conferences have you attended on evaluation?" Thirty-seven or fifty-eight percent of the workshop participants reported that they had attended one or more meetings on evaluation and twenty-seven or forty-two percent reported that they had not attended any meetings on evaluation since the workshop. The Regional MDTA Coordinators indicated that they had attended three organized conferences dealing with evaluation since the workshop. State MDTA staff were also at these meetings. State and Regional Evaluation Task Force Members reported that they had attended meetings dealing with evaluation by attending the Central Kentucky Vocational Education Evaluation Project Workshops, The Objectives Workshop, and the Institute on Long-Range and Annual Planning. Other meetings mentioned by the participants were attendance at the Southern Association of Colleges and Schools Committee, the Southern Region Association for State Advisory Counsils, AMIDS, and other regional and local meetings.

TABLE IV

FREQUENCY OF EVALUATION ACTIVITIES MODIFIED AND/OR INITIATED AS REPORTED BY SIXTY-FOUR PARTICIPANTS RESPONDING TO THE FOLLOW-UP OF THE MDTA EVALUATION WORKSHOP

Activities	Regional MDTA Coordinators N=13	MDTA Selection and Referral Officers N=12	State MDTA Staff N=6	State Economic Security Staff N=2	State and Regional Evaluation Task Force N=21	Regional Superintendents N=3	Kentucky Bureau of Vocational Education Staff N=6	Other N=1	TOTAL N=64
Establishing a leadership team for evaluation	3	1	1	0	5	1	1	1	13
Establishing a staff committee on evaluation	2	3	0	1	5	1	1	1	14
Establishing citizens advisory committees	2	1	1	0	5	1	1	0	11
Establishing a student committee on evaluation	1	0	1	0	1	0	0	0	3
Writing or revising program philosophy	5	3	3	1	11	0	4	0	27
Writing or revising program objectives	7	4	4	1	19	2	6	1	44
Conducting employment opportunity surveys	3	6	0	1	4	1	0	1	16
Conducting employer surveys regarding the performance of former students	9	2	2	1	3	2	1	1	21
Conducting former student follow-up surveys	10	6	2	1	8	3	2	0	32
Conducting cost-effectiveness studies	0	2	0	0	3	0	0	0	5

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Table IV (continued)

Activities	Regional MDTA Coordinators N=13	MDTA Selection and Referral Officers N=12	State MDTA Staff N=6	State Economic Security Staff N=2	State and Regional Evaluation Task Force N=21	Regional Superintendents N=3	Kentucky Bureau of Vocational Education Staff N=6	Other N=1	TOTAL N=64
Conducting studies of student characteristics	0	2	0	1	3	0	1	0	7
Orienting present students to the importance of follow-up	9	3	2	1	4	2	1	0	22
Developing a schedule of evaluation activities	5	4	4	1	7	3	1	1	26
Developing a budget for evaluation	3	0	1	0	5	0	1	1	11
Disseminating results of the evaluation effort	4	3	4	1	1	1	1	1	16
Assessing the effect of the evaluation effort	1	2	3	1	1	0	1	1	10

The fourth question on the follow-up form asked, "To what extent were you able to initiate and implement the "Plan of Action" developed at the workshop. Data in Table V summarize the responses of the participants to this question. As shown by the data in Table V, two or three percent of the participants stated that the question did not apply to them. Nineteen or thirty percent of the respondents reported that they had not initiated or implemented the plan of action developed. However, forty-three or sixty-seven percent of the participants reported that they had been able to initiate and implement some or most of the plan of action. None of the participants reported that all of the plan of action had been implemented. These findings indicated that two-thirds of the participants had initiated and implemented some or most of the plans of action developed at the workshop.

TABLE V

EXTENT TO WHICH WORKSHOP PARTICIPANTS WERE ABLE TO INITIATE AND IMPLEMENT THE "PLAN OF ACTION" DEVELOPED AT THE MDTA EVALUATION WORKSHOP

Extent	Responses	
	Number	Percent
Does not apply	2	3
None	19	30
Some	34	53
Most	9	14
All	0	0
TOTAL	64	100

The last question on the follow-up form asked, "What additional comments do you have about the MDTA Evaluation Workshop?" Thirty-nine or Sixty-one percent of the workshop participants who returned the follow-up form made some additional comments about the workshop. Twenty or thirty-one percent did not respond to the question. Following are the comments listed by the participants:

- The workshop was well planned; however, we had too many high powered individuals who knew too little about MDTA. I felt the workshop was generally oriented toward regular education and vocational programs other than MDTA. Overall it was excellent.

- Personal opportunity to become actively engaged in evaluation has been limited. New program planning and evaluation activities are anticipated soon.

- Very good.

- The trainee follow-up instrument needs to be revised as many trainees don't seem to understand what to answer. The timing of mailings is too close to the end of the MDTA program to get good sound replies as some students want and take a vacation after training before they start looking for a job.

- Immediately upon concluding this workshop I was promoted and was no longer connected with MDTA. However, it has aided me in other school areas especially accreditation under Southern Association Standards which is to be one of my next major projects.

- Very good.

- Good, well planned.

- In comparison to other workshops I have attended, I would say the MDTA Workshop was the best I have ever attended.

- A scholarly, impressive workshop, but of little practical value at the local level.

- I feel this workshop was excellent. Even though we are not completely involved with students or schools, we are involved with planning, cost accounting, and appraisal. This institute was timely to the Employment Service Operation and has given me insight into planning objectives and appraising same. Would like the opportunity to be exposed to more of the same. Very professional!

- I realize that the workshop was intended to aid in areas developing a tool for evaluation purposes. However, the time allotted for developing was not sufficient. Perhaps more time should have been given to the actual workshops and less to special speakers. The work day should end at least by 4:30 p.m. Additionally, a coordination of other follow-up tools used by various agencies, and a feed-back tool developed between agencies would prove most desirable.

- No programs in the area at present. Evaluations are largely on a follow-up basis.

- Please keep in touch with us.

- Excellent timing.

- I observe the evaluation work done by the vocational school and assist when called upon.

- The summary material was never sent to Employment Service personnel. Apparently it was sent only to personnel in vocational education. It appears it could have been more on a State level with which we in the field have to work with.

- It was a valuable aid in helping us to work toward the implementation of a good evaluation program.

- The Evaluation workshop was a good orientation to the principles of evaluation but somewhat ideal in that the practical side of getting additional personnel to handle the evaluation effort at the State level was not adepuately discussed to my recollection. However, I was relatively new and the evaluation workshop was multi-oriented.

- We need more time to develop and implement the plan. We need a full time person with some know how to work with each area school and other agencies on evaluation. The workshops to date on evaluation of MDTA Projects have been excellent, we need more of the same.

- The workshop was excellent. It was well planned and offered much benrfit to the State MDTA evaluation effort.

- Very good, very well organized.

- I think it was well planned and conducted.

- A terrific introduction and beginning.

- Time well spent.

- It was a week well worth the effort. We need more involvement of the total regional staff.

- The MDTA workshop provided a base that has made subsequent meetings such as the Performance Objectives Workshop, the VEEP meetings, and the EPDA Comprehensive Planning Conference, more meaningful.

- It was for the most part over my head. It was not nearly as effective as the Central Kentucky Vocational Education Evaluation Project.

- I feel the information we received at the MDTA workshop will serve the regional task force representatives as a guide in establishing a regional plan for self-evaluation. The other workshops have been closely correlated with the MDTA workshop.

- We need to be pushed by someone higher up to get something done on evaluation, oo that the money won't be lost that was spent of the workshop.

- This was one of the best organized and conducted conferences I have ever attended. The speakers were excellent.

- Very good.

- I feel that we will need a time schedule as to when each phase should be completed, possibly set up in coordination with Frankfort.

- Served as a valuable tool in developing a concept of continuous evaluation. Will be of valuable assistance in the future toward evaluation of the State program.

- Well presented and executed. Very good leadership.

- It was very helpful to me in getting ready to assist high schools in our region to evaluate their programs and use the results of evaluation of the State program.

- I gained information that will be of value in evaluating programs in my region, even though I have had very little time to work towards evaluation of programs.

- It was an excellent workshop.

- Good start, we need modification as we go along.

- Workshop was very good, well organized.

In addition to the above comments, several MDTA coordinators submitted examples of former student follow-up reports compiled after the workshop. An example report of the results of an MDTA former student follow-up can be found in Appendix Z.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

All conclusions were based upon the formal and informal evaluations conducted both during and after the workshop and can be held tenable only for the participants included in the workshop. However, generalizations can be made to populations or situations with similar characteristics but caution must be exercised when attempting to generalize the findings of the study to populations of unknown or dissimilar characteristics.

As evidenced by the evaluative comments of the interpreters, the workshop proceeded according to schedule. Use of interpreters allowed minor adjustments and modifications to be made as the need arose. The use of interpreters provided a built-in mechanism for keeping the workshop running smoothly.

It was concluded that the organization of the small groups was a successful technique to use in helping the participants to discuss the materials presented in the general sessions and to develop the plan of action. The interaction of the small group members, their enthusiasm, and the ratings and written comments on the small group meeting evaluation forms offered evidence that the small group activities provided an excellent opportunity for the participants to learn more about the procedures and techniques of program evaluation.

As evidenced by the differences in responses from pre-test to post-test on the Concept of Evaluation Inventory, the workshop participants believed significantly more strongly about the value of evaluation as a whole and about certain individual items at the end of the workshop than at the beginning. The research hypothesis stated that the mean post-test scores of the participants completing the workshop should be significantly higher than their mean pre-test scores. Significant differences were found between the mean pre-test and the mean post-test scores on twelve of the thirty items in the inventory. Significant differences, in accordance with the research hypothesis, were also found between the mean pre-test and the mean post-test scores of the participants on the total inventory. Of the significant differences found on the twelve individual items, eleven were found to be in accordance with the research hypothesis. These findings indicated that, as measured by the inventory used, the participants in the workshop believed significantly more strongly about certain aspects of evaluation and about evaluation as a whole at the end of the workshop than at the beginning.

It was concluded that the conduct of the workshop was acceptable to the participants involved. As evidenced by the responses of the participants on the Workshop Evaluation Scale, they were highly satisfied with the conduct of the workshop. Based upon a possible mean score of 5.00 in agreement with the conduct of the workshop, the mean score of the participants on the total of all items on the Workshop Evaluation Scale was 4.24. This mean rating indicated that, as measured by the items on the scale used, the participants were highly satisfied with the conduct of the workshop.

The evidence collected on the follow-up of the workshop six months after its completion indicated that the participants were involved in conducting many of the activities presented, discussed, and planned at the workshop. Sixty-four of seventy-two or eighty-nine percent of the workshop participants, responded to the follow-up. Almost all of the participants had either modified and/or initiated at least some of the evaluation activities suggested during the workshop. Thirty-four or fifty-three percent of the participants who returned the follow-up form indicated that they had conducted or assisted with some kind of educational program on evaluation since the workshop and thirty-seven or fifty-eight percent of the participants reported that they had attended one or more meetings on evaluation since the workshop. In addition, forty-three or sixty-seven percent of the participants reported that they had been able to initiate and implement some or most of the "plan of action" developed at the workshop. These findings, along with the additional comments commending the organization and content of the workshop and the number of meetings and activities devoted to evaluation since the workshop, indicated that the workshop had made a major contribution to orienting the participants to the needs for the evaluation of their programs and to the procedures and techniques for conducting program evaluations.

Recommendations

The following recommendations formulated by the workshop co-directors were based upon knowledge gained while assisting with the development, execution, and evaluation of the MDTA Evaluation Workshop. In addition, recommendations were based upon observations made during and after the workshop and the statistical findings of the workshop evaluation. Therefore, the recommendations must be evaluated accordingly. The recommendations are:

1. Inservice educational programs, similar to the MDTA Evaluation Workshop, should be continued in future years. Workshops of this nature should be conducted in states other than Kentucky. The overall evaluation of the workshop indicated that the MDTA Evaluation Workshop had and is making a significant contribution to the improvement of MDTA programs in Kentucky.

2. Inservice educational programs, conducted similar to the MDTA Evaluation Workshop, should be continued in areas other than

evaluation in future years. The outcomes derived from the workshop indicated that workshops of this nature can make a valuable contribution to the program of manpower and vocational education in the future.

3. The format and organization of the workshop program should be continued in future years. As evidenced by the responses on the Workshop Evaluation Scale, the participants were highly satisfied with the organization, structure, and content of the workshop.

4. The small group meetings should be continued in future meetings similar to the MDTA Evaluation Workshop. Results of the evaluations of small group meetings by the participants indicated that the small groups were especially effective in developing regional plans of action.

5. Representatives from the various groups involved in MDTA programs should continue to be involved in inservice educational workshops in the future. Comments and observations by the diverse group of participants indicated that the workshop was a valuable and unifying experience for all who attended.

6. Instruments to evaluate the effectiveness of workshops similar to the MDTA Evaluation Workshop should be developed. Instruments should be developed to measure, knowledges and attitudes other than those measured by the instruments used.

APPENDIXES

APPENDIX A

WORKSHOP FLYER

WORKSHOP ON DEVELOPING PROCEDURES AND
TECHNIQUES FOR EVALUATING MANPOWER DEVELOPMENT
AND TRAINING ACT PROGRAMS IN KENTUCKY

May 18-22, 1970

Seelbach Hotel
Louisville, Kentucky

for

Regional MDTA Coordinators
MDTA Selection and Referral Officers
State MDTA Staff Members
State Department of Economic Security Staff Members
Kentucky Bureau of Vocational Education Evaluation Task Force Members
Kentucky Bureau of Vocational Education Members

to

Assist workshop participants to:

- write performance objectives
- identify the essential elements of a product-oriented evaluation program
- write a product-oriented evaluation plan
- develop and administer follow-up instruments
- analyze follow-up data
- develop recommendations for programs based upon the analysis of the data

PROJECT DIRECTORS

Dr. Floyd L. McKinney, Assistant Professor
and
Dr. Alfred J. Mannebach, Assistant Professor
Kentucky Research Coordinating Unit
Vocational Education Department
152 Taylor Education Building
University of Kentucky
Lexington, Kentucky 40506

SPONSORED IN COOPERATION WITH THE

Kentucky State Department of Education
Bureau of Vocational Education
- Interagency Relations (MDTA)
- Research Coordinating Unit, University of Kentucky
- State Program Evaluation

Kentucky Department of Economic Security
United States Office of Education, Bureau of Adult, Vocational, and Library Programs, Division of Manpower Development and Training.

APPENDIX B

WORKSHOP

PRE-REGISTRATION FORMS

WORKSHOP PRE-REGISTRATION FORM

"Evaluating MDTA Programs"

Seelbach Hotel
Louisville, Kentucky
May 18-22, 1970

PLEASE PRINT OR TYPE

1. Name: Miss, Mrs. / Mr., Dr. _____
(Circle one) (First) (Middle) (Last)

2. Address: _____
(Position) (Employer)

_____
(City) (State) (Zip)

3. Phone: Home _____

Office _____

4. Please enclose a pre-registration fee of $10.00

Make Checks payable to MDTA Workshop.

5. You will be given a receipt for reimbursement during registration in the Colonial Room at the workshop.

_____
(Signature)

_____
(Date)

Return this form and your check as soon as possible, but no later than April 15, 1970, to:

Dr. Alfred J. Mannebach
152 Taylor Education Building
University of Kentucky
Lexington, Kentucky 40506

WORKSHOP PRE-REGISTRATION FORM

for

Presentations and Luncheon
Monday, May 22, 1970

on

"Evaluating MDTA Programs"

Seelbach Hotel
Louisville, Kentucky
May 18-22, 1970

PLEASE PRINT OR TYPE

1. Name Miss, Mrs. / Mr., Dr. _____
(Circle one) (First) (Middle) (Last)

2. Address: _____
(Position) (Employer)

_____
(City) (State) (Zip)

3. Phone: Home _____

Office _____

4. Please enclose a pre-registration luncheon fee of $7.50
Make checks payable to MDTA Workshop.

5. You will be given a receipt for reimbursement during registration in the Colonial Room at the workshop.

6. Remarks

_____
(Signature)

_____
(Date)

Return this form and your check as soon as possible, but no later than April 15, 1970 to:

Dr. Alfred J. Mannebach
152 Taylor Education Building
University of Kentucky
Lexington, Kentucky 40506

APPENDIX C

WORKSHOP

PARTICIPANTS AND STAFF

WORKSHOP PARTICIPANTS

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APPENDIX D

AGENDA FOR

SMALL GROUP LEADERS' MEETINGS

AGENDA

WORKSHOP ON EVALUATING MDTA PROGRAMS

Small Group Leaders Orientation Meeting
March 24, 1970
1:30 p.m.

152 Taylor Education Building

University of Kentucky, Lexington

Overview of workshop

- Objectives
- Participants
- Evaluation plan to be developed by participants
- Workshop program

Role of the small group leader

Outline small group sessions

- Content
- Instructional aids

Schedule next meeting

MDTA EVALUATION WORKSHOP

Small Group Leaders Meeting

April 28, 1970
1:30 p.m.
145 Patterson Building
University of Kentucky, Lexington

AGENDA

1. Review registration list
2. Assign participants to small groups and regional groups
3. Regional group leadership organization
4. Plan development and submission procedure
5. Review materials participants will receive
6. Small group meeting evaluation form
7. Review materials brought by small group leaders
8. Film: "Goofing Off With Objectives," Mager Associates

AGENDA

Small Group Leaders Meeting

EVALUATING MDTA PROGRAMS

May 12, 1970
1:30 p.m.

Room 251, Student Center, University of Kentucky

Review Assignment of Participants
into Regional Groups

Review guidelines for developing regional
evaluation plan and guidelines
for small group meetings

Concept of Evaluation Inventory

Small Group Evaluation Form

Designation of Interpreters

APPENDIX E

LETTER TO

PROSPECTIVE WORKSHOP PARTICIPANTS

To: Registered participants for MDTA Evaluation Workshop

From: Alfred J. Mannebach and Floyd L. McKinney
Workshop Co-Directors

Enclosed is a copy of the workshop program on Evaluating MDTA Programs. All workshop participants and guests should report to the Colonial Room, Seelbach Hotel, Louisville, Kentucky, 9:30 - 10:30 a.m., Monday, May 18, 1970. The workshop will end at 10:30 a.m., Friday, May 22, 1970.

We are looking forward to working with you.

To: Registered participants for the Monday, May 18, luncheon and sessions of the MDTA Evaluation Workshop

From: Alfred J. Mannebach and Floyd L. McKinney, Workshop Co-Directors

Enclosed is a copy of the workshop program on Evaluating MDTA Programs. You should report to the workshop headquarters in the Colonial Room, Seelbach Hotel, Louisville, Kentucky, 9:30 - 10:30 a.m., Monday, May 18, 1970.

We are delighted you can be with us for the Monday sessions and luncheon.

APPENDIX F

WORKSHOP PROGRAM

88/89

A WORKSHOP ON DEVELOPING PROCEDURES AND TECHNIQUES FOR EVALUATING MANPOWER DEVELOPMENT AND TRAINING ACT PROGRAMS IN KENTUCKY

WORKSHOP HEADQUARTERS

Colonial Room

Seelbach Hotel

Louisville, Kentucky

WORKSHOP DIRECTORS

Dr. Floyd L. McKinney, Assistant Professor
Dr. Alfred J. Mannebach, Assistant Professor

Kentucky Research Coordinating Unit
for Vocational Education
University of Kentucky, Lexington

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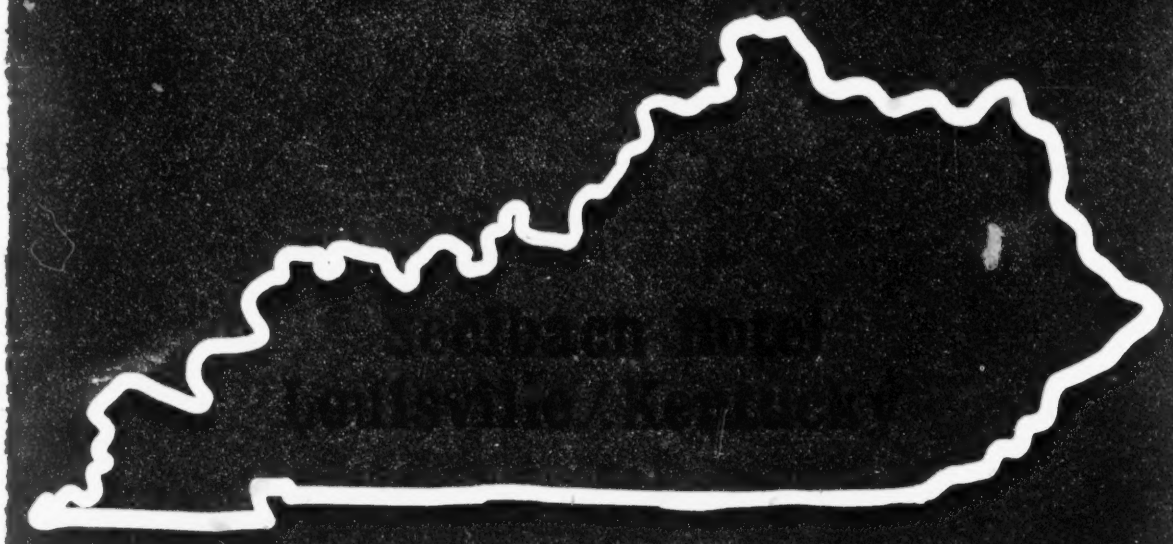
Workshop Program

EVALUATING M.D.T.A. PROGRAMS

MAY 18-22, 1975



This workshop is sponsored through the cooperation of the following agencies:

Kentucky State Department of Education

Bureau of Vocational Education

—Interagency Relations (MDTA)

—Research Coordinating Unit, University of Kentucky

—State Program Evaluation

Kentucky Department of Economic Security

United States Office of Education

Bureau of Adult, Vocational and Library Programs, Division of Manpower Development and Training

PURPOSES OF THE WORKSHOP

It is our hope that this workshop will assist personnel in Kentucky's Manpower Development and Training Program and personnel in the Bureau of Vocational Education to develop and assist others in planning and initiating local evaluation programs. An additional contribution of the workshop will be the demonstration of a way in which State leaders can be provided expertise in assisting local educators to develop evaluation programs.

More specifically the workshop should enable the participants to be more proficient in:

1. writing performance objectives,

2. identifying the essential elements of a product-oriented program evaluation effort,

3. writing a product-oriented evaluation plan for the local MDTA program,

4. administering follow-up instruments according to successful practices as evidenced by research, and

5. analyzing follow-up data and developing recommendations based upon the analysis of data.

Wendell P. Butler

Superintendent of
Public Instruction

PROGRAM FOR THE WORKSHOP

Monday, May 18, 1970

9:30 - 10:30 a. m.

Registration - Colonial Room

All workshop participants and guests must register.

10:30 a. m.

First Session - Junior Ballroom

Presiding - Mary Lois Williamson

Welcome - Carl F. Lamar

Overview and Orientation - Floyd L. McKinney

Program and Arrangements for Workshop
- Alfred J. Mannebach

11:30 a. m. - Recess

12:00

Second Session - Oak Room

LUNCHEON

Presiding - James R. McGown

Address - Howard A. Matthews

Monday, May 18 (continued)

2:00 p.m.

Third Session - Junior Ballroom

Presiding - C. O. Neel

Why Evaluate? Harold M. Byram

2:30 p.m.

Objectives in Performance Terms - Gene Love

3:30 p.m. - Break

4:00 p.m. - Reaction Panel

Alfed J. Mannebach, Chairman

W. C. Montgomery

Kenneth Carter

Lyle M. Neikirk

John A. Wismann

Clayton P. Omvig

4:30 p.m. - Small Group Meetings

Steven J. Gyuro - Junior Ballroom

Mary Lois Williamson - Oriental Room

Charles Wade - Room 1006

Lyle M. Neikirk - Room 1007

Monday, May 18 (continued)

5:15 p. m. - Recess

Evening - Library Materials and Vimcet Filmstrips on Objectives Available for Participants Use - Colonial Room

Tuesday, May 19, 1970

8:30 a. m.

Small Group Meetings

Steven J. Gyuro - Junior Ballroom

Mary Lois Williamson - Oriental Room

Charles Wade - Room 1006

Lyle M. Neikirk - Room 1007

10:00 a. m.

Fourth Session - Junior Ballroom

Presiding - Ted Cook

"Goofing Off With Objectives"

- produced by Mager Associates

Comments - Gene Love

Tuesday, May 19 (continued)

10:30 a. m. - Break

11:00 a. m.

Organizing for Evaluation

- Harold M. Byram

11:45 a. m.

Questions from Audience

- Ted Cook, Chairman

12:15 p. m. - Lunch

1:30 p. m.

Fifth Session - Junior Ballroom

Presiding - Alfred J. Mannebach

Organizing and Using Citizens' Committees - Floyd L. McKinney

2:15 p. m.

Questions and Answers

- Alfred J. Mannebach

2:45 p. m. - Break

Tuesday, May 19 (continued)

3:15 p. m.

Small Group Meetings

Steven J. Gyuro - Junior Ballroom

Mary Lois Williamson - Oriental Room

Charles Wade - Room 1006

Lyle M. Neikirk - Room 1007

5:00 p. m. - Recess

Evening - Library Materials and Vimcet Filmstrips on Objectives Available for Participants Use - Colonial Room

Wednesday, May 20, 1970

8:30 a. m.

Sixth Session - Oak Room

Presiding - Samuel C. Evans

Development of Follow-Up Instruments

- Max U. Eninger

Wednesday, May 20 (continued)

9:30 a. m. - Reaction Panel

C. O. Neel - Chairman

James R. McGown

Harold R. Binkley

Fred Martin

Charles Furr

10:00 a. m. - Break

10:30 a. m.

Small Group Meetings

Steven J. Gyuro - Oak Room

Mary Lois Williamson - Oriental Room

Charles Wade - Room 1006

Lyle M. Neikirk - Room 1007

12:00 - Lunch

1:30 p. m.

Seventh Session - Oak Room

Presiding - Christine Wallace

Successful Procedures and Techniques in Using Follow-Up Instruments

- Max U. Eninger

Wednesday, May 20 (continued)

2:00 p. m. - Use of Data Processing

- Steven J. Gyuro
- Robert Brandon

2:30 p. m. - Reaction Panel

Floyd L. McKinney - Chairman

Alfred J. Mannebach

Robert Kelley

Tommy Cooper

3:00 p. m. - Break

3:30 p. m. - Small Group Meetings

Steven J. Gyuro - Oak Room

Mary Lois Williamson - Oriental Room

Charles Wade - Room 1006

Lyle M. Neikirk - Room 1007

5:00 p. m. - Recess

Evening - Library Materials and Vimcet Filmstrips on Objectives Available for Participants Use - Colonial Room

Thursday, May 21, 1970

8:30 a. m. - Small Group Meetings

Steven J. Gyuro - Junior Ballroom

Mary Lois Williamson - Oriental Room

Charles Wade - Room 1006

Lyle M. Neikirk - Room 1007

10:00 a. m. - Break

10:30 a. m.

Eighth Session - Junior Ballroom

Presiding - Steve Marcum

Interpreting Evaluation Findings

- J. Robert Warmbrod

11:30 a. m. - Reaction Panel

Steven Gyuro - Chairman

Jack Hatfield

Dorotha Oatts

Lyle Neikirk

James Disney

12:00 - Lunch

Thursday, May 21 (continued)

1:30 p. m.

Ninth Session - Junior Ballroom

Presiding - Art Goldsmith

Implementation of Findings

- Art Gallaher, Jr.

2:30 p. m. - Questions from the Audience

Charles Bright - Chairman

3:00 p. m. - Break

3:30 p. m. - Small Group Meetings

Steven J. Gyuro - Junior Ballroom

Mary Lois Williamson - Oriental Room

Charles Wade - Room 1006

Lyle M. Neikirk - Room 1007

5:00 p. m. - Recess

WORKSHOP PARTICIPANTS SUBMIT COMPLETED REGIONAL EVALUATION PLANS TO SMALL GROUP LEADERS

Thursday, May 21 (continued)

Evening - Library Materials and Vimcet Filmstrips on Objectives Available for Participants Use - Colonial Room

Friday, May 22, 1970

8:00 a. m. - Readers review the regional evaluation plans of the workshop participants.

9:00 a. m. - Tenth Session - Junior Ballroom

Presiding - Floyd L. McKinney

Using and Being A Consultant

- Alfred J. Mannebach

9:30 a. m. - Assistance Available from State Agencies and Organizations - Carl F. Lamar

10:00 a. m. - Workshop Summary and Evaluation

10:30 a. m. - Adjournment

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Mr. Ted Cook

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Mr. Robert Kelley

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Mr. Fred Martin

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Mrs. Dorotha Oatts

Mrs. Christine Wallace

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From the University of Kentucky:

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APPENDIX G

WORKSHOP

REGISTRATION CARD

REGISTRATION

WORKSHOP ON EVALUATING MDTA PROGRAMS

Mr. Mrs.
NAME Dr. Miss _____
(last) (first) (middle)

NAME OF SCHOOL, SCHOOL DISTRICT, OR AGENCY:

_____

TITLE: _____

PROFESSIONAL ADDRESS: _____

_____
(city) (state) (zip)

HOME ADDRESS: _____

_____
(city) (state) (zip)

APPENDIX H

REFRESHMENT PREFERENCE

To assist the workshop management in arranging for morning and afternoon refreshment periods, will you please indicate your preferences.

MORNING

Check one indicating your preference for a beverage

_____Coffee
_____Milk
_____Hot Tea

Would you like to have a sweet roll?

_____Yes
_____No

AFTERNOON

Check one indicating your preference for a beverage

_____Coffee
_____Milk
_____Hot Tea

Would you like to have cookies?

_____Yes
_____No

APPENDIX I

REFERENCE MATERIALS

PROVIDED WORKSHOP PARTICIPANTS

3776

REFERENCE MATERIALS

PROVIDED WORKSHOP PARTICIPANTS

Burt, Samuel M. Industry and Community Leaders in Education. Kalamazoo: The W. E. Upjohn Institute for Employment Research, 1969. 54 pp.

Burt, Samuel M. The Volunteer in Vocational Education. Kalamazoo: The W. E. Upjohn Institute for Employment Research, 1969. 10 pp.

Byram, Harold M. and Floyd McKinney. Evaluation of Local Vocational Education Programs. East Lansing, Michigan: Research and Development Program in Vocational-Technical Education, Michigan State University, 1968. 80 pp.

Mager, Robert F. Preparing Instructional Objectives. Palo Alto, California: Fearon Publishers, 1962. 60 pp.

O'Connor, Thomas J. Follow-up Studies in Junior Colleges: A Tool for Institutional Improvement. Washington, D. C.: American Association of Junior Colleges, 1965. 75 pp.

APPENDIX J

CONCEPT OF

EVALUATION INVENTORY

3778

CONCEPT OF EVALUATION INVENTORY

Name_____

Please check the number indicating you present position.

_____1. MDTA Regional Coordinator

_____2. MDTA Selection and Referral Officer

_____3. State MDTA Staff Member

_____4. State Economic Security Staff Member

_____5. Evaluation Task Force Member-Kentucky Bureau of Vocational Education

_____6. Regional Evaluation Task Force Member

_____7. Regional Superintendent

_____8. Member of the Kentucky Bureau of Vocational Education, not in preceding list

_____9. Other_____
(Specify)

This inventory will be used to evaluate partially the MDTA Evaluation Workshop. Questionnaires and answers will be kept in strict confidence.

Directions:

Read each statement carefully and decide how you feel about it. You are offered five possible answers to each statement. Circle the number which coincides with your opinion about the statement. The "undecided" answer should be circled only when you have no opinion about the statement.
Please answer all statements.

Example:	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
The federal government should provide more funds for educational research	5	(4)	3	2	1

Statements

1. Evaluation should be an integral part of any program of vocational education	5	4	3	2	1
2. Teachers and school administrators should consider evaluation to be a part of their job	5	4	3	2	1

Statements	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
3. An organized plan for evaluating programs of vocational education is not essential	5	4	3	2	1
4. It is impossible to determine whether or not an MDTA program is successful unless it is evaluated	5	4	3	2	1
5. Evaluation of MDTA programs should be conducted soley for the purpose of satisfying the requirement for evaluation by the federal government	5	4	3	2	1
6. Evaluation results should be considered in planning programs of vocational education. . . .	5	4	3	2	1
7. Evaluation of programs of vocational education is a waste of time and money . . .	5	4	3	2	1
8. Citizen advisory committees have no role in conducting evaluations of programs of vocational education	5	4	3	2	1
9. Citizen advisory committees should assist in formulating objectives for programs of vocational education	5	4	3	2	1
10. Citizen advisory committees should assist vocational educators in making recommendations based on the data secured in local program evaluations.	5	4	3	2	1
11. Citizen advisory committees should administer programs of vocational education	5	4	3	2	1
12. Citizen advisory committees should assist in planning programs of vocational education. . . .	5	4	3	2	1

Statements	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
13. One of the best reasons to evaluate is for program improvement and program planning . . .	5	4	3	2	1
14. Plans for new vocational education programs should include provisions for evaluation	5	4	3	2	1
15. Employers are concerned primarily with the product or output of vocational education programs	5	4	3	2	1
16. Programs of vocational education should be compared with similar programs in other vocational schools	5	4	3	2	1
17. The best evaluations are conducted by teams of "experts."	5	4	3	2	1
18. An interview with a former student will elicit less objective information than a questionnaire that is mailed to the former student.	5	4	3	2	1
19. Dropouts of vocational education programs should not be included in follow-up studies.	5	4	3	2	1
20. "Eye Appeal" has little influence on the percentage of questionnaires returned by former students.	5	4	3	2	1
21. Written results of an evaluation of the vocational education program should be made available to all concerned	5	4	3	2	1
22. Objectives are statements that describe the methods by which a student can achieve a goal . . .	5	4	3	2	1
23. Objectives should describe the desired student outcomes . . .	5	4	3	2	1

Statements	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
24. Objectives should be wiitten so as to describe minimum standards of acceptable student performance	5	4	3	2	1
25. The wording of items on follow-up questionnaires is not important in the analysis of the data. . . .	5	4	3	2	1
26. "Acquiring meaningful data on employment" is a well-stated objective to be included in an evaluation of the vocational education program	5	4	3	2	1
27. Objectives should be so stated that anyone familiar with the subject area can recognize the successful attainment of the objective	5	4	3	2	1
28. Students in vocational education courses should receive orientation toward and preparation for follow-up programs.	5	4	3	2	1
29. A guidance program in a vocational school should include effective student follow-up services . . .	5	4	3	2	1
30. The proportion of people who engage in an occupation in a field in which they were trained is a poor measure of the training effectiveness of a program	5	4	3	2	1

APPENDIX K

LUNCHEON PROGRAM

3783

VOCATIONAL EDUCATION

MDTA EVALUATION WORKSHOP

LUNCHEON

12:00 NOON

OAK ROOM

SEELBACH HOTEL

P R O G R A M

PRESIDING	James R. McGown Director Interagency Relations
Invocation	Jack R. Hatfield Director Health Occupations Education
Introduction of Guests	Bobbie R. Grogan Deputy Director Bureau of Vocational Education
Purpose of Workshop	C. O. Neel Coordinator State Program Evaluation
Introduction of Speaker	Wendell P. Butler Superintendent of Public Instruction
Address	Dr. Howard A. Matthews Director Division of Manpower Development and Training Bureau of Adult, Vocational and Library Programs U. S. Office of Education

M E N U

Cup of Fruit Supreme

Chef's Mixed Green Salad
French Dressing

Boneless Breast of Chicken on Toast
Smitane Sauce

Glaced Baby Carrots

Buttered New Peas

Ice Cream Pie

Beverage

APPENDIX L

SMALL GROUP

MEETING ASSIGNMENTS

SMALL GROUP MEETING ASSIGNMENTS

Code

SDE, MDTA - State Department of Education, Manpower Development and Training Act

SDE - State Department of Education

MDTA - Regional MDTA Coordinators

ES - Economic Security

RETF - Regional Evaluation Task Force Member

UK - University of Kentucky

RS - Regional Superintendent

SAC - State Advisory Council

Williamson

SDE
Frankfort

Resource Person: Floyd McKinney
UK
Lexington

Hazard

Earl Mohn - Chairman
MDTA
Hazard

Roy Combs
ES
Hazard

Art Goldsmith
Regional MDTA Representative
Virginia

Charles Bright
SDE
Frankfort

Leroy Martin - Secretary
RETF
Hazard

Ashland

Michael Campbell - Chairman
MDTA
Ashland

Howard Hawkins
SDE, MDTA
Richmond, Virginia

Steve Marcum
SDE
Frankfort

Paul D. Thompson
ES
Morehead

Billy Howard
SAC
Frankfort

Jr. Poling - Secretary
RETF
Ashland

Mayo

Charles Combs - Chairman
MDTA
Paintsville

Jack Hatfield
SDE
Frankfort

Brownelle Skaggs - Secretary
RETF
Paintsville

R. T. Cooper
ES
Prestonsburg

Bernard Haugen
Supervisor, Dept. of
Community Colleges
MDTA
Raleigh, N.C.

Wade
SDE
Frankfort

Resource Person: C. O. Neel
SDE
Frankfort

Paducah

Ray D. Brown - Chairman
RS
Paducah

Jewell Deene Ellis
SDE
Murray

David C. Dunning
ES
Paducah

James T. West - Secretary
RETF
Paducah

Samuel C. Evans
ES
Frankfort

Madisonville

Mary H. Stanley - Chairman
MDTA
Madisonville

B. M. Hatley
RS
Madisonville

W. C. Montgomery
SDE
Frankfort

Joyce P. Logan - Secretary
RETF
Madisonville

John F. Loyd
SDE, MDTA
Frankfort

Richard C. Pearce
Night Principal
Madisonville

James Disney
SDE
Frankfort

Martin L. Norfleet
ES
Hopkinsville

Owensboro

Billy Joe Stone - Chairman
MDTA
Owensboro

Richard E. Cates - Secretary
RETF
Owensboro

Kenneth Carter
SDE
Frankfort

Marvin Cole
RETF
Owensboro

Roy C. Russell
ES
Owensboro

Neikirk
SDE, MDTA
Frankfort

Resource Person: Alfred J. Mannebach
UK
Lexington

Somerset

Mary Lois Prather - Chairman
MDTA
Somerset

John N. Adams - Secretary
RETF
Somerset

Dorotha Oatts
SDE
Somerset

Billy G. Terhume
ES
Bethelridge

Walter Heiderman
SDE, MDTA
Baltimore, Maryland

H. D. Noe
RS
Somerset

Harlan

Otis M. Parker - Chairman
Night Principal
Harlan

Ben L. Abraham, Jr. - Secretary
RETF
Harlan

Charles C. Furr
ES
Frankfort

Billy Joe Cawood
RS
Harlan

Christine Wallace
SDE
Frankfort

Jerry C. Metcalfe
ES
Harlan

Bowling Green

E. T. Brookes - Chairman
MDTA
Bowling Green

Stokely B. Hall - Secretary
RETF
Bowling Green

Robert Lee Kelley
SDE
Frankfort

Bob C. Brown
ES
Bowling Green

Gyuro
UK
Lexington

Resource Person: James McGown
SDE, MDTA
Frankfort

Covington

Robert Koo - Chairman
MDTA
Covington

Doug McKinley
SDE
Frankfort

Kenneth Mahoney
SDE, MDTA
Frankfort

Virginia Pratt - Secretary
RETF
Covington

Roberta M. Anderson
ES
Covington

Central Kentucky

Wilbur Tincher - Chairman
MDTA
Lexington

Fred A. Martin
SDE
Frankfort

Lawrence J. Foster
ES
Lexington

Kyle Ramey - Secretary
RETF
Lexington

Claude Howard
RS
Lexington

Louisville

John Wismann - Chairman
MDTA
Louisville

Ted Cook
SDE
Lexington

Don Gunter - Secretary
RETF
Jeffersontown

Charles Aebersold
Counselor Coordinator
Jeffersontown

Alan R. McDonald
ES
Louisville

Warren A. Sheeley
Regional MDTA Representative
Atlanta, Georgia

APPENDIX M

OUTLINE FOR

SMALL GROUP MEETINGS

WORKSHOP ON DEVELOPING

PROCEDURES AND TECHNIQUES FOR EVALUATING

MANPOWER DEVELOPMENT AND TRAINING ACT PROGRAMS IN KENTUCKY

SMALL GROUP MEETINGS

May 18-22, 1970

Seelbach Hotel

Louisville, Kentucky

3794

INTRODUCTION

Participation in the small group meetings of this workshop provides the opportunity for participants to put "theory into practice." The schedule of Small Group Meetings was developed to serve as an organized plan for making the most of the limited time available for small group meetings. The schedule should help the regional groups proceed in the development of their regional plans in a step by step procedure.

Various parts of the regional plans are due at periodic intervals throughout the workshop. The regional plans will be typed, duplicated and returned so that each participant can review the evaluation plans developed for the other regions. The most important elements of each regional evaluation plan can then be incorporated into the evaluation plan of a specific region with the assistance of the regional leadership team and the citizens advisory committee.

References pertaining to each part of the regional evaluation plan to be developed are listed on succeeding pages. For each reference, pages are listed which are most pertinent to each part of the regional evaluation plan. However, other parts of the references provided the participants and references listed in the Selected Bibliography on vocational education evaluation may also be of benefit in writing the regional evaluation plans.

Monday, May 18, 1970

4:30 - 5:15 p.m.

Steven J. Gyuro - Junior Ballroom
Mary Lois Williamson - Oriental Room
Charles Wade - Room 1006
Lyle M. Neikirk - Room 1007

At the end of this session, workshop participants will:

1. be able to identify their responsibilities for the remainder of the workshop.
2. be able to identify the characteristics of their region.
3. be organized into regional groups with a chairman and recording secretary appointed.

References:

1. Schedule of Small Group Meetings.
2. Guidelines for Participants' Evaluation Plan
3. Byram, Harold M. and Floyd McKinney, Evaluation of Local Vocational Education Programs. East Lansing, Michigan: Research and Development Program in Vocational-Technical Education, Michigan State University, 1968. p. 1-4.
4. CAMPS data and other regional information.

Procedure:

1. Orientation and review of the Small Group Meetings schedule.
2. Review the Guidelines for Participants' Evaluation Plan.
3. Designate the chairman and secretary for each regional group.
4. Discuss and describe your situation and begin writing the regional plan.

Tuesday, May 19, 1970

8:30 - 10:00 a.m.

Steven J. Gyuro - Junior Ballroom
Mary Lois Williamson - Oriental Room
Charles Wade - Room 1006
Lyle M. Neikirk - Room 1007

At the end of this session, workshop participants should be able to:

1. write objectives in performance terms

2. identify and write objectives for local evaluation programs.

References:

1. Mager, Robert F. Preparing Instructional Objectives. Palo Alto, California: Feron Publishers, 1962.
2. Byram and McKinney, pp. 13-18.

Procedure:

1. Complete Performance Objectives Exercise.

2. Write example performance objectives.

3. Discuss the objectives of the evaluation efforts on the local level.

4. Write the objectives of local evaluation effort.

3:15 - 5:00 p.m.

Steven J. Gyuro - Junior Ballroom
Mary Lois Williamson - Oriental Room
Charles Wade - Room 1006
Lyle M. Neikirk - Room 1007

At the end of this session, workshop participants should be able to:

1. list suggestions as to how to obtain administrative commitment for the local evaluation program.

2. identify the types of people to compose the local leadership team and the citizens advisory council.

3. construct plans for organizing the evaluation program.

4. identify the activities of the leadership team and the citizens advisory council.

5. write a plan showing how they will involve staff, citizens, and students in the evaluation effort.

References:

1. Byram and McKinney, pp. 5-12; pp. 51-57.

2. The Advisory Committee and Vocational Education. American Vocational Association, Washington, D. C. 1969, pp. 24-30.

3. Burt, Samuel M., Industry and Community Leaders in Education. Kalamazoo: The W. E. Upjohn Institute for Employment Research, 1969, pp. 6-10; pp. 21-25; pp. 37-39; p. 46.

4. Burt, Samuel M., The Volunteer in Vocational Education. Kalamazoo: The W. E. Upjohn Institute for Employment Research, 1969. pp. 8-10.

Procedure:

1. Discuss the importance of administrative commitment to the local evaluation effort.

2. Discuss the types of people to be represented on the local leadership team and the citizens advisory committee.

3. Discuss organizational procedures for the local leadership team and the citizens advisory council.

4. Discuss the functions and activities of the local leadership team and the citizens advisory committee.

5. Outline in your plan the ways you will involve staff, citizens and students in the evaluation effort.

5:00 p.m. - Part I and Part II of regional plans due.

Wednesday, May 20, 1970

10:30 - 12:00 a.m.

Steven J. Gyuro - Oak Room
Mary Lois Williamson - Oriental Room
Charles Wade - Room 1006
Lyle M. Neikirk - Room 1007

At the end of this session, workshop participants should be able to:

1. write the purposes for a former student follow-up instrument.

2. identify questionnaire items which will measure the performance specified in the program objectives.

References:

1. Byram and McKinney, pp. 19-24; pp. 33-50.

2. O'Connor, Thomas J., Follow-up Studies in Junior Colleges: A Tool for Institutional Improvement. Washington, D. C.: American Association of Junior Colleges, 1965. pp. 29-45; pp. 54-74.

Procedure:

1. Discuss the purposes of a follow-up instrument.

2. Discuss the content and format of a former student follow-up instrument.

3. Identify the content essential to be included in a follow-up instrument.

4. Review different follow-up instruments and compare and contrast the advantages and disadvantages of each.

5. Begin writing a follow-up instrument.

12:00 a.m. - Part III of regional plans due.

3:45 - 5:00 p.m.

Steven J. Gyuro - Oak Room
Mary Lois Williamson - Oriental Room
Charles Wade - Room 1006
Lyle M. Neikirk - Room 1007

At the end of this session, workshop participants should be able to:

1. construct a follow-up instrument which will measure the performance specified in the program objectives.

References:

1. Byram and McKinney, pp. 19-24; pp. 33-50.

2. O'Connor, Thomas J., Follow-up Studies in Junior Colleges, Washington,D.C. American Association of Junior Colleges, 1965. pp. 29-45; pp. 54-74.

Procedure:

1. Develop follow-up instrument.

Thursday, May 21, 1970

8:30 - 10:00 a.m.

Steven J. Gyuro - Junior Ballroom
Mary Lois Williamson - Oriental Room
Charles Wade - Room 1006
Lyle M. Neikirk - Room 1007

10:00 a.m. - Part IV, V, and VI of regional plans due.

At the end of this session, workshop participants should be able to:

1. identify ways and means of using socio-economic information, manpower needs data, statements of philosophy and objectives, cost-effectiveness data, and student characteristics data in evaluating programs of vocational education.

2. construct a budget for an evaluation effort.

3. list the evaluation activities to be included in a successful plan.

4. construct a schedule of activities for the evaluation program.

References:

1. Byram and McKinney, pp. 59-64.

2. O'Connor, pp. 29-45.

3. KRCU Research and Development Handbook.

4. Handout materials

Procedure:

1. Follow-up questions and completion.

2. Discuss how the local educational agency should use:

   a) local, state and national socio-economic information
   b) annual and projected manpower needs
   c) local statements of philosophy and objectives
   d) cost-effectiveness studies
   e) studies of student characteristics

3. Write methods of accomplishing number 2 into your plan

4. Hand out and discuss a sample budget.

5. Discuss possible evaluation activities.

6. Organize relevant evaluation activities in order and write a schedule of activities, including dates.

3:30 - 5:00 p.m.

Steven J. Gyuro - Junior Ballroom
Mary Lois Williamson - Oriental Room
Charles Wade - Room 1006
Lyle M. Neikirk - Room 1007

At the end of this session workshop participants should be able to:

1. analyze data collected in the evaluation effort.

2. write a plan for disseminating the results of the evaluation program.

3. identify the elements essential for implementing an evaluation program.

4. write procedures and techniques for assessing the effectiveness of the evaluation effort.

References:

1. Byram and McKinney, pp. 59-68.

2. Handout materials.

Procedure:

1. Discuss and complete data analysis exercise.

2. Discuss dissemination problems and possibilities.

3. Discuss implementation problems and possibilities.

4. Write a dissemination and implementation plan.

5. Discuss assessment of the effect of the local evaluation plan.

6. Write how you will assess the local evaluation plan.

7. Discuss and specify (write) how to incorporate evaluation as a part of the regular on-going program of vocational and technical education.

5:00 - 7:00 p.m. - Parts VII - XII of regional plans due.

APPENDIX N

GUIDELINES FOR

PARTICIPANT'S EVALUATION PLAN

WORKSHOP ON DEVELOPING

PROCEDURES AND TECHNIQUES FOR EVALUATING

MANPOWER DEVELOPMENT AND TRAINING ACT PROGRAMS IN KENTUCKY

GUIDELINES FOR PARTICIPANTS' EVALUATION PLAN

May 18-22, 1970

Seelbach Hotel

Louisville, Kentucky

GUIDELINES FOR PARTICIPANTS' EVALUATION PLAN

The workshop program has been designed to encourage interaction between the participants and the workshop consultants. When not attending general sessions, the workshop participants will meet in four small groups. Each of the four small groups will be sub-divided into regional groups to work as a team on developing a regional evaluation plan. Each regional group will consist of the regional superintendent or his regional evaluation task force representative, the MDTA coordinator and the MDTA Selection and Referral Officer from the same region, a member of the Kentucky Bureau of Vocational Education Evaluation Task Force, and other participants.

The evaluation plan to be developed will be designed to meet the evaluation needs of vocational education programs at the regional and local levels. Group leaders will initiate discussions and provide direction to the small groups. Following general discussions, the regional groups will work together to develop step by step throughout the workshop. Phases of the regional plans are to be submitted periodically so that the secretaries can type, duplicate, and distribute the regional evaluation plan to the participants. Consultants and evaluation plan readers will be available for consultation throughout the workshop to help develop the plan. The readers will review the completed evaluation plan with the workshop participants at 8:00 a.m. on Friday morning, May 22.

To provide some structure and consistency to the regional evaluation plans, each plan is to include the following:

I. Names, Regions, and Positions of the authors of the regional evaluation plan.

II. Situation - Describe where your region is located, the current manpower situation in your region, the number and kind of MDTA programs presently in operation in your region, the commitment you can expect from others regarding involvement in an evaluation effort, the responsibility you have or expect with regard to training people for the evaluation effort, the assistance you can provide in initiating an evaluation effort in your region, and the criteria to be used to select or identify the institutions or programs to be assisted.

III. Objectives of the regional evaluation effort. - Write the objectives of the evaluation effort at the regional level; include what is to be accomplished, who is to be involved, and when the evaluation is to be done.

IV. Arrangements for providing local leadership for the evaluation effort. - Describe how persons interested in evaluation can be identified, how potential leaders at the local level can be identified, and how local leaders can become involved.

V. Provisions for using local staff members, citizens and students. - Identify who is to be involved; describe how local staff members, students and citizens can be involved, how citizens will be orianized, what involved citizens can do, and how local citizens can be kept informed.

VI. A Follow-up Instrument - A former student follow-up instrument to be used in the evaluation effort is to be developed by each regional group.

VII, Suggestions as to how the local educational agency should use:

A) local, state, and national socio-economic information. - Describe where pertinent information can be obtained, the kinds of information that is relevant at each level, and how relevant information can be used in the evaluation and program planning effort.

B) annual and projected manpower needs. - Include how the manpower needs at the local, state, and national levels can be used in the evaluation and program planning effort, and describe how the local educational agencies can use manpower data.

C) local statements of philosophy and objectives - Indicate how statements of philosophy and objectives serve as a basis for evaluation, how objectives will be established, and how attainment of objectives will be measured.

D) cost-effectiveness studies. - Review several studies which have been done on cost-effectiveness; indicate how a cost-effectiveness study can be established, and how a cost-effectiveness study can contribute to the evaluation effort.

E) studies of student characreristics. - Include in the plan how studies of student characterisitcs will be used in the evaluation effort, how students' needs will be determined, and how the aspirations of the students are to be assessed.

VIII. A sample budget for the evaluation effort. - Specify what items must be budgeted for; budget what the evaluation effort will cost, and estimate the time required to conduct the initial stages of a continuous evaluation effort.

IX. A schedule of activities, including dates. Describe how the evaluation effort is to be organized, the major activities to be included in the evaluation effort, the order in which the activities are to be accomplished, and the time schedule to be followed.

X. Suggestions for disseminating and implementing findings of the evaluation effort. - Describe how the evaluation results will be distributed, who will be the target populations, what provisions will be established for dissemination, how the findings can be implemented, what program changes are necessary as a result of the findings, and how needed changes will be made.

XI. Suggestions for assessing the effort of the local evaluation effort. - Write into the plan who will assist the local evaluation effort, what the local evaluation effort will include, and how the effect of the local evaluation effort can be assissed.

XII. Suggestions for incorporating evaluation as a part of the on-going program of vocational and technical or MDTA education. - Describe how evaluation can become an integral part of the educational process and indicate what actions will enhance the status of evaluation.

APPENDIX O

READERS AND ASSIGNMENT OF REGIONAL GROUPS FOR READER

READERS AND ASSIGNMENT OF REGIONAL GROUPS FOR READER REACTIONS

The members of the regional group will report to the places assigned Friday Morning, May 22. The reader will react to the evaluation plan developed by the regional group.

Friday, May 22, 1970

Steven J. Gyuro - - Junior Ballroom

Hazard	8:00 a.m.
Paducah	8:15 a.m.
Somerset	8:30 a.m.

Alfred J. Mannebach - - Room 1004

Mayo	8:00 a.m.
Covington	8:15 a.m.
Owensboro	8:30 a.m.

Floyd L. McKinney - - Oriental Room

Madisonville	8:00 a.m.
Central Kentucky	8:15 a.m.
Bowling Green	8:30 a.m.

C. O. Neel - - Room 1006

Harlan	8:00 a.m.
Ashland	8:15 a.m.
Louisville	8:30 a.m.

APPENDIX P

QUESTIONS FOR THE PRECEDING SPEAKER

WORKSHOP ON
EVALUATING MDTA PROGRAMS

Questions for the Preceding Speaker

In relation to the topic covered by the preceding speaker, what questions remain unanswered or what points would you like clarified?

APPENDIX Q

INSTRUCTIONAL AIDS

INSTRUCTIONAL AIDS

The following instructional aids were made available for the use of the workshop participants.

Videotape

A thirty minute report by the local evaluation leadership team from the Blooming Prairie, Minnesota Public Schools. Blooming Prairie was one of the local schools participating in Dr. Harold M. Byram's Multi-State Evaluation Project. The report deals with the procedures and techniques used during Blooming Prairie's evaluation effort.

Available from Instructional Media Center, 230 Erickson Hall, Michigan State University, East Lansing, Michigan 48823.

Filmstrips and Tapes

Eight filmstrip-tape programs by W. James Popham and Eva L. Baker were available for viewing by the workshop participants. Each filmstrip is about one-half hour in length and was made available with audiotape narration and an optional response sheet.

The following filmstrips were used:

#1. Educational Objectives.
#2. Systematic Instructional Decision-Making
#3. Selecting Appropriate Education Objectives
#4. Establishing Performance Standards.
#5. Appropriate Practice.
#7. Evaluation
#9. Defining Content for Objectives
#10. Identifying Affective Objectives

Available from Vimcet Associates, Post Office Box 24714, Los Angeles, California 90024.

Movie

The movie, "Goofing Off With Objectives" was available for the participants use Tuesday, Wednesday and Thursday evenings.

Available from Mager Associates, 13245 Rhoda Drive, Los Altos Hills, California 94022.

APPENDIX R

EVALUATION OF

SMALL GROUP MEETINGS

WORKSHOP EVALUATION SCALE
for
Small Group Meetings

Small Group Leader: _____Gyuro _____Wade _____Neikirk _____Williamson

Please complete this scale and return it to the small group leader. Place a check (✓) at the appropriate point on each scale. Be sure to elaborate on each response, giving specific examples or reasons for your decision, and/or ways improvement could have been made.

	Excellent	Good	Fair	Poor
1. Were the objectives of this small group meeting made clear to you. If not, what was lacking? Elaborate:				
2. Was this discussion held suitably to the topics covered by the preceding presentations in the workshop? Elaborate:				
3. Did the discussion leader initiate interaction between individuals? Elaborate:				
4. Was each participant given adequate opportunity to ask questions? Elaborate:				
5. Was each participant given adequate opportunity to express ideas or suggestions? Elaborate:				
6. Was group cohesiveness maintained while allowing viewpoint difference? Elaborate:				
7. Did the resource persons provide adequate information? Elaborate:				

8. What other specific comments do you have about this discussion session? (Please use the reverse side of this page if needed.)

APPENDIX S

WORKSHOP EVALUATION SCALE

WORKSHOP EVALUATION SCALE

Please circle the number indicating your present position.

1. MDTA Regional Coordinator
2. MDTA Selection and Referral Officer
3. State MDTA Staff Member
4. State Economic Security Staff Member
5. Evaluation Task Force Member - Kentucky Bureau of Vocational Education
6. Regional Superintendent
7. Member of the Kentucky Bureau of Vocational Education, not in preceding list
8. Other _____
   (Specify)

PART I - Directions:

Read each statement carefully and decide how you feel about it. You will agree with some statements and disagree with others. You are offered five possible answers to each statement. The "undecided" answer should be circled only when you have no opinion. Circle one number following each statement. Please answer all Statements.

Example:	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
The city needs to improve garbage collection schedules	5	4	3	2	1

This person feels in no uncertain terms that garbage collection schedules are inadequate

---

Statements	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
1. The purposes of this workshop were clear to me	5	4	3	2	1
2. The objectives of this workshop were not realistic	5	4	3	2	1
3. Specific purposes made it easy to work efficiently . . .	5	4	3	2	1

Statements	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
4. The participants accepted the purposes of this workshop . . .	5	4	3	2	1
5. The objectives of this workshop were not the same as my objectives	5	4	3	2	1
6. I didn't learn anything new . .	5	4	3	2	1
7. The material presented was valuable to me	5	4	3	2	1
8. I could have learned as much by reading a book	5	4	3	2	1
9. Possible solution to my problems were considered . . .	5	4	3	2	1
10. The information presented was too elementary	5	4	3	2	1
11. The speakers really knew their subjects	5	4	3	2	1
12. The discussion leaders were not well prepared	5	4	3	2	1
13. I was stimulated to think objectively about the topics presented	5	4	3	2	1
14. New acquaintances were made which will help in my future work	5	4	3	2	1
15. We worked together as a group .	5	4	3	2	1
16. We did not relate theory to practice	5	4	3	2	1
17. The sessions followed a logical pattern	5	4	3	2	1
18. The schedule was too fixed . .	5	4	3	2	1
19. The group discussions were excellent	5	4	3	2	1
20. There was very little time for informal conversation	5	4	3	2	1
21. I did not have an opportunity to express my ideas	5	4	3	2	1

Statements	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
22. I really felt a part of this group	5	4	3	2	1
23. My time was well spent	5	4	3	2	1
24. The program met my expectations	5	4	3	2	1
25. I have no guide for future action	5	4	3	2	1
26. Too much time was devoted to trivial matters	5	4	3	2	1
27. The information presented was too advanced	5	4	3	2	1
28. The content presented was not applicable to occupational programs	5	4	3	2	1
29. Workshops of this nature should be offered again in future years	5	4	3	2	1
30. Workshops such as this will contribute little to my work . .	5	4	3	2	1
31. The research finding presented were useful to me in my job . .	5	4	3	2	1
32. The references available to participants were not appropriate	5	4	3	2	1

APPENDIX T

WORKSHOP FOLLOW-UP

INSTRUMENT

Follow-Up of Workshop on Evaluating
MDTA Programs

May 18-22, 1970
Louisville, Kentucky

Please respond to the following questions regarding the evaluation activities in which you have engaged since attending the workshop.

1. Which of the following evaluation activities have you modified and/or initiated since your participation in the MDTA Evaluation Workshop? (Please check ✓ all activities in which you have engaged.)

_____ Establishing a leadership team for evaluation

_____ Establishing a staff committee on evaluation

_____ Establishing citizens advisory committees

_____ Establishing a student committee on evaluation

_____ Writing or revising program philosophy

_____ Writing or revising program objectives

_____ Conducting employment opportunity surveys

_____ Conducting employer surveys regarding the performance of former students

_____ Conducting former student follow-up surveys

_____ Conducting cost-effectiveness studies

_____ Conducting studies of student characteristics

_____ Orienting present students to the importance of follow-up

_____ Developing a schedule of evaluation activities

_____ Developing a budget for evaluation

_____ Disseminating results of the evaluation effort

_____ Assessing the effect of the evaluation effort

2. What type of educational programs on evaluation have you conducted or assisted with since the MDTA Evaluation Workshop?

3. What other workshops, institutes, or conferences have you attended on evaluation?

4. To what extent were you able to initiate and implement the "Plan of Action" developed at the workshop?

_____ None

_____ Some

_____ Most

_____ All

5. What additional comments do you have about the MDTA Evaluation Workshop?

APPENDIX U

LETTER ACCOMPANYING THE FIRST MAILING OF THE FOLLOW-UP INSTRUMENT

UNIVERSITY OF KENTUCKY

LEXINGTON, KENTUCKY 40506

COLLEGE OF EDUCATION
VOCATIONAL EDUCATION
RESEARCH COORDINATING UNIT
152 TAYLOR EDUCATION BLDG

November 13, 1970

We are pleased to have an opportunity to contact you regarding your evaluation activities since your attendance at the Workshop on Evaluating MDTA Programs, May 18-22, 1970 in Louisville, Kentucky.

Your response on the enclosed questionnaire will help the workshop staff make a more realistic assessment of the value of the workshop. It is not necessary for you to sign your name to the questionnaire since it has been pre-coded for objectivity during analysis. All information will be confidential and the data will be handled in such a way that responding individuals cannot be identified.

Please use the return envelope to return the questionnaire at your earliest convenience. Your cooperation is greatly appreciated.

Sincerely,

Floyd L. McKinney
Assistant Professor

Alfred J. Mannebach
Assistant Professor

br

APPENDIX V

THANK YOU - REMINDER CARD

THANK YOU-REMINDER CARD

November 20, 1970

Dear Colleague:

We want to express our thanks for your cooperation in completing the questionnaire recently sent to you. If you have not yet completed the questionnaire, please complete it and put it in the mail today. Thanks.

Sincerely,

James R. McGown
Director, Interagency Relations
Kentucky Bureau of Voc. Educ.

APPENDIX W

SECOND

FOLLOW-UP LETTER

UNIVERSITY OF KENTUCKY

LEXINGTON, KENTUCKY 40506

COLLEGE OF EDUCATION
VOCATIONAL EDUCATION
RESEARCH COORDINATING UNIT
152 TAYLOR EDUCATION BLDG.

December 4, 1970

We need your help. We have not received a copy of the Follow-up instrument regarding the Workshop on Evaluating MDTA Programs. This is an opportunity for you to make a direct and constructive contribution relative to such workshop efforts.

In the event you have misplaced the questionnaire we sent to you earlier, we are enclosing another copy. Please return it as soon as possible. Thank you for your time and effort.

Sincerely,

Floyd L. McKinney
Assistant Professor

Alfred J. Mannebach
Assistant Professor

APPENDIX X

SELECTED BIBLIOGRAPHY ON VOCATIONAL EDUCATION EVALUATION

SELECTED BIBLIOGRAPHY ON VOCATIONAL EDUCATION EVALUATION

Prepared for

Workshop on

Evaluating MDTA Programs

May 18-22, 1970

Seelbach Hotel

Louisville, Kentucky

Complied by:
Floyd L. McKinney
Alfred J. Mannebach
University of Kentucky
Lexington, Kentucky

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SELECTED BIBLIOGRAPHY ON VOCATIONAL EDUCATION EVALUATION

Ammerman, Harry L. and William A. Melching. The Derivation, Analysis, and Classification of Instructional Objectives. HumRRo. Alexandria: George Washington University, May 1966. 58pp.

Arnold, Walter M. Vocational, Technical and Continuing Education in Pennsylvania. Harrisburg: Pennsylvania Department of Public Instruction, 1969.

Austin, John J. and Donald A. Sommerfeld. An Evaluation of Vocational Education for Disadvantaged Youth. Muskegon: The Public Schools of the City of Muskegon, Michigan, April 1967. 200pp.

Baldwin, Thomas S. "The Development of Achievement Tests for Trade and Technical Education: A Three Year Summary." University of Illinois, 9pp. (Mimeographed)

Bibliography of Publications. Alexandria: Human Resources Office, The George Washington University, 1968.

Bjorkquist, David and Curtis R. Finch. "Use and Critique of Product Measures in Evaluation." Paper read at the 62nd Annual Convention, American Association, Dallas, Texas, December 1968.

Broadbent, William A. and Bruce A. Reinhart. The AMIDS Program: An Appraisal of the First Six Months. Los Angeles: Division of Vocational Education, University of California, 1969. 274pp.

Burt, Samuel M. Industry and Community Leaders in Education. Kalamazoo: The W. E. Upjohn Institute for Employment Research, 1969. 54pp.

Burt, Samuel M. Industry and Vocational-Technical Education -- A Study of Industry Education -- Advisory Committees. New York: McGraw-Hill Bood Company, 1967. 520pp.

Burt, Samuel M. The Volunteer in Vocational Education. Kalamazoo: The W. E. Upjohn Institute for Employment Research, 1969. 10pp.

Byram, Harold M. "A Suggestive Frame of Reference for Evaluation of Programs Of Vocational Education in Public Schools." East Lansing, Michigan: College of Education, Michigan State University, undated. 3pp. (Mimeographed).

Byram, Harold M. and Floyd McKinney, Evaluation of Local Vocational Education Programs. East Lansing, Michigan: Research and Development Program in Vocational-Technical Education, Michigan State University, 1968. 80pp.

Byram, Harold M. "Guidlines for Evaluation of Local Programs of Vocational Education." Paper read at the National Institute on Improving Vocational Education Evaluation, Fayetteville, Arkansas, August 5, 1969.

Byram, Harold M. "Strategy and Methodology for Self-Initiated Evaluation of Local Programs of Vocational Education." Paper read at the Conference on Evaluating Vocational and Technical Education, October 8, 1969, Atlantic City, New Jersey. 25pp.

Craig, Judith S. (ed.). "Proceedings of the Conference on Follow-up Studies in Educational Research." Madison, Wisconsin: Center for Studies in Vocational and Technical Education, Industrial Relations Research Institute, The University of Wisconsin, 1965. 37pp. (Mimeographed).

Cushman, Harold R. and Martin V. Jarmin. "The Organization and Utilization of Agricultural Advisory Boards in New York State." Ithaca, New York: The Agricultural Education Division, Rural Education Department, New York State College of Agriculture, Cornell, University, 1965. 118 pp. (Mimeographed)

Erickson, Lawerence W. and Mary Ellen Oliverio. Evaluation Criteria For Survey Instruments in Business Education. Chicago, Illinois: South-Western Publishing Company, 1964. 89pp.

"Evaluation of the Project In-School Youth Work-Training Program for Fourteen and Fifteen Year-Old Youth." Detroit, Michigan: Program Evaluation Secrion, Detroit Public Schools.

Evaluation of Arkansas Vocational Training Programs in Relation to Economic Development. Part I: Occupational Needs and Employment Projections, Part II: Survey of Vocational Schools Performance, Part III: Evaluation of Programs and Recommendations. Little Rock: University of Arkansas, 1969.

Evaluation Systems for Local Programs of Vocational-Technical Education, A Final Report of Project 701. East Lansing, Michigan: Research and Development Program in Vocational-Technical Education, Michigan State University, 1967. 8pp.

Evaluation in Vocational Education. Sacramento, California: Research Coordinating Unit, Vocational Education Section, State Department of Education, 1967. 77pp.

Ferguson, Edward T. "A Comparison of the Effectiveness of the Project and Cooperative Methods of Instruction on Selected Competencies in Distributive Education at the Secondary Level." East Lansing, Michigan: Research and Development Program in Vocatioanl-Technical Education, Michigan State University, 1968. 16pp.

Finch, Curtis R. "The Development of an Instrument to Measure Student Attitude Toward Individualized Shop and Laboratory Instruction." University Park: Pennsylvania State University, Research Service, January, 1969. 17pp.

Finsterback, F. C. The Role of Advisory Committees in Vocational Technical Education. Dover, Delaware: Occupational Research Coordinating Unit, Delaware Department of Public Instruction. 10pp.

Grobman, Hulda. Evaluation Activities of Curriculum Projects. AERA Monograph Series on Curriculum Evaluation. Chicago: Rand McNally and Company, 1968.

Guba, Egon C., Daniel L. Stufflebeam, and Stuart Westerbrand. "Strategies for Improving the Evaluation of Elementary and Secondary Education." Columbus: The Ohio State University, 1967. (Mimeographed)

"Guidelines for Conducting Follow-up Studies of Vocational and Technical Education Students," Bulletin No. 2152. Lansing, Michigan: Division of Vocational Education, Michigan Department of Education, 1965. 8pp. (mimeographed)

Hamlin, H. M. "Citizens Evaluation of Public Occupational Education." Center for Occupational Education, North Carolina State University of Raleigh, 1967. 179pp.

Hamlin, H. M. "Organizing to Provide Public Occupational Education in North Carolina." Raleigh, North Carolina: North Carolina State University, 1968. 22pp. (Mimeographed)

A Handbook for Boards of Education, School Administrators, Advisory Board Members, and Teachers of Agriculture. Albany, New York: Bureau of Agricultural Education, The University of the State of New York, 1966. 13pp.

Harris, Norman. Technical Education in the Junior College, New Program for New Jobs. Washington, D.C.: American Association of Junior Colleges, 1964. 102pp.

"How High School Cooperative Trainees Fare in the Labor Market, Phase C." East Lansing: Michigan State University, College of Education, Educational Publication Service, August 1966. 65pp.

"How High School Cooperative Trainees Fare in the Labor Market, Phase D." East Lansing: Michigan State University, College of Education, Educational Publication Services, July 1967. 74pp.

"HumRRo Interim Bibliography of Publications." George Washington University, February 1969. 20pp.

Hurt, Mary Lee and Margaret V. Barkley. "Evaluation of Consumer and Homemaking Education, as a Part of Home Economics Programs." A Paper presented at the National Conference on Consumer and Homemaking Education, School of Home Economics University of Nebraska, February, 1969. 11pp.

"An Instrument to Evaluate MDTA Institutional Training Projects in Arizona. An Arizona Manpcwer Development Training Publication." Phoenix: Arizona State Department of Vocational Education.

Interviewing and Counselling. Washington, D.C.: Social Security Administration, U. S. Department of Health, Education, and Welfare, 1964. 28pp.

The Job Ahead, A Model for Determining Area Vocational Needs. Lincoln: Nebrasda Department of Education. 4pp.

"Job Placement Bibliography No. VII, Addendum No. VII and Cost-Benefit Analysis, Bibliography No. XII, Addendum No. XII." Madison: The University of Wisconsin Center for Studies in Vocational and Technical Education, May, June, July, August 1968. 19pp.

Kaufman, Jacob J. "A Cost-Effectiveness Study of Vocational Education." The Pennsylvania State University Institute for Research on Human Resources, March 1969. 301pp.

Kaufman, Jacob J. "The Role of Cost-Benefit Analysis in the Evaluation of Vocational and Technical Education." A paper presented at the Annual Meeting of the American Vocational Association, Cleveland, Ohio, December 5, 1967.

Kaufman, Jacob J. and Morgan V. Lewis. 'The School Environment and Program's for Dropouts." The Pennsylvania State University, Institute for Research on Human Resources, August 1968. 184pp.

Kaufman, Jacob J. and others. "The School Environment and Programs for Dropouts: Summary." University Park: The Pennsylvania State University, Institute for Research on Human Resources. 25pp.

Kirby, Frederick C. and Paul A Castagne. "Benefit-Cost Analysis of TAT Phase I Worker Training." Oak Ridge, Tennessee: Training and Technology Project, P. O. Box 117, 1969.

Kaufman, Jacob J. "Cost-Effectiveness Analysis as a Method for the Evaluation of Vocational and Technical Education." Paper read at the National Institute on Improving Vocational Education Evaluation, Fayetteville, Arkansas, August 7, 1969.

Mager, Robert F. Preparing Instructional Objectives. Palo Alto, California: Fearon Publishers, 1962. 60pp.

Mager, Robert F. and Kenneth M. Beach. Developing Vocational Instruction. Palo Alto, California: Fearon Publishers, 1967. 83pp.

Mahlstede, John P. Research and Development in Vocational and Technical Education: Non-Metropolitan Areas, U.S.O.E. Research Project No. ERO 255. Ames, Iowa: Iowa State University of Science and Technology, 1966. 61pp.

Mohs, Milton C. Service Through Placement in the Junior College. Washington, D.C.: American Association of Junior Colleges, 1962. 102pp.

"Manpower Research Projects Sponsored by the U.S. Department of Labor, Manpower Administration through June 30, 1969." Washington, D.C.: U. S. Department of Labor, Manpower Administration.

Moss, Jerome. "The Evaluation of Occupational Education Programs." Technical Report. Minneapolis: Minnesota Research Coordinating Unit in Occupational Education, 1968.

Vocational Education. Sixty-eight Yearbook, Part I. National Society for the Study of Education. Chicago: University of Chicago Press, 1969. 301pp.

Educational Evaluation: New Roles, New Means. Sixty-eight Yearbook, Part II. National Society for the Study of Education. Chicago: University of Chicago Press, 1969. 409pp.

Main, Earl D. "A Nationwide Evaluation of MDTA Institutional Job Training Programs. Report No. 118." Chicago: National Opinion Research Center, University of Chicago.

Norton, Robert E. "Improving Vocational Education Evaluation." Paper read at the American Vocational Association Convention, Boston, 1969.

O'Connor, Thomas, J. Follow-up Studies in Junior Colleges: A Tool for Institutional Improvement. Washington D.C.: American Association of Junior Colleges, 1965. 75pp.

Organization, Function, and Operation of Industry Advisory Groups. Washington, D.C.: Electronic Industries Association, 1721 De Sales Street, N.W., Undated. 12pp.

Phipps, Lloyd J. and Kenneth Knell. "The How of Successful Citizen Advisory Committee Operation." Urbana: University of Illinois, College of Education, May, 1968. 38pp.

Popham, W. James and others. Instructional Objectives. AERA Monograph Series on Curriculum Evaluation. Chicago: Rand McNally and Company, 1969.

Edgerton, H. A. and R. W. Sylvester. "The Prediction of Outcomes of MDTA Programs: A Pilot Study." Washington, D.C.: Performance Research, Inc., 1966.

"Procedure for Determining Vocational Education Needs Through Community Analysis." Lincoln: University of Nebraska, Nebraska Research Coordinating Unit, October, 1968. 24pp.

Pucel, David J., and others. Questionnaire Follow-up Returns as a Function of Incentives and Responder Characteristics. Minneapolis: Department of Industrial Education, University of Minnesota, 1968. 15pp.

Follow-up Cards. Helena: Department of Public Instruction, Research Coordinating Unit, 1969. 7pp.

Riendeau, Albert J. The Role of the Advisory Committee in Occupational Education in the Junior College. Washington, D.C.: American Association of Junior Colleges, 1967. 75pp.

Schriven, Michael. The Methodology of Evaluation. Lafayette, Indiana: Social Science Education Consortium, Purdue University, 1966. 58pp.

Sharp, Laure M. "Student Follow-up Study Procedures As a Technique for Evaluating Vocational and Technical Education Programs." A Working Paper for the National Conference on Evaluating Vocational and Technical Education Programs, October 6-9, 1968, Atlantic City.

Smith, Robert G., Jr. An Annoted Bibliography on the Determination of Training Objectives. Alexandria, Virginia: Human Resources Research Office, The George Washington University, 1967. 132pp.

Smith, Robert G., Jr. Controlling the Quality of Training, Technical Report 65-6. Alexandria, Virginia: Human Resources Research Office, The George Washington University, 1965. 41pp.

Smith, Robert G., Jr. The Design of Instructional Systems, Technical Report 66-18. Alexandria, Virginia: Human resources Research Office, The George Washington University, 1966. 85pp.

Smith, Robert G., Jr. The Development of Training Objectives, Research Bulletin 11. Alexandria, Virginia: Human Resources Research Office. The George Washington University, 1964. 101pp.

Stake, R. E. "The Countenance of Educational Evaluation." Teachers College Record, 68:523-540, April, 1967.

Starr, Harold. "Methodologies for Conducting State Program Evaluation." Paper read at the National Conference on Methods and Strategies for State Plan Development, Covington, Kentucky, March 27, 1969.

A Systems Approach to the Evaluation of Vocational Education. East Lansing, Michigan: Research and Development Program in Vocational-Technical Education, Michigan State University, 1967. 7pp.

Technical Education: Less-Than-Baccalaureate Level Programs in Higher Education. Richmond, Kentucky: Eastern Kentucky University, 1967. 25pp.

Tuckman, Bruce W. The Development and Testing of an Evaluation Model for Vocational Pilot Programs. USOE Project No. 6-8355, Grant No. OEG-1-7-008355-2039. Washington, D.C.: U. S. Office of Education, 1967.

Tyler, Ralph W. Basic Principles of Curriculum and Instruction. Chicago: The University of Chicago, 1965.

Tyler, Ralph W. (ed.) Educational Evaluation: New Roles, New Means. The Sixty-eighth Yearbook of the National Society for the Study of Education. Chicago: The University of Chicago Press, 1969.

Tyler, Ralph W., Robert Gagne, and Michael Scriven. Perspectives on Curriculum Evaluation. AERA monograph Series on Curriculum Evaluation. Chicago: Rand McNally and Company, 1967.

U. S. Department of Labor. Manpower Report of the President. Washington, D.C.: Government Printing Office, 1969. 253pp.

The Use of Follow-up Studies in the Evaluation of Vocational Education. Washington, D.C.: Bureau of Social Science Research, Inc., 1966. 35pp.

On Using and Being a Consultant. Washington, D.C.: American Association of Junior Colleges, 1967. 34pp.

Vocational Education in Michigan, The Final Report of the Michigan Vocational Education Evaluation Project. East Lansing, Michigan: College of Education, Michigan State University, 1963. 252pp.

Wenrich, Ralph and Robert J. Crowley. Vocational Education as Perceived by Different Segments of the Population. Cooperative Research Project No. 1577. Ann Arbor, Michigan: The University of Michigan, 1964. 148pp.

Wood, Eugene S. An Evaluation of Illinois Post-High School Educational Programs in Agriculture. Carbondale, Illinois: School of Agriculture, Southern Illinois University, 1967. 36pp.

Wyllie, Eugene Donald. An Evaluation Plan for Business Education Programs in High Schools. Chicago, Illinois: South-Western Publishing Company, 1963. 33pp.

APPENDIX Y

WORKSHOP PRESENTATIONS

LUNCHEON ADDRESS

Howard A. Matthews, Director
Division of Manpower Development and Training
Bureau of Adult, Vocational and Library Programs
U. S. Office of Education
Washington, D. C.

Luncheon Address at the
Workshop on Developing Procedures and Techniques
for Evaluating Manpower Development and
Training Act Programs in Kentucky

May 18, 1970
Seelbach Hotel
Louisville, Kentucky

LUNCHEON ADDRESS

I'm so glad to join Superintendent Butler in acknowledging the importance of the educational community becoming more involved and working more hand in hand with folks like this group of young men here from the Employment Security Division. That's not always the case in many areas that I visit. In fact, I was in a meeting in another area not too long ago and it was very obvious that there was a kind of formal and strained relationship between the personnel of the public employment service on the one hand and the vocational education people on the other hand. When the two fellows were introduced and they were both on the program and they both had equal time and the vo-ed man got up and said, "I'm sure glad to see my friend over her, John Dykes, who is head of the Employment Service. I've known him for ten years and there isn't a thing I wouldn't do for him." And then he said his piece and sat down and Dykes got up and he said, "I'm glad to be on the program with my friend from the Division of Vocational Education and its true I've known him too for ten years and there isn't anything I wouldn't do for him. That's the way it's been for ten years -- doing nothing for each other." So I'm glad in this day and this common undertaking that you are attempting to do something for each other.

I'm really not going to deliver the full two hours that I have prepared, but in the few minutes I have, I would like to chat with you about some things I think the education community as well as the employment security community need to think about. I hope that perhaps during this week that there might be some serious dialogues aforded. If just one or two of the things I'm going to suggest to you are initiated, then my trip down here will have been worthwhile.

Every place you go today, as Superintendent Butler has so well indicated, there are a lot of questions about accountability. Translated to the terms of a country boy like me from the west, it means "What did you do with what you had?" Now we tend to look at accountability in a very linear program efficiency way. We think we've done a good job if we have X number of dollars with X number of people trained to do this thing or that thing. Now, I'm suggesting that perhaps what we really do when we do our evaluations that way is engage in what I call a sort of phoney numbers game. We don't really look at the multiplier effect and the possible ripple or other effects and implications of our program. Illustrated another way, not too very long ago I read the results of two polls. In these polls, eighty five per cent of the people who were polled about the educational system of this country agreed that they found nothing particularly wrong with it. And, they have a lot of linear statistics that prove their point.

We are the most literate nation in the world. No matter how you cut it, no matter how you count it, we read more library books, we have more people who subscribe to magazines and newspapers, and we couldn't really have a lousy educational system in terms of the scientific advancements in the fields of electronics and communication. We all sat around and watched the guy step on the moon. That fact can't really say in substance that we have a lousy educational system. But it does tend to dramatize that the prosperity is greater than it ought to be, because you and I tolerated doing percisely what it has always done. And that has been to prepare people for the next level of education. In the process, lots of people drop through the cracks and it is this

group of people that you and I need to look at and evaluate what we are doing for them.

What might we have done better for them when they were in the system? And what might we pump back into the system to help it change itself? I'm convinced that there will be no subsidy change in any system; employment security, vocational education, general education, or whatever system you are talking about without some very serious involvement in depth of that system. I think the last fifty years of spending money on research has proven that you don't pick a book off the shelf and read about some esoteric research problem or project with lots of statistical tables in it that the researcher understands and I don't, and say, "Gee whiz, that applies to me and I'm going to change and I'm going to be like that research book says."

We can bring about an effective change if we can bring about effective evaluation. For example, in some of our manpower projects we had evaluations and we also had evaluations of the evaluations. Many projects were identified as good ones because they had displacement rates and they had fewer dropout rates than other projects. We have a project trying to upgrade steel workers to teach them how to read and write so that they can bid for better jobs. But the project doesn't do any good because they can't take jobs unless they have enough seniority to bid on the jobs when they come. So theoretically, at least in the linear evaluation I am talking about, the project is a bust because, although the guys move from grade 5 to grade 8, they didn't get the better jobs that they should have gotten.

Now let's look at evaluation in terms of what I hope you will think about this week. I got a letter from a fifty five year old man in that project and it was the first letter he had ever written in his life. He had to write to somebody because he felt so good about what was happening to him. In his letter he told me that for the first time in his life, he knows what his kids are doing in school. He knows what they ought to be doing in reading and he is able to motivate them to change their attitudes toward school, which suggests the possibility that they might be better students as a result. Of course, he told me in the letter that he had other problems. He is not now dependent upon his wife to write letters to his son in Vietnam, so that has strained their relationship to some extent because now he knows what his son is saying. But the point that I am making is that the multiplier effect of his having learned to read was lost in the way we do evaluation. Because this man did not automatically take a step up, the program, theoretically, in the evaluation model was a failure. So I would hope that as you talk about evaluation this week, you might discuss the multiple feedback payoff system and devote a few moments of your energy to talking about how we really assess program effectiveness, as opposed to what we always intended to assess and that's some theoretical model of program efficiency.

Another question I would challenge you to think about for a few moments this week are some models or myths, as I call them, that we have in education. I think one of the most serious is the iron clad seniority system that has developed in the educational fraternity. This system is particularly bad as it affects those students who do not accommodate well to it.

It was mentioned that once I was an elementary school principal. That's what took me to Alaska. I use that to illustrate my point, because I think it has a direct application to vocational and technical education. The story goes something like this. I was in a sleepy Idaho town where there were three qualifications you had to pass to be a local school superintendent. I flunked two out of three. I was interviewed by the local school board and was asked three questions. 1. Do you know how much the school budget was last year? I really didn't know, I hadn't boned up on that. 2. Do you know what the tax rate is for the county? I passed that allright, I knew what it was because I was a tax payer. 3. Can you operate on the same budget as last year? I said I don't think so, so I missed two out of three and I didn't get the job.

But anyhow I was a high school principal and I had listened long enough to the high school teachers say what a lousy job elementary and junior high school teachers do. I had a friend in Alaska who told me about all the new school buildings they were going to build and about all the increase of students in Alaska. He came back at Christmas with lots of pictures of fish and I think that those pictures motivated me to say, "If you ever get anelementary school in Alaska, where the building, the teachers, the principal, and the students all meet each other on the first day, let me know. I'd like to be in a building once in my life where nobody could tell me how it was done last year, or the year before, or the last twenty years, and see what I could do."

I wanted to be the first guy to lose the keys to the medicine cabinet, the guy to get the first key to the scotch tape cabinet, all those things that go with successful school administration. So when the building was built, I was given the opportunity to see what we could do with it. It wasn't really an experimental school, it was just a pragmatic approach to take a different look at elementary education. It's the only building I've ever been in that was build to house a program. The other buildings I've been in, and I know you don't do it this way in Kentucky, have been sort of an Oedipus to the imagination of an architect and to the school board. Then you hope it will fit your program. But this one was built to house a program. We didn't have two walls in the building that were the same color. Today you would probably call that psychedelic, but we just thought of it as a different color scheme.

We had a credit union in our building. Any student could belong to the credit union if he could keep his passbook. Now what do you have to do to keep a passbook? You've got to be able to do interest; you've got to do all the four functions of arithmetic; add, subtract, multiply, and divide. We had third graders who could belong to the credit union. The credit union was run by the students, they invented their own money, the student bookstore, and ice carnival, and that's how they made money to pay things on the passbook. Well we suddenly discovered that parents had learned something about saving, even ones who had never heard of the word before. I learned a lot about those kind of multipliers, but this is what happened to me in the educational hierarchy. I don't want you to shed any tears for me because you can see I survived, but I had all the fourth grade teachers mad because you don't teach division until the fourth grade. And all of the fifth grade teachers were mad because you don't teach division with remainders until the fifth grade. And the eighth grade teachers were really disturbed because what were they going to teach the students in the eighth grade if mathematics with interest was taught in the third grade? It was tramatic for the teachers.

We have done the same thing as we have carved up vocational education and manpower programs. Now I submit that perhaps we ought to look at them again in terms of program effectiveness. Many of these artifical divisions have developed as we have allowed seniority systems in education to formulate around education training. These systems have really formed for social and fraternal reasons and not for professional and technical reasons. And I would hope that as you discuss evaluation, you might take a look at these problems.

Another good illustration is attendance. I don't think there is a person in this room that can prove to my satisfaction that there is any real relationship between attendance at school and attendance on the job. There is an entirely different payoff system in attendance at school as opposed to the payoff system for attendance on the job. Yet, we go politely along believing that we can force a student to be in school five days and he'll automatically show up for work five days a week. I don't believe you can prove that is a fact. I don't think anybody has any evaluation data that will show a direct cause and effect relationship between the two.

Just study the history of attendance in school; its very simple. The compulsory attendance laws were not designed to get students in school where they're supposed to be, but to get them out of the labor market. Right to work laws have done the same thing. That was their basic premise. Superintendent Butler and I know that the easiest way to keep all the school districts in the State from being mad at you is to have a state distribution formula that has factors which apply to every school in the state, every student who goes to school, and every student who attends. The better the attendance, the more money the school gets. So you force the kid to be there. He may possibly have learned as much in three days as he would have in five. So I'm suggesting that we need to look at the multipliers and some of the effects of our programs that we think are good. For now, we only have some sort of linear data for the central cause and effect sequence, and we call that evaluation.

Among other things, I hope you pay some attention to evaluating the real motivators for what students do in school or what they do in manpower programs. For example, in vocational education we have said that our principal job is to train people for the world of work. Well I think that statement takes its origin, the world of work facet of it at least, from our traditional time honored protestant church and I think it worked. Now if you really studied the history of the Industrial Revolution, you would find that if it hadn't been for the church-state relationship in some of the merchant countries and that it hadn't been taught that it was immoral, indecent, or un-Christian not to work, the effect of the Industrial Revolution might have been entirely different on our nation from what it is today.

So our traditional "work ethic" in the value systems of people is based on that ethic which creates this linear sequence of work, pay, reward. We've also persuaded ourselves to believe that out of work in that ethic comes most of the socializing and moralizing influences that motivate people. I contend that our evaluations ought to look at some of these things in this perspective. For example, we are a post industrial society. We don't have more people producing goods, we have more people selling and producing

services. It's increasingly more difficult for a person to identify himself with anything in which he can get full fulfillment. Everyone is identified with a pay check relationship. Even the production task man is more and more a machine babysitter who knows his job is going well if nothing happens. And then if something does happen, someone else will fix it anyhow. There is not an awful lot of fulfillment in that type of job. In addition, our credit card culture tells a youngster growing up that this cause and effect sequence is backwards. We enjoy now and pay later. So perhaps work at best is a psychological punishment for having done so, as opposed to a work, pay, reward, leisure sequence.

But, in most evaluations we're not really evaluating these kinds of causes and effects. I hope this week that as you talk about evaluations for programs some of these kinds of questions might enter into your discussion. I will close on a true story about Alaska which suggests to me that unless we do this we probably haven't seen anything yet in the diversion of programs; in the difficultuly of getting people into dialogue together about making program sense. As many of you know, those folks from my office here can go back to sleep, they have heard this story a hundred times but its a true story and illustrates my point, but I guess perhaps before I tell it I will urge just one other thing which you might want to consider.

We've talked about the vocational education community and the employment service community. I know at this conference you are going to talk about the broad proliferation of federal laws that have something to do with educational training. But I think that when the historians get through telling about this period of time, they will not be spending as much time on the federal statutes as they are on what we are doing on the state and local level; what we're all doing in the proliferation of services and programs. For example, in the United States today, there are 80,000 unites of government. Fourty six thousand are local units of government. There is only one unit of government at the federal level unless they changed it after I left this morning. Fifty-four state and territorial jurisdictions, 300 counties, and all the rest are local units of government. Of the 46,000, roughly 20,000 are school districts and roughly 26,000 are special service districts. The special service districts the water pollution districts, the soil conservation districts, the drug abuse; districts, and all the others have a sort of headless forth branch of government presided over by administrated courts and commissions. These courts and commissions have many of the new and emerging jobs, particularly in environmental control, in some of the health occupations, and in others that we have really never been able to quantify or classify. So I am suggesting that when the Congress attempts to solve a social problem it has to look at that broad array of local units of government, many of which are not coordinated with any other local unit of government. Take, for example, the area in which I live. Within a 45 minute drive from my house in Washington, D. C., I can drive through eleven different police jurisdictions. They are all called metropolitan Washington and they are all administered by separate, discrete, different entities. Three of them are administered by Federal entities that don't even have to talk to each other about what the speed limits are, what the parking regulations are, and so forth. Well the same thing is happening at the local level in many, many ways. So I would suggest that one of the things you might want to talk about this week as you evaluate what we do with what we have is "How we can do a better job with involving that part of what is happening in government today in our program planning and in our setting of

objectives for people? How do you bring in an economist to talk with a local administrative board who doesn't answer to any body and yet has jobs for people living in their area?"

That brings me to my story and then I will sit down. As some of you know, in Alaska there's a condition known as perma-frost. That means substantially that below about 18 inches from the top of the ground, the ground is frozen, sometimes to as much as 200 - 300 feet. And so it's almost impossible in the permafrost areas to build conventional buildings with concrete foundations and concrete walls because in the summer time the permafrost will thaw out just a little bit because of the heat conduction of the building. Then in the winter it will freeze back and the building will buckle all out of shape. So we tried all kinds of things to compensate for the permafrost. We built one building on about 150 screw jacks. The janitor screwed the jacks up and down to try and keep the building level. So we're the only people I really know that actually stole anything from the Russians as far as ideas are concerned. One of our engineers learned that over in Syberia they had a hazardous problem. The Russians freeze the bridge abuttments. They just form the abuttments on the refrigeration tubing to keep them frozen and the abuttments stay right where they're put. There's no buckling or there's no heating. So we built a little building in Nome to try this system out and sure enough it worked. We dug right down into the permafrost, we laid refirgeration tubing, two sets, redundant set and operating set and when heat went down we picked it up and ran it back through an exchanger system to have heat in the building and it was tremendous. And so I thought this would be a very fine thing to motivate the natives to understand that this is the 20th century and that technology had moved into the frontier. So I prepared a speech to explain this to them. And I had a fellow standing next to me by the microphone who could speak Eskimo. There is nc written equivalent for Eskimo and so I couldn't just hand it out to them. They couldn't have read it anyhow. So I preceded to tell them all the technical details about this building and what it meant in terms of better living in the Artic and so on. And all the time I was talking, I'd say a few words, then I'd stop. He'd say a few words, he'd stop, and I'd say a few more and he just kept saying the same sounds over and over and over again and it wasn't until I got down to talking about the kids that he changed his sounds. And it bothered me as it would anybody I'm sure, so after the meeting I asked somebody who could understand Eskimo, "What in the world was that guy telling those people there at the first part of my speech?" And he said, "Well, he was just telling them you hadn't said anything yet!"

Well that's a true story and I like to think that because there are no Eskimos equivalents for words like refrigeration and what not, I believe the man was right. I was dealing on a level that had absolutely no relevancy to what their problems were. The problems were their children, and when I talked about them, they understood. So I would hope that as you deal in evaluation this week you think about not having said anything yet and get down to that area of the problem.

WHY EVALUATE?

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WHY EVALUATE?

In one sense, perhaps, one could answer the questions assigned for this presentation with the rejoinder that everyone here already has answered the question to his own satisfaction, otherwise why would he be here. Again, one might say, in effect, that the funding or supporting agency insists that programs be evaluated to justify continued support.

Neither of these positions is assumed, although they might both be valid. Rather, a very realistic look at the need is suggested here, since it should profoundly affect the way in which program evaluation is done.

The first reason for program evaluation is that "it's my program." By "my" is meant citizens in the area served by the program. No program should ever be thought of as "belonging" to teachers or school administrators, or to a state or federal agency, but rather to the public.

About whom are citizens speaking when they say, "They are my people." They are referring to their own sons and daughters, to those of their neighbors or to others for whom they have a concern. Citizens feel they should have something to say about what is happening to them.

The public also is conscious, or should be, of the fact that those being served by vocational/technical education programs are going to work for the public, whether on a custom basis in a shop or home, or they already are or soon will be employees of that part of the public that runs the businesses, industries, and government. So the public has a right to evaluate the training of those whom they hire.

Those who are taxpayers most certainly are entitled to think that "It's my money" you are spending for this training. It goes for instructional salaries, supplies, equipment, and overhead of a vocational/technical training program. There is just as much logic to expecting taxpayers to try to decide whether they are getting their money's worth in a vocational training program as in a car, the purchase of a new house, or a television set.

Certainly these are not the only persons concerned with program evaluation. The educator should be saying, "It's my responsibility, professionnally." Evaluation should be considered as so truly an integral part of education that the really competent and conscientious educator cannot side-step the obligation to assist in the appraisal of a program for training of present and prospective workers. He will be held accountable for the results no matter whether they are good or bad.

If consideration is to be given to the outcomes of an appraisal effort, then the only conclusion which the concerned educator can draw is, "Yes, we must bring about an adequate appraisal of the program in order to improve it." We are hearing a great deal now about preparation of a local or area program plan. If such a plan is to be a valid one it should be based on evaluation of what has been, or is now. If a new program is to be a part of the plan, then the procedure for subsequent appraisal of the new program should be built into the plan. Apparently, program evaluation, in one form or another, is well-nigh inescapable.

Before going further it may be well at this point to indicate what we mean by program evaluation. As used in this discussion, evaluation will refer to the task of making judgments about the worth or value of a program of vocational/technical education. It primarily involves the determination of the extent to which previously established goals and objectives are being or have been attained. Let us now take a look at some of the principles on which sound evaluation is based.

To repeat, an evaluation ought to be done by those responsible for the improvement of the program and those affected by it. The support for this position is the premise that the persons involved are those who must subsequently implement the recommendations coming out of the study. Of course, those operating a program might be so close to it that they would fail to sense some of the important elements to be examined, or the significant needs to be explored. Some educators might feel that they need greater competency in developing evaluation instruments or in analyzing and interpreting data to be collected.

Some evaluations of vocational education programs have been carried out by employing outside "experts" to come into the school and either conduct an evaluation or assist educators to make it. Accreditation procedure is an example of this. The benefits of expertise are obtained, but this appraoch also has some shortcomings. Outside experts may not sense all the concerns of the educators and the clientele. Moreover, there is no assurance that the findings and recommendations of such a group of evaluators will be heeded or implemented, especially if those who are to carry them out have not had a part in formulating them.

As we examine the task of those to be involved in the work or task of evaluation the logical--indeed, the mandatory--starting point is with program goals and objectives. These must be clearly stated in terms of human learning and accomplishment of an occupational nature. You may want to give considerably more attention to this aspect in your deliberations here this week.

The basic concern of people affected by programs of occupational education is whether they are getting what they hope to from the programs, and whether this is worth what they are putting into them. This concern, in other words, is with the <u>product</u> or output. The <u>input</u> or <u>process</u> has to be considered, too, to determine whether there are ways in which process could be inproved so as to get a greater or better product. Ultimately, this would lead to cost-benefit analysis, too.

Most accreditation, and state-directed evaluations of local programs have placed considerable emphasis on the <u>ways and means</u> of conducting the program. These approaches have involved setting up standards to be met, and determining how nearly a school program measures up to them. The validity of such an approach depends on the validity of the standards. You will, of course, have your own opinion on this. Such an approach might also involve comparisons with other schools. Most people involved in, or affected by such programs, however, usually have only a token interest in comparisons with other schools.

If comparisons between or among schools or programs are not to be made, what, then can be used as a standard by which to judge the outcome? The most that I could say at this point would be that standards will have to be deve-

loped on the basis of past experience and records. I will be more specific on this point, if desired, at another time.

It should be recognized that program evaluation truly is an effort of research. Some research "purists" might not agree. I would submit, however, that the over-all excellence and acceptability of an evaluation effort will depend a great deal on the extent to which sound research techniques are applied.

The sixth principle to be suggested here relates to program planning. The evaluation effort needs to be conducted in such a way as to be definitely helpful in program planning. If a program plan is to be based on occupational training needs, then study of needs would be a part of the evaluation. If students' background, occupational interests and career goals are to be considered then these things need to be included in the study. Where it is believed that there is need for re-allocation of resources from some less-effective curricula--in terms of occupational success or placement outcomes--to some emerging or more greatly needed curricular areas, then evidence needs to be uncovered that should support or refute this. This is another way of saying that program planning should govern the nature of the evaluation effort, and should grow out of it.

If the principles just enunciated are acceptable, we may next consider the theoretical framework within which a local or area program of vocational/technical education may be conducted. Some would refer to this as a model. A model, however, might be expected to have incorporated in it several operational components. What we shall refer to, therefore, is a process for locally-directed evaluation.

An over-simplification at this point would be to state that the process is one of stating objectives, analyzing evidences of the attainment of them, and then modifying the program and/or revising the objectives. Objectives and goals, for purposes of this discussion, are used somewhat synonymously; hence the "bull's eye" connoting a target as goal.

This task is one which, in my experience, is not generally well-done. After seven years working rather intensively with 33 school systems in five states I would have to report that although most of the tasks in an evaluation were well done, nevertheless, in few of these was a really fine job done on stating goals or objectives. It is fortunate, in my judgment, that this will be dealt with at length this week. All staff persons concerned with a program should actively assist in thinking through and stating the goals of the program.

A criterion question is one which states the objective, or a subsidiary objective, in such a way that an answer is called for that would help to measure the attainment of the objective. The task is to identify questions and have them worded in such a manner that they may be answered negatively, positively, and/or with degrees of these. It may not be necessary to word such questions for any objectives that are narrow and specific. On the other hand, occasionally a broad objective would suggest several questions relating to it.

The task logically to follow this one is to cooperatively agree on what evidence will be acceptable as indicating the answer to the criterion ques-

tion. Before leaving this let it be noted that this suggests the identification of facts of which the evidence is presumed to be constituted, and of developing the instruments or other ways and means of retrieving the information.

It is at this point that expertise in the form of consultants may be required, although we would not rule out the seeking of consultant help on the performance of the other indicated tasks as well.

The analysis of the information is, of course, the intermediate task. While some of this activity can be performed by a group, much of it will, of necessity, be done by an individual or individuals. The interpretation should either be done by a competent research person or with the assistance of such a person.

The culminating task of formulating and implementing recommendations may be directed by the evaluation leader, but involves, to a greater or lesser degree, all who have helped with the preparation for this task, as well as those who are responsible for carrying out the recommendations. These include the administrators, but may also include the members of the faculty and citizens.

The decisions that need to be made may relate to: (1) acceptance of recommendations in principle; (2) when to put recommendations into effect; (3) describing the kind of action necessary for implementation; and/or (4) identifying or obtaining staff and material or financial resources for implementation.

Naturally, if recommendations actually are carried into action this may, in turn, suggest modification of the over-all objectives or goals. Even though no action was decided on, the program goals might still need to be changed to make them more realistic, or at least more congruent with the actual outcomes or accomplishments on the program.

This discussion has been rather theoretical, but purposely so. The "nitty-gritty" will be dealt with later. At this point in the conference it seems necessary to present this theoretical framework. It is extremely important that one know <u>why</u> he is doing what he is. If this theoretical framework is acceptable it also will be possible to achieve a degree of uniformity that should prevail among the institutions and program personnel that are going to be involved.

WRITING OBJECTIVES IN PERFORMANCE TERMS

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WRITING OBJECTIVES IN PERFORMANCE TERMS

Introduction

Since this part of the workshop is being directed to the writing of objectives in performance terms, let me suggest four objectives to which you might direct your attention. After my presentation and the discussion which will follow, and after the individual study sessions scheduled for tomorrow morning, you should be able to do certain things. First, you should be able to list Mager's criteria for writing objectives in performance terms. Second, you should be able to list the first-order classifications in the Taxonomy of Educational Objectives, Cognitive Domain, Affective Domain, and Psychomotor Domain. Third, you should be able to use the criteria and classifications to write objectives using descriptive terms which are not open to many interpretations. Fourth, you should develop a sense of value for and a committment to the writing of objectives in performance terms. This may appear to be a "tall order" to you at the moment. It is, however, one that you can achieve.

Tomorrow you will see the film "Goofing Off With Objectives." It's humor should convince you that we are presently doing a relatively poor job of communicating with our students when we write objectives. One thing which the film does not tell you, however, is that many teachers do not write objectives at all. Some do not know the difference between an objective and a course description. Others are unconcerned with whether or not their students have a performance goal.

There are some very good reasons why we need to be able to write objectives in performance terms. Let me review several of these reasons.

Need for Specifying Objectives in Performance Terms

Performance Objectives Should Focus on the Learner. The student is the most important consideration in learning. The subject matter, the environment, and the teacher are secondary considerations. Consequently, the objectives should focus on the learner.

Let's look at it another way. There is no teaching if there is no learning. It serves no meaningful purpose to examine the behavior of the teacher except as it has reference to the learner. To write objectives in terms of student performance is a step in the right direction.

Performance Objectives Facilitate Evaluation. Once objectives have been written in performance terms, evaluation becomes primarily a matter of execution rather than procedure. The more valid and reliable objective tests used to evaluate instruction are based on careful considerations of student behavior. We must know what outcomes are expected of the student before we can evaluate his accomplishments. These outcomes need to be identified before the instructional program is designed--not afterward.

Constructing Performance Objectives Establishes a Foundation for Meaningful Teacher-Student Interaction. If you accept the statement that there is no teaching if there is no learning, it should be obvious that the learner should be involved in writing objectives. The teacher's first objective is either to select students with high interest in his subject area or to develop the interest in his students. Involvement of the students in setting goals (performance objectives) for instruction is a time-tested solution to the problem of sustaining interest, causing learning to occur, and making teachers out of "performers."

If the learner helps to specify the conditions of what I call the "learning contract," he will be more likely to accept the contract and to modify his behavior according to its conditions. In my opinion, this teacher-student interaction is a vital part of the instructional program. It is not just a pre-instruction, teacher activity.

If you are convinced that objectives should be written in carefully specified performance terms, you should be interested in a review of selected means of detailing the terms of the performance.

Techniques for Writing Performance Objectives

There exists in the education profession a growing number of contemporary scholars interested in improved techniques for writing objectives. Among these are three or four who have had a great influence on me as I am sure they have had on others. They are Robert F. Mager, Benjamin S. Bloom, David R. Krathwohl, and Elizabeth J. Simpson. I am not as familiar with Simpson's work as I am with the others.

Mager has outlined three criteria for specifying the terms of the learning contract. Bloom, Krathwohl, and Simpson, as well as a large number of other people who have worked with these writers, have edited taxonomies of educational objectives. All four have made a significant contribution to persons interested in writing objectives in performance terms.

Specifying the Terms of Objectives. Let's look at the work of Mager (1) first. He has outlined three criteria for writing objectives. They are:

1. . . . specify the kind of behavior which will be acceptable as evidence that the learner has achieved the objective.
2. . . . define the desired behavior by describing the important conditions under which the behavior will be expected to occur.
3. . . . specify the criteria of acceptable performance by describing how well the learner must perform to be considered acceptable.

These criteria require the teacher and, hopefully, the student to supply important information about what the learner will be able to do at the conclusion of the study period, under what conditions he will be able to do it, and at what level he will be expected to perform.

Mager has had a tremendous influence on me. Although I must confess that there was a time when I thought his criteria were "impossible." I made the mistake of trying to apply his "guidelines" in a very specific way. The result was some rather long, cumbersome but very specific objectives which my students in teacher education found hard to accept. If his criteria are used as guidelines they can help many teachers communicate better with their students, thereby enhancing learning conditions.

My undergraduate students, in general, have not readily committed themselves to the use of Mager's criteria. My analysis of this reaction is that they are teacher-centered in their methodology and preoccupied with subject matter to the point that they do not easily perceive the need for focusing in such detail on the needs of the learner. My graduate students have been more interested in applying the criteria. They do, however, frequently experience the problem of being too specific.

Let's look at an example objective. Here is one lifted from a student's teaching plan.

> To teach students to appreciate the importance of controlling lawn weeds.

You should immediately recognize a word in this objective which is open to interpretation. "Appreciate" can mean different things to different people. It appears that the "behavior which will be acceptable as evidence that the learner has achieved the objective" is for the student to be able to control turfgrass weeds. The writer did not define the "important conditions under which the behavior would be expected to occur." Nor did he "specify the criteria of acceptable performance." Here is the same objective with refinements.

> Given ten common turfgrass weeds, the student can identify the weeds and outline an acceptable procedure for controlling each.

This objective satisfies all three of Mager's criteria. It notes (1) that the student can identify and outline procedures for controlling turfgrass weeds, (2) that the student will be given ten weeds to work with, and (3) that he must identify and outline acceptable control procedures for all ten.

Establishing Levels of Performance. Now let's look at the taxonomies reported by Bloom, (2), Krathwohl, (3), and Simpson (4). The first-order classifications used in each domain are listed below.

Cognitive (Bloom)	Affective (Krathwohl)	Psychomotor (Simpson)
1. Knowledge	1. Receiving	1. Perception
2. Comprehension	2. Responding	2. Set
3. Application	3. Valuing	3. Guided Response
4. Analysis	4. Organization	4. Mechanism
5. Synthesis	5. Characterization by Value	5. Complex Overt Response
6. Evaluation		

The Taxonomy of Education Objectives, Cognitive Domain was the first of the three domains to be written. This is and has been the area of measurement in which educators have been primarily interested for centuries. It is only natural that it was the first to be developed.

Those who have carefully studied the book edited by Bloom will quickly recognize the significance of each of the six classifications noted above. Others will want to study the system of classifying human behavior. It is a useful guide for specifying performance objectives. Mager's criteria tell us how to write objectives while these six categories form a hierarchial system for determing the type and level of behavior desired.

Let's take another look at the revised turfgrass objective cited above. To what level in the cognitive domain does the objective extend. There are certain things the student must have "knowledge" of. He must "comprehend" the relationship between different weeds and different control measures. It is not required that he make "application" of his knowledge. A decision must be made whether or not the student should stop at the "comprehension" level or should aim for a higher level. Certainly if the student will be expected to control weeds in someone's lawn, the objective should be extended to the "application" level.

David Krathwohl was very much involved in the development of the cognitive taxonomy. Later he spearheaded the writing of the affective taxonomy. It represents one of the latest and best efforts to develop an hierarchy for dealing with interests, attitudes , feelings, etc. I find that there are not as many occasions when I feel the need to write affective objectives but when there is one, Krathwohl's system of classifications is of much help. You will note that I suggested an affective objective for your consideration at the beginning of this paper.

Education is a continuing proposition. It does not occur only in the school and classroom. It extends beyond the school and into the future. It is measured today as well as tomorrow. We must be concerned with the ultimate effects our teaching activities have on the learner. If he does not value what he learns to the point that it helps positively to shape his character, then it is doubtful how useful our teaching activities may have been.

As I mentioned previously, I am less informed about Simpson's psychomotor domain than I am about the cognitive and affective domains. However, in my field of interest, I feel more competent to specify performance objectives as they relate to motor activity. Nonetheless, the hierarchy outlined by Simpson is helpful when used as a guide for the teacher and his student to use in determining the desired level of performance.

Once again recall the revised turfgrass objective. The last statement made, has added significance. That is, if the student is to be able to control weeds in lawns, then the objective should specify the "application" level. Application infers motor activity. We might want to rewrite the objective to include a motor response.

> Given a specimen lawn, the student can (1) outline an annual program of weed control and (2) carry out the prescribed treatments as outlined.

You will note that the objective is considerably different from the last statement. It is very likely aimed at the needs of a more advanced student and is undoubtedly based on accomplishment of other more basic objectives. For example, the student still must be able to identify common weeds. Otherwise, he would not be able to outline an annual program of weed control.

Its a Matter of Commitment

No matter how much a person may know about the various criteria and techniques for writing objectives in performance terms, it will serve no useful purpose unless that person is committed to the use of performance objectives. I sincerely believe that the quality of teaching could be greatly improved in most every school if teachers could be motivated to become interested and involved in the task of specifying objectives in performance terms. Many students would for the first time comprehend the goals of their instructors. Who can say how much more they might learn under these enlightened conditions?

Summary

First, it is important to remember when writing objectives that the learner is the most important consideration. There is no teaching if there is no learning. The student must be involved in specifying the terms of the learning contract (objectives). Carefully written objectives make the evaluation of teaching and learning a much easier task.

Second, the criteria outlined by Robert F. Mager facilitates the specification of objectives in performance terms. These criteria, used as guidelines, help the writer indicate (1) what the learner will be doing when he demonstrates that he has reached the objective, (2) under what conditions the desired behavior will be expected to occur, and (3) at what level the learner will need to perform.

Third, the first-order classifications in the three taxonomies of educational objectives as edited by Bloom, Krathwohl, and Simpson are useful in selecting the desired type and level of behavior in writing performance objectives. The classifications may be used as checklists to assist in the specification of the desired level of performance.

Fourth, the writing of objectives in performance terms is, in the final analysis, a matter of commitment. Those who want to be better teachers can and do write objectives which clearly communicate desired behavioral outcomes.

Bibliography

1. Mager, Robert F. Preparing Instructional Objectives, Fearon Publishers, Palo Alto, California, 1962.
2. Bloom, Benjamin S., et al. Taxonomy of Educational Objectives: Cognitive Domain, David McKay Company, Inc., New York, 1966.
3. Krathwohl, David R., et al. Taxonomy of Educational Objectives: Affective Domain, David McKay Company, Inc., New York, 1967
4. Simpson, Elizabeth J. Classification of Educational Objectives: Psychomotor Domain, Illinois Teacher of Home Economics, Volume X, Number 4, Winter 1966-67.

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ORGANIZING FOR EVALUATION

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ORGANIZING FOR EVALUATION

Theory and Practice of Involvement in Local Program Evaluation

The acceptance of the premise that staff and citizens should be involved in evaluation is assumed in this discussion. Albeit, I am well aware that the degree of acceptance will vary greatly with you and your own professional colleagues. It is believed, however, that this premise is basic to the assigned topic for this discussion. Let us, therefore, begin by examining some of the aspects affecting this involvement. Those citizens who have children in school are concerned that these youth eventually can find work that they like, and in which they will do well. Some of them also expect that the educational institutions which they support will provide for their own improvement, for progressing in their work, and/or for changing jobs. Citizens who are employers or supervisors are concerned with what might be done to get people prepared to work in their companies, and that these will be ready for the specific job training that some of them will want and/or need to become better workers.

Citizens are a potential resource for advice because of their experience in work. Most of them, however, have had work experiences limited to one or two types. This may be an advantage, because depth of work experience is needed in setting up or validating specific operational objectives. On the other hand, since it would be physically impossible to tap the work experience background of all adults in an area or community, the lack of breadth of occupational coverage by any one committee of citizens should be recognized.

The value systems of any representative group of citizens, therefore, may vary considerably, depending on the hierarchy of priorities that they have erected for themselves, for their own businesses or industries, or for their own youth.

All of this leads up to a position which has been demonstrated to be defensible in the thirty-three schools and colleges with which we have worked in our evaluation efforts. This is that if an advisory committee is wanted for local program evaluation and planning, it had better be composed of representative and responsible citizens, rather than of merely a group of management-appointed representatives of a few of the larger businesses or industries of an area or of those which are more important in contributing to the economy of the area. The potential help from a well-chosen citizens' advisory committee is, indeed, great. It relates to what youth and adults want and need, to what their own and their fellow citizens' businesses need, and to what they and their bussinesses can do to help build a better program.

Turning from the general public to the educational staff, we note some characteristics that are similar and others that are different. Most teachers of specialized vocational courses are, themselves, narrowly experienced and trained, insofar as occupations are concerned. But here again as groups of staff members are brought together, such experiences and knowledge can be pooled for evaluation and program planning purposes.

Most staff members, however, are preoccupied with teaching to the students the subjects assigned to them, and typically have not given a great deal of thought to program nor to program evaluation. The evaluation in which they have been involved may be of one or both of two types. These persons have measured student achievement in instruction which they provide. They may have participated in gathering information for an evaluation for accreditation purposes, or for a statewide or nationwide evaluation for checking compliance or justifying official program approval. Partly because of these experiences, and partly because of the fear of the unknown, many teachers tend to feel threatened when approached in regard to evaluation of local programs.

The concerns and interests of staff relate to the occupations represented by, or related to the courses they teach. Probably a greater relevance is to the current and prospective youth and adults who constitute what the staff members preceive to be the "clientele."

Since they have these concerns, and because they know more than anyone else about the courses they themselves teach, and about the students, in the aggregate, the members of the staff can make a signal contribution to any local program evaluation effort. They are qualified to take an inventory of students' interests and are capable of interpreting students' claimed interests. They keep records of these and of students' experiences, their strengths and their weaknesses, including the perceptions of the parents. Those in whom former students have confidence can successfully ascertain from these records information about their work, their job satisfaction and the relevance of their previous schooling to these.

Selecting, Organizing and Using a Staff Committee

Let us now take a look at the tasks in organizing a staff committee for an evaluation effort. The first one is that of appointment of an individual as leader of the evaluation project. This might be a director of vocational education, an assistant administrator or a classroom instructor. Staff members should be made aware of the responsibilities assigned to this leader and of their own roles as they cooperate with him and each other. A staff member may well be appointed to work as an associate leader on a team basis.

This team must be provided time and adequate clerical help, equipment, supplies and support for necessary local travel. In addition to this, they should be provided time to work with teachers, committees, and employers; to do research and writing; to develop statements of objectives and instruments for gathering data; and to report on staff and committee activities and outcomes of the total evaluation effort.

The number and types of staff positions represented on the evaluation committee is likely to vary with the size and complexity of the institutions and with the purposes of the evaluation effort. It need not be a large committee, but should include key persons in the school. Each specialized area should be represented. Other staff areas which should be represented include guidance, administration and the general education curriculum.

The leader of the evaluation effort serves as chairman of this committee. He also serves as spokesman for the committee in communications to the administration and to the public. The leader and the research associate make contacts with other faculty members, citizens, employers, employees, consultants, and resource persons.

A member of this leadership team calls staff committee meetings, chairs them, and democratically guides the work of the committee. The leader and his associate prepare, or cause to have prepared by other members, relevant data and other materials and prepare a report on the findings. In short, the role of the team encompasses all the principles stated yesterday, and other activities that will be discussed by the presenters and the participants in this workshop.

The chief administrator of the school or college has the responsibility for announcing the evaluation effort to the faculty and to the community, and for enlisting faculty interest and cooperation. He also should assure those who are to work on the project that time will be made available or compensated for, when necessary; that clerical and research costs will be supported; and that serious consideration will be given to the findings and recommendations for program improvement.

There are several ways of providing staff time for work on activities of program evaluation. Some schools have budgeted funds for in-service education and curriculum planning. These could be used to support staff activities in the evaluation program. Many members of school staffs are matriculated at a university for graduate study. Independent study or research for graduate credit is another way of encouraging staff work on evaluation. There are many instances of staff members who, when working on a comprehensive evaluation project, have found "spin-off" research that they can do on a subsidiary problem for independent study credit or thesis.

Before a staff committee can become effective it must be oriented to the task, and needs to understand what is meant by program evaluation. Teachers should understand the purposes of the evaluation effort, namely, to determine the extent to which the total effort of personnel, curricula and activities of the school are achieving the goals to which the school, its supporters, and its clientele are committed.

Following orientation of the staff committee a plan for conducting the evaluation should be developed and placed in writing for all to see who are to be involved. The minimum recommended items to be included in such a plan are the following:

- Purposes or objectives of the project
- Scope and duration of the study

This means: what are the instructional programs; what curricula will be considered; what grade or age levels; and the depth of the probe. It also means

the estimate of elapsed months or weeks during which it is expected that the endeavor is to be conducted.

- Organization and function of the staff committee

This should specify the frequency and duration of meetings and individual staff member responsibilities.

- Organization and purposes of the citizens' advisory committees

This would include questions such as whether there will be an over-all committee, craft or departmental committees and any sub-committees, etc.

- Proposed major activities to be conducted

Examples would be development of philosophy and objectives, development of occupational competency statements for each program and course; conducting follow-up survey to check attainment of some of the over-all objectives of the program; conducting employer interviews; conducting occupational needs surveys; and studying curricula in detail in light of findings in these aforementioned activities.

- A schedule of activities

Regardless of how difficult it may appear to do this, the making of a schedule is essential if the evaluation is to be satisfactorily carried out. The beginning and ending of the instructional year or program duration, as well as availability of staff at various time, both will have a bearing on the time schedule.

- Plan for disseminating and implementing the findings or results. This should include the faculty, administration, advisory committees and the general public.

- Budget

All who have prepared proposals will agree that preparation of a budget goes a long way toward facilitating or obtaining the necessary support for actually carrying out activities.

If it is an acceptable assumption that all members of the faculty of an educational institution could contribute, to a greater or lesser degree, to development of occupational competency in youth and adults, then widespread participation to an optimum extent by all members is desired, insofar as this is feasible. This means those assigned at all levels and for all curricular areas. Faculty meetings are useful to help emphasize the point that every course and student activity and every faculty member may make a significant contribution to occupational preparation. The need for development of occupationally oriented courses potentially beneficial to all students looking forward to employment is a typical concern to be explored through such meetings.

Relationship of State and Local Leadership Teams

Up to this point the impression inadvertently might have been given that the leadership team spearheading a local or area program evaluation would be working entirely independently from, or with total disregard for a team conducting a statewide evaluation of vocational education. Such is not the intent. In fact, just the opposite is what I would advocate.

Prior to the VE 1963 Act and the 1968 amendments, state departments of education had no mandate for statewide evaluation of vocational/technical education. The states typically agreed in their state plans to check compliance with requirements for reimbursable programs. These dealt mainly with the nature of the inputs, such as facilities, curricula and time in laboratory or class. In addition, many state departments have systematically collected data relating to accomplishments or outcomes. These have enabled the states to compare gross outputs with previous years and sometimes with other states. They have not in the past been active in assisting local leaders to direct studies of their own programs.

Now, however, all states have a mandate to evaluate statewide programs and to encourage and/or become involved in local or area program evaluation. Few states have completed their design for accomplishing this. Many have been caught unprepared for this task, but have started planning for implementing the state-plan provisions for evaluation.

Here are parts of statements from one state plan: "Periodic evaluations of statewide vocational education programs and activities will be conducted and/or contracted . . .," and "Local educational agencies operating vocational education programs will be responsible for annual evaluations of their programs." Now, the data and information used in a statewide evaluation would have to be obtained from local agencies. This information could be quantitative or qualitative, depending on the type needed. It could be based on criteria set up by the state or criteria set up by local agencies, or both. The difficulty would be that locally determined criteria are apt to vary with local goals and objectives.

Two alternatives which might be considered should, in my opinion, be avoided. One would be for the state agency and local agency to conduct two, separate, and unrelated evaluation efforts. This, however, could result in needless duplication of work, and might create antagonism. Another alternative would be to have one evaluation. This would probably be state planned, and each local agency's part in it would be uniform. It would resemble current regional accreditation patterns, which have not been viewed as meeting the needs of the local agencies. It would not provide for the kind of involvement we have been advocating here. It probably would not provide for evaluating any programs not reimbursable nor provide for special or unique goals or objectives of the local agencies.

What would be more acceptable, all around, would be for state and local leaders to get together to discuss the kind of coordination needed. The statewide goals and objectives would be formulated and hopefully accepted by local leaders. The goals and objectives for local programs also would be stated. Similarities and differences would be noted. Criteria would be set up locally, and on a state basis.

Eventually, a determination could be made of what minimum data and information are needed. Each local leader team would determine what additional information it might need. The data gathering process, so far as local people are concerned, should appear as one process rather than two. The information needed locally would be available to local people for decision-making and that for the state level decision-making to that agency. All would recognize that the complexity and magnitude of bringing about such a coordinated evaluation task is tremendous. Staff resources trained in evaluation, as well as financial resources to adequately do the job, are limited. This is another reason, however, for a division of labor between state and local agencies.

A coordinated effort could at least arrive at common terminology, some standardization of forms, and help to avoid information gaps and duplication of effort. A great deal of training of local leadership would be called for, and statewide meetings and workshops, and probably through the creation and use of a statewide steering committee on evaluation.

Any state could at least make a start, and I think this is all that I am advocating. In one state with which I am somewhat familiar, four procedures have been set up. These deal with: (1) annual program reviews by the local staff, (2) follow-up of former students; (3) analysis of local plans; and (4) team visitations.

In another state the state department last year conducted uniform evaluations of about 20 area vocational education programs. Uniform criteria were set up and standard type of instruments used to gather uniform type of data. Emphasis was on input, and not a great deal of local staff and citizen involvement except in gathering and supplying information. This year they are asking these area schools to direct their own evaluations. These will be according to prescription, but may vary. Next year the state-directed evaluation will be conducted and so on.

In several states computerized data collection from former students is being set up on a permanent or continuing basis. Thus, certain minimum data will be collected uniformly by all schools. Each school, however, may supplement the questions asked, and gather data relevant to particular objectives for a given school.

In the future it seems to me that we shall need much more consultation between local or area schools and state departments in regard to statewide evaluation and local evaluation. I hope we will also see, as well, coordinated and cooperative efforts aimed at producing more valid and acceptable appraisals of programs.

ORGANIZING AND USING CITIZENS ADVISORY COMMITTEES

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Paper presented at the
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for Evaluating Manpower Development and
Training Act Programs in Kentucky

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ORGANIZING AND USING CITIZENS ADVISORY COMMITTEES

Education, today, is face to face with one of the most important confrontations of all times. This confrontation reached spotlight status with the campus riots and disorders of the University of California at Los Angeles, Columbia University, and more recently Kent State University. But educational leaders are quick to point out that confrontations have and are occurring at the community college and high school level. The lack of involvement in the decision making process has frequently been sighted as a major contributing reason for these campus disorders. Could it be that those affected by the educational programs and those responsible for the programs were not active participants in the decision making processes?

In vocational education we have been relatively free of the kind of disorders which have plagued some of our institutions of higher education. But let us not be too warm in our self-praise. Are we in vocational education walking in the midst of strangers? How much involvement of the citizens of the community do we have when we consider an issue as critical as program evaluation? As teachers and administrators of vocational education, we have a tendency to call the local program offerings "my programs of vocational education." However, the American citizen, yes, the American taxpayer thinks of his school as something personal and special, and he wants it within close reach of his touch and comprehension.

In vocational education, we are confronted with changes occurring in the nature of jobs, the advancement of technology, population mobility, and an incessant demand for new skills and new knowledge. As vocational educators, we take pride in providing opportunities for each individual to develop to his fullest potential. However, as the complexities of the world of work have increased, it has become more difficult than ever before to provide opportunities of a complex and varied nature so that each student can achieve his full potential.

The local citizens advisory committee is a tool we must use more frequently to assist in developing, upgrading, and evaluating programs of vocational education. Education has never been, and is not now, the sole responsibility of the schools. If every individual is to reach his full potential the school needs help. Citizens of the community are generally eager to assist teachers and administrators, but unless teachers and administrators provide leadership and an opportunity to participate, the good intentions of citizens will be in vain. If we accept the idea that schools exist for the purpose of serving the people of the community, it is then natural that the citizens of the community should be well informed about their school and included in a consultation role in program evaluation.

Without question, laymen are interested in vocational education. Their willingness to help in the performance of the educational process has been demonstrated many times. If we accept the fact that public schools owe their origin to the public, it quickly becomes evident that schools need the confidence of the public they represent. This confidence is important because, whether or not citizens are involved, they will talk and they will evaluate. Riendeau supports the need for citizens advisory committees by asking the

question, "How else can schools and colleges be sure that their occupational programs are in tune with employment needs?"[1] Shoemaker contends that "involvement of a community in vocational education is not just a nice gesture; it is a matter of life and death to a sound program."[2] Perhaps it is when citizens eliminate educators or when educators eliminate citizens that the real mistakes in educational planning are made. Without question, laymen are interested and concerned about education. They have a right to be informed, consulted, and included.

Selecting and organizing a citizens advisory committee can involve a complex pattern of relationships. If we are to work effectively with citizens advisory committees, it is important that we possess an understanding of how advisory committee members should be selected, how the advisory committee should be organized, and what functions the advisory committee should perform.

Board of Education Policy Statement

A statement of policy concerning citizens advisory committees should be developed by the board of education if one does not already exist. This should be brief and cover only the essential points. Typical of the items included in such statements are: purposes and functions of the committee; number of members; method of selecting members; length of members' terms; and communication procedures.

Purposes of Citizens Advisory Committees

Perhaps no area related to citizens advisory committees is more important than that of purposes. One of the major causes of citizens advisory committee failure is lack of agreement about purposes.

Important to the understanding of the citizens advisory committee role and responsibilities is the concept of policy development. It is the responsibility of the board of education to develop policies and to see that these policies are properly initiated by competent professional people. It is the responsibility of the citizens advisory committee to bring the viewpoints of citizens to the attention of the board of education on matters pertaining to the educational program. Decisions rest with the board of education. Without question, the public should share in educational policy development. It is most important that members of citizens advisory committees always keep in mind that their role is advisory and that their recommendations fall in the category of suggestions to administrators and to members of the board of education.

The primary purpose of the citizens advisory committee for vocational education is to provide the ways and means by which the citizens of a school

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[1]Albert J. Riendieau, The Role of the Advisory Committee in Occupational Education in the Junior College (Washington, D.C.: American Association of Junior Colleges, 1967), p. 19.

[2]Byrl Shoemaker, "Involving the Community in Needs Studies and Program Development," The National Association of Secondary School Principals Bulletin 49:113, May, 1965.

district can participate effectively in the program of vocational education. General purposes of the citizens advisory committee for vocational education are:

1. To assist vocational educators in the development of sound adequate policies and programs:
2. To identify the need for programs of vocational education;
3. To interpret vocational education conditions to fellow citizens and enlist their support in seeking improvement;
4. To bring community information, opinion, and planning into the deliberations of school officials concerned with policy-making;
5. To harmonize differences in vocational education points of view between school officials and members of the community; and
6. To assist vocational educators and students in evaluating the local program of vocational education.[3]

Types of Citizens Advisory Committees

Broadly speaking, citizens advisory committees can be categorized as independent citizens committees and school initiated citizens committees. Our concern as it relates to the evaluation of programs of vocational education, is with the school initiated citizens committee. Research strongly supports the school-initiated type of citizens committee. The greatest advantage of the school-initiated committee is that it is welcomed by those in the school with whom the committee will work. Independent citizens committees frequently are motivated by ulterior motives which lack responsibility.

There is no real consensus of research opinion as to whether citizens committees should be of a continuing or short-term nature. If program evaluation is to be a continuous process and if we are going to use the services of a citizens advisory committee, it seems rather logical that the citizens advisory committee be a continuing type of committee.

Kinds of vocational citizens advisory committees that have been used in education are rather varied, but may be classified as general, departmental, and craft committees. The general committee is usually a permanent one organized to give advice on the total program of vocational education in the school. Evaluation could be one of several functions or interests of such a committee. A variation of this would be a sub-committee on evaluation. A departmental committee serves a single department. Industrial education teachers frequently use craft committees for each training program, such as drafting or auto mechanics.

Committee Member Selection

Committee size. The size of the citizens advisory committee is of vital importance to the proper functioning of the group. Committee size will vary by size of the community, the scope of the vocational education offering, the

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[3] Adapted from Leslie W. Kindred, School Public Relations (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1957), p. 194.

diversity of businesses and industries in the community, and the purposes of the committee. The committee should not be so large as to be unwieldy or so small as to be unrepresentative of the community. Ten to fourteen committee members have proved to be a desirable number for general committees. Departmental and craft committees have been smaller, with five to nine members suggested.

Qualifications of committee members. Employers, employees, parents, former students and students now enrolled should be considered for advisory committee membership. Factors important to consider in selecting committee members include:

1. A genuine interest in the school;
2. Honesty and sincerity of purpose;
3. Willingness to serve, and with time to give to committee activities;
4. Respect and confidence of the citizens of the committee;
5. Freedom from strong biases that could interfere with the reaching of sound conclusions;
6. Interested in vocational education;
7. Ability to communicate information and ideas to the community and to the committee; and
8. Knowledge of the world of work and a strong commitment to providing opportunities for each individual to develop to his fullest potential.

Appointment of committee members. Occasionally, well-meaning individuals suggest that the members of citizens advisory committees should be appointed by various organizations within the community. It is very questionable if citizens advisory groups made up of members selected by various community organizations, agencies, or businesses can serve the same purpose as a cross-sectional, representative, committee. There appears to be a tendency for committee members appointed by various organizations in a community to maintain the status quo rather than directing their efforts toward program improvement.

The names of persons to be considered for nomination to the citizens advisory committee are best suggested by members of the school staff. The school staff may secure suggestions for committee members from the citizens of the community. The citizens advisory committee should include some of the most capable people of the community. Citizens advisory committee members should reflect their personal views, not those of an organization, agency or business.

The names of the individuals chosen by the school staff for the citizens advisory committee should be presented to the chief administrator of the school system. Names of prospective members may be further screened by local administrators. Some informal or unofficial inquiry may be made to determine the willingness of the individuals to serve as a committee member. The nominations, when submitted to the board of education, may include more names than needed for the committee. The board is then asked to select a given number of individuals for the citizens advisory committee. The board, of course, adds names, if it chooses to do so. Individuals selected by the board of education should receive official notification of the selection, preferably by letter from the chief school administrator. Personal contact by a school staff representative will help to start the committee on a positive note.

Term of office. Committee members should be appointed for a definite length of time. Three-year terms are suggested. Terms should be staggered, and replacements selected by the same process as the original committee members. No member should be allowed to succeed himself, thereby permitting fresh ideas to be brought into the committee and educate more community citizens.

Committee Organization

There is a great deal of confusion regarding the advisability of a constitution and by-laws for the citizens advisory committee. There is a tendency to favor a committee constitution and by-laws with the caution that rigidity can result from overemphasis on these documents. A well-written constitution and by-laws can contribute substantially to the clarification of committee purposes. There is general agreement that the constitution and by-laws should receive board of education approval.

The time of year for organization of the citizens advisory committee is not considered crucial by many authorities, but most suggest the annual organization meeting should be held as soon after July 1 as possible. The committee should not be overly organized. A chairman, a vice-chairman, and a secretary, elected from the lay membership, should provide sufficient committee leadership.

The number of meetings a citizens committee should hold should be directly related to the need for discussion of some real problems. The meetings should be held frequently enough to maintain interest and effectiveness. The meeting agenda should be prepared in advance by the citizens advisory committee chairman and the school representative.

The importance of good organization for citizens committees was stressed by Hamlin in his statement "Most (citizens advisory committees) have made valuable contributions, but some have failed and a few have done more harm than good because they were poorly organized."[4]

Committee Member Orientation

It is of utmost importance that new members of citizens committees are properly oriented as to their role and duties. An important item of business for the first meeting, and if necessary succeeding meetings, of the citizens advisory committee is a review of the purposes and functions of the committee. Members of the teaching staff and administrators might be asked to make presentations at the first committee meeting. Another effective communication technique is the use of an advisory committee handbook. Committee members will need to be informed not only of their role and duties as a member of the committee, but they may need a refresher course on the philosophy and objectives of the program of vocational education.

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[4]Herbert M. Hamlin, The Public and Its Education (Danville, Illinois: The Interstate Printing and Publishing Company, 1955), p. 372.

School representative. The person upon whose shoulders rests a great deal of the responsibility for the success or failure of the citizens advisory committee is the person who represents the school. The most logical individual to assume the task is the local director of vocational education or the director of the vocational school. Depending on the purposes of the committee, the individual assuming this role may be a teacher, department head, or coordinator.

Among the responsibilities of the school representative are the following:

1. Keeping committee members ifnormed concerning vocational education objectives and philosophy,
2. Updating committee members regarding local, state, and federal policies for vocational education,
3. Keeping committee members fully informed about the local program of vocational education,
4. Keeping committee members abreast of the latest trends regarding evaluation procedures and techniques, and
5. Acting as secretary for the committee.

It is important to remember that the school representative is an ex-officio member of the committee and that he is present to seek advice, not to give it.

Committee recommendations. The recommendations of the citizens advisory committee should be made in written form. The written recommendations should also include the reasons or rationale for the recommendation. This would also provide a permanent record of the committee's action and help prevent misinterpreting the committee's intent.

Recognition. Service on a citizens advisory committee can be a sacrifice and hard work for the participants. Recognition of citizens contributions should be made by the school. The school's gratitude can be shown by awarding a certificate of appreciation and sending a thank-you letter to committee members at the end of their period of service. Other suggestions include the placing of members' names in school publications and in material released to newspapers and periodicals.

Citizens Advisory Committee Functions

Without question one of the greatest services rendered by an advisory committee is to interpret the school's program of vocational education to the people of the community. If we accept this as one of the major functions of citizens advisory committees, it logically follows that assistance in program evaluation should be a major activity of citizens advisory committees. What are the activities in which a citizens advisory committee can engage? The functions of a citizens advisory committee can be varied and very borad, but the activities discussed here will be limited to those related to evaluation.

Activities related to evaluation in which citizens advisory committees have engaged include:

1. Assisting in writing and revising the philosophy statement for vocational education;
2. Assisting in the formulation and revision of objectives for the school's program of vocational education;
3. Helping to identify the manpower needs of the community;
4. Helping to identify and describe vocational education program needs;
5. Assisting in the planning of the total vocational education evaluation effort;
6. Providing advice regarding the use of data-gathering instruments within the community;
7. Assisting in the interpretation of data regarding outcomes of the program; and
8. Assisting in formulating recommendations based on the information resulting from the evaluation effort.

A function seldom performed but a very important one is the need for citizens advisory committees to periodically evaluate their own programs.

Summary

The key points for successful citizens advisory committee operation include:

1. Well defined pruposes,
2. Board of education approval,
3. Carefully selected membership,
4. Suitable appointment,
5. Orientation of members,
6. A capable school representative,
7. Competent lay leadership,
8. Well planned purposeful meetings, and
9. Worthwhile activities.

DEVELOPMENT OF FOLLOW-UP INSTRUMENTS

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Paper presented at the
Workshop on Developing Procedures and Techniques
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3872

DEVELOPMENT OF FOLLOW-UP INSTRUMENTS

I am specifically addressing myself to the problems of developing the follow-up instrument, not conducting the follow-up survey. In your handout material you have an outline of my presentation. I will try to cover the points indicated on that outline in my discussion.

One of the basic weaknesses that I see in most follow-up instruments is that, when you read them, you don't get the impression that people always know where they are going. I had an experience last fall in Washington D. C. as a consultant to a group developing a follow-up instrument. The group consisted of a panel of experts who discussed what should go into this instrument. That's the way the discussion started. It went on all day long. There were arguments back and forth about items that should be and items that should not be asked and disagreements about what items to include. Finally they came out with a large array of items that was much too large for the instrument that they had in mind. The second day we tried to cut in half this large body of questions that were going to be in the final instrument and I kept making myself obnoxious by saying, "Why do you want this information?" "What is the purpose of it?"

It was very clear that the people who were charged with putting this instrument together did not have a set of basic objectives in mind for the system that they were trying to evaluate. They were trying to conduct an evaluation by designing the instrument ahead of resolving the issue of what are the objectives against which this system would be evaluated. I think this is one of the basic weaknesses I see in instrument design. Too many times it's a matter of people getting together and asking, "What are the kinds of questions we're going to ask?"

I would suggest, no matter what kind of a system you are trying to evaluate, and if you're doing a follow-up of any kind, you are trying to evaluate a system, you're first step is to establish the basic objectives of the system. There are a number of ways you can do this. One is to develop a theoretical model which, when developed, you can use to generate certain objectives that the system must have. I want to illustrate that, but I want to point out to you that this was a model developed for a specific kind of a system, namely secondary education in major cities and it concerned vocational education. It's not exactly the kind of model that you would probably develop for your kind of system.

If you open your brochure to the first page you'll see a public relations sketch of the model and that is the manpower conversion equation that you see on the back. What we tried to do with this simple model is to relate the whole business of vocational education or vocational training to the national good. I want to go over it very briefly with you. On the left side of the model we started out with the assumption that we have a large reservoir of underdeveloped manpower resources in the country at the secondary school level and we indicated that there are basically three channels through which this undeveloped manpower reservoir would be converted into skilled manpower resources. One was through public vocational-technical education systems.

The second one was through private business and industrial training programs; in company type training programs which develop skills. The third one was private vocational and technical education institutes, by the schools, if you will.

For your purposes here, being involved in MDTA type programs, we could add a fourth channel which would include all of the Department of Labor programs which are designed to convert undeveloped manpower to some type of a skilled manpower. Basically we said that the objective of the system as a whole, the collection system of three channels of conversion, was to turn out skilled manpower in both kind and quantity so as to match the skilled manpower requirements of the expanding economy. The idea was that there would be a balance between the output and the requirements of the economy served by the various systems that are part of this conversion.

If you follow the reasonings of the model, it generates certain basic objectives. Quite obviously, as the skilled manpower requirements of the country increase, there should be a corresponding increase in the numbers of undeveloped manpower resources that are being tapped and brought into the system. We put that in the form of one basic objective - enrollment growth. We said it was a basic objective and we spelled it out in a nonquantitative way, although it can be put in a percentage value. It was a basic objective of public schools for vocational education systems to show a continuing increase from year to year in the percent of noncollege students enrolled in vocational programs at the secondary and post-secondary school level. Unless they did show a continuing increase in these kinds of enrollments, they would not be able to meet the requirements of the model which was to turn out skilled manpower resources in a quantity and kind that was needed.

Another objective which followed from this model, logically, was one concerning growth of course offerings. The systems charged with the responsibility of converting manpower would have to enlarge the range of their course offerings so as to be consistent with the requirements of the expanding economy. Therefore we concluded that one of the basic objectives of the public-sector was to show a continuing increase in the range and diversity of curricular offerings until such offerings adequately reflected both manpower requirements and the range of talents in the school age populations served. A good many years ago when I first did a study on public vocational education, it was quite clear that the vast majority of schools across the country, comprehensive and vocational, had a very limited range of vocational offerings for their students. As a matter of fact, in 1964 when I first did a study, well over sixty percent of the schools that offered some type of T & I program offered less than three vocational curricula. A boy could be a butcher, a baker, or a candlestick maker and if he didn't like either one of the three he was back in the academic program. He did not really have a choice. This has been corrected over the years to some extent due to the increased funding available to vocational education, but there is still a long way to go. Offerings are still quite restrictive in many schools. The range from which the student may choose, is not too great in many schools. Our last survey in thirteen major cities in the United States revealed that about thirty-five percent of the vocational program graduates, on the day they graduate want no part of the occupation for which they are trained. They just don't want to be in it, which from the standpoint of manpower conversion represents a huge loss

since some of these people have been in these programs two and three years. One of the responsible factors indicated by the survey is the restriction in the range of curricular offerings. They did not really get the choice that they wanted.

A third basic objective which comes out of this particular model concerns holding power. Obviously, if you put people into a conversion system and 100 percent of them drop out, you don't have much of a conversion system. Now that's an extreme statement, but we do know the holding power of many of these vocational curricula is much short of what it should be from the standpoint of effective output. Therefore we concluded that the basic objectives of these systems should be to show continuing improvement in the student holding power so as to increase the percentage of students who complete the vocational curriculum of their choice. Primarily we're not talking about educating you on objectives, I'm merely using them as an illustration. We felt that the model calls for, if we're to meet the basic objective of the model, the placement of graduates or program completers into the field for which they are trained. I think you can see the sense of that if we take it to the extreme. Again, if 100 percent of all the people that we were turning out wanted no part of the occupation or occupational field for which they were trained, we would not regard this a very effective manpower conversion system. Therefore, we concluded that it should be the objective to show a continuing improvement in the percent of qualified program completers who are placed in the occupation for which trained, or at least in related occupations.

We can use this model and then tie to it the second approach indicated, namely use a consensus of experts to derive objectives. Actually we had, for this particular study, an advisory group of about sixteen people, half of whom were state directors, half of whom were city representatives. We spent a day, I guess almost two years ago, in San Francisco having quite a heated discussion as to what are the basic objectives of vocational education. It was very interesting because here we have state level people interacting with city level people and their viewpoints were quite different. The upshot of that day, however, was that we generated considerably more objectives of the system than we did from our theoretical model. We had to recognize that it was a good technique to get people who were knowledgeable in the field to sit down, not to come out with questions that should be in an instrument (we didn't even give them an opportunity to give us that kind of thinking), but to focus their attention on what are the basic objectives of this system that we're trying to evaluate. In the final report of this study, there is a large array of these primary and secondary basic objectives.

Another method that is useful is to use research findings to either justify your objectives or add to your objectives. I'll give you one example. The objective of placing people into the field for which they are trained was derived from the model. Nevertheless, you get a great deal of agrument from vocational educators as to whether that is indeed a basic objective. To some, it doesn't make any difference as long as a student gets a job, whether or not it's in the field for which he's trained. If he gets a job, they have done their duty. A previous research finding, however, indicated that when we compared the people who went into the field for which they were trained with those who did not go into the field for which they were trained, into a

field that was completely unrelated to that for which they were trained, that those who went into the field were better off in every economic respect. They earned more, their job security was greater, their earnings increase over a period of years was more substantial, their personal satisfaction that they reported with their work was much greater than those who left the field for which they were trained. So in every way you look at it, those who went into the field for which they were trained were better off. We concluded that these facts added justification to the basic objective that it was sensible, assuming their interests were in this direction, to try to place people into the field for which they were trained. These, then, are three techniques you can use to generate your basic systems: developing a theoretical model, using a consensus of experts and using research findings to either corraborate or extend your basic objectives.

Now, the second basic step, here, is to identify those objectives that require a follow-up survey. Not all of your objectives do this. Take, for example, the first one I mentioned, enrollment growth, or the third one, holding power. None of these objectives have to do with following-up students. Of the total array of objectives that you come out with, in effect the basic objectives for evaluating a system, you are to go back over those and tag those that have some implications for data in a follow-up situation. These data are related, obviously, to former students' post-school or post-training experience. Now here we're talking about additional educational experiences that they might have after leaving the system. Certainly we're talking about their employment experiences. We might also be talking about their military experiences.

A second area would be data related to attitudes and opinions that they might have about the system itself through which they pass. This is very worthwhile. How critical, how satisfied were they with the experiences they had in MDTA programs?

One of the things about attitudes and opinions that you have to be very concerned about is that, by and large, these are subject to considerable halo effects in the sense that most young people, if you ask them about an educational or training experience through which they pass, are very generous and try to say nice things about it. This is where I look at the exceptions, those who don't say nice things about the program. Look at the specific comments they have to say and you will often learn much more about the system from those who are inclined to be critical than those who give sort of a "I was very satisfied with my experience" reaction. It is not always that they were very satisfied, it is often that they are being generous. We know from previous situations that when you get such people into a group situation it's surprising how much criticism you can get from people who initially were satisfied with the system.

Another group of items that might be a portion of a follow-up survey is data related to assessment of their own capabilities. How much do they think about their technical skills, their practical knowledge, their reading capabilities? You're asking them to assess themselves along dimensions which have some relationship to success in the employment field and these presumably are dimensions to which the experience they just went through should have

added. We found in the earlier study, that a very substantial percentage; well over fifty percent of the people going out of T & I vocational shops, felt that they were deficient in mathematics. Now that they were in the job and knew what the job required, they decided they didn't know enough math. This is the kind of thing you can assess with your follow-up survey.

The instrument should secure data required for independent variable analysis. By that we're talking about the need to put into the questionnaire ways of breaking down your groups so that you can analyze the data in terms of special groups. Sex would be such a variable, race would be another, and age might be a variable. You might find that you get an entirely different reaction from whites than from blacks or from young people than from older people. In evaluating MDTA projects, I imagine you have quite a range operating some of your courses unlike what you get in the public schools where they're fairly homogeneous as to age range. It makes sense that you analyze your data in terms of age categories if you have a wide range because you might find that if you lump them all together your generalization would apply to a heterogenous group.

The third basic step is to develop a classification scheme for follow-up data. Once you've identified the objectives that relate to a follow-up survey, then it's a matter of developing a way of breaking down your data. At this point you haven't developed an item. The kind of a classification that we use includes job related data, things that have nothing to do with their job after the training or education. One of the early studies in which I was involved was the process and product study. One of the findings of that study was that when we compared vocational students with academic or general program students in terms of their conversational interests after they left school, in terms of their extra or avocational activities, hobbies, or things they liked to do that had nothing to do with their work, in terms of their participation in community organizations, their leadership role in such organizations, we found that basically, there was no difference between the vocational and the academic students. They did not reflect what is very often current in the educators thinking, at least, at that time, that the academic programs provide a broad gauged, enriched educational program which fills out the person and somehow, he's going to be a better person in his total activities after leaving school as opposed to the vocational student who is a narrow, shoemaker-type kid who learns a trade and doesn't like to read books or he doesn't like to go to plays and he doesn't get involved in community organizations. All that proved to be not so.

Once you have these basic classifications, then you're concerned with filling them out in terms of questions that relate to each one of the classifications and tie to the objectives. The first suggestion is a rather practical one. Draft the items into a precise format and space requirement. This is very difficult to get the people to do. I have, through experience, found that if you start out with a blank piece of paper and just formulate question and answer categories, by the time you want to fit those questions and answers categories into the format of a questionnaire, you can't. The questions are too long, the answer categories are too long, you've got to re-edit everything. So what we do, in a sense, is to say here is the space allotment, the format for the question and answer categories. Now you develop your question within that space and format and then your first draft will come out with something that will reasonably fit into the finished instrument.

It is important to expose the draft of the questionnaire to some independent critique. Let someone who has not been in on the development of the questionnaire tear it apart, question each item, and question the various answer categories. It's amazing how they see defects in what you thought was a very adequate first draft of the questionnaire. This is a very necessary step to go through. Preferably it should be someone who has not been in and is not ego evolved in the questions that have been developed. This is, again, the case of bringing in outside people who have some knowledge of the field and asking them to take a questioning attitude toward it.

Finally, it's desirable to organize your questions into a format of sections and item sequence. We have found this very convenient for the person answering the questionnaire and it also helps us in terms of getting people to react to the questionnaire. In our first grouping we asked what came about immediately after high school. We follow that with a section about your first full-time job, and in that section we include items only having to do with the first full-time job. Later on we include a section that has to do with the former student's present full-time job. Other sections can include items dealing with education after high school and another with the former students present training needs. What I'm suggesting is that in the design of the questionnaire, you group your items into common units of information where they all have to do with a common element like the first job, training requirements and so forth.

Plan and design your basic questionnaire format. What is your format? How are you going to set this thing up? There are three possibilities here. There actually are more. With technology changing, they're constantly expanding. You can design the questionnaire for key punching. If you're going to do that, then your answer categories should be consistent with the coding necessary for the key punchers to work from. If you design your questionnaire properly with key punching in mind later on, you can put your codes right into the questionnaire and key punches can work directly from the questionnaire to generate their cards.

You can design the questionnaire for optical scanning and, of course, this seems to be the thing, right now. We try to avoid key punching if at all possible because that's another source of generating errors. Optical scanning is not mark sensing. It reacts to the light rather than to any graphite material in the mark. Optical scanning requires an 8 1/2 x 11 sheet. The machine will only take this size. This machine, of course, immediately turns out your punch cards or immediately goes onto tape depending upon the machine capability. You can have either way.

The third set up is mark sensing which is a different type of machine and the reason I mention this is that sometimes the optical scanning machines are not locally available or sensing machines are more likely to be available. Wherever there's a public school system that's doing a lot of test grading, scoring, and so forth, they probably have a mark sensing machine and you might have access to such machines. The difficulty with mark sensing is that it's not as reliable as optical scanning and also it is a much slower and, in a sense, a more costly way of processing data. Now, the point of this is that in designing your questionnaire, if you have volumes, real volumes of cases, then you should give consideration to the business of are you going to key

punch, optical scan, or mark sense. If you have a small volume, I don't know what you people are up against, but if you're talking about a couple hundred cases, my advice to you would be to forget about all this technology. It isn't worth it. It's only worth it when you're dealing with thousands of cases. Go back to the old way of making tally marks and having clerks interpret the answers for you.

There's always a conflict when you develop the questionnaire; at least, we always run into it. We want to ask more information than we can really get by with and still get a good response out of our people that are being surveyed. Generally speaking a short questionnaire will get you a lot better response than a long questionnaire. Not that much better, though, we've found from a pilot study, but it is better. Now then, you have a decision. Are you going to get answers to all the information that you're looking for, all the questions that you want answered, and risk a low response rate or are you going to hold down your information requests in order to gain a higher response rate? It really has to do, again, with your basic objectives. For example, if you were designing a questionnaire right now only to answer federal reporting requirements with respect to vocational education, it could be a very short questionnaire. They don't ask for much. They essentially want to know where did he go after high school and there are about a half a dozen categories as such. That's all they need to know. If you want to learn the reasons underlying where they go, underlying your basic objectives as I shall point out to you in just a moment, then you have more information you have to get after and this means you have to make this horrible decision. You look at the final draft and say, that's too long.

The example I've provided you is a terrible questionnaire to expose people to. It's really too much information. We decided we'd rather have the information and have a relatively low rate of response which we could correct later on with a correction sample technique than have the short questionnaire where we maximize our response rate and then when we got the answers we found out I wish I would have asked for that other information. By now I would have understood the nature of the responses that I got on the ones that I did include. Let me give you an example. We're very much interested, according to our objective, in the placement of students into the field for which they are trained. To get a simple reading like that wouldn't take very much. But we were equally interested in the reasons they didn't get placed in the field. What were the underlying reasons as this student was able to report to us?

Your space requirements are always a matter of resolving internal conflicts between getting all the information you need and risking a low rate of response or getting a high rate of response with less information than you really would like to have. The volume of your cases I've already mentioned. If it's a substantial volume, you've got to go into more automated techniques of collecting and analyzing your data. In a complete system it's a matter of a day or two after you get all your data in and run through the scanner before you get your final results analyzed.

Cost constraints are a big issue. If you only have so much money this eliminates a lot of things that you can do. You certainly can't get as involved in mass technology if you don't have the money. Your total mail out package, I might say here, is a consideration in designing your questionnaire.

Mailing expenses depend upon volume. In our last study we had 24,000 cases and this is a large mailing cost. And so we have to design everything to meet the total charges. We don't want the weight of our mailout package to suddenly be one that gets us into the next highest rate. So you're looking at paper and volumes of paper that go into it and you're weighing it all the time in terms of whether you're going to generate something that suddenly places you into another postal category.

The fifth consideration in your design is whether you are going to go with one mail out or a multiple mail out. I'll say a little bit more about that this afternoon, but certainly if you're going to go with multiple mail-outs, then you have to give consideration to how you are going to separate those who have responded and those who have unknown addresses from the respondents.

The sixth basic step is to prepare a dummy questionnaire for composition. We generally line up questionnaire items on index cards with the space requirements indicated on the card and assemble it in a final dummy questionnaire for composition. Before you print it you can have the questionnaire composed, that is, the paste-up of the questionnaire prior to printing of it, and generate generally enough photo copies of it so that you can use it for a pilot application. I think this is very necessary before you print, that you have some type of a pilot application of your instrument. There are two ways to do this. One is to select a very small number of cases and give them the same mail out package in this pilot application as will be given later on. Now you're doing that primarily to get a reading on how effective are your instructions. What are the kinds of mistakes they're making on the questionnaire, and so forth. You're not doing it in terms of getting an assessment of the later returns. You're checking it out by trying to see what happens. If on the pilot trial the errors run above five percent there's something wrong with the item. Perhaps a better way of doing it, and you don't need many cases, is to get even a half a dozen or a dozen people who will be subject to the questionnaire in an interview situation and explain what you're doing. Have them go through it following the instructions, without giving them any additional verbal instructions. After they have gone through it and you have reviewed their answers, you can review it with them. You can get from relatively few people a rather quick reading on what you think is an amazingly clear question that was unambiguous to them. They see a different meaning in it. I'm going to turn this meeting back to Mr. Neel and for the next half hour you will have a chance to react to what I have said.

SUCCESSFUL PROCEDURES AND TECHNIQUES IN USING FOLLOW-UP INSTRUMENTS

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SUCCESSFUL PROCEDURES AND TECHNIQUES IN USING FOLLOW-UP INSTRUMENTS

We're now talking about some of the things that you can do to maximize the return of the follow-up instruments. I might say that by participating in the small groups this morning I got a better grasp of the MDTA aspects of the follow-up. This, of course, made me change some of my thinking. I have been in sort of a massive follow-up situation. We're dealing with thousands of cases and most of you who are in the MDTA program, locally, were dealing with relatively small numbers, from 30 to perhaps 50 cases, and much of the formality that I talked about this morning is perhaps not as applicable to that small situation because you have opportunities of individualizing your approaches and doing kinds of things that will maximize your follow-up.

Now let's turn to some of the factors that have a bearing on getting the maximum rate of return. These are some of the things that have a bearing upon the rate of return that you get from the questionnaire that you send out. One of the major factors is the design of the questionnaire itself. I can give you the rules and then give you the illustrations that violate all of these rules. Number one, the questionnaire itself, should have something other than a homespun quality to it. You should do a professional job of styling and printing so it looks like it is a serious instrument.

Rule number two is the one that we violated in the example that I gave out to you this morning. Don't pack your questionnaire, don't put your questions in a dense format so that the whole page looks very busy. Having said that, I can now say that if you look at our example questionnaire, you can see that this is a gross violation of what this rule says. Now, of course, what happens is that with all of these rules you compromise. In that particular case, this was a first generation questionnaire used throughout the state of Pennsylvania for some 20,000 cases. We had debates over many of the items regarding whether or not they should be included and we finally concluded that we would let the facts of the first generation application of the questionnaire and the analysis of the data throw out the items for the next generation. So in this case we went with all of the questions that we thought were relevant that we could get on an 8 1/2 x 11 scanning form on both sides, knowing perfectly well that this was a dense and busy questionnaire and that we were sacrificing substantial returns. Next year it will be a much looser questionnaire, but it will not be on the basis of our expert opinion as much as it will be on the basis of actual data analysis. We will throw out items and pick out the ones that are useful to the second generation questionnaire.

Design the type for legibility and, of course, we have somewhat violated that, too. We should have had a larger type, but the constraint of trying to get so many items in that first year to get a reading on how people react to it cut down on the size of type. Generally, I'd like to incorporate the instructions into the questionnaire in some way. If you're using a one sided questionnaire then the instructions should be built on the reverse side of the questionnaire. If you separate the instructions from the questionnaire, as we did some years ago, putting them out in two forms, what you sometimes overlook is the fact that the people who get these questionnaires do not answer them immediately. They lay them aside somewhere in their home. It may be a week or

two weeks before they get back to it. Sometimes the instructions on completing the questionnaire get separated from the questionnaire and then you get returns with considerable errors in them.

Avoid, unless absolutely necessary, what I call personal items. One of the big ones is earnings; dollar earnings. We know this because even when we get the returns back, the statement of earnings is the item that is most frequently omitted. You have a person who has very conscientiously filled out all items, comes to the earnings one, skips it and then continues to fill out all the items thereafter. For some reason or other, the vocational graduates do not like to put down their earnings. I would say that you can count on a ten percent loss on that item. There are other types of personal items which should be avoided.

Avoid excessive questionnaire length. Here again, however, we did a study a few years ago to see what effect length has on the quality of returns. We had two instruments, one was exactly twice as long as the other one. There was no question that we lost returns on the longer one, but, frankly, the information gained with the longer questionnaire at that time raised the question as to whether or not we could sacrifice some of the returns to get more information. Surprisingly, enough, it seems like people either want or don't want to cooperate with you and a little bit more information doesn't drastically change the situation. There is some loss, but it is not as tremendous as we would sometimes be led to suspect.

We never send out a questionnaire without sending along a letter to the person explaining the purpose of the questionnaire. We try to tie the purpose of the questionnaire in with a twist in the letter that gets the recipient personally involved in returning this information. We try to use psychological appeals. As an example of the psychological appeal that we used with our recent survey of high school graduates, because of these being turbulent times, we, in effect, wrote a letter, the general theme of which was that this is your opportunity to contribute toward changing the educational system. If you think it's not as good as it should be, some of this information will be very essential to feed back to the educators to show them where they are deficient. The information would be put to good use. That was the general theme. The words were very carefully phrased. We tried to latch onto this personal involvement that here a person had a chance to get information back to the educators.

Another psychological appeal that we found was very useful was what you might call an authoritatian appeal. There are some kids out there who literally have to be told. "Get this thing done and send it into us" and we did it in a way on one particular occasion, since the U.S. Office of Education was sponsoring the study. We repeatedly used the U.S. Office of Education in the phrasing of the letter. We built in the higher authority symbols of the state throughout the letter and it proved to be quite effective.

Another technique is the incentive appeal. You give people a monetary reward for responding. Listening to the conversation this morning on an MDTA program, it seemed to me that rather than fuss around with some of these fancy psychological or personal appeals, one of the simplest things that you could do to maximize your returns would be to budget into your programs at least $2.00

for follow-up incentive purposes at the end of the program. That means that if you're dealing with a course that has an output of thirty some students you're really only talking about budgeting $60.00. If you want to get real generous offer a maximum of $3.00 per person. Now, due to the thousands of dollars that you spend in these programs turning out these students, I wouldn't think it would be too unreasonable to add to your budget this kind of money so as to maximize the returns. We tried it out last fall when we had our so called hard-core nonresponders. We tried all the personal appeals, the psychological appeals, the authoritarian appeals, and when all the chips were down and we still had a hardcore we offered $1.00 per person. Frankly, we had discussions on our staff where most people thought this was ridiculous. People don't do anything for a dollar today, you know. We said, well, in view of the thousands involved here we'll stick with the dollar. They might surprise us, and they did. We got a tremendous response for one dollar. It actually cost us more to get the dollar back to them than the dollar itself. But you won't have this problem since we dealt with several thousand of them. It works. You can think of it this way. It's not unreasonable, if you really want this information and want to maximize the returns, to pay them for their time and effort.

Humor can be used to help maximize returns, particularly where the multiple stage approach is used. In one study we sent out seven times before we gave up maximizing our returns. It isn't really necessary, but along about the time when someone has gotten two letters from you telling them to get this thing in, no matter how you state it, he's beginning to get a little irritated and at that point we threw in this little humorist appeal. Again, what is humor to one person is not necessarily humor to another person. We found this letter quite effective even though one of our groups had it without that $5.00 incentive at the bottom. They just got the upper portion of the letter. I might say humor always has a way of backfiring. It's a tricky business. We got one irate letter from a parent whose son was in Viet Nam and that parent didn't think this letter was funny at all in view of the circumstances. In reviewing the letter I can see where she might not think it was funny. So humor is tricky.

Perhaps one of the best things that can be done to maximize your returns is what I call an advance orientation of the people who are to respond to your survey at a later date. Before they leave your MDTA program or your vocational programs it is a good idea to acquaint them with the fact that they will receive a questionnaire through the mail. Discuss with them why this is being done, if at all possible give them exposure to the instrument right then and there while they're still with you so they can go through it and raise any questions they might have about it. All of these methods, we know from the experiences of several other researchers, greatly improve the return you get. They know what's coming, they know when it's coming and they have an idea what is involved. It was someone who knew them who explained it to them and they're more likely to respond.

There is one real hazard about pre-orienting students and I don't have any data on this, but I'm always worried about it. That is, if you put the orien-

tation in the hands of an instructor who is explaining an evaluation instrument to students who will shortly leave him and who will be followed-up you may have some difficulty. Now if he's very enthusiastic and concerned about the kinds of responses his students give to the questionnaire, it is quite possible that he will introduce a serious bias into the responses he gets. No one has yet really tackled this problem. I can well see that the students might learn the kinds of answers that are desirable, and because the instructor is admired or respected or is a "nice Joe" particularly if it indicates that other people will use this to evaluate him, he might get a kind of a bias into the returns that doesn't tell the true story.

The fourth basic approach to increase your returns, of course, are the multiple mailouts. So many people try a single mailing and stop at that point. We normally take it to three mailouts, before we give up, although in other circumstances we've gone beyond that. When you use a multiple mailout, you're using the same instrument each time of course, but you should never use the same letter. This is a situation where you use one appeal in the first letter, a different appeal in the next letter and still another appeal in the third letter. The idea is that not all people are responsive to a single appeal. If you use the same letter, you invariably get what you call a decay curve in your returns. If you got twenty percent on your first mailout you'll get on the order of between ten and fifteen percent on your second mailout and then drop down to five percent on your third mailout. The reason is that you're just giving them the same thing, but three times. Now in order to avoid this and flatten out that decay you have to use a stepped-up appeal.

The mailout intervals we have found by actual pilot studies are best done at a very massed rate. In other words, you don't mailout one questionnaire, wait a month, and mailout another one. Distributing it over a period of time does not give you the kind of return that you would get if you hit them hard and fast. You mailout one and in two weeks you mailout another one and in another two weeks you mailout another one. Bang, bang, bang! It seems to have some compression effect and it gets the respondents off the inertia of reacting to it. They seem to go cold if you distribute it too much and you lose the effect of the repetitive mailout. So we tried to bunch the mailouts real quickly.

We have done some studies to raise the question, when is the best time to mail it out in terms of its arrival time? Should you mail things so that they arrive on the early part of the week, at the end of the week or on the weekend? The findings are not very conclusive. Generally we found that there is a slight preference for the early part of the week. You time your mailings so that they arrive on Monday and Tuesday. U.S. mails being what they are in our situation, we have very often sent by air freight the information to the postmaster in the designated city and tell him to release it on Monday morning knowing that then, the recipients will get it on Tuesday. But if we relied upon U.S. mail across the country, we'd have no control over when they got to the recipient. If you're using the multiple mailout approach then it makes a sense to use a different strategy on you second and third mailout. Some peo-

ple, again, are early in-the-week performers, others late-in-the-week performers. If you tried to hit them early in the week on your first mailout, try for a week-end arrival where the letter arrives on Friday or Saturday.

We have sometimes used our own educational system's envelope. This is not good practice we've found. The more we can use a letterhead that the person can identify with, the better off we are. So consequently, now we either get from the school systems or print their letterhead on our first mailout. This is coming from the local school district to the recipient. He came out of this school district and he's curious about what he's getting from them. He doesn't know educational systems and that is not likely to ring a bell with him. As to who signs the letter, other things being equal, unless you're using a humorist appeal or some of these other types of things, it should be signed by the person, again, whom he can identify with, the instructor. The instructor, the high school principal, the guidance counselor, these are the people who should sign the letter to him, not some outside research organization or some person he doesn't know anything about. Other things being equal, the instructor is the closest to them. Now, if he's a real disagreeable fellow that might not always work, but generally speaking, across the board, they do like their instructor.

In a multiple mailout situation, if you use the same letterhead, even though it would be, let's say, the local school district, there is danger of the recipient not opening his mail after the first mailing. By this time he knows what's in there without even opening it. He might be inclined to just throw it in the waste paper basket. In this case, he will not have been exposed to your second appeal to him, which might click if he reads it. So you have the first task of getting him to open the envelope before he throws it away. So we used a series of what we call envelope openers. With Black students, on our second mailout in the Metro Study, we have the enveloped hand stamped with a slogan, "Black helps Black." Now the purpose was to arouse curiosity. It did not have the usual return address on top and we figured this would at least cause them to open up the envelope to find out what in the world was in there with this peculiar bold rubber stamp in color on the envelope. I don't have any real research basis for knowing that it really helped, but we did get returns back that were substantially greater than what people had said we would get from Black inner city students.

Do you really need a high rate of returns? The answer depends upon what you're trying to generalize to. Thinking in terms of your relatively small MDTA classes of thirty or so and you're trying to generalize right back to how that unit of thirty has performed, then you necessarily want to maximize your returns. You're shooting for 100 percent if possible. At the other extreme, if you're conducting a follow-up survey such as we are in Pennsylvania and we're trying to draw conclusions about vocational education not in a particular course nor in a particular location, but we're trying to generalize across the entire State of Pennsylvania. What are the results for an entire region of the state? There I don't think it's necessary to shoot for such high rates of return.

In the Process and Product Study we got a sixty percent rate of return on 10,000 cases. That left 4,000 cases not heard from. Now, the question was whether or not we could draw any conclusions on our 6,000 cases because they may have had a heavy nonrespondant bias introduced into them. In other words, we might have said the good students are answering and the bad ones are not, and what we're getting back is a picture of the good ones and you can hardly generalize to everyone if this is true. With that, we took a ten percent sample of the non-respondents, the 4,000 that did not respond, using one of the search and interview organizations. Out of that ten percent sample, we got an eighty percent return. People found them, interviewed them, and filled out the questionnaire with them. The interviewer was on the pencil end of the situation and the returns were given to us. Our analysis of these ten percent returns was not significantly different from the 6,000 returns that we got back through the normal procedure. Our conclusion was that in terms of the kinds of information we wanted to get, there was no difference from those that did respond. Therefore, we could go ahead and generalize to the entire group.

You really don't know whether or not this is always going to be the case. I have no experience with MDTA types of population and I would suggest that where you have a substantial amount of non-response in a questionnaire situation, someone should make the effort of this selective sample interviewing approach to see whether those that did not respond are the same or different. If they are different, then there are mathematical equations that can say, in effect, if they're different you can feed the difference into the equation and correct your main returns and come out with statements in terms percentages, means, and so forth about what the situation would have been had 100% returned their questionnaire. I find that most of the pressure for a high rate of response is a political pressure out of the Office of Education. When you get proposal prescriptions as a contractor you're supposed to agree that you'll get a 90 percent rate of response, things like this, because it's impressive to people when you say you got that kind of return. From a scientific sampling point of view, this is not at all necessary. Our marketing surveys that do this kind of thing in industry, consumer surveys, would be broke if they tried to go for a sixty percent response. They go for two to four percent at a maximum and then make generalizations about hundreds of thousands of people based on very small samples. By and large they do this quite correctly if their sampling strategy's correct. Thank you very much.

THE USE OF ELECTRONIC DATA PROCESSING SYSTEMS IN AN EVALUATION EFFORT

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THE USE OF ELECTRONIC DATA PROCESSING SYSTEMS IN AN EVALUATION EFFORT

In the past twenty years man has made significant advancements in technology which are designed to help him do the kinds of work required more efficiently, effectively, and effortlessly. This trend in technology is well represented in the field of computerization. The computer, as a tool, has helped man do things which at present he would be unable to do without the capabilities of the computer and its potentialities. The complexity and scope of our modern way of life has made the age of computerization a necessity. The purpose of this paper is to present the background and a basic understanding of electronic data processing systems and to explore the concerns and considerations involved in employing this type of a system in an evaluation effort. The major focus of this paper is directed upon the use of an electronic data processing system by the evaluator and in assisting him to achieve his evaluation objectives. The first section of the paper will center around an explanation of the electronic data processing systems. The second section will be concerned with the actual implementation and use of electronic data processing systems by an evaluator to provide him with a tool which will enable him to perform an evaluation in a more effective and efficient manner.

The Electronic Data Processing Systems (EDPS)

Historical Background

Most people would say that the data processing systems are a recent innovative development of man. However, this is not the case. The roots of data process and computerization are lodged in pre-Egyptian period. The abacus which was a mathematical computing device was in wide use in the Middle East as far back as 3000 BC. Persons in the field of data processing and computer systems trace the relationship of its development to the abacus. The next major influence in data processing was conceived by Charles Babbage in the 1830's. Babbage is given recognition for developing the basic principles and ideas for computer development. His developments in this field were supported by the earlier inventions of the slide rule and hand calculating machines which took place in the seventeenth century.

The major development of data processing is accredited to Mr. Herman Hollerith, who after 1890 was working with the United States Bureau of the Census. The processing of census data was an enormous task. Therefore, he built sorting and counting machines which would handle the punch card data which he developed for processing the 1910 census. The punch card is directly traced back to Babbage and his initial efforts in the development of data processing systems.

Surprisingly little effort was put forth in this area until about 1930 at which time the basis for electronic data processing was launched. The first computer was built in the Fall of 1945. From that time on, further developments influenced by social, economic, and political factors have produced tremendous improvements and expansions in the computer processing field. These improvements have normally been characterized in terms of generations of computers.

The generation of computers began in the 1940's and were characterized by the use of vacuum tubes and electronic impulses instead of using the hand manipulated or mechanically driven devices of previous eras. The second generation which was initiated in the middle 1950's replaced the vacuum tubes with transitors and increased the speed of the computers so that they will be able to preform an operation in a millionth of a second. The third generation of computers which were produced in the early 1960's made use of miniaturized circuits which allowed the computer to be even a smaller device; made tremendous increases in speed so that operations can presently be done in billionths of a second; as well as, allowing the computer to handle multiple programs simultaneously.

The EDP System has been used to translate languages, bake cakes, control space exploration, mix cement, make airplane reservations, solve engineering problems, simulate engine wear, and update your bank account.

This very brief history does show that electronic data processing has roots in antiquity but is a tool of the modern generation.

Definition of Electronic Data Processing System

Before we discuss any further the operation or the use of electronic data processing in evaluation efforts, it may be advantageous to define our terms so that we will maintain a common basis for understanding. The term electronic refers to the power source and the actual vehicle which allows the entire system to operate. The term data is defined as a quantifiable fact which serves as the basis for information. Information being that data which has been edited, summarized, and is meaningful to the receiver of the information. Processing is conceived as a logical sequence of related steps or operations which when performed allows us to obtain the desired information. The term systems, in this context can be considered as a set of devices or machines which are interrelated and function as a whole and whose operation is directed towards providing the desired information. This desired information can be said to be the goal or objective of the evaluator. Therefore, if we were to put these separate words now back into the original phrase which is electronic data processing system, we can see that this phrase can be defined for our situation as the logical sequence of steps involving the changing of data into information for the purpose of producing desired informational outcomes. The significance of the definition is that it does allow us to identify the basic ideas involved in an EDP System. The processing of the data through movement and manipulation directed toward providing meaningful information are the basic ideas involved in the definition of EDP System.

Concept and Rationale

The basic concept of EDP Systems centers around the flow of data. This flow can be designated in terms of the ability of the system to transfix, transform, and transmit the data in the form of information. Transfix refers to the ability of the system to identify, separate, and store bits of data which are placed into the system. Transformation in this context refers to the ability of the system to retrieve and manipulate that data in a desired or predetermined form. Once the data has been transformed we could refer to it as information. The information then is transmitted. Transmit refers to the aspects of restoring or releasing information from the system. The system allows us

then to retrieve or receive from the system the transformed information which can be applied to our problem or our decision situation. These concepts of transfix, transform, and transmit are basic to any form that the EDP Systems may take and allows us to focus on the fundamental concept of flow of information.

The rationale for an EDP System and its use is based in man's need to manage information. This system acts as a tool that man has available to him and in our situation, the evaluator has available to him, the ability to manage information which is basic and relevant to his effort. We have all heard of the knowledge explosion, the sophistication of educational methodology, and the boundless amount of data which can bury a person. Evaluation is in this same situation. Evaluators will find limitless amounts of information from which he will have to select, collect, manage, and interpret, if his evaluation effort is to be successful. So the rationale that we can use for our evaluator employing an EDP System is that in reality he must manage large volumes of relevant and required data and he must be able to take that data and perform operations with it, so that ultimately the information that he generates will be meaningful not only to him but to all other decision makers concerned with the evaluation effort.

Characteristics of an EDP System

What are the basic characteristics of an EDP System that will help an evaluator in performing his tasks? Basically, the EDP System can be characterized by five factors. These factors are speed, memory, accuracy, automation, and an increase in information. The speed of the computer system has already been described. We are discussing speed in terms of billionths of a second. This enables the evaluator to not only handle large volumes of information but of course to handle them in a fraction of the time that it would normally take. Memory is a characteristic which enables the system to store the large volumes of information which are fed into it as well as to store and have on call the instructions which describe how the data will be manipulated and what form the information produced will take. Unlike the human memory, the computer never forgets. Because of its ability to store and operate at tremendous speeds, the accuracy of the system is of an extremely high quality. Human error does not enter into the system as such. Normally, errors in the system are either at the beginning where the information is put in or at the end when the information produced is interpreted. The system itself normally is also automatic, in so much, that once the evaluation data is fed into the machine and the machine has received the instructions which describe what we want done with the data the process becomes automatic and takes place without the necessity of human intervention. The last characteristic refers to the tremendous increase in information which can be obtained from such a system. Not that this information was not always there, but the other characteristics of this system of speed, memory, and accuracy allow more information to be derived from an equal amount of data which was available before the use of EDP System. Therefore we as evaluators will be able to obtain larger amounts of accurate, valid, and meaningful information. It becomes obvious that these characteristics of an EDP System are all interrelated and form a total picture of the system which can be described as a valuable tool for the evaluator in his managing and transforming data into the desired informational outcomes.

Basic Types of EDP Systems

With the knowledge of these characteristics, one can begin to look at what types or kinds of systems are available to the evaluator. There are two basic types of systems available, the unit record system and the computerized system. The familiar punch card has a fixed number of columns (80) and is normally read as a unit and provides a record of the data, so the term unit record has evolved. Hence machines which only use punched cards for putting data in and producing information in the system have formed the unit record system. This system employs very familiar types of equipment such as key punch machines, sorters, collators, verifiers, reproducers, and tabulating machines. These normally operate from external types of instructions. These external instructions normally would take form of wired boards which fit into control panels on the various kinds of equipment. The system then derives its instructions and data for processing from basically internal sources (punched data cards.) The second type of system, which is computerized, may also make use of punch cards. However, its instructions are derived from a set of stored data. In addition, the computerized system normally does not operate from the punched cards as does the unit record system. It will read the punched cards and put them in storage or on tape. The computerized system, because of its extreme high rate of speed, makes use of data and instructions for its operation from internally stored units. Many times, however, the two types of EDP Systems are used in conjunction with each other and form a very effective total system.

Components of an EDP System

With the two types of systems, unit record and computerized; there does exist common components in each system which help us better understand what basically goes on in an EDP System. These basic types of components include an input unit, storage unit, a processor unit, a control unit, and an output unit. The input unit is that device which allows the evaluator and the computer operator to place into the machine that data which is necessary for producing the desired informational outcomes. The storage unit, whether it be internal or external, allows the machine to have available at its command the necessary data and instructions to perform the required manipulations of the data. The storage unit keeps the pertinent data and instructions available for ready use for the processor unit and responds to commands from the control unit. The processor or arithmetic unit manipulates the data and allows us to produce information. This particular unit basically operates on the same principles as a calculating machine. It can add, subtract, multiply, and divide and therefore is very basic in principle, however, at the speeds which it can operate and with the amount of data that it can actually process it becomes a very important and integral unit of the system. The control unit of an EDP System does just as the term implies. It allows us to control the operations which are carried out in the processing unit and maintain and use the storage unit. First of all, it allows us to identify and pull into the processing unit the information data from storage that is necessary for that operation. It also provides the instructions to the processing unit as to whether it should add, subtract, multiply or divide and in what sequence these operations need to be carried out. The control unit may also instruct the processing unit to put back into storage a portion of the data which it has manipulated for later use. Therefore, the control unit basically does give instructions to the system and actually controls its operation. The out-

put unit is that unit which allows us to receive from the system the information which is desired and it becomes clear that there is a direct relationship between the input and the output allowing us to see how the concepts of transfix, transform, and transmit begin to take shape and relates to the components of the EDP System and its operations.

Kinds of Media Used in EDP System

The media used in this system relates to the types of material used by each of the components. The input unit in most systems can make use of punch cards which are probably the most common media used with EDP systems at present. With the computerized system however, the use of tape which can be either in the form of punched paper or magnetic tape has become the basic input media because of its ability to handle large volumns of data at relatively high speeds. In addition, the computer program, which is a set of instructions for the control unit of the system, is normally placed on magnetic discs which resemble a long playing record. Here again, the idea of large volumns of instructions with easy access at tremendous speed is the key to using this type of media. Other types of media which can be used as input are the documents themselves. An example of this type is the check which you have in your checkbook. It has magnetic inked numbers on it which are read by various devices and are the input media for the computer processing system. One of the newer developments in input development is called optical scanner. This is a device which electronically reads documents as they are fed into the machine. Optical scanners are used to read standardized types of answer sheets, which all of us have used, as well as to read under experimental conditions essay types of answers. One of the latest and most exciting input media, which has been develped for computer use, is that of voice. Experimental projects have employed the use of human voice as an input to the EDP System.

The storage, processing, and control units employ a common media - that being the electronic impulse. Man commicates with these three units through a device which resembles a typewriter but sends electrical impulses to these units and in turn, when there is trouble, is requested for information in the form of electrical impulses.

The output media normally employs basically the same type as the input unit in terms of punched cards, both punched paper and magnetic tapes, and documents. However, the basic output device is the high speed printer which operates from electrical impulses transmitted from the processing unit. These high speed printers print approximately 600 to 1200 lines per minute. By line, we mean not a single letter or single word, but a complete line of letters at a fraction of a second. In addition, computer outputs have also been developed which do take the form of the human voice and have been able to communicate orally with an operator. It appears at present that the input and output media of an EDP System are unlimited. However, the basic types of media that an evaluator will be concerned with at this point will be the punch cards or magnetic tape as the input media and the printouts of the high speed printer as the output media.

This very short discussion of the electronic data processing system has provided a background upon which we can now build the ideas and understandings for the actual employment of electronic data processing systems in the development of instruments as they relate to an evaluation effort. In review, then,

an EDP System is a system which attempts to manage the flow of information from the receiving stage, to the storing stage, to the manipulation stage and ultimately producing desired informational outcomes. The system has tremendous speed, a large memory capacity, operation with high level of accuracy, and allows us to operate automatically in providing an increased amount of meaningful information. The unit record system and computerized system which encompasses input, storage, processing, control, and output units provide a very viable means by which the evaluator can handle and manage the information necessary for his evaluation effort.

Using EDP Systems

Considerations for Using EDP Systems

The first and most basic consideration an evaluator has to consider is whether to use or not to use EDP Systems. This decision should be based upon the objectives and needs of the evaluation plan. In an evaluation effort, what should be the objective for using an EDP System? This objective should be based upon a very real and very clearly described need to manage information. The second consideration deals with the nature of the output, manipulations, and inputs necessary for using an EDP System. It should be noted here that we have just reversed the normal order in which these particular components were discussed. The reason, for this, is that in considering the use of an EDP System the first consideration should be the output. What kinds of information do we need? Once the outcomes can be defined, then we can work backwards and we can say; if these are the informational outcomes we want, then what kinds of manipulations will this involve. These manipulations, once described, will provide a basis for establishing what the data requirements will be for the input. As an example, we could say in the evaluation we would like to have information about the percentage of high school students which dropout prior to graduation. This outcome then can be analyzed and we can extract from it the manipulations that will be necessary to achieve it, that is, the development of percentages. The computation of percentages requires two basic sources of data or two quantitative measures which can be compared - in this case the total enrollment of the high school and the number of pupils dropping out before graduation. The manipulations involved in the process are division and multiplication. These manipulations will provide us with a basis for establishing the necessary inputs. The analysis of the nature of outputs, manipulations, and inputs is a crucial consideration for using an EDP System.

The third major consideration is that of quantification. It is imperative in using an EDP System that the inputs be quantifiable. This means that we can categorize them, either in terms of yes - no, male - female, smaller - larger, or desirable - undesirable. Quantification may also be achieved by ranking or ordering elements such as how important you feel vocational education is to your career development, grade levels, or level of performance. The point that is made here is that quantification is a very basic and fundamental concept in the use of an EDP System. The EDP System can not make judgments about data, it can only follow instructions which you provide.

The fourth consideration is codification. Codification refers to the coding of data in such a form that the EDP System can easily store and manipulate the relevant data. As an example, coding can be used for individual names, for individual titles, as well as for various occupation areas.

Codes can either be developed by the evaluator or he may make use of standardized codes such as those found in the dictionary of occupational titles or those employed in other fields like an individual's social security number. The consideration of coding and quantifying are very closely related.

The fifth consideration that an evaluator has to be aware of is that of time. The speed at which an EDP System operates is only a small portion of the total time necessary for its employment. Data must be prepared, there must be developed input formats, instructions for the system, and the form of the output that is desired must be designed, so it becomes evident that the actual operation of the system consumes a very small part of the time necessary for employing EDP Systems. Time has to be planned for in terms of the availability of the machine at the particular time that the evaluator wants to use it and to insure lead time for data preparation and program development.

The sixth consideration is that of resources. In order to use an EDP System, the evaluator needs to have the necessary resources available for its employment. These resources include money for services which will be a function of the volume of data, scope of data preparation, and the extent of the manipulations. The resource of qualified EDP personnel and the availability of equipment, facilities, and materials must also be considered by the evaluator. If these resources are not available to him in the immediate area then the use of these resources through some other agency or in some cases through contracts will increase the amount of resources necessary for the employment of an EDP System.

The considerations of objectives; needs; nature of the outputs, manipulations, and inputs desired; the quantification and codification of data; the time available; and the resources at the disposal of the evaluator are important prerequisites to using the EDP System in any evaluation effort. It seems logical then that the considerations for using EDP Systems centers around the volume of information that is to be processed and the way in which the information is to be processed. It also becomes very obvious at the present time and under present circumstances in vocational education that the complexity and scope of evaluation efforts in vocational education will, in fact, require that the evaluator consider using EDP Systems in his evaluation efforts.

Concerns for the User of EDP Systems

There does exist an order of basic concerns for the user of EDP Systems in his development of an evaluation plan and more specifically in the development and implementation of an evaluation instrument. The concerns which are presented in this text relate to a sequence of interrelated concerns which lead from the identification of the information desired to the printout which presents to the evaluator the findings of the evaluation effort. The kind of information needed is the first concern which the evaluator must address himself to. This concern is the basis upon which all further steps in employing an EDP System in evaluation is built upon. The evaluator must identify and specify explicitly the kinds of information which will be presented as evidence in the evaluation plan and which will be used to answer the criterion questions that have been developed. Once the information requirements have been specified, then the evaluator can move toward the identification of the

sources of information. The sources of information will have an impact upon the type of instrument and the collection methodology to be employed. When the sources have been identified and we know the types of information that are required, the development of the instrument and its format can be initiated. Concurrently, the collection methodology must be established. The instrument format and collection methodology must be mutually supporting so that the evaluator can obtain the required information. Upon completion of the collection phase, the data needs to be assembled and prepared for processing. Therefore, procedures for assembling the data need to be developed so that the data may be prepared for processing. In addition, the manipulation of the data should be well defined and spelled out prior to putting the data into the system. This will require the identification of presently existing computer programs or the designing and writing of a program by a computer programmer which will meet the manipulation requirements of the evaluation. The final concern for the evaluator is the report display that he desires. There are many forms that the information output can take. Therefore, the evaluator must specify the type of listing of data, types of charts, the format or the structure in which the output information will be presented to him. These concerns for information required, their sources, the format of the instrument, how the data is to be collected and assembled, the manipulation, and the reporting of the data from the system are all requisite concerns for the evaluator prior to his employing an EDP System.

Procedures to Employ EDP Systems

Once the evaluator has addressed himself to the above concerns and has outlined and specified the types of data requirements and instruction necessary to use an EDP System, he may direct his attention to the actual procedures that have to be followed in the employing EDP System. These procedures are listed and described as following:

(1) Decide to use EDP Systems - the evaluator must make a decision at the initiation of an evaluation plan as to whether or not he will employ and EDP System. This decision should be based upon the following elements.
   (a) The volume of data information which is to be involved in the evaluation effort.
   (b) The time that is available for the evaluation effort.
   (c) The resources available to the evaluator.
   (d) The levels of efficiency and effectiveness which the evaluator wishes to attain in conducting the evaluation project.

(2) State the desired informational outcomes - the evaluator must set the outcomes or objectives that he wishes to attain as a result of employing an EDP System. The questions of What, Who, How, Why, When and Where need to be answered.

(3) State operational constraints - the evaluator must be aware and be able to state the operational constraints which are placed upon him in the conduct of an evaluation project and which will effect the use of EDP Systems. The constraints in this situation directly relate to the elements which the evaluator has considered in deciding whether or not to use EDP Systems as stated in (1) above.

(4) Contact EDP Systems personnel - the evaluator at this point needs to contact the specialist in EDP Systems and involve them in the further development of the procedures to employ EDP Systems. At the same time, he must inform the specialized personnel of the situation as it presently exists.

(5) Discuss jointly the evaluation plan - the evaluator needs to involve the EDP System personnel in reviewing the evaluation plan and discussing thoroughly the objectives of the evaluation project and attempt to analyze the way in which the EDP System can benefit the evaluator in acheiving these objectives.

(6) Develop the instrument - the evaluator upon the recommendations of the EDP Systems personnel can then proceed to develop the instrument which is necessary to collect the required data.

(7) Decide on the instrument format - the evaluator upon completing the draft of the instrument should review the content and its organization with EDP Systems personnel and arrive at a decision as to the most feasible format.

(8) Collect the data - the evaluator then proceeds to employ his instrument and collect the necessary data.

(9) Prepare the responses for processing - the evaluator upon receiving the responses to his instrument begins to organize and prepare the data so that it is in a logical order and format for introduction into the EDP System.

(10) Employ EDP Systems - The evaluator in conjunction with the EDP personnel prepare for input and process the data.

(11) Review printouts - the evaluator upon completion of the processing reviews the printout information to insure that it is accurate, complete, and has provided the necessary meaningful information that is required to meet the objectives of the evaluation project.

(12) Complete the report - the evaluator interprets the findings and completes the project report.

(13) Store information - the evaluator prepares to store the input data, instructions, and output information which has been used and is a result of the evaluation project. It is important that this data be stored so that if necessary the evaluator can always reprocess his data to substantiate the conclusions and implications that are presented in the final report.

Examples of Instruments Used in EDP Systems

The following examples depict the various instrument formats which have been developed and are available in conjunction with EDP Systems. (See Appendix C).

Pitfalls

The employment of EDP Systems by an evaluator is not a guarantee of success. There does exist many pitfalls which the evaluator must be aware of. These pitfalls include the following:

(1) The lack of adequate planning - this is probably the most serious pitfall which the evaluator must be aware of and insure that he does not become a victim of. The use of EDP Systems does not happen by chance and does require extensive planning on the part of the evaluator with EDP personnel to insure that the system will provide the type of information which the evaluator needs.

(2) Overinterpretation of findings - this again is a common pitfall which many evaluators fall into. There is a very great desire on the part of evaluators to over-interpret and over-generalize the information which results from employing EDP Systems.

(3) Panacea attitude - many times the employment of EDP Systems is used to solve all the ills of the evaluator and any failure that results in the evaluation project is blamed upon the EDP System. The old saying of Garbage-In and Garbage-Out is quite appropriate for evaluation efforts. The EDP System does not make judgments in the processing sequence. The system only does what the evaluator dictates or desires it to do and the information which results from data processing is only as good as the data which goes in and the directions which are given to the system in the processing phase.

(4) Presence of zero or blank responses - the evaluator in most cases will need to be aware that zeros and blank responses will not be compatible with most programs that are presently available. In developing the instrument and in preparing the responses for the system, zeros and blank responses have to be adjusted. This adjustment may take the form of not using zeros at all or in the preparation of the data for processing the zeros and blank responses will be compensated for by some coding system.

What Happens in an EDP System

Now that we have addressed ourselves to what the evaluator does in employing the EDP System, what actually happens in the system? First, the original documents, and in our case the actual instrument, is analyzed to be sure that it is complete and that any corrections in relation to marking or responses are made. Secondly, the coding takes place. The codes are applied to the source document as preplanned by the evaluator and the EDP personnel. Next, the data are converted from the source document, in most cases it would be an answer sheet, to the machine media whether this be punch cards or magnetic tape. After the data are converted it is generally advisable that the next step of verifying be taken. The verifying step allows the source document to be compared against the machine media to be sure that the conversion has been made without mistakes. Next, the data and the computer program to be used are inserted into the system. After the data and the computer program have been placed into the input unit and have been transferred to the storage unit and control unit the processing phase can be initiated. This step is normally controlled by the computer operator. The final step is the obtaining of the printout. The printout will follow the

format or the display which has been preplanned by the evaluator and the program specialist. This completes the steps involved in the employment of the EDP System.

Summary

The EDP System as we have described it and the manner in which the evaluator can employ it focuses upon the EDP System as an evaluation tool. It is one of the chief tools which the evaluator can use in attempting to conduct an effective and efficient evaluation effort. And as an evaluation tool for managing information, the evaluator will be to transfix, transform, and transmit the information required by the evaluation effort. It is crucial that in discussing EDP Systems instrumentation, and evaluation that one not be overwhelmed with the hardware, software, or EDP terminology. To assist the evaluator, a list of terms and an annotated bibliography is provided in Appendix A and B.

The major factor in employing EDP Systems in instrument development and evaluation efforts is the people that use it. The human orientation is by far the most important. It is the evaluator with the assistance of EDP personnel working together to identify what is needed, where it can be found, how it can be collected, and how it can be processed to provide the evaluator with the type of information that he needs to be able to make judgments and attain his evaluation program objectives.

Apperdix A

GLOSSARY[1]

Automatic Data Processing System (ADP) - A system which employs an electronic data processing machine and related equipment for the purpose of data processing.

BIT - A binary digit. All alphanumeric characters and/or decimal digits can be expressed in binary notation. Using this notation, characters and/or digits may be represented as six-bit, eight-bit, etc., words.

Bug - A mistake in the computer program or a malfunction of the computer itself.

Card Punch - Any of several devices for punching data into cards. The devices range from simple hand punches through keyboard type card punches to high speed, computer controlled punches.

Character - Any one of the set of symbols used to encode data. The symbols may be the digits 0 through 9, the letters A through Z, or special characters such as + - # &, etc. Each character is represented by a combination of bits and punches. Any combination of bits or punches which is not associated with an accepted character leads to what is referred to as an illegal character.

Code - Any system of rules, usually represented by a set of symbols, used for data handling.

Collate - To merge two or more sets of ordered data in such a way as to produce one or more ordered sets which still reflect the original ordered sequence.

Compile - The process by which a set of program statements is converted from the language in which they are written to the appropriate machine language.

Computer - A device capable of receiving data from an input unit, operating on the data and producing results for an output device. Frequently used in generic sense to refer to a total installation rather than one unit of the installation. The term CPU, for central processing unit, more closely fits the term computer.

CPU - The Central Processing Unit of a computer, sometimes referred to as the computer main frame. The CPU usually contains the central storage area, arithmetic and logical operations unit.

Data - The term used to include all facts pertaining to and used in a specific operation. Data may consist of all numbers, all alphabetic characters, or may be alpha-numeric.

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Data Processing - An all-inclusive term which refers to the total process of rearranging data from its original form to its final form.

Debug, Debugging - The process of testing a program to eliminate errors and determine that a series of instructions will produce a desired outcome.

Disk - A magnetized circular metal plate which rotates continuously during operation. Data may be read from or to disks; they may be permanently mounted or be in the form of a changeable package of disks.

Documentation - A set of written instructions which explains in detail the purpose and operating steps involved in completing a task.

Electronic Data Processing System (EDP) - Used to designate an entire configuration of devices including input, central processor, control, and output devices.

Externally Stored Program -A series of instructions which are wired into plug boards for use with small processing units.

Feedback - In CAI, this term describes an occurrence which results from, or depends on, the response of the student. In some situations, feedback would be synonymous with reinforcement.

File - Any number of records, closely related and usually processed as a group.

Flow-Chart - A diagram representing the movement of data through a program.

Format - A statement of the arrangement of data and/or instructions.

Hardware - All of the machines, racks, tubes, transitors, wires, motors, lights, etc. in an electronic data processing system.

Input - Movement of data to the CPU for processing.

Input-Output Control System (IOCS) - A set of instructions, or a routine, designed to facilitate the movement of data to and from the CPU.

Instruction - A group of characters which defines a particular operation within the computer.

Key-Punch - A device, much like a typewriter, for translating data to punch cards such that each character is represented by the proper punch or combination of punches.

Language - A collection of expressions used to cause the computer to perform required operations. Some languages are unique to one machine; others can be used on several machines. Among the more common languares are:

COBOL - Common Business Oriented Language is an English language type programming language. It is extremely flexible, quite general in nature, and notably inefficient from a machine-time point of view.

FORTRAN - Formula Translating System. Primarily designed for use in programming problems which are expressed in a mathematical type language. More specific than COBOL, not as flexible but more efficient.

Machine Language - The statements or instructions which are executed by the machine. Not a conversational or general language.

Library (Program Library) - A collection of programs in general use on the EDP system. Programs are available for use in much the same way as are books in a library.

Machine Processable Form - Refers to data which are in a form which is acceptable by an input device. May be data on coded sheets to be read by an optical scanner, data punches on cards or located on magnetic disks or tapes.

Microsecond - One millionth of a second.

Nanosecond - One billionth of a second.

Operating System - Refers to a part of a system software package. May contain IOCS routines, data sorting routines, etc. The operating system usually controls the internal flow of programs and is sometimes called a monitor system.

Output - Movement of data from the CPU to an output device such as a printer.

Program - A series of instructions which lead to the solution of a problem. The series includes instructions for moving data from the input area and moving results to the output area. When executed, the program must be in machine language form.

Programming - The process of developing a program or series of instructions.

Real Time - Refers to the amount of time it actually takes the computer to locate data in a storage area and transfer it to the arithmetic unit; synonymous with access time.

Routine - Similar to program, but usually not a complete program. Several sub-routines may exist in one program, each of which is designed to execute a specific set of instructions.

Software - The collection of programs which permits the user to make maximum use of the computer. Manufacturers generally supply software packages which contain programs which are necessary for efficient use of the EDP installation.

Storage - A device which receives data, retains it indefinitely, and supplies it upon demand.

Storage Capacity - Refers to the number of units or words of data which a device can contain at one time. Frequently given in thousands of words, such as 8k (eight thousand words,) 16k, 32k, etc.

Time Sharing - A process by which a device is used for two or more processes (e.g., input and output) during the same time interval. Some of the larger computers can handle multiple input/output devices during the same interval. (For example, the IBM 1500 system for computer assisted instruction can be adapted to handle 32 input/output devices, all of which may be operating at the same time.)

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[1]Stoker, Howard W., Automated Data Processing in Testing.

Appendix B

ANNOTATED BIBLIOGRAPHY

Goodlad, J. I., O'Toole, J. F., Jr., & Tyler, Louise L., Computers and Information Systems in Education. New York: Harcourt, Brace & World, 1966.

Grossman, A., and Howe, R. L., Data Processing for Educators. Chicago: Educational Methods, 1965.

Loughary, J. W., et al., Man-Machine Systems in Education. New York: Harper and Row, 1966.

Van Ness, R. E., Principles of Punched Card Data Processing, 2nd ed. Elmhurst, Ill: Business Press, 1964.

Whitlock, J. W., Automatic Data Processing in Education. New York: Macmillan, 1964.

Additional References:

Borko, Harold (editor), Computer Applications in the Behavioral Sciences, Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962.

Stoker, Howard W., Automated Data Processing in Testing, New York, New York: Houghton Mifflin Company, 1968.

INTERPRETING EVALUATION FINDINGS

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INTERPRETING EVALUATION FINDINGS

"Our group had 20 per cent fewer (dental) cavities!" All of us have heard this or a similar advertising report of the findings of studies designed to evaluate the effectiveness of toothpaste. When we attempt to interpret this "finding," some questions immediately come to mind: With what other group or groups was "our group" compared? How were persons participating in the study selected? What was the precise nature of the treatment given? What were the ages of those participating? What was the condition of their teeth before entering the experiment? What measurements were made? Who made the measurements?

It is evident that we could make a long list of questions about this particular finding. But the important point is that the answers to these questions have a great deal to do with how we interpret the results of the evaluation of different brands of toothpaste.

Let's take a closer look at these questions. You will note that some of the questions actually raise doubt as to the truthfulness of the finding. How sure are we that a certain brand of toothpaste was the factor which really made the difference in the number of cavities? Perhaps there were factors operating other than a particular brand of toothpaste, which could help reduce the number of cavities. For example, suppose the persons using the touted brand of toothpaste brushed their teeth three or four times a day; suppose great pains were taken to see that they cut down on their consumption of candy, coke, and other sweet foods; suppose only volunteers were used in the experiment; or suppose boys and girls were selected for the experiment because they had a history of many cavities. Each of these factors could contribute to a reduction in the number of cavities regardless of the brand of toothpaste used; or at best, when the use of a certain toothpaste was accompanied by these conditions, it may be more effective than when used under more everyday conditions.

So one of the crucial questions in interpreting evaluation findings is: Did the treatment -- in this case the use of a certain toothpaste -- really make a difference? If we can rule out or discount the other factors which may have caused or contributed to the result obtained, then we place a different interpretation on the findings than would be the case otherwise.

Before we leave this example, I call your attention to another dimension of interpretation hinted at by the skeptic's questions. Even if we are satisfied that the finding is legitimate -- that is, the brand of toothpaste did make a difference in the experiment or study -- parents could still wonder whether similar results will be forthcoming if their children use the recommended brand of toothpaste. The point is that valid findings in particular settings involving certain groups of people at a particular point in time are not automatically and completely applicable to what might be expected to occur in other settings with different groups of people at some other time. So another crucial questions in interpreting evaluation findings pertains to the degree to which the findings can be generalized. To be specific, the appropriate question is: To what groups, settings, situations, or types of measures do the results apply?

I hope this example has helped to clarify and pinpoint the dimensions of interpretation of evaluating findings that I wish to discuss. Instead of evaluating or testing the results of using certain brands of toothpaste, we are concerned with the results or outcomes of vocational education and manpower training programs. Instead of evaluating findings like "our group had 20 per cent fewer cavities," we appraise the degree to which we can trust and apply findings such as "retraining programs do improve the employment experience of unemployed workers."

In both cases we ask the same type of questions. First, we want to get some idea as to the extent the results observed can actually be attributed to the vocational education or manpower program under scrutiny. If our curiosity is satisfied on that score, the second category of suspicions probes the question of the extent to which the findings can be generalized to other groups, settings, situations, and times. Note also that in both cases we are concerned with outcomes -- the number of cavities in the example -- and measures which describe the characteristics, the change in behavior, the ability to perform, or the performance of persons who complete or leave vocational education and manpower programs.

It is evident that this workshop is concerned with output evaluation. By now I am sure you are aware that the output approach to evaluation must begin with a precise definition of objectives specifying the outcomes sought which, in turn, become the evaluative criteria used in determining the effectiveness of the educational program. I assume, also, that the workshop discussions and presentations have stressed the relationship between evaluation and program planning. Evaluative studies are an important input to the decision-making process when questions and policy about program development and revision are discussed.

To What Extent Are the Findings Valid?

Some Preliminary Considerations

Description, Correlation, and Cause-Effect. In interpreting evaluations of educational programs, we need to pay close attention to the intent or purpose of the evaluation. Most evaluative studies can be placed in one of three categories which are descriptive of the basic purpose or intent of the evaluation undertaken.

First there are studies designed primarily to describe the characteristics, competencies, or performance of persons who have completed a vocational education or manpower program. A second category includes studies designed to investigate the relationships between outcomes (e.g. competencies possessed or level of performance) and characteristics of students or trainees (e.g. age, ability, socioeconomic status) or relationships between outcomes and some dimensions of the educational program such as number of hours of supervised occupational experience, the number of hours of classroom instruction attended, and the like. The third category includes those studies which have as an obvious or stated purpose the determination if a certain program produces some hypothesized results. Before elaborating briefly on each of these categories of purposes or intents of evaluation, perhaps my comments will be easier to follow

if we name the categories as follows: the first category we will label descriptive studies; the second category will be referred to as correlational studies; and the third category pertains to studies which claim to establish, or at least investigate, cause-effect relationships.

Another way of looking at this concern in interpreting evaluation findings is to consider the categories as labels for claims being made by the evaluator. In descriptive studies the evaluator's primary claim (or intent) is to describe, in a complete and accurate manner hopefully, the characteristics, kind and level of competence possessed, or level of performance of persons who have been exposed to a particular series of educational experiences. If the evaluator's intent is solely description, then it must be made clear that claims cannot be made that the program (series of educational experiences) necessarily produced or caused the outcomes described. Unfortunately, the evaluator who sets out to describe outcomes, the consumer of the findings, or both frequently imply or clamm a more direct relationship between program and outcomes than the design of the study allows or warrants. Examples of descriptive evaluation studies include many follow-up studies of graduates which yield information like whether employed or unemployed, number of weeks or months from completion of the training program to first job, hourly wage, and related information.

In correlational studies, the evaluator not only is interested in describing outcomes but wishes to add another dimension by investigating relationships between outcomes and characteristics of students, the nature of students' educational experiences, or the nature of the environment or setting in which the educational program is conducted.

An example illustrates this type of evaluative study well. Williams and Hull (1968) sought to explain why vocational teachers who had participated in a workshop on cooperative education were not equally successful in establishing cooperative work-experience arrangements for vocational students with local businesses. An assumption was that teachers would be able to implement cooperative education programs after successfully completing the workshop. Their descriptive evaluation revealed, however, that teachers who had completed the workshop varied considerably in the degree to which they had established cooperative education programs. So they sought to investigate the relationships between the degree to which teachers were establishing cooperative education programs--the outcome expected from the workshop--and certain community and school characteristics which they hypothesized might be related to the degree workshop participants were successful or not successful in establishing cooperative education programs. Some of the variables they investigated were the school administrator's attitude toward cooperative education, the number of training stations in the community, and the number of vocational teachers in the school. In addition to describing outcomes of an educational program, they also attempted to describe some community and school characteristics which were related to teachers' degree of success in implementing cooperative education programs. Please note, however, that evaluative studies which are intended to investigate relationships (correlational studies) between outcomes and program inputs do not necessarily result in conclusions denoting cause-effect relationships.

If the evaluator wishes to determine the effects of a particular educational program on the performance of persons completing the program, we move to the third category of intents or claims of evaluative studies. Again an illustration will be used. The study reported by Brazziel (1966) was designed to ascertain the effects of general education in a manpower program. Specifically, the investigator sought answers to two questions: What are the effects of general education in a training program designed to equip unskilled persons with saleable skills? How will the final products (performance of graduates) differ from products of programs which did not offer basic education? So the investigator's intent is to identify the extent to which general education experiences produce or affect the post-training performance of graduates of manpower programs. I hope it is clear that in this case the evaluator is not satisfied with description of outcomes accompany certain programor environment variables. What he is interested in is the effect on post-training performance caused by general education in a manpower program. If the evaluator is successful in establishing this cause-effect relationship, he will also have described outcomes as well as established the degree and significance of the relationship between outcome and type of program offered. I hope you begin to see that evaluative studies which claim to establish cause-effect relationships offer many challenges and problems, but at the same time yield more valid answers, than do studies that are designed primarily to describe or investigate relationships.

Comparison Groups. This brings us to another important but related factor which cannot be ignored in interpreting the findings of evaluative studies. This factor is illustrated by one of the questions raised in our appraisal the claim that the use of a particular toothpaste resulted in fewer cavities: With what group or groups was "our group" compared? Let's take a look at several possibilities.

In too many instances evaluative studies of vocational education programs do not involve comparisons of program outcomes with the outcomes of alternative programs; or to state it another way, evaluative studies frequently do not compare the performance or capabilities of persons who complete a vocational program with the capabilities or performance of persons who complete an alternative program or, for that matter, with persons who complete no vocational education program. Notice that in the study of the effectiveness of a workshop on cooperative education mentioned earlier (Williams and Hull, 1968) the performance of the teachers completed the workshop was not compared with any other group or groups of teachers. The only comparison implied is a comparison of the actual performance of teachers who completed the workshop with what the investigators thought the teachers' performance should be. In cases of this nature we compare what are construed to be outcomes of the program with what we think the outcomes should be. Actually, this type of evaluative study is a case study that has as its primary intent the description of characteristics, capabilities, or performance of persons who have been exposed to the program. I hope it becomes evident form the comments which follow that the evaluator who makes claims other than description for evaluation studies of this nature is walking on extremely thin ice.

A somewhat better alternative to comparing what we think may be program outcomes with what we desire the outcomes to be is to compare participants' characteristics, capabilities, or level of performance after completing an educational program with corresponding measures of participants before they enrolled in the program. This is the familiar before-after study which means we compare participants after completing a vocational education or manpower program with themselves before or at the time of enrollment. An example of this type of comparison is a New York study to evaluate secondary school programs to prepare students for wage earning occupations in home economics (Nelson and Jacoby, 1967). The evaluation involved assessing students participating in the programs both before and after the program on the following factors: attitudes toward work, attitudes toward women working during various stages of the family life cycle, and knowledge and comprehension of concepts of food service and the working world. I ask you to be alert to factors that will be mentioned shortly which qualify, if not threaten, interpretations that can be placed on the findings of before-after studies.

I suspect it is evident by now that the major concerns in interpreting evaluation findings include whether or not a comparison group is used as well as the nature and characteristics of the group or groups with whom the outcomes of vocational education and manpower programs are compared. If we are to move beyond description with any degree of assurance that evaluation findings (outcomes) can be attributed to the vocational education or manpower program in which persons participate, some provision must be made for the use of comparison groups.

A few examples illustrate how comparison groups have been used in evaluative studies of vocational education and manpower programs. In a study already mentioned, Brazziel (1966) compared the post-training performance of a group of men who had completed a manpower program including general education and technical training with a group of men who had completed a technical training program only. Kaufman's (1968) frequently quoted study of the costs and benefits of vocational education compared the labor market performance and earnings of high school graduates of the vocational curriculum with the performance of noncollege-attending graduates of the academic curriculum. An assessment of the effects of retraining programs on the labor market experience of unemployed persons in depressed rural areas involved four comparison groups: completes, persons who completed the 16-week training program; non-completes, persons who were accepted for the training program but failed to attend or dropped out before completing the program; rejects, persons who applied for but were rejected from training; and non-applicants, unemployed persons who did not apply for admission to the training program (Solie, 1968). In studying the costs and returns for investments in technical schooling in North Carolina, Carroll and Ihnen (1967) matched each graduate of a two-year post-secondary technical school with a high school classmate of comparable ability who had not received any formal post-secondary education.

The crucial need for a comparison group, or control group if you prefer the parlance of experimentation, should not be overlooked in interpreting evaluation findings. (For further comments, see Sharp and Krasnegor, 1966; Sharp, 1968; and Somers, n.d.)

Recapitulation. Let's review briefly. Remember our main concern at this stage of the game is to determine whether or to what extent we can believe the evaluating findings. In other words, we must make some judgment about the extent to which the program outcomes we observe can be attributed to the educational program experienced by vocational education students or manpower trainees. More specifically, we want to answer this question: Did the vocational education or manpower program really make a difference in the capabilities and/or the level of performance of those who completed or left the program? To this point we have discussed two major considerations which qualify or enhance the interpretation that can be put on evaluation findings. First was the intent or claim made for the evaluative study at the outset. Was the study designed to describe only, was it designed to study relationships between outcomes and inputs, or was it designed to ascertain cause-effect relationships. Second was the use or lack of use of comparison groups.

Alternative Explanations of Findings

As we evaluate vocational education and manpower programs, our main concern is to determine what outcomes accompany or are produced by the programs. If my comments so far have not at least hinted that such a goal is difficult to accomplish, I have missed the target. The problem we must now face is to identify some factors which have the potential for affecting or influencing program outcomes that, in turn, might be mistakenly interpreted as outcomes or results produced by the vocational education or manpower program. Our concern now is with factors which threaten the truthfulness (validity) of evaluation findings. These possible threats offer plausible alternative explanations to the hoped-for conclusion that the vocational education or manpower program produced (caused) the outcomes observed or measured. These threats are frequently labeled extraneous or intervening variables (Moss, 1968).

How Students Are Selected. When outcomes of vocational education or manpower programs are compared with outcomes of alternative programs, care must be taken to avoid attributing differences in program outcomes to differences in programs when, in fact, differences in outcomes may be influenced more by differing characteristics of students or trainees enrolled than by differences in the nature, type, or duration of the educational program.

We know that there are characteristics of people which are positively related to performance, particularly performance in the labor market, regardless of whether an individual receives specific preparation or not. Some of these characteristics include general level of ability, aptitude for certain areas of endeavor, interest, socio-economic status, prior experience, and the like. So if students electing vocational education courses differ on some or all or these characteristics from students not electing vocational courses or from students electing alternative avenues to occupational preparation, evaluative studies comparing the capabilities or performance of persons completing vocational programs with persons completing other programs are misinterpreted when differences or lack of differences in outcomes are attributed solely to the nature of the

to the nature of the educational program. In these cases, the fact that students completing the programs have different characteristics offers a real and direct threat to the interpretation that can be placed on the evaluation findings. Differences or lack of differences in program outcomes could be influenced, or perhaps accounted for by differences between the groups of students on characteristics which are positively related to occupational performance.

Generally, vocational education stands to gain more than it loses when this threat to the validity of findings is controlled or accounted for in evaluative studies. When compared to students in the academic curriculum, for example, vocational students usually rank lower on several of the characteristics (e.g. general ability, certain aptitudes, socioeconomic status) which are related positively to occupational success are removed or accounted for in the case of students completing the academic or a nonvocational curriculum, logic supports the argument that the benefits from vocational education may be greater than some evaluative studies have indicated.

My point is this. Evaluative studies comparing the outcomes of vocational education and manpower programs with alternative programs that ignore or overlook the fact that enrollees in the various programs may also differ have high potential for yielding findings which may not be valid.

Well designed evaluative studies handle this threat to valid interpretation by describing the relevant characteristics of enrollees in the various groups and by investigating the relationships of these characteristics to outcomes. This feat is most frequently handled through the statistical technique of regression analysis. A few examples will indicate the types of socioeconomic and demographic variables investigators have found to influence occupational performance independently of vocational education and manpower programs. Kaufman, et. al. (1968) studied the influence of these characteristics on occupational performance: age, sex, race, marital status, intelligence quotient, and father's occupation as a measure of socioeconomic status and background. Investigators studying the benefits and costs of manpower retraining have used these variables to ascertain the impact of trainees' socioeconomic and demographic characteristics on employment performance: age, sex, race, level of education, marital status, labor force experience prior to retraining, labor market area, regular occupation, previous training, and mobility of trainee (Somers and Stromsdorfer, 1964). The study of technical school graduates in North Carolina mentioned earlier included an estimation, through regression analysis, of the relationship between the following factors, in addition to technical schooling, and monthly income: high school grade average, prior work experience, mother's schooling, residence during high school (rural or urban), military service, migration from home community, and size of high school graduating class (Carroll and Ihnen, 1967).

Differing characteristics of enrollees in educational programs being compared are a real threat to the valid interpretation of evaluation findings, since the evaluator rarely has any control over which students elect what program. Enrollees "self-select" themselves into vocational education or some other program. The same attributes, interests, and aspirations which lead students to

select or not select a particular curriculum may also be the characteristics which enhance or impede occupational success independently--or in spite of--the curriculum in which they enroll. The "true experimenter" takes care of this problem through random assignment of students to educational programs which, within known statistical limits, achieves equality of groups prior to enrollment. Evaluators of vocational education and manpower programs rarely have this option.

Contemporary History. Another possible alternative explanation of the findings of evaluative studies has to do with happenings in the students' or trainees' environment, other than the educational program being evaluated, which might contribute to favorable ratings on the criteria used to assess program effectiveness. Again there is the risk that findings of the evaluation will be attributed to the educational program when, in fact, other happenings, events, or experiences of students while enrolled in the program may have directly influenced the outcome measures and observations. We label this possible threat to valid or truthful findings as contemporary history, that is, events, other than the educational program, occurring from the beginning of the educational program to the time outcome measures or observations are made which may influence the outcome criteria independently of the educational program.

An example will help clarify. Take the case where the occupational performance of students completing a nonvocational high school curriculum is being compared with the occupational performance of high school students completing a vocational curriculum. Suppose a sizeable proportion of the nonvocational students had part-time jobs during the time they were enrolled in high school. That work experience would surely influence their occupational performance after graduating from high school. So that bit of contemporary history is a threat--an alternative explanation-- to a finding indicating significant differences or lack of significant differences between the two groups in occupational performance.

General social and economic conditions influencing employment are an important part of contemporary history when vocational education and manpower programs are evaluated in terms of enrollees' labor market performance. The point is made clear by this comment of a labor economist: "It is sufficient to note that the growth of manpower programs in the 1960's coincided with a constantly increasing level of national employment and that, therefore, the poor, the unskilled and the unemployed could be expected to improve their economic status--as indeed most of them did--whether they were enrolled in a manpower program or not." (Somers, n.d.)

This threat to a valid interpretation of evaluation findings is particularly applicable to data from follow-up studies, especially when the follow-up data are collected several years after students complete the educational program. Statements attributing occupation success solely to a vocational education program completed some three to five years earlier are, without doubt, generally invalid. Some investigators rightfully maintain that the effectiveness of an educational program is most clearly seen in the first job held after graduation, for in subsequent jobs it is difficult to differentiate the relative influence of the educational program from the influence of employment experience and

other events occurring since the completion of the educational program (Kaufman, Schaefer, et. al., 1967). The threat of contemporary history is real to a valid interpretation of findings yielded by evaluative studies which do not involve a comparison group.

Disregarding Persons Who Do Not Complete the Program. Frequently, evaluative studies of vocational education and manpower programs only involve persons who have successfully completed the educational program being evaluated. If a considerable number of persons entering the program leave or drop out during the duration of the program, then it is obvious that an evaluation which involves only those who successfully complete the program may give a less than accurate (valid) picture of the outcomes of the program.

With few exceptions, it can be assumed that persons who fail to complete the program successfully are also very likely to be persons who would be least successful in occupational performance. The point is that evaluative studies which only involve students who complete a program run the risk of misinterpretation if there has been considerable mortality of enrollees during the conduct of the program. So outcomes attributed to the program may, in effect, be due in large part to the fact that measures are only made on persons who are most capable as demonstrated by the fact that they completed the program. The evaluator has a responsibility to supply data concerning the number and characteristics of enrollees who fail to complete the educational program successfully.

Normal Growth and Development. I propose that any type of program designed to teach children ten to eighteen months of age to walk will be highly successful. This illustrates another possible threat to a valid interpretation of evaluation findings. It is obvious that most children between ten and eighteen months of age are going to learn to walk whether they participate in a formal training program or not. To be specific, we must be alert to those situations where outcomes which we would like to attribute to an effective educational program are not simply the result of normal maturation of students, whether physical, psychological, or emotional.

Normal growth and development poses a threat that cannot be overlooked in long-term educational programs. Over a period of two or four years students are going to change considerably in physical, psychological, and emotional attributes which contribute to occupational success whether they are enrolled in an occupational education program or not. We must be on guard not to attribute these normally occurring changes to outcomes produced by an educational program. For example, an evaluative study attributing eighteen to twenty-year-old students' favorable attitudes toward work to an educational program could be questioned since it is about that age when many persons begin to work to buy a car, support a wife and child, and establish a home. I suspect that natural growth and development is a more serious threat to valid evaluation findings in vocational education than many of us realize.

Measurement and Observation. We know that the results of evaluative studies can be influenced by the type of measurements and observations used as well as by

the persons who make the measurements and observations. In many respects it is difficult, if not virtually impossible, for persons responsible for the conduct of a program to evaluate the program objectively. There is always the temptation to use outcome measures which we think will indicate success; there is always the temptation, when ratings involve a great deal of judgment, to error in the direction that is favorable to the program. Generally, former enrollees have a tendency to respond on questionnaires or during interviews in a manner which they perceive we want them to respond, which usually is favorable to the program.

You and I would p obably be somewhat suspicious of the finding about the effectiveness of that brand of toothpaste if we knew the finding was the result of the manufacturer's research. We would be more likely to believe the finding if we knew that test was made by an independent testing agency. So it is with evaluation in vocational education. Let's be careful to design evaluative studies so that the outcomes we claim to result from vocational education and manpower programs are not the result of biased and incomplete measurement and observation.

Test-wiseness. By taking tests we learn how to achieve higher scores on subsequent tests. When evaluative studies involve testing of students before and during the educational program, students may be learning how to achieve higher scores on tests at the end of the program because they become more testwise. This tends to happen with attitude tests particularly and with achievement and performance tests when enrollees are not in an environment where testing is a common occurrence. Evaluative studies involving only one group of students or trainees where the same or similar tests are given before and after the educational program are particularly vulnerable to this threat of possible alternative explanations for a finding that the program produced the outcomes described.

Extreme Cases. As a general rule, the more extreme we are on one measure today, the less extreme we will be tomorrow or sometime in the future on the same or a related measure. For example, students who score extremely high or extremely low on a test one day will tend to regress downward or upward on another test another day. One factor operating to produce that result is what the statisticians call statistical regression. I do not intend to attempt an explanation of this possible threat here, other than to mention two situations where evaluators should be very sensitive to statistical regression as a possible alternative explanation of evaluation findings.

One is a situation where educational programs are provided students who score at the low end on criteria used in selecting participants. In effect, these students have no way to go but up. Evaluators must be careful not to credit this improvement in performance or achievement solely to the effectiveness of the program for it is likely that statistical regression has been a factor also. Evaluative studies of vocational programs for the disadvantaged should be given close scrutiny in this regard.

The other type of situation where evaluators must be on guard is when evaluative studies involve the matching of vocational education students on some variable such as I. Q. with college preparatory students. Statistical regression works in a very subtle fashion in studies of this nature. If you are planning a study or are appraising evaluative studies which involve matching of students, please consult someone who knows something about statistical regression if you are not on speaking terms with the phenomenon.

Recapitulation. I have discussed seven possible alternative explanations to evaluation findings which state or imply that the outcomes observed do, in fact, result from the vocational education or manpower program being assessed. Please do not misconstrue my statements or intentions to mean that all or most evaluation findings cannot be trusted, that is, they are not true (invalid). What I am saying is that we cannot accept in an unquestioning manner all claims of evaluative studies which label vocational education and manpower programs either effective or ineffective.

A good example of what I mean is the group of studies assessing the effectiveness of vocational and technical education through cost-benefit and cost-effectiveness models. One group of studies led to this conclusion: "Greater educational benefits in monetary terms could be gained by shifting resources away from vocational education in high schools to other types of education." Other studies have led to this conclusion: "Additional public funds should be spent on the vocational-technical curricula rather than on the nonvocational-technical senior high school curricula." Which finding do you trust? Which finding is more valid? (Warmbrod, 1968; 1969)

The point I wish to emphasize is that the seven factors I have mentioned can produce results (outcomes) which can be mistaken for results (outcomes) produced by the educational program being evaluated. It behooves the evaluator as well as the user of evaluation findings to be aware of these possible threats to valid findings. Evaluative studies which do not involve comparison groups are particularly vulnerable. When comparison groups are used, care must be taken to assess whether the seven factors operate differentially in the various groups. For a more detailed discussion of internal validity, see Campbell and Stanley (1966).

To What Extent Can the Findings Be Generalized?

Once the interpreter's curiosity has been satisfied about the validity of evaluation findings, the next concern had to do with the extent to which the findings can be applied (generalized) to other groups, situations, measures of outcomes, and times. The asuumption here, of course, is that the findings are valid, that is, the findings describe outcomes which we are reasonably sure resulted at least in part from the vocational education or manpower program being assessed.

To What Groups (Populations) Do the Findings Apply?

Characteristics of Students or Trainees. In generalizing findings about the relative effectiveness or ineffectiveness of vocational education and manpower programs, care must be taken not to assume that results produced when students with a particular set of characteristics are enrolled will apply to another set of students with different characteristics. For example, it can be questioned whether evaluation findings resulting from programs enrolling predominantly rural students can be generalized to urban students. The results of evaluative studies of manpower programs for unemployed adults probably are not applicable to employed adults enrolled in other types of occupational education. Evaluation findings resulting from assessments of so-called regular vocational education programs should be questioned if attempts are made to apply the findings to students enrolled in special programs for the disadvantaged.

I am not saying that evaluation findings must apply only to the individuals involved in the programs evaluated. I am saying that findings resulting from studies of persons with particular characteristics can be generalized only to populations of persons of which the persons studied are representative samples.

Nonresponse. A severe limitation to the generalizability of evaluation findings resulting from follow-up studies is nonresponse. This is particularly true when data are collected through mail questionnaires. In many cases, a sizeable number of persons fail to respond. Unless there is evidence to the contrary, it can be assumed that respondents differ substantially from those who did not respond especially on some variables which are crucial to the outcomes measured. The result is that the findings cannot even be generalized with any degree of confidence to all persons enrolling in or completing the educational program. In studies where nonresponse is a factor, the interpreter of evaluation findings is taking a risk if findings are generalized widely.

I am sure that Mr. Eninger covered this topic in his presentations yesterday. His nationwide follow-up study (Eninger, 1965) of graduates of high school trade and industrial vocational programs is one of the best designed and most thoroughly conducted follow-up studies we have. Yet problems of nonresponse are of some consequence in generalizing the findings of that study. For additional comments on techniques and procedures in using follow-up studies, see the following: Somers (1968); Little (1970); Pucel, et. al. (1966); Eckland (1968); Sharp and Krasnegor (1966); Sharp (1968).

To What Settings, Situations, and Measures Do the Findings Apply?

Frequently, well designed evaluative studies are conducted almost as case studies in a particular school system or as case studies of a particular Manpower Development and Training Act Program. This is generally true of the cost-benefit and cost-effectiveness studies of vocational education and manpower pro-

grams that have been conducted during the past five years or so. So the user of evaluation findings must be alert to the temptation to assume that a succesful program in one situation will be similarly successful in a completely different situation or setting.

Description of Program. The user or interpreter of evaluation findings is helped a great deal in applying results of evaluative studies if the evaluator has described in a thorough manner the nature of the program offered. This enables the user of the findings to make some rather clearcut decisions as to what other types of vocational education and manpower programs the results might apply.

I can illustrate the point with an example. Assume that we have a valid study indicating that graduates of a high school vocational program are very successful in obtaining well paying jobs for which they were prepared. To what extent would you apply that finding if you knew that a part of the program was an aggressive placement service cooperatively sponsored and operated by the school and the state employment service? That particular aspect of the program--a placement service-- could very well be a main factor contributing to the high placement rate of graduates. Knowledge of this sort about the nature of programs evaluated is extremely helpful, if not essential, for making decisions about the extent to which evaluation findings can be generalized.

Hawthorne Effect. We know that people react differently when they are aware that they are participating in a special program or that their actions and activities are being monitored. It is not uncommon for better designed evaluative studies to accompany new programs and pilot programs. In these cases, it is very likely that those participating in the program, teachers as well as students, are aware that they are being evaluated. Evaluative results produced in these situations and settings may not be representative of what could be expected in similar settings with similar students and teachers who were not being monitored or were not aware that they were participating in a special evaluative effort.

Test Sensitization. Results yielded by evaluative studies involving many tests before and during the educational program may not be applicable to situations where a massive testing program is not used. Tests prior to and during an educational program sensitize students to the content of the educational program. Similar results might not be forthcoming in situations where students had not received a degree of sensitization of what is to come.

Outcome Measures. Care must be taken not to assume that valid findings pertaining to one group of outcome measures will also hold true for another group of outcome measures. For example, findings regarding the economic benefits of vocational education and manpower programs cannot necessarily be generalized to findings that would result if noneconomic outcome measures were used as evaluative criteria. Of course, the reverse is true also. My contention is that evaluators of vocational education and manpower programs should design

studies which include measures pertaining to all appropriate objectives the educational program is supposed to attain.

Recapitulation. In addition to making decisions about the validity of evaluation findings, the interpreter must also make some decisions about the extent to which the findings can be applied to other groups, situations, measures, and times. The factors I have discussed should be considered in making decisions about the generalizability of evaluation findings. Researchers label the questions about generalizability as threats to external validity (Bracht and Glass, 1968).

Some Implications

What does all this mean for evaluation of vocational education and manpower programs? I do not want you to interpret my comments as implying that valid evaluation is an unattainable goal. We can design and conduct evaluative studies that provide meaningful and valid inputs to the decision-making process. My plea is that we get on with the task.

First we must enhance our competence to design and conduct evaluative studies. We will need more evaluation specialists that we now have. But just as important, we must realize that there are other persons who can make significant contributions to the evaluation of vocational education and manpower programs. We must not be reluctant to seek help of specialists in educational evaluation in other areas, economists, sociologists, and others with appropriate expertise. These is no reason, however, why those interested in and responsible for vocational education and manpower programs cannot become more expert in evaluation. Perhaps one of the greatest needs is for personnel who can advise those in decision-making potitions about the degree of confidence that can be placed in the findings of evaluative studies.

But equally important, we must not be so naive to accept without question the findings of evaluative studies. We must not assume that just because we observe or measure outcomes accompanying vocational education and manpower programs that the outcomes always and completely result from--or are caused by--the programs. Let's recognize the threats to valid interpretation and generalization of evaluation findings. If all we can do is describe the competence and performance of persons who have completed or left programs, let's admit it and make no further claims. If we can show a high degree of relationship between outcomes and characteristics of students, the program and the environment in which the program is conducted, let's try harder to see if there really are functional relationships. If we claim that a particular program produces certain outcomes, let's demonstrate that we are aware of and have attempted to account for other factors that could produce or qualify the claims we make.

The next time you read a report of the findings of an evaluative study of a vocational education or manpower program, ask these questions. To what extent

did participation in the program produce the results observed? If you are satisfied on that score, then ask: To what populations, situations, measures, and periods of time can the findings be applied?

References

Bracht, Glenn H. and Glass, Gene V. "The External Validity of Experiments." American Educational Research Journal 5:437-474; November 1968.

Brazziel, William F. "Effects of General Education in Manpower Programs." Journal of Human Resources 1:39-44; Sumner 1966.

Campbell, Donald T. and Julian C. Stanley. Experimental and Quasi-Experimental Designs for Research. Chicago: RAnd McNally and Company, 1966.

Carroll, Adger B. and Ihnen,,Loren A. Costs and Returns for Investments in Technical Schooling by a Group of North Carolina High School Graduates. Raleigh, N. C.: Department of Economics, North Carolina State University, 1967.

Eckland, Bruce. "Retrieving Mobile Cases in Longitudinal Surveys." Public Opinion Quarterly 32:51-64; 1968.

Eninger, Max V. The Process and Product of T. & I. High School Level Vocational Education in the United States: The Product. Pittsburg, Pa: American Institutes for Research, September 1965.

Kaufman, Jacob J., Hu, Teh-wei, Lee, Maw Lin, and Stromsdorfer, Ernst W. A Cost-Effectiveness Study of Vocational Education: A Comparison of Vocational and Nonvocational Education in Secondary Schools. University Park, Pa.: Institute for Research on Human Resources, The Pennsylvania State University, October 1968.

Kaufman, Jacob J., Schaefer, Carl J., et. al. The Role of the Secondary Schools in the Preparation of Youth for Employment. University Park, Pa.: Institute for Research on Human Resources, Pennsylvania State University, February 1967.

Little, J. Kenneth. Review and Synthesis of Research on the Placement and Follow-up of Vocational Education Students. Columbus: Center for Vocational and Technical Education, The Ohio State University, 1970.

Moss, Jerome, Jr. The Evaluation of Occupational Education Programs. Minneapolis: Research Coordinating Unit in Occupational Education, University of Minnesota, September 1968.

Nelson, Helen Y. and Jacoby, Gertrude P. Evaluation of Secondary School Programs to Prepare Students for Wage Earning in Occupations Related to Home Economics. Ithaca, N. Y.: New York State College of Home Economics, Cornell University, October 1967.

Pucel, David J., Nelson, Howard F., and Wheeler, David N. Questionnaire Follow-up Returns as a Function of Incentives and Responder Characteristics. Minneapolis: Department of Industrial Education, University of Minnesota, 1969.

Sharp, Laure M. "Student Follow-up Study Procedures as a Technique for Evaluating Vocational and Technical Education Programs." Paper presented at the National Conference on Evaluating Vocational and Technical Education Programs, Atlantic City, New Jersey, October 1968.

Sharp, Laure M. and Krasnegor, Rebecca. The Use of Follow-up Studies in the Evaluation of Vocational Education. Washington, D.C.: Bureau of Social Research, Inc., May 1966.

Solie, Richard J. "Employment Effects of Retraining the Unemployed." Individual and Labor Relations Review 21:210-225; January 1968.

Somers, Gerald G. "The Response of Vocational Education to Labor Market Changes." Vocational Education. Supplement to The Journal of Human Resources, Vol. 3, 1968. pp32-58.

Somers, Gerald S. "Data Needs for Monitoring and Evaluating Manpower Programs." Reprint No. 115, Industrial Relations Research Institute, University of Wisconsin (n.d.).

Somers, Gerald G. and Stromsdorfer, Ernst W. A Benefit-Cost Analysis of Manpower Retraining. Reprinted from the Proceedings of the Seventeenth Annual Meeting, Industrial Relations Research Association, 1964.

Warmbrod, J. Robert. Review and Synthesis of Research on the Economics of Vocational-Technical Education. Columbus: Center for Vocational and Technical Education, the Ohio State University, 1968.

Warmbrod, J. Robert. "Summary of Research on the Economics of Vocational-Technical Education." Paper presented to Research and Evaluation Department, American Vocational Association, December 1969.

Williams, David L. and Hull, William L. Personal and Situational Variables Which Inhibit or Stimulate the Adoption of Agricultural Occupations Curricula as an Innovation in Vocational Agriculture by Institute Participants. Stillwater, Okla.: Research Foundation, Oklahoma State University, September, 1968.

IMPLEMENTATION OF FINDINGS

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Paper presented at the
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for Evaluating Manpower Development and
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IMPLEMENTATION OF FINDINGS

I want to thank Drs. McKinney and Mannebach for inviting me to be with you at this workshop. It is a new experience for me to be talking to people in vocational education. However, as an anthropologist, my interest is in development and developmental change and by this I mean change of all varieties - economic, educational, social and psychological. I have a very strong interest in vocational education, particularly as it is being employed as a strategy in developing so called underdeveloped areas. I was very much concerned, for example, in Western Ireland with the introduction of vocational education into that area as a strategy for modernizing the peasant population on Western Ireland and I will try to draw some examples from that particular experience as I have not had a requisite kind of experience with vocational education in this country.

The theme of this workshop is evaluation, an activity which all of us are coming to view as important and critical to our planning efforts no matter what our planning efforts might be. Evaluation is something that is very difficult to get away from these days. It's uncomfortable psychologically, but I think evaluation is a permanent fixture from here on out. And the tighter the dollar gets in these programs, the more concern there will be for evaluation.

There are a number of ways of viewing evaluation. You've been discussing these, I presume, over the last few days. As an anthropologist, let me indicate how I view evaluation because it will give you some basis on which to make judgments about the kind of comments that I'll be making. In anthropology and other social sciences we view evaluation in a number of ways, but two of these are particularly significant. Evaluation can be viewed by us as periodic stock-taking or it can be viewed as continuous activity; something which is going on all the time. If we perceive evaluation as periodic stock-taking, then our concern is for featuring some kind of reading which provides us information about our success in achieving predetermined goals. Periodic stock-taking is concerned with understanding ground that has already been covered.

If we perceive evaluation as a continuous activity, and for an anthropologist this makes a lot more sense, then evaluation is something that is going on all the time. If our concern is with continuous activity, then we are looking for readings which provide us information about process, how things are happening; not whether the result is achieved, but what is the process whereby we are achieving. The assumption is that if the process is going right then you don't have to be concerned with periodic stock-taking. Concern with continuous evaluation permits continuous feedback into the system and corrections are being made continuously. The concern is with ground that is being covered currently rather than where we have been. No matter which of these models that we draw upon, in the end, evaluation performs the same functions for us. Evaluation enables us to take readings, which in turn provide the information necessary to make corrections as these are needed in our programs.

When we're talking about making corrections, we're talking about the implementation of findings. That is to say, evaluation produces the result which indicates the need for some modification in direction. Once there is an attempt to modify direction we're dealing with the kind of situation that the anthropologist refers to as the innovative situation. My remarks to you on the implementation of findings are derived from the anthropological insight into the innovative situation.

Before getting into our major concern, the implementation of findings, there are two or three very basic, elementary definitions that I'd like to lay out so that you can keep these in mind while I'm speaking. The first of these is innovation. I view innovation, and others in my field view it, very simply. It's a psychological process which leads to change in behavior. Any change in behavior that is shared by two or more people is the kind of behavior that we're talking about. Any time you modify patterns for behavior, whatever they might be, we have in fact an innovation. Innovations can appear very naturally and they can appear on their own accord. We are, all of us, potential innovators in our own individual habitat. Innovations can also be guided and planned. When ever we're doing the latter, we usually have an identifiable advocate, someone or some agency that is advocating the change or innovation. The advocate is one who proposes an innovation for purposes of gaining its acceptance. In guided change there is always someone or some group that is supposed to change. I will refer to that particular group as the target. The target, then, is the proposed recipient of the innovation.

Changes can be of two kinds. There are those which we refer to on the one hand as genuine changes. These are changes that are valued by the target. The target modifies his behavior and attaches a value to it. This is opposed to the second kind of change which I would identify as spurious change. In both of these cases, the changes made are effective; but on the one hand, the target values the change. This is the case of the genuine change. In the spurious situation, the innovation does not carry value for the target or the recipient but here his acceptance is conditioned on something else. For example, it may be fear, the threat of being fired, or the threat of being criticized by one's fellow workers in industry or in the school system. This kind of acceptance is imitated, innovated or it is accomodated. If the desire is to please, we normally think of it as imitating. One will imitate the innovation in order to please the foreman, in order to please the teacher, in order to please the superintendent, in order to please the governor, or somebody else, whatever level of abstraction it is that we're talking about.

If the desire is to avoid threat, if there's the element of coercion involved, we normally speak of this kind of behavior as accommodating. The individual is accommodating to a particular situation. He doesn't value that change at all. He's afraid if he doesn't accept it.

The problem with spurious change is that once that stimulus relaxes or lets off, then the target is very apt to revert to a prior condition. This is

one of the big problems we have in government programming in this society. So much of the change that is effective is spurious. It is imitative because a carrot is held out, there is an economic reward for compliance. The assumption of innovative agencies, government particularly, is that if you hold out the carrot long enough, people come to think that this is the way the world really is and pretty soon you can take the carrot away and because the behavior is conditioned people will continue with the innovated modifications of behavior. We now have about four generations of very intensive social planning that indicate that this is not, in fact, the way it happens. Once the stimulus is removed, people are very apt to revert back to the prior condition.

Our concern this afternoon is how to implement findings in ways so that genuine change is affected. I propose that we examine the implementation of findings by looking at one of those variables which bear on the effective communication of findings to a target. Our first concern will be with communication. Secondly, that we concern ourselves with those variables associated with a target which predisposed him to accept or reject an innovation. Then I will follow those two concerns with a short discussion of the processes for implementing innovations. At this point, I want to introduce a disclaimer and that is that I have any sure fire formula to propose to you that will ensure success, that there is some formula that exists in the behaviorial sciences that will ensure success in getting a target population to accept an innovation. There is no sure fire formula. What I propose to do is to present to you a straightforward, no nonsense discussion of some of the things that we have learned in anthropology about effecting change. I feel compelled to introduce this disclaimer because some of my over zealous colleagues in the social and behavioral sciences are trying to convince the world that we really have a lot of answers. I happen to be one who feels we don't have a lot of answers and we certainly don't have a formula to ensure success despite what some of my learned colleagues in psychology might think. As I say, I propose to give you a fairly straightforward, no nonsense, in the sense of social science gobbledy-goop, discussion of some of the things we've learned about effecting change. The generalizations that I will make about change will apply to effecting change in an organization such as the school, government bureaucracy, industry, or to individual behavior as well.

Let's look first, then, at communications. Communications is the big thing now. There's a lot being made of communications, the need for good communications. Marshall McLuhan is putting out very expensive letters every month to assist people in understandnng all the problems of communication. My approach to communications and my discipline's approach to communication is very simple, so I'd like to emphasize only a very small number of points. Never be deluded that formal channels are the only or even the best routes for communicating messages about change. Never be deluded in thinking that formal channels get the job done. There's an obvious advantage to formal channels, communication, directives, memorandum, working through the formal heirarachy, utilization of massed media, all of this. The obvious advantage of formal communication channels is that they permit contact with a very large target population and

they permit it very quickly. The obvious disadvantage is that contacts so initiated tend to be very light. They don't often take because you live in a society in which you're continually bombarded with thousands of messages from all kinds of vested interests and we have an amazing capacity in this society to screen them out, to tune them out. So I would pose serious reservations to you in the utilization of formal communications. If you've got a large target population then you don't have any choice, you have to use formal communication.

Our research information indicates that personal contact between the advocate and the target is the most effective. However, obviously if there are great numbers of people in the target population, this can't be utilized effectively. There is a distinction between formal and personal communications. Our data indicates that to effect change, personal communication seemed to get the job done better.

However, there is a third kind of change which should never be underestimated and that is the effectiveness of informal channels for communication, such as the clique. In a large school system for example, we know that information is going to be deliberately distorted for example, depending on the power arrangement of cliques of teachers. On the other hand we know that if other conditions are properly attended to, informal communications can be very, very effective. This is the grapevine system. Never underestimate the informal communication system.

There are segments of our society where the informal communication system in fact carries much higher value with it than does the formal. I remember doing some research in a rural county of the Ozarks where we were concerned with agricultural development and we could never convince the agricultural agent in that county that the target population, the farmers, valued informal communication channels and that when you used the formal communication channel like an article in the local newspaper, you literally turned people off. And if he ever got on the radio he had had it. The only person that the target population listened to on the radio was the weatherman or a preacher. We convinced, not him, but his supervisors that there were certain kinds of important messages that could be gotten out on the formal communications media by utilization of the weatherman. And we occasionally were slipping messages on the end of the weather forecast. Everybody listened to the weather forecast, but not everybody listened to the preacher. When the agricultural agent went on radio, they literally came unglued because that guy's supposed to be out working on farms. What's he doing sitting down in Springfield, in a radio station? They saw it as avoiding his job. He's supposed to be involved in direct personal communication.

Whether we utilize the formal, whether we utilize the personal, or whether we utilize the informal it's a truism that educational procedures must be made simple, as simple as possible and as direct as possible. That seems almost too obvious to say, but you have experienced reading directives which go to subordinates. It's not an easy task and especially if you want to effect genuine change because very often the advocate and the target have two very different

views of the world and these have to be reconciled. One of the ways to do this is don't clutter up the communication channel. Keep it as simple as possible. Above all, communicate. Our evidence indicates that seducing people into change more often than not leads to this because sooner or later they're going to be ticked off, they're going to be irritated.

Another point I want to make about communication is that feedback channels should always be established. These are absolutely necessary to determine the reactions to change and the reactions to innovation. The target must never feel that communications are operating only one way and I would make a generalization here, having done an awful lot of work with Blacks, Indians, and Mexicans, and with peasants in Ireland, that the more underprivileged your target population is the more vulnerable it sees itself as a part of the system. When working with the underprivileged there is more need there to insure adequate feedback because these particular segments of the population are not generally accustomed to response. If they are accustomed to formal response, it is very often deliberately distorted. Therefore, every effort must be made to obtain an accurate feedback if the situation is one of high tension. The channels usually have to be informal. This was true just two weeks ago at the University of Kentucky when we had a student disorder. Formal communications in that situation were relatively ineffective. If you really wanted to know what was going on or you wanted to know what was being thought, there was a need for mediating links. This is true in working with Blacks and people in ghettos. Formal communications from that segment of the population so often are deliberately garbled. Otherwise, you tip your hand as to what your strategy is. They would rather not tell the establishment what they are really thinking, except out of desperation.

That's all I have to say about communication, but I think the matter of communication is very simple. We've got a lot of evidence to indicate that formal communications are not all that effective. They may, however, be very necessary if your target population is very large. If you're dealing with a small target population, though, personal contact, which usually comes out of your eyes, is much more effective.

Let's turn our discussion now to the target population and indicate some of the things we think we know in anthropology about achieving successful, genuine acceptance of an innovation. I qualified that with 'I think we know' because I'm not sure that we really do know. In line with the interests in communication that I have just discussed we have a very large body of research to indicate that people more readily accept innovations which they understand. Understanding is critical. These are variables which influence the target. You must be able to understand.

Closely related to this we have a lot of data to indicate that targets are more apt to accept changes which they perceive as relevant. They're fairly self evident, obviously. Evidence indicates that in most cases, relevance, more than anything else has to do with the target's awareness of his needs, not the advocate's needs. One of the great gulfs in this society between the rich and the

poor, and between the different generations in this society is a basic distrust, especially of those who plan for other people. In other words, there is the basic feeling that someone is trying to superimpose their conception of needs on someone else. I make my needs yours. And this, of course, is what we have seen built into government programs in the last six or eight years. You've got to involve the poor, you've got to involve other disadvantaged segments in identifying their needs. What is their true conception of needs? Very often I think the establishment doesn't like what comes out because it's a very different conception than what the establishment feels people ought to see as their needs. So relevance has to do more than anything else with the target's awareness of his needs.

I think it's perfectly legitimate for those in power to try to communicate to the target. Look, there are needs here which you have not yet recognized. You need to be sensitive to these. You need to be stimulated toward them. This kind of stimulation, though, is dangerous, It's starting with "We can help you solve your problems if you will just become more aware of them." And what happens? You get them solved and people take to the streets.

I want to draw some examples from my experience in Western Ireland with vocational education. Public education in Ireland, for a long time, has been a real mess. For the most part it stopped at the sixth grade. If a student went on to secondary education in Ireland, he usually did this at his own expense, with one exception. Along time ago somebody put vocational education into the public domain, the secondary domain, of the Irish school system and the kids could go to vocational school at public expense. These schools, however, were for the most part separate and distinct because they were public and most secondary education was in the hands of religious orders. So these schools tended to be separate and distinct from the "academic program" and they carried very little value. In fact, one considered it really a failure to go to vocational education schools. If you couldn't go to the academic school, the intellectual route and I'm talking about Irish peasants now, there really wasn't much use in going at all.

Beginning in the late 1950's the Republic of Ireland decided that it was going to come into the middle of the Twentieth Century through industrialization. Although it's difficult to industrialize a country where you don't have an industrial work ethic. For several decades Ireland has had vocational education schools but has not produced a blue collar population, the kind that industrialization needs. You can't industrialize, you can't attract foreign industry unless you have workers. By just pulling a peasant off a farm, a guy who has no work ethic, you get a person whose values regarding time and so forth are completely off base for the industrial system. These problems contributed to injecting into the public system a new input on the vocational education side.

One of the things they did was an intensive communication program to make

peasants aware that Ireland is in fact moving into the middle of the Twentieth Century. The government adopted a program to make the peasants aware of their needs. The frustration level in the peasant population went up. The country had been selling them short they said. And this means rewriting some history in Ireland because they have been blaming the British now for the last fifty years for all their problems. The British left in 1920 so now, two or three generations later, we still have the same problem facing us and this is what the government communicated.

The government made the Irish peasants aware that this new thing in vocational education, this new thrust in vocational education was tied in with modernizing Ireland. Vocational education became a symbol of modernization, at least in the government's eyes. It's not been all that successful because vocational education to many peasants is still not highly valued. There was a deliberate attempt in the case of the introduction of this innovation to communicate to the peasants in ways that they became more sensitive to their needs.

The government put its tail on a chopping block because it said we haven't been doing our job and you ought to feel this. You ought to be aware that we haven't been doing our job. You ought to put the screws to us. You ought to put the pressure on us. The government's intent was that when you get the peasants aroused, you can introduce this very neat vocational education system and the peasant youth are going to enroll in it. The government felt that in a very short period of time Ireland would have an industrial ethic in its population and industrialization could zoom. This was the whole plan.

Related to both relevance and understanding we also have a large volume of research literature to indicate that people more readily accept innovations that they've had a hand in planning. So we're talking about involvement in planning. Involve the target whenever you possibly can in planning. Planning is a future time orientation. Planning is what's going to happen tomorrow and what's going to happen tomorrow is what's going to happen to me if I'm part of the target population and I like to have something to say about that.

Industry sometimes goes to great lengths to involve segments of the industrial system in their planning enterprises. They do this very covertly, because they don't want to convey the feeling that they're selling out labor for example. Part of the concern in American society in recent years has been that labor and managemant are to cozy, they've been in bed with each other too much. When, in fact, what you're getting is a deliberate attempt on the part of management and a deliberate attempt on the part of labor to get involved in the planning process. In fact, you now have labor going to the extent of laying plans for management. Part of the bargaining which goes on at the bargaining table now is of this order as compared to what it was, thirty years ago.

I'm really suggesting the simple dictum in American society that people tend to respond more positively when they feel they're being "worked with" rather than having things "done to". I think this is an attitude, doing things

to people, which is beginning to more and more in this society carry negative if not revolutionary kinds of reactions tied to it. People want to be "worked with" rather than having things "done to" them. They want to be heard out, they want to be involved.

In the case of our educational experiment in Ireland to make vocational education respectable, the planning of county vocational education systems was left very largely to county vocational education committees and the word went out to these people, "maximize your contacts with the public at large," to be communicating continually. Not only that people ought to see this as relevant, in terms of needs that they haven't been articulating, but get them involved. And they did get involved. They had small groups and clusters all over the country, partly communicating this, but at the same time getting feedback, "What's going to be necessary for you to like the vocational education system?"

The fourth point I want to emphasize is change. Is change something that the target population normally expects to take place? Is this something that one expects to happen? The implementations of findings and seeing these translated into innovations and behaviors literally flourish in an environment in which change is expected. I would emphasize that if evaluation becomes a permanent feature in an organization, if evaluation is built in so that people come to expect that evaluation is part of the system, an expectation of change is very likely to be present in the target population. The end product of evaluation is change, corrective change, positive change. And if they get accustomed to the evaluation process then they are going to have an expectation of change.

In light of this point I should like to make a related point and that is, an important quality in the target system, an important quality in the advocate's is the capacity for criticism. Don't back off from criticism. It may well be that this capacity is not present and will have to be encouraged. Criticism is reflection. It is reflection on the past; it is reflection on the present; it is anticipation of correction in the future.

Institutionalized criticism in this society is one of the healthiest aspects of American society, despite the intolerance that is shown criticism by many segments of the society, political and otherwise. The evidence is very clear that the capacity for criticism and especially self-criticism is a very desirable trait. I'm talking about criticism now, I'm not talking about self-degradation, tearing oneself down. That's not criticism. We've come to think of criticism in almost negative terms, but I'm posing it to you as a value, as a very positive value. Again, I think if evaluation becomes a regular feature in your system the capacity for criticism becomes enhanced. Anytime criticism is stifled, then your system is moving in more autocratic directions, away from the democratic process.

In our Irish situation, we had a very interesting problem because the Irish were very accustomed to viewing education as an area of stability. They were accustomed to viewing education as something that continued on a straight line. It

never went up. It might drop in quality, but it came back up to that line. They did not see education as something which changes. In American society we do, incidentally. We anticipate innovation in the area of education. In Ireland, one of the problems has been to convince people that educational systems ought to change. Again, the government in this case, the advocate, has done this by tying educational change to industrial changes. The image of Ireland on the move and to get on the move we've got to change. Incidentally the latest implication of what they're doing is secondary education out of the hands of the church. Because, as I've said, secondary education for a long time has been in the hands of the church and it just hasn't succeeded. Ireland being 95% Catholic, contributes to the difficulties. The way they're doing it, of course, is to put the vocational education schools in with the academic schools and they have what they call the comprehensive school. The comprehensive is so big and so complex it has to be built by the government. Religious hierarchy didn't like that, but that's the way it's happening.

A fifth point is dependence on the authority. This is a variable that figures very prominently in my own work on change. Dependence on authority that exists in a given target system. Who are those in a given system,--school system, community or state--who command some kind of authority? I'm not talking about power, I'm not talking about public authority in the sense of a sheriff, but I'm talking about the kind of authority which comes from prestige. We're talking about those who, because they say it people listen. In the Ozark community I was talking about earlier, if you wanted to get an educational innovation in and there have been many, you never go through the schools. People won't listen to the teachers. They're very anti-intellectual. You work it through the local doctor because they'll believe anything the doctor says no matter what kind of an idiot he is. I think the one who was there when I was there was that. He had tremendous prestige, tremendous power, tremendous authority. He sounded off on everything. You had to sell that guy if you wanted something to happen. You had it come through his lips. Professional educators there were very frustrated because their authority was not recognized. That's what I'm talking about with dependence upon authority. In American soeiety, we live in the most complex, technological society in the world. We all depend on authority. I wouldn't dare try to fix my televsion set. I wouldn't dare try to fix my automoblie motor. I depend on authority, people I respect, for doing that kind of thing.

I think those that plan changes should be very careful of the kinds of authority with which innovations are tied. In the case of our Irish example this was a relatively easy one to crack, because people depend upon the government to do it. The Irish government did this at the top political level. They didn't do it through the people that headed the educational system. The pronouncements about this came at the very top because the Irish wouldn't believe it if it came anywhere else. The Irish peasant wouldn't believe it. You say the church will take care of that. They'll really kill this fault because the guy does not understand this change. But when the guy at the very top, Jack Lynch, says it, then everybody said, well maybe there's a chance. That was the kind of authority that they were talking about.

Another variable is margin of security. Security is something, of course, that is important to all of us. I'm talking about security as it is measured, not just in economic terms, but the security that comes with prestige. The security that comes with power. The security that comes with knowing you're important. Margins of security operate in economic, prestige, and power terms especially. In all of these areas each of us has what I would refer to as some social capital to invest. Now when you're talking about getting a guy to accepting an innovation you're asking him to examine alternatives and sometimes this can be a threatening business. The Irish peasant, for instance, has no ecomomic capital. He operates at a subsistance level and he's just in danger continually of going hungry because of weather and everything else. No prestige capital, for the most part. He's at the bottom of the ladder and he's been there for several centuries. If you say to him, for example, I know you have enough money to try what the agricultural extension agent wants you to try, just give it a try for one year. You've got to be very careful in promising success in that case. His second line of defense will be, if I fail people will think me an idiot. He has no prestige that he can gamble. And they would think him an idiot. Look at him, he's a fool. He's got a wife and kids. He made a little bit of money last year and what did he do? He hooped it off this year in some innovation that a guy from the University told him would work. It didn't work. Maybe the rains came, maybe something that was completely an act of the gods by their definition. The cattle died of some disease or something like that. He has no prestige that he can invest.

Incidently, in the case of vocational education, the Irish peasant resisted that primarily on prestige grounds because he did not value vocational education. He had not in the past and there was a period when he was coming around to seeing, well maybe this is worthwhile. But his first reaction to vocational education was, it's all a plot. Those guys at the top are really trying now to build us into the system right at the bottom because the first reaction was, they're going to substitute vocational education for the academic education. We won't have a chance. That's only for the rich. If you look at it, incidentally, in terms of our education, they're right because about 90% of youth that go to University level schools in Ireland come from the top 10% of the population. There's a real cutting line there for each social class. So the Irish peasant, with good justificaiton, resisted this innovation because he had no prestige capital and he felt this was just a way of institutionalizing his prestige.

A seventh factor is group solidarity. We sometimes lose sight of the fact that members of the target system cluster into informal groups such as cliques and these cliques develop with certain kinds of boundries around them and innovations sometimes threaten these boundries. They threaten group solidarity or they're perceived to threaten it and for that reason they percipitate negative responses. Well, when you're up against this kind of thing, small group dynamics, fear of gossip, fear of informal sanctions, all of this applies and, incidentally, I don't know about the vocational education teachers, but I do know this - in the non-vocational segments of the public schools, in-

novations are very group threatening. Teachers have an amazing defense mechanism which they can utilize to screen out any possible changes. They're all kinds of ways they can assist change. They have made of the classroom a monastic cell and you don't get in there. You don't monitor what goes on it in there and it's really amazing what's happened to some very good innovations like new math and some other things once the doors close. Everybody accepts it in the faculty council but then you get in behind the door and things are done to it. One teacher shouldn't critize another's grade. There are all kinds of informal mechanisms to keep group solidarity. There are reasons for this and I'm not saying this in negative terms, incidentally. Teachers in American society tend to be a very threatened group by the school board and everything else.

Now, let me rush through some others. There's another variable here that I've called logical compatibility. Sometimes innovations just don't fit. The innovation, when judged by itself, looks very good, but when you get it in the system you find that it runs into all kinds of other values, other kinds of behavior. It just doesn't fit. There's just a logical imcompatibility and you've got to change an awfully lot of the rest of the system if that particular innovation is important enough for you to really fight for. Sometimes it's not important enough to fight for and it would be better to disengage, pull out. It's hard for Americans to do this. Once we get bent on a certain direction we go there sort of hell-bent for an election and we're scared to death to turn around. There is virtue in having fought the game, even if you lose. For God's sake, fight. Don't give up. So once we get innovative channels established it's very difficult for us to turn around. I work with people in the State department and they say this is one of the biggest problems they have. Once we get policies established, and until we have fought those things right to the death, it it extremely difficult to back off.

A number of variables cluster into something that I would call scale. Here I'm concerned really with two things. One is timing. Is the timing right to introduce an innovation? Is the system already undergoing change? Has there been a high expectation of change already? Has there been a lot of change occuring? If things have been working all right, that's great. You get a bandwagon effect, you know? Let's try it. But, on the other hand, there may be apathy in a system because of prior failures. Your timing on an innovation may be completely cock-eyed. Pay careful attention to timing as well as magnitude. Americans are more accustomed to change than any other society, but we kind of like it in small doses. We like a lot of small changes. Something that is very big politically, economically, or otherwise is very threatening, unless, of course, you have calamities as we did in the early '30's. We had a whole complex of government programs that came out overnight almost, but that's very severe kind of situation.

Number Ten is the never-to-be-forgotten or unforeseen circumstances, unforeseen consequences. No change can occur in isolation. It will produce secondary changes, tertiary changes and this is one of the reasons why we insist on a communication system with very good feedback mechanisms. You can't

introduce a chanee into a complex system like a school, for instance, without that reverberating. It's kind of like dropping a pebble into a brook. You get these concentric circles that go out. You get reverberations and other kinds of changes evolve.

Now with these major variables in mind, variables which condition the success of communication and the degree to which the target population will accept or reject, let's turn our attention now very briefly on the processes for implementation. The processes for implementation are three in number. I think these are important to you if I understand your roles correctly. One process is what we call alternatives. The other is what we call replacement and the other is syncretic. I aplogize for the official scientific terminology on the last one.

What do we mean by alternatives? You want to introduce a change into a system and an alternative operates in this way. A is an alternative to B . You don't drop B out, you keep B in, but A is introduced as an alternative. Probably most of the change that occurs in American technology for example is introduced in the area of alternatives. We have competing systems, competing technologies and in the end the competitive worth of the innovation is judged against how it measures up in the minds of potential acceptors with that which is already there.

The alternative is a very non-threatening process. Replacement, though, is quite threatening usually. This is where the innovation, A, is a replacement for B. B drops out of the system completely. Now remember, B, because it's there, usually has value attached to it. There are habits associated with it. There are fixations and attitudes and so forth associated with the pattern and it's rather drastic to ask people to drop something out of their system and to accept an absolute system; just to do away with the replaced value.

The thrid process of implementation is called syncretic. This is where you blend A and B. A syncretic process is to blend A with B to produce C. What you have in the end is neither A, neither B, but you have C. You have something that's quite different. The teacher I talked about while ago that goes into that monastic cell with all this complex innovation we call new math. She syncretizes it usually. She introduces enough of it to stay honest. She introduces enough of it to stay honest with the system, but she has a lot of the old in there. What you get is C. The target, or the child in this case, is not usually enlightened well enough to detect what is happening. The parents don't understand new math well enough to detect it either.

Changes may take place by either of these three processes. Each can be effective in the right setting. The characteristics of the population into which the change is to be introduced is an important factor to consider when determining which process to use in initiating change. However, any of the three processes may work in a given situation.

USING AND BEING A CONSULTANT

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USING AND BEING A CONSULTANT

We have focused our attention in this workshop on an evaluation process which is State assisted and locally directed. At this point, we might ask ourselves the question, "How will the State assist local educational agencies in evaluation?" We might also ask, "What type of assistance might local educational agencies require and how can they best obtain it?" The major purpose of this presentation is to attempt to answer these questions and to relate to you some ideas about how to use and be a consultant.

My remarks will be concerned primarily with three facets, or dimensions, of consultation. Fist, I would like to talk about consultation in general as it relates to the evaluation concept that concerns us here, today; second, relate a few concepts regarding using a consultant; and third, discuss some factors to consider on being a consultant. It is hoped that these remarks will help clarify the nature of the consultative process so that in the execution of the evaluations you are preparing to conduct, you may be prepared to offer and to use consultation more effectively and efficiently.

In the broadest sense, the purpose of consultation is to help bring about change. As a change agent, the consultant is usually confronted with providing assistance to a group of individuals who are in a position of leadership or responsibility. A board of education, school administrators, or a committee of educators, students, or citizens may be concerned with including a new evaluation process into the vocational education program. These groups of people are in a position of leadership. They may request the assistance of a consultant to provide them with the background, information and experience needed to help them make the necessary plans, arrangements and decisions to put the evaluation plan into effect. The consultant must have the background, education and experience necessary to help those in positions of leadership to arrive objectively at the best solutions to a given set of problems.

Simply stated, consultation is merely a method of communicating information directly from one party to another. For given situations, the process of consultation may be superior to other methods of information gathering, such as, access to resource libraries, correspondence with specialists, or various methods of trial and error learning.

Perhaps the greatest single advantage of consultation is the actual presence of the source of information. By having the consultant at the scene of planning or decision making, the information provided can be more viable, more specific, and more explicit and understandable than if the consultant was remote from the situation under discussion. In effect, the advice and ideas rendered by a consultant can be tailored to the specific needs of the consultee, rather than condensed in generalities from which the consultee must deduce answers to his specific needs.

Second, consultative service establishes lines of communication which open a direct channel or information between the source and the user. With the consultant close at hand, major issues can be discussed and minor points can be clarified. The benefit of face to face dialogue with the consultant is of great advantage to the group needing information.

The third advantage of consultation lies in its efficiency as a means of communication. With a careful understanding of the objectives, roles, and interactions which maximize the effectiveness of consultative services, relevant information can be transferred with a minimum of uncertainty and effort.

Consultation should, of course, be extremely flexible and dynamic. There are and should be no inviolate definitions of roles or procedures which might serve in practice to curb innovations or modifications of the process. On the other hand, a careful inspection of the nature of past consultative transactions will provide us with guidelines for future use of consultants and enable us to benefit from past experiences in consultation.

Consultation may be defined functionally in terms of the nature of the assistance provided by a consultant. To begin with, there are certain obvious requisites without which consultation would be either superfluous or unsuccessful.

In a study published in 1959, Savage[1] described the three basic conditions which are fundamental to consultation:

1. a group or individual needing assistance in solving a problem, in planning, or in evaluating some aspect of an enterprise,
2. a felt need for assistance on the part of the individual or group, and
3. an individual or group competent to provide assistance in problem solving, planning, or evaluation.

The value of outlining these requisites is that often all three conditions are not present simultaneously; that is, if a real need for assistance is not accompanied by a consensual awareness of that need, consultative service probably will not be sought or contracted. On the other hand, it is possible that a group or individual may perceive a need when there is none, or misperceive the nature of an actual need. In such instances, consultation would be either superfluous or misdirected and thus ineffective.

Finally, the competence of the party being sought as the consultant must be validated thoroughly prior to contracting his services; otherwise the consultee may find himself more knowledgeable than his source of information.

Savage[2] gives the broad definition of "advisory assistance" to consultation. Based on this definition, three types of consultants may be delineated. They are:

1. the "expert." He provides the "right" answers to problems in an arbitrary manner,
2. the "resource person." He presents an abundance of information or alternatives to the consultee, and

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[1] Willaim W. Savage, Consultative Services to Local School Systems. (Chicago: Midwest Administration Center, University of Chicago, 1959), p. 47.

[2] Ibid. p. 50-51.

3. the "process person." He serves as a catalyst for interaction among group members and promotes progress toward solutions and decisions.

As an example of the roles of each of these types of consultants, Savage[3] suggests that an "expert" might inform a school board what it's evaluation program should be; a "resource person" might explain what kinds of evaluation procedures are available and discuss the feasibility of each; and a "process person" might show the board members how to work most efficiently together in choosing an evaluation program.

At this point, we might ask ourselves, "How can a consultant assist us in our local evaluation effort?" There are several evaluation activities at the local level in which a consultant might be involved. Consultants may assist in:

1. selecting advisory committee members,
2. selecting the local leadership team,
3. planning the evaluation effort,
4. organizing for the evaluation program,
5. developing objectives,
6. developing instruments,
7. interpreting data,
8. recommending future courses of action, and
9. planning for implementation of the results.

It seems feasible that a consultant could provide assistance in any of the above areas. Other problem areas, not identified in the above list, may arise on the local level and require the assistance of a consultant to help solve the problem.

A more specific definition of a consultant in regard to the task of evaluation of vocational education programs has been provided by a study[4] published in 1968 at Michigan State University. In this study, there was agreement between consultants and consultees on the concept that a consultant on vocational education evaluation is primarily a resource person and, secondarily, an expert or a process person.

In the Michigan study, responses by both consultants and consultees to a checklist devised to ascertain the characteristics, role expectancies, abilities, and activities involved in the consultative process revealed that the most useful and desirable activities of a consultant in regard to evaluation are "planning, suggesting, recommending, listening, criticizing, stimulating, organizing, clarifying and synthesizing." On the basis of this study, it appears that the consultant, with respect to the task at hand, can be most useful in providing a broad range of information and relevent experience to the consultee

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[3] Ibid. p. 52.

[4] The Role of the Consultant in Evaluation of Local Vocational Education Programs, (East Lansing: Research and Development Program in Vocational-Technical Education, Department of Secondary Education and Curriculum, Michigan State University, 1968), p. 2.

rather than dictating "correct" decisions or simply offering his judgments and solutions to the problems presented.

In summary, we may broadly define a consultant as a person or persons who provides specialized information and alternatives that will be of assistance to a group or individual in need of such advice. While a consultant may be either an expert, a resource person, a process person, or a combination of all three, his greatest usefulness in evaluating programs of vocational education lies in his capacity as a resource person to provide a broad range of information and a variety of procedural techniques to those educators less experienced in such matters.

Now let us turn our attention to some factors to consider on using a consultant. First, an individual or group must feel that they have need for the services of a consultant. Then they must identify why a consultant is needed. Some problems are specific while others are general in nature. Those planning for the use of a consultant must identify the objectives which the consultant is to serve. The objectives of having the consultant should be discussed and written so that there is no misunderstanding as to what the consultant is to do. Unless the purposes are clear, it is unlikely that either the consultant or the consultee will be satisfied with the results.

Another question to consider in using a consultant is "When should a consultant be used?" The answer to this question depends upon the objectives of using a consultant. Consultants may be most useful in either the planning stage, the implementation stage, or the analysis and interpretation stage of an evlluation program. He may be used to help develop solutioss to general or specific problems. Although there is not a best time to use a consultant for all circumstances, Balha[5] has indicated that a consultant can be used most effectively when:

1. there is a need to evaluate a program to determine what the real problems are,
2. the group needs help in defining and limiting the problem,
3. a problem might be introduced more effectively be someone from outside,
4. the group has exhausted its own resouces,
5. the group needs specific or technical information,
6. the group needs morale to maintain confidence in the value of further efforts,
7. the group needs assistance in evaluating the work that has been accomplished, and
8. there is need for assistance in determining the next steps to follow.

In conducting a self-initiated evaluation effort, a consultant may be used effectively in any of the previous situations, in addition to the planning, implementation, analysis, and interpretation stages.

Once the "why" and the "when" of using a consultant have been answered, those seeking consultant assistance must identify who can fulfill most ef-

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[5]Marion Jay Blaha, "When and How a Consultant Can Be Used Most Effectively," Educational Leadership, November, 1952.

fectively the purposes designated by the group. If a qualified consultant candidate is not known to the group, they must also identify where they might obtain good consultants. Identifying the most qualified person for a given assignment is an essential factor in resolving the problem. Consultants can be secured through several sources. The major sources of assistance regarding procedures and techniques of self-initiated evaluation are the Kentucky Research Coordinating Unit, the State Program Evaluation Unit, the Bureau of Vocational Education, colleges and universities and State Departments of Education. In addition, information obtained from advisory committees and contacts made by personal inquiry can be helpful in identifying the most qualified consultant for the task at hand.

In selecting a consultant, a group must consider how the consultant is to function. Depending on the objectives a consultant may serve as an:[6]

1. advisor - to counsel you in time of need.
2. arbitrator - to mediate differences of opinion between oposing factions.
3. decorator - to enhance the image and prestige of your institution.
4. dispenser - to provide specialized information and expertise.
5. evaluator - to assess the strengths and weaknesses of a program in your institution.
6. fire fighter - to resolve a problem or settle a crisis with great dispatch because no alterntive is available.
7. innovator - to introduce new ideas, concepts, methodologies or procedures.

When a list of suitable consultant candidates has been compiled, the qualifications of those suggested should be investigated. If possible, references should be obtained from educational agencies where consultants have served a similar role previously. Discussions or short visits with the consultant candidate will also be helpful in the selection process.

Certain desirable personal characteristics of consultants have been identified.[7] They are:

1. objectivity - the consultant approaches problems without preconceived ideas as to their solution.
2. independence - the consultant is not influenced by status of personnel or by vehement objections to suggestions; he has courage of his convictions.
3. integrity - the consultant respects confidences.
4. patience - the consultant works patiently on assignments.
5. tact - the consultant has the ability to deal with people gently but firmly.
6. rapport - the consultant maintains harmonious relations with the consultee.

Following the selection of the consultant whose qualifications seem appropriate to the objectives to be served, the educational agency should

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[6] On Using and Being a Consultant (Washington, D. C.: American Association of Junior Colleges, 1967), p. 15.

[7] Ibid., p. 16.

write a letter of invitation and appointment. The letter should state explicitly the objectives of the assignment and the conditions regarding the work of the consultant; the amount of time to be spent, the place, the date, reports to be submitted, presentations to be made, and renumeration for the services rendered.

Preparation must also be made for the consultant's visit. Pertinent materials which contribute directly to the objectives of the assignment should be sent to the consultant prior to his visit. Background materials relevant to the consultant's mission will be helpful to him in his preparation for the visit.

The staff members of the local educational agency should also be prepared to work with the consultant. They should identify problems or issues which the consultant should help solve. A planned schedule of activities for the consultant should be prepared and distributed to the staff for review.

The host, or consultee, has several responsibilities to the consultant. Before the visit the host should arrange for the hotel accommodations, transportation, meals and an appropriate welcome. During the visit, adequate conference space, office supplies, secretarial help, and pertinent additional information should be made available to the consultant. In general, the host should avoid excessive socialization or commitment to social obligations which may lead to bias on the part of the consultant. The consultant should be allowed time to reflect on meetings and interviews and prepare preliminary reports if called for. The host should also check with the consultant periodically to identify any specific needs or requests he may have. Arrangements for the evening hours and a schedule of the activities for the following day should also be agreed upon.

When the consultant arrives, the host should be prepared to meet with him to review the objectives and planned schedule for the visit. Details of what is expected of the consultant should be made available at this time.

Facilities and secretarial assistance should be put at the disposal of the consultant, particularly if a report is expected of him before he concludes his visit. Time and space should be provided to allow the consultant to summarize the events of the visit.

The local educational agency should follow up on the visit of the consultant. After the consultant has concluded his task, members of the local educational agency should consider the recommendations, suggestions or evaluations of the consultant and if appropriate, follow them to the degree possible. The decision to accept, either in whole or in part, the results that emerge from the consultant's visit is the responsibility of the local educational agency, not the consultant's. If the local educational agency chooses to reject the recommendations of the consultant, it is no concern of the consultant.

The local educational agency may need further assistance from the consultant in the implementation of the program of action. If the required assistance was not included in the original visit, an additional assignment should be negotiated separately. If an agreement has been made to remunerate the

consultant and to reimburse him for expenses incurred, a follow through at an early date, subsequent to the completion of his service, should be made.

In summary, the effective use of a consultant involves a clear understanding of the roles of both parties, a complete and continuing exchange of information, adequate hospitality for the consultant, and a complete follow-up of the service.

I would like now to discuss briefly some factors to consider on being a consultant. While it is the purpose of an educational agency to seek a qualified specialist, the consultant has the prime responsibility in determining if his expertise is what is desired. Accordingly a potential consultant should assess the native of the request for his services by asking two questions. First, will my background and experience enable me to fill the role effectively? Second, does the schedule and regular commitments permit me to devote sufficient time and attention to the requirements of the assignment? If the answer to either of these questions is negative, an ethical thing for a consultant to do would be to eliminate himself as a candidate.

The experience of a consultant is a matter of paramount importance. A consultant must posses considerable knowledge about the particular area in which the consultee needs assistance. He must be very well acquainted with the processes and interactions involved in problem-solving, and he must also have considerable ability in communicating and working with others. We might summarize the facets of his experience as substantive knowledge, procedural know-how, and diplomacy.

Upon arriving at the site where the consultative activities will take place, a consultant should review the objectives briefly with the host, assiss the attitudes that prevail within the group and be prepared to meet and deal with individuals whose behaviors and attitudes can, and often do, influence the proceedings which ensue.

On the job, the conslutant should gather the ideas offered by the staff, synthesize this information in terms of the objectives of the visit, and prepare a preliminary report prior to leaving the site. Much of the benefit of having a consultant, however, will be the assistance and information he provides the staff while working on specific problems. If a report is called for by prior agreement, the consultant should prepare and complete it soon after his visit. Promptness in submitting reports enables the educational agency to plan and implement its course of action.

There are several guidelines which may be used to direct the consultant in his work. According to the study[8] conducted in Michigan, a consultant should:

1. prepare diligently for the visit,
2. furnish resource materials,
3. visit the area and the people involved with the problem or situation,
4. be dynamic, pracitical, democratic, sympathetic, and a good organizer,

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[8] The Role of the Consultant in Evaluation of Local Vocational Education Programs, op. cit., p. 3.

5. offer a variety of best possible solutions to the problem,
6. assist in defining and establishing objectives,
7. aid in interpreting information,
8. keep the group informed,
9. help the group move toward a decision, and
10. evaluate group goals, processes, and decisions.

In summary, a consultant may be characterized as a person having a broad background of experience in a particular field. He must possess extensive knowledge, diplomacy, and communicative ability. He must assist those in positions of leadership, so therefore, he must be a leader. He can make his greatest contribution to education by sharing his knowledge, experience and procedural know-how with those who have shown an expressed need for his expertise. It seems, then, that this sharing of information and leadership can be transmitted most effectively by face-to-face dialogue through consultation.

ASSISTANCE AVAILABLE FROM STATE AGENCIES AND ORGANIZATIONS

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ASSISTANCE AVAILABLE FROM STATE AGENCIES AND ORGANIZATIONS

There is a trend across the country which requires that for any project or program to be conducted, the directors of that project must include funds for professional consultants. Too often it's a matter of adding prestige to the project or program. I do not wish to minimize the importance of consultants and the contributions they can make to plan and conduct a project. For example, I think the consultants to this workshop have been outstanding. They have stimulated the thinking of the workshop participants and have been available to answer questions in the small groups. As such, they have been very good. It should be pointed out, however, that the task to be accomplished will be done by the group requiring consultants. Consultants are very valuable in helping, but they do not do the work for you.

My topic is one of answering the question, "Where can you secure assistance for developing a local evaluation plan?" It would be nice if each of you could have the likes of Dr. Byram, Dr. Love, Dr. Eninger, Dr. Warmbrod, and others, to come to the vocational schools and work with regional groups to assist in developing evaluation plans for MDTA programs. They could make a great contribution; however, it is physically impossible for these men, with their busy schedules, to help every school in every state to complete their evaluation plans. It is also impossible for us to financially support such efforts, but that is the purpose of this workshop. It has given you an opportunity to take advantage of some of these outstanding consultants to help all the regions of the State. Everyone here now becomes a consultant. You have gone through the process and now you will be called upon as a consultant.

At this point you have had an opportunity to develop a basic plan for evaluation. Because of the limited amount of time available, you will want to work on this plan considerably. This is going to take time. We must pursue this topic while it's still fresh on the minds of those of you who will form the leadership teams. While working on your plan, you will probably need some additional help. I will identify some of those State agencies and organizations which can provide assistance to you in the evaluation effort.

There are many agencies and organizations and I'd like to categorize these into some separate divisions. There are two separate MDTA agencies involved. One is the Division of Interagency Relations in the Bureau of Vocational Education, Jim McGown and Lyle Neikirk. The other is the Kentucky Service, Department of Economic Security, Sam Evans and Charlie Furr. There are excellent working relationships between the two agencies, and I'm sure that you can depend on them to give you a great deal of assistance.

In another sub-category, there are some evaluation groups at the State level that are available. The State Program Evaluation within the Bureau of Vocational Education is available. Mr. Neel is going to be involved in evaluation of all vocational education and MDTA programs. He will be doing

some of the leadership work in getting these programs under way. The State Evaluation Task Force which is a part of the Bureau of Vocational Education will assist Mr. Neel. The Task Force will be involved in planning evaluation at the State level. Another evaluation group is the State Advisory Council for Vocational Education and Manpower Development and Training. Bill Howard is the executive director of that agency and part of their function is evaluation. Bill was here all week because he is very much concerned about the part the advisory council can play in evaluation of state programs in vocational education and in manpower training.

Let's look at another sub-category of agencies and organizations. I like to refer to them as research agencies. Of course, one that comes to mind immediately is the Kentucky Research Coordinating Unit for vocational education with Dr. Omvig, Dr. McKinney, Dr. Mannebach, and Dr. Gyuro. This group has certainly made an impact since about 1966. They have gradually taken on more and more activities, and they quite often go around the State to let people know that they're available for assistance. They're available at your call. That's their job. They're certainly capable, as you well know, and are wanting to do this. They have at their disposal the facilities of the University of Kentucky including the data processing facilities, some funds for research, research assistants, and other help. They could be of assistance to you in local evaluation. In addition to the R. C. U., all of the teacher education institutions can be helpful. One of the subgroups included as a part of their plan, working with one of the State universities to help them remove some of the bias that we've heard about from evaluating our own programs. The teacher education institution could provide a graduate assistants on a part-time basis to do some of the leg work for this project. In some cases that will cost money, but in some cases the institutions are eager to assist. Often a graduate assistant needs a good project for his dissertation or for a special project on which he is working. May I suggest to you that all the State universities and colleges can provide you some assistance.

What kinds of assistance can you expect from these agencies and organizations? There are two things I'd like to mention. One, hopefully, some of these agencies will provide funds to conduct an evaluation of MDTA programs. At this point, I don't have the answer as to which agency would provide the funds. Our best bet would be that it will come through one of the manpower agencies that I've mentioned although I wouldn't discount the possibility of others providing funds if you request it from them. The other item which can be provided from all these agencies is technical assistance.

Most of the agencies that I have mentioned are really state agencies which are directly related to MDTA programs, but it has been suggested that we also identify some other state, regional, and local agencies, organizations and groups that could have an input into your evaluation efforts. Some of these groups will need to be involved with considerable caution. There are some groups that would like to evaluate you very much. They might have a purpose in mind, putting you out of business, or making you appear to be accomplishing your objectives very poorly. Use caution

in how much you use some outside groups. You must involve them. Involvement is essential. Make clear the part that these groups are to play in the evaluation plan. If they understand this you're on good grounds, but otherwise you may be in for some trouble.

One group at the State level which can be used is Spindletop Research. You can think of other public and private research firms. In fact, the one that Dr. Eninger represents will come and assist you in conducting an evaluation. There is some cost involved in most of these agencies. Most of the agencies I have listed earlier would charge little or no cost for consultative help, little or no cost for any kind of assistance that they could provide for you. The agencies like Spindletop must depend on contracts and payment in order to continue their existence. There are many other agencies available for assistance. Area development district boards which have been formed in each of the 15 regions need to be involved. The local and State Chamber of Commerce can be of much assistance to you in identifying the businesses where people are employed. The State Chamber, through its leadership at the State level has newsletters going out to all the businesses who are members of the Chamber of Commerce. They can be an excellent resource. There are other agencies of this sort, such as Associated Industries of Kentucky and labor organizations. The State Department of Commerce has material that could be useful as an input. The Industrial Development committees in various communities are interested in manpower training. The CAMPS agency is certainly a resource in developing your evaluation plan. There are also many other inner agencies councils which should be involved. The Kentucky Development Committee and the district agency committees are interested in total development, and there are many other such inner-agency councils which can be of help to you. Local school districts have people who might be of help in writing certain evaluation plans. Other departments of state government, such as the Department of Child Welfare and the Division of Public Assistance within the Department of Economic Security have people assigned throughout the State who can assist you. There are many of these agencies and organizations, but one I do not which you to forget is the assistance and help that you can receive from local businesses and industry. In your local community, there may be an industry willing to contribute some time and effort to assist in writing and conducting an evaluation program. They have many things which they can contribute to our educational process.

Most of these organizations can supply information and can assist in contacting people who should be involved in the evaluation effort. Some of them can assist in determining the objectives in conducting the follow-up of students and conducting employee interviews. We hope that you will call on them in developing your evaluation plan more completely and in completing the evaluation effort. You should have confidence, at this time, to do much of the work on your own with a minor amount of consultant help. Many of you know as much about evaluation at this time as some of the experts I have mentioned. You have had an experience this week with films, speeches, tapes, filmstrips, books, small group activities, and consultants which were available to you. This has been a real good course in evaluation. It is probably equivalent to some of the college courses

and much better than many of them that you can take. I hope you'll remember these agencies and organizations are available to assist you in your evaluation efforts. It is up to you to make use of them.

APPENDIX Z

EVALUATION PLAN FOR

THE MADISONVILLE REGION

EVALUATION PLAN FOR THE MADISONVILLE REGION

I. Names and positions of the writers of the plan.

Dwight Borum, Chairman
Coordinator, Christian Co. Extension Center
Hopkinsville

B. M. Hatley
Regional Superintendent
Madisonville Area Vocational School
Madisonville

Joyce P. Logan
Coordinator, Reimbursed Programs
Madisonville Area Voc. School
Madisonville

Richard C. Pearce
Night Principal
Madisonville Area Vocational School
Madisonville

W. C. Montgomery
Director
Agricultural Education
Frankfort

John F. Loyd
MDTA
Frankfort

Martin L. Norfleet
Economic Security
Hopkinsville

II. Situation

The Madisonville Vocational Education region includes the same nine counties as the Pennyrile Area Development District - Muhlenberg, Hopkins, Todd, Christian, Trigg, Caldwell, Lyon, Crittenden, and Livingston counties located in the western part of the State.

Population in the region was established as approximately 188,000 for 1970 and projected as 204,000 for 1975 The work force in the Madisonville region includes 57,587 persons. An overall unemployment rate for the region is 4.4 per cent ranging from a low of 3.3 per cent in Hopkins County to a high of 13 per cent in Lyon County. The holding power of high schools in the area shows an overall 70.1 per cent completing high school. The total number of handicapped persons in the region is the fifth highest in the state.

Five counties in the region have been designated as economically depressed. Trigg, Lyon, and Livingston are RAR counties and are beginning a Concerted Services in Training and Education to aid rural development. The development of the Land Between the Lakes recreational area is bringing increased emphasis on tourism to this area.

The primary industries are agriculture, mining, and manufacturing. Industrial growth centers in the region are Hopkinsville located in Christian County and Madisonville in Hopkins County. Total employment in manufacturing has been increasing to a high of 1,831 in 1968 with a projection of 2,337 in 1971.

Muhlenberg and Hopkins counties are in the heart of the western Kentucky coalfield, and mining continues to play a major role in employment in the region. Mining and quarrying are gradually declining with an employment of 3,804 in 1968 and a projected decline to 3,613 in 1971. The TVA Steam Plant in Muhlenberg county will become the largest power plant in the TVA system.

Fort Campbell Military base offers employment opportunities for persons in Christian and Trigg counties.

A number of persons in Lyon and Livingston counties are employed outside the region in the industrial complex at Calvert City.

MDTA programs presently operating in the region include licensed practical nurse programs located in Madisonville, Greenville, and Hopkinsville. A ward clerk class is in operation in the Madisonville Area Vocational School, and a clerk stenographer class is offered in the Hopkinsville Extension Center. Lyon County, an area of high unemployment, has a small engine repair class. Operation Transistion is a new type of training program for the state and is Operating at Fort Campbell. In the Madisonville Area Vocational School, there are individual MDTA referrals in some of the occupational training areas.

Support for the evaluation effort in the Madisonville region comes from the

area vocational school staff, Economic Security office, Advisory Committees, business and industry, and other agencies.

Responsibility for training people in the evaluation effort will depend heavily on people who have had experience in evaluation for this training. This might include local agencies, school staff, and specialists from state and federal agencies.

The Regional Evaluation Task Force will initiate an organized evaluation effort in the region and be responsible for coordination of evaluation activities.

Programs to be evaluated are those programs being operated within the scope of vocational education as based upon area needs. Evaluation will be concerned with MDTA, regular vocational training, on-the-job training, vocational education for special needs, and any other vocational programs which might be exemplary or innovative.

Program Objectives

1. To assist the student in selecting an occupation in accordance with his interests and capabilities.

2. To contribute to the students' knowledge in the art of getting a job, holding a job, and advancing on the job.

3. To develop occupational skills necessary for the student to secure employment in the occupation of his choice.

4. To develop attitudes, work habits, and safety practices to meet requirements of business and industry

5. To enable graduates to succeed and progress in the world of work.

6. To make provisions for ancillary services needed by disadvantaged and handicapped persons to become self supporting members of society.

7. To meet the needs of the labor market in the area.

III. Objectives

The purpose of the evaluation effort is to determine whether the programs being carried out are meeting the occupational needs of the people to be served in the region. The degree to which program objectives are being met is to be measured, and the results of the evaluation used for program improvement and program planning

People to be involved in evaluation include lay people in the community; students; school staff; advisory committees; business and industry; state, federal, and other agencies.

Evaluation is a continuous process. A systematic plan for the regional evaluation of all programs will begin with the establishment of regional needs, make provision for assessment during the training program and follow-up at the completion of the program.

IV. Arrangements

A local leadership team for evaluation should consist of the chief school administrator, manager of the local employment office, representatives from education institutions, and representatives from business and industry. Involved in the evaluation effort will be students, parents, graduates, school staff, employers, and employees.

V. Provisions

The leadership team will be responsible for initiating and coordinating evaluation processes.

Instructional staff members will have specialized experience and can relate to the evaluation in the area in which they have taught.

Citizens representing the public at large can communicate feelings of the community to the committee.

Observation of student reaction and communication with parents will assist evaluation.

Follow-up procedures should be implemented for students completing the program and also for anyone who enrolled but did not complete the program.

The follow-up instrument for dropouts should be different from that used for graduates. It should aim at the reasons students do not complete the program.

A survey instrument should be used with employers of students to help assess performance, work habits, and attitudes of former students.

The local leadership evaluation team and advisory committees should study the results of the survey and follow-up instruments. As a result of the evaluation, recommendations for program change or improvement should be developed. Action on the recommendations should come from the administration staff.

VI. Follow-up Instrument

Given below are suggested questions for the follow-up instrument to be used with students who have completed the program. This is to assist in measuring the degree to which the program objectives are being met.

Program objectives to be measured are listed in Appendix A.

1. Are you Employed?
   ____A. Part Time ____B. Full Time ____C. Unemployed

2. How related is your job to the occupational training?
   ____A. Same occupation
   ____B. Highly related
   ____C. Slightly related
   ____D. Completely different

3. If unemployed, check which situation best fits.
   ____A. Further Education
   ____B. Marriage and home career
   ____C. Military service
   ____D. Disability
   ____E. Unable to find job
   ____F. Looking for work
   ____G. Not looking for work
   ____H. Training insufficient

4. If employed in an occupation different from that trained for, check reason or reasons for change.
   ____A. No jobs available
   ____B. Developed new interest
   ____C. Disliked occupation trained in
   ____D. Found better opportunity
   ____E. Never intended to follow training
   ____F. This work pays more
   ____G. Other

5. Have you been contacted for employment since acceptance of your present job?
   ____A. Yes ____B. No

6. Before training how much confidence did you have in your ability to get a job and hold it?
   ____A. Much
   ____B. Some
   ____C. Little
   ____D. None

7. Did you receive help in making your choice of an occupation?
   ____A. Yes ____B. No

8. In making your occupational choice, which of the following were used?
   ____A. Employment Service
   ____B. School
      ___1. Instructor
      ___2. Counselor
      ___3. Other
   ____C. People employed in the occupation
   ____D. Other

9. Do you feel you made the right occupation choice?
____A. Yes ____B. No ____C. Undecided

10. If not satisfied with choice of occupation, indicate reasons.
____A. Difficult to obtain jobs in occupation
____B. Work boring and unsatisfying
____C. Wages too low
____D. No chance for advancement
____E. No employment opportunities in the area
____F. Type of work unsatisfactory
____G. Other_____

11. In making an occupational choice, which of the following was most valuable.
____A. Testing ____C. Career Information
____B. Counseling ____D. Training

12. Is your present job and the conditions under which you work?
____A. Highly satisfactory ____C. Fairly satisfactory
____B. Satisfactory ____D. Unsatisfactory

13. What part of your trade or occupation did you find that you were least prepared when starting to work?
____A. Production speed or standards
____B. Getting along with other workers
____C. Standards of accuracy
____D. Practical experience
____E. Technical knowledge
____F. Applying for the job
____G. Other_____

14. Check one or more of the following areas in which you received instruction in MDTA.
____A. How to operate equipment
____B. How to use tools
____C. Reading, writing, or math
____D. How to apply for a job

15. During training did you receive special help from agencies such as
____A. Child Welfare ____C. Vocational Rehabilitation
____B. Public Assistance ____D. Other

16. Has there been an increase in your income since training?
____A. Yes ____B. No
If yes, estimate difference_____

17. Indicate basic skills in which you need additional training.
    ____A. Manual job skills
    ____B. Job knowledge
    ____C. Mathematical skills
    ____D. Writing skills
    ____E. Speaking skills
    ____F. Reading skills
    ____G. Personal relations
    ____H. Supervisory skills
    ____I. Other_____

VII. Suggestions

A. Some sources of pertinent information are Department of Commerce, Fantus Report, Chamber of Commerce, Department of Economic Security, Southwest Industrial, Public Assistance, OEO surveys, Area Development District, Technical Action Panel, Interagency Council, U. S. Department of Labor, Southern Association of Colleges and Schools, Kentucky State Plan for Vocational Education, Department of Child Welfare, Human Relations Commission, and individual business and industry surveys.

Kinds of relevant information include student characteristics (physical, emotional, and mental); socioeconomic characteristics of individual students; local, state, and national occupational information; geographical wage scale, and geographical location and setting.

This information will be used in the evaluation and program planning effort to determine objectives, whether or not results of the program are consistent with objectives and compare favorably with state and national performances, occupational areas, degree of complexity, community needs, length of the course as it relates to remedial education and related information, whether we are reaching the people we need to reach and whether training is having an impact on the economy.

B. National, state, and local manpower needs can be used in the evaluation and planning effort by helping us determine whether or not the programs offered met projected labor needs. This manpower data is used in determination and justification of program planning, instructional content, and is important in determining criteria set up in federal legislation concerning manpower training.

C. Local statements of philosophy and objectives work within the framework of state and national established manpower policies and serve as guidelines to assist in meeting local or regional needs.

D. A cost effectiveness study should be established by the research division with the regional leadership evaluation team by workshops, seminars, or other

means whereby available data will help assess per capita wage earnings increase and socioeconomic change.

E. Studies of student characteristics shall be used in the evaluation effort to determine student needs as related to program development, remedial instrution, counseling, and need for additional supportive services.

A study shall be made of data gathered from the student personnel file information and current and relevant information from participating agencies such as employment services and other.

VIII. Budget

All criteria for establishing the evaluation budget was based upon number of MDTA students now in programs or students involved in MDTA programs already completed in former fiscal years.

All funds will be based upon a proration of programs in operation and may well vary in accordance to:

A. Number of Students

B. Information Needed

C. Response

Line Item Budget Request
see Budget Back-up

1.0	Personnel Salaries	2,800.00
2.0	Travel Expense	332.00
3.0	Supplies and Communications	550.00
4.0	Equipment	168.00
5.0	Employees Benefits	256.00
6.0	Non Anticipated Materials as requested	400.00
	TOTAL	$4,506.00

BUDGET BACK-UP
Madisonville Region
Evaluation Services

1.0 Personnel Salaries $2,800.00

1.1.0 Team Leader $600.00

1.1.1 Team Leader Proration Formula
4 - days in Reg. meetings at Madisonville
(2) 2 - day state meeting
(2) 1 - day in Reg. other than headquarters
10 day Total

Based on 220 day week yr.
10/220 = 1/20 approx.
$12,000 est. sal. x 1/20 = $ 600.00

1.2.0 Team Leader Asst. $1,000.00

1.2.1 Team Leader Asst. Proration
10 - day in Reg. headquarters
2 - day state meetings
10 - day in Reg. other than headquarters
24 day Total

Based on 220 day week yr.
24/220 = 1/10 approx.
$10,000 est. sal. x 1/10 = $1,000.00

1.3.0 Research Assistant $NA

1.3.1 Should be budgeted in Research budget.

1.4.0 Consultants $300.00

1.4.1 In Region Consultants NA
1.4.2 Out of State
1.4.2.1 Expenses and fee est. $300.00

1.5.0 Clerical $900.00

1.5.1 Clerical Proration formula
1/4 time based on sal. est. 3,600 yr.

2.0 Travel Expense $332.00

2.1.0 Team Leader $143.00

2.1.1 Proration Formula
(2) 2 - day state meetings
lodging $40.00
meals 24.00
$64.00

(2) 1 - day in Reg.
meals $ 5.00

400 mi. est. for state meetings x .08¢ = $32.00
Toll est. 30.00
$62.00

200 mi. est. for meeting in Reg. x .08 = $16.00
Toll est. = 6.00
$22.00

2.2.0 Team Leader Asst. $165.00

2.2.1 Proration Formula
(2) 2 - day state meetings
lodging $40.00
meals 24.00
$64.00

10 - day in Reg.
meals $25.00

400 mi. est. for Reg. x .08¢ = $32.00
Toll est. = 12.00
$44.00

2.3.0 Research Assistance NA

2.3.1 Should be budgeted in Research budget

2.4.0 Consultants $24.00

2.4.1 Mileage est. 300 mi. within region x .08¢ = $24.00

3.0 Supplies and Communications $550.00

3.1.0 Clerical $60.00

3.1.1 Est. of small misc. Type

3.2.0 Printing & Purchase of forms & test $400.00

3.2.1 Based on cost of Ohio Trade Test and cost of grading
$4 per student x 100 = $400.00

3.3.0 Postage $60.00

3.3.1 Based upon 100 x 3 times x 3 responses x .06 = $54.00
for dist. results 6.00
$60.00

3.4.0 Telephone $30.00

4.0 Equipment $168.00

4.1.0 File Cabinet w/lock $89.00

4.1.1 Law requires all confidential records be under lock

4.2.0 Storage Cabinet w/lock $79.00

4.2.1 For storing of tests and confidential materials

5.0 Employees Benefits $256.00

5.1.0 Teacher Retirement $112.00

5.1.1 Team Leader Sal. $ 600.00
Team Leader Asst. 1,000.00
$1,600.00

5.2.0 FICA $43.00

5.2.1 Clerical Sal. $900.00 x 4.8% = $43.00

5.3.0 State Retirement $101.00

5.3.1 Clerical Sal. $900.00 x 11¼% = $101.00

6.0 Non-Anticipated Items & Supplies $400.00

6.1.0 To be purchased only by State Department authorization

7.0 Space, existing equipment, utilities now in use under regular program can be prorated as to value and need for matching monies if needed.

* rate on any matching requirement on budget back-up 7.0

IX. Schedule of Activities

SCHEDULE OF ACTIVITIES DEVELOPED AND FOLLOWED
BY A LOCAL STAFF COMMITTEE

Dates	
April 25	Organization of Leadership Team
April 29	Preliminary orientation meeting with administration
May 2	Organizational meeting of Faculty Advisory Committee
May 5	Training Session for Faculty Advisory Committee
May 10	Develop a schedule of activities
May 19	The leadership team will develop overall philosophy and objectives
September 10	Faculty Advisory Committee meeting to adopt overall philosophy, to compile criterion questions, and to submit names for citizens' advisory committees
September 16-October 4	Current addresses compiled for 1969 graduates
September 17	Local Leadership Team meeting to select citizens' committee members
	Confirmation letters mailed to committee members
October 11	Notices prepared for citizens' committee meeting on October 15
October 15	Orientation and organizational meeting for citizens' committees
October 16	Review and utilize evaluation materials in training workshop
November 1	Mail follow-up questionnaire and cover letter to graduates of 1969 and persons who did not complete the program
November 8-25	Follow-up reminder requests
December 10	Compile, analyze and interpret results of follow-up questionnaire
	Committee meetings to formulate occupational survey plans
January 5	Prepare for occupational survey
	Hold citizens' advisory committee meetings
February 1-25	conduct occupational survey
	Citizens' committee meetings
April 10	Request consultant help in analyzing and interpreting data
April 15	Analyze data and findings, in light of objectives
April 30	Joint meeting of staff and citizens' committees to study findings
July 5 - August 15	Formulate recommendations
September 10	Plan for implementation of recommendations from the evaluation process
September 15	Present recommendations to administration
October 15	Promote and aid in implementation activities for recommendations

X. Dissmeinating and implementing findings

Information from evaluation will be disseminated by the leadership team to public schools, vocational schools, employment service, advisory committee, Chamber of Commerce, local industry, and interested Agencies.

Changes will be implemented by persons charged with the responsibility for performance of that particular facet of the program. Findings of the evaluation study will determine what program changes, if any, are necessary in accordance with the objectives of the evaluation study. Changes will be made in a way that will contribute to the effectiveness of the program with a minimum disruptive effect on the school program.

XI. Assessing the Effect

The leadership team who has conducted the evaluative effort will attempt to determine the effect of the local evaluation and will be responsible for implementing those changes necessary to meet the objectives of the total program.

XII. Incorporating Evaluation

Evaluation is an interral continuous part of the on-going program. Process used to bring about this continuous evaluation will be through maintaining advisory committees, contacts with students and citizens, inservice programs, and contacts with business and industry. Instruments will be developed for periodic evaluation. Evaluation will be incorporated in such a manner that the results effected by the evaluation will be used to enhance the educational process of vocational education and will cause those changes to be made that will improve the overall process of education.

APPENDIX AA

RESULTS OF AN MDTA

FORMER STUDENT FOLLOW-UP

344/345

RESULTS OF AN MDTA FORMER STUDENT FOLLOW-UP

L.P.N.
A8376

CONDUCTED BY: Hazard Area Vocational-Technical School
2130 Allais Road
Hazard, Kentucky 41701

AT: Hazard Area Vocational-Technical School
2130 Allais Road
Hazard, Kentucky 41701

SUBMITTED BY: Earl Mohn, MDTA Co-ordinator

Results of an MDTA Former Student Follow-Up

L.P.N. project, A8376, was conducted at the Hazard Area Vocational-Technical School from November 17, 1969 to November 13, 1970. Twenty-four students were enrolled in the class. There were twenty-four stations available.

There were 19 completions with 5 dropouts. The average amount of time dropouts spent in class was two months.

An MDTA Former Student Follow-Up Instrument was sent to the twenty-four trainees. Twenty-two or 91.7% of the trainees returned the questionnaires. Four or 80% of the dropouts returned the questionnaires.

The results were summarized, analyzed, and reported as follows.

Table 1 - Employment Status of 22 Trainees Returning the Follow-Up Instrument

Employment Status	Number	Percent
Full Time	15	68
Part Time	1	5
Unemployed	6	27
TOTAL	22	100

Table 1A - Area Where Trainees Are Employed

Area	Number	Percent
Immediate Area	14	63
Outside 100 Mile Radius But In-State	1	5
Out of State	0	0
Unemployed	5	22
No Reply	2	10
TOTAL	22	100

Table 2 - Reasons Offered by MDTA Trainees for Taking Longer Than Expected to Find Full Time Employment

Reasons	Number	Percent
Found a job as soon as I expected	12	54.5
No jobs available	1	4.5
Wasn't interested in jobs available	0	0
Parents wanted me to stay at home	0	0
Lacked skills or other qullifications for jobs available	1	4.5
Was too young	0	0
Got married	1	4.5
Wanted more education and/or training	0	0
Other (No Reply)	2	9.1
(Taking Vacation)	1	4.5
(Waiting for State Board Results)	2	9.2
(Did not finish class)	2	9.2
TOTAL	22	100%

Table 3 - Ways MDTA Trainees Obtained Their Present Jobs

Ways of Obtaining Job	Number	Percent
On my own, without anyone's help	11	50
Private employment agency	1	4.5
State employment service	1	4.5
Through parents or relatives	0	0
Through a friend	1	4.5
Was already with same employer	1	4.5
Through MDTA teacher	2	9
Through vocational counselor	0	0
Want ads	0	0
Other (Umployed)	2	9
(No reply)	3	14
TOTAL	22	100

Table 4 - Extent to which the MDTA training prepared MDTA trainees for their present jobs

Degree of Preparation	Number	Percent
Very well prepared	12	55.0
Well prepared	6	28.0
Not too well prepared	0	0
Very poorly prepared	0	0
No reply	4	17.0
TOTAL	22	100.0

Table 5 - Ratings of Various Aspects of MDTA Training by the Trainees

Aspects	No Reply		Excellent		Good		Fair		Poor	
	#	%	#	%	#	%	#	%	#	%
Quality of MDTA Training	4	18.2	9	40.9	9	40.9	0	0	0	0
Physical condition of school	2	9	5	22	14	64	1	5	0	0
Physical condition of shops or labs	3	14	4	17	12	55	3	14	0	0
Teacher interest in students	3	14	11	50	6	27	2	9	0	0
Instructional materials and aids	2	9	12	55	7	31	1	5	0	0
Student counseling	2	9	7	32	9	41	4	13	0	0
Preparation for job interview	3	14	6	26	12	55	1	5	0	0
Job placement	5	23	10	45	6	27	1	5	0	0
Practical application of training to job	2	9	10	45	8	37	2	9	0	0
Reputation in community	4	18	9	40	8	37	1	5	0	0

3967

Table 6 - Extent to which the MDTA project prepared trainees to work with supervisors and fellow workers

Degree of Preparation	Number	Percent
Excellent Preparation	8	37
Adequate Preparation	11	50
Some Preparation	0	0
Little Preparation	0	0
No Preparation	0	0
No Reply	3	13
TOTAL	22	100

Table 7 - Weekly Pay of MDTA Trainees on Their Present Job

Pay Per Week	Number	Percent
Under $50	0	0
$51 - 75	5	23
$76 - 100	6	27
$101 - 125	1	5
$126 - 150	3	14
$151 - 175	0	0
$176 - Over	0	0
No Reply	7	31
TOTAL	22	100

Table 8 - Job Titles of MDTA Trainees on Their Present Job

Job Title	Number	Percent
No Reply	7	32.0
L.P.N., General Nursing	13	59.0
Visiting Home Health Nurse	1	4.5
Health Bus Driver	1	4.5
TOTAL	22	100

VT 014 388
HUGUELEY, JAMES E.
AN ACCELERATED PROJECT FOR A SYSTEMS PROGRAM APPROACHING NON-UNEMPLOYMENT OF VOCATIONAL STUDENTS. INTERIM REPORT.

MEMPHIS CITY SCHOOL SYSTEM, TENN. DIV. OF VOCATIONAL EDUCATION.
BUREAU OF ADULT, VOCATIONAL, AND TECHNICAL EDUCATION (DHEW/OE), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
OEC-0-70-5181
PUB DATE - ND 143P.

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IDENTIFIERS - MEMPHIS CITY SCHOOL SYSTEM

ABSTRACT - AMONG THE OBJECTIVES OF THIS PROJECT ARE THE DESIRE TO DEVELOP: (1) A COMPREHENSIVE AND CONTINUING PROGRAM OF OCCUPATIONAL GUIDANCE FOR K-14, (2) A DESIRE WITHIN THE STUDENT TO REMAIN IN SCHOOL AND OBTAIN THE GENERAL EDUCATION AND SKILLS NECESSARY FOR EMPLOYMENT, AND (3) AN OVERALL PROGRAM OF POSITIVE RELATIONSHIPS WITH COMMUNITY, PARENTS, CONSULTANTS AND VOLUNTEER WORKERS WHICH WILL GIVE STUDENTS AN ENRICHED OUTLOOK ON THE WORLD OF WORK. PREPARED AS AN INTERIM REPORT, THIS DOCUMENT PROVIDES AN ASSESSMENT OF THE SIX PHASES OF THE PROJECT WHICH INCLUDE: (1) THE JOB GUIDANCE AND PLACEMENT CENTER, (2) THE ELEMENTARY PROGRAM, (3) THE CAREER OPPORTUNITIES PROGRAM, AND (4) THE COMPUTER STORAGE AND RETRIEVAL PROGRAM. AN EVALUATION OF VARIOUS PHASES REVEALED THAT ALL COMPONENTS OF THE PROJECT ARE PROGRESSING TOWARD THE STATED OBJECTIVES. RECOMMENDATIONS ARE OFFERED REGARDING SUCH POINTS AS THE NEED FOR GREATER EMPHASIS ON FIELD TRIPS FOR TARGET-AREA CHILDREN. THE REPORT INCLUDES 26 APPENDIXES OF SUPPORTING OR RELATED INFORMATION. RELATED DOCUMENTS ARE AVAILABLE AS VT 014 389 (ALSO IN THIS ISSUE), AND VT 014 390, VT 014 391, AND VT 014 392 (IN AIM VOL. 5. NO. 3). (JS)

VT 014 388

INTERIM REPORT

Project No. 0-361-0115
Contract No. OEC-0-70-5181

An Accelerated Project for a Systems Program Approaching Non-Unemployment of Vocational Students

Exemplary Project in Vocational Education
Conducted Under
Part D of Public Law 90-576

James E. Hugueley
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Division of Vocational Education
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Memphis, Tennessee 38112

VT014388

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INTERIM REPORT

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The project reported herein was performed pursuant to a grant with the Bureau of Adult, Vocational, and Technical Education, Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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APPENDIX	TITLE
U	Abstract
V	ITV Advisory Committee
W	Preliminary Report by Out-house Evaluators
X	Career Orientation Guide - 7 through 9 Element
Y	Course of Study for General Cooperative Education
Z	Guide - "Start Getting That Job Now"

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SUMMARY

a. Period Covered:

June 30, 1970 to June 30, 1971

b. General Goal and Objectives of the Project:

The general objectives of the project are as follows:

1.) Develop a comprehensive and continuing program of occupational guidance information and techniques which will, from K to 14th grade, insure the maximum number of young people entering vocational programs and then bridge the gap from school to earning a living.

2.) Develop a series of "hand on" and soft educational units which will insure maximum relevance of education for the world of work.

3.) Develop within the student a desire to stay in school and obtain a general education and skills for entering into employment.

4.) Develop within the student the ability to appraise his occupational goals in a manner equal to his abilities, desires, and the forecasted needs of industry.

5.) Develop an overall program of positive relationships with community, parents, consultants, and volunteer workers which will give students an enriched outlook on the world of work.

6.) Develop all programs so the following characteristics prevail:

a. Student develops self-understanding and self-awareness.

b. Student recognizes and makes fuller use of his capabilities.

c. Students develop positive adjustment to school, community and home environments.

d. Student development of self-confidence and self-esteem.

e. Student developes the ability to make wise decisions.

7.) Develop a series of personal inventories which when given at grades 6, 9 and 12 will indicate realistic soundness of vocational choices.

8.) Develop a complete follow-up study which will test the relevance of the total project.

c. Procedures followed:

1. General Design

The general design of the project is appropriate in achieving stated objectives because it will motivate students early in their school years to be aware of the various rewarding occupational careers. It will show students a wide range of offerings and opportunities here in Memphis. In addition it is anticipated that the project will give students some idea of the job satisfaction, work conditions and income potential of varied careers.

Specifically, the project at the elementary level provides "laboratory" experiences in the occupational skills at the earliest grades which research indicates can be accomplished. At the senior high level the project has an effective placement component of a Job Guidance and Placement Center, two sections of General Co-op Training and later a computer systems retrieval for follow-up and job placement.

The three elements of the project are to be operated in a series of phases. Phase one (1) which became operational at once is the Job Guidance and Placement Center which includes the co-op work experience program. Phase two (2) Elementary program required six months after funding to become operational. However, the Curriculum Specialist working with WKNO staff (ETV) began to research and develop 16 mm fifteen minute SOF films. Some of the designs in the offerings will be organized as follows:

Kindergarten: The child learns about the work activities of his mother, his father, and other members of his household.

Grade 1: The child learns about work in his immediate environment, his home, school, church, and neighborhood.

Grade 2: The child learns about community helpers who protect and serve him as well as about familiar stores and businesses in the community.

Grade 3. The child studies the expanding community. Emphasis is placed on transportation, communication, and other major industries.

Grade 4. The child learns about the world of work at the state level, including the main industries of the state.

Grade 5. The child's studies broaden to cover the industrial life of the nation. Major industries of the various sections of the United States are selected for study.

Grade 6. The child's program is expanded to include the entire Western Hemisphere. Life in Canada and South Central America is contrasted with life in the United States.

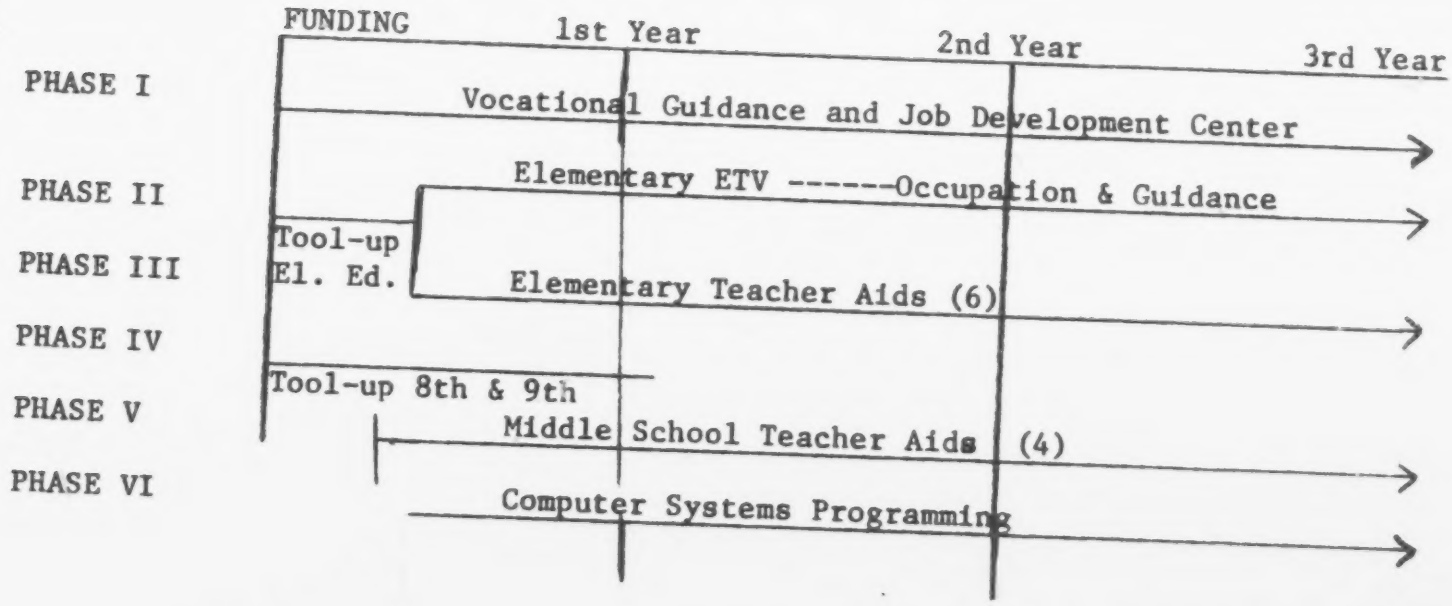
The developmental sequence of the series will start with the 5th and 6th grade and continue until kindergarten is completed. As the educational inserts (study guides, lesson plans, etc.) were developed, they were correlated at once with the scheduled T.V. coverage.

Phase 3 Three COP (Career Opportunities Program) teacher aides, and three SPAN staff members worked with the teachers in the target area schools in correlating the guidance information with certain "hands on' activities. Another federally funded project, COP, was utilized in providing three teacher aides at no cost to project SPAN. It was felt that due to the necessity of field-testing only two films during the year and the impracticality of utilizing aides full-time that the money could be better utilized in purchasing materials that were needed.

Phase 4 Started the same time as Phase 2. It is staffed with a curriculum specialist who has developed software for an occupational guidance series to be included in existing middle school programs. (See enclosed curriculum guide)

Phase 5 The necessity of developing and discovering pertinent materials for use in Phase 4 required that this phase utilizing teacher aides to implement the developed units be postponed until funding for next year. They will be scheduled into various middle schools and be used in 8th and 9th grade home economic and industrial arts classes.

Phase 6 Curriculum Specialist funds were to be deverted to computer program storage and retrieval for job placement and follow-up; however, we are planning to retain these persons and carry on this function as well. A graphic projection of various phases is as follows:



2. Schools and Location

The project is directed to that socio-economic area of our community which is predominately of the minority race and has the greatest incidence of poverty and school drop-outs.

Those schools which encompass this target area are:

Northside High School
Population 1435

Humes Jr. High
Population 1503

Elementary Schools

Caldwell - 1716

Maury - 239

Guthrie - 835

Carnes - 734

Klondike - 704

Merrill - 430

Gordon - 786

Pope - 732

Grant - 689

TOTALS 6,865

Cypress Jr. High
Population 1619

Elementary Schools

Hyde Park - 1593

Vollentine - 433

Shannon - 984

Springdale - 490

Hollywood - 908

TOTALS 4,408

3. Participants

All officially enrolled students from those schools listed in 2. above will be considered as the functioning group in the project. It must be understood that ETV materials developed in this target area will be made available to all elementary students, school system wide. The target group contains 15,800 students which represents 13% of the total student population. It is estimated that all Memphis 5th and 6th graders will take part in the ETV series. The "on hands" follow-up and teacher aide assist will be directed to approximately 5,000 K - 9 students in target area schools.

Non-public schools are in the target area: one elementary and one high school (St. Anthony and Catholic High). Materials and ETV services will be available for these schools.

d. Results; Accomplishments:

All components of the project are progressing well in line with the goals and objectives. The elementary phase of the project has produced and field-tested two films and a complete set of educational inserts and "hands-on" activities. The middle-school phase of the project has been implemented and field-tested in all home economics and industrial arts classes in the target area schools. Two classes of general co-op training have been incorporated as a part of this phase. Seventy-eight and six-tenths per cent (78.6%) of the students were placed in part-time positions and efforts are continuing for complete placement. The thirty two (32) students attended a one hour class daily and received on-the-job training each afternoon. The high school phase of the project consisted of concentrated efforts of job development and placement. Two general cooperative training classes met daily and were successful in placing ninety-two and six-tenths percent (92.6%) of the twenty-seven (27) students enrolled. Excellent rapport was developed with other on-going placement and training programs in the Memphis area. Various quick-shot programs for general target area students were conducted and concentrated placement efforts resulted in forty-one (41) full time placements.

Many students were counseled regarding the area vocational schools, state technical schools and other post-high educational and apprenticeship programs. (See Appendices A - G)

e. Evaluation:

Evaluation plans were finalized and an on-going and a systematic procedure was implemented. Three signed contracts were forwarded to Mr. John H. Getreu's Office on March 17, 1971. Evaluation plans are on schedule as outlined in the contract and the attachment to accompany the formal agreement for Project SPAN evaluation.

f. Conclusions and Recommendations:

The project is meeting its stated objectives and progressing nearly on schedule. Full implementation of all phases is a functioning reality. It is serving identified needs of our target population.

We recommend the following modifications in our original proposal and attached 1971-72 budget as stated in the April 19, 1971 letter to Dr. Sidney C. High, Jr., Chief, Exemplary Programs U.S.O.E., from Mr. W. A. McGinnis, Director of Vocational Education, Memphis City Schools: (See Appendix H - copy of letter)

References	Modifications
Page 24	1. Extend the target area boundaries to the northwest to include Westside Sr. High School district and its feeder schools. Concern has been expressed that the present target area is predominantly black. The extension of the project boundaries as stated above would tend to construct a more equal ethnic balance in the target area serving disadvantaged children. The SPAN staff will be increased by employing an additional Job Development Counselor and a Co-op Coordinator. (See Appendix I - on-site evaluation by U.S.O.E.)
Pages 17, 22, 23	2. Full air programming of ITV career orientation films produced this year will begin in September, 1971. SPAN will not produce additional films for lower elementary grades. We will retain ITV Curriculum Specialist to develop additional "hands on" and insert material to accompany the original ITV series and basic career programs for lower elementary. Additional responsibility will be in correlating all elementary classroom activities between the teacher and aide.
Pages 17, 18, 23	3. The middle school (Jr. High) Curriculum Specialist will have major emphasis of coordinating career orientation in Jr. High Industrial Arts, Home Economics and other classes. Additional duties will be in coordinating all Jr. High Co-op (work experience) programs, and assisting students in making an orderly transition into high school occupational programs.

Pages 18,23

4. Computer program will not be developed at the onset as a "job bank." The format will be limited to a "job print out" available to Sr. High and post High students and counselors. Matching by computer of jobs to students may be programmed for late 1972 or third year of grant.

5. Greater emphasis is to be placed on field trips for target area children. Emperial evidence indicates properly programmed trips to business and industry coupled with resource people visiting the school greatly improves the career concepts of children.

We also recommended in this letter that the project funds for the first year be extended until August 31, 1971.

Body of the Report

a. Problem

Enrollment and Target Area The Memphis City Schools in December, 1969, at the time of the submitting of our proposal had an enrollment of 134,049 students; elementary 70,063, middle school 34, 109, and 26,302 senior high school. In May 1969, 6,267 students graduated from our high schools. Latest follow-up data of graduates indicates that 54 percent are attempting college. It is anticipated that less than 30 percent will complete college. For all practical purposes 2,873 were available for employment. Of this number, 1,363 were students who had been trained in existing vocational programs. Local follow-up studies of all vocational graduates indicates a (related or occupation for which trained) placement of sixty-five (65) percent, while fourteen (14) percent entered the armed services or attempted post high school education. The remaining 1,509 entered or attempted to enter the labor force with no occupational training. It is estimated that thirty-five (35) percent of this group are from the minority race and were not prepared to enter the labor force. Paradoxically, this same group contains our greatest percentage of socio-economic academic and cultural handicapped. They represent fifty-three (53) percent of the total school population. This group also contributed the greatest number to the unemployed out of school youth and is the target area for a program which will aid students in finding a bridge between school and earning a living. Within the target area, poverty plays an important role; thirty-eight (38) percent of the school enrollees come from families with incomes of $3,000 or less.

The 1970-71 school year showed an increase in our enrollment. Total enrollment was 150,657; elementary 75,992, middle-school 37,734 and 28,618 senior high school. In May, 1971, 8,313 students graduated from our high schools.

The Dropout To further indicate the complexity of the problem, recent Memphis City School dropout data indicates that the dropout rate for the target area is 7.6% or twice as much as the local educational agency rate. Significant dropout patterns have been found as early as the 9th grade. By the time that the dropout leaves high school he is in the 11th grade and has reached the compulsory attendance age (17 years old). He is not equipped with vocational skills. For example, during 1968-69 school year 585 students dropped out of target area schools. Of this number only 16 were vocational students who, in the opinion of the teacher, had developed saleable skills for employment in occupations for which trained.

To aid in combating the dropout problem the Memphis City Schools has established the Occupational Emphasis Program involving 180 potential dropout students. In this experimental setting these students are learning occupational skills, obtaining high school credits toward graduation and employment. Of significance is the eighty-five (85) to ninety (90) percent average daily attendance for a group of students who previously attended school rarely. Unfortunately this program does not presently have the capacity to meet the needs of all students who could be helped.

Other Local Solutions in Vocational Education

Other programs which currently operate cooperatively by the Division of Vocational Education and Special Education are the Perceptual Handicapped-Pre-vocational-Coop Training Program and Special Needs Elementary Skill Centers. The former is too new to ascertain its success in placing students in a full time occupational setting. However, the latter, located in target area elementary schools, has some success in holding overage in elementary grade students in an occupational training and basic education environment until they can be placed into the middle school, full-time employment or in post-high school vocational programs at age 17.

In three target area high schools there are vocational improvement team teaching programs which vocationally relate remedial reading and arithmetic. This program though remedial in nature tends to keep students in trade and industrial subjects by reinforcing certain academic skills needed to understand better the dialogue of industry.

Additional Vocational Division studies indicate that not more than eighty-five (85) percent of the vocational training stations are filled in the target area schools, yet they have the capability of training 1,820 students in the subject areas of Trade and Industry, Distributive Education, Vocational Office Education, Occupational Home Economics, and Occupational Health Education. Additional guidance and counseling would tend to increase the enrollment by 364 students.

Required subjects in target area middle schools which tend to direct students into vocational programs are 8th grade industrial arts and home economics. In the target area there are 488 students taking 8th grade industrial arts and 406 taking home economics. Logic indicates that many boys and girls should follow-up with 9th grade comparable subjects if they are to take vocational programs in high school. Target area middle schools enrolled 1,548 in 9th grade industrial arts and home economics, less than 500 are boys. It is estimated that this figure could reach 1,800 students. However, there is evidence to indicate that all target area boys while not taking 8th grade industrial arts are taking this same subject in the 9th grade.

From the information presented it appears that potential non-college bound students are not being programmed into vocational subjects when "transitioning" into target area high schools.

Placement Need

Placement records indicated that all vocational graduates are not finding work in jobs for which they are trained. As more and more young adults graduate from high school the placement problem increases. In Memphis it has been detected that there

exists a mismatch and nonmatching of students from high school vocational programs with local work stations or additional skill training at vocational and technical post high school programs. Current literature indicates that placement of target area type students can be improved provided the student who has acquired vocational skills is matched with the correct job, work station and employer. The Education Commission of the States suggested, "The educational system should be responsible for carrying each student, of whatever age, through to the next step."

In a community such as Memphis serious problems in identifying job work stations can be narrowed to the following, (1) largeness of the industrial and business community, (2) great distance to travel to locate suitable work stations, (3) teachers accepting a responsibility unlike those of their academic colleagues, (4) lack of teacher release time for making contacts and (5) lack of funds for travel.

Additional problems arise for the college bound student who near graduation has changed his mind and now decides to enter the world of work. Literature indicates that it is the responsibility of the school to train and place this student. The task becomes complicated when without saleable skills the person goes door to door seeking employment. Various studies indicate that somewhere in this student's program he should be given an opportunity to quickly learn those skills needed for employment. In the Memphis City Schools the Distributive Education program has shown that it is possible to train young adults in a short time for employment. Pre-Christmas Sales Training Programs, conducted on a voluntary basis after school hours, has prepared hundreds who have been successfully employed for peak season sales work.

Parent's Role in Vocational Selection

Literature indicates that parents are not especially helpful in resolving personal, educational, or vocational problems. Betz reports in "Perceptions of Non-college Bound Vocationally-Oriented High School Graduates," that poor parental assistance coupled with the students rather limited perception of the school, means that there is an absence of a 'significant other' to help these students make satisfactory vocational decisions." It is suggested that within the target area this is the case.

Of a serious nature is the poor concept parents have of a working environment which is more sophisticated than theirs. Various subjective observations made by the Memphis Vocational Staff indicates that parents of target area students hinder successful employment after training due to their lack of knowledge of what industry and business expect in respect to punctuality, working a full week or day, honesty and pride of workmanship. It is suggested that parents, teachers and guidance personnel need in-depth training into ways of directing the above attitudes. Business and industry will give the target area student a chance to be employed if the student approaches work in a serious and productive manner.

Problem Assumptions

The evidence presented which focuses in on the problem suggests the following:

1. Memphis City Schools has a target area made up of predominantly the minority race which tends to find its students handicapped and disadvantaged. They are children with special needs.

2. The dropout problem in target area schools is real and serious.

3. A large percentage of Memphis high school graduates are attempting to enter the world of work without vocational training. Vocational trainees are more successful in obtaining the first job. Target area schools are less sucessful in placing non-vocational students than non-target area schools.

4. Training space is available in vocational classes in target area schools.

5. The middle school's enrollment of students in subjects which normally direct students to vocational education indicates there is a large group of students who are:

   a. Uncommitted
   b. Uninspired
   c. Undecided

6. Industry and business have indicated that they will hire trained personnel regardless of ethnic origin, economic status, or handicaps.

7. Indications are that middle and senior high school educational selections would be more relevant to student needs for earning a living if in early years students developed a realistic concept of work and occupations.

8. Students taking vocational education are not dropout prone.

9. Memphis does not have an organized, student centered occupational orientation program.

10. Parents tend to fail to encourage vocational students to seek and keep their first job.

11. Early school dropouts need a "quick shot" approach to learning basic occupational skills and job attitudes.

Problem Conclusion

The Memphis Board of Education has committed itself to the highest quality education possible. Rapid influx of students into the target area from surrounding communities and our operating budget which is lower than any school system in its population area makes the goal of quality education less than a reality. However, it should be noted that a number of innovative programs are in operation which are developing a high degree of expertise within associated personnel. It becomes the goal of this system to present a proposal for an exemplary project which will focus in preparing students for earning a living. The geographical target area is located in the most seriously disadvantaged and poverty areas of the school community.

The project is designed to give occupational orientation from K through 14. It is composed of exemplary elements leading to placement of vocational and nonvocational students.

The operational elements are designed to utilize many services from local innovative projects operated by the Division of Instruction, local employment service agencies, and various public and private post high school occupational training programs. The total project has been designed around other innovative and experimental programs discovered during research for the proposal.

b. Objectives and Goals of the Project

The complex nature of the total program dictates that the objectives be listed as general and specific. This approach tends to offer objectives for each element of the proposal that are concise and able to be proven.

A. General

1. Develop a comprehensive and continuing program of occupational guidance information and techniques which will, from K to 14th grade, insure the maximum number of young people entering vocational programs and then bridge the gap from school to earning a living.

2. Develop a series of "handson" and soft educational units which will insure maximum relevance of education and skills for entering into employment.

3. Develop within the student a desire to stay in school and obtain a general education and skills for entering into employment.

4. Develop within the student the ability to appraise his occupational goals in a manner equal to his abilities, desires, and the forecasted needs of industry.

5. Develop an overall program of positive relationships with community, parents, consultants, and volunteer workers which will give students an enriched outlook on the world of work.

6. Develop all programs so the following characteristics prevail:

   a. Student develops self-understanding and self-awareness
   b. Student recognizes and makes fuller use of his capabilities
   c. Students develop positive adjustment to school, community and home environments
   d. Student development of self-confidence and self-esteem
   e. Student developes the ability to make wise decisions

7. Develop a series of personal inventories which when given at grades 6, 9 and 12 will indicate realistic soundness of vocational choices.

8. Develop a complete follow-up study which will test the relevance of the total project.

B. Specific

K through 6

1. Develop a series of ETV guidance films which are designed to give maximum emphasis on preparing a youngster to select realistic life goals leading towards specific educational preparation in the middle and high school.

2. Develop those "educational inserts" which will correlate the ETV film series with existing T.V. programs and curricular elements in the science and social studies areas.

3. Develop a program of "hands on" activities for grades K through 6 which will tend to improve manipulative skills at early years.

4. Develop a high degree of occupational sensitivity within the elementary teacher.

7 through 9 Element

1. Develop a relevant approach to industrial arts and home economics which will keep students in school.

2. Develop a series of educational inserts which are designed to give students experiences in making occupational choices and then enroll in appropriate courses in high schools.

10 through 12 Element

1. Develop a vocational guidance and job placement center which will direct its attention to the placement and follow-up of vocational students.

   Additional objectives of this center are:

   a. Aid students in the selection of occupational fields of training in relation to their desires, acquired skills, innate abilities and the forecasted demands of industry and business.

   b. Give students personal guidance and counseling in order to aid them in daily problem solving activities.

   c. Follow-up on students as they progresses through their training. Develop a workable relationship with each instructor in attempting to understand the potential and limits of each student.

   d. Provide pre-employment orientation in preparation to occupational applications and interviews.

   e. Develop job placement and post high school educational opportunities for senior and graduating Voc-ED students within the target area comprehensive high school.

   f. To develop an accurate follow-up program on all students. The maintenance of adequate records to insure rapid retrieval of information will be a significant goal of this objective.

   g. To develop a program of orientation for feeder junior high schools servicing each comprehensive high school.

2. Develop a co-op program designed to give work experience to 12th grade vocational students, and those entering into employment but not having marketable skills.

3. Develop a summer or after school hour basic skill program for non-vocational and non-college bound students which will equip them with saleable skills for entry level employment.

4. Develop programs which will give employment and future educational direction to the dropout student.

c. Description of general project design and procedures followed

* PERT
Activity - SPAN

EVENTS	ACTIVITY	
1. Funding Project		
2. Project Director on hand	2,3	employ personnel
3. Curriculum Specialist on hand		
4. Office facilities ready	4a	order telephone service for East Branch and Northside Headquarters
5. Equipment and supplies on hand	5a	order office equipment and supplies for East Branch and Northside
	5b	select and order Guidance publications and books
	5c	order audio (tapes, records, recorder)
	5d	equipment and supplies received for East Branch and Northside Headquarters
6. ETV element organized	6a	establish ETV advisory committee
	6b	select and order interest inventory
	6c	select schools in target area to be given inventory
	6d	advise principal, request his approval
	6f	parent conference interview
	6g	develop student survey-interview sheet
	6h	establish sample questions to be used in tape interviews
	6i	establish schedule of survey of interest for elementary schools

*Includes events and activities from June, 1970, through June, 1971.

PERT (continued)

EVENTS	ACTIVITY	
6. ETV element organized (cont'd)	6j	ETV Advisory Meeting - Dutch treat luncheon
	6k	tabulate results of interview
	6l	tabulate results of parent interview
	6m	tabulate results of teacher interview
	6n	interview Tennessee Employment Security re: Occupations
	6o	contact Chamber of Commerce regarding project and potential industries
	6p	convert potential industry to potential occupations
	6q	match Tennessee Employment Security, student desires, Chamber information
	6r	select unlimited number of galaxies for films
	6s	develop sequence of shooting first fifteen films
	6t	obtain examples of tapes from other systems
	6u	review tapes and films
	6v	select format for SPAN approach to ETV units
	6w	theme song
	6x	research types of music
	6y	selection of tapes vs. 16mm film
	6z	selection color vs black and white

PERT (continued)

EVENTS	ACTIVITY	
6. ETV element organized (cont'd)	6aa	selection of length
	6bb	develop scripts
	6cc	develop "hands on" and educational inserts for 1st ETV unit
	6dd	select characters and locations for 1st ETV unit
	6ee	shooting of 1st ETV unit
	6ff	in-service of teachers of ELMED element
	6gg	educational inserts and 1st ETV unit ready for implementation
	6hh	in-service of all elementary supervisors in the Memphis City Schools
	6ii	pre-test of selected target area children
	6jj	field test of 1st ETV unit implemented with "hands on" educational inserts and WKNO showing of film
	6kk	post test to selected target area children
7. ETV Occupational Ready to Film	7a	locations, characters, script selected and ready for shooting
	7b	locations, characters, script selected and ready for 2nd ETV unit
	7c	develop "hands on" and educational inserts for 2nd ETV unit

PERT (continued)

7. ETV Occupational Ready to Film (continued)	7d	shooting of 2nd ETV unit
	7e	field test in target area of 2nd ETV unit
	7f	locations, characters, scripts selected and ready for shooting of 3rd and 4th ETV unit
8. Middle School Element Organized and Staffed	8a	obtain home economics and industrial arts curriculum guides
	8b	conference with teachers, counselors and supervisors
	8c	order interest literature
	8d	review current interest literature
	8e	request copies of interest literature currently used by counselors and vocational teachers in Memphis School system
	8f	list interest literature in junior high school library
	8g	research curriculum library at Memphis State University for interest material
	8h	start writing occupational orientation curriculum for middle school element
	8i	secure copies of textbooks used in vocational courses
	8j	periodical check with supervisor and director on progress
	8k	occupational orientation curriculum written and completed for middle school elements

PERT (continued)

EVENTS	ACTIVITY	
8. Middle School Element Organized and Staffed (continued)	8l	in-service for home economics and industrial arts teachers and supervisors
	8m	pre-test given to target area students before implementation of middle school elements
	8n	implementation of middle school occupational orientation curriculum
	8o	field test and implementation of occupational orientation curriculum in all Home Economics and Industrial Arts classrooms in target area
	8p	post test given to target area students after implementation of middle school elements
	8q	implementation of general co-op training classes in middle school element
	8r	placement of general co-op training students
9. High School Element Organized and Staffed	9a	staff on hand
	9b	initial contact with schools through guidance departments and principals
	9c	establish student criteria and select students
	9d	compile course material and curriculum guide for co-op phase
	9e	curriculum guide and course material complete for this element

PERT (continued)

EVENTS	ACTIVITY	
9. High School Element Organized and Staffed (continued	9f	high school element implemented with co-op classes and guidance and placement center
	9g	guidance and job placement of general co-op training students
	9h	guidance and job placement of vocational seniors at target area high school
	9i	implementation of numerous "quick shot" programs for selected general students

d. Results and Accomplishments of the Project

Explanation of PERT - Activity SPAN

We have concentrated on both the general and specific objectives and goals of the project during this first year. We have divided the project into four elements for discussion purposes: K through 6 element, 7 through 9 element, 10 through 12 element, and Administration.

The K through 6 element was staffed with an elementary curriculum writer, Mrs. Mary Payne, on August 6, 1970. She began research on deciding on the correct approach to use in the I.T.V. series. She visited the Atlanta, Georgia School System and Mrs. Helen Cook to view the approach that had been used there. I.T.V occupational films and tapes were ordered from other school systems across the country. She viewed these with members of the WKNO-TV staff. Two of these films were field tested in elementary classrooms to get reactions of elementary students. She determined very quickly that various approaches used in these films would not suffice for our purposes. The films did not hold the attention of the students.

The final challenge was evident — we needed a theme that would hold the student's attention. We began a diligent effort to discover what this might be. We could discount some ideas that have been presented in the films from other systems. In an effort to discover the approach which we should use, we administered the Science Research Associates' Interest Inventory, "What I Like to Do." The purpose in administering this particular test was to determine the interests of fifth and sixth graders in the target area, with the idea that these interests could then be incorporated into the ETV films and educational inserts. The tabulation of the scores of these fifth and sixth graders were as follows:

Raw Score Mean

	5th grade girls	5th grade boys
art	65 percentile	75 percentile
music	65 percentile	80 percentile
social studies	70 percentile	60 percentile
quiet play	70 percentile	70 percentile
active play	50 percentile	50 percentile
manual arts	68 percentile	60 percentile
home arts	65 percentile	78 percentile
science	65 percentile	32 percentile

	6th grade girls	6th grade boys
art	61 percentile	70 percentile
music	52 percentile	78 percentile
social studies	70 percentile	52 percentile
active play	52 percentile	65 percentile
quiet play	75 percentile	60 percentile
manual arts	74 percentile	65 percentile
home arts	60 percentile	82 percentile
science	65 percentile	48 percentile

Our conclusion was that music and artistic backgrounds for the films would be a necessity. The need for developing and/or utilizing scrap books was evident. The high level of interest in the manual arts indicated that "hands on" activities involving building things and working with tools was advisable. A close association with home activities was indicated by the high scores in home arts. These scores lead us to place emphasis on life styles in the films. The relative lower scores in the social studies and science areas may be based on the fact that many of the statements in these two areas began with the words: "Read a ....." or "Listen to a lecture about .....". These results lead us to lean more heavily on the physical involvement of the child in the activities and to avoid reading and/or talking to any great extent. (See Appendix J for a copy of the inventory)

An E.T.V. overall advisory committee was also formed to help with planning for the film series. Representatives from education, industry, parents and WKNO-TV volunteered to serve on the committee. (See Appendix V for copy of the Advisory Committee)

The first ETV advisory committee meeting was held in September, 1970. At this meeting, the committee was given a folder containing the names and titles of the committee members, a list of the experimental schools and the names of the principals, counselors, teachers and community workers or parents that were involved in the project, a schedule of activities for starting phase I of the project, copies of the project abstract, copies of the questionnaire to be given the students,and copies of the 1st PERT activities.

The staff gave a brief progress report after which the committee members were told how their expertise would be utilized in the project. The members expressed an eagerness to serve; each felt that the project was meeting a great need in the Memphis area.

It became evident after a short period of time that the time schedule of the ITV series was overly ambitious. Mrs. Grace Williams was hired on August 17, 1970 to be curriculum writer for the junior high level. In addition to her regular duties, whe assisted Mrs. Payne in the preliminary planning of the elementary phase to get it operational.

Various home visits were initiated by the two ladies. Approximately twenty parents in the communities of the experimental schools were visited. The parents were informed of the general objectives of the project and the activities in which the students would be participating. They were very receptive and expressed pleasure at having this type of program in their schools. They offered to assist in any way they could with the project; most agreed to meet with the SPAN staff and review the materials developed at intervals during the year. It was felt that the home visits gave the SPAN staff some insight into the community's problems and at the same time gave the parents the feeling that the Board of Education and the Vocational Education Division were concerned about their children.

Another questionnaire was administered to the same experimental group as the SRA "What I Like to Do." (See Appendix K for a copy of the questionnaire) We needed additional information regarding student awareness at these grade levels. Generally speaking, the information obtained was what we had expected (that is, it was similar in part to what the Atlanta project found). Few of the children knew occupational titles other than old stand bys like teacher, doctor, nurse, policeman, mailman and fireman. A number of the boys wanted to be football players, and some of the girls wanted to be stewardesses or movie stars. Although they were not always able to supply names for the occupations, the boys described the work done by sixty-one different workers. The answers were quite revealing: one boy said he want to be a "man"; another wanted to be an "important man" when he grew up; another simply wanted to be "something." The girls were not quite as diversified; they only described 38 different workers. The answers ranged from "teacher" to "a harpsichord player."

On December 16, 1970, Mrs. Payne and Mrs. Williams met with Mr. George D. Clark, Director of Elementary Instruction, and a delegation of 5th and 6th grade teachers from the target area for the purpose of gaining insight and direction for the "hands on" materials for the elementary portion of Project SPAN. Also in attendance were Mr. W. A. McGinnis, Director of the Vocational

Division, Mr. James Marsh, Assistant Director of the Vocational Division, Mr. John Ralston, Supervisor of Industrial Arts, Mrs. Odessa Myers, Elementary Supervisor, and Mr. Gene Holland, Principal of Gordon Elementary.

Each person was given a packet containing samples or descriptions of the various "hands on" materials and a check list for evaluating the material. (See Appendix L for a sample of these materials)

The group discussed the advantages and disadvantages of hardware versus software for use in the classroom; no conclusion was reached at this meeting. The members were asked to return an enclosed checklist and the approach to be used would be decided on the basis of this checklist.

The budget that was approved by the U.S. Office of Education permitted us to produce only ten (10) ETV films. WKNO-TV usually charges approximately $2,000 for each film comparable to the ones they are producing for our project. Various negotiations were conducted and a figure of $820.00 per film was agreed upon. (See Appendix M for letter from Mr. Howard Holst) The deadlines were considered to be too optimistic, however.

The problem of which particular career clusters would be presented in the films were next attacked. Various projections of labor needs in our area over the next decade or two were explored. Various groups came to the surface at this point and desired that their occupations be featured. Various building trades associations and unions made offers to help us to implement a film on their area, but these proved to be "talk" and little action. These were construed as attempts to gain some publicity at our expense.

In consultation with our advisory committees and the vocational division, we arrived at a series of clusters to be presented in the films. They are included in Appendix N.

Some changes in titles were made as work on these continued, but the clusters of occupations remained as originally decided.

The first ETV film entitled "Who Builds Our Houses?" was field-tested on March 1 and 2, 1971 and the "hands on" activities were field-tested in twelve (12) 5th and 6th grade classrooms in the target area on March 4 and 5, 1971. Three Career Opportunities Program (COP) teacher aides assisted Mr. Hugueley, Mrs. Payne and Mrs. Williams in the implementation of the "hands on" activities. (See Appendix O for materials used in this field-test) All 5th and 6th grade classrooms in both the city and county school systems, one-thousand classrooms, received these materials. Response was favorable and we decided that our approach was correct. We had a film and a complete set of inserts to use as a pattern for future films in the series.

The second film was field-tested on the Health Occupations, "Who Keeps Us Healthy?" on May 12 and 13, 1971. (See Appendix P for a letter and checklist)

The educational inserts and "hands on" activities are now written for the majority of the ten(10) films and scheduling has been arranged for implementation during next school year. A film will be shown each month and teacher aides will work with all of the 5th and 6th grade classrooms in our target area on a rotating basis. This will permit a total of approximately 4,000 students to obtain assisted "hands on" activities.

The cost of providing instructional materials is a heavy burden. Financially, we are unable to do so with our present budget. To solve this problem has required that we solicit donations from the business community. Businesses have shown a willingness to donate materials and equipment for our use previously. The field tests conducted after the showing of the first two films would have been impossible except for donations from businesses. They donated bricks, trowels, paint, brushes, faucets, sand paper and a multitude of other materials. This saved the project much money that was needed elsewhere.

With donations from businesses and our anticipated funding, we can provide "hands on" experiences in all 127 classrooms during next school year.

Our goal is August 20, 1971, to have all educational inserts and "hands on" activities printed and packaged for distribution. We also plan to have all "hands on" materials ready for all ten films and ready for distribution at selected intervals during next school year. The expanded target area will permit us to provide services to fifteen (15) elementary schools.

The 7 through 9 element was staffed with a curriculum writer, Mrs. Grace Williams, on August 17, 1970. She began to research this phase and discover materials that had been previously developed. ERIC helped with this research effort. She started to bring all career materials together and to obtain sources for free and inexpensive teaching aides.

The K through 6 and 7 through 9 elements were housed in a room at the Adult Education Center-East Branch. The office was staffed with a secretary, Mrs. Barbara DeLee, who would work with these two elements of the project.

It was soon evident that the expertise of Mrs. Williams was needed in the elementary phase as well. The task of getting this phase off the ground required a tremendous amount of effort. Mrs. Williams, therefore, allotted her time between both of these elements of the project.

As the elementary phase gained momentum, Mrs. Williams was able to allot time to the 7-9 element. She researched the libraries of each of our target area middle schools to see what occupational materials were available for student use. She obtained home economics and industrial arts curriculum guides and arranged conferences with teachers, counselors and supervisors of these two areas. After proper research of all available sources, she began construction of a occupational orientation curriculum guide. It was written in such a way as to be integrated into the curriculums of industrial arts and home economics.

This guide was completed in January, 1970, and field-tested in each home economics and industrial arts classroom in the target area schools. A pre- and post-test was given to ascertain its effectiveness in meeting stated objectives. (See Appendix W for a copy of this guide)

The on-going evaluation process required much time. Pre- and post-tests had to be given and checked by the elementary and middle school curriculum writers. The Gordon Occupational Check List was recommended by our evaluators as the proper test for the 7 through 9 element. The results of these will be made a part of their annual report.

The 7 through 9 element is ready for full implementation in September, 1971. Two full-time teacher aides will rotate between three schools and help the teachers to implement the guide and various "hands on" activities.

The social studies teachers at the seventh grade level are interested in integrating occupational orientation in their curriculum. An addition to the guide is being prepared this summer to permit this in the fall.

Another part of the 7 through 9 element is the General Co-op Training Class. Two classes of thirty-two (32) students were offered for students who were 16 years of age. These classes met daily and began during the second semester, 1971 school year. The students were released from school in the afternoon to pursue a job in industry. Placement efforts were successful. (See attached chart in Appendix A)

We plan to expand these classes to two at each of our target area junior high schools during next year. This will permit us to reach all over-aged students in these schools.

Mr. John Coulthurst and Mrs. Kathering King are our General Co-op Training Teacher-Coordinators at this level. They also taught a class of General Co-op Training at our target area high school, Northside, during the second semester of last school year. (See Appendix Q for a listing of students and training stations)

The 10 through 12 element became operational during second semester, January, 1971. It is staffed by a Job Development Person, Mr. Marshall Marcus, and part-time duties of Mr. John Coulthurst and Mrs. Katherine King. Mr. Marcus joined our staff on October 16, 1970 and began to

research this phase. A need that quickly became evident was a curriculum guide that could be used by our teachers at this level. Mr. James Hugueley and Mr. Marcus began to construct a guide for this purpose. (See Appendix X for a copy of this guide)

Mr. Marcus originally was hired for a teacher-coordinator position, but his expertise was required in the job development position. He, however, helped to set up the classes in the junior high schools and high school in our target area.

He contacted all guidance counselor at each junior high school and Northside high school to plan the program for each school.

Students for the junior high co-op phase had to be interviewed and proper schedules changed initiated. Final selections were effected and arrangements were made for the classes to begin second semester.

Materials were also researched for our use in numerous "quick shot" programs that were planned. An excellent guide was discovered at the Memphis Community Learning Lab, a federally funded project. The guide was utilized in these classes. (See Appendix Y for a copy of this guide)

A set of visuals and sample applications were ordered for our use also at this level.

See Appendixes A-F for charts on our contacts and placements.

The project has been cooperating with many other agencies in line with our objectives and goals. A listing of the agencies can be found in Appendix G.

The approach to be used in the 10 through 12 element has been modified and we feel improved for next school year. All vocational students will be exposed to a two (2) weeks unit stressing basic job skills and attitudes. A general co-op class will meet daily for students who desire training in a vocational area that is not offered at Northside. They will obtain co-op work experience in the afternoon. All second semester vocational seniors will be given a chance to obtain work experience as ready during their second semester of the senior year.

In our research for the project at all three levels, we have brought together many career pamphlets, brochures and teaching materials. These are being catalogued for use in our vocational guidance activities. We plan to make these available to all teachers, counselors and administrators in our school system. A bibliography will be printed for distribution to all schools. The materials are being catalogued according to subject matter, title, and publisher. (See Appendix R for a sample procedure)

The Administrative Structure

The administrative structure of the total program is headed by the Director of Vocational Education, Department of Instruction. To assure continuity, organization and direction the Vocational Education Director will be assisted by an overall project coordinator.

Assigned curriculum specialist will work directly under his supervision. Teacher aides will be assigned to the elementary and middle school curriculum specialists and rotated through various schools as the plan dictates. (See Appendix S)

The Vocational Guidance and Job Placement Center will be jointly administrated by the target school principal and the Vocational Education Director. Co-op teachers assigned to this element will be directed by the job placement specialist.

Headquarters for this project will be Northside High School as it is centrally located to the target area population. (See Appendix T for a copy of the organizational chart and See Appendix U for a copy of the Abstract)

The SPAN project director, James E. Hugueley, was employed on September 1, 1970.

Mr. James Marsh, Assistant Director of Vocational Division, was acting director in the interim period. He served in this capacity until September 1, 1970. The two curriculum specialists and one secretary were hired during this period.

James E. Hugueley.....Project Director--employed September 1, 1970

Mary B. Payne.....Curriculum Writer-ETV series--employed August 6, 1970

Grace Williams.....Curriculum Writer-Jr. High Level employed August 17, 1970

Barbara DeLee.....Secretary, Adult East Branch section employed August 24, 1970

Doris D. Flowers.....Secretary, Northside Headquarters employed October 1, 1970

Marshall Marcus.....Job Development Person, Northside Headquarters--employed October 16, 1970

John Coulthurst.....Co-op Coordinator, Northside Headquarters employed December 14, 1970

Katherine King.....Co-op Coordinator, Northside Headquarters employed January 28, 1971

Jerry Turpin.....Elementary Curriculum Writer--employed June 1, 1971

e. Evaluation of Project

A final yearly report of our "out-house" evaluators will be included in our August 31, 1971 Quarterly Report. (See the Preliminary Reports in Appendices I and W)

f. Conclusions, Implications, and Recommendations for the Future

The Project is progressing well in live with state objectives and goals. Steps have and are being taken for eventual integration into our entire school system. Information is being disseminated throughout the state of Tennessee. We feel the project has been and will continue to fulfill its mandate and meet the needs of the students it serves.

Our recommendations for the future can be found in Appendix H of this report.

James E. Hingeley
Signature of Project Director

June 30, 1971
Date

W. A. McLemore
Approved
Director of Vocational Education

APPENDIX A

* CLASS ENROLLMENTS IN GENERAL COOPERATIVE TRAINING CLASSES DURING THE SECOND SEMESTER OF THE 1971 SCHOOL YEAR AT CYPRESS AND HUMES JUNIOR HIGH SCHOOLS

HUMES JR. HIGH	MALE	10	
	FEMALE	5	(86.6 % Placement)
	** PLACEMENTS	13	
CYPRESS JR. HIGH	MALE	15	
	FEMALE	2	(70.6 % Placement)
	** PLACEMENTS	12	

* These students were at least 16 years of age and in the 8th or 9th grade in school. They attended class for one hour daily and were released from school in the afternoon.

** Represent placements in a part-time , paid position in business and industry. These figures reflect efforts from January 21 through May 31, 1971. Efforts are continuing during the summer to affect total placement. These students are visited regularly on the job.

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APPENDIX B

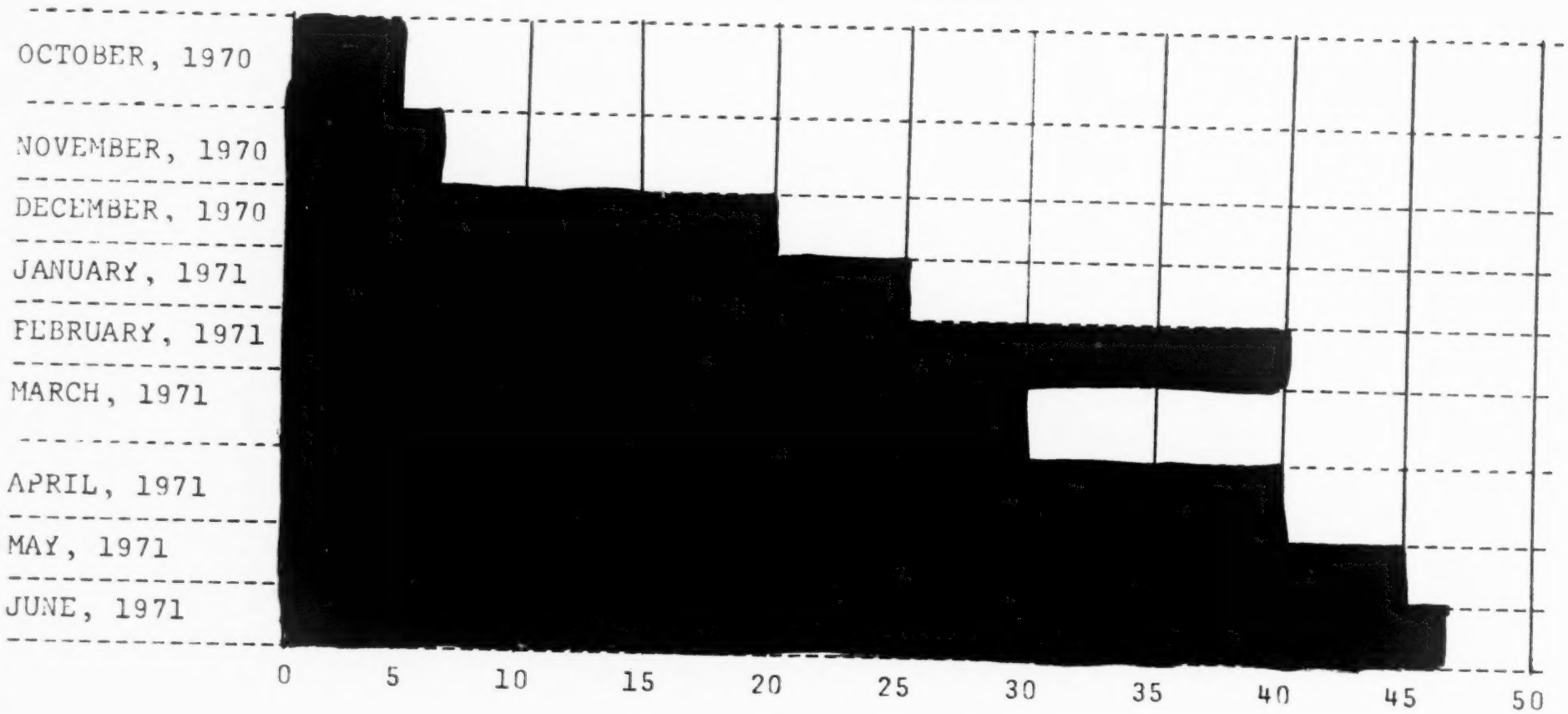
* ENROLLMENTS AND PLACEMENTS IN NORTHSIDE
GENERAL COOPERATIVE TRAINING CLASSES DURING
SECOND SEMESTER OF 1971 SCHOOL YEAR

NORTHSIDE HIGH SCHOOL	MALE	16	
	FEMALE	11	(92.6 %)
	PLACEMENTS	25	

* Students attended a GCT Class for one hour daily and were permitted to gain part-time experience in business and industry in the afternoon. School credit is given for the class and on the job training. They are visited regularly on the job by the teacher-coordinator. Vocational students were placed in the area in which they were receiving their vocational training.

APPENDIX C

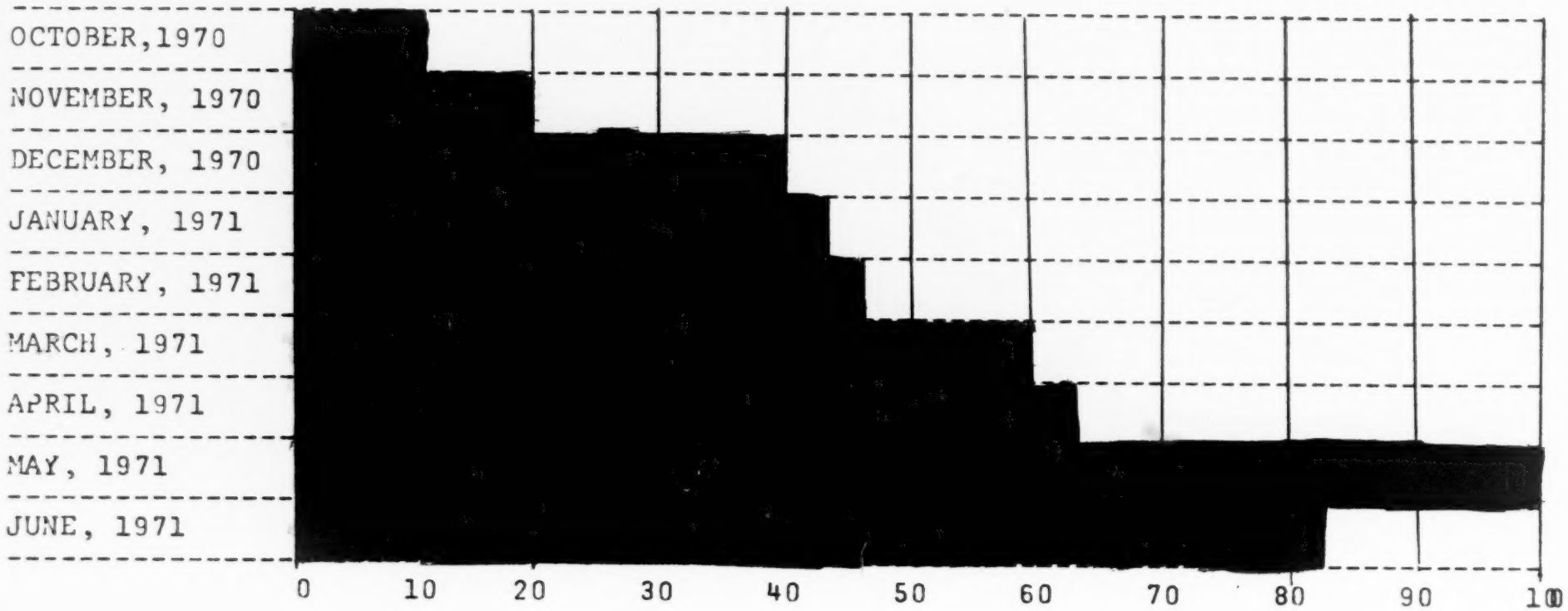
* STUDENT REFERRALS TO EMPLOYERS
FOR INTERVIEWS AND POTENTIAL PLACEMENT
(OCTOBER, 1970 THROUGH JUNE, 1971)



* Denotes referrals to employers for interviews and potential placement. This includes both the General Cooperative Training Students and those referred from the Vocational Services at Northside High School.

APPENDIX D

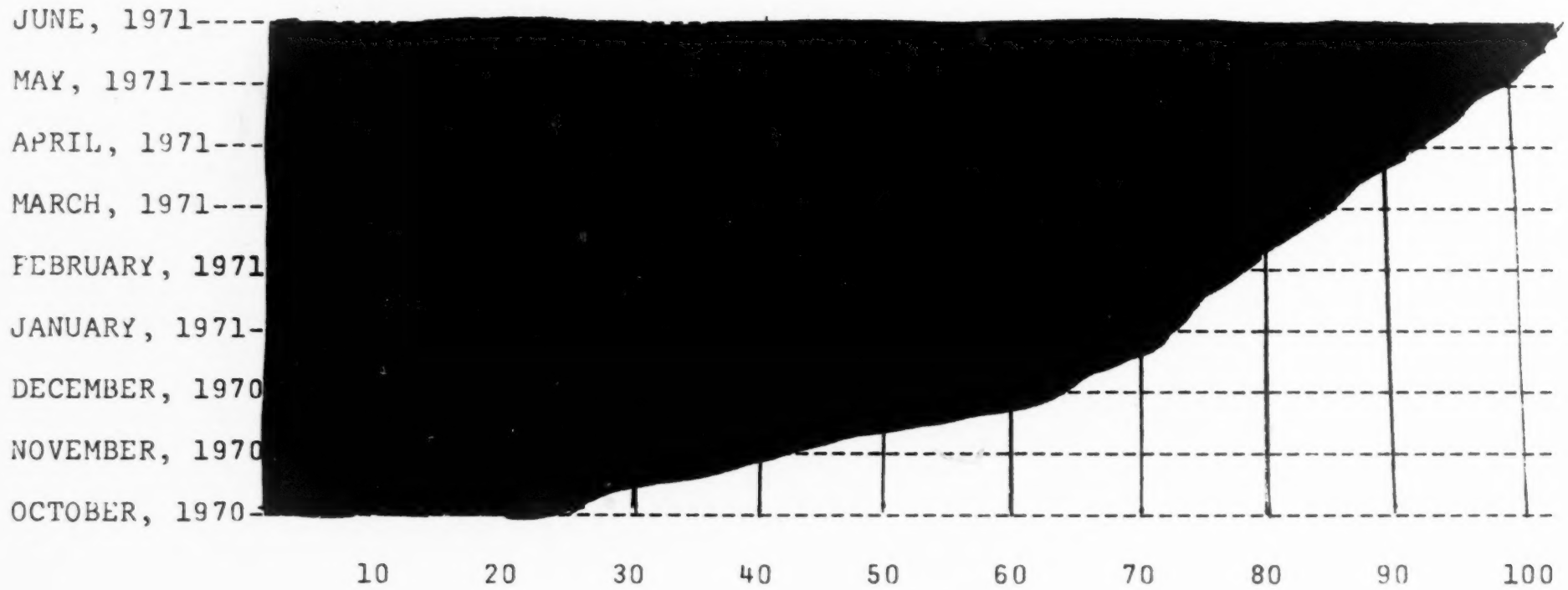
* VOCATIONAL AND OCCUPATIONAL GUIDANCE CONFERENCES
WITH TARGET AREA HIGH SCHOOL STUDENTS --NORTHSIDE HIGH
(OCTOBER 16, 1970 THROUGH JUNE 30, 1971)



* Denotes the number of students that came by the SPAN Office and/or was contacted in his classes for the purpose of vocational and occupational guidance. This includes contacts by our job developer and two teacher-coordinators with Northside Students.

APPENDIX E

* EMPLOYER AND COMMUNITY CONTACTS
JOB DEVELOPMENT
OCTOBER 16, 1970 THROUGH JUNE 30, 1971



* Denotes contacts made with potential employers, parents and other individuals regarding the SPAN PROJECT.

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APPENDIX F

* JOB DEVELOPMENT AND PLACEMENT
NORTHSIDE HIGH SCHOOL

SENIORS

Names	Telephone	Job Site
Carl Owens	323-6410	Cole Manufacturer
Reginald Owens	525-3038	"
Jimmy Virgin	276-0992	"
Michael Albright	527-9882	"
Joe Mitchell	278-6971	"
John Rucker	278-9928	"
Johnny Bell	526-5870	"
James Miller	357-4961	"
Joseph Elliott	358-3819	"
Edward McKinley	527-0733	Carl Carson
Larry Goodman		Buckeroo Steak House (Park)
Clara Drain	323-4935	Corp. of Engineers
Jimmy Harrison		Tenn. Voc. Rehab & Electrical Apprenticeship
Michael Henderson	527-0196	Tenn Voc Rehab
Larry Self (Junior)	275-2823	Defense Depot Electrical Helper
Linda Freeman	526-4001	Adult Special Project Program - Office Occupation
Helen Lee	526-4606	Adult Special Program
Wyonia Springfield	526-1771	Animal Program "
Gladys Weaver	525-3013	Adult Special Project Program - Office Occupation
Marva Bradford	527-3665	"
Robert Ross	275-0955	Memphis Furniture
Leon Brethett	527-4101	"
Debra Craven	278-9492	"
Louis Young	276-5344	"
Walter Williams	398-2132	"
Robert Little		"
Ronald Reed	275-3230	"
Karl Gray		"

* Placements other than those students enrolled in General Cooperative Training Classes at Northside High School.

(CONTINUED)

Name	Telephone	Job Site
Rex Wallace	274-2977	Adult Special Program
Freddie Mask	452-5877	Auto Mechanics "
Walter Leveay	274-8026	Memphis Ice Cream Summer Job - College
Wayne Bean	525-4381	Jr. Hired Southwestern Printing Department
John Aldridge	276-6763	Apprenticeship Opportunity Center Training Program
David Adair	274-1509	"
Charles Boswell	323-7208	"
William Chalmers	527-9150	"
Bruce Quinn	526-6263	"
Mike McClenden	275-8766	"
Ronnie Vasser	525-1541	"
June Harts	324-9735	"
Prentice Hawkins	275-7876	"

APPENDIX G

THE FOLLOWING IS A LIST OF COMMUNITY, PRIVATE AND PUBLIC ORGANIZATIONS OUTSIDE THE MEMPHIS BOARD OF EDUCATION. WE HAVE MET WITH MEMBERS OF THESE ORGANIZATIONS, EXCHANGED IDEAS AND INFORMATION, AND HAVE ESTABLISHED WORKING RELATIONSHIPS WITH MANY OF THEM:

1. Coordinating Committee for Jobs for youth - Sponsored by the Mayor of Memphis
2. Memphis Urban League
3. Project Headstart
4. Memphis Community Action Committee
5. Tennessee State Employment Security Division
6. Apprenticeship Information Center - Tennessee Employment Security
7. Apprenticeship Opportunity Center
8. In-school Neighborhood Youth Corps
9. Vocational Rehabilitation Department - State of Tennessee
10. NAACP
11. CAMPS
12. Black Knight, Inc.
13. Police Department - Neighborhood Center
    a. Florida Street
    b. Frayser
14. U.S. Civil Service Commission
15. Home Builders Association of Memphis
16. Memphis Area Chamber of Commerce
17. Special Vocational Program - Shelby County Board of Education
18. Youth Employment Division - Tennessee Employment Security
19. City of Memphis, Personnel Division
20. State Technical Institute at Memphis

APPENDIX H

BOARD OF EDUCATION
Memphis City Schools
2597 Avery Avenue, Memphis, Tennessee 38112

Please reply to office of:
W. A. McGinnis,
Director, Vocational Education

April 19, 1971

Dr. Sidney C. High, Jr.
Chief, Exemplary Programs
and Service Branch
Department of Health, Education and Welfare
Office of Education
Washington, D. C. 20202

Dear Dr. High:

Reference: OEC-0-70-5181 (361)
0-361-0115

In regard to your letter of March 30, 1971, we request approval of our 1971-72 exemplary program grant for $166,495.00. This request is based on the following major proposal modifications, referenced to by page number found in original proposal, and the attached budget.

Reference	Modifications
Page 24	1. Extend the target area boundaries to the northwest to include Westside Sr. High School district and its feeder schools. Concern has been expressed that the present target area is predominantly black. The extension of the project boundaries as stated above would tend to construct a more equal ethnic balance in the target area serving disadvantaged children. The SPAN staff will be increased by employing an additional Job Development Counselor and a Co-op Coordinator.
Pages 17,22,23	2. Full air programming of ITV career orientation films produced this year will begin in September, 1971. SPAN will not produce additional films for lower elementary grades. We will retain ITV Curriculum Specialist to develop additional "hands on" and insert material to accompany the original ITV series and basic career programs for lower elementary. Additional responsibility will be in correlating

all elementary classroom activities between the teacher and aide.

Pages 17,18,23

3. The middle school (Jr. High) Curriculum Specialist will have major emphasis of coordinating career orientation in Jr. High Industrial Arts, Home Economics and other classes. Additional duties will be in coordinating all Jr. High Co-op (work experience) programs, and assisting students in making an orderly transition into high school occupational programs.

Pages 18, 23

4. Computer program will not be developed at the onset as a "job bank". The format will be limited to a "job print out" available to Sr. High and post High students and counselors. Matching by computer of jobs to students may be programmed for late 1972 or third year of grant.

5. Greater emphasis is to be placed on field trips for target area children. Emperial evidence indicates properly programmed trips to business and industry coupled with resource people visiting the school greatly improves the career concepts of children.

Your attention is invited to an increase in salaries in budget section which included 7% Board salary increase plus normal salary schedule increment.

In addition, we request this grant be effective September 1, 1971, at which time we anticipate depletion of funds in first year cost reimbursement contract.

In the event questions arise, feel free to contact me at 323-8311, Sta. 475.

Sincerely,

W. A. McGinnis

cc: Mr. W. D. Callian
Mr. Charlie Dunn
Mr. Ed Hudgens
Mr. James Dugueley
Mr. James Marsh
Mr. John Getreu

Name of Project Director: Mr. James Hugueley

Proposed beginning and ending dates: _____ to _____

Category	First Twelve Months		Second Twelve Months		Third Twelve Months		Total (all year)	
DIRECT COSTS	Federal	Local	Federal	Local	Federal	Local	Federal	Local
A. Personnel (List all position titles)	122,586.00							
B. Employee Benefits (Itemize benefits such as Social Security, retirement, etc.)	13,615.00							
C. Travel (Indicate nature and length of trips.)	7,200.00							
D. Supplies and Materials (Describe)	4,300.00							
E. Communications (Postage, telephone, etc.)	1,100.00							
F. Services (Duplication and Reproduction, Statistical, Testing, Other.)	6,500.00							
G. Final Report Production								
H. Equipment (Generally, large capital equipment may not be purchased with Federal funds under an exemplary project; however, special pieces of such equipment might be rented if essential to project operations. Small items of essential equipment might be either rented or purchased, depending upon which method is most advantageous.	950.00							
I. Other Direct Costs (Itemize)	10,244.00							
J. Sub-total for Direct Costs								
TOTAL	166,495.00							

1023

A. PERSONNEL

(All 12 month employees)

1 - Project Director $13,056.00 @	$ 13,056.00
2 - Curriculum Writers $12,375.00 @	24,750.00
2 - Job Development Counselors $10,800.00 @	21,600.00
3 - Co-op Coordinators $10,200.00 @	33,600.00
2 - Secretaries $6,150.00 @	12,300.00
8 - Teacher Aides 180 days x $2.00 x 6 hr. per day	17,280.00
	$ 122,586.00

B. EMPLOYEE BENEFITS

Social Security 5.2%)	
Retirement 5%)	$ 12,500.00
Hospitalization Insurance $115.00 @	1,115.00
	$ 13,615.00

C. TRAVEL

Local $500 x 10	$ 5,000.00
Out of city	1,000.00
Consultant travel (Atlanta, Portland, Chicago, Washington)	1,200.00
	$ 7,200.00

D. SUPPLIES

Secretarial and office	$ 1,025.00
Instructional	3,275.00
	$ 4,300.00

E. COMMUNICATIONS

Telephone	$ 900.00
Postage	200.00-
	$ 1,100.00

F. SERVICES

Evaluation and testing	$ 6,500.00

G. EQUIPMENT

Rent and purchase file cabinets and related furniture	$ 950.00

H. OTHER DIRECT COST

Computer time and services	$ 4,500.00
Field trips	1,800.00
In Service Work Shop (teacher stipence)	3,944.00
	$ 10,244.00

TOTAL 4024 $ 166,495.00

APPENDIX I

Evaluation Report
Project SPAN (Systems Program Approaching
Non-Unemployment of Vocational Students

Applicant Organization: Memphis City Schools
Division of Vocational Education
2597 Avery
Memphis, Tennessee 38112

U.S.O.E. Contract No. OEC-0-70-5181 (361)
Project No. 0-361-0115

This evaluation report was prepared subsequent to a site visit to the SPAN project on April 5 - 7, 1971. Members of the evaluation team were: Miss Mary Lovell, Project Officer, U.S.O.E.; Mrs. Joyce Dechman, Senior Program Officer, U.S.O.E.; Mr. James Wykle, Program Officer, Region IV, U.S.O.E.; and Mr. Ed B. Hudgens, Coordinator Program Services, State of Tennessee, Department of Education.

Project SPAN is funded under Part D, Exemplary Programs and Projects in Vocational Education, of the Vocational Education Amendments of 1968, and is operational in a pyramid of schools, K-12, in the Memphis City Schools system. Specifically, those schools now participating in the project are the Northside High School, Humes Junior High School, Cypress Junior High School, and the 14 elementary schools feeding into these schools. The population in the attendance area of these schools may be said to be predominately of the black minority race and to represent a high percentage of children who are disadvantaged and who have special needs.

The Memphis City school system is to be complimented for the very excellent facilities for vocational training at Northside High School and for the spirit of cooperation and dedication we witnessed on the part of all teachers and administrators during our visit to Memphis.

Project SPAN was written to include and is pursuing specific objectives related to increasing the awareness of elementary students to the world of work; to increasing opportunity for junior high school students to explore the world of work; to assisting students in making more mature occupational choices; to providing special services such as work experience programs for 9th grade students who have been identified as drop-out prone; and to assist students in grades 10-12 to make a smoother transition to the world of work by providing increased opportunities for cooperative education, by providing intensive skill training, and by pursuing a commitment to the placement of all students exiting from the school system. Efforts are underway to utilize the characteristics of the city; i.e., the variety and availability of job opportunities, the possibility of field trips to a wide-range of businesses, the current post-secondary vocational facilities, and related government projects, to the greatest benefit of the students.

Northside High School has a wide variety of ongoing occupational training opportunities for its youth. In this particular project, federal funds are being utilized to plug previous gaps in the program particularly at the elementary and junior high levels and to insure a sequential career development program from K-12 which is suitable for the participation of all students in the attendance area.

The following materials represent feelings and reactions of the evaluation team to the program components and to the project as a whole.

The utilization of ETV for elementary occupational orientation appears to be somewhat behind schedule. One film has been piloted in the classroom with what appears to be a very excellent teacher's packet that was used in conjunction with the film. The lessened ongoing activities during the summer months will permit intensive efforts on developing this component and we are assured that it will be fully implemented in the Fall of 1971.

Efforts should be made to increase the opportunities for hands-on exploratory experiences for students, particularly in grades 7 through 9. There is an apparent lack of occupational orientation information and exploratory activities planned for the 7th grade. Moreover, there is a need to increase and intensify occupational exploratory activities and experiences in grades 8 and 9. Students in these grades are getting ready to enter high school; they are more mature and receptive to these experiences as they begin to think in more realistic terms about their courses of study in high school. These exploratory experiences also offer the student an opportunity to explore possible fields of interest and help him to decide what areas he may not wish to pursue. In any event, intensive occupational exploratory activities broaden the student's range of experience, increase his understanding of the "world of work", and increase his appreciation of the skill and talent displayed by adults in their various jobs.

The degree of youth involvement and pride of accomplishment in participating in the work experience program was high at the 9th grade level. The students were sincerely interested in Project SPAN and the opportunities it is giving them to obtain and hold part-time jobs. Many of the students spoke with pride and satisfaction about the jobs they held. The teachers were also able to inspire several of the students to seek more highly skilled jobs.

The range of cooperative education programs and work experience opportunities at the 10-12 level is somewhat narrow. This may be caused by the short time this component of the Project was in operation. Since the staff members with the responsibility for this element of the Project realize its present limitations, it appears

that they are working successfully to develop greater opportunities for students to hold meaningful jobs.

The staff might like to consider alternative ways in which to expand work experience and cooperative education opportunities. Volunteer work could possibly be used to some extent in this regard. Through cooperative education, according to the 1968 Vocational Education Amendments, "a meaningful work experience is combined with formal education enabling students to acquire knowledge, skills, and appropriate attitudes. Such programs remove the artificial barriers which separate work and education and, by involving educators with employers, create interaction whereby the needs and problems of both are made known. Such interaction makes it possible for occupational curricula to be revised to reflect current needs in various occupations." This differs from work experience which allows the student to work at a job not related to his vocational studies in school, but which permits the student to develop wholesome attitudes toward work and, consequently, develop increased personal aspirations.

Through volunteer work, opportunities for the involvement of youth in making a genuine contribution to their families and community could be increased and expanded. The students themselves will probably have numerous ideas on activities which will benefit the community. Some of these jobs might be voluntary at first and then develop into paying jobs. Students might do volunteer work in hospitals and build upon this experience to obtain a job in the public or health service areas. Or the students might want to develop a project requiring little initial investment, such as a community baby sitting service.

The number and range of short-term, intensive training or "quick shot" courses for seniors or dropouts who have no previous vocational training should be expanded. Perhaps the job developer who helps to determine what jobs are available within the community which students could fill after some training in a vocational area. For instance, a student may study business and office occupations during a semester in order to qualify as an office clerk. The particular courses offered should, however, be determined by your staff, the school administration, and local employment needs. It is most desirable that these courses give the students information orientating them to work, that is, the students would be helped in filling out job applications, in conducting themselves during a job interview, and in forming a good self concept and gaining confidence in their ability to obtain and hold a job. In addition to the previous items, related to specific components, the evaluation team would like to make the following observations and suggestions.

Project personnel appeared to be outstanding. They have a good understanding of the career education concept, work unselfishly to help the students, and perhaps more important, know how to help them. They are able to communicate with the students and parents, and therefore demonstrate a genuine understanding of their student and community population. The staff also appears to have good support with, and the support of, the school administrators whose students are participating in the Project.

We found many positive and outstanding features in the Project which confirm the dedication, interest, and sincerity of the Project Director, his staff, and the school administrators and teachers in providing students with career education information, work experiences, and skill training.

An outstanding feature of the Project is its coordination with other government agencies and school programs such as the Employment Security Commission, the Vocational Rehabilitation programs, and the Neighborhood Youth Corps. Older high school students, particularly, were referred to appropriate school programs offered at the area vocational school and in the adult evening programs. This type of coordination helps to better serve the students without unnecessarily duplicating on-going efforts.

We noted an emphasis in program recruitment and participation of students who were academically, economically, and/or socially disadvantaged. These students are the youngsters who most often had difficulty assimilating the traditional curriculum and who most frequently need alternative curriculums, teaching methods, and classroom experiences. The enthusiasm and motivation of the ninth grade students we observed in a cooperative education class was most gratifying.

Recommendations that we wish to make with regard to general direction and emphasis for the project during the next two years follow.

Because of the new emphasis on Career Education or career development by the U. S. Commissioner of Education for all youth in the Nation, we have concern now that this project, which so closely parallels his thinking is limited to the attendance area previously defined. An image created here may make it more difficult to spread the concepts of career development to other parts of the city and to other parts of Tennessee where the student population represents a higher socio-economic background and a greater orientation to pursue studies leading to employment in the professional areas.

We would suggest, therefore, that Memphis school administrators and our SPAN Project personnel attempt, with whatever additional funds are available to expand the project to include a population which will give it an image of being a system designed to provide

students from all social, racial, and economic backgrounds with the occupational information and exploratory experiences necessary to develop mature and realistic concepts of their own interests, abilities, and aptitudes, the "World of Work", and the best means by which they can achieve their career goals.

More preservice and inservice training in career education is recommended by Mr. Hudgens for the staff. With this additional background, the staff can adapt to the career education concept more readily and can probably teach it more effectively. When teachers have a favorable attitude toward what they are teachers have a favorable attitude toward what they are teaching, their enthusiasm is bound to influence their students, making them more receptive to the instruction.

Because of the directions that we see Career Education and career development taking, nationally, the entire team feels some concern that greater efforts be exerted in this project to tie in the administrators, counselors, and teachers outside our Project staff to the concepts of career development activities for all youngsters and the part that each must play. If these administrators and teachers understand the concepts of the project in greater depth, they can more easily suggest students who can benefit from the project, ease any administrative problems such as scheduling which might occur with Project classes, and more easily enlist the help of parents, businessmen, and the community concerning the Project.

Regularly employed counselors expressed a desire for more orientation and/or in-service training regarding the "World of Work" and the importance of the psychological and social implications of career development. Counselors might make field trips to observe various workers or they might obtain summer work experience in an area other than education in order to broaden their understanding of the "World of Work." Such background will enable the counselors to advise students more realistically concerning their courses of study and their career plans. Hopefully the counselors will also better understand the "human" factors in seeking and obtaining employment.

Further revisions of Project SPAN should be made in accordance with results of follow-through information concerning Northside graduates. This information would contribute to more realistic changes in program emphasis and curriculum. Moreover, follow-through activities serve as an indicator of the needs of the local job market and the employment need of industry.

We suggest, further that minority students need follow-through placement activities. That is, the secondary school would keep track of graduates or dropouts to determine their succes or, lack of it,

in obtaining and holding a job. If the former students are not doing well in their employment, or if they want to change job areas or increase their job skills, the high school counselors could advise them concerning current job opportunities, evening, adult, and postsecondary programs available. The counselors could also assist the students in making personal and social adjustments by either helping them to solve these problems or by referring them to social counceling agencies.

Finally, we suggest that the career ladder concept of career development be used in counseling both academically-oriented students and senior vocational students. This means that the students would understand the broad range of jobs within their career field of interest which may vary from ones requiring little skill and formal training to those requiring graduate professional training. This information helps the students to access their skill level and abilities more accurately. It softens the disappointment of initial failure. On the other hand, it also gives the graduates a concrete next-step to strive for in his job. The graduates are thus able to handle the emotional stresses of the "World of Work" more realistically both its disappointments and its successes.

The visit to the Memphis SPAN project was, for all concerned, an extremely encouraging and rewarding experience. The progress to date in Memphis certainly warrants funding continuation and, without doubt, a higher level of funding continucation if this possibility becomes a reality. The enthusiasm, dedication and ability of all administrators and staff involved in the project will make possible a significant contribution to our efforts for national demonstrations of career development in action.

APPENDIX J

PROFILE FOLDER for

An Inventory of Children's Interests

Name_____

Dates of Administration:

Grade 4_____ **Grade 6**_____

Grade 5_____ **Grade 7***_____

Everybody likes different things. It is important to know the things you like to do and to compare them with what other boys and girls like to do. You can draw a picture of the things that interest you on the charts inside this folder. Then you can see how your interests compare with those of boys and girls all over the country. These charts are called "profiles." Your teacher will help you draw your own profile.

How to Draw Your Profile

1. Look at the charts inside this folder. The charts for girls are at the top, and the charts for boys are at the bottom. Find the right chart for your grade.* For instance, if you are a grade 6 girl, you would use the third chart in the top row.
2. When you have found your chart, look at the first column of numbers. At the top is the letter "A" with the word "ART" under it. That means that the column is for your score on Part A of *What I Like to Do*—your interest in Art.
3. What is your score for Part A? Write it in the box at the top of the Art Column.
4. Now find the second column of numbers. It says "B—MUSIC" at the top. Write your score for Part B in the box at the top of the Music Column.
5. Do the same for all your scores. Write your scores for all the parts of *What I Like to Do* in the boxes at the top of the columns on your chart.
6. Now look down Column A until you find the number that matches, or is closest to, the number you have written in the box. Draw a circle around this number. If your score is right between two numbers, you may circle the space in between.
7. Do the same for each of the other columns. Circle the space between numbers or the number that matches, or is closest to, the number that you have written in the box at the top of each column. When you have finished, you will have eight circles—one in each column.
8. Now draw a straight line from the circle in Column A to the circle in Column B, another line from the circle in Column B to the circle in Column C, and so on until all your circles are joined by lines. This is your interest profile.
9. Now read the back page of this folder to find out what your profile means and how your interests compare with those of other boys and girls.

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APPENDIX K

NAME_____ AGE_____

SCHOOL_____ SEX_____ GRADE_____

COMPLETE THE FOLLOWING STATEMENTS BY FILLING IN THE BLANKS:

1. When I grow up I would like to be_____

2. I don't like to_____

3. After school I like to_____

4. A worker I have actually seen at work is_____

5. I think people work because_____

6. My favorite television show is_____

7. A comic strip that I like is_____

8. My favorite song is_____

9. Name a job you think:

   a. would scare you_____

   b. would be fun_____

   c. would be easy_____

   d. would be important_____

   e. would be hard_____

   f. would be dull_____

   g. would pay a lot of money_____

   h. would pay very little money_____

   i. you would not want to have_____

10. On the back of this page, write 2 sentences about what you think about work.

APPENDIX L

HANDS-ON OBJECTIVES

From the results of the Science Research Associates (SRA) "What I Like To Do", we determined that the pupils in the target area schools are activity oriented and that the "hands-on" projects should follow these guidelines to career exploration:

1. They should relate to his goals and values and at the same time inspire him to cooperate with others and become the finest person it is possible to become.
2. They should involve questions important to the student and should help him to see that he has control over the process of his own career development.
3. They should offer the opportunity for him to see what it feels like to do a certain job by placing himself in the role of the worker.
4. They should allow the student to test his skill as well as to ascertain his interest in particular tasks.

The most effective projects would contain a wide range of activities relative to the ITV films and should be incorporated into the present curriculum.

CLASSROOM ACTIVITIES

In addition to the actual "hands-on" kits, there will be numerous classroom activities to accompany the films. These activities include, among others:

a) keeping a classroom scrapbook, including pictures of the various occupations shown in each film, stories and poems written about occupations, and any other material the teacher feels is pertinent to occupational orientation.

b) working crossword puzzles, anagrams, word bingo, or scrambled sentences with the vocabulary words.

c) participating in simulation (or role-playing) games pertaining to the films.

d) writing stories, poems, songs, or letters pertaining to the various occupations.

e) working picture puzzles to help identify the workers by the tools they use.

f) learning to locate information about occupations (dictionary, encyclopedia, and library books).

g) making picture maps of the workers in the neighborhood (or Memphis) and adding to them as the year progresses.

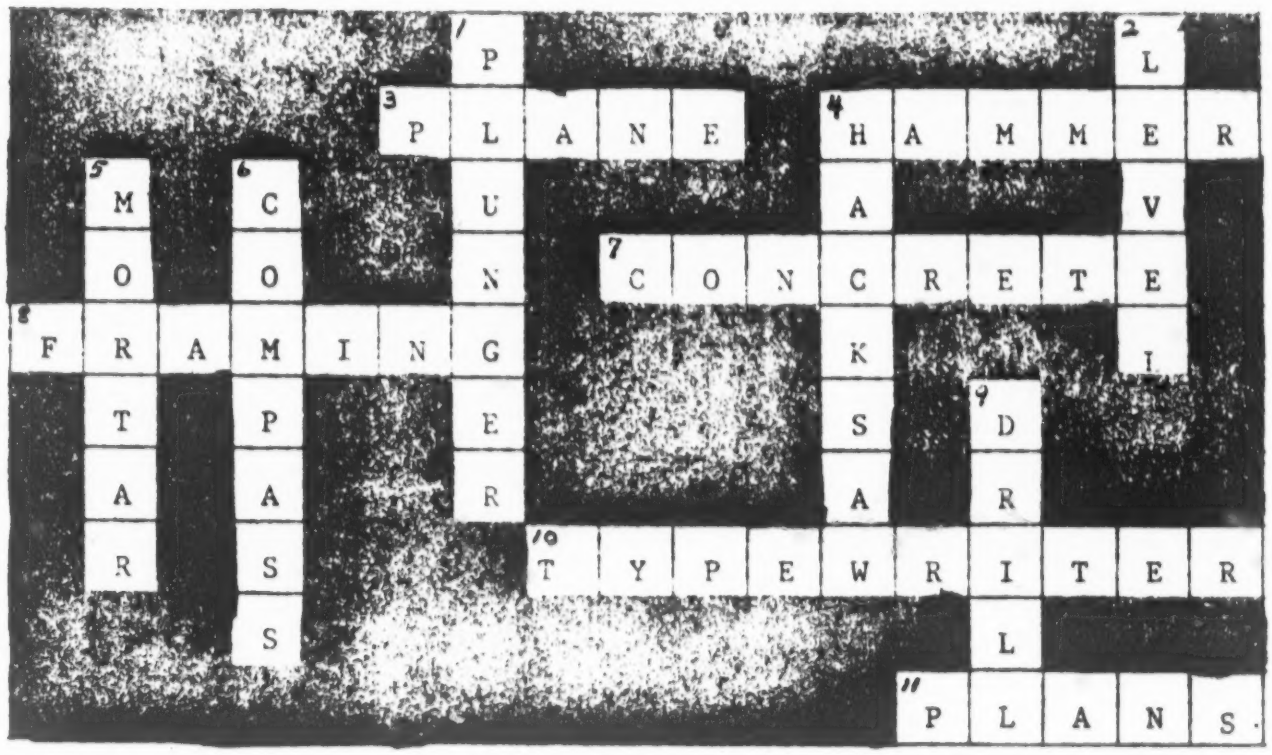
h) working with newspapers to familiarize students with the want ads.

i) interviewing persons who work at various occupations and reporting the information gathered to the class.

j) drawing pictures or comic strips pertaining to the various occupations.

k) making picture dictionaries and putting pictures of the workers on the bulletin boards.

VOCABULARY CROSSWORD PUZZLE



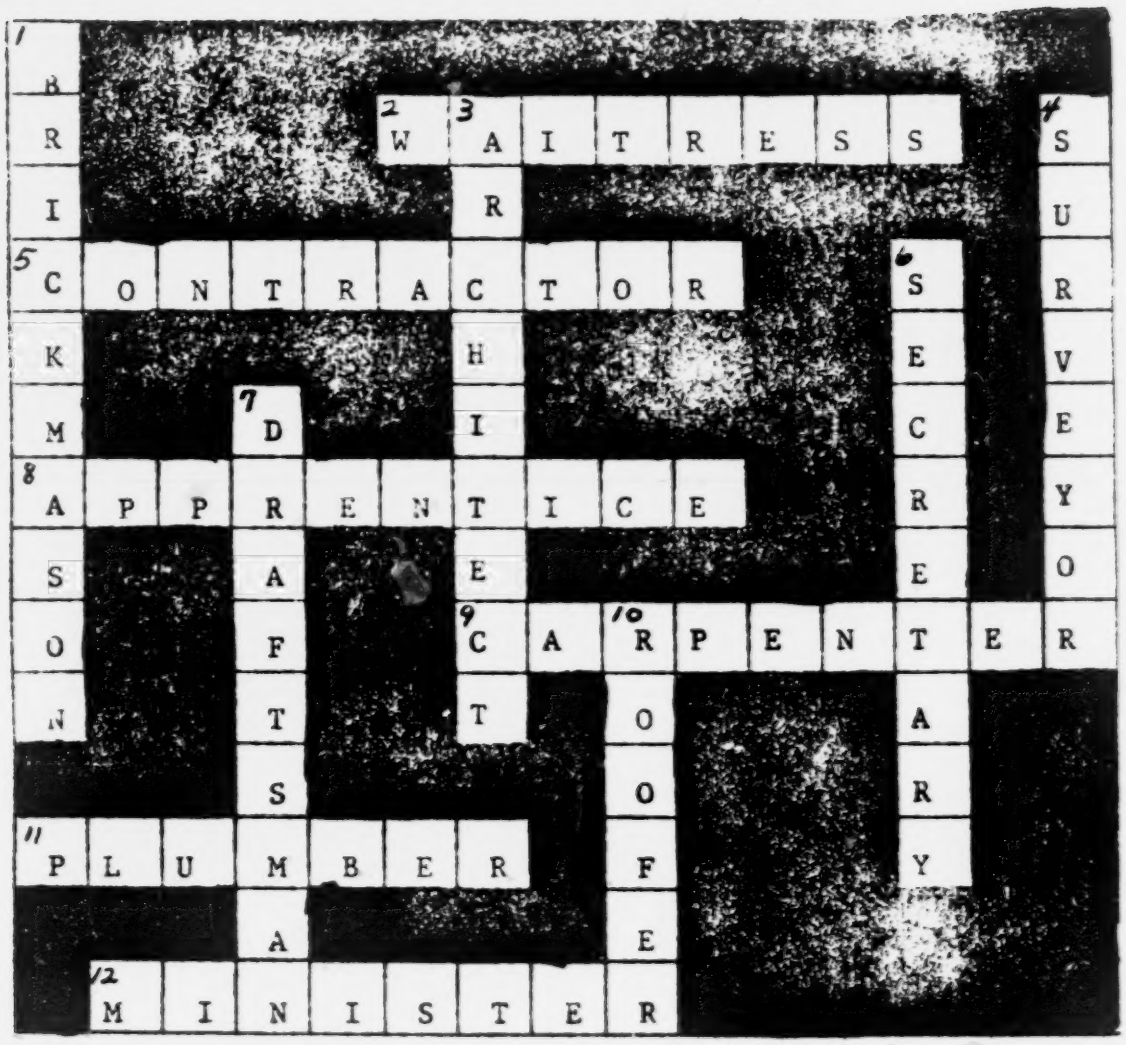
DOWN

1. The plumber uses a _____ to clear waste from the drain of a sink
2. A brick mason uses a _____ to be sure the wall does not dip.
4. A _____ is used to cut through a pipe.
5. _____ holds the bricks together to form a wall.
6. The draftsman uses a _____ to draw a circle.
9. A _____ is used to make holes.

ACROSS

3. The carpenter uses a _____ to smooth the rough edges of wood.
4. A _____ is a pounding tool.
7. _____ is poured into forms for the floor of a house.
8. A carpenter is _____ a house when he puts in the studs and rafters
10. The secretary uses a _____ to write letters.
11. _____ are the same thing as blueprints.

OCCUPATIONS CROSSWORD PUZZLE



Use the occupations seen in the film to work this puzzle.

CROSS

. A _____ serves food in the restaurant.

. All the workers in the building trades work for a _____.

. An _____ is a person who is learning a trade.

. A _____ does the wood work on the house.

1. The _____ installs the bathroom fixtures in the house.

2. The _____ works through the church to help the community.

OWN

. A _____ works with a trowel and mortar.

. The _____ designs a house and then instructs the draftsman in drawing up the plans.

<u>)OWN</u>

·. A _____ measures the lot and the location of the house on the lot.

·. The _____ types and takes dictation.

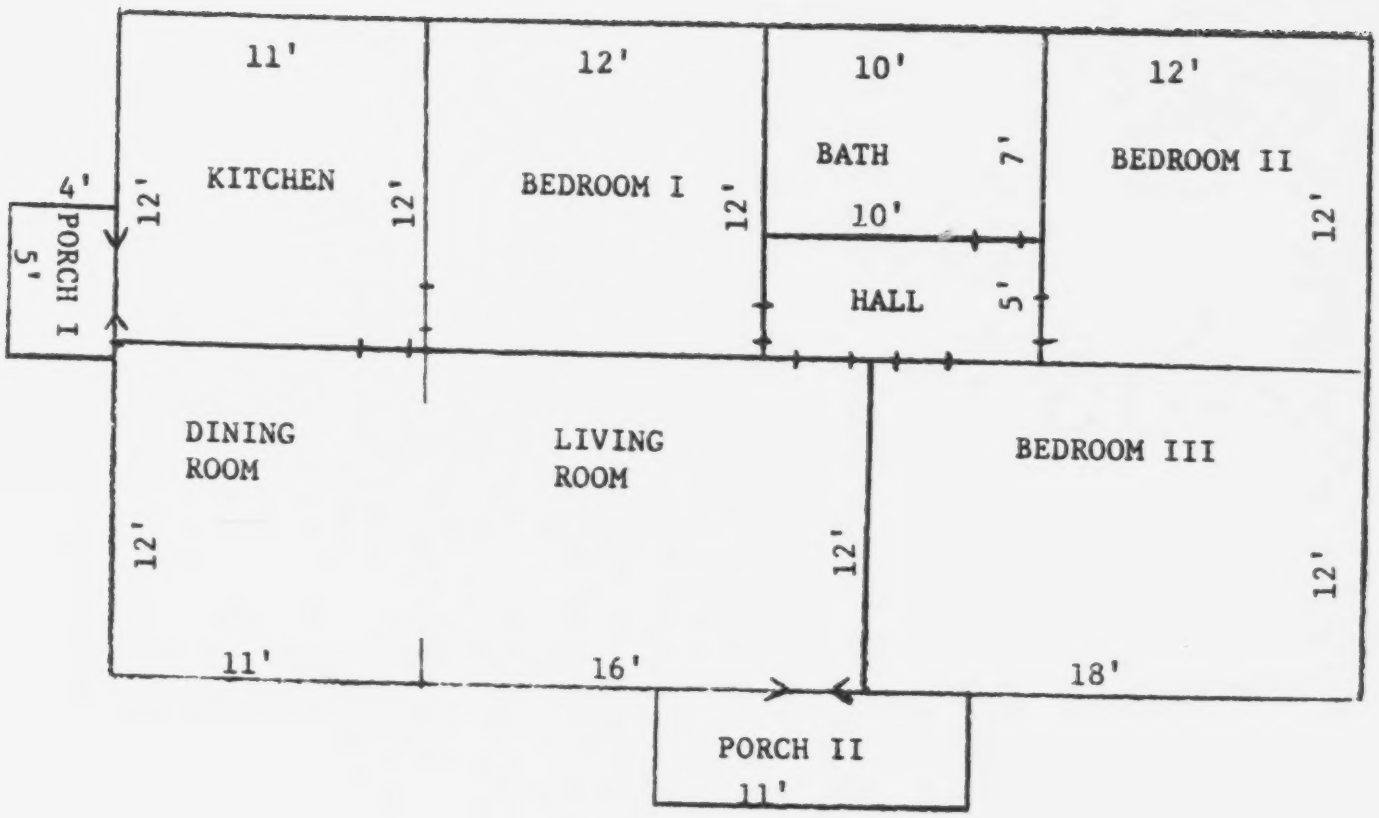
. The _____ draws in the details of the blueprint.

0. The _____ puts the shingles on a house.

HANDS-ON

BUILDING TRADES

Example for determining the area of a room. Look at the scale drawing of the house. The dimension of Porch II is 4' x 11" which means it is 11 feet long and 4 feet wide. To obtain the area multiply 11 feet by 4 feet; the answer is 44 square feet. So the area of the porch is 44 square feet.



HANDS ON

Building Trades

1. Look at the scale drawing. How many square feet of space are in each room?

   Living Room_____

   Dining Room_____

   Kitchen_____

   Bathroom_____

   Bedroom I_____

   Bedroom II_____

   Bedroom III_____

   Hall_____

2. By adding the number of square feet in each room, determine how many square feet there are in the entire house. (Do not include the porches.)

   Answer_____

3. If the average cost to build a house is $15 for each square feet, how much will this house cost?

   Answer_____

PLEASE INDICATE POSITION:

Teacher_____
Principal_____
Supervisor_____

HANDS ON EVALUATION

Time: (fill in the blanks)

I feel I could allow _____ minutes per _____ (day, week, month) for the students to work on "hands-on" projects.

SIZE OF THE GROUPS (check you choice)

_____ (a) I feel the children should be broken into four groups, with each group working on a different activity. Then the groups could rotate.

_____ (b) I feel that the entire class should be working on the same activity at the same time

GOALS OF THE "HANDS-ON" ACTIVITIES (check your choice)

_____ (a) I feel that the students should be allowed to work on the activities for the sake of working, not for an end product.

_____ (b) I feel that the students should be working toward an end product.

END PRODUCTS (check your choice)

_____ (a) I feel that any items produced in the classroom should be taken home by the students

_____ (b) I feel that any items produced in the classroom should be left in the room for use by the entire class.

ACTIVITIES (place the number of the "hands-on" in the blank)

_____ (a) I feel that I like this "hands-on" description best.

_____ (b) I feel that I like this "hands-on" description least.

_____ (c) I feel that this activity, which I have personally tried in my classroom, would be a good one for this project:

_____

_____

_____

HANDS-ON KIT SUGGESTIONS

Please note that these are merely suggestions and that there is room for you to check your choices of them and to add your own suggestions at the bottom. Check "yes" if you think the children would like the project and/or would benefit from participation. Check "no" if you think the children would not react favorably and/or would not benefit from participation.

Yes_____ No_____

1. Carpenter - allow the students themselves to put together the frames for four flats to be covered with cardboard and painted. These flats could be used in simulation (or role playing) as the house being built; then it could be folded flat, stand, and used for later films as well as the background for various plays and stories in the regular classroom activities.

Yes_____ No_____

2. Carpenter - have a precut model of the rooms of a house (built to scale) which could be assembled like a 3 dimensional puzzle. Have the rafter and roofing partially assembled so that the children can place them on the blocks to complete the house.

Yes_____ No_____

3. Carpenter - since each class is asked to keep a scrapbook, the students could make a wooden cover for the scrapbook.

Yes_____ No_____

4. Carpenter - have a nail driving contest (or sanding, sawing, hex building).

Yes_____ No_____

5. Carpenter - have each child build his own musical instrument.

Yes_____ No_____

6. Carpenter - using a board with a numbered design, have the students make a nail mosiac.

Yes_____ No_____

7. Carpenter - give the students a hammer, a saw, some nails, and some wood and allow them to work on their own.

Yes_____ No_____

8. Carpenter - have the students build individual projects, such as a shoe brush, tie rack, shoe shine kit, etc.

Yes_____ No_____

9. Draftsman - have the students work with a simplified floor plan and figure the amount of space in each room and the total cost of the house.

Yes_____ No_____

10. Draftsman - have the students do a scale drawing of their classroom, baseball diamond, etc.

Yes_____ No_____

11. Plumber - have the students put together an old fashioned spigot type faucet and a length of pipe.

Yes_____ No_____

12. Plumber - have the students work with the plumber's tools and pipe any way they like.

PROGRAM TITLE: MISSION POSSIBLE

DAY AND DATE:

TIME: 15 MINUTES

WKNO - TV

Channel 10
Memphis, Tennessee

VIDEO	AUDIO
TITLE CARD (SPAN)	THEME #_____
OT OF: Memphis-Arkansas bridge is superimposed over the title	
tle card fades. Camera zooms in on the traffic on the bridge, follows one small car, shows it on clover leaf exit, then on Riverside to the Park.	
mera picks up the teacher leaving the car accompanied by the children and approaching the viewing stand, shots should include the river. The teacher places a cartridge in the viewer and looks into it.	
	FADE THEME - VOICE FROM TAPE
e camera picks up a view of the river as though seen through binoculars and swings to the bridge construction.	Good morning. I have something constructive for you this time.
e view is cut and replaced by a still shot of a man leaving a house. (Made to seem as if seen through the view finder)	VOICE: This is one of the workers you are to study. He uses the name of Carpenter and he has been seen in these various disguises.
tting up wall board... restaurant.. his bank... tting in a floor...	
nily leaving church	VOICE: These are some of his know associates. Who are these people?
mber working	Who is this man? Does he work with Mr. Carpenter often?
aftsman at her desk	What kind of plans does this woman pass on to him?
ickmason building a wall	How does this man help Mr. Carpenter?
retary at desk typing	Does this woman act as a go-between to the boss?

PROGRAM TITLE: MISSION POSSIBLE

DAY AND DATE:

TIME: 15 MINUTES

WKNO - TV
Channel 10
Memphis, Tennessee

VIDEO	AUDIO
oofer working	Does this man work over Mr. Carpenter?
ack to moving film of bridge construction	Your assignment is to find out what this crew is putting together.
pprentice on the job	The carpenter's apprentice will be your contact man. With his help, learn all you can about these workers. It may take several days, but take your time and do a thorough job.
eacher and children return to car. Close o shot of the tape smoking. Teacher elects 2 boys and a girl to go with her. hey get into the car and leave the park.	This tape will self-destruct in 5 seconds. TAPE DESTRUCTS
FADE	<u>TEACHER</u>: Sammy, you and Joe, like to build things. You take this assignment. Yes, Lynn, you can go along, too.
hildren approach the house and are met by the pprentice who takes them around showing the arious workers.	<u>CHOICE OF</u>: SOF, music, simulated converstatio construction sounds
NCLUDE THESE SHOTS:	VARIOUS QUESTIONS BY THE YOUNGSTERS AND STATEMENTS BY THE WORKERS
arpenter goes to office to get pay check.	
pprentice goes to bank.	
uck wagon comes by with lunch.	
ulldozer and concrete truck.	

PROGRAM TITLE: MISSION POSSIBLE

DAY AND DATE:

TIME: 15 MINUTES

WKNO - TV
Channel 10
Memphis, Tennessee

VIDEO	AUDIO

BE SURE TO INCLUDE THE FOLLOWING SHOTS:

CARPENTER: making forms for concrete, framing a house, putting up wall board, putting in sub-flooring, a ceiling, hard-wood floors, doors, windows, decking a roof. Be sure to show him working with the plumber, the draftsman, the secretary, the brick mason, the roofer.

PLUMBER: connecting water to the house, putting in bathroom facilities, kitchen sink, garbage disposal, dishwasher, washing machine connections, etc. Some of these shots should be made with the carpenter and the draftsman. Plunger,monkey wrench, rotor rooter.

DRAFTSMAN: with the architect showing changes in the plans, working with a T-square, a draftsman's compass, at a drawing table, with the triangular scale, and with the plans. Show her working with the architect and with the carpenter and plumber.

BRICK MASON: mixing sand, water, and mortar, laying a wall, leveling a wall, cutting a brick in half, working the bricks around doors, windows, and corners (tools included should be trowel, mortar board, level, plumb line.

SECRETARY: typing, answering the telephone, making out paychecks, having the boss sign them, taking dictation, giving checks to the carpenter.

ROOFER: untying the shingles, getting them up on the roof, nailing them into place, putting in flashings, gutters, the top to the roof. Be sure to show him working with the carpenter. (hammer-hachet, shingles, roofing knife, offset wrench.

PROGRAM TITLE: MISSION POSSIBLE

DAY AND DATE:

TIME: 15 MINUTES

WKNO - TV
Channel 10
Memphis, Tennessee

VIDEO	AUDIO
:ARPENTER'S LIFESTYLE: Show him with his :amily - leaving home for work, leaving :hurch, eating in a restaurant, at his ıobby.	
ıPPRENTICE: meeting the children, working ıt some of the various jobs.	
ıRCHITECT: with the draftsman making some :hange in the plans.	
:ONTRACTOR: sign paychecks, dictate letter o secretary, talk on the phone or work with ·lans.	
:ASHIER: at drive-in window at the bank.	
·ULLDOZER DRIVER: working at the construction ·ite.	
ONCRETE TRUCK DRIVER: working at the ›nstruction site.	
JRVEYOR: working on the construction site.	
INISTER: telling the family goodday at the hurch.	
AITRESS: taking the order at the restaurant.	
UNCH WAGON OPERATOR: selling lunch to the hildren on the building site.	
HILDREN:	

PROGRAM TITLE: MISSION POSSIBLE

DAY AND DATE:

TIME: 15 MINUTES

WKNO - TV
Channel 10
Memphis, Tennessee

VIDEO	AUDIO
view of the completed house. Zoom back for long shot of the children leaving to get nto the car	CHILDS VOICE: Reporting to the central office. Assignment completed. We discovered what Mr. Carpenter and his crew were building...
UICK SHOTS OF THE 7 FEATURED WORKERS	VOICE: Our students have finished their investigation. Can you tell me who these workers were and what they were doing?
	THEME MUSIC AND OUT

APPENDIX M

WKNO

November 24, 1970

SPAN PROJECT
DIV. OF VOCATIONAL EDUCATION

DEC 01 1970

MEMPHIS CITY SCHOOLS

Mr. James E. Hugueley
SPAN Project Director
c/o Memphis City Schools
Room 244
2597 Avery Avenue
Memphis, Tennessee 38112

Dear Mr. Hugueley:

I sincerely appreciate your letter of November 16 in which you outline some of the particulars concerning WKNO-TV's production of recorded instructional materials for the SPAN project.

Your understanding of the agreement we are working out seems essentially correct, but I should like to add one or two items based upon my meeting with Messrs. McGinnis and Marsh, and my later telephone conversation with Mr. Marsh. The first four subjects below are taken in the order set forth in your letter.

1. WKNO-TV will produce and record ten instructional programs, each fifteen minutes in length, in black and white. While the total cost of these programs has not been established, it is understood that the Memphis City Schools and the SPAN project will be responsible for no more than $8200.00 of the cost. Although it is intended that all lessons shall be recorded on 16mm film with sound, it is possible that, in order to meet a telecast deadline, one or more lessons might of necessity be recorded on videotape to the extent that there is no damage to the intent and purposes of the SPAN project. It is further understood that all recorded materials belong to SPAN at the conclusion of the project.

2. SPAN staff will furnish scripts. It should be noted that the average elapsed time from complete shooting script to final product is estimated at three weeks. Any difficulties with shooting, processing or editing could substantially lengthen this period.

3. Mrs. Mary Payne will serve as liaison between SPAN and our staff and will work with us in the selection of shooting sites and subjects for the films. She will also accompany the photographer and assist in editing the film. It is understood that Mr. Price Broughton, WKNO-TV production manager, will serve as executive producer for the lessons, although Mrs. Payne will work primarily with our director of instructional television, Mrs. Mary Kohlmeyer, concerning program content.

4. WKNO-TV will obtain necessary releases for subjects filmed and handle permission for graphics and background music to be used so that the lessons will be cleared for educational television broadcast and audio-visual use in the United States.

5. It is also understood that one lesson will be complete for telecast by January 19, 1971, and that the target date for the completion of the other nine lessons is June 30, 1971. However, in the event of unforeseen delays, it is still essential that a majority of the lessons be complete by June 30, 1971 at whatever cost, and that the remaining lessons be complete in order to meet the 1971-72 telecast schedule.

Again, my thanks for writing, and please let me know of any adjustments we might need to make in the above.

Sincerely,

Howard D. Holst
Managing Director

cc: Mr. W. A. McGinnis
Mr. James Marsh
Memphis City Schools

Mr. A. Price Broughton
Mrs. Mary H. Kohlmeyer
WKNO-TV

APPENDIX N

SEQUENCE AND TITLES OF ETV FILMS

I. Who Builds Our Houses? Building Trades

II. How Do We Stay Healthy? Health

III. Who Makes These Machines Go? Office Occupations

IV. Who Works in Our Neighborhood Stores? Distributive

V. Where Do We Eat Out? Home Economics, Food Service

VI. Who Gives Services in Our Neighborhood? Service

VII. Who Keeps Us Moving? Transportation

VIII. How Do We Keep in Touch? Communications

IX. How Do We Get Clothes? Home Economics, Clothing

X. Why Do People Work? Introductory Film

APPENDIX O

BOARD OF EDUCATION
Memphis City Schools
2597 Avery Avenue, Memphis, Tennessee 38112

February 16, 1971

James E. Hugueley
SPAN Project Director
Northside High School
1212 Vollintine
Memphis, Tennessee 38107

Dear Fifth and Sixth Grade Teachers:

The Vocational Education Division of the Memphis City Schools has a new project - SPAN - which stands for a Systems Program Approaching Non-unemployment. Essentially, this project is designed to prepare students K - 12 for the world of work. At the elementary level, we are concerned with introducing students to workers and their tools. To implement this occupational orientation, we are in the process of making films showing clusters of workers on the job and we are designing various educational inserts to accompany these films.

The first film, entitled: Mission Possible: Who Builds Our Houses, will be shown by WKNO, Channel 10, on March 1, 1971, at 9:00 A.M. and on March 2, 1971, at 2:00 P.M. We invite you to utilize the educational inserts included in this packet and to watch our film at one of these times.

We would appreciate your evaluation of the film and the inserts. Any suggestions you have can be sent to Mrs. Mary Payne, Curriculum Writer, SPAN Project, Adult Education Center - East, 4911 Sanderlin.

Thank you for your cooperation in this endeavor.

Sincerely,

James E. Hugueley

James E. Hugueley
SPAN Project Director

W. A. McGinnis

Approved by
Mr. W. A. McGinnis
Director, Vocational Division

George D. Clark, Jr.

Approved by
Mr. George Clark
Director, Elementary Education

ddf

cc: Principals
Supervisors

WKNO	tv 10
Project	SPAN
March	1&2

Mission Possible:
Who builds our houses?

DESIGN
for
CONSTRUCTING A HOUSE

Children investigate the cluster of workers in the building occupations and observe the life style of a craftsman. They also meet people working at occupations other than those under direct investigation. The way each worker uses his tools is noted.

SPECIFICATIONS FOR VIEWING

Children should be able to:

1. List all the workers in the film and describe the work each one was doing.
2. Point out actions which show or tell how the people feel about their work.
3. Explain ways in which the people in the film work together.
4. Judge whether people in the building trades make a good living for their families.

BLUEPRINTS FOR LEARNING

When shown a picture of a building trades craftsman, pupils should be able to: a) name him, b) describe generally the work he does, c) match him with pictures of the tools he uses.

Through class discussion of the building trades craftsmen, the pupils should determine: a) whether the workers are happy with their work, b) whether they earn an adequate living, c) that the workers work together.

TRADE TALK

apprentice	compass
brickmason	concrete
carpenter	drill
draftsman	framing
plumber	hack saw
roofer	hammer
secretary	level
	mortar
	plane
	plans
	plunger
	typewriter

BUILDING IN THE CLASSROOM

Books

Adamson, Gareth. MR. BUDGE BUILDS A HOUSE

Beneson, Lawrence A. HOW A HOUSE IS BUILT

Goodspeed, J. M. LET'S GO WATCH A BUILDING GO UP

Greene, Carla. I WANT TO BE A CARPENTER

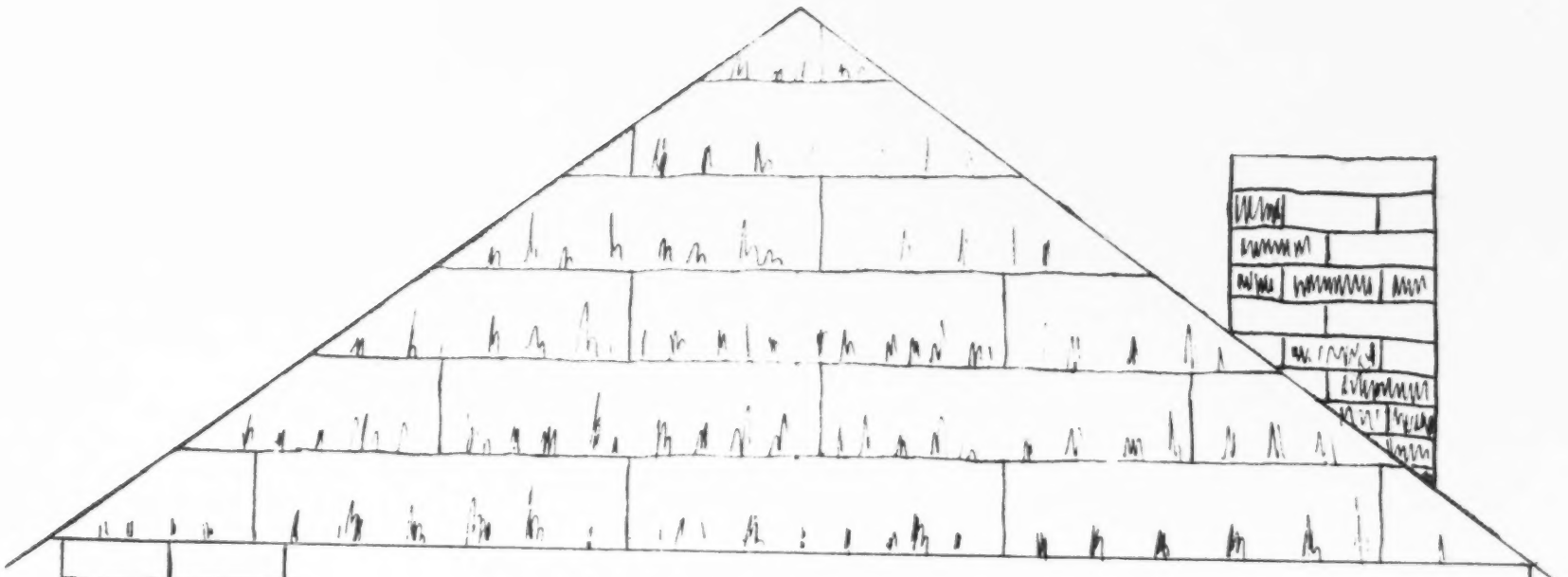
Films

(Available to Memphis City Schools)

"The New House - Where It Comes From"

"Making Bricks for Houses"

SPAN



WORK ORDER FOR FURTHER CLASSROOM BUILDING

Have the children:

1. Discuss the SPECIFICATIONS FOR VIEWING
2. Cut out pictures of workers and tools similar to those in the film. Place these in their scrapbooks and label them.
3. LANGUAGE ARTS: Write a story about one of the following: a) what would happen if all the carpenters, all the plumbers, or all the secretaries stopped working, b) a funny thing happened when I tried to build a _____.
4. Divide into groups and make up and act out a play about the workers needed to produce a house. (Don't forget the lumberjack!)
5. Using the vocabulary words, work the crossword puzzles.
6. SOCIAL STUDIES: Compare the tools the workers in the film used with the tools used by the early settlers in our country.
7. MATH: Work the attached problem involving the area of a house and its total cost.
8. Use any or all of the four building projects included. Obtaining materials for these projects is left up to the resourcefulness and ingenuity of the individual teacher.

ROOFER 4061

DRAFTSMAN

SPAN

PLUMBER

4063

SECRETARY

4065

APPRENTICE

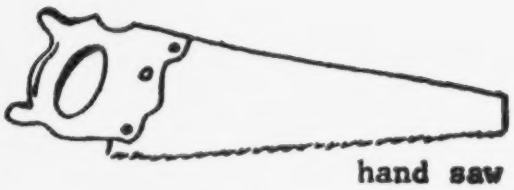
BRICK MASON

4066

CARPENTER

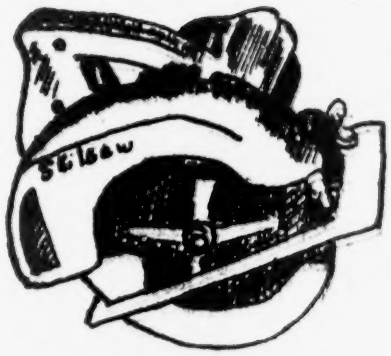
WHO USES THESE TOOLS AND MATERIALS?
(Match the tools with the workman)

TOOLS

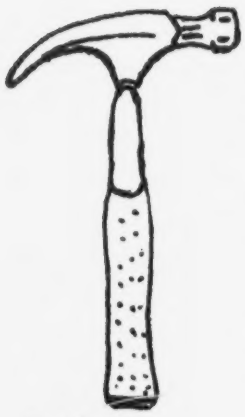


hand saw

sheet rock knife

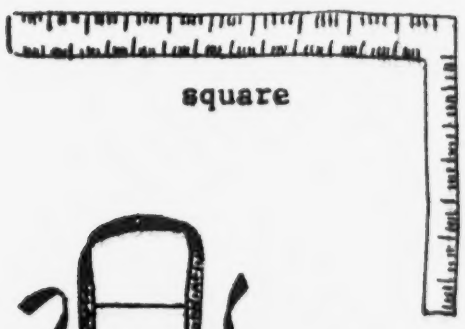


power saw

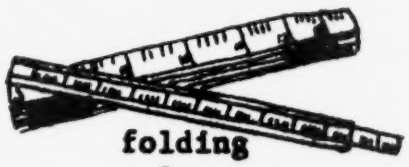


hammer

screwdriver



square



folding rule

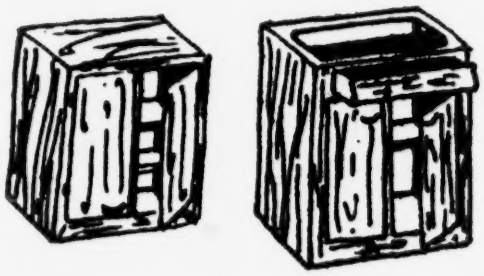
tape rule

work apron

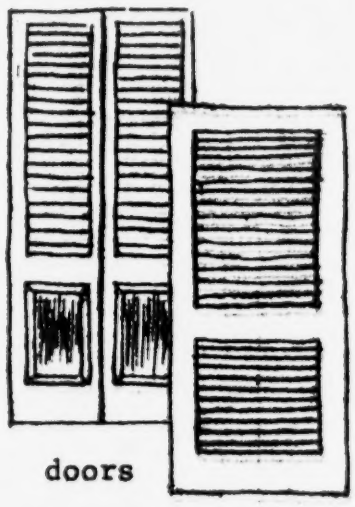
MATERIALS

nail (finishing)

nail (common)



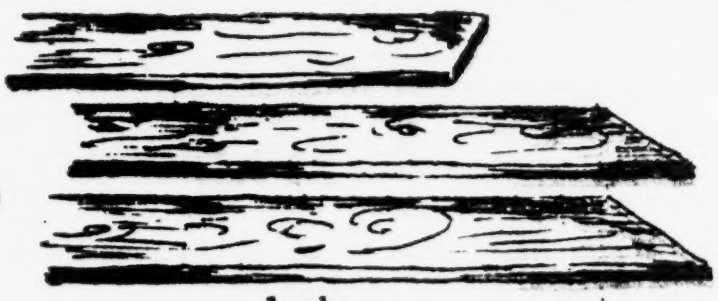
cabinets



doors

screw (roundhead)

screw (flathead)



planks

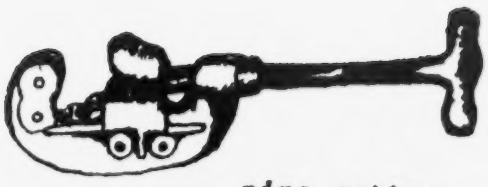
SPAN

WHICH WORKER USES THESE TOOLS AND SUPPLIES?

(Match the tools with the workman)

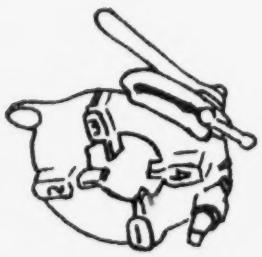
TOOLS

pipe wrench

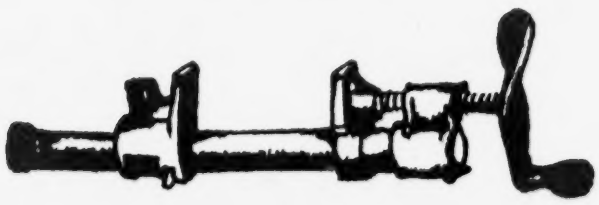


pipe cutter

propane torch



threading machine



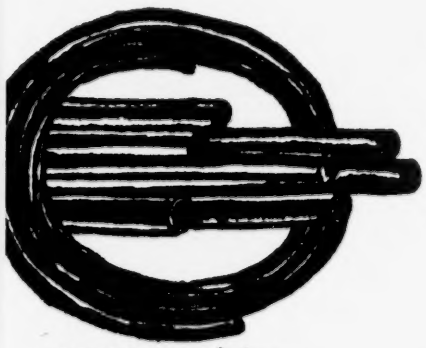
bar clamp

soldering gun

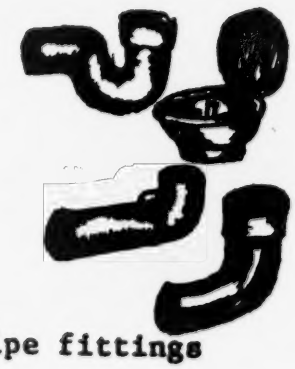
tin snips

vice grips

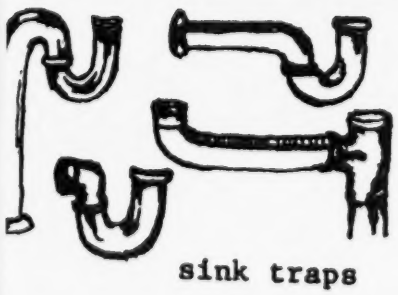
MATERIALS



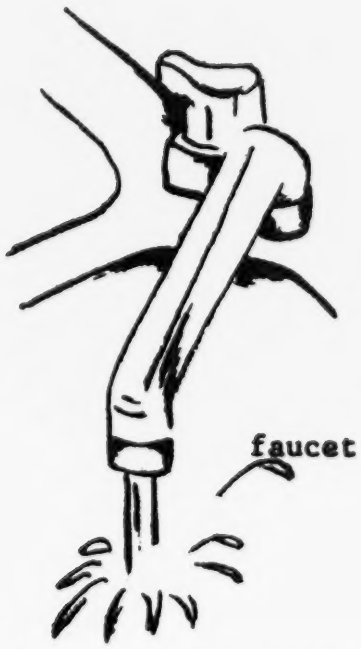
copper tubing



pipe fittings



sink traps



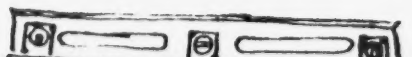
faucet

pipes

SPAN

WHICH WORKER USES THESE TOOLS AND MATERIALS?
(Match the tools with the workman)

TOOLS



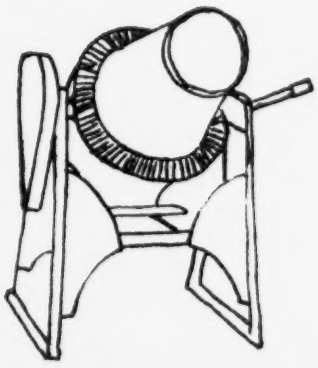
level

shovel

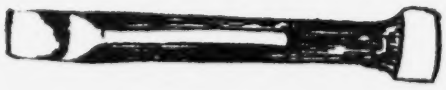
framing square

brick hammer

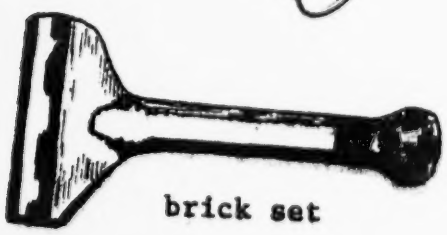
trowel



mortar mixer

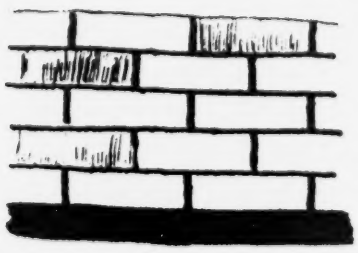


brick chisels

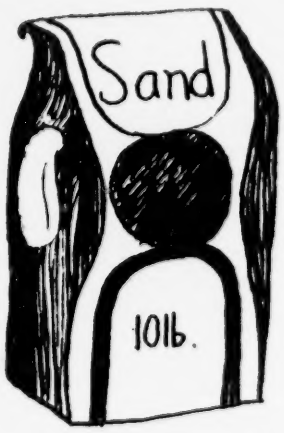


brick set

SUPPLIES



bricks



sand

mortar mix

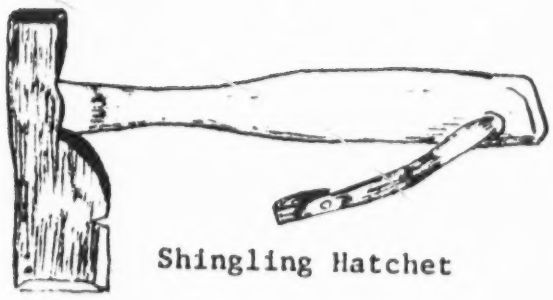
masonry nail

SPAN

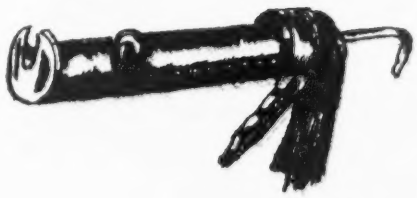
WHO USES THESE TOOLS AND MATERIALS

(Match the tools with the workman)

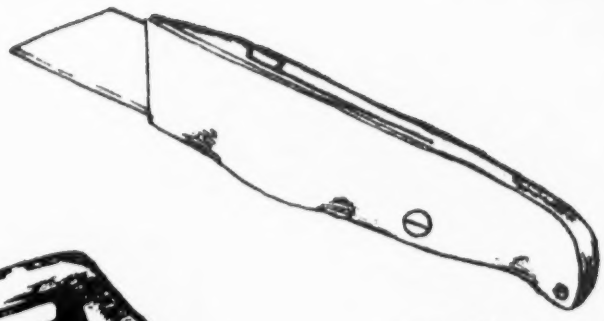
TOOLS



Shingling Hatchet



Caulking Gun



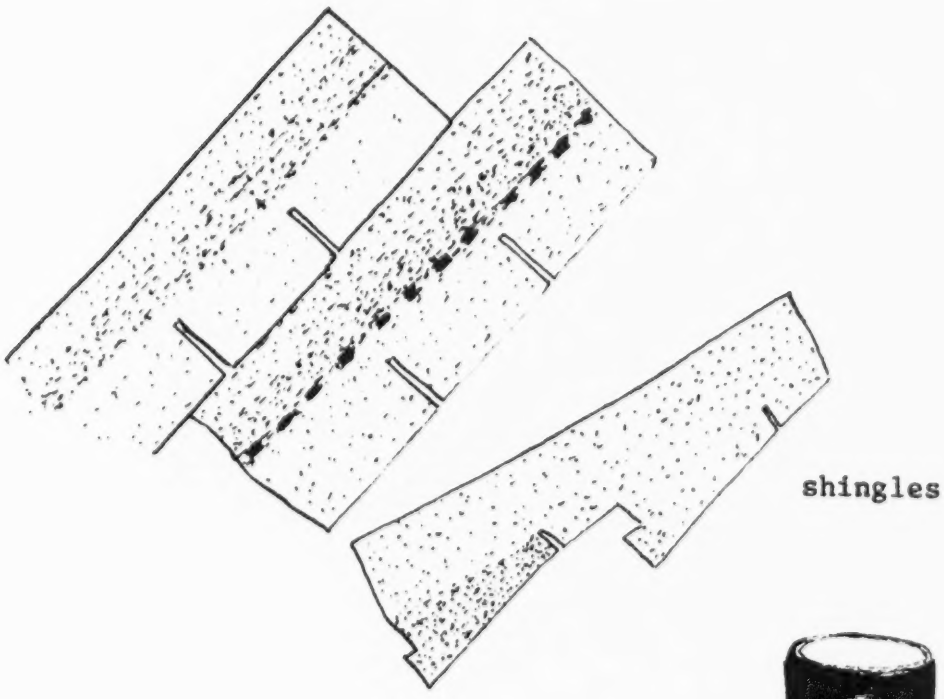
roofing knife

ladder

rubbing brick

MATERIALS

roofing nail



shingles

roofing felt

roofing tar

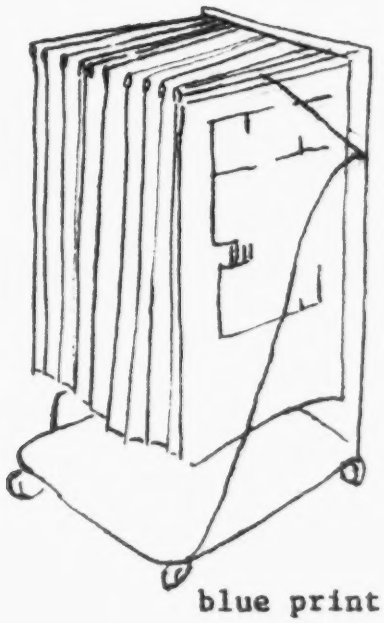
SPAY

WHICH WORKER USES THESE INSTRUMENTS AND MATERIALS?

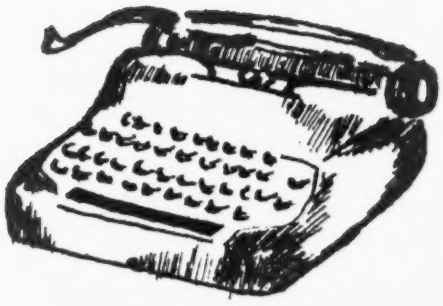
(Match the tools with the workman)

adding machine

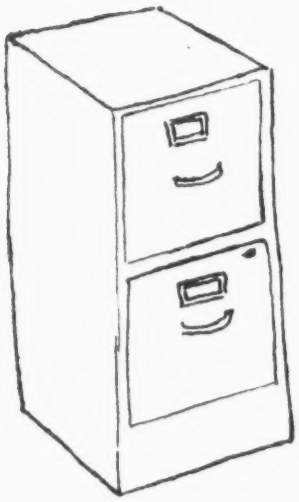
EQUIPMENT



blue print stand

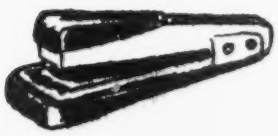


typewriter



file cabinet

telephone



stapler

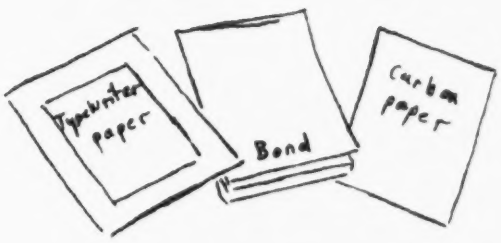
SUPPLIES

hole punch

scotch tape

pencil

stamp and ink pad



typing paper and carbon

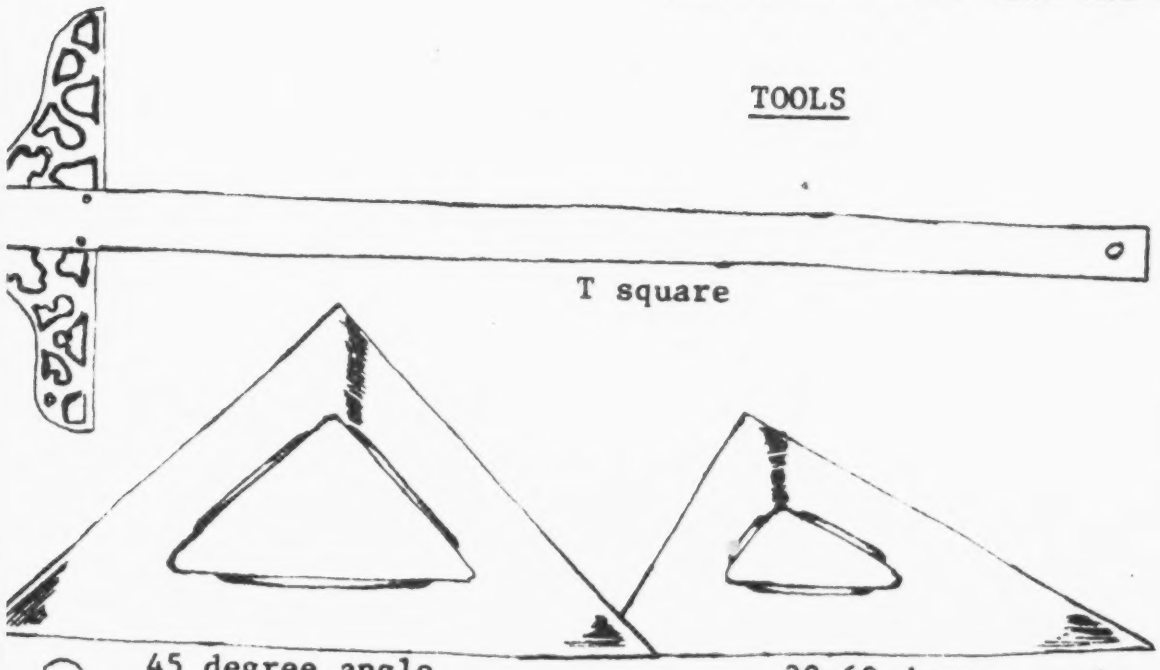
stenographer's pad

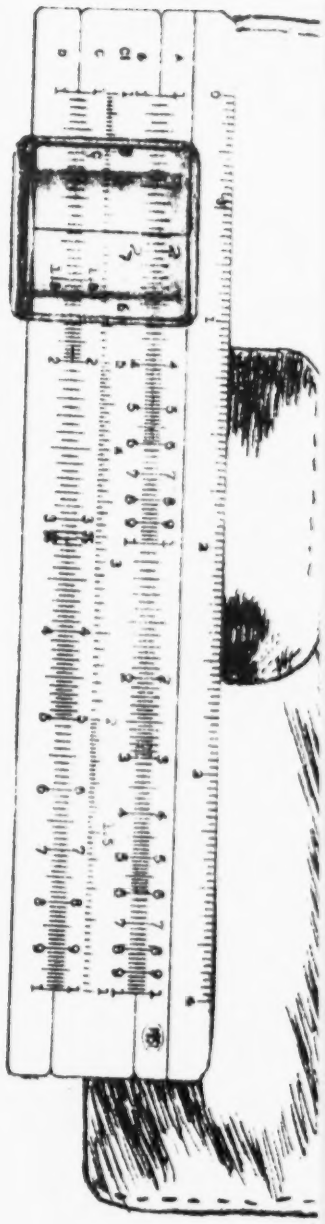
SPAN

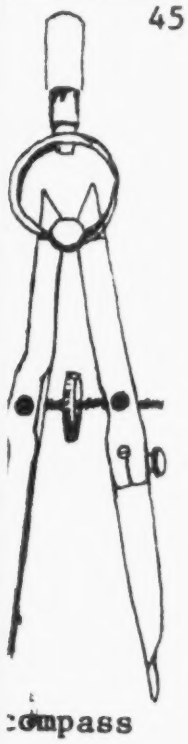
WHO USES THESE INSTRUMENTS AND MATERIALS?

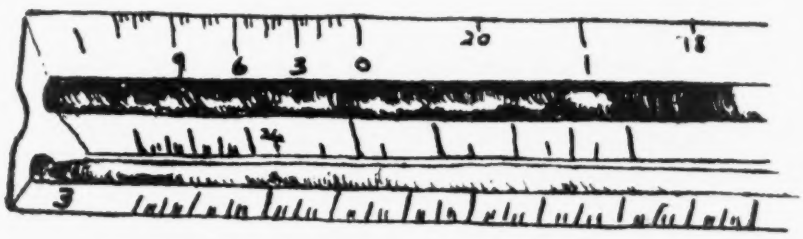
(Match the tools with the workman)

TOOLS

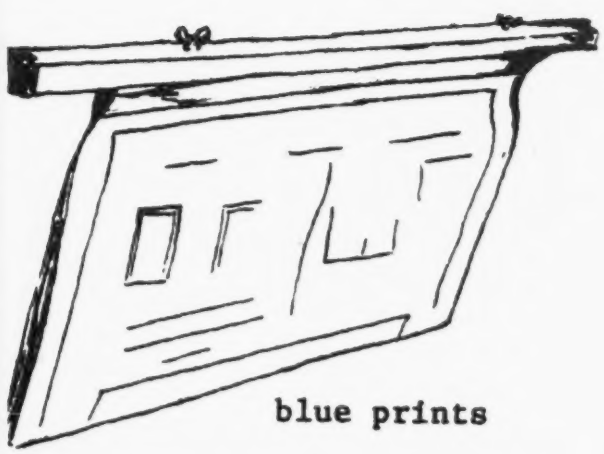




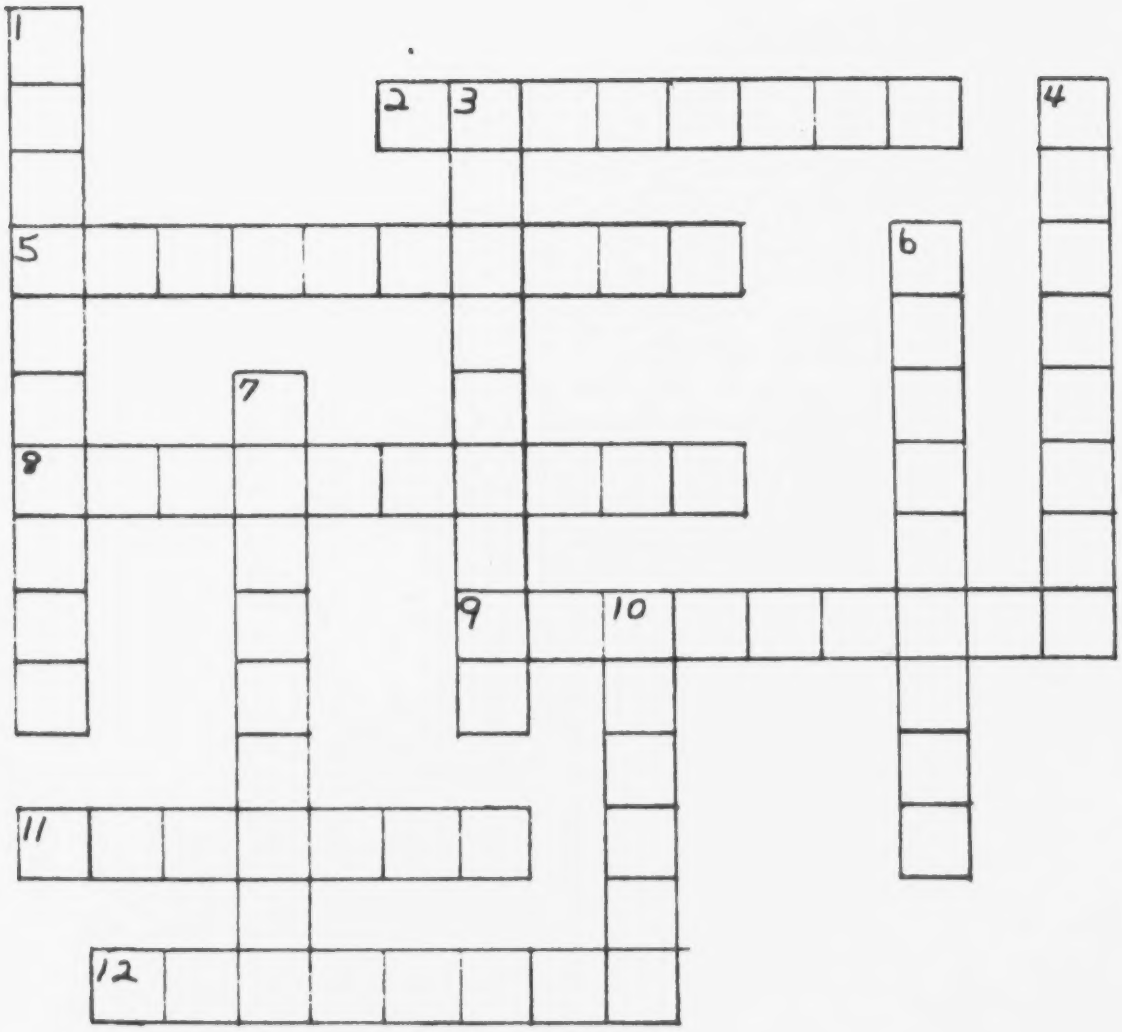




MATERIALS



OCCUPATIONS CROSSWORD PUZZLE



Use the occupations seen in the film to work this puzzle.

ACROSS

2. A _____ serves food in the restaurant.

5. All the workers in the building trades work for a _____.

8. An _____ is a person who is learning a trade.

9. A _____ does the wood work on the house.

11. The _____ installs the bathroom fixtures in the house.

12. The _____ works through the church to help the community.

DOWN

1. A _____ works with a trowel and mortar.

2. The _____ designs a house and then instructs the draftsman in drawing up the plans.

DOWN

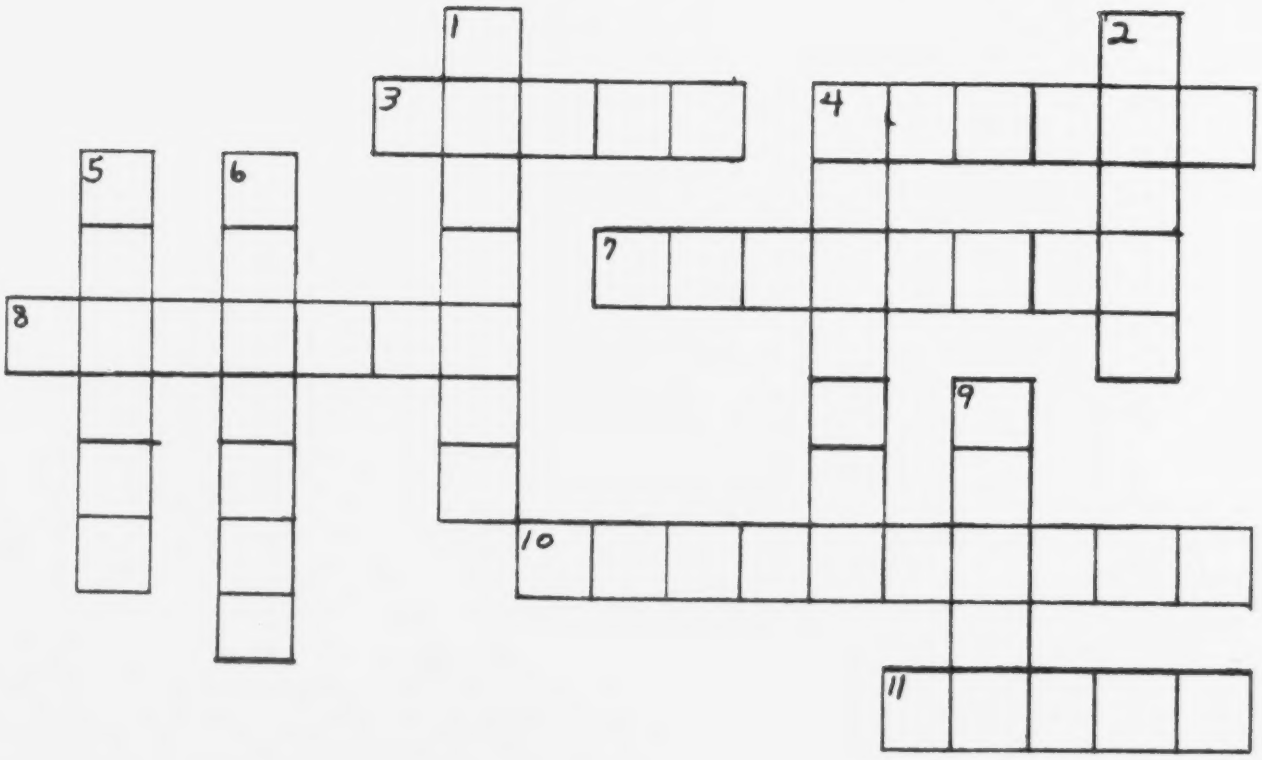
4. A _____ measures the lot and the location of the house on the lot.

6. The _____ types and takes dictation.

7. The _____ draws in the details of the blueprint.

10. The _____ puts the shingles on a house.

VOCABULARY CROSSWORD PUZZLE



DOWN

1. The plumber uses a _____ to clear waste from the drain of a sink.
2. A brick mason uses a _____ to be sure the wall does not dip.
4. A _____ is used to cut through a pipe.
5. _____ holds the bricks together to form a wall.
6. The draftsman uses a _____ to draw a circle.
9. A _____ is used to make holes.

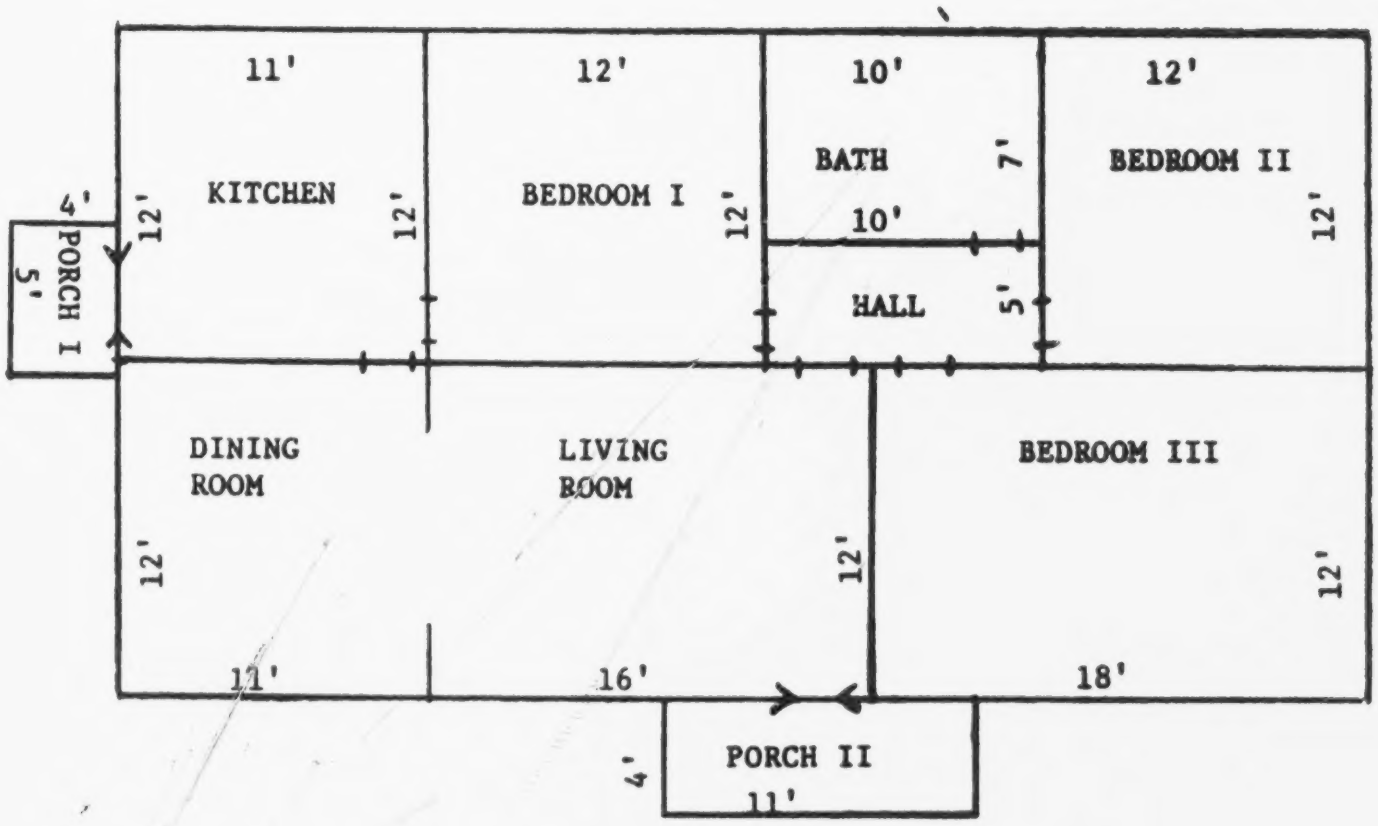
ACROSS

3. The carpenter uses a _____ to smooth the rough edges of wood.
4. A _____ is a pounding tool.
7. _____ is poured into forms for the floor of a house.
8. A carpenter is _____ a house when he puts in the studs and rafters.
10. The secretary uses a _____ to write letters.
11. _____ are the same thing as blueprints.

MATH PROBLEM

BUILDING TRADES

A carpenter needs to know how much floor space is in a house. By using the math you have learned in class, you can figure the floor space, or area, of a room or a house, too. Look at the drawing of the house. The dimension of Porch II is 4' x 11' which means it is 11 feet long and 4 feet wide. To obtain the area multiply 11 feet by 4 feet; the answer is 44 square feet. So the area of the porch is 44 square feet.



SPAN

Math Problem

Building Trades

1. Look at the scale drawing. How many square feet of space are in each room?

   Living Room_____

   Dining Room_____

   Kitchen_____

   Bathroom_____

   Bedroom I_____

   Bedroom II_____

   Bedroom III_____

   Hall_____

2. By adding the number of square feet in each room, determine how many square feet there are in the entire house. (Do not include the porches.)

   Answer_____

3. If the average cost to build a house is $15 for each square feet, how much will this house cost?

   Answer_____

Project #1

Building a Tradesman's Notebook

Objective:

Following the instructions in the kit, the students should be able to construct a wooden cover for a scrapbook.

Procedure:

1. Assemble all tools and materials needed for the project. (plywood or hard board, brass decorative bit, leather-ribbon-string, paper, saw, file, 1/4" drills [hand and twist], 12" rule, hammer, C clamp, pencil, sandpaper, steel wool, vinyl paint, 1" brush, soft rags, newspapers)

2. Acquire 2 pieces of board (9" x 12") and place group number on the inside of each piece.

3. On each piece of wood make a pencil mark to indicate the places to drill the holes. Locate them as shown in illustration #1.

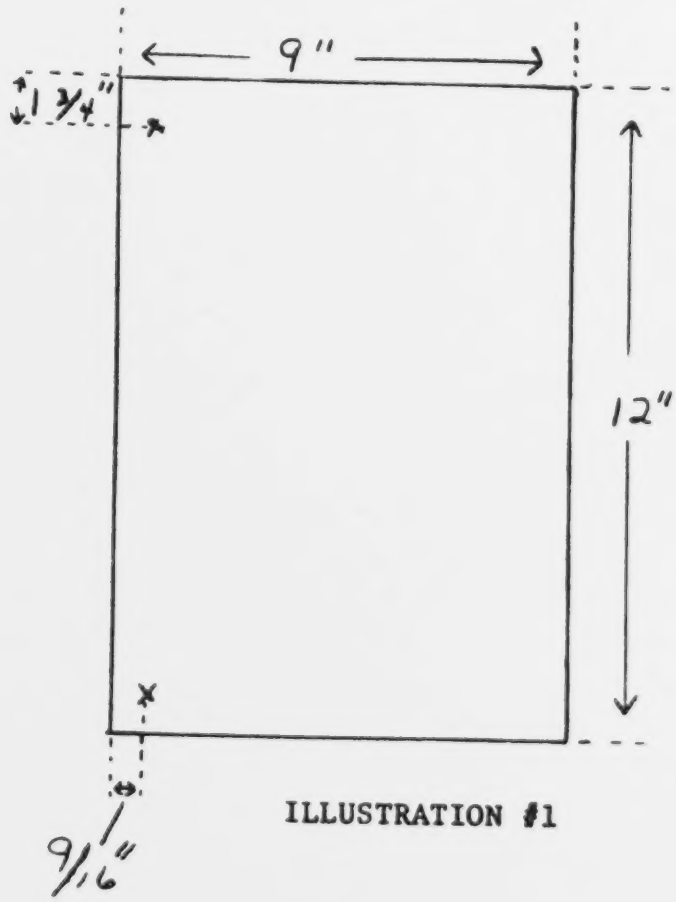


ILLUSTRATION #1

4. Drill 1/4" holes in these locations on each board.

5. With a ruler, make a saw line on 1 only of the boards. This will be the front of the notebook, or part A. Place the saw line as shown in illustration #2.

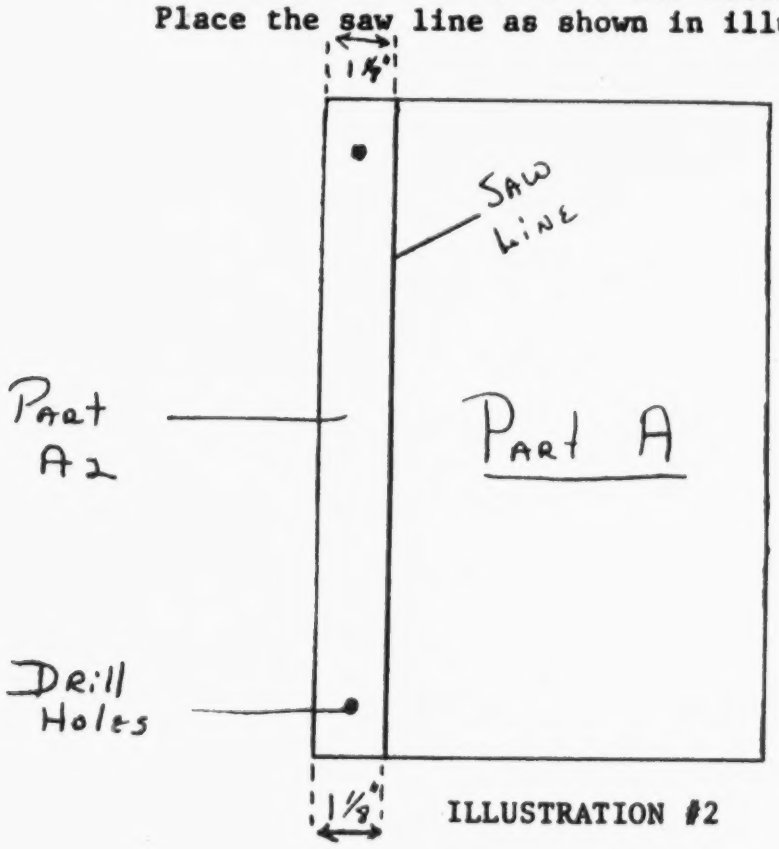


ILLUSTRATION #2

6. Clamp a board fence along the right side of the saw line and saw down the fence. Sand the sawed edges until smooth. Round the outside edges with a file and sandpaper. See illustration #3.

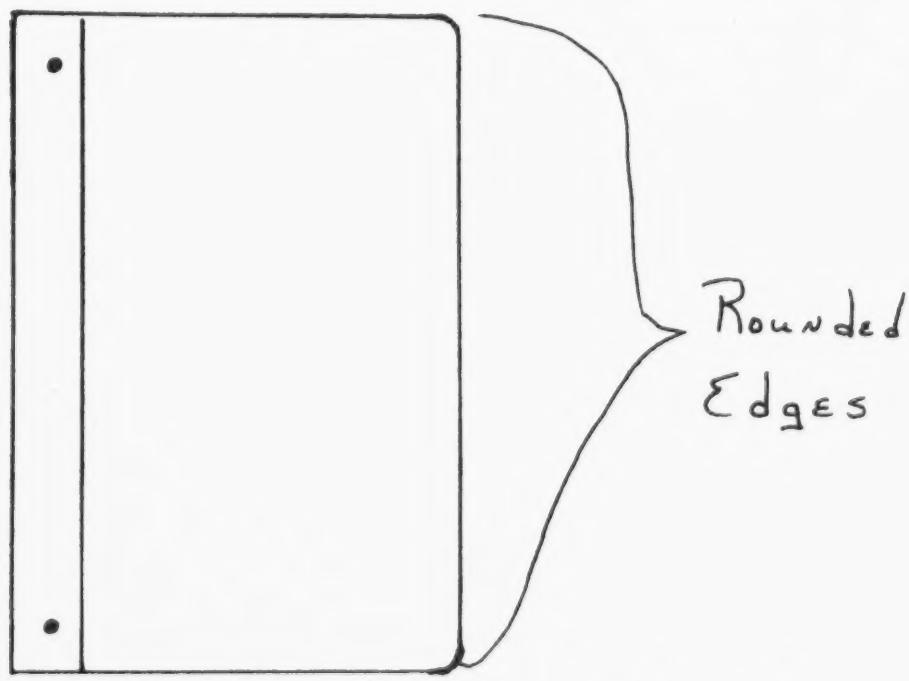


ILLUSTRATION #3

7. Locate hinges on part A and A2 between the sawed edges and fasten with brads, using a hammer. See illustration #4.

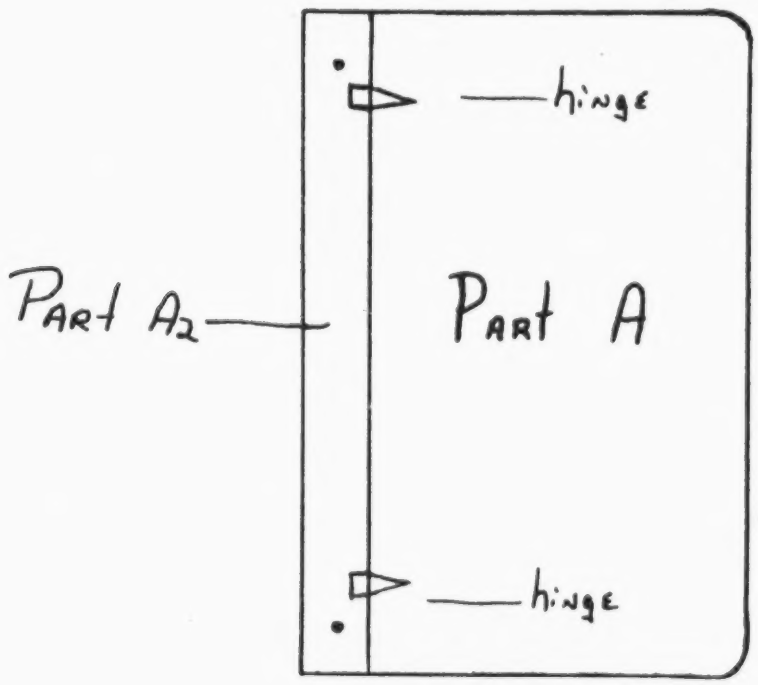


ILLUSTRATION #4

8. Cut holder (leather, ribbon, string) to correct width and length (3/16" x 24").

9. Sand entire project smooth.

10. Spread newspapers. Paint and decorate.

11. Add unlined paper to use for pictures of workers and tools.

Project #2

Return Brick Corner, Common Bond

Objective:

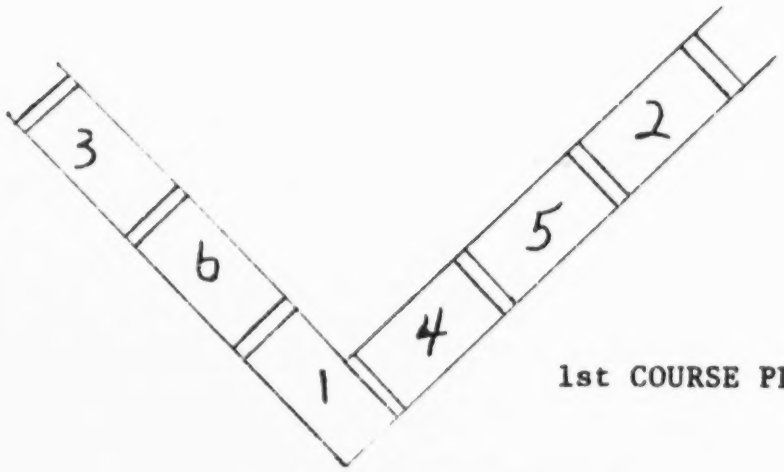
With the use of this guide, a student should be able to simulate the construction of a return brick corner, common bond, 3 courses high.

Procedure:

1. Assemble all tools and materials needed for the job. (mortar, water, trowel, plumb line, square, level)

2. Mix mortar.

3. Lay out 6 bricks dry and square them with the tri-square. Separate them evenly by using your forefinger as a spacer.



1st COURSE PLAN

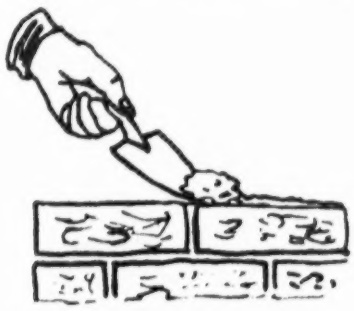
4. Holding trowel with fingers under the handle and thumb on top, cup mortar and place it under bricks #1, 2, and 3.

5. Bed up in mortar bricks # 1, 2, and 3 before disturbing the others. Level all three.

6. Lift brick #4 and place small amount of mortar under it and scrape some mortar on end of brick. Bed it up in mortar, being sure there is mortar between bricks #1 and #4. Repeat procedure for bricks #5 and #6.

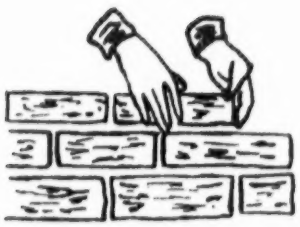
7. Make sure the bricks are level and square.

8. With trowel, place a line of mortar on top of the bricks.

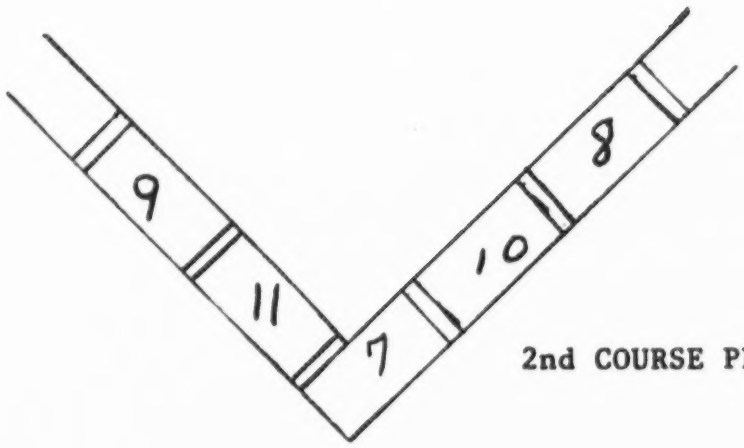


SPREADING MORTAR

9. Place the bricks on the mortar in this manner.



PUTTING THE BRICKS
IN PLACE

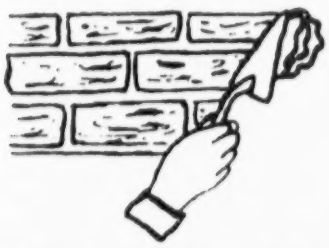


2nd COURSE PLAN

10. As in step 5, bed up in mortar bricks #7, 8, and 9. Level them.

11. Lift brick #10, place mortar under it, bed it up as in step 6. Repeat the procedure for brick #11.

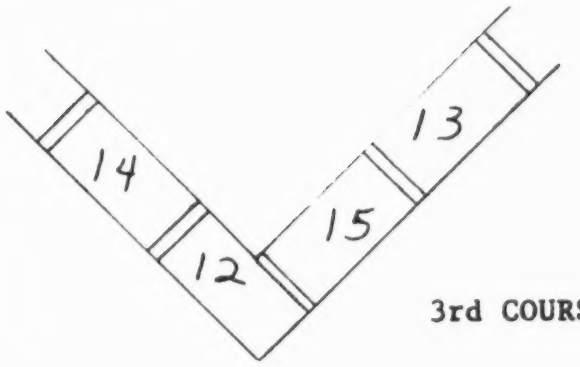
12. Using the trowel, scrape away any extra cement from the bricks so that the wall is smooth.



SCRAPING AWAY THE
EXTRA CEMENT

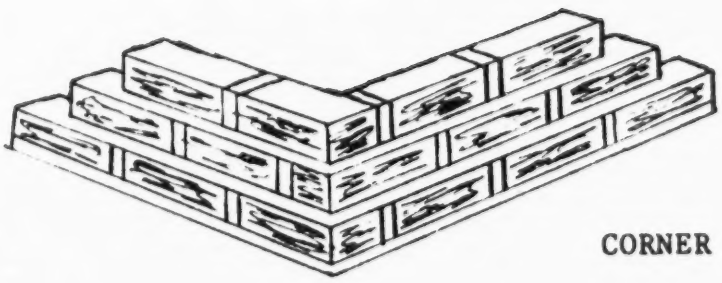
4083

13. Repeat the procedure used in steps 5 and 10 for the 3rd course.



3rd COURSE PLAN

14. Be sure the top is level and the sides are square.



CORNER ELEVATION

Project #3

Drawing to Scale

Objective

Using the tools provided in this kit, the student should be able to draw to scale a room or a ball diamond. Also they should be able to construct a perpendicular line and a five-point star.

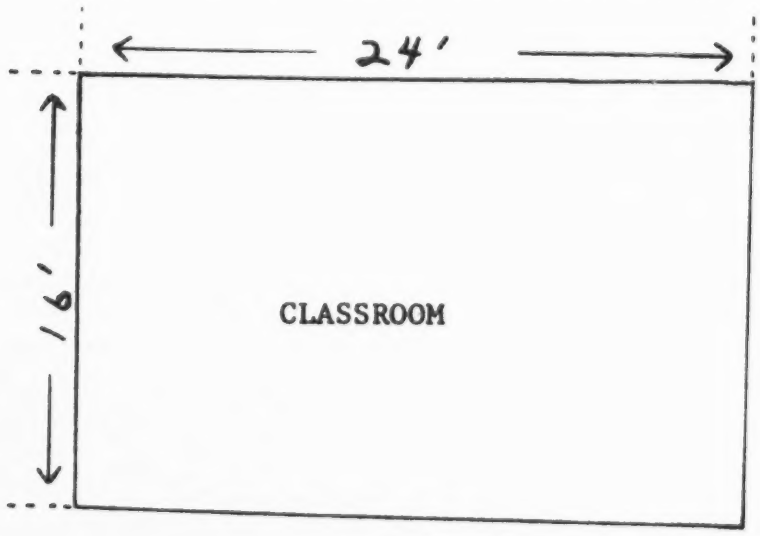
Procedure

1. Assemble all tools needed. (#4 pencil, paper, eraser, compass, ruler)

2. Using the ruler, measure your classroom and write down the exact measurements. Instructions for drawing a room are under A; instructions for drawing a softball and a baseball diamond are under B; and instructions for drawing a pentagon and a 5-point star are under C. You may want to draw one or all of these.

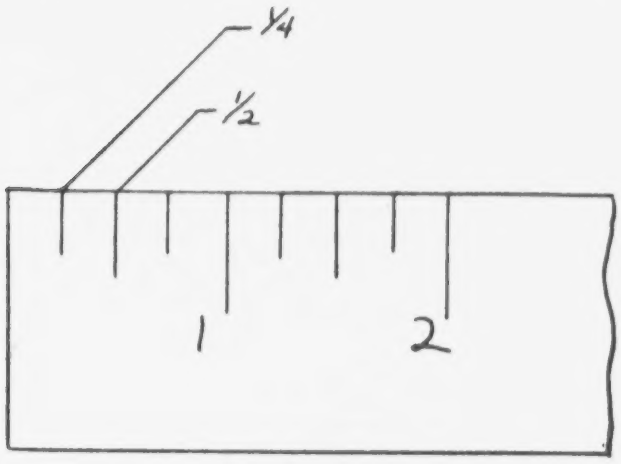
A. A Classroom:

1) For a room, measure each side as shown.

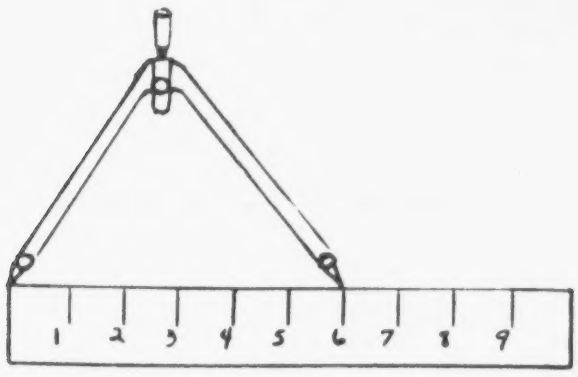


This scale drawing indicates that the room is 16 feet wide and 24 feet long.

2) When drawing a room to scale, let 1/4 of an inch on the ruler represent 1 foot. According to our measurements, our scale drawing room will be 6 inches long and 4 inches wide. (6 inches would be 24 - 1/4 inches; 4 inches would be 16 - 1/4 inches)



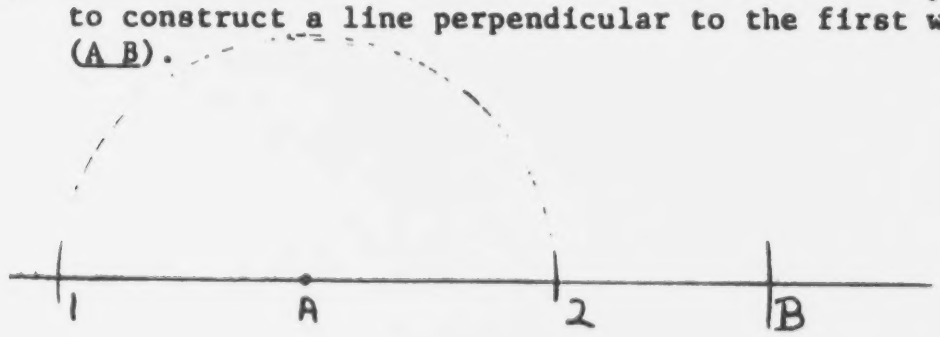
3) To draw the room, place the steel point of the compass at 0 and open the compass until the pencil point touches the correct mark (in our case 6 inches).



4) Make a straight line [on your drawing paper] to be one wall. With your compass set as in step 3, mark an arc for the end of the wall.

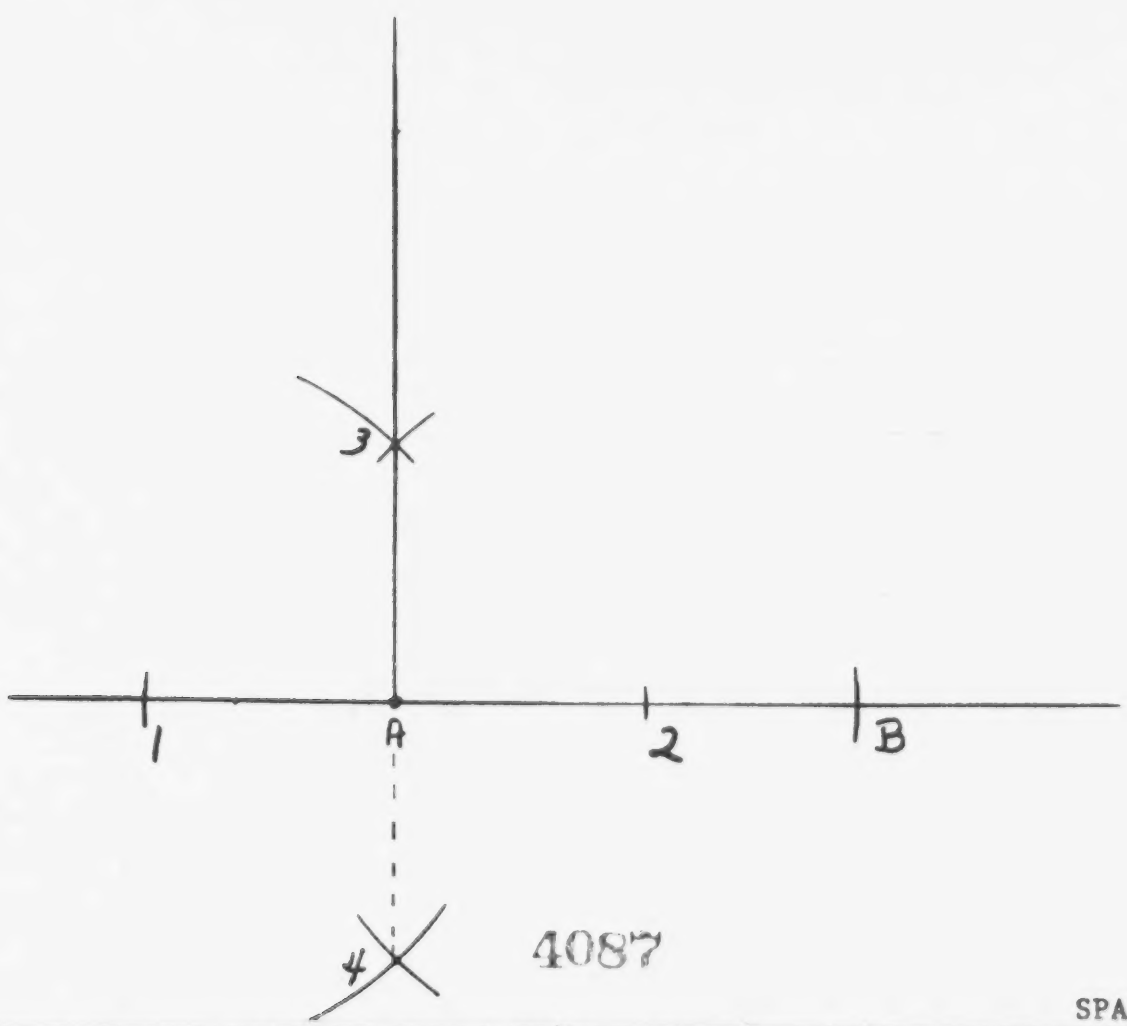
4086

5) Now to make the second wall we must use our compass to construct a line perpendicular to the first wall (A B).



Put the compass at any setting which will not go off the page. Then with the steel point at A make an arc cut line AB on either side of A. These arcs are 1 and 2.

Open the compass slightly, put the steel point on 1, and make an arc above and below A. Leaving the compass on the same setting, place the point on 2 and repeat the procedure. Where these arcs cross are point 3 and 4. Connect points 3 and 4 through A and you have a perpendicular line.



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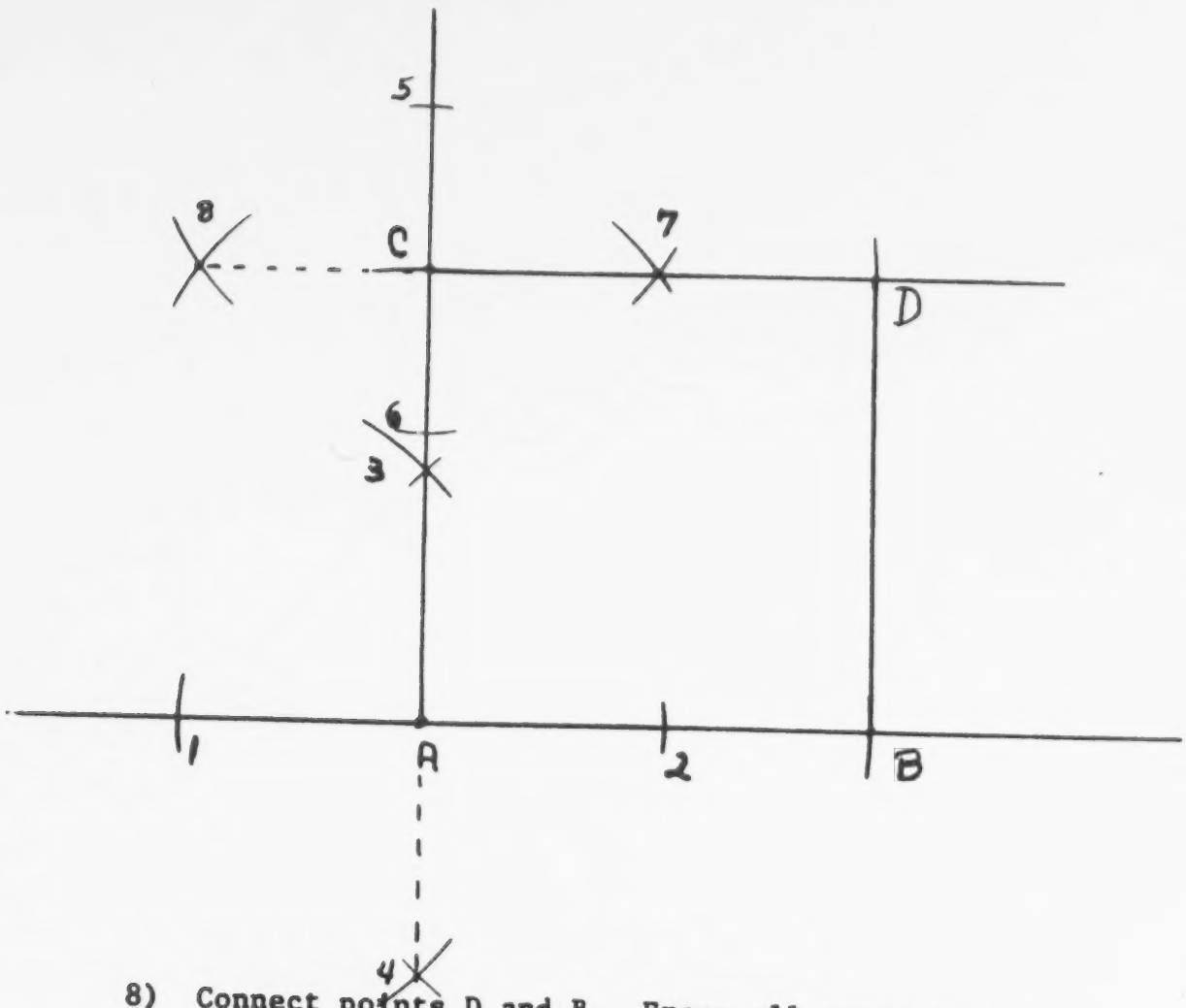
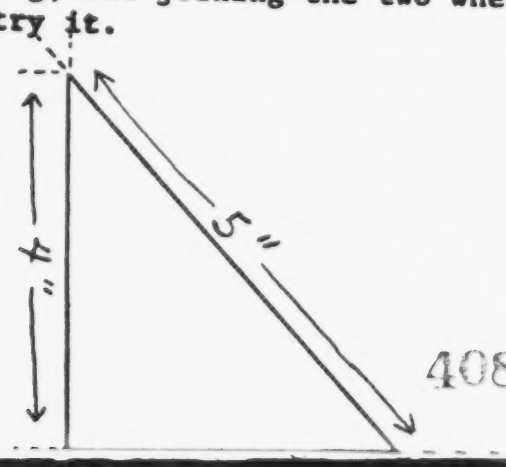
6) With the compass, measure the scale length of your second wall. Place the point at A and mark an arc C. Line AC then becomes the width of your room as line AB is the length.

7) At point C construct a perpendicular line to become the other length wall. (Use same procedure as in step 5.)



8) Connect points D and B. Erase all unnecessary lines. You have a scale drawing of your classroom. Why don't you try to do scale drawing of the desks within your classroom?

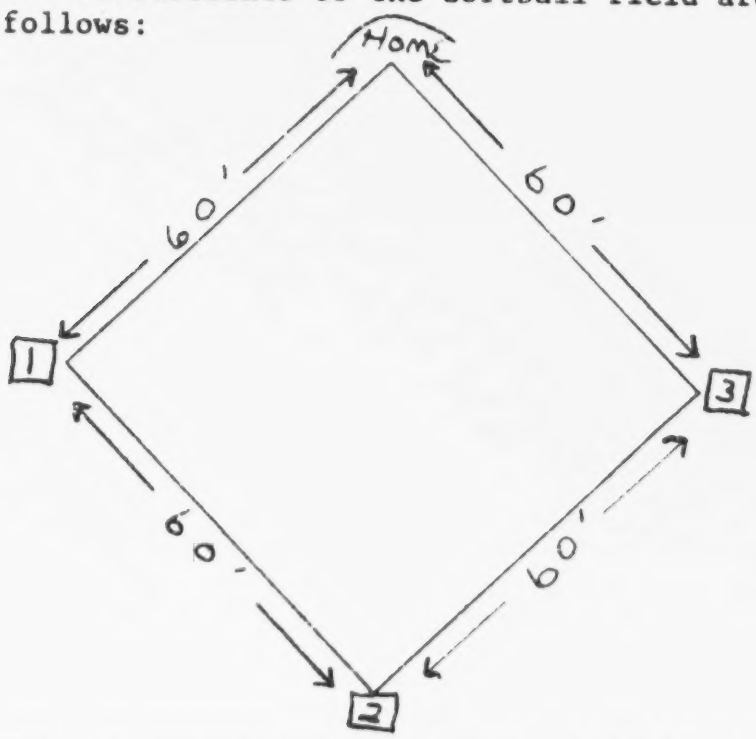
NOTE: Carpenters make a square corner by measuring 3" on side AB; estimating a perpendicular like BC 4" long; and joining the two where 5" meets AC. You try it.



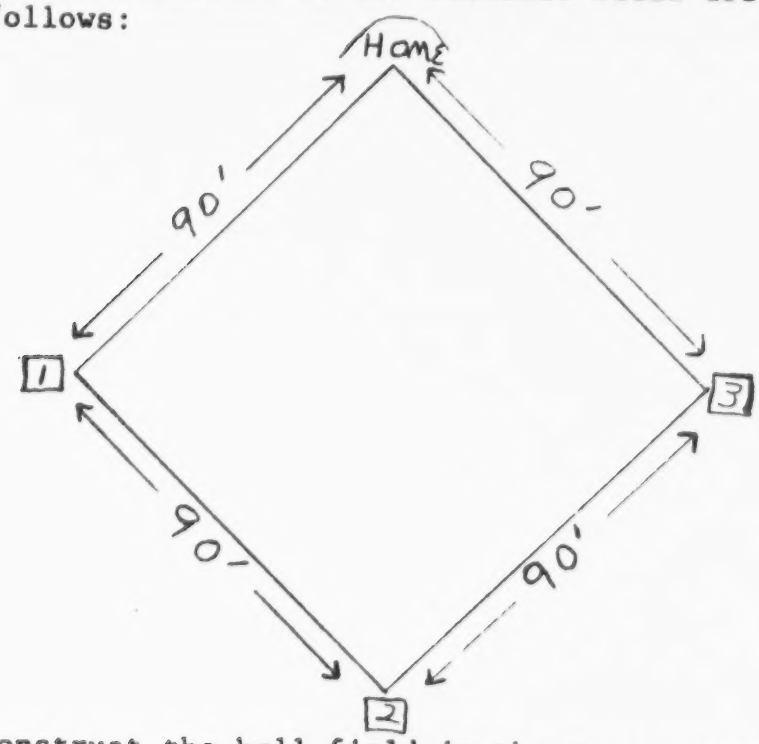
B. <u>A softball and a baseball diamond</u>:

1) When drawing a ball field to scale, use 1/16 of an inch to represent 1 foot.

2) The measurements of the softball field are as follows:



The measurements of the baseball field are as follows:

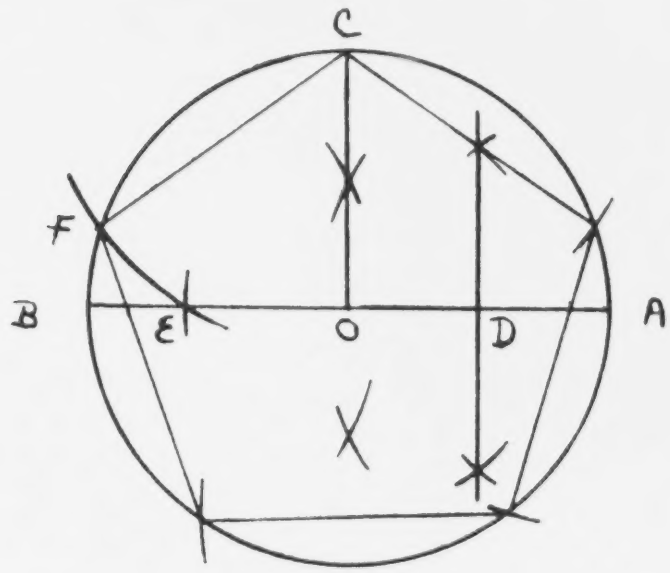


3) Construct the ball field in the same manner as the room, being sure the lines are perpendicular to each other.

4) Can you put in the pitcher's mound? the batter's box? (Use the <u>World Book Encyclopedia</u> for reference.)

C. <u>Constructing a pentagon and a 5-point star</u>:

1) Draw a circle equal to the size of pentagon desired.



2) Construct diameter, <u>AB</u> and radius <u>OC</u> perpendicular to <u>AB</u>.

3) Bisect line <u>AO</u> to find center point <u>D</u>.

4) Draw <u>CE</u> using point <u>D</u> as the center.

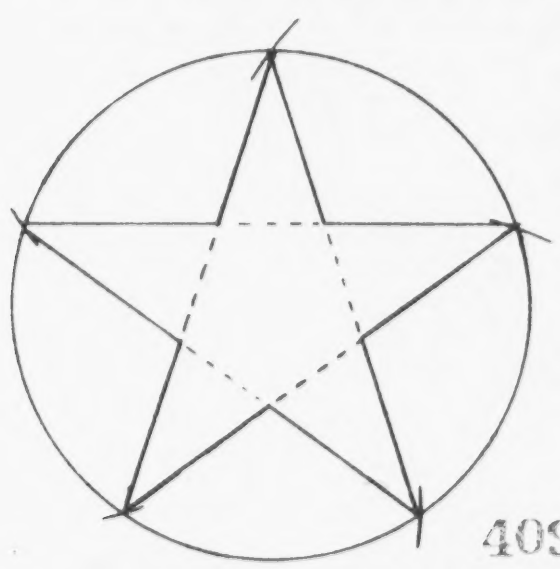
5) Draw arc <u>EF</u> from center point <u>C</u>.

6) Draw the line <u>CF</u>.

7) Lay off the four remaining sides, equal to <u>CF</u>, around the circle.

8) Connect the points around the circumference to form a pentagon.

To form a 5-point star locate the five points as above and connect the points as shown below.



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Project #4

How to Repair a Leaky Compression Type Faucet

Objective:

Following the set of instructions, the student should be able to replace a washer in a compression type faucet.

Procedure:

1. Assemble all tools and materials needed.
   (regular screwdriver, phillips screwdriver, monkey wrench, seat tool, piece of cloth, masking tape)

2. Shut off water (main supply)

   Check points:

   a. Valve handle underneath faucet.
   b. Valve under house or just outside house where water line enters house.
   c. Main valve near the street inside the water meter.

3. Turn faucet handle to make sure water is shut off.

4. Place tape or cloth around packing nut (see A in illustration). Using wrench, unscrew nut loose from threads.

5. Using off and on handle, unscrew valve faucet stem (see B in illustration) and remove it from water faucet housing.

6. Using screwdriver, remove faucet screw at washer end (see C in illustration). If damaged, use a hacksaw and reslot the screw slot.

7. Remove and discard old worn washer (see D in illustration).

8. Select proper size new washer that fits inside rim of stem. Always place flat side down against rim.

9. Replace faucet screw with screw driver.

10. Remove seat (see E in illustration) with a seat tool and wrench.

11. Check seat rim for worn places or grooves.

12. If seat is scarred or grooved:
    a. Discard and purchase a new one.
    b. Reseat worn seat using emery cloth, shaping stone or file.
    c. Buy an inexpensive valve seat grinder. (not recommended) If seat threads are worn, you will have to purchase a pipe joint putty or ribbon to fill in the space.

13. Replace new seat or repair seat.

14. Replace packing if water has been spurting around stem.

15. Using a rag or old toothbrush, clean all parts. Make sure you leave no metal particles or grit on threaded parts where seat and washer meet.

16. Replace stem (see B in illustration) in faucet, using your hands.

17. With wrench protected with tape or cloth, tighten packing nut (see A in illustration).(You may have to use screwdriver to push packing in place first.)

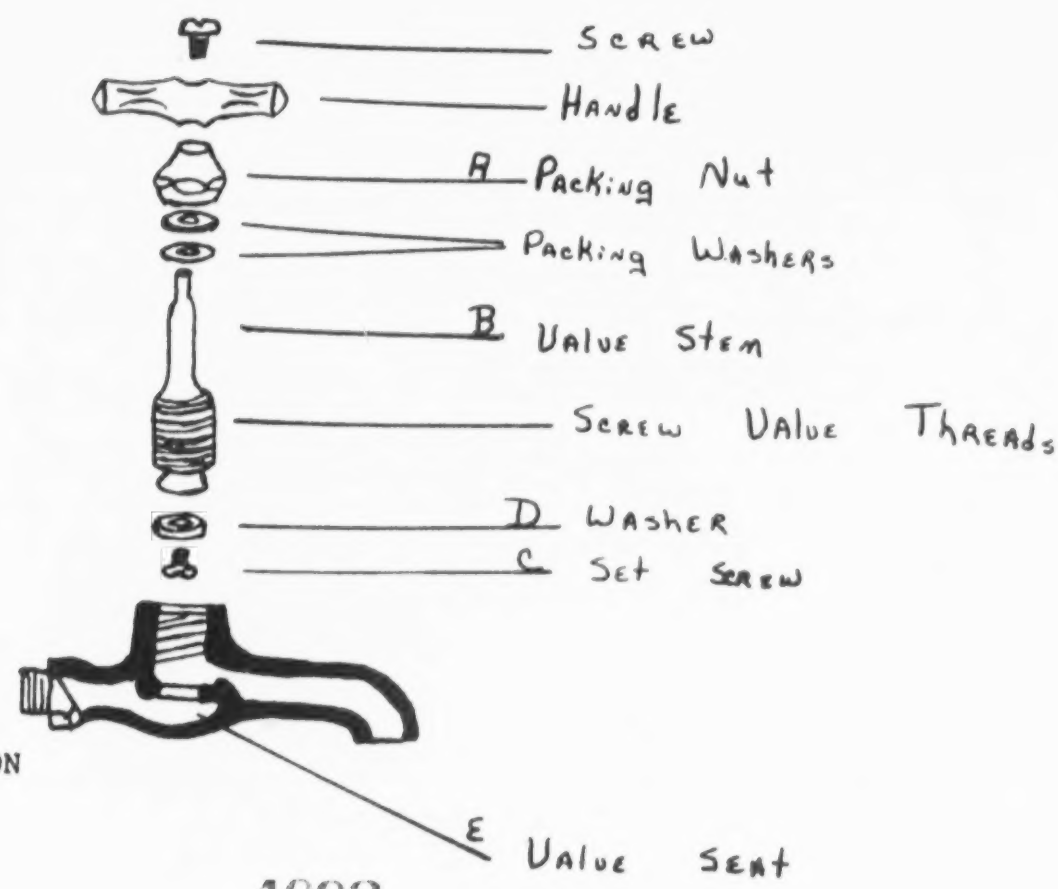
18. Turn handle to "off" position.

19. Turn on water at the main meter cutoff valve.

20. Return to the faucet and open and close the flow of water several times to see if the job is complete.

21. If it still leaks, repeat dissembling and assembling steps.

22. If leak is corrected, let water flow a few minutes out of the spout to force air out of the water line. This is what causes the pipes to pop and cough. This causes water to flow uneven at first through the faucet.



NOZZLE OR SPOUT COMPRESSION
FAUCET SIDE VIEW EXPOSED

APPENDIX P

BOARD OF EDUCATION
Memphis City Schools
2597 Avery Avenue, Memphis, Tennessee 38112

Please reply to:
James E. Hugueley, *SPAN Project Director*

Northside High School
1212 Vollintine Avenue
Memphis, Tennessee 38107

May 7, 1971

Dear Fifth and Sixth Grade Teachers:

A field test will be conducted on May 12, 1971 at 1:45 P.M. of the Health Occupations Film over WKNO-TV. It will be shown again on May 13, 1971 at 11:15 A.M.

Please view this film with your class and check the enclosed questions and return to us at your earliest convenience via pony express. The response should be addressed to:

Mrs. Mary Payne
Curriculum Specialist
Project SPAN
4911 Sanderlin
Adult Education Center-East
Memphis, Tennessee 38111

Your cooperation in this field test is appreciated.

Very truly yours,

James E. Hugueley

James E. Hugueley
SPAN Project Director

JEH:ddf

Enclosure

SURVEY FOR SPAN I.T.V. PROGRAM

Dear Principal:

Please have each fifth and sixth grade teacher check the appropriate blank for each item and return this form to:

SPAN Project, ITV Series
Adult Education Center-East
4911 Sanderlin
Memphis, Tennessee 38117

1. My class is grade (5) _____ (6) _____

2. My class watched the program on health occupations. (yes) _____ (no) _____

	all students	most students	few students	none of the students
3. Did the students watch the program attentively?	_____	_____	_____	_____
4. Did the students identify with the persons in the film?	_____	_____	_____	_____
5. Did the students like the music with the program?	_____	_____	_____	_____
6. Did the students attempt to answer the questions presented on the program?	_____	_____	_____	_____
7. Did the students want to discuss the workers after the program was completed?	_____	_____	_____	_____
8. Did they have a good opinion of the workers presented on the program?	_____	_____	_____	_____
9. Did you feel that watching this program is helpful to the classroom students?	_____	_____	_____	_____

ADDITIONAL SUGGESTIONS OR IDEAS: _____

_____

_____

_____

_____

The name of my school is _____

Thank you for your help and cooperation.

SPAN 1971

APPENDIX Q

CYPRESS JUNIOR HIGH SCHOOL

NAME	STATION
Donald Bell	Lion Service Station
Jerry Blackwell	Esso Service Station
Wayne Cox	Esso Service Station
Carl Exum	Walgreen's
Jackie Bumpus	NYC
Terry Lipford	NYC
Gregory Neyland	NYC
Corrina Shipp	NYC
Gibson Grandberry	Maplewood Grocery
Walter Poindexter	Gadd Barber Shop
Schnelle Owens	Borg Pharmacy

HUMES JUNIOR HIGH SCHOOL

NAME	STATION
Glen Maxwell	Blues Station
Callison Bayes	Mr. Pride Car Wash
Harvey Hopkins	Mr. Pride Car Wash
Frank Leake	Mr. Pride Car Wash
Nathan Young	Mr. Pride Car Wash
Grover Young	Marketland-Metro Shopping Center
William Payne	Marketland-Metro Shopping Center
Carrie Cooper	Frosty Freeze
Robert Pallard	Lucky Food Stores
Ricky Wheeler	Jeffco Auto Sales
Odell Brooks	Esso Service Station
Kay Little	Jack Pirtle
Phyllis Early	Jack Pirtle

APPENDIX R

SUBJECT MATTER: Describes a number of occupations in the hospital

Your Career Opportunities in Hospitals

American Medical Association
535 N. Dearbon St.
Chicago 10, Illinois

File: Health occupations

TITLE: Your Career Opportunities in Hospitals

American Medical Association
535 N. Dearbon St.
Chicago 10, Illinois

Describes a number of occupations in the hospital

File: Health occupations

PUBLISHERS: American Medical Association
535 N. Dearbon St.
Chicago 10, Illinois

Your Career Opportunities in Hospitals

Describes a number of occupations in the hospital

File: Health occupations

APPENDIX S

*E.T.V. Series and Sequence of Viewing

Occupational Cluster Featured In Film	Number of "Hands-on" Activities	Number of Classroom Activities (Games, etc.)	Number of Vocabulary Activities
1. Introductory - Why Do People Work? - September, 1971	None	None	None
2. Building Trades - September, 1971	4	3	2
3. Transportation - October, 1971	4	3	2
4. Health Occupations - November, 1971	4	3	2
5. Office Occupations - December, 1971	4	3	2
6. Communications - January, 1972	4	3	2
7. Industrial - February, 1972	4	3	2
8. Home Economics - March, 1972	4	3	2
9. Distributive - April, 1972	4	3	2
10. General Services - May, 1972	4	3	2

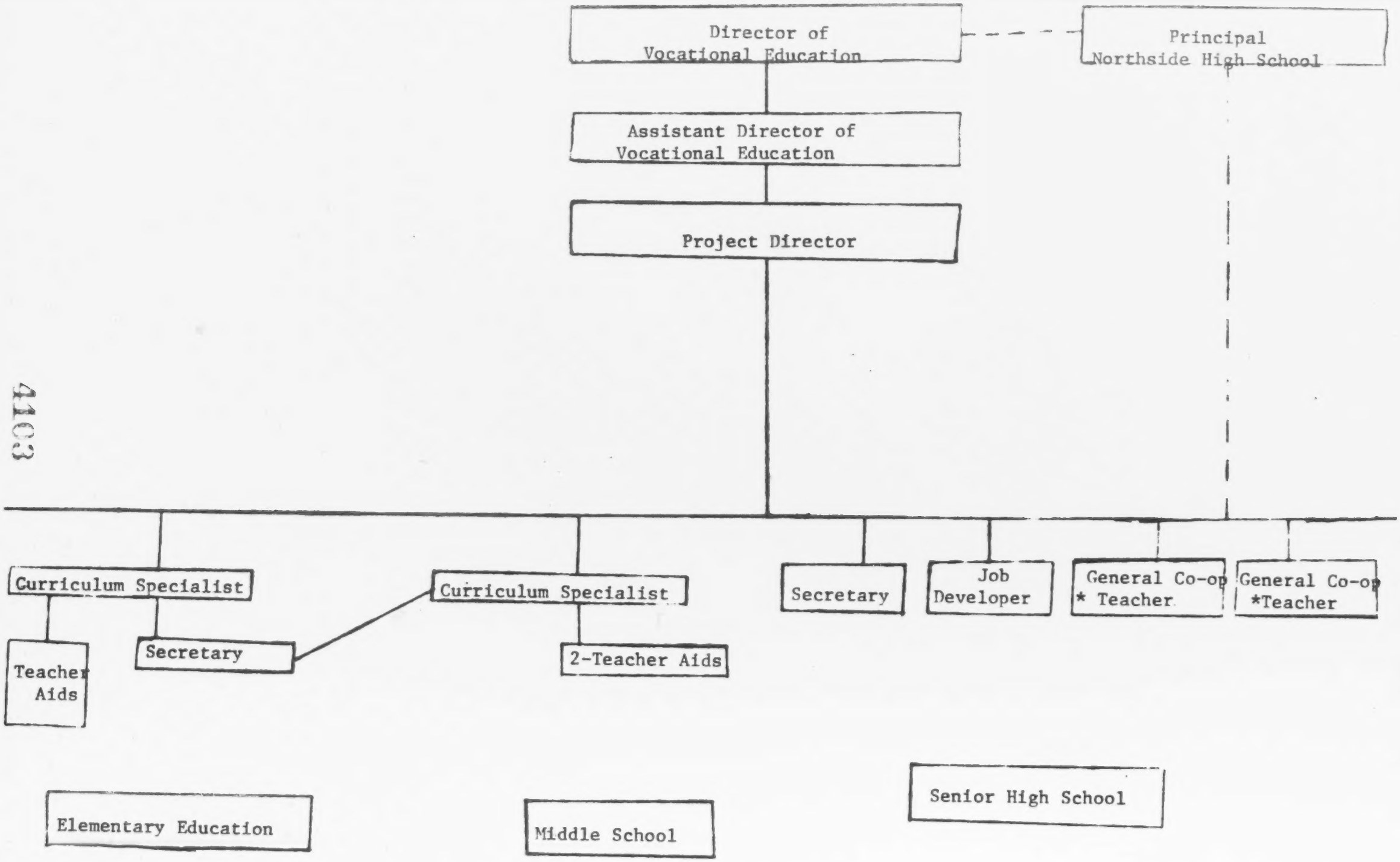
*The majority of the "hands-on" activities, classroom activities, and vocabulary activities are completed. They are being typed and printed. All of these will be completed by September, 1971. The filming of the 15 minute by WKNO-TV will also be completed by September, 1971.

The six (6) proposed teacher aides will rotate among 127 classrooms to assist the teachers in implementing the above activities after the showing of the film over WKNO-TV.

4101 C1

APPENDIX T

4102



* General Co-op teachers teach one class each at middle school and high school levels.

APPENDIX U

STATE: Tennessee

TITLE OF PROJECT: Project SPAN - An Accelerated Project for a Systems Program Approaching Non-Unemployment of Vocational Students

DIRECTOR: James E. Hugueley
Northside High School
1212 Vollentine
Memphis, Tennessee 38104

APPLICANT ORGANIZATION: Memphis City Schools, Division of Vocational Education

ESTIMATED TOTAL FEDERAL FUNDS - SECTION 142 (c): $391,353

DURATION: June 1970 - June 1973

DESCRIPTION OF PROGRAM:

I. Administrative Structure

Director of Vocational Education and his supervisory staff in the Memphis City Schools heads total program, assisted by project coordinator. Staff includes: curriculum specialist, job development coordinator, teacher aides, and target area school principal, cooperative coordinators, and teachers.

II. Program Design

The elementary level program provides laboratory experiences in occupational skills, films on ITV, and educational inserts. The middle school will integrate an occupational guidance series into the industrial arts and home economics programs. The high school level will utilize a Vocational Guidance and Job Development Center located at the target area high school, a cooperative program, a basic skill program during the summer or after school, and programs for dropouts. A computer system will be set up for job placement and follow-up the second and third year.

One high school will be used as the target area, and students from 2 junior high schools will be involved. Fourteen elementary schools will receive materials and assistance from the center. All Memphis 5th and 6th grades will take part on a voluntary basis; 13% of the total student population will participate.

III. Program Components

A. Occupational Orientation This is provided in the elementary and middle school programs, which include occupational elements in films and lab experiences for K through 6 and educational inserts in industrial arts and home economics courses in grades 7 through 9.

B. Cooperative Education Work experience will be provided for 12th grade students. Second or third year vocational enrollees and non-vocational students will participate in cooperative education after taking a summer or after school program of skill orientation. Coordination will be handled through the job developer and co-op coordinators in the center.

C. Intensive Job Entry Skill Training A program will be developed through the center to train high school students in quick "shot" programs. This will be included with the cooperative program for non-vocational students.

D. Occupational Guidance, Counseling and Placement The program basically provides occupational guidance information and techniques, K through 14. The main guidance and placement efforts are handled through the information and placement center for high school students.

IV. Unique Features:

A. Utilization of educational television for the delivery of vocational orientation programs.

B. Development of a computer system approach to job placement.

C. Redirection of industrial arts and home economics to occupational orientation.

D. Quick "shot" occupational skills program for potential dropouts leading to employment.

APPENDIX V

ITV ADVISORY COMMITTEE

DIRECTOR: Mr. James Hugueley

Mr. James Marsh	Supervisor, Vocational Division, City Board of Education
Mrs. Mary Payne	Curriculum Writer, SPAN Project, City Board of Education
Mrs. Grace Williams	Curriculum Writer, SPAN Project, City Board of Education
Mrs. Elfredda Mann	Memphis Area Vocational Technical School
Mrs. Odessa Myers	Department of Instruction, City Board of Education
Mrs. Avis Pentecost	Department of Instruction, City Board of Education
Mr. Dicky Ralston	Vocational Division, City Board of Education
Mr. Jack Willis	Guidance Department, City Board of Education
Mr. Dave Zanone	Psychological Services, City Board of Education
Mr. John Heirigs	Building Trades Representative
Mrs. Daisy Jarrell	Memphis Learning Laboratory
Mrs. Lynn Tharpe	Memphis Urban League
Mr. Price Broughton	WKNO-TV
Mrs. Mary Kohlmeyer	WKNO-TV
Mrs. Lola Goldsmith	Community Worker, Merrill Elementary School
Mrs. Amy Lurry	Community Worker, Pope Elementary School
Mr. W. D. Callian	Asst. Superintendent, Department of Instruction

APPENDIX V

Evaluation of Project SPAN*

Preliminary Report

May 15, 1971

I. Introduction

The contract for evaluation of the SPAN project was finalized April 1, 1971. Because of the lateness of this date only limited evaluation has been possible. A number of activities have been monitored, however, and several others are in process or in the planning stages. The SPAN staff has been pursuing the program objectives vigorously, and it appears they are prepared to move effectively into the second year of the project. An on-site evaluation has been conducted by representatives from HEW in which the program was given a good rating and encouragement. As a result of this visit the project is being expanded into an additional high school district next year. (Copy of the On-Site Evaluation is attached.)

Product evaluation of the project will be long range in nature. In the meantime components must be analyzed in light of how well they are meeting both short and long range objectives. If students are being helped effectively to become knowledgeable and successful in the job market as a result of their school experience, the results of programmatic effects will not be felt for several years. In the meantime knowledge and attitude change may be measured to some degree using observations, school records, and paper and pencil instruments as criteria for success in the program. The first available ultimate cirteria will be the holding power of the target area schools. If the

*A project undertaken by the Memphis City Schools under Part D of the Vocational Education Amendments of 1968 (PL90-576).

drop-out rate decreases in schools where SPAN is instituted and continues the same or increases in similar schools, then there is basis for claiming some success. Later, when students who have participated in SPAN begin to graduate, it will be possible to compare them with similar school populations relative to their ability to obtain employment and perform successfully in a job for which they have prepared. The Guidance Division of the Memphis City Schools has indicated that the rate of drop-outs in grades 7-12 for the entire school system during the years 1967-70 was approximately 3 per cent. By contrast the rate at the target school, Northside High School, during the same period was 7.6 per cent; and at the control school, Booker T. Washington High School, it was 9.4 per cent. The rate at Westside High School, the school which likely will be added to the project for next year was only 2.8 per cent during these three years.

II. The Elementary Component

Preliminary investigation by the SPAN staff revealed that on the average elementary students in the target area were unable to name more than two or three kinds of work. The children were interviewed, as well as asked to write (their own spelling accepted) as many kinds of work as they could. Especially noticeable was the lack of the service professions mentioned--health services other than doctors, repairmen, salesmen, etc. In order to acquaint the children with a wider variety of work possibilities, as well as to attempt to develop in them a wholesome attitude toward work, a series of educational films are being developed. Special supplementary materials in the form of games, puzzles, posters, and suggestions for the teachers are to be developed along with units

of "hands-on" experiences which provide the children an opportunity to handle some of the tools and materials used by different kinds of workers. The films are being produced by the staffs of SPAN and WKNO, the local ETV station. The supplementary materials and "hands-on" programs are being developed by the SPAN staff.

The first film produced and field tested in March dealt with the building trades. Even though the evaluation contract negotiations had not been completed at the time of this field test, an assessment was undertaken under the direction of The University of Tennessee staff in anticipation of final approval of the contract. One fifth grade class and one sixth grade class were selected in each of six target area elementary schools. Based on objectives set for the film, a test was developed by the U. T. staff and was administered to each class prior to the showing of the film on WKNO-TV to assess the amount of knowledge the students had about the material. A SPAN staff member and the director of the evaluation from The University of Tennessee visited each teacher in advance of the pre-test and film-centered unit to explain exactly what was being attempted and the kind of approach the teacher should take with the children in order to insure uniform data collection.

The children were given a repeat of the test after having had varying portions of the unit. Randomly selected classes were placed in groups which were tested after (1) only viewing the film, (2) having the film introduced by the teacher using the supplementary materials developed and provided by the SPAN staff and then viewing the film, or (3) having the introduction, film and other experiences including the "hands-on" unit. The Office of Institutional Research of the Knoxville

campus of The University of Tennessee is analyzing the results of these data in an attempt to ascertain the effects of the different program components on the knowledge and attitude of the students. Frequency counts, per cents, Chi Square and McNemar analyses are being done.

A second film, on the subject of health occupations, has been developed by the SPAN staff. The supplementary and "hands-on" materials have not yet been completed, but the film was shown in mid-May on WKNO-TV so that teacher reaction to the film itself could be obtained before the school term ended. The additional eight films will be developed by fall using the feedback obtained from the field testing as in-put.

III. Junior High

Eighth and ninth grade students enrolled in shop and home economics classes at Cypress and Humes junior high schools were administered the Gordon Occupational Check List prior to and again after a two to three week unit on occupations. These tests are presently being scored and will be available soon to assess progress in these two schools. Because of the lateness in the spring term of the development of this phase of the project the control school (Porter Junior High School) was not tested. This will be done next year.

In the occupational development-coop phase of the junior high program, 12 of 15 students at Humes and 12 of 17 at Cypress were successfully placed in jobs in business in the area. These work experiences were of a wide variety--service stations, car washes, stores, etc. Follow-up will be made with these employers for their assessment of the program.

IV. Senior High

All juniors at Northside High School have been given the Gordon Occupational Check List and the Crites Vocational Development Inventory. These are presently being scored. Plans are being made to give these instruments to seniors at Westside and Booker T. Washington high schools early in the fall of 1971. Records will be kept to determine how effective the SPAN program is in helping students identify, train for, obtain and retain successful areas of employment.

A form has been developed for use by counselors next year in keeping up with contacts with seniors. A check will be made to see how counselor contacts for various purposes, training programs, and coop experiences are related to job placement and success in holding jobs attained. Conferences were held with counselors at both Northside and Booker T. Washington high schools, as well as with guidance officials at the Central Office, in connection with the development of this form.

Twenty-three of 27 students enrolled in the occupational development program at Northside High School during 1970-71 were successfully placed in coop positions. These students were placed in areas of their vocational training, for example, printing, auto mechanics, etc.

Data on drop-outs in the Memphis City Schools, 1967-70 were compiled by personnel in the Guidance and Pupil Attendance Division, as mentioned in the first section of this report. Careful analysis of this area of effect by SPAN will be possible next year.

V. Summary

All phases of Project SPAN are under way and progress toward stated objectives is evident. By the time the Final Draft of the

evaluation for the first year of the project is prepared in August considerable objective data will be available. Analysis of these data will be useful in setting goals and developing the program for the second year of operation.

VT 014 389
AN ACCELERATED PROJECT FOR A SYSTEMS PROGRAM APPROACHING NON-UNEMPLOYMENT OF VOCATIONAL STUDENTS (SPAN). EVALUATION REPORT, 1970-71. APPENDIX W TO ANNUAL INTERIM REPORT.

MEMPHIS CITY SCHOOL SYSTEM, TENN. DIV. OF VOCATIONAL EDUCATION.
TENNESSEE UNIV., KNOXVILLE. BUREAU OF EDUCATIONAL RESEARCH AND SERVICE.
BUREAU OF ADULT, VOCATIONAL, AND TECHNICAL EDUCATION (DHEW/OE), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
OEC-0-70-5181
PUB DATE - 30AUG71 114P.

DESCRIPTORS - EDUCATIONAL INNOVATION; *CAREER EDUCATION; *VOCATIONAL COUNSELING; OCCUPATIONAL GUIDANCE; CAREER PLANNING; *PROGRAM DEVELOPMENT; *PROGRAM EVALUATION; *REPORTS; SCHOOL COMMUNITY RELATIONSHIP; EDUCATIONAL TELEVISION; ELEMENTARY EDUCATION; JUNIOR HIGH SCHOOLS; KINDERGARTEN; JOB PLACEMENT; POTENTIAL DROPOUTS; SECONDARY EDUCATION; COOPERATIVE EDUCATION; CURRICULUM DEVELOPMENT; STUDENT NEEDS

ABSTRACT - DEVELOPED TO HELP MEET THE COGNITIVE AND AFFECTIVE NEEDS OF SELECTED STUDENTS, THIS PROJECT WAS DESIGNED TO INCLUDE VOCATIONAL EDUCATION COMPONENTS FOR GRADES K-6, GRADES 7-9, AND GRADES 10-12. MORE SPECIFICALLY THE ELEMENTARY PROGRAM WAS PLANNED TO PROVIDE LABORATORY EXPERIENCES IN OCCUPATIONAL SKILLS, FILMS FOR INSTRUCTIONAL TELEVISION, AND RELATED MATERIALS. TO COMPLIMENT THIS COMPONENT THE JUNIOR HIGH PROGRAM WAS DEVELOPED TO INTEGRATE AN OCCUPATIONAL GUIDANCE SERIES INTO INDUSTRIAL ARTS AND HOME ECONOMICS. AND FINALLY THE SENIOR HIGH PROGRAM WAS DESIGNED TO ESTABLISH A VOCATIONAL GUIDANCE AND JOB DEVELOPMENT CENTER, A COOPERATIVE WORK-STUDY PROGRAM, A BASIC SKILL PROGRAM, AND PROGRAMS FOR DROPOUTS. EVALUATION OF THE FIRST YEAR ACTIVITIES LED TO SEVERAL RECOMMENDATIONS INCLUDING: (1) THE SERIES OF TELEVISION FILMS DEVELOPED FOR THE ELEMENTARY PROGRAM SHOULD BE COMPLETED AND WIDELY UTILIZED, (2) THE JUNIOR HIGH PROGRAM, HAVING PASSED THROUGH THE DEVELOPMENTAL STAGE, SHOULD BECOME OPERATIONAL EARLY IN THE SCHOOL YEAR SO THAT THE FULL IMPACT OF THE PROGRAM CAN BE FELT AND EVALUATED, AND (3) THE SENIOR HIGH PROGRAM SHOULD DEVELOP BETTER METHODS OF IDENTIFYING THE NEEDS OF POTENTIAL DROPOUTS. RELATED DOCUMENTS ARE AVAILABLE AS VT 014 388 (ALSO IN THIS ISSUE AND VT 014 390, VT 014 391, AND VT 014 392 (IN AIM VOL. 5 NO. 3). (JS)

VT 014 389

PROJECT SPAN

EVALUATION

1970-71

VT014389

4117

APPENDIX W TO
ANNUAL INTERIM REPORT
PROJECT NO. 0-361-0115

EVALUATION REPORT
1970-71

Project No. 0-361-0115
Contract No. OEC-0-70-5181

An Accelerated Project for a Systems Program Approaching Non-Unemployment of Vocational Students
" S P A N "

Exemplary Project in Vocational Education
Conducted Under
Part D of Public Law 90-576

Bureau of Educational Research and Service
The University of Tennessee

Evaluation Team -

Dr. Robert K. Roney, Evaluation Project Director
Mr. Francis Gross, Evaluation Project Associate
Mr. Douglas Norman, Evaluation Project Consultant

August 31, 1971

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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I. INTRODUCTION

Project SPAN--an accelerated project for a Systems Program Approaching Non-unemployment of vocational students--was undertaken by the Division of Vocational Education of the Memphis City Schools as a three-year program funded by Part D of Public Law 90-576 as an Exemplary Project in Vocational Education. Its purpose was to develop and implement a program in the public schools which would enable students to plan ahead vocationally and effectively to bridge the gap between the academic activities of the school and the realities of the world of work. During the 1970-71 school year, the project staff was to develop, field test, and make operational the several components of the project.

The general objectives, as stated in the Interim Report, included:

"(1) Develop a comprehensive and continuing program of occupational guidance information and techniques which will, from K to 14th grade, insure the maximum number of young people entering vocational programs and then bridge the gap from school to earning a living.

(2) Develop a series of 'hands on' and soft educational units which will insure maximum relevance of education for the world of work.

(3) Develop within the student a desire to stay in school and obtain a general education and skills for entering into employment.

(4) Develop within the student the ability to appraise his occupational goals in a manner equal to his abilities, desires, and the forecasted needs of industry.

(5) Develop an overall program of positive relationships with community, parents, consultants, and volunteer workers which will give students an enriched outlook on the world of work.

(6) Develop all programs so the following characteristics prevail:

(a) Student develops self-understanding and self-awareness.

(b) Student recognizes and makes fuller use of his capabilities.

(c) Students develop positive adjustment to school, community and home environments.

(d) Student development of self-confidence and self-esteem.

(e) Students develop the ability to make wise decisions.

(7) Develop a series of personal inventories which when given at grades 6, 9 and 12 will indicate realistic soundness of vocational choices.

(8) Develop a complete follow-up study which will test the relevance of the total project."

The evaluation report which follows deals with the level of attainment of these general objectives and their associated specific goals as outlined in each section of the report. The report covers the period June 1, 1970, through August 15, 1971, even though the evaluation contract was not negotiated until March 1, 1971. As far as possible, both process and product evaluations were undertaken. In the case of product evaluation, however, the first year's results are not complete, since most of the effort was spent during that period on development and field testing materials for future use.

The components of Project SPAN for which evaluation was undertaken were:

1. Elementary (K-6)
2. Junior High (7-9)
3. High School (10-12)
4. Administration of the Project

II. ELEMENTARY SCHOOL COMPONENT

Introduction.

This section of the evaluation report will deal with activities of Project SPAN related to children in the elementary grades. The project's program for grades K-6 is primarily concerned with helping students learn more about different vocations. It is designed to lead into skills training and cooperative experiences in the middle and high school grades. This part of the evaluation will be principally concerned with a series of films made for educational television and related instructional materials, designed for use by students in grades 5 and 6.

Vocational Films.

A major aspect of Project SPAN for children in kindergarten through grade 6 is a series of 10 films on various occupations. General goals for these films are to acquaint children in the project's target group with the world of work, to emphasize occupations for which these children could reasonably be expected to have interests and aptitudes rather than the more remote professions; and to help them develop positive personal attitudes toward work through the presentation of persons from different backgrounds gainfully employed.

Development and field testing of the film series has taken place during the 1970-71 academic year. At the writing of this report, four of the films had been completed, and two had been shown over open circuit television. The other six films in the series were in various stages of production and were scheduled to be ready for showing early in the 1971-72 school year. Background research on the various vocations depicted in the films plus writing of the scripts were the responsibility of members of the SPAN staff. Filming, editing, and other

aspects of production were performed for the project by the staff of educational television station WKNO, Memphis. This station also was designated to telecast the series in 1971-72.

A major problem in producing the films was the limited funds available. Approximately $820 was budgeted for each 15-minute film. This contrasts with approximately $6,000 needed for a film of comparable length done in color and employing sound synchronized with lip movements, dissolves and other techniques associated with polished productions. Through improvisation and economics, however, the project and television station staffs were able to develop a series of documentary type films, employing natural settings and available sources of light. A ratio of film exposed to film footage needed for showing approaching 1:1 was used to save on film and processing costs. A voice-over narration technique was used for most footage. This was effectively combined with "wild sound," background noises recorded at the various locations and later incorporated in the film soundtrack as needed. Limited dialogue between characters was used, along with a freeze-frame technique to emphasize members of different occupations. Brief introductory and background music also was employed effectively in two of the four films viewed for this evaluation.

Specific Objectives for K-6 Component.

The specific objectives for the K-6 component largely were concerned with the vocational guidance films. These objectives, as given in the original proposal for Project SPAN, are as follows:

(1) Develop a series of guidance films for educational television which are designed to give maximum emphasis on preparing a youngster to select realistic life goals leading toward specific educational preparation in the middle and high schools.

(2) Develop "educational inserts" which will correlate the ETV film series with

existing television programs and curricular elements in the science and social studies areas.

(3) Develop a program of "hands on" activities which will tend to improve manipulative skills at early years.

(4) Develop a high degree of occupational sensitivity within the elementary teacher.

Educational Inserts.

In connection with the second objective of the elementary component, the SPAN staff developed a series of printed materials to be used before and after the telecasts of the vocational films. A sample set to be used with the first film of the series, on building trades, is included in Appendix A to this report. The inserts were designed to help prepare students participate actively in the films. Rather than watching the telecasts passively, the students were encouraged to respond to questions posed by the films. The "inquiry approach" to learning was used in many of the programs. Rather than simply giving information on various vocations, the films were designed to stimulate, through a series of questions, thought and responses from the students watching in their classrooms. The inserts also served as departure points for follow-up discussions after the telecasts and for related activities in such subjects as language arts and mathematics.

The inserts for the building trades film contain a teachers' guide, a series of pictures of tools used in different jobs, drawings showing different tradesmen and tradeswomen at work, mathematics problems on the number of square feet in different rooms of a house, occupations and vocabulary crosswork puzzles, and a series of duplicated instructions for those students who will have later "hands on" experiences, that is, experiences in actually working with some tools used in the building trades. These exercises include making a hinged wooden cover for a scrapbook; constructing a return brick corner, common bond, three courses

high; using simple drafting tools to draw to scale a room or ball diamond; and replacing a washer in a compression faucet.

Objectives for Individual Films.

Members of the project staff and of Station WKNO assisting with program production compiled an informal list of objectives for each of the 10 films in the vocational series. The objectives for the second film in the series, on health occupations, are representative. They are as follows:

(1) Children should be able to name the different kinds of workers in this field.

(2) They should understand the duties of different categories of nurses.

(3) They should be able to match different kinds of hospital instruments with different job categories.

(4) They should be able to describe what different members of a hospital team do.

(5) They should be able to determine whether members of a hospital team enjoy helping make people well.

(6) They should be able to understand the common goal which members of a hospital team share with doctors, that is, making people well.

(7) They should understand the pride that members of the hospital team have in their work.

(8) They should understand that all team members, both men and women, perform important tasks.

Evaluation Design.

Two instruments were used in evaluating the four films completed by the end of the initial year of Project SPAN. One was based on "Guidelines to Preparation and Evaluation of Occupational Films," prepared by the National Vocational Guidance Association. The introduction to these guidelines said in part:

Films about occupations are in great demand for use with elementary,

junior and senior high school students, college students, and adults. These groups, differing in age and level of educational attainment, have also significantly different patterns of interests and needs.

Children in elementary schools, for example, need introduction in a way that stimulates their imaginations, to occupations that they are not likely to encounter.

It is not likely . . . that any one film on occupations will be equally useful for all groups. Therefore, film producers will need to consider the group for whom a film is intended and make certain that content and objectives are appropriate to the age and educational level.

Distribution of occupations, industries, and educational facilities varies considerably with location in different parts of the country. An occupational film designed for national distribution, therefore, requires a broader approach than one intended for showing in a single locale.

It will be helpful to those who are selecting career guidance films if the producer will provide a leaflet or pamphlet presenting the purpose of the film, a summary of its content, possible uses, viewing time, and, when appropriate, suggestions for follow-up.

The document added that the principal test of an occupational film is "how well it contributes to the process of career development" among viewers and that ideas presented were more important than style, format and technical quality of a film. An instrument, therefore, was developed based on the NVGA's list of criteria for selection of significant content for occupational films. Where possible, a direct quotation for the association's criteria was included in each of the 10 sections of the instrument. Otherwise, a paraphrase from the criteria was used to explain the portion of the rating instrument.

The different aspects of film content to be rated and explanatory material quoted or paraphrased from the association's criteria are as follows:

(1) Interdependence of Related Occupations--The occupational film portraying a cluster of occupations that requires similar interests with varying levels of ability is especially important and useful in the school guidance program.

(2) Activities of Worker--Film should show duties of the worker and the patterns of interests and values which a person in a certain occupation likely will

hold.

(3) Setting of Work--The possible variety of work settings should be realistically portrayed.

(4) Preparation Required--Some indication of the extent and nature of the education and training required is essential.

(5) Occupation's Contribution to Society--Does the film show a product or service that is the outcome of work done?

(6) Excellence of Workmanship--The motion picture film has the potential for dramatizing the benefits of quality workmanship.

(7) Levels of Occupational Opportunities--Beginning occupations and promotional opportunities are matters of concern to youth.

(8) Personal Rewards of Occupation--The motion picture can portray effectively the psychological rewards of occupational performance.

(9) Organizations Related to Occupations--Information should be given about the organizations, if any, which a worker in a particular occupation is expected to join.

(10) Factors Affecting Growth of the Occupation--Significant trends can be illustrated in the occupation film.

Each of the above 10 sections of the instrument contained a 10-point rating scale, with the lower end of each scale indicating that the SPAN film evaluated had "low value" as far as the particular criterion was concerned, and the upper end of the scale indicating high value.

A second instrument was developed to evaluate the technical aspects of the film, as well as the format and style. The nine sections of this instrument dealt with the following:

(1) Camera Work--Variety of camera angles, lack of jump cuts, focus, imaginative use of the camera.

(2) Narration--Pleasing quality of narrator's voice; a lack of condescension in

tone and inflection; good sound quality.

(3) Lighting--Good use of available and artificial light sources.

(4) Editing--Film edited into smoothly flowing narrative, with one scene leading logically into the next.

(5) Script--Conversational writing, with short sentences and easily understood terms. No "writing down" to students. An original, fresh approach to information and ideas.

(6) Use of Entertainment to Hold Viewer Interest--Films rely on entertainment techniques of commercial television to hold viewer interest and are not too didactic.

(7) Visual Impact of Films--Visual aspect of television is used to the fullest advantage, with a limit to the number of scenes showing lecturers or panel discussions.

(8) Words, Music and Motion Combined for a Pleasing Effect.

(9) Extent to Which Films Meet SPAN Objectives.

A 10-point rating scale also was used with this instrument. The scale for each of the first eight sections used lower numbers to indicate "poor" rating, higher numbers to indicate a "good" rating. On the last section, which referred to the SPAN objectives, the scale ranged from "limited" to "extensive". Samples of both instruments, as well as the NVGA list of criteria for films, are given in Appendix B.

Each of the four completed films was viewed through a monitor in the studios of Station WKNO, and afterwards each of three evaluators completed the two instruments described above.

Effects of Films on Target Audience.

Besides evaluating the content and technical qualities of the completed films, the evaluation team made an effort to determine their impact on a sample

of the target population. Since the films primarily were intended for use in fifth and sixth grade classes, three groups of students were selected, with two fifth grade classes and two sixth grade classes in each group. Each of the three groups was treated differently with respect to exposure to the vocational films and related material. A SPAN Film Evaluation Instrument was developed for this purpose. The instrument was designed to measure students' cognate knowledge of vocational areas discussed in the films and their attitudes toward work in general. A copy of the instrument is included in the Appendix C to this report. Each group of students responded to the instrument before any involvement with SPAN films and related material.

After being given the test, Group One viewed the first film, the completed one dealing with building trades. The group then completed the same instrument as a post-test.

Group Two, after taking the pre-test, was given the printed inserts containing information about the building trades. The group then viewed the film on television and took the post-test.

Group Three took the pre-test, studied the printed inserts, viewed the film and then had the "hands on" experiences, in which they repaired a faucet, laid brick, and made a wooden scrapbook back. As a final activity, the group completed the SPAN Film Evaluation Instrument on a post-test basis.

A computerized frequency count was made of the students' responses to the instrument. The McNemar Test, a non-parametric test designed to show significance of difference in a situation where the same subjects are tested prior to and following an event, was used to analyze the pre- and post-test data from each group. The purpose was to determine if changes in the number of correct responses from one test to another were significantly different, statistically, from what might have been expected by chance. If there were statistically significant differences shown, it could be concluded that the SPAN experiences were a possible

factor in improved knowledge of and attitudes toward a particular vocation, in this case, the building trades.

Evaluation Findings.

This section will report on findings of the two major evaluation activities discussed in the preceding portion of this section. The first dealt with judging content and technical quality of the guidance films for television. The second involved testing of three groups of elementary school students who viewed the films and had varied auxiliary experiences.

The median ratings of the visiting evaluation team for content and technical quality of the films are given in Table II-1.

Each horizontal row of the table gives the median ratings for the four completed films on each of the 10 items in the content survey and each of the 9 items in the technical survey. Each vertical column gives the ratings on both instruments for a single film.

The technical quality ratings of the films were consistently high. Camera work, use of available light, editing, and visual impact of the films were rated especially high. With only one exception, all of the ratings were 7 or above on the 10-point scale.

With three exceptions, ratings on the subscales of the content survey were 5 (average) or above. Especially high ratings were given the films for showing interdependence among various jobs within a vocational group, for realistically portraying work settings, for stimulating pride in workmanship, and for showing products of different jobs.

The ratings generally were consistent with and tended to support the representative objectives previously stated for the film. In other words, the producers were judged to have met the objectives they set for themselves. The three content areas in which the films received below-average ratings were those which the staff decided they could not adequately cover in a 15-minute program for

TABLE II-1

FILM RATINGS

	Film Number*			
	1	2	3	4
Content Item				
1 (Job interdependence)	10	9	9	9
2 (Worker activities)	9	8	5	7
3 (Work setting)	9	9	8	8
4 (Job preparation)	4	3	3	4
5 (Job product)	9	9	9	9
6 (Workmanship)	8	9	9	8
7 (Job levels)	5	6	7	8
8 (Job satisfaction)	8	6	6	5
9 (Related groups)	1	2	2	1
10 (Job trends)	3	3	3	2
Technical Item				
1 (Camera work)	9	10	9	10
2 (Narration)	9	7	9	10
3 (Lighting)	9	10	10	10
4 (Editing)	9	9	10	10
5 (Script)	9	9	8	9
6 (Entertainment)	9	9	6	10
7 (Visual impact)	9	10	10	10
8 (Pleasing effect)	10	9	8	10
9 (Meet objectives)	9	9	8	9

* Film Topics

Film 1: Building trades
Film 2: Health occupations
Film 3: Manufacturing
Film 4: Food service occupations

television. These areas involved discussing related labor unions and associations which members of a vocational group could join, the kinds of training and preparation which members of different work groups need, and job trends within a given vocation.

The second aspect of the evaluation concerned the scores of three student groups, previously discussed, on an instrument especially designed to measure their knowledge of and attitudes toward building trades, the subject of one SPAN film. For each of the first 10 questions, there was one "correct" response. The 11th question gave the students nine choices of hand tools and asked that they circle the ones which they thought could be used in building a house. All nine items could be so used.

Group One was tested, viewed the film on building trades, and then was given the same test again. As noted, the McNemar Test was appied to determine whether any improvement in the number of correct answers was beyond what might be reasonably expected by chance. On 6 of the 10 questions, the number of correct answers after viewing the film, as contrasted to performance on the pre-test, was found to be significantly different at at least the .05 level. Three were significant at the .001 level.

Group Two worked with the printed inserts as well as viewing the film between the pre- and post-test. The number of correct responses on the post-test as contrasted to the pre-test again increased at the .05 level or better on 6 of the 10 questions. This indicates that the increases could have been the result of chance factors--guessing, etc.--only 5 times out of a 100. The changes were significant at the .001 level on three questions.

Group Three saw the film, studied the printed inserts, and engaged in the actual "hands on" use of certain building tools during the interval between the first and second tests. Changes were statistically significant at the .05 level or above on 5 of the questions and at the .001 level on 4 questions.

Complete results of the McNemar Test for answers of the three groups are given in Tables II-2, II-3 and II-4.

TABLE II-2

RESULTS OF McNEMAR TEST
FOR GROUP ONE

Question	Differences Significant At These Levels
1	.001
2	.01
3	.10
4	.001
5	.10
6	.02
7	.01
8	.001
9	.30
10	.30

The 11th question concerned the 9 hand tools which could be used in building a house. In each of the three treatment groups, the number of items selected increased on the post-test. The number of students in each group selecting 6 or more of the tools on the pre-test and the post-test is given in Table II-5.

Conclusions, Implications and Recommendations

Based upon the material presented, the following conclusions can be drawn about the component of Project SPAN for K-6:

TABLE II-3

RESULTS OF McNEMAR TEST
FOR GROUP TWO

Question	Differences Significant At These Levels
1	.05
2	.01
3	.001
4	.001
5	No change
6	.02
7	.50
8	.001
9	.20
10	N.S.

(1) Three of the four objectives for the component have been realized to a considerable degree. Four in a series of vocational films for television have been completed and six others are scheduled for completion early in 1971-72. Two of the films have been telecast on a pilot basis. Educational inserts, printed material to use in advance of and as a follow-up to the telecasts, have been developed for all of the films. Also being completed is a related program of "hands on" activities for students to correlate with the films and to give students actual limited experiences in vocational skills. The only component objective on which there has been little demonstrable progress is that calling for developing a "high degree of occupational sensitivity within the elementary teacher(s)" in target schools.

TABLE II-4

RESULTS OF McNEMAR TEST
FOR GROUP THREE

Question	Differences Significant At These Levels
1	.05
2	.001
3	.001
4	.001
5	.10
6	N.S.
7	.20
8	.001
9	.50
10	N.S.

TABLE II-5

CORRECT RESPONSES TO QUESTION 11

Group	Pre-Test	Post-Test
1	42	71
2	57	86
3	35	70

Participation by teachers in the activities related to the vocational films should help achieve this objective, once all 10 of the films are completed and telecast during 1971-72. As part of its 1970-71 program for teachers, Project SPAN sponsored two in-service workshops, attended by approximately 375 elementary and high school staff members in August, 1971. The workshops dealt with making education more relevant through occupational orientation and exploration. Participants were asked to complete a feedback questionnaire at the end of the two programs. They were virtually unanimous in agreeing that: (a) the workshops gave them a better understanding of Project SPAN; (b) students in their classes would benefit from the project's programs; and (c) many concepts discussed during the workshops could be integrated into their subject matter areas.

(2) The four completed SPAN films were judged to have attained many of the objectives for vocational films, as identified by the National Vocational Guidance Association. The same films also were judged to have a high degree of technical polish. Technical qualities of the projects were commendable considering the limited budget ($820) under which each was produced.

(3) On the basis of testing students following the showing of a pilot film, it can be concluded that the vocational films hold considerable promise for increasing knowledge about different vocations among students in grades five and six and of bringing student attitudes about the world of work more in accord with generally accepted social values--that is, viewing work as desirable, satisfying and rewarding.

Project SPAN's elementary component appears to be a vital part of a well integrated plan to make education more meaningful to students in elementary, junior and senior high school. The project's attempt to relate major vocational fields to education seems worthy of emulation by other systems, especially those with significant segments of disadvantaged students.

The elementary component's use of a multi-media approach to instruction appears to be especially meaningful in a period when educators are being urged to consider non-traditional teaching methods and instructional media. The effective use of educational television as a means of orienting large numbers of students toward vocations, at a relatively low per-student cost, is encouraging. The production of high quality films on low budgets which effectively depart from the didactic approach of the ETV studio lecturer and adapt the form of the television documentary to the needs of the schools have implications for educators seeking new approaches to vocational education as well as to other fields. The film series also demonstrates how officials of a school system, the staff of a special project, and the production staff of an educational television station can cooperate to help meet the needs of children.

Recommendations based on the evaluation of the K-6 component are as follows:

(1) The K-6 component of Project SPAN should be continued and expanded if possible.

(2) The series of television films should be completed and widely utilized, along with printed inserts and descriptions of "hands on" activities to be used in connection with the films.

(3) Other schools not in the target area of SPAN should be encouraged to make use of the films. In order to utilize them to the fullest advantage, it will be necessary for the related printed material developed by the project staff (inserts and "hands on" instructions) to be made available to other schools within range of the television station, since the inquiry approach is used in some films to stimulate active participation of viewing students. This approach requires advance preparation of students so that they will be able to get the fullest possible benefit from the instructional technique.

(4) Prints or kinescopes of the television programs should be made available to teachers who wish to show the films again in their classrooms and/or to use them in connection with instructional units scheduled at times other than

when the open circuit television programs are shown. (Recommendations 3 and 4 will require schools outside the project to pay for duplication and distribution of printed materials used in connection with the television programs and for copies of the film to show via projector in the classroom.)

(5) Teachers may be briefed on extending discussion of the televised films into areas recommended by the National Vocational Guidance Association but not practical to cover in the limited amount of time for each film. These include the extent and nature of education and training required for different vocations, a more extensive discussion of the product or service that is the outcome of work done, the psychological rewards of occupational performance, and professional associations and labor organizations usually connected with different vocations.

(6) Information on the use of educational television as a delivery system for instruction about vocations, especially through the filmed documentary approach utilizing actual settings, workers and sounds, should be made available to other interested systems and agencies. This is especially true of some of the techniques used to cut production costs. If possible, the project should preserve accounts of technical processes and problems involved with the series so that others can profit from them.

(7) Evaluation of the effectiveness of the guidance films and accompanying printed materials should be continued. Measurement of the impact of the multi-media approach on students' knowledge about major vocations and their attitudes toward the world of work should be expanded during the second year, when all 10 films are scheduled to be shown, so that a fuller understanding of the programs' effectiveness can be attained.

(8) Workshops and other activities aimed at developing a high degree of occupational sensitivity among elementary teachers should be continued and expanded. A systematic approach to judging the extent to which this component objective is achieved during 1971-72 should be developed.

III. JUNIOR HIGH COMPONENT

Even though elementary students may become more aware of the world of work through programs such as SPAN, it is important that students at the junior high, or middle school, level be given additional enrichment in the work orientation area if they are to enter high school with the desired knowledge and attitudes. For this reason, a special occupational orientation and exploration unit was developed to be used in eighth and ninth grade home economics and industrial arts classes. A limited cooperative work program was set up to provide some students with the opportunity of developing basic job-related skills, attitudes and understandings in a true business setting. Students at the junior high level need to become prepared for successful employment by learning about the nature and operation of our economic system, how to work, the value of an education to the work situation, the use of technology in many modern jobs, problem solving and necessary attitudes for obtaining and holding a job. With these needs in mind, the following specific objectives were established for the junior high component of the project:

"(1) Develop a relevant approach to industrial arts and home economics which will keep students in school.

(2) Develop a series of educational inserts which are designed to give students experiences in making occupational choices and then enroll in appropriate courses in high school."

It is obvious that in the case of each of these objectives, product evaluation was not totally possible during the first year of the project. Several years of comparative data on school dropouts will be required to ascertain whether SPAN is having any effect. Although paper and pencil tests were used to measure any shift in knowledge or attitude resulting from a special

SPAN unit, the ultimate criteria of success for the second objective will not be available until the present eighth and ninth grade students reach high school and make their course choices. Therefore, much of the evaluation for the junior high component must be on the process as it was developed.

Dropout Rate.

The guidance officials of the Memphis City Schools reported a negligible dropout rate in the two junior high schools in the target area, Cypress and Humes; but they reported a higher than average rate of dropouts in the high school, Northside, in that area (7.6 per cent compared to the city average of less than 3.5 per cent for all high schools during the years 1967-70.) In all probability, the high rate at Northside is attributable at least in part to things which happened or did not happen when the students were in the lower grades in school. The compulsory attendance law in Tennessee would keep most of the students at Cypress and Humes from leaving school until after the ninth grade. The dropout rates for 1970-71 will not be available until fall, 1971, (after this report is completed); therefore, no comparisons on even one year of the operation of Project SPAN were possible. Effectiveness of the project on this aspect of the school program will not be totally clear for several years, but a beginning estimate may be made by the end of the second year of the project.

Co-op Program.

Although limited in scope and for short duration, the initial cooperative employment experiences were provided for a small number of junior high students during the spring of 1971. Daily classes were established for students who were 16 years of age or older, and those for whom employment could be obtained were released from school in the afternoon for this purpose.

Table III-1 reports the success of the co-op placement effort. The co-op students were not placed in jobs until late in the school year and, as a result, no valid evaluation was possible.

TABLE III-1

JUNIOR HIGH CO-OP PROGRAM
SPRING 1971

Schools	In Class			Placed on Job	
	Male	Female	Total	No.	Per Cent
Cypress	15	2	17	12	70.6
Humes	10	5	15	13	86.6
Totals	25	7	32	25	78.1

Unit of Study.

During the 1970-71 school year, a unit of study, Occupational Orientation and Exploration, was developed by the SPAN staff for use in eighth and ninth grade home economics and industrial arts classes in the target area schools. A curriculum guide was written and distributed to the teachers of home economics and industrial arts at Cypress and Humes Junior High Schools. The unit was designed so that it could be taught in a three-week period or integrated into other units over a longer perior of time. The following areas were covered:

1. orientation to the world of work
2. understanding of self and others
3. home economics related occupations
4. occupations in distribution
5. health occupations
6. occupations in trades and industry
7. office occupations

General objectives were given for the unit, as were more specific, behavioral objectives for each of the areas. Methods of presentation, supplementary materials, bibliographies, case study materials, other sources of educational materials, evaluation instruments, samples of personnel forms and letters and a guide to child labor laws were presented in this document. The material was well done and assembled into an attractive, easily useable

format. In addition to the curriculum guide, the vocational teachers at the junior high schools were provided information about and encouraged to arrange field trips to local business and industrial establishments. Also, the SPAN staff conducted assembly programs at Cypress and Humes to inform a wider range of students about many aspects of the occupational scene.

Evaluation Instrumentation.

In order to assess the effectiveness of the unit on Occupational Orientation and Exploration, the teachers administered the Gordon Occupational Check List to groups of students before and after the three-week unit. The students were also asked at both times to list all the occupations (jobs) they could. The purpose of the latter is obvious--to determine whether the students were more knowledgeable about occupations after the course than before.

The Gordon Occupational Check List consists of 240 activities that are performed in many different kinds of jobs. (See Appendix D.) These 240 activities are organized into five general interest categories and are further grouped into 30 internally-related clusters. Table III-2 displays the item clusters.

TABLE III-2

ITEM CLUSTERS IN EACH
GENERAL OCCUPATIONAL AREA

Check List Area	No. of Items	Item Clusters
Business	48	1-8, 41-48, 81-88, 121-128, 161-168, 201-208
Outdoor	24	9-16, 49-56, 89-96
Arts	24	129-136, 169-176, 209-216
Technology	96	17-32, 57-72, 97-112, 137-152, 177-192, 217-232
Service	48	33-40, 73-80, 113-120, 153-160, 193-200, 233-240

The Check List was developed for use in survey research and in individual and group counseling. Activity items were written for the selected occupations, using the Dictionary of Occupational Titles and Occupational Outlook Handbook as guides. Results of test-retest reliability studies reported in the Manual (Revised Edition, 1967) are shown in Table III-3.

TABLE III-3

RELIABILITY COEFFICIENTS OF
GORDON OCCUPATIONAL CHECK LIST,
TWO ADMINISTRATIONS, ONE MONTH APART*

Check List Area	r I	II	III	IV
Business				
Boys	.97	.79	.98	.68
Girls	.92	.85	.96	.91
Outdoor				
Boys	.89	.84	.94	.90
Girls	.83	.87	.99	.71
Arts				
Boys	.83	.77	.97	.91
Girls	.88	.81	.96	.96
Technology				
Boys	.90	.79	.97	.91
Girls	.75	.72	.99	.79
Service				
Boys	.76	.82	.97	.88
Girls	.85	.82	.96	.88
Total				
Boys	.94	.81	.97	.89
Girls	.88	.82	.97	.89

*All reliability coefficients were estimated by the formula for overlapping elements.

I Number of items underlined in the two administrations.
II Identical items underlined in the two administrations.
III Identical responses--underlined, circled, or unmarked.
IV Items circled in the first administration that were underlined in the second administration.

The Check List was specifically developed to be relevant to the non-college bound young person who will leave high school to enter the world of

work, and it has been used successfully as low as the eighth grade.

Evaluation of Junior High Component.

The number of students completing the evaluation instruments both before and after the unit of study on occupations is reported in Table III-4.

TABLE III-4

NUMBER OF PARTICIPANTS IN EVALUATION
OF JUNIOR HIGH UNIT OF STUDY

School	Gordon and List of Occupations		List of Occupations Only		Total
	Both Pre- and Post-Tests	One Test* Only	Both Pre- and Post-Tests	One Test* Only	
Cypress					
Boys	45	22	28	11	106
Girls	60	8	19	4	91
Humes**					
Boys	13	15	0	48	76
Girls	45	15	36	14	110
Total					
Boys	58	37	28	59	182
Girls	105	23	55	18	201

* Therefore, not useable in the analysis.
** Data from 48 students at Humes was not useable because they were not administered both the pre- and post-tests.

Of the 383 junior high students in the home economics and industrial arts courses in the two schools, 246 completed useable evaluations of one or both types. The girls completed 160 of these evaluations, 105 sets of the Gordon Occupational Check List with lists of occupations and 55 sets of lists of occupations only. One reason for the smaller number of boys was the fact that 48 students, all of them boys, were not given both tests at one school. There also was a higher rate of absenteeism among the boys on the days of the evaluations.

No statistical analysis was undertaken on the results of the Gordon Occupational Check List, since it was obvious that the overall change reflected was too slight to be significant. The results are reported in Table III-5 in average number of additional (or fewer) items scored on the post-test as compared with the pre-tests for each of the item clusters.

TABLE III-5

RESULTS OF THE GORDON
OCCUPATIONAL CHECK LIST

School	No. of Students	Average Change				
		B	O	A	T	S
Cypress						
Boys						
Class 1	16	- .63	- .56	0	-1.93	- .93
Class 2	29	7.21	2.14	2.78	11.89	5.28
Total	45	4.27	1.13	1.71	6.62	2.96
Girls						
Class 1	17	-6.64	- .76	-2.05	-3.76	- .88
Class 2	30	+1.43	- .30	.56	- .06	- .70
Class 3	13	2.23	.61	- .92	1.84	.54
Total	60	-2.12	- .23	- .50	- .70	- .48
Humes						
Boys (1 class)	13	-2.23	-1.00	-1.84	-6.07	.61
Girls						
Class 1	22	- .36	.50	1.27	- .31	1.36
Class 2	23	7.73	- .87	2.91	7.52	5.43
Total	45	3.77	- .20	2.00	3.69	3.44
All Students	163	1.32	.09	.78	2.13	1.64

From these data it may be seen that there was considerable variation in amount of change among the various classes evaluated. These differences were not attributable to the sex of the students, since both boys and girls varied considerably from class to class. One possible explanation for these differences may be the lack of consistency in the presentation of the unit

by the different teachers. Two observations may be made relative to this. First, the teachers were provided with materials and curriculum guides but were given little orientation into the project and its objectives until the workshops which were held during the summer. They could hardly have been expected to pursue the unit with equal vigor, understanding or competence under the circumstances. Second, interpretation of the fluctuations in scores on the Gordon Occupational Check List may be difficult. A student may have indicated on the post-test an interest in a new occupation because he had been introduced to it during the unit. On the other hand, he may have decided he was no longer interested in a particular job because he had become more familiar with it during the unit and found it was not what he thought it to be. In both cases, the occupational orientation unit should be judged successful.

List of Occupations.

Students in 13 junior high classes (N=246) completed lists of all the occupations they could prior to and after the unit on occupational orientation. All groups recorded substantial increases in their ability to name jobs. Table III-6 summarizes the responses of the students on this activity. Boys in one school were limited in number because of a breakdown in communication which resulted in faulty data in all except one class. All classes showed an average gain even though in isolated instances individual students named fewer jobs during the post-test than they did during the pre-test. Overall, it is obvious that the students knew about considerably more occupations after the unit than they did before it. As was the case with the Gordon Occupational Check List, it may be suspected that differences in orientation and interest of the teachers may have affected the results of the test.

TABLE III-6

RESPONSES TO REQUESTS TO
LIST ALL OCCUPATIONS (JOBS) YOU CAN

School	No. Students	Mean No. Jobs Listed Before Unit	Mean No. Jobs Listed After Unit	Mean Change
Cypress				
Boys				
Class 1	16	21.25	28.88	7.63
Class 2	29	14.38	39.17	36.15
Class 3	19	49.37	126.11	76.74
Class 4	9	53.89	115.22	61.33
Mean		29.89	98.77	68.88
Girls				
Class 1	17	13.82	55.41	41.59
Class 2	30	9.73	49.83	40.10
Class 3	13	13.31	50.69	37.38
Class 4	19	55.74	163.32	107.58
Mean		22.27	78.47	56.20
Humes				
Boys				
(1 class)	13	4.46	9.62	5.16
Girls				
Class 1	22	3.77	7.18	3.41
Class 2	23	19.78	97.13	77.35
Class 3	21	76.38	154.67	78.29
Class 4	15	63.07	142.33	79.26
Mean		38.12	95.98	57.86
All Students	246	28.80	86.22	57.42

Recommendations.

The following recommendations are made regarding the Junior High Component of Project SPAN:

(1) The SPAN project, having passed through its developmental stage, should become operational early in the school year so that the full impact of the program can be felt and evaluated.

(2) The program should be expanded into classes in the 7th grade; and, if possible, units should be developed for use in classes other than home

economics and industrial arts so that a broader range of students can be reached.

(3) The field trips and assembly programs should be encouraged. An attempt should be made to assess their effect on student knowledge and attitudes about various occupations.

(4) An assessment should be made of the attitudes and knowledge of parents of SPAN students in the area of occupational orientation. It is likely that an educational program may need to be developed in order to make them partners in the efforts by the schools and the business community to give their children vocational guidance and training.

(5) During the summer of 1971, workshops were held for the teachers who will use the SPAN material. This is good, and continued in-service training of this nature is encouraged. The teacher is a key to the success of the program.

(6) Close working arrangements and careful evaluation should be developed in connection with the co-op program. Evaluation needs to be on-going, as well as follow-up, in nature.

(7) The co-op program should be expanded so that more students who want it can participate. This will require considerable cooperation with local business and industrial leaders.

IV. HIGH SCHOOL COMPONENT

The high school phase of Project SPAN did not become operational until the second semester of the 1970-71 school year. The specific objectives of this component as identified by the SPAN staff were:

(1) To develop a vocational guidance and job placement center which would direct its attention to the placement and follow-up of vocational students. Additional objectives of this center were:

(a) To aid students in the selection of occupational fields of training in relation to their desires, acquired skills, innate abilities and the forecast demands of industry and business.

(b) To give students personal guidance and counseling in order to aid them in daily problem solving activities.

(c) To follow-up on students as they progress through their training. To develop a workable relationship with each instructor in attempting to understand the potential and limits of each student.

(d) To provide pre-employment orientation in preparation for occupational applications and interviews.

(e) To develop job placement and post high school educational opportunities for senior and graduating voc-ed students within the target area comprehensive high school.

(f) To develop an accurate follow-up program on all students. The maintenance of adequate records to insure rapid retrieval of information will be a significant goal of this objective.

(g) To develop a program of orientation for feeder junior high schools servicing each comprehensive high school.

(2) To develop a co-op program designed to give work experience to 12th grade vocational students and those entering into employment but not having marketable skills.

(3) To develop a summer or after-school basic skill program for non-vocational and non-college bound students which will equip them with saleable skills for entry level employment.

(4) To develop programs which will give employment and future educational direction to the dropout student.

The Vocational Guidance and Job Placement Center.

The center became functional at Northside High School during January, 1971. Early emphasis was placed upon gathering base data concerning student needs and backgrounds. Survey sheets were distributed to seniors in an effort to gather data and promote student inquiry into the services offered by the SPAN staff. Due to the problems associated with initiating the program--personnel shortages, locating and equipping offices, making initial contacts with businessmen, etc.--few records exist attesting to the number of inquiries and follow-up counseling sessions held between January 1, 1971 and May 31, 1971. However, the co-op coordinator estimated that more than 300 counseling sessions were held during that period.

A letter was sent to all graduating seniors (given in Appendix D of the 6-30-71 Quarterly Report) reiterating SPAN's commitment to help graduates and dropouts in the future. This, according to project officials, resulted in at least 200 additional counseling and/or contact sessions during the period from June 1, 1971, through August 31, 1971. Since records of contacts and counseling sessions were not available, it was not possible to give an analysis of people served, e.g. student, non-student, graduated student, dropout, etc.

It should be noted that the SPAN staff has promulgated and practiced an "open-door" policy in their vocational guidance and placement efforts.

Attempts have been made to establish service linkage with the community as well as students in Northside High School. Over 20 private and public community organizations have been contacted, resulting in an exchange of information. Thus, people counseled have reportedly ranged in age from 9 to 45 and included non-students, students from other schools in the Memphis system, and non-vocational students.

Next year, an effort will be made to contact every senior to determine student needs. Plans are set to bring vocational-technical school recruiters to the schools during early fall to talk with the juniors and seniors. This is a departure from their usual spring visits and should serve to give the seniors more time to plan for post high school training while allowing juniors more time to consider curricula patterns during their last two years of high school.

The objectives of the center to follow up on counselees by monitoring their progress through training and to assist them in job placement have not had adequate lead time for implementation. Success in this phase is contingent upon (a) a systematic record-keeping procedure and (b) the computerized retrieval system planned for the third year of the project.

The center has also been involved in gathering, sorting, and cataloguing vocational education materials. These materials are available to students, teachers, and guidance counselors. By fall, 1971, a bibliography of the materials available will be distributed.

An orientation for feeder junior high schools was developed and manifested in the Curriculum Guide for Occupational Orientation and Exploration in Junior High Schools. A description and evaluation of the guide appears in the section of this report dealing with the Junior High Component.

In accordance with the recommendations of the on-site evaluation team from U.S.O.E., the project will extend the target area to include Westside

High School in 1971-72. A vocational guidance and placement center became operational there beginning August 23, 1971, to parallel the activities and services of the center located at Northside High School.

The Co-operative Work Program.

This program began during October following the employment of a cooperative coordinator. Initially the program consisted of a daily, one hour, general cooperative training class for students. Much ground work had to be done with potential employers, including identification, initial contacts, in-depth interviews, and follow-up communication, before students could be placed for part-time work. Whenever positions became available, prospective students had to be identified and given "quick shot" training sessions to orient them for interviews and the work situations for which they were being considered. Due to the delayed start, the initial student counseling, and the interviews with employers, the full-scale operation of the cooperative work-study program was not realized until the second semester. The following table gives the results for the second semester:

TABLE IV-1

SENIOR HIGH CO-OP PROGRAM
SPRING 1971

School	In Class			Placed on Job	
	Male	Female	Total	No.	Percent
Northside	16	11	27	25	92.6

Quantative data on job retentions during this period were not available at the time of this evaluation due to the incomplete follow-up counseling and contacts with employers. The SPAN staff has assured the evaluation team that

these figures will be available later in the fall and will be included in a later report.

Many changes are planned for the co-op program during the second year. Greater emphasis on work attitudes will be effected through daily instruction. More time will be spent on counseling co-op students in order effectively to match people with jobs and employers. In short, the cooperative program's emphasis in 1971-72 appears to be on job retention and advancement rather than job placement. This is a logical progression toward enhancing the effectiveness of the co-op program.

Summer School Program.

The basic skill program conducted during the summer months consisted of coordination between non-vocational and non-college bound students and the skill development courses offered by the Memphis school system. SPAN staff members provided interested students with information on available courses, how to register, whom to contact, etc. Due to the lack of records, no quantitative data were available at the time of this evaluation on the number of students assisted.

Program for Dropouts.

This phase of the high school component has not yet fully materialized. The nature of the dropout student militates against his seeking vocational counseling and guidance. Usually he gives little or no notice of his intention to quit school. Consequently, after he has dropped out, it is very difficult to counsel him or even locate him. The problem, then, is one of identifying the potential dropout, establishing effective communication channels with him (through trust and confidence), and subsequently maintaining that communication with him in order to counsel and identify vocational alternatives for him when he leaves school.

Efforts have been made to secure policy procedure changes which channel all students through the Vocational Counseling Center as part of their withdrawal process. It is hoped that this will provide greater contact with dropouts. At the time of this writing, dropout figures for Northside High School were not available for the 1970-71 school year. Figures from previous years indicate a rate approximately twice as high as the average for the entire high school student population in the city (7.6 per cent).

Evaluation Techniques and Instruments.

The lateness of the evaluation contract prevented a pre-test situation to help evaluate the effectiveness of vocational counseling and instruction in the senior high component. As a result, only a programmatic description of activities in this phase supported by quantitative data (when available) was possible. Measures have been taken to lay the groundwork for an independent objective measurement of the SPAN efforts during the second year of the project.

To facilitate the gathering of quantitative data on students counseled and assisted in job placement, a "counselor record" form has been devised by the staff of the visiting evaluation team, the SPAN staff, and the counselors at Booker T. Washington and Northside High Schools. (See Appendix E). This form is to be completed upon the first contact with a student during the school year. It then will become a part of his file and be used to record all subsequent contacts with him.

Two tests, the Gordon Occupational Check List (Appendix D) and the Crites' Vocational Development Inventory (Appendix F), were selected to assess changes in vocational preferences and vocational maturity of students in the targeted high schools during the second year. The Gordon Occupational Check List was described in the Junior High Component of this evaluation. A description of the Crites' VDI follows.

The Crites' Vocational Development Inventory.

The concept of vocational maturity is more comprehensive than vocational choice, including not only the selection of an occupation, but also attitudes toward decision-making, comprehension and understanding of job requirements, planning activity and ability, and development of vocational capabilities. The Crites' VDI is an attitude scale that was designed to elicit the attitudinal or dispositional response tendencies in vocational maturity which are nontellectual in nature, but which mediate both choice behaviors and choice aptitudes.

The test is a 50-item scale consisting of statements about an adolescent's (a) involvement in the process of vocational choice, (b) orientation toward the vocational choice problem, (c) independence in decision-making, (d) preferences for factors in vocational choice, and (e) conception of the choice process. The VDI yields a raw score ranging from 0 to 50. The higher the raw score, the greater the vocational maturity level. It has been normalized using a sample of 15,298 students in grades 7 through 13 from 8 states--including Tennessee.

The VDI was administered to 369 students in the eleventh grade at Northside High School. The pre-test group scores had a mean of 31.50 (24th percentile) with a range of 1 to 47. The norm for Tennessee was a mean of 35.54 (or the 57th percentile). Since the eleventh grade at Northside were, as a group, at the 24th percentile, this served to reinforce the need for vocational training for students in the target area. These results were also consistent with previous findings for the test which indicated:

(1) Curricular groups at the same educational level have been found to differ in the maturity of their vocational attitudes, with those students in the more vocationally-oriented courses of study being less mature.

(2) Similarly, adolescents from less favored socioeconomic circumstances and/or minority ethnic and racial groups are less vocationally mature.[1]

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[1]John O. Crites, The Maturity of Vocational Attitudes in Adolescence. (Iowa City: The University of Iowa, 1969), p. 91.

The group data will be retained and used for comparative purposes with a post-test administered to the same group next spring. Plans are also under way to administer the test to seniors at Booker T. Washington, to serve as a control group, and Westside, the additional target area school, early in the fall semester of 1971.

Individual test results will be incorporated into each student's record which will be available to guidance personnel for use in occupational counseling.

Conclusions and Recommendations.

The vocational guidance and job placement center located at Northside High School, after getting off to a slow start, is giving every indication of approaching the level of organizational development and effectiveness necessary to meet the objectives originally identified by the SPAN staff. As in most aspects of counseling, time is one of the necessary ingredients that must be invested, along with the elements of data gathering, publicity, and personal contacts, before the full benefits of the efforts expended may be realized. In this light, quantitative data on students counseled or placed in jobs would not be indicative of the efforts during the first eight months of start-up time at the center.

The cooperative program during the first year has undoubtedly served as a valuable learning experience for the SPAN staff by giving them many insights into the problems of initiating work-study opportunities for black students in the Memphis area. Next year a greater effort will be directed toward retention following job placement by modifying the cooperative program format to include more "quick shot" courses designed to change student attitudes toward employment, working with others, etc. In addition, a wider array of employment opportunities will be sought. It is commendable that the project has the flexibility and the staff members who are willing to modify their approaches in accordance with perceived solutions to problems encountered.

The recommendations for improving the effectiveness of the high school component are as follows:

(1) Greater emphasis should be placed on the development and utilization of a systematic data recording and filing process. This is needed especially in the area of vocational counseling and job placement. Files should be maintained on every student counseled, every employer contacted, and every person placed on a job. The counselor record form previously described will, if used properly, provide much data on future counseling and job placement services. This will also eliminate possible duplication of work by SPAN staff and guidance counselors.

(2) In addition to the emphasis on student attitudes toward work, a greater effort may be needed to orient more employers toward the objectives of the co-op program. It is realized that considerable effort has been expended in the dissemination of information through the mass media; however, it is felt that in an area often bound by tradition and cultural bias, personal contacts may ultimately be more successful. It is also realized that the cooperative program director, among his other duties, has had to assume full responsibility for contacting each potential employer and arranging for student placement. It is recommended that additional personnel be provided or that the duties of existing personnel be modified to allow greater concentration during the beginning of the second project year toward this goal.

(3) The co-op program should be expanded in order to serve a larger number of students. The prospects of attempting a volunteer program which will lead to paid employment as proposed in the U.S.O.E. on-site evaluation seem meritorious and are endorsed.

(4) Plans should be made to expand the basic skill program for next summer to include classes that are not normally available through the Memphis summer

school vocational program.

(5) Greater emphasis should be placed on identifying potential dropouts in order to begin working with them before they actually leave school. Under these circumstances, some students may be counseled and directed toward some aspect of vocational training which may motivate them to stay in school. If the situation results in a student's actually leaving school, previous contacts and data on hand will serve to enhance the staff's ability to provide employment and future occupational direction for him. A profile of potential dropouts could be developed using such indicators as (a) the frequency of serious disciplinary problems (suspensions, for example), (b) an analysis of achievement test scores--to identify potential under-achievers, (c) a combination of overage and underachievement factors, (d) the absentee rate, and (e) conferences with teachers and other students to detect personal problems leading to dropout possibilities.

V. ADMINISTRATIVE COMPONENT

After the usual difficulties accompanying the initiation of a new program were overcome, the administrators of Project SPAN have made significant progress toward the stated goals. All reports to local officials and to U.S.O.E. have been prompt and complete. Although some parts of the proposed program have lagged behind schedule, especially in the elementary component, good progress has been made to catch up and be on schedule by fall term, 1971. Four of the ten films for the elementary component have been completed with most of the camera work finished for four others. Schedules are set for filming the remaining two in early September. Editing and final preparation will be completed by September 13, 1971, the date set for showing the first film during the 1971-72 school year. All work must be done by that date since the first film shown will be made from parts of all of the others and, therefore, must be completed last. The SPAN ITV schedule for 1971-72 is found in Appendix G.

Staffing for the project progressed satisfactorily during the year. The project director procured the services of competent staff in key positions early in the year. Although there has been some turn-over in staff, replacements have been secured. Additional teacher aides are expected to be employed this fall as well as staff to expand the high school component into another school.

Facilities, although adequate throughout the year, have been improved during the summer. The consolidation of the East and Northside offices should make for a more efficient operation during 1971-72.

Considerable effort was spent in the area of public relations for the project. Radio, television, and local press coverage has been good for a project of this type and size. There has been good support in this and other phases of the SPAN program by the local school district.

Recommendations for the administration of the project include:

(1) Attempt to maintain the vigorous, enthusiastic leadership given the project during its first year.

(2) More public relations work could be done utilizing both the mass media and personal contact with community and business elements.

(3) More complete records of some parts of the project should be kept. This recommendation is dealt with specifically in other parts of this report.

VI. OVERALL SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary.

Project SPAN was established by the Memphis City School System to help meet the cognitive and affective needs of target area students in vocational education. The Division of Vocational Education of the Memphis City Schools received funds under Part D of Public Law 90-576 for the first year of a proposed three-year program to operate from June, 1970, through June, 1973. Staff of the project included a director, a curriculum specialist, a job development coordinator, teacher aides, and target area principals, cooperative coordinators and teachers.

The project design called for three components, covering grades K-6, 7-9, and 10-12. The elementary level program was to provide laboratory experiences in occupational skills, films for instructional television and related printed materials. The junior high school was to integrate an occupational guidance series into industrial arts and home economics programs. The high school component was to establish a Vocational Guidance and Job Development Center, a cooperative work-study program, a basic skill program to be held during the summer or after regular school hours, and programs for dropouts. Project plans call for a computer system to be set up to facilitate job placement follow-up work with students during the second and third years of the program.

The project's target area for its first year encompassed a high school, two junior highs, and 14 elementary schools. Lack of knowledge about vocational fields and lack of vocational skills was considered a serious problem among the students of target schools.

SPAN's first year was devoted to developing and beginning operations of the project's programs. A contract was signed under which the Bureau of Educational Research and Service of the College of Education, University of Tennessee, agreed to evaluate SPAN's 1970-71 activities. This document is the final report on that evaluation. It examines the administration of the project and its components for grades K-6, 7-9, and 10-12. It also draws conclusions about and makes recommendations for SPAN programs. Conclusions and recommendations for each grade-level component are contained in the sections of this report dealing with that phase of SPAN activities. More general conclusions and recommendations for the overall project follow.

Conclusions.

(1) Despite encountering many problems which are typical of the first year of an innovative program, Project SPAN has successfully laid the foundation for fully operational components in 1971-72.

(2) Although 1970-71 mainly was a developmental year, Project SPAN was able to meet, partially or wholly, a number of its programmatic objectives.

(3) Evaluation of the project's 1970-71 activities, of necessity, focused on processes rather than products. A more thorough evaluation of the products of SPAN programs will be possible in 1971-72. It should be recognized, however, that Project SPAN's long-range goals could affect the lives of students in target areas to such a degree that assessment of the project's success may not be fully possible until several years after its scheduled completion.

(4) The staff of Project SPAN is to be commended for its dedication, flexibility and initiative in successfully overcoming many of the problems connected with beginning such a program and for bringing the project to its present stage of development.

(5) The Memphis City School System is to be commended for recognizing the potential value of a project such as SPAN, for seeking support for the program, and for allowing the project's staff considerable freedom in developing its components within the overall guidelines established by sponsoring and supporting agencies.

Recommendations.

(1) Project SPAN should be continued and, if possible, expanded during 1971-72.

(2) Project accomplishments in 1971-72 again should be evaluated in light of objectives for the total program and for each component. This evaluation should be concerned with both process and product but emphasize the latter. A contract for the 1971-72 evaluation should be signed as soon as possible to facilitate data gathering.

(3) Since projects such as SPAN usually run for three years, the staff should concentrate on making all planned programs fully operational in 1971-72. The project's third and final year necessarily will be a time for evaluating SPAN's total impact and disseminating information to other interested educators.

(4) Staff members should examine SPAN's objectives and future plans in light of problems encountered in 1970-71 to see if any "fine tuning" of the overall project is needed at the beginning of 1971-72.

(5) Recommendations for each project component should be examined and possible methods for implementing the recommendations discussed.

(6) Complete and accurate records of all SPAN activities, including those involving students and the community, should be kept for future reference.

(7) There should be continued and, if possible, expanded emphasis on the orientation of teachers and counselors in target schools toward the proper use of SPAN materials and programs.

(8) Public relations and human relations efforts should be continued and expanded to help different segments of the public and of the business community become more aware of Project SPAN and of the needs which resulted in the project's being funded. These efforts should include use of the mass media plus personal contacts with industrial, business and civic leaders. Special attention should be given to the value of community and parental involvement in project programs.

APPENDIX A

WKNO	tv 10
Project	SPAN
March	1&2

Mission Possible:
Who builds our houses?

DESIGN for CONSTRUCTING A HOUSE

Children investigate the cluster of workers in the building occupations and observe the life style of a craftsman. They also meet people working at occupations other than those under direct investigation. The way each worker uses his tools is noted.

SPECIFICATIONS FOR VIEWING

Children should be able to:

1. List all the workers in the film and describe the work each one was doing.
2. Point out actions which show or tell how the people feel about their work.
3. Explain ways in which the people in the film work together.
4. Judge whether people in the building trades make a good living for their families.

BLUEPRINTS FOR LEARNING

When shown a picture of a building trades craftsman, pupils should be able to: a) name him, b) describe generally the work he does, c) match him with pictures of the tools he uses.

Through class discussion of the building trades craftsmen, the pupils should determine: a) whether the workers are happy with their work, b) whether they earn an adequate living, c) that the workers work together.

TRADE TALK

apprentice	compass
brickmason	concrete
carpenter	drill
draftsman	framing
plumber	hack saw
roofer	hammer
secretary	level
	mortar
	plane
	plans
	plunger
	typewriter

BUILDING IN THE CLASSROOM

Books

Adamson, Gareth. MR. BUDGE BUILDS A HOUSE

Beneson, Lawrence A. HOW A HOUSE IS BUILT

Goodspeed, J. M. LET'S GO WATCH A BUILDING GO UP

Greene, Carla. I WANT TO BE A CARPENTER

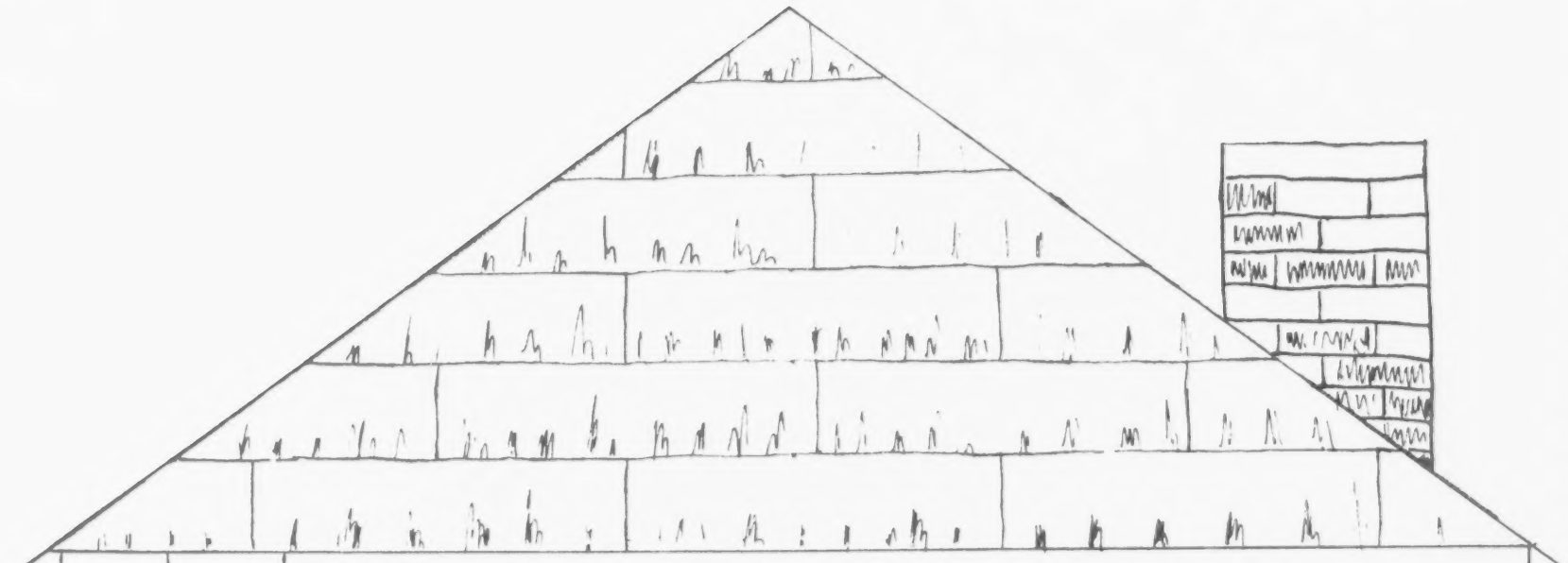
Films

(Available to Memphis City Schools)

"The New House - Where It Comes From"

"Making Bricks for Houses"

SPAN



WORK ORDER FOR FURTHER CLASSROOM BUILDING

Have the children:

1. Discuss the SPECIFICATIONS FOR VIEWING
2. Cut out pictures of workers and tools similar to those in the film. Place these in their scrapbooks and label them.
3. LANGUAGE ARTS: Write a story about one of the following: a) what would happen if all the carpenters, all the plumbers, or all the secretaries stopped working, b) a funny thing happened when I tried to build a _____.
4. Divide into groups and make up and act out a play about the workers needed to produce a house. (Don't forget the lumberjack!)
5. Using the vocabulary words, work the crossword puzzles.
6. SOCIAL STUDIES: Compare the tools the workers in the film used with the tools used by the early settlers in our country.
7. MATH: Work the attached problem involving the area of a house and its total cost.
8. Use any or all of the four building projects included. Obtaining materials for these projects is left up to the resourcefulness and ingenuity of the individual teacher.

SPAN

SPAN

PLUMBER

ROOFER

4171

DRAFTSMAN

4172

SECRETARY

APPRENTICE

4174

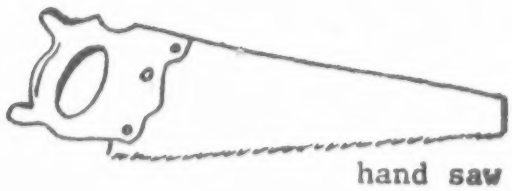
BRICK MASON

4175

CARPENTER

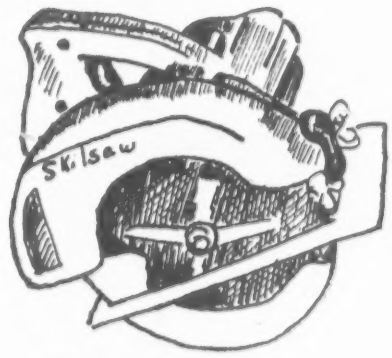
WHO USES THESE TOOLS AND MATERIALS?
(Match the tools with the workman)

TOOLS

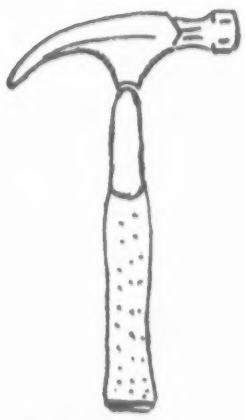


hand saw

sheet rock knife

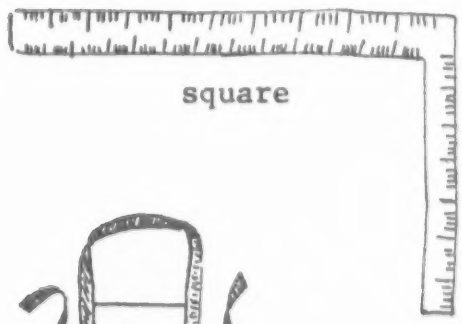


power saw

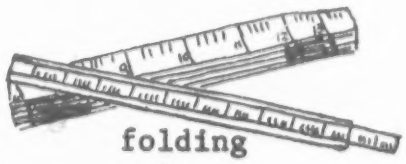


hammer

screwdriver

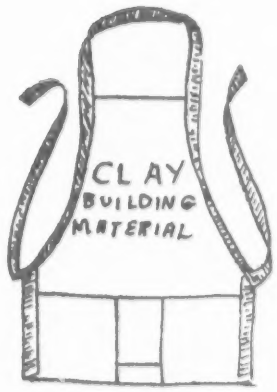


square



folding rule

tape rule

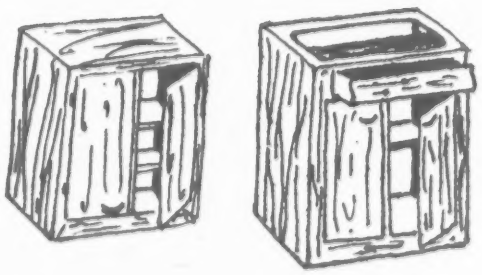


work apron

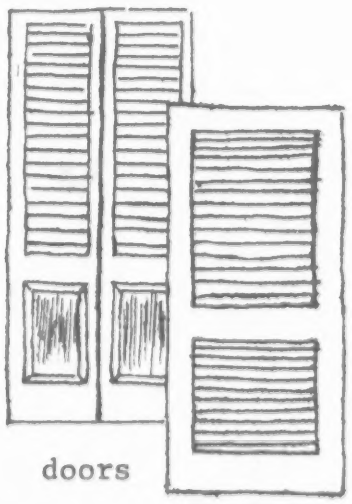
MATERIALS

nail (finishing)

nail (common)



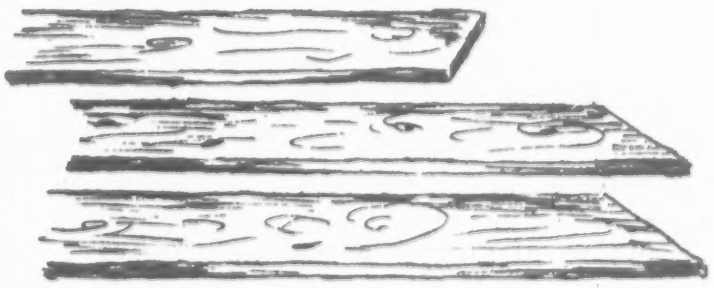
cabinets



doors

screw (roundhead)

screw (flathead)



planks

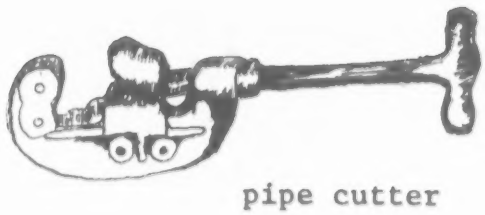
SPAN

WHICH WORKER USES THESE TOOLS AND SUPPLIES?

(Match the tools with the workman)

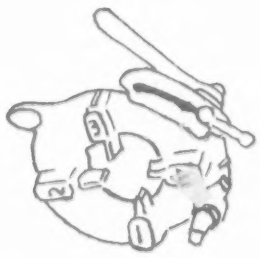
TOOLS

pipe wrench

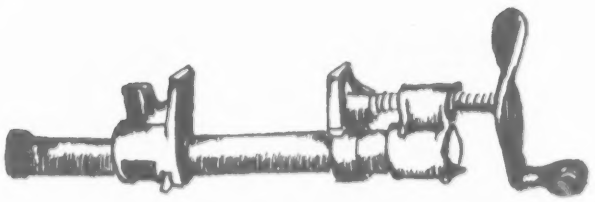


pipe cutter

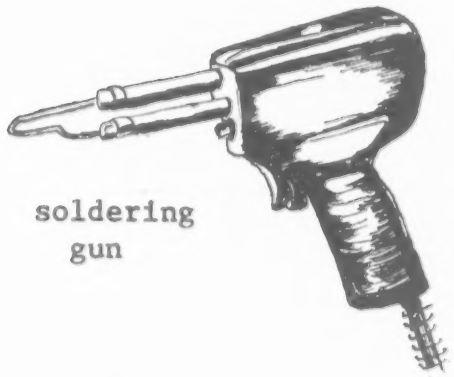
propane torch



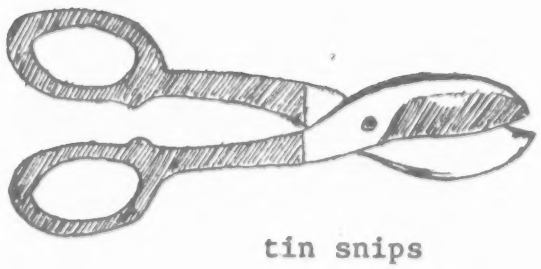
threading machine



bar clamp



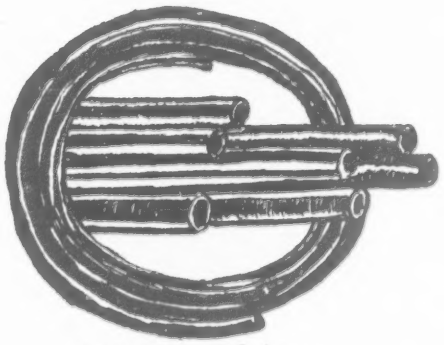
soldering gun



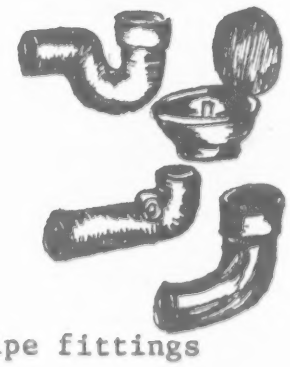
tin snips

vice grips

MATERIALS

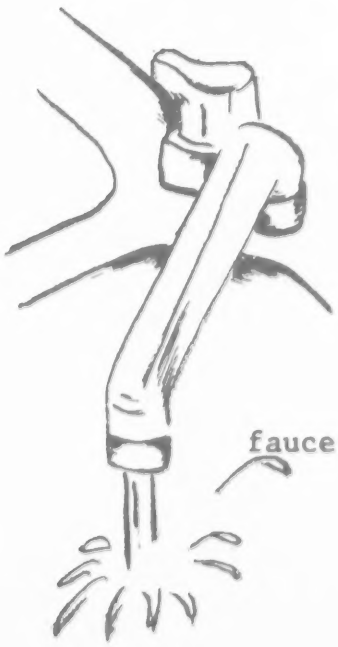


copper tubing

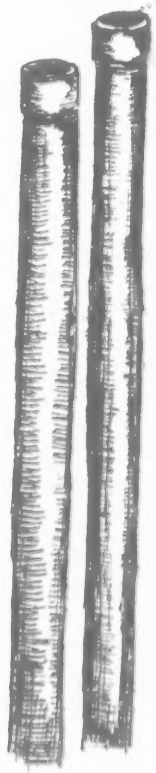


pipe fittings

sink traps



faucet



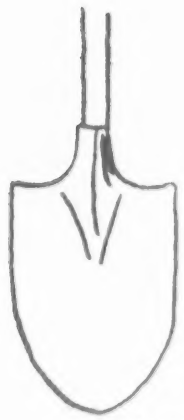
pipes

SPAN

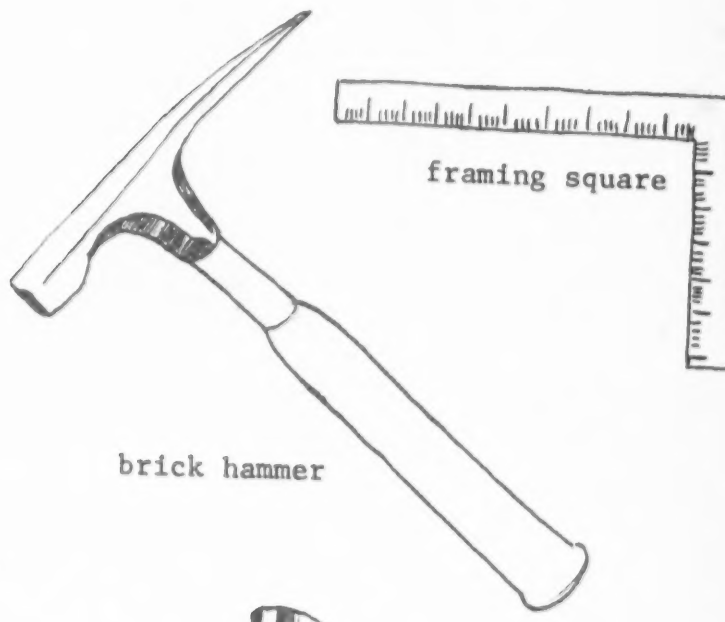
WHICH WORKER USES THESE TOOLS AND MATERIALS?
(Match the tools with the workman)

TOOLS

level



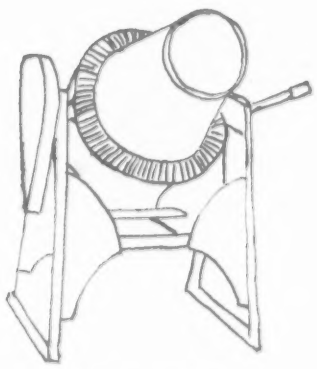
shovel



framing square

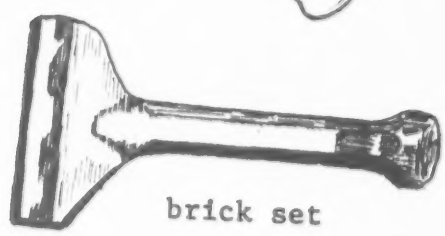
brick hammer

trowel



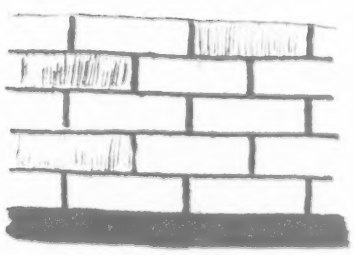
mortar mixer

brick chisels

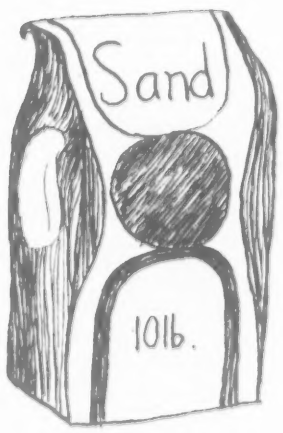


brick set

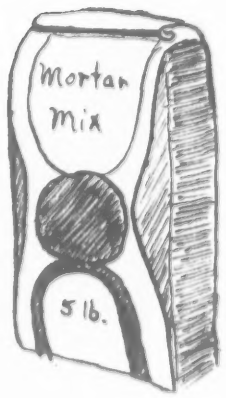
SUPPLIES



bricks



sand



mortar mix

masonry nail

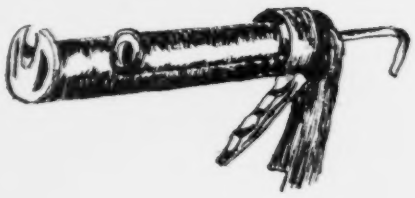
SPAN

WHO USES THESE TOOLS AND MATERIALS

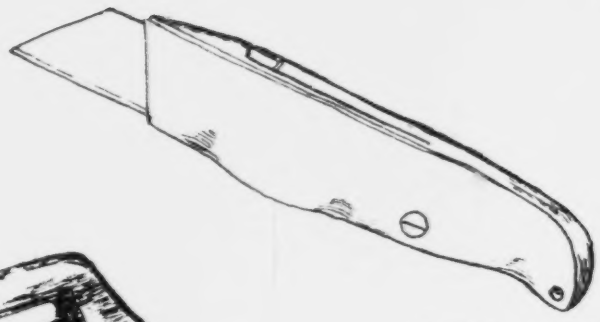
(Match the tools with the workman)

TOOLS

Shingling Hatchet

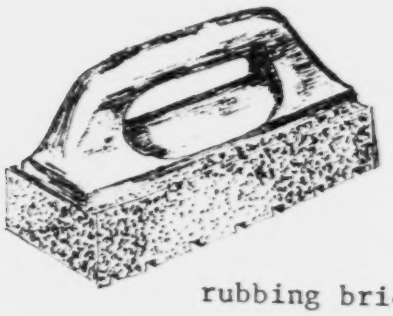


Caulking Gun



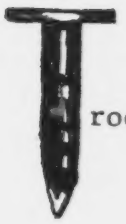
roofing knife

ladder



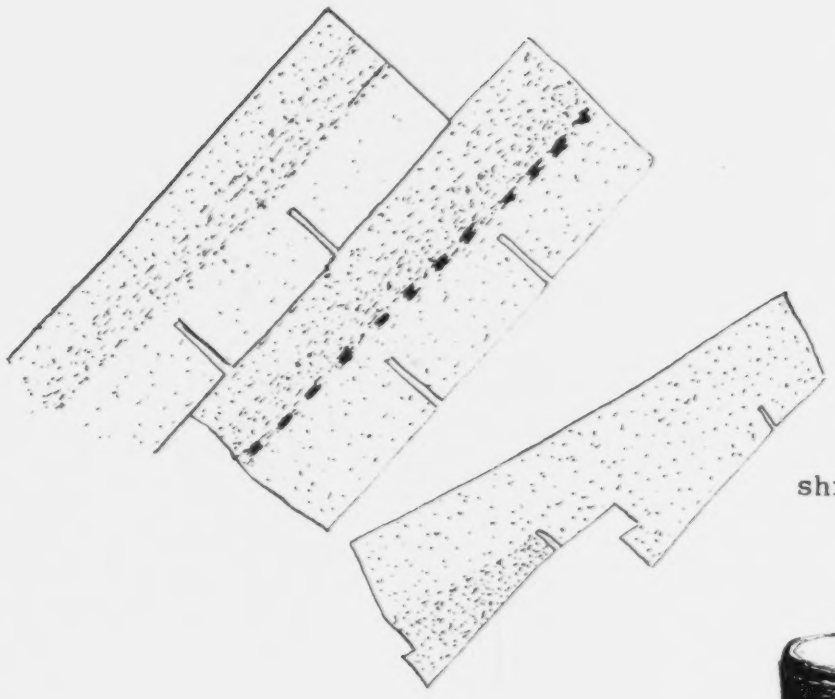
rubbing brick

MATERIALS



roofing nail

roofing felt



shingles

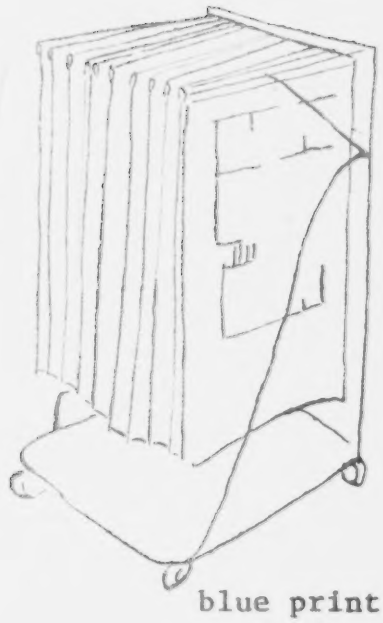
roofing tar

WHICH WORKER USES THESE INSTRUMENTS AND MATERIALS?

(Match the tools with the workman)

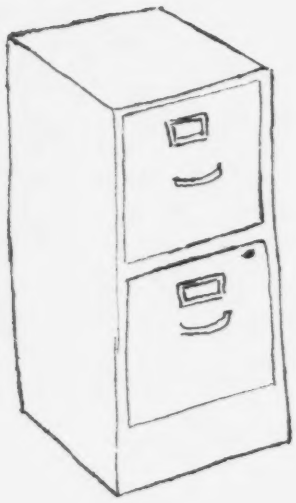
EQUIPMENT

adding machine

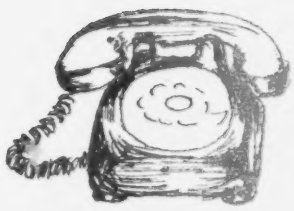


blue print stand

typewriter



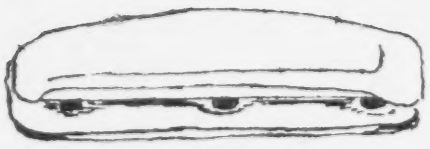
file cabinet



telephone

stapler

SUPPLIES

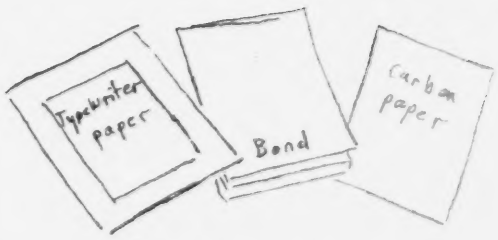


hole punch

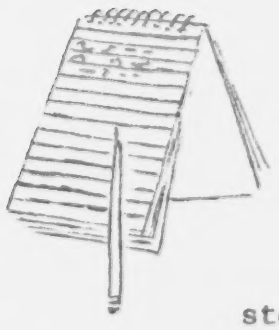
scotch tape

pencil

stamp and ink pad



typing paper and carbon



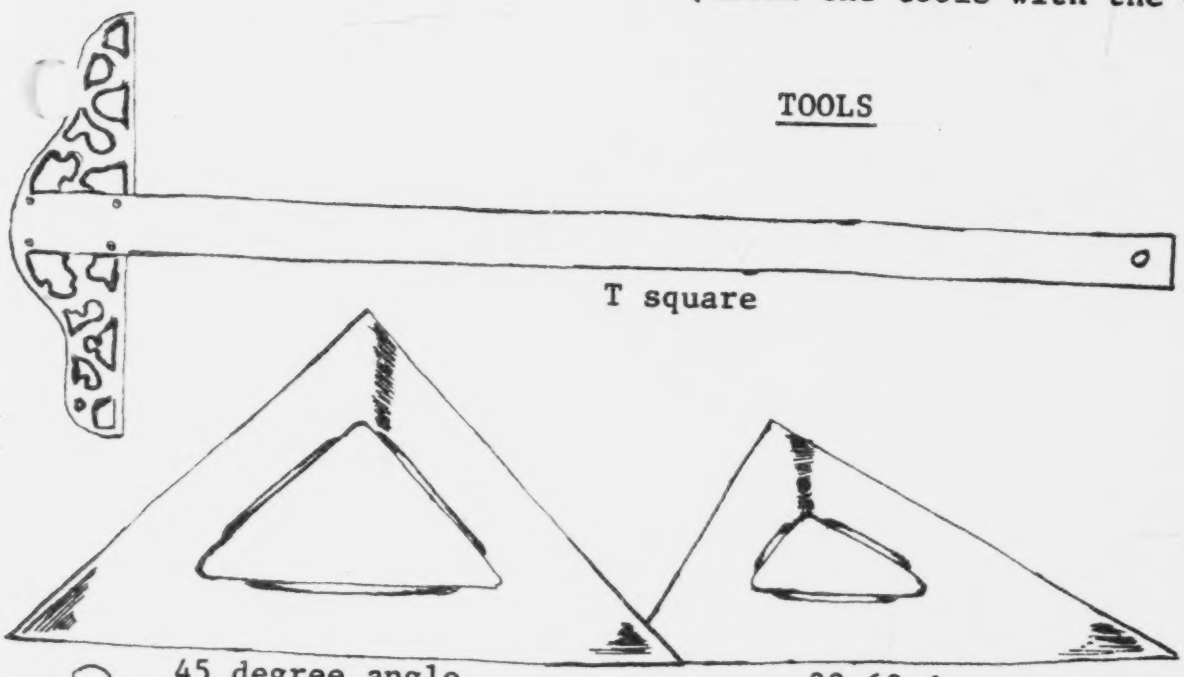
stenographer's pad

SPAN

WHO USES THESE INSTRUMENTS AND MATERIALS?

(Match the tools with the workman)

TOOLS

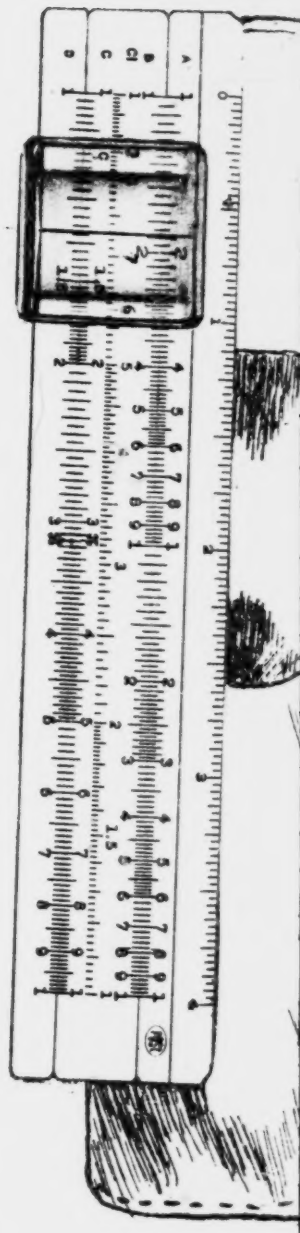


T square

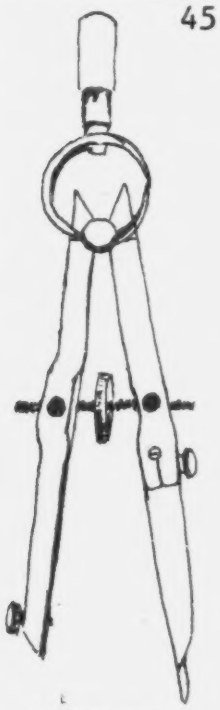
45 degree angle

30-60 degree angle

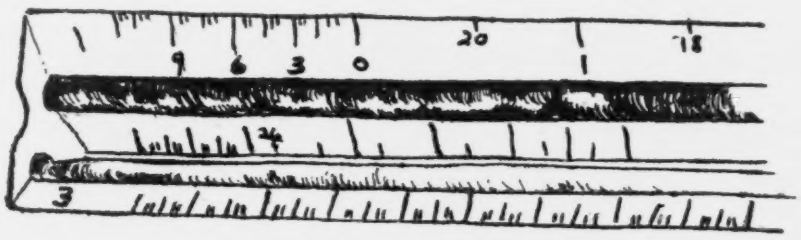
drafting table



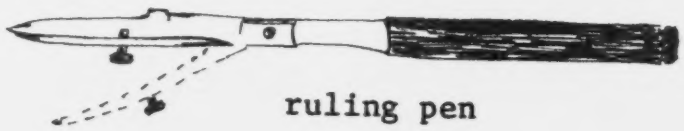
slide rul



compass

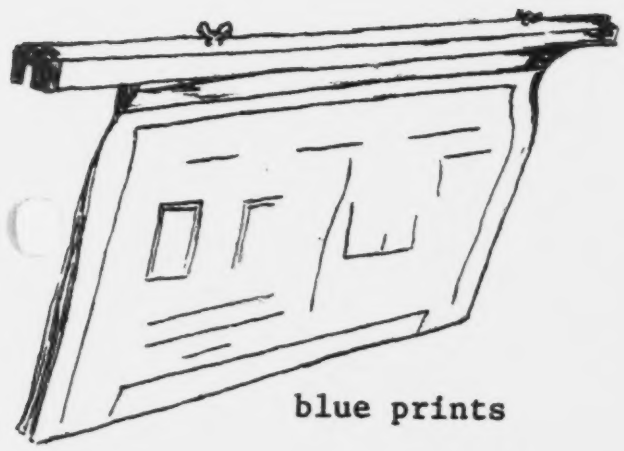


triangle scale



ruling pen

MATERIALS



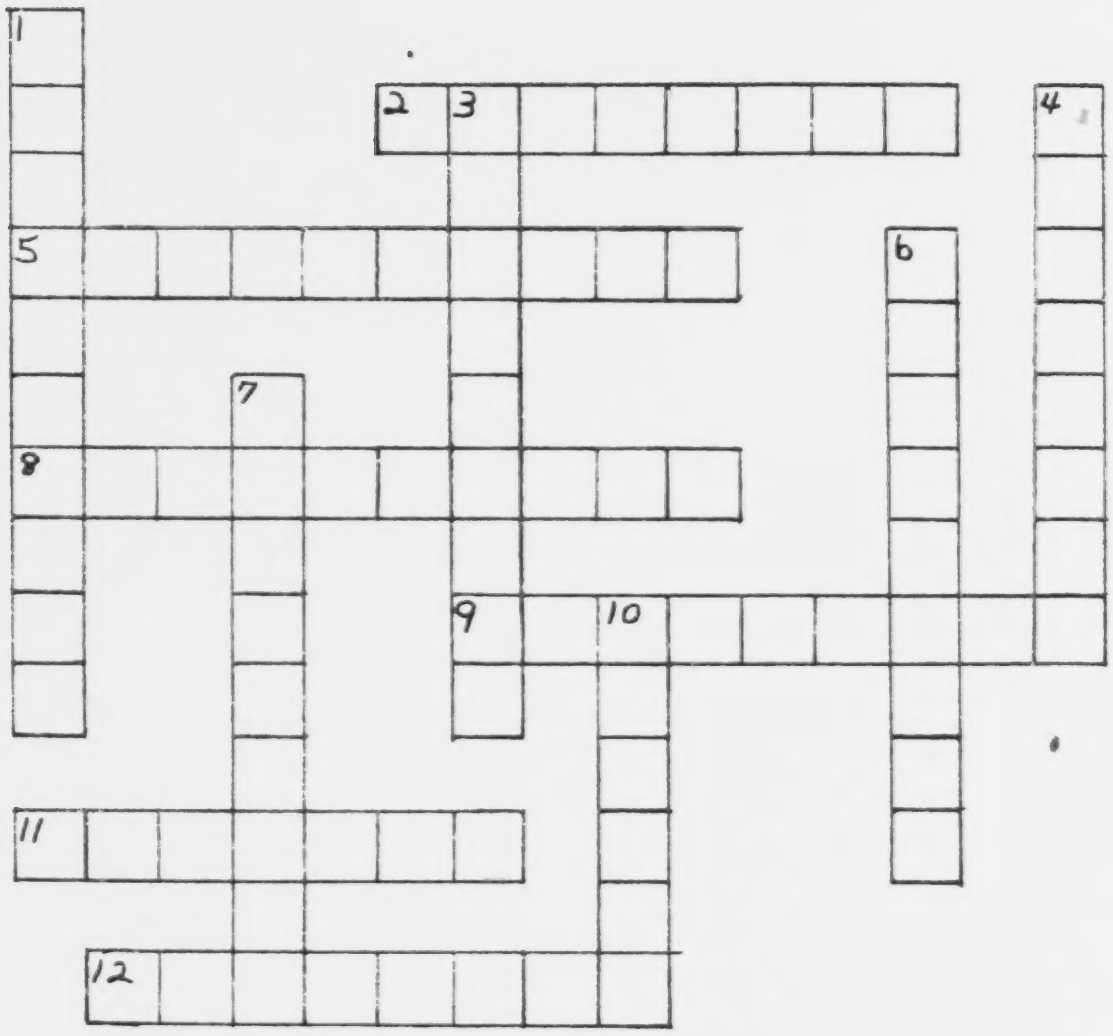
blue prints

eraser

ink

pencil

OCCUPATIONS CROSSWORD PUZZLE



Use the occupations seen in the film to work this puzzle.

ACROSS

2. A _____ serves food in the restaurant.

5. All the workers in the building trades work for a _____.

8. An _____ is a person who is learning a trade.

9. A _____ does the wood work on the house.

11. The _____ installs the bathroom fixtures in the house.

12. The _____ works through the church to help the community.

DOWN

A _____ works with a trowel and mortar.

2. The _____ designs a house and then instructs the draftsman in drawing up the plans.

DOWN

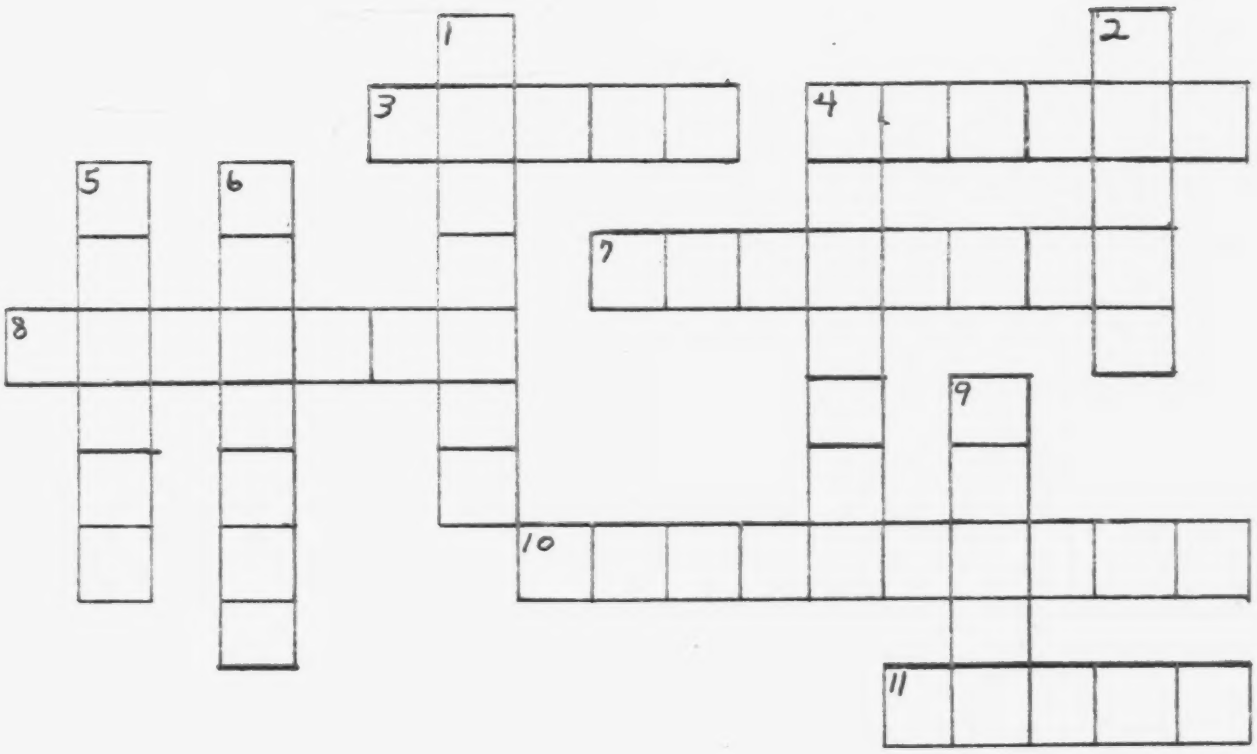
4. A _____ measures the lot and the location of the house on the lot.

6. The _____ types and takes dictation.

7. The _____ draws in the details of the blueprint.

10. The _____ puts the shingles on a house.

VOCABULARY CROSSWORD PUZZLE



DOWN

1. The plumber uses a _____ to clear waste from the drain of a sink.
2. A brick mason uses a _____ to be sure the wall does not dip.
4. A _____ is used to cut through a pipe.
5. _____ holds the bricks together to form a wall.
6. The draftsman uses a _____ to draw a circle.
9. A _____ is used to make holes.

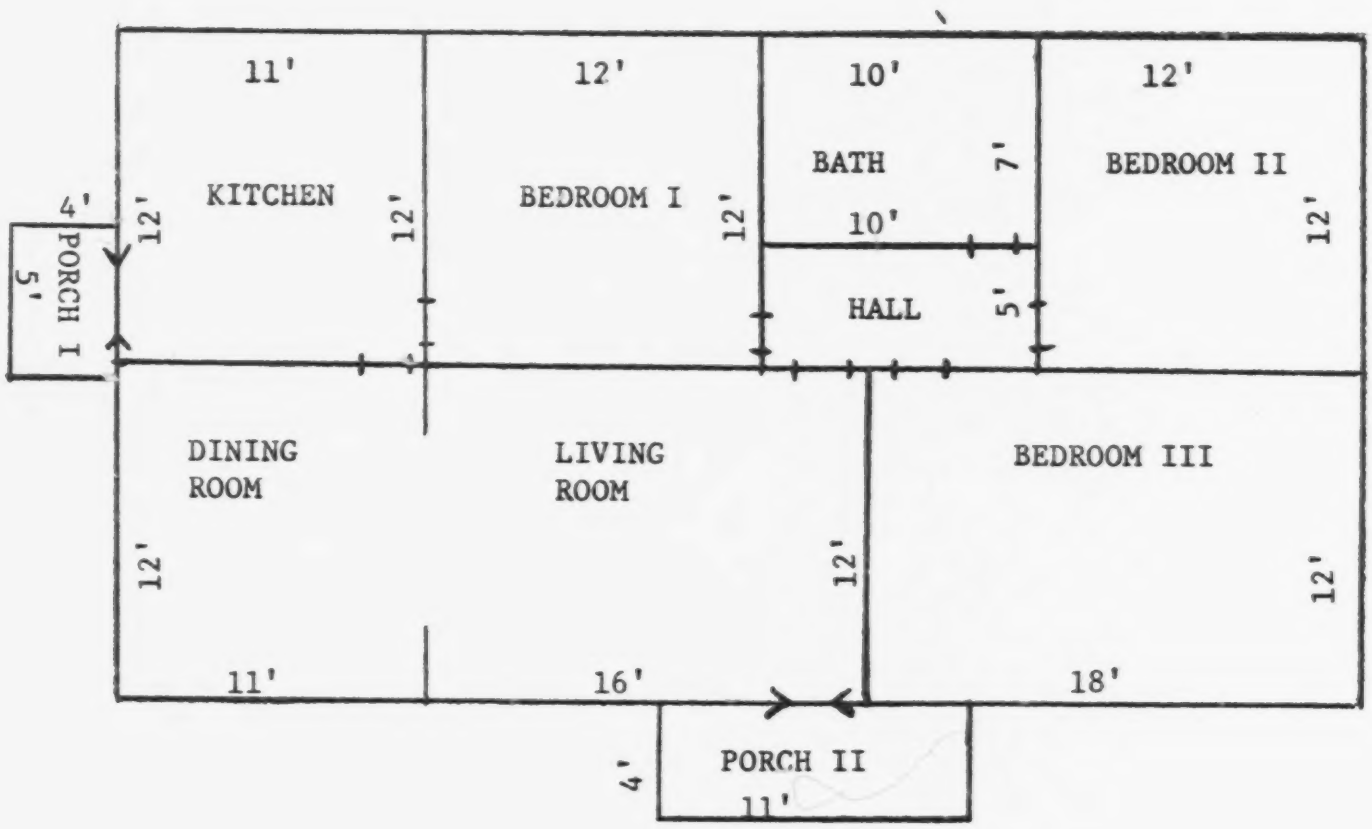
ACROSS

3. The carpenter uses a _____ to smooth the rough edges of wood.
4. A _____ is a pounding tool.
7. _____ is poured into forms for the floor of a house.
8. A carpenter is _____ a house when he puts in the studs and rafters.
10. The secretary uses a _____ to write letters.
11. _____ are the same thing as blueprints.

MATH PROBLEM

BUILDING TRADES

A carpenter needs to know how much floor space is in a house. By using the math you have learned in class, you can figure the floor space, or area, of a room or a house, too. Look at the drawing of the house. The dimension of Porch II is 4' x 11' which means it is 11 feet long and 4 feet wide. To obtain the area multiply 11 feet by 4 feet; the answer is 44 square feet. So the area of the porch is 44 square feet.



Math Problem

Building Trades

1. Look at the scale drawing. How many square feet of space are in each room?

   Living Room_____

   Dining Room_____

   Kitchen_____

   Bathroom_____

   Bedroom I_____

   Bedroom II_____

   Bedroom III_____

   Hall_____

2. By adding the number of square feet in each room, determine how many square feet there are in the entire house. (Do not include the porches.)

   Answer_____

3. If the average cost to build a house is $15 for each square feet, how much will this house cost?

   Answer_____

Project #1

Building a Tradesman's Notebook

Objective:

Following the instructions in the kit, the students should be able to construct a wooden cover for a scrapbook.

Procedure:

1. Assemble all tools and materials needed for the project. (plywood or hard board, brass decorative bit, leather-ribbon-string, paper, saw, file, 1/4" drills [hand and twist], 12" rule, hammer, C clamp, pencil, sandpaper, steel wool, vinyl paint, 1" brush, soft rags, newspapers)

2. Acquire 2 pieces of board (9" x 12") and place group number on the inside of each piece.

3. On each piece of wood make a pencil mark to indicate the places to drill the holes. Locate them as shown in illustration #1.

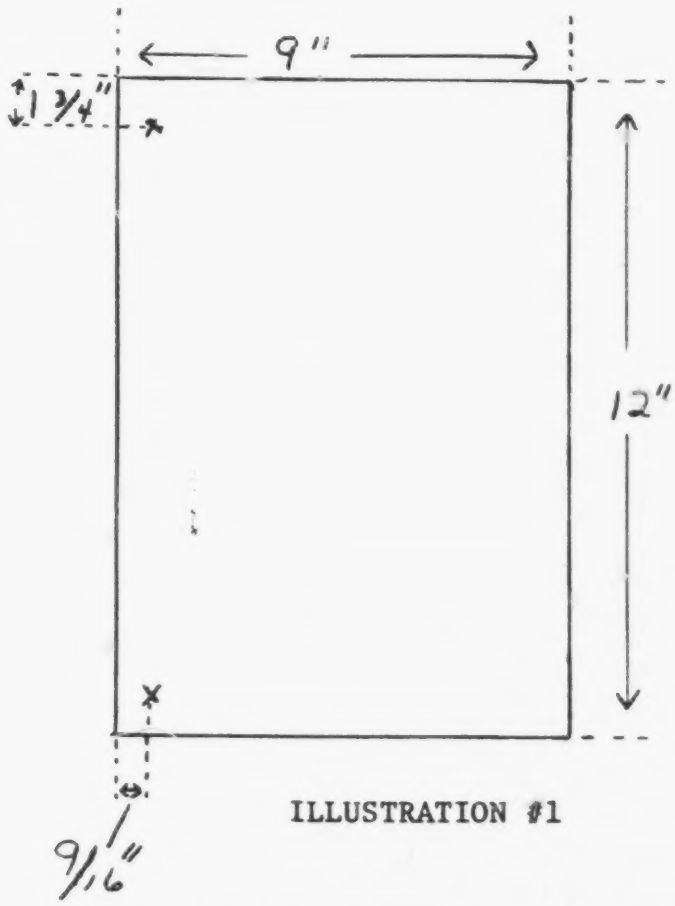


ILLUSTRATION #1

4. Drill 1/4" holes in these locations on each board.

5. With a ruler, make a saw line on 1 only of the boards. This will be the front of the notebook, or part A. Place the saw line as shown in illustration #2.

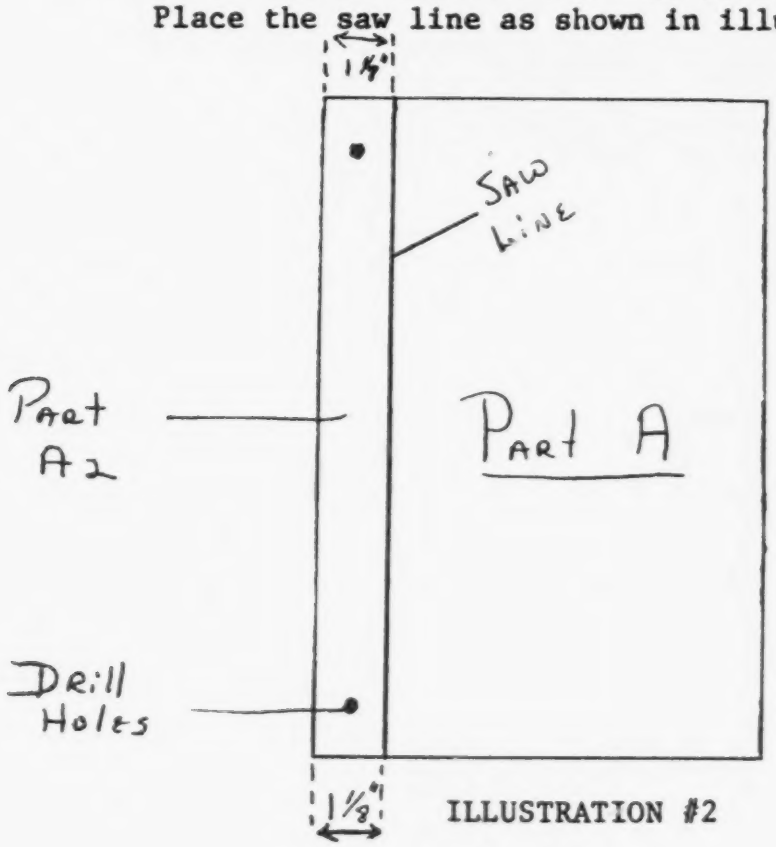


ILLUSTRATION #2

6. Clamp a board fence along the right side of the saw line and saw down the fence. Sand the sawed edges until smooth. Round the outside edges with a file and sandpaper. See illustration #3.

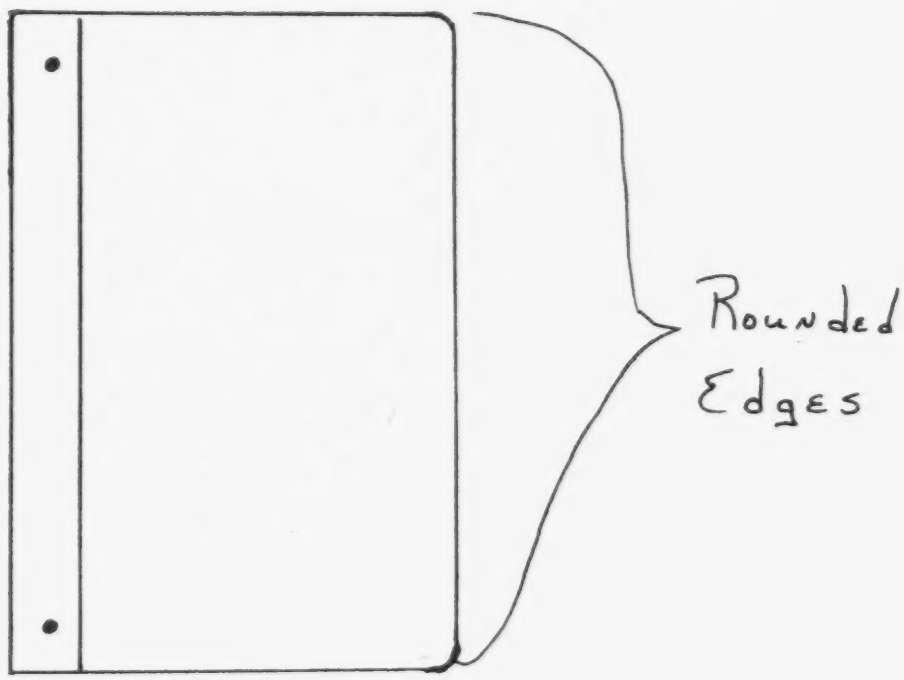


ILLUSTRATION #3

7. Locate hinges on part A and A2 between the sawed edges and fasten with brads, using a hammer. See illustration #4.

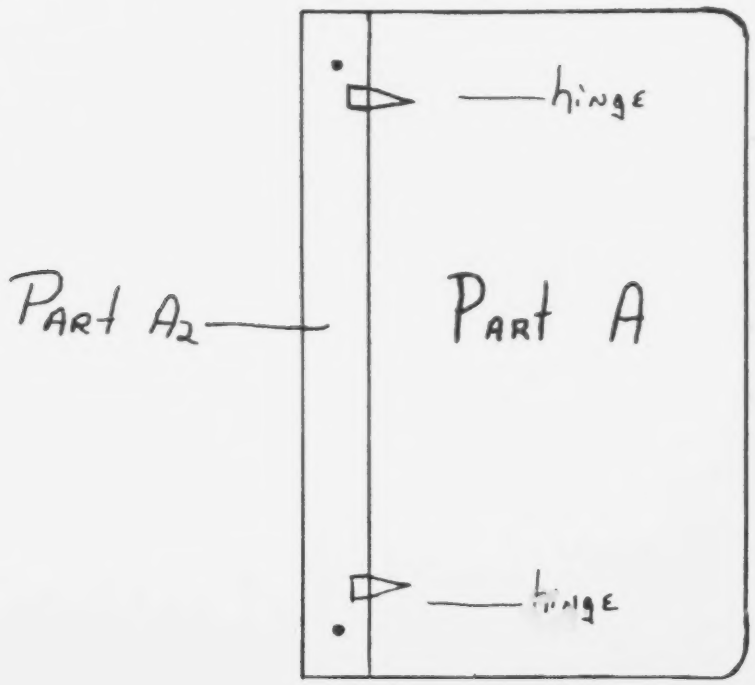


ILLUSTRATION #4

8. Cut holder (leather, ribbon, string) to correct width and length (3/16" x 24").

9. Sand entire project smooth.

10. Spread newspapers. Paint and decorate.

11. Add unlined paper to use for pictures of workers and tools.

Project #2

Return Brick Corner, Common Bond

Objective:

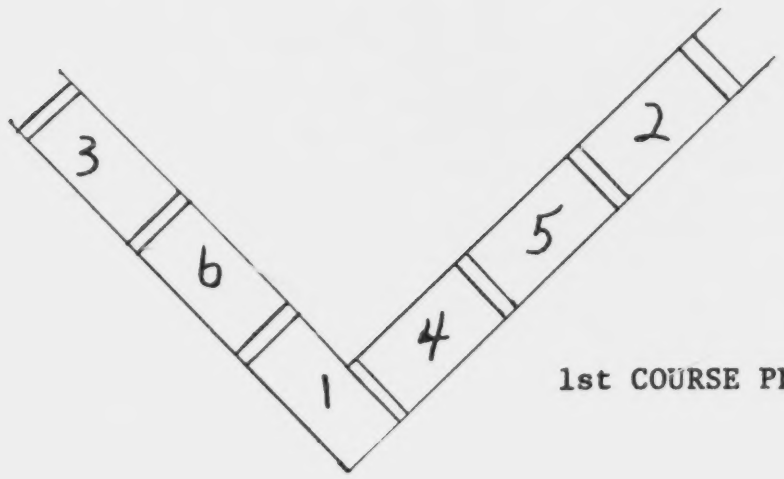
With the use of this guide, a student should be able to simulate the construction of a return brick corner, common bond, 3 courses high.

Procedure:

1. Assemble all tools and materials needed for the job. (mortar, water, trowel, plumb line, square, level)

2. Mix mortar.

3. Lay out 6 bricks dry and square them with the tri-square. Separate them evenly by using your forefinger as a spacer.



1st COURSE PLAN

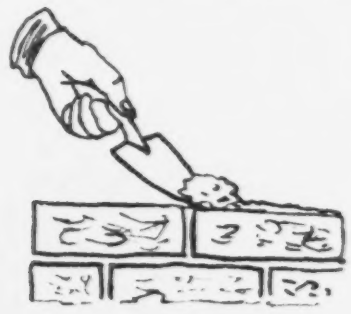
4. Holding trowel with fingers under the handle and thumb on top, cup mortar and place it under bricks #1, 2, and 3.

5. Bed up in mortar bricks # 1, 2, and 3 before disturbing the others. Level all three.

6. Lift brick #4 and place small amount of mortar under it and scrape some mortar on end of brick. Bed it up in mortar, being sure there is mortar between bricks #1 and #4. Repeat procedure for bricks #5 and #6.

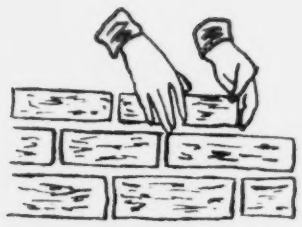
7. Make sure the bricks are level and square.

8. With trowel, place a line of mortar on top of the bricks.

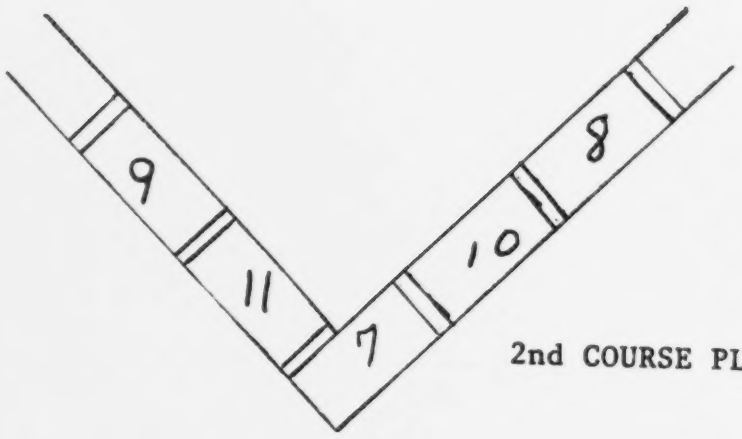


SPREADING MORTAR

9. Place the bricks on the mortar in this manner.



PUTTING THE BRICKS
IN PLACE

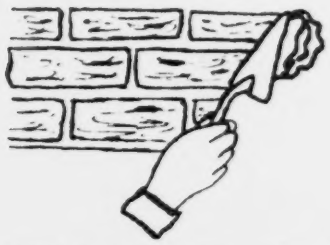


2nd COURSE PLAN

10. As in step 5, bed up in mortar bricks #7, 8, and 9. Level them.

11. Lift brick #10, place mortar under it, bed it up as in step 6. Repeat the procedure for brick #11.

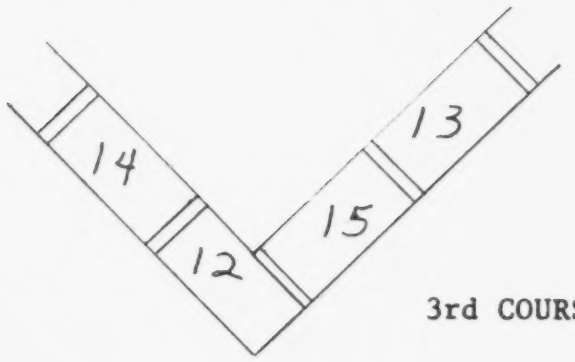
12. Using the trowel, scrape away any extra cement from the bricks so that the wall is smooth.



SCRAPING AWAY THE
EXTRA CEMENT

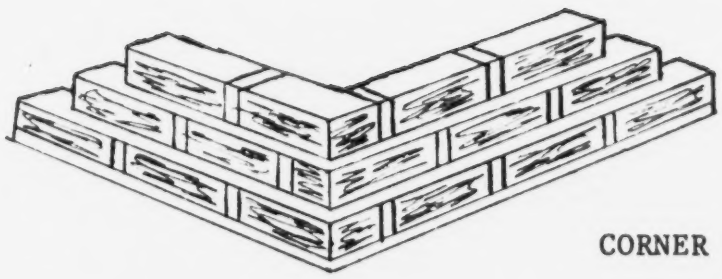
SPAN

13. Repeat the procedure used in steps 5 and 10 for the 3rd course.



3rd COURSE PLAN

14. Be sure the top is level and the sides are square.



CORNER ELEVATION

Project #4

How to Repair a Leaky Compression Type Faucet

Objective:

Following the set of instructions, the student should be able to replace a washer in a compression type faucet.

Procedure:

1. Assemble all tools and materials needed.
   (regular screwdriver, phillips screwdriver, monkey wrench, seat tool, piece of cloth, masking tape)

2. Shut off water (main supply)

   Check points:

   a. Valve handle underneath faucet.
   b. Valve under house or just outside house where water line enters house.
   c. Main valve near the street inside the water meter.

3. Turn faucet handle to make sure water is shut off.

4. Place tape or cloth around packing nut (see A in illustration). Using wrench, unscrew nut loose from threads.

5. Using off and on handle, unscrew valve faucet stem (see B in illustration) and remove it from water faucet housing.

6. Using screwdriver, remove faucet screw at washer end (see C in illustration). If damaged, use a hacksaw and reslot the screw slot.

7. Remove and discard old worn washer (see D in illustration).

8. Select proper size new washer that fits inside rim of stem. Always place flat side down against rim.

9. Replace faucet screw with screw driver.

10. Remove seat (see E in illustration) with a seat tool and wrench.

11. Check seat rim for worn places or grooves.

12. If seat is scarred or grooved:
    a. Discard and purchase a new one.
    b. Reseat worn seat using emery cloth, shaping stone or file.
    c. Buy an inexpensive valve seat grinder. (not recommended) If seat threads are worn, you will have to purchase a pipe joint putty or ribbon to fill in the space.

13. Replace new seat or repair seat.

14. Replace packing if water has been spurting around stem.

15. Using a rag or old toothbrush, clean all parts. Make sure you leave no metal particles or grit on threaded parts where seat and washer meet.

16. Replace stem (see B in illustration) in faucet, using your hands.

17. With wrench protected with tape or cloth, tighten packing nut (see A in illustration).(You may have to use screwdriver to push packing in place first.)

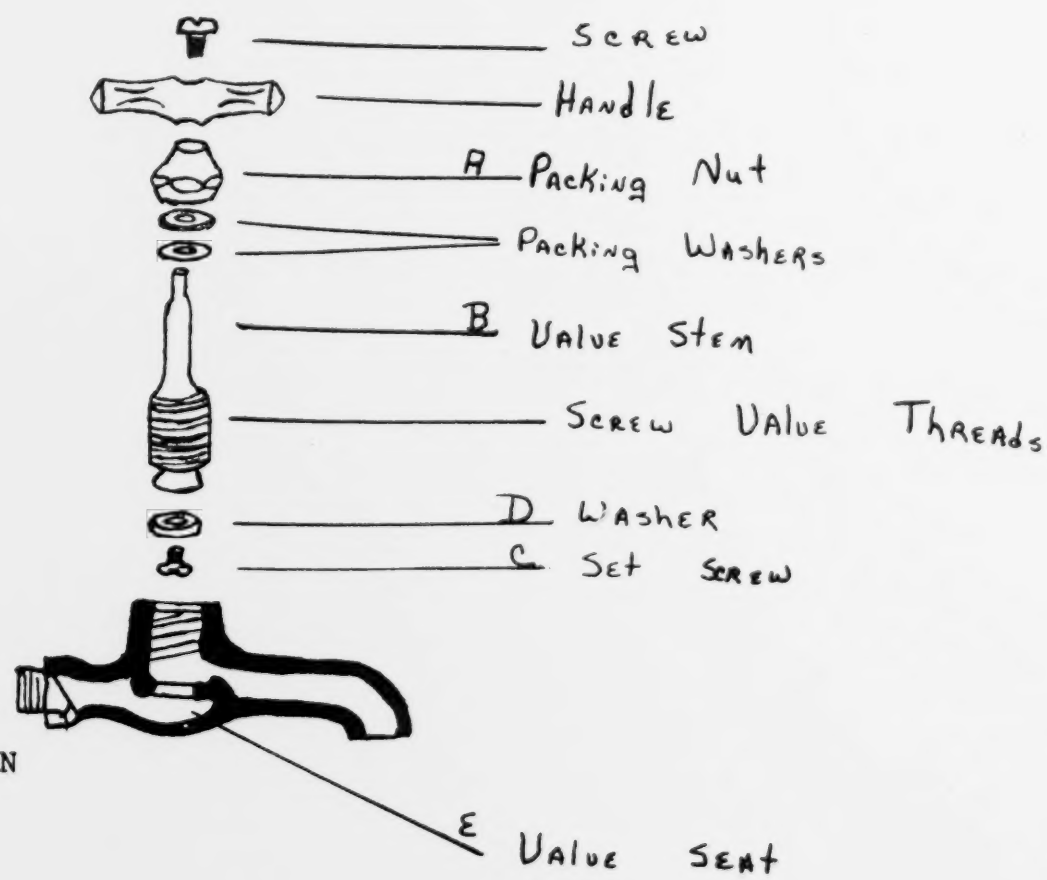
18. Turn handle to "off" position.

19. Turn on water at the main meter cutoff valve.

20. Return to the faucet and open and close the flow of water several times to see if the job is complete.

21. If it still leaks, repeat dissembling and assembling steps.

22. If leak is corrected, let water flow a few minutes out of the spout to force air out of the water line. This is what causes the pipes to pop and cough. This causes water to flow uneven at first through the faucet.



NOZZLE OR SPOUT COMPRESSION
FAUCET SIDE VIEW EXPOSED

Project #3

Drawing to Scale

Objective

Using the tools provided in this kit, the student should be able to draw to scale a room or a ball diamond. Also they should be able to construct a perpendicular line and a five-point star.

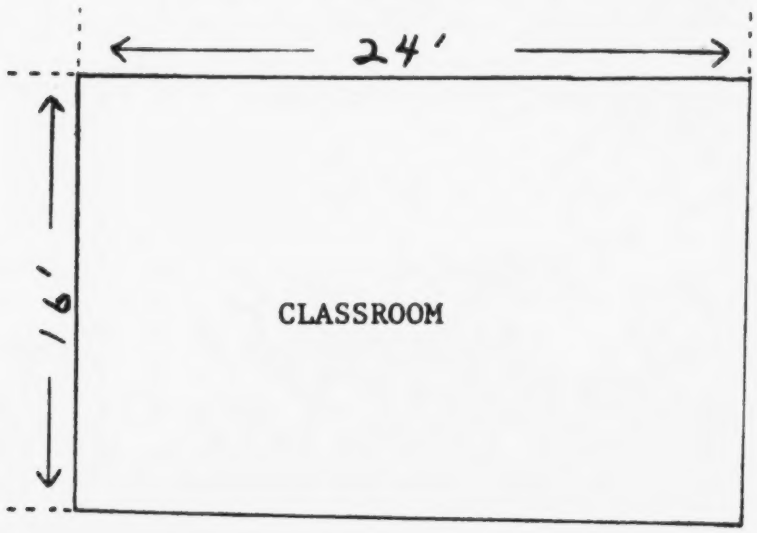
Procedure

1. Assemble all tools needed. (#4 pencil, paper, eraser, compass, ruler)

2. Using the ruler, measure your classroom and write down the exact measurements. Instructions for drawing a room are under A; instructions for drawing a softball and a baseball diamond are under B; and instructions for drawing a pentagon and a 5-point star are under C. You may want to draw one or all of these.

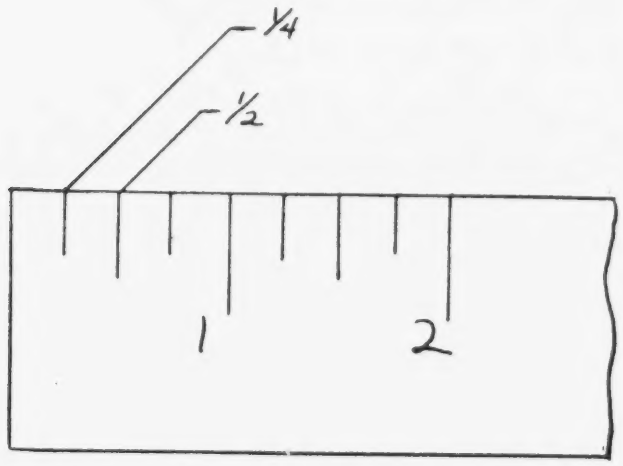
A. A Classroom:

1) For a room, measure each side as shown.

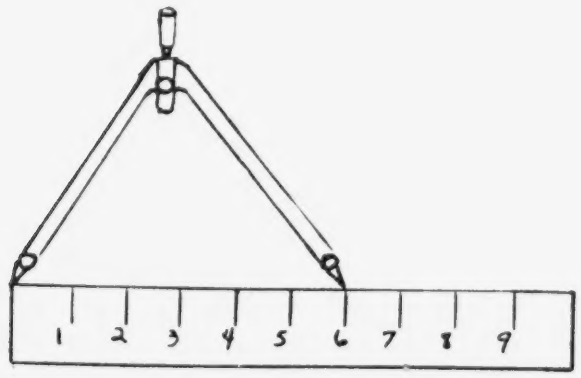


This scale drawing indicates that the room is 16 feet wide and 24 feet long.

2) When drawing a room to scale, let 1/4 of an inch on the ruler represent 1 foot. According to our measurements, our scale drawing room will be 6 inches long and 4 inches wide. (6 inches would be 24 - 1/4 inches; 4 inches would be 16 - 1/4 inches)

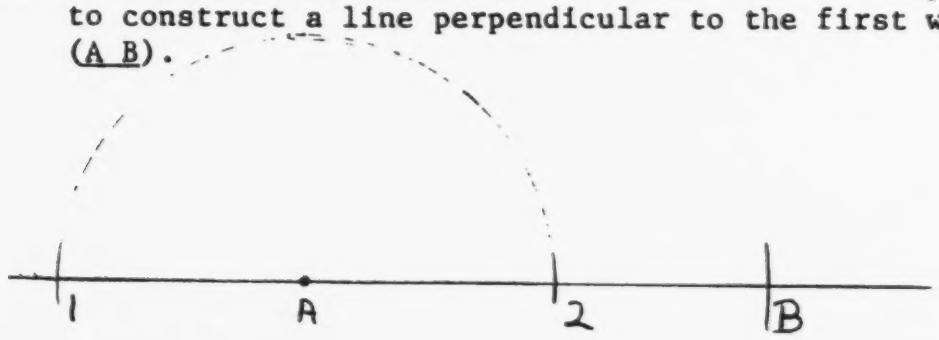


3) To draw the room, place the steel point of the compass at 0 and open the compass until the pencil point touches the correct mark (in our case 6 inches).



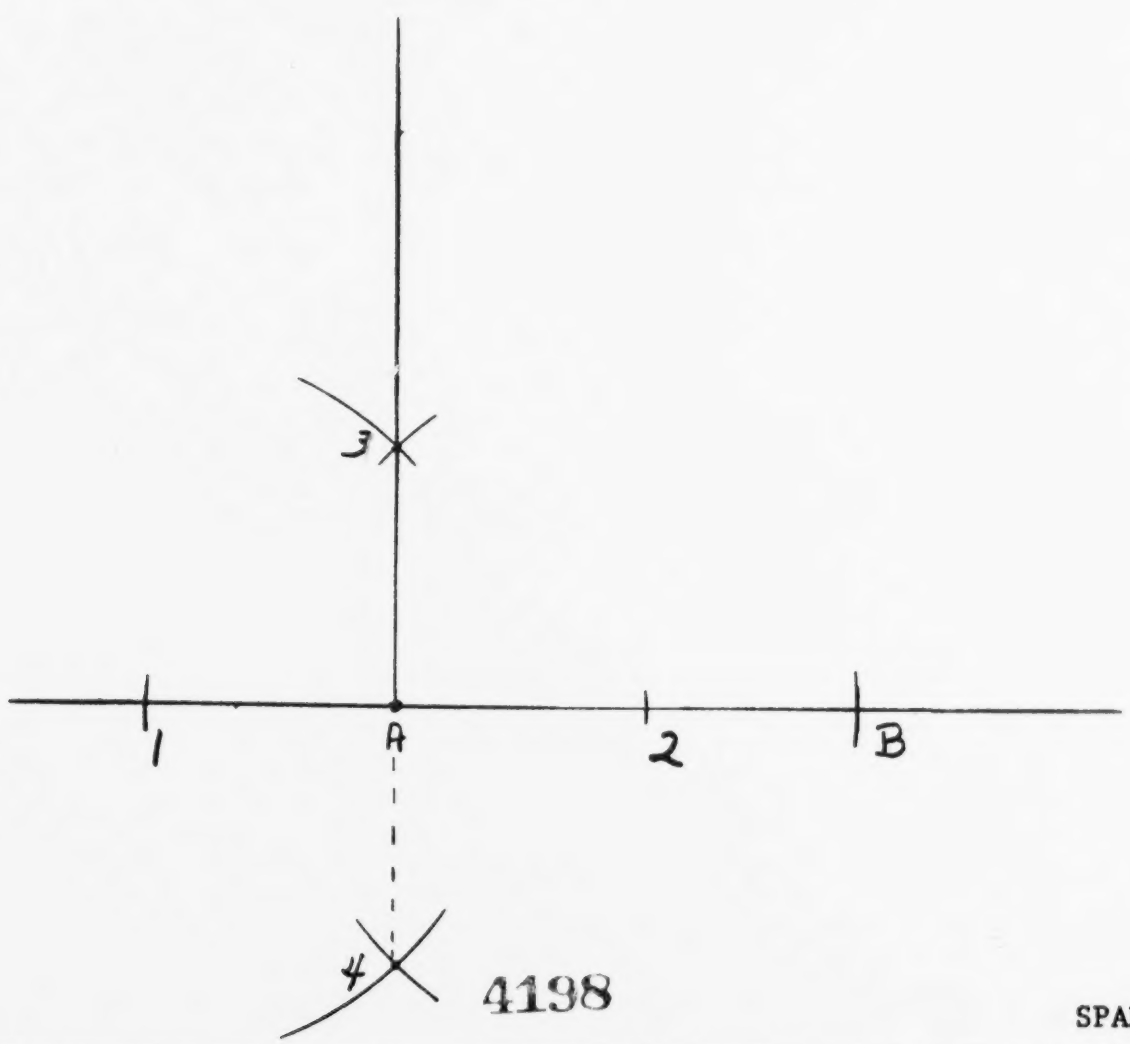
4) Make a straight line [on your drawing paper] to be one wall. With your compass set as in step 3, mark an arc for the end of the wall.

5) Now to make the second wall we must use our compass to construct a line perpendicular to the first wall (A B).



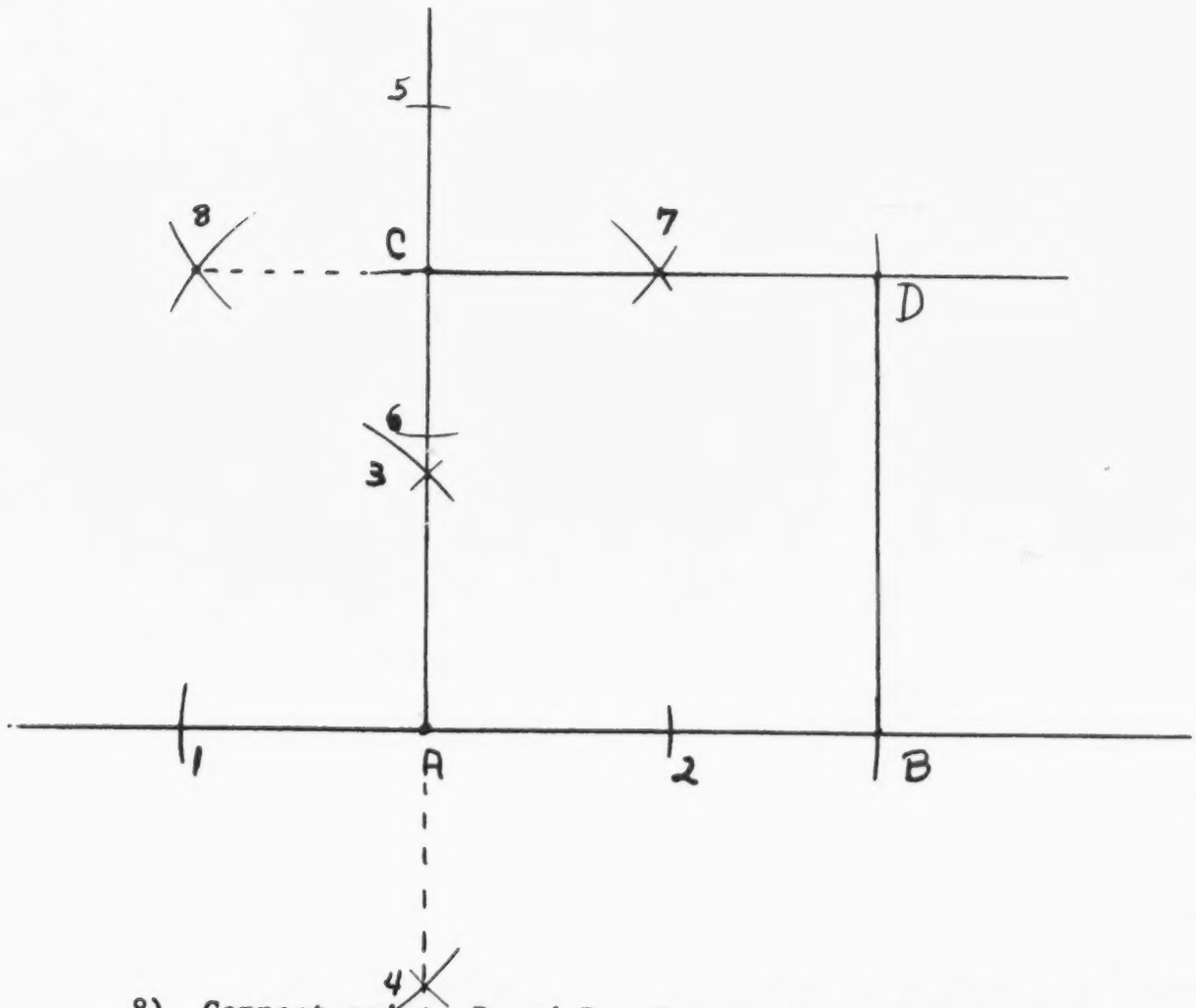
Put the compass at any setting which will not go off the page. Then with the steel point at A make an arc cut line AB on either side of A. These arcs are 1 and 2.

Open the compass slightly, put the steel point on 1, and make an arc above and below A. Leaving the compass on the same setting, place the point on 2 and repeat the procedure. Where these arcs cross are point 3 and 4. Connect points 3 and 4 through A and you have a perpendicular line.



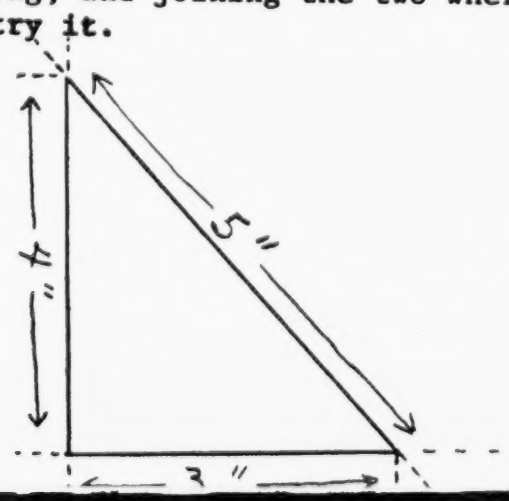
6) With the compass, measure the scale length of your second wall. Place the point at A and mark an arc C. Line AC then becomes the width of your room as line AB is the length.

7) At point C construct a perpendicular line to become the other length wall. (Use same procedure as in step 5.)



8) Connect points D and B. Erase all unnecessary lines. You have a scale drawing of your classroom. Why don't you try to do scale drawing of the desks within your classroom?

NOTE: Carpenters make a square corner by measuring 3" on side AB; estimating a perpendicular like BC 4" long; and joining the two where 5" meets AC. You try it.

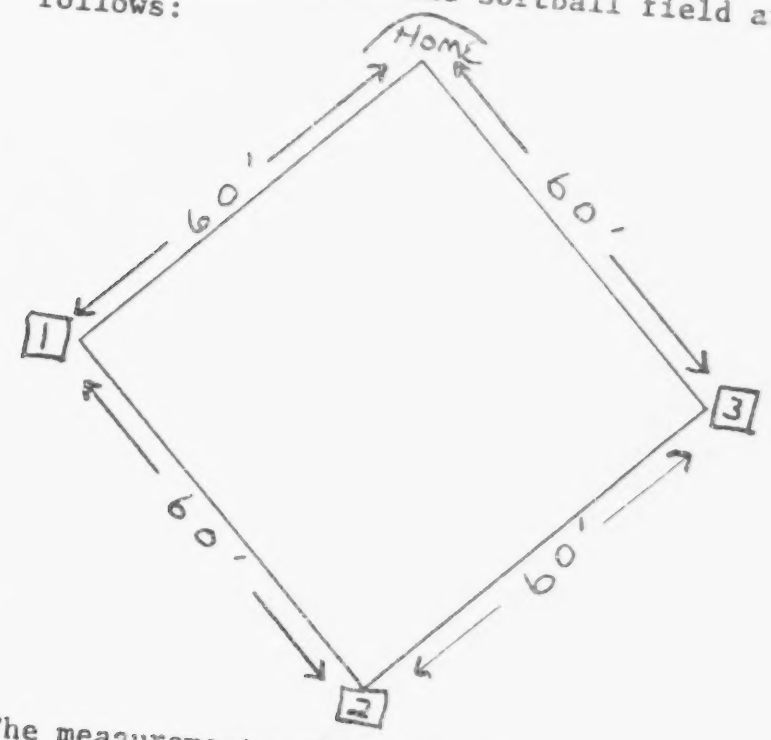


transfer

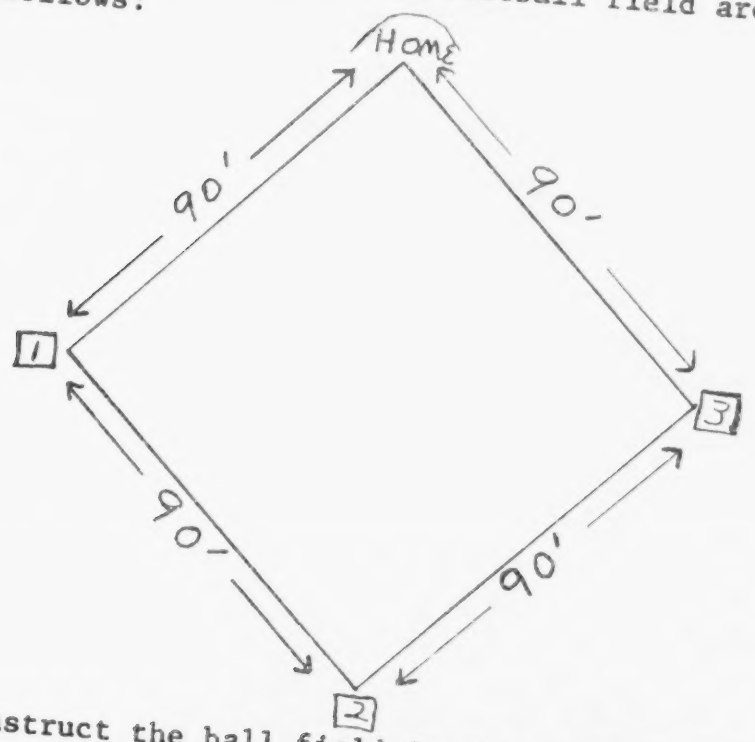
B. <u>A softball and a baseball diamond</u>:

1) When drawing a ball field to scale, use 1/16 of an inch to represent 1 foot.

2) The measurements of the softball field are as follows:



The measurements of the baseball field are as follows:

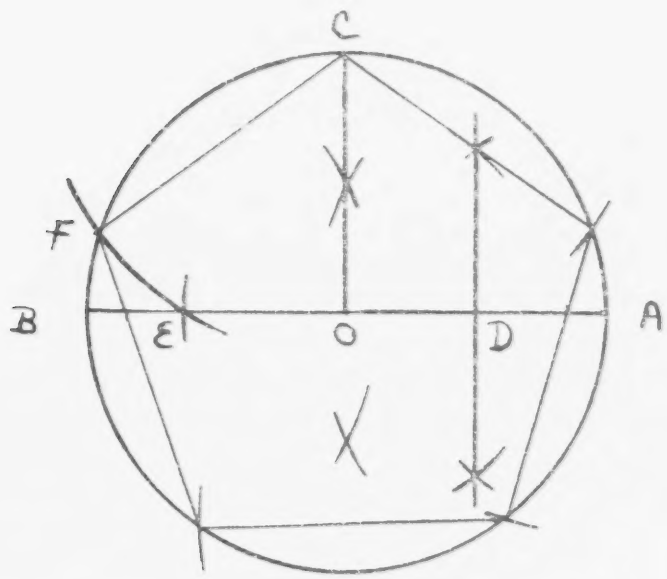


3) Construct the ball field in the same manner as the room, being sure the lines are perpendicular to each other.

4) Can you put in the pitcher's mound? the batter's box? (Use the <u>World Book Encyclopedia</u> for reference.)

C. Constructing a pentagon and a 5-point star:

1) Draw a circle equal to the size of pentagon desired.



2) Construct diameter, AB and radius OC perpendicular to AB.

3) Bisect line AO to find center point D.

4) Draw CE using point D as the center.

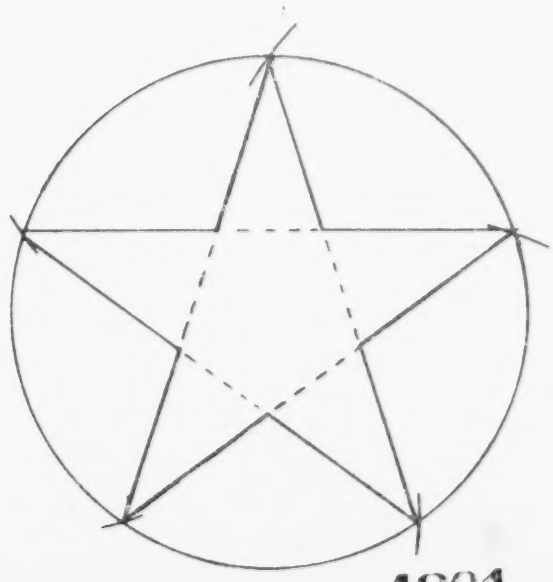
5) Draw arc EF from center point C.

6) Draw the line CF.

7) Lay off the four remaining sides, equal to CF, around the circle.

8) Connect the points around the circumference to form a pentagon.

To form a 5-point star locate the five points as above and connect the points as shown below.



APPENDIX B

1. Interdependence of Related Occupations

"The occupational film portraying a cluster of occupations that requires similar interests with varying levels of ability is especially important and useful in the school guidance program."

Rating Scale

1 2 3 4 5 6 7 8 9 10

Low Value High Value

2. Activities of Worker

Film should show duties of worker and pattern of interests and values which person in a certain occupation likely will hold.

Rating Scale

1 2 3 4 5 6 7 8 9 10

Low Value High Value

3. Setting of Work

"The possible variety of work settings should be realistically portrayed."

Rating Scale

1 2 3 4 5 6 7 8 9 10

Low Value High Value

4. Preparation Required

"Some indication of the extent and nature of the education and training required is essential."

Rating Scale

1 2 3 4 5 6 7 8 9 10

Low Value High Value

5. Occupation's Contribution to Society

Does film show product or service that is outcome of work done?

Rating Scale

1 2 3 4 5 6 7 8 9 10

Low Value High Value

6. Excellence of Workmanship

"The motion picture film has the potential for dramatizing the benefits of quality workmanship."

Rating Scale

1 2 3 4 5 6 7 8 9 10

Low Value High Value

7. Levels of Occupational Opportunities

"Beginning occupations and promotional opportunities are matters of concern to youth."

Rating Scale

1 2 3 4 5 6 7 8 9 10

Low Value High Value

8. Personal Rewards of Occupation

"The motion picture can portray effectively the psychological rewards of occupational performance."

Rating Scale

1 2 3 4 5 6 7 8 9 10

Low Value High Value

9. Organizations Related to Occupations

"Information should be given about the organizations, if any, which a worker in a particular occupation is expected to join." (Unions, professional associations, etc.)

Rating Scale

1 2 3 4 5 6 7 8 9 10

Low Value High Value

10. Factors Affecting Growth of the Occupation

"Significant trends can be illustrated in the occupational film."

Rating Scale

1 2 3 4 5 6 7 8 9 10

Low Value High Value

TECHNICAL CRITERIA

1. Camera Work - variety of camera angles, lack of jump cuts, focus, etc.

Rating Scale

1 2 3 4 5 6 7 8 9 10
Poor Good

2. Narration - Pleasing quality, inflection suggesting approach to student as equals, lack of condescension, good sound quality.

Rating Scale

1 2 3 4 5 6 7 8 9 10
Poor Good

3. Lighting - good use of available and artificial light sources.

Rating Scale

1 2 3 4 5 6 7 8 9 10
Poor Good

4. Editing - Film edited into smooth flowing narrative, one scene flows logically into next.

Rating Scale

1 2 3 4 5 6 7 8 9 10
Poor Good

5. Script - Writing is conversational. Easily understood terms used. Original, fresh approach to ideas and information. No "writing down" to students.

Rating Scale

1 2 3 4 5 6 7 8 9 10
Poor Good

6. Use of Entertainment to Hold Viewer Interest - Is enjoyment combined with instruction? Is film too didactic? Do films rely on entertainment techniques of commercial television to hold viewer interest?

Rating Scale

1 2 3 4 5 6 7 8 9 10
Poor Good

7. Visual Impact of Films - Are non-studio settings used? Is visual aspect of television used to fullest advantage? Is there a limit to scenes showing individual lecturers or panel discussions?

Rating Scale

1	2	3	4	5	6	7	8	9	10
Poor									Good

8. Are words, music, and motion combined for pleasing effect?

Rating Scale

1	2	3	4	5	6	7	8	9	10
Poor									Good

9. Extent to Which Films Meet SPAN Objectives

Rating Scale

1	2	3	4	5	6	7	8	9	10
Limited									Extensive

TECHNICAL CRITERIA

1. Camera Work - variety of camera angles, lack of jump cuts, focus, etc.

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Poor									Good

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Poor									Good

9. Extent to Which Films Meet SPAN Objectives

Rating Scale

1	2	3	4	5	6	7	8	9	10
Limited									Extensive

APPENDIX C

PROJECT SPAN-I

(01-02) Name_____ (03) School_____

(04) Boy [ ] 1 Girl [ ] 2 (05) Grade_____

For each question draw a ring around the one answer you think is best.

(06) Houses are built by

1. one kind of worker.
2. two or three kinds of workers.
3. many kinds of workers.
4. I'm not sure.

(07) Which of these workers helps the carpenter build a house?

1. postman.
2. plumber
3. preacher
4. none of these.

(08) Which of these workers helps the carpenter build a house?

1. draftsman.
2. doorman.
3. dentist.
4. none of these.

(09) Do women ever help the carpenter?

1. yes.
2. no.
3. I don't know.

(10) Workers are

1. happy.
2. unhappy.
3. I don't know.

(11) People

1. do not care about what kind of work they do.
2. are proud of the work they do.
3. I'm not sure how they feel.

(12) Which of these may help the carpenter build a house?

1. baker.
2. butcher.
3. brick mason.
4. none of these.

(13) Which of these people may help the carpenter build a house?

1. secretary.
2. senator.
3. shoe salesman.
4. none of these.

(14) A good kind of work is where

1. you work with your hands and may get dirty and sweaty.
2. stay clean and wear a shirt and tie or a dress.
3. you enjoy your work regardless of what it is.
4. I'm not sure.

(15) Is it better to work at a hard job or not to work at all?

1. work at a hard job.
2. not work at all.
3. I don't know.

Why did you answer this question as you did?

(16-24) Circle all the tools or materials below which may be used in building a house.

1. trowel
2. hammer
3. decking
4. roofing nail
5. shovel
6. drill
7. mortar
8. bricks
9. saw

(25-) Name all the workers you can think of which are part of building a house.

APPENDIX D

Gordon Occupational Check List

BY LEONARD V. GORDON

NAME _____ DATE _____

GRADE OR CLASS _____ AGE _____ SEX _____

SCHOOL _____ CITY OR TOWN _____

					TOTAL
B	O	A	T	S	

DIRECTIONS

This Check List was prepared to help you indicate the kinds of work you are interested in doing. It includes a list of activities that are performed in many different kinds of jobs. You are asked to read the list and underline each activity that you would like to do.

You may not be completely familiar with some of the activities. Some of the activities require training that you have not yet had. This need not influence your choice. Consider each activity and then decide whether, after some training, you would like to perform the activity. Underline only those activities that you would like to perform as part of regular, full-time employment.

These are the steps for you to follow:

First step: Read slowly through the list and when you come to an activity that you would like to do on the job, underline it, like this

149. build or repair barrels or kegs

Second step: After you have gone through the entire list, look back over all the activities that you have underlined. Then circle the numbers in front of the activities that you would like to do *the very most,* like this

(149) build or repair barrels or kegs

Third step: Answer the questions on pages 5 and 6.

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4213

First Step: Read the list slowly, and as you come to an activity that you would like to do as part of a full-time job, underline it.

1. sort and deliver mail, messages and packages
2. do routine sorting, numbering and stapling
3. operate a duplicating machine
4. file letters, bills and receipts
5. type routine letters and statements
6. keep records of goods received and stock on hand
7. select and package goods ordered by customers
8. determine the best routes for deliveries

9. grow fruits or nuts commercially
10. grow a variety of vegetables for market
11. grow wheat, oats, barley or rye
12. breed and raise livestock
13. raise chickens for eggs or meat
14. maintain a herd of cattle for milk production
15. train or take care of horses
16. perform a variety of duties on a small farm

17. sort, grade and pack fruits and vegetables
18. cook fruits, vegetables or meats for canning
19. operate can-sealing equipment in a cannery
20. make, wrap and package candies
21. grade food products according to quality
22. operate pasteurizing equipment in a dairy
23. bake bread, cake or pastry in a bakery
24. cut and trim meat in a market

25. make or alter clothing
26. operate a loom or knitting machine
27. dye cloth in a dyeing machine
28. cut fabric or leather according to a pattern
29. sew heavy fabric on a power sewing machine
30. wash or iron clothing in a laundry
31. dry-clean or press suits and other garments
32. repair shoes and other leather goods

33. clean and maintain office or other buildings
34. make beds and clean rooms in a hotel
35. carry baggage and perform services in a hotel
36. register and assign rooms to hotel guests
37. make travel arrangements for people
38. attend to the comfort of airline passengers
39. make all arrangements for large social affairs
40. sort, shelve and check out books in a library

41. operate a telephone switchboard
42. gather information for reports or catalogs
43. read and answer customers' letters
44. receive and make appointments for callers
45. get information from charge account applicants
46. give information or directions to customers
47. type letters from dictation or dictaphone
48. work as a private secretary

49. operate a tractor or other machinery on a farm
50. plant or care for flowers, shrubs or lawns
51. grow trees, plants and flowers in a nursery
52. work as part of a survey crew
53. help explore for mineral or oil deposits
54. help maintain campgrounds in a national forest
55. trap game for meat, skins, or for live sale
56. be a hunting or fishing guide

57. pour molten metal into molds
58. melt ore to extract the metal
59. make objects from sheet copper or brass
60. make parts or objects out of sheet metal
61. make tanks or boilers out of steel plate
62. fuse metal parts together by welding
63. cut, groove and shape metal by machine
64. make metal parts by heating and hammering

65. fire and tend a large commercial furnace
66. maintain proper steam pressure in a boiler
67. make patterns for cutting or casting
68. plate metal objects with nickel, silver or gold
69. plan designs for dies, tools, jigs and fixtures
70. make or repair shop tools or parts
71. move or install heavy industrial machinery
72. load or unload trucks or ship's cargo

73. work behind a soda fountain
74. prepare or cook food in a restaurant
75. work as a helper in a restaurant kitchen
76. wait on table in a restaurant or club
77. be in charge of a dining room or private club
78. seat patrons at a theater or at sporting events
79. give haircuts and shaves
80. give facials, shampoos, or style hair

81. keep accurate records of sales and payments
82. check entries in records and bills for accuracy
83. compute wages of company employees
84. prepare bills and invoices for customers
85. perform computations on a calculating machine
86. operate a key punch or other business machines
87. handle deposits and withdrawals in a bank
88. work as a cashier in a store or restaurant

89. mine for metal ore or coal
90. blast with dynamite or nitroglycerine
91. use instruments to detect and measure radiation
92. do maintenance or construction at great heights
93. cut, load and haul logs in a forest
94. work underwater using diving or SCUBA equipment
95. catch fish for commercial purposes
96. be a member of a ship's crew

97. assemble parts for radio or television sets
98. repair radio and television sets
99. repair refrigerator and air conditioning units
100. repair electric motors and generators
101. fix appliances such as fans, toasters and irons
102. operate and maintain broadcasting equipment
103. make tests on experimental electronics components
104. erect and maintain power or telephone lines

105. straighten automobile fenders and bodies
106. repair and overhaul automobile engines
107. inspect, repair and overhaul aircraft engines
108. maintain a ship's engines, boilers and pumps
109. keep industrial machinery in operating condition
110. assemble motor parts on a subassembly line
111. assemble small mechanical units for airplanes
112. test or evaluate newly designed engines or parts

113. service automobiles in a gasoline station
114. drive a taxicab
115. be a chauffeur for a company or private family
116. operate a public bus or streetcar
117. deliver products over an established route
118. work as a conductor on a railroad
119. operate a passenger elevator
120. pilot an airplane for commercial purposes

121. interview people who apply for jobs
122. try to collect overdue accounts from customers
123. talk with customers about their complaints
124. ask people questions for an opinion poll
125. demonstrate new products in a store
126. take orders from customers over the telephone
127. set up production schedules to meet orders
128. investigate and settle insurance claims

129. design jewelry or other art objects
130. design sets for the theater
131. design new types or styles of wearing apparel
132. create designs for fabrics, wallpaper or linoleum
133. paint or decorate pottery or porcelain
134. prepare advertising copy or displays
135. arrange displays in store windows or showcases
136. plan interiors for homes, hotels, or clubs

137. install or repair plumbing in houses
138. plaster walls and ceilings
139. paint houses or buildings
140. erect framework, joists and partitions in houses
141. put flooring, cabinets and doors in new houses
142. apply or fasten roofing to houses
143. install or connect electrical wiring systems
144. fit and install gas, water and air pipes

145. make brick walls, chimneys or fireplaces
146. finish concrete surfaces on walks or driveways
147. cut and shape sandstone, marble or granite
148. assist in placing steel girders and columns
149. lift or move objects with a crane or hoist
150. operate a bulldozer, power shovel or grader
151. drive a heavy truck or van
152. contract for the building of houses

153. guard property against theft or illegal entry
154. stand guard at a plant or building entrance
155. inspect establishments for cleanliness or safety
156. be in charge of inmates in a jail or prison
157. patrol a neighborhood on foot or in a police car
158. work as a detective or private investigator
159. assist in fighting fires
160. be a member of the armed forces

4215

161. sell goods or services to people
162. sell merchandise or services over the telephone
163. be a salesperson in a department store
164. wait on customers in a variety or drug store
165. sell merchandise or take orders from door to door
166. sell goods, at wholesale, to stores or companies
167. sell automobiles or major household appliances
168. sell insurance, securities or real estate

169. take photographs, develop film and make prints
170. sketch or paint pictures of scenes or people
171. draw cartoons or illustrations
172. make signs or posters
173. write stories, reports or news articles
174. write material for television or radio
175. obtain engagements for entertainers or speakers
176. promote publicity for individuals or organizations

177. convert hides to leather with tanning solution
178. mix pigment, oil and thinner to make paint
179. mold clay to make dishes or pottery
180. prepare rubber compounds for use in making tires
181. mold plastic objects by machine
182. make chemical tests or analyses of materials
183. operate equipment for making glass
184. operate equipment for producing gasoline from oil

185. upholster chairs or couches
186. make, repair or refinish wooden furniture
187. make or repair jewelry or ornaments
188. carve designs on wood or stone
189. grind lenses for binoculars or spectacles
190. clean and repair watches and clocks
191. repair, clean and adjust office machines
192. repair locks and change safe combinations

193. take care of infants or very small children
194. assist nurses by bathing and serving patients
195. do practical nursing in a private home
196. watch and care for mental patients
197. teach handicraft to handicapped persons
198. be a companion to a blind or older person
199. manage a home for a private family
200. care for animals in a veterinary hospital

201. operate or manage a small retail shop or store
202. operate or manage a small business or service
203. manage a motel or small hotel
204. supervise foremen in a plant or factory
205. be in charge of an office or sales staff
206. buy supplies for the use of an organization
207. buy and price merchandise for a retail store
208. decide whether to give people loans or credit

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209. operate a projector in a motion picture theater
210. assist with props, lights or cues in a theater
211. perform on a stage or in a night club
212. perform or appear on radio or television
213. be a professional musician or singer
214. be a professional dancer
215. work as a model
216. be a professional athlete

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217. prepare type or plates for printing
218. engrave lettering or designs in printing plates
219. take readings of pressure, temperature and wind
220. prepare accurate working plans or drawings
221. check dimensions of parts against a blueprint
222. inspect parts or products for flaws or defects
223. assist engineers in design of machine parts
224. take and classify fingerprints

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225. clean and remove deposits from people's teeth
226. assist a dentist in pulling teeth
227. make dental plates, inlays and bridgework
228. perform routine tests in a laboratory
229. test urine and make blood counts
230. take, develop and interpret X-ray pictures
231. give first aid treatment to accident cases
232. assist an undertaker or embalmer

233. supervise the play of young children
234. organize club activities in a community center
235. coach athletic games or teach sports
236. conduct a group in body building exercises
237. teach or instruct a class or group
238. work as an interpreter or translator
239. act as a guide to sightseers or tourists
240. work as a member of a religious organization

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Second Step: Look back over the items you have underlined and circle the numbers in front of the activities which you would like to do the very most.

Third Step: Turn to the next page.

4216

[redacted] omit

1. If you had the ability and could get the proper training, what kind of job would you choose as your life's work? Tell why you would choose this job. What things do you like about it? Are there things about it that you might not like?

(Please turn to page 6.)

4217

2. You have underlined certain job activities in the Check List. Now, are there any *other* jobs or work activities, aside from these, that you would like to do?

   Yes____ No____ If yes, please tell what they are.

3. After leaving high school, do you plan to obtain additional training or education in any of the following? (For each, check the choice that applies.)

Technical, vocational or trade school.	Yes____	No____	Undecided ____
Junior college.	Yes____	No____	Undecided ____
Four-year college or university.	Yes____	No____	Undecided ____

4. Do you have a fairly good idea regarding the type of work you actually will be doing about five years from now? Yes____ No____ Can't say_____

   If you had to make a *best guess* as to the type of work you actually will be doing five years from now, what would it be?

4218

APPENDIX E

_____ HIGH SCHOOL

MEMPHIS CITY SCHOOLS
SPAN - COUNSELOR RECORD
1971 - 72

This form should be marked each time a student has contact with the counseling or SPAN office. See reverse side for instructions.

(4-6) Name _____ (7-8) Grade _____

(9-12) Date of Birth [ ][ ] [ ][ ] (13) Sex [1] [2]
Mo. Yr. M F

(14) [1] Check here if student is in a vocational program.

(15) 0 1 2 3 4 5 6 7 8 9 or more
[X] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
Conference held regarding selection of occupational field.

(16) 0 1 2 3 4 5 6 7 8 9 or more
[X] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
Student selected a field of occupational interest and indicated it positively to counselor.

(17) 0 1 2 3 4 5 6 7 8 9 or more
[X] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
Conference held regarding daily problem or personal matter.

---

(18) [1] Check here if student enrolled in a summer basic skills program.

(19) [1] Check here if student did NOT complete summer basic skills program.

(20) 0 1 2 3 4 5 6 or more
[X] [ ] [ ] [ ] [ ] [ ] [ ]
Student placed in a co-op work program.

(21) [1] Check if student failed to complete a co-op work program. Complete next item.

(22) 0 1 2 3 4 5 6 or more
[ ] [ ] [ ] [ ] [ ] [ ] [ ]
Check number of months (rounded to nearest) he(she) worked in incompleted assignment.

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APPENDIX F

VDI

Vocational Development Inventory

Attitude Scale

JOHN O. CRITES, Ph.D.
THE UNIVERSITY OF IOWA

DIRECTIONS:

There are a number of statements about occupational choice and work listed in this booklet. Occupational choice means the kind of job or work that you think you will probably be doing when you finish all of your schooling.

If you agree or mostly agree with the statement, use your pencil to blacken the circle in the column headed *T* on the separate answer sheet. If you disagree or mostly disagree with the statement, blacken the circle in the column headed *F* on the answer sheet. Be sure your marks are heavy and black. Erase completely any answer you wish to change.

Copyright, 1966, by John O. Crites. All rights reserved. No part of this booklet may be reproduced or copied in any way without permission of the author.

FORM IV: FOR RESEARCH PURPOSES ONLY

Part I

1. Once you choose a job, you can't choose another one.
2. In order to choose a job, you need to know what kind of person you are.
3. I plan to follow the line of work my parents suggest.
4. I guess everybody has to go to work sooner or later, but I don't look forward to it.
5. A person can do any kind of work he wants as long as he tries hard.
6. I'm not going to worry about choosing an occupation until I'm out of school.
7. Your job is important because it determines how much you can earn.
8. Work is worthwhile mainly because it lets you buy the things you want.
9. The greatest appeal of a job to me is the opportunity it provides for getting ahead.
10. I often daydream about what I want to be, but I really haven't chosen a line of work yet.
11. Knowing what you are good at is more important than knowing what you like in choosing an occupation.
12. Your parents probably know better than anybody which occupation you should enter.
13. If I can just help others in my work, I'll be happy.
14. Work is dull and unpleasant.
15. Everyone seems to tell me something different; until now I don't know which kind of work to choose.
16. I don't know how to go about getting into the kind of work I want to do.
17. Why try to decide upon a job when the future is so uncertain.
18. I spend a lot of time wishing I could do work that I know I cannot ever possibly do.
19. I don't know what courses I should take in school.
20. It's probably just as easy to be successful in one occupation as it is in another.
21. By the time you are 15, you should have your mind pretty well made up about the occupation you intend to enter.
22. There are so many things to consider in choosing an occupation, it is hard to make a decision.
23. I seldom think about the job I want to enter.
24. It doesn't matter which job you choose as long as it pays well.

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25. You can't go very far wrong by following your parents' advice about which job to choose.
26. Working is much like going to school.
27. I am having difficulty in preparing myself for the work I want to do.
28. I know very little about the requirements of jobs.
29. The job I choose has to give me plenty of freedom to do what I want.
30. The best thing to do is to try out several jobs, and then choose the one you like best.
31. There is only one occupation for each person.
32. Whether you are interested in a particular kind of work is not as important as whether you can do it.
33. I can't understand how some people can be so set about what they want to do.
34. As long as I can remember I've known what kind of work I want to do.
35. I want to really accomplish something in my work—to make a great discovery or earn lots of money or help a great number of people.
36. You get into an occupation mostly by chance.
37. It's who you know, not what you know, that's important in a job.
38. When it comes to choosing a job, I'll make up my own mind.
39. Choose an occupation which gives you a chance to help others.
40. When I am trying to study, I often find myself daydreaming about what it will be like when I start working.
41. I have little or no idea of what working will be like.
42. Choose an occupation, then plan how to enter it.
43. I really can't find any work that has much appeal to me.
44. Choose a job in which you can someday become famous.
45. If you have some doubts about what you want to do, ask your parents or friends for advice and suggestions.
46. Choose a job which allows you to do what you believe in.
47. The most important part of work is the pleasure which comes from doing it.
48. I keep changing my occupational choice.
49. As far as choosing an occupation is concerned, something will come along sooner or later.
50. Why worry about choosing a job when you don't have anything to say about it anyway.

APPENDIX G

SPAN ITV SCHEDULE

MONTH	FILM	SHOW DATES (WKNO)
Sept/1971	Why Do People Work?	Sept. 13, 15, 17 (10:00 - 10:15)
Sept/1971	Building Trades Occupations	Sept. 27, 29, Oct. 1 (10:00 - 10:15)
Oct/1971	Transportation Occupations	Oct. 18, 20, 22 (10:00 - 10:15)
Nov/1971	Health Occupations	Nov. 22 (2:30), 23 (2:10), 24 (9:15)
Dec/1971	Office Occupations	Dec. 13 (8:30, 2:10, 2:45)
Jan/1972	Communications Occupations	Jan. 20 (8:45, 10:30, 2:30)
Feb/1972	Industrial Occupations	Feb. 28 (1:50, 2:30)
Mar/1972	Distributive Occupations	Mar. 22 (8:45, 10:30, 2:30)
Apr/1972	General Services Occupations	Apr. 4 (8:45, 10:30, 2:30)
May/1972	Food Services Occupations	May 11 (8:45, 10:30, 12:30)

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VT 014 395
TARVER, JAMES D., AND OTHERS
FARM MANPOWER REQUIREMENTS IN GEORGIA, 1960-1970.

GEORGIA UNIV., ATHENS. COLL. OF AGRICULTURE EXPERIMENT STATIONS.
GEORGIA STATE DEPT. OF EDUCATION, ATLANTA
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - APR71 25P.

DESCRIPTORS - *OCCUPATIONAL SURVEYS; *AGRICULTURAL LABORERS; *MANPOWER NEEDS; *EMPLOYMENT OPPORTUNITIES; *FARM LABOR SUPPLY; *LABOR FORCE; STATE SURVEYS; EMPLOYMENT TRENDS
IDENTIFIERS - GEORGIA

ABSTRACT - THE SIZE OF GEORGIA'S AGRICULTURAL LABOR FORCE DURING THE YEARS 1960-1970 WILL BE AFFECTED BY FOUR MAJOR FACTORS: (1) THE NUMBER OF DEATHS OF ADULT FARM MALES, (2) THE NUMBER OF ADULT FARM MALES RETIRING, (3) THE NUMBER OF YOUNG MEN AVAILABLE FOR REPLACEMENT, AND (4) THE NUMBER OF FARM JOB OPPORTUNITIES. TWO DIFFERENT PROJECTIONS OF GEORGIA'S 1960-1970 AGRICULTURAL MANPOWER REQUIREMENTS ARE PROVIDED, ONE BASED UPON THE ASSUMPTION THAT THE AGRICULTURAL MANPOWER REQUIREMENTS WILL REMAIN THE SAME AS IN 1960, AND THE SECOND BASED UPON THE PROBABILITY THAT THE NUMBER OF FARMS WILL DECREASE DURING THE DECADE AT THE SAME RATE AS BETWEEN 1959-1964. THE 159 GEORGIA COUNTIES WERE CLASSIFIED INTO 17 SOCIALLY AND ECONOMICALLY HOMOGENEOUS AREAS AND DATA BASED ON THIS BREAKDOWN WAS USED TO ARRIVE AT THE PROJECTED REPLACEMENT RATIOS. THE GENERAL CONCLUSION IS THAT IF THE RECENT TREND IN THE DECLINE OF GEORGIA AGRICULTURE CONTINUES AND UNLESS NEW DEMANDS ARISE FOR FARM LABOR, PROBABLY HALF, OR MORE, OF THE YOUNG GEORGIA FARM BOYS REACHING MATURITY DURING THE DECADE WILL HAVE TO SEEK EMPLOYMENT OPPORTUNITIES IN AREAS OTHER THAN AGRICULTURE. (AW)

VT 014 395

Farm Manpower Requirements in Georgia, 1960-1970

by

James D. Tarver, Prakash C. Sharma, and E. Evan Brown
Department of Agricultural Economics
College Station, Athens, Georgia

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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UNIVERSITY OF GEORGIA
COLLEGE OF AGRICULTURE EXPERIMENT STATIONS

April 1971 Research Report 100

VT014395

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University of Georgia

College of Agriculture Experiment Stations

Athens, Georgia

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E. BROADUS BROWNE	College Station, Athens

SAM BURGESS, *Editor*

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Farm Manpower Requirements in Georgia, 1960-1970*

by

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INTRODUCTION

The size of Georgia's agricultural labor force during the decade 1960-1970 will be affected by four major factors: First, the number of adult farm males dying; second, the number retiring; third, the number of young men available for replacement; and fourth, the number of farm job opportunities. The fourth factor is a determinant of farm employment rather than "size" of the labor force.

The number of adult males residing on farms in 1960 who will die by 1970 is predictable, as is also that of boys living on farms in 1960 who will reach working age and still be living in 1970. Then with some degree of certainty, and upon certain assumptions, one may calculate the number of farm males who will retire by 1970.

Unlike the first three factors, the number of farm job opportunities available during 1960-1970 is not accurately predictable. Yet changes are sure to occur in business conditions, number of farms, and farm technology which will affect manpower requirements in Georgia.

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This study provides two different projections of the manpower requirements in Georgia's agriculture between 1960 and 1970.

The first projection assumes that the manpower requirements in agriculture will remain stationary, i.e., the number of adult farm males will remain constant through 1960 to 1970.

The second projection assumes that the annual rate of change in the number of farms, by size, from 1959 to 1964 will continue throughout the 1960 to 1970 decade, i.e., the manpower requirements will decrease in proportion to the projected decline in number of farms.

OBJECTIVES

The three major objectives of this study were to determine:

1. The number of adult farm males who will either die or retire between 1960 and 1970.

2. The number of farm boys who will be available as replacements during the decade.

3. The replacement ratios of adult farm males for each state economic area.

MANPOWER REPLACEMENT REQUIREMENTS BASED UPON A STATIONARY AGRICULTURAL LABOR FORCE

Number of Farm Men Entering and Leaving Working Age-Groups, 1960 to 1970

There were 93,425 males 20-64 years of age living on Georgia farms on April 1, 1960. During the 1960-1970 decade, 7,024 of these persons 20-64 years of age on April 1, 1960 will die and 19,684 will reach age 65, making a total loss during the decade of 26,708 males

(Table 1)[2/] This latter number represents the replacement necessary to maintain the adult farm male population 20-64 years of age at the 1960 level. However, 50,492 farm-reared boys will reach age 20 during the decade and will compete for these 26,708 vacancies.

Assuming no change in the number of males 20-64 years of age on Georgia farms from 1960 to 1970, 23,784 young farm men, or 47 percent, must seek employment in non-farm occupations or agriculturally related occupations. Or if all young men reaching age 20 during 1960 to 1970 stay on farms, it needs the creation of 23,784 new farm job opportunities. It is obvious that the vacancies resulting from death and retirement will be sufficient to absorb only 26,708, or 53 percent, of the available young farm men.

The 159 Georgia Counties were classified into 17 socially and economically homogeneous areas (S.E.A.'S). Figure 1 shows the 17 economic areas used in this analysis. Nine of the S.E.A.'S are non-metropolitan areas which contain no city as large as 50,000 inhabitants and eight are metropolitan areas which contain at least one city of 50,000 or more population. In Figure 1 the non-metropolitan areas are identified by numbers and the metropolitan areas are identified by letters. The descriptive names of each of the 17 S.E.A.'S are as follows:

[2/] It was assumed that the working age farm population included all farm males between the ages of 20 to 64. In 1964, nearly 19 percent of the Georgia farm operators were 65 years of age and over. For the purpose of these computations, it assumed that a farm male on reaching age 20 begins active farm work and that a man, upon reaching his sixty-fifth birthday, retires from work. Of course, some males of working age do not engage in any productive farm work and some do not cease gainful employment upon reaching age 65.

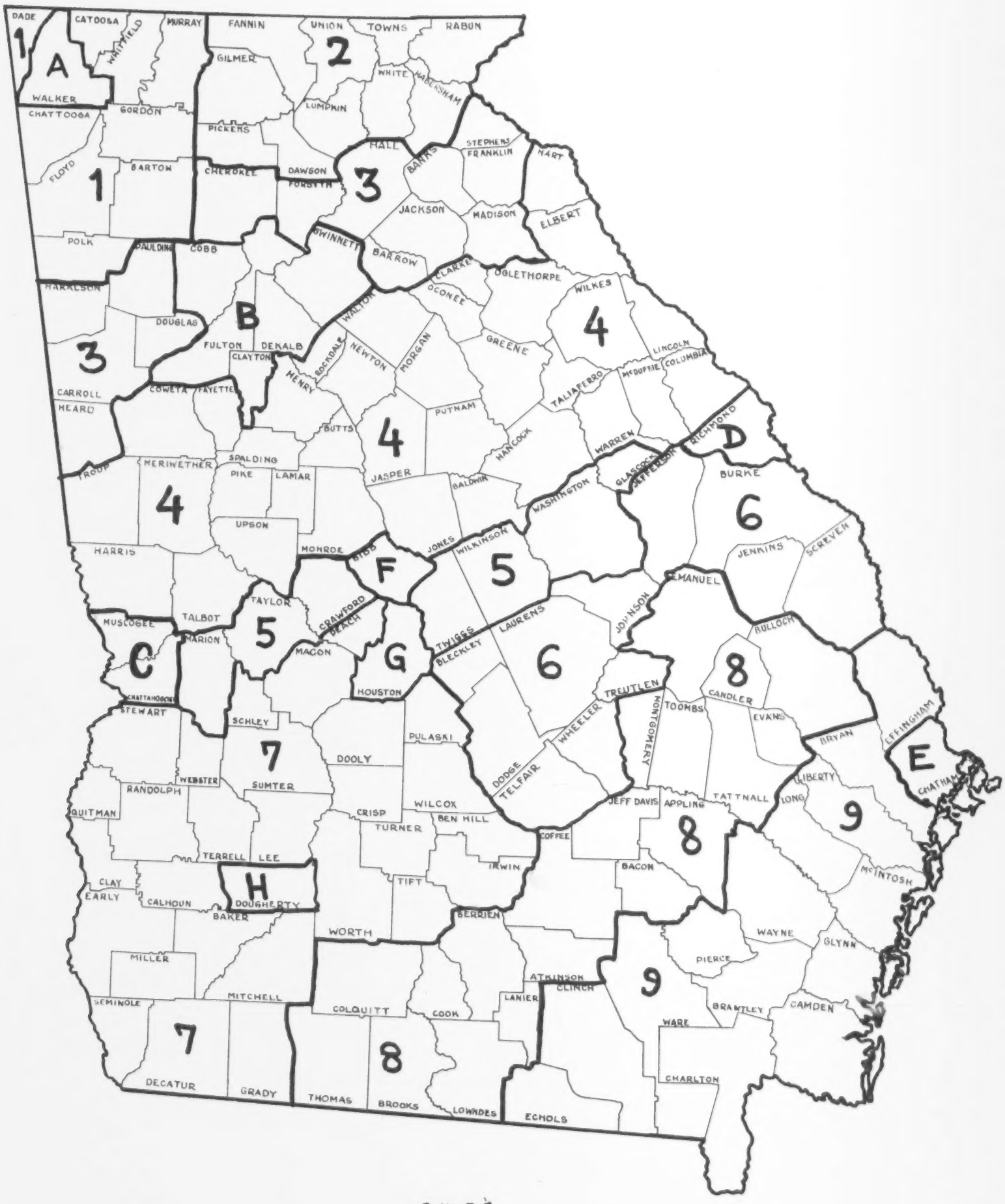

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Figure 1. State Economic Areas of Georgia, 1960

SEA'S	Descriptive Title
1	Northwest Georgia Ridge and Valley Area
2	Georgia Blue Ridge Area
3	Georgia Upper Piedmont Area
4	Georgia Lower Piedmont Area
5	Georgia Sand Hills Area
6	Georgia Upper Coastal Plain Area
7	Georgia Central Coastal Plain Area
8	Tifton Plain Area
9	Georgia Coast Area
A	Chattanooga SMSA[3/] (Part in Georgia)
B	Atlanta SMSA
C	Columbus SMSA (Part in Georgia)
D	Augusta SMSA (Part in Georgia)
E	Savannah SMSA
F	Macon SMSA (Bibb County Part)
G	Macon SMSA (Houston County Part)
H	Albany SMSA

[3/] SMSA refers to Standard Metropolitan Statistical Area.

Table 1 shows the number of male workers required to replace the older men dying and retiring from farming in each of the 17 State Economic Areas in Georgia. The proportion of total death and retirement displacement is approximately the same from one area to another, with death accounting for a total of 26 percent, and retirement for 74 percent, of all probable vacancies.

Replacement requirements are highest in Metropolitan State Economic Areas A (Walker County) and D (Richmond County). Both State Economic Areas will need over 85 percent of all farm-reared males reaching age 20 and surviving to 1970 to maintain a stationary agricultural labor force. Economic Area E (Chatham County) has the third highest requirements, with 66 percent of all potential young farm males being needed to replace workers leaving the labor force. In contrast, only 35 percent of the young men reaching working age in State Economic Area F (Bibb County), 42 percent in Economic Area G (Houston County), and 44 percent in Economic Area C (Chattahoochee and Muscogee Counties) will find opportunities on farms if a stationary labor force continues throughout the 1960 decade. Unless new farm jobs are created, it is obvious that the others have no choice but to pursue other employment opportunities.

Replacement Ratios of Farm Males of Working Ages

A precise measure of manpower requirements is the extent, absolute or relative, to which the population reaching working age exceeds or replaces those who leave working ages during a given period. This

measure is commonly referred to as a "replacement ratio".[4/] A replacement ratio of 100 implies that the number of farm boys entering the labor force equals the total number of farm men who will die and retire from 1960 to 1970. Furthermore, it indicates that all farm-reared males attaining the age of 20 and surviving to 1970 will be needed to replace the adult farm males lost from death and retirement. A replacement ratio of more than 100 indicates a replacement excess or surplus of young men entering the working age to replace the older men who leave the farm labor force. In other words, if the ratio is greater than 100, there is a larger number of persons entering the working age groups than leaving. On the other hand, if the ratio is less than 100, the number of persons leaving the working age groups is larger than the number entering.[5/]

[4/] The male replacement ratio, as defined here, is the ratio of farm boys reaching age 20 during 1960 to 1970 and surviving to the end of the decade to each 100 farm men 20-64 years of age who die or pass the age of retirement at 65 during 1960-70. This ratio is computed from the number of men entering and leaving working age groups: (1) the number of entrants is the number of farm males 10-19 years of age in 1960, who can be expected to reach their twentieth birthday and survive to 1970, and (2) the number of departures is the number of adult farm men 20-64 years of age in 1960 expected to die or reach the retirement age of 65 by 1970.

[5/] In computing the farm male replacement ratios, it was assumed that the 1959-1961 mortality rates would continue throughout 1960-1970. Five-year survival rates for white males, computed from the 1959-1961 Georgia life tables were applied to the farm males 20-54 years of age on April 1, 1960. The 5-year survival rates were calculated from Georgia State Life Tables: 1959-61, Vol. 2, No. 11, U. S. Department of Health, Education and Welfare, Public Health Service, Washington, D. C., June 1966. The replacement ratios shown in this publication are slightly lower than those computed by Bowles, Beale, and Bradshaw. The small differences are the result of different survival rates used in the two reports; see Gladys K. Bowles, Calvin L. Beale, and Benjamin S. Bradshaw, Potential Supply and Replacement of Rural Males of Labor Force Age, 1960-70, U. S. Department of Agriculture, Economic Research Service, Statistical Bulletin No. 378, Washington, D. C., October, 1966, Tables 6, 11, and 13.

Table 2 shows that Georgia had more boys on farms in 1960 than needed subsequently in agriculture during 1960 to 1970. For every 100 men who either die or retire, 189 young men are ready to enter the farm labor force. Thus, to maintain the number of adult farm males at the 1960 level will require only 100 out of every 189 farm-reared youths maturing during 1960-1970. For every 100 youths needed as replacements, 89 may be spared between 1960 and 1970 without reducing the size of the farm male labor force.

Variations in Replacement Ratios Among Economic Areas

Table 2 shows the specific areas of Georgia in which the greatest and least farm manpower surpluses are likely to develop during the 1960-1970 decade. Each state Economic Area will have more than a sufficient number of maturing young men to replace the older men dying and retiring. The greatest excess of young farm men will develop in Economic Area F (Bibb County), whereas the smallest surpluses will occur in Economic Areas A (Walker County) and D (Richmond County). In Atkinson County (Economic Area 8) there will be 397 young men entering for every 100 men departing from the labor force. The next highest replacement ratio (318) occurs in Webster County (Economic Area 7). Moreover, in 12 other counties (Hancock, Rockdale, Twiggs, Jenkins, Dooly, Lee, Peach, Stewart, Worth, Bacon, Brantley and Effingham), there will be at least 250 to 315 young farm men available for each 100 farm job opportunities during 1960-70.

MANPOWER REPLACEMENT REQUIREMENTS BASED UPON PROJECTED CHANGES IN THE NUMBER OF FARMS

The replacement ratios as shown in Table 2 were computed upon the assumption of constant job opportunities in Georgia's agriculture from 1960 to 1970. In some areas of the State, farm employment probably has reached a level consistent with the efficient agricultural operations. As a whole, however, Georgia has not yet attained this level. Furthermore, there are no foreseeable prospects for a state wide increase in the agricultural labor force. Rather, recent trends indicate a continuation of the decline in the number of farms and an increase in the size of farms as agriculture becomes more highly mechanized. Consequently, the anticipated 1970 agriculture manpower requirements in Georgia agriculture will be smaller than for 1960.

The number of Georgia farms declined from 105,735 in 1959 to 83,366 in 1964, a loss of 22,369, or 21 percent.[6/] If this decline continues at the same annual rate between 1964 and 1970 as from 1959-64, Georgia will have nearly 60,000 farms by 1970, which will be nearly 46,000 fewer or 43 percent less than in 1959 (Table 3). All economic areas of the state will have a decline in the number of farms except Economic Area C (Muscogee and Chattahoochee Counties), where an increase of 7 percent in the number of farms is expected from 1960 to 1970.

Two contrasting trends in the size of farms are expected to occur between 1960 and 1970 (Table 4). The number of farms of 1,000 acres

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[6/] U. S. Bureau of the Census, U. S. Census of Agriculture: 1964, Georgia, Vol. I, Part 28, U. S. Government Printing Office, Washington D. C., 1967.

and over is expected to increase somewhat as smaller farms are consolidated into larger units in order to utilize machinery and equipment more efficiently. During the same time, the number of farms under 1,000 acres in size is expected to decrease.

The projected decline of nearly 46,000 farms between 1959 and 1970 with no decline in the average number of persons per farm will shrink the 1970 Georgia farm population to slightly over 224,000 or 45 percent less than in 1960 (Table 5).[7] It is also obvious from this table that only metropolitan Economic Area C (Chattahoochee and Muscogee Counties) will have an expected increase in the farm population between 1960 to 1970 because of an expected increase of 7 percent in the number of farms during the decade (Table 3). All other economic areas of the State will have a decline in the rural farm population. The greatest decline in the rural farm population between 1960 and 1970 is expected in Economic Area G (Houston County) and Economic Area H (Dougherty County), followed by a decline of more than 50 percent in Economic Areas 6 and 7 and metropolitan Economic Areas B (Clayton, Cobb, DeKalb, Fulton, and Gwinett Counties) and F (Bibb County). The least decline in rural farm population will occur in Economic Areas E (Chatham County) and D (Richmond County). Both of these counties will have a decline of 8 and 12 percent, respectively.

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[7] The expected 1970 rural farm population by counties and economic areas was estimated by assuming that the average number of rural farm persons per farm would remain the same as in 1960.

SUMMARY AND CONCLUSIONS

The size of Georgia's agricultural labor force during the decade 1960-1970 will be affected by four major factors: First, the number of adult farm males dying; second, the number retiring; third, the number of young men available for replacement; and fourth, the number of farm job opportunities. Unlike the first three factors, the number of farm job opportunities available during 1960-1970 is not accurately predictable. Yet, changes will surely occur in business conditions, number of farms, and farm technology which will affect manpower requirements in Georgia.

This study provides two different projections of the manpower requirements in Georgia's agriculture from 1960 to 1970. The first projection assumes that the manpower requirements in agriculture will remain stationary, i.e., the number of adult farm males will remain constant through 1960 to 1970. The second projection assumes that the annual rate of change in the number of farms, by size, during 1959 to 1964 will continue throughout the 1960 to 1970 decade, i.e., the manpower requirements will decrease proportionately to the projected decline in the number of farms.

The three major objectives of this study were to determine (1) the number of adult farm males who will either die or retire between 1960 and 1970; (2) the number of farm boys who will be available as replacements during the decade; and (3) the replacement ratios of adult farm males for each state economic area.

The major findings of this study are summarized below:

1. In 1960, 93,425 males 20-64 years of age lived on Georgia farms. Between 1960 and 1970, the losses from death in this age group will exceed 7,000 and nearly 19,700 will retire at age 65, making a total loss during the decade of slightly more than 26,700.

2. Meanwhile, nearly 50,500 farm boys will have attained age 20 by 1970 and will compete for these 26,700 vacancies. Unless new demands arise for farm labor, it will be necessary for 23,800 young farm men to enter other occupations.

3. The farm male replacement ratio for Georgia during the decade 1960-70 is 189. That is, for every 100 farm men who die between the ages of 20 and 64, or reach the age of retirement at 65, there will be 189 young men reaching the age of 20 ready to take their places by 1970.

4. To maintain the number of adult farm males at the 1960 level will require only 100 out of every 189 farm-reared youths maturing during 1960-1970. For every 100 youths needed as replacement, 89 may be spared without reducing the number of farm men 20-64 years of age.

5. Recent trends indicate that the manpower requirements in Georgia agriculture will decline during 1960-1970. If the number of farms continues to decline at the same annual rate between 1964-1970 as from 1959-1964, Georgia may have nearly 60,000 farms by 1970 or about 46,000 fewer than in 1960.

6. If farm population decline is proportional to that expected in

number of farms, there will be over 180,000 fewer farm people in 1970, or 45 percent less, than in 1960.

7. The anticipated 45,825 reduction in the number of farms by 1970 (Table 3) is expected to decrease the rural-farm population from 405,138 in 1960 to 224,050 in 1970, a decline of 45 percent (Table 5).

8. Probably half, or more, of the young Georgia farm boys reaching maturity during the present decade will migrate to towns and cities in search of employment opportunities.

Table 1. Number of Georgia Rural-Farm Males Lost by Death and Retirement and Number of Males Reaching Age 20 Needed for Replacement, 1960-1970.

Economic Area	Number of Rural-Farm Males, 20-64 in 1960	Number of Rural-Farm Males Lost by Death & Retirement 1960-1970	Rural-Farm Males Reaching Age 20 During 1960-70 and Surviving by 1970	
			Number	Percent Required for Replacement
	Col. 1	Col. 2	Col. 3	Col.4 (Col.2/Col.3 x 100)
GEORGIA	93,425	26,708	50,492	53
1	6,199	1,692	2,882	59
2	3,628	1,094	1,681	65
3	9,447	2,843	4,345	65
4	14,766	4,168	8,238	56
5	2,905	903	1,633	55
6	9,155	2,609	5,371	49
7	19,942	5,573	11,539	48
8	18,711	4,915	10,159	48
9	4,176	1,144	2,367	48
A	664	245	279	88
B	2,195	668	1,131	59
C	125	28	63	44
D	149	55	64	86
E	95	31	47	66
F	375	81	230	35
G	519	118	280	42
H	392	91	183	48

Table 2. Replacement Ratios of Rural-Farm Males, 20-64 years of age, Georgia, 1960-1970.

Economic Area and County	Replacement Ratio	Economic Area and County	Replacement Ratio
State	189	Economic Area 4 (cont)	178
Economic Area 1	170	Fayette	197
Bartow	185	Greene	208
Catoosa	104	Hancock	260
Chattooga	167	Harris	138
Dale	89	Hart	152
Floyd	180	Henry	182
Gordon	200	Jasper	198
Murray	176	Jones	130
Polk	214	Lamar	130
Whitfield	155	Lincoln	131
		McDuffie	227
Economic Area 2	154	Meriwether	192
Dawson	151	Monroe	155
Fannin	189	Morgan	220
Gilmer	132	Newton	175
Habersham	183	Oconee	146
Lumpkin	207	Oglethorpe	159
Pickens	121	Pike	200
Rabun	140	Putnam	181
Towns	160	Rockdale	300
Union	112	Spalding	137
White	183	Talbot	246
		Taliaferro	171
Economic Area 3	153	Troup	111
Banks	125	Upson	100
Barrow	125	Walton	182
Carroll	150	Warren	182
Cherokee	153	Wilkes	173
Douglas	133		
Forsyth	182	Economic Area 5	181
Franklin	154	Crawford	118
Hall	162	Glascock	218
Haralson	186	Marion	228
Heard	119	Taylor	150
Jackson	156	Twiggs	270
Madison	176	Washington	178
Paulding	114	Wilkinson	151
Stephens	144		
		Economic Area 6	206
Economic Area 4	178	Bleckly	211
Baldwin	159	Burke	248
Butts	202	Dodge	216
Clarke	147	Jefferson	170
Columbia	179	Jenkins	285
Coweta	163	Johnson	181
Elbert	210	Laurens	168

Table 2. Replacement Ratios of Rural-Farm Males, 20-64 years of age, Georgia, 1960-1970.

Economic Area and County	Replacement Ratio
Economic Area 6 (cont)	206
Screven	221
Telfair	191
Treutlen	166
Wheeler	238
Economic Area 7	203
Baker	229
Ben Hill	201
Calhoun	154
Clay	192
Crisp	155
Decatur	151
Dooly	251
Early	208
Grady	179
Irwin	193
Lee	257
Macon	240
Miller	242
Mitchell	208
Peach	256
Pulaski	203
Quitman	225
Randolph	124
Schley	231
Seminole	216
Stewart	287
Sumter	187
Terrell	209
Tift	225
Turner	189
Webster	318
Wilcox	186
Worth	251
Economic Area 8	207
Appling	231
Atkinson	397
Bacon	313
Berrien	218
Brooks	236
Bullock	203
Candler	181
Coffee	223
Colquitt	219
Cook	196
Economic Area 8 (cont)	207
Emanuel	220
Evans	187
Jeff Davis	211
Lanier	185
Lowndes	193
Montgomery	167
Tattnall	163
Thomas	176
Toombs	187
Economic Area 9	207
Brantley	313
Bryan	114
Camden	100
Charlton	178
Clinch	78
Echols	94
Effingham	252
Glynn	129
Liberty	125
Long	193
McIntosh	133
Pierce	226
Ware	228
Wayne	212
Economic Area A	114
Walker	114
Economic Area B	169
Clayton	222
Cobb	139
DeKalb	203
Fulton	204
Gwinett	150
Economic Area C	225
Chattachoochee	150
Muskogee	255
Economic Area D	116
Richmond	116
Economic Area E	152
Chatham	152
Economic Area F	284
Bibb	284
Economic Area G	237
Houston	237
Economic Area H	201
Dougherty	201

Table 3. Projected Change in Number of Farms by Economic Area, Georgia 1959-1970.

Economic Area	Number of Farms in 1959 Col.1	Projected Number of Farms, 1970 Col.2	Projected Change in Farms, 1959-1970 Number Col.3 (Col.1 - Col.2)	Projected Change in Farms, 1959-1970 Percent Col.4 (Col.3/Col.1) x 100
GEORGIA	105,735*	59,910	-45,824	-43
1	7,242	4,750	-2,492	-34
2	5,286	3,428	-1,858	-35
3	13,018	8,776	-4,242	-33
4	18,899	10,576	-8,323	-44
5	3,222	1,684	-1,538	-48
6	9,318	4,041	-5,277	-57
7	18,852	8,633	-10,219	-54
8	18,345	11,286	-7,059	-38
9	4,679	3,303	-1,376	-31
A	1,014	596	-418	-41
B	3,976	1,742	-2,234	-56
C	166	178	12	7
D	228	200	-28	-12
E	238	218	-20	-8
F	391	174	-217	-55
G	451	164	-287	-64
H	410	161	-249	-61

* The number of farms in 1959 reported for the 159 counties in Georgia added to 105,735 rather than to the published state total of 106,350.

Table 4. Projected Change in the Number of Farms by Size, Georgia, During 1959 to 1970.

Size of Farm	Number of Farms 1959	Expected Number of Farms 1970	Expected Changes in Farms 1959-1970	
			Number	Percent
	Col.1	Col. 2	Col. 3 (Col.2-Col.1)	Col. 4 (Col.3/Col.1) x 100
GEORGIA	105,735**	59,910	-45,825	-43
Less than 10 acres	6,799	3,088	-3,711	-55
10-49	27,717	11,754	-15,963	-58
50-69	11,693	5,763	-5,930	-51
70-99	12,016	6,394	-5,622	-47
100-139	12,885	6,572	-6,313	-49
140-179	7,961	4,833	-3,128	-40
180-219	5,704	3,688	-2,016	-35
220-259	3,741	2,777	-964	-26
260-499	9,810	8,103	-1,707	-17
500-999	4,906	4,399	-507	-10
1000 and over	2,503	2,539	36	1

* The projected number of farms in 1970, by size groups were estimated by assuming the annual rate of change in each economic area, by size, between April 1, 1960 and November 15, 1964 would remain constant during the 10- year period April 1, 1960 to April 1, 1970.

** The number of farms in 1959 reported for the 159 counties in Georgia added to 105,735 rather than to the published state total of 106,350.

Table 5. Expected Change in Rural-Farm Population by Economic Areas, Georgia, 1960-1970.

Economic Area	Rural-Farm Population 1960	Number of Farms 1959	Rural-Farm Population Per Farm 1960	Expected Rural-Farm Population 1970*	Expected Change in Rural-Farm Population, 1960-1970	
					Number	Percent
	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5 (Col. 4 -Col. 1)	Col. 6 (Col. 5/ Col. 1) x 100
GEORGIA	405,138	105,735	3.8	224,050	-181,088	-45
1	24,238	4,242	5.7	15,236	- 9,002	-37
2	12,862	5,286	2.4	8,409	- 4,453	-35
3	37,351	13,018	2.9	25,405	- 11,946	-32
4	65,405	18,899	3.5	36,400	- 29,005	-44
5	12,448	3,222	3.9	6,562	- 5,886	-47
6	41,753	9,318	4.5	17,866	- 23,887	-57
7	94,200	18,442	5.1	42,604	- 51,596	-55
8	79,835	18,755	4.3	49,147	- 30,688	-38
9	17,778	4,679	3.8	13,056	- 4,422	-22
A	2,437	1,014	2.4	1,430	- 1,007	-41
B	9,274	3,976	2.3	4,051	- 5,223	-56
C	543	166	3.3	607	64	12
D	597	228	2.6	524	- 73	-12
E	409	238	1.7	375	- 34	- 8
F	1,672	391	4.3	745	- 927	-55
G	2,408	451	5.3	876	- 1,532	-64
H	1,028	410	4.7	756	- 1,171	-61

*The expected 1970 rural-farm population by economic areas was estimated by assuming that the average number of rural-farm persons per farm would remain the same as in 1960.

REFERENCES

1. Bowles, Gladys K., Calvin L. Beale, and Benjamin S. Bradshaw, Potential Supply and Replacement of Rural Males of Labor Force Age, 1960-70, U. S. Department of Agriculture, Economic Research Service, Statistical Bulletin No. 378, Washington, D. C., October, 1966.

2. Bowles, Gladys K., and Conrad Taeuber, Farm Population --- Rural-Farm Males Entering and Leaving Working Ages, 1940-50 and 1950-60: Replacement Ratios and Rates. Series Census - AMS (P-27) No. 22, Washington, D. C., 1956.

3. Lu, Yao-Chi, James Horne, and Luther Tweeten, Farming Opportunities in Oklahoma and the United States, Bulletin B-683, Oklahoma State University Agricultural Experiment Station, Stillwater, Oklahoma, September, 1970.

4. Sharma, P. C., "Effect of Changes in Land Use, Mechanization and Other Selected Factors Upon Migration from Georgia Farms, 1950-1960" (unpublished Ph. D. dissertation, 1970) University of Georgia, Athens, Georgia.

5. Taeuber, Conrad, Replacement Rates for Rural-Farm Males Aged 25-69 Years, by Counties, 1940-50, U. S. Department of Agriculture, Bureau of Agricultural Economics, Washington, D. C., 1944.

6. Tarver, James D., Oklahoma Farm Manpower Needs, Bulletin B-505, Oklahoma State University Agricultural Experiment Station, Stillwater, Oklahoma, April, 1958.

7. _____, "Farm Manpower Requirements in Pennsylvania, 1960-70," Mimeograph, Demographic Research and Training Center, Social Science Research Institute, University of Georgia, Athens, Georgia.

8. Tarver, James D. et al., Population Trends of Georgia Towns and Cities, Research Report 43, University of Georgia College of Agriculture Experiment Stations, Athens, Georgia, March, 1969.

9. U. S. Bureau of the Census, U. S. Census of Population: 1950 Characteristics of Population, Vol. II, Part II, Georgia, Table 49, and 49a, U. S. Government Printing Office, Washington, D. C., 1952.

10. _____, U. S. Census of Population: 1960. General Social and Economic Characteristics PC (1) - 12C. Georgia, Table 92, U. S. Government Printing Office, Washington, D. C., 1961.

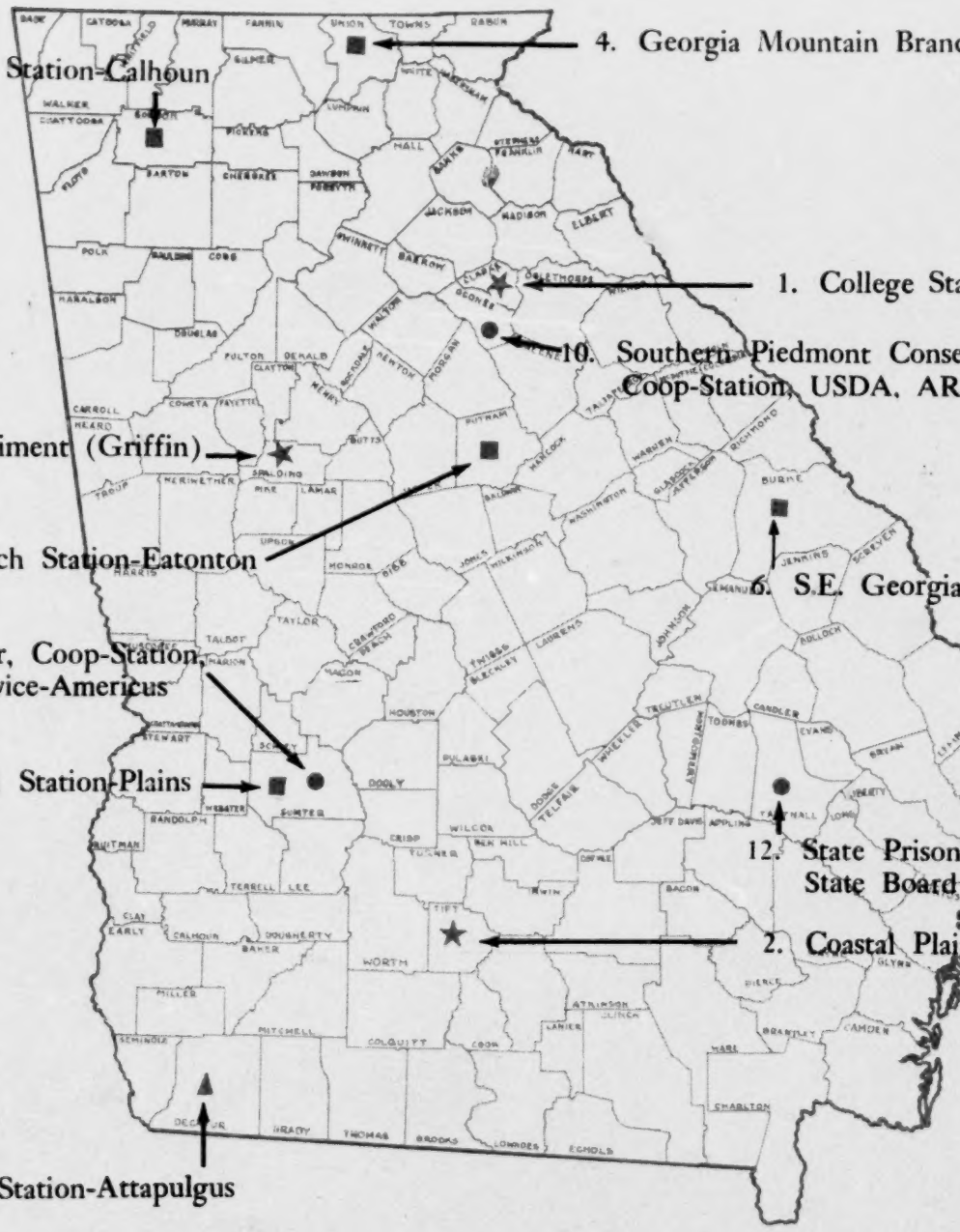
11. _____, U. S. Census of Agriculture: 1959, Georgia, Vol. I, Part 28, U. S. Government Printing Office, Washington, D. C., 1961.

12. _____, U. S. Census of Agriculture: 1964, Georgia, Vol. I, Part 28, U. S. Government Printing Office, Washington, D. C., 1967.

13. U. S. Department of Health, Education, and Welfare, Public Health Service, Georgia State Life Table 5: 1959-61, Vol. 2, No. 11, Washington, D. C., June, 1966.

Agricultural Research Outreach

The state of Georgia is a study in geological and climatological contrasts; from the cool ruggedness of North Georgia to the flat sandy Coastal Plain to the semitropical South Georgia. As each area of the state presents different problems for those farmers in the various regions, research of a regional nature has been required; and in keeping with this need, the statewide outlook and outreach of the University of Georgia College of Agriculture Experiment Stations has been conceived and operated in such a fashion as to place agricultural research information of a regional nature only a short driving distance away. The Experiment Stations and their locations are indicated below:



VT 014 420
NORTHUMBERLAND LONG-RANGE PLANNING PROJECT.

CENTER FOR EDUCATIONAL FIELD SERVICES,
DURHAM, N.H.
NORTHUMBERLAND SCHOOL DISTRICT, N.H.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - FEB71 115P.

DESCRIPTORS - EDUCATIONAL PLANNING;
*EDUCATIONAL FACILITIES; *FACILITY
REQUIREMENTS; BUILDING PLANS; SPACE
UTILIZATION; *SCHOOL PLANNING; *ELEMENTARY
GRADES; *SECONDARY GRADES; DESIGN NEEDS;
VOCATIONAL EDUCATION; EDUCATIONAL RESEARCH;
EDUCATIONAL FINANCE; CONSTRUCTION COSTS

ABSTRACT - A STUDY OF SCHOOLS IN THE
NORTHUMBERLAND (NEW HAMPSHIRE) SCHOOL
DISTRICT REVEALED THAT SERIOUS SPACE
SHORTAGES EXIST IN THE ELEMENTARY GRADES,
WITH ALL THE KINDERGARTEN STUDENTS AND OVER
10 PERCENT OF THE REMAINING ELEMENTARY
POPULATION HOUSED IN RENTED SPACES. THE HIGH
SCHOOL AT THE PRESENT TIME IS NOT SERIOUSLY
OVERCROWDED, ALTHOUGH THE SIZE OF MANY OF THE
AVAILABLE CLASSROOMS RESTRICTS PROGRAM
DEVELOPMENT AND NECESSITATES COMPLICATED
SCHEDULING PROCEDURES. THE STUDY OF THE HIGH
SCHOOL SITUATION ALSO INCLUDES A SEPARATE
STUDY ON THE INDUSTRIAL ARTS VOCATIONAL
PROGRAM WHICH WAS PART OF A LARGER VOCATIONAL
STUDY COVERING SEVERAL OTHER DISTRICTS. MINOR
CHANGES AND RENOVATIONS WERE SUGGESTED FOR
THE PRESENT ELEMENTARY SCHOOL WHICH IS TO
HOUSE GRADES 4-6, AND THREE SPACE STUDIES
WERE DEVELOPED FOR A NEW SCHOOL FOR GRADES 1-
3. THREE ALTERNATE PLANS WERE ALSO DEVELOPED
FOR THE HIGH SCHOOL (GRADES 7-12) WHICH
RECOMMEND ALTERNATIONS TO EXISTING STRUCTURES
AND ADDITION OF A NEW ADMINISTRATION AND
GUIDANCE SUITE. DETAILED DESCRIPTIONS OF THE
PLANS, INCLUDING COSTS, SPACE REQUIREMENTS,
AND FLOOR PLANS ARE INCLUDED. (SB)

VT 014 420

NORTHUMBERLAND

LONG-RANGE PLANNING PROJECT

VT014420

CEFS

CENTER FOR EDUCATIONAL FIELD SERVICES

4260

NORTHUMBERLAND

LONG-RANGE PLANNING PROJECT

To: School Board
Northumberland School District
Roland Young, Chairman

Alan E. Rich, Superintendent

February, 1971

CENTER FOR EDUCATIONAL FIELD SERVICES

University of New Hampshire

New Hampshire School Boards Association

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LONG-RANGE PLANNING PROJECT

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ACKNOWLEDGEMENT

Those who have participated in this study acknowledge the cooperation and assistance of many people. Our special appreciation is extended to the following:

Northumberland School Board	Superintendent	Stark School Board
Roland Young	Alan E. Rich	Mrs. Emma Miles
Stanley Emery		Mr. Philip Stearns
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APPENDIX

INTRODUCTION

INTRODUCTION

The Northumberland School Board has contracted with the Center for Educational Field Services to conduct a study of the schools of the district, for the purpose of analyzing the present situation, identifying existing problems, and proposing alternative solutions as a basis for discussion and planning.

The analysis of the present situation in the elementary grades indicated serious space shortages. All the kindergarten pupils and over 10% of the remaining elementary population are presently housed in rented spaces. The consultants therefore recommend that a new school be constructed for grades K-3, and that grades 4-6 continue to attend at the Groveton Elementary School, where certain reassignments of spaces and the reduction in enrollment will relieve overcrowding and result in program improvement.

The study of the situation at the high school, attended by grades 7-12, includes a separate section on the industrial arts-vocational program. This part of the report was carried out as part of a larger vocational study covering several other districts under the auspices of the State Department of Education's Research Coordinating Unit. Extensive field work was undertaken, with interviews and questionnaires submitted to sectors of the school population, recent graduates, faculty and staff, and representative employers in the region. General background was provided through library research. As a result of the secondary study three alternative plans were developed which offer solutions to immediate problems and provide a foundation for long-range planning for the educational needs of the District.

The high school at the present time is not seriously overcrowded, although the small size of many of the available classrooms restricts program development and necessitates complicated scheduling procedures. The secondary population is projected to increase considerably in the next five years, so that it will be imperative by 1976-77 to provide additional classrooms to accommodate the increased enrollment.

The alternative responses presented in this report take into account the limitations imposed by the small size of the present high school site and by the borrowing capacity of the District. Two of the plans therefore propose two-story additions to the existing building, and the third alternative suggests a separate industrial arts building on land to be acquired adjacent to the high school.

All plans propose an administrative organization of the district as follows: K-3, 4-6, 7-12. In considering both immediate and future space needs, the consultants also planned sufficient facilities to accommodate not only students from Stark (grades 4-6 if desired, and all pupils in grades 7-12), but also students from neighboring communities in Vermont. A brief discussion of the AREA Plan and the New England Higher Education Compact are to be found below in the section on "Financial Status".

PRESENT STATUS OF SCHOOL BUILDINGS

PRESENT STATUS OF SCHOOL BUILDINGS

Elementary Schools

Groveton Elementary School

Grades: 1-6

Date of Construction: 1908, 4-room addition in 1959.

Site: Less than 1 acre.

Classrooms: 8 of 850 sq. ft., 4 of 900 sq. ft., music room and library 800 sq. ft. each.

Capacity: 300 (or somewhat higher with a class size of 30 in the larger rooms).

Present Enrollment: 329

The original building contains 8 classrooms on the first and second floors. Although not quite conforming to the latest minimum standards, these rooms are adequate for 25 pupils. The new one-story addition has 4 classrooms of over 900 sq. ft. The library and music room on the third floor of the old building should be relocated under any circumstances chiefly for reasons of fire safety (there has already been a fire in the attic), and also because the library should be more easily accessible. The dining area in the basement can serve only 85 pupils at one time, which makes it difficult to schedule a lunch program for over 300 students.

This school houses 329 of the total enrollment of 366 in grades 1-6, with the other 37 accommodated at the Methodist Church. Kindergarten is located at St. Francis Hall (38 pupils in two rooms). Even with this arrangement, Groveton Elementary School is overcrowded, and the limited site offers little opportunity for expansion.

Stark Elementary School

Grades: 1-6

Date of Construction: 1900

Site: Approximately 2 acres.

Classrooms: 2 (556 and 496 sq. ft. respectively)

Capacity: 34

Present Enrollment: 68

This rural school houses six grades in two classrooms which are small by any criteria, especially when compared to the 900 sq. ft. called for by state standards. The present enrollment of 68 is exactly double the capacity of the building (calculated at 30 sq. ft. per student). As a result, teachers are faced with overcrowded classrooms in addition to the problems presented by multiple grades.

The school district is to be commended for installing modern kitchen, heating, and plumbing facilities. The sewage system needs to be improved to meet state sanitation requirements.

Groveton High School

Grades: 7-12

Date of Construction: 1916, addition in 1959.

Site: 3/4 acre

Classrooms: 12 academic (1 of 475, 2 of 525, 3 of 660, 2 of 704, 2 of 800, 2 of 822 sq. ft.); 3 Business Education 2 of 660, 1 of 236 sq. ft.), 1 Home Economics (660 sq. ft.), 1 Woodworking Shop (2100 sq. ft.), 1 Drafting (600 sq. ft.), 1 Art (994 sq. ft.), 1 Physical Education (74' x 96'), 1 Music (624 sq. ft.), 1 Library (300) + Study (1800 sq. ft.). No Cafeteria.

Capacity: 350

Present Enrollment: 346

Most of the academic classrooms in the high school are small by today's standards (including some very small rooms), resulting in the need for complex scheduling arrangements. Any new rooms to be added should be 800 sq. ft. or more to provide adequate spaces for the desired program. The language lab at 660 sq. ft. is not only small but also in a poor location in an isolated area of the basement. The science rooms, although well equipped and the largest in the building, do not meet modern space requirements. Business education has two medium-sized rooms and one extremely small space (236 sq. ft. for Business Machines). Home Economics should have twice as much room as it has at present (1200 - 1400 sq. ft.).

The shop area, including drafting, of 2700 sq. ft. is quite satisfactory for general woodworking. It is suggested that this space (the original gym-auditorium) could be better used for other purposes, and that other

industrial arts offerings should be provided in addition to woodworking. The art area of approximately 1000 sq. ft. should be 800 sq. ft. larger to meet state standards (providing at least 60 sq. ft. per pupil), but there seems to be no other space available suitable to this type of offering. The music room in the new wing (624 sq. ft.) is far too small for a high school band. The gymnasium is well maintained, but does not quite meet the requirements for senior high school basketball of 50' x 84'. At 44' x 82.4' the basketball court approaches regulation size, and the gymnasium as a whole appears larger than it is. The library has a good collection of books, but at 300 sq. ft. is very small. This defect could be corrected by removing the partition between the library and study hall and thus obtaining a total space of 2100 sq. ft., which would meet state requirements. There is no cafeteria, and it is recommended that this facility be provided.

The spaces for guidance, nurse's office, and administration are very limited and should be expanded. The building as a whole is in excellent condition, showing the value of judicious improvements over a period of time and of a good year-round maintenance program.

The emphasis throughout this description of the existing building has been on the small size of the available classrooms. This does not mean that the spaces per se are not functional; however, the limited areas make satisfactory scheduling a difficult task for the administration. It would be desirable to have several larger classrooms at the present time. By 1976-77, when the enrollment projections show an increase of almost 100 students in grades 7-12, more classroom space will become a necessity.

FINANCIAL STATUS

FINANCIAL STATUS

Borrowing Capacity

At the present time Northumberland has an assessed valuation as equalized (based on 1968 figures) of $19,002,783. With a borrowing capacity calculated at 7% of this figure (Municipal Finance Act RSA33), or $1,330,195, and an outstanding debt of $102,000, Northumberland would have a net borrowing capacity of $1,228,195. As the debt is paid off, the borrowing capacity would increase by approximately $15,000 per year for each of the next three years.

The recent installation of a Public Service facility in Northumberland will increase the assessed valuation as equalized by a sizeable amount. When the Tax Commission figures are released in the summer of 1971, Northumberland's borrowing capacity will in all probability be at least $50,000 higher than on the basis of the 1968 figures. The estimated costs of the alternative plans developed for Northumberland have been held below the limits of the district's borrowing capacity.

The AREA Plan (RSA 195)

If the AREA Plan is adopted in March, 1971, by both the Northumberland and Stark School Districts, the state will provide 40% instead of 30% building aid to the receiving district. This would make a difference of $5,000 per year on a $1,000,000 debt with a 20-payment plan. Also, according to RSA 195-A:10, incentive aid could be available up to the legal limits of $45 per elementary pupil, $60 for junior high, and $75 for senior high students.

NEW ENGLAND HIGHER EDUCATION COMPACT (RSA 200-A)

Under this law the Dresden School District has set a precedent by joining Hanover, N. H., and Norwich, Vt., in one district across state lines. The following quotation from the law is applicable to the Northumberland District and the neighboring communities in Vermont as well: "It is the purpose of this compact to increase the educational opportunities within the states of New Hampshire and Vermont by encouraging the formation of interstate school districts which will each be a natural social and economic region with adequate financial resources and a number of pupils sufficient to permit efficient use of school facilities within the interstate district and to provide improved instruction." Basically the interstate school district thus formed would be similar to a Cooperative School District within the state, including eligibility for special state financial aid.

PROGRAM AND SPACE NEEDS

STATE BOARD OF EDUCATION

MINIMUM STANDARDS AND RECOMMENDATIONS FOR ELEMENTARY SCHOOLS

PROPOSED STANDARDS FOR SECONDARY SCHOOLS

The recommendations of the consultants are based on the minimum standards for elementary schools set by the State Board of Education. A brief summary of these standards as they apply to the Northumberland District is included in this report. Standards covering secondary schools (grades 7-12) have recently been adopted by the State Board, and the consultants' recommendations were designed to meet these space requirements.

Elementary Schools

School Sites

Minimum Standard (requirement)	Each elementary school shall include a minimum of five acres plus an additional acre of land for each 100 children of projected maximum enrollment for new construction.
Recommendations:	Each elementary school site should include a minimum of ten acres plus an additional acre of land for each 100 children of projected maximum enrollment for new construction.

Classroom Size

Kindergarten	50 sq. ft. per pupil
Regular classrooms 1-6	30 sq. ft. per pupil (or 900 sq. ft., whichever is greater)
Regular classrooms 7-8	30 sq. ft. per pupil (no less than 800 sq. ft.)

Resource Centers or Libraries

K-6:

Less than 150 pupils	Space may be provided in regular classrooms.
150-300 pupils	1,000 sq. ft. or one regular classroom.
300-500 pupils	2,000 sq. ft. or two regular classrooms.
Over 500 pupils	Minimum area is 10 percent of enrollment times 40 sq. ft. per pupil.

7-8: Minimum area is 10 percent of enrollment times 40 sq. ft. per pupil-minimum area approved is 1,800 sq. ft.

Secondary Schools

A REGULAR CLASSROOM, WITH FIXED PARTITIONS, SHALL CONTAIN A MINIMUM OF 800 SQ. FT., INCLUDING STORAGE, OR 30 SQ. FT. PER STUDENT, WHICHEVER IS GREATER.

Subject	Square Feet Per Student	
	Acceptable	Recommended
Regular classrooms (English, Math, Language)	30	35
Social Studies	35	40
Language Lab.	35	40
Science		
Combination Lab-Classroom	60	70
Single-Purpose-Room Lab.	50	60
Art	50	60
Music		
Instrumental	35	40
Choral	10	15
Practice Rooms and Storage as Required		

Subject	Square Feet per Student	
	Acceptable	Recommended
Industrial Arts		
Junior High	75	100
Senior High	100	125
Home Economics		
Food or Clothing Laboratory	50	60
All-Purpose Department	60	70
Library-Resource Center:	10% of enrollment at 40 sq. ft. per student. Minimum area approved: 1800 sq. ft.	
Vocational Offerings		
Business and Office Occupations		
Bookkeeping, Stenography	40	50
Typing, Business Machines	35	40
Office Practice Lab-Classroom	50	60
Distributive Occupations		
Combination Lab-Classroom	60	70
Occupational Home Economics		
Food Service, Lab-Dining Area and Storage	110	120
Child Care Services	110	120
Trade and Industrial Education		
Auto Mechanics	175	200
Machine Shop	150	175
Building Construction	125	150
Drafting	60	80
Electricity-Electronics	60	80
Printing-Graphic Arts	100	125
Welding	60	80

It is recommended that classrooms and related laboratory facilities be located adjacent to each other or in close proximity, also that additional storage space be provided.

RELATIONSHIP OF CURRICULUM NEEDS AND SPACE REQUIREMENTS

GROVETON ELEMENTARY AND SECONDARY SCHOOLS

The basic assumption of the space needs survey is that space projections should be not only related to projected school populations, but also that the kind of space and priority of needs should be determined by the nature of the desired educational program. Usually educational desires are quite different from present practice. Thus it is normal that the desired program represent a need for curriculum change as well as change in facilities.

It is assumed by this investigator that effective and lasting change is best brought about by the commitment and involvement of those persons most directly responsible for the implementation and support of changes.

The data for this study were obtained from the following sources:

(1) Discussions with Superintendent Alan Rich

(2) Discussions with faculty of Groveton Elementary and High Schools.

(3) Discussions with Principals Dimick, Flight, and Monahan.

(4) Discussion with Mr. John Ney, former Guidance Counselor, Groveton High School

(5) A vocational education questionnaire sent to employers (see Appendix A)

(6) The 1968 Arthur D. Little, Inc. report, New England: An Economic Analysis (see below for a review of the section pertaining to Northumberland)

(7) A curriculum questionnaire to secondary school faculty (see Appendix B)

(8) A curriculum questionnaire to high school students (see Appendix C)

(9) The Report of the Visiting Committee of the New England Association of Colleges and Secondary Schools, "Evaluation of Groveton High School, Groveton, N. H. ", April 8, 9, 10, 1969.

(10) The Groveton Plan for Meeting the Minimum Standards and Recommendations for New Hampshire Elementary Public Schools.

Elementary School Curriculum and Space Needs

The present elementary school is for the most part inadequate in size, in quality of facilities, in availability and flexibility of facilities. The district is presently renting space outside the school building to accommodate kindergarten and overflow elementary pupils. The two rooms at St. Francis Hall are adequate in size and do not hamper the educational process seriously, although it would be advantageous to have staff and children nearer to other primary classes. The two rooms at the Methodist Church used by elementary pupils are small. The students must move back and forth between the school building and the rented classrooms at lunch time, and it is difficult to assure adequate supervision at all times while they are in transit. Since most of the children housed at the Methodist Church classrooms have special needs, good supervision is critically necessary. In addition, the remoteness of these rooms also serves to give these children a feeling of physical segregation from the rest of the student body.

Despite present crowded conditions and the small size of many rooms, the elementary school is fortunate in having excellent staff and administrative leadership. The staff desires to move toward more activity-centered classrooms, greater general program flexibility, and more attention to the special needs of certain groups of children. These aspirations for the improvement of education are to a large extent frustrated by the existing space arrangements.

The old section of the present building lacks the flexibility necessary for program development, particularly at the primary level. Major use of the third floor would require extensive renovation, and the site is too limited to

justify these major changes, or to serve as an adequate play area. These existing problems are compounded by two additional factors: first, the school population will increase in the next two years, partly through a higher projected enrollment from Groveton and partly through the possibility of a greater number of tuition students at the elementary level. Second, the district will have to meet new State minimum standards by 1972.

The basic needs for the Groveton elementary program may be summarized as follows:

- Large rooms for activity-centered programs at the primary level
- At least 2 rooms for special education classes
- A library-resource area
- A teacher work area
- Additional regular classrooms, to decrease present class size, eliminate the necessity of renting rooms outside the district, and accommodate future school populations
- Improved playground facilities
- Additional cafeteria serving space or the development of new facilities at the high school

The space needs at the elementary level will also be increased if Stark, upon implementation of the AREA Plan with Northumberland, decides to send some of its upper elementary grades to the Groveton School. This would seem a desirable step to relieve the congestion at the Stark School (6 grades in two rooms). Not only does this school fail to meet State standards as to classroom space, but there are also serious deficiencies in library facilities, physical education, and art programs. The tuitioning of grades 4-6 or 5-6 to the Groveton School would provide a solution for some of Stark's problems.

High School Curriculum and Space Needs

Groveton High School is faced with considerable space deficiencies with regard to its present program. The necessary future program development and the projected enrollment increase of approximately 25% over the next eight years in grades 7-12 will increase the space requirements in a number of areas.

Currently space shortages exist in science, shop, physical education, locker area, art, library, home economics, and music. Since there is no cafeteria at the high school, the students must use the limited facilities at the elementary school. There is also some need for secretarial office space, a nurse's room, additional guidance space (one room presently used for classes), shortage space for audio-visual materials, and space for use by the janitor. These considerations alone justify building renovation and expansion.

Program changes and adjustment in several areas were found to be desirable as a result of surveys taken by the CEFS team. Some of the data leading to recommendations for program development are reviewed below. Proposals for the vocational program will be dealt with in a later section of this report.

Recommendations from Faculty and Administration

Many excellent suggestions were made in this area by both faculty and administrators. Those that were supported by the CEFS team and given highest priority are as follows:

(1) Expansion of the vocational-industrial arts program (discussed in a later section of this report).

(2) Expanded library-resource center and full-time librarian.

(3) Expanded curriculum for the non-college-bound student.

(4) Reduction in number of study halls and increased options for student use of unscheduled time.

(5) Increased offerings in art.

(6) Consolidation of classrooms by subject area.

Recommendations from Students

189 high school students responded on the 36-item curriculum questionnaire. The students gave the greatest support to the following curriculum changes:

(1) Voluntary study halls.

(2) Use of resource centers during free periods.

(3) Increased size and availability of library.

(4) More courses involving work and study in the community.

(5) More courses combining several subject areas to study common problems.

1969 Recommendations of the New England Association of Colleges and Secondary Schools

The following are some of the suggestions made by the 1969 NEACSS Visiting Committee:

(1) Developmental and remedial specialists.

(2) More art offerings.

(3) Expanded course offerings for average and below-average students.

(4) Bigger library and resource area with a librarian.

(5) Additional offerings in English and Business Education.

The preceding samples of data indicate agreement on many areas of needed program change. The CEFS consultants have summarized their recommendations as follows, taking into account all available sources of information.

General Program Needs

(Exclusive of vocational and industrial arts program)

(1) Increase in size and availability of library-resource center. This will require a well equipped space of at least 2,000 sq. ft. and full-time supervision.

(2) Increased space and course offerings in art.

(3) Improved music facility.

(4) Increased locker space in the physical education area.

(5) Development of cafeteria serving space at the high school.

(6) Increased flexibility in scheduling to allow a greater variety of courses and better uses of non-class time.

(7) Increased and revised course offerings to provide richer and more appropriate programs for non-college-bound students.

Program and Space Needs by Subject Area for Grades 7-12

The following summaries of space needs are based on maximum projections projected over the next ten years. Other factors entering into these recommendations are proposed additions and deletions of courses, changes in number of periods per week for some courses, recommended changes in class size and necessary improvement in the quality of certain facilities.

English

The Castaldi calculations (see Appendix D for an explanation), show a need for approximately 4-1/2 teacher stations in this subject, requiring the addition of 1 or 2 rooms. There is also a need for a large group instruction area whose use could be shared by music, dramatics, or any other large group of students.

Mathematics

The minimum number of teacher stations needed is projected at 3. A small room to be used as a mathematics resource area would also be desirable.

Science

Castaldi calculations based on projected enrollments indicate a need for about 3-1/2 teaching stations. The science department presently uses 3 rooms. Ideally one classroom-laboratory should be added. The minimum recommendation is for consolidation of 3 science rooms and the part-time use of a fourth room.

Social Studies

This program requires a total of slightly over 3 teacher stations, or one additional classroom. Access should also be provided to a room suitable for showing films or using other audio-visual material.

Language

According to projected enrollments this course will need about 1-1/2 teaching stations. The most desirable arrangement would be the addition of one classroom to serve as a language lab. In order to provide 25 pupils with 35 to 40 sq. ft. of space each, this room should have approximately 900 sq. ft.

Physical Education

The present program is undergoing desirable improvements. The needs in this area are a divider (or folding partition) in the gym to provide 2 teacher stations. Another urgent need is increased locker and storage space.

Art

The art program continues to grow, and it is projected that a significantly higher percentage of students will be enrolling in this course. There is a definite need to expand the art area in order to provide more flexibility and variety of program, more storage space, and more student work space.

Music

The present facility is inadequate in almost every respect. The consultants strongly recommend an improved and enlarged music area for instrumental and vocal classes with storage space for instruments and sheet music, as well as small practice rooms for student use.

Dramatics

There is little space available except on the stage for student rehearsals and other activities connected with dramatics. The demands of the physical education program generally do not allow use of the stage by the dramatics coach. The consultants suggest that a platform be included in the music suite which can be used on a shared basis by both the dramatics and the music instructors.

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A detailed discussion of program and space needs for Industrial Arts, Home Economics, and Business Education will be found in the next section, "Vocational Education Study".

VOCATIONAL EDUCATION STUDY

VOCATIONAL EDUCATION STUDY

The general survey of needs in the Northumberland School District revealed a strong concern for improvement of the occupational program at Groveton High School. The Research Coordinating Unit, Vocational Technical Division, New Hampshire State Department of Education, made funds available on a matching basis so that CEFS could undertake a more thorough study of curriculum needs in this area.

In order to carry out this type of in-depth study, the CEFS research team utilized the Critical Path Method, a systems-based approach which includes the following steps: statement of the problem, identification of areas of investigation, summary and analysis of the findings, and development of alternative responses appropriate to a solution of the problem as originally stated.

The problem was to evolve in detail an occupational program and define the necessary space requirements for the Northumberland District and the surrounding communities. The assessment of the area's needs was to be based on an evaluation of the economic situation of the district and the surrounding region, both present and projected, and the results of questionnaires sent to employers, faculty, former students, and current students. Additional data were collected from discussions and interviews, as well as the other sources listed on pages 14 and 15 above.

The results of this investigative effort may be summarized as follows:

- The region has good growth potential, with manufacturing leading in the employment field, although construction, finance, insurance

and real estate will increase at a faster rate than manufacturing. Agriculture will continue to decline.

- Employer interest and response in the immediate area were minimal, although many employers in other parts of the region are already cooperating with their respective high schools.
- Students, both recent graduates and current students, showed great interest in a wider variety of vocational offerings, especially those that involved community participation.
- School staff identified desirable changes in the vocational program, with more variety and flexibility seen as the most important feature.

After thorough consideration of the different approaches to career education, the consultants concluded that the most satisfactory response to Northumberland's needs in this field was the cluster concept. This is a rather new direction in occupational education which involves thinking and planning in terms of career clusters rather than a collection of narrowly defined training programs for specific jobs. An important complement to this approach is cooperative education, whereby the student receives supervised job training during the school day at a business or industry in the area, thus making the community and its many resources an integral part of the educational process.

The "cluster" concept has been implemented or recommended in several states, notably Oregon, Wyoming, and Georgia, with each state assigning priority to clusters best suited to its economy, both present and projected. Using some of these programs as guidelines, the consultants are proposing the

following clusters as a desirable framework for Northumberland's industrial arts program:

*(1) General Metals - Metal Processing

Machines (Small Engines, Automotive)
Sheet Metal
Drafting

*(2) Woodworking - Building Trades

Drafting
Furniture
Construction
Wiring
Plumbing

*(3) Home Economics

Foods and Nutrition
Quantity Cooking
Family and Home
Clothing and Textiles
Drafting

*(4) Business Education

Secretarial and Clerical
Accounting
Office Machines
Office Practice

(5) Agriculture

Production and Related Occupations
Drafting
Conservation
Forestry
Horticulture
Equipment Repair

* These clusters represent offerings to be included in planning for the immediate future.

(6) Distributive Services

Merchandising
Sales
Retailing
Financing

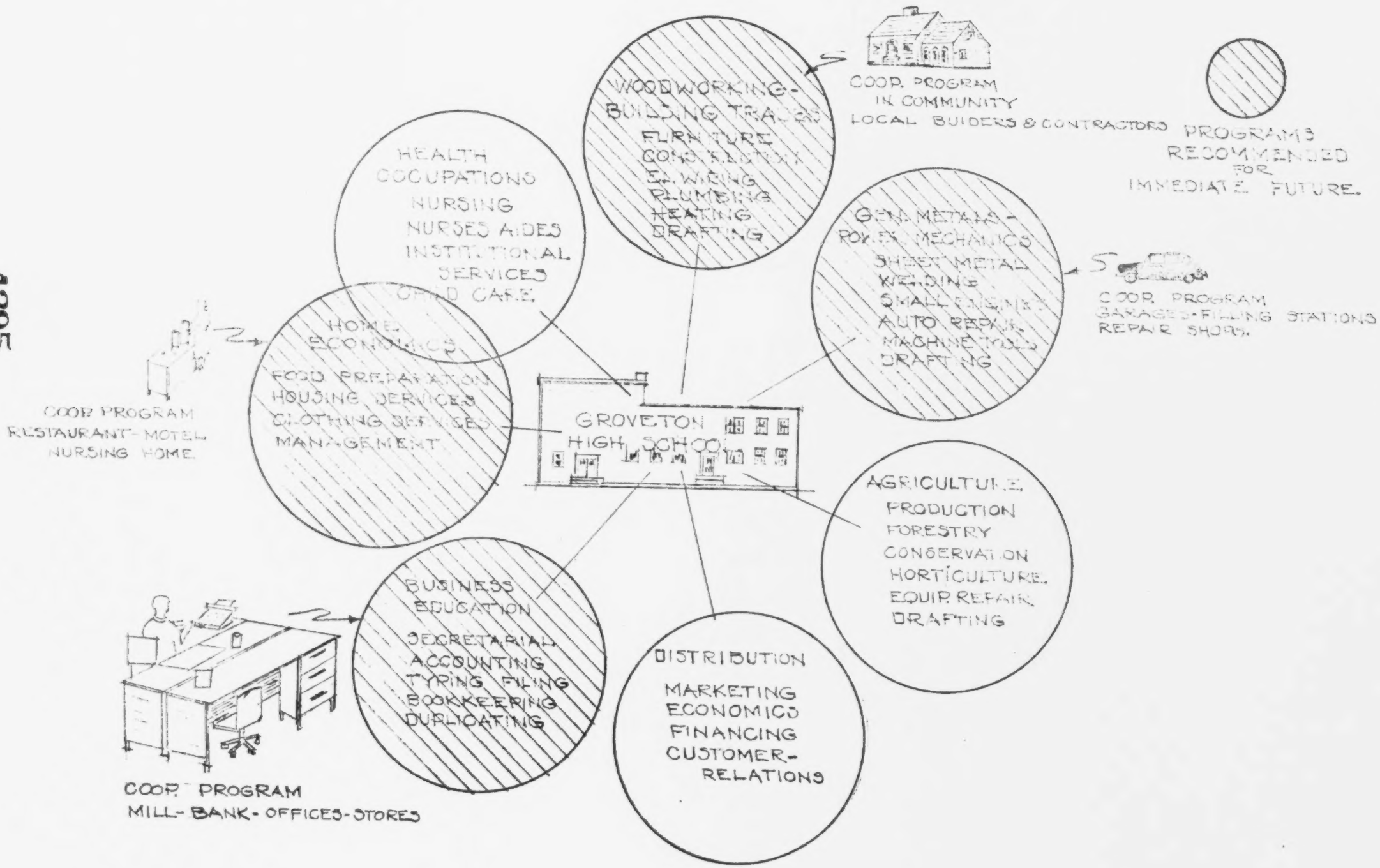
(7) Health Occupations

Nursing
Home-Health Care
Institutional Services
Child Care

These seven clusters represent an optimum program for a district such as Northumberland. Taking into consideration the district's limits as to available space and funds, the consultants are assigning priority to the first four (General Metals -Power Mechanics, Woodworking-Building Trades, Home Economics, Business Education) for the immediate future. It would be desirable if in later years Northumberland could round out its industrial arts program to include the other three categories, thus providing comprehensive career education to the students of the district. The chart on the following page gives a graphic illustration of the total concept.

The specific recommendations for meeting space and curriculum requirements for the first four clusters are to be found in the alternative plans presented in the last section of this report.

POSSIBLE PRACTICAL ARTS PROGRAMS STUDIED FOR GROVETON HIGH SCHOOL.



ARTHUR D. LITTLE REPORT - A Review

A brief summary of the findings of the Arthur D. Little Report[1] is included here as background for the vocational study carried out by the CEFS committee. In this report the Northumberland area is considered as part of the three northern counties of Coos, Grafton, and Carroll.

Agriculture has been declining steadily, as in the rest of New Hampshire, since 1964. Both the number of farms and the acreage cropped have been decreasing. Dairy farming, the chief activity in this sector of the economy, is moving off the old hill farms into the Connecticut Valley and other areas better suited to this type of agriculture.

The population shows sporadic periods of growth, but the overall rate of increase is projected to be approximately half of that for New England (14% by 1980 as opposed to 26%). The absolute gain of 14,400 people is equivalent in percentage to the anticipated employment increase in the region (.5% for both factors).

The major employment categories in 1966 were manufacturing (53%), trade (19%), services (12%). Today manufacturing still provides over half the jobs in the area, but is not advancing as rapidly as the other categories, such as construction and finance, insurance and real estate, which are projected to show a marked increase by 1980.

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1) New England: An Economic Analysis. A Report Prepared for the New England Regional Commission by Arthur D. Little, Inc. Cambridge, Mass., 1968.

The dominant manufacturing industries in 1966 were lumber, furniture, and paper products (47%), textiles, apparel, and leather goods (17.7%), and chemicals, rubber, and plastics (15.1%). Electrical machinery accounted for 3.5% and other machinery for 7.8%. Metals-transportation equipment, unlike the rest of New Hampshire, provided almost no employment. It is expected that by 1980 both lumber and textiles will experience a decline in employment (18% and 30% respectively). At the same time the chemical industry will grow at a slow but steady rate, while employment in machinery, including electrical, and printing and publishing will show marked increases. No growth is projected for metals-transportation equipment.

The trends briefly outlined here are of significance for the industrial arts-vocational program of the Northumberland School District because they indicate the probable future economic pattern, especially in the employment field, in the area. This pattern must be taken into consideration in the development of any future occupational education program that is to be meaningful and useful to the high school students of the district.

"MAN, EDUCATION, AND MANPOWER"[1)]

Some pertinent material from Dr. Grant Venn's book Man, Education, and Manpower is included here as general background for the vocational study. According to this author, the most significant element of the new technology is the process of constant change. For instance, in the last few years the increasing use of automated machinery and computers has resulted in a massive displacement of jobs and personnel, not only among the older group of workers, but especially among recent high school graduates whose education had prepared them rather adequately for subsequent schooling and not at all adequately for competition in today's job market. Dr. Venn predicts that by 1975 workers in professional and technical fields will outnumber skilled craftsmen, and the proportion of unskilled workers will fall below 5%. The 1969 Manpower Report of the President gives the following figures for the projected change in occupational groups from 1965 to 1975:

Occupational Group	% Increase or Decrease 1965-75
Professional and Technical	45.2
Managers and Proprietors	23.3
Clerical Workers	32.5
Service Workers	34.4
Sales Workers	25.0
Skilled Workers	23.1
Semi-Skilled Workers	10.5
Laborers	- 2.4
Farm Workers	- 21.6

1) Venn, Grant. Man, Education, and Manpower. The American Association of School Administrators. Washington, D.C., 1970.

These numbers indicate that there will be serious shortages in the number of skilled technological workers within a few years, while American youth is being trained for jobs which may no longer exist by the time the student graduates from high school. As a result the average youth will change occupations five times within the next forty years. Dr. Venn states that the "existing and projected lack of meaningful employment opportunities for large numbers of youth growing into adulthood is perhaps the major domestic problem in America today."

Educators must take an entirely new look at the function of vocational education today. The high degree of specialization found in many vocational and technical curricula seems to bear little relation to conditions in the outside world. More time should be devoted to the development of broader technical understanding, of communication and computational abilities, combined with an appreciation of civic, cultural, and leisure activities. The specific job training should be left to the future employer. Apart from job skills and general education, a potential employee should receive some training to develop a sense of responsibility and cooperation, the ability to take instruction, and adaptability to different working conditions.

Some concrete suggestions as to the school's role in this process are made by Dr. Venn. Schools should operate throughout the calendar year with added time devoted primarily to career planning, occupational preparation, and student participation in the adult roles of society. This would not mean an expansion of program, but rather an increase in the educational options. The attendant increased use of staff, facilities, and school equipment

may very well result in a certain amount of reorganization within the school. Schools should abandon the categorization of curriculum into college preparatory, vocational, and general, and should move towards a program aimed at career preparation and development.

A prerequisite for the achievement of these goals is closer cooperation with employers and other social agencies of the community. All students should be given the opportunity of some type of work experience during their high school days. This experience could be acquired either during the regular school year or in a period when the student could be employed full time. Upon evaluation by the school, the work experience would receive educational credit.

The following three chief categories of work experience have been identified:

(1) Exploratory - learning about a career.

(2) Skill training to learn attitudes, primarily of responsibility and cooperation.

(3) Acquisition of specific job skills in an occupational field.

The work experience should be adjusted to the student's ability and achievement level, and flexibility must be an integral component of the program. This type of cooperative education should be assigned a prominent place as a major learning method in occupational preparation.

The in-school counseling and training activities should be supplemented by the assistance of other concerned groups. A permanent advisory council for cooperative education, consisting of business leaders and other

interested members of the community, should be established to help the school board in formulating policies and standards. The State Employment Agency should be asked to establish early contact with students in full co-operation with school guidance personnel. Schools must help the student make the transition from the classroom to the world of work by increased vocational and career counseling and by providing placement and follow-up services.

DATA FROM FACULTY, ADMINISTRATION, STUDENTS, EMPLOYERS

Expansion in the industrial arts-vocational program was given top priority by faculty and administration at Groveton High School. In most cases an improved practical arts program was seen as a major response to the needs of the non-college-bound student. There was particular concern for ways to meet the needs of potential dropouts. There was a strong feeling that the AREA vocational schools available to Groveton would not solve the local problems. Only a very small number of students would be willing to leave their local school, and potential dropouts and "reluctant learners" were not provided for in most AREA vocational programs.

The student questionnaire (Appendix C) revealed strong student support for the following:

- Free time use of shop facilities including resource area.
- More courses involving participation in the community.
- Greater role for students in curriculum determination.
- More courses which prepare a student directly for a job.
- More work-study opportunities.
- More courses dealing with students' needs and interests.
- More interdisciplinary, problem-oriented courses.

Employers who had been previously contacted regarding the vocational program - particularly the Groveton Paper Co. - have shown a willingness to develop a variety of cooperative work-study arrangements with the school. The expanding program in Business Education is an excellent example of this cooperation.

The letters and questionnaires sent to 32 local employers (see Appendix A) elicited almost no response. This may be interpreted to mean that there is little community support for expanded work-study opportunities. However, it is also apparent that most of the businesses polled are small, non-manufacturing enterprises which hire very few employees.

An investigation of businesses outside the Groveton area generally indicated that local vocational programs in each of the surrounding areas had already made heavy demands on employers. Most Colebrook businesses, for example, have been approached to assist in local school programs. Whitefield and Lancaster have been utilized by the White Mountains Regional High School program. Berlin industries are also involved with local high school and vocational school programs.

RECOMMENDATIONS

General Observations

These recommendations are based on the data assembled by the consultants plus an analysis of studies of business projections and employment trends in northern New Hampshire, as well as an analysis of the present high school program.

The high school staff should undertake to develop new educational offerings for non-college-bound students in all areas of the curriculum. Consideration should be given to more independent use of resource areas; more course offerings dealing with current personal and social issues of concern to youth; redesigning of skill courses to meet the needs of the average citizen rather than to provide diluted versions of traditional college curricula; implementation of interdisciplinary studies; use of "mini-courses"; and development of courses with more direct participation in community activities.

Occupational Program

The present one-teacher shop program includes a shop area and drafting classroom, which were found to be well equipped and adequate for the present scope of the program. The home economics program is seriously hampered by inadequate space. The same applies, though to a lesser degree, to the Business Education Department. Taking into consideration the nature of the community and the needs of the students, the consultants recommend a more comprehensive occupational program for Groveton High School.

A good occupational program for Groveton should include the following offerings:

(1) Woodworking and Building Trades

(2) General Metals and Power Mechanics

(3) Home Economics

(4) Business

The specific course content will be developed according to the educational specifications determined by the school board and administration. The following observations are presented in order to assist those concerned in developing guidelines for the specifics of the program.

Since occupational experience will be made available to grades 7-12, the range of experiences will vary from an exploratory program for the junior high school students to the different vocational skills offered under the direction of instructors qualified in several areas.

The objectives of an occupational program should include the following:

- To stimulate an active interest in the occupational life of the community, in methods and problems of production and exchange.
- To develop an appreciation of good design and workmanship, and a feeling of pride in work well done.
- To promote good attitudes towards health and safety.
- To develop an understanding of graphics and the ability to express ideas through this technique.
- To develop in each student a measure of skill in the handling of tools and machines.

In the last two years of high school, 11th and 12th grade students will acquire some advanced and specialized training needed in the world of work. The consultants chose not to make a definite dividing line between an activity in "industrial arts" as compared to a skill which might be placed under the heading of "vocational education". Upon the completion of an occupational program in woodworking and building trades, a student would be able to be employed by a contractor or carpenter in the building of a house, applying his first-hand knowledge of such skills as framing a building, laying shingles, installing sash, wiring, etc. Similarly a boy who has completed the general metals-power mechanics program should be competent in the handling of metal and power equipment.

Material is now available at the State Department of Education outlining a wage-earning program for small rural high schools with enrollments comparable to Groveton's. This program is structured for grades 11 and 12 with job experience of at least 3 hours a day, for which the student is to be paid a minimum wage. Employment opportunities are made available to students who have completed the program.

Local limitations as to population, industry, and transportation may dictate certain modifications of the total program. With a small number of trainees the program would encompass only two or three areas, which would be determined according to students' interests and needs, and the job stations available in the community. Instruction would be carried on in small-group seminars or even on a single-student basis. The trainee would specialize in one area during the year; if not successful in one particular area, the trainee could transfer to another within that period.

It would be difficult for Groveton High School to offer a full vocational program as defined by the State Board of Education, even if it became a cooperative or AREA school. This is due in part to its small size and in greater measure to the existence of recognized vocational centers within commuting distance from Groveton. These centers are in a better position to provide "unit shop training" for those students desiring to specialize in such fields as machine shop, auto mechanics, etc. Groveton High School could meet the needs of the majority of its students by providing the four clusters of occupational offerings mentioned above: woodworking and building trades, general metals and power mechanics, home economics, and business.

This type of program would offer several advantages to a high school like Groveton. The wide range of academic abilities often found in a small high school will be taken into consideration. The skills and knowledge common to several occupations will be grouped so that eligible students can gain experience in a number of fields according to their interests. Most small businesses demand a person capable of doing several jobs: if the school offers a varied training background, local businesses will probably be more cooperative in offering job experiences to the trainees. To offer this program, a school does not need to provide expensive facilities. An additional advantage is the program's built-in flexibility, designed to meet each student's needs on an individual basis.

Woodworking and Building Trades

The area for this offering should be approximately 2,800-3,000 square feet. It is recommended that the present shop equipment be supplemented by adding special tools and equipment used in the building trades, as for example a cement mixer, ladders and staging, skill saws, house jacks, pipe cutters, pipe-threading dies, electrical equipment for house wiring, etc. The student should also become familiar with the use of small tools required for carpentry.

The program will begin with exploratory experiences at the junior high level (cutting and shaping of wood, use of power saws). The student will progress in grades 9-12 to acquiring the basic vocational skills required in the building trades, which he will learn to apply on the job in his last two years through a cooperative program. The scope of the program will be determined by the competence of the instructor, the equipment provided, and the availability of work experiences such as worthwhile community projects that can be carried out as school projects. Students should also work as carpenters' assistants or helpers in the actual building of a home or making a major renovation. Close cooperation between the school and the contractor is essential to avoid exploitation of the student and to assure the integration of the work experience with the school's program. An ideal project would be the actual planning and construction of a house by students under the supervision of the instructor and other specialists (carpenters, electricians, etc.).

General Metals and Power Mechanics

A shop classroom of approximately 3,000 sq. ft. is recommended for this program. The exploratory experiences in the 7th and 8th grades would include cutting, forming, bending, drilling metals, simple welding (gas and electric), and the principles of the internal combustion engine. In the upper grades the student will learn the care and repair of the small engine such as those used in the snowblower, lawnmower, outboard, or skimobile. From there the student will progress to the larger engines as in automobiles and trucks. Limitations of space and equipment will restrict the number of cars and machines that can be serviced in the school shop at any one time. Thus every opportunity should be provided for cooperative work experiences in local garages, auto repair shops, and welding shops.

Graphics and Drafting

A separate space has been recommended for this offering. Although not considered as a grouping or "cluster" of courses, graphics and drafting are a part of several other clusters of the occupational program at Groveton High School, and use of this area should be made available to all students. The graphics and drafting room should have an area of approximately 1,200 sq. ft. Student drafting tables, drawing equipment, and a machine for reproducing drawings should be provided. Multiple uses are possible for this room, as in home economics for home planning, in mathematics or

science for independent work. In some schools students use such a room in their free time to gain experience in graphics or architectural drawing. The answers to the student questionnaires indicated a definite desire for free access to all shop areas during school time. Making these facilities available on an unrestricted basis to the whole student body could be an effective means of integrating the occupational program with the student's total learning experience.

Home Economics

The single room of approximately 600 sq. ft. presently occupied by the Home Economics Department is entirely inadequate even for a one-teacher program. The department formerly had the use of a second, adjacent room, which has been assigned to other subjects due to lack of space in the building.

The minimum area recommended for home economics in a school of this size is 1,200-1,300 sq. ft. This area should contain 4 kitchen units, a sewing area, and a resource center for independent study. Flexibility in physical arrangement of spaces should be provided through light, easily moveable tables and chairs. It is especially important to have both flexibility and the opportunity for independent work at Groveton High School because of the number of students involved. If all pupils in 6 grades (7-12) are to receive instruction in home economics, the single instructor will be faced with insurmountable scheduling problems unless independent work is available within the department.

The home economics program will be organized along the same lines as suggested for the other programs - exploratory for grades 7 and 8, developmental for grades 9-10, and opportunity for specialization, independent study and cooperative work experience for grades 11-12.

Business Education

A good high school business education program should be planned for the benefit of all students. Although the major emphasis should be on training students in the skills required in the world of work, offerings in this cluster should also be made available to those not planning a career in this field. The general objectives of the program may be summarized as follows:

(1) To develop educational competence at the employment level for qualified and interested students.

(2) To meet manpower needs by developing the maximum potential of students planning an office career, thereby serving both the individual and the community.

(3) To enrich all students' education by offering learning opportunities to any student interested in business and economic practices.

The Business Education Department at Groveton High School presently utilizes 2 small classrooms and a very small adjoining room crowded with office machines. This program needs an area ranging from 35-40 sq. ft. per student in typing and bookkeeping to 50-60 sq. ft. in the office practice laboratory. The total area of 1,700 sq. ft. now available for this department should be increased to at least 2,875 sq. ft. to provide a minimum of 1,000 sq. ft. each for an office practice laboratory and bookkeeping-stenography, and 875 sq. ft. for typing and business machines. The consultants recommend that 3 classrooms be provided for business education, arranged and remodeled in such a way as to facilitate teacher supervision.

The existing program at Groveton High School is excellent. It is to be especially commended because it is the only industrial arts offering at the school to carry on a cooperative program with local industry and business. Every effort should be made to continue and expand this valuable experience in spite of the limited opportunities available in the community.

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As the occupational education program is developed in the Northumberland School District, consideration should be given to the possibility of initiating new clusters beyond the four which are recommended for the immediate future. As a starting point, a cluster in

Distributive Services could begin with one-semester offerings within the Home Economics or Business Education Departments of courses such as Finance Marketing, Merchandising Techniques, Distribution of Goods, Merchandising Economics, Business Law, Business Principles and Management, Business Behavior and Psychology, etc. Similarly the General Metals and Building Trades clusters could serve as a nucleus for the development of a cluster in Agriculture. The cluster concept should be envisaged as providing a maximum of flexibility and expandability to keep pace with the changing needs of the community and the individual students.

ALTERNATIVE PLANS

Alternative responses have been developed for the present and future needs of the Northumberland School District on two levels: for the lower elementary grades (K-3) and for the secondary grades (7-12).

Three schemes are presented for a new elementary building for grades K-3, showing various possible space arrangements for a school accommodating 250-275 pupils. Grades 4-6 would continue to attend the present Groveton Elementary School, where there would be ample space for the projected maximum enrollment of 182 pupils from Groveton in 1973-1974.

The three different plans for the secondary school are designed both to relieve existing pressure areas in the school and to make provision for a good practical arts program along the lines developed in the industrial arts-vocational study above.

The plans are described in detail in this section, accompanied by pertinent space studies.

SPACE STUDIES

The building diagrams accompanying each scheme or alternative plan are in no way intended to be architectural studies or sketches. These space studies were drawn up to help the Northumberland School Board visualize the changes proposed as a result of this survey. The diagrams show the amount of space needed for a particular activity or program, and the relationship of this space to other areas in the building. They are drawn to appropriate scale and thus provide a basis for computing the budget estimate according to the area required (in square feet). A unit cost of $30.00 per square foot was used for new construction and of $25.00 per square foot for additions to the high school building. These estimates are based on actual costs of other projects recently completed. They include costs of construction, equipment, engineering, and, where applicable, of site development.

ALTERNATIVE PLANS

Elementary

New Elementary School (K-3)

The consultants recommend that a new school be built for grades K-3 on a site of at least 8 acres. Some factors to be considered in choosing and developing the site are the slope of the ground (level land is preferable), accessibility to public utilities, and the cost of meeting the new state requirements with regard to water pollution, sewage systems, etc.

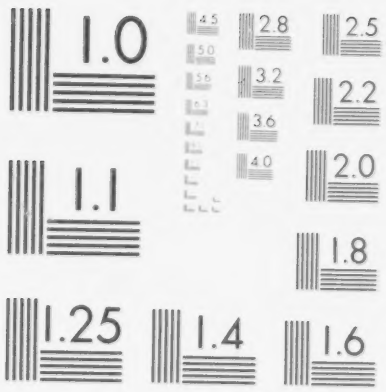
Three different plans have been developed, each providing approximately 24,000 sq. ft. of space for 250 pupils (Schemes 1 and 2) or 275 pupils (Scheme 3). All plans include an activity room, a library-resource center, a health suite, and a principal's office. The plans differ in the arrangement of spaces according to the open concept, permanent partitioning of classrooms, or a combination of these two concepts.

Scheme 1 represents the open concept school, with the learning areas separated by moveable furniture partitions. The resource center forms the core around which the 11 learning areas are grouped. Space is provided for music at one end of the 4,000-sq. ft. activity room, which also serves as the cafeteria. The kitchen and activity/lunchroom are located in a separate wing of the building and thus are readily accessible to the public without the necessity for opening the rest of the school. This facility could prove to be of great service if it is made available for community use.

63 OF 133

ED

063 517



MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS-1963-A

Scheme 2 also provides 11 classrooms. These are self-contained and have permanent partitions. The activity room and kitchen are similarly located as in Scheme 1 and offer the same advantage of easy access. The kindergarten room is planned for the same section of the building, so that these pupils can be separated to a certain extent from the other students.

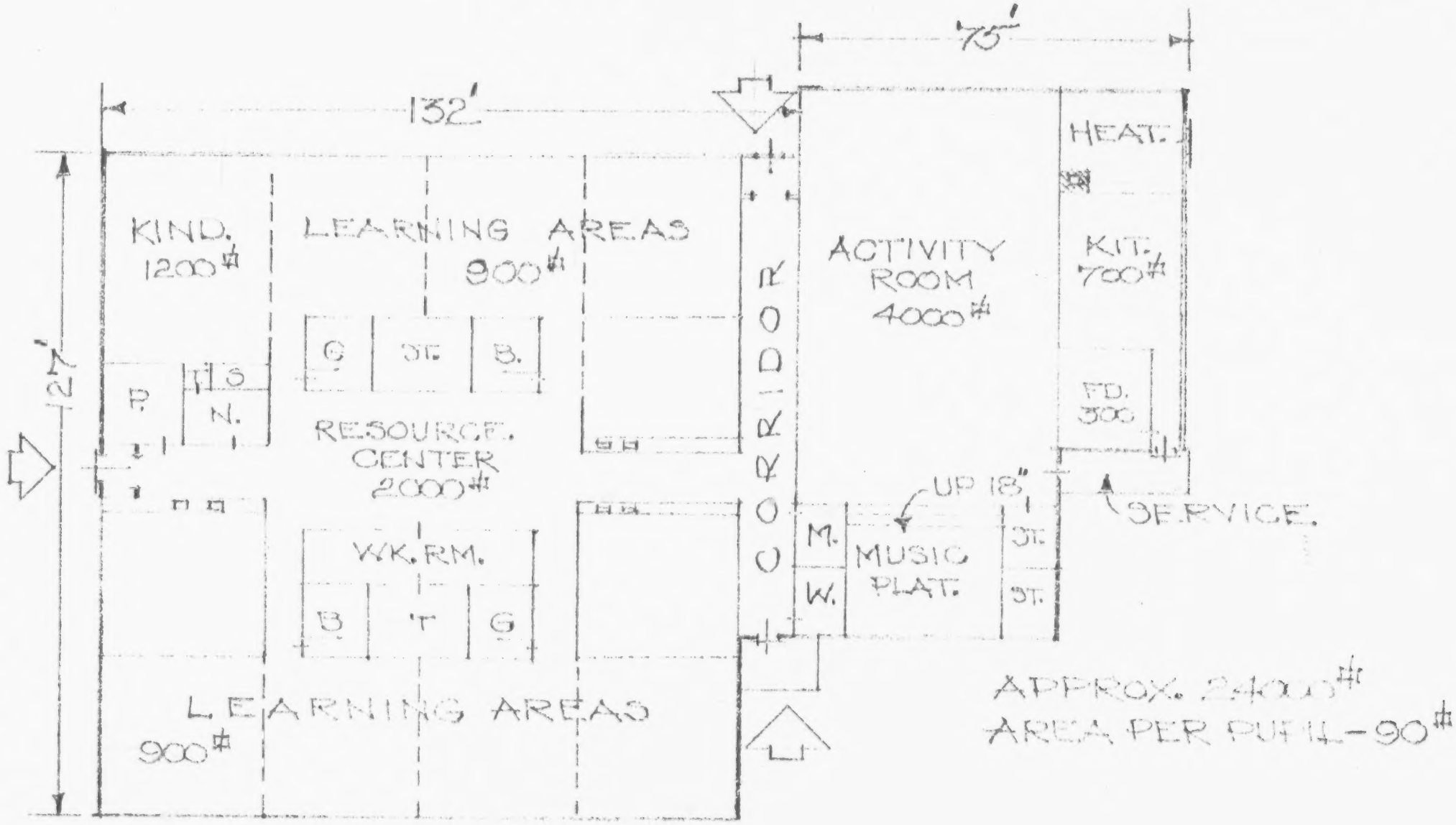
Scheme 3 makes possible a combination of the open concept and the self-contained classroom. The kindergarten is separate and self-contained. The other 10 rooms are divided into two sections, one of 4 and one of 6 rooms. Either section could be developed with open or semi-open learning areas or as enclosed classrooms. The kitchen and cafeteria are again separately accessible as in the first two schemes.

Since the total area provided is approximately the same for each of the proposed buildings (24,000 sq. ft.), the cost differential will be small. The total estimated cost, at today's prices, is approximately $375,000. The decision as to which type of school will be built will depend on the educational philosophy which the school board wishes to implement for the lower elementary grades (open concept, self-contained classrooms, or a combination of both).

The space studies on the following pages illustrate the three schemes developed for the new elementary school.

63

SCHEME 1.

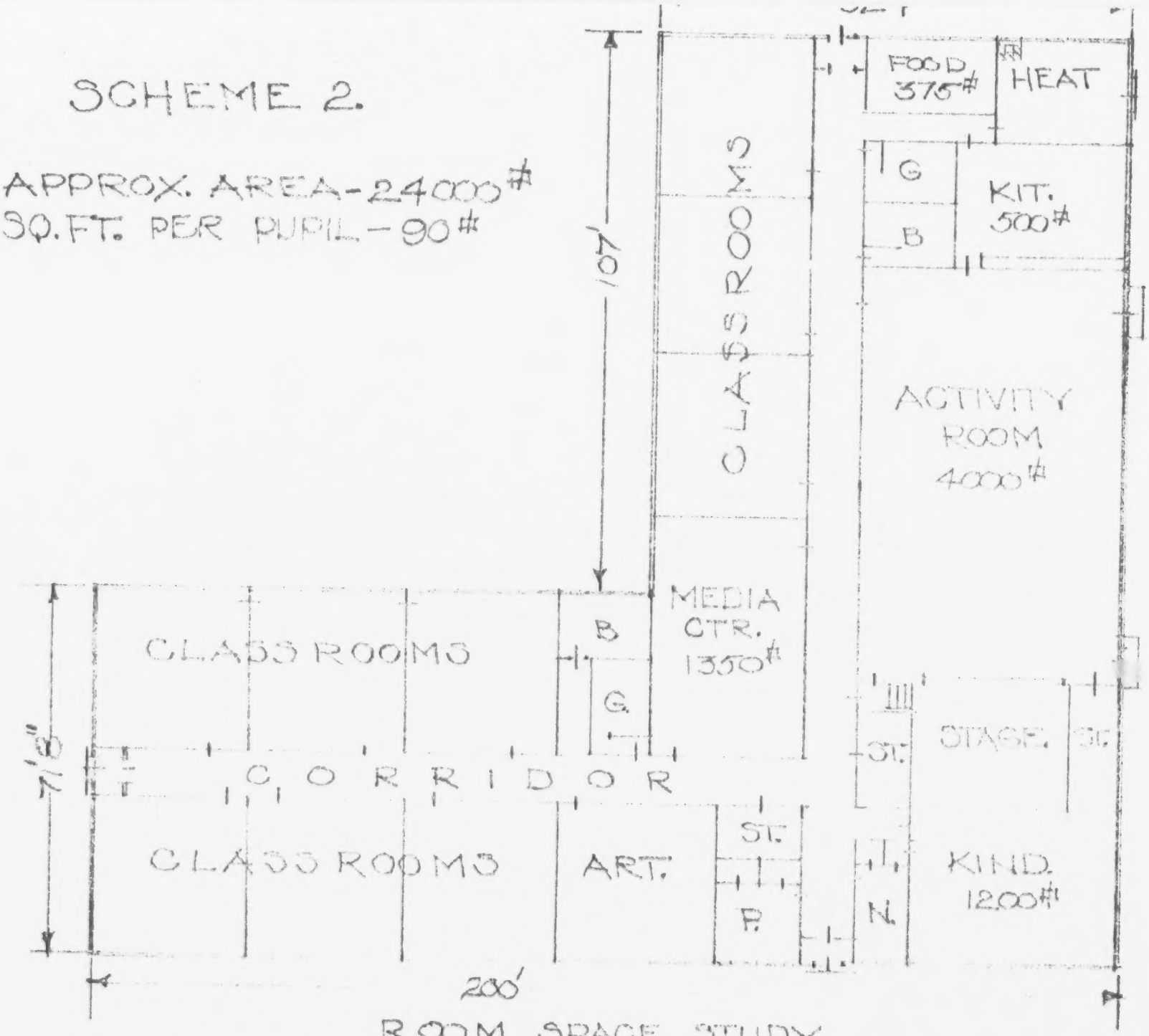


ROOM SPACE STUDY
FOR
ELEMENTARY SCHOOL - 250 PUPILS

4319

SCHEME 2.

APPROX. AREA - 24000#
SQ. FT. PER PUPIL - 90#

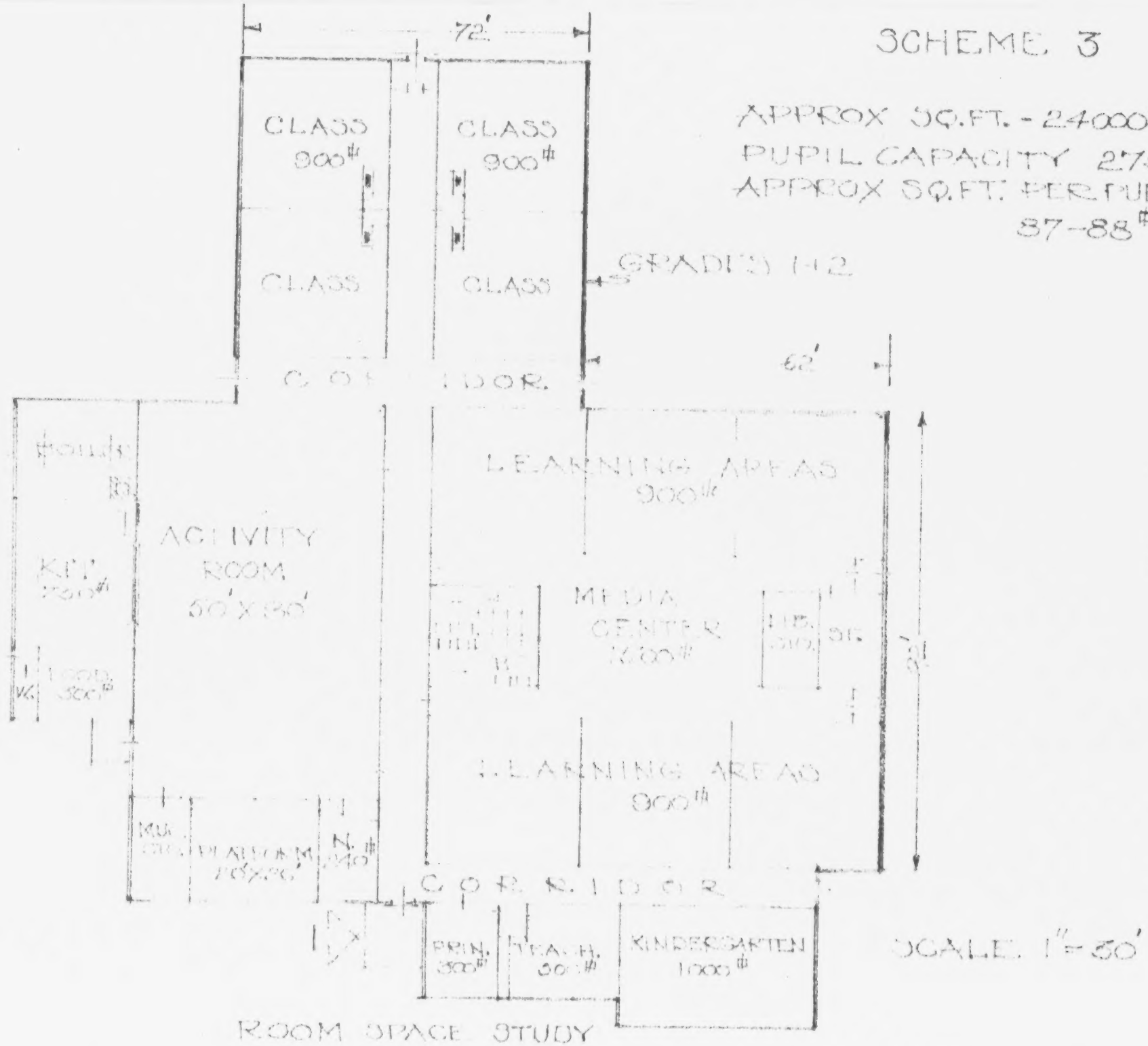


ROOM SPACE STUDY
ELEMENTARY SCHOOL - 250 PUPILS

SCALE 1" = 30'

SCHEME 3

APPROX SQ.FT. - 24000#
PUPIL CAPACITY 275
APPROX SQ.FT. PER PUPIL
87-88#



ROOM SPACE STUDY
FOR
ELEMENTARY SCHOOL - 275 PUPILS

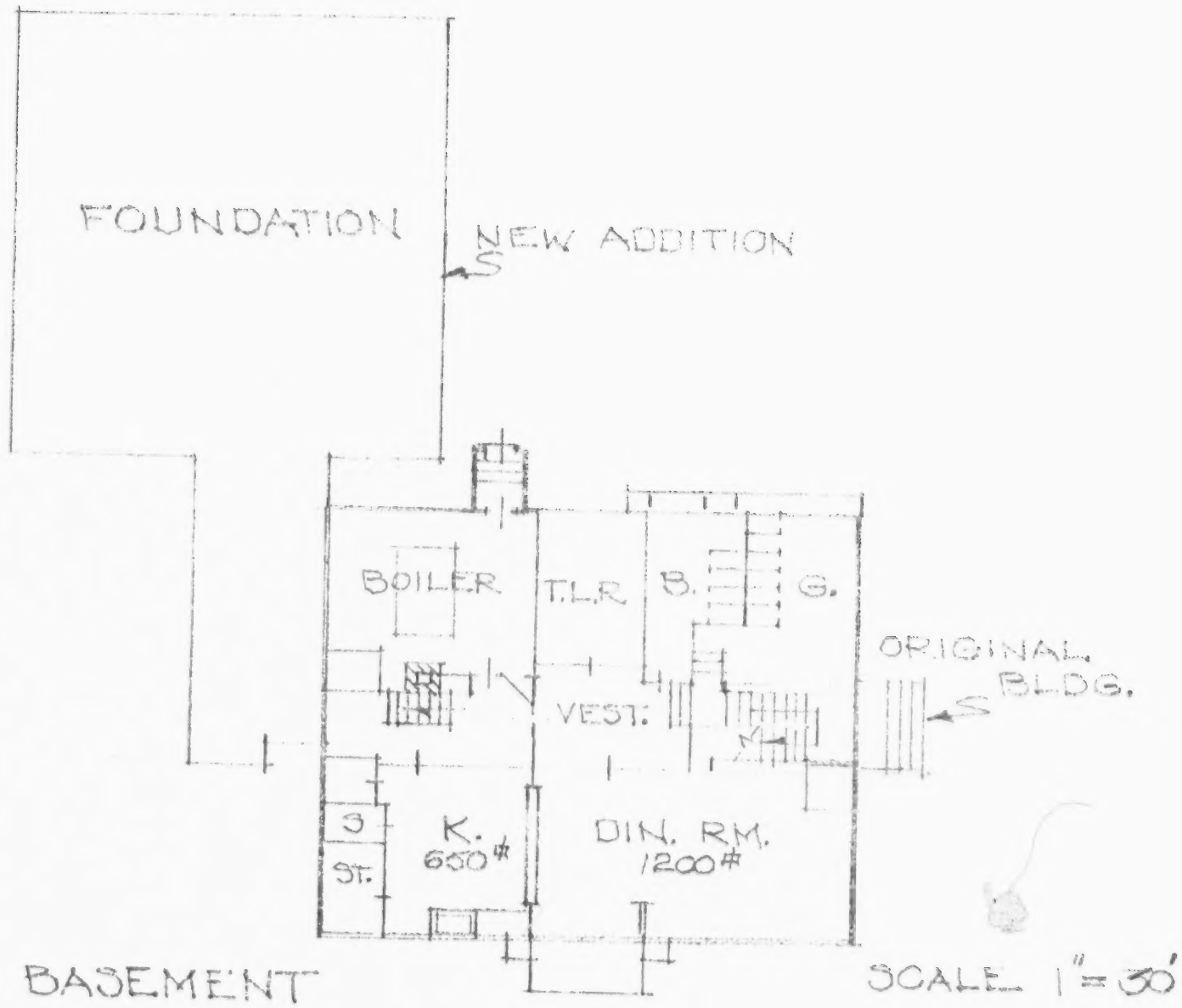
Groveton Elementary School (4-6)

This school houses grades 4-6. The consultants recommend that regular classroom use of the third floor be discontinued for reasons of safety and accessibility. The two rooms on this floor could be converted to a teachers' workroom and a music practice room. There will then be 12 classrooms to accommodate a projected peak enrollment of 182 pupils from Groveton (in 1973-74) and to provide facilities for a library, art, music, and special education. By assigning 25 pupils to each classroom, 8 rooms will be needed for learning activities, and the remaining 4 can then be used as a resource center, art room, music room, and special education classroom. It is recommended that the small room on the second floor be converted to a teachers' workroom. If the school population decreases as indicated by the population projections (reaching a low of 137 by 1976-77), it will be possible to achieve a better pupil-teacher ratio of 20:1.

The classrooms are of ample size, and if the Stark School Board decides to send its upper elementary grades to Groveton, these students can be easily accommodated at the Groveton Elementary School. If the consultants' recommendations are carried out, this building will provide excellent facilities for grades 4-6.

The space studies on the following pages suggest how the proposed reassignment of spaces can be implemented.

RENOVATIONS
FOR
GRADES 4-6



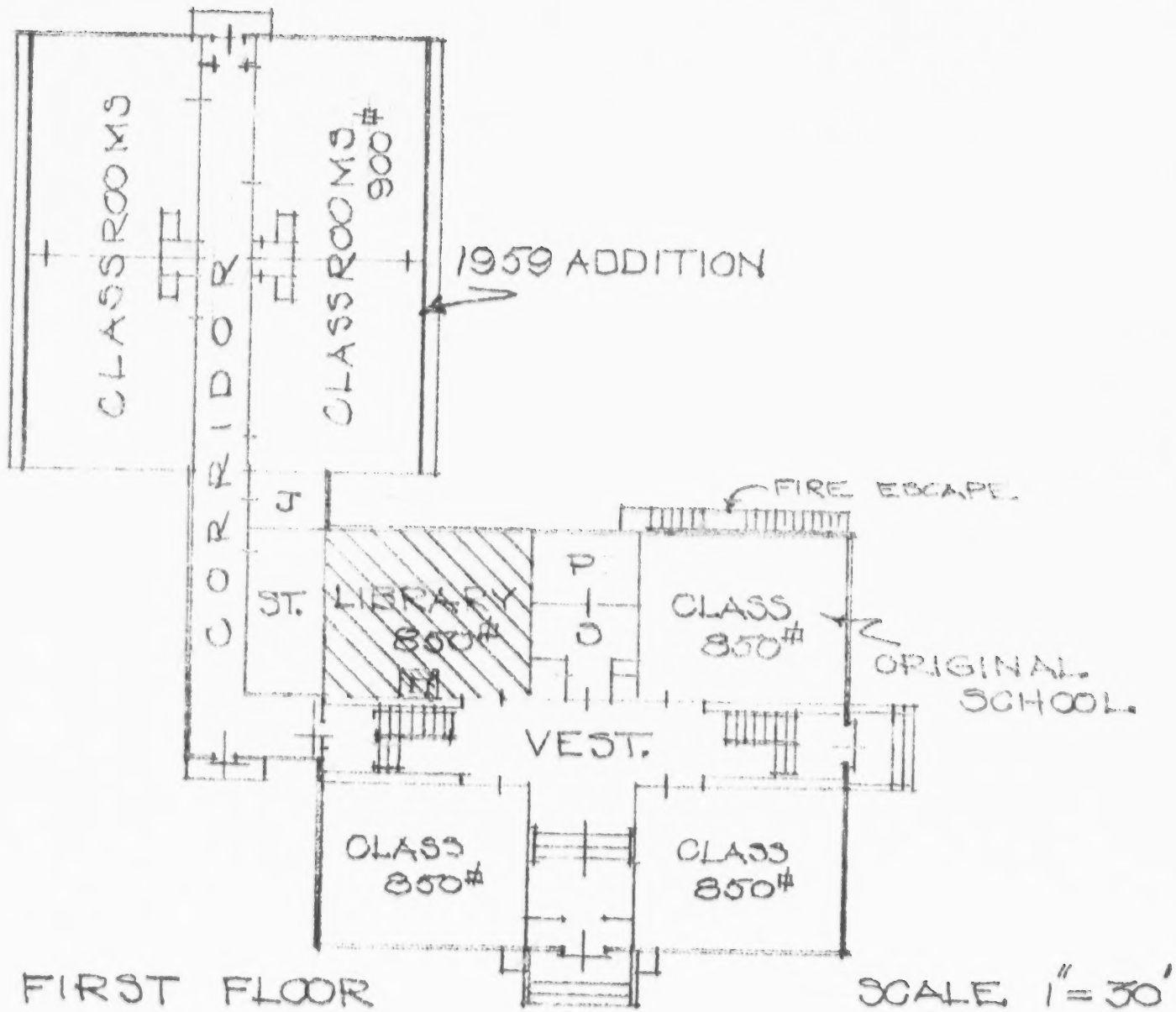
BASEMENT

SCALE 1" = 30'

GROVETON ELEMENTARY SCHOOL

4323

RENOVATIONS
FOR
GRADES 4-6
CAPACITY 150-200



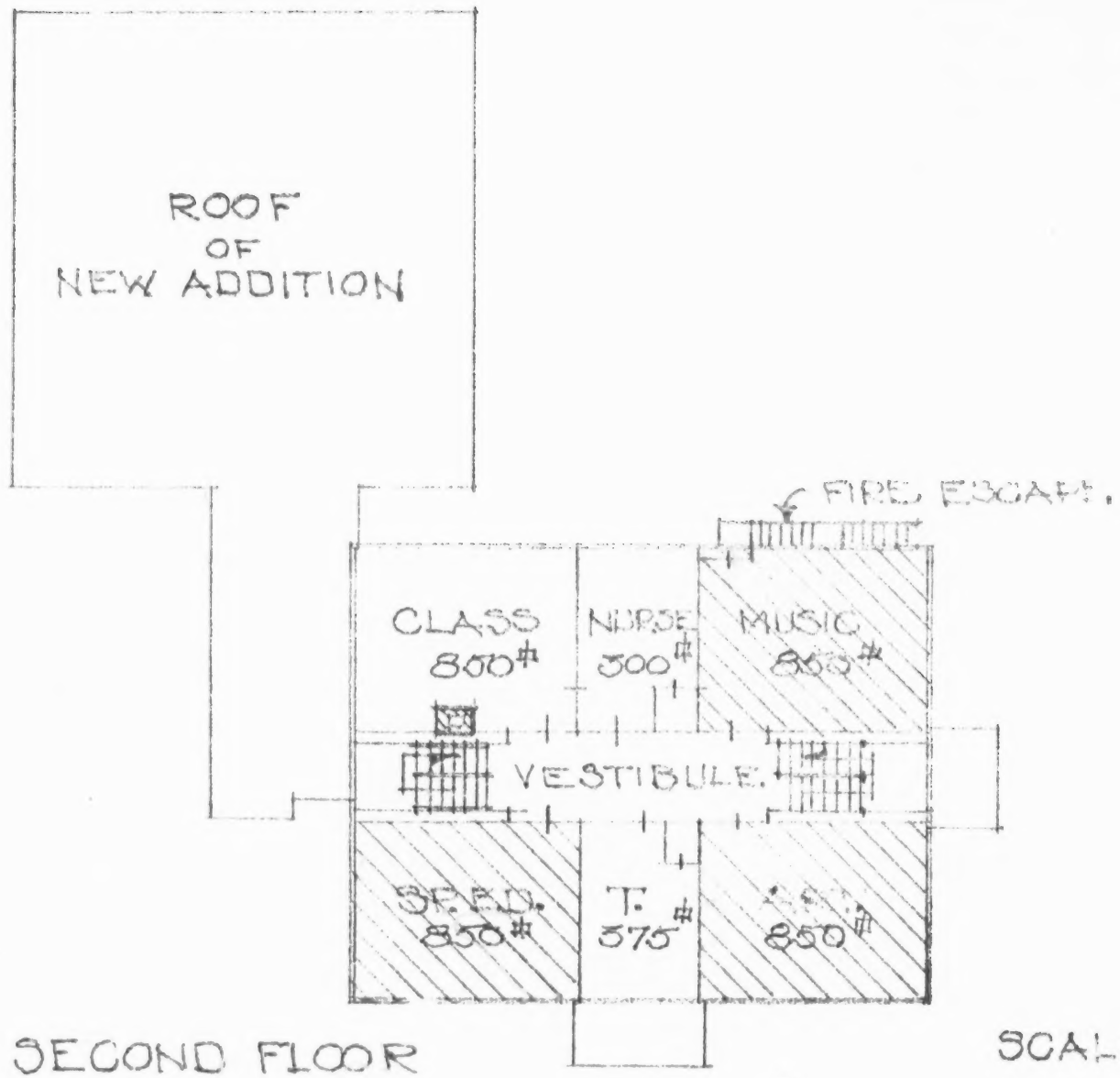
FIRST FLOOR

SCALE 1" = 30'

GROVETON ELEMENTARY SCHOOL

4324

RENOVATIONS
FOR
GRADES 4-6
CAPACITY 150-200



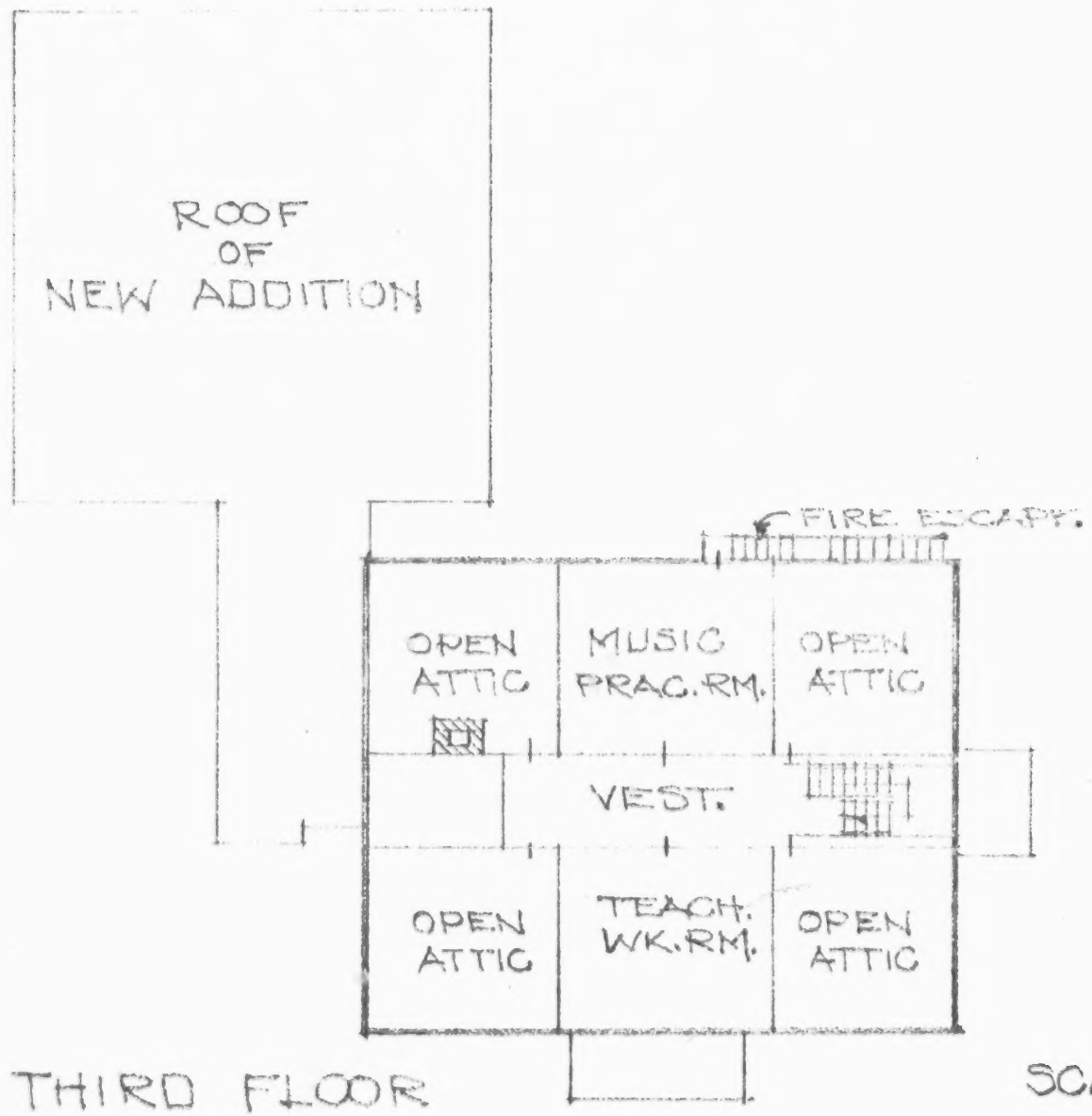
SECOND FLOOR

SCALE 1"=30'

GROVETON ELEMENTARY SCHOOL.

4325

RENOVATIONS
FOR
GRADES 4-6



THIRD FLOOR

SCALE 1" = 30'

GROVETON ELEMENTARY SCHOOL

4326

Groveton High School

The present high school building attended by grades 7-12 is operating at capacity at this time. The small size of most of the rooms makes scheduling and assignment of classes extremely difficult and results in certain program deficiencies. It is recommended that more space be provided as soon as possible in the interest of program development and curriculum expansion. The vocational study undertaken by the consultant team indicates the desirability of more varied and flexible offerings in industrial arts. These alone will require additional spaces. By 1976 an increase of almost 30% in the school population is projected, and new rooms will be needed merely to house this higher number of students, even if no program changes are to be undertaken. With these factors in mind, the consultants have developed three plans which will bring about desirable improvements in program and make provision for anticipated growth in enrollment in future years.

The possible alternatives for the high school were limited by two considerations. First, the small size of the site imposes considerable restraints on expansion; Plans 1-A and 1-C therefore propose two-story additions to the present building, whereas Plan 1-B requires the acquisition of additional land for the separate industrial arts and music facility. The second limitation is imposed by the borrowing capacity of the district, which presently stands at $1,228,195. Although this may increase to some extent in future years, the consultants made economy their priority concern, keeping estimated costs within the range of the borrowing capacity.

PLAN 1-A

This plan calls for a two-story addition and changes and renovations to the present building.

The addition would provide 16,800 sq. ft. of space. Two industrial arts areas are to be located on the first floor, with 3,500 and 3,000 sq. ft. each. The consultants have tentatively assigned these spaces to Power Mechanics-Automotive and Woodworking-Building Trades. The shop area would be completed by using the adjacent room of 625 sq. ft. (presently assigned to music) for graphics and drafting. On the second floor a room of 1,900 sq. ft. with a raised platform is planned for music and drama; an adjoining room of 840 sq. ft. will be used for class work in these subjects. The remainder of the second floor is to be occupied by a social studies suite, which is to include a resource center. Folding partitions could provide flexibility in this space, so that one, two or three classrooms could be provided as needed.

Certain changes and renovations are recommended for the existing building. The present shop would be converted to a cafeteria with a kitchen; the latter could be either a warming kitchen (serving kitchen) or could be used for food preparation for the high school. The present drafting room would remain a classroom and could be assigned to English. Art would

remain in its present location, but even with the conversion of existing storage space to art storage, the available space would still fall short of the state standards of 50-60 sq. ft. per pupil.

The administrative suite would be moved to the adjoining classroom now being used for social studies. The present principal's office would become the guidance suite. The existing science rooms of 660 sq. ft. each would be enlarged by adding the use of the present guidance space which adjoins one of the science rooms. Room 4 would be assigned to science and mathematics on a shared basis. The home economics area would be doubled by the addition of a second room to be used as a sewing and resource center.

On the second floor the library and study hall could be combined into one area of 1,800 sq. ft. Together with the library office of 300 sq. ft. this would give Groveton High School a satisfactory library/media center. If necessary, the cafeteria could be used part time as a study hall. The business education area has been expanded by the addition of a third room, a change dictated by the large enrollment in this program. The present music room has been assigned to graphics and drafting.

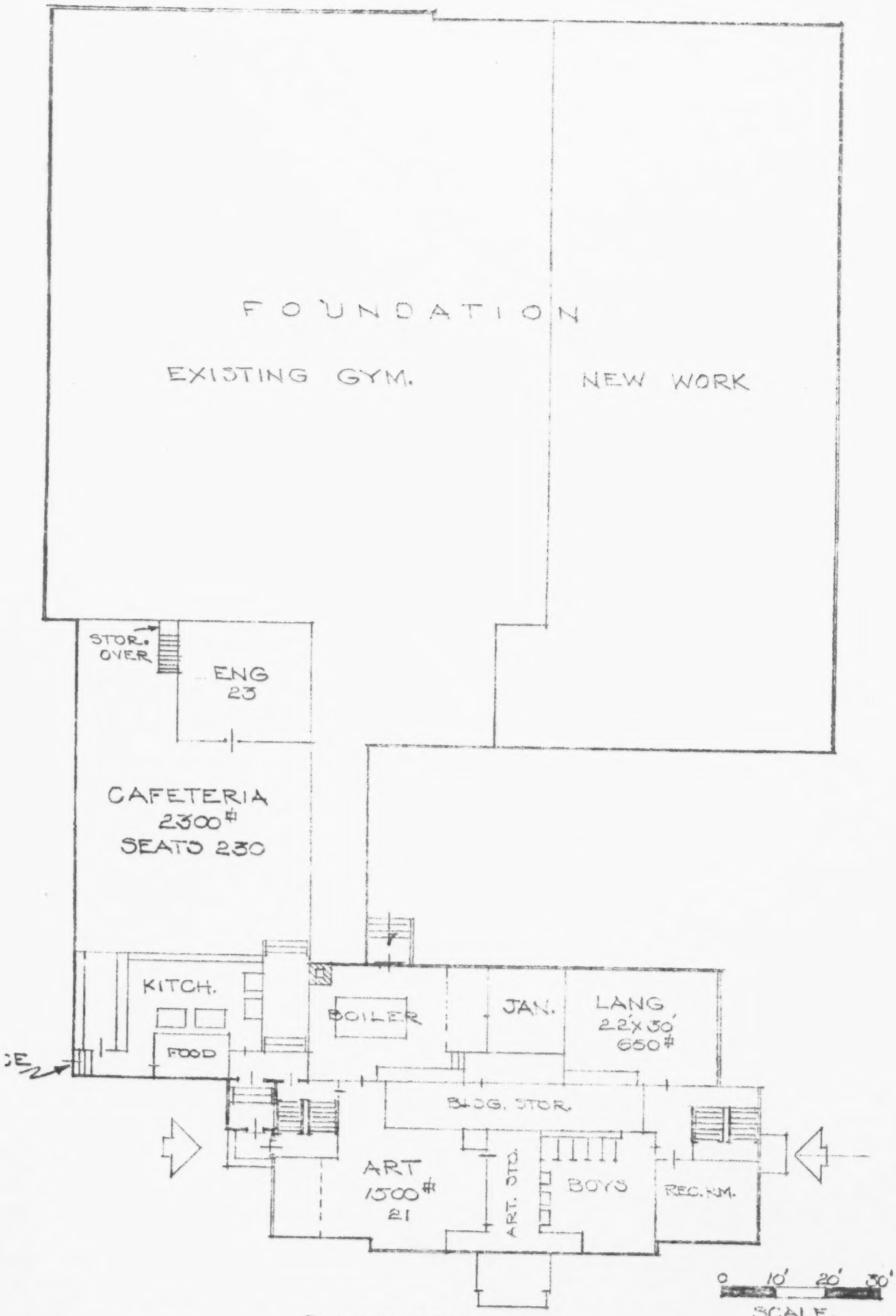
The gymnasium should be converted to a two-station unit by the installation of a divider (canvas curtain, folding partition or other). This change is recommended to further desirable program development in physical education.

There are no lavatory facilities on the second floor, and the accompanying space studies make provision for boys' and girls' toilets directly over the first-floor lavatories in order to keep the cost of installation to a minimum.

The total cost of the addition and of the recommended renovations and improvements to the high school is estimated at $489,500.

The following pages contain the space studies illustrating the above recommendations.

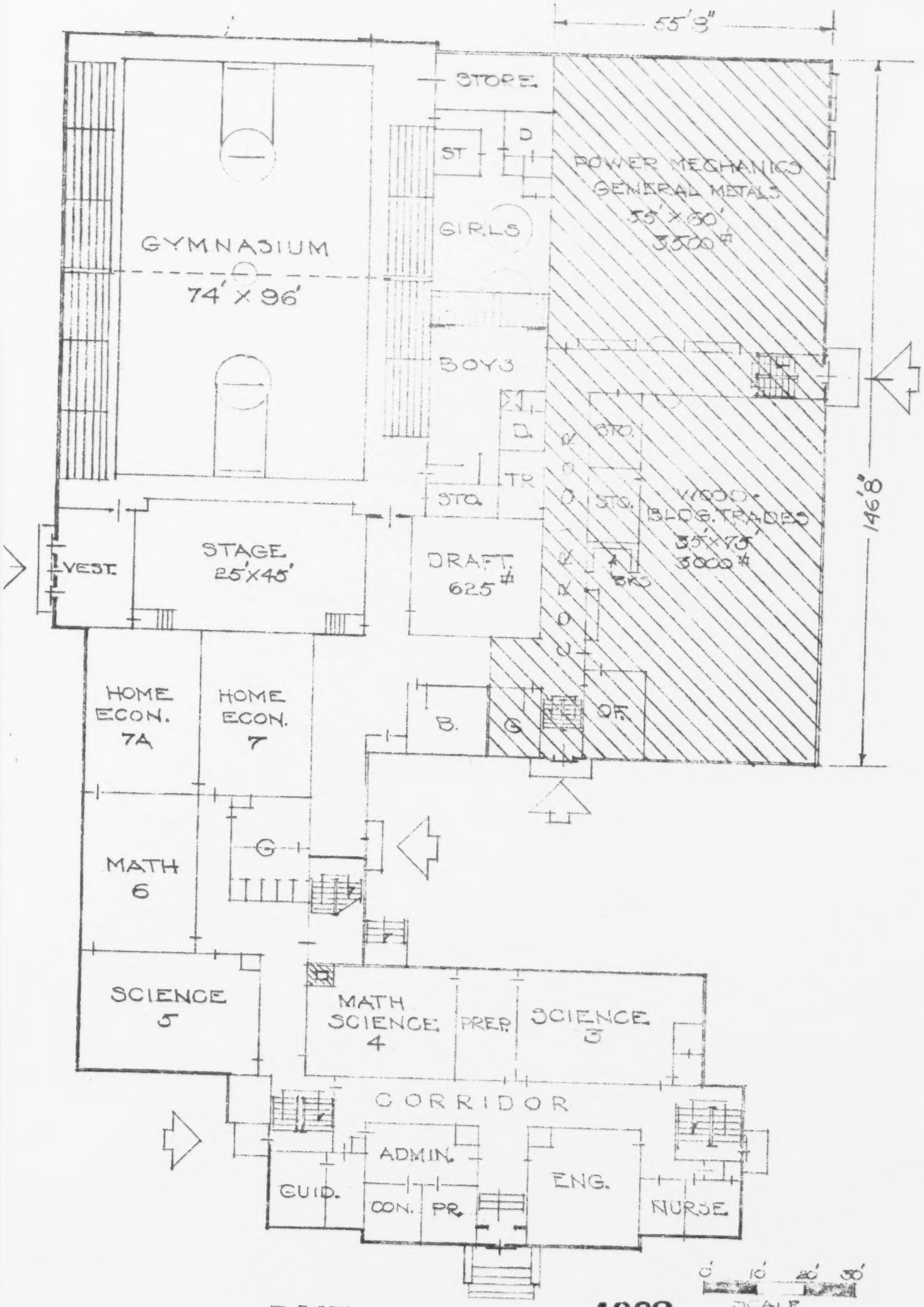
PLAN IA



BASEMENT
GROVETON HIGH SCHOOL

4331

PLAN 1A

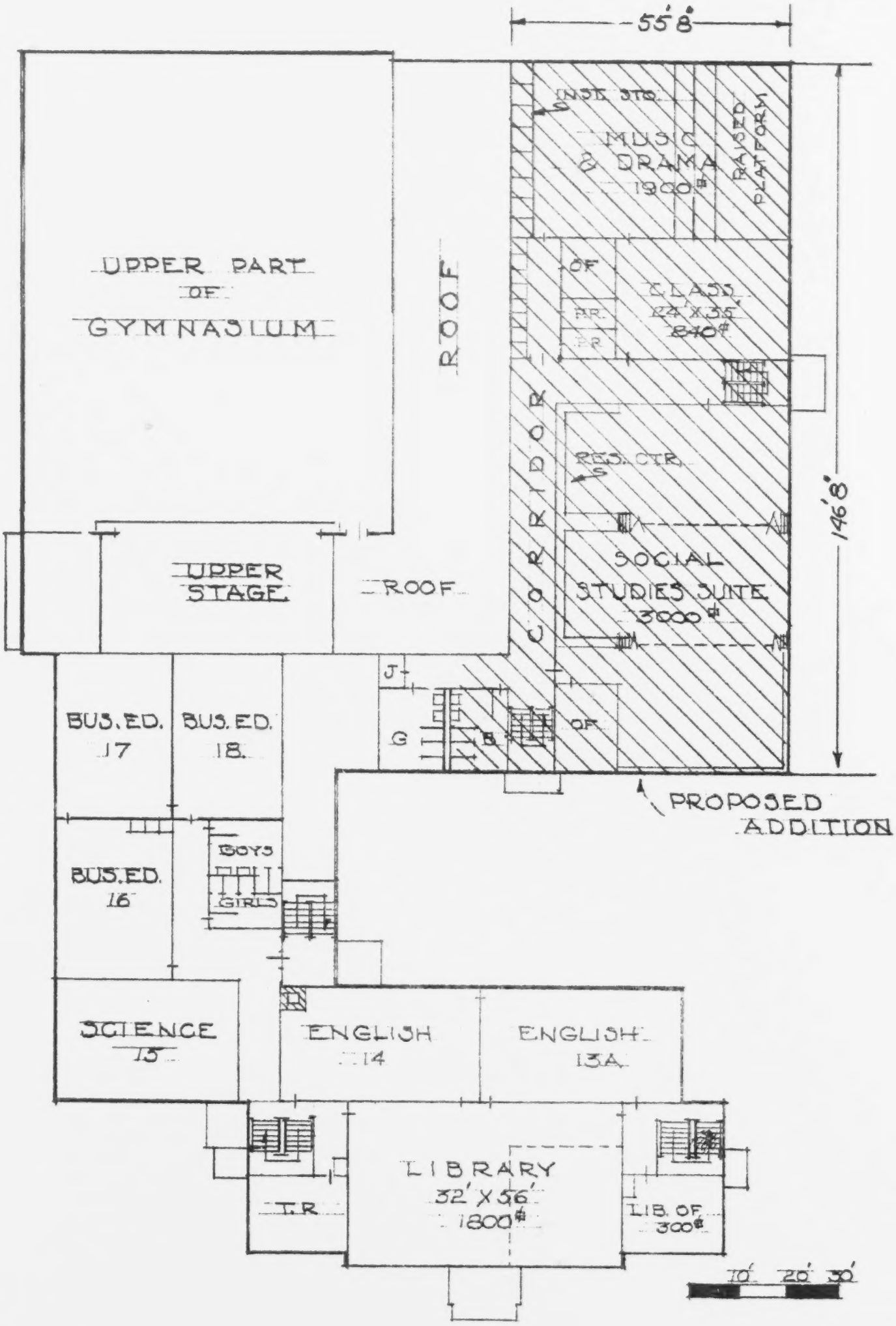


FIRST FLOOR

GROVETON HIGH SCHOOL

4332

PLAN 1A



SECOND FLOOR

GROVETON HIGH SCHOOL

4333

PROJECT BUDGET*

New Elementary School K-3, 250 pupils 24,500 sq. ft. @ $30.00		$ 735,000
Renovation - Groveton Elementary School Library, Teachers' Workroom, etc.		5,000
Groveton High School		
2-story addition, 17,000 sq. ft. @ $25.00		425,000
Additions and Changes		64,500
1. Cafeteria, Serving Kitchen, Floor, Ceiling, Tables, Chairs	$20,000	
2. Resource Center, remove Partition, new Furniture, etc.	5,000	
3. Toilets - Second Floor	5,000	
4. Administration and Guidance	4,000	
5. Additional Shop Equipment, Power Machines, etc.	30,500	
TOTAL		$1,229,500

* All estimates must be adjusted to reflect costs at time of construction. In the case of the addition to the high school, the purchase cost of additional land may increase the estimated figure of $25.00 per square foot.

PLAN 1-B

New construction under this plan would consist of a separate building to house industrial arts and music, and a single-story addition to the high school.

The Beaton property and the lot adjacent to it would make a very desirable site for the new building. There are several advantages to this plan. Industrial arts and music are both activities requiring sound insulation, and a separate building would facilitate the solution of this problem. The design of the building would not be restricted as in an addition to an existing structure, and there is the possibility of reducing construction costs by using a prefabricated industrial type of building.

The industrial arts area would contain 2 shops of 3,000 sq. ft. each for General Metals-Power Mechanics and for Woodworking-Building Trades, and a drafting room of 1,200 sq. ft. The music and dramatics area would have 2,000 sq. ft. and would contain a platform for related activities; 360 sq. ft. of storage space have been provided in addition. The total area of this building would be approximately 11,300 sq. ft. The cost has been estimated at $25.00 per square foot for a total of $282,500, although the cost of site acquisition may increase this figure somewhat.

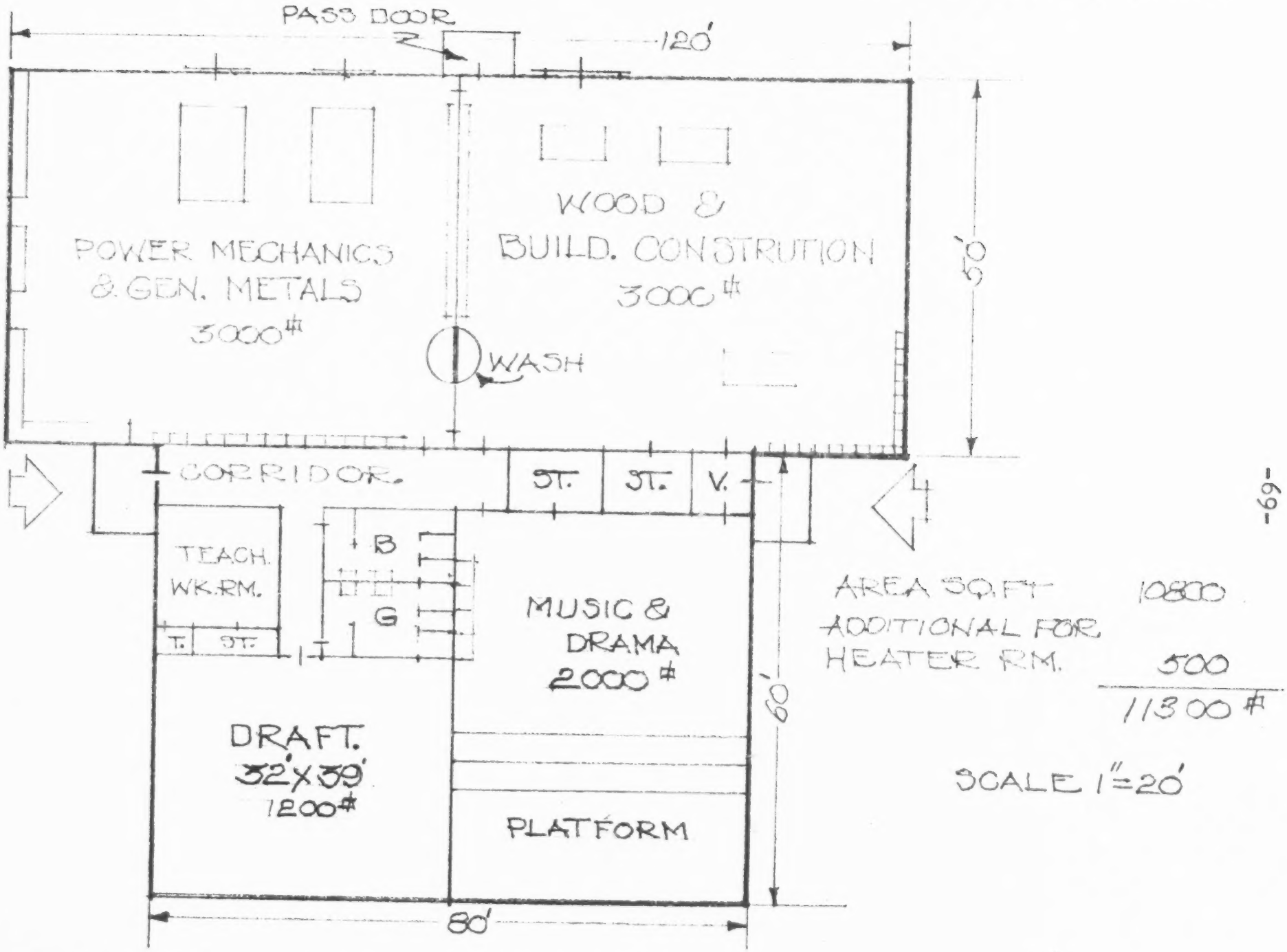
The one-story addition to the high school would provide 4 classrooms for an open-concept English area, a language lab of 1,000 sq. ft. with

an adjoining classroom of 500 sq. ft. The total area would be 6,800 sq. ft., and the estimated cost, at $25.00 per square foot, is $282,500.

The renovations and reassignments of spaces in the present high school building are very similar to those in Plan 1-A (see pages 60-61 above), except that in this plan social studies has been assigned to the 2 rooms behind the library, instead of English as in Plan 1-A.

The total project cost for this plan has been estimated at $517,000. The space studies on the following pages illustrate the proposed changes and new construction.

PLAN 1 B
ROOM SPACE STUDY



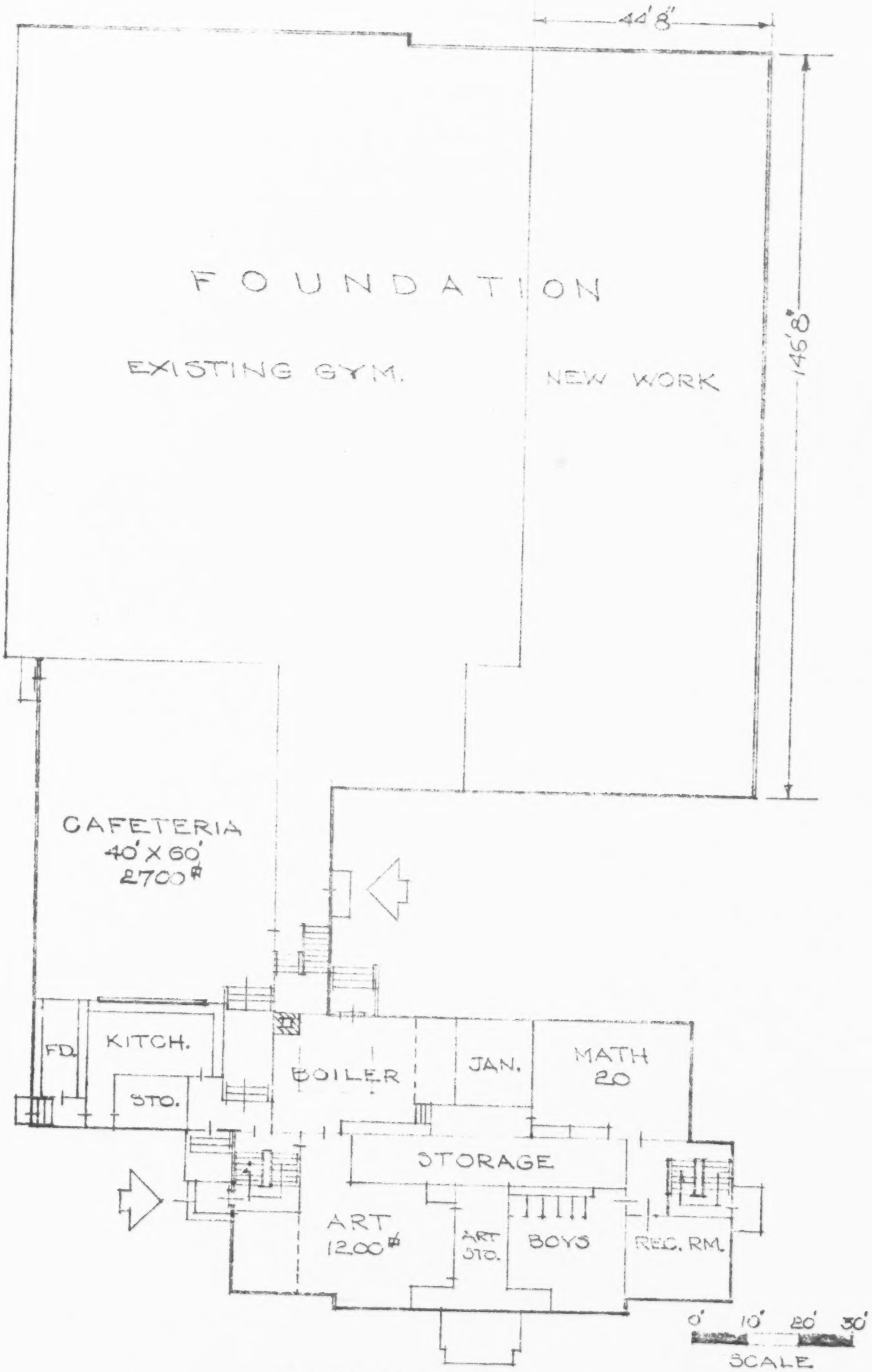
AREA SQ.FT. 10800
ADDITIONAL FOR
HEATER RM. 500
11300 #

SCALE 1"=20'

PRACTICAL ARTS BLDG. - GROVETON HIGH SCHOOL

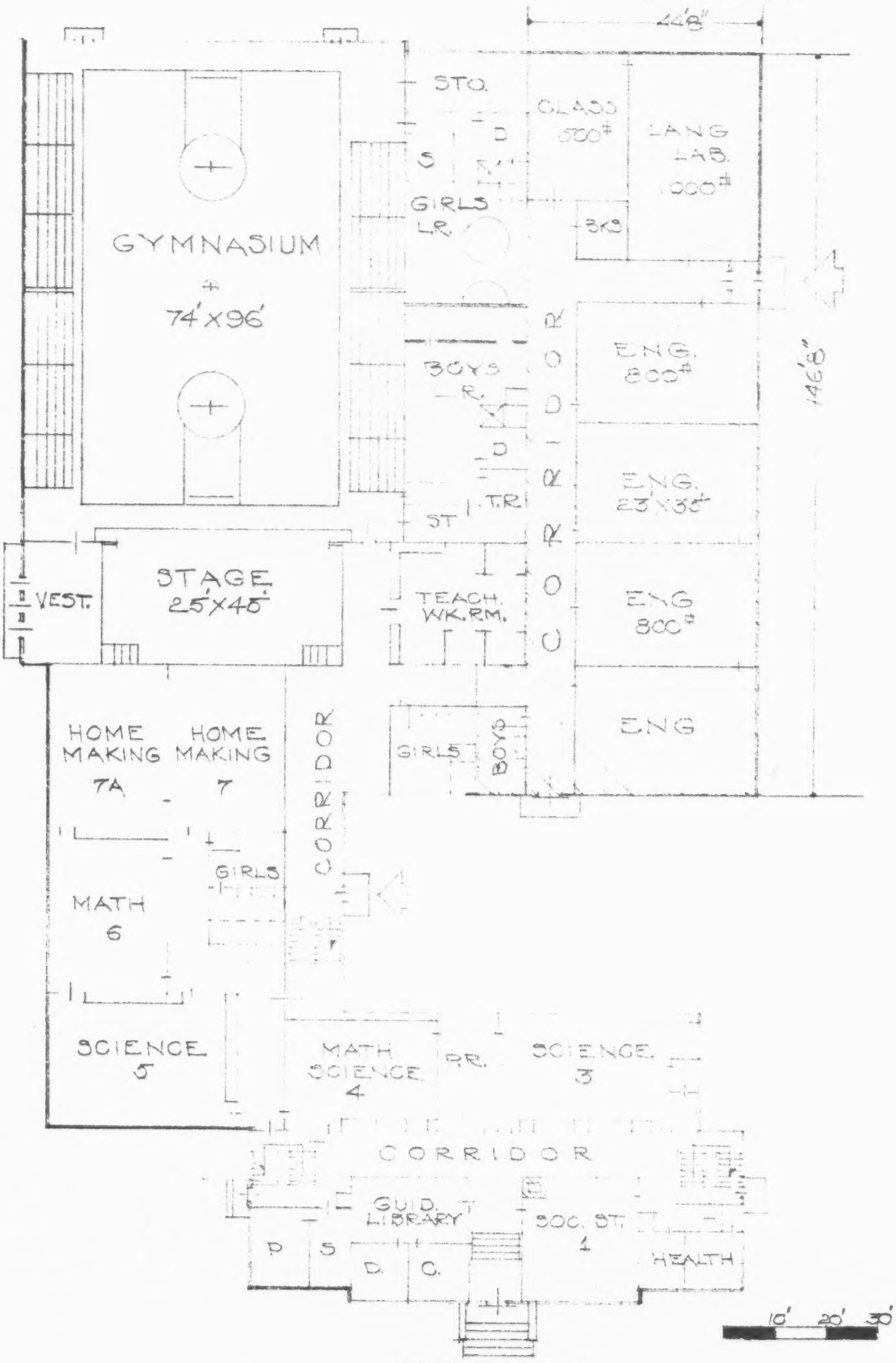
4337

PLAN 1B



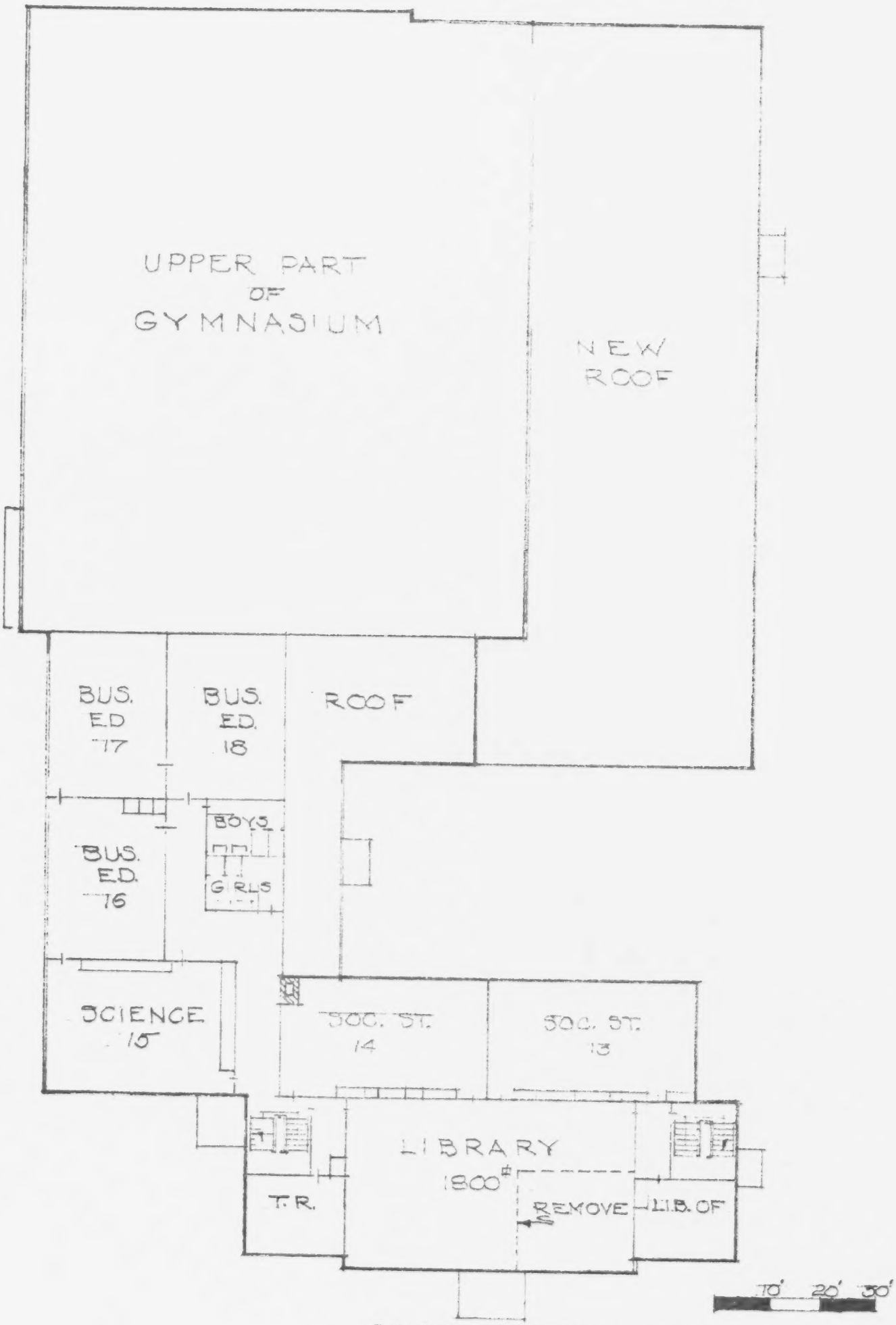
BASEMENT
GROVETON HIGH SCHOOL

PLAN B



FIRST FLOOR
GROVETON HIGH SCHOOL

PLAN 1 B



SECOND FLOOR
GROVETON HIGH SCHOOL

4340

PROJECT BUDGET*

New Elementary School K-3, 250 Pupils 24,500 sq. ft. @ $30.00		$ 735,000
Renovation - Groveton Elementary School Library, Teachers' Workroom, etc.		5,000
Groveton High School		
New Industrial Arts and Music Building 11,300 sq. ft. @ $25.00		282,500
1-Story Addition 6,800 sq. ft. @ $25.00		170,000
Additions and Changes		64,500
1. Cafeteria, Serving Kitchen, Floor, Ceiling, Tables, Chairs	$20,000	
2. Resource Center, remove Partition, new Furniture, etc.	5,000	
3. Toilets - Second Floor	5,000	
4. Administration and Guidance	4,000	
5. Additional Shop Equipment Power Machines, etc.	30,500	
TOTAL		$1,257,000

* All estimates must be adjusted to reflect costs at time of construction. In the case of the addition to the high school, the purchase cost of the additional land may increase the estimated figure of $25.00 per square foot.

PLAN 1-C

This plan is in many ways similar to Plan 1-A. The main difference is that the second floor of the addition is extended over the present shower rooms, so that valuable space is gained on this level.

The first floor of the addition is the same as in Plan 1-A, with 2 shop areas of 3,300 and 3,400 sq. ft. respectively (including storage space) for General Metals-Power Mechanics and Woodworking-Building Trades.

The second floor will have excellent music and drama facilities with a main area of 2,000 sq. ft. and a platform at one end. There is a classroom of 800 sq. ft. for music appreciation or other related offerings. The music office (370 sq. ft.), 3 practice rooms (220 sq. ft. each), and 2 storage areas complete this suite with a total area of over 4,600 sq. ft. This floor will also contain 3 classrooms for social studies, 2 of 800 sq. ft. separated by a folding partition for flexible class arrangements and 1 of 624 sq. ft. Art is located in a room of 1,450 sq. ft., providing much better facilities than under Plan 1-A, which in essence retained the presently existing arrangement. The present art room in the high school basement can be converted to other uses, such as an enlarged language area or a second drafting room.

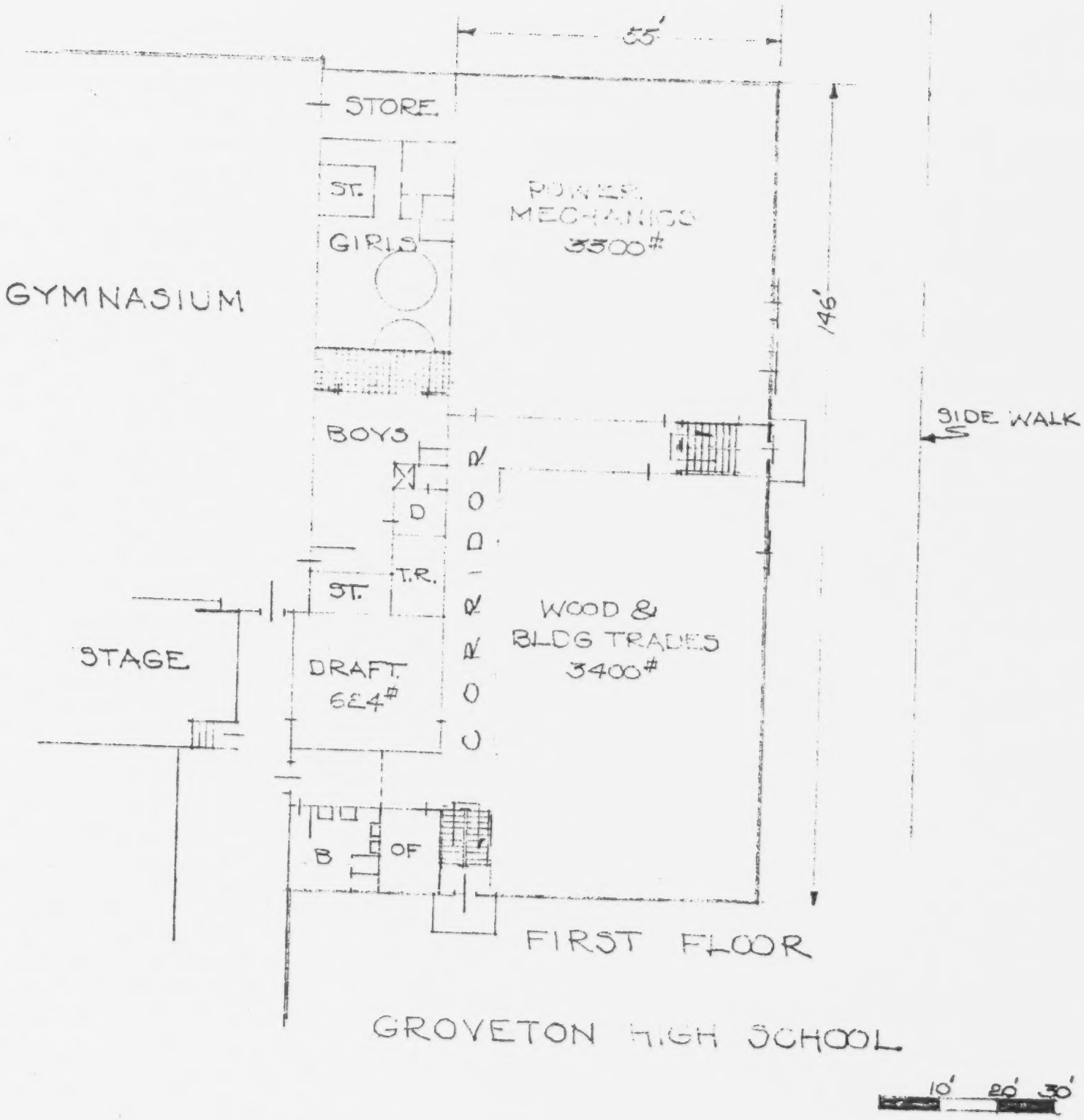
Note should be taken of the fact that the rooms next to the upper gymnasium wall would have no natural light. Special provisions

to solve this problem (domes, skylights, clerestory windows) can be made, but will probably be expensive. Adequate ventilation and artificial lighting would be sufficient for the uses to which these rooms have been assigned.

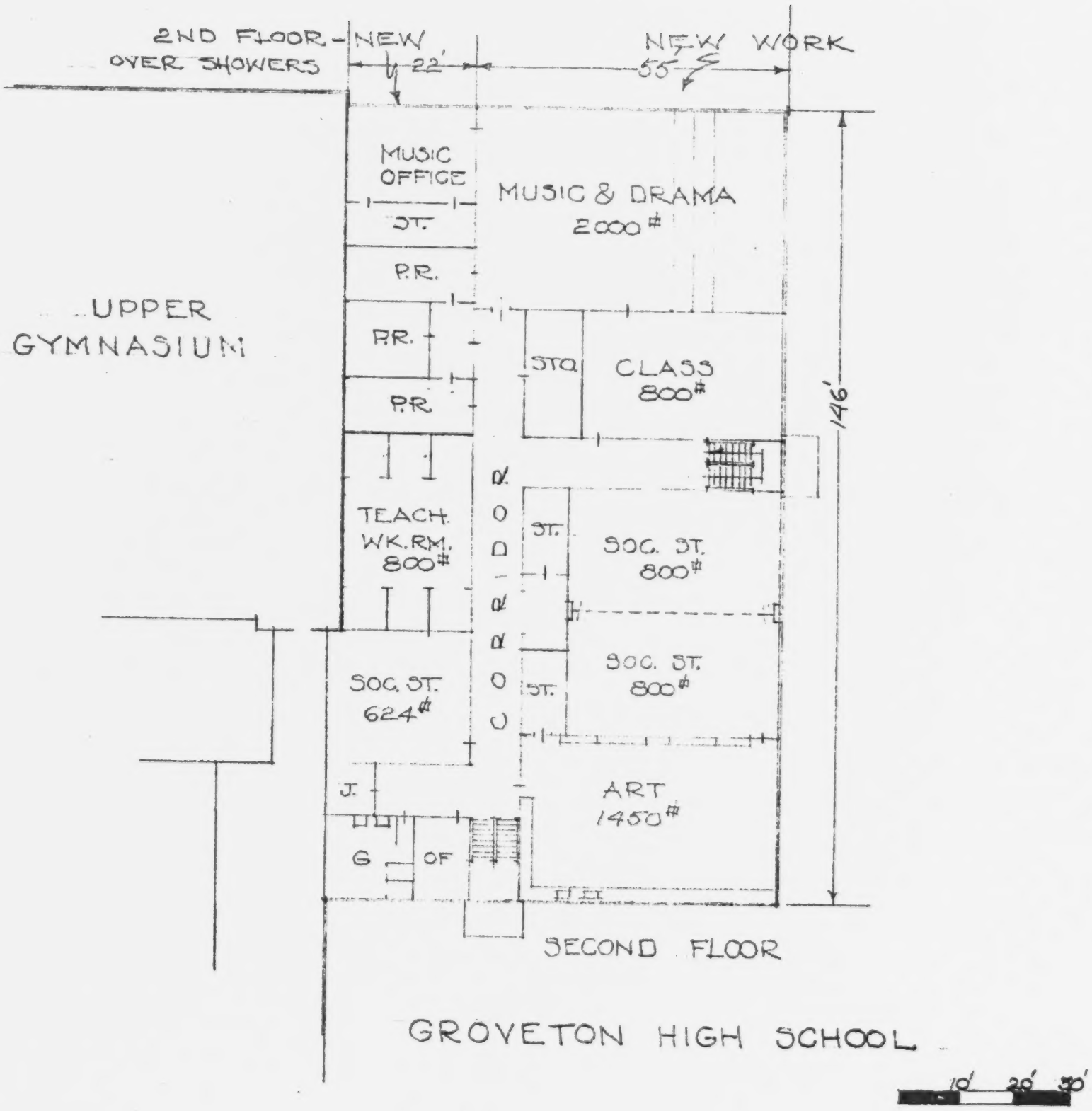
The alterations and renovations in the present high school building are the same as in Plan 1-A, with the exception of the art area discussed above.

The estimated project cost is $549,500. Two space studies on the following pages illustrate the proposed addition.

PLAN 1C
ROOM SPACE STUDY



PLAN IC
ROOM SPACE STUDY



PROJECT BUDGET*

New Elementary School K-3, 250 Pupils 24,500 sq. ft. @ $30.00		$ 735,000
Renovation - Groveton Elementary School Library, Teachers' Workroom, etc.		5,000
Groveton High School		
2-Story Addition, 19,400 sq. ft. @ $25.00		485,000
Additions and Changes		64,500
1. Cafeteria, Serving Kitchen, Floor, Ceiling, Tables, Chairs	$20,000	
2. Resource Center, remove Partition, new Furniture, etc.	5,000	
3. Toilets - Second Floor	5,000	
4. Administration and Guidance	4,000	
5. Additional Shop Equipment, Power Machines, etc.	30,500	
TOTAL		$1,289,500

* All estimates must be adjusted to reflect costs at time of construction. In the case of the addition to the high school, the purchase cost of additional land may increase the estimated figure of $25.00 per square foot.

COMPARATIVE BUDGET - All Plans

	Plan 1-A	Plan 1-B	Plan 1-C
New Elementary School K-3, 250 Pupils 24,500 sq. ft. @ $30.00	$ 735,000	$ 735,000	$ 735,000
Groveton Elementary School Renovations: Library, Teachers' Workroom, etc.	5,000	5,000	5,000
Groveton High School			
1. Addition	425,000*	170,000**	485,000***
2. Renovations, Changes Cafeteria, Serving Kitchen, Library, Toilets, Administration, Guidance Suites, Shop Equipment	64,500	64,500	64,500
3. New Industrial Arts-Music Building 11,300 sq. ft. @ $25.00		282,500	
Total	$1,229,500	$1,257,000	$1,289,500

* Two-story addition, 17,000 sq. ft. @ $25.00

** One-story addition, 6,800 sq. ft. @ $25.00

*** Two-story addition, 19,400 sq. ft. @ $25.00

Note: All estimates must be adjusted to reflect costs at time of construction.

SUMMARY

The basic organization is the same for all plans developed by the consultants: K-3, 4-6, 7-12. In the elementary grades, a new school is recommended for grades K-3, and minor changes and renovations are suggested for the present Groveton Elementary School, which is to house grades 4-6. Three different space studies have been developed for a new elementary school, offering the school board a choice between the open concept, the self-contained classroom, or a combination of the two. Upon implementation of the recommendations, Northumberland will have two excellent elementary schools with room for future growth and very satisfactory facilities such as resource centers, art and music areas, and teachers' workrooms.

The three alternatives for Groveton High School are a response to the space and program needs of Northumberland's students in grades 7-12. The space needs at the high school do not represent an urgent problem at this time from the point of view of numbers of students. However, the small size of most of the rooms in the building creates scheduling difficulties and has an inhibiting effect on program development. By 1976 enrollment projections indicate a large increase in the number of high school students, so that extra space will become a necessity within a few years merely to accommodate these increased numbers. The consultants' recommendations are designed to further program development in the near

future and to provide sufficient space for expected growth in the school population on a long-range basis.

One of the priority concerns of the consultant team was the development of an occupational program suited to the needs of both the students and the community. The requirements of a small rural high school such as Groveton are quite different from those of a large urban or regional high school. The consultants recommend that occupational education be made available to all students as part of the secondary school experience, and that the program be organized in groupings or ("clusters") of offerings. Four main clusters are recommended for the immediate future: General Metals-Power Mechanics, Woodworking-Building Trades, Home Economics, and Business Education. The cluster concept is seen as a flexible arrangement responsive to the needs of the community and the school population. As these needs change, the original clusters can be altered accordingly; they may also provide a nucleus for the formation of new clusters as indicated.

The specific recommendations for Groveton High School are contained in three separate plans which have certain elements in common: the alterations to the existing building will include a cafeteria and kitchen through conversion of the present shop area; the library will be converted to a resource center of larger dimensions by the removal of the existing partition; a new administration and guidance suite will be provided in space now assigned to class use. Each plan proposes an addition to the

present structure, for which extra land will have to be acquired. Plans 1-A and 1-C call for a two-story addition, with the industrial arts area located on the first floor and academic classrooms on the second floor. In Plan 1-B a one-story addition is proposed which has been tentatively assigned to English and language lab. According to this plan, industrial arts and music will occupy a new building on a new site to be purchased close to the high school. The advantages of this alternative would be sound insulation for these usually noisy activities and a greater freedom in designing the structure if constructed separately from an existing building. For instance, considerable savings could be effected by using a prefabricated industrial type of building.

Implementation of any one of these plans would provide the Northumberland School District with an outstanding high school where both spaces and program can be responsive to the needs of the students and the community.

The estimated costs are as follows: $1,229,500 for Plan 1-A, $1,257,000 for Plan 1-B, and $1,289,500 for Plan 1-C. Although these amounts are slightly higher than Northumberland's net borrowing capacity on the basis of 1968 figures, it is expected that the Tax Commission's assessments based on 1970 valuations will show a sufficient increase in the District's net borrowing capacity to permit the implementation of any one of the proposed alternatives.

APPENDIX A

CENTER FOR EDUCATIONAL FIELD SERVICES
School Districts Using University Resources

University of New Hampshire
6 Garrison Avenue
Durham, N. H. 03824

Office of the Director

December 4, 1970.

Dear

The Northumberland School Board and Superintendent Alan E. Rich have asked the Center for Educational Field Services at the University of New Hampshire to assist them in surveying educational needs and developing alternatives for space and program development in the schools.

At Groveton High School there has been considerable interest from students, faculty and administration in expanding the practical, work-oriented experiences for all students.

There seem to be two kinds of desirable work-related experiences. The first is Exploration which emphasizes:

(a) gaining introductory knowledge and skills in various occupations
(b) learning the general requirements for success and satisfaction in various fields of work, such as good work habits, courtesy, dependability, communication skills, and pride in accomplishment

The second is developing Marketable Skills or the preparation for specific jobs through long-term job experience and related school instruction which provides entry level skills for employment when the student graduates from high school.

We need your assistance in finding out your needs and opinions on these two kinds of vocationally oriented experiences.

It would be greatly appreciated by all members of your school community if you would take the time to fill out and return the enclosed questionnaire as soon as possible.

After collecting your opinions, we may want to stop by and discuss further some of your ideas and suggestions.

Thank you for your assistance.

Sincerely,

Jason E. Boynton
Director

JEB:eg
Enclosures

Vocational Education Survey

Center for Educational Field Services
University of New Hampshire
Durham, New Hampshire 03824

1. Name of Business _____

2. Address _____

3. Phone _____

4. Your Name _____ Position _____

5. Major Product or Activity _____

6. Number Employed: (Full Time) Men _____ Women _____ (Part Time) Men _____ Women _____

7. Union? Yes _____ No _____

8. Payroll jobs in your business:

Position	Qualifications
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

9. What jobs do you find hardest to fill with qualified people?

_____

10. To what extent do you have to recruit labor from outside the local area?

_____

11. What do you believe the schools should do to serve your employment needs?

Subject matter _____

_____

Basic and specialized skills _____

_____

Attitude _____

Other _____

Which of the above do you feel is the school's most important job?

_____

12. How would you evaluate the schools effort in developing vocational skills and job exploration at this time?

_____

_____

13. What value do you think exploratory work experience has as part of the high school program? (Gaining introductory knowledge and skills in education, learning general employer expectations and good work attitudes)

( ) great value
( ) valuable
( ) some value
( ) little value

14. Would you be interested in working with the school in arranging exploratory work experiences?

Yes_____ No_____ Maybe_____

15. What value do you think a vocational program to develop marketable skills has which combines school and job experience to train students for specific jobs?

( ) great value
( ) valuable
( ) some value
( ) little value

16. Would you be interested in working with the school to arrange a vocationally oriented work-study program to develop marketable job skills?

Yes_____ No_____

17. Would you be willing to come into the school to explain and demonstrate major job skills in your field?

Yes_____ No_____

18. What suggestions do you have for a better vocationally oriented education?

_____

_____

_____

_____

_____

APPENDIX B

FACULTY SURVEY ON CURRICULUM, STAFF AND

SPACE NEEDS

1. How many teachers are in your department? _____

2. List the courses offered in your department and approximate number of students enrolled in each course.

3. Does your department have interest in intradepartmental team teaching or in interdepartmental-interdisciplinary team teaching and planning? If so, describe briefly.

4. For your <u>present</u> <u>program</u> and present enrollments:

   A. Does your department need more teachers? _____
   If so, how many? _____

   B. More rooms? _____
   How many and what kind?

   C. Teacher office and/or work space? _____
   If so, describe (including any desired sharing with other departments.)

   D. Other needed facilities?

5. If you were <u>to change</u> your present program to make it what your department thinks it should be.....

   A. What courses would you eliminate?

   B. What courses would you add? (Indicate number of sections and of additonal teachers required.)

   C. What kind of additional facilities would be required? (Classrooms, large group areas, small group areas, labs, etc.)

6. Would members of your department like to separate the 7th and 8th grade from the high school?

   If so, how would this affect the needs listed in questions 4 and 5?

7. What is the attitude of your department towards study halls, student free time, and independent study? Would your positions on these matters require any special facilities or scheduling? Describe:

8. What kind of library resource center(s) would your department like to see and how would you like to have it used?

9. Is the present schedule satisfactory? _____

   If not, how would you like to change it? (use activity period for classes, shorten periods, add one period to the day, move to modular, flexible scheduling, etc.?)

10. List, in order of priority, the areas of curriculum you think are in greatest need of change in the whole school.

APPENDIX C

RELATIONSHIP BETWEEN HIGH SCHOOL
AND VOCATIONAL ASPIRATIONS: A
SURVEY QUESTIONNAIRE FOR CURRENT STUDENTS

Please check: Male_____ Female_____

and

Please check the following either "Yes" or "No"

The subjects I am taking in high school are
designed to enable me to enter a four year college.

Yes _____

No _____

Please list the job which you would like to have when you finish school: _____

Directions for the following questions:
Please put a check mark to the left of the one best answer for each question.

1. Are you interested in the subjects you take in high school?
   - _____A Extremely interested
   - _____B Very interested
   - _____C Somewhat interested
   - _____D Very little interest
   - _____E No interest at all

2. Do you feel that your high school subjects help you to prepare for your future job?
   - _____A Extremely helpful
   - _____B Very helpful
   - _____C Helpful
   - _____D Somewhat helpful
   - _____E No help at all

3. Are your homework assignments related to the job that you would like to have?
   - _____A Highly related
   - _____B Very related
   - _____C Related
   - _____D Somewhat related
   - _____E Not related at all

4. Do after school activities in high school prepare you for the job you would like to have?
   - _____A A great deal
   - _____B Quite a bit
   - _____C Little
   - _____D Very little
   - _____E Not at all

5. Do after school activities outside of high school prepare you for the job you would like to have?
   - _____A A great deal
   - _____B Quite a bit
   - _____C Little
   - _____D Very little
   - _____E Not at all

6. Do you feel that your teachers are interested in your future job plans?
   - _____A Extremely interested
   - _____B Very interested
   - _____C Somewhat interested
   - _____D Very little interest
   - _____E No interest at all

7. How much effort do you put into your schoolwork?
   _____A As much effort as possible
   _____B A great deal of effort
   _____C An average amount of effort
   _____D Little effort
   _____E No effort at all

8. Do you feel that the subjects you study in high school bring out your abilities?
   _____A Very well
   _____B Quite a bit
   _____C Somewhat
   _____D Very little
   _____E Not at all

9. Would you show more of your ability if your schoolwork were preparing you for a job?
   _____A A great deal more
   _____B Quite a bit more
   _____C About the same as now
   _____D Very little more would show
   _____E No additional ability would show

10. Do you plan to graduate from high school?
   _____A I definitely plan to graduate
   _____B I'm pretty definite about graduating
   _____C I may graduate, I'm not sure
   _____D I have little interest in graduating
   _____E I do not plan to graduate

11. Do you plan to go to a four year college?
   _____A I definitely plan to go
   _____B I'm pretty definite about going
   _____C I may plan to go, I'm not sure
   _____D I have little interest in going
   _____E I do not plan to go

12. Do you plan to go to a junior college, technical school, vocational school, nursing school, business school or similar type of program after high school?
   _____A I definitely will go
   _____B I'm almost sure to go
   _____C I might go
   _____D I'm unlikely to go
   _____E I definitely will not go

13. Do you feel that school would be helpful to you if you could attend school from about 8 AM to 12 noon and work, from about 1 PM to 5 PM, at a school supervised job which is useful and enables you to earn money?
   _____A Extremely helpful
   _____B Very helpful
   _____C Helpful
   _____D Somewhat helpful
   _____E Not helpful

RELATIONSHIP BETWEEN HIGH SCHOOL

AND CURRENT VOCATIONS: A SURVEY

QUESTIONNAIRE FOR FORMER STUDENTS

Please check: Male _____ Female _____

and

Please check the following either "Yes" or "No"

Were the subjects you took in high school designed to enable you to enter a four year college?

Yes _____

No _____

Please list the job which you currently hold: _____

Directions for the following questions:
Please put a check mark to the left of the one best answer for each question.

1. Were you interested in the subjects you took in high school?
   _____A Extremely interested
   _____B Very interested
   _____C Somewhat interested
   _____D Very little interest
   _____E No interest at all

2. Do you feel that your high school subjects helped you to prepare for the job you now hold?
   _____A Extremely helpful
   _____B Very helpful
   _____C Helpful
   _____D Somewhat helpful
   _____E No help at all

3. Were the homework assignments you had in high school related to the job you currently hold?
   _____A Highly related
   _____B Very related
   _____C Related
   _____D Somewhat related
   _____E Not related at all

4. Did after school activities in your high school prepare you for the job you currently hold?
   _____A A great deal
   _____B Quite a bit
   _____C Little
   _____D Very little
   _____E Not at all

5. While you were in high school, did your after school activities outside of school prepare you for the job you currently hold?
   _____A A great deal
   _____B Quite a bit
   _____C Little
   _____D Very little
   _____E Not at all

6. While you were in high school, did you feel that your teachers were interested in your job plans?
   _____A Extremely interested
   _____B Very interested
   _____C Somewhat interested
   _____D Very little interest
   _____E No interest at all

7. How much effort did you put into your schoolwork while in high school?
   _____A As much effort as I possibly could
   _____B A great deal of effort
   _____C An average amount of effort
   _____D Little effort
   _____E No effort at all

8. Do you feel that the subjects you studied in high school brought out your abilities?
   _____A Very well
   _____B Quite a bit
   _____C Somewhat
   _____D Very little
   _____E Not at all

9. Would you have been able to show more of your ability if your high school studies had been preparing you for a job?
   _____A A great deal more
   _____B Quite a bit more
   _____C About the same
   _____D Very little additional ability would have shown
   _____E No additional ability would have shown

10. Did you receive a high school diploma?
   _____A Yes
   _____B No

11. Are you attending a four year college?
   _____A Yes
   _____B No

12. Are you now attending a junior college, technical school, vocational school, nursing school, business school, or other non four year college program?
   _____A Yes
   _____B No

13. Do you feel that high school would have been helpful to you if you could have attended from about 8 AM to 12 noon and worked, from about 1 PM to 5 PM, at a school supervised job which was useful and enabled you to earn money?
   _____A Extremely helpful
   _____B Very helpful
   _____C Helpful
   _____D Somewhat helpful
   _____E Not helpful

APPENDIX D

CASTALDI FORMULA

The Castaldi Formula is used to determine space needs on the basis of the number of class periods per week, of students per section of each course, and on the total number of students taking each course. An 80% space utilization factor is assumed. The results of the calculation are summarized in terms of Teacher Stations.

The Formula: $T.S. = 1.25 \frac{E}{C} \cdot \frac{n}{N}$, where T.S. = Teacher Stations
E = Number of Students in Course
C = Desired Class Size
n = Periods per Week
N = Number of Periods in the School Week

Example # 1:

It is desired to determine the number of teacher stations needed for an 800-pupil high school in English.

800 students will be taking English, desired class size is 25, 5 periods of English will be given a week and there are 35 periods in a school week:

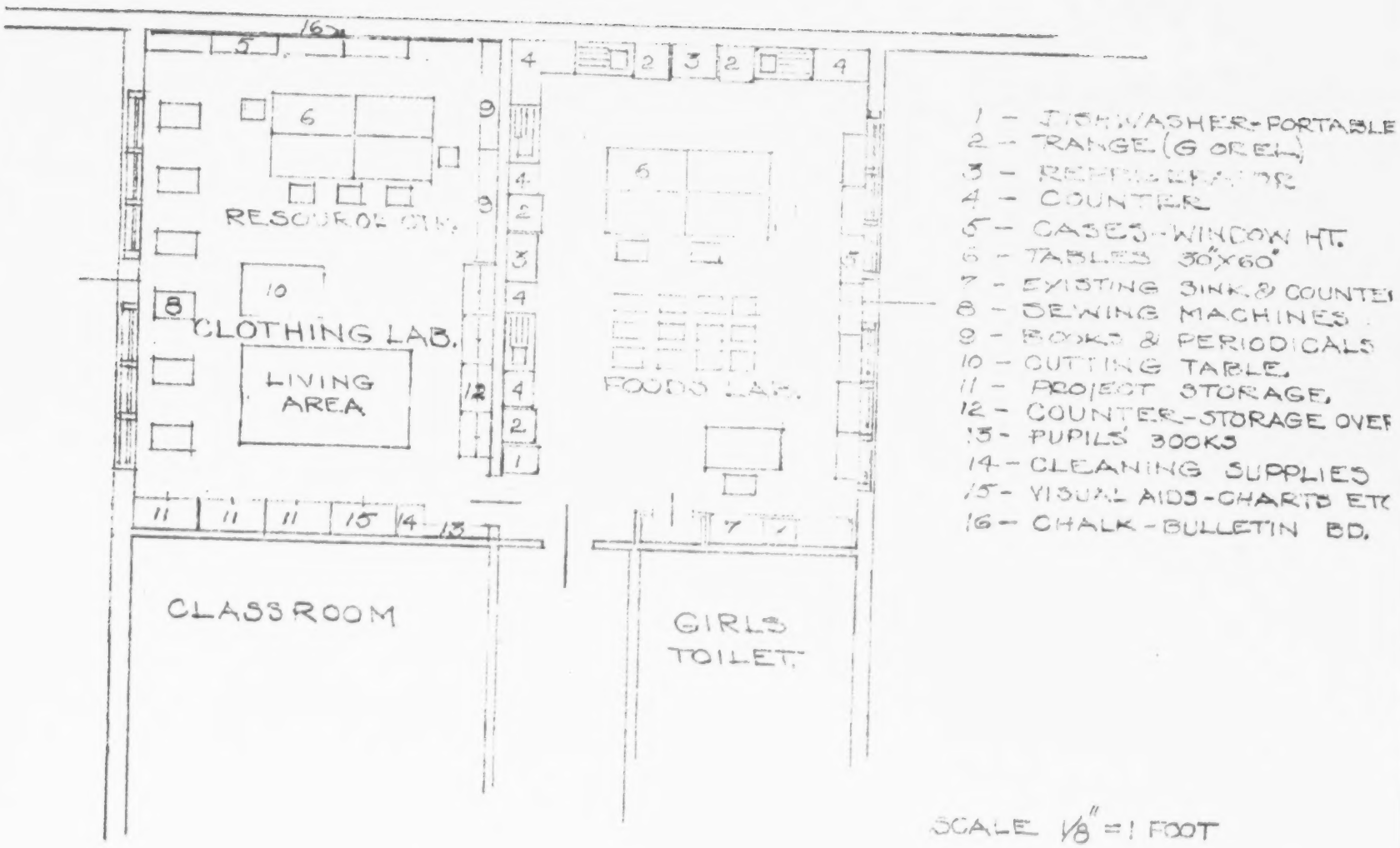
$T.S. = 1.25 \frac{800}{25} \cdot \frac{5}{35} = 5.7$ Teacher Stations required.

Example # 2:

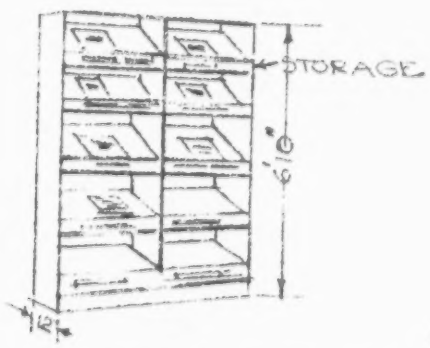
How many rooms are needed if 300 pupils are to be enrolled in art, which meets twice a week?

The desired class size is 25, and there are 35 periods in the school week.

$T.S. = 1.25 \frac{300}{25} \cdot \frac{2}{35} = .86$ Teacher Stations or 1 Classroom

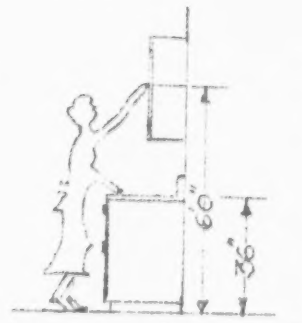


SUGGESTED LAYOUT
FOR
A 1 TEACHER HOME ECONOMICS SUITE
GROVETON HIGH SCHOOL



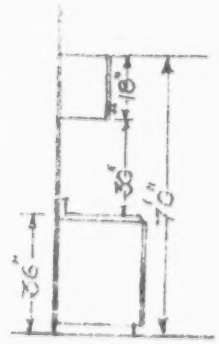
WALL PERIODICAL SHELVING & STORAGE

#13



COUNTER HEIGHT

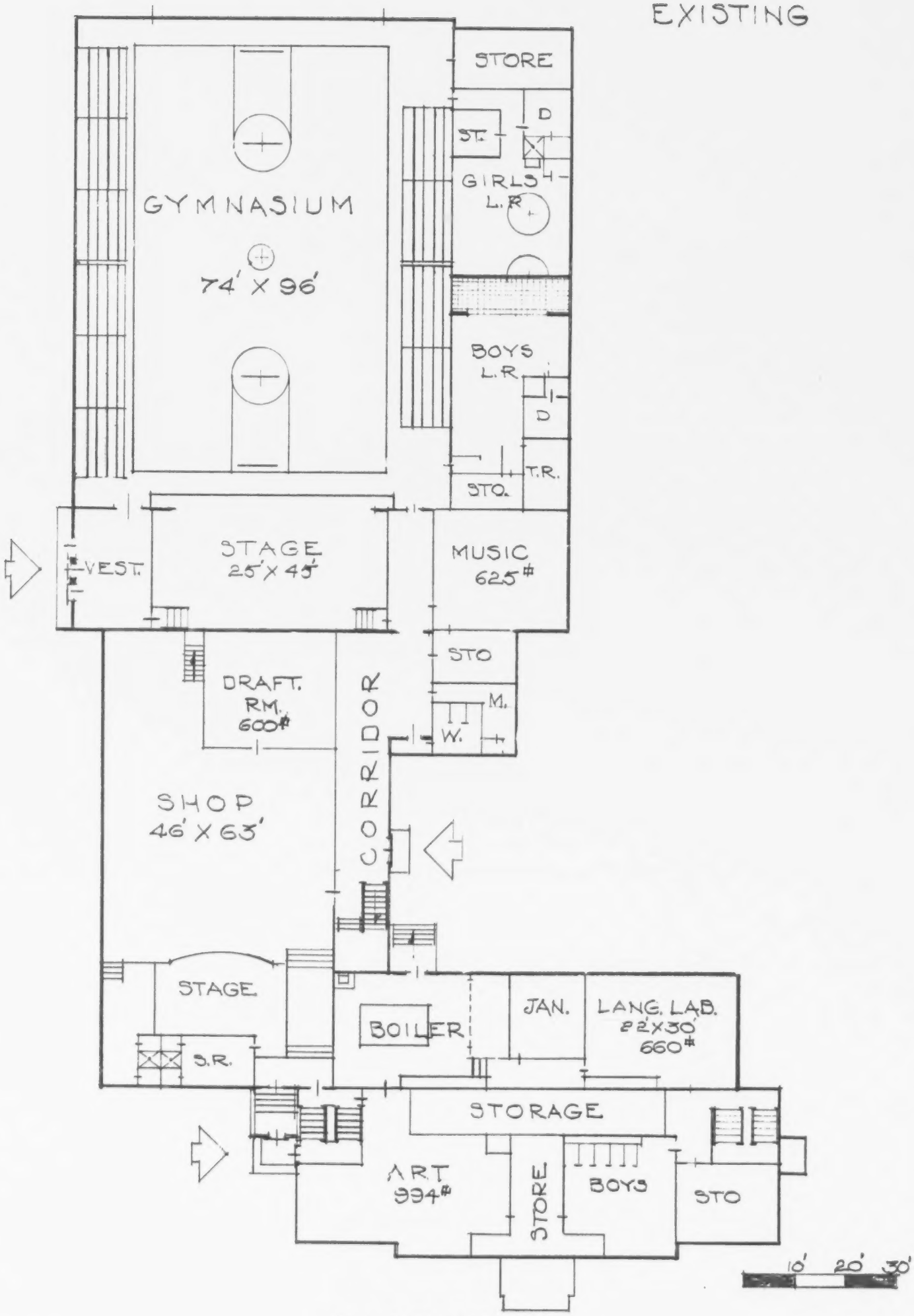
#12



STOR. OVER RANGE

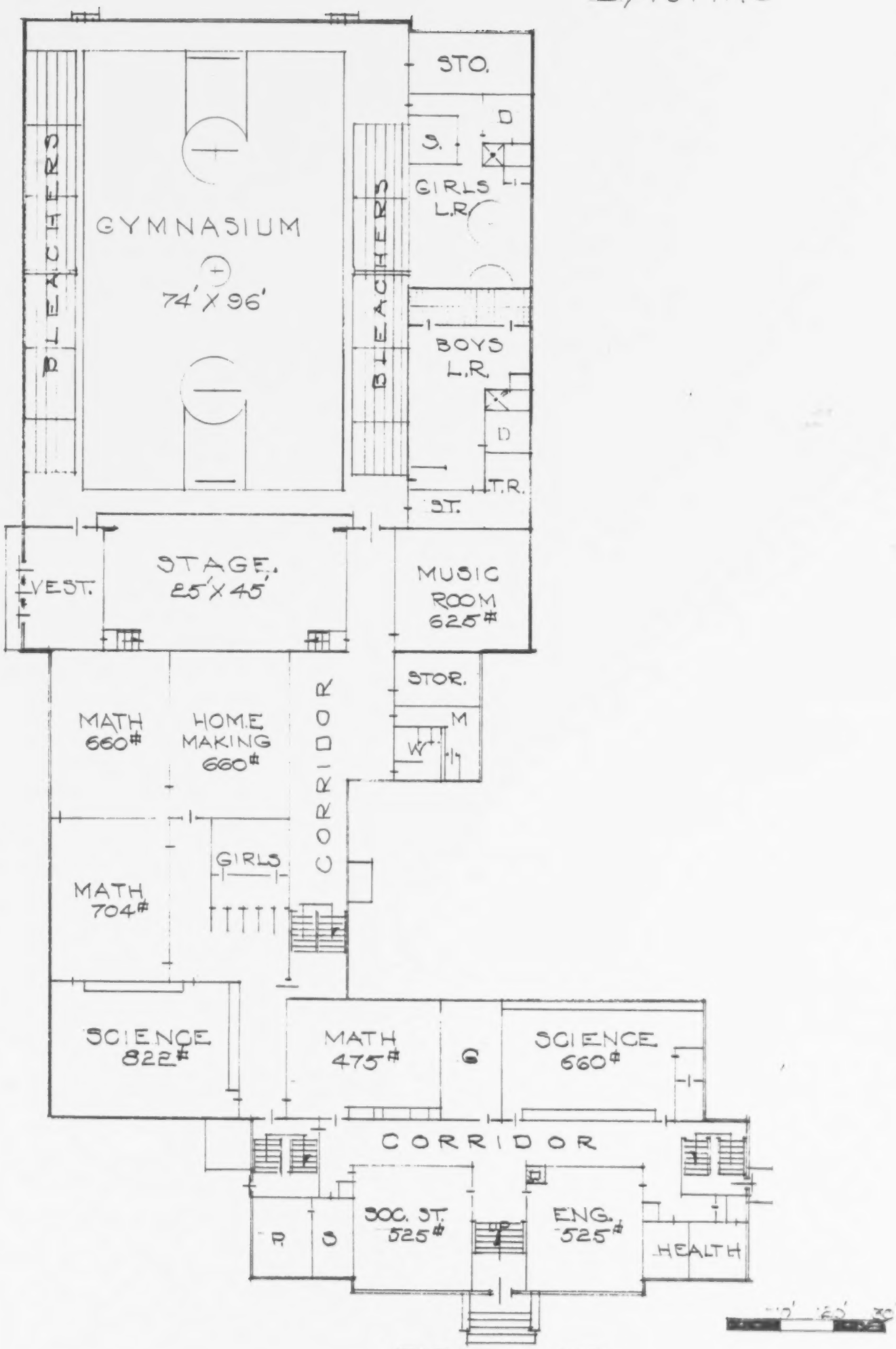
#2

EXISTING

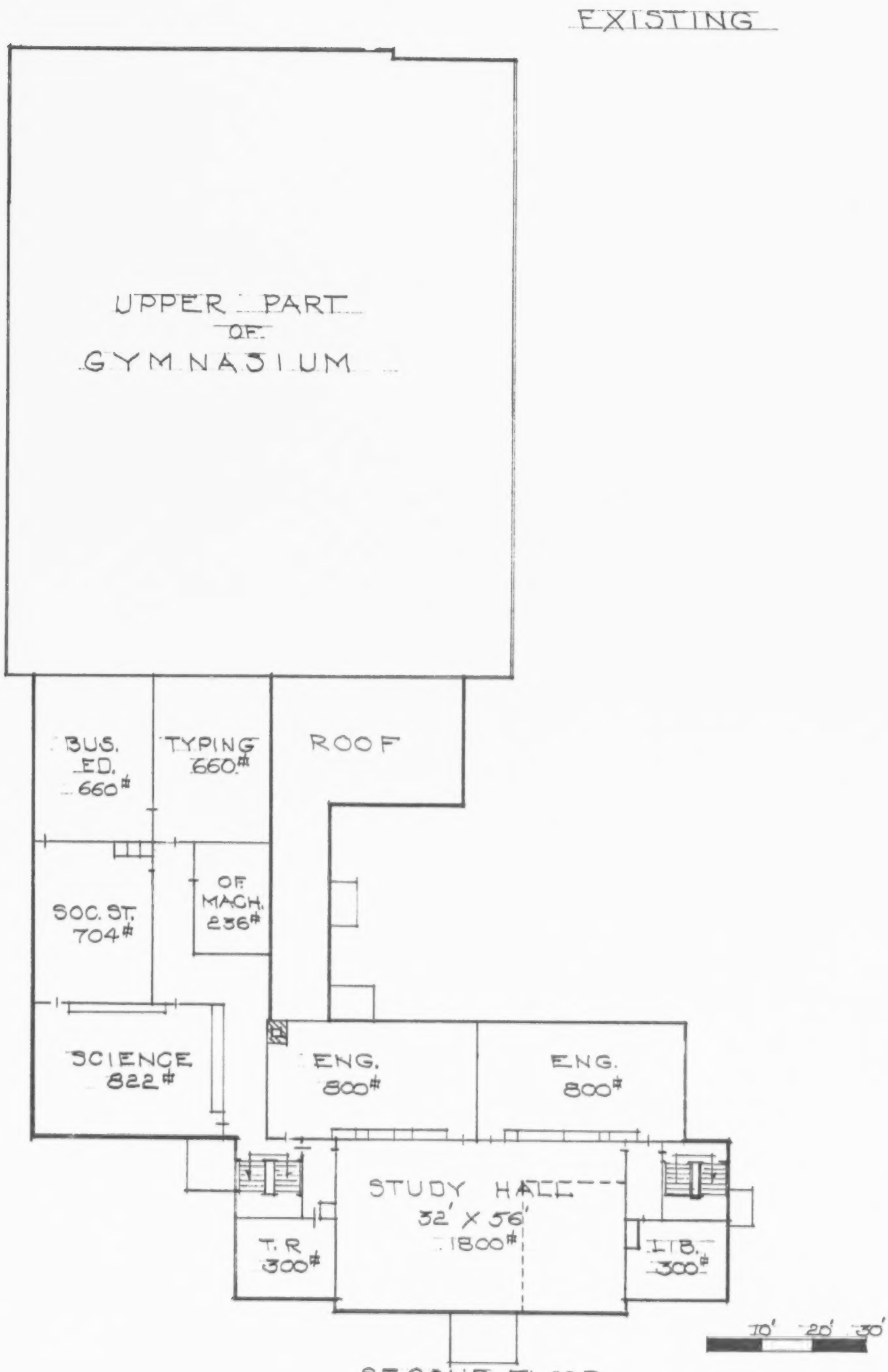


BASEMENT
GROVETON HIGH SCHOOL

EXISTING

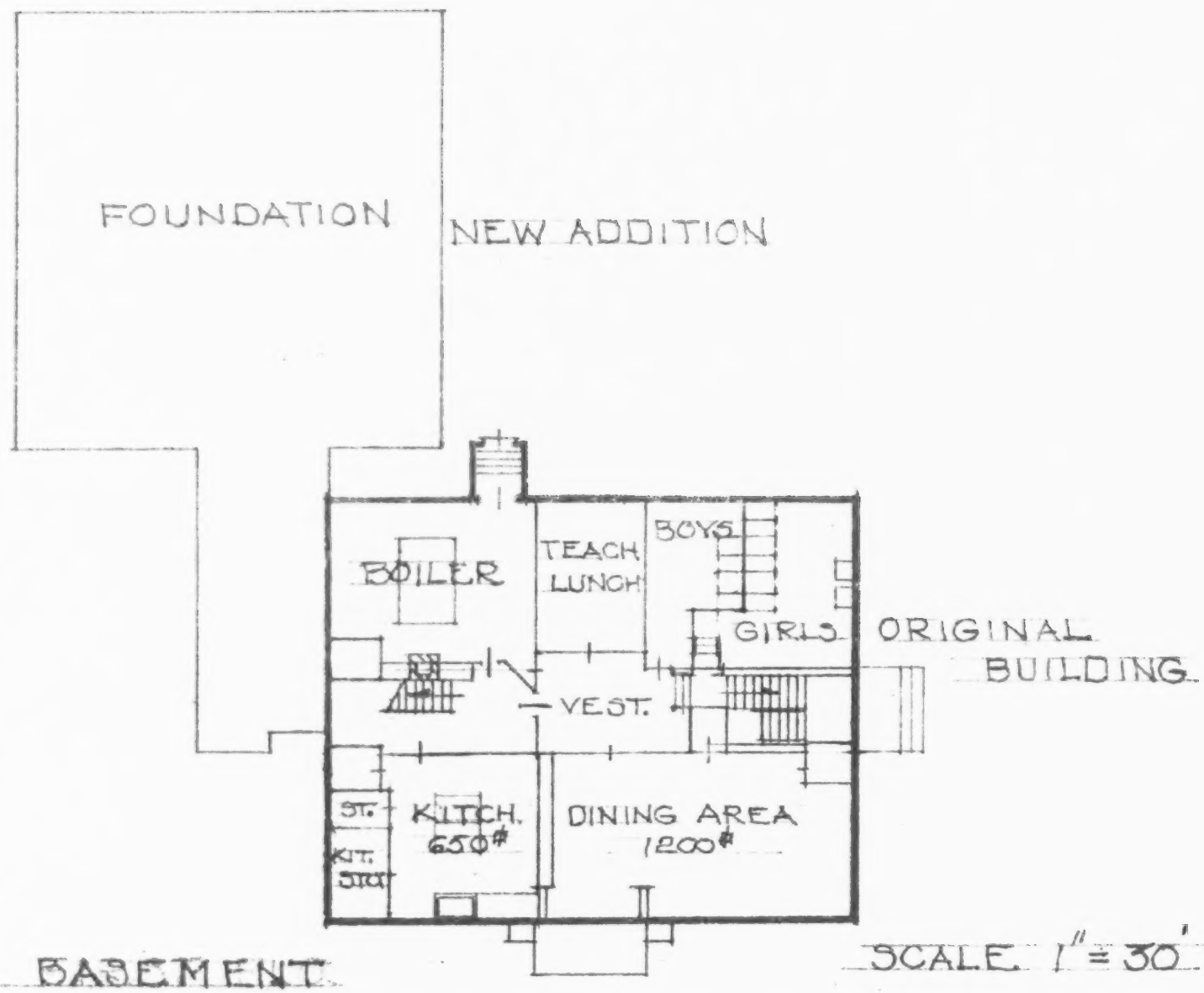


FIRST FLOOR
GROVETON HIGH SCHOOL



SECOND FLOOR.
GROVETON HIGH SCHOOL

EXISTING



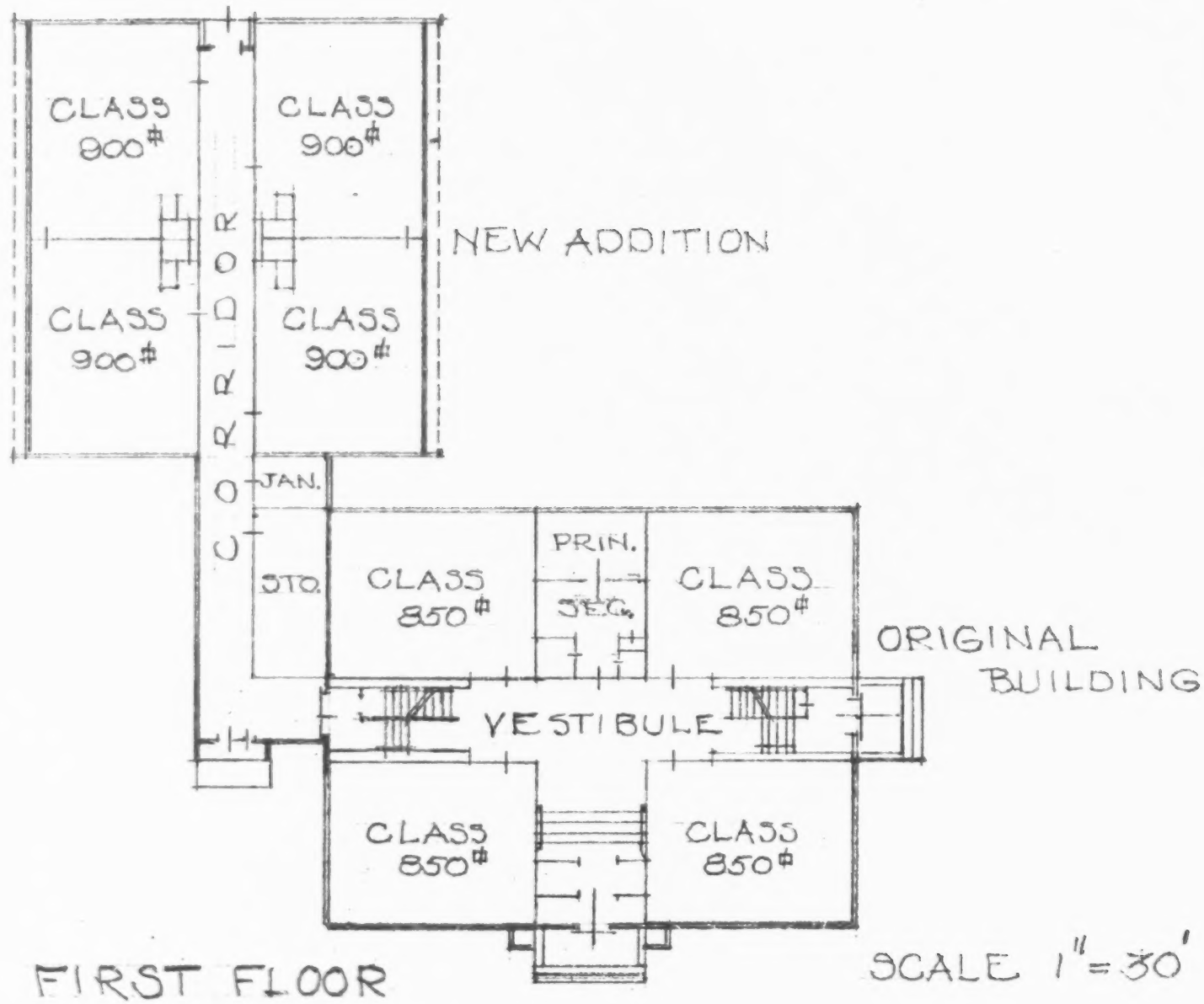
SCALE 1" = 30'

BASEMENT

GROVETON ELEMENTARY SCHOOL

4371

EXISTING



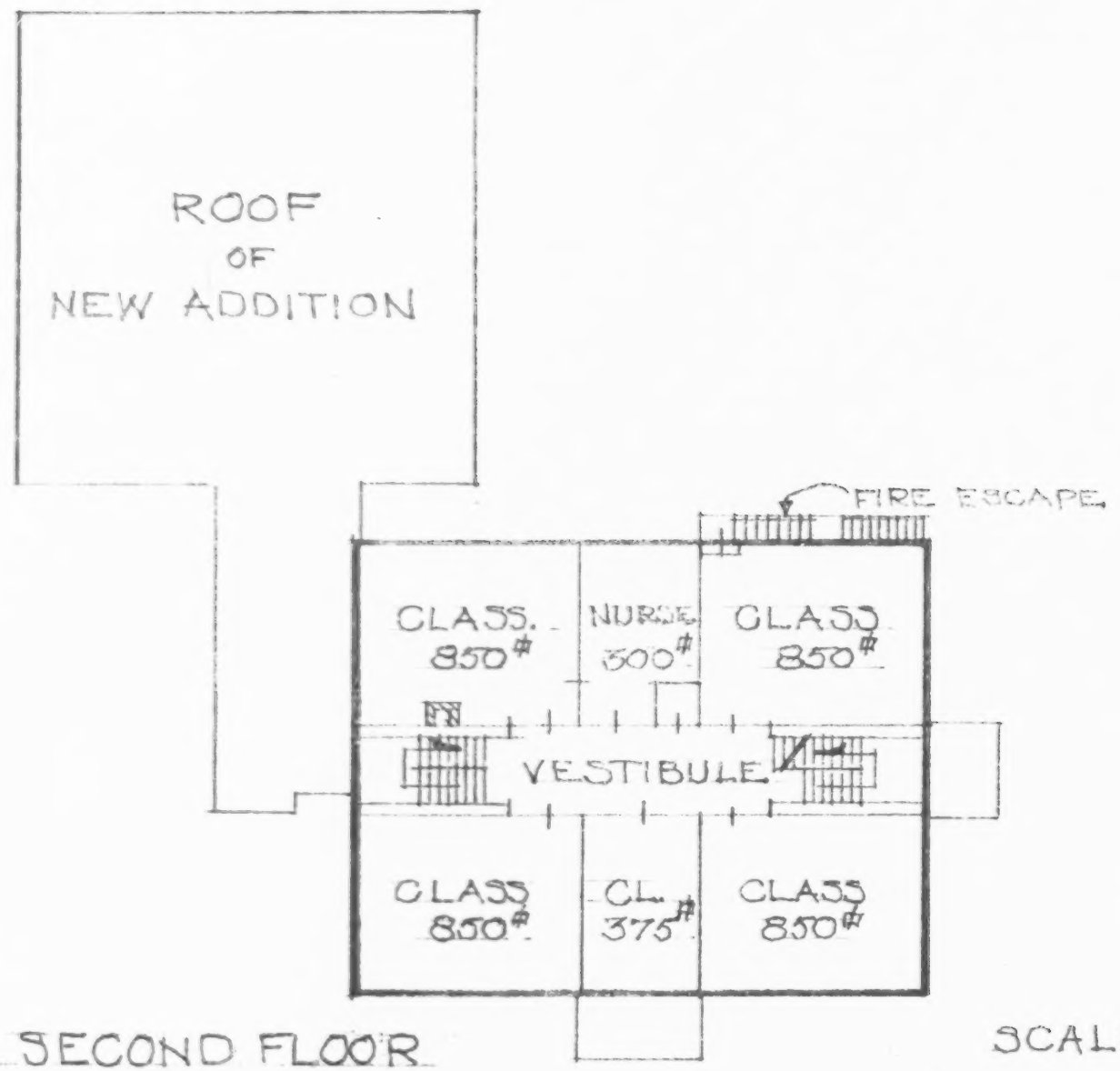
SCALE 1" = 30'

FIRST FLOOR

GROVETON ELEMENTARY SCHOOL

4372

EXISTING



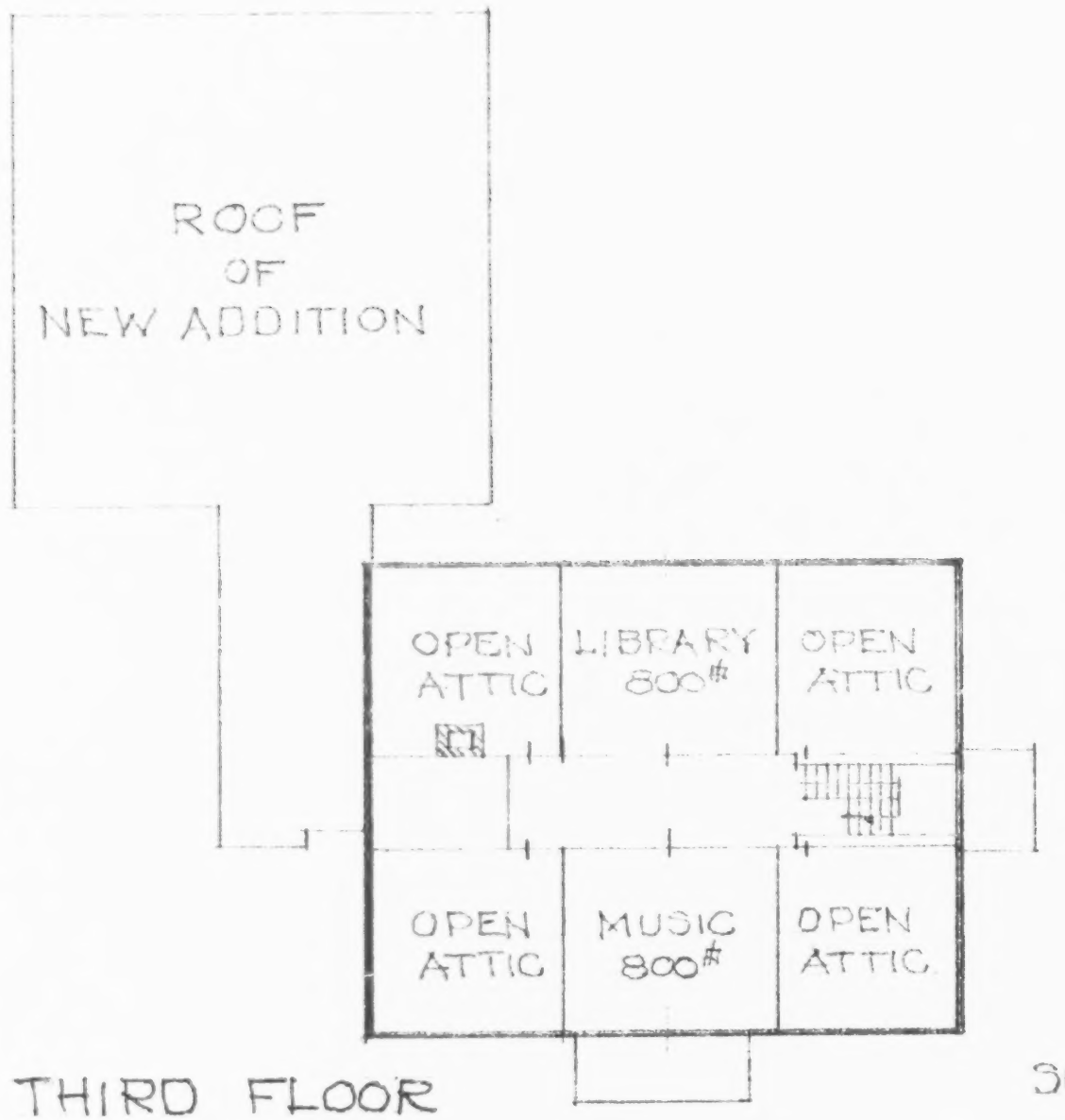
SECOND FLOOR

SCALE 1" = 30'

GROVETON ELEMENTARY SCHOOL

A373

EXISTING



SCALE 1" = 30'

THIRD FLOOR

GROVETON ELEMENTARY SCHOOL

4374

VT 014 422
CONWAY LONG-RANGE PLANNING PROJECT.

CENTER FOR EDUCATIONAL FIELD SERVICES,
DURHAM, N.H.
CONWAY SCHOOL DISTRICT, N.H.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - JUL70 133P.

DESCRIPTORS - EDUCATIONAL PLANNING;
*EDUCATIONAL FACILITIES; *FACILITY
REQUIREMENTS; BUILDING PLANS; SPACE
UTILIZATION; *SCHOOL PLANNING; *ELEMENTARY
GRADES; *SECONDARY GRADES; DESIGN NEEDS;
VOCATIONAL EDUCATION; EDUCATIONAL RESEARCH;
EDUCATIONAL FINANCE; CONSTRUCTION COSTS

ABSTRACT - A STUDY OF SCHOOLS IN THE CONWAY
(NEW HAMPSHIRE) SCHOOL DISTRICT WAS
UNDERTAKEN TO ANALYZE THE PRESENT SITUATION,
IDENTIFY EXISTING PROBLEMS, AND PROPOSE
ALTERNATE SOLUTIONS FOR DISCUSSION AND
PLANNING. IN ADDITION TO THE SCHOOL SURVEY,
DATA FROM A SEPARATE STUDY OF VOCATIONAL
EDUCATION IN SEVERAL DISTRICTS WERE ALSO USED
IN DEVELOPING THE LONG-RANGE PLANS. ANALYSIS
OF THE PRESENT SITUATION REVEALED THAT ON THE
ELEMENTARY LEVEL, CERTAIN DESIRABLE
FACILITIES ARE EITHER NON-EXISTENT
(KINDERGARTEN) OR NOT VERY SATISFACTORY
(LIBRARY AND GUIDANCE). ON THE HIGH SCHOOL
LEVEL, THERE IS A CERTAIN DEGREE OF
OVERCROWDING, WHICH IS AGGRAVATED BY SMALL
CLASSROOMS. IN ADDITION, THE SHOP FACILITIES
ARE NOT SATISFACTORY WITH REGARD TO EITHER
SPACE CONDITIONS OR EQUIPMENT. ON THE BASIS
OF THE STUDY, TWO LONG RANGE PLANS WERE
PROPOSED, ONE FOR A BASIC ORGANIZATION
CONSISTING OF GRADES K-6 AND 7-12 AND THE
OTHER FOR GRADES K-4, 5-8, AND 9-12. THESE
PLANS ARE DESCRIBED IN DETAIL, INCLUDING
COSTS, SPACE REQUIREMENTS, AND FLOOR PLANS.
(SB)

VT 014 422

VT014422

4376

CONWAY

LONG-RANGE PLANNING PROJECT

To: School Board
Conway School District
David Douglass, Chairman

School Study Committee

Superintendent David Appleton

July, 1970

CENTER FOR EDUCATIONAL FIELD SERVICES

University of New Hampshire New Hampshire School Boards Assoc.

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4377

CENTER FOR EDUCATIONAL FIELD SERVICES
6 Garrison Avenue
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LONG-RANGE PLANNING PROJECT

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ACKNOWLEDGMENT

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Mary Kennett
Gordon Mann

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INTRODUCTION

The School Board of the Conway School District, in the interest of long-range planning for future school needs, has contracted with the Center for Educational Field Services to conduct a study of the schools in the district, both elementary and secondary, for the purpose of analyzing the present situation, identifying existing problems, and proposing alternative solutions as a basis for discussion and planning.

The analysis of the present situation brought to light several problems. On the elementary level, certain desirable facilities are either non-existent (such as provision for kindergarten) or not very satisfactory (library and guidance, for example). On the secondary level, there is a certain degree of overcrowding at the High School, aggravated by the small size of the rooms that must be used for regular classes. The shop facilities are not satisfactory, with regard to either space conditions or equipment. The study conducted by Dr. Michael Andrew on curriculum structure and his survey on vocational education represent an attempt to find solutions to some of the apparent problems through consultation with concerned persons, both inside and outside the school system. Several recommendations emerged from these studies, which are treated in detail in this survey.

On the basis of this research, and after several meetings with the Conway School Board, Superintendent, and School Study Committee,

the CEFS team has developed two alternative plans which seek to provide solutions to some immediate problems and offer a foundation for long-range planning for the educational needs of the District. The essential features of the two plans may be summarized as follows:

Plan I: Basic Organization - K-6, 7-12.

1. Elementary Schools (K-6):
   6-room addition to Conway School
   4 room addition to Fuller School

   This will provide 26 classrooms for projected peak enrollment of 650, facilities for kindergarten, library, special education, better administrative and guidance areas at both schools.

2. Kennett High School (7-12)
   New annex to be built, containing gymnasium, 2-story industrial arts wing, music facility.

   Renovations to present building to departmentalize subject areas (science, social studies), improve administrative, guidance, health facilities, etc.

Plan II: Basic Organization - K-4, 5-8, 9-12.

1. Elementary Schools (K-4)
   4-room addition to Conway School (no change at Fuller)

   Same facilities as under Plan I for grades K-4.

2. New Middle School (5-8)
   New school to be built on new site of at least 11-12 acres, containing core facilities (cafetorium-gymnasium, guidance, administrative suites), two media centers, shop, etc. Capacity: 550-600 pupils.

3. Kennett High School (9-12)
   New annex to be built with same physical education, music facilities as in Plan I. Industrial arts wing of one story.

   Similar renovations to present plant as in Plan I.

PRESENT STATUS OF SCHOOL BUILDINGS

PRESENT STATUS OF SCHOOL BUILDINGS

Elementary School Buildings

There are three elementary schools in the Conway School District, serving grades 1-6. The Pine Tree School has four rooms, and the Conway and Fuller Schools, both built in 1956, have ten rooms each. The total elementary enrollment as of September, 1969, was 607 pupils, distributed as follows: 96 at Pine Tree, 269 at Conway, and 242 at Fuller. Several grade sections in these schools are overcrowded with up to 35 pupils in a classroom, necessitating administrative decisions with regard to maximum class size, dual grades, etc.

In general, the elementary schools lack several desirable facilities: no provisions are made for kindergartens, and the arrangements for remedial reading rooms or school libraries are not very satisfactory in any of the buildings.

Pine Tree School (grades 1-5 and special education classes)

With a present enrollment of 76 pupils in grades 1-5 and 15 pupils in special education classes, accommodated in four classrooms of 540 sq. ft. each, this school is overcrowded by modern standards. The small size of the classrooms is especially critical in view of the new state requirements for classroom size that are to be adopted in the near future, specifying a minimum of 900 sq. ft. (see below:"State Board of Education - Minimum Standards and Requirements").

The cafeteria, which is located in the basement, presents a definite fire hazard; any flash fire, whether from the kitchen or the boiler, would close the exits. It is strongly recommended that this condition be corrected as soon as possible.

Conway and Fuller Schools (grades 1-6)

The capacity of these schools, on the basis of 25 pupils per classroom in 20 rooms, is 500. The present enrollment of 511 has strained this capacity and resulted in the conditions of overcrowding mentioned above.

The sites are adequate for expansion: the Conway School shares 30 acres with the Kennett High School, and the Fuller School has a site of 7 acres.

Both schools have the following facilities: an activities room with a stage, a nurse's room, and a principal's office.

Kennett High School (7-12)

The original section of this building was constructed in 1923; the first addition was built in 1938, and a major one in 1963. The High School can comfortably accommodate approximately 850 students, but two factors contribute to conditions of crowding at the school. First, present enrollment at almost 900 is somewhat over capacity. Second, many of the rooms which must be used for regular classroom purposes are too small for anything but small-group instruction or seminar classes, especially in the light of the latest recommendations, which call for a minimum size of 800 sq. ft. for a regular classroom.

The gymnasium with an area of 60' x 76' is also too small by modern standards. The recommended size for a high school gymnasium is 100' x 110'; the playing area would occupy 50' x 84', and the rest of the space would serve to accommodate spectators, storage, etc. A physical education program for a high school of this size should have at least three teacher stations in order to provide two physical education classes a week for all students. Four teacher stations would be preferable, since this would permit three classes a week; one of these classes could offer "corrective" instruction in physical education.

The present shop facilities provide inadequate space even for the current program and will need to be expanded whether the recommendations of the Vocational Study included in this report are implemented or not. The auto shop has an area of less than 1200 sq. ft. and should have 3,000 - 3,600 sq. ft. The metals shop (1520 sq. ft.), the graphic arts room (484 sq. ft.), and the electrical area (576 sq. ft.) are all too small, especially according to the proposed standards for shop spaces. It would be advisable to give serious consideration to the changes necessary in this part of the school plant.

The present library with 3,800 sq. ft. offers excellent facilities for the number of students currently enrolled. There will, however, be a shortage of space in this area when the maximum enrollment is reached (in 1976-77, if the population projections are borne out).

The same applies to the art room, which is adequate for present

usage. Any increase in the total high school enrollment or in the number of students taking art would necessitate an immediate increase in available space. If this extra space could be provided now, it would not only forestall future emergency action, but could also be put to good use by the present art students.

The music area is at present located in the lecture room(no. 410). It is highly recommended that a modern music room with good sound insulation be constructed in a part of the building away from other activities. In this way the lecture room could be made available for large-group instruction and other uses, and the music program would be greatly improved by good separate facilities.

The present "auxiliary" spaces, i.e. those spaces not directly used as learning areas, will need thorough study. The principal's office, the guidance and health suites should be expanded and, if possible, located in close proximity to each other. It would be very desirable to have several small rooms for private conferences in this area.

FINANCIAL STATUS

BORROWING CAPACITY

In 1970, the Conway School District has an assessed valuation as equalized of $44,431,376. With a borrowing capacity calculated at 7% of the assessed valuation, or $3,110,196, and an outstanding debt of $625,000, the District would have a net borrowing capacity of $2,485,196. As the debt is paid off, the borrowing capacity would increase by $60,000 annually.

The borrowing capacity would be sufficient for the implementation of Plan I ($2,162,700). If Plan II is selected at an estimated capital budget of $3,033,750, the District has two options for funding the project: either special legislation may be introduced in the General Court to permit the District to exceed its borrowing capacity, or the AREA Plan may be adopted (see next page) as specified in RSA chapter 195-A.

THE AREA PLAN

With regard to funding school construction costs, the Conway School District may find it advantageous to consider the AREA (Authorized Regional Enrollment Area) Plan, since it is already acting as a receiving district on a contractual basis for several school districts. For a high school building program, the receiving school district under the AREA Plan would qualify for 55 per cent building aid from the state. On a $2,000,000 bond issue for 20 years, the state would thus contribute $55,000 on the first payment. In addition, incentive aid is available. This is now being partially funded and could be as high as $75.00 per high school pupil, $60.00 per junior high pupil, and $45.00 per elementary pupil. An AREA school may also be eligible for lower interest rates if the State Building Authority guarantees a part of the bond issue under the terms of RSA Chapter 195-C.

The obvious financial advantages of the AREA Plan to the receiving school district would seem to merit serious consideration by the Conway School Board.

PROGRAM AND SPACE NEEDS

STATE BOARD OF EDUCATION

MINIMUM STANDARDS AND RECOMMENDATIONS

PROPOSED STANDARDS FOR SECONDARY SCHOOLS

In order to clarify the rationale underlying the recommendations of the project committee as developed in the two alternative plans presented later in this report, a brief summary of the minimum standards of the State Board of Education for elementary schools as they apply to the Conway School District will be presented. Standards for secondary schools (grades 7-12) are now being developed and will be promulgated by the State Board in the near future. They are introduced here in draft form. Although they may undergo some revision before approval of the final version, in essence they represent the intentions of the State Board.

Elementary Schools (K-8)

School Sites

Minimum Standard (Requirement)	Each elementary school shall include a minimum of five acres plus an additional acre of land for each 100 children of projected maximum enrollment for new construction.
Recommendations:	Each elementary school site should include a minimum of ten acres plus an additional acre of land for each 100 children of projected maximum enrollment for new construction.

Classroom Size

Kindergarten	50 sq. ft per pupil (at least 1000 sq. ft.)
Regular classrooms 1-6	30 sq. ft. per pupil (or 900 sq. ft., whichever is greater).
Regular classrooms 7-8	30 sq. ft. per pupil (no less than 800 sq. ft.)

Resource Centers or Libraries

K-6:

Less than 150 pupils	Space may be provided in regular classrooms.
150-300 pupils	1000 sq. ft., or one regular classroom.
300-500 pupils	2000 sq. ft., or two regular classrooms.
Over 500 pupils	Minimum area is 10% of enrollment times 40 sq. ft. per pupil.
7-8:	Minimum area is 10% of enrollment times 40 sq. ft. per pupil - minimum area approved is 1800 sq. ft.

Secondary Schools (7-12)
(Proposed Standards)

A REGULAR CLASSROOM, WITH FIXED PARTITIONS, SHALL CONTAIN A MINIMUM OF 800 SQ. FT., INCLUDING STORAGE, OR 30 SQ. FT. PER STUDENT, WHICHEVER IS GREATER.

Subject	Square Feet per Student	
	Acceptable	Recommended
Regular Classrooms (English, Math, Language)	30	35
Social Studies	35	40
Language Lab.	35	40
Science		
Combination Lab-Classroom	60	70
Single-Purpose-Room Lab.	50	60
Art	50	60
Music		
Instrumental	35	40
Choral	10	15
Practice Rooms and Storage as Required		
Industrial Arts		
Junior High	75	100
Senior High	100	125
Home Economics		
Food or Clothing Laboratory	50	60
All-Purpose Department	60	70
Library-Resource Center:	10% of enrollment at 40 sq. ft. per student. Minimum area approved: 1800 sq. ft.	
Vocational Offerings		
Business and Office Occupations		
Bookkeeping, Stenography	40	50
Typing, Business Machine	35	40
Office Practice Lab-Classroom	50	60
Distributive Occupations		
Combination Lab-Classroom	60	70

Subject	Square Feet per Student	
	Acceptable	Recommended
Occupational Home Economics		
Food Service, Lab-Dining Area and Storage	110	120
Child Care Services	110	120
Trade and Industrial Education		
Auto Mechanics	175	200
Machine Shop	150	175
Building Construction	125	150
Drafting	60	80
Electricity-Electronics	60	80
Printing-Graphic Arts	100	125
Welding	60	80

It is recommended that classrooms and related laboratory facilities be located adjacent to each other or in close proximity, also that additional storage space be provided.

The Relationship of Curriculum Needs and Space Requirements

by

Dr. Michael D. Andrew

I. Introduction

The basic assumption of the space needs survey is that space projections should not only be related to anticipated school populations but that the kind of space and the priority of needs should be determined by the nature of the desired educational program. It is usually the case that educational desires are quite different from present practice. Thus, it is normal that the desired program should represent a need for curricular change as well as change in facilities.

This survey has uncovered, in some areas, the basic framework of a desired program that will require curriculum change and related change in the nature and amount of space. Both of these needs will be described.

It is assumed by this investigator that effective and lasting change is best actualized by the commitment and involvement of those persons most directly responsible for implementation and support of changes.

Teachers, administrators, concerned citizens and students are those most closely involved. Each of these groups has been instrumental in this study. Faculty and administrators have been consulted to initiate ideas and specify needs. Concerned citizens have been involved in assessing these needs and offering further suggestions.

Students have been asked for general appraisal of present programs and for recommendations for change. Although much more could be done in this initial planning phase, the active involvement and interest of various groups has been productive and has kindled considerable enthusiasm for further efforts to improve the educational programs of the Conway schools. It should be noted, however, that this study has been generated out of a feeling of pride in present school programs and facilities and a desire for further improvement of what is already a very praiseworthy public school system.

The principal role of this investigator has been to encourage dialogue within and among the concerned groups and to assist in the evolution of educational plans that fit the local needs, values and resources.

Throughout this process the Superintendent, Mr. David Appleton, has been most cooperative and helpful. His support and advice have been invaluable. Special acknowledgement must go to the School Study Committee, who have not only been involved in generating educational ideas and priorities but who have spent many, many hours assisting in the gathering of data for this report. Their interest, involvement, and commitment has been extraordinary. Equally helpful has been Mr. George Davidson, who was largely responsible for the vocational survey and Mr. Hollis Robbins who was of considerable assistance in this project. Kennett High School Principal, Mr. Paul Rodenhiser,

Mr. David Brown, Miss Lord, Mrs. Walker and Mr. Mathurin have also been unfailingly patient and cooperative in their assistance.

A general survey of needs was made by questionnaires and interviews with elementary school principals, many elementary school teachers, all high school teachers, Mr. Paul Rodenhiser, Mr. George Davidson and Mr. David Appleton. Questions were directed to present and future program and space requirements. Other sources of data include on-site visits, conferences with the superintendent; high school principal; elementary school principals; high school department chairmen and specialists; teachers in the Conway and John Fuller Elementary Schools. Written reports[1] were submitted by the high school department chairmen. These reports followed a discussion by all department chairmen and reflected further discussion with their staff members. The 1966 Visiting Committee Report on the Evaluation of Kennett High School (New England Association of Colleges and Secondary Schools) was also reviewed as a possible source of data.

Data from the various sources were directed to two concerns: (1) space and facilities needed to maintain the present level of program; (2) space and facilities required for desired program changes in the next few years. (Projections of school population and space in this study have been made over a period of ten years to 1980-81.)

[1] See Appendix A for sample questionnaire.

The data were summarized and evaluated, and combined with population projections to reach an estimate of space needs. Results have been discussed at length by Dr. Andrew of CEFS, Mr. Appleton, and the Conway School Study Committee. Pooling of data and opinions has resulted in the following list of priorities:

At the Elementary Level

1. Special education in each school
2. Kindergartens
3. Library-resource centers with librarian
4. Improved physical education space
5. Specialized art and music facilities and instructors
6. Specialized science facilities

At the Secondary Level

1. An expanded industrial arts - vocational education program and facility
2. An expanded physical education facility
3. "Special education" facility and instructor
4. Expanded music facility
5. Departmental resource centers and office space

II. Elementary Schools

Elementary school principals and teachers of the Conway and John Fuller Schools were asked to describe present space needs and to project desired changes in program and facilities for the next several years.

It was noted that there are 30-34 students in 5 rooms at the Conway Elementary School. The attendance area could be changed to overcome this situation by a redistribution of population between

Conway and Fuller Schools. Since an increase of only 34 children is projected in total population of grades 1-6 in the year 1980-81, overcrowding with the present program is not extremely critical. There is a need to meet state standards with special reference to library-resource areas and the apparent need of space for special education, specially equipped science areas, and kindergarten rooms. Also bothersome locker, coat and storage problems were reported.

When teachers and principals were asked to indicate their curriculum wishes and order of priority, the following items were almost universally cited: (1) special education in each school; (2) Kindergarten; (3) library-resource center with librarian; (4) physical education space and lockers with showers; (5) art room with teacher; (6) music room with teacher.

Both prinicpals and Mrs. Croto (specializes in science in the Conway Elementary School) also listed a specialized science room as a high priority.

The author of this report concurs that the teachers and administrators have singled out seven critical areas for improvement. It is difficult to assign priorities. Any remodeling of present structures or new buildings should be planned with careful consideration of each of these areas. The author's first priorities would be kindergarten, special education, library-resource centers, and science rooms. Physical education can be (and is) carried on reasonably

well. Art and music are presently provided in the individual classrooms by teachers and specialists. Special education is non-existent except in the Pine Trees School and would serve many more students if distributed in individual schools (with the added benefit of not isolating these students as completely). The library-resource center is virtually non-existent and its addition could add a significant learning center dimension to the curriculum. Science as an exploratory, activity-centered learning experience requires an appropriate facility and teacher. Most teachers presently do little with respect to an activity-centered science program. This points to the need for a specialist.

Kindergarten might require a greater acquisition of staff than the above items, and a considerable investment in space and transportation. Nonetheless, it would be highly desirable.

Most of the elementary problems could be met by the building of a new elementary or middle school, perhaps closing the Pine Tree School and redistributing enrollment. Other alternatives would be the addition of space to present facilities or the building of a large elementary school in Conway and the utilization of the present Conway Elementary School for grades 7-12. Several of these possibilities will be explored more fully in the alternative plans developed by the project committee and discussed later in this report.

III Secondary Education

The space shortage for present program is somewhat more critical in Kennett High School than in the elementary schools. The music and physical education facilities are very inadequate. Lack of staff and adequate facilities limit the junior high and high school industrial arts program. The high school biology and junior high science programs are badly overcrowded. Rooms 711, 9 and 10 are English and Math seminar-size rooms inadequate for the large classes presently assigned to them.

In addition to current space needs for the existing program, there are two other reasons for projected space needs for grades 7-12. First, the faculty and administration are seeking major program changes. Second, enrollment projections for grades 7-12, show a 19% increase from 1970-1976-77.

Present needs, projected program changes and future enrollments will be taken into account in the following description of space needs for grades 7-12.

There was unanimous agreement by the faculty that grades 7 and 8 should be separated in some ways from grades 9-12. It was felt that separate schedules and generally separate areas within the same facility would be adequate. For these reasons all 7th and 8th grade courses and space needs have been estimated by themselves.

In projecting space needs with the Castaldi Formula, a seven-period day was assumed. This was in response to a unanimous desire on the part of the faculty for a more flexible schedule and relief from present overcrowding. An alternative would be modular flexible scheduling, but this did not seem appropriate to present staff desires or modes of operation. (There was, for example, very little interest in large-group or small-group instruction or in inter- or intra-departmental team-teaching operations.) Standard classes of 25 students were generally assumed (except as otherwise indicated.) Class enrollment figures were based on 1969-70 enrollment, school population projections and faculty-administration estimates of enrollment changes. Where new courses are suggested, projected enrollments were sometimes taken entirely from the same group of students enrolled in other courses in the same departments. In other cases there is a projected demand from a "new" student population. These were made in consultation with principal and department heads. (Tables showing the needs for teacher stations are to be found in Appendix B.)

There was considerable interest at the secondary level in more effective use of student study or non-class time. It is clear that the large cafeteria study hall is a waste of faculty resources in police duties and a waste of student time for many in those study halls. It was recommended by faculty, a recommendation with which this author concurs, that supervised resource areas for student use during

free time would be a very worthwhile educational alternative at Kennett High School. Such a plan would allow students, who did not violate the privilege, the option of spending unscheduled time in resource areas. Resource areas are recommended in Art, Industrial Arts, Social Studies, English, Science, and Physical Education. This recommendation has been provided for in the alternative space plans summarizing this document.

In addition to the above program changes there was a strong feeling expressed by faculty, administration and the school study committee that some changes needed to be made in curriculum for the non-college bound student and that facilities and staff for special educational needs should be provided. These areas of the curriculum have dictated major portions of the space projections. Improved vocational education was considered of such high priority that CEFS undertook a detailed study which is summarized separately in the following section.

Inadequacies in the present physical education facility have been noted and are provided for in space development alternatives. Other proposed space changes in the high school include improved accommodations for administration, guidance, and health, as well as additional teacher office space. In several cases teacher office space is proposed adjacent to proposed resource centers. This will allow for departmental planning by faculty, for teacher use of resource areas, and for convenient supervision of these areas. Teacher office space

also decreases the need felt by teachers for their own classroom and an understandable resistance to moving all of their belongings and resources from room to room.

Summary of Secondary Program Recommendations

1. Expanded physical education facility: four teacher stations needed for grades 7-12.

2. Special education room and staff.

3. Expanded vocational-industrial arts program and improved curriculum for non-college bound students. (See special report below.)

4. Addition of resource areas and corresponding release of faculty and students from study halls.

5. Change to a 7-period class day with elimination of the present activity period. (A prompt change of this nature will relieve immediate crowding and allow some much needed leeway in scheduling.)

6. Addition of teacher office space located, where appropriate, adjacent to resource centers.

7. Development of a new music facility.

8. Development of an expanded art facility.

9. Additional general classroom space to alleviate present crowding and accommodate projected school populations.

10. Expansion of administrative offices.

11. Expansion of counseling facilities and relocation near administrative offices.

12. Expansion of nurses' offices.

VOCATIONAL EDUCATION STUDY

ARTHUR D. LITTLE REPORT (1968)

Review

A very brief summary of the findings of the 1968 Arthur D. Little Report[1)] is included here as background for the Vocational Study carried out by the CEFS committee. In the Report the three northern counties (Coos, Grafton, and Carroll) were grouped as one region for purposes of study and analysis, and the findings have some appliciability to the Conway area. However, the CEFS committee believes that developments in Belknap and Merrimack Counties (treated as a separate region in the Little Report are more pertinent to the present and future situation of Conway, and therefore the study results for that area are also included here in abridged form.

In the three northern counties there has been a decline in the number of farms as the hill farms are being abandoned, but there has been a small increase in farm product sales. Population has increased only slightly and at a much slower rate than in New England as a whole. In employment, 53% was in manufacturing, 19% in trade, and 12% in services. Manufacturing was dominated by lumber, furniture, and paper products, with lumber and textiles showing some decline. The industries showing the highest rate of growth were machinery (including electrical)

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1) New England: An Economic Analysis. A Report Prepared for the New England Regional Commission by Arthur D. Little, Inc. Cambridge, Mass., 1968.

and printing, and there was some growth in chemicals, rubber, and plastics. By 1980 employment in construction, finance, insurance, and real estate is expected "to increase markedly" with services taking a relatively low share.

In contrast to the three northern counties, Belknap and Merrimack comprise the second fastest growing area in New Hampshire in both population and employment. Between 1959 and 1964 the number of farms declined by one-third and the agricultural acreage by one-fifth. In approximately the same period (1960-1966) employment in manufacturing increased by 7%, in construction by 49%, in services by 47%, and in trade, finance, insurance and real estate by over 31%. Thus the greatest increase in employment was in non-manufacturing fields. The employment pattern in manufacturing presents the following picture: 26.6% in textiles, apparel, and leather; 16.3% in electrical machinery; 14.6% in other machinery; 10.9% in lumber, furniture, and paper; 10.2% in printing and publishing. The rate of growth in this area will be higher than that for New England as a whole. Although manufacturing is expected to continue to dominate the industrial scene, there will be an employment shift towards other fields. By 1980 electrical machinery is projected as the biggest employment sector.

Although the Conway area is of course affected by economic developments in the northern counties to some degree, the extension of throughways to eastern New Hampshire will reinforce the tendency already evident in the region towards closer economic ties with the counties to the south. The Conway area may be expected to develop in similar directions as

Belknap and Merrimack with an employment shift to the south and increased manufacturing in and around Conway. Any study of the future vocational needs of the Conway School District must take the above factors into consideration.

VOCATIONAL STUDY

The general survey of needs in the Conway schools revealed a priority concern for improvement of the vocational program at Kennett High School. The Research Coordinating Unit, Vocational Technical Division, New Hampshire State Department of Education, made funds available on a matching basis so that CEFS could undertake a more thorough study of curriculum needs in this area. Since there was a strong interest in cooperative education-vocational education, special attention was directed to the interests and needs of employers in the Conway area. Students were also surveyed to gain their general reaction to the present curriculum and their specific interest in work-study plan. In addition, members of the high school staff and administration, Mr. Appleton, and the School Study Committee were involved in discussion of curriculum needs in the vocational area. In the survey of employers, 45 businesses in the area were polled. Questionnaires and letters (Appendix C) were followed up by personal interviews with 32 of the 45 employers. The results of this poll are summarized as follows:

> 10 businesses voiced an interest in some kind of cooperative work experience for high school students.
>
> 13 businesses said they were not interested in a cooperative work experience for high school students.
>
> 11 businesses were not presently interested, but would like more information.

The consensus of the interviewers was that most of the employers, including those who showed interest in a cooperative work experience,

did not feel that specific job training was a necessity for employment in their businesses. Rather, those who showed interest in cooperative plans felt that work experience was of more general educational value for students.

There was a nearly unanimous feeling that general training in basic math and communication skills, and the development of positive work attitudes was far more important than specific job skill training. Among the attitudes considered critical by employees were personal responsibility, pride in work, and courtesy, with special emphasis being placed on the need for the first two qualities. Several respondents said that students needed to explore a variety of job experiences at the high school level.

Almost all of those who voiced an interest in cooperative education felt that development of a particular work skill was not necessary. Nonetheless, they saw general educational value in work experience and commented on the benefits of (1) exploring different jobs, (2) finding out what jobs are like before being hired, (3) learning general work habits and employer expectation, (4) making school work more meaningful.

Some interest was expressed in a vocational program with cooperative work opportunities to train cooks and chefs for local resorts and restaurants. Interest was also shown in having well trained typists ready for secretarial jobs, but there was little desire for more detailed skills for these jobs. In every case, attitudes were given high priority.

At Kennett High School, Mr. Hollis Robbins and Mr. George Davidson have been most closely involved with the development of a vocational program. They have already initiated a pilot program in Cooperative Education and were anticipating high interest in expanding this program. Results of the Employer Survey indicated a general lack of interest in a two-year program of intensive training for particular job skills.

The interpretation of this data was suggested by Mr. Robbins, Mr. Davidson, the School Study Committee and this author. It appears that the nature of businesses in the areas is such that intensive training for particular job skills is not required. There is little technical industry in the area, such as machine tool, electronics or printing, and most employers represent small businesses and recreational enterprises. Many of the jobs are seasonal and require little specialized training. A 1969 Investigation of Recreational Employment in this area showed only 30% of employees with prior work experience in their jobs.[1] Employers' concern for attitude was also verified in the Annis-Floyd study which showed, "Courtesy, appearance, and pride in work rated the highest concern among the employers".[2] The study also points out that Employment Security is used very little as a source of obtaining employment.

1. Annis and Floyd. "An Interstate Investigation of Employment Oppertunities and Educational Requirements for Jobs in Outdoor Recreation," Project No. 8-A-011, U. S. Department of Health, Education, and Welfare, Office of Education, Bureau of Research, Septemter, 1969, pp. 58-60.

2. Ibid., p. 59.

Despite the lack of demand for a two-year vocational cooperative education program for specific job skill development, there was interest from some employers in assisting the school with a general work experience.

The questionnaire to current students (Appendix D) was filled out by 109 seniors. The general reaction to school subjects by all respondents (questions 1-3) showed most responses in the middle of five categories--referring to their curriculum as "somewhat interesting and useful". Differences between college-bound and non-college-bound students were not significant. In fact, there was a remarkable similarity of responses regarding curriculum between all sub-groups, college preparatory girls, college preparatory boys, non-college preparatory girls and non-college preparatory boys. It was surprising to note that the greatest interest in a cooperative work experience during the school day was from college-bound boys.

Only 4 respondents felt that teachers were extremely interested in students' future job plans. Twelve felt teachers were very interested and 91 felt teachers had some, little or no interest.

There was a strong feeling that the students' abilities could be much better brought out if school work were seen as preparing students for a job.

Sixty-six of 123 questionnaires were received from students of the class of 1968-69 (see Appendix E for questionnaire and summary of results). Most of these were from college students. Responses were quite similar to those of present students. There was a significant

difference on question 2 (Did subject help prepare for job you now hold?) where responses of former students were evenly distributed among all options. The relevance of homework assignments to job came out the lowest on both questionnaires. The enthusiasm for relating high school studies to specific jobs was somewhat less with former students (question 9).

In addition to questionnaires to the class of 1968-69, a summary of the jobs occupied by the class of 1969 was reviewed. This summary is available at the Guidance Office.

After considering the data from the above sources, it was concluded by Mr. Davidson, Mr. Robbins, the School Study Committee, and this investigator, that there was a strong need for curriculum change, especially for the non-college-bound student. However, there was little evidence from the local business community or the students that a program was needed which would commit students to two years of intensive training for a specific job. The nature of available jobs in the area, the educational philosophy of citizens interviewed and the views of the study participants came out in support of a broad, flexible program. It was concluded that a major revision in the basic curriculum and treatment of the non-college-bound student was in order and that the industrial arts program should become an industrial art-vocational program providing a wide variety of job experiences as well as basic shop skills. The following specific recommendations were made:

(1) Utilization of cooperative work experience for exploration of some specific jobs and for the general educational value of work experience (realistic attitude toward work, understanding of job requirements, added relevance to school experience, etc.). Further communication and planning should be done with interested employers.

(2) The building of a new industrial-vocational arts facility providing basic facilities for grades 7-12 with large multi-purpose rooms to house a series of short courses in specific trades which would be taught by skilled practitioners from the local area, by regular teachers, and by experts from other areas. This facility should be large enough to accommodate projected enrollments plus an additional 15% enrollment from students who would be admitted for project work during their non-class time. Space should be provided to meet needs of vocational education or should be easily adaptable to this end. A facility of this type is included in Alternative Plan I.

(3) The non-college curriculum should be expanded for girls, and college-bound students should be encouraged to participate in some aspects of the industrial arts-vocational program. It is expected that girls would become enrolled in drafting, visual communications and possibly electronics.

(4) A concerted effort should be made to devise a new general curriculum for the non-college-bound student. This does not mean a general program geared wholly to acquisition of vocationally oriented skills. The suggested program would include development of new kinds of courses in the traditional disciplines as well as courses not presently represented in single academic fields. Examples might include semester or quarterly courses, courses concerned with individual development and social process, and interdisciplinary, issue- or topic-centered courses. It is recommended that the community allocate funds for this kind of curriculum development. Teams of concerned and committed teachers and citizens should be selected to work on this effort.

They could work in many ways including use of assistance through a local, year-long curriculum development course with tuition paid by the district, by a paid summer workshop with consultants or by in-service workshops during the year offering consultative assistance. The development and implementation of significant new curriculum is a long process. The area of interest (curriculum for the non-college student) is one with very few existing models. It represents one of the most critical problems in American public school education. There are few ready-made, effective curricula in this area

and teachers could not be expected to develop anything of significance during school time or functioning in the manner of the typical curriculum committee. However, if the community is willing to entrust and support committed faculty and citizens to work in this area, the chances of actual change in educational practice are far greater than with the mere addition of instructional space and facilities. Educational change is aided by supplying space which supports new educational programs; but the underlying impetus for change comes through teachers who understand and believe in a program. This kind of understanding and commitment is best achieved by active involvement of teachers in the choice and evolution of educational plans.

(5) The vocational components of the program should include a mixture of industrial arts and some specific vocational training. Vocational training for many jobs would be introduced by a series of short, practical courses. Attempts should be made to help students follow up areas of interest with individual projects and appropriate work-study.

A vocational program for specific job skills should be maintained in the business area, and a cooks and bakers program should be explored -- perhaps as a joint offering by the excellent cafeteria staff at Kennett High School and the Department of Home Economics.

(6) Summary:

The overall recommendation is for an expanded and improved general program for all non-college-bound students and a richer vocational offering for these students as well as for students bound for post-secondary vocational schools.

Institution of two years of intensive skill development for a specific job coupled with on-the-job training is not recommended on a wide scale. This option should, however, remain open for individual needs.

The basis of the industrial arts-vocational program would be a series of job-oriented short courses and basic skill building in drafting, woodworking, general metals, electricity, and visual communication. This program would be augmented by some on-the-job training. Basic skill building would lead to more advanced work in construction, auto mechanics, visual communications, electronics, machine shop and drafting. Work in these areas would probably be coupled with the job-oriented exploratory courses mentioned above. Although work experience should be aimed primarily at the development of good work attitudes and a realistic view of the world of work, in some cases it should be directed to complex skill development. Flexibility and individualization should characterize this program and every attempt should be made to allow use of the vocational-industrial arts facility as a resource area for student use during free (study) time.

These recommendations describe a new general education program designed to meet all the varied needs of young adults and tomorrow's citizen. It also describes a major program element of a vocational nature which will involve students in work-oriented learning activities whose main objectives are personal fulfillment, self-confidence, competence, pride in accomplishment, self-discipline and responsibility; and whose secondary objectives are a realistic view of the world of work, a broad base of work skills sufficient for entry into most jobs in the region; and, for some, a degree of expertise in chosen jobs which allows entry into highly specialized jobs.

ALTERNATIVE PLANS

ALTERNATIVE PLANS

Introduction

In an effort to provide the Conway School Board with as wide a variety of solutions as possible to the problems now existing in the District, the CEFS team originally developed five alternative plans. As a result of a meeting held on May 19, 1970, attended by the CEFS team, Superintendent Appleton, the Conway School Board, and the Conway School Study Committee, Plans I and II were chosen as offering the most desirable alternatives from the point of view of the Conway School District. At the request of the participants, some of the features of Plans III, IV, and V were incorporated into Plans I and II. These two revised alternatives are presented in detail below. A summary of the original Plans III, IV, and V is included here as a matter of record:

Plan III: Basic organization - K-6, 7-12.

A new school would be built in Conway for K-6.

A four-room addition would be built at the Fuller Elementary School (K-6).

Kennett High School (7-12):

A new gymnasium would be built.

A one-story shop wing would be built.

Conway Elementary School would be converted for use as a High School Annex.

Estimated cost: Approximately $2,500,000.

Plan IV: Basic organization - K-6, 7-12.

A new school would be built in Conway for K-6.

A four-room addition would be built at the Fuller Elementary School (K-6),

Kennett High School (7-12):

The present gymnasium would be enlarged, and the new area under this addition would be used to expand the shop facility.

Other necessary renovations would be made at the High School.

Conway Elementary School would be converted for use as a High School Annex.

Estimated cost: Approximately $2,100,000.

Plan V: Basic organization - K-4, 4, 4.

A new school would be built in Conway for K-4.

A two-room addition would be built at the Fuller Elementary School (K-4).

The Conway School would be converted to a middle school (5-8).

Kennett High School (9-12):

A new gymnasium would be built.

A one-story shop wing would be built: grades 7-8 would use the pratical arts facilities at the High School.

Necessary renovations would be made at the High School.

Estimated cost: Approximately $2,400,000.

SPACE STUDIES

The building diagrams accompanying each Alternative Plan are in no way intended to be architectural studies or sketches. These space studies were drawn up to help the Conway School Board and the School Study Committee to visualize the changes proposed as a result of this survey. The diagrams show the amount of space needed for a particular activity or program, and the relationship of this space to other areas in the building. They are drawn to appropriate scale and thus provide a basis for computing the budget estimate according to the area required (in square feet). A unit cost of $25.00 per square foot was used, based on unit costs of recent projects; this would include the cost of construction, equipment, engineering, and site development. If a new site is to be acquired, as foreseen in Plan II for the new middle school, the cost of the site must be added to the budget estimate, resulting in a unit cost of $30.00 per square foot.

PLAN I

This plan would retain the basic 6-6 organizational pattern and would also provide for kindergartens at the elementary schools, resulting in a K-6, 7-12 organization. Additions would be built at the Conway and Fuller Elementary Schools; a new two-story addition to the High School, containing a gymnasium, industrial arts facilities, and regular classrooms, combined with some basic changes in the present building, would convert Kennett High School into a modern school plant that would serve the needs of the district for many years.

Elementary Schools (K-6)

It is proposed that provisions be made at Conway and Fuller Elementary Schools for the following: a kindergarten, a library, a special education class, and improved administrative and guidance facilities at each school. According to the projections, the 1-6 population will peak at 650 in 1978-79; on the basis of 25 pupils per classroom, 26 classrooms would be required to accommodate this number of pupils, i.e. six more than are at present available at both schools. The projected kindergarten population for that year is 106, making a total peak population of 756 for K-6.

In order to provide the desired facilities and to accommodate the increase in school population, six rooms should be added to the Conway School, four rooms to the Fuller School, and the Pine Tree School would

act as a reserve until the projections can be reviewed. Implementation of this plan for the elementary schools will necessitate decisions with regard to class size, multiple grades, and a possible redistribution of attendance areas in order to determine the number of new classrooms and where they are to be located.

Space studies illustrating the suggested changes at the Conway and Fuller Schools are to be found on the following pages. The floor plan of the existing building is shown first; in this case, the floor plans of the existing Conway and Fuller Schools are identical, so that only one version is included. The next diagram shows the 6-room addition to the Conway School. Two possible plans for a 4-room addition at the Fuller School are presented., the first one for a traditional four-room addition and the second for an "open concept" type with two large learning areas, each of which may be subdivided into two smaller areas if desired.

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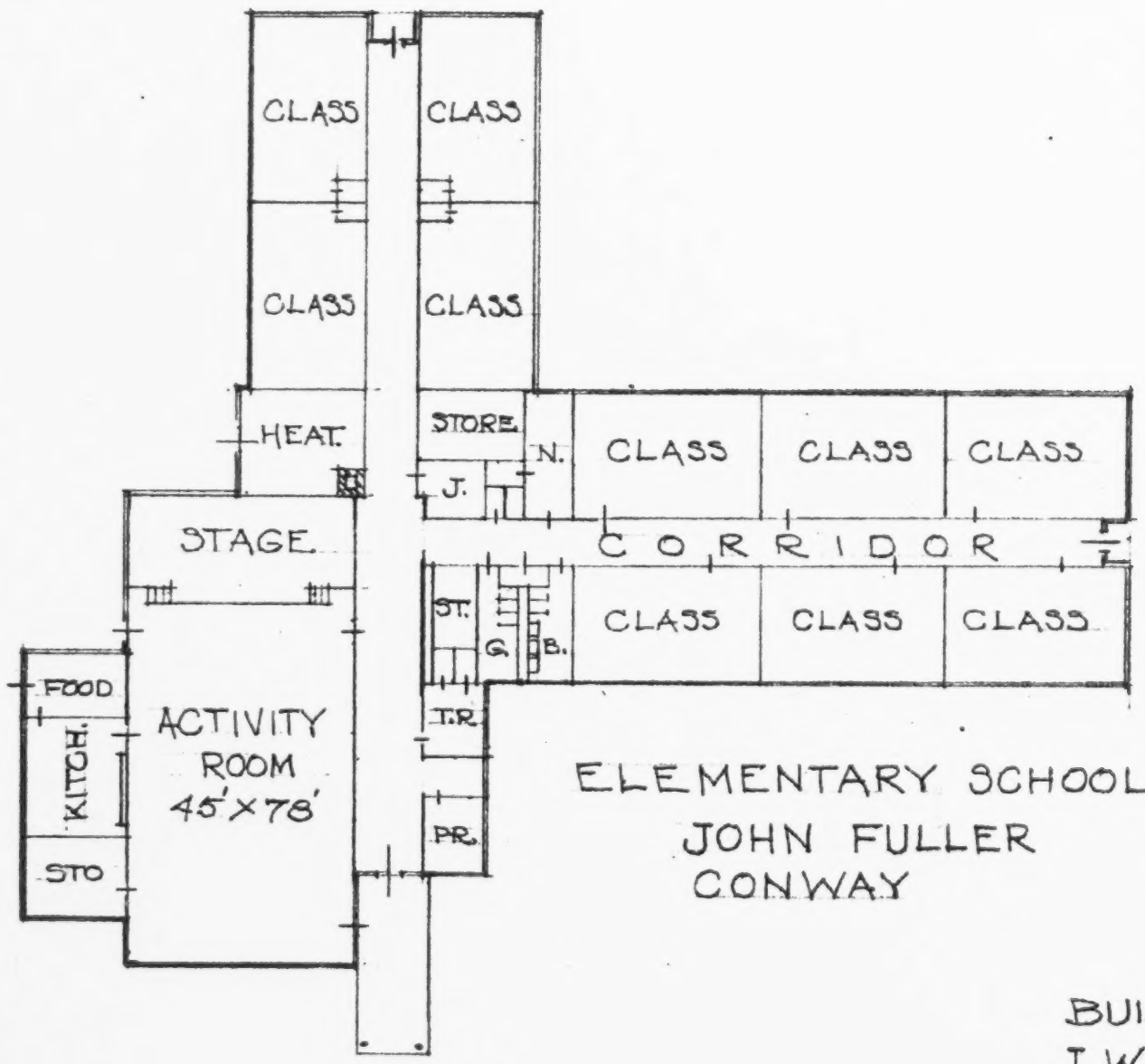
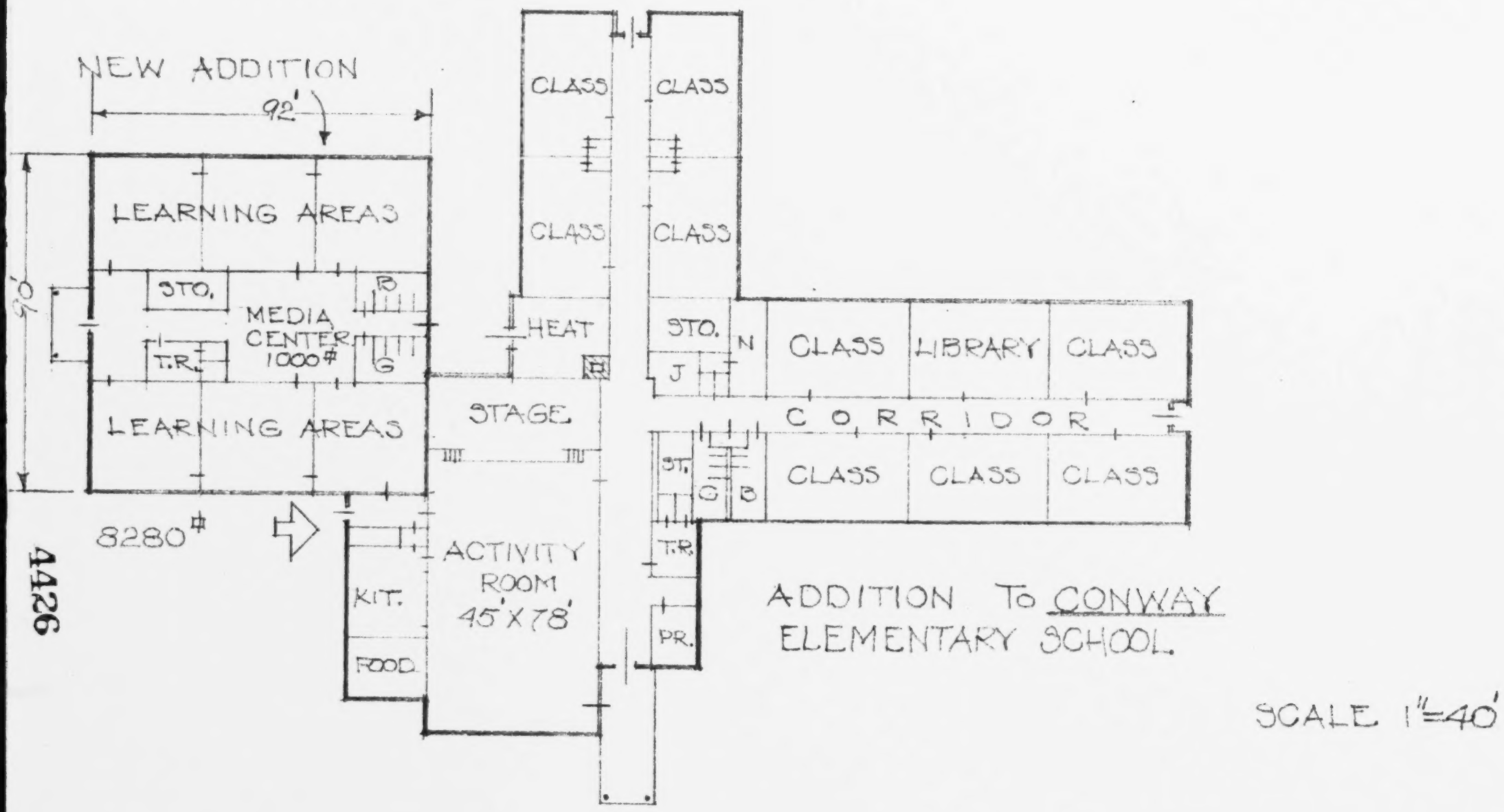


ELEMENTARY SCHOOLS
JOHN FULLER
CONWAY

SCALE 1"=40'

BUILT 1956
I.W. HERSEY
ARCHITECT

PLAN 1
ROOM SPACE STUDY



ADDITION TO CONWAY ELEMENTARY SCHOOL

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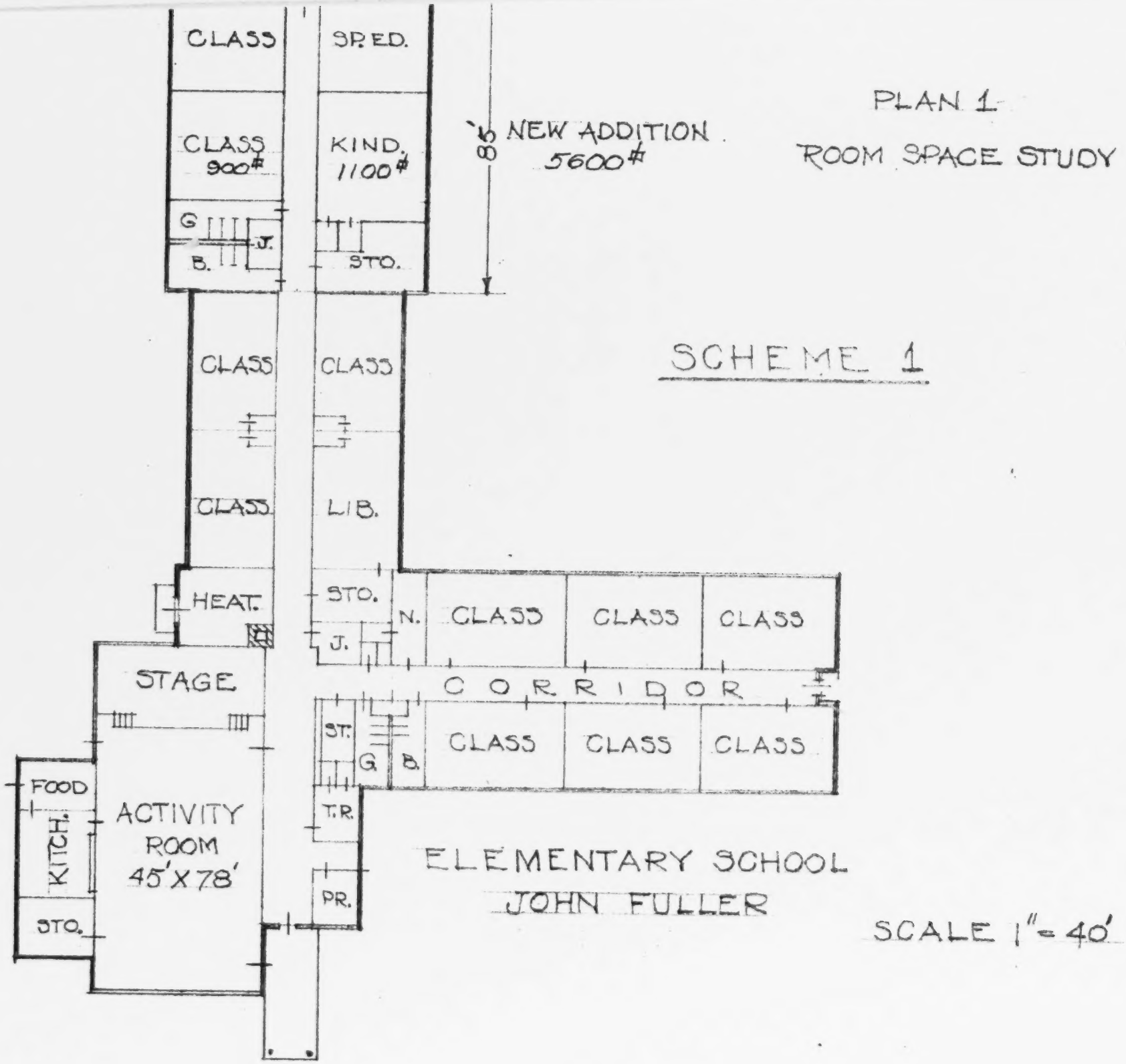


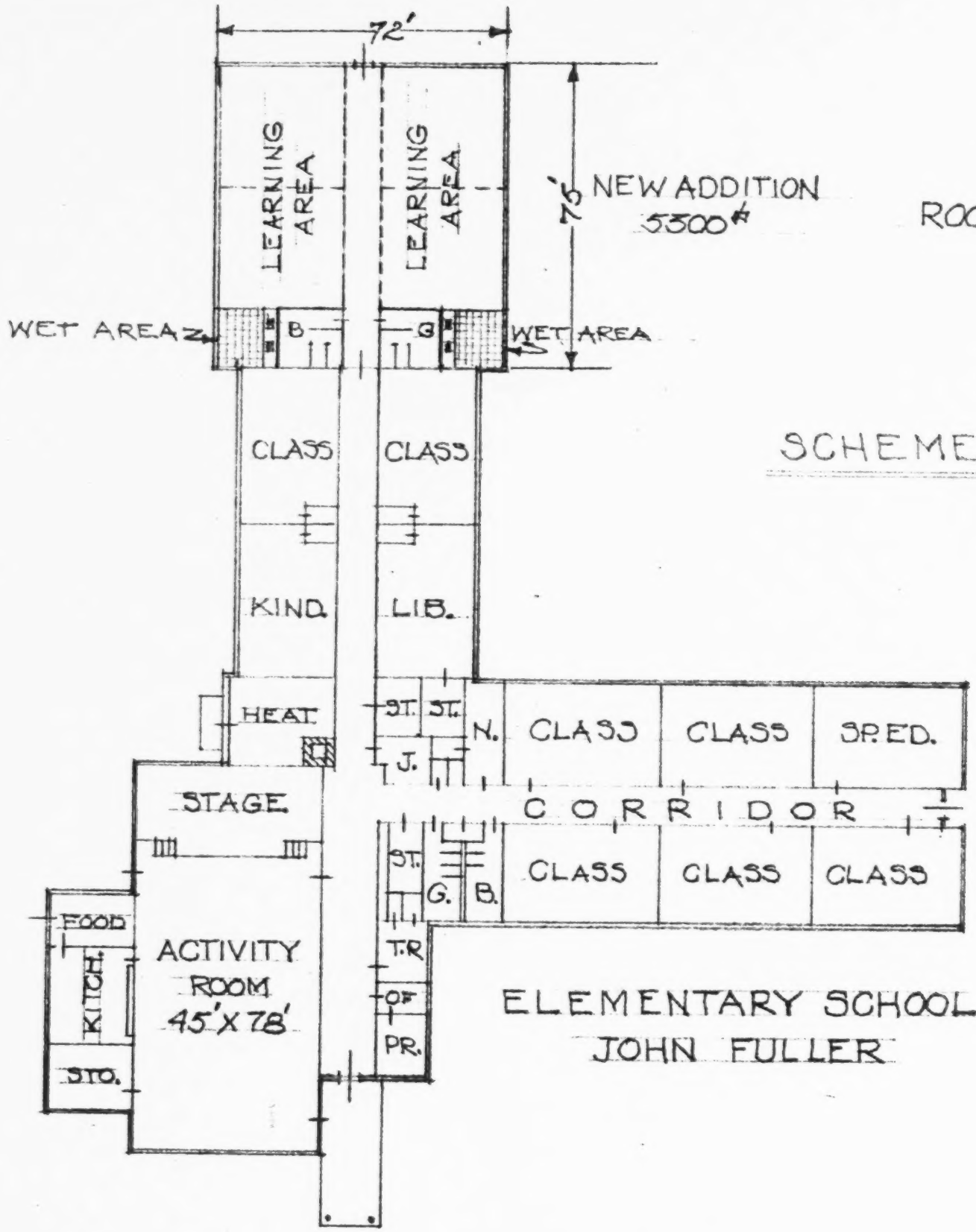
PLAN 1

ROOM SPACE STUDY

SCHEME 1

ELEMENTARY SCHOOL
JOHN FULLER

SCALE 1" = 40'



PLAN 1

ROOM SPACE STUDY

SCHEME 2

ELEMENTARY SCHOOL

JOHN FULLER

SCALE 1" = 40'

Kennett High School

According to this plan, a new annex would be built for the High School, housing a new gymnasium, industrial arts facilities, and new classrooms, and increasing the existing area by a total of 52,508 sq. ft.

The gymnasium section of the annex would contain a main area 100' x 110', a stage space of 30' x 90', boys' and girls' showers (2700 sq. ft.), and a lobby of 1500 sq. ft. on the first floor. The main area would be large enough for a regulation 50' x 84' basketball court and seating accommodations for approximately 1000 spectators. On the stage level in this section there would be a music room of 2000 sq. ft. with risers for orchestral and choral work. On the level below there would be additional space for music activities, such as individual instrumental practice, music appreciation, storage, etc. This facility would have a twofold advantage: it would be in a part of the building remote enough from other school activities so that the noise interference would be minimal, and the lecture room now being used for music could be adapted for other purposes such as large-group instruction.

The practical arts wing of the new annex would have two stories 86' x 176' each. The first level would have a metal shop of 3200 sq. ft., an auto shop of 3400 sq. ft., a wood shop of 3000 sq. ft., and one classroom of 900 sq. ft. On the second level there would be a graphic arts (visual communications) room of 2000 sq. ft., an electrical shop (2000 sq. ft.), an art room (2000 sq. ft.), a drafting room (1750 sq. ft.), five classrooms (three of 800 and two of 900 sq. ft.), and a teachers' workroom.

In the existing building, the present gymnasium would continue to be used for physical education. Together with the new gymnasium, the physical education department could then have four teacher stations and offer three classes a week to all students.

Other parts of the present high school, however, would undergo some fundamental changes. The shop areas would be converted for classroom use, the spaces next to the present science areas in the 1963 addition would also be used for science, and one room in the basement of the original building would become a teachers' room. The present art room would be divided to form a library-resource area and a science room. The whole second floor of the original building would be reserved for social studies, including a special resource center for this department. In general, as the space studies show, an effort has been made to assign rooms by related subjects.

The administrative, guidance, and health suites have all been rearranged so as to place them in greater proximity to each other than they are now. The present guidance suite would be used as a teachers' workroom.

Upon completion of these renovations and with the building of the new annex, the Conway School District will have an excellent facility that should serve the educational needs of the community for many years, making provision for the projected maximum enrollment of 1050-1100.

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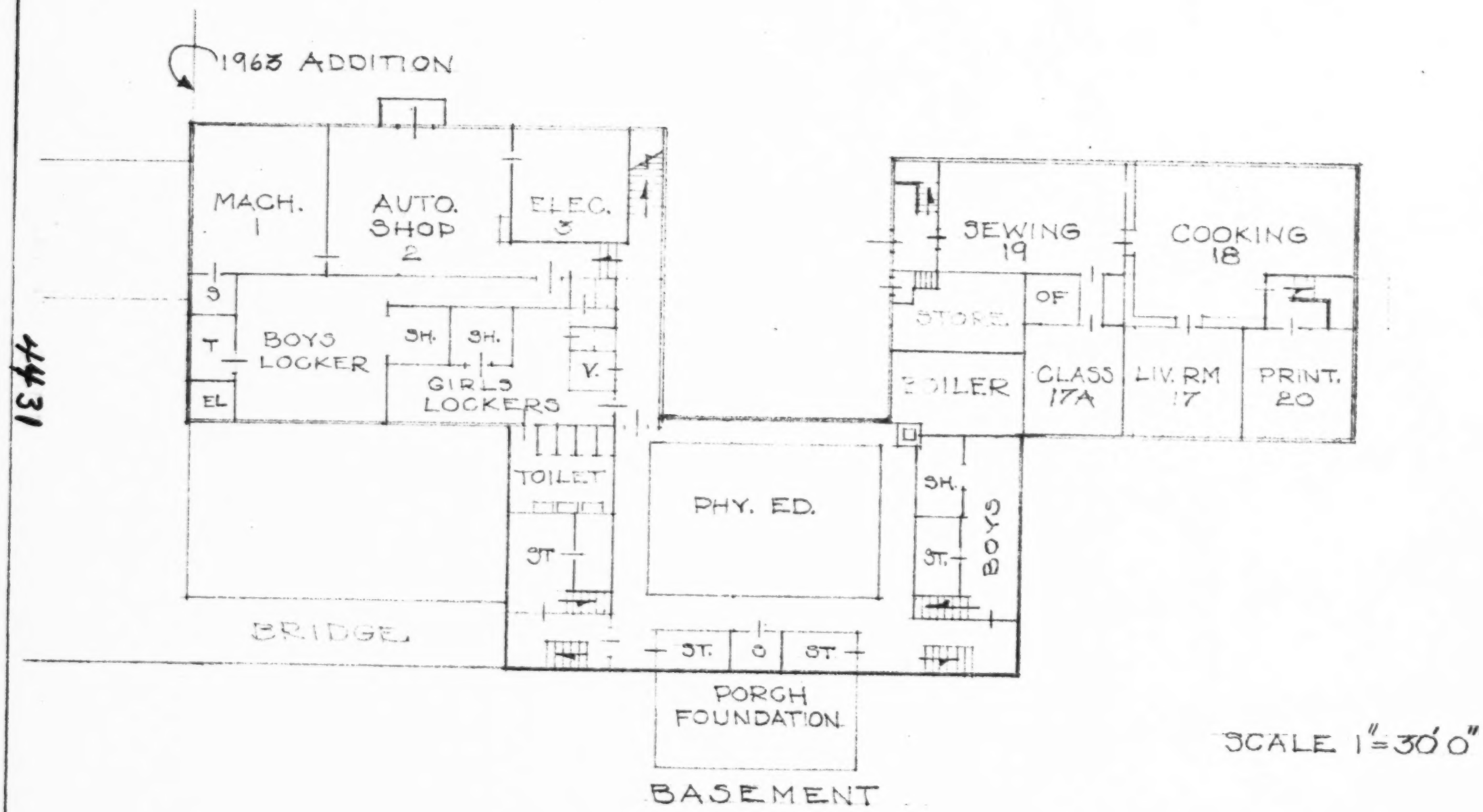


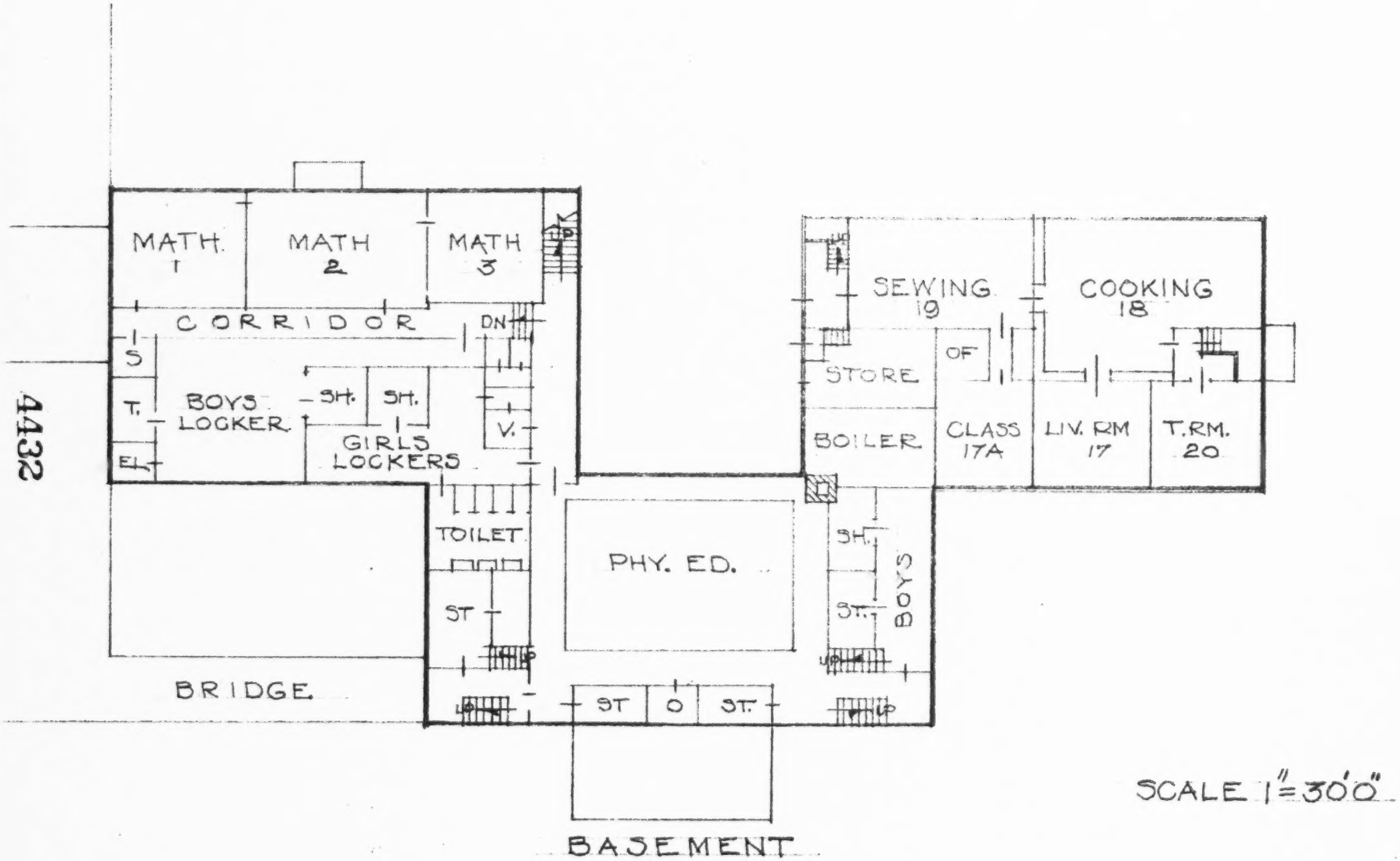
SCALE 1" = 30' 0"

BASEMENT

KENNETT HIGH SCHOOL - CONWAY

44431

PLAN 1



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KENNETT HIGH SCHOOL - CONWAY

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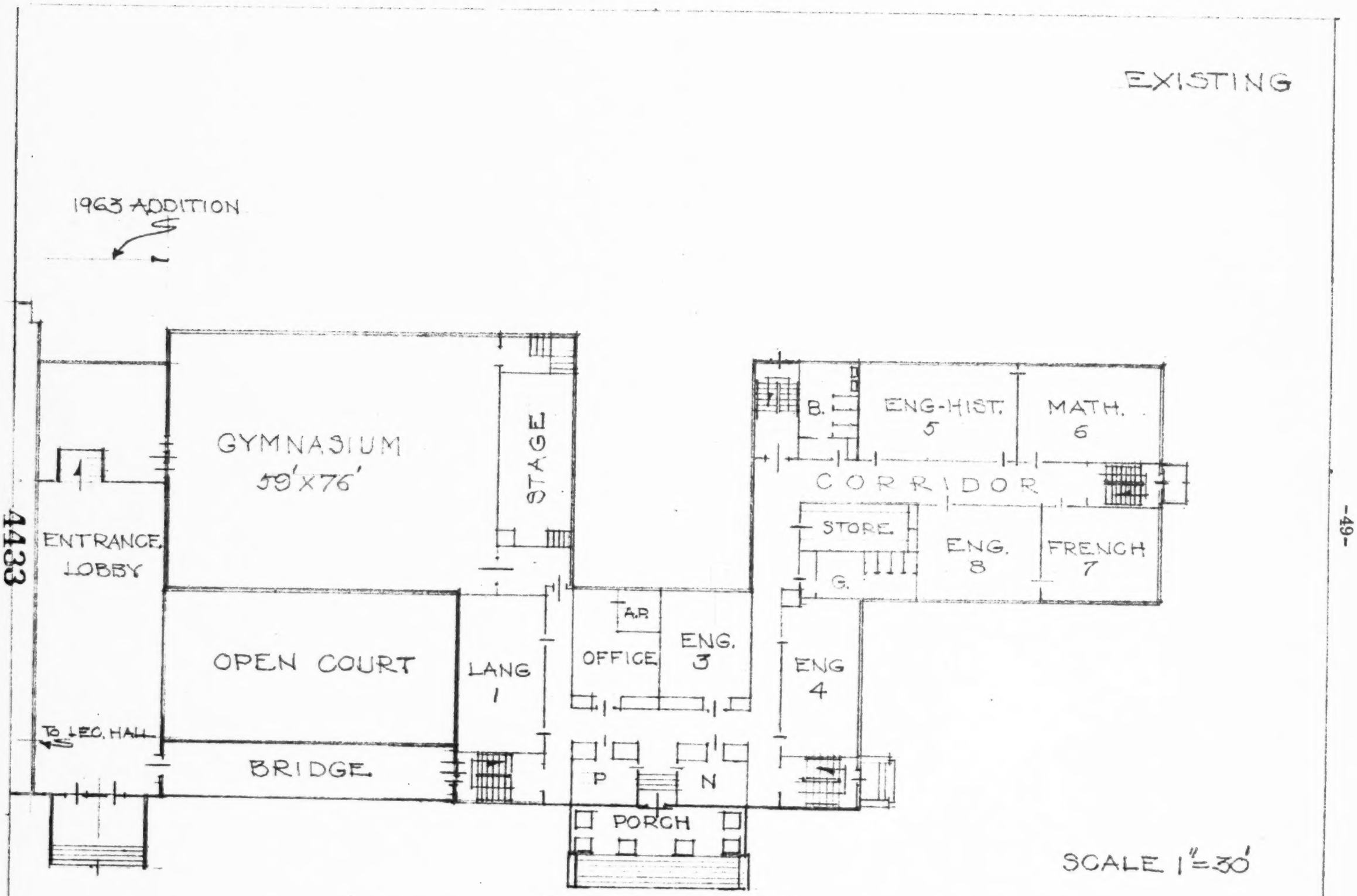
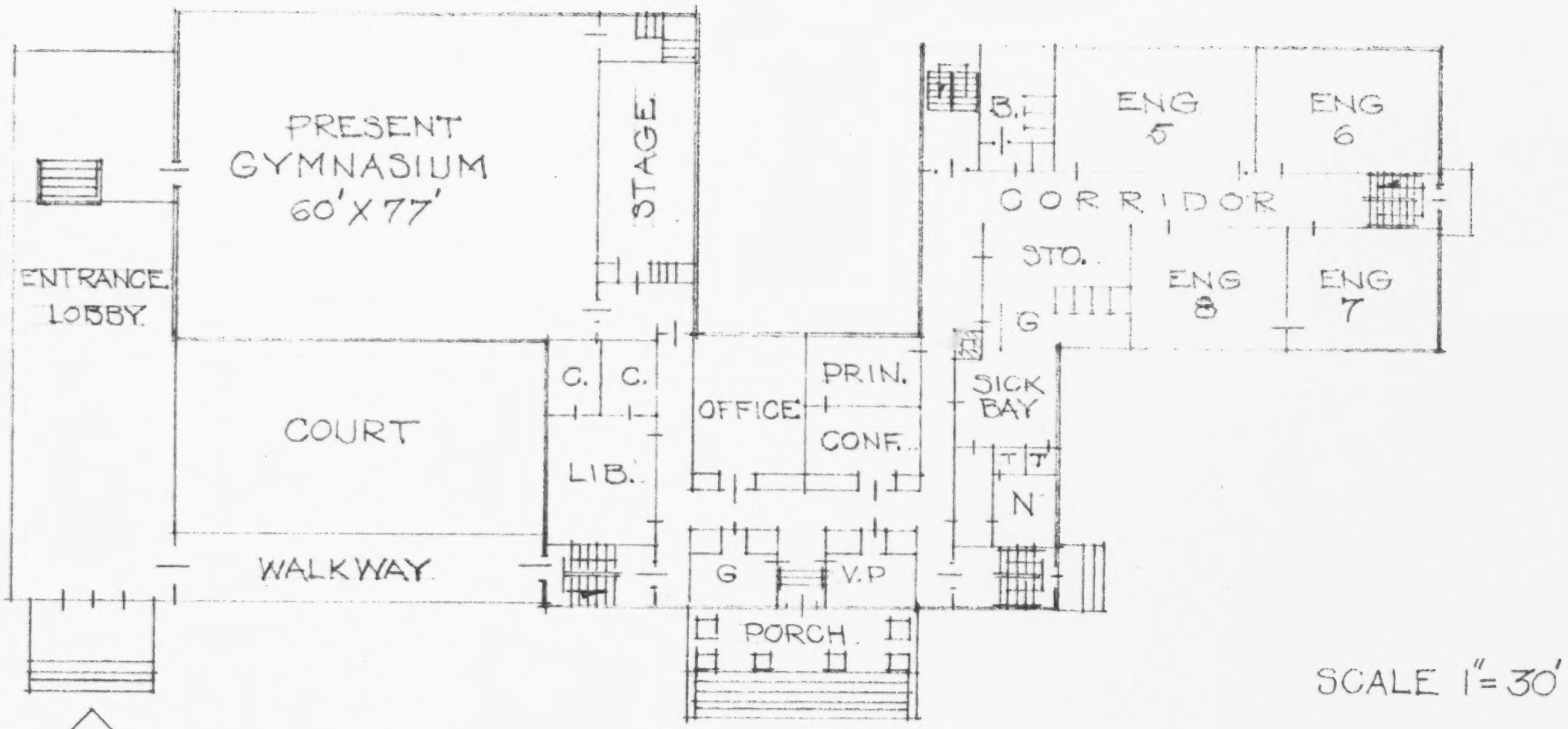


FIRST FLOOR

KENNETT HIGH SCHOOL - CONWAY

4433

PLAN 1

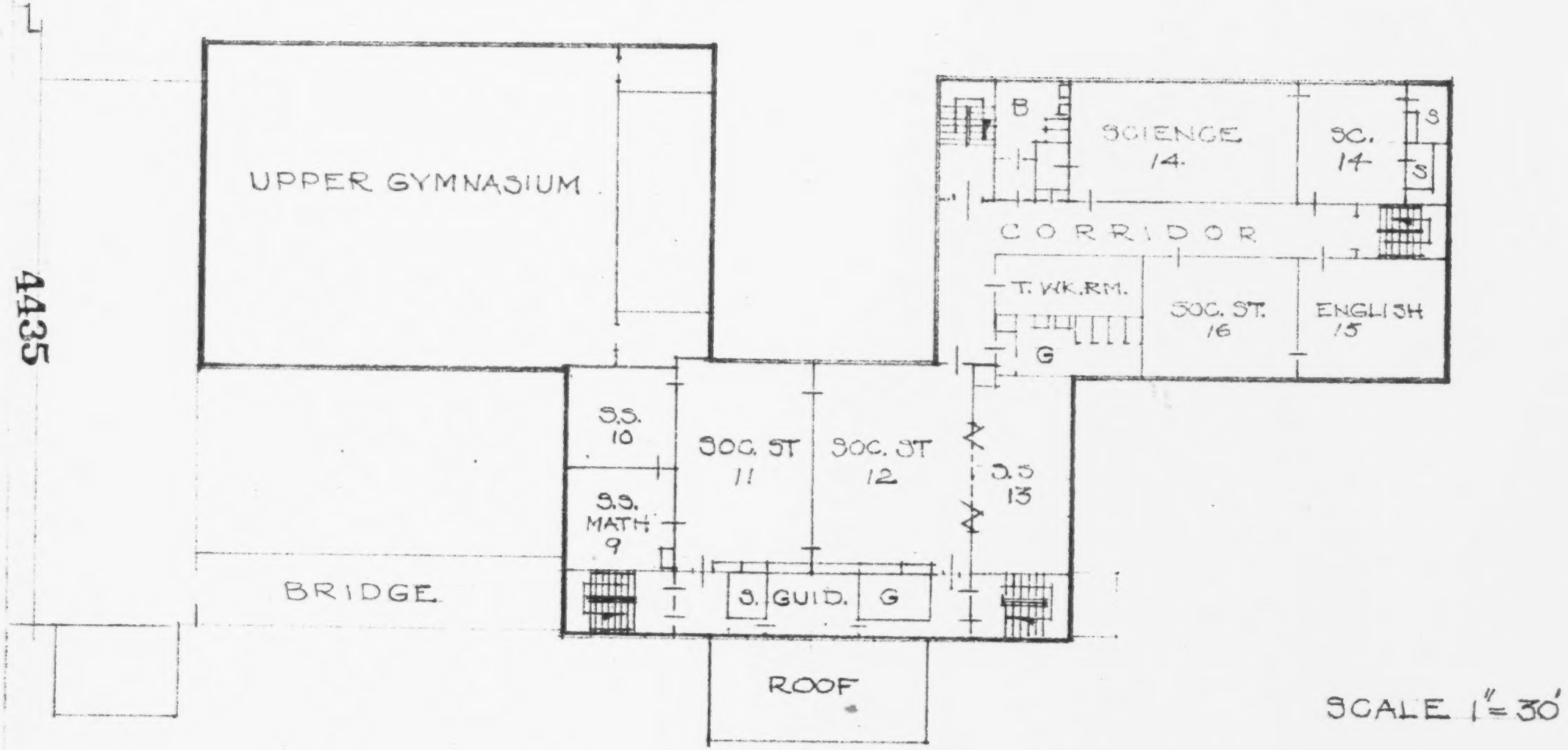


FIRST FLOOR

KENNETT HIGH SCHOOL.-ORG. BLDG.

4434

EXISTING



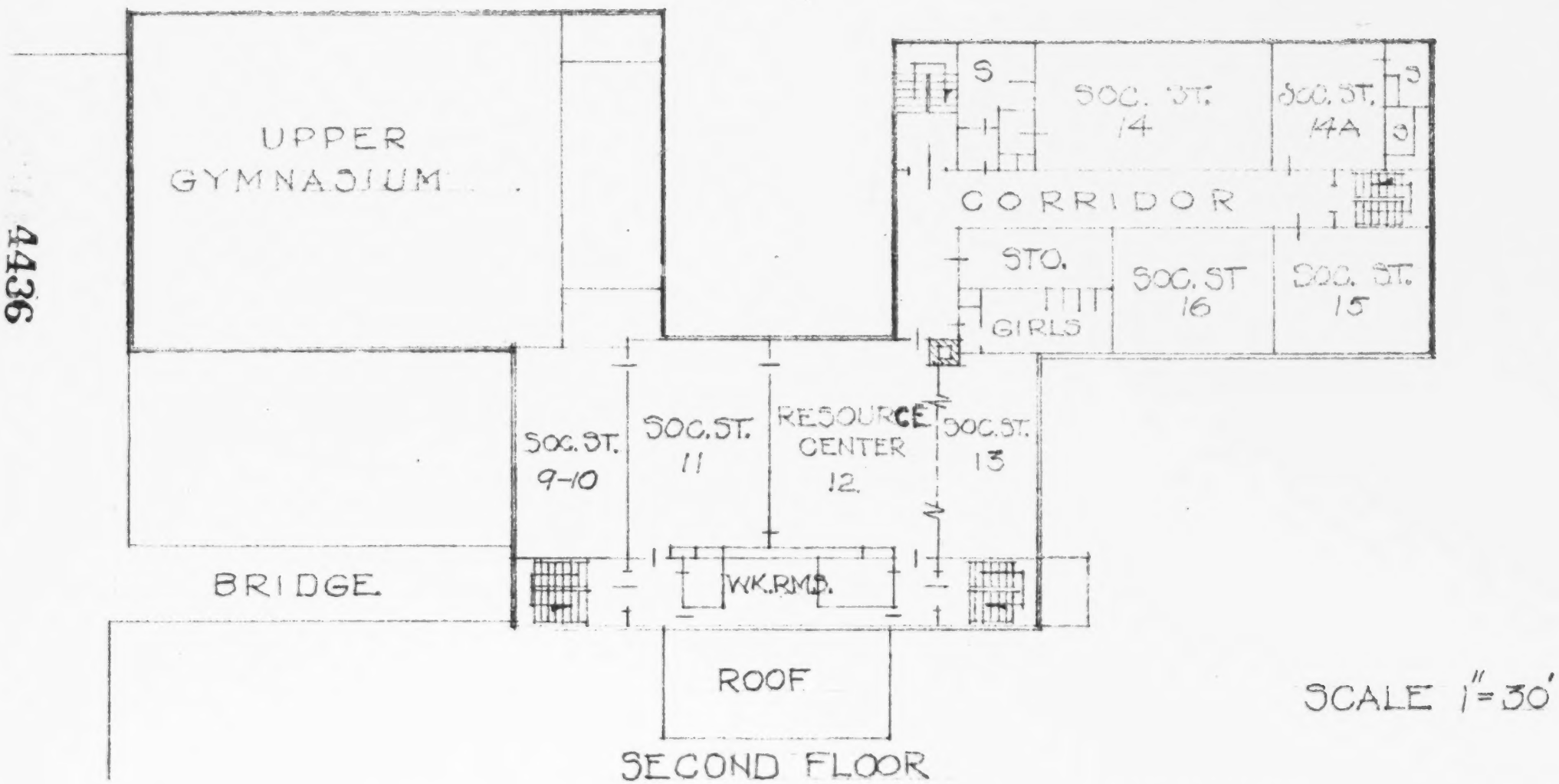
SCALE 1" = 30'

SECOND FLOOR

KENNETT HIGH SCHOOL - CONWAY

4435

PLAN 1



SCALE 1" = 30'

SECOND FLOOR

KENNETT HIGH SCHOOL - CONWAY

4436

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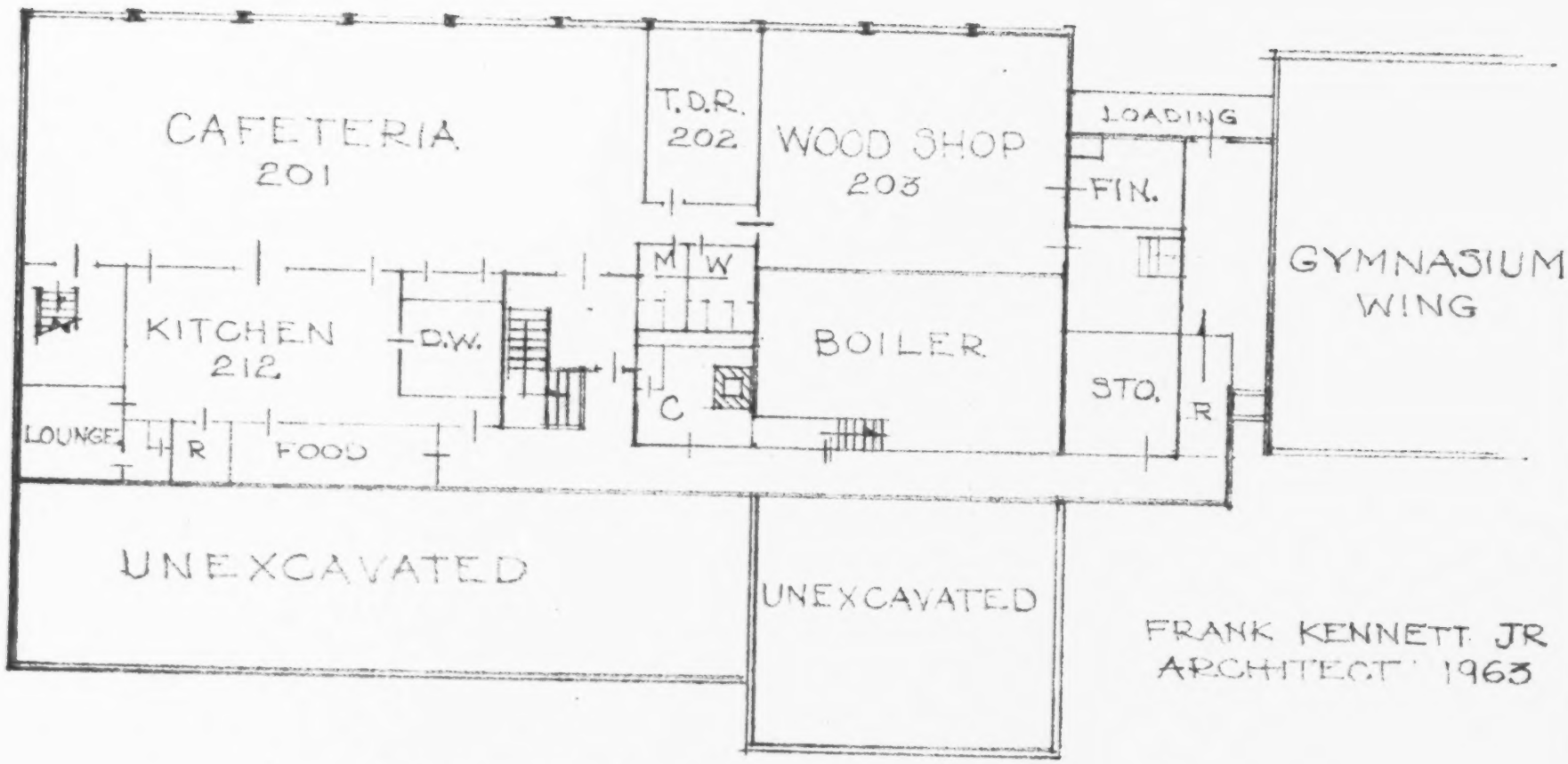


FRANK KENNETT JR
ARCHITECT 1963

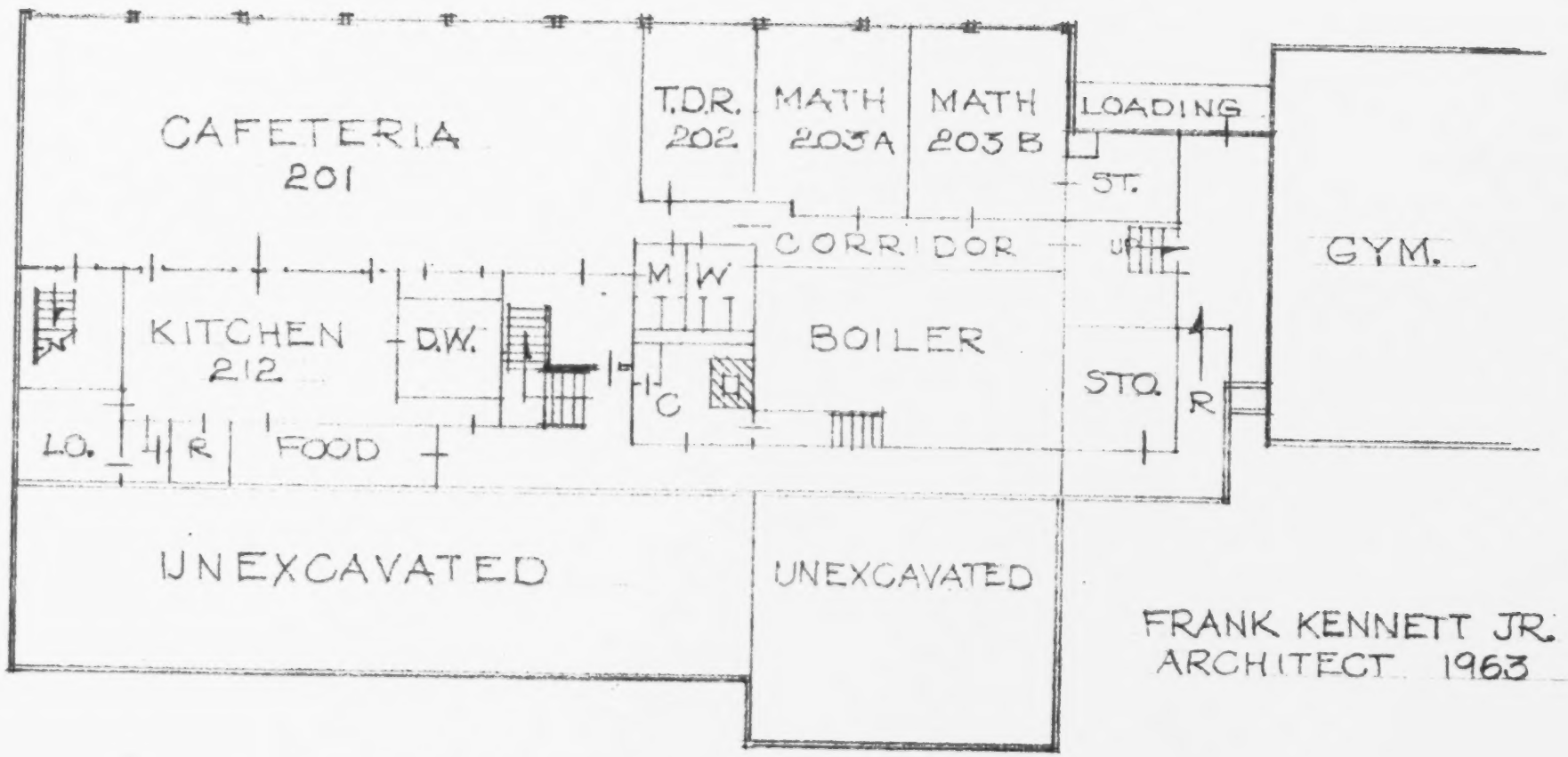
BASEMENT

KENNETT HIGH SCHOOL – CONWAY N.H.

SCALE 1"=30'0"

4437

PLAN 1



BASEMENT

KENNETT HIGH SCHOOL - CONWAY

SCALE 1"=30'0"

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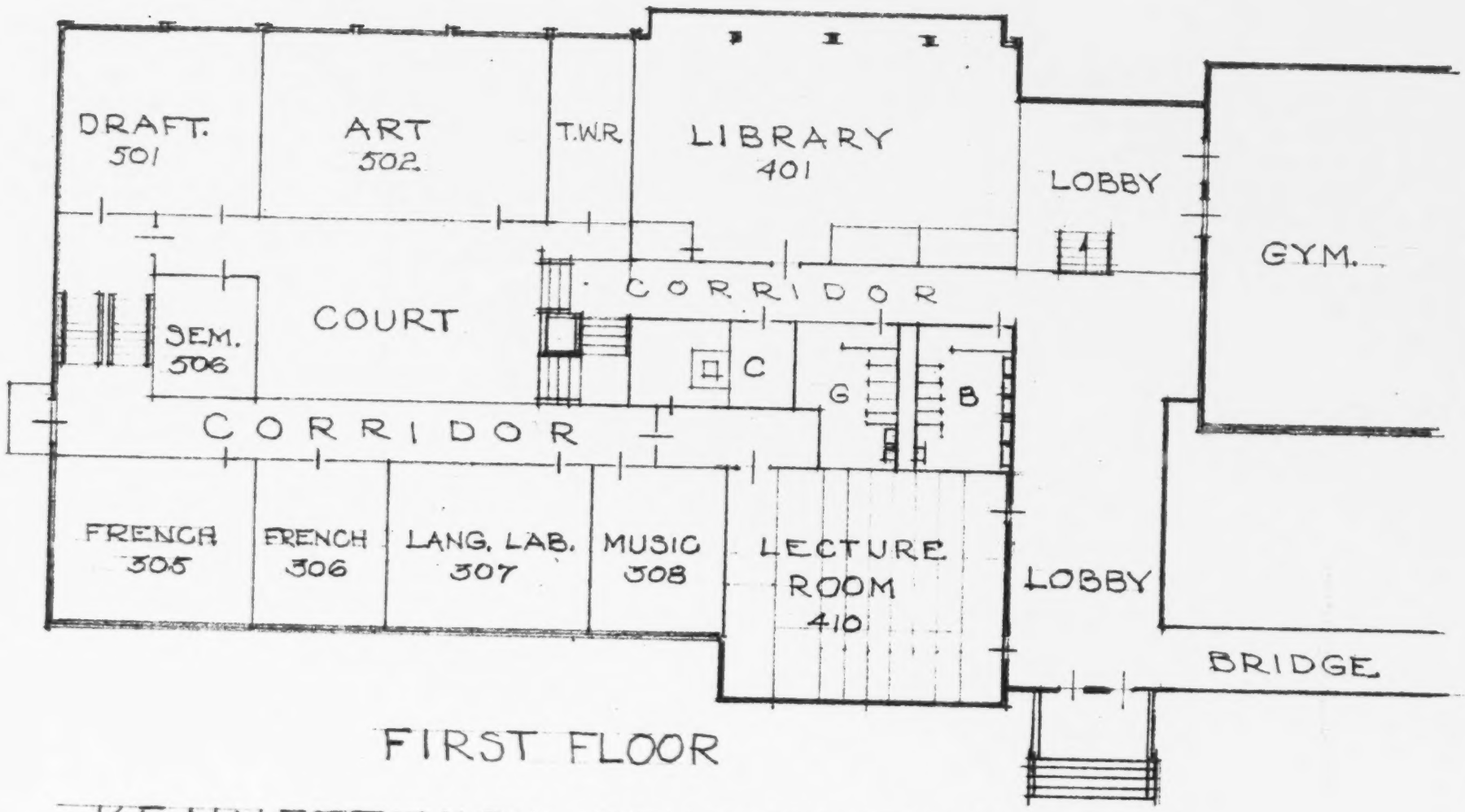
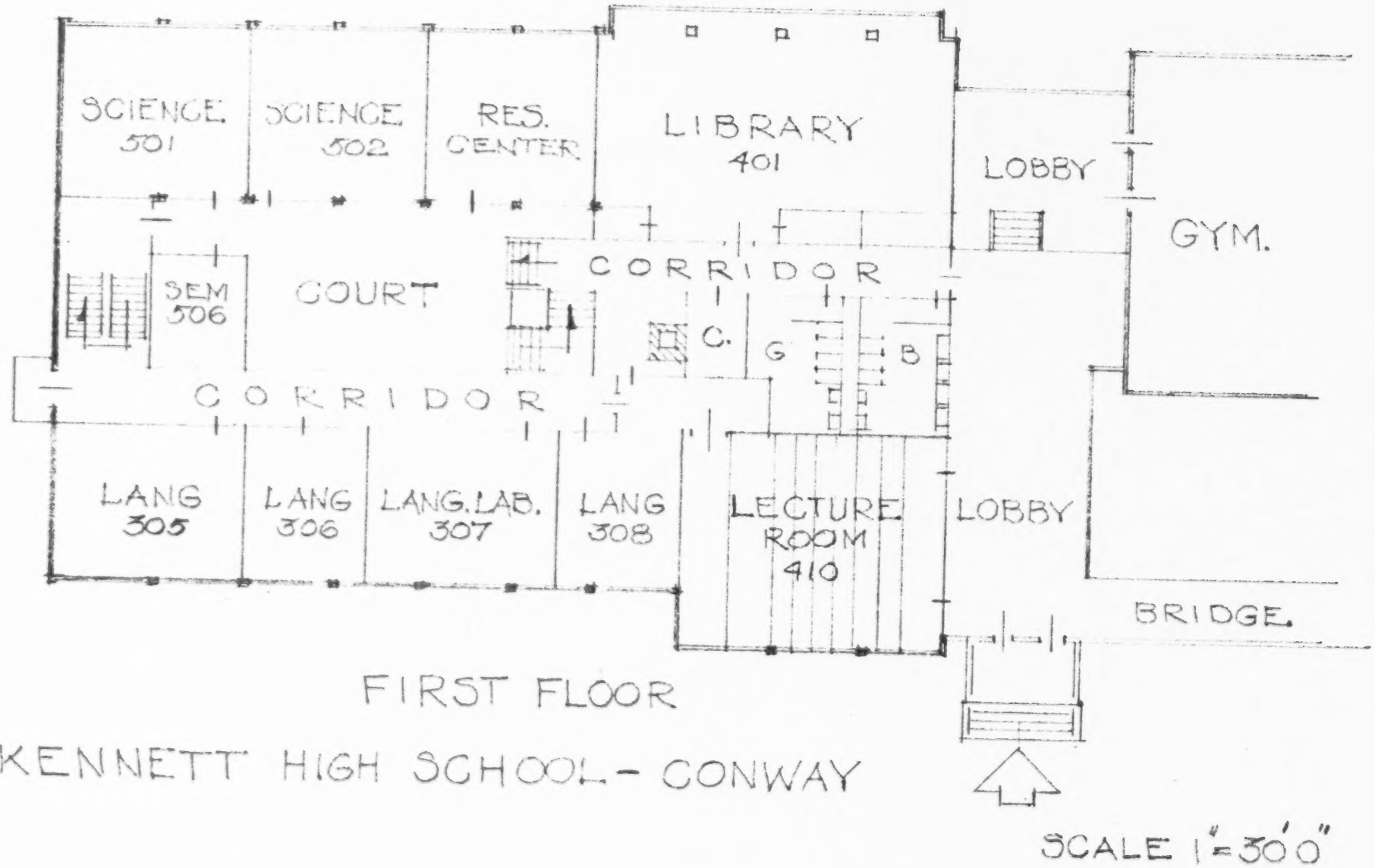


FIRST FLOOR

KENNETT HIGH SCHOOL - CONWAY N.H.

SCALE 1"=30'0"

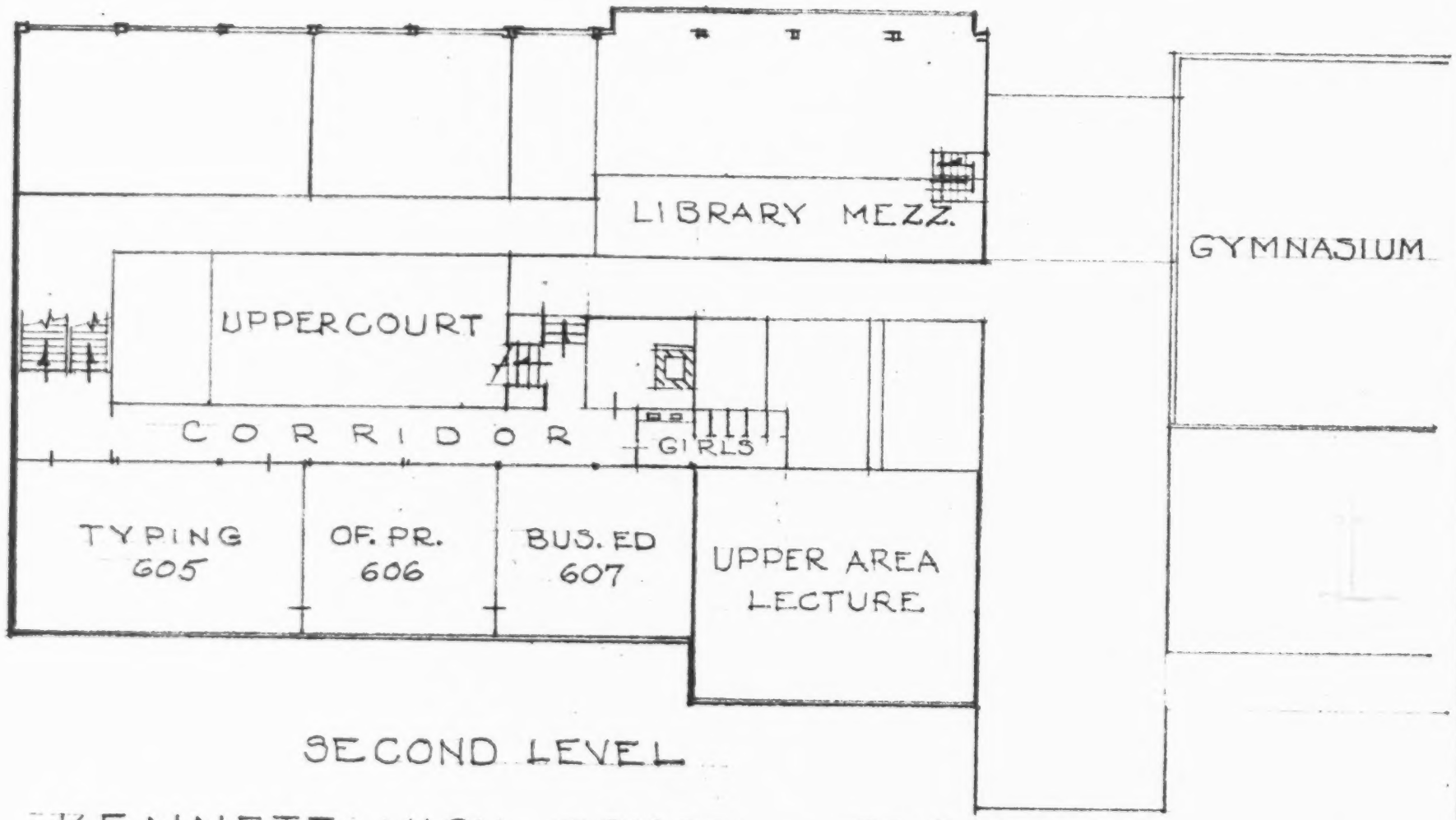
PLAN 1



FIRST FLOOR

KENNETT HIGH SCHOOL - CONWAY

EXISTING

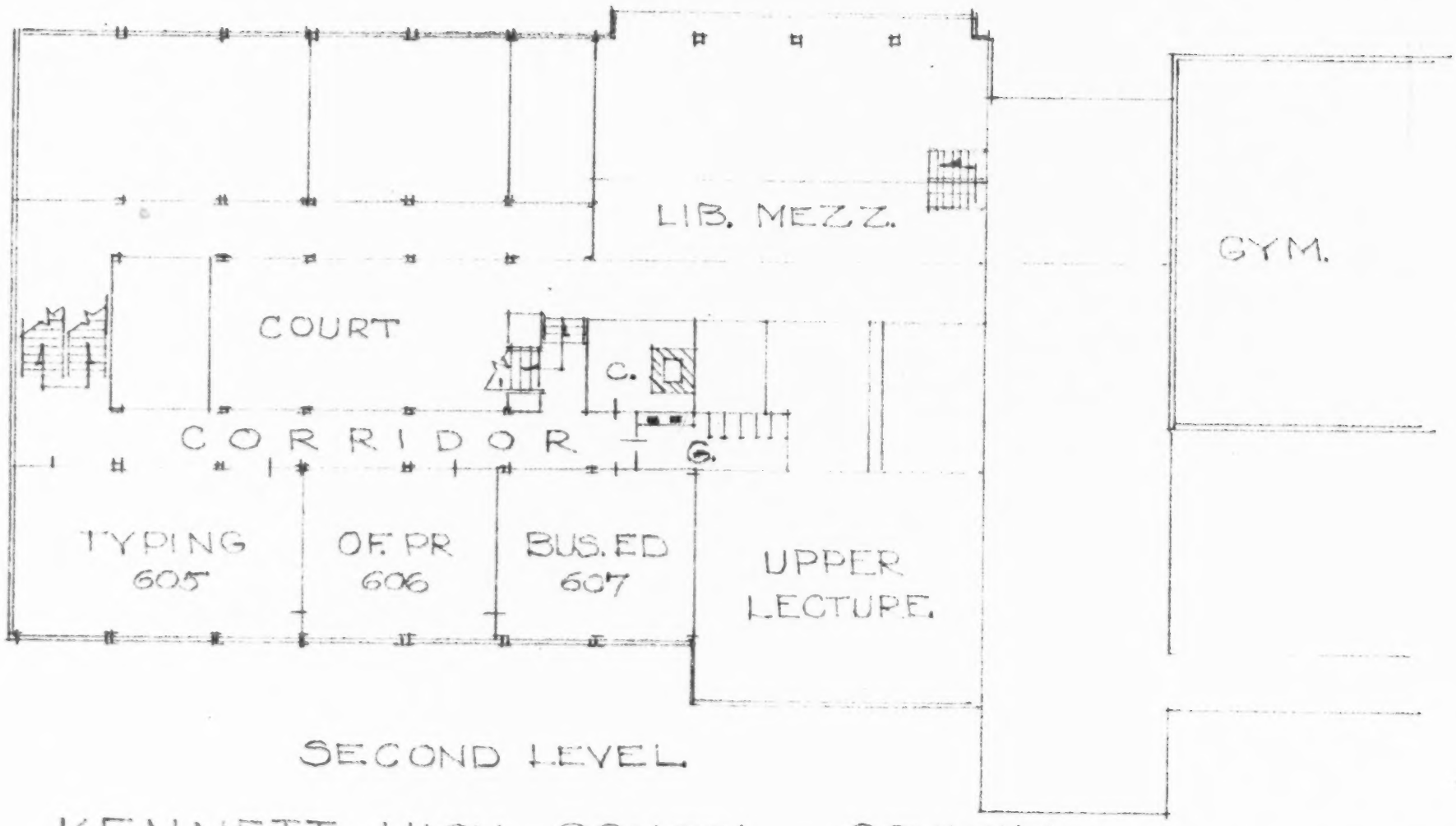


SECOND LEVEL

KENNETT HIGH SCHOOL — CONWAY N.H.

SCALE 1"=30'0"

PLAN 1



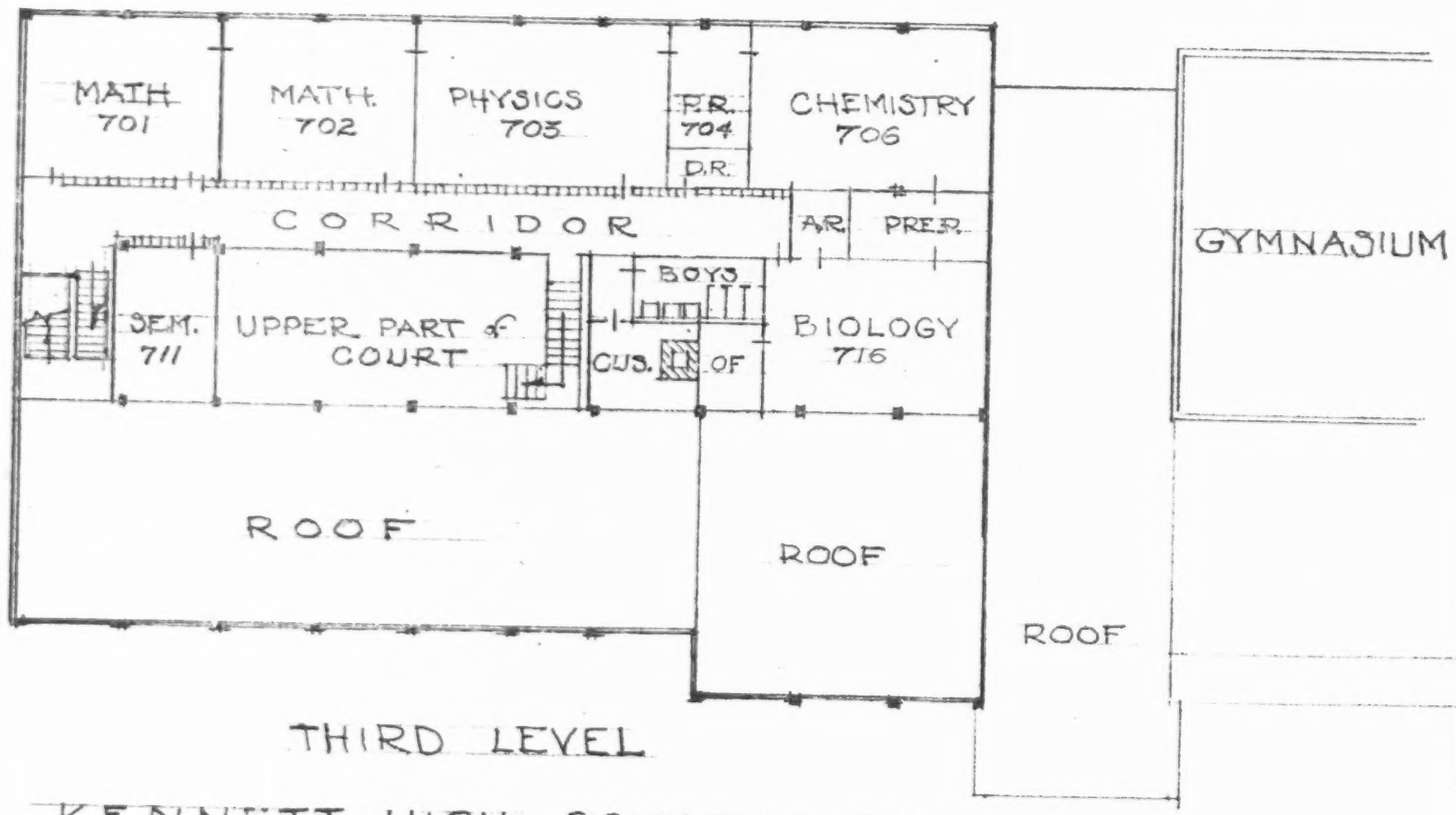
SECOND LEVEL

KENNETT HIGH SCHOOL - CONWAY

SCALE 1"=30'0"

4442

EXISTING

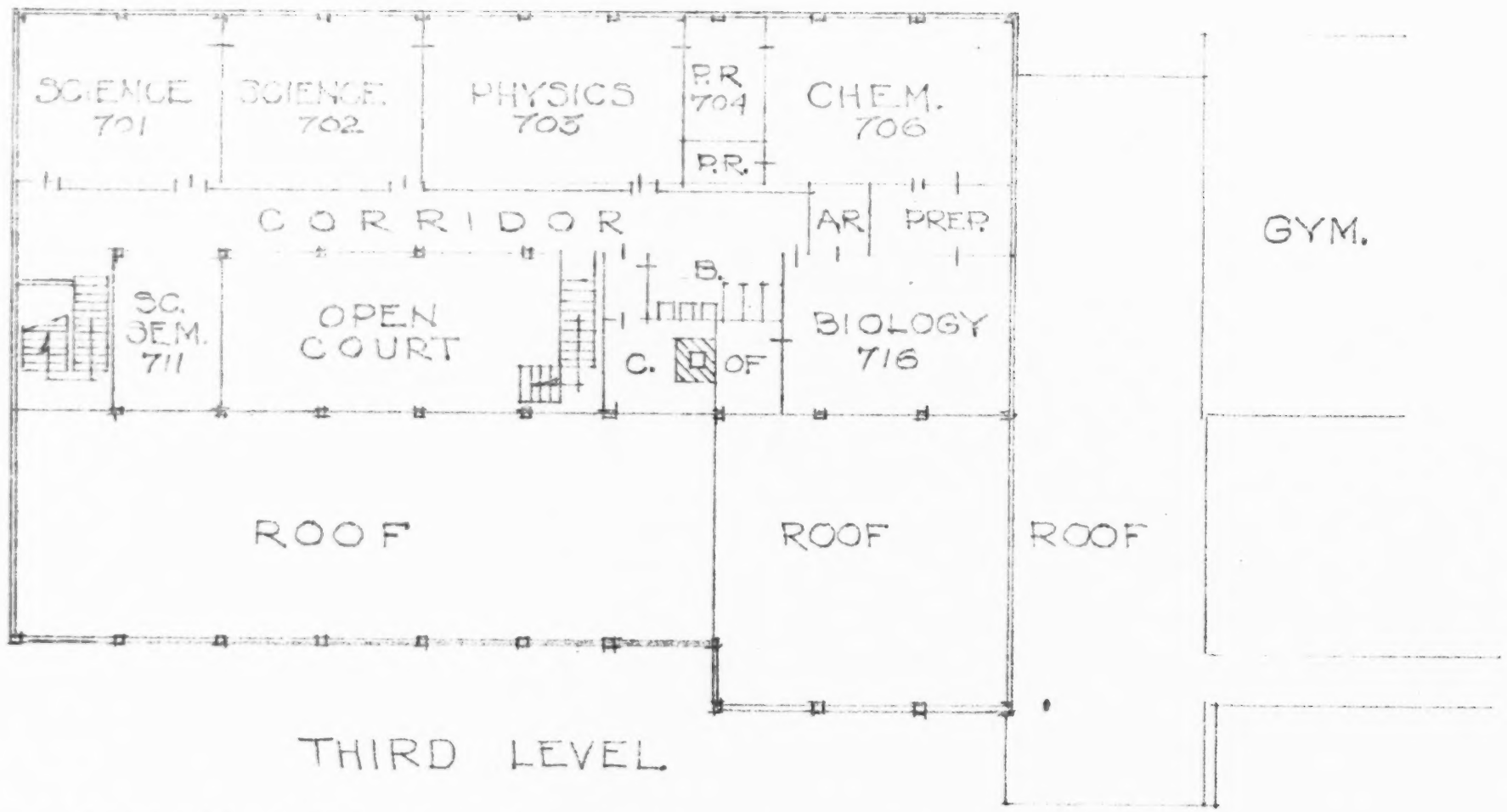


THIRD LEVEL

KENNETT HIGH SCHOOL - CONWAY N.H.

SCALE 1"=30'0"

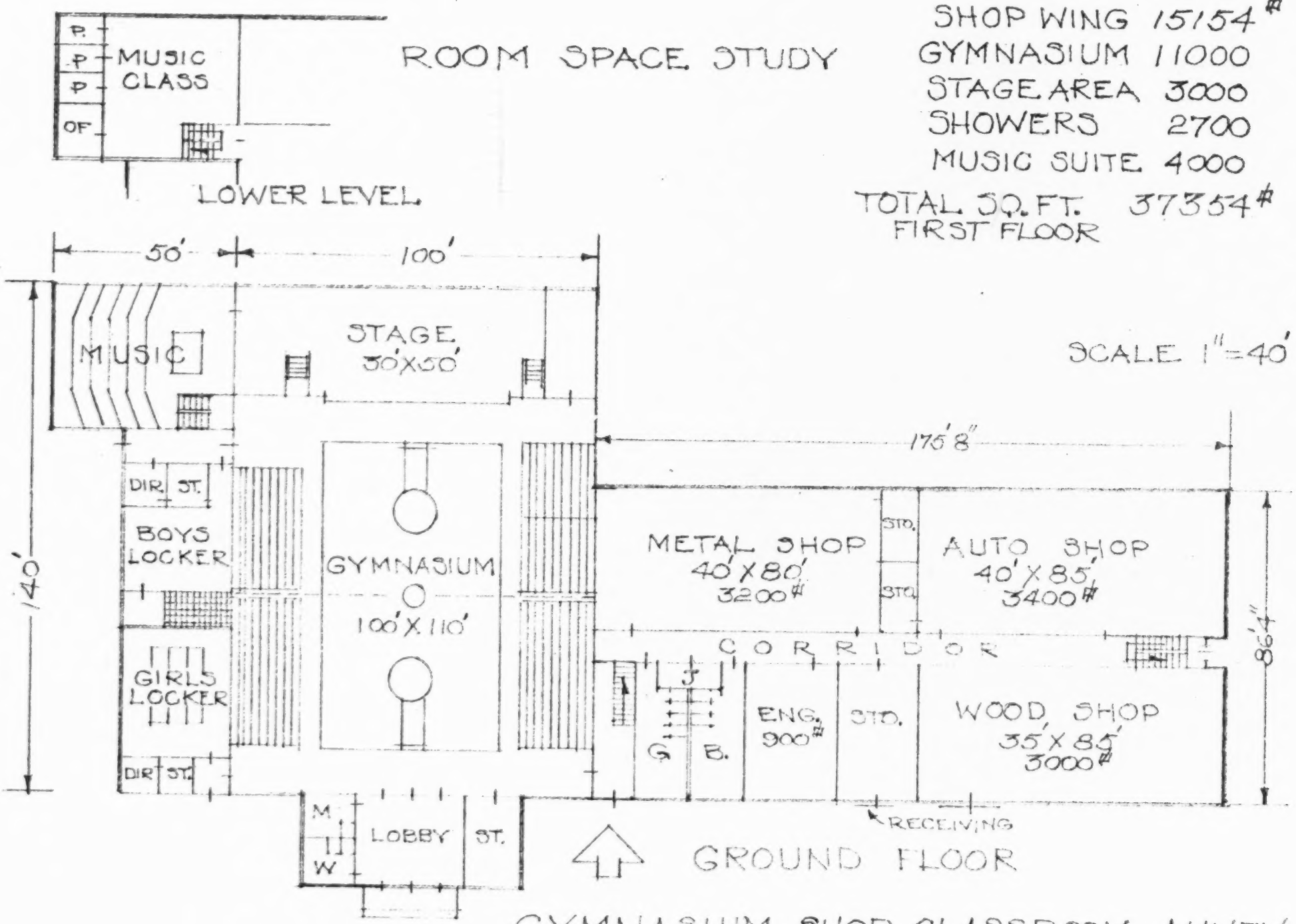
PLAN 1



THIRD LEVEL

KENNETT HIGH SCHOOL - CONWAY

SCALE 1"=30'0"

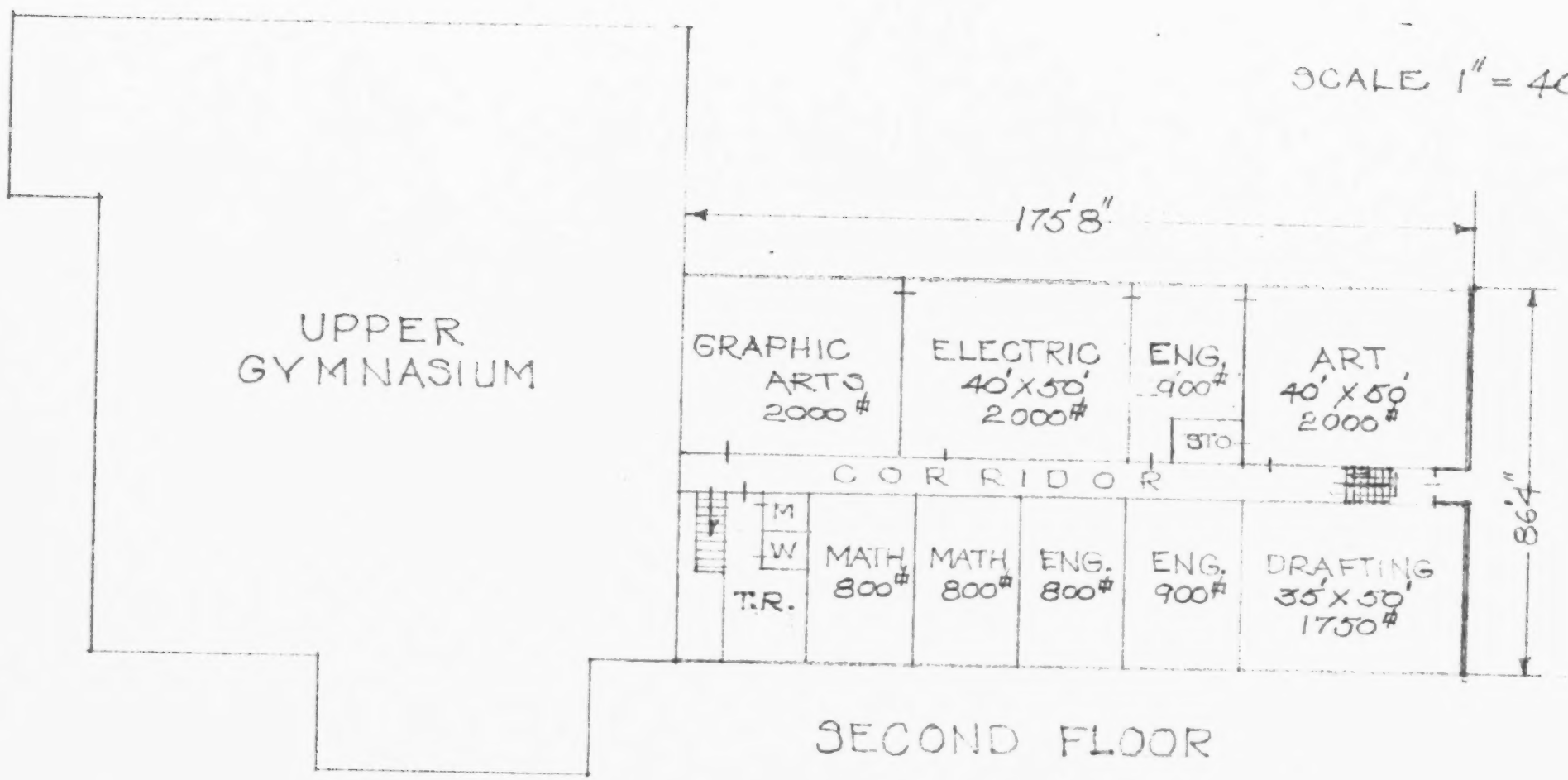


GYMNASIUM-SHOP-CLASSROOM ANNEX
KENNETT HIGH SCHOOL.

ROOM SPACE STUDY

PLAN 1

SHOP-CL.RM WING 15154#
TOTAL 1ST FLOOR 37354
TOTAL BLDG 52508#



SECOND FLOOR

GYMNASIUM-SHOP-CLASSROOM ANNEX
KENNETT HIGH SCHOOL.

4446

PROJECT BUDGET

Plan I (K-6, 7-12)

New Annex to Kennett High School	
Gymnasium Two-Story Shop Wing	
52,508 sq. ft. at $25.00/sq. ft.	$ 1,312,700
Special Shop and Physical Education Equipment	250,000
Alterations and Renovations to High School	
Science Area Administrative Suite Resource Center	155,000
Additions to Elementary Schools	
6 Rooms at Conway School 4 Rooms at Fuller School	365,000
Contingency	
Borings, Grading, Parking Lot, etc.	80,000
Total	$ 2,162,700 *

*Note: All estimates must be adjusted to reflect costs at time of construction.

EVALUATION

- Plan I retains the present 6-6 organization of the Conway School District.

- The proposed additions to the Conway and Fuller Elementary Schools would improve the elementary system as follows:

  1. Provision would be made for kindergartens at both schools.

  2. Provision would be made for remedial and special education classes at both schools.

  3. A good library would be provided at both schools.

  4. Administrative and guidance facilities would be expanded.

  5. There would be enough classroom space to accommodate the projected peak elementary school population in 1978-79 of 650 pupils in grades 1-6 (756 for K-6, if kindergartens are implemented).

- The annex to Kennett High School, combined with the proposed alterations and renovations in the present building, would provide the following new or improved facilities:

  1. A new gymnasium, which, together with the present gymnasium, would make possible four teacher stations for physical education (3 classes a week for all students) and provide adequate space for interscholastic athletics.

  2. A new music area, located so as not to interfere with other school activities and offering a variety of spaces for the music program.

  3. A well-equipped, spacious industrial arts section with spaces for a good industrial arts - vocational program suited to the needs of the area.

  4. Possibility of rearrangement of classrooms by general subject area in the present building, especially in science and social studies.

  5. Relocation and expansion of administrative, guidance, and health suites.

  6. Built-in flexibility and possibility of expansion when needed for a projected peak enrollment of 1050-1100 students.

- At an estimated cost of $2,162,700 Plan I will be approximately $871,000 less expensive than Plan II.

PLAN II

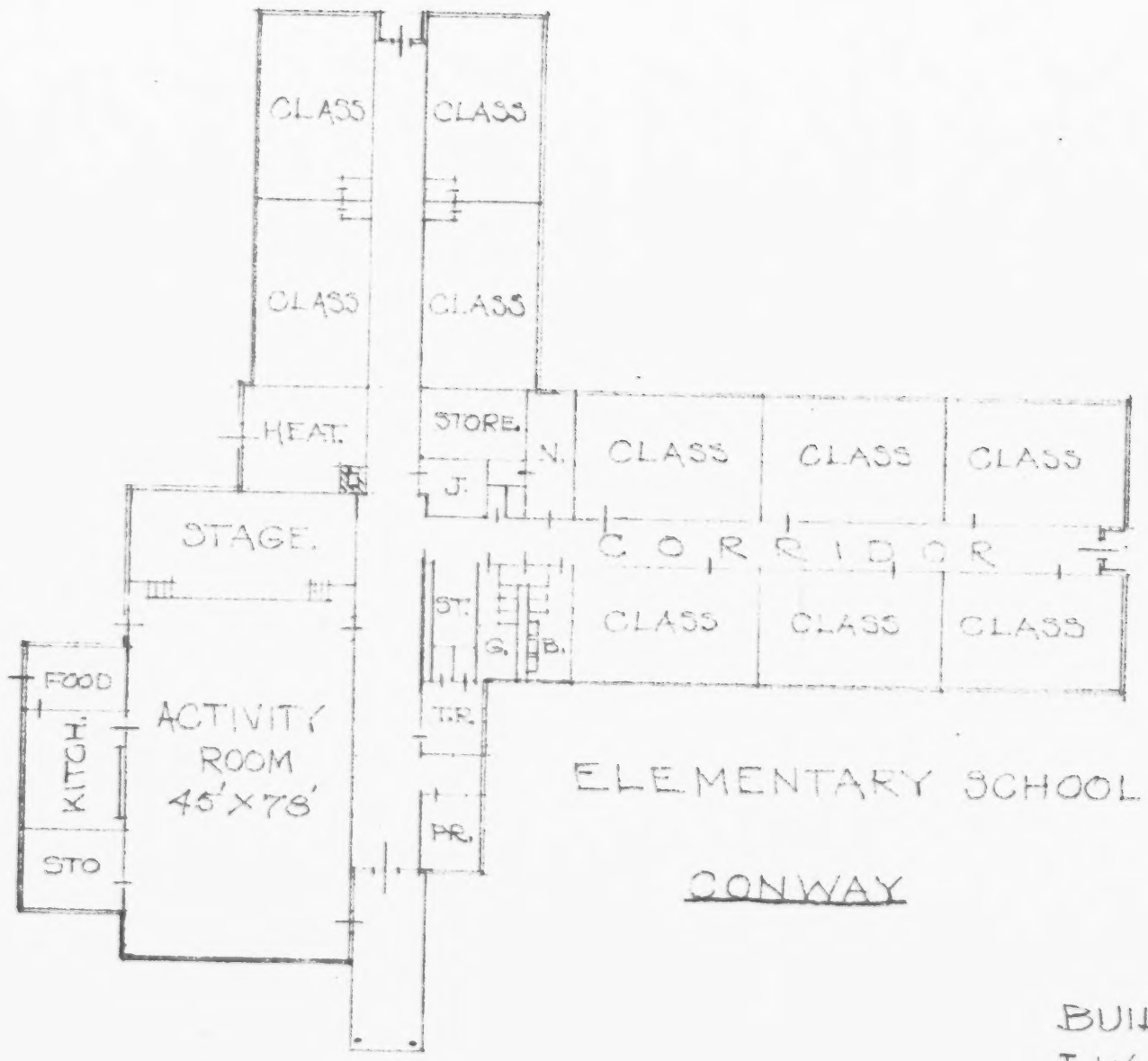
According to this alternative, the basic organizational plan would be K-4, 4, 4, with the construction of a new middle school for grades 5-8. The Conway and Fuller Elementary Schools would house grades K-4, requiring a four-room addition at the Conway School, no changes at the Fuller School, and a redistribution of attendance areas. The Pine Tree School would be kept in reserve, as under Plan I. Kennett High School would accommodate grades 9-12, with a new gymnasium as in Plan I, a new one-story industrial arts facility, and alterations in the present building along similar lines as in Plan I.

Elementary Schools (K-4):

The population projections forecast a peak enrollment for grades 1-4 of 426 in 1976-77. The addition of the projected kindergarten population for that year would bring this figure to 531 for K-4. If the boundaries for the attendance areas are redrawn, a four-room addition to the Conway School would enable it to accommodate 225-250 pupils in grades 1-4, as well as to provide facilities for kindergarten, a library, special education, and improved administrative and guidance suites, as per Plan I. The Fuller School would provide similar facilities for the rest of the elementary population without requiring any new construction and the Pine Tree School could be held in reserve in case of unexpected in-migration or for some other use as needed.

The following two pages show space studies of the existing floor plan at the Conway School and of the proposed four-room addition.

EXISTING



ELEMENTARY SCHOOL

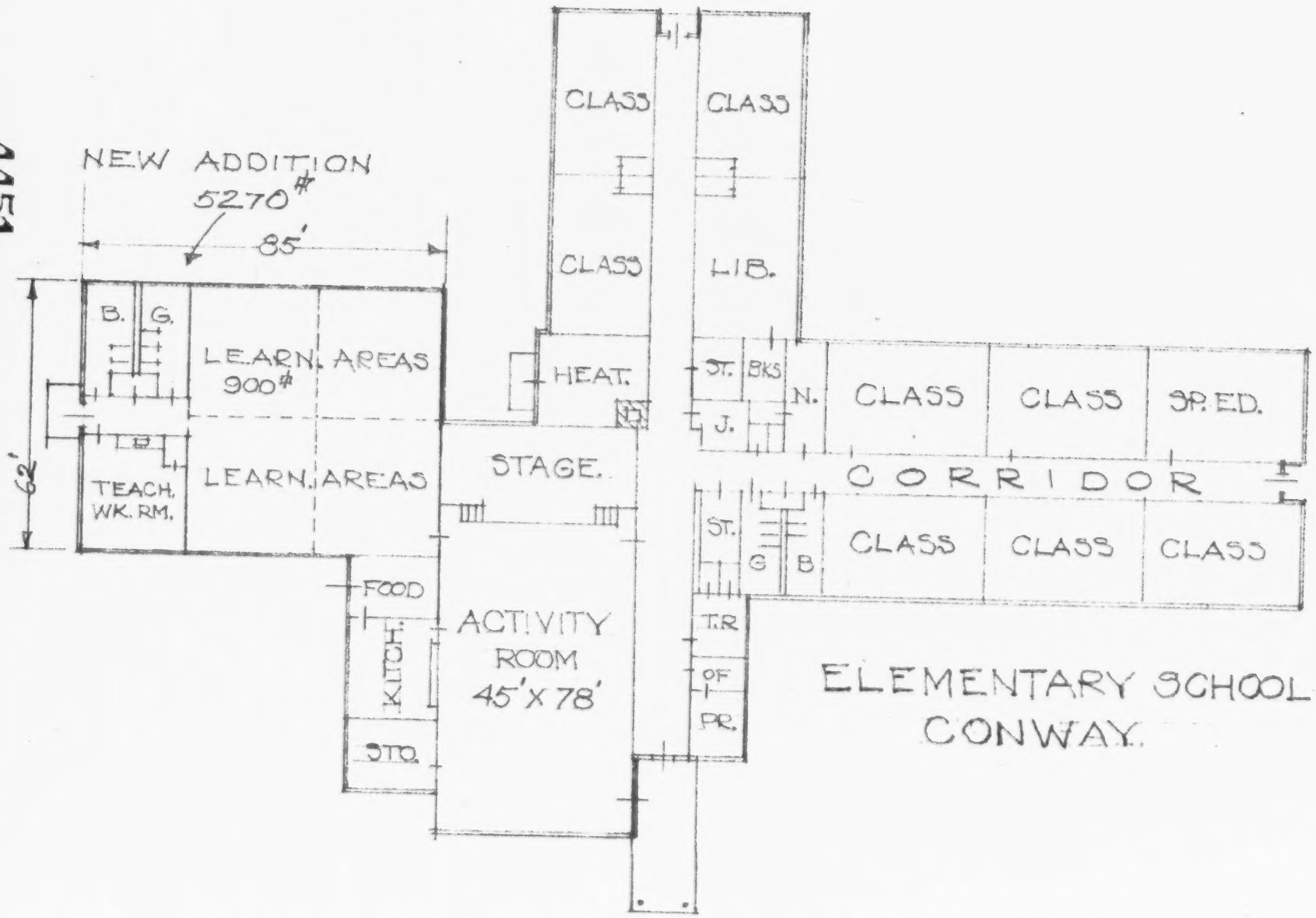
CONWAY

SCALE 1"=40'

BUILT 1956
I.W. HERSEY
ARCHITECT

PLAN 2

ROOM SPACE STUDY



ELEMENTARY SCHOOL
CONWAY.

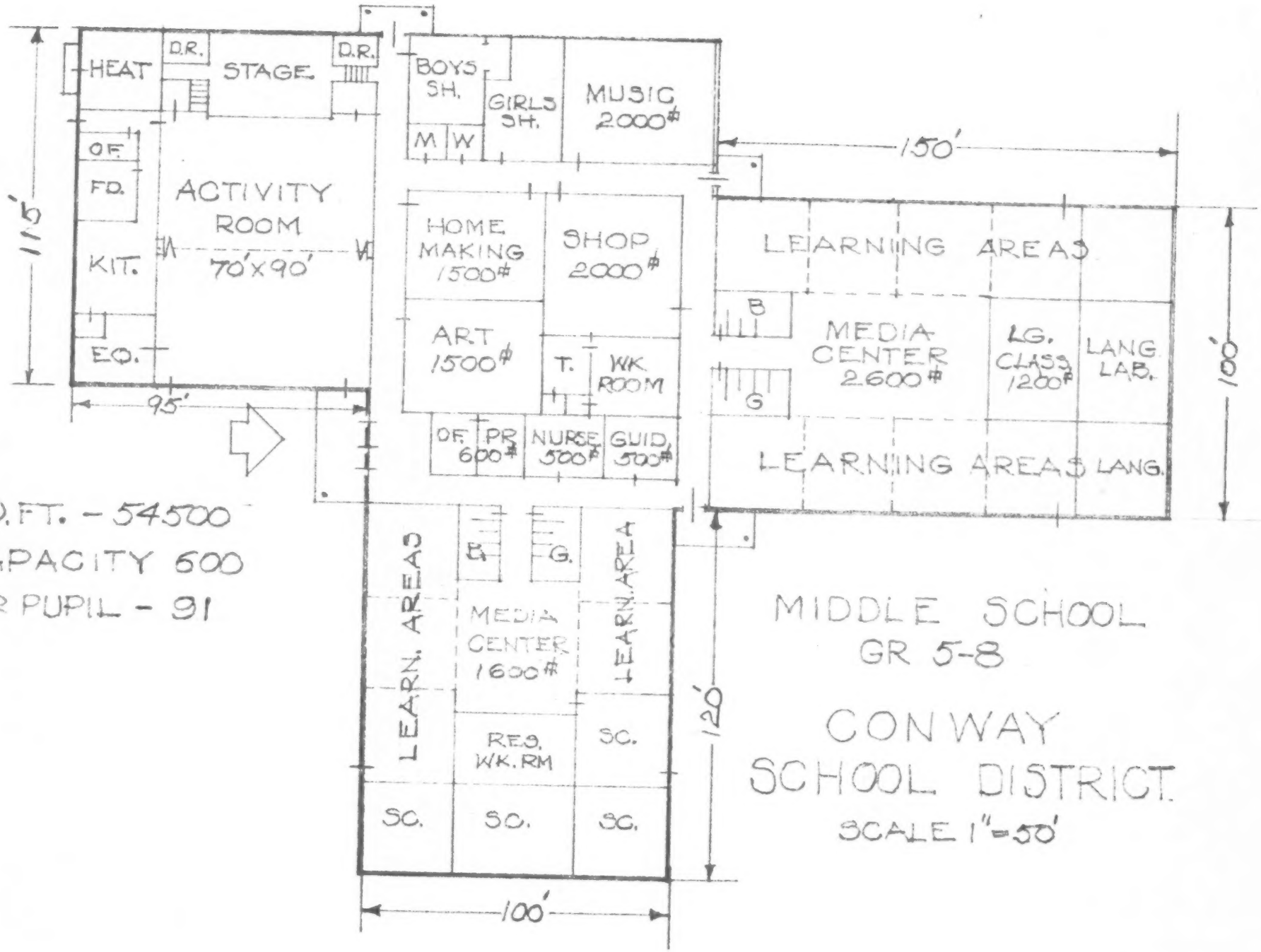
SCALE 1" = 40'

Middle School (5-8):

The new middle school, with a projected capacity of 550-600 pupils, would provide approximately 54,500 sq. ft. of space and would be located on a new site of at least 11-12 acres. The building would contain its own shop facilities, a home-making unit, art, science, and music areas, one large-group instruction area, a cafetorium-gymnasium 70' x 90' with a stage, a kitchen, and showers for boys and girls. The two classroom wings are located so as to adjoin the core facilities, and each contains a media center, one of 2600 sq. ft. and one of 1600 sq. ft. If desired, grades 7 and 8 could be assigned to one wing, and grades 5 and 6 could share the other.

The space study on the following page illustrates the suggested arrangement of spaces.

PLAN 2
ROOM SPACE STUDY



AREA SQ. FT. - 54500
PUPIL CAPACITY 600
SQ. FT. PER PUPIL - 91

MIDDLE SCHOOL
GR 5-8

CONWAY
SCHOOL DISTRICT

SCALE 1"=50'

Kennett High School (9-12):

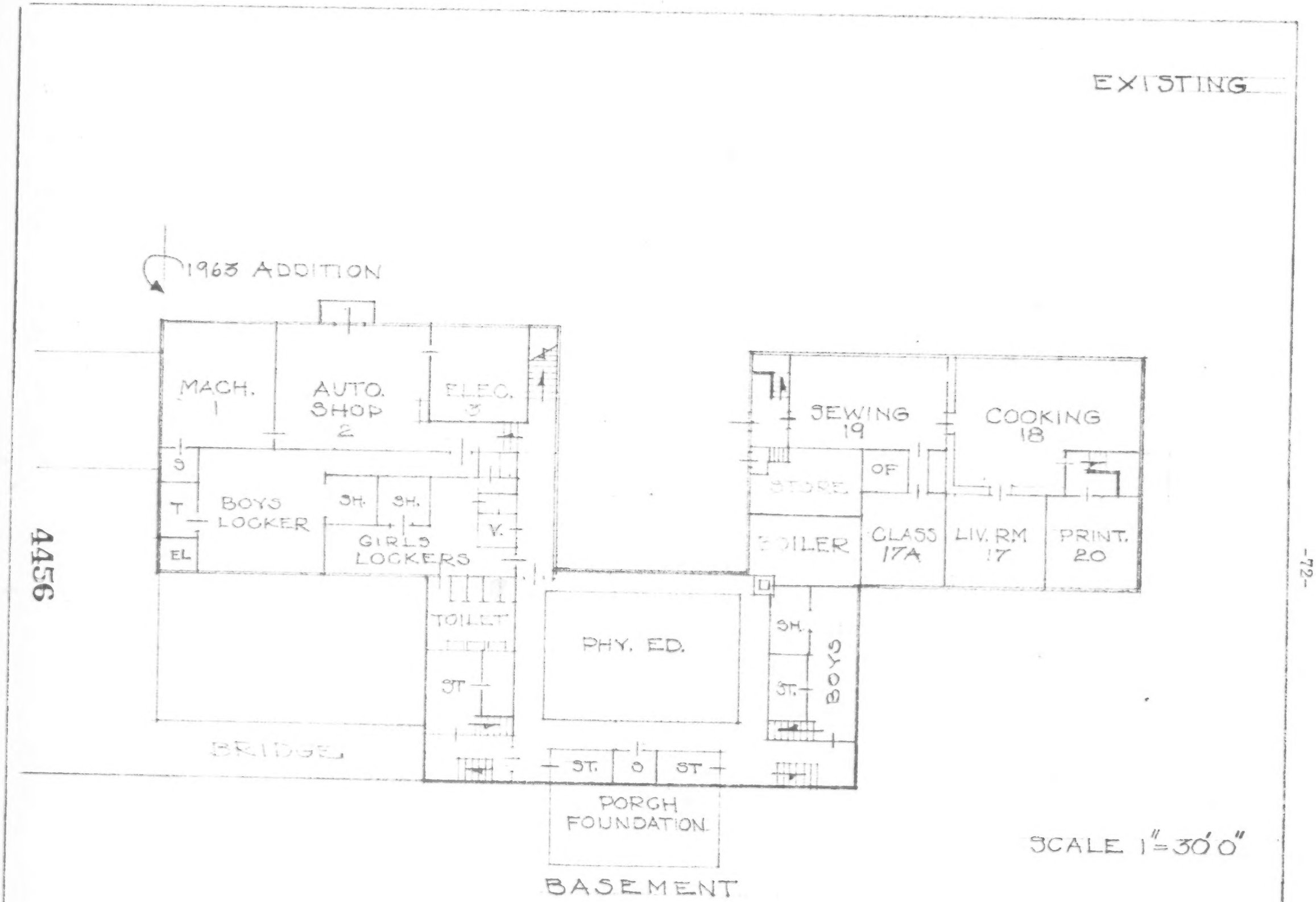
The new annex to be built for the High School would contain a gymnasium and a single-story shop wing. The gymnasium with an area of 11,000 sq. ft. would have space for a regulation basketball court 50' x 84' and seating accommodations for approximately 1000 spectators. This section of the annex would also have a stage area of 2700 sq. ft., a music area of 2000 sq. ft., shower facilities (boys' and girls') of 2700 sq. ft., and a lobby of 1500 sq. ft., offering essentially the same facilities as in Plan I (see p. 45 above).

The shop wing of the annex would have an area of 16,650 sq. ft. on one level. The following facilities would be in this wing: a general metals area of 2500 sq. ft., a wood shop of 2300 sq. ft., an auto shop of 3300 sq. ft., an electrical shop of 2000 sq. ft., a graphic arts (visual communications) room of 1560 sq. ft., and one classroom of 900 sq. ft. The present shop areas would be converted to general academic classroom use.

Alterations and renovations in the present building would follow a similar pattern as suggested in Plan I, resulting in a good administrative core with suites for administration, guidance, and health, conference rooms, etc., all located in close proximity to each other. A resource center on the second floor would become part of the social studies area, with the present guidance section being converted to a teachers' workroom. In the present Kennett wing the library space would be increased by adding to it a part of the art room. Rooms 501 and 502 would become

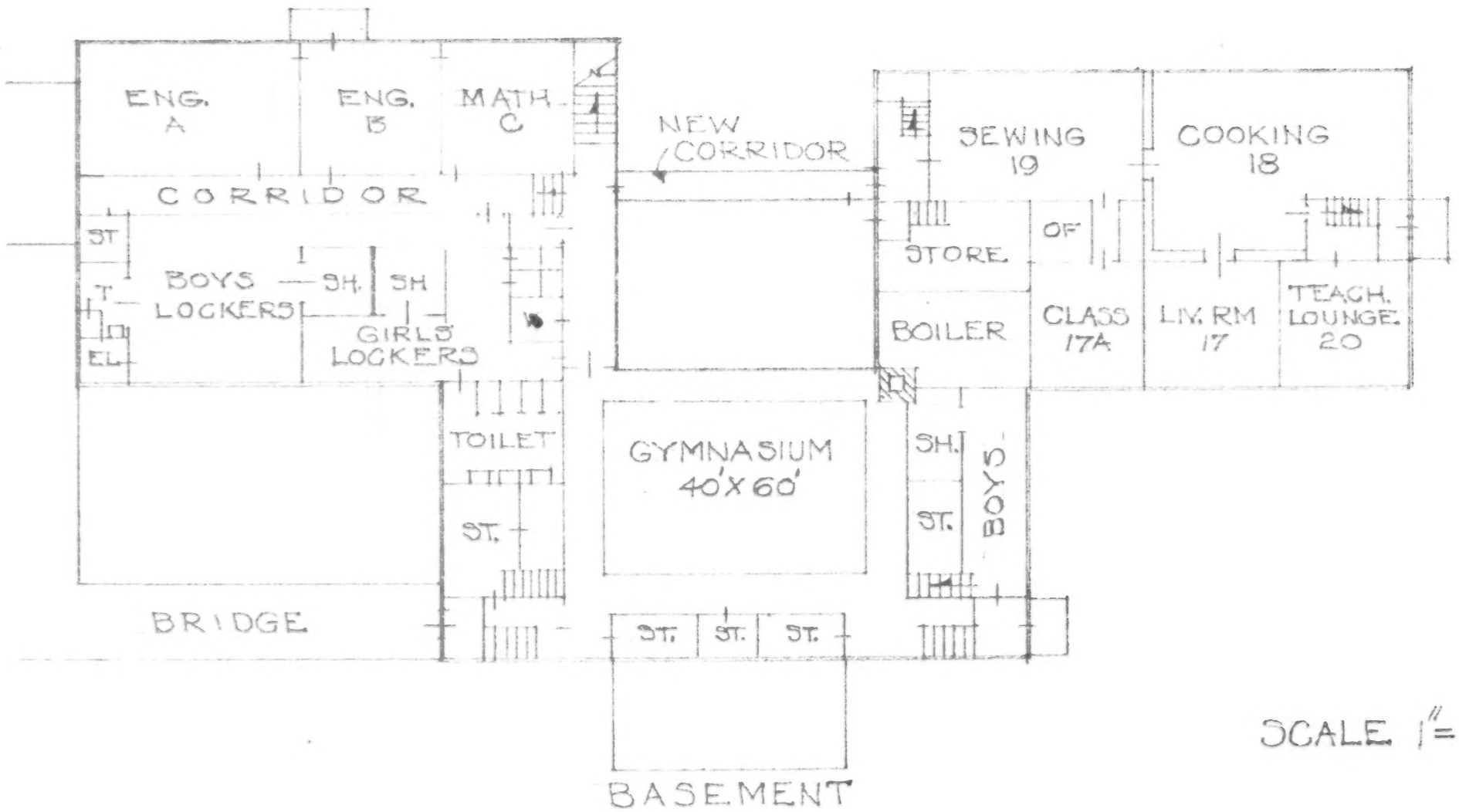
the art area, either as one big (2000 sq. ft.) room or two smaller ones. Science would be departmentalized as in Plan I on the third floor of this wing. A drafting room would be located in the basement, (see p. 46 above).

The following pages contain space studies for the annex and the proposed changes at Kennett High School.



KENNETT HIGH SCHOOL - CONWAY

PLAN 2
ROOM SPACE STUDY

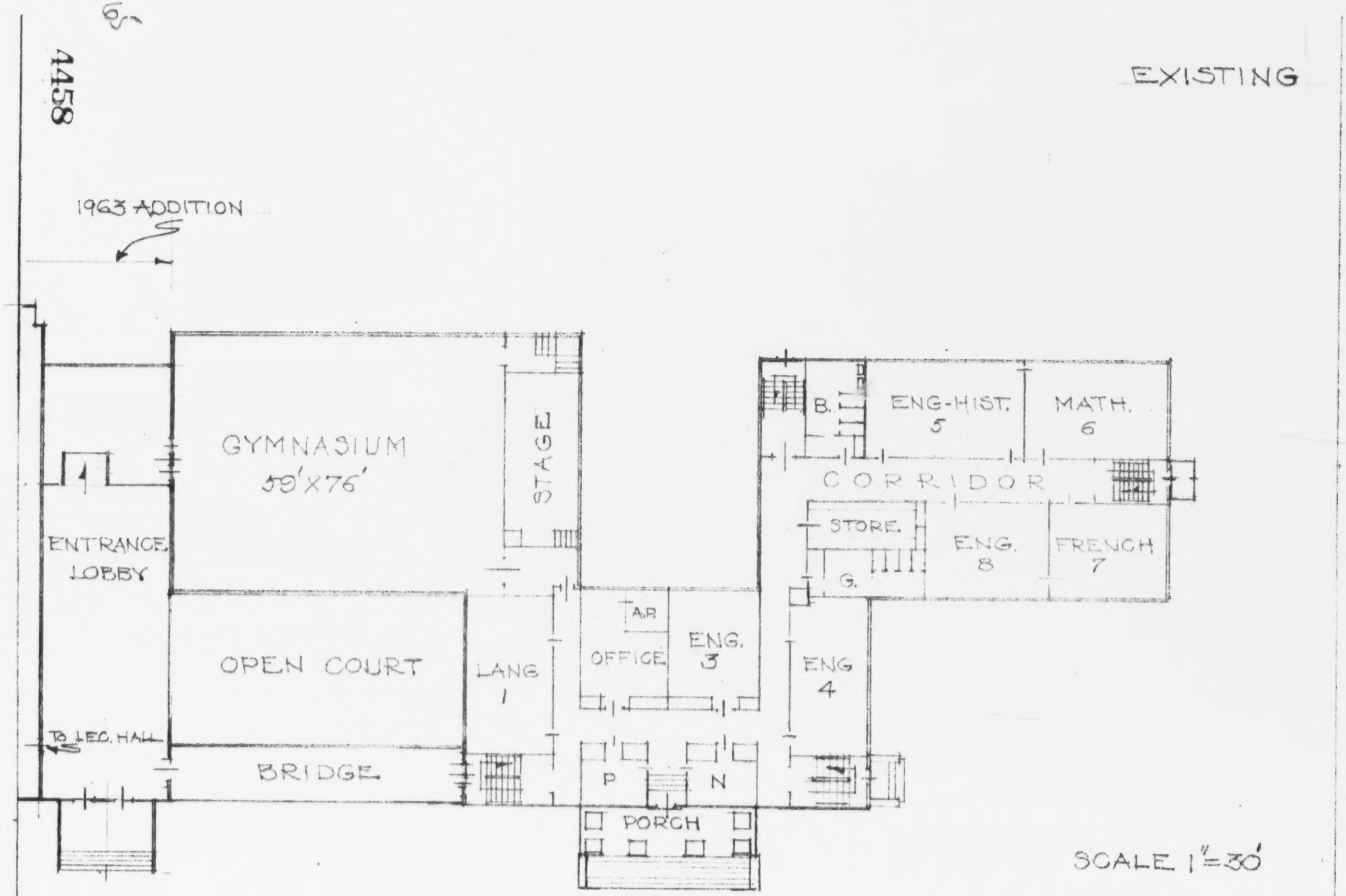


SCALE 1"=30'

BASEMENT

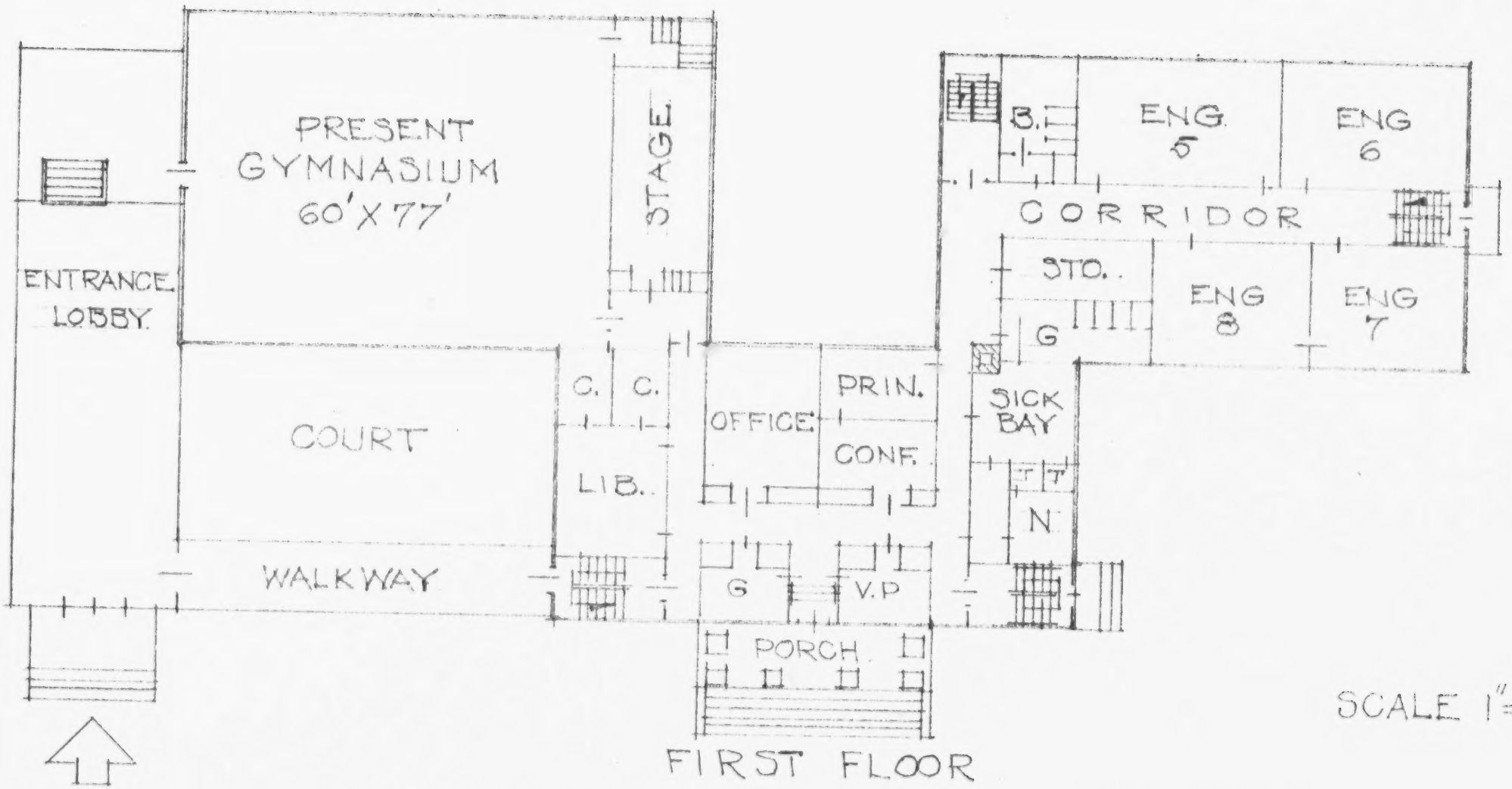
KENNETT HIGH SCHOOL - CONWAY

4457



FIRST FLOOR

KENNETT HIGH SCHOOL - CONWAY

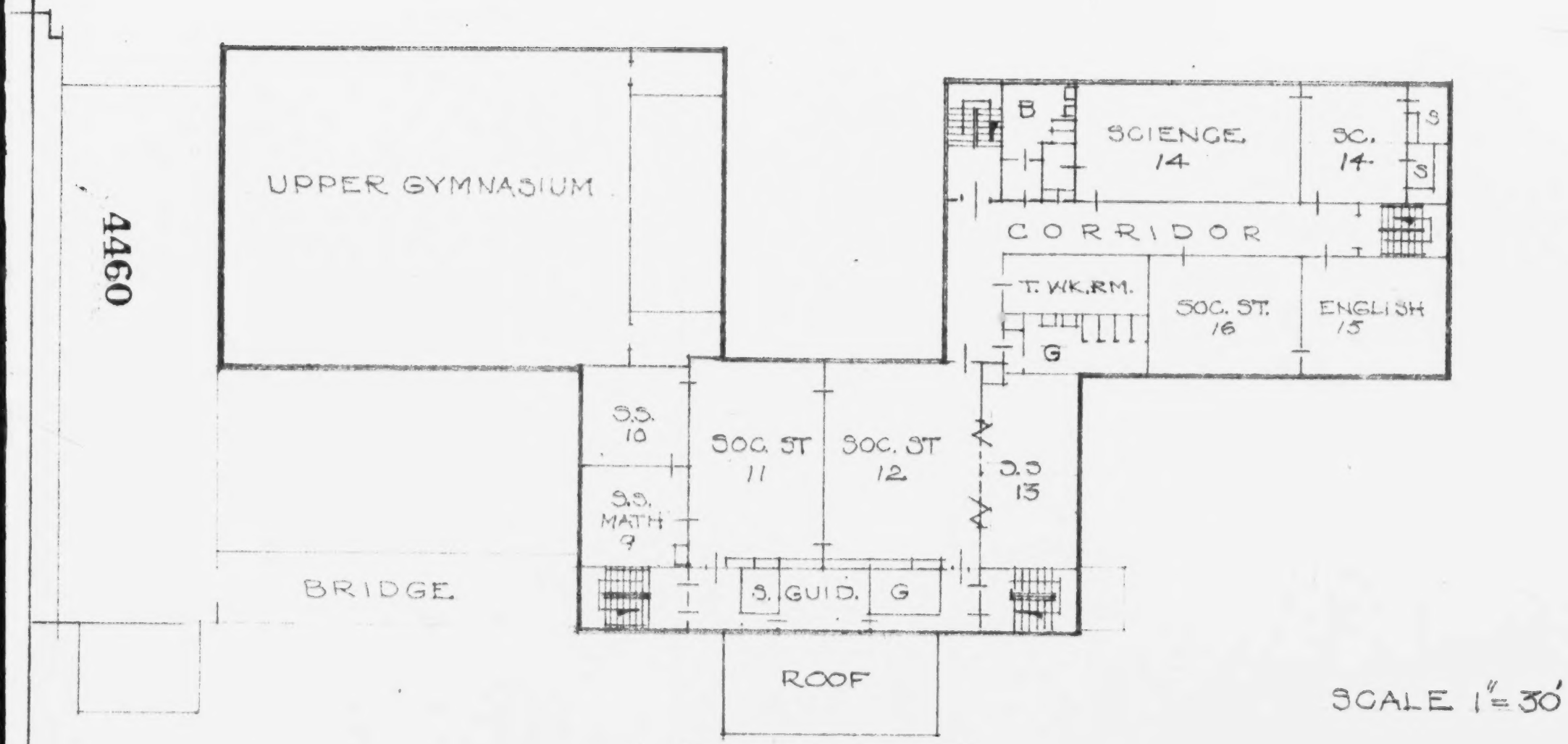


SCALE 1"=30'

FIRST FLOOR

KENNETT HIGH SCHOOL.-ORG. BLDG.

EXISTING



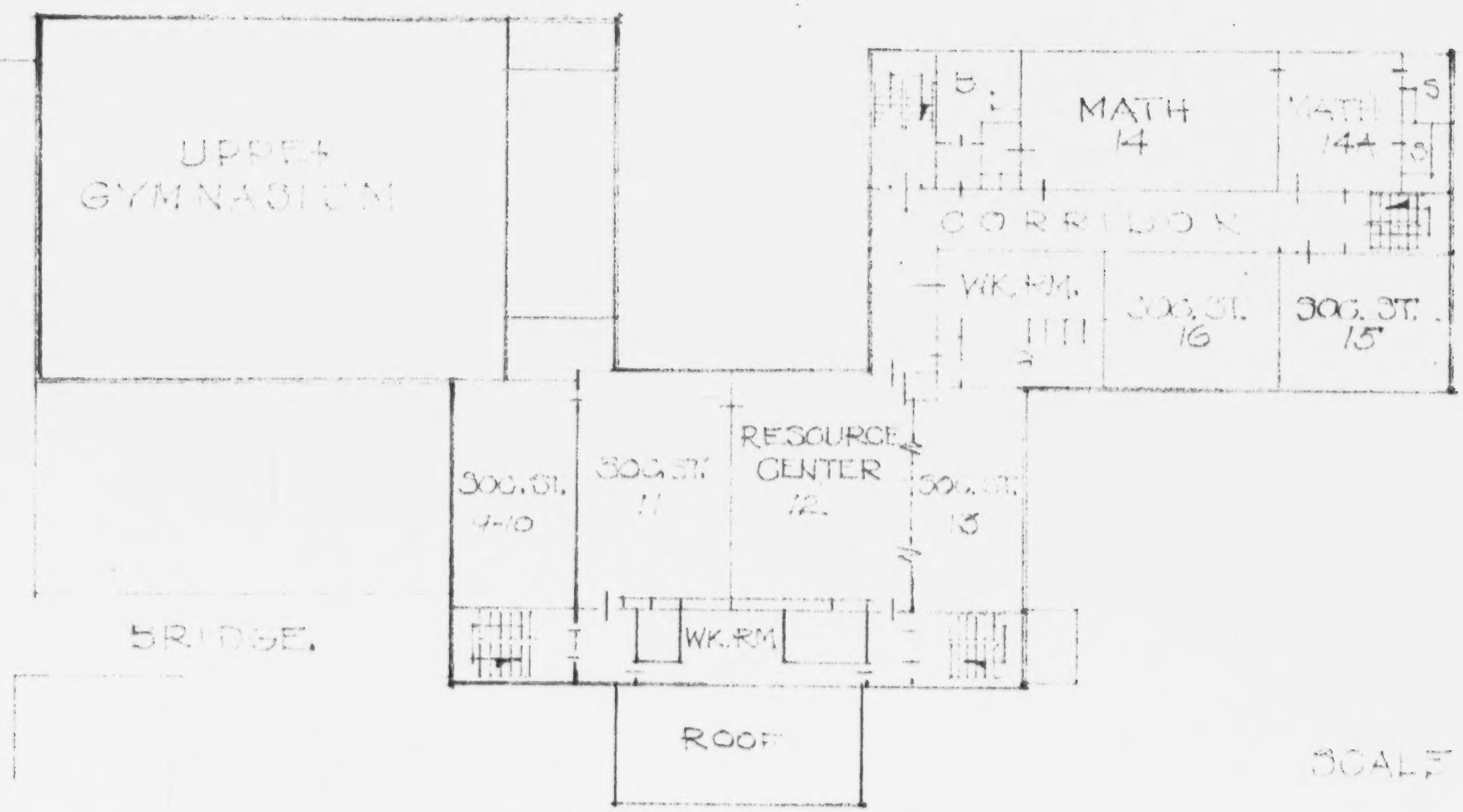
SCALE 1" = 30'

SECOND FLOOR

KENNETT HIGH SCHOOL - CONWAY

PLAN 2

ROOM SPACE STUDY

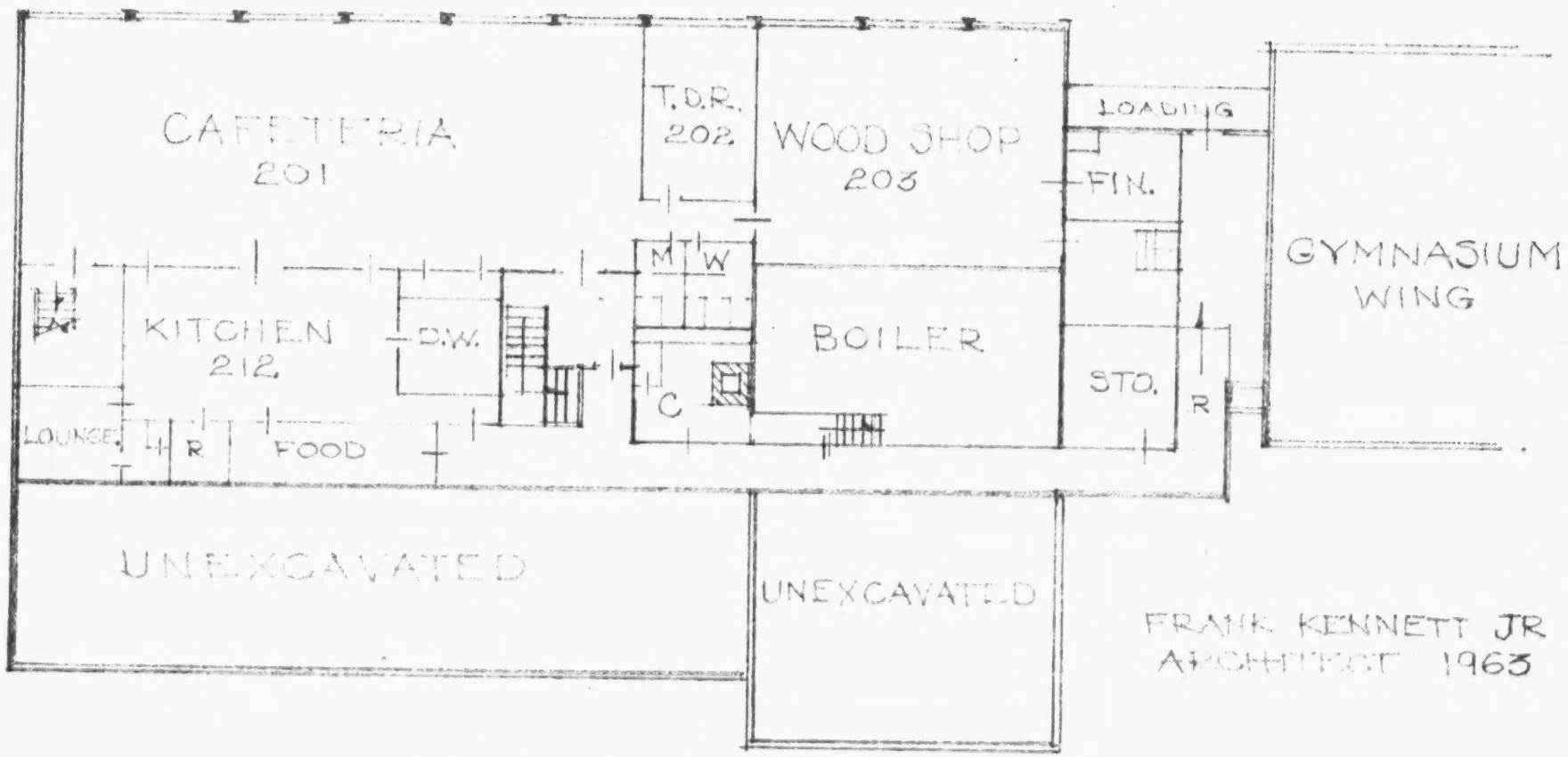


SCALE 1/8" = 50'

SECOND FLOOR

KENNETT HIGH SCHOOL - CONWAY

EXISTING



FRANK KENNETT JR
ARCHITECT 1963

BASEMENT

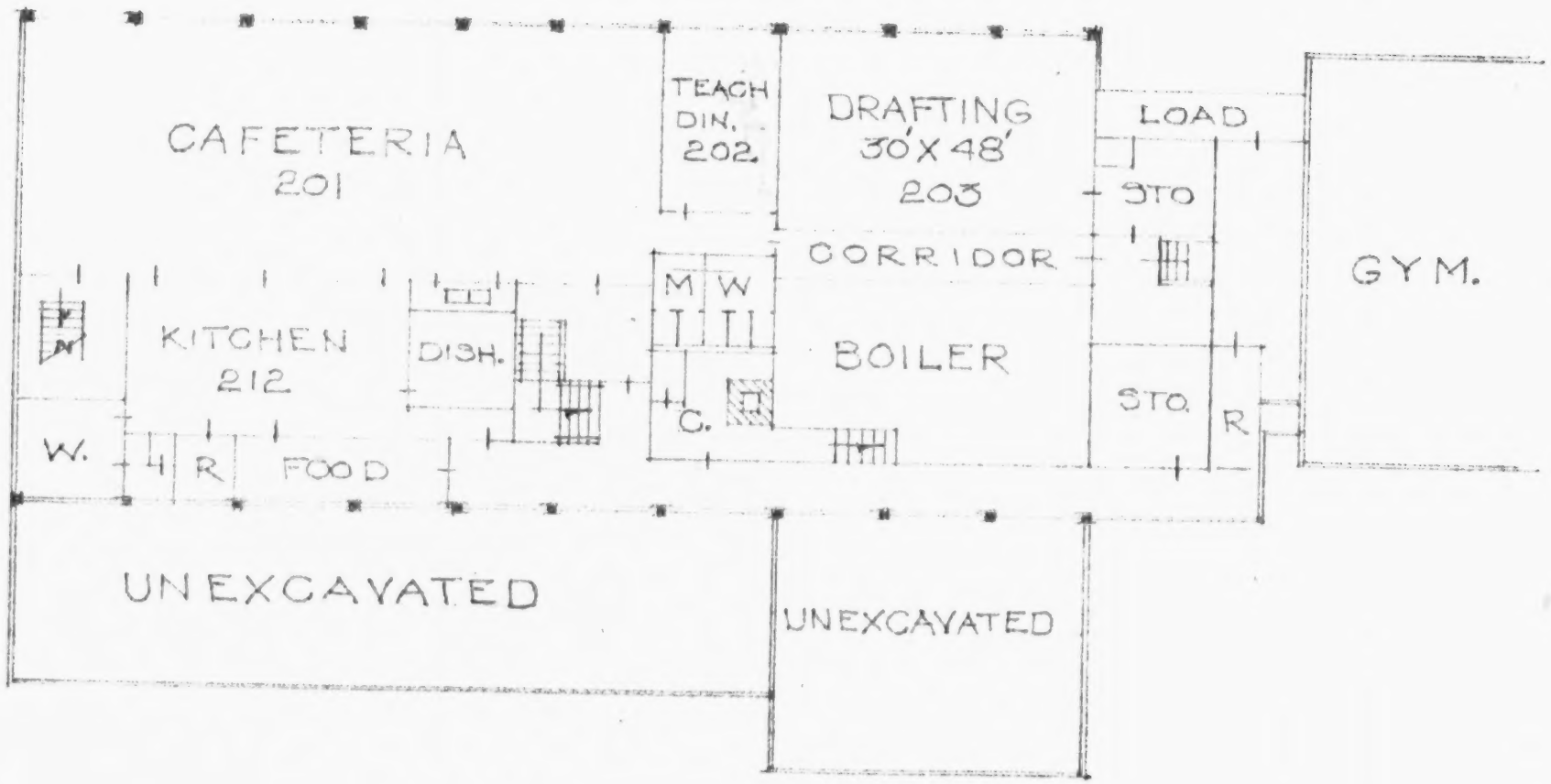
KENNETT HIGH SCHOOL — CONWAY N.H.

SCALE 1"=30'0"

4462

-78-

PLAN 2.
ROOM SPACE STUDY



BASEMENT

KENNETT HIGH SCHOOL - CONWAY

SCALE 1"=30'

4463

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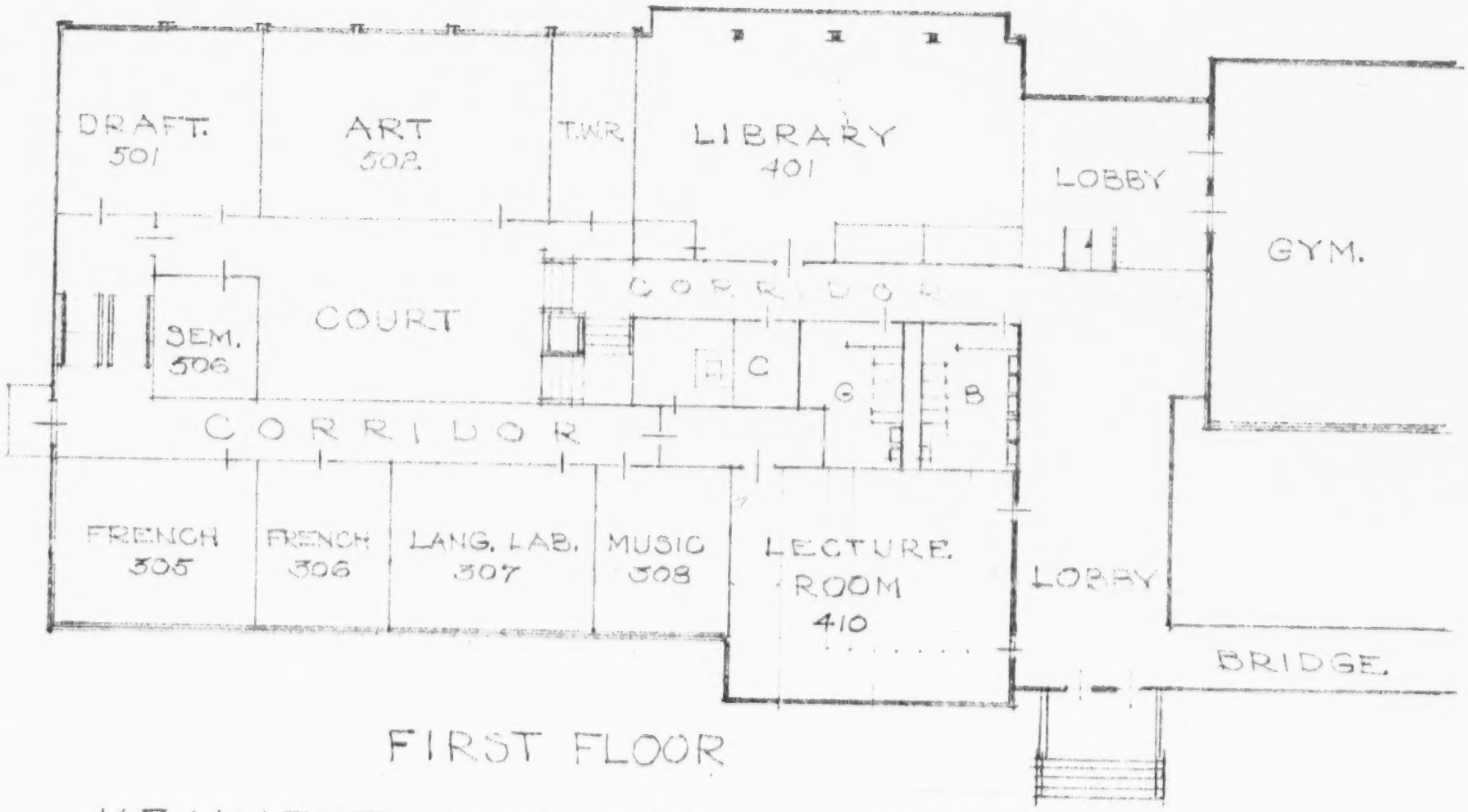


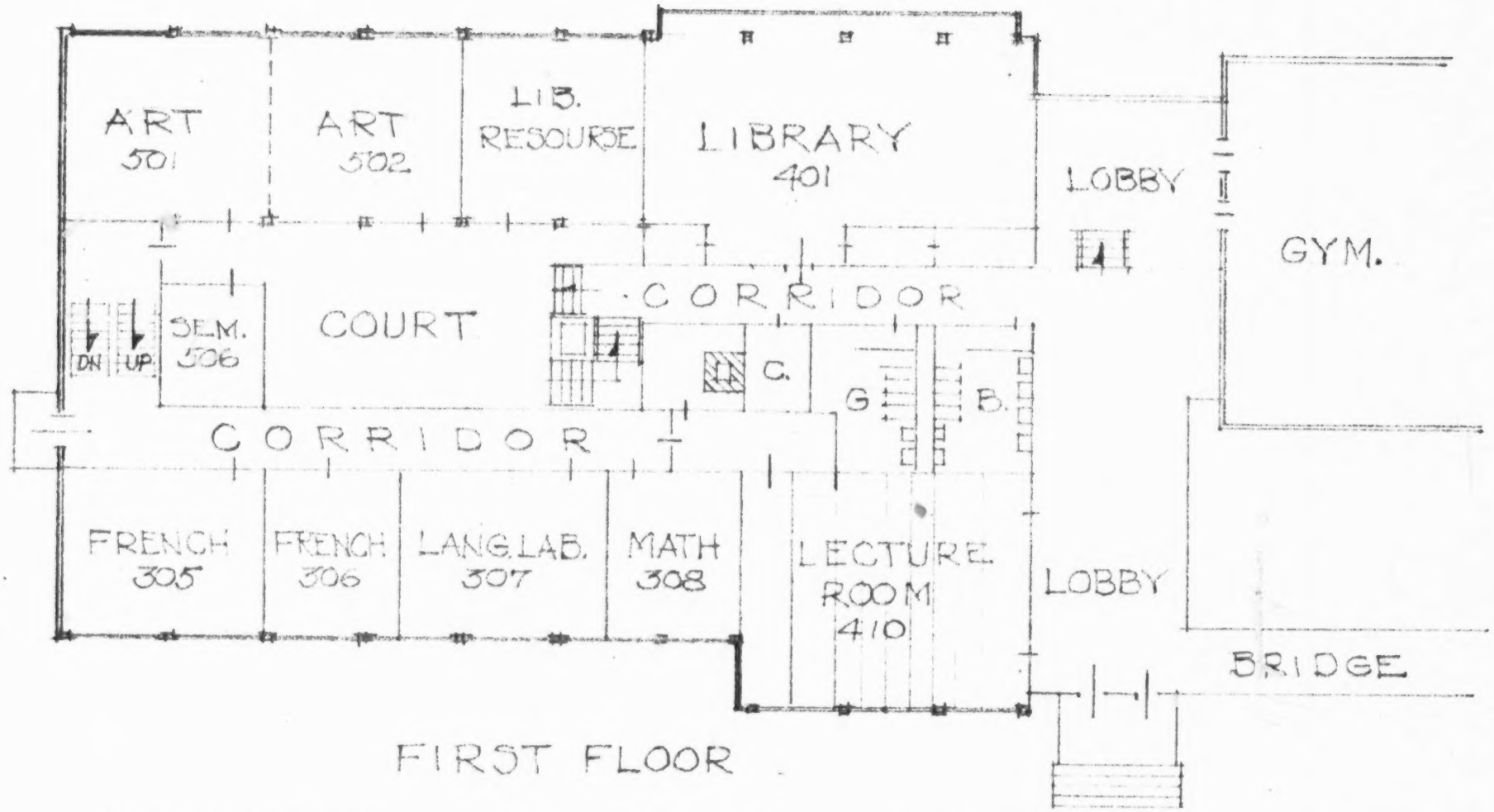
FIRST FLOOR

KENNETT HIGH SCHOOL - CONWAY N.H.

SCALE 1"=30' 0"

PLAN 2

ROOM SPACE STUDY

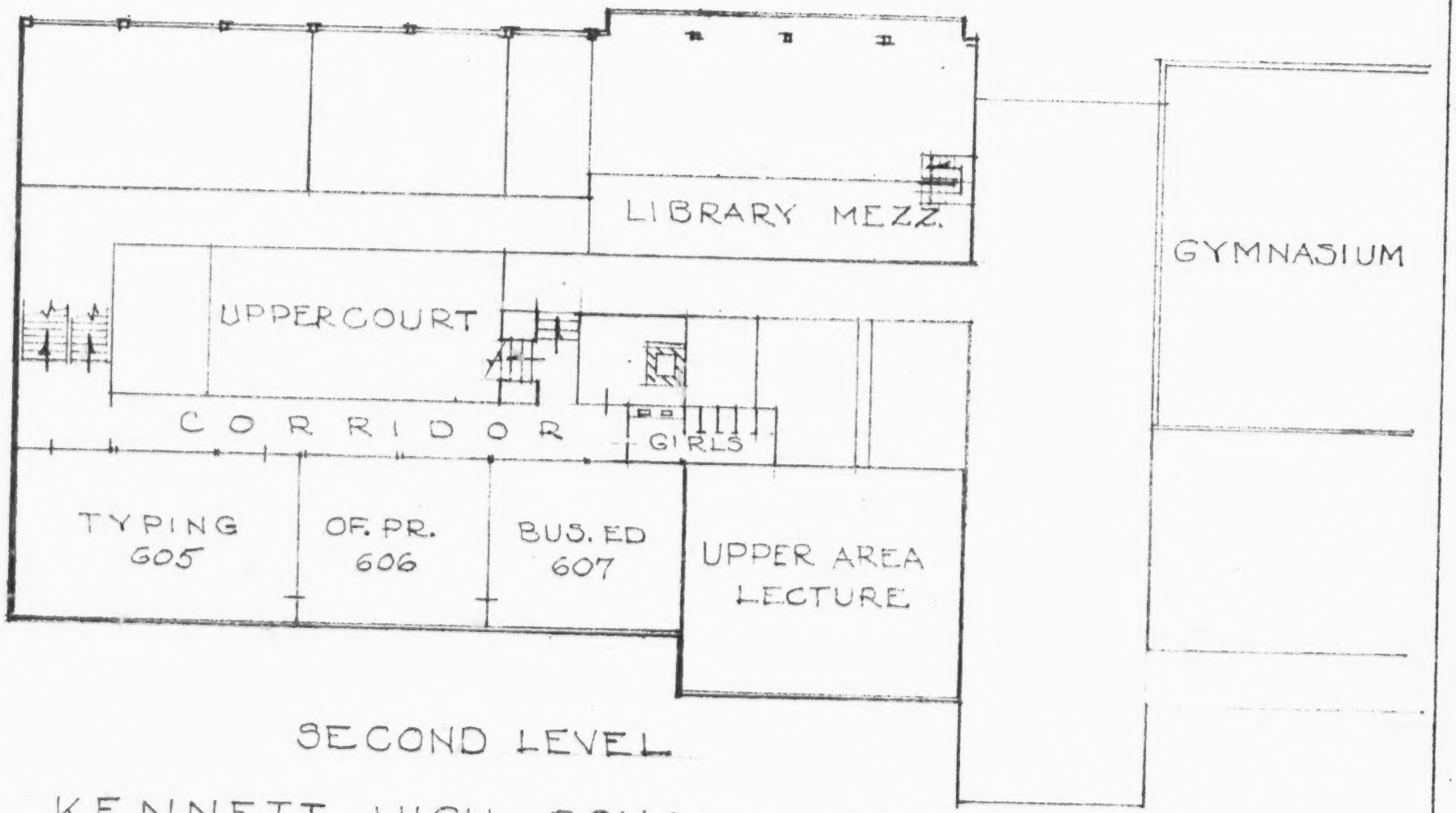


FIRST FLOOR

KENNETT HIGH SCHOOL - CONWAY

SCALE 1" = 30'

44665

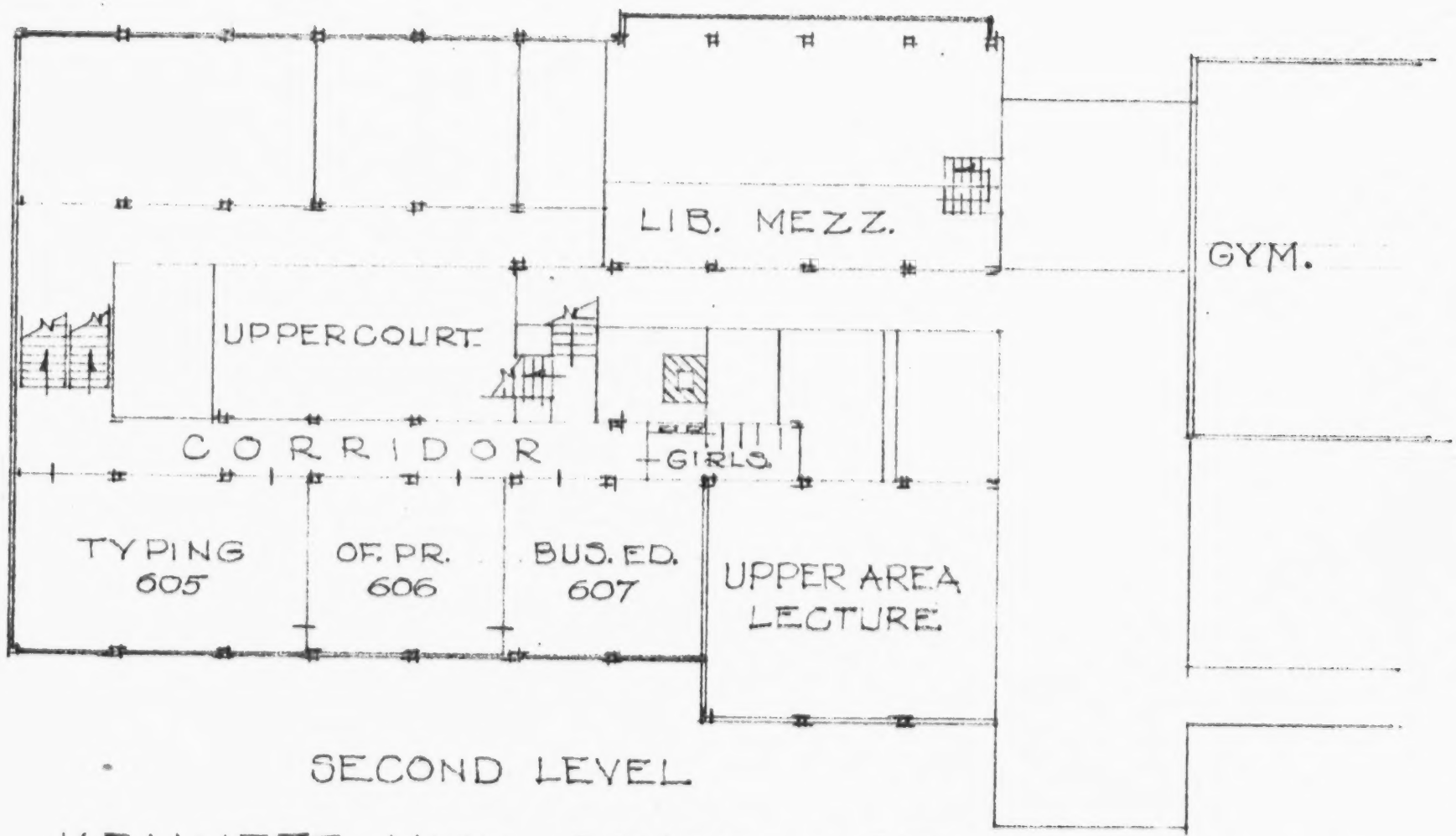


SECOND LEVEL

KENNETT HIGH SCHOOL — CONWAY N.H.

SCALE 1"=30'0"

PLAN 2

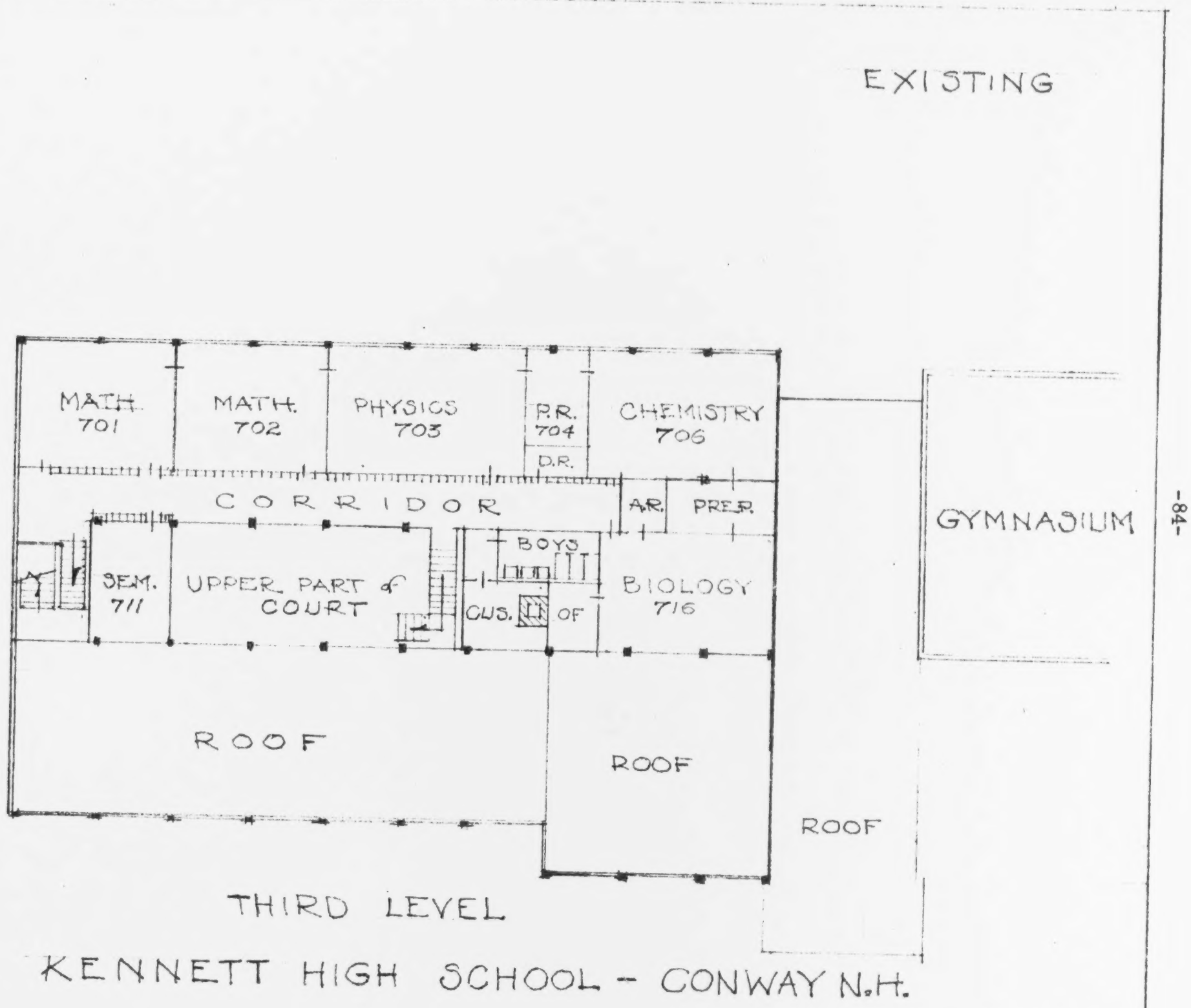


SECOND LEVEL

KENNETT HIGH SCHOOL - CONWAY

SCALE 1" = 30'

44677



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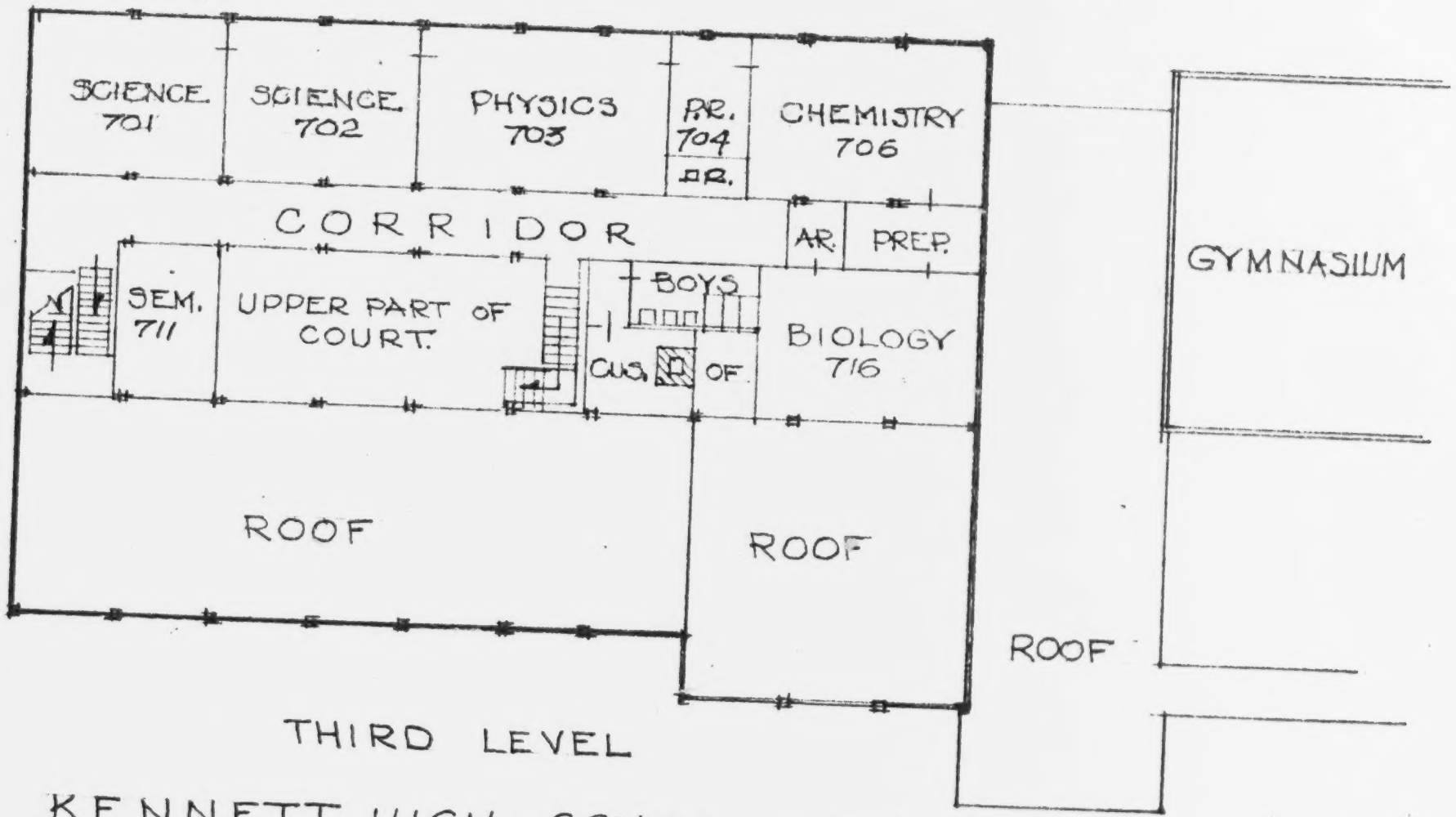
446468

PLAN 2
ROOM SPACE STUDY



THIRD LEVEL

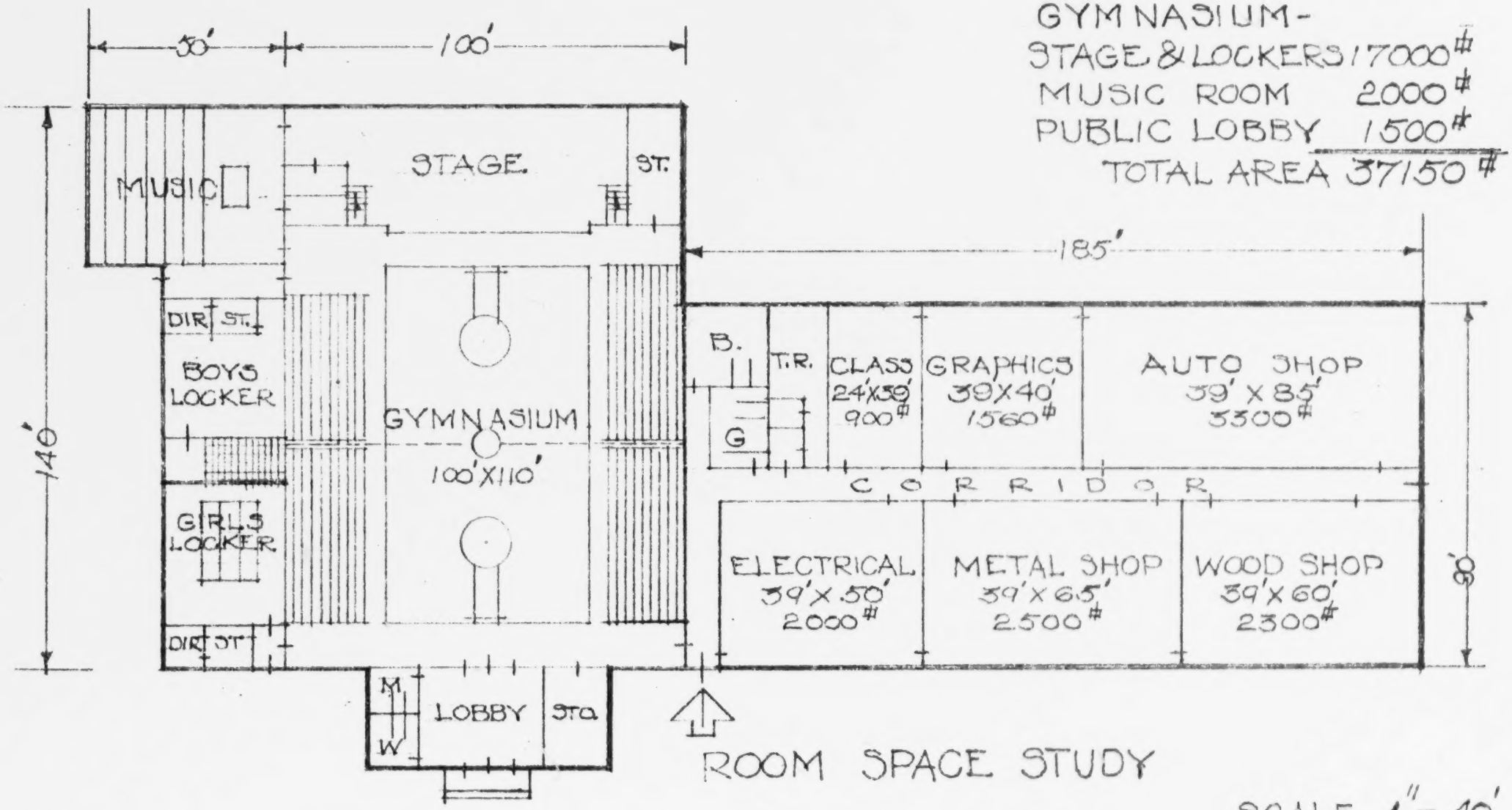
KENNETT HIGH SCHOOL - CONWAY

SCALE 1"=30'

4469

PLAN 2

SHOP WING 16650#
GYMNASIUM-
STAGE & LOCKERS 17000#
MUSIC ROOM 2000#
PUBLIC LOBBY 1500#
TOTAL AREA 37150#



ROOM SPACE STUDY

SCALE 1" = 40'

NEW ANNEX-KENNETT HIGH SCHOOL

4470

PROJECT BUDGET

Plan II (K-4, 4, 4)

New Annex to Kennett High School		
One Story		
Gymnasium-Shop Facilities 37,150 sq. ft. @ $ 25.00/sq. ft.	$	928,750
Special Shop and Physical Education Equipment		200,000
Alterations and Renovations to High School		
Science Area Administrative Suite Resource Center		50,000
New Middle School		
600 Pupils in Grades 5-8 54,500 sq. ft. @ $30.00/sq. ft.		1,635,000
Addition to Conway Elementary School (4 rooms)		140,000
Contingency		
Borings, Grading, Parking Lot, etc.		80,000
Total	$	3,033,750*

*Note: All estimates must be adjusted to reflect costs at time of construction.

EVALUATION

- The organizational pattern would be K-4, 5-8, 9-12.

- The proposed four-room addition to the Conway Elementary School would enable the two elementary schools to provide the same facilities as cited in the Plan I Evaluation (see above, p. 64) The schools could accommodate the projected peak enrollment of 426 pupils in grades 1-4, as well as the anticipated peak kindergarten population of 106, making a total maximum projected enrollment of 531 in K-4.

- The new middle school would have all the necessary core facilities and learning areas for 600 pupils in grades 5-8. A new site would have to be acquired and developed for this plant.

- The new annex to the High School and the proposed alterations and renovations in the present building would convert Kennett High School into an excellent four-year secondary school with ample capacity for 800 students. (See above, p. 64, for a more detailed discussion).

- This plan offers certain advantages in that the new middle school would relieve the present crowded conditions at the High School and would respond to the secondary teachers' suggestions that 7th and 8th grade pupils be separated from grades 9-12 if possible (see above "Relationship of Curriculum Requirements and Space Needs", p. 19).

- The estimated cost of this project of $3,033,750 would exceed the District's borrowing capacity (according to 1968 figures) of $2,485,196. Two possible solutions to this problem would be special legislation to exceed the borrowing capacity or adoption of the AREA Plan to obtain state building aid and increase borrowing capacity. (See above, p. 8 for a discussion of the AREA Plan).

CONCLUDING STATEMENTS

CONCLUDING STATEMENTS

The following surveys in this report analyze the present situation in the Conway School District :

1. Present status of school buildings.

2. A study of the relationship of curriculum needs and space requirements.

3. A vocational study preceded by a review of the section of the 1968 Arthur D. Little Report pertinent to the region.

The two alternative plans were developed on the basis of these surveys. Implementation of either plan will necessitate several decisions on the part of the Conway School Board. Whichever plan is adopted, some determination will have to be made as to the future of the Pine Tree School, since Plan I and Plan II propose that the entire elementary school population be accommodated in the Conway and Fuller Schools; this will also necessitate a redistribution of attendance areas, which will involve some changes in the present transportation program.

Both plans call for the construction of an annex to Kennett High School, whose location with regard to the present building will have to be decided by the School Board.

Plan II proposes that a new middle school be built. This would involve the selection and acquisition of a new site of at least 11-12 acres. This plan will require thorough consideration, not only of the validity of the middle school concept, but also of the measures necessary to finance the project. As pointed out earlier in this report, the estimated cost of

Plan II exceeds the Conway School District's present borrowing capacity by a considerable amount. Two possible solutions to this problem are special legislation enabling the District to exceed its borrowing capacity, or the adoption of the AREA Plan.

In addition to the above decisions which must be made in order to implement the conclusions reached in this report, there are two questions of long-range effect to which the Conway School Board should give thorough consideration. First, should the District offer kindergarten? The alternative plans both provide space for kindergarten, so that no additional construction would be required if the School Board decides to institute this program. Second, the CEFS team strongly recommends an on-going curriculum study with special attention to devising a new general curriculum for the non-college-bound student (see above, p. 32). This study should involve persons outside the school system as well as teachers and administrators and should take account of the economic development of the Conway area, especially with regard to the development of the vocational sector of the curriculum.

In the meantime, the alternative plans offer solutions to some of the Conway School District's most pressing problems: the inadequate facilities on the elementary level, overcrowding at the secondary level, and inadequate industrial arts facilities at the High School.

APPENDIX

APPENDIX A

FACULTY SURVEY ON CURRICULUM STAFF AND SPACE NEEDS

1. How many teachers are in your department? _____

2. List the courses offered in your department and approximate number of students enrolled in each course.

3. Does your department have interest in intradepartmental team teaching or in interdepartmental-interdisciplinary team teaching and planning? If so, describe briefly.

4. For your present program and present enrollments:

   A. Does your department need more teachers? _____
      If so, how many? _____
   B. More rooms? _____
      How many and what kind?

C. Teacher office and/or work space? _____
If so, describe (including any desired sharing with other departments.)

D. Other needed facilities?

5. If you were to change your present program to make it what your department thinks it should be .....

A. What courses would you eliminate?

B. What courses would you add? (Indicate number sections and number of additional teachers required.)

C. What kind of additional facilities would be required? (classrooms, large group areas, small group areas, labs, etc.)

6. Would members of your department like to separate the 7th and 8th grade from the high school? _____

   If so, how would this affect the needs listed in questions 4 and 5?

7. What is the attitude of your department towards study halls, student free time, and independent study? Would your positions on these matters require any special facilities or scheduling? Describe:

8. What kind of library resource center(s) would your department like to see and how would you like to have it used?

9. Is the present schedule satisfactory? _____

   If not, how would you like to change it? (use activity period for classes, shorten periods, add one period to the day, move to modular, flexible scheduling, etc?

10. List, in order of priority, the areas of curriculum you think are in greatest need of change in the whole school.

APPENDIX B

The Castaldi Formula

Explanation of the Calculations

The following calculations use the Castaldi Formula and are based on the number of class periods per week, of students per section of each course, and on the total number of students taking each course. An 80 per cent space utilization factor is assumed. The resultant estimates of space needs are summarized in terms of teacher stations. The figures used are based on the following data:

1. CEFS' enrollment projections through 1980-81.
2. Teachers' estimates of course enrollment trends.
3. Teacher statements of maximum class size (for example, 15 for Home Economics, 30 for Physical Education, etc.).
4. A 35-period week.
5. Projected course additions and deletions.
6. Number of class meetings per week suggested by faculty and administration.

<u>Castaldi Formula</u>:

$$T.\ S. = 1.25 \frac{E}{C} \cdot \frac{n}{N}$$

T. S. - Teacher Stations
E - Number of Students in Course
C - Desired Class Size
n - Periods per week
N - Number of periods per School Week

4-YEAR SENIOR HIGH SCHOOL (Grades 9-12)

800 Pupils 7-Period Day

Subject	Per Cent in Course	No. of Pupils	No. in Class	Periods Per Week	Teacher Stations
English	105	840	25	5	6
Social Studies	80	640	25	5	5
Mathematics	80	640	25	5	5
Science	63	504	20	5	5
Language	40	320	25	5	3
Business Education	33	264	25	5	3
Art	11	88	20	5	1+
Physical Education	100	840	30	3	3
Homemaking	10	80	20	5	1+
Drafting	10	80	25	5	1
Music					1+
Industrial Arts - Vocational Education					5
Woodworking				(1)	
Metals - Machine				(1)	
Auto - Small Motors				(1)	
Visual Communication				(1)	
Electricity-Electronics				(1)	

6-YEAR HIGH SCHOOL (Grades 7-12)

1050 Pupils 7-Period Day

Subject	Per Cent in Course	No. of Pupils	No. in Class	Periods per Week	Teacher Stations
English	104	1100	25	5	8
Social Studies	80	840	25	5	7
Mathematics	80	840	25	5	6
Science	76	800	20	5	7
Language	40	420	25	5	4
Business Education	33	350	25	5	3
Art	11	115	20	5	2
Physical Education	100	1050	30	3	4
Homemaking					
9-12	10		20	5	1
7-8	50		20	5	1
Drafting	10	105	25	5	1
Music					2
Industrial Arts - Vocational Education					5
Woodworking				(1)	
Metals - Machine				(1)	
Auto - Small Motors				(1)	
Visual Communications				(1)	
Electricity-Electronics				(1)	

APPENDIX C

KENNETT HIGH SCHOOL

Conway, New Hampshire 03818

Guidance Department

COOPERATIVE EDUCATION 1969-1970

Cooperative education is a program for students who are enrolled in a school and who through a cooperative arrangement between the school and employers, receive part-time vocational instruction in the school and on-the-job training through part-time employment. It provides for alternation of study in school with a job in industry or business, the two experiences being planned and supervised by the school and employer so that each contributes definitely to the student's development in his chosen profession or occupation. Work periods and school attendance may be on alternate days, weeks, or other periods of time; but the hours at work are during the school day and equal or exceed the hours spent in school during the regular school year.

The major purpose of this program is to encourage students to continue their education, acquire work experience, and to obtain a high school diploma.

Students participating in this program attend school in the morning; in the afternoon, they are employed in the community at not less than current minimum wages.

The student who is enrolled in this program

(1) must meet the regulations of the school regarding the program,
(2) will be graded four times a year by the employer on the quality of his work.

If a student wishes to participate in the program, the first step is to obtain parental consent. If the parent agrees that it is in the best interest of the student, he is enrolled in the program for the school year.

February 13, 1970

SUBJECT: Occupational Survey

FROM: School Study Committee

Dear Employer:

The local School Study Committee is making an effort to sample the thinking of local employers relative to the existing program at Kennett High School.

Enclosed is an Occupational Inquiry Form which has been prepared to assist the Committee in this attempt to gain insights into ways in which the employers and the school can work closely together to provide the kinds of educational experiences that will better prepare the student for employment.

Will you please take a few moments to think about the items listed on this form and jot down your reactions? Within a few days, a representative from the Committee will contact you personally about this form and discuss it with you.

Thank you very much for your cooperation in this important matter.

FOR THE COMMITTEE

George T. Davidson, Jr.
Director of Guidance Services
Kennett High School

GTD/c

Enclosures

OCCUPATIONAL SURVEY

February, 1970

Kennett High School

Conway, N. H. 03818

Name of Concern _____

Address _____ Tel. No. _____

Name of Person Interviewed _____

Title of Person Interviewed _____

1. Nature or Type of Firm, Industry, or Business:

   _____

2. Maximum Number Employed: Men _____ Women _____

3. List Payroll Jobs Available:

Position	Min. Age	Qualifications

4. Are you able to employ those who may be handicapped?

   ( ) Physical ( ) Mental

5. What kinds of information would you like to know from the schools about prospective employees?

   _____

   _____

   _____

   _____

OCCUPATIONAL SURVEY

February, 1970

Kennett High School
Conway, N. H. 03818
Page Two

Name of Concern _____

6. What do you believe the schools can do to better serve the employers in this area?

   Subject matter content _____

   _____

   Development of skills _____

   _____

   Development of attitudes _____

   _____

   Other _____

   _____

7. What is the nature and extent of training given by the employer?

   _____

   _____

8. To what extent has it been necessary for you to recruit labor outside local sources?

   _____

   _____

9. What kinds of jobs do you find the hardest to fill?

   _____

   _____

OCCUPATIONAL SURVEY

February, 1970

Kennett High School
Conway, N. H. 03818
Page Three

Name of Concern _____

10. What interest do you have in a Cooperative Educational Program wherein the students will work during part of the school day in on-the-job training with pay?

( ) Very much interested

( ) Would like to know more about how it actually works

( ) Not interested

11. General Comments:

APPENDIX D

SURVEY QUESTIONNAIRE FOR CURRENT STUDENTS

MARCH 30, 1970

TOTAL IN CLASS	150
TOTAL REPLIES	109

		CPG	CPB	NCPG	NCPG	Totals
1. Are you interested in the subjects you take in high school?	Extremely interested	0	1	1	1	3
	Very Interested	10	4	4	3	21
	Somewhat interested	15	26	20	13	74
	Very little interest	2	1	3	2	8
	No interest at all	0	2	0	1	3
2. Do you feel that your high school subjects help prepare you for your future job?	Extremely helpful	3	2	5	1	11
	Very helpful	7	3	7	2	19
	Helpful	10	18	2	8	38
	Somewhat helpful	6	13	12	6	37
	No help at all	1	3	2	3	9
3. Are your homework assignments related to the job that you would like to have?	Highly related	0	1	1	0	2
	Very related	1	2	4	1	8
	Related	9	4	4	3	20
	Somewhat related	9	17	8	5	39
	Not related at all	8	11	11	11	41
4. Do after school activities in high school prepare you for the job you would like to have?	A great deal	0	2	1	1	4
	Quite a bit	3	4	3	1	11
	Little	9	12	3	3	27
	Very little	5	5	4	2	16
	Not at all	10	12	17	13	52
5. Do after school activities outside of high school prepare you for the job you would like to have?	A great deal	5	4	4	5	18
	Quite a bit	7	9	3	5	24
	Little	8	10	7	3	28
	Very little	3	8	6	1	18
	Not at all	4	4	8	6	22

CPG - College Preparatory Girls
CPB - College Preparatory Boys
NCPG - Non-college Preparatory Girls
NCPB - Non-college Preparatory Boys

		CPG	CPB	NCPG	NCPB	Totals
6. Do you feel that your teachers are interested in your future job plans?	Extremely interested	1	1	2	0	4
	Very interested	3	5	3	1	12
	Somewhat interested	11	18	12	10	51
	Very little interest	6	5	5	5	21
	No interest at all	4	6	6	3	19
7. How much effort do you put into your schoolwork?	As much as possible	2	1	1	0	4
	A great deal of effort	7	3	1	2	13
	An average amount	15	22	22	11	70
	Little effort	3	7	4	6	20
	No effort	0	2	0	1	3
8. Do you feel that the subjects you study in high school bring out your abilities?	Very much	0	1	2	0	3
	Quite a bit	8	5	7	2	22
	Somewhat	11	19	12	10	52
	Very little	8	6	4	7	25
	Not at all	0	4	3	1	8
9. Would you show more of your ability if your schoolwork were preparing you for a job?	A great deal more	5	4	4	8	21
	Quite a bit more	10	21	14	9	54
	About the same	8	7	9	1	25
	Very little more	1	1	0	1	3
	No additional ability	1	1	0	1	3
10. Do you plan to graduate from high school?	I definitely plan	27	33	25	16	101
	I'm pretty definite	0	1	3	0	4
	I may graduate	0	1	0	3	4
	I have little interest	0	0	0	0	0
	I do not plan to graduate	0	0	0	1	1

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		CPG	CPB	NCPG	NCPB	Totals
11. Do you plan to go to a four year college?	Definitely plan to go	15	21	0	0	36
	Pretty definite about	1	6	0	0	7
	May plan to go	7	2	1	3	13
	Little interest in going	2	2	3	1	8
	Do not plan to go	2	3	24	14	43
12. Do you plan to go to a 1 or 2 year program?	Definitely plan to go	6	10	4	2	22
	Pretty definite about	2	2	7	6	17
	May plan to go	4	4	8	4	20
	Little interest in going	5	9	5	6	25
	Do not plan to go	10	11	4	2	27
13. Do you feel that school would be helpful if you worked from 1-5 p.m.?	Extremely helpful	2	11	8	7	28
	Very helpful	7	11	6	3	27
	Helpful	4	6	5	2	17
	Somewhat helpful	2	0	7	3	12
	Not helpful	6	6	2	4	18

RELATIONSHIP BETWEEN HIGH SCHOOL
AND VOCATIONAL ASPIRATIONS: A
SURVEY QUESTIONNAIRE FOR CURRENT STUDENTS

Please check: Male_____ Female_____

and

Please check the following either "Yes" or "No"

The subjects I am taking in high school are
designed to enable me to enter a four year college.

Yes _____

No _____

Please list the job which you would like to have when you finish school: _____

Directions for the following questions:
Please put a check mark to the left of the one best answer for each question.

1. Are you interested in the subjects you take in high school?
   - ____A Extremely interested
   - ____B Very interested
   - ____C Somewhat interested
   - ____D Very little interest
   - ____E No interest at all

2. Do you feel that your high school subjects help you to prepare for your future job?
   - ____A Extremely helpful
   - ____B Very helpful
   - ____C Helpful
   - ____D Somewhat helpful
   - ____E No help at all

3. Are your homework assignments related to the job that you would like to have?
   - ____A Highly related
   - ____B Very related
   - ____C Related
   - ____D Somewhat related
   - ____E Not related at all

4. Do after school activities in high school prepare you for the job you would like to have?
   - ____A A great deal
   - ____B Quite a bit
   - ____C Little
   - ____D Very little
   - ____E Not at all

5. Do after school activities outside of high school prepare you for the job you would like to have?
   - ____A A great deal
   - ____B Quite a bit
   - ____C Little
   - ____D Very little
   - ____E Not at all

6. Do you feel that your teachers are interested in your future job plans?
   - ____A Extremely interested
   - ____B Very interested
   - ____C Somewhat interested
   - ____D Very little interest
   - ____E No interest at all

7. How much effort do you put into your schoolwork?
   _____A As much effort as possible
   _____B A great deal of effort
   _____C An average amount of effort
   _____D Little effort
   _____E No effort at all

8. Do you feel that the subjects you study in high school bring out your abilities?
   _____A Very well
   _____B Quite a bit
   _____C Somewhat
   _____D Very little
   _____E Not at all

9. Would you show more of your ability if your schoolwork were preparing you for a job?
   _____A A great deal more
   _____B Quite a bit more
   _____C About the same as now
   _____D Very little more would show
   _____E No additional ability would show

10. Do you plan to graduate from high school?
   _____A I definitely plan to graduate
   _____B I'm pretty definite about graduating
   _____C I may graduate, I'm not sure
   _____D I have little interest in graduating
   _____E I do not plan to graduate

11. Do you plan to go to a four year college?
   _____A I definitely plan to go
   _____B I'm pretty definite about going
   _____C I may plan to go, I'm not sure
   _____D I have little interest in going
   _____E I do not plan to go

12. Do you plan to go to a junior college, technical school, vocational school, nursing school, business school or similar type of program after high school?
   _____A I definitely will go
   _____B I'm almost sure to go
   _____C I might go
   _____D I'm unlikely to go
   _____E I definitely will not go

13. Do you feel that school would be helpful to you if you could attend school from about 8 AM to 12 noon and work, from about 1 PM to 5 PM, at a school supervised job which is useful and enables you to earn money?
   _____A Extremely helpful
   _____B Very helpful
   _____C Helpful
   _____D Somewhat helpful
   _____E Not helpful

APPENDIX E

February 24, 1970

SUBJECT: Class of 1968 Survey

FROM: School Study Committee

The local School Study Committee is making an effort to sample the thoughts of the graduates of the Class of 1968 at Kennett relative to the program of studies as you remember it at Kennett.

Enclosed is a Questionnaire which has been prepared to assist the Committee in its effort to improve the kinds of educational experiences now in existence. Some changes have already been made since you left Kennett, and others are contemplated.

Will you please take a few moments to think about the items on this survey form and jot down your reactions?

A self-stamped envelope is enclosed for your convenience. Will you please return this to me today?

Thank you very much for your cooperation, and best wishes to all of you.

FOR THE COMMITTEE

George T. Davidson, Jr.
Director of Guidance Services

SURVEY QUESTIONNAIRE FOR FORMER STUDENTS - CLASS OF 1968

MARCH 30, 1970

66 REPLIES

123 INQUIRIES

		CPG	CPB	NCPG	NCPB	Totals
1. Were you interested in the subjects you took in high school?	Extremely interested	4	1	0	0	5
	Very interested	6	7	9	2	24
	Somewhat interested	14	13	4	3	34
	Very little interest	0	1	0	2	3
	No interest at all	1	0	0	0	1
2. Do you feel that your high school subjects helped you to prepare for the job you now hold?	Extremely helpful	1	4	4	1	10
	Very helpful	5	2	3	0	10
	Helpful	9	5	4	1	19
	Somewhat helpful	6	2	1	3	12
	No help at all	2	6	1	2	11
3. Were the homework assignments you had in high school related to the job you currently hold?	Highly related	0	4	1	0	5
	Very related	3	0	1	1	5
	Related	7	2	3	0	12
	Somewhat related	6	5	7	0	18
	Not related at all	6	8	1	6	21
4. Did after school activities in your high school prepare you for the job you currently hold?	A great deal	0	3	0	0	3
	Quite a bit	6	4	2	2	14
	Little	5	1	2	1	9
	Very little	5	2	0	0	7
	Not at all	6	8	9	4	27
5. While you were in high school did your after school activities outside of school prepare you for the job you currently hold?	A great deal	1	3	0	1	5
	Quite a bit	4	6	3	2	15
	Little	9	3	3	1	16
	Very little	3	1	0	2	6
	Not at all	5	5	7	1	18

		CPG	CPB	NCPG	NCPB	Totals
6. While you were in high school, did you feel that your teachers were interested in your job plans?	Extremely interested	1	1	1	1	4
	Very interested	8	5	5	0	18
	Somewhat interested	9	6	6	3	24
	Very little interest	4	6	1	0	11
	No interest at all	1	3	0	3	7
7. How much effort did you put into your school work while in high school?	As much effort as poss.	1	0	2	0	3
	A great deal of effort	9	1	1	1	12
	Average effort	11	12	7	3	33
	Little effort	3	8	3	3	17
	No effort at all	0	1	0	0	1
8. Do you feel that the subjects you studied in high school brought out your abilities?	Very well	1	1	1	1	4
	Quite a bit	7	7	5	1	20
	Somewhat	15	7	4	4	30
	Very little	0	5	3	0	8
	Not at all	0	2	1	1	4
9. Would you have been able to show more of your ability if your high school studies had been preparing you for a job?	A great deal more	2	3	0	2	7
	Quite a bit more	7	8	6	4	25
	About the same	9	6	5	0	20
	Very little addition	3	4	1	1	9
	No additional ability	3	0	0	0	3
10. Did you receive a high school diploma?	Yes	24	22	13	7	66
	No	0	0	0	0	0

		CPG	CPB	NCPG	NCPB	Totals
11. Are you attending a four year college?	Yes	11	10	1	0	22
	No	13	12	13	7	45
12. Are you now attending a non four year program?	Yes	3	2	3	4	12
	No	19	20	10	3	52
13. After school supervised job useful?	Extremely helpful	7	6	1	4	12
	Very helpful	5	2	4	1	12
	Helpful	5	2	3	0	10
	Somewhat helpful	3	7	4	0	14
	Not helpful	7	5	1	2	15

RELATIONSHIP BETWEEN HIGH SCHOOL

AND CURRENT VOCATIONS: A SURVEY

QUESTIONNAIRE FOR FORMER STUDENTS

Please check: Male _____ Female _____

and

Please check the following either "Yes" or "No"

Were the subjects you took in high school designed to enable you to enter a four year college?

Yes _____

No _____

Please list the job which you currently hold: _____

Directions for the following questions:
Please put a check mark to the left of the one best answer for each question.

1. Were you interested in the subjects you took in high school?
   _____A Extremely interested
   _____B Very interested
   _____C Somewhat interested
   _____D Very little interest
   _____E No interest at all

2. Do you feel that your high school subjects helped you to prepare for the job you now hold?
   _____A Extremely helpful
   _____B Very helpful
   _____C Helpful
   _____D Somewhat helpful
   _____E No help at all

3. Were the homework assignments you had in high school related to the job you currently hold?
   _____A Highly related
   _____B Very related
   _____C Related
   _____D Somewhat related
   _____E Not related at all

4. Did after school activities in your high school prepare you for the job you currently hold?
   _____A A great deal
   _____B Quite a bit
   _____C Little
   _____D Very little
   _____E Not at all

5. While you were in high school, did your after school activities outside of school prepare you for the job you currently hold?
   _____A A great deal
   _____B Quite a bit
   _____C Little
   _____D Very little
   _____E Not at all

6. While you were in high school, did you feel that your teachers were interested in your job plans?
   _____A Extremely interested
   _____B Very interested
   _____C Somewhat interested
   _____D Very little interest
   _____E No interest at all

7. How much effort did you put into your schoolwork while in high school?
   _____A As much effort as I possibly could
   _____B A great deal of effort
   _____C An average amount of effort
   _____D Little effort
   _____E No effort at all

8. Do you feel that the subjects you studied in high school brought out your abilities?
   _____A Very well
   _____B Quite a bit
   _____C Somewhat
   _____D Very little
   _____E Not at all

9. Would you have been able to show more of your ability if your high school studies had been preparing you for a job?
   _____A A great deal more
   _____B Quite a bit more
   _____C About the same
   _____D Very little additional ability would have shown
   _____E No additional ability would have shown

10. Did you receive a high school diploma?
   _____A Yes
   _____B No

11. Are you attending a four year college?
   _____A Yes
   _____B No

12. Are you now attending a junior college, technical school, vocational school, nursing school, business school, or other non four year college program?
   _____A Yes
   _____B No

13. Do you feel that high school would have been helpful to you if you could have attended from about 8 AM to 12 noon and worked, from about 1 PM to 5 PM, at a school supervised job which was useful and enabled you to earn money?
   _____A Extremely helpful
   _____B Very helpful
   _____C Helpful
   _____D Somewhat helpful
   _____E Not helpful

VT 014 425
WINTERS, EARL E.
AREA-WIDE PROJECT FOR OCCUPATIONAL ORIENTATION, EXPLORATION, COUNSELING, JOB TRAINING, AND JOB PLACEMENT FOR ELEMENTARY AND SECONDARY STUDENTS. INTERIM REPORT.

POTTAWATTAMIE COUNTY BOARD OF EDUCATION, COUNCIL BLUFFS, IOWA.
BUREAU OF ADULT, VOCATIONAL, AND TECHNICAL EDUCATION (DHEW/OE), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
OEC-0-71-0676(361)
PUB DATE - OCT71 62P.

DESCRIPTORS - *CAREER EDUCATION; VOCATIONAL EDUCATION; *INTEGRATED CURRICULUM; *ELEMENTARY SCHOOL CURRICULUM; *HIGH SCHOOL CURRICULUM; OCCUPATIONAL INFORMATION; OCCUPATIONAL GUIDANCE; *VOCATIONAL DEVELOPMENT; EMPLOYMENT OPPORTUNITIES; EDUCATIONAL RESEARCH; JOB PLACEMENT; DROPOUT PREVENTION; DROPOUT REHABILITATION; JOB SKILLS; VOCATIONAL COUNSELING
IDENTIFIERS - OCCUPATIONAL EXPLORATION

ABSTRACT - AN OCCUPATIONAL ORIENTATION, EXPLORATION, COUNSELING, AND JOB TRAINING PROJECT FOR ELEMENTARY AND SECONDARY STUDENTS WAS ESTABLISHED TO: (1) CREATE AWARENESS OF EMPLOYMENT OPPORTUNITIES, (2) ENHANCE FEELINGS OF SELF WORTH AND AN UNDERSTANDING OF INDIVIDUAL INTERESTS, CAPABILITIES, AND STRENGTHS, (3) DEVELOP JOB SKILLS AND PERSONAL CHARACTERISTICS WHICH WILL AID IN SECURING AND MAINTAINING EMPLOYMENT, (4) DEVELOP AWARENESS OF EMPLOYMENT AGENCIES AND ORGANIZATIONS, AND (5) FACILITATE EFFECTIVE PLACEMENT. THROUGH AN AGREEMENT WITH A COMMUNITY COLLEGE, SCHOOL DISTRICT, AND LOCAL BOARD OF EDUCATION, PROJECT PERSONNEL COORDINATED WITH LOCAL SCHOOL PERSONNEL TO ASSIST THEM IN THE DEVELOPMENT OF CAREER EDUCATION CURRICULUMS, HELP THEM WITH PLACEMENT FOR GRADUATES AND DROPOUTS, AND PROVIDE CAREER INFORMATION AND RESOURCE MATERIALS AT ALL LEVELS, K-12. ACTIVITIES DURING THE FIRST YEAR INCLUDE: (1) DEVELOPMENT OF OCCUPATIONAL UNITS FOR K-6, (2) SUMMER SCHOOL PROGRAM OF HANDS-ON VOCATIONAL EXPLORATION FOR 7-12, (3) IMPLEMENTATION OF WORLD OF CONSTRUCTION UNITS IN THE JUNIOR HIGH CURRICULUM, AND (4) DEVELOPMENT OF A POWER MECHANICS COURSE. THE PROJECT IS PROCEEDING ACCORDING TO SCHEDULE AND RECOMMENDATIONS FOR THE FUTURE INCLUDE EXPANSION OF THE ADVISORY BOARD TO INCLUDE INDUSTRY PERSONNEL AND EXPLORATION OF MORE VOCATIONAL AREAS FOR WOMEN. (SB)

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INTERIM REPORT

Project No. 0-361-0070
Contract No. OEC-0-71-0676(361)

Area-Wide Project for Occupational Orientation, Exploration, Counseling, Job Training, and Job Placement for Elementary and Secondary Students.

Exemplary Project in Vocational Education
Conducted Under
Part D of Public Law 90-576

Earl E. Winters
Pottawattamie County Board of Education
Route 1
Council Bluffs, Iowa 51501

October, 1971

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The project reported herein was performed pursuant to a contract with the Bureau of Adult, Vocational, and Technical Education, Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgement in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Earl E. Winters

Pottawattamie County Board of Education
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October 1971

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I SUMMARY

Time period covered by the report:

October 1, 1970 to October 1, 1971.
(The Director was employed September 1, 1970)
(The staff was assembled November 16, 1970)
(Project proposed duration stipulates an April 1, 1970 to March 31, 1973 date)

GOALS AND OBJECTIVES

Objectives: The objectives of this project for all elementary and secondary boys and girls, particularly for those with special needs, are listed below:

(a) To create awareness, on the part of elementary and secondary students, of the opportunities which exist in the world of work. Many people today enter an occupational field more or less on the basis of chance. Another factor is the constantly changing world of work, in which individuals may expect to change their occupation at some time during their working years. Personalized information processes, beginning at the elementary school level, will help persons to make career choices which are based on a much wider understanding of the world of work in general, and of specific job opportunities, in particular.

(b) To create an understanding, within individuals, of particular interest, capabilities, and strengths, which they have. In addition to an understanding of the world of work, people need an adequate understanding of themselves. They need to have an accurate assessment of their personal interests, their general abilities, and their specific aptitudes.

(c) To enhance feelings of personal self-worth in individuals. People need to be able to identify themselves as successful rather than failures. Emphasis

must be placed upon positive attributes, rather than upon weaknesses or handicaps.

(d) To develop skills necessary in work situations, for now and for the future. Students must obtain skills, while in school, that will help to prepare them for their future in the world of work, whether they enter immediately into the labor force, upon termination of their formal education, or choose to enter post-secondary training. People should be equipped with some work skills by the time they leave high school.

(e) To develop personal characteristics which will aid in securing and maintaining employment. Many persons who are released from employment are released because they are unable to get along with people at work. Students, while in school, must begin to learn the social skills which will enable them to interact effectively with other people in work settings.

(f) To develop awareness of the agencies and organizations which are available to assist persons seeking employment. People need to have the knowledge necessary to provide them with easy access to the employment services which are available.

(g) To facilitate effective placement. Actual job or post-secondary training placement is the final objective of this project.

4. Administration: The administration of the project will be jointly shared by Iowa Western Community College and Pottawattamie County School System, with respect to dissemination of information, making contacts, selecting personnel to carry on the work, and overall supervision and evaluation. Advisory groups will include key employers, key employees, key members of organized labor, social welfare agencies, rehabilitation groups, business associations, personnel from local schools, and governmental agencies such as the State Department of Public Instruction, the Iowa State Employment Service, and the Employment Security Commission.

PROCEDURES FOLLOWED

Through an agreement between Iowa Western Community College, Council Bluffs Community School District, and the Pottawattamie County Board of Education, project personnel

coordinated with local school personnel to assist them in the development of career education curricula, help them with placement for graduates and dropouts, and to provide career information and resource materials at all levels, K-12, public and private.

RESULTS AND ACCOMPLISHMENTS

During this period, occupational units for presentation K-6 were developed; a summer school program of hands-on vocational exploration, 7-12; work with future and present dropouts, including job skill training and interagency referrals; updating through correlation of guidance programs within city schools; implementation of World of Construction units in the junior high curriculum; coordination of Neighborhood Youth Corps II work-study program at Offutt Air Force, with on-the-job training for disadvantaged youths (dropouts); and short-term intensive training at the high school in the areas of being a maid; have developed a power mechanics course at the high school level.

EVALUATION

It is felt that nearly all of the goals sought for the first year were accomplished in an actual schedule that began seven and one half months after the original target date.

CONCLUSIONS AND RECOMMENDATIONS

We conclude with our third-party evaluators, therefore, that our project is developing along the lines developed for its implementation by the orginal plans. The recommendations of the Central Iowa Association and those members of our advisory board are that we expand the board to include industry personnel; that we explore more vocational areas for women, especially for our "summer school"; and that more attention, at the elementary level, be placed at continuing to help the students gain self-awareness.

We further recommend that the project be converted from a reimbursable contract to a grant.

II THE REPORT

Problem area toward which project is directed, to quote directly from the proposal:

"Two main problems exist. One is the lack of emphasis on the suitability of the vocational-technical area of education as an appropriate positive educational alternative. Children and parents tended to see college admission as the only "success" alternative which is open to them, and tended to see vocational-technical education, the Armed Forces, direct entrance into the labor force, and apprenticeship training as alternatives for the person who is a "failure." A second problem is the lack of suitable vocational-technical opportunities. Students in rural areas reside too far away. In the urban areas disadvantaged youth tended to be excluded from training programs because of the competition of these programs and because they lacked the financial resources to pursue any further educational programs."

(a) Creating bridges: First, students, particularly the disadvantaged and handicapped, in elementary and intermediate schools, will be given information about earning a living through educational media, contact with business people, and visitations; secondly they will be provided work exploration in school and business settings; thirdly, they will be given job entry training, when applicable; and fourth, they will be referred for employment.

(b) Cooperation: This will be promoted by making use of manpower agency facilities for labor market information, for testing and selection, for specific types of training, for consulting with students, and for placement.

(c) Broadening: The information provided, together with actual participation in work or school training based upon selection through counseling and guidance procedures, as well as contact with employers, employees, and manpower agencies, should broaden the aspirations of students.

The main thrust of this project will be toward assisting children and youth who have previously been excluded from vocational-technical education because of academic, socio-economic, or other handicaps. Students who have dropped out of school will be encouraged to return; potential dropouts will be identified and specific services will be provided for them to stop their leaving school; rural students will be served; services will be provided specifically for urban children who are disadvantaged.

4.

GOALS AND OBJECTIVES OF THE PROJECT

I. To create awareness on the part of elementary and secondary students of the opportunities which exist in the world of work.

A. Students receive occupational information to enable each person to make a choice of careers based on a wider understanding of the world of work and specific jobs and their opportunities.

1. Each elementary student will be able to name at least five occupations in the world of work.

2. Each elementary student will be able to name at least two of the duties performed by each person in a particular occupation.

3. Each elementary student will name the type of training required for at least five occupations in the world of work.

4. Each elementary student will name at least three personal qualities needed by a person in obtaining a job.

5. Each elementary student will be able to name the advantages and disadvantages of five occupations.

6. Each elementary and secondary student will be able to list the occupations represented by guest speakers to whom the student has listened over the past school year.

7. Each elementary and secondary student will be able to identify the occupations observed during field trips conducted over the past school year.

8. Each elementary and secondary student will be able to describe the type of "hands-on" orientation he has had in the past school year.

9. Each elementary and secondary student will be able to identify the jobs in the occupational orientation films he has seen over the past school year.

10. Each secondary student will select specific jobs for analysis from the Chronicle Guidance Career Kit.

II. To create an understanding within individuals, of particular interests, capabilities, and strengths which they have.

A. Each elementary and secondary student will be able to list his own facts, figures, characteristics, traits, reactions, and feelings after viewing certain filmstrips geared to his grade level.

B. After the student has been apprised of his particular occupational interests, capabilities, and strengths:

1. Each elementary and secondary student will select three occupations that he thinks he would like to do in the world of work.

2. Each elementary and secondary student will list certain personal capabilities and strengths he has that will enable him to enter the occupation selected.

III. To enhance feelings of self-worth in individuals.

A. Each elementary student will complete a project by himself.

B. Each elementary student will make a notebook about an occupation in the world of work.

C. Each secondary student will make his own choice of a career he feels he would like to pursue.

IV. To develop skills necessary in work situations, now and in the future.

A. Each secondary student will pursue training in a skill of his choice.

B. Each secondary student will pursue a trade or skill that will not become obsolete in the near future, as determined by a comprehensive analysis of local, state, and federal employment predictions.

C. Each secondary student will perform selected basic

skills of an occupation at a level of performance required for job entry.

D. Each secondary student will perform the minimum number of basic skills necessary to enter the world of work at the entry level.

V. To develop personal characteristics which will aid in securing and maintaining employment.

A. Each secondary student will list those social skills necessary in securing and maintaining employment.

B. Each secondary student will list personal qualities helpful in securing and maintaining employment.

VI. To develop awareness of the agencies and organizations which are available to assist persons seeking employment.

A. Each federal, state, and local governmental agency within the city limits of Council Bluffs will know of the need of employment for student personnel.

B. Each of the three, independent (private), employment agencies within the city limits of Council Bluffs will know of the need for employment of students.

C. Each of the eighty, independent, business and personnel offices in industry, within the city limits of Council Bluffs, will know that students are available for employment.

D. Each secondary school placement counselor will be aware of those agencies and people who assist student personnel in obtaining employment.

E. Each elementary student will be able to name an agency or service which will aid him in seeking employment.

F. Each secondary student will be able to name at least one governmental and one private agency which is available to assist persons seeking employment.

VII. To facilitate effective placement.

A. A procedure will be established with the placement counselor to disseminate job and placement information to the students.

1. Each secondary student will know of job openings compatable with his interests, desires, and capabilities.

B. A procedure will be established to enroll high school seniors with employment agencies.

1. Each high school senior will enroll with the Iowa State Employment Service.

C. A program will be developed to retrieve information from the employer to the school from which the student terminated his education and training.

DESCRIPTION OF GENERAL PROJECT DESIGN, AND PROCEDURES

Procedures:

(a) General Design: The project was designed to provide personnel who will work directly with local elementary and secondary schools, and with the interested and concerned organizations, agencies, and businesses in developing and providing counseling and guidance services, information, and materials; in identifying students with special needs; in recommending and developing special curriculums for the regular nine-month school training; in developing and providing special training during the regular school program, and during the summer, including school shop courses, work-study, cooperative employment, and regular employment; and placement through cooperation with manpower agencies.

The work-study programs conducted by local schools, the cooperative programs conducted by local schools, and courses for persons with special needs in elementary and secondary schools could be helped with the use of funds from Parts B,G, and H of the 1968 Amendments, and with local funds.

The specific procedures used were to be directly related to the stated objectives. Career information was to be provided to make students aware

of the world of work in general, and of opportunities which exist for them in particular. The information processes were to involve interaction with people; publications, including pamphlets and other printed materials; audio-visual materials; reference materials; subscription services; professional books and journals; and places of employment. Specific emphasis was to be placed upon interaction with people, both by bringing people from work settings to visit with students, and by providing visitations by students to work settings.

Testing services were to be used to assist students in learning about the interests, capabilities, and strengths which they have. Testing services and test results already available were to be used. Specific instruments used in this project were to include the General Aptitude Test Battery, the Differential Aptitude Test, the Kuder Vocational Preference Record, and the Strong Vocational Interest Blank. Some of the local schools are already making use of several of these instruments. Other tests can be used when necessary in individual cases.

Vocational counseling and guidance services were to be provided, first to assist students in obtaining information and in self-understanding, and second, to assist students in integrating the information received into their perception of themselves. Emphasis was to be placed upon the enhancement of the individual's feelings of self-worth.

Exploratory work experiences were to be provided, both in the school setting and in employment situations. Actual experience is a necessary part of an adequate awareness of opportunities. The main thrust of this project, in regard to exploration, was to be summer programs which would make feasible the transporting of students from outlying school districts to the urban centers where school shop facilities are adequate and where opportunities exist for exploration activities in work settings.

Intensive training in specific job entry skills was to be provided for high school students during the final years of their secondary school career. Again, primary

effort was to be expended in bringing students into the facilities which are available. This intensive training was to be oriented toward either equipping the student for entry into a job or making him ready for a post-secondary vocational-technical education program.

Group guidance activities were to be undertaken in the area of human relationships, to assist students in developing personal attributes which will make it easier for them to secure and maintain employment. Individual counseling was to be used to assist students in this important area.

Another significant procedure was the effort to establish and maintain communication at all levels. In-service training for school personnel and for work supervisors, and visitations between students and employers, in order to concentrate on effective communication and total awareness of opportunities. Students were to visit factories, businesses, employment services, and training schools. Planned events for students were to include assembly programs, career days, panels, and career talks, as well as visitations. Events for professional personnel were to concentrate on personal communication. The advisory committee for this project was to be a significant link in the chain of communication. Encouragement and assistance for occupation-oriented clubs was to be provided. Project personnel were to work with parents in order to aid them in becoming involved with their children in the area of occupational choice, training, and placement.

Finally, project personnel were to work with students, employers, employment agencies, and post-secondary vocational-technical school personnel in facilitating placement of high school graduates in a job or in further training.

(b) Schools or locations: All schools in the area served by this project which choose to participate, both public and private, were served through this project.

Activities included in this project were to be facilitated through the use of the offices of the Iowa Western Community College and the Pottawattamie

County School System. The use of the materials and services of the Halverson Center For Education, and the use of the vocational-technical education facilities of the Iowa Western Community College was committed. Other training centers were to be used as they become available to the project.

(c) Participants: All students who resided in the Council Bluffs Community School District who were served by the project were to be participants in the project. The total student population of this area is approximately 24,800.

Special efforts were to be made to identify and involve those students having special needs who might best be served through vocational education. It is estimated that nine per cent of the students in this area are labeled as disadvantaged. Approximately three per cent of the students in this area are labeled mentally handicapped. Approximately one half per cent are physically handicapped. Efforts are being made, through the use of another project, to identify students who are operating under severe emotional stress. This project will emphasize individual contact with these students who have special needs to encourage them to take advantage of the services provided. It is expected, then, that project personnel will work with approximately 3,200 individual students, in addition to the services provided to everyone. It is to be noted that a concentration of services was to be made in Pottawattamie County, which includes the city of Council Bluffs, and over half of the area student population. Programs developed in Pottawattamie County were to serve as demonstrations to all schools throughout the area.

(d) Methods and Materials: Project personnel were to work very closely with the counselors who are now working in the schools. By serving as consultants to these counselors in the area of practical arts and vocational education, greater and more specific efforts can be made toward identifying individuals with special needs who might profit from practical arts and vocational education and assisting these individuals in work exploration and training.

Project personnel were to work closely with classroom teachers, particularly at the elementary school level. Key teachers were to be identified and become involved in the writing of materials, such as occupational units, for use in the classroom. In this manner, it was possible to assist children in exploring the world of work while they were learning the basic skills being taught in the schools. These key teachers were used as resource persons for other teachers, and through the use of video taping and in-service training conferences, the materials developed will be made available to all teachers, who were to be encouraged to use them in their classrooms. Publications which are now available in this area are to be used to the fullest extent.

Project personnel were to work with children and with their parents. Special efforts were to be made to identify those children who may be potential dropouts or who would otherwise not become interested in vocational education, and to assist parents in understanding their children.

Project personnel were to also work closely with agencies outside the school, such as rehabilitation services, welfare agencies, and particularly the employment service and employer and employee groups. Efforts in this area were to emphasize communication between school and other agencies.

At the elementary school level, emphasis was to be placed upon providing complete and adequate information for the student about the world of work and about himself. At the junior high school level, emphasis was to be placed upon providing opportunities for the students in exploratory training in the practical arts areas. At the lower high school level, emphasis was to be placed upon identification of students who may profit from vocational education and upon identifying, for these students, their particular interests, and abilities. At the upper high school level, emphasis was to be placed upon in-school vocational training and direct work experience. At the time of high school graduation and following graduation, emphasis was to be placed upon placement of students and follow-up activities.

Specific methods to be used were to involve publications, including biographies, magazines, and periodicals, newspapers, booklets, brochures, reference books, career fiction, songs and poems, and occupational briefs, abstracts, monographs, audiovisual aids,

including bulletin board displays, exhibits, posters and charts, murals and art, phonograph, video tape and audio tape recordings, radio and television, slides, films and filmstrips; planned programs, including assemblies, panels, career days and career talks; programmed instruction, including vocational workbooks, reports by individuals, and occupational exploration kits; interviews, including conferences with workers and personnel officers, group discussions, job clinics, and career conferences; simulated work experiences, including exploratory practical arts training, practice job interview, and career clubs; direct observation, including visitations to places of work and "foster uncle and aunt" programs; directed exploration, including occupational units, occupational courses, occupational curriculums and exploratory jobs; and actual occupational experience, including shop training, work experience programs, on-the-job training, and temporary jobs.

BUILDING A "PYRAMID" OF SCHOOLS FOR DEMONSTRATION OF THE PROJECT.

A "pyramid" of schools within a single school system was to be developed. We have the complete cooperation of the Council Bluffs School System in this area.

Two school buildings were to be involved: Edison Elemtary - Junior High School, and Thomas Jefferson High School. It was intended the elementary school counselor, which was hired by this project, was to be placed in Edison Elementary School. There are already counselors in Edison Junior High School and in Thomas Jefferson High School to serve junior and senior high school pupils. Thomas Jefferson High School has cooperative education programs, and has possibly one of the most complete curriculums in the area of vocational training that exists in southwest Iowa. Those two school buildings, then, through the use of project personnel and personnel already employed by the Council Bluffs Community School System, provide the pyramid upon which the project is built. The programs which are initiated and which already exist in these schools were to be used for demonstrating the design of the project so that the development concept can be spread by the Iowa Western Community College. Iowa Western Community College, also located in the City of Council Bluffs, was to form the top of the pyramid which we are building. This institution cooperated with the Pottawattamie County School System in designing this project and has personnel who are committed to assisting project personnel in any way possible.

RESULTS AND ACCOMPLISHMENTS

Our departmental staff, on November 16, 1970, met for the first time with its director, who had been hired on September 1, 1971. After an orientation to the Pottawattamie County School System, the Area XIII Community College, and the Council Bluffs Community School District, offices were occupied at Roosevelt School in Council Bluffs on November 18, 1971, and work was begun to implement our aims and objectives. The original staff consisted of: Director, Earl Winters; Placement Coordinator, Richard Martin; Elementary Counselor, Jean Devoy; Vocational Education and Counselor Coordinator, Lucille Linde, who resigned July 1.

Initially, our thrusts were at Thomas Jefferson High School and Edison Elementary and Junior High, our two pilot schools. The project was designed to develop meaningful paradigms of a motivational nature, from our own ingenuity and the expertise of the institutions involved, give them trial, and propagate them so that all students, public and private, within the areas of Council Bluffs (first year), Pottawattamie County (second year) and the eight contiguous counties in Area XIII (final year), and to help them become aware of the world of work.

Using the pryamidal system, the elementary schools' thrust was in the construction and implementation of units of vocational information to create awareness of the opportunities within the world of work; to create an understanding, within individuals, of their particular interests, capabilities, and strengths; and to enhance feelings of self-worth in individuals.

Then, through further integration of the academic skills in the junior high grades, increased stress was placed upon development of skills necessary in work situations, present and future; and the development of personal characteristics which will aid in securing and maintaining employment.

Finally, the senior high student was made increasingly aware of the agencies and organizations available to assist persons seeking employment, and the facilitation of effective placement for the school terminator, either as a graduate, or as a dropout.

This was accomplished by personal diplomacy: we visited with every junior and senior high school in Council Bluffs, some ten in all, as well as Lewis Central schools, and met with their coordinating personnel to acquire an overview of the extant programs, discussed areas of concentration and growth, and remained available for suggested updating, and especially the integration of the world of work within the existant curriculum. This meant pooling ideas developed within the diverse systems, and modifying them to fit into particular schools. After an experimental phase, where these programs were developed, they were printed and made available to all participating schools for their utilization. Thus, as a result, forty-two vocational units applicable to the primary-elementary schools were constructed and are in the process of editing for publications.

An additional elementary counselor, Jackie Crabtree, joined us August, 16, 1971, and has prepared twelve more units developed around the "cluster" approach of job-related vocations. Included in this unit are twelve different occupations concerned with the organizational structure of the Council Bluffs city health department.

Also, arrangements have been made with the sewage treatment plant for tours for classes if the teachers wish. In addition, she had spent time meeting with teachers, principals, and coordinators to explain our program. In order to helping the teachers integrate the world of work into their curriculum, is has been necessary for her to thoroughly familiarize herself with their curriculum, which she is presently working on.

Another new acquisition is Don Hall: our new vocational education coordinator, whose job is working with the vocational education teachers, has, since July 1, 1971, instituted the world of construction in the junior high pilot school at Edison, where 250 students will have the chance to investigate this cluster of occupations.

A power mechanics course has been developed for use now in one high school and hopefully it will then be moved to another location. This power mechanics course was normed after the successful "on-hands" summer school experience. The techniques developed this summer, as the actual critiques from the personnel involved, student and instructor, enabled us to do this.

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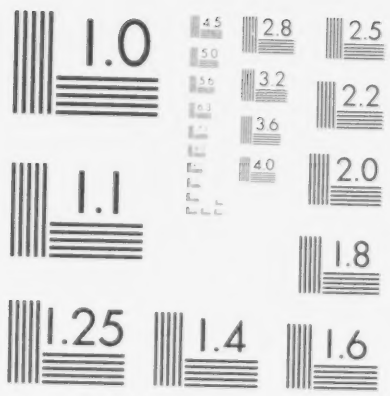

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

A short term intensive training course for girls in maid service has been developed for use in our pilot high school, which is being implemented by the special education coordinator.

In the area of placement, over one hundred sixty employers were contacted. As the labor market was tight for adults (1200 adults were registered for unemployment), preference was given to them, especially those previously laid off, rather than to high school students. However, procedures were developed with the counselors at the high schools to apprise the students of the few jobs gleaned by personal contacts. Ironically, many of these jobs were not picked up by the students because they only paid minimum wage, or less.

Of the seven potential dropouts referred to us,all but two returned to school: one, the only one over sixteen, was followed through a series of failures, including being expelled from MDTA training in auto body and fender repair. He is now on his way to the Job Corps. The other boy has expressed an interest in returning to school, but not the one to which he has been assigned. This leaves us in a awkward position, as our department has proceeded to its limit. The Director of Secondary Education for the Council Bluffs System has refused a transfer, so we are at an impasse, since the lad is only fifteen and cannot be employed.

We coordinated with the local Neighborhood Youth Corps director and Chief of Civilian Personnel at Offutt Air Force Base, Bellevue, Nebraska, in seeking jobs for N Y C participants the past summer. We had a promise from the air base for ten participants, immediately, with more promised. The regional N Y C director in Harlan, Iowa, had not been properly apprised of the program by the local director in the Iowa State Employment Service, and slots were not left open. Consequently, this avenue was closed, due to the limiting of our role to coordination.

However, we are now in the process of coordinating an NYC II program of picking up dropouts and sending them to Bellevue, Nebraska, for a half day of remedial work in academic subjects, plus a half day of on- the-job training, resulting in a diploma (plus meaningful vocational experience) on graduation day.

The most exhilarating aspect of our department's efforts has been the Different Type Of Summer School, a no-grade, no tuition, no-credit "hands-on" work experience in the areas of: electronics, vocational home economics, power mechanics, drafting, graphic arts communication, machine tool operations, office education, and welding. This was a county-wide project, involving the busing of seventy-four students from as far away as fifty miles from the communities of Treynor, Avoca-Hancock, Underwood, Tri-Center, Walnut, Lewis Central, Carson-Macedonia, Oakland, and of course, Council Bluffs. The students, two hundred and four during the first four-week session, ranged from seventh to twelfth grades, co-educational, private and public, were given exploratory training, then allowed to do the various types of jobs a worker in any of the above areas would be required to do, with no stress upon teaching skills. With the exception of electronics, held only during the first session, girls were enrolled in all classes. The enthusiasm of both the teacher and those taught, reflected in the fact that attendance was high (with no such requirement stipulated), was quite evident in the reports turned in by the teachers, as well as by the third-party evaluators, who gave the program an unqualified success. The students voted their approval by their tool kits: thirty-five tool kits were purchased (some three hundred pieces of equipment in all) and each one returned intact.

Since the summer sessions, we have diligently been formulating plans for an in-house working paper that reveals our separate approaches to the coming school year, which have been modified by the suggestions made this October by the federal inspection team of USOE and by the Central Iowa Associates, our third-party evaluators, and are implementing them. Also, considerable effort was made to orient our new personnel with the various administrators and coordinators, with whom they will work in the city systems, to insure a smoother transition into the coming year.

CONCLUSION

We feel, likewise, that in the ten and one-half months of our program, including less than six months of the

regular school year, we reached many of our goals with the personnel we had who were qualified in their areas. The notable exception was contacting all elementary schools for inclusion in the program. With new personnel so assigned, this will be made up anon. We feel extremely pleased that we instigated exploration at the junior high level, a severe void in most schools' vocational programs.

We attribute the late approval and funding and the six and one-half months' delay in beginning this project, as an obstacle to be overcome, since we should have begun operation well before school started last fall, so that we could have laid some groundwork before attempting a project of such magnitude and scope as ours. Next year, with a cadre of about three hundred students interspersed within the schools of the county who have been actively engaged in our program, we feel we will have a better springboard than was present at appearance, at second semester this past year.

Finally, we are well pleased in the reaction we have received from the implementation of the ERIC system into our project, to assist those teachers, in those vocational-technical areas which we are designed to propagate. The vocational educators and the librarians are being oriented, in groups, relative to the use of ERIC and microfiche, then, will be ordered for them to supplement our present library. With our reader-printer and planned procurement of a portable reader available for further investigation, we are positive that many of the pertinent programs successfully tried at other pilot schools can be obtained, modified, and implemented within the local schools.

Earl E. Britts
Signature of Project Director

30 Sept. 1971
Date

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iowa
associates

FINAL REPORT

First Year of the Guidance and Vocational

Education Exemplary Project

Pottawattamie County School District

September 25, 1971

Final Report

The First Year of the Guidance and Vocational Education Exemplary Project in the Pottawattamie County School System

Submitted by

Central Iowa Associates, Inc.

September 25, 1971

I. INTRODUCTION

This evaluation was conducted by Central Iowa Associates, Inc., using a team of four evaluators, all of whom are professionally qualified and experienced in the field of counseling and guidance. In addition, each member of the team has had previous research and evaluation experience in individually varying but relevant topics and settings. A brief resume' for each team member is attached to this report.

Site visits were conducted on June 3, June 28, July 23, September 15 and September 21, 1971. Prior to these visits, each team member familiarized himself/herself with materials relative to the project; the members then worked together as a team to establish an integrated plan for the evaluation. During the actual visits, each team member conducted a pre-assigned portion of the evaluation, working singly, in pairs, and/or as a complete four-person team. Findings were brought together in post-visit team discussions, at which time conclusions and recommendations were developed and summarized for inclusion in the post-evaluation visit reports. Written interim reports were submitted to the

Project Director on June 11, July 6, and August 11. Recommendations were also discussed with the project staff members both during and at the conclusion of each visit.

Evaluation contacts included visits in those schools in which the project was operating and interviews with project staff, school personnel and others associated, directly or indirectly, with the program. In addition, on June 28 and July 3 a questionnaire was administered both to students and teachers involved in the summer vocational education program in order to obtain information regarding individual and group reactions to that program. This special evaluation of the summer program is described in Section III of this report. Further, on the September 21 visit, two objective assessment instruments were administered to 13 regular school classes. These instruments and the objective research design are described in Section IV of this report.

In general, it should be noted that in this first year the project was severely hampered by the fact that funding was delayed until well after the schools opened for the 1970-71 academic year. The consequences of this late start are numerous, although frequently somewhat intangible.

II. GENERAL EVALUATION

A. Elementary Level

The main thrust at this level has been at Edison, the pilot school. Herein, the project is fortunate to have had the opportunity to create something new, independent of the previously existing programs. Among the goals stated on pages 9 and 10 of the project proposal, it is clear that most elementary school effort has been toward goal (a), "To create

awareness on the part of elementary and secondary students of the opportunities which exist in the world of work." The objectives (b), "To create an understanding, within individuals, of particular interests, capabilities, and strengths which they have", and (c), "To enhance feelings of personal self-worth in individuals" have not been implemented. The goals or objectives, (d), (e), (f), and (g) are not applicable or relevant to the elementary level.

Whereas, at the elementary level the project effort has been directed primarily toward the staff and students in the pilot school, it has produced techniques and materials (the learning units) which could easily be extended into other elementary schools in the area. This extension seems to have begun and it is our impression that just as the program has been well accepted in the pilot school, so it will be accepted in other elementary schools.

It should be noted that the main thrust of the project effort at the elementary level has been to supply guidance materials, learning units, and personal assistance to the teachers with the intent that the teachers would soon come to incorporate career information as a part of their regular teaching activities. The evaluators consider this approach to guidance at the elementary level to be an interesting and possibly most fruitful model which should be followed carefully. The interviews by the evaluators revealed a rather general enthusiasm with the elementary program. The objective research now in progress will hopefully substantiate this. The project staff member first assigned to Edison Elementary School has now been assigned to initiating project efforts in other elementary schools. Another elementary counselor, new to the

project, is continuing the work in Edison before moving out to other schools. This "moving out" is seen by these evaluators as a most appropriate way to pursue the project goals.

One suggestion or caution with respect to the elementary program is that staff time for the development of materials ("units") should be minimized where possible by using materials available from other sources (e.g., from other exemplary projects).

B. Junior High Level

In the first interim report, these evaluators suggested that no meaningful effort had been expended at the junior high level though it would seem that this is the level where a project of this kind could have the most impact. Since that interim report, however, the very successful summer program reached more junior high students than students at other levels. Further, project staff has started this fall to implement an extensive program in Edison Junior High. The traditional shop courses have been replaced by the program, "World of Construction". It is hoped that this program will provide, in accordance with the project goals, a realistic view of one broad segment of the world of work, and that a high level of acceptance of this new program will secure subsequent, similar programs (e.g., the "World of Manufacturing" and the "World of Power"). Project staff are actively searching for similar materials and programs that would be of more interest to girls at this level. These new efforts in the Edison Junior High and the future plans at this level favorably impress these evaluators. Hopefully, the objective research now in progress will substantiate these impressions.

C. High School Level

In the first interim report these evaluators questioned the effectiveness of the project in Thomas Jefferson, its pilot senior high school. At this time, we can only reiterate our feeling that the project has not had a significant impact in this pilot school. A number of possible reasons for the lack of impact could be cited, many of which are completely outside the responsibility of project personnel. Two points, however, could be made to emphasize our opinion that Thomas Jefferson should no longer be considered as a pilot school for the project:

1) Thomas Jefferson already has the most extensive vocational education program in western Iowa, and is generally considered one of the best such programs in the state. An exemplary project is much more likely to have an impact in a school where there is either no vocational education program or a program that is seriously deficient.

2) Closely associated with the goals of this project is the need for counselors interested in guidance in the vocational education area, who interact with the vocational education instructional staff, work and placement coordinators, etc. Due to the job specification and job tradition for counselors in schools such as Thomas Jefferson, it is virtually impossible for project staff to bring about changes. The situation implied here is not unique to Thomas Jefferson, but rather is found in many large urban high schools in the midwest. Again, the project staff cannot be held responsible for not being able to change this situation.

24.

In the spring of 1971, the project staff started to aid St. Albert's High School with their vocational education program by supplying information and vocational education materials. This effort continues, as well as similar efforts in Lewis Central High School and the Abraham Lincoln High School. These evaluators favor the switch of emphasis at the senior high level from Thomas Jefferson to one or another of these aforementioned schools. It seems, however, that no precise plan of action has been formulated at this time with respect to project activities at the senior high level.

D. Job Placement

In the first interim report, these evaluators stated that they did not clearly understand the intent nor the effectiveness of the activities of the Job Placement Coordinator. This situation continues to a great extent. It has been reported to us that this project staff member has contacted some 160 employers in the hope of finding positions for vocational education students and school dropouts. Further, individual incidents wherein project staff has been extensively involved in the placement of dropouts have been reported to us. The "effectiveness" of these efforts is impossible for us to evaluate. We note with interest, however, the possibility that the project staff will develop an on-going relationship with a local NYC program. Efforts in developing such on-going relationships are seen by these evaluators as most consonant with the goals of the project.

One suggestion is that the Job Placement Coordinator actually be housed in a senior high school and function therein as part of the counseling staff. In such a setting, he would serve as a model for staff and students of how a counselor functions with respect to placement of vocational education students and dropouts.

III. EVALUATION OF THE 1971 SUMMER PROGRAM

Report submitted

August 11, 1971

A. Method

On June 28 and on August 3, 1971, four members of the staff of Central Iowa Associates, Inc. visited all locations wherein the activities of the summer program took place. During these visits, the instructors in the summer program were interviewed by the staff of Central Iowa Associates, using a pre-planned format. A satisfaction questionnaire, designed for this project by Central Iowa Associates, was administered to students participating in the program. A copy of the questionnaire is included as Appendix A of this report.

Members of the Exemplary Project staff mailed a similar questionnaire to parents of children who participated in the first session of the summer program. The analysis of those parent questionnaires, returned by August 3, is included in this report.

B. Results

The Student Satisfaction Questionnaire. The summer program consisted of two four-week classes or sessions. In the first session, there were just over 200 student slots. Because some of the students in the program attended more than one class, the actual number of students participating was less than 200. Likewise, in the second summer session there were about 75 student slots. Some of the same students participated in both sessions.

Questionnaires were received from 93 students in the first session and from 39 students in the second session. The actual number of

questionnaires received is somewhat less than 100% of the number participating because of factors such as:

a) The evaluators did not reach some classes in time for the students to complete the questionnaire during the class period, and some students had to leave immediately.

b) One class was away on a field trip at the time.

c) Several students in the first session had completed their projects and so had "completed the program" for the session.

d) Several students were absent on the days of the evaluation visits because of pre-planned activities such as family vacations.

e) On the day of the first evaluation visit, the ambient temperature was above 100°. Most workshop and classroom facilities were not air-conditioned, consequently, absenteeism was unusually high on the day of the visit.

Analysis of the Student Questionnaire. A breakdown of the number of males and females responding is as follows:

	1st Session		2nd Session		Total	
	Number	Percent	Number	Percent	Number	Percent
Males	69	74	37	95	106	80
Females	24	26	2	5	26	20
	93		39		132	

From the first session there were 30 respondents between the ages of 16 and 18, the remainder ranging from 12 through 15. In the second session there were 11 respondents between the ages of 16 and 18 and 28 between the ages of 12 and 15.

To the question, "Would you come back to the summer program next year if you were free to do so?", the responses were as follows:

	1st Session		2nd Session		Total	
	Number	Percent	Number	Percent	Number	Percent
Yes	81	87	36	92	117	88
No	5	5	1	3	6	5
Failed to Respond	7	8	2	5	9	7
	93		39		132	

To the question, "How well did you like the program?", the responses were as follows:

	1st Session		2nd Session		Total	
	Number	Percent	Number	Percent	Number	Percent
I liked it very much	64	69	26	66	90	68
It was pretty good	20	21	8	20	28	21
It was okay	6	6	4	10	10	8
I didn't like it	0	0	1	3	1	1
Failed to respond	3	3	0	0	3	2
	93		39		132	

From the above response pattern, it is evident that the students were, in general, quite enthused with the program. The interaction of the staff of Central Iowa Associates with the students during visits to these classes certainly supports the findings concerning such enthusiasm. Though not readily categorized, the responses to other questions such as, "What things about the program were most interesting and/or helpful to you?", and, "Would you encourage your friends to come next year?", also tend to indicate high student satisfaction.

There were a wide variety of responses to the question, "What things didn't you like about the program?" There seemed to be an element of consistency about these responses only with respect to the 16-18 year-old group in the second session, who expressed some disfavor with the presence of 12-15 year-olds in the same classes. These evaluators tend not to take this objection of the 16-18 year-olds at all seriously. In fact, it seems to be a normal reaction for members of this age group when participating in activities with younger students who often are found to be as interested and capable as the older group. Further, in the "real" world of work, people must adapt to co-workers from different age groups, sex, abilities, interests, cultural and ethnic backgrounds, etc. Other responses to this question revealed no consistent pattern and were most often concerned with rather trivial points, such as the heat or the time it took to get parts or supplies for a given project.

Questions concerning the courses liked best during the regular school year, about hobbies, and about performance in regular school studies seemed, for the most part, to indicate that the program was reaching mostly those students who would, in fact, be expected to benefit most from the program. There were, obviously, a few very superior students and, likewise, a few students very limited in ability or exhibiting negative attitudes with respect to <u>any</u> type of education. This latter group were most often the source of negative comments about the program.

Self-reported attendance at the summer classes was quite high. This is encouraging in view of the fact that attendance was completely voluntary and no grading system was utilized. Inspection of class

attendance records and the questioning of instructors also indicated very good attendance. Several instructors remarked that attendance was better than the attendance at shop classes conducted during the regular school year. In the second session, neither enrollment nor attendance were at the level of the first session. This was to be expected and is easily understood in light of family vacation schedules and the day to day employment possibilities for students in corn-detasseling and other such jobs. The generally good attendance, however, is further indication that the students were well satisfied with the program.

Questions regarding the types of employment the students might like as working adults indicate that after participation in the program, the students were considering, in general, a broader range of occupations than before participation. Though these questions constitute a rather crude measure of vocational information and vocational maturity, the responses tend to indicate that the average program participant had gained both vocational information and vocational maturity.

Many, many suggestions were generated by the question regarding other types of work experiences the students would like to have included in future summer programs. These suggestions received from students, as well as those contributed by the instructors, are listed in Appendix B. There is no intent on the part of these evaluators that all these suggestions be taken seriously. Rather, it is interesting that students and instructors involved in the program could, on a moments notice, come up with such a lengthy and diverse list of suggestions.

In summary, the analysis of the student questionnaire indicates that students were well satisfied with the program and there is a high probability that they gained vocational information, experience, and maturity from it.

Analysis of the Instructor Interviews

Analysis of the instructor interviews must be concerned with two distinct categories of responses: a) responses concerning the overall impression of the program, and b) specific or detailed comments or suggestions. The reason for this approach is that the instructors were virtually unamimous in their enthusiasm for the project though they mentioned quite a number of points which could be improved or changed. For the most part, when the details mentioned were critical, they were criticisms which pertained to the facilities available (e.g., that a shop was not well equipped or not properly ventilated) for vocational education in general and did not indicate any specific deficit with respect to the summer program. Other criticisms pertained to scheduling, course or program content, and the number of students enrolled in a given class. Such difficulties as were pointed out are to be expected in the beginning phase of any new program where there is not the benefit of past experience. Thus, the detailed remarks of instructors are not listed in this report; the project director and staff are already aware of them, and listing them in this report might lead the reader to de-emphasize the strong, generally favorable comments.

A number of the instructors stated that they were pleasantly surprised to find that the junior high students participated so profitably

in the program. Some of the instructors had little or no previous experience with this age group and had not expected them to be so interested, capable, and mature in their conduct in the workshops. One instructor indicated that she would "probably" like to participate in the program in the future; all others were definite in asserting their interest in continued participation.

The Analysis of Parent Questionnaires

Project staff mailed questionnaires to about 130 parents of students who had participated in the first summer session. Responses from 58 (about 45%) were returned by August 3. The questions and a tally of the responses were as follows:

1. Did your boy or girl show enthusiasm for the course or courses in which they enrolled?

	Number	Percent
Yes	54	93
Somewhat	4	7
No	0	
	58	

2. Do you feel if your boy or girl was given the opportunity to take new and different courses other than those offered this summer they would be interested?

	Number	Percent
Yes	43	74
Somewhat	9	15
No	6	10
	58	

3. Did your boy or girl seem to object to the bus ride (if they rode a bus)?

	Number	Percent
Yes	0	0
Somewhat	2	3
No	36	62
Not applicable	20	35
	58	

4. In your opinion do you think your boy or girl would be interested in attending the second session of summer school, July 19 through August 13, exploring a different area in the "World of Work"?

	Number	Percent
Yes	35	60
No	21	36
No response	3	3
	58	

If yes, which of the following areas:

	Number	Percent
Power Mechanics	11	26
Graphic Arts	8	19
Machine Shop	11	26
Welding	11	26
No choice given	2	5
	43	

5. Do you believe your boy or girl gained knowledge of the "World of Work"?

	Number	Percent
Yes	57	98
Somewhat	1	2
No	0	0
	58	

In addition to the responses summarized above, some parents added various remarks. From the data and remarks of the parents, it seems that the following points can be made:

1. Some parents expected more intensive training; they seemed not to understand that the program was for exploratory purposes rather than to provide intensive training in specific occupational areas.

2. Some parents would have liked the program to include courses that would be more appealing to girls.

3. Some suggested bus transportation for students living in the areas of Council Bluffs not convenient to public transportation.

4. A few of the many positive comments were as follows:

"We think it is a good program for the kids to learn and help decide a future."

"This was a very satisfactory experience for our daughter....."

".....I certainly feel the course was very worthwhile for our son."

"We feel it is good to have a program like this so to help the child decide for the future."

Others specifically congratulated the project staff on a job well done and thanked them for offering the program.

Summary

Analysis of the data from students, instructors, and parents consistently indicate a high degree of satisfaction with what certainly can be considered a very successful summer program. The evaluators add the following remarks and/or suggestions:

1. This type of summer program is of more interest and benefit to the students than the traditional arts and crafts or recreation summer program.

2. The cost of the program is quite modest. The cost per student should further decrease as more students are attracted to the program.

3. Junior high students especially should be recruited. Most students of this age group are "ready" for this type of program. Senior high students should not be excluded, though after several years of operation it would be expected that more students in this age group will already have participated in this exploratory program and will actually be ready to "experience" the world of work during the summer months.

4. Hopefully, the summer program was so successful that it will be continued in Council Bluffs without the assistance of this project. Thus, project thrust can be directed to other parts of Area XIII.

5. The experiences of the first year will lessen considerably the difficulties with respect to planning, recruitment, scheduling, and course content in future years.

6. The project staff will endeavor to include a wider variety of work experiences--particularly programs which will appeal to girls.

7. The project staff will seriously consider conducting only one session of the program--possibly running the session for six rather than four weeks.

IV. OBJECTIVE EVALUATION

With the exception of the questionnaires used in the evaluation of the summer program, these evaluators have based this report on impressions received from discussion and structured interviews. Due to the late involvement of the third-party evaluators, no other objective assessment was possible during the first year of the project. However, a research design for such an objective assessment has been submitted to the Project Director and is appended to this section of this report. Further, this objective assessment was inaugurated at the time of the September 21, 1971 site visit. Certain aspects of the current situation are enumerated herewith:

1) The instruments used for measuring vocational information and vocational maturity are the Occupational Awareness Test (OAT) and the Vocational Development Inventory (VDI). The OAT was developed by J. W. Menne, Ph.D. and D. G. Zytowski, Ph.D. The VDI, by John O. Crites, Ph.D., was chosen as the best instrument for the assessment of vocational maturity down to grade four.

2) Grades 4, 6, and 8 in Edison and 10 and 12 in Thomas Jefferson were considered "experimental units". Again, one class from each grade was tested. One class each from grades 4, 6, and 8 of Lewis Central were also tested so as to have a measure of units which so far have received no direct project influence but might be expected to receive project effort within the next year. All of these same 13 classes will be retested in the spring of 1972.

3) The project staff did an excellent job in obtaining the cooperation needed for testing in the 13 classes, and they were of tremendous assistance in helping to conduct the test administrations.

4) The project staff has begun to implement the recommendation, stated in the first interim report, that they conduct their own objective evaluation. To this end, they have arranged for pre- and post-testing on the various "World of Construction" units at the junior high level. They have also begun the design of an instrument to evaluate or assess the satisfaction that the "World of Construction" provides to students.

5) It is suggested that there be a systematized follow-up on the students placed in job training or actual employment as a result of project efforts.

Objective Research Design for the Guidance and Vocational Education Exemplary Project in the Pottawattamie County School System

Submitted

August 11, 1971

The objectives of the program as stated on pages 9 and 10 of the proposal are concerned with such goals as:

1) To create awareness, on the part of elementary and secondary students, of the opportunities which exist in the world of work.

2) To create an understanding, within individuals, of particular interests, capabilities, and strengths which they have.

3) To enhance feelings of personal self-worth in individuals.

4) To develop personal characteristics which will aid in securing and maintaining employment.

5) To develop awareness of the agencies and organizations which are available to assist persons seeking employment.

It would seem that the above listed goals can be seen as concerned with the factors of vocational information and vocational maturity. Thus, information is needed before one can be aware of the opportunities which exist in the world of work. The person who is vocationally mature will have an understanding of his own particular interests, capabilities, and strengths. Therefore, these factors, vocational information and maturity, are used in this research design as these factors are considered to be directly related to some of the immediate project goals.

In order to evaluate the effectiveness of the special exemplary vocational education program, the following is proposed:

1) Measure the vocational information and vocational maturity of the students in the program at the start and near the end of the school year (treatment group).

2) Measure the same two factors on a matched sample of students at a school which is not an immediate participant in the program at the same two times (control group).

An increase, for the treatment group, in the amount of vocational information and the level of vocational maturity, greater than that of the students in the non-participating (control) group, will indicate the degree of success of the program. This hypothesized increase can be expressed in the usual terms of statistical significance as well as the econometric terms, cost-effectiveness or cost-benefit ratio for the program.

A measure of vocational information, the Occupational Awareness Test, has been developed for use in this project. One of two measures of vocational maturity developed for similar projects will be used.

In order to ascertain the project's degree of effectiveness with respect to the objectives (d) and (g) on pages 9 and 10, it would be desirable to measure job success and job satisfaction of the program participants, say 5 years later, but this is precluded by the time frame and the budget for evaluation purposes. It seems reasonable to infer that students who are better informed and approach vocational choices more maturely will, in fact, be more successful and satisfied in the world of work.

3) A satisfaction measure, similar to that used by these evaluators during the summer of 1971, will be used in the early spring of 1972 on a sample of the program participants.

4) Another satisfaction measure (similar to that mentioned in #3) will be distributed in the early spring of 1972, by mail, to a sample of parents of children in the program.

The rationale behind the use of satisfaction measures is:

a) To get formal feedback about the program to serve as input for third-year planning.

b) Satisfaction with a program is a crucial variable. Even if the program is effective as measured in steps 1 and 2, taxpayer support will be engendered only if the program is well liked. In fact, it is even possible for a program that cannot be demonstrated to be effective to be supported by taxpayers just because they like the program.

5) The schools, grades, and students to be measured in this research design will be determined in conjunction with the Project Director and his staff. Likewise, the actual administration of the test instruments and questionnaires will be a joint effort of the project staff and the third party evaluators.

This research design is not intended to be the sole procedure by which the project is to be evaluated. It is the contribution of the third party evaluators and is intended to supplement the self-appraisals and evaluations of the project staff.

V. OVERVIEW AND SUMMARY

1) These evaluators consider that the project staff have put forth considerable effort and have been reasonably successful in the very short first year of the project. Many deficiencies noted and suggestions made on the occassion of the first interim report have been attended to and substantial improvements have been made in a few short months.

2) Explicit planning with respect to a pilot school at the senior high level and a specific program for that school should be implemented soon.

3) Certain considerations pointed out in the first interim report continue to deserve attention of the project staff. Specifically,

a) How can the project facilitate the development of the self-image which is stated as a project goal?

b) How can the handicapped and the disadvantaged be helped?

c) How can vocational education programs be expanded so as to be of more interest to girls?

d) How can the instructional and administrative staff of the schools in the area, from the elementary through the college level, be made more aware of and involved in project efforts?

e) How can citizens, business leaders, parents and others be made more aware of and involved in project efforts?

4) The project is now completely staffed and the entire staff show evidence of great interest and are putting forth considerable effort toward the attainment of project goals. Several staff members are seen by these evaluators as persons of exceptional committment and ability.

Respectfully submitted,

Ellen Betz, Ph.D.

John W. Menne, Ph.D.

Donald G. Zytowski, Ph.D.

Joy M. Menne, M.S.

APPENDIX A

Student Satisfaction Questionnaire

In order to help us plan for future vocational-education programs we would like some information about yourself, your reactions to this summer's program, and your suggestions for next year.

Your name_____Your age____Your school last year_____

Your grade in school this coming fall_____

Number of days you missed attending the summer program_____

Program work area or areas in which you participated:

1)

2)

3)

4)

5)

What things about the program were most interesting and/or helpful to you?

What things didn't you like about the program?

Would you come back to the summer program next year if you were free to do so? Why or why not?

Would you encourage your friends to come next year? Why or why not?

Would you like to have some other kinds of work experiences included in the program next year that were not offered this year? If so, what kinds?

Why did you come to the program this year--that is, what did you expect to gain from it?

How did you first hear of the summer program?

Did a teacher, counselor, or someone else help you decide to enter the program? Who and how?

APPENDIX A (continued)

Overall, how did you like the program? (check one of the statements below)

I liked it very much_____

It was pretty good_____

It was okay_____

I didn't like it_____

What kind of job or jobs would you now consider (or think you might like working at) when you are a working adult?

Before you came to the summer program, what kind of job or jobs did you think you might like to work at when you become a working adult?

In your studies during the regular school year would you describe yourself as (check one of the below)

A very good student_____

A good student_____

An average student_____

A below-average student_____

What courses (studies) have you liked best in your regular school work?

Please list some of your hobbies.

Thank you for your cooperation!

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Counseling Psychologist and Acting Director, Student Counseling Service, Washington University, St. Louis, Missouri, 1958-65.

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Consulting Editor, Personnel and Guidance Journal
Consulting Editor, Journal of Vocational Behavior
Teaches Courses in Vocational and Abnormal Psychology
Publications in Journal of Vocational Behavior, Personnel and Guidance Journal, Journal of Counseling Psychology, Journal of Applied Psychology
Books: Vocational Behavior: Readings in Theory and Research, N.Y.: Holt-Rinehart & Winston, 1968.
Psychological Factors in Vocational Development, Boston: Houghton-Mifflin, 1970.

Degress: A.B. in Education, Harris Teachers College, St. Louis, Missouri, 1952.
M.S., Counseling & Personnel, Washington University, St. Louis, Missouri, 1958.
Ed.D., Washington University, St. Louis, Missouri, 1965.
Certified Counseling Psychologist, State of Iowa.

APPENDICES

BIBLIOGRAPHY

Research Projects (ERIC and other sources)

VT 003 665 Follow-up Study of MDTA Uplift Project, by Florida A. & M, July 1967

VT 004 011 Preparation of Health Education Leaders for Serving Disadvantaged, by Missouri University, May 1967

VT 004 014 Evaluation of Vocational Education for Disadvantaged Youth, by Muskegon Public Schools, April, 1967

VT 004 318 Project: Gatekeeper-Program to Train Employers to Interact with Disadvantaged, by American University, 1967

Leaflet Youth We Haven't Served, Kemp, 1966, U. S. Office of Education

VT 003 853 Retrieval Research in Experimental and Demonstration Programs for Disadvantaged Youth, by Manpower Administration, 1966

VT 004 693 Programs of Occupation Training for School Alienated Youth, by U. S. Office of Education, August, 1967

VT 005 077 American Vocational Association Speech (Disoriented Youth): Edison Occupational School, Cleveland, Ohio, Supportive Services and Training Programs of Pilot Project

VT 001 839 Sheltered Workshop Operation by Manpower Administration, March, 1967

VT 004 114 Efficacy of Prevocational Curriculums and Services Designed to Rehabilitate Slow Learner Dropouts, by Karnes, Champaign, Illinois, August, 1966

VT 001 399 Workshop for Counselors Concerned with Minority Youths, by Washington University, St. Louis, October, 1965

VT 001 618 Employment Orientation Programs for Retarded Pupils in New Jersey Public Schools, by New Jersey State Department of Education, November, 1965

VT 000 910 Industrial Arts Program and High School Dropouts, Suggested Programs, West Virginia, Bremman, March, 1963

VT 003 666 Prevocational Classes Under Experience Training Fund, by Seattle Public Schools, 1966

VT 005 420 Report of Vocational-Technical Education Development for Persons with Special Needs by States, by U. S. Office of Education, February, 1968

VT 002 551 Project: Rural Education-Disadvantaged Youth (To Create Readiness and Motivation for Vocation) Applied in Five Communities by Illinois University (No publication date provided)

VT 005 414 Development of Program to Prepare Disadvantaged for Vocational Education, Washington, D.C. School for Psychiatry, June, 1967

VT 003 543 Experimental Program in Vocational Education, Six Week Summer Program by Springfield, Illinois, School District No. 186, 1967 (185 pp.) MF 75¢, HC 9.35

VT 004 668 Workshop Report: Study of Disadvantaged for Selected Teachers of Occupational Training, by Texas Technological College, Lubbock, July, 1967

VT 001 280 Experiment to Promote Greater Interest in Underachieving High School Boys, by Eastern Michigan University, May, 1965

VT 008 166 American Vocational Association Speeches: Effective Technical and Industrial Programs for Disadvantaged, Thomas and James

VT 005 037 American Vocational Journal Report of 12 Research Reviews, RE: Students with Special Needs, November 1967 Issue

VT 007 127 Youth with Special Needs - Characteristics of Students and Aspects of Vocational Educational Programs Essential, University of Michigan, 1967 (Direct from University of Michigan Microfilm $3.25)

VT 001 515 Reducing Dropout Rate, New York State Education Department-Recommendation, July, 1965

VT 001 583 Vocational Special Needs Pilot Program, Troy, Tennessee, July, 1966

ED 022 056 Experimental Junior High School Course in Occupational Opportunities, by Darcey & Powell, Ohio University, Athens, June, 1968

ED 016 268 Career Simulation for Adolescent Pupils, by Barbula and Isaac, San Diego, California, November 1967

ED 010 076 Career Simulation for Sixth Grade Pupils, by Shirts, San Diego, 1966

ED 010 054 Opportunities and Requirements for Initial Employment of School Leavers, by Cook, Wayne State University, Detroit, 1966

ED 027 411 Innovations and Special Programs in Vocational Education, by National Association of State Directors of Vocational Education, August, 1968

Article Summer School for Introduction to Vocations, Oaklyn Junior High School, Oakly, N.J., American Vocational Journal, December, 1969

Article Occupational Information in the Junior High School: Implications for Vocational Education by De Blassie and Jones, N. Mex. RCU, Santa Fe, American Vocational Journal, December, 1969

July 6, 1971

Dear Parents:

Your son or daughter has just completed the first session of a summer school sponsored through the combined efforts of the Pottawattamie County School System, Iowa Western Community College and the Council Bluffs Community School System. We would like to get your reactions to this new and unique program in the "World of Work". If you would please answer the following questions and return them in the enclosed envelope it would be greatly appreciated:

1. Did your boy or girl show enthusiasm for the course or courses in which they enrolled?
   Yes_____Somewhat_____No_____.

2. Do you feel if your boy or girl was given the opportunity to take new and different courses other than those offered this summer they would be interested?
   Yes_____Somewhat_____No_____.

3. Did your boy or girl seem to object to the bus ride? (If they rode a bus.)
   Yes_____Somewhat_____No_____.

4. In your opinion do you think your boy or girl would be interested in attending the second session of summer school, July 19 through August 13, exploring a different area in the "World of Work"?
   Yes_____No_____. If yes, which of the following areas: Power Mechanics_____Graphic Arts_____Machine Shop_____Welding_____.

5. Do you believe your boy or girl gained knowledge of the "World of Work"?
   Yes_____Somewhat_____No_____.

6. Please list any suggestions you feel would be beneficial to us.

   _____

   _____.

We would like to thank you for your consideration in helping us with the questionnaire.

Sincerely yours,

Earl E. Winters, Director
Guidance and Vocational Education

APPENDIX A

Student Satisfaction Questionnaire

In order to help us plan for future vocational-education programs we would like some information about yourself, your reactions to this summer's program, and your suggestions for next year.

Your name_____Your age____Your school last year_____

Your grade in school this coming fall_____

Number of days you missed attending the summer program_____

Program work area or areas in which you participated:

1)

2)

3)

4)

5)

What things about the program were most interesting and/or helpful to you?

What things didn't you like about the program?

Would you come back to the summer program next year if you were free to do so? Why or why not?

Would you encourage your friends to come next year? Why or why not?

Would you like to have some other kinds of work experiences included in the program next year that were not offered this year? If so, what kinds?

Why did you come to the program this year--that is, what did you expect to gain from it?

How did you first hear of the summer program?

Did a teacher, counselor, or someone else help you decide to enter the program? Who and how?

APPENDIX A (continued)

Overall, how did you like the program? (check one of the statements below)

I liked it very much_____

It was pretty good_____

It was okay_____

I didn't like it_____

What kind of job or jobs would you now consider (or think you might like working at) when you are a working adult?

Before you came to the summer program, what kind of job or jobs did you think you might like to work at when you become a working adult?

In your studies during the regular school year would you describe yourself as (check one of the below)

A very good student_____

A good student_____

An average student_____

A below-average student_____

What courses (studies) have you liked best in your regular school work?

Please list some of your hobbies.

Thank you for your cooperation!

THE OCCUPATIONAL AWARENESS TEST Form A, 1971

John W. Menne & Donald G. Zytowski

Directions: On the separate answer sheet, mark the letter of the correct answer. Notice that the questions are answered across the answer sheet, while on this paper they are arranged from top to bottom.

IN WHICH ONE OF EACH OF THESE PAIRS OF OCCUPATIONS CAN YOU MAKE THE MOST MONEY?

1.	A-Commercial Artist	B-Medical Technician	C-Both The Same	D-Don't Know
2.	A-Pilot	B-TV Cameraman	C-Both The Same	D-Don't Know
3.	A-Interior Decorator	B-Lawyer	C-Both The Same	D-Don't Know
4.	A-Hotel Manager	B-Game Warden	C-Both The Same	D-Don't Know

IN WHICH OCCUPATION DO YOU NEED MORE YEARS OF SCHOOL?

5.	A-Accountant	B-Truck Driver	C-Both The Same	D-Don't Know
6.	A-Secretary	B-Sewing Machine Operator	"	"
7.	A-Bank Teller	B-Computer Programmer	"	"
8.	A-Stock Clerk	B-Nurse	"	"

IN WHICH OCCUPATION DO YOU WORK MORE WITH YOUR HANDS?

9.	A-Linotype Operator	B-Real Estate Salesman	C-Both The Same	D-Don't Know
10.	A-Mailman	B-Buyer	"	"
11.	A-Bookkeper	B-Auctioneer	"	"
12.	A-Telephone Operator	B-Milkman	"	"

IN WHICH OCCUPATION DO YOU WORK MORE WITH PEOPLE?

13.	A-Economist	B-Beautician	C-Both The Same	D-Don't Know
14.	A-Social Worker	B-Barber	"	"
15.	A-Foreman in Industry	B-Weather Man	"	"
16.	A-Dressmaker	B-News Reporter	"	"

IN WHICH OCCUPATION DO YOU NEED GREATER SKILL IN TALKING OR WITH WORDS?

17.	A-Grocerystore Manager	B-Telephone Lineman	C-Both The Same	D-Don't Know
18.	A-Chef	B-Auditor	"	"
19.	A-Carpenter	B-Sales Clerk	"	"
20.	A-Printer	B-Homebuilder	"	"

IN WHICH OCCUPATION DO YOU NEED GREATER SKILL WITH NUMBERS OR COMPUTATIONS?

21.	A-Welder	B-College Professor	C-Both The Same	D-Don't Know
22.	A-Fire Fighter	B-Doctor (Physician)	"	"
23.	A-School Teacher	B-Waitress	"	"
24.	A-Aircraft Mechanic	B-Theater Cashier	"	"

IN WHICH OCCUPATION ARE THERE MORE JOBS AVAILABLE?

25.	A-Plumber	B-Dock Worker	C-Both The Same	D-Don't Know
26.	A-Architect	B-Librarian	"	"
27.	A-Mechanical Engineer	B-Photographer	"	"
28.	A-Draftsman	B-Airline Stewardess	"	"

IN WHICH OCCUPATION ARE WORKING CONDITIONS CLEANER OR MORE COMFORTABLE?

29.	A-TV Entertainer	B-Minister, Priest, or Rabbi	C-Both The Same	D-Don't Know
30.	A-Musician	B-Police Detective	"	"
31.	A-Radio-TV Announcer	B-Cowboy	"	"
32.	A-Deep Sea Fisherman	B-Policeman	"	"

IN WHICH OCCUPATION DO YOU TRY TO GET PEOPLE TO DO WHAT YOU WANT THEM TO DO?

33.	A-Farmer	B-Insurance Salesman	C-Both The Same	D-Don't Know
34.	A-Lumberjack	B-Electrician	"	"
35.	A-Professional Athlete	B-Taxi Driver	"	"
36.	A-Watch Repairman	B-Production Manager	"	"

THE OCCUPATIONAL AWARENESS TEST Form B, 1971
John W. Menne & Donald G. Zytowski

Directions: On the separate answer sheet, mark the letter of the correct answer. Notice that the questions are answered across the answer sheet, while on this paper they are arranged from top to bottom.

IN WHICH ONE OF THESE PAIRS OF OCCUPATIONS DO YOU NEED MORE YEARS OF SCHOOL?

1.	A-Commercial Artist	B-Medical Technician	C-Both The Same	D-Don't Know
2.	A-Pilot	B-TV Cameraman	C-Both The Same	D-Don't Know
3.	A-Interior Decorator	B-Lawyer	C-Both The Same	D-Don't Know
4.	A-Hotel Manager	B-Game Warden	C-Both The Same	D-Don't Know

IN WHICH OCCUPATION DO YOU WORK MORE WITH YOUR HANDS?

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7.	A-Bank Teller	B-Computer Programmer	"	"
8.	A-Stock Clerk	B-Nurse	"	"

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11.	A-Bookkeper	B-Auctioneer	"	"
12.	A-Telephone Operator	B-Milkman	"	"

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14.	A-Social Worker	B-Barber	"	"
15.	A-Foreman in Industry	B-Weather Man	"	"
16.	A-Dressmaker	B-News Reporter	"	"

IN WHICH OCCUPATION DO YOU NEED GREATER SKILL WITH NUMBERS OR COMPUTATIONS?

17.	A-Grocerystore Manager	B-Telephone Lineman	C-Both The Same	D-Don't Know
18.	A-Chef	B-Auditor	"	"
19.	A-Carpenter	B-Sales Clerk	"	"
20.	A-Printer	B-Homebuilder	"	"

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28.	A-Draftsman	B-Airline Stewardess	"	"

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31.	A-Radio-TV Announcer	B-Cowboy	"	"
32.	A-Deep Sea Fisherman	B-Policeman	"	"

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34.	A-Lumberjack	B-Electrician	"	"
35.	A-Professional Athlete	B-Taxi Driver	"	"
36.	A-Watch Repairman	B-Production Manager	"	"

THE VOCATIONAL DEVELOPMENT INVENTORY

FORM IV

Directions: There are a number of statements about occupational choice and work listed in this booklet. Occupational choice means the kind of job or work that you think you will probably be doing when you finish all of your schooling.

If you agree or mostly agree with the statement, print a T in front of the number of that statement. If you disagree or mostly disagree with the statement, print an F in front of the number of the statement. Erase completely any answer you wish to change.

1. Once you choose a job, you can't choose another one.
2. In order to choose a job, you need to know what kind of person you are.
3. I plan to follow the line of work my parents suggest.
4. I guess everybody has to go to work sooner or later, but I don't look forward to it.
5. A person can do any kind of work he wants as long as he tries hard.
6. I'm not going to worry about choosing an occupation until I'm out of school.
7. Your job is important because it determines how much you can earn.
8. Work is worthwhile mainly because it lets you buy the things you want.
9. The greatest appeal of a job to me is the opportunity it provides for getting ahead.
10. I often daydream about what I want to be, but I really haven't chosen a line of work yet.
11. Knowing what you are good at is more important than knowing what you like in choosing an occupation.

12. Your parents probably know better than anybody which occupation you should enter.

13. If I can just help others in my work, I'll be happy.

14. Work is dull and unpleasant.

15. Everyone seems to tell me something different, until now I don't know which kind of work to choose.

16. I don't know how to go about getting into the kind of work I want to do.

17. Why try to decide upon a job when the future is so uncertain.

18. I spend a lot of time wishing I could do work that I know I cannot ever possibly do.

19. I don't know what courses I should take in school.

20. It's probably just as easy to be successful in one occupation as it is in another.

21. By the time you are 15, you should have your mind pretty well made up about the occupation you intend to enter.

22. There are so many things to consider in choosing an occupation, it is hard to make a decision.

23. I seldom think about the job I want to enter.

24. It doesn't matter which job you choose as long as it pays well.

25. You can't go very far wrong by following your parents' advice about which job to choose.

26. Working is much like going to school.

27. I am having difficulty in preparing myself for the work I want to do.

28. I know very little about the requirements of jobs.

29. The job I choose has to give me plenty of freedom to do what I want.

30. The best thing to do is to try out several jobs, and then choose the one you like best.

31. There is only one occupation for each person.

32. Whether you are interested in a particular kind of work is not as important as whether you can do it.

33. I can't understand how some people can be so set about what they want to do.

34. As long as I can remember I've known what kind of work I want to do.

35. I want to really accomplish something in my work-to make a great dis--covery or earn lots of money or help a great number of people.

36. You get into an occupation mostly by chance.

37. It's who you know, not what you know, that's important in a job.

38. When it comes to choosing a job, I'll make up my own mind.

39. Choose an occupation which gives you a chance to help others.

40. When I am trying to study, I often find myself daydreaming about what it will be like when I start working.

41. I have little or no idea of what working will be like.

42. Choose an occupation, then plan how to enter it.

43. I really can't find any work that has much appeal to me.

44. Choose a job in which you can someday become famous.

45. If you have some doubts about what you want to do, ask you parents or friends for advice and suggestions.

46. Choose a job which allows you to do what you believe in.

47. The most important part of work is the pleasure which comes from doing it.

48. I keep changing my occupational choice.

49. As far as choosing an occupation is concerned, something will come along sooner or later.

50. Why worry about choosing a job when you don't have anything to say about it anyway.

POTTAWATTAMIE COUNTY SCHOOL SYSTEM
"An Intermediate School District"

The Halverson Center for Education

Route 1
Council Bluffs, Iowa 51501

DR. CALVIN R. BONES, *Supt.*

TELEPHONE (712) 366-0503

RESOURCE SERVICES OFFERED

The Pottawattamie County School System has established an ERIC (acronym for Educational Resources Information Center) system at its Department of Guidance and Vocational Education headquarters, Room 11, Roosevelt School. Catalogued are the very latest and most innovative research data compiled in volumes called AIM (Abstracts of Instructional Materials) and ARM (Abstracts of Research and Related Materials), both in the areas of vocational and technical education; we also have RIE (Research in Education) and IPSI(Integrated Personnel Services Index.) The information is indexed by subject area, and is in the form of a synthesized abstract. If you are interested in more detailed information, you may request the microfische from us and examine it in our reader printer, a machine that magnifies the microfische on a readable twelve-inch square screen. Futhermore, should you desire a print of any of these pages, we can print an 8 1/2 x 11" size copy for your own use.

The advantages are: (1) All of the current research, multiplying at the rate of 35,000 reports and 20,000 articles annually, are now available without having you personally read, verbatim, each thesis; (2) Any site which has access to ERIC and microfische instantaneously become a research center; (3) Each educator can become familiar with any of the significant research data in any field, and especially those how-to-do it projects successfully tried in other schools; which means that (4) Education can respond (almost) immediately to relevant change...it takes two weeks to order and receive the microfische! The only other delay is the time it takes you, as a teacher, to implement this research and adapt it to your own particular situation.

So come in and visit us and meet ERIC; he's not the most handsome, but he is surely the most intelligent man you'll ever meet.

Earl E. Winters

Earl E. Winters, Director
Telephone 712-328-0730

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VT 014 432
PURDY, RALPH D.
A CRITICAL LOOK AT THE HIGH SCHOOL BY FORMER STUDENTS. A SURVEY OF THE 1964 AND 1967 GRADUATES OF TWELVE SELECTED HIGH SCHOOLS IN OHIO.

MIAMI UNIV., OXFORD, OHIO. BUREAU OF EDUCATIONAL FIELD SERVICES.
OHIO STATE ADVISORY COUNCIL FOR VOCATIONAL EDUCATION, WORTHINGTON
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EXECUTIVE DIRECTOR, THE OHIO ADVISORY COUNCIL FOR VOCATIONAL EDUCATION, 112 W. NORTH STREET, WORTHINGTON, OHIO 43085 ($2.25, POSTPAID; LIMITED NUMBER AVAILABLE)
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DESCRIPTORS - *VOCATIONAL EDUCATION; *GRADUATE SURVEYS; SCHOOL SURVEYS; *STATE SURVEYS; *EDUCATIONAL NEEDS; PROGRAM DEVELOPMENT; PROGRAM EVALUATION; *SECONDARY EDUCATION; STUDENT NEEDS; COLLEGE BOUND STUDENTS; DROPOUTS; NONCOLLEGE PREPARATORY STUDENTS; OCCUPATIONAL GUIDANCE; POST SECONDARY EDUCATION
IDENTIFIERS - OHIO

ABSTRACT - BASED ON INFORMATION GATHERED FROM STUDENTS AND RECORDS OF 12 OHIO SCHOOLS, THIS STUDY SOUGHT TO DETERMINE: (1) THE PERCENT OF HIGH SCHOOL GRADUATES SERVED BY POST-SECONDARY INSTITUTIONS, (2) THE KINDS OF POST-SECONDARY INSTITUTIONS IN WHICH THE COLLEGE-BOUND ACTUALLY ENROLL, (3) THE NEED FOR VOCATIONAL EDUCATION PROGRAMS IN OHIO, AND (4) THE EXTENT AND CAUSES OF STUDENT DROPOUTS IN BOTH HIGH SCHOOL AND COLLEGE, SUBSEQUENT EMPLOYMENT RECORDS, AND THE IMPLICATIONS OF SUCH INFORMATION FOR VOCATIONAL PROGRAM PLANNING AND DEVELOPMENT. SURVEY FINDINGS INCLUDED: (1) MORE THAN HALF OF THE 1970 GRADUATES HAD POST-SECONDARY SCHOOL ASPIRATIONS AND NEARLY NINE OF EVERY TEN WERE ABLE TO REALIZE THIS AMBITION, (2) MORE THAN TWO OF EVERY FIVE GRADUATES FOLLOWED THE COLLEGE PREPARATORY PROGRAM, (3) PARENTS PROVIDED THE MOST SIGNIFICANT ASSISTANCE IN THE SELECTION OF HIGH SCHOOL SUBJECTS TO BE STUDIED, THE GUIDANCE COUNSELOR WAS SECOND, AND TEACHERS THIRD, AND (4) THREE OUT OF FIVE DROPOUTS REPORTED THAT THEIR HIGH SCHOOL EXPERIENCE HAD BEEN EITHER "VERY HELPFUL "OR" HELPFUL." ONE IMPLICATION OF THIS STUDY IS THAT THE USE OF THE RATIO OF COLLEGE-BOUND TO NON-COLLEGE-BOUND SENIORS IS INVALID AS A BASIS FOR THE DISTRIBUTION OF MONEY FOR VOCATIONAL PROGRAMS. (JS)

VT 014 432

A CRITICAL LOOK AT THE HIGH SCHOOL BY FORMER STUDENTS

A Special Study Project

The Advisory Council For Vocational Education

in Ohio

The Bureau of Educational Field Services
The School of Education
Miami University
Oxford, Ohio
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THE OHIO ADVISORY COUNCIL FOR VOCATIONAL EDUCATION

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The School of Education
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Oxford, Ohio
45056

A CRITICAL LOOK AT THE HIGH SCHOOL BY FORMER STUDENTS

A survey of the 1964 and 1967 graduates
of twelve selected high schools in Ohio

A Special Study Project
The Advisory Council for Vocational Education
in Ohio

by

Ralph D. Purdy
Project Director

The Bureau of Educational Field Services
The School of Education
Miami University
Oxford, Ohio
45056

March, 1971

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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4575

RETROSPECTIVE THOUGHTS

BY

A DROPOUT

I too dropped out of school . . . I really wish now that I could have stayed and got my diploma . . . I joined the Army, there I stayed for . . . I took a GED test . . . and passed it and received two good electronics schools and very valuable training. I am presently employed at . . . as a senior electronics technician. I honestly think I have done pretty well with my life for having dropped out of school, although don't get me wrong. I don't or wouldn't ever encourage it. If I hadn't finished in the Army and worked in a field that would help me when I got out, then I would more than likely be among the so many of the unemployed.

I haven't yet completed my education as far as I am concerned and am at the present taking a correspondence course through Cleveland Institute of Electronics for a First Class Radio Telephone license and hope to someday to get a EE degree . . . .

I sincerely hope that all school systems can come up with a method for keeping the students in school and help the hard headed smart alecks, such as I use to be, from making school a joke and staying there until they graduate.

I can't honestly blame you or _____ school for my dropping out, just myself.

Thank you for the time spent on my letter.

Excerpts from a letter
accompanying Form
MU 3 Dated August 31,
1970

THE ADVISORY COUNCIL FOR VOCATIONAL EDUCATION
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Cincinnati - Seton	Miss Dot Keininger
Cleveland	Dr. James Walker
Dayton	Mr. Don D. Longnecker
Jackson	Mr. Arthur Stephenson
Lima	Mr. Howard Scheuerman
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I think a high school should center more around the students and their ambitions, than around education. Because if students know that the school is worrying about them and their hopes and ambitions instead of trying to force them to learn they will learn by themselves willingly.

--A Graduate

CHAPTER I

DIRECTIONS FOR THE STUDY

The primary function of the Advisory Council For Vocational Education in Ohio is to advise the Division of Vocational Education, The State Department of Education, and to propose policies for vocational education to the State Board of Education in Ohio. To fulfill these responsibilities it is necessary that the Council obtain as much factual information as possible upon which to base recommendations for policy formation and to use in support of adopted policy statements. More specifically, the Council wanted data about:

1. The per cent of high school graduates reported to be college-bound; the percentage actually enrolling in college; and the holding power of higher education and/or post-secondary institutions following enrollment to graduation or completion of the program.
2. The kinds of higher and/or post-secondary educational institutions in which the college-bound actually enroll.
3. Information for planning an adequate program of vocational education within the school districts of Ohio, and for the fair and equitable distribution of state and federal monies for vocational education.
4. The extent and causes of student drop outs in both high school and college, their subsequent employment record, and the implications of such information for vocational program planning and development.
5. Any additional information significantly related to the above four statements.

The Council contracted with Miami University, Oxford, Ohio, on May 22, 1970, for the development of a special study project to collect basic information related to the five areas listed above. The contract provided that the study should be directed by Dr. Ralph D. Purdy, Professor of Educational Administration and former Director of the Bureau of Educational Field Services, The School of Education, Miami University. It was further provided that the Director should work closely with the Executive Director for the Council, and that he should have the advisory assistance of two Special Study Committees with representative membership from the Council.

Scope of the Study

The desired information was to be secured from two sources: (1) the school records and (2) the students themselves. The former necessitated a careful examination of pupil permanent records in each participating school, while a questionnaire was to be developed for high school graduates and high school drop outs to provide appropriate information. It was proposed that the students enrolling in one ninth-grade class in ten selected high schools of Ohio be identified and followed through formal school attendance

and/or into employment to September, 1970. To the extent possible, information on each student was to be secured concerning high school and post-high school training, his employment during and following high school and post-high school training, the general kinds of training programs (college preparatory, general, vocational education, practical arts) pursued, the relationships between these programs and subsequent employment, and any related information available.

The cooperation of ten high schools was considered to be essential for the identification and collection of the desired information. These schools were to be selected on the basis of their diversity of program offering; geographical location within the state; and the type of school: suburban-urban-central city, rural, vocational, academic or parochial (see Table 1.1). The data was to be collected for the graduates of the classes of 1964 and 1967, and for those students who would normally have graduated with the class of 1967 but who dropped out of school prior to graduation. Furthermore it was proposed that the college and/or post-high school intentions of the 1970 graduating classes of the participating schools be identified, and that actual enrollment following graduation be determined.

TABLE 1.1

TYPES OF SCHOOLS TO BE STUDIED

Type of school	Suggested number of schools
1. An inner city school	2
2. Large city school, graduates college-bound	1
3. High school in an industrialized middle sized city	1
4. College preparatory schools (high percentage going to college)	1
5. Suburban high schools	2
6. A county high school	1
7. Consolidated rural high school	1
8. A joint vocational school	1
9. A parochial high school	1
10. A private high school	1

Note: one school may be used for more than one category.

Limitations

There were certain limitations to the study:

1. The information was to be limited to that available on the individual pupil records in the files of the participating schools; to the responses given

by the students on the questionnaire; to the number of questionnaires returned; and to such other information as it might be possible for those assisting in the study to gather.

2. Although it would be desirable to have the information from all schools and from all graduates in the state, finances and time limited the study to ten selected high schools in Ohio (unless others elected to participate in the study by their own choice).

3. The basic information to be gathered was to be limited to two classes, the graduates from the years 1964 and 1967 and to those who dropped out of school but would normally have graduated with the class of 1967.

4. The time factor was a limitation in each phase of the study, including the designing of the project, the period for the collection of the data, computerizing the information, analysis and interpretation of findings, and the writing of the final report. The time allotment, when adjusted for unanticipated problems and setbacks, proved to be minimal in each instance.

5. Respondents to the questionnaires were self-selective, that is, those who voluntarily completed and returned the questionnaire. Any analysis and interpretation of findings must be made with appropriate consideration to this limitation.

Assumptions

The study is predicated upon some assumptions which are significantly related to the planning and development of the project. These include the following:

1. It is accepted that the data gathered from the participating schools should be representative of and predictive for the state of Ohio.

2. It is assumed that the pupil records in the participating districts will be sufficiently complete to provide worthwhile information for the study.

3. Although the number of questionnaires returned by graduates in related types of studies is disappointingly low, it is believed that acceptable returns can be secured with active participation of staff personnel known by the students in their respective schools.

4. It is believed that there will be constructive values accruing to the staff members and to the participating districts through the work of local personnel in the development and interpretation of the study.

5. It is believed that the findings of the study as interpreted by the participation of the local staff members will have a significant influence upon both policy formation and adoption by the respective boards of education, and in administrative practices in each of the participating districts.

The Report

The remainder of this report will be concerned with what was done, how it was done, the findings, an analysis and interpretation of the findings, and recommendations for the consideration of the members of the Council. The location of this information may be found in the Table of Contents.

* *

"Please do not stress a college education so much. College is not everything, especially if you find out after two years and two quarters that you made a wrong choice, thus making it difficult to find a job. College education is even preached to six grade students. Make known, by voice not just phamplets, the other possible job opportunities. Not everyone has money to pay for college then switch and pay for vocational training. I did not."

--A suggestion by one graduate for his high school.

"To have a class of sex; to give the students a better understanding of the birds and bees, for they won't experiment and have to drop-out of school and entering the hardships of married life. At least wait until you're in your 20's and they'll be fewer divorces I believe."

--A School Dropout

[The above are direct quotations, with no editing.]

CHAPTER II

PLANNING THE STUDY

Many people helped design the project described in the preceding chapter. Members of the Advisory Council participated in one or the other of two meetings scheduled for this purpose. Other contributors included doctoral candidates in Educational Administration at Miami University, representatives from each of the participating school districts, and the Director and Research Director from the Division of Vocational Education, The State Department of Education. What follows is a report of the various steps taken which led to the collection of the data upon which the findings, interpretations and recommendations of the project (presented in succeeding chapters) are based.

More on the Objectives

While the general objectives as stated in Chapter I provided the basis for the development of the project, it was anticipated that many related questions and problems would be identified and that information collected might be helpful in their resolution. Among research ideas proposed, the following are representative of suggestions offered by members of the Advisory Council:

1. How valid is the ratio of college-bound to non-college-bound graduates as a basis for the allocation of vocational funds in Ohio?
2. How valid is the reported number of high school seniors planning to enter college in relation to the number that actually enroll?
3. What is the relationship, if any, of tracks pursued in high school to college entrance? To success in college?
4. How valid is the reported difference between college entrance tracks and vocational tracks with regard to college entrance? To tenure in college? To success in college?
5. What preparation programs are needed at the secondary level to more adequately meet the needs of those young people entering business and industry who are high school dropouts? High school graduates? College dropouts? College graduates? High school dropouts who return and complete their high school program? High school dropouts and graduates who enter other post-secondary vocational and/or technical training programs?
6. Of those high school graduates listed on their high school records as planning to attend college, how many plan to enter and how many actually enter a four year college or university? A two year community college? A business college? A technical school? A vocational school? Nurses' training? Related types of post-secondary training programs?
7. What might be some possible guidelines for classifying high school graduates for post-high school training programs, other than the college-bound?

8. From the data collected what might be the implications for programs at the high school level? At the post-high school level? For the two year community college? For the colleges and universities? For admission standards in any post-secondary school?

9. What are the implications of the findings pertaining to school dropouts?

10. Are there some academic/vocational myths that need to be exploded?

The Council members did not expect that all of these questions could or would be answered. It was hoped, however, that within the framework of the project it would be possible to secure information relevant to some of them.

Participating Schools

Careful consideration was given to the identification of the criteria upon which the ten schools for participation in the study would be selected.[1] First of all, the schools should be representative of Ohio to the extent possible, with consideration being given for geographical location, socio-economic factors, suburban and central city, industrial and agricultural areas, academic and vocational schools, and a private or parochial school. From three to five high schools were named within each of the categories, with some schools meeting the criteria for two or more of the several classifications. A school, or a school district, was identified as being the first to be invited to participate in the study, with the other schools named having an alternate status.

Interest in the study was confirmed when, on the first telephone call, all but one of the first ten superintendents contacted accepted the invitation to participate in the study. One additional telephone call completed the selection of the ten school districts participating in the project (Table 2.1; Figure 2.1). Eight of the ten superintendents named the high school to be involved in the study. Two superintendents elected to have two schools participate in the project, with the expenses of the second school to be borne from local finances. In these instances the Project Director was to provide consulting assistance to the second school, and the findings were to be included in the Project Report.

It is interesting to note that two of the schools selected for involvement in the project rank in the first ten of Ohio schools having the highest percentage of college-bound graduates. Wyoming ranks first with 95.9 per cent, and Upper Arlington ranks ninth with 86.2 per cent.[2]

---

[1]The identification of the selection criteria and the list of representative schools were made by the Project Director in consultation and with the advice of the Executive Secretary of the Council and the Director of the Division of Vocational Education, The State Department of Education. The Project Director then reviewed the list with the Advisory Committee of the Council.

[2]The figures were obtained from the Division of Computer Service, were based upon the 1967-68 spring reports, and were reported by Mr. Herman Sims, Director of Curriculum, Wyoming City Schools to SWOERC Conference Participants in 1970.

TABLE 2.1

SCHOOLS PARTICIPATING IN THE STUDY

Location	School	Superintendent
Canton	Canton Timkin Vocational	Dr. Henry P. Kurdziel
Cincinnati	Elder H. S. for Boys Seton H. S. for Girls	Father Herman H. Kenning
Cleveland	Cleveland East Technical Cleveland West Technical	Dr. Paul W. Briggs
Dayton	Fairview High School	Dr. Wayne M. Carle
Jackson	Jackson High School	Mr. John Finch
Lima	Lima High School	Dr. Earl A. McGovern
Perrysburg	Penta County JVSD	Dr. Jacob See
Sandusky County	Lakota High School	Mr. John Kaczenski
Upper Arlington	Upper Arlington High School	Dr. Walter B. Heischman
Wyoming	Wyoming High School	Mr. Harold Bush

FIGURE 2.1

Geographical Location of the 12 Participating High Schools

The schools selected for participation in the study represent a cross section of the high schools of Ohio. The size of the graduating classes ranged from 103 to 630 in 1964, from 110 to 593 in 1967, and from 125 to 700 in 1970 (Table 2.2). Selected characteristics by individual schools would include the following:

1. Canton Timkin Vocational: an established vocational high school located in an industrial city in northeastern Ohio.
2. Cincinnati Elder: an academic boys' parochial high school.
3. Cincinnati Seton: an academic girls' parochial high school.
4. Cleveland East Technical: a comprehensive inner-city high school serving a predominately economically deprived area.
5. Cleveland West Technical: a comprehensive inner-city high school serving a broad section of students from economically deprived areas to more affluent areas.
6. Dayton Fairview: a comprehensive large city high school with a majority of its student population college-bound.
7. Jackson: a small city high school located in a predominately agricultural area of southeastern Ohio.
8. Lima: a comprehensive high school (Lima's only high school) located in an industrial city of west-central Ohio.
9. Penta County JVSD: one of the first vocational schools in a Joint vocational School District serving five counties in northwest Ohio.
10. Lakota: a rural consolidated high school in northwest Ohio (Sandusky County).
11. Upper Arlington: a large suburban high school (Columbus area) serving a predominately affluent area.
12. Wyoming: a small suburban high school (Cincinnati area) serving a predominately affluent population.

Each of the ten superintendents appointed a Local Project Coordinator whose responsibility it was to supervise the collection of data for his respective high school. Each coordinator was to receive compensation (provided for within the project budget), in addition to funds for postage and office supplies. The people named Local Project Coordinators varied: they were teachers, supervisors, counselors, research personnel, T & I Coordinator, assistant superintendent of schools, and retired principals (Table 2.3). The success of the project rested upon the ingenuity and tenacity of these people in collecting the data from office records and in securing responses from as many of the graduates as possible. Recognition is hereby given to the commendable work of these staff members.

Selecting Data to be Collected

The first draft of the questionnaire was prepared by the Project Director. Additional

TABLE 2.2

NUMBER OF SCHOOL GRADUATES
1964, 1967 and 1970

City	Name of the Schools	Grades	No. of Graduates 1964	1967	1970
Canton	Timkin Vocational	9-12	325	325	314
Cincinnati	Eldon (Parochial - Boys)	9-12	299	410	461
	Seton (Parochial - Girls)	9-12	305	363	392
Cleveland	East Technical	10-12	350	234	270
	West Technical	9-12	630	545	565
Dayton	Fairview	9-12	310	335	360
Jackson	Jackson	7-12	213	236	228
Lima	Lima	10-12	535	535	550
Perrysburg	Penta County JVSD	11-12	N/A	500	500
Kansas	Lakota Local, Sandusky Co.	9-12	110	110	125
Upper Arlington	Upper Arlington	10-12	489	593	700
Wyoming	Wyoming	7-12	103	151	162
	TOTAL		3669	4337	4626

TABLE 2.3

LOCAL PROJECT COORDINATORS

School Number	School	Local Project Coordinator	Position
1	Canton Timkin Voca.	Mr. Morris Marburger	T & I Coordinator
2	Elder H.S. for Boys	Father Thomas A. Duesing	Mathematics Teacher
3	Seton H.S. for Girls	Miss Dot Keininger	Counselor
4	Cleveland East Tech.	Dr. James Walker[1]	Research Associate Div. of Res. & Develop.
5	Cleveland West Tech.	Dr. James Walker	Research Associate Div. of Res. & Develop.
6	Dayton Fairview	Mr. Don D. Longnecker	Retired Principal
7	Jackson High School	Mr. Arthur Stephenson	Mathematics Teacher
8	Lima High School	Mr. Howard Scheuerman	Retired Principal Lima High School
9	Penta County JVSD	Mr. Edwin Knepper	Supervisor
10	Lakota High School	Mr. Myron Cline	Counselor
11	Upper Arlington High School	Mr. James Blosser	Guidance Counselor
12	Wyoming High School	Mr. Herman Sims	Asst. Superintendent

[1]In Cleveland the Project was assigned to the Division of Research and Development. While Dr. Walker had primary responsibility, the following participated in the study at various times: Dr. Don Haelas, Director, Technical and Vocational Education, Mrs. Margaret Fleming and Mrs. Marion Kilbain.

information was provided and suggestions for deletions were made by twenty members of the Advisory Council at three separate meetings held for this purpose. Eight interested doctoral candidates in Educational Administration at Miami University shared in this thinking through process. Especially helpful were the recommendations made by the Local Project Coordinators who believed that the instrument designed for the collection of data would be of value to them in their schools. Six attended a project planning and orientation session in Oxford, and the Project Director met with the other five Coordinators in or near their respective schools. It was the unanimous recommendation of the Coordinators that all information be limited to that which could be secured on the front and back of one 8 1/2 x 11" sheet of paper. The final draft was prepared by the Project Director. Unfortunately, many very appropriate and desirable questions were eliminated in order to keep within the two page limit, a condition which was judged by all as essential in securing questionnaire returns by the graduates.

Five forms were prepared for use in the study. These included the following:

MU 1 School Record Report, with data to be secured by the Coordinator from the permanent record of each student in the school office.

MU 2 High School Improvement Data Sheet, a questionnaire to be mailed to the graduates of the classes of 1964 and 1967.

MU 3 High School Improvement Data Sheet, a questionnaire to be mailed to school drop-outs who normally would have graduated with the class of 1967.

MU 4 College-Bound Graduates, classes of 1970. A one page form to be completed by the Project Coordinator.

MU 5 College-Bound Graduates, classes of 1964 and 1967.

Copies of these forms appear in the Appendix. It will be noted that the questions were numbered for key punching on data processing cards.

Problems Encountered

Major problems were encountered by the Local Project Coordinators in securing returns for Forms MU 2 and MU 3. All Coordinators reported difficulty in securing usable addresses for large numbers of students having moved from the district. In many instances they found it impossible to secure any address at all. The problem was further aggravated by changes in name, with the girls having married and no corrections having been made in names or mailing addresses on permanent records. Furthermore, several Coordinators reported that many families had moved from the district, thus making it impossible to get names and addresses via a telephone call.

Problems reported by one or more of the Coordinators included the following:

No answer to telephone calls
Many letters returned
Many graduates in service
Some letters never delivered
Lack of information on permanent records

School records lost
Telephone numbers changed in the area
Impossible to contact many homes
Very few students stay in the area
The method of student selection for admission to the school
Limited information on permanent records received from sending district
Securing proper addresses in a rural area
Records of withdrawing students incomplete

Steps Taken to Overcome Problems

The problems encountered were formidable. However, the hard work of the Local Project Coordinators made possible a satisfactory, usable return on the questionnaires. It was common practice for the coordinators to use graduation lists to secure addresses; to make a general mailing to all graduates; and to re-check addresses on returned and unclaimed letters. In some instances a total of six letters were mailed to some students, each to a different address. In many instances both students and teachers were used to locate "lost students", and the telephone for home calls was employed in a majority of the schools. Other techniques reported by the Coordinators included the following:

Addresses on graduation lists were checked with those on job placement cards
Committees used - pupils; teachers.
Stamped, returned addressed envelopes enclosed
Credit Bureau checked for name changes
Draft Board checked for address changes
"Return Requested" placed on envelope
"Please Forward" placed on envelope
Announcements made in local paper
Announcements made on local radio
Letter sent to parents requesting that they forward the questionnaire to their son or daughter (reported as being very effective)

The Local Project Coordinators were unanimous in feeling that a real effort had been made to secure as complete returns as possible under the circumstances. A great deal of time and energy had been devoted by them in their respective situations to get the correct addresses and to follow-up in every possible way.

Use of the Computer

It was indicated earlier that the forms used in the study had been numbered in order to record the information on IBM cards. All returns for MU 1, MU 2 and MU 3 forms were card punched by the Computer Services at Miami University. All tables presenting data from these forms were prepared from the print-outs by the computer. In addition to totals for each of the various categories, it was possible to analyze only a few of the potential cross tabulations between two or more items. The cards have been preserved, and are available for the use of interested and responsible personnel.

Summary Statement

The project was planned and designed with the cooperative assistance of a great

number of people, including members of the Advisory Council, doctoral candidates in Educational Administration at Miami University, The Director of the Division of Vocational Education, The State Department of Education, and the Local Project Coordinators in each of the participating high schools. The project was implemented in twelve high schools of Ohio representing selected socio-economic areas, geographic areas, program emphasis, and private schools.

Data were secured from (1) the permanent records of the graduates for the years 1964 and 1967; (2) a questionnaire mailed to the 8,006 graduates of these two years in the twelve high schools; (3) a questionnaire mailed to the 781 dropouts from the class of 1967; and, (4) reports by the Local Project Coordinators concerning the post-secondary entrance record by the graduates of these schools for the classes of 1964, 1967 and 1970. The next chapter will present an analysis and interpretation of the information collected in this study, with student suggestions and recommendations for the improvement of their high school being presented in chapter IV.

* *

"To memorize facts and figures is not an effective way of learning. The student should be made to think and reason out problems using the facts he has."

--A Graduate

"Not trying so hard in teaching the past but endeavoring to instill in the mind of today's youths ideals for the present and the future. To teach the facts of life outside in the adult world so that they may be better equipped to handle themselves in the right manner when they are on their own."

--A School Dropout

CHAPTER III

FORMER STUDENTS SPEAK OUT

The next two chapters will present data gathered by the Local Project Coordinators. In this chapter will be information on: (a) the graduates and institutions they attended, (b) data from the students' permanent records, and (c) graduate and dropout responses to a questionnaire. An analysis and interpretation of the replies by both graduates and dropouts to the question, "Make one suggestion that you think would really help your high school to become a better school," will be given in Chapter IV.

Chapter III is divided into five parts:

I - The number of graduates (1964, 1967, 1970) planning to enter college or other post-secondary institutions and the number that actually enrolled (MU 4, MU 5)

II - Data from permanent records of graduates and dropouts (MU 1)

III - Data from replies by graduates of 1964 and 1967 to a mailed questionnaire (MU 2

IV - Information on high school dropouts who normally would have graduated with the class of 1967 (MU 3)

V - Job and career orientations

A general summary will be presented at the end of the chapter.

PART I

The College Bound Graduate

High school graduates are entering post-secondary institutions in record numbers. This is true for the nation, for the state, and for the graduates of the twelve high schools studied. But such a general statement glosses over much interesting and very significant information. For example, no information is provided in response to such questions as: how valid are the stated intentions of seniors at graduation time concerning their enrollment in a college, a university, or other post-secondary institution? Are the numbers of graduates reported to the State Department of Education as "College-Bound" valid in relation to the actual number who enroll? Does "college-bound" mean a college or university, or does it include post-secondary institutions

which are not colleges or universities? Do the graduates tend to enroll in their own state's institutions, or do many of them go out-of-state? These and related questions will be answered for the students in the graduating classes of 1964, 1967 and 1970 of the twelve high schools.

Local Project Coordinators collected information from many sources concerning those college bound graduates. The intentions of high school seniors for post-secondary school training were secured from school records and from annual reports to the State Department of Education. An intensive effort was made to secure information on the graduates of the class of 1970 concerning their enrollment in a college, a university, or other post-secondary school during the summer or fall terms in 1970. Since school records do not provide such follow-up information except in a very limited number of instances, data were not readily available for the graduates of the classes of 1964 or 1967. Furthermore, contact with former graduates was found to be impossible for large numbers of graduates due primarily to name changes (girls getting married), and the lack of forwarding addresses for either the graduate or his family. Available data on permanent school records were secured, and the Coordinators made diligent effort via high school faculty members, students in school, telephone calls to parents and graduates, follow-up letters and many other means in an effort to secure complete returns if possible. The data thus secured are presented in the following tables, with accompanying comments and interpretations presented primarily in outline form for brevity and clarity[1].

1964, 1967 and 1970 Graduates Continuing their Education[2] (Tables 3.1 and X3.1)

1. The number of graduates planning to continue some kind of formal education following graduation from high school has increased by 10.1 per cent in six years, or from 41.1 per cent for the class of 1964 to 51.2 per cent for the class of 1970.

---

[1]The tabulated information will be given in tables, some of which are presented in this chapter while others of lesser significance appear in the appendix. The latter tables will have the letter "X" as part of the table number. Other tables referred to in the text but having limited value will be available upon request, and the letter "R" will precede the table number.

[2]References will be made throughout this chapter to schools by number. The key to these numbers are:

1. Canton Timkin Vocational
2. Elder High School For Boys (Parochial)
3. Seton High School For Girls (Parocial)
4. Cleveland East Technical High School
5. Cleveland West Technical High School
6. Dayton Fairview High School
7. Jackson High School
8. Lima High School
9. Penta County Joint Vocational School
10. Lakota High School, Sandusky County
11. Upper Arlington High School
12. Wyoming High School

TABLE 3.1

PERCENT OF GRADUATES PLANNING TO ENTER POST-SECONDARY PROGRAMS AND ACTUAL ENROLLMENTS

Graduates	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
Percent of graduates reported planning to enter post-secondary programs:													
Class of 1970	7.6	90.7[1]	47.2	54.8	46.4	50.8	40.0[2]	38.0	12.6	30.4	84.9	94.4	51.2
Class of 1967	3.7	64.6	46.6	70.5	47.2	56.4	27.5	40.2	8.8	40.0	90.6	92.7	48.5
Class of 1964	2.2	60.2	25.9	27.2	27.8	57.4	28.2	41.5	NA[3]	x[4]	85.1	92.2	41.1
Percent of students reported as continuing their education to the number enrolling:													
Class of 1970	7.0	78.7	40.1	44.8	19.1	54.7	41.7	41.7	36.0	8.8	26.4	87.9	93.2
Class of 1967	4.3	59.8	49.5	25.6	13.8	52.2	25.0	25.0	39.1	10.6	48.2	89.0	92.7
Class of 1964	5.5	91.7	25.9	8.6	9.7	48.7	26.8	26.8	40.2	NA	x	85.1	92.2
Difference in percentage (by subtraction) between those reported planning to enter and those actually enrolled in post-secondary school programs:													
Class of 1970	-.6	-12.0	-7.1	-10.0	-27.3	+3.9	+1.7	-2.0	-3.8	-4.0	+3.0	-1.2	-5.7
Class of 1967	+.6	-4.8	-1.1	-44.9	-33.4	-4.2	-2.5	-2.1	+1.8	+8.2	-1.6	0	-8.6
Class of 1964	+3.3	+31.5	0	-18.6	-18.1	-8.7	-1.4	-1.4	NA	x	0	0	-4.8

[1]The Superintendent of School #2 reported 300 or only those who planned to enter college. This figure has been adjusted (418) to include those who enrolled in nursing, technical, business and cosmetology schools.

[2]The figure for school #7 changed from 76 to 91. The percentage figures reflect these adjustments.

[3]NA: Not applicable. Penta County did not have a graduating class in 1964.

[4]x: No record; data not available; unknown.

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2. The number of graduates actually enrolling in a post-secondary institution has increased by 9.2 per cent in the same six year period, or from 36.3 per cent for the class of 1964 to 45.5 per cent for the class of 1970.

3. Generally, graduates of vocational schools (1 and 9) do not plan to attend post-secondary institutions. The percentages ranged from 2.2 per cent (1-1964) to 12.6 per cent (9-1970). It may be implied that the graduates of vocational schools possess a skill which provides immediate employment, and that they choose to enter the labor force as opposed to continuing their formal education. However, the trend is toward more vocational students entering college.

4. More high school graduates entered post-secondary programs than planned to attend at the time of graduation in seven of 32 classes studied.

5. Many high school graduates who hoped to enter post-secondary programs were unable to do so. The greatest discrepancy existed in inner city schools (4 and 5). In one instance (4, class of 1967), 70.5 per cent of the graduates indicated a desire to enter a post-secondary program, while only 25.6 per cent actually enrolled in a post-secondary program. This means that of the 165 who hoped to go to some post-secondary institution, 60 were successful and 105 were not successful. Thus, nearly two out of three graduates (63.6 per cent) who hoped to continue their education did not do so.

6. Inner city schools (4 and 5) made the most consistent gains in the percentage of students entering post-secondary programs from the three groups studied.

7. Schools having the highest percentage of graduates attending post-secondary programs are: suburban schools (11 and 12); parochial schools (2); and the more affluent city schools (6).

8. Each high school has its own distinctive pattern for the number of seniors who plan to enroll in a post-secondary program compared with actual enrollees.

9. In general, five to eight per cent of the graduating seniors reported as being college-bound do not enter any type of a post-secondary program.

1970 Graduates

A further follow-up study was made of the graduates of the class of 1970. The local Coordinators were successful in determining the types of colleges entered, and the types of post-secondary programs other than colleges and universities in which students enrolled. The first provided data concerning junior colleges, branch campuses, four year colleges and universities (Table 3.2). The second gave selected post-secondary schools in which the graduates enrolled (Table 3.3).

Types of Colleges Entered, Class of 1970 (Table 3.2):

1. Of the 1940 college-bound graduates 1,147 (63.7%) entered a university.

2. More than nine out of ten of the 1970 graduates (92.8%) entered a college or university as planned at graduation time.

3. More students enrolled in a college or university from four of the twelve high schools than had planned to enroll at the time of graduation (1,6,7, and 11).

4. A larger proportion of graduates from inner city schools (4 and 5) entered a junior or community college than was reported for any of the other schools. The graduates of a male parochial school followed closely in third place (2).

Types of Post-Secondary Schools Entered (Other than College), Class of 1970 (Table 3.3):

1. The intentions of graduates in relation to the number actually enrolling in post-secondary schools were not as definite as those entering a college or university (72.9% to 92.8%).

2. Graduates from eight of the 12 schools entered business colleges, with the largest number (10) coming from a girls' parochial school (3).

3. Graduates of all schools entered technical schools, with the largest number (60) coming from a boys' parochial school (2). While 38 of the graduates of a vocational school (9) expressed interest in entering a technical school, only 17 actually enrolled.

4. Sixteen graduates from six of the twelve schools entered a school of cosmetology. There were no entrants from vocational schools.

5. Fifty-eight of 81 graduates from ten schools entering an academy, proprietary, or other schools came from a boys' parochial high school (2).

6. Technical schools were the most popular of the post-secondary, non-college institutions, with 143 of 304 students enrolled (47.2%).

7. Graduates of vocational schools (1 and 9) tend to enroll only in advanced technical programs or four year colleges.

TABLE 3.2

TYPES OF COLLEGES ENTERED
CLASS OF 1970

MU 4

Type of Institution	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
A junior or community college:													
No. planning to enter	--	60	--	63	43	20	2	3	--	1	17	8	217
No. entered	--	55	--	55	36	24	1	3	--	1	16	8	199
A branch campus of a university													
No. planning to enter	8	--	27	3	15	--	15	--	--	3	--	6	77
No. entered	8	--	21	3	--	--	12	67	--	3	--	5	119
A four year college:													
No. planning to enter	--	--	29	28	27	34	15	21	20	14	140	48	376
No. entered	--	--	29	19	15	23	14	21	17	8	141	48	335
A university:													
No. planning to enter	6	200	76	32	116	112	33	159	--	22	427	87	1270
No. entered	8	190	67	37	39	130	52	86	--	14	438	86	1147
No. planning to enter a four year college or university	6	200	105	60	143	146	48	180	20	36	567	135	1646
No. actually enrolling	8	190	96	56	54	153	66	107	17	22	579	134	1482
Percent	133.3%	95.0%	91.4%	93.3%	37.8%	104.8%	137.5%	59.4%	85.0%	61.1%	102.1%	99.3%	99.3%
Total planning to enter a college or university	14	260	132	126	201	166	65	183	20	40	584	149	1940
No. actually enrolling	16	245	117	114	90	177	79	177	17	26	595	147	1800
Percent	114.3%	94.2%	88.6%	90.5%	44.8%	106.6%	121.5%	96.7%	85.0%	65.0%	101.9%	98.7%	92.8%
Percent of graduates actually enrolling in a college or university	5.1%	53.1%	29.8%	42.2%	15.9%	49.2%	34.6%	32.2%	3.4%	20.8%	85.0%	90.7%	38.9%[1]

[1] If corrections are made by excluding the two vocational schools (#1 and 9), the percent of the graduates enrolling in a college or university increases from 38.9 per cent to 46.3 per cent.

4600

TABLE 3.3

TYPES OF POST-SECONDARY SCHOOLS ENTERED (OTHER THAN COLLEGE)
CLASS OF 1970

MU 4

Type of Institution	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
A business college													
No. planning to enter	--	--	10	2	5	3	6	5	--	4	6	--	41
No. entered	--	--	10	3	1	2	2	5	--	2	3	--	28
A technical school													
No. planning to enter	4	60	23	2	23	10	11	13	38	7	8	2	201
No. entered	6	60	12	1	11	11	3	9	17	4	7	2	143
Nurses training													
No. planning to enter	--	--	14	3	11	2	5	3	3	2	4	1	48
No. entered	--	--	13	--	5	4	3	3	3	1	3	1	36
School of cosmetology													
No. planning to enter	--	--	4	--	--	--	14	2	--	--	--	--	20
No. entered	--	--	3	1	--	1	7	1	--	--	3	--	16
An institute[1]													
No. planning to enter	1	20	--	--	2-	--	--	1	--	--	6	1	49
No. entered													
Other (Academy, proprietary, other)													
No. planning to enter	--	42	2	--	2	1	6	2	2	1	--	--	58
No. entered	--	40	2	1	--	--	1	3	7	--	1	--	55
Reported as unknown	--	--	--	--	--	--	(23)	--	--	--	(23)	--	
Total planning to enter a Bus. Col., Tech. Sch., Nurses Tr., Cos. Institute, or other	5	122	53	7	61	16	42	26	43	14	24	4	417
No. actually enrolling	6	118	40	7	18	20	16	21	27	7	20	4	304
Percent of grads. enrolled in above schools to the number planning to enroll	120.0%	96.7%	75.5%	100.0%	29.5%	125.0%	38.1%	80.8%	62.8%	50.0%	83.3%	100.0%	72.9%
Percent of grads. enrolled in above schools to the total number of graduates	1.9%	25.3%	10.2%	2.6%	3.2%	5.5%	7.0%	3.8%	5.4%	5.5%	2.9%	2.4%	6.6%

[1]The classification of "Institute" was included at the request of some of the local coordinators. In general, it refers to a specific type of school, usually with a narrow or limited program dealing with specific areas of a vocational or technical nature. The length of time may be for a very short period of a few weeks to two years or more.

4601

Percentage of Graduates Enrolling in Post-Secondary programs, Class of 1970 (Table 3.4):

Are all graduates reported as college-bound really college bound? That is, do the figures reported in the spring by the various school districts realistically indicate the number (1) that actually enroll in some kind of a post-secondary program, and (2) that enroll in a college or university? The data for the class of 1970 were sufficiently complete to provide information for further analysis and interpretation (Table 3.4):

1. 51.2 per cent of the graduates planned to enter some post high school training program.
   45.2 per cent of the graduates actually enrolled in some post high school training program.
   38.9 per cent of the graduates actually enrolled in a college or university.
   6.6 per cent of the graduates enrolled in a post-secondary program other than a college or university (nurses training, technical school, business college, cosmetology schools, etc.)

2. Nearly six per cent of those reported as college-bound in June did not enroll in any post-secondary institution during the summer or fall of 1970.

3. More than one of every ten graduates (11.1% who hoped to go to college at the time of graduation failed to do so.

4. The largest percentage of graduates entering a post-secondary school other than a college or university came from parochial high schools (2 and 3, 12.0% and 10.0% respectively).

5. Ten of the twelve high schools reported as "college-bound" all graduates planning to enroll in some post-secondary school.

6. The schools reporting with greatest accuracy (less than 5% deviation) the number of students planning to enter post-secondary programs and the number actually enrolling were suburban schools, large city high schools, and the city vocational high school.

7. High schools having the largest percentage of graduates enrolling in a college or university were suburban districts (90.7% and 85.0%), a boys' parochial school (53.1%), and a large city high school (49.2%).

TABLE 3.4

PERCENTAGE OF GRADUATES ENROLLING IN POST SECONDARY INSTITUTIONS
CLASS OF 1970

Graduates	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
Number of graduates	314	461	392	270	565	360	228	125	550	500	700	162	4,626
Percentage of graduates reported as college-bound	7.6	90.7	47.2	54.8	46.4	50.8	40.0	38.0	12.6	30.4	84.9	94.4	51.2
Per cent of graduates actually enrolled in:													
A college or university	5.1	53.1	29.8	42.2	15.9	49.2	34.6	32.2	3.4	20.8	85.0	90.7	38.9
A post-secondary institution other than a college or university	1.9	25.3	10.2	2.6	3.2	5.5	7.0	3.8	5.4	5.5	2.8	2.4	6.6
A college, university, or some post-secondary institution	7.0	78.7	40.1	44.8	19.1	54.7	41.7	36.0	8.8	26.4	87.9	93.2	45.5
Difference in percentage (by subtraction) between the number reported as college-bound and the number actually enrolling in a post-secondary institution	+ .6	+12.0	+ 7.1	+10.0	+27.3	-3.9	+1.7	+2.0	-3.8	-4.0	-3.0	-1.2	+5.7
Difference in percentage (by subtraction) between the per cent enrolled in a college or university and the number reported as college-bound	+2.5	+37.6	+17.4	+12.6	+30.8	+1.6	+5.4	+5.8	+9.2	+9.6	- .1	+3.7	+12.3

460 603

8. The same schools identified in item 6, above, had the largest percentage of graduates attending a college, university or other post-secondary institution (93.2%, 87.9%, 78.7%, and 54.7% respectively).

Location of Institutions in Which 1970 Graduates Enrolled (Table 3.5):

Do the graduates of Ohio high schools attend colleges and universities in Ohio, or do large numbers of them go across state lines? For the 1970 graduates of the twelve schools studied the answer is as follows (Table 3.5):

1. Four of every five college-bound graduates of the twelve high schools attended a college or a university in Ohio (1,676 or 80.9%).

2. An equal number of graduates attended colleges and universities in states contiguous with Ohio as attended institutions in all of the other states in the nation (196 and 195).

3. Only one graduate in 412 (or 5 out of 2,072 graduates) students attended a college or a university in a foreign country.

4. Graduates from suburban, large city, and boy's parochial schools (11, 12, 6, and 2) selected colleges located throughout the United States more frequently than did the graduates of the other schools.

1964 and 1967 Graduates

Data comparable to that presented above for the class of 1970 are not available for the classes of 1964 and 1967. Neither school records nor responses by the graduates was sufficient to give information in detail or to the extent as that provided by the Local Coordinators for the high school graduates entering college during the summer or fall of 1970. However, some information is available as reported by those graduates who responded to the questionnaire. Twenty-four and four-tenths per cent of the 1964 graduates and 35.6 per cent of the 1967 graduates responding to the questionnaire have given some clues to the holding power of the colleges and universities. However, it must be remembered that this analysis is based upon those who chose to respond to the questionnaire, and that it does not represent the entire class. Also, it is evident that a larger number of responses were received from those who have attended college than for those who did not pursue training beyond the high school and probably for those who dropped out of college prior to graduation. The data presented below will have significance within this context, and within the limitations of this potentially skewed response.

TABLE 3.5

LOCATION OF INSTITUTIONS IN WHICH 1970 GRADUATES ENROLLED

MU 4

State or region	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
Ohio	20	265	149	113	100	136	87	171	37	24	487	87	1676
State contiguous to Ohio:													
Indiana	3	20	1	--	--	10	1	2	--	1	20	5	63
Kentucky	--	45	4	--	--	8	4	5	--	1	10	8	85
Michigan	--	5	--	1	4	4	--	5	--	2	9	5	35
Pennsylvania	--	--	--	2	1	3	--	1	--	--	2	3	12
West Virginia	--	--	--	--	--	--	--	--	--	--	1	--	1
Total	3	70	5	3	5	25	5	13	--	4	42	21	196
Other states by regions:													
Southern states	--	2	--	2	--	6	2	6	--	--	16	6	40
Eastern states	--	7	1	--	--	13	1	4	--	--	14	14	54
Central states (east of the Mississippi)	--	18	1	3	1	4	--	1	--	--	9	8	45
Western states (west of the Mississippi)	--	--	1	--	1	11	--	3	--	--	27	13	56
Total	--	27	3	5	2	34	3	14	--	--	66	41	195
Foreign countries	--	--	--	--	1	1	--	--	--	--	1	2	5
Total	23	362	157	121	108	196	95	198	37	28	596	151	2072
Unknown or not reported	--	--	--	--	--	--	--	--	--	5	19	--	24
Percent of the graduates attending institutions in:													
Ohio	87.0	71.3	94.9	93.4	92.6	69.4	91.6	86.4	100	85.7	81.7	57.6	80.9
Neighboring states	13.0	19.3	3.2	2.5	4.6	12.8	5.2	6.6	--	14.3	7.0	13.9	9.5
Other states	--	7.5	1.9	4.1	1.9	17.3	3.2	7.1	--	--	1.1	27.2	9.5
Foreign countries	--	--	--	--	.9	.5	--	--	--	--	.2	1.3	.24

4605

There were 3669 graduates from 11 schools in 1964. Records from the schools indicated that 1257 (34.2%) of this number enrolled in a post-secondary school program. The distribution of these students by classification of schools was as follows: rural - 4.5% (only one school reported); city - 36.6%; central city - 7.2%; suburban - 38.3%; vocational - 1.4% and parochial - 19.4% (Table X3.17). However, the percentages vary somewhat when the ratios for withdrawals from college prior to the attainment of a degree are determined by classifications of schools (computed from Table 3.6). These were as follows: rural - 14%; city - 23.2%; central city - 39.6%; suburban - 13.1%; vocational - not available; parochial - 20.5%.

There were 4337 graduates from 12 schools in 1964. Records from the schools indicated that 1776 (40.9%) of this number enrolled in a post-secondary school program. The distribution of these students by classification of schools was as follows: rural - 112, 6.3%; city - 384, 21.6%; central city - 135, 7.6% suburban - 668, 37.6%; vocational - 67, 3.8%; and parochial - 410, 23.1%. As was true for the graduates of 1964, the ratios for withdrawals from college prior to completion of the third year vary from those given above. These were as follows: rural - 20.5%; city - 18.0%; central city - 23.7%; suburban - 11.8%; vocational - 29.9%; parochial - 16.3%; and 16.3% for all students.

According to this record, the best holding power in the colleges was recorded for the graduates of suburban schools. There is probably very little difference in the holding power of the colleges for the two classes, since the data were based on withdrawal with less than four years of college work for the high school class of 1964, and on three years of work for the class of 1967.

The data provide one additional way in which to look at the holding power of the colleges. Four hundred fifty-four (454) of the 1964 graduates reported having earned bachelors degree or higher. This number represents 12.4 per cent of the 4337 graduates, and 50.8 per cent of the 1534 responding to the questionnaire (Table 3.7). Of this number, 89.2 per cent followed the college preparatory program in high school, 4.8 per cent the practical arts program, 4.5 per cent the general program, and 1.5 per cent the vocational program.

Summary Statement

More than half of the 1970 graduates of the twelve schools studied had post-secondary school aspirations (51.2%), and nearly nine of every ten (88.8%) were able to realize this ambition. This means that 45.5 per cent of the graduates attended a college, a university, or other post-secondary institution, and that more than one in ten of those graduates (11.1%) who wanted to go to college failed to do so.

TABLE 3.6

WITHDRAWALS FROM COLLEGE PRIOR TO COMPLETION OF WORK

Type of School	Less than 1 yr.	1 yr. less than 2 yrs.	2 yrs. less than 3 yrs.	3 yrs. less than 4 yrs.	Total	No. grads. reported enrolled	Percent withdrawn with less than 4 yrs.
			Class of 1964				
			College Preparation Program				
Rural	2	-	1	2	5		
City	8	16	13	10	47		
Central City	2	6	3	2	13		
Suburban	3	13	23	15	54		
Vocational	--	--	--	--	---		
Parochial	9	8	10	11	38		
TOTAL	24	43	50	40	157		
			General Program				
Rural	--	1	--	--	1		
City	7	6	3	2	18		
Central City	2	1	1	1	5		
Suburban	1	1	2	--	4		
Vocational	--	--	--	--	---		
Parochial	1	--	--	--	1		
TOTAL	11	9	6	3	29		
			Vocational				
Rural	--	--	--	--	---		
City	1	1	--	--	2		
Central City	1	5	--	--	6		
Suburban	--	--	--	--	---		
Vocational	8	7	3	2	20		
Parochial	--	--	--	--	---		
TOTAL	10	13	3	2	28		
			Practical Arts				
Rural	1	--	1	--	2		
City	8	7	1	2	18		
Central City	8	1	1	2	12		
Suburban	--	3	2	--	5		
Vocational	--	--	--	--	---		
Parochial	4	3	3	1	11		
TOTAL	21	14	8	5	48		
			TOTAL				
Rural	3	1	2	2	8	57	14.0
City	24	30	17	14	85	366	23.2
Central City	13	13	5	5	36	91	39.6
Suburban	4	17	27	15	63	481	13.1
Vocational	8	7	3	2	20	18	.2
Parochial	14	11	13	12	50	244	20.5
TOTAL	66	79	67	50	262	1257	20.8

[1] For the purposes of this table the schools were classified as follows: Rural - 7 and 10; City - 6 and 8; Central City - 4 and 5; Suburban - 11 and 12; Vocational - 1 and 9; and, Parochial - 2 and 3.

[2] There was no record for one school in 1964 (Table X - 3.1)

TABLE 3.6 (Continued)

WITHDRAWALS FROM COLLEGE PRIOR TO COMPLETION OF WORK

Type of School[1]	Less than 1 yr.	1 yr. less than 2 yrs.	2 yrs. less than 3 yrs.	Total	No. grads. reported enrolled	Percent withdrawing with less than 3 yrs.[3]
			Class of 1967			
			College Preparation Program			
Rural	5	5	8	18		
City	7	16	17	40		
Central City	6	2	1	9		
Suburban	11	21	40	72		
Vocational	--	--	--	--		
Parochial	10	11	33	54		
TOTAL	39	55	99	193		
			General Program			
Rural	--	--	1	1		
City	7	5	8	20		
Central City	2	3	4	9		
Suburban	1	2	2	5		
Vocational	--	--	2	2		
Parochial	2	3	1	6		
TOTAL	12	13	18	43		
			Vocational			
Rural	1	1	1	3		
City	1	--	1	2		
Central City	2	3	2	7		
Suburban	--	--	--	--		
Vocational	11	3	4	18		
Parochial	--	--	--	--		
TOTAL	15	7	8	30		
			Practical Arts			
Rural	1	--	--	1		
City	2	3	2	7		
Central City	2	2	3	7		
Suburban	1	1	--	2		
Vocational	--	--	--	--		
Parochial	1	3	3	7		
TOTAL	7	9	8	24		
			TOTAL			
Rural	7	6	10	23	112	20.5
City	17	24	28	69	384	18.0
Central City	12	10	10	32	135	23.7
Suburban	13	24	42	79	668	11.8
Vocational	11	3	6	20	67	29.9
Parochial	13	17	37	67	410	16.3
TOTAL	73	84	133	290	1776	16.3

[1]For the purposes of this table the schools were classified as follows: Rural - 7 and 10; City - 6 and 8; Central City - 4 and 5; Suburban - 11 and 12; Vocational - 1 and 9; and, Parochial - 2 and 3.

[2]Graduates of 1967 would normally have completed three years of college work when this study was made, or perhaps beyond three years with attendance during four quarters of one or more of the three years. Therefore, all students responding with four or more years of training were classified as "Continuing training."

[3]Reported from school records.

TABLE 3.7

HIGHEST EARNED DEGREE BY 1964 GRADUATES

Degree	Track: College Prep.	General	Vocational	Practical Arts	Total
		Number of Responses			
AB; BS	284	5	2	7	298
Master's degree	29	2	--	1	32
Associate degree	18	7	1	4	30
PhD; EdD	1	--	--	--	1
MD; DDs	5	--	--	--	5
Other	68	6	4	10	88
TOTAL	405	20	7	22	454
		Percent of Responses by Degree			
AB; BS	70.1	25.0	28.6	31.8	65.6
Master's degree	7.2	10.0	---	4.5	7.1
Associate degree	4.4	35.0	14.3	18.2	6.6
PhD; EdD	.2	---	---	---	.2
MD; DDs	1.2	---	---	---	1.1
Other	16.8	30.0	57.1	45.5	19.4
TOTAL	99.9	100.0	100.0	100.0	100.0
		Percent of Responses by Track			
AB; BS	95.3	1.7	.7	2.3	100.0
Master's degree	90.6	6.3	---	3.1	100.0
Associate degree	60.0	23.3	3.3	13.3	99.9
PhD; EdD	100.0	---	---	---	100.0
MD; DDs	100.0	---	---	---	100.0
Other	77.3	6.8	4.5	11.4	100.0
TOTAL	89.2	4.5	1.5	4.8	100.0

There was one major exception to the above statement. While many 1970 graduates of inner city schools wanted to attend a post-secondary school, only about one in three were able to fulfill this desire (except East Technical in Cleveland, where 81 per cent of those 1970 graduates who wanted to attend a post-secondary program were able to do so). For example, only 61 of 175 West Technical graduates in Cleveland (1964) wishing to enroll in a post-secondary program were able to do so (35%). The per cent of inner city school students wanting to attend a post-secondary program and able to do so were as follows:

	East Technical	West Technical
1970	81%	41%
1967	36%	29%
1964	31%	35%

The graduates have generally tended to enter colleges and universities (92.9%) with the larger group entering a university (63.9%). Four of every five college-bound graduates (80.9%) enrolled in an Ohio college. One in ten (9.3%) attended a college or a university in an adjoining state, and one in ten (9.5%) selected a higher education institution located in other than adjacent states. Only 0.24 per cent of the college-bound graduates attended an institution located in a foreign country.

Additional selected summary statements from the data presented in Part I includes the following:

1. The number of graduates enrolling in a post-secondary program increased by 9.2 per cent from 1964 to 1970.

2. In general, graduates of vocational track programs in high school do not continue their education in college, although the trend is upward in this area.

3. In general, five to eight per cent of the high school graduates do not enroll in any post secondary program after having expressed intentions to do so.

4. The record for the 4,626 graduates of the class of 1970 indicates that:
   a. 51.2 per cent planned to continue some kind of education beyond high school.
   b. 45.2 per cent actually enrolled in some post-secondary program.
   c. 38.9 per cent enrolled in a college or university.
   d. 6.6 per cent enrolled in post-secondary programs other than colleges or universities.
   e. 6.0 per cent did not enroll in a post-secondary program after expressing intention to do so.

5. Four of every five college-bound graduates attended an Ohio college or university (80.9%).

6. While the data are incomplete for the entire class, that which is available indicated that one in five (20.8%) of the 1964 graduates who enrolled in a college program withdrew prior to the attainment of a degree.

7. Again, the data are incomplete for the entire class, but that which is available in this study indicated that one in six (16.3%) of the 1967 graduates who enrolled in a college program withdrew prior to the completion of the third year (The data were collected prior to the enrollment for the fourth year).

8. While the number of graduates entering college from vocational programs in high school is smaller than for any other track, the per cent of those that complete college is higher than for those from any other program. For example, the per cent of students by high school track that left college prior to graduation was as follows: Practical Arts - 40.3 per cent; General - 29.9 per cent; College Preparatory - 27.9 per cent; and, Vocational - 24.1 per cent.

9. The percentage of college drop-outs by high school track for the class of 1967 during the first three years was as follows: General - 29.1 per cent; College Preparatory - 25.1 per cent; Practical Arts - 18.2 per cent; and, Vocational - 17.6 per cent.

10. Of the 454 college graduates from the 1964 high school graduating class, 89.2 per cent had pursued the college preparatory program in high school, 4.8 per cent the practical arts program, 4.5 per cent the general program, and 1.5 per cent the vocational program.

PART II

A Report From the Permanent Records

Part I reported on the college-bound student for the classes of 1964, 1967 and 1970. Part II will present data selected from the permanent records of each 1964 and 1967 high school graduate of the twelve high schools. The Local Project Coordinator in each school assisted in the development of the form utilized in this part of the study and was responsible for the gathering and reporting of the information as requested on the questionnaire (Form MU 1).

Questionnaire Returns - MU 1

The total number of usable forms returned by the Local Project Coordinators were 8,811 (Table 3.8). Of this number, 7,590 were for the 1970 graduates, representing a 95.6 per cent return. The graduating class of 1967 had a 96.2 per cent return, while 1964 had 85.9 per cent. Usable forms for 1967 dropouts and withdrawals numbered 1,413.

Male and Female Students

More male than female students were reported in the study. Of the 8,806 total (five cards were rejected by the computer), 4571 were male and 4235 female, or 51.9 and 48.1 per cent respectively (Table X-3.4). While the female graduates slightly outnumbered the males in 1964 (1,646 and 1,605), the male students outnumbered the females in 1967 (2,160 and 1,983).

Of more significance was the number of those students who dropped out of school at some point between admission to the school and graduation time with the class of 1967. Of the 1,413 dropout students, 807 were male and 606 were female, or 57.1 and 42.9 per cent respectively. There does not appear to be any significant difference in male-female dropout rates when examined by schools. Although the male dropout rate is higher in an inner ceity school (4 - 61%) and 39%), the rate is relatively normal in another inner city school (5 - 52% and 48%). And, while the percentage of male dropout students is high in school nine (67%), it should be noted that the number of male students is more than double the number of female students (a Joint Vocational School District).

Year of Entrance to the High School

As might be expected, most of the graduates entered their respective high schools at the normal time for admission. They entered as freshmen in four-year high schools, as sophomores in three-year high schools, and as juniors and seniors in the joint vocational school. With corrections being made for the three-year and vocational schools, the number of entrants by years after the normal opening of the school were 45, 31, 104 and 68 in each of the respective four high school years, with 32 being listed as "other" (Table R-3.4). Thus, more transfer students enrolled during their junior year than during the freshman, sophomore or senior years.

Only one factor was observed which may warrant further investigation by those interested. The number of dropouts, which represented about one third of the number in the graduating class for 1967, had a higher rate of late-entrance, particularly in the

TABLE 3.8

QUESTIONNAIRE RETURNS FROM HIGH SCHOOL RECORDS

Graduates	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
Class of 1964:													
No. of graduates	325	299	305	350	630	310	213	535	--[1]	110	489	103	3669
No. of forms received	315	290	304	184	498	235	209	513	--	112[2]	492[3]	101	3253
Per cent returns	96.9%	96.9%	99.7%	52.6%	79.0%	75.8%	98.1%	95.9%	--	101.8%	100.6%	98.1%	85.9%
Class of 1967:													
No. of graduates	325	410	363	234	545	335	236	535	500	110	593	151	4337
No. of forms received	283	404	360	237	528	303	235	533	405	117	589	151	4145
Per cent of returns	87.1%	98.5%	99.2%	101.3%	96.9%	90.4%	99.6%	99.6%	81.0%	106.4%	99.3%	121.7%	95.6%
Dropouts (Class of 1967)[4]													
No. of forms received	81	91	48	230	273	112	101	269	82	37	88	1	1413
Total forms received	679	785	712	651	1299	650	545	1315	487	266	1169	253	8811

[1]There was no graduating class at the Penta County JVS in 1964.

[2]It is possible that some cards were incorrectly punched or that a form was incorrectly checked which made possible more than a 100 per cent return for a given class in some schools.

[3]It is possible that some cards were incorrectly punched or that a form was incorrectly checked which made possible more than a 100 per cent return for a given class in some schools.

[4]Students who dropped out of school but who should have graduated with the class of 1967, had they continued in school.

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ninth and tenth grades. The entrance of the dropout students into their respective high schools after the normal opening of the school were 76, 50, 39 and 21 respectively. Although data in this study do not provide a clue to the cause, it might be hypothesized that the dropout student comes from a home that is more transient then may be so for other students.

Schools Attended Prior to Enrollment in This High School

As would be normally expected, the largest number of the students entered their high school from a public school (Table R-3.5). Only a few students enrolled from private schools (21), from military schools (10), from government dependent schools (5) or others (16). The largest number of enrollees from non-public schools (2126) came from parochial schools. When this number is corrected for the two parochial schools which draw their enrollees almost entirely from other parochial schools, the number is reduced from 2,126 to 660. Thus, 660 parochial students transferred to a public high school, with two schools receiving 80 per cent of this total. One public vocational school (1) drew a large number from a parochial school (121), as did one large inner city school (5-407).

Location of School Previously Attended

Seventy-six per cent of the students in this study entered their high school from another school within the same school district (Table R-3.1). An additional 19 per cent came from a school district located in the same county. Thus, 95 per cent of the students enrolled from a school within the same county as the high school from which they graduated or from which they dropped out of school.

High School Program of Studies

Nearly one of every two students reported in this study (42.1) pursued the college preparatory program in their resident high school (Table 3.9). This is only slightly more than the average (class of 1970) that actually enrolled in a college or university (38.9%). More than one in five of the students followed the general program (22.1%), and the vocational program (21.3%), and one in seven (14.5%) studied in the area of practical arts.[1]

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[1] "Practical Arts" is a somewhat controversial term. It is used in this study to designate those subjects which may prepare for employment, but which are supported with funds derived from local sources. Some administrators accept "Practical Arts" as a track in the program, comparable to those designated as general, college preparatory and vocational. The Practical Arts may include such areas as Industrial Arts, Home Economics, Business Education, Secretarial Training, and Bookkeeping.

TABLE 3.9

HIGH SCHOOL PROGRAM OF STUDIES

High school program	Number of student by school number													
	1	2	3	4	5	6	7	8	9	10	11	12	Total	Percent
Class of 1964:														
College preparatory	--	244	145	46	129	160	58	203	--	48	438	136	1603	48.5%
General	14[3]	--	83	77	138	53	46	130	--	14	32	--	587	17.7%
Vocational education[1]	301	--	--	73	88	--	50	96	--	32	--	--	640	19.3%
Practical arts	--	46	76	1	143	26	55	87	--	21	23	--	478	14.5%
Class of 1967:														
College preparatory	--	323	166	63	84	166	72	192	--	59	518	151	1794	43.3%
General	31[3]	--	87	83	159	89	61	154	--	20	49	--	733	17.7%
Vocational education	252	1	--	91	110	1	43	107	405[4]	28	--	--	1038	25.0%
Practical arts	--	80	107	--	175	47	59	80	--	10	22	--	580	14.0%
Withdrawals and dropouts (With class of 1967):														
College preparatory	4	34	25	89	41	18	14	39	--	8	64	1	337	23.8%
General	53[3]	--	22	122	134	85	61	124	--	18	22	--	641	45.4%
Vocational education	24	--	--	13	53	--	9	27	82[4]	4	--	--	212	15.0%
Practical arts	--	57	1	6	45	9	17	79	--	7	2	--	223	15.8%
Total, all responses:														
College preparatory	4	601	336	197	254	344	144	434	--	112	1020	288	3734	42.1%
General	98[3]	--	192	282	431	227	168	408	--	52	105	--	1963	22.1%
Vocational education	577	1	--	177	251	1	102	230	487[4]	64	--	--	1890	21.3%
Practical arts	--	183	184	7	363	82	131	246	--	38	47	--	1281	14.5%
TOTAL	679	785	712	663	1299	654	545	1318	487	266	1172	288	8,868	

[1]Vocational education - meeting state board standards.

[2]Practical arts - including industrial arts, non-vocational business education, etc.

[3]Students are graduated in the general program if they have enough credits to meet state standards for graduation but not enough to receive a vocational certificate.

[4]Students entering the vocational program in Penta County had previously been enrolled in the following tracks: general - 174; practical arts - 157; college preparatory - 47; and, vocational - 27.

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Two observations are of interest when comparing enrollments and percents of enrollments in the four tracks for the graduates in 1964 and in 1967. Enrollments in each track were higher in 1967, but differences occurred in the proportion of students within these tracks. For example, the ratio declined in the college preparatory program (1964 - 48.5%; 1967 - 43.3%); remained nearly the same in the general program (1964 - 17.7%; 1967 - 17.7%); and in practical arts (1964 - 14.5%; 1967 - 14.0%); and, an increase was made in vocational education (1964 - 19.3%; 1967 - 25.0%).

Of the dropout and withdrawal students involved in this study, nearly one in four (23.8%) studied in the college preparatory track, while nearly one in two (45.4%) was in general education. One in six was in practical arts (15.8%) and in vocational education (15.0%).

Student Withdrawals and Transfers - Class of 1967

There were students in each of the twelve high schools who withdrew to enter another school or who dropped out of school. The data compiled from the official records of the schools by the Local Project Coordinators indicate that this is a much larger problem in some schools than in others. The following represents some of the more significant factors (Table X-3.5):

1. A total of 1408 students withdrew from the twelve high schools prior to graduation.

2. The sophomore and junior years were the heaviest years for withdrawals from school.

3. Of the 1408 withdrawals 627 were reported withdrawing to enter another school (46.0%).

4. One student withdraws to enter another school or to drop out of school for every three in the graduating class.

Month in Which Student Withdrew or Dropped Out of School

Do more students withdraw and drop out of school in the fall? During what months are the highest number of withdrawal and/or dropout students recorded? For the students who should have graduated with the class of 1967 but withdrew or dropped out of school, the answers to these and related questions are as follows (Table R-3.2):

1. A total of 1413 students withdrew to enroll in another school or to drop out of the twelve schools in this study.

2. If the total of withdrawals and dropouts (1413) were added to the number of graduates, then one in five (20.9%) withdraw after enrollment to enter another school or to drop out of school.

3. The months in which these students withdrew or dropped out of school were:

a.	June	421	f.	February	88
b.	September	282	g.	March	84
c.	January	126	h.	April	66
d.	November	122	i.	December	55
e.	October	119	j.	May	50

4. A total of 40.9 per cent of the students withdrew or dropped out of school between September and Christmas.

5. The two heaviest months for inner city schools were October and November (4) and September and January (5).

Why Dropouts Drop Out

What do the official school records indicate as to the primary reason for students leaving school prior to graduation? The report is as follows (Table 3.10):

1. "To go to work" is the response for 25.4 per cent of the known reasons.

2. Marriage and doctor's certificate are the next most often recorded reasons (11.8%).

3. There were no recorded reasons for leaving school because of: financial problems in the home, teacher-pupil conflict, or the discouragement caused by low grades.

4. Since there were more recorded reasons as "other" (402) than there were for specified reasons (268), apparently the prepared list of reasons for the withdrawal of the dropout student was inadequate.

5. More than one in every two withdrawals being unknown or not reported, school records are very incomplete on causes for student withdrawal from school.

TABLE 3.10

PRIMARY REASON FOR WITHDRAWAL OF THE DROPOUT STUDENT
(Based on official school records)

Items 27-28, MU 1

Primary reason for withdrawal of the dropout student	Number of students by school number												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
To go to work	--	--	--	38	106	--	19	--	--	--	7	--	170
Financial problems in family	--	--	--	--	--	--	--	--	--	--	--	--	--
Doctor's certificate	--	--	--	26	1	--	--	--	--	--	1	--	28
Conflict/problems in home	--	--	--	1	--	--	--	--	--	--	1	--	2
Illness - personal	--	--	--	1	--	--	2	--	--	--	--	--	3
Illness - family	--	--	--	--	--	--	--	--	--	--	--	--	--
Teacher-pupil conflict	--	--	--	--	--	--	--	--	--	--	--	--	--
Discouraged - low grades	--	--	--	--	--	--	--	--	--	--	--	--	--
Discouraged - various reasons	--	--	--	--	--	--	1	--	--	--	4	--	5
Marriage	2	--	--	9	27	--	13	--	--	--	--	--	51
Expelled	--	--	--	--	--	2	2	1	3	1	--	--	9
Other	38	2	--	145	131	5	11	48	19	3	--	--	402
Unknown	11	2	5	4	3	3	--	6	12	2	5	--	53
Totals	51	4	5	224	268	10	48	55	34	6	18	--	723
No record; no report													690
											Total		1413

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The Dropout Returns to School

The official school records indicate that a relatively small number of dropouts return to the high school from which they withdrew, and that the number who remain to graduate is even smaller. The data (Table R-3.3) may be summarized as follows:

1. The twelve high school reported 83 dropout students returning for further work and 749 that did not return. Of this number, one in ten dropouts returned to school (9.9%).

2. Item one, above, accounts for a total of 832 dropout students, but 1413 were reported in Table 3.7. If it may be assumed that the remaining 581 did not return, then only one in 18 dropout students returned to school (5.8%).

3. It was reported that a total of 285 dropout students entered another school at a later time. Of this number 202, or 70.0 per cent enrolled in a public school.

4. Dropout students (209) were reported as subsequently entering a night school, business school or college, a college or university, or some other post-secondary program. Of this number 68 enrolled in a night school.

5. A total of 292 dropout students were reported as returning to the high school (83) or entering some other type of institution (209). Thus, one in five (20.6%) of the 1413 dropout students returned to some institution for further training.

Employment of the Dropout

School records are very incomplete on the employment record of the dropout student. Only 143 (10.1%) are known to have been employed immediately upon leaving school; and only 57 (4.0%) were known to have dropped out of school without being employed immediately. This leaves 85.9 per cent unaccounted for, with regard to employment or withdrawal to enter another school (Table 3.11).

Summary Statement

Data were secured from the permanent records in the office of the twelve high schools for the graduates for the classes of 1964 and 1967, and for withdrawals and dropouts for the class of 1967. A total of 8811 forms were returned, representing 96.2 per cent of the 1967 graduates, and 85.9 per cent of the 1964 graduates.

TABLE 3.11

EMPLOYMENT OF THE DROPOUT STUDENT

Item 32, MU 1

Item question	Number of students by school number												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
Did the dropout student become employed immediately upon leaving school?													
Yes	5	3	--	5	25	8	22	59	12	--	4	--	143
No	4	--	--	6	--	--	20	20	2	1	4	--	57
No record; unknown	69	9	--	70	243	1	3	78	48	4	8	1	534
Totals	78	12	--	81	268	9	45	157	62	5	16	1	734
No report													679
Total reported dropouts and withdrawals (Table X-3.7)													1413

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The majority of the students entered their respective high schools from within the same district or from another district within the same county (95%). More than two of every five graduates (42.1%) followed the college preparatory program. Twenty-two and one tenth per cent followed the general track, 21.3 per cent the vocational program, and 14.5 per cent the practical arts area.

While total enrollments increased within each track from 1964 to 1967, the distribution of students within these tracks changed. The per cent of students graduating decreased in the college preparatory program (48.5% to 43.3%), remained constant in the general program (17.7% and 17.7%) and in practical arts (14.5% and 14.0%), and increased in vocational education (19.3% and 25.0%).

Nearly one in two dropout students had been enrolled in the general program (45.4%), one in four in the college preparatory track (23.8%), and one in six in practical arts (15.8%) and in vocational education (15.0%).

The 1967 graduates from Penta County Vocational School had enrolled from high schools located in five counties. Prior to entering the vocational program they had been pursuing the following tracks: general - 174; practical arts - 157; college preparatory - 47; and, vocational - 27.

June and September were the two heaviest months in which students withdrew or dropped out of school. The records indicate that one of four students (25.4%) dropped out of school to go to work. Only one of ten students that dropped out returned to school. Only one in ten (10.1%) were known to have been employed immediately upon leaving school. And finally, school records are very incomplete in regard to information about the students who withdraw or drop out.

PART III

Responses By The Graduates

Data gathered from each student's permanent records on file in the school offices provide only one part of the information significant to this study. Of equal and perhaps even greater importance was the story told by the graduates and the dropouts themselves. A questionnaire was developed for this purpose (see Chapter II) and mailed to 8006 graduates and to the dropouts as determined by each school.

A total of 2,606 completed questionnaires was received, of which 2,438 were from high school graduates, a return of 30.5 per cent. A total of 168 were received from dropout students (Table 3.9).

Eight hundred ninety-four completed forms were received from the graduates of 1964 (24.4%), and 1,544 from the class of 1967 (35.6%). The school having the highest percentage of returns was Wyoming (61.8%), with Canton Timkin second (57.5%). There were returns of less than twenty per cent from the graduates of three schools (4, 5 and 9 - 5.8%, 15.0%, and 17.1%). The range was from 5.8 to 61.8 per cent.

The data were placed on IBM punch cards and tables were prepared from the information provided on the computer print-outs. This information will be presented under separate sub-headings which will correspond generally to the questions used in the questionnaire forms (MU 2 for graduates and MU 3 for dropouts).

Number of Male and Female Respondents

Of the respondents from the class of 1964, 48 per cent were male and 52 per cent female (Table 3.12). The respondents from 1967 were 40.3 per cent male and 59.7 per cent female. The total of all graduates responding to the questionnaire was 2,438, of which 43.1 per cent were male and 58.6 per cent female. Thus, the percentage of returns from female graduates averaged 13.5 higher than the males' percentage of returns.

The percentage of male graduate respondents ranged from a low of 38.1 (8) to a high of 49.3 (5), excluding from consideration the all boys' and all girls' parochial schools (2 and 3). Therefore, in the ten schools remaining, the responses received from girls exceeded the number received from boys in all instances.

The return of completed questionnaires by school dropouts (those who should have graduated with the class of 1967) was disappointingly low. Only 168 forms were received from 1413 dropout students or 11.9 per cent (Table 3.8). However, the return is acceptable when consideration is given to the problems encountered by the Local Project Coordinators. They found it almost impossible to locate these students, either within the community or in a new location due to lack of forwarding addresses. Of the returns received, the ratio of male to female respondents was very similar to those for the graduates. Sixty-nine male and 99 female dropout students returned the questionnaire (41.4 and 58.6 per cent respectively).[1]

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[1] Responses by dropout students to questions which were also asked of the graduates will be presented in Part III. Responses to questions different from those addressed to the graduates will be presented in Part IV.

TABLE 3.12

QUESTIONNAIRE RETURNS BY GRADUATES AND DROPOUTS

No. questionnaires returned by:	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total	Percent
Class of 1964:														
Male students	39	79	--	9	46	35	23	71	--	16	86	25	429	48.0
Female students	37	--	82	5	41	31	8	114	--	19	104	24	465	52.0
Total	76	79	82	14	87	66	31	185	--	35	190	49	894	
Class of 1967:														
Male students	130	84	--	7	53	39	26	75	30	18	109	51	622	40.3
Female students	168	--	174	13	61	57	43	123	45	30	151	57	922	59.7
Total	298	84	174	20	114	96	69	198	75	48	260	108	1544	
Total Graduates (1964 + 1967):														
Male students	169	163	--	16	99	74	49	146	30	34	195	76	1051	43.1
Female students	205	--	256	18	102	88	51	237	45	49	255	81	1387	56.9
Total	374	163	256	34	201	162	100	383	75	83	450	157	2438	
Percent: Male	45.2	100.0	--	47.1	49.3	45.7	49.0	38.1	40.0	41.0	43.3	48.4	43.1	
Female	54.8	--	100.0	52.9	50.7	54.3	51.0	61.9	60.0	59.0	56.7	51.6	56.9	
Percent of Graduates returning questionnaire	57.5	23.0	38.3	5.8	17.1	25.1	22.3	35.8	15.0	37.7	41.6	61.8	30.5	
Dropouts (class 1967, MU 3)														
Male students	4	--	--	3	12	12	24	5	4	2	1	2	69	41.4
Female students	5	--	25	5	4	10	26	13	3	6	--	2	99	58.6
Total	9	--	25	8	16	22	50	18	7	8	1	4	168	
Grand Total:														
Male students	173	163	--	19	111	86	73	151	34	36	196	78	1120	43.0
Female students	210	--	281	23	106	98	77	250	48	55	255	83	1486	57.0
Total	383	163	281	42	217	184	150	401	82	91	451	161	2606	

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Student Responses to Questions

Question: In your opinion what subject area was most helpful and what of least value to you? (Check one or more in each column):

Since this question deals with subject matter areas, it would be desirable to first review the choices available to the students from the various schools in the study. Copies of subjects and units offering during 1970-71 was secured from the Principal's Report in the State Department of Education. These were tablulated by units for the subject areas utilized in the questionnaire (Table 3.13). It will be noted that the range of offerings by schools was quite varied, ranging from 60 units in a suburban school to 144 1/4 in a comprehensive city high school. The average number of units offered in these twelve schools was: rural - 72.0; city - 131.875; central city - 121.125; vocational - 84.75 (however, this is not a comparable figure, since the students in the Penta County Vocational School enrolled during their junior or senior year for the vocational program received their general courses in their freshmen and sophomore years in their home high school); suburban - 87.5 (The range is 60 to 135); parochial - 65.125; and, total 98.98 (excluding Penta County). When Penta County is excluded, it was found that some schools did not provide any programs in some areas: general home economics - 2 schools (excluding the second vocational school); vocational education - three schools; foreign language - one school; music - one school; and, industrial arts - one school. Usually broad offerings are provided in English and speech; in one suburban school (33 units and in a city school (23 1/2 units). In general, the comprehensiveness of the course offering is directly related to the size of the high school and to the socio-economic structure of the community being served.

Individual differences are very much evidenced in the identification of subject areas considered most and least helpful. There were some graduates who labeled an area most helpful, while others considered the same area of least value. However, some common agreement was reached by a representative number. For example, art was considered to be least valuable by the classes of both 1964 and 1967. Also receiving low ratings were foreign languages, music, and industrial arts.

On the other hand, English was considered by the graduates to be most helpful, with over 90 per cent of both classes favoring it. Other areas checked as being most helpful by 70.0 per cent or more of the graduates were as follows: mathematics, science, business education, history and government, civics, sociology and economics (Table 3.14).

The dropout students made very similar classifications of the subject areas which they considered to be most helpful and of least value. Again, English stood at the top of the list with 90.6 per cent of the respondents saying that this area was most helpful. English was followed by science (82.6%), mathematics (81.2%), business education (74.1%), and history and government (71.3%). Again, art was at the lowest level with 26.2 per cent, with industrial arts (35.3%) second, and foreign language (36.9%) third.

TABLE 3.13

NUMBER OF UNITS OFFERED BY SUBJECT AREA, 1970-71

Subject Area	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Range of Offering
English; Speech	4[1]	8 1/2	7 1/2	7	6 1/2	23 1/2	7 1/2	9 3/4	--	6	33	5 1/2	0- 33
Foreign Language	--	12	12	6	8	16	8	13	--	6	16	14	0- 16
Social Studies	2	5 1/2	6	4 1/2	5 1/4	7 1/2	6	6	--	5	11	7	0- 11
Business Education	11[4]	7 1/2	8 1/2	7	9 1/4	14 1/2	4	10 1/4	11[3]	6	15 1/2	7	0- 15 1/2
Vocational	58	--	--	43 1/2	61	6	38	62 1/2	55	8 3/4	3	--	0- 61
Mathematics	7	9	11 1/2	8	8	13	7	6	--	6	15	10	0- 15
Science	3	7 1/2	6	6	7 1/4	11	5	7	--	5	7	5	0- 11
Art	1	4	4	5	6 1/4	4	2	4	--	3	5 1/2	1 1/2	0- 6 1/4
Music	--	1	2 3/4	2 1/2	5 1/2	4	2 3/4	6	--	1 1/2	13	2 1/4	0- 13
General Home Economics	--	--	4	3 1/2	8 1/4	4	--	8 1/2	--	3	5 1/2	3 1/2	0- 8 1/2
Industrial Arts	2 1/2	5	--	3 1/2	11 1/4	14	8	9	--	3	7 1/2	2 1/2	0- 11 1/4
Physical Education/Health	2 1/2	1	1	1/2	1	1	1 1/2	1 3/4	--	1 1/2	1 1/4	1 1/4	0- 2 1/2
Other	12 1/2[2]	--	5 1/2	7	3/4	1	1/2	1/2	--	9	1 3/4	1/2	0- 12 1/2
TOTAL	103 1/2	61 1/2	68 3/4	104.0	138 1/4	119 1/2	90 1/4	144 1/4	66	63 3/4	135.0	60.0	60-144 1/4

[1]English 12 - Campus class at McKinley

[2]Vocational

[3]These units are also vocational

[4]These units are also vocational, but supported from local funds.

Source: Records from the Principals' Reports in the State Department of Education.

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TABLE 3.14

SUBJECT AREAS MOST HELPFUL AND OF LEAST VALUE

Subject area	Class of 1964			Class of 1967			Dropouts		
	Most helpful	Least value	Percent helpful	Most helpful	Least value	Percent helpful	Most helpful	Least value	Percent helpful
English	536	36	93.7%	869	95	90.1%	85	9	90.4%
Mathematics	457	82	84.8%	682	158	81.2%	86	9	90.5%
Business education	258	76	77.2%	397	139	74.1%	58	8	90.6%
History and government	298	113	72.5%	483	194	71.3%	56	21	72.7%
Science	319	134	70.4%	513	208	82.6%	44	25	63.8%
Civics, sociology, econ.	239	90	72.6%	324	175	64.9%	43	21	67.2%
Secretarial studies	195	89	68.7%	312	166	65.3%	40	18	69.0%
Literature	237	138	63.2%	418	191	68.6%	39	25	60.1%
Vocational (Vo. Ag., D.E. and other voc. ed.)	104	80	56.5%	150	159	48.5%	29	14	67.4%
Home ec. (not vocational)	131	107	55.0%	208	225	48.0%	33	24	57.9%
Health and Physical Education	168	229	42.3%	277	369	42.9%	43	31	58.1%
Industrial arts	100	121	45.2%	128	236	35.2%	26	20	56.5%
Music	108	208	34.2%	216	324	40.0%	18	39	31.6%
Foreign language	138	306	31.1%	274	469	36.9%	17	60	22.1%
Art	72	232	23.7%	136	383	26.2%	24	47	33.8%

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Another picture of the most helpful subject matter areas as reported by the graduates for the two years being studied was gained in a listing of the rank order of these subjects by high school track for 1964 and 1967 (Table 3.15). English holds first place for all students, excepting that it is replaced by mathematics and vocational education by vocational students in 1964 by mathematics in 1967 (Vocational education was second), and by business education by the graduates in practical arts in 1967. Those areas receiving the five highest ranks for all graduates were English, mathematics, science, history and government and business education. Those subject matter areas receiving the fewest number of votes as the most helpful subject matter area were art, industrial arts, vocational education, music and home economics. Subject areas falling in the lower third when ranked by the tallies for all students but which were placed in the upper third by selected groups included the following: Vocational education was ranked on and two by the vocational students in 1964 and 1967 respectively and fifth place by practical arts students in 1967; and, industrial arts was given fourth ranking by vocational students in 1964. Only one upper third ranked subject area was placed in the lower third group.

Science, ranked third by all students, was accorded eleventh place by the students in practical arts in 1967.

Still another picture may be secured by examining the three most helpful and three least helpful subject matter areas when tallied by type of school, track and year (Tables 3.16, X-3.15, X-3.16, R-3.18, and R-3.19). The classification of the school appeared to make no significant difference in the identification of the most helpful areas. The result was essentially a scattergram, with emphasis in all schools on English, mathematics, business education, and science. However, a different emphasis is noted when the three most helpful areas were tallied by high school track. While the graduates of all tracks placed most emphasis on English, the close similarity stopped at this point. Graduates of college preparatory programs concentrated on the importance of English, mathematics and science, with some recognition for literature and secretarial studies. Graduates of general programs stressed business education, vocational students emphasized vocational subjects and mathematics, and practical arts graduates emphasized business education and secretarial studies.

Question: Who was most helpful to you in the selection of your high school courses? (check one):

Both graduates and dropouts indicated that their parents had been more helpful to them in the selection of their high school courses than any one else (Table 3.17; R-3.9). This was reported by one in three of the graduates of 1964 (33.9%), and by more than one in four of 1967 and by the dropouts (27.7% and 25.4% respectively). The guidance counselor was next in helpfulness with more than one in five students recognizing their assistance as being most valuable (21.7%). Teachers were so recognized by one of eight students (12.3%).

TABLE 3.15

RANK ORDER OF MOST HELPFUL SUBJECT MATTER AREAS
BY TRACK AND YEAR

Subject Area	Grand Total	Coll. Prep. '64	Coll. Prep. '67	General '64	General '67	Vocational '64	Vocational '67	Practical Arts '64	Practical Arts '67
English	1	1	1	1	1	3	3	1	2
Mathematics	2	2	2	5	3	1	1	2	4
Science	3	4	3	8	8	5	7	8	11
Hist., Gov't.	4	5	5	3	6	8	6	5	7
Bus. Ed.	5	7	7	2	2	6	4	4	1
Literature	6	6	4	10	9	11	12	10	8
Civics, sociol.	7	3	6	7	5	7	11	6	10
Sec. Stud.	8	8	8	4	4	12	5	3	3
Health/P. E.	9	12	12	9	10	8	8	12	9
For. Lang.	10	11	10	15	15	15	15	15	14
H. Ec.	11	9	11	6	7	10	10	11	6
Music	12	10	9	14	13	14	13	13	13
Voc. Ed.	13	15	15	12	11	1	2	7	5
Ind. Arts	14	13	13	11	12	4	9	9	11
Art	15	14	14	13	14	13	14	14	15

Source: Eugene Griffith, Assessment of High School Training After Graduation. Miami University, Oxford, Ohio. A PhD dissertation, utilizing the data gathered in this vocational study.

TABLE 3.16

THREE MOST HELPFUL SUBJECT MATTER AREAS
BY HIGH SCHOOL TRACK

Subject Area	College Preparatory	General Program	Vocational Education	Practical Arts	Total
English	9	9	7	8	33
Mathematics	9	4	7	2	22
Business education	-	7	3	6	16
Science	9			2	11
Secretarial studies	1	3	1	4	9
Vocational Ed.			5		5
Civics, soc.l. econ.		3			3
History, Gov't		3			3
Health & Phys. Ed.		2			2
Home Economics		2			2
Literature	2				2
Industrial arts				1	1

[1]Tallies were made from a listing of the most helpful subject areas when classified by high school track for 1964 and 1967.

TABLE 3.17

PERSONNEL MOST HELPFUL IN SELECTION OF HIGH SCHOOL COURSES

Personnel	Number 1964	Number 1967	Number Drop-outs	Number Total	Percent 1964	Percent 1967	Percent Drop-outs	Percent Total
Your parents	304	433	43	780	33.9%	27.7%	25.4%	29.6%
Guidance counselor	184	346	41	571	20.5%	22.1%	24.3%	21.7%
Teacher	127	167	29	323	14.1%	10.7%	17.2%	12.3%
Other students	74	134	6	214	8.2%	8.6%	3.6%	8.1%
Your brother or sister	39	114	8	161	4.3%	7.3%	4.7%	6.1%
Superintendent	32	31	6	69	3.6%	2.0%	3.6%	2.6%
Principal	9	47	7	63	1.0%	3.0%	4.1%	2.4%
Assistant Principal	15	17	6	38	1.7%	1.1%	3.6%	1.4%
Dean of men/women	14	21	--	35	1.6%	1.3%	--	1.3%
Other	100	225	23	378	11.1%	16.3%	13.6%	14.4%

Question: In your opinion what was the most valuable experience you had in high school? (Check one):

The classwork stands out as the most valuable experience both graduates and dropouts had in high school. More than one in three students checked this item (34.6%) (Table 3.18; R-3.10). More than one in eight students indicated that teacher interest and helpfulness and vocational education were the most valuable experiences (13.2% and 13.0% respectively). All other activities carried significance for some students, but not for a large number in any instance.

TABLE 3.18

MOST VALUABLE EXPERIENCE IN HIGH SCHOOL

Experience	Total 1964	Total 1967	Total Drop-outs	Total Total	Percent 1964	Percent 1967	Percent Drop-outs	Percent Total
The classwork	335	501	66	902	37.4	32.5	39.3	34.6
Tch. interest & helpfulness	129	188	28	345	14.4	12.2	16.7	13.2
Vocational education	116	197	27	340	13.0	12.8	16.1	13.0
Athletics, interscholastic	58	125	7	190	6.5	8.1	4.2	7.3
Music	59	120	4	183	6.6	7.8	2.4	7.0
Social activities	38	76	4	118	4.2	4.9	2.4	4.5
Informal meeting with teacher	31	47	5	83	3.5	3.0	3.0	3.2
Club membership	18	42	6	66	2.0	2.7	3.6	2.5
Club officer	12	45	3	60	1.3	2.9	1.8	2.3
Dramatics; plays	15	32	6	53	1.7	2.1	3.6	2.0
Athletic within the school	6	23	3	32	.7	1.5	1.8	1.2
Debate	11	17	3	31	1.2	1.1	1.8	1.2
School newspaper	8	20	2	30	.9	1.3	1.2	1.2
Meetings with counselor	10	14	1	25	1.1	.9	.6	1.0
School annual	3	9	--	12	.3	.6	--	.5
Cheer leader	4	6	--	10	.4	.4	--	.4
Other	42	81	3	126	4.7	5.2	1.8	4.8
TOTAL	895	1543	168	2606				

When tabulations were made by high school track (Table 3.19), it was noted that vocational education ranked as the most valuable experience for those students in this track, and that it ranked in third position for all students. Classwork, however, was easily in first position, with one in three students (34.5%) out of 2,113 respondents stating that this was their most worthwhile experience.

TABLE 3.19

THE MOST HELPFUL EXPERIENCE WHILE IN HIGH SCHOOL BY TRACK

Rank	Experience	College Preparatory	General	Vocational	Practical Arts	Total
1	Class work	492	97	36	104	729
2	Teacher interest	175	44	14	49	282
3	Vocational education	31	36	106	90	263
4	Music	117	17	6	20	160
5	Athletics, interschol.	127	16	8	6	157
6	Social activities	72	6	4	14	96
7	Teacher - informal meetings	57	15	2	3	77
8	Club membership	36	2	1	5	44
9	Dramatics	32	6	2	3	43
10	Club officer	25	3	--	4	32
11	Athletics, intramural	13	5	3	6	27
12	School newspaper	23	--	1	2	26
13	Debate	13	6	1	3	23
14	Meetings with counselor	13	3	2	2	20
15	School annual	6	1	--	3	10
16	Cheer leader	7	1	--	1	9
	TOTAL	1,322	271	192	328	2,113

Question: Was your high school education helpful in the kinds of work that you have done since leaving school? (Check one):

Two of every three students believed that their high school education had been either helpful or very helpful in the kinds of work experiences they had since leaving school (Table 3.20; X-3.7). One in three believed that their high school education had been very helpful (33.8%). One student in fifty (2.0%) felt that high school had been of no value, and one in fourteen (7.2%) were of the opinion that it had been of little value. Generally, these opinions were held by the graduates of both 1964 and 1967, and by the dropouts as well, although one in twenty of the dropouts (5.0%) held that high school had been of no value.

TABLE 3.20

VALUE OF HIGH SCHOOL EDUCATION FOR WORK EXPERIENCES

Value of high school education	Total				Percent			
	1964	1967	Drop-outs	Total	1964	1967	Drop-outs	Total
Very helpful	314	498	51	865	35.7	32.8	32.1	33.8
Helpful	301	486	44	831	34.0	32.1	27.7	32.5
Of some help	207	381	41	629	23.4	25.1	25.8	24.6
Was of little value	50	119	15	184	5.6	7.8	9.4	7.2
Was of no value	11	32	8	51	1.2	2.1	5.0	2.0
TOTAL	885	1516	159	2560				

Question: What one more thing should the high school have done to help you to prepare for advanced training? (Check one):

The graduates placed most emphasis on strengthening the ability to think as a suggestion for improvement in preparation for advanced training beyond the high school, with one in five (19.4%) making such a recommendation. Three other areas followed very closely: better correlation of high school training to actual situations

in life and on the job (18.6%); reading (18.5%); and, study habits (17.7%). The graduates of the class of 1964 placed most emphasis on study habits, while the class of 1967 stressed the ability to think (Table 3.21; X-3.8). Very little recognition was given to work habits (1.4%).

TABLE 3.21

SUGGESTED IMPROVEMENTS FOR ADVANCED TRAINING

Areas for improvement	Number of respondents			Percent of respondents		
	1964	1967	Total	1964	1967	Total
Thinking	121	222	343	18.3	20.1	19.4
Better correlation of high school training to actual situations in life and on the job	131	198	329	19.8	17.9	18.6
Reading	120	207	327	18.2	18.8	18.5
Study habits	135	177	312	20.4	16.0	17.7
Oral communication	80	164	244	12.1	14.9	13.8
Writing	54	101	155	8.2	9.1	8.8
Helped you to learn how to get along with others	11	20	31	1.7	1.8	1.8
Work habits	9	15	24	1.4	1.4	1.4

Question: What is your highest earned degree? ____AB;BS; ____Master's degree; ____Associate; ____PhD; EdD; ____MD; ____DDS; ____Other.

Nearly two of every three graduates responding for the class of 1964 (496 of 894 - 66.1%) indicated that they had completed college. This number is increased to nearly three out of four students (72.8%) when all degrees are considered (Table 3.22; R-3.15).

It is interesting to note that for the class of 1964 (3669 graduates), 1508 planned to go to a post-secondary institution, 1287 enrolled in some post-secondary institution,

and 496 reported having earned degrees. The 496 with earned degrees represents 13.5 per cent of the total graduates, 32.8 per cent of those who hoped to continue their education, and 38.5 per cent of those who were reported by the school office as having enrolled in a post-secondary institution. These percentages become increasingly significant when the data is based on a 24.4 per cent return of the questionnaire by those graduating in 1964. It may be assumed, however, that a much higher percentage of graduates who attended college returned the questionnaire than did those for whom formal educational training was terminated with the completion of high school.

TABLE 3.22

HIGHEST EARNED DEGREE BY THE GRADUATES

Degree	Number of respondents			Percent of respondents	
	1964	1967[1]	Total	1964	1967
AB; BS	293	(246)	539	66.1	(43.8)
Masters degree	33	(3)	36	7.4	(.5)
Associate degree	32	(63)	95	7.2	(11.2)
PhD; EdD	1	(2)	1	.2	--
MD	6	--	6	1.4	--
DDS	2	--	2	.5	--
Other	76	(248)	76	17.2	--
TOTAL	496	(562)			

[1]It is probable that the data reported for 1967 is in error. It is possible, but not probable, that 246 of the 1776 1967 college entrants (13.8%) would have an earned degree within three years following graduation. Furthermore, there is no explanation for a reported 248 graduates of 1967 with "other" degrees, unless it be one and two year certificates, or other types of awards. However, this number in relation to 76 for the class of 1964 appears to be exceedingly high.

Summary Statement

A total of 2,438 completed questionnaires were received from 8006 high school graduates, or a 30.5 per cent return. An additional 168 forms were received from dropout students, making a grand total of 2,606 replies.

The number of course offerings, or credits ranged from a minimum of 60 in one suburban school to 144 1/4 in a comprehensive city high school. Three schools provided no offerings in vocational education.

English was considered to be the most helpful subject by all students. College preparatory students emphasized English, mathematics and science; vocational students named vocational education and mathematics as being most valuable; students in the general program stressed business education; and, those in practical arts identified business education and secretarial studies above all others. Foreign language (935) and art (662) were considered to be of least value by both graduates and dropouts.

Parents provide the most significant assistance in the selection of high school subjects to be studied (29.6%), with the guidance counselor in second position (21.7%), and teachers in third place (12.3%).

The class work was considered to be the most valuable experience while in high school by both graduates and dropouts. A total of 729 of 2,113 graduates (34.5%) provided this emphasis, while teacher interest was second (13.3%), and vocational education was third (12.4%).

Two out of every three students (66.3%) believed that high school training had been either "very helpful" or "helpful" for their work experiences. One in ten (7.2%) felt that it had been of "little value" (7.2%), or "of no value" (2.0%).

Graduates believed that the high schools could be improved in the areas of thinking (problem solving) (19.4%); better correlation of high school training to actual situations in life and on the job (18.6%); reading (18.5%); study habits (17.7%); and, oral communication (13.8%).

Of 496 graduates responding to the questionnaire from the class of 1964, 150 (33.9%) reported that they had earned advanced degrees such as masters, associate, doctors of medicine and of philosophy, dentistry, and "other".

Part IV will give special attention to the dropouts who responded to the questionnaire.

PART IV

Responses By The Dropouts

It was indicated above that 168 responses (Table 3.9) were received from 1413 student dropouts (Table 3.8) from the class of 1967. Some of the questions mailed to the dropouts were identical to those presented to the graduates, and some were designed for the dropouts only. Responses to those questions which were also answered by the graduates were presented in Part III, above. Responses to those questions given only to the school dropouts will be presented in Part IV, including the reasons why the graduates believed their classmates left school prior to graduation.

The following summarizes briefly the responses by the school dropouts to those questions asked of both graduates and dropouts as presented in Part II and Part III, above:

1. Subjects considered to be most helpful to the dropout included Mathematics, English, business education and history and government (Table 3.14). The response was almost identical for the points of view as expressed by the graduates.

2. School dropouts identified three people as being most helpful in the selection of their high school course of study: their parents, the guidance counselor, and the teacher (Table 3.17). Again, these responses were similar to those given by the graduates.

3. The most valuable experiences while in high school were reported by the dropouts to be: the classwork, teacher interest and helpfulness, and vocational education (Table 3.18). These were also the three most frequently identified by the graduates.

4. Three out of five school dropouts (59.8%) held that high school education was either "very helpful," or "helpful". This compares comparable with the two out of three similar responses by the graduates (Table 3.20). However, a larger percentage of the dropouts reported that high school "was of little value," or "was of no value" (Dropouts - 14.4%; 1964 graduates - 6.8%; 1967 graduates - 9.9%).

Question: Some of your classmates left school prior to graduation. In your opinion what were the primary reasons why they did not finish school? (Check one or more):

In the opinion of the graduates, more than one in five (22.8%) of their classmates left school prior to graduation because they were discouraged (Table 3.23; R-3.11). When two items are added together (discouraged - various reasons, and discouraged - low grades) then more than one in three students (34.5%) left school because they were discouraged. Only one in ten of the graduates (10.7%) believed that their classmates left school to go to work.

Marriage was considered to be the second most important reason (17.1%), with conflict at home as the cause of more than one in ten dropping out of school (11.1%).

TABLE 3.23

REASONS WHY CLASSMATES LEFT SCHOOL PRIOR TO GRADUATION

	Number			Percent		
Reason for leaving school	1964	1967	Total	1964	1967	Total
Discouraged, various reasons	369	572	941	22.1	23.3	22.8
Marriage	297	407	704	17.8	16.6	17.1
Discouraged, low grades	192	292	484	11.5	11.9	11.7
Conflict: problems at home	196	261	457	11.7	10.6	11.1
To go to work	205	238	443	12.3	9.7	10.7
Teacher-pupil conflict	139	232	371	8.3	9.5	9.0
Expelled	54	118	172	3.2	4.8	4.2
Financial problems in family	74	90	164	4.4	3.7	4.0
Illness - personal	13	41	54	.8	1.7	1.3
Doctor's certificate	7	14	21	.4	.6	.5
Illness, family	9	8	17	.5	.3	.4
Other	118	178	296	7.1	7.3	7.2
TOTAL	1673	2451	4124			

Question: In your judgment, what was the primary reason why you left high school prior to graduation? (Check one):

When the dropouts were asked the question as to why they left school prior to graduation, their responses were quite similar to those mentioned by their classmates. There was agreement on three of the five most important reasons. One in four of the dropouts (27.7%) indicated that they left school to go to work, a reason which was placed in fifth position by the graduates (Table 3.24; R-3.12). Both dropouts and graduates placed marriage in second position. While the classmates of dropouts stated that the most important reason was discouragement for various reasons, this item was given third place by the dropouts. Both placed "conflict-problem at home" in fourth position of importance.[1]

TABLE 3.24

REASONS WHY DROPOUTS DROPPED OUT OF SCHOOL

Reason for leaving school prior to graduation	Number of Responses	Percent of Responses
To go to work	51	27.7
Marriage	35	19.0
Discourage - various reasons	30	16.2
Conflict - problems in home	18	9.8
Financial problems in the family	14	7.6
Discourage - low grades	13	7.1
Teacher-pupil conflict	12	6.5
Doctor's certificate	4	2.2
Illness in the family	4	2.2
Personal illness	2	1.1
Expelled	1	.5
TOTAL	184[2]	

[1]Tables for Part IV will present the tabulation of responses by dropouts from all twelve schools. The number of separate schools was considered to be insufficier to justify reporting or analysis by separate schools.

[2]Total responses may exceed the number of dropout students, with some students checking two or more items.

Question: If vocational programs had been available would you have completed high school? ____Yes; ____No.

Fifty-one of 99 respondents (51.5%) indicated that they would have completed high school had vocational programs been available. The more favorable responses came from a girls' parochial school (3) and from a small city high school in an agricultural area (7).

Question: What program would have encouraged you to stay in school longer? (Check one or more):

One in five dropout students (19.4%) believed that they would have stayed in school longer if the opportunity had been provided for them to earn money while in high school (Table 3.25; R-3.8). Thirty-one of the dropout students (18.9%) believed that a work-study program would have been helpful. More than one in six of these students (15.8%) wanted a course to help them to improve their writing, and one in eight (12.7%) wanted help in learning how to study. The primary implication is that the 165 dropout students responding believed that there could have been programs which would have encouraged them to stay in school longer.

TABLE 3.25

FACTORS THAT WOULD HAVE ENCOURAGED DROPOUT STUDENTS TO REMAIN IN SCHOOL

Programs	Number	Percent
An opportunity to earn money while in high school	32	19.4
A work/study program	31	18.9
A course to help improve writing	21	15.8
Training for a skilled job	24	14.5
Training in how to study	21	12.7
A course to help improve reading	19	11.5
A course to help improve in arithematics; mathematics	11	6.7
Other	1	.6
TOTAL	165	

Question: If you attended any kind of a school since leaving high school prior to graduation, check those schools you have attended:

Fifty-seven of the dropout students indicated that they had attended an adult evening school (Table 3.26; R-3.13). This represents 26.1 per cent of all schools checked by these former high school pupils. More than one in five of the schools was a business college (22.0%), and one in six (16.5%) was a regular high school. Two hundred and eleven students indicated that they had attended one of the twelve types of schools listed (some students could have checked two or more schools).

TABLE 3.26

SCHOOLS ATTENDED BY DROPOUTS

Schools attended	Number	Percent
Adult evening school	57	26.1
Business college	48	22.0
A regular high school	36	16.5
Night high school	14	6.4
Junior or community college	12	5.5
Correspondence course	11	5.0
Institute (Less than 2 years)	10	4.6
College or university	8	3.7
Post high school technical program	5	2.3
Private school	5	2.3
Work-study program	3	1.4
Manpower program	2	.9
Other	7	3.2
TOTAL	218	

Question: How far do you wish that you could have gone (or hope to go) in school? (Check one):

Almost three of four dropout students (74.8%) responding to the questionnaire indicated that they wished that they could have attended a college or university, or a junior or community college (Table 3.27; R-3.14). Less than one in eight (11.0%) indicated that the completion of high school should have been their goal. This response suggests that dropout students, with maturity and experience in the working world, sense the need for college training, and that they covet the opportunity for advanced training.

TABLE 3.27

LEVEL OF TRAINING DESIRED BY DROPOUTS

Level of training desired	Number of Respondents	Percent of Respondents
College or university	113	72.9
Grade 12	17	11.0
Business college	10	6.5
Junior or community college	3	1.9
Post high school technical program	2	1.3
Grade 10	1	.6
Private school	1	.6
Correspondence course	1	.6
Work-study program	1	.6
Other	6	3.9
TOTAL	155	

Summary Statement

While the number of responses was insufficient to draw significant conclusions by schools, they are adequate to secure an over-all picture of some important points of view held by the dropout student. These may be summarized as follows:

1. Dropouts consider English, mathematics, business education, history and government to have been their most helpful subject areas while in high school.

2. The parents, the guidance counselor and the teacher were most influential in assisting the dropout student to select his subject areas for study while in high school.

3. The classwork, teacher interest and helpfulness, and vocational education were judged to have been the most valuable experiences while in high school.

4. Three out of five dropouts (59.8%) reported that their high school experience had been either "very helpful," or "helpful."

5. The classmates of dropouts who graduated were of the opinion that students dropped out of school because: 1 - they are discouraged (22.8%); 2 - marriage (17.1%); 3 - low grades (11.7%); 4 - conflict at home (11.1%); and, 5 - to go to work (10.7%).

6. The dropouts gave a somewhat difference response as to why they left school. They report as follows: 1 - to go to work (27.7%); 2 - marriage (19.0%); 3 - discouraged (16.2%); 4 - conflict at home (9.8%); and, 5 - financial problems in the family (7.6%).

7. One in five of the dropouts reported that an opportunity to earn money would have encouraged or assisted them to remain in school. Others suggested a work-study program (18.9%), a course to help improve their writing (15.8%), training for a skilled job (14.5%), and, training in how to study (12.7%).

8. One in four (26.1%) of 218 dropout students reported having attended an adult evening school. One in five (22.0%) attended a business college, and one in six (16.5%) returned to attend a regular high school.

9. The dropout students wanted more education. One hundred fifty-five of the 168 responsents (93.3%) indicated that they would like to achieve a higher level of training. Of this number, 72.9 per cent expressed a desire to have college or university training

Additional points of view by the dropout student will be given in Part V which is devoted to job and career orientations.

PART V

Job and Career Orientations

Both the graduates and the dropouts were provided the opportunity to respond to selected questions concerning training for a vocation and for employment. The question and the responses follow.

Question: Have you attended one or more of the following after graduation from high school? (Check any that you attended):

Several types or classifications of school other than a college have been attended by the graduates of the twelve high schools, although no one type of enrolled significantly larger numbers than the others (Table 3.28; R-3.6). One hundred seventy-one graduates indicated that they had enrolled in a business college. This represents 14.1 per cent of the students reporting having enrolled in the institutions included in the above listing. One in ten (10.9%) had enrolled in a technical school. Nearly one in three students (33.2%) indicated that they had enrolled in schools other than those listed, suggesting that there exists a great diversification and variety in the selection of non-college schools for post-high school enrollment.

TABLE 3.28

ENROLLMENT IN SELECTED CAREER TRAINING PROGRAMS FOLLOWING GRADUATION FROM HIGH SCHOOL

School or program	Number of graduates 1964	1967	Total	Percent of graduates 1964	1967	Total
Business college	87	84	171	16.9	12.1	14.1
Technical school	53	79	132	10.3	13.4	10.9
An institute	49	71	120	9.5	10.2	9.9
Correspondence course	65	52	117	12.6	7.5	9.7
Apprenticeship program	31	43	74	6.0	6.2	6.1
Vocational school	35	36	71	6.8	5.2	5.9
Voc. or trade sch. conducted by business or industry	22	36	58	4.3	5.2	4.8
Work-study program	17	29	46	3.3	3.5	3.8
Manpower program	11	9	20	2.1	1.3	1.7
Other	146	256	402	28.3	36.8	33.2

Question: Did you withdraw from college to enter a vocational or technical school? ____Yes; ____No.

About one in 31 of the graduates of the class of 1964 reported withdrawing from college to enter a vocational or technical school (20 students - 3.2%). The ratio was one in 40 students for the class of 1967 (25 students - 2.5%) (Table X-3.9).

Question: Did you complete one or more of the programs checked above? ____Yes; ____No.

The students identified those vocational, technical and other non-college institutions which they had attended after graduation from high school. Those that indicated they had attended one or more of these schools were asked if they had completed the program in the school or schools checked. Of the 445 respondents to this question from the class of 1964, 288 (64.7%) indicated that they had completed the program; and, 300 (50.1%) of the class of 1967 stated that they had completed the program. Of the nine dropouts responding to this question, eight (88.9%) checked the "Yes" response.

Question: Did you have a part-time job while in high school? ____Yes; ____No.

Nearly one of every two respondents in each classification indicated that they had served in a part-time job while attending high school. Of 81 respondents (dropouts) to a second question, 23 (28.4%) indicated that they continued on this job after leaving school (Table 3.29; X-3.12). Thus, more than one of every four dropout students continued on the job in which they had been working part-time as a high school student. Twenty-three of 81 dropout students reported that they had been in an apprenticeship program.

TABLE 3.29

STUDENTS WITH PART-TIME JOBS WHILE IN HIGH SCHOOL

	Class of 1964	Class of 1967	Drop-outs	Total
Question: Did you have a part-time job while in high school:				
Yes	384	701	39	1124
No	459	675	44	1178
Percent responding "yes"	45.6%	50.9%	47.0%	48.8%
Question: Did you continue full-time on this job after leaving school:				
Yes			23	
No			58	
Percent responding "yes"			28.4%	

Question: Are you presently employed? ____Yes; ____No.

A total of 1521 of 2332 respondents (65.2%) indicated that they were employed at the time the study was made (Table 3.30). Seven of ten of the 1964 graduates were employed (73.6%), three of five of the 1967 graduates were employed (60.5%), and four out of five of the dropouts were employed (60.3%). The largest percentage of graduates currently employed from both classes was from a parochial school (2). The smallest percentage of 1964 graduates currently employed (58.4%) was from an all girls' parochial school (3). Of the 1967 graduates the lowest percentage (46.2%) was from an academic suburban high school (12). It should be noted, however, that many of the 1967 graduates were still in college.

Question: Now that you have work experience, what do you think would have helped to make your years in high school more wothwhile? (Check one):

One suggestion stands out above all others as a recommendation by the responding students (Tables 3.31; R-3.7; R-3.17) that would have made their high school years more worthwhile. Nearly one of every two students (1142 - 44.6%) wished that there had been more course offerings from which to select in their program. The percentage for the class of 1964, for 1967 and for the dropouts was 49.3 per cent, 43.6 per cent and 29.6 per cent respectively. The suggestion in second ranking position called for more extra-curricular activities (9.8%). However, nearly one in four respondents (23.3%) felt that their suggestion was outside the items as listed (and were of a general and diversified nature).

Question: Does your present position provide an opportunity for advancement? ____Yes; ____No.

Thirty-nine of 83 dropout students responding to the above question indicated that their present position did provide an opportunity for advancement.

TABLE 3.30

PRESENT EMPLOYMENT STATUS

Item 4-54, MU 2; 94, MU 3

Employment Status	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
Class of 1964:													
Yes	48	70	45	11	69	48	19	125	--	20	136	31	622
No	18	6	32	2	15	15	5	56	--	7	49	18	223
Total	66	76	77	13	84	63	24	181	--	27	185	49	845
Percent	72.7	92.1	58.4	84.6	82.1	76.2	79.2	69.1	--	74.1	73.5	63.3	73.6
Class of 1967:													
Yes	145	67	109	10	89	49	38	91	--	29	123	42	826
No	121	12	43	8	23	39	29	65	--	10	128	49	540
Total	266	79	152	18	112	88	67	156	--	39	251	91	1366
Percent	54.5	84.8	71.7	55.6	79.5	55.7	56.7	58.3	72.3	74.4	49.0	46.2	60.5
Dropouts (class of 1967):													
Yes	6	--	9	2	11	8	18	9	5	3	1	1	73
No	3	--	11	4	3	6	3	9	2	5	--	2	48
Total	9	--	20	6	14	14	21	18	7	8	1	3	121
Percent	--	--	--	--	--	--	--	--	--	--	--	--	60.3
Grand Total													
Yes	199	137	163	23	169	105	75	225	39	52	260	74	1521
No	142	18	86	14	41	60	37	130	15	22	177	69	811
TOTAL	341	155	249	37	210	165	112	355	54	74	437	143	2332
Percent responding "yes"	58.4	88.4	65.5	62.2	80.5	63.6	70.0	63.4	72.2	70.3	59.5	51.7	65.2

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TABLE 3.31

SUGGESTIONS FOR HIGH SCHOOL IMPROVEMENT
BASED ON WORK EXPERIENCE

Suggestion for improvement	Number of responses				Percent of responses			
	1964	1967	Drop-outs	Total	1964	1967	Drop-outs	Total
More curr. choices	437	655	50	1142	49.3	43.6	29.6	44.6
More extra curr. activities	67	154	29	250	7.6	10.2	17.2	9.8
Teacher understanding	52	105	--	157	5.9	7.0	--	6.1
Acceptance by fellow students	46	63	--	109	5.2	4.2	--	4.3
A chance for success	33	67	--	100	3.7	4.5	--	3.9
More support from parents	44	50	--	94	5.0	3.3	--	3.7
Understanding by guid. coun.	25	31	--	56	2.8	2.1	--	2.2
Friendship other pupils	12	25	--	37	1.4	1.7	--	1.4
Understanding by principal	8	10	--	18	.9	.7	--	.7
Other	162	344	90	596	18.3	22.9	53.3	23.3
TOTAL	886	1504	169	2559				

Summary Statement

Responses by respondents to questions pertaining to job and career orientations may be summarized as follows:

1. Approximately one in six of the high school graduates reported having enrolled in a career training program. One hundred forty-six (146) of the 894 (16.3%) 1964 graduates indicated participation in such training programs as did 256 (16.6%) of the 1544 1967 graduates. Business college and technical schools were more frequently selected by the students (14.1% and 10.9%).

2. The data indicated that from two to three per cent of students enrolled in college withdraw to enter a vocational or technical school.

3. Nearly two out of three students (64.7%) reported having completed a vocational, technical or other non-college institution which they attended following graduation from high school.

4. Nearly one of every two students reported having part-time jobs while in high school (1964 - 45.6%; 1967 - 50.9%; dropouts - 46.0%).

5. More than one in four of the dropout students (28.5%) reported that after leaving school they continued full time on their high school part-time job.

6. A total of 1521 of 2332 respondents (65.2%) indicated that they were employed at the time the study was conducted. This number might be increased somewhat when consideration is given for those 1967 graduates who would normally still be in college.

7. Nearly one of every two students (1142 - 44.6%) indicated that there should have been more course offerings from which to select his personal program in order to better prepare for his work experience.

8. It should also be noted that the permanent school records on dropouts: a) are very incomplete, with data on employment being available for 200 of the 1413 dropout students (14.1%; Table 3.11). b) indicated that 143 of the reported 200 students (71.5%) were employed immediately upon leaving school.

Chapter Summary

The summary provided at the end of each of the five parts of this chapter constitute a review for this chapter. The reader is referred to these sections for a summarized analysis of the findings in this study.

The suggestions and the recommendations made by 2,606 high school graduates and dropout students should be given serious consideration in planning for the strengthening and improvement of the high schools involved in this study. Also, there are implications for all the high schools in the state of Ohio. These students have shared their best thinking in response to the questions posed in the survey; as such, they merit study, analysis and interpretative utilization by the educational decision makers concerned with secondary school improvement.

CHAPTER IV

THE GRADUATE SPEAKS OUT

"The Graduate Speaks Out" reports the comments and suggestions of the graduates and dropouts to an open-ended question: "Make one suggestion that you think would really help your high school to become a better school." Nearly 2,000 accepted this invitation, a number greatly exceeding expectations. The graduates of both classes and those who had dropped out of school had something to say, and they said it. What they had to say is important, and the people of Ohio should give serious consideration to policy making and planning for the improvement of the secondary schools of this state.

The responses have significance from several points of view. For example, graduates of the class of 1967 have been out of high school for three years. Many are still in college; others are employed in business and industry. Their comments reflect points of view based upon relatively recent high school experiences, tempered with adjustments to post-high school opportunities which include college training, getting and retaining a job, and activities related to everyday living. Responses from the graduates of 1964 come from those who have been out of high school for six years. Most have completed formal education and are employed in business and industry. Their comments reflect a more mature point of view based upon both age and extent of post-secondary school experiences. Responses from the dropouts (those who normally would have graduated with the class of 1967) reflect the points of view of those who elected for various reasons to leave high school, and who have had from three to six years of experience following their departure from high school. Furthermore, the responses of the graduates by types of high school attended (example, an academic vs. a vocational school) may have some very noteworthy and significant implications. This chapter will attempt to present an analysis and an interpretation of these several points of view as stated by the respondents.

Number of Respondents

More than nine of every ten students returning the survey questionnaire voluntarily offered suggestions for the improvement of their high school. A total of 1,992 respondents, or 92.3 per cent of all replies received, shared one or more ideas which, in their judgment, would help to make their high school a better school. Of the 1,992 respondents offering suggestions, 796 were received from graduates of the class of 1964, 1,111 from the graduates of the class of 1967, and 85 from those who dropped out of school but would normally have graduated with the class of 1967 (Table 4.1).

Tabulating the Responses

Tabulating the responses to an open-ended question is, at best, a tedious, difficult and hazardous undertaking. Nevertheless, the risks are accepted in order to get

TABLE 4.1

NUMBER OF RESPONSES WITH SUGGESTIONS
FOR THE IMPROVEMENT OF THE SCHOOL

MU 2 - 56; MU 3 - 100

School	Number of student respondents			
	Class of 1964	Class of 1967	Drop-outs	Total
1. Canton Timkin	60	62	8	130
2. Cincinnati Elder	68	72	0	140
3. Cincinnati Seton	92	140	12	244
4. Cleveland East Technical	12	16	6	34
5. Cleveland West Technical	72	98	15	185
6. Dayton Fairview	68	101	3	172
7. Jackson	23	57	6	86
8. Lima	161	143	16	320
9. Penta County JVSD	N/A	58	7	65
10. Lakota Local, Sandusky Co.	25	48	8	81
11. Upper Arlington	167	228	1	396
12. Wyoming	48	88	3	139
	796	1111	85	1992

as unbiased and honest points of view as possible. The question is, as indicated, completely open-ended. The respondent does not have to select from the author's preconceived list of possible responses, and he is not influenced in any way as to what he might interpret as the "right response" from the way the question is stated. The response to an open-ended question is his own idea, and as such, it is important. It represents, in this instance, what he thinks should be done to improve his high school. He draws upon his own recollections of courses taken, instructional personnel, activities and opportunities to write his own answer to the question.

The first problem emerged with multiple suggestions being offered by many of the respondents. Although a majority confined themselves to only one proposal, about one in three made a second suggestion. They had things to say that were important to them. And, because their suggestions are important to this study, it was decided to tabulate all ideas contributed by each respondent. Thus, the total number of items tabulated will exceed the number of questionnaires with responses to this question.

One of the most difficult tasks is the development of classifications under which the various responses can and should be classified. The following guidelines were established to make the tabulations as objective and as consistent as possible:

1. The classifications should emerge from an analysis of the replies by the respondents, from a theoretical categorization of anticipated responses.
2. The replies of respondents from one school were carefully analyzed and potential classifications or categories for the tabulations of responses were developed.
3. The tentative categories were tested in a spot checking of responses for the remaining eleven schools, and appropriate adjustments and revisions made.
4. In classifying and categorizing responses, flexibility was maintained to the degree necessary in order to retain the original intent and purpose of the respondent.
5. The categories utilized in the study should have a written statement which would serve as a guide in defining or interpreting each one. Summary descriptions of each category under which each of the 1992 responses were to be classified should be developed.
6. Classifications of responses should be made by categories by schools and by the year of graduation or by the dropout student.
7. The identification of the categories and the classification of responses as outlined above were to be made by three experienced educational personnel familiar with students and with the field of education. They were to work both singly and then together as a team in such a manner that they would pool their respective judgments for the categories and for the classification of responses for objectivity and consistency.
8. The Project Director served as an advisor and consultant to the three men in the implementation of the several steps outlined above.

Student responses were classified under nine categories[1] as follows:

I. Curriculum

A. Expansion

1. Advanced placement
   a. Academic
   b. Vocational

2. Program and Course Variety
   a. Academic
   b. Vocational

3. Special Services

B. Relevancy

1. Course Content
   a. Academic
   b. Vocational

II. Guidance

A. Counselor

1. Personal

2. Career

B. Staff

1. Personal

2. Career

III. Policy (Board of Education and School)

A. School Rules and Regulations

1. Personal

2. Academic

IV. Interpersonal Relationships

A. Student-student

B. Student-teacher

C. Student-administration

D. Community-school

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[1]See the Appendix for "Summary Descriptions of Student Response Categories".

V. Facilities

A. Building

B. Equipment

VI. Quality of Education

A. Maintaining quality

B. Improving quality

VII. Organization

A. Scheduling

B. Program

C. Personnel

1. Quality

2. Quantity

VIII. Instruction

A. Materials (Instructional)

B. Methodology (Teaching)

IX. Learning Attitudes and Values

It was considered desirable to classify the twelve high schools involved in this study for the purpose of analyzing and interpreting student responses.[1]

Academic Parochial:	Elder, Cincinnati Seton, Cincinnati
Comprehensive City:	Fairview, Dayton Lima
Academic Suburban:	Upper Arlington Wyoming
Rural:	Jackson (small city in an agricultural area) Lakota Local, Sandusky County

[1]The contents for this chapter were organized, planned, tabulated and analyzed by three doctoral students in Educational Administration at Miami University. All three are experienced educators. They are: Mr. David C. Fuller, Mr. Dale E. Kistler, and Mr. Donald E. Schmidt.

Vocational City: Timkin Vocational, Canton

Vocational Suburban: Penta County JVSD

Comprehensive Inner City[1]: East Technical High School, Cleveland
West Technical High School, Cleveland

General Findings

As the student replies were tabulated in the several categories, one interesting observation became increasingly evident -- the concerns of the respondents were remarkably similar. The type of school from which the student graduated was not the most important factor, nor was the year in which the student graduated. Although variations do occur from school to school and from 1964 to 1967, these variations appeared to be less significant than the fact that there existed a remarkable consistency in the thinking of all students concerning steps to be taken to make their high school a better school in the future.

The second factor pertains to "concerns" rather than to suggestions for the betterment of the school from which they graduated. The more the tabulators worked with the classification of responses, the more they found themselves talking about the "concerns" being expressed by the respondents. It became evident that the students believed the best way to suggest means of improvement was to identify the concerns they held about various aspects of their respective schools. If their concerns could be stated, then perhaps their expression of problems would indicate the directions to be taken to improve the conditions which prompted their concerns.

As was indicated above, these concerns on the part of the students were classified into nine broad areas. More suggestions were made by the graduates for the improvement of their high school in the field of the curriculum than in any other area. Of the 2,620 suggestions made, 751 or 38.6 per cent, called for changes in the curriculum, with major emphasis on broadening and expanding the program offering, and making the course content more relevant (Table 4.2). Students were least concerned with facilities and equipment. Apparently, the graduates in the twelve schools studied were satisfied with the buildings provided and with the available facilities for the instructional and activity program. At least, problems in this area were not sufficiently important to make a suggestion for their improvement.

Nearly one of every five recommendations (19.4%) called for an improvement in interpersonal relationships. This specifically related to four distinct areas: student and student, student and teacher, student and administration, and the school and the community.

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[1]The names of these two schools are misleading, since neither one is strictly a technical high school. Both are comprehensive schools.

TABLE 4.2

MAJOR AREAS OF CONCERNS

Rank	Areas of Concerns	Number				Per cent			
		Total	1964	1967	DO's[1]	Total	1964	1967	DO's
1	Curriculum: expansion and relevancy	751	323	403	25	28.7	30.9	27.2	27.5
2	Interpersonal relationships	499	194	278	27	19.0	18.6	18.7	29.7
3	Guidance	324	129	183	12	12.4	12.3	12.3	13.2
4	School policies & regulations	289	117	157	15	11.0	11.2	10.6	16.5
5	Instruction	286	95	191	0	10.9	9.1	12.9	0
6	Organization	189	57	128	4	7.2	5.5	8.6	4.4
7	Attitudes and values	148	68	77	3	5.6	6.5	5.2	3.3
8	Quality of education	110	61	45	4	4.2	5.8	3.0	4.4
9	Facilities and equipment	24	1	22	1	.9	.001	1.5	1.0
	TOTAL	2620	1045	1484	91	99.9	99.9	100	100

[1]DO's - Drop-outs

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One in eight suggestions (12.4%) emphasized the need for improving the guidance program with reference to career counseling, personal counseling, and strengthening staff personnel for both kinds of counseling.

Improvement of the instructional program ranked fifth in the number of suggestions made for the improvement of the high school (286 - 10.9%). Improvement in teaching techniques and practices (methodology) was uppermost in the minds of these respondents. Of minor concern was the strengthening of the materials of instruction.

It is interesting to note that the teaching of attitudes and values was one of the most vital areas needing attention (148), and that the maintenance and improvement of the quality of the educational program came next (110).

The response by the dropout students was similar to that of the graduates. The four areas of major concern were the same; however, the dropout student gave first priority to improving interpersonal relationships, with stress being placed on teacher-student relations. As one dropout said, "BE MORE HONEST -- the teachers don't give the students a chance." Second priority was given to expansion and relevancy of the curriculum, third place to school policies and regulations, and fourth place to improving the guidance program.

It should be noted that there existed a very high degree of consistency in the areas identified by the graduates of the classes of 1964 and 1967 as most vitally in need of improvement. The first five in rank order of importance for the class of 1964 were: curriculum, interpersonal relationships, guidance, school policies and regulations and improvement of the instructional program. The rank order for the class of 1967 was: curriculum, interpersonal relationships, improvement of the instructional program, guidance, and school policies and regulations. The rank order for the school dropouts was: interpersonal relationships, curriculum, school policies and regulations, and guidance.

In general, the 1964 and 1967 graduates remain consistent when indicating specific ways to improve their respective high schools. They placed first importance on strengthening student-teacher interpersonal relationships (Table 4.3).

A few students in both classes emphasized the necessity to expand the number and variety of offerings in the vocational program. Teaching methodology, or the manner in which classroom teachers developed or handled their instructional program, ranked second in need for improvement by the graduates of the class of 1967, and fifth in importance by the class of 1964. Improvement in guidance and counseling was emphasized by both classes, with a ranking in importance of three and six respectively for the two years. It may be significant that the class of 1964 expressed major concern about acquiring attitudes and values, a concern that was not listed as a major item by those who had been out of school for only three years. This suggests that, as the students gain in maturity and in experience, they increasingly realize the necessity for appropriate attitudes and values in business and in everyday life, and they express this as an essential element for the improvement of their respective high schools.

TABLE 4.3

SPECIFIC CONCERNS OF THE RESPONDENTS

Rank order 1964	Rank order 1967	Specific concerns of the respondents	No. of references 1964	No. of references 1967
1	1	Student-teacher interpersonal relations	142	188
2	3	Expanded vocational program and course variety	137	143
3	6	Career counseling by a guidance counselor	103	87
4	4	Expanded academic program and course variety	100	132
5	2	Teaching methodology	85	184
6	7	Learning of attitudes and values	68	77
7	9	School rules and regulations - personal	65	63
8	5	School academic rules and regulations	52	94

Specific Findings

The major areas of concerns and the more specific concerns, as presented above, have highlighted what the respondents wrote about most frequently in proposing suggestions for improving their respective high schools. This section will report briefly on the items as tabulated, with a brief description of the principal ideas expressed by the respondents.

Each of the nine major classifications contains sub-items appropriate to clarifying and reporting the comments of all those surveyed. The reader may be interested in the tabulation of responses by each item in Table 4.4 for the class of 1964, the class of 1967 and the dropouts. Further reporting of the responses by years and by schools may be found in the Appendix. Selected responses written by the students are also given in the Appendix.

What do the tabulations of responses by categories (Table 4.4) mean in terms of attitudes, points-of-view, concerns and recommendations as reported by the students? Figures and categories often seem cold and isolated from the real meaning and intent of the concerned people they represent. The following attempts to "bring to life" what the students were trying to communicate. Each item, each suggestion, each comment is made from analysis of the individual responses of all of the 2,620 respondents. Here is what the tabulators gathered from this analysis. The categories follow the order used in Table 4.4.

Curriculum:

1. Forty graduates recommended an expansion of the curriculum in academic areas. Forty were urging such things as advanced English, a fifth year of mathematics, and university courses with credit while in high school.

2. Eighteen students proposed expansion of the vocational offering. All but one of these graduates was in the class of 1964. They talked about the introduction of cooperative programs, with opportunities to make money for essentials and for college.

3. Many graduates in both classes urged a greater variety of course offerings in both the academic and vocational areas. In general, graduates of vocational schools recommended more and different kinds of academic offerings. Stress was placed on English, communication skills, money management, and how the government operated. Graduates from academic schools strongly recommended more vocational courses, with stress being placed on cooperative courses with the opportunity to earn money, and the development of skills in order to earn money to attend and while attending college. Some graduates from vocational schools recommended cooperative programs.

4. Recommendations in the area of special services as related to the curriculum were primarily suggestions for special situations, such as textbooks in braille for the blind, programs for the physically handicapped and related problems in the area of special education.

TABLE 4.4

SUMMARY OF SUGGESTIONS FOR IMPROVING THE HIGH SCHOOL

Areas for improvement	Number of responses			
	Class of 1964	Class of 1967	Drop-outs Class of 1967	Total
I. CURRICULUM				
A. Expansion of the curriculum				
1. Advanced placement:				
a. Academic	21	19	--	40
b. Vocational	17	1	--	18
2. Program and course variety				
a. Academic	100	132	5	237
b. Vocational	137	143	6	286
3. Special services	1	5	2	8
B. Relevancy of course content				
1. Academic	31	63	7	101
2. Vocational	16	40	5	61
TOTAL	323	403	25	751
II. GUIDANCE				
A. Counselor				
1. Personal	10	56	3	69
2. Career	103	87	6	196
B. Staff				
1. Personal	4	21	2	27
2. Career	12	19	1	32
TOTAL	129	183	12	324
III. BOARD & SCHOOL POLICIES				
A. School Rules and regulations				
1. Personal	65	63	3	131
2. Academic	52	94	12	158
TOTAL	117	157	15	289

TABLE 4.4 (cont.)

SUMMARY OF SUGGESTIONS FOR IMPROVING THE HIGH SCHOOL

Areas for improvement	Number of responses			
	Class of 1964	Class of 1967	Drop-outs Class of 1967	Total
IV. INTERPERSONAL RELATIONSHIPS				
A. Student-student	22	37	3	62
B. Student-teacher	142	188	22	352
C. Student-administrator	14	42	1	57
D. School-community	16	11	1	28
TOTAL	194	278	27	499
V. FACILITIES				
A. Buildings	--	12	1	13
B. Equipment	1	10	--	11
TOTAL	1	22	1	24
VI. QUALITY OF EDUCATION				
A. Maintain present quality	18	37	4	59
B. Improve the quality	43	8	--	51
TOTAL	61	45	4	110
VII. ORGANIZATION				
A. Scheduling	16	17	--	33
B. Program	8	35	1	44
C. Personnel				
1. Quality	33	64	2	99
2. Quantity	--	12	1	13
TOTAL	57	128	4	189
VIII. INSTRUCTION				
A. Instructional materials	10	7	--	17
B. Teaching methodology	85	184	--	269
TOTAL	95	191	--	286
IX. LEARNING OF ATTITUDES & VALUES	68	77	3	148
GRAND TOTAL	1045	1484	91	2620

5. Many students (150 graduates and 12 dropouts) wanted greater relevancy in course content in both academic and vocational areas. In general they recommended a closer connection between what happens in school and what work opportunities life offered after graduation. That is, they felt that instruction should be related to the outside world; it should be current and up-to-date.

6. Selected statements by respondents"

   "High school, I think, should make its education more practical and realistic and more thorough. Thus it will then prepare one for college and give the student a proper sense of justice and respect for his fellow man."

   "High school should have offered more information in its courses. As a student at OSU, I have found through education courses there that most students thought high school was boring and of little value except socially. I don't think high school helps you to learn to think and get along with people well."

   "To offer courses for those students who have to pay their way through college and have to learn a vocation in order to pay their way. I know that if I had had the opportunity to take both college prep and vocational courses it would have helped tremendously."

   "Go deeper in subject science, literature, math, and discuss more to make sure students understand."

   "If we had more of a choice I would of went to college. You didn't supply more fields to go along with more information. I didn't receive the information til a year too late."

Guidance:

1. Student responses about guidance centered on the activities of the counselor as a guidance person, and the responsibility of each and every teacher to serve as an advisor and counselor.

2. Students were interested in both personal and career counseling, with career advising by the counselor receiving the most suggestions for improvement.

3. The graduates wanted more assistance, given in a sympathetic and understanding way, in learning how to handle personal problems and learning how to get along with others.

4. Stress was placed on increased assistance in understanding the working world and getting a job. They wanted this assistance on an individual basis, not just group help or no help at all.

5. Several believed it would have been helpful if their teachers had exhibited more understanding of and interest in their problems. They seemed to be saying that a teacher should not be just a teacher of subjects, but should be

a teacher of her students, interested in their growth and development, and wanting to help them to grow and to develop.

6. Selected statements by respondents:

"I think that there should be more opportunities for teachers to get to know their pupils. Perhaps through individual conference. Maybe if the students knew that the teachers were interested in them they would not be so hesitant to go to the instructors for help."

"A more helpful guidance department, catering not only to college-bound students but to every pupil. Many students in my class were discouraged by the indifferent attitude of most of the teachers."

"Better teacher-pupil relations."

Board and school policies:

1. The respondents expressed concern for rules and regulations in two areas -- those which affected them personally and those which pertained to academic regulations.

2. There was a dichotomy of expressions concerning school regulations affecting dress code, length of hair, skirt, facial hair and related problems. Many believed that there should be much stronger codes, while others believed that existing codes should be relaxed.

3. Nearly twice as many graduates of the class of 1967 as in the class of 1964 emphasized changes in academic regulations. The primary concern was for the abandonment of the conventional tracking system, or for an opportunity to take courses in other tracks. Greater flexibility in scheduling and in course selection was also stressed.

4. Selected statements by respondents:

"I do not think there should be one program strictly for college studies and one with preparation for the business world."

"They should let students in the college preparatory course take courses in the other tracks. Students should be allowed to take sewing and cooking, and also in typing and shorthand as electives. These would be much more helpful in the future than some of the courses I took, such as chemistry and Math IV."

Interpersonal relationships:

1. More recommendations were made for the improvement of interpersonal relationships than in any other area, except curriculum.

2. A few students believed there should be an improvement in the relationships between students. There was a reaction against cliques, against racial disturbances, and against the "athletic set". Some were troubled with the belief that there were a privileged few in the school, and there was opposition to a student aristocracy.

3. Of major importance was the need for improvement in student-teacher and student-administrator relationships. Especially the graduates believed that the teacher should relate to them as individuals rather than as a certain pupil in a given seat. They did not seem to believe that the teacher should be a close friend, but a human being interested in the student and wanting to help him.

4. A few students felt that the school-community relationship should be improved. Mostly they wanted a closer relationship, without spelling out what this relationship should be.

5. Selected statements by respondents:

   "The teachers should treat them (the students) just like another person and not a dumb little kid."

   "I hated school, everything was a bore and I think it was because of a poor teacher-student relationship. Kids deserve better than what I had -- no time for extra help from teachers, the guidance counselor considered me a trouble maker, and I was there to learn! But who cared then? Who cares now?"

   "Become more actively involved in community affairs and to enable the student to feel more a part of his school and community by providing more actual experiences, coordinated with text book material."

Facilities

1. Most significant is the lack of recommendations for the improvement of buildings and equipment.

2. Of the 24 suggestions received in this field, some asked for up-to-date equipment, enlargement of space for special areas, such as guidance, and for general improvement.

3. Selected statements by respondents:

   "More funds for newer and better learning materials and equipment and supplies."

   "More equipment for advanced courses."

Quality of education

1. The respondents spoke of "quality education", but their remarks were obscure and non-specific with regard to their meaning. About half believed the present quality of the high school program should be maintained, i.e., the program kept that way. The other half (59 and 51) felt that improvements should be made, but did not indicate what was needed.

2. Selected statements by respondents:

   "To me, _____ High School is one of the best."

"I think that the _____ school should be a better school than it is."

Organization:

1. There was no common agreement among the respondents recommending improvement in the organization of the school system. Some wanted different types of scheduling, with flexibility and modular scheduling being mentioned. Some thought that the study hall should be eliminated, believing that it was a waste of time.
2. There was an expressed need for a lower teacher-pupil ratio.
3. Some graduates believed that improvements could be made in the way teachers structure and organize their classrooms, but no specific recommendations were made.
4. Selected statements by respondents:

   "Remove study halls and shorten the school day. I understand this is being done in a limited sense already. I think study halls were a horrible waste unless I spent them on extra-curricular activities such as the school news paper."

   "The one thing I remember the most is the fantastic amount of time which was wasted."

   "With the long 55 minute periods, instructors rarely utilized the whole class period to best advantage."

Instruction:

1. The graduates believe that significant changes should be made in instructional methodology. Specifically they recommended more student participation, more student planning, discussion vs. lecture, and more student involvement.
2. There was a strong feeling evidenced in many replies that they "did not want to be lectured to."
3. The students felt that audio-visual materials were not always used effectively.
4. Selected statements by respondents:

   "To memorize facts and figures is not an effective way of learning. The student should be made to think and reason out problems using the facts he has."

   "But high school students -- the 'transition period' -- need to be stimulated to learn through new ideas and young, pertinent approaches. Students will not learn if they are not interested; thus, spurring interest should be an educator's primary task -- then the learning will come of its own accord."

"The student and teacher should be on an open exchange. Knowledge can be made exciting without expensive equipment if a learned and gifted person is teaching."

Learning of attitudes and values:

1. Many students (148) from both classes believed that improvement could and should be made regarding learning of attitudes and values.
2. Some respondents stated that the school had a responsibility to teach specific values and attitudes, particularly with regard to human relations and in learning to get along with other people.
3. Some believed that students should be taught the value of work.
4. Some criticized the idea of the value of college for everyone.
5. While some stressed the importance of the school's teaching values, they emphasized that these same values should be practiced within the school.
6. Selected statements by respondents:

   "I am not interested in _____ becoming a better school -- the students becoming real people is much more worthwhile."

   "For _____ High School to realize that it is it's responsibility to train and teach the students who are not going to college."

   "A decent person cannot attend school and feel accepted."

To summarize there were five major areas of recommendations for the improvement of the high schools as interpreted by the graduates of the classes of 1964 and 1967, and the school dropouts of the class of 1967. The first pertained to curriculum improvement, with 751 of 2620 references suggested for consideration. Most important was program and course variety in both the academic and vocational areas. The second major recommendation called for an improvement in interpersonal relationships (499 references) with special emphasis given to strengthening student-teacher relationships. The third proposed strengthening the guidance program (324 references) by increasing both personal and career counseling, with sympathetic and active involvement of both counselors and teachers in the advising process. The fourth area of interest was school rules and regulations (289 references) with the recommendations divided between strengthening and relaxing the regulations pertaining to personal dress and appearance. Students favored relaxing the track system, encouraging and allowing them to take courses in various tracks. The fifth area placed stress upon the improvement of instruction (286 references). The respondents particularly emphasized the improvement of teaching methodology, with greatly increased student participation.

Findings by Schools

One more way of looking at the suggestions and recommendations made by the respondents for the improvement of their high schools is to examine the tabulated

statements by schools (Table X-4.1). While a detailed examination should be made by each of the participating schools (copies of all statements were forwarded to them), some summary statements may have significance for a wide range of interested people. The following comments are made as brief generalizations in relation to each school:

School Number 1 (A city vocational school):

1. Graduates of both classes urged more academic course offerings to facilitate college entry and to use in their daily lives.
2. Improvement in interpersonal relationships and in teaching methods was important for the class of 1964.
3. The quality of the educational program ranked second in importance for the class of 1967.

School Number 2 (An academic parochial school):

1. Both classes wanted improvements in:
   a. student-teacher interpersonal relationships.
   b. improved teaching methods.
   c. expanded vocational course offerings.
2. The 1964 respondents were evenly divided on the issue of relaxed vs. stricter enforcement of school regulations.
3. The 1964 respondents recommended an expansion in both academic and vocational course offerings.
4. Concern was expressed by both classes about the heavy emphasis on the athletic program, and particularly the preferential treatment shown athletes.

School Number 3 (An academic parochial school):

1. There was a high degree of concern expressed by both classes for:
   a. the rigidity of academic rules and regulations (example: no electives outside the elected tract, such as typing and business courses for college-bound students).
   b. the lack of positive student-teacher relations which denied individuality.
2. The 1964 respondents would seek improvement in the guidance services.
3. The 1967 respondents placed greater emphasis on the improvement of teaching methods.

School Number 4 (A comprehensive inner city school):

1. This school while ninth in size (1970 graduating class), had the fewest

number of questionnaire returns.

2. Recommendations were quite diversified, with no one area receiving major emphasis.

3. Some concern was expressed by respondents of both classes about the lack of positive student-teacher interpersonal relationships and the improvement of the curriculum and guidance programs.

School Number 5 (A comprehensive inner city school):

1. The respondents for both classes expressed significant concern about:

   a. improvement of the curriculum
   b. the lack of positive student-teacher interpersonal relationships
   c. the need for effective teaching methodology.

2. The respondents for the class of 1964 wanted:

   a. more flexibility in the selection of courses
   b. a more effective career guidance program.

3. The 1967 respondents placed greater emphasis on the need for an expanded academic and vocational curriculum.

School Number 6 (A comprehensive city high school):

1. 1964 and 1967 respondents were concerned about:

   a. curriculum improvement
   b. poor student-teacher interpersonal relationships
   c. the misuse of various teaching methods
   d. courses not being interesting
   e. the need for an expanded vocational curriculum.

2. The 1964 respondents recommended expansion in academic offerings.

3. The 1967 respondents placed significantly greater emphasis on interpersonal relationships.

School Number 7 (A small city in an agricultural area):

1. The 1964 and the 1967 graduates recommended:

   a. improvements in the curriculum

2. The 1964 graduates expressed concern about the lack of guidance services.

3. The 1967 graduates expressed concern about interpersonal relationships and the improvement of instruction.

School Number 8 (A comprehensive city high school in an industrial setting):

1. The 1964 and the 1967 respondents emphasized:

   a. improvements in the curriculum

b. poor student-teacher relationships
c. poor teaching methods.

2. The respondents for the class of 1964 also emphasized:

   a. an expanded curriculum offering in:
      --academic areas
      --vocational areas
   b. a desire for strict disciplinary control. This point of view was modified by the responses of the 1967 graduates to a more flexible approach.

3. The 1967 respondents urged an improvement in:

   a. interpersonal relationships in an effort to ease growing disruptive situations.
   b. the guidance program
   c. the quality of the personnel
   d. learning attitudes and values

School Number 9 (A Joint Vocational School):

1. The 1967 respondents gave a strong vote of confidence to the vocational school concept.

2. Suggestions were made for the improvement of interpersonal relationships, in the curriculum, and in guidance.

School Number 10 (A rural consolidated high school):

1. The 1964 and the 1967 respondents expressed a concern for:

   a. improved teaching methods
   b. a more positive student-teacher relationship
   c. improvement in the curriculum

2. The number of returns for the class of 1964 was quite small, and the responses diversified.

School Number 11 (A large suburban high school):

1. The 1964 and the 1967 respondents expressed a desire for:

   a. An expanded curricular offering in:
      --academic areas
      --vocational areas
   b. a modification in teaching methods to permit increased student participation
   c. improved positive student-teacher interpersonal relationships
   d. improved career guidance counseling.

2. Respondents from both classes significantly emphasized the need for the acquiring of attitudes and values.

School Number 12 (A small suburban high school):

1. Respondents from both classes stressed the need to improve the curriculum.
2. The 1964 respondents recommended:
   a. an improved career guidance program
   b. better student-teacher relationships.
3. The 1967 respondents recommended:
   a. an expansion in vocational course offerings.
   b. improved teaching methods
   c. improvement in interpersonal relationships

Some interesting distinctions come to light when examining the data by schools. For example, students from primarily academic schools advocate more vocational subjects while the graduates of vocational schools want more academic subjects. Both want courses that will help them to understand life and the world about them, and to develop the skills to earn while learning.

Students from parochial schools are more concerned about school rules and regulations, while inner city school respondents emphasize interpersonal relationships. In general, student respondents from vocational schools appear to be less critical and more supportive of their respective schools. Respondents from suburban schools are especially concerned about curriculum improvement and improving interpersonal relationships.

A graphic presentation of selected major concerns by categories and by school classifications is presented in Figures 4.1, 4.2, 4.3, and 4.4.

Summary Statement

The chapter began with, "The Graduate Speaks Out." He had many things to say in response to the request, "Make one suggestion that you think would really help your high school to become a better school." A total of 1,992 respondents (92.3%) shared 2,620 ideas which represented their feelings, frustrations, concerns and suggestions for their high school. The responses were tabulated according to a cooperatively developed plan and recorded by schools, by year of graduation and by dropouts. Briefly, the students expressed their points-of-view as follows:

1. In general graduates and dropouts stated "concerns" about their high school rather than the making of suggestions for improvement.
2. Graduates of 1964 and 1967 and dropouts with the class of 1967 had concerns about their high schools, and they wanted to assist by stating what they believed were their problems while in school.

FIGURE 4.1

PERCENTAGE OF TOTAL RESPONDENTS FOR 1964 AND 1967 BY MAJOR CATEGORY

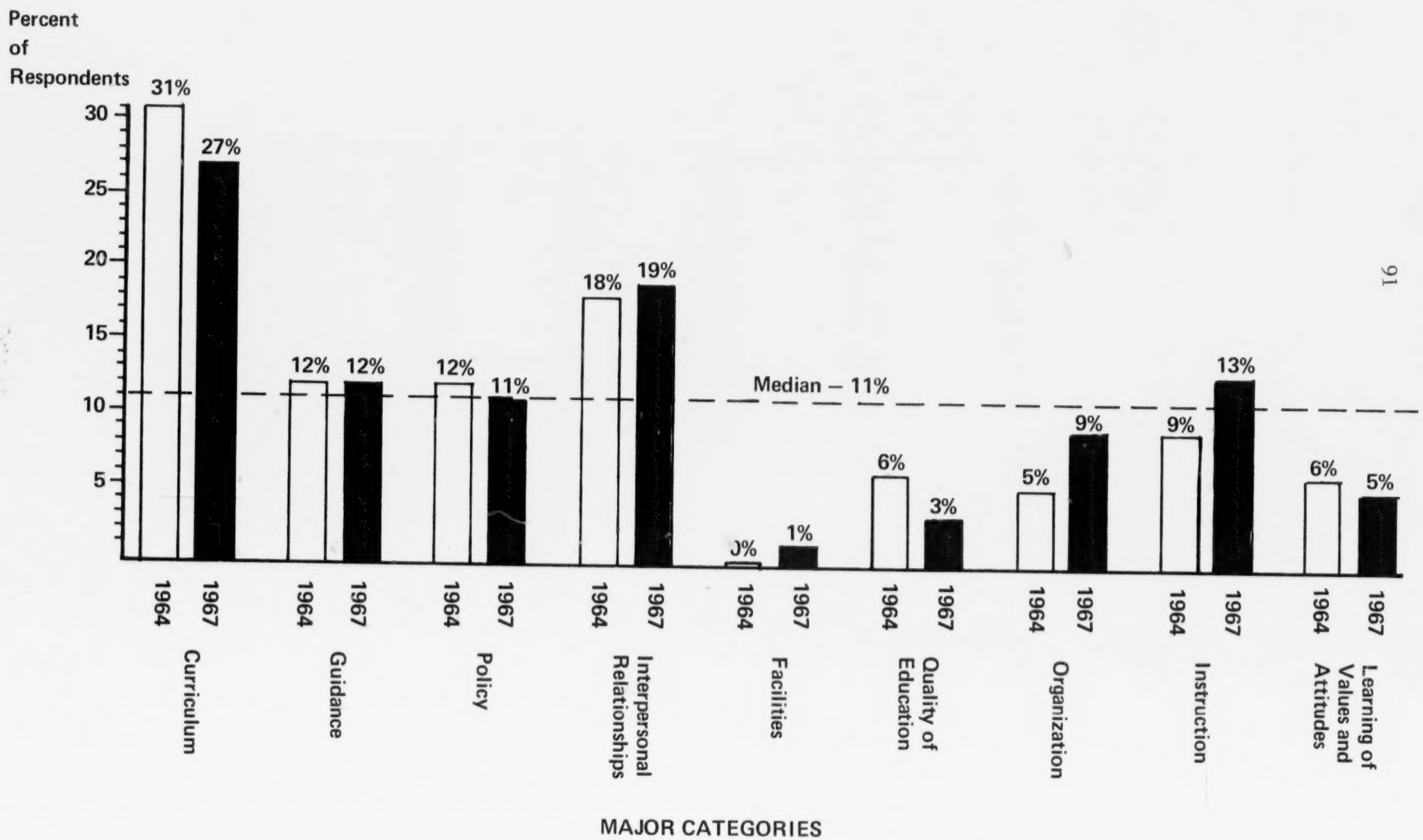

FIGURE 4.2

CURRICULUM CONCERNS: PERCENTAGE OF RESPONDENTS BY SCHOOL CLASSIFICATION AND YEAR

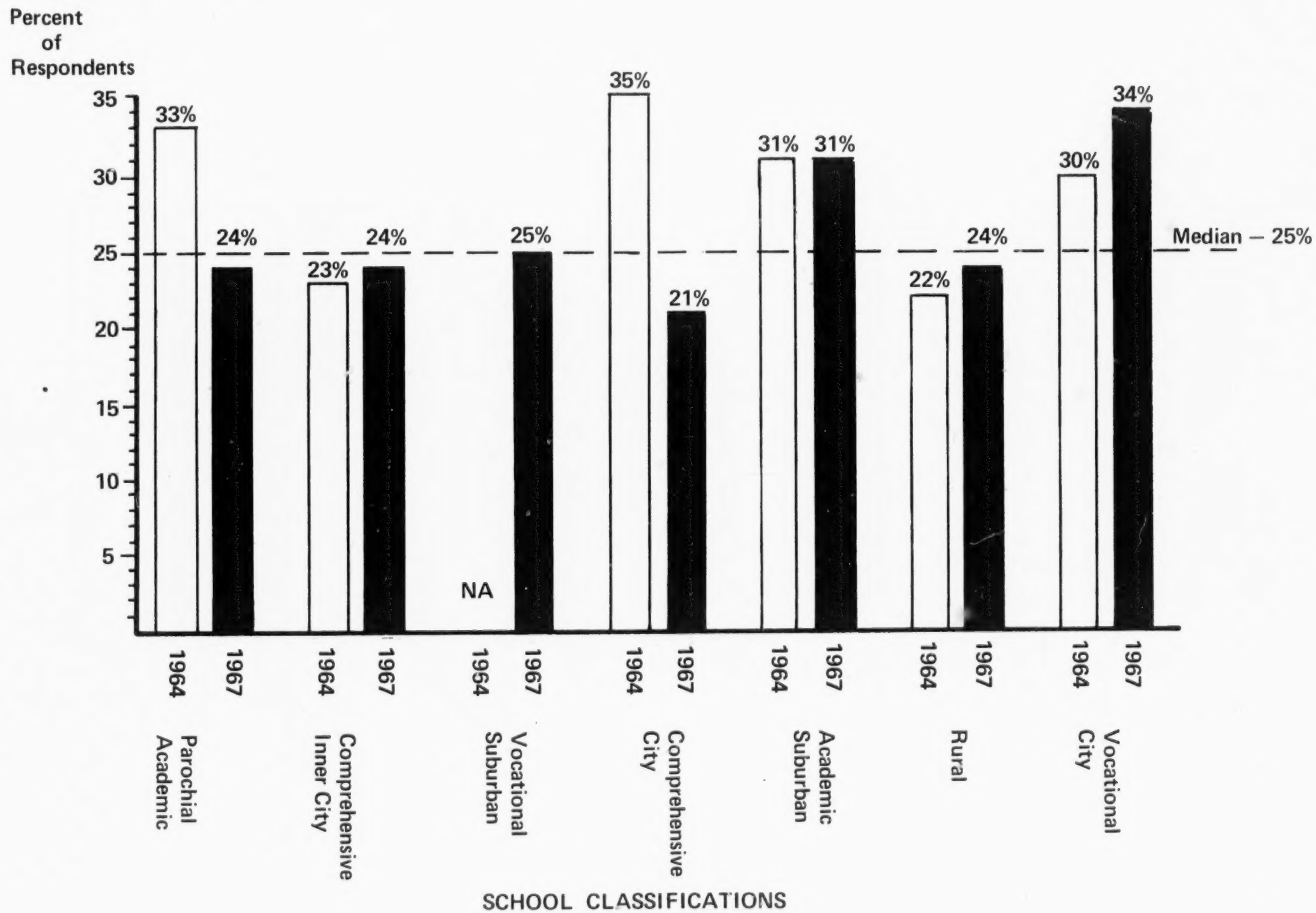

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FIGURE 4.3

GUIDANCE CONCERNS: PERCENT OF RESPONDENTS BY SCHOOL CLASSIFICATION AND YEAR

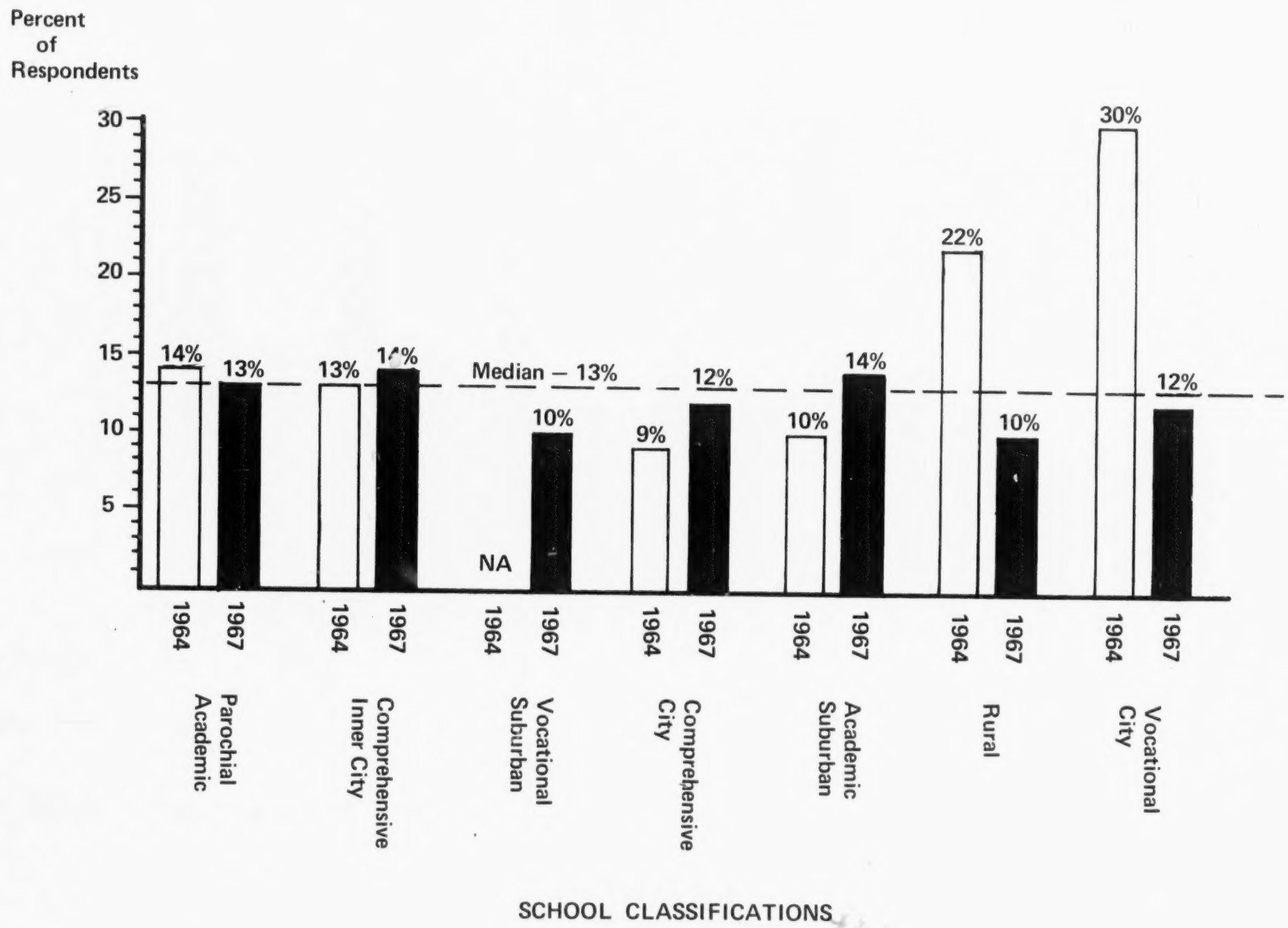

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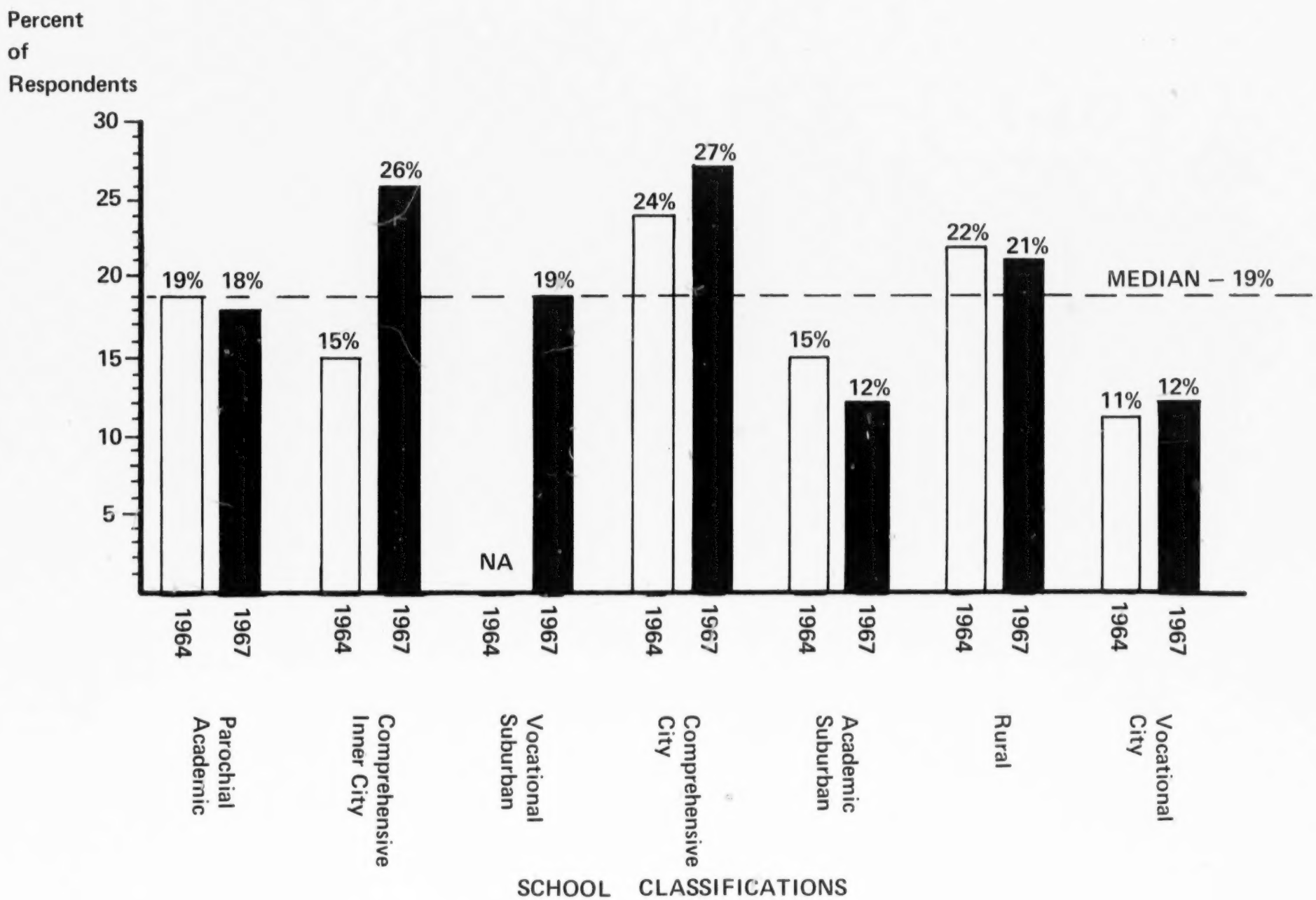
FIGURE 4.4

INTERPERSONAL RELATIONS CONCERNS: PERCENT OF RESPONDENTS BY SCHOOL CLASSIFICATION AND YEAR



4674

3. Each respondent made an average of one and one third suggestions or "concerns" about their high school.

4. A rank order of stated concerns, suggestions or recommendations for high school improvement is as follows:

   a. Expansion and improvement of the curriculum, both academic and vocational (28.7%), with emphasis on a more direct relationship between course content and the world about them.

   b. The improvement of interpersonal relationships, especially between the students and the teachers (19.0%).

   c. Strengthening the guidance program (12.4%).

   d. Strengthening or modifying school policies and regulations (11.0%).

   e. Improving instruction, with emphasis on methodology (10.9%).

   f. Changes in the school organization (7.2%).

   g. Increased attention to the teaching of attitudes and values (5.6%).

   h. Improving the quality of the education program (4.2%).

   i. Improving facilities and equipment (.9%).

An important central theme, consistent throughout most suggestions, were expressions seeking more humanization in the total school program.

A word of caution needs to be made concerning the analysis and interpretation of the material presented in this chapter. While the number of responses represents an acceptable sampling of the graduates for the years of 1964 and 1967, consideration needs to be given to the fact that the respondents represent only those who chose or wanted to respond to the questionnaire. As such, the data may represent certain biases or prejudiced points-of-view. It is the opinion of the Project Director, however, that the responses are quite typical, that they do represent in general a significant segment of the student population of the two graduating classes in the twelve high schools involved in the study, and that the data may be used with caution in the development of new directions for the improvement of education in these twelve high schools. Furthermore, there may be significant implications for the state of Ohio.

The next chapter will present suggestions, comments and recommendations based upon the data presented in Chapter 3 and 4.

CHAPTER V

COMMENTS - SUGGESTIONS - RECOMMENDATIONS

This study was initiated by the Advisory Council for Vocational Education in Ohio. It was designed to secure information to help develop policies to be recommended to the State Board of Education, and to administrative leaders by and through the Division of Vocational Education, The State Department of Education in Ohio. More specifically the purposes were directed toward the collection of data on the following:

1. The percentage of high school graduates reported college-bound, the percentage actually enrolling in college; and, the holding power of higher education and/or post-secondary institutions following enrollment.

2. The kinds of higher and/or post-secondary educational institutions in which the college-bound actually enrolled.

3. Information for the planning of an adequate program of vocational education within the school districts in Ohio, and for the fair and equitable distribution of state and federal monies for vocational education.

4. The extent and causes of student dropouts in both high school and college, their subsequent employment record, and the implications of such information for vocational program planning and development.

5. Additional information as may be significantly related to the above four statements.

Chapters II and IV present the data. A reader interested in this study must review the information as presented and make his own assessment of its value for his purposes. If a brief overview is desired, it is suggested that he read the summaries of the five parts of Chapter III and Chapter IV. Since the highlights of the findings have been summarized following the presentation of the data, they will not be repeated in this chapter.

There are certain implications to be gathered from an analysis of the information reported in this study. Although the reader will wish to make his own analysis and interpretation, with implications for the long-range improvement of education in Ohio, some selected comments, suggestions and recommendations are herewith proposed as a basis for further study and potential action. They are not intended to be fully definitive, but rather to be suggestive for continuing study and analysis by the interested reader. There is no major significance to the order in which the suggestions, comments and recommendations are presented.

A. The use of the ratio of college-bound to non-college-bound seniors, established on data gathered prior to the time of graduation in June, is invalid as a basis for the distribution of money for vocational programs.

While there exists some support for the concept of reimbursement for vocational education on the basis of the ratio of the college-bound to the non-college-bound high school graduate, the data gathered in this study reveal many imperfections. Four of these deserve consideration:

1. There is no consistent pattern utilized by the various districts in reporting the number of seniors planning to enroll in college. A few report only those who planned to enter a junior or community college, a four year college or a university. More districts report as college-bound all seniors who are planning to attend some post-secondary institution, including business colleges, technical schools, nurses training institutions, and others. This implies that the ratio of college-bound to non-college-bound will drop when corrected for those seniors who plan to attend institutions that are primarily vocational and technical in nature. The data for the class of 1970 serves as a good example. For every 100 students reported as college-bound, 11.1 per cent did not enroll in any school; 12.9 per cent enrolled in a business college, technical school or other post-secondary program; and, 76.0 per cent entered a junior or community college, a four-year college or a university. Or, when considering the entire class, the reported 51.2 per cent of college-bound students dropped to 38.9 per cent when actual enrollments in four-year colleges were determined in the fall.

2. Not all seniors are able to fulfill their ambitions to attend some post-secondary training institution. The data collected in this study indicated that an average of 6.4 per cent of the seniors that planned to enroll for advanced training beyond the high school are unable to do so for various reasons (Table 3.1). Thus, if the district reports that 50 per cent of the senior class plan further education, then, in an average high school, it may be anticipated that 44.6 per cent will actually enroll in some post-secondary institution.

3. Not all seniors who enter a post-secondary institution enroll in a college or university. Using the class of 1970 as an example, and as reported for the twelve high schools in this study, 6.6 per cent of the graduates reported as "college-bound" actually enroll in vocational and technical institutions such as a business college, a technical school, proprietary schools and others of a related nature.

The above three points may be illustrated with information on the 1970 graduates as previously reported. The record is as follows:

Per cent of graduates reported as "college bound"	51.2%
Per cent of graduates enrolling in a post-secondary institution	45.5%
Per cent of graduates entering a college or university	38.9%
During the 7 years following graduation, approximately 39 per cent completed their college training program	
Per cent of graduates enrolled in additional training other than a college or university	6.6%

The difference between the percentage of students reported as college-bound and the percentage actually enrolling in a college or a university was 12.3 per cent of the graduating class. Therefore, of every 100 students, only 38.9 actually enrolled in a college or university, rather than the projected figure of 51.9.

It is regretable that comparable data are not available for the graduates of the classes of 1964 and 1967 for the twelve schools included in this study. Most schools regretably do not keep such follow-up information on their graduates. Had it been possible to have secured 100 per cent returns on the questionnaires from the graduates, the data would have been provided for comparative purposes. Since it was indicated in the study that 30.5 per cent of the graduates responded to the inquiry, and since it was evident that a disporportionate share of these respondents had attended college, comparable data are not available.

4. A summary of selected data provides some very interesting information (Table 5.1) which may be summarized as follows:

   a. The number of high school graduates for the twelve schools reported in this study increase annually by 6.07 per cent from 1964 to 1967, and by 2.2 per cent from 1967 to 1970.

   b. The ratio of secondary school dropouts to graduates was one to three for the class of 1967.

   c. The per cent of graduates with plans to enter a post-secondary institution for advanced training was on the increase for the years reported in this study (1964 - 41.1%; 1967 - 48.5%; 1970 - 51.2%).

   d. Approximately 12 of every 13 graduates who planned to continue their education after high school were able to fulfill their ambitions; only one of every 13 students was unable to do so.

   e. The number of students who actually enrolled in a college was much lower than the number reported as having plans to continue education after graduation from high school. When a distinction

TABLE 5.1

SUMMARY TABLE OF
SELECTED DATA

Legend	Class of 1964	Class of 1967	Class of 1970
1. Number of graduates	3669[1]	4337	4626
2. Number of dropouts		1413	
3. Ratio of dropouts to graduates		1-3.07	
4. Per cent of graduates:			
--planning to enter a post-secondary school	41.1%	48.5%	51.2%
--who planned to enter a post-secondary school and did enroll	92.2%	92.7%	93.2%
--actually enrolled in a post-secondary school			45.2%
--actually enrolled in a college			38.9%
--actually enrolled in a post-secondary school other than a college			6.3%
5. Student withdrawals from college completing:			
--less than one year	66	73	
--one year but less then two years	79	84	
--two years but less then three years	67	133	
--three years but less then four years	50	x[2]	
	262	290	
6. Per cent of high school graduates entering a college by high school track:			
--college preparatory	48.5%	43.3%	
--general	17.7%	17.7%	
--vocational	19.3%	25.0%	
--Practical Arts	14.5%	14.0%	
7. Per cent of withdrawals from college by high school track:			
--college preparatory		23.8%	
--general		45.4%	
--vocational education		15.0%	
--Practical Arts		15.8%	

[1] One school did not have a graduating class in 1964.

[2] The 1967 graduates would be entering their fourth year of college work when the data was collected.

is made between enrollment in a post-secondary institution (college, business college, technical school, institute, or other training program), the per cent of graduates (class of 1970) dropped from 51.2 per cent reported as planning to pursue post high school training to 38.9 per cent who actually entered a college or a university. Thus, the "college-bound" student that actually enrolled in a college was 12.3 per cent less than the number that had indicated a desire to continue their education after high school.

f. Student withdrawals (dropouts) from college was about the same for each of the four years for the class of 1964, and the number increased during each of the first three years for the class of 1967 (it should be noted that the data is probably skewed due to the possible lower return of questionnaires by the dropout students).

g. The 1964-1967 data indicated an increase in the per cent of students following the vocational education track in high school to enter college (+5.7%) and a decrease for those who pursued the college preparatory track (-5.2%).

h. The per cent of withdrawals (dropouts) from college was highest for the high school graduate who followed the general track (45.4%), and it was the lowest for those who followed the vocational education track (15.0%) and the practical arts track (15.8%).

5. Data collected in this study suggests that the generally accepted principle of vocational education for the non-college-bound has some major weaknesses, and possibly a limited basis for formation of policy on vocational education. The following is suggested for further study:

   Responses by some graduates indicate that the college-bound student want vocational education for various purposes.
   Vocational skills are needed by the college-bound to earn money to go to college and to stay in college.
   Some graduates in the college preparatory track wanted vocational courses.
   A rigid application of the tracking system in secondary schools tends to limit the meeting of individual student needs. More study is needed.
   The graduates reporting in this study called for a much greater flexibility in crossing tracks.

6. Six and six-tenths per cent of the high school graduates enrolled in institutions other than a college or university. Also, the data indicate that there is an additional loss of three out of ten students (29.3%) who failed to complete their college training program. These people enter the market prematurely,

and they have immediate need for marketable skills. The specific needs of this group should be identified and appropriate programs developed for assisting these job entrants to attain maximum productivity within a relatively short period of time.

7. If vocational education is to be provided to meet the needs of the non-college-bound student, the 30 per cent potential college dropout, the student who is uncertain about his future or who hpes to go to college but does not, and the high school dropouts, then it becomes imperative that:

   a. The vocational training needs of these students be more fully and specifically identified.

   b. Training programs be developed or adapted to meet these needs.

   c. The formula for the distribution of money in support of vocational training programs be amended and expanded to provide for the programs to meet the indicated needs for these students.

B. If it is determined to be desirable to distribute money for vocational education on the basis of the ratio of college to non-college-bound graduates, then it is essential that several steps be taken to establish the validity of the ratio.

This writer's position is that the distinction between college-bound and non-college-bound, between college preparatory and vocational tracks, and related parallels are not only out-moded and cliche but invalid, inaccurate and potentially harmful to the welfare and well being of the high school students and the subsequent college student. Some of the graduates in this study who attended college indicated a need for vocational skills. One of the major recommendations for the improvement of the high school was in the area of the curriculum, with emphasis on both vocational and academic programs.

Whatever may be the basis for the distribution of money for vocational education, several additional factors should be taken into consideration in developing the formula. The following are suggested for further study:

1. Develop and standardize an acceptable classification for all appropriate post-secondary institutions in which the graduate (and dropout) might enroll.

2. Request that each high school report on or near June 1 the number of students planning to attend a post-secondary institution, using the standardized classification proposed above.

3. Have each high school submit a report on or near October 15 giving the number that actually enroll in a post-secondary institution, using the standardized classification proposed above.

4. Analyze the submitted information from items "b" and "c" above to determine relationships between plans for post-secondary school entrance and the fulfillment of these plans; determine the implications for vocational program improvement and the related factor of financial support for these programs, especially for vocational education and the formula used in the distribution of money for vocational programs.

5. Develop a system whereby each high school can maintain a more complete and adequate record pertaining to enrollment in post-secondary institutions, and factors related to withdrawals and dropouts, both in high school and in college. This information should then be used to make further adjustments in the formula for the distribution of money for vocational programs.

The implementation of the above suggestions would make possible the identification of patterns of relationships over the years between a great variety of significant factors. Some of these would include the following:

1. Post-secondary school intentions and the fulfillment of these plans.

2. The relationship between intentions and fulfillment (item 1) and work opportunity within the area, the economy of the state and related factors which would help to make possible a more rapid adjustment of the high school program to changing needs and changing times.

3. The holding power of post-secondary institutions (dropouts and completions), and the causes related to it, with implications for program adjustment and improvement, for financial support of these programs, and for post-secondary institutions and high school interrelationships.

4. Secondary school preparation programs and admission requirements into the several post-secondary school institutions, including the colleges and universities.

5. The guidance and counseling program and the problems and opportunities in the community, state and nation.

6. Accumulative records of students by social security number.

C. Plans should be made for the establishment of a state educational data bank, with personnel information available for both public and private students.

It is time for the people of Ohio to give serious consideration to the development of a state educational data bank. The hardware and the technological capabilities are available for the implementation of this recommendation, and steps should be taken to implement it within the very near future. Utilization of this capability would make available quantities of significant data not now accessible for the decision-making process.

If it should be determined that there should be two banks, one for higher education and one for public education, then the two systems should be compatible. Under these conditions the information proposed in items "A" and "B" above could be provided with a minimum of time and effort on the part of the local school districts, and the data would be instantly retrievable. The full implementation of the recommendations made in item "1" and "2" will undoubtedly be limited until such time as a state educational data bank is established.

D. Selected areas of the high school program should be improved.

If the judgment of the graduate and dropout student as reported in this study has meaning, then there are several suggestions which should be given serious consideration for the improvement of the program of studies. Among other things, emphasis was placed upon the following:

1. More offerings should be available in both vocational and academic areas.

2. Some vocational students wanted more offerings in selected areas of the academic program, and some students in academic schools wanted opportunities for vocational training and the development of a vocational skill (Table 4.4).

3. After a few years out of high school the student senses a gap between the high school program and the problems and issues found in life experiences beyond the secondary school. This emphasizes the need for relevancy in the program and activities at the high school level, and a more realistic and functional plan for program and development related to social, business, and industrial world of life and work.

4. Certain areas of the curriculum need attention. The problem is not clear whether this need is for improvement in the content and program of a given area, or in the development of an appreciation for and an understanding of the value of the area. Certain areas were identified as having little value, such as a foreign language, art, music, industrial arts and health and physical education (Table 3.15).

5. If the one primary reason for high school students dropping out of school is because they are discouraged (Table 3.24), then there should be a study and an analysis made of the causitive factors, and remedial action taken.

6. The respondents indicated (directly and by implication) that the dropout rate might be lowered if provision were made for:

   --overcoming the factors leading to discouragement.
   --making vocational program available; training for a skilled job.
   --providing an opportunity to earn while learning (cooperative programs or development of a saleable skill).

--a work-study program.
--more assistance for improving reading, writing, and learning how to study.

These areas merit further study for analysis and resolution.

7. While many dropout students enroll in some kind of a vocational, technical or proprietary school, a great majority of them (72.9%) wish that they could have gone to college. Schools should maintain contact with these students, and an effort should be made at an appropriate time with each one to provide guidance and assistance in continuing his education.

8. The respondents believed that increased emphasis should be placed on the process of thinking (problem solving), learning how to get along with others, study habits and oral communication (Table 3.21). This is a problem for consideration by every teacher, administrator and personnel involved in teacher training programs.

E. Student comments on how to improve their high schools provide a variety of recommendations.

Three staff members made a detailed analysis of student responses to an open-ended question whereby they could make one suggestion that they believed would really help their high school to become a better school (Chapter IV). Following the analysis of the replies, the staff members were asked to indicate any pertinent recommendations which, in their judgment, should be made in response to what the students were saying. The following is a brief report of their comments:

1. Each school district should have a plan for the "follow-up" of their graduates and dropouts. Attention should be given to occupations, all post-secondary school training, withdrawals from high school and college, and related problems.

2. It was suggested that an attitudinal survey, made sometime after graduation, would be valuable.

3. An effort should be made to integrate the curriculum, and to move away from the tracking system.

4. Personal relationships are exceedingly more significant than technical competencies.

5. Counselors and teachers should serve as guidance personnel.

6. Responses by the students indicate that it is time to critically examine the meaning and purpose of the high school.

7. The apparent honesty and frankness of responses lends credence to the former high school student as a valid source of information pointing toward significant educational change.

8. The lack of student concern about buildings and facilities suggests that this is not a major problem today. However, it may also indicate that emphasis has been misplaced, with an imperative need to give increased attention to the curriculum, to guidance, and to interpersonal relationships rather than to brick and mortar.

9. There was an expressed surprise on the part of the analyzers that:

   --few students expressed concern for the quality of the educational program (except indirectly).
   --a representative number of the respondents were concerned about attitudes and values, with implications for family life.
   --there was a minimum of references to school administrators.
   --there were very few references to the board of education.

F. Selected observations and comments are proposed for further study and consideration:

1. The range in the number of credits offered in the twelve schools in this study (60-144 1/4) suggests a wide variation in opportunity to make course selections in keeping with students interests, aptitudes, and abilities. As the world of work demands and necessitates increasingly complex and selective skills resulting from new scientific discoveries and technological developments, it will become increasingly essential that the schools be structured in such a manner that will make possible breadth and quality of programs at an acceptable level of cost; and, that will provide every child in the state, regardless of his geographical location or his socio-economic position, with equitable educational opportunities commensurate with his respective needs.

2. The high school dropout is a specialized problem with many facets. When 27.7 per cent of the dropout respondents state that they dropped out to go to work, it suggests that it is time to give serious consideration to the expansion of school related job opportunities as an integral part of the program. This position is reinforced with the reporting of part-time employment while in high school: 1964 graduates - 45.6 per cent; 1967 graduates - 50.9 per cent; and dropouts - 46.0 per cent. Furthermore, one in four dropouts (28.5%) reported that they continued on this job full time after dropping out of school. Also, 72.9 per cent of the dropouts indicated that they wanted more education. With a recognized need for education, and with a desire for more training, this is the time for counselors, teachers and administrators to keep in contact with these students and to provide assistance and counseling for further training opportunities for both graduates and dropouts.

3. The holding power in colleges is best for those students who pursued the vocational program in high school. Withdrawal from college prior to graduation was highest for students who followed the practical arts program (40.3%), and lowest for vocational education track students (24.1%). As more and more vocational schools are organized, and as more and more students enroll in vocational programs, it is very probable that an increasing number of vocational students will enroll in college. If the record indicated in this study continues in the future, then the holding power of the colleges should be enhanced.

4. Vocational education is meeting a need which has not been provided by many schools in the past. This is evidenced by the previous enrollments in high school tracks by students entering the Penta County Vocational school and graduating with the class of 1967. Only 27 of the 405 students had been in a vocational program before enrolling in Penta County. The remainder of the students had been enrolled in general education (174), practical arts (157), and in college preparatory programs (47). If similar programs were available to all students in Ohio, it is very probable that a similar realignment in programs of study would be made.

5. It is possible that a portion of the emphasis on student counseling, particularly with regard to program and subject selection, is misplaced. Students indicated that they had been influenced in such selection more by their parents than by anyone else (29.6%). This suggests that it may be time for the schools to provide parents with the essential information for program and subject selection, and to increasingly seek to make them a part of the counseling staff.

G. Further research should be made in many areas.

Studies of this kind often identify more questions and problems than they resolve. Such has been the case with this project. A few should be mentioned as a part of this report.

1. A thirty per cent return of the questionnaires would generally be considered acceptable in studies of this type. The respondents were those who chose of their own volition to return the completed questionnaire. Two issues suggest further study: one relates to the validity of the responses, and the other to a more complete and representative sampling of the total number of graduates and of dropouts in one selected school. Such a study would be very desirable.

   However, the experience with this study indicates that such a study would be very costly. All eleven of the Local Project Coordinators exerted an

intensive effort to secure maximum returns (Chapter II). The cost for securing what would appear to be very limited additional returns would be exceedingly high. In the light of the probable cost, and in view of the almost insurmountable obstacles encountered by the Local Project Coordinators, it is probable that the extent of the returns would not justify the necessary financial outlay.

There is one check that should be made on this point of view. It is suggested that three or more of the Local Project Coordinators be called to a meeting of the Advisory Council, or to appear before a sub-committee of the council, to present their judgment of such a proposal and to receive their testimony concerning steps taken and returns achieved in the present study, with implications for a more intensive follow-up study in one selected school system.

2. The returns from dropout students were most disappointing. It would be very desirable to have an intensive study of dropouts in one selected school, and thereby to verify or modify the general findings in the present study.

   Again, the cost might be prohibitive in terms of potential outcomes. As proposed above, it is suggested that three or more of the Local Project Coordinators be invited to share their point of view with regard to this suggestion.

3. The proposals made in items one and two above might be investigated intensively with a pilot project in one school system. Such a study should take one graduating class and dropouts from that class and follow each student over a five year period. There should be a well planned exit interview with each student, and periodic interviews throughout the five year period.

4. More information is needed on the tracking system used in the various high schools. The respondents in this study were strong in their recommendations that there be more flexibility and more freedom of choice across the conventional tracks. This whole area merits further study and investigation.

   One aspect of this problem will be pursued by a doctoral candidate in Educational administration Administration at Miami University. Data will be matched for individual students from information reported on the office records (Form MU 1 in this study) and from responses by the student reported on Form MU 2. This dissertation should be completed during the summer of 1971. Significant information would be made available concerning

the value, or lack of value, of the track system with subsequent implications for modified or revised policies in this area of education.

5. It was proposed at the beginning of this study that one approach might be the identification of needs by contacting skilled and semi-skilled workers in business and industry. These workers could be sampled for information similar to that used in this study, with the findings correlated with the recommendations proposed by the graduates of 1964, 1967 and by the dropouts as reported in preceeding chapters, resulting in a collection of viable recommendations for future high school programs. Such a study is being developed at this time with completion planned for December, 1971.

6. While maturity and experience tend to mold attitudes and values which modify previously held concepts, it would be so helpful if an instrument could be devised whereby the attitudes of students in high school could be assessed in somewhat the same pattern as this project assessed the attitudes of students after being out of high school for three to six years. While the results would lack the judgment which comes with maturity and experience, it is believed that such a study could prove to be most valuable for the planning of program improvement while the students involved could profit from such changes or modifications.

7. Too little information is known about the nature and cause of student withdrawals from college, and the implications for program improvement at the secondary school level. Some respondents in this study have indicated that they withdrew from college for financial reasons. Also, the lack of skills with which to earn money to go to and to remain in college was cited as a contributing factor. These are areas that merit further study and exploration, with appropriate adjustments being made in the high school program of study and related activities.

8. A periodic study should be made of students who have been out of school for three to five years. This project has indicated the potential merit for such a follow-up study. A format should be devised to be used in every high school in Ohio, with the encouragement and assistance of the State Department of Education. The proposed study, after being tested in selected high schools under normal conditions, could be implemented on a state-wide basis. This might be done every five years, or the state might be divided into five sections with a different section making the study each year on a five year rotating basis.

9. The present study was made with a cross section of representative schools in Ohio. A similar or related study should be made in depth for such areas

as inner-city and suburbia; metropolitan and rural schools; schools with a high and a low per pupil annual financial investment in education; high schools with small and large enrollments; vocational schools and academic schools; vocational schools and comprehensive schools; and many others.

Summary Statement

The record of this project stands on its own merits as reported in preceding pages. Much of the data has been very closely related to the stated objectives of this study. Its merits and limitations serve to point up the need for further study and investigation, and especially for a new and fresh attack upon a plan or plans for the improvement of education in Ohio.

* *

"I do not think there should be one program strictly for college studies and one with preparation for the business world. I think there should be a combined course of study offered to everyone between the academic program and the business program. No one really knows what life will bring them after graduation but if one has a beginning knowledge of both these fields, he should be set for just about everything."

-- A Graduate

APPENDIX

A Questionnaire Forms:

MU 1 - School Record Report

MU 2 - High School Improvement Data Sheet (For high school graduates)

MU 3 - High School Improvement Data Sheet (For drop-outs)

MU 4 - Graduates, class of 1970

MU 5 - College-Bound Graduates, Classes of 1964 and 1967

B X Tables

The X Tables provide information tabulated by schools. In many instances condensed tables appear in the text.

C Selected Statements (by high school graduates and drop-outs) for the Improvement of the High Schools.

D R Tables (Tables available upon request).

MU 1

APPENDIX A

SCHOOL RECORD REPORT

_____ , _____ 1/2 High School No. ____
(Last name)

3 0 ____ Male
1 ____ Female

4 0 ____ Graduate, class of 1964
1 ____ Graduate, class of 1967
2 ____ Member of class of 1967 (1963-67) but not a grad.

5 Year of entrance to this high school
0 ____ September, 1963
1 ____ 1963-64
2 ____ September, 1964
3 ____ 1964-65
4 ____ 1965-66
5 ____ 1966-67
6 ____ Other: _____

6 The school attended immediately prior to enrollment in this h. s. was:
0 ____ a public school.
1 ____ a parochial school.
2 ____ a private school.
3 ____ a military school.
4 ____ a gov't dependent school.
5 ____ Other: _____

7 The student entered this school from:
0 ____ another school in this district.
8 another school district in:
1 ____ this county.
2 ____ Ohio, but not in this county
3 ____ Indiana.
4 ____ Kentucky.
5 ____ Michigan.
6 ____ Pennsylvania
7 ____ West Virginia
8 ____ another southern state.
9 ____ a state or territory other than above.
10 ____ a foreign country
11 ____ Other: _____

9 High School program of studies pursued by student:
0 ____ college preparatory
1 ____ general
2 ____ vocational education -- meeting state board standards
3 ____ practical arts (including industrial arts, non-vocational business education, etc.)

10 Rank in the class at time of graduation, or at time of dropping out of school:
0 ____ quartile 1 (highest quartile)
1 ____ quartile 2
2 ____ quartile 3
3 ____ quartile 4 (lowest quartile)
4 ____ unknown

(OVER)

WITHDRAWALS AND DROP-OUTS, CLASS OF 1967

11 The student dropped out or transferred to another school prior to graduation during the school year of:

0 ____ 1963-64.
1 ____ 1964-65.
2 ____ 1965-66.
3 ____ 1966-67.
4 ____ Other: _____

12 0 ____ The student continued in school but did not graduate with the class of 1967 (no further follow-up of this student).
1 ____ Student withdrew to enter another school (no further follow-up of this student).

Number of days of absence of the drop-out student during the years of:

13/15____ 1963-64.
16/18____ 1964-65.
19/21____ 1965-66.
22/24____ 1966-67.

(leave blank if unknown or no record)

The student dropped out of school in (check month and year):

Month		Year	
25	0 ____ Sept.	26	0 ____ 1963.
	1 ____ Oct.		1 ____ 1964.
	2 ____ Nov.		2 ____ 1965.
	3 ____ Dec.		3 ____ 1966.
	4 ____ Jan.		4 ____ 1967.
	5 ____ Feb.		
	6 ____ Mar.		
	7 ____ Apr.		
	8 ____ May		
	9 ____ June		

27 Primary reason for withdrawal of the
28 drop-out student:

0 ____ to go to work.
1 ____ financial problems in family.
2 ____ doctor's certificate.
3 ____ conflict/problems in home.
4 ____ illness - personal.
5 ____ illness - family.
6 ____ teacher-pupil conflict
7 ____ discouraged - low grades
8 ____ discouraged - various reasons.
9 ____ marriage.
10 ____ expelled.
11 ____ Other: _____
12 ____ Unknown.

29 Did the drop-out student return at a later date?

0 ____ Yes.
1 ____ No.

30 If yes, did he graduate?

0 ____ Yes.
1 ____ No.

31 If the drop-out student entered another school at a later time was this school a:

0 ____ public school.
1 ____ parochial school.
2 ____ private school.
3 ____ Other: _____

32 Did the drop-out student become employed immediately upon leaving school?

0 ____ Yes.
1 ____ No.
2 ____ No record; unknown.

33 Did the drop-out student subsequently enter one of the following:

0 ____ a night school.
1 ____ a business school or college.
2 ____ a college or university.
3 ____ a junior college.
4 ____ a community college.
5 ____ a technical institute.
6 ____ a work-study program.
7 ____ a manpower program.
8 ____ Other: _____

34 Reading level at time of dropping out of school (data not to be computerized):

_____ (Data reported at grade 11 or above).
_____ (Data reported from records below grade 11)
_____ Information not available.

Form MU 2

1+2 H.S. No. _____

HIGH SCHOOL IMPROVEMENT DATA SHEET
AUGUST 1970

_____ _____ _____
Last name First name Maiden name, if female and married

Address: _____ _____ _____
Street City State

3 0 ____ Male
1 ____ Female

4 0 ___ Graduate, class of 1964
1 ___ Graduate, class of 1967
2 ___ Member of class of 1967, (1963-67) but not a graduate.

INFORMATION CONCERNING YOUR HIGH SCHOOL

In your opinion what subject area was most helpful and of least value to you? (Check one or more in each column):

	Subject Area	Most helpful	Of least value
5	Art	0 ____	1 ____
6	Business education	0 ____	1 ____
7	Civics, sociology, econ.	0 ____	1 ____
8	English	0 ____	1 ____
9	Foreign language	0 ____	1 ____
10	Health and Phys. Ed.	0 ____	1 ____
11	History & Government	0 ____	1 ____
12	Home Ec. (Not vocational)	0 ____	1 ____
13	Industrial Arts	0 ____	1 ____
14	Literature	0 ____	1 ____
15	Mathematics	0 ____	1 ____
16	Music	0 ____	1 ____
17	Science	0 ____	1 ____
18	Secretarial studies	0 ____	1 ____
19	Vocational (Vo. Ag, T+I, B.E., D.E., H. Ec., etc.)	0 ____	1 ____

20 Other _____

21 Who was most helpful to you in the selection of your high school courses? (Check one):

0 ___ The superintendent
1 ___ The principal
2 ___ An assistant principal
3 ___ The Dean of Men/Women
4 ___ A teacher
5 ___ A guidance counselor
6 ___ Your parents
7 ___ Your brother or sister
8 ___ Other students
9 ___ Other: _____

22 23 In your opinion what was the most valuable experience you had in high school? (Check one):

0 ___ The classwork
1 ___ Vocational Education
2 ___ Music
3 ___ Dramatics; plays, etc.
4 ___ Debate
5 ___ Athletics - interscholastic
6 ___ Athletics - within the school
7 ___ Meetings with school counselor
8 ___ Teacher interest and helpfulness
9 ___ Informal meetings with teachers
10 ___ Club membership
11 ___ Club officer
12 ___ School newspaper
13 ___ School annual
14 ___ Cheer Leader
15 ___ Social Activities
16 ___ Other: _____

24 Was your high school education helpful in the kinds of work that you have done since leaving school? (Check one):

0 ___ Very helpful
1 ___ Helpful
2 ___ Of some help, but could have been more worthwhile and helpful
3 ___ Was of little value
4 ___ Was of no value

25 26 Some of your classmates left school prior to graduation. In your opinion what were the primary reasons why they did not finish school? (Check one or more):

0 _____ To go to work.
1 _____ Financial problems in family.
2 _____ Doctor's c·-tificate.
3 _____ Conflict/problems in home.
4 _____ Illness - personal.
5 _____ Illness - family.
6 _____ Teacher-pupil conflict.
7 _____ Discouraged - low grades.
8 _____ Discouraged - various reasons.
9 _____ Marriage.
10 _____ Expelled.
11 _____ Other:

27 If Vocational programs had been available would you have completed high school?
0 ___ Yes; 1 ___ No.

What program would have encouraged you to stay in school longer? (Check one or more):

Courses to help you improve:
28 _____ --in reading.
29 _____ --in arithmetic; mathematics.
30 _____ --in writing.
31 _____ --in how to study.
32 _____ A work/study program.
33 _____ Opportunity to earn money while in high school.
34 _____ Training for a skilled occupation.
35 _____ Other: _____

QUESTIONS FOR GRADUATES CONTINUING THEIR EDUCATION:

36 If you attended a college or university, how many years of work did you complete?
0 ___ Less than 1 yr. 5 ___ 3 years
1 ___ 1 year 6 ___ 3½ years
2 ___ 1½ years 7 ___ 4 years
3 ___ 2 years 8 ___ 5 years
4 ___ 2½ years 9 ___ More than 5 yrs.

37 What is your highest earned degree?
0 ___ AB; BS 4 ___ MD
1 ___ Masters degree 5 ___ DDS
2 ___ Associate 6 ___ Other: _____
3 ___ PhD; EdD

38 What one more thing should the high school have done to help you to prepare for advanced training? (Check one):
Improved your:
0 ___ --reading. 3 ___ --oral communication.
1 ___ --writing. 4 ___ --study habits.
2 ___ --thinking 5 ___ --work habits.
6 ___ Helped you to learn how to get along with others.
7 ___ Better correlation of H.S. training to actual situations in life and on the job.

39 Did you withdraw from college to enter a vocational or technical school?
0 ___ Yes; 1 ___ No.

40 Did you graduate from college and then enter a vocational or technical school?
0 ___ Yes; 1 ___ No.

Have you attended one or more of the following after graduation from high school? (Check any that you attended):
41 _____ A vocational school
42 _____ A technical school
43 _____ A business college
44 _____ Taken a correspondence course
45 _____ An institute
46 _____ Manpower program
47 _____ Work-study program
48 _____ A vocational or trade school conducted by a business or industry
49 _____ Apprenticeship program
50 _____ Other: _____

51 Did you complete one or more of the programs checked above?
0 ___ Yes; 1 _____ No.

INFORMATION CONCERNING EMPLOYMENT:

52 Did you have a part-time job while in high school? 0 _____ Yes; 1 ___ No.

53 How many different jobs have you had since leaving school? _____

54 Are you employed on a job at this time?
0 ___ Yes; 1 _____ No.

55 Now that you have work experience, what do you think would have helped to make your years in high school more worthwhile? (Check one):
0 ___ More curriculum choices
1 ___ More extra-curricular activities
2 ___ More support from your parents
3 ___ A chance for success
4 ___ Acceptance by your fellow students
Friendship and understanding by:
5 ___ --your teachers.
6 ___ --your principal
7 ___ --your guidance counselor
8 ___ --other pupils
9 ___ Other: _____

ONE SUGGESTION FOR YOUR HIGH SCHOOL:

56 Make one suggestion that you think would really help your high school to become a better school:

_____
_____
_____

Form MU 3

1+2 H.S. No. _____

HIGH SCHOOL IMPROVEMENT DATA SHEET
AUGUST 1970

_____ Last name _____ First name _____ Maiden name, if female and married

Address: _____ Street _____ City _____ State

3 0 ____ Male
1 ____ Female

4 0 ____ Graduate, class of 1964
1 ____ Graduate, class of 1967
2 ____ Member of class of 1967, (1963-67) but not a graduate.

INFORMATION CONCERNING YOUR HIGH SCHOOL

In your opinion what subject area was most helpful and of least value to you? (Check one or more in each column):

	Subject Area	Most helpful	Of least value
5	Art	0 _____	1 _____
6	Business education	0 _____	1 _____
7	Civics, sociology, econ.	0 _____	1 _____
8	English	0 _____	1 _____
9	Foreign language	0 _____	1 _____
10	Health and Phys. Ed.	0 _____	1 _____
11	History & Government	0 _____	1 _____
12	Home Ec. (Not vocational)	0 _____	1 _____
13	Industrial Arts	0 _____	1 _____
14	Literature	0 _____	1 _____
15	Mathematics	0 _____	1 _____
16	Music	0 _____	1 _____
17	Science	0 _____	1 _____
18	Secretarial studies	0 _____	1 _____
19	Vocational (Vo. Ag, T+I, B.E., D.E., H. Ec., etc.)	0 _____	1 _____
20	Other _____		

21 Who was most helpful to you in the selection of your high school courses? (Check one):

0 ___ The superintendent
1 ___ The principal
2 ___ An assistant principal
3 ___ The Dean of Men/Women
4 ___ A teacher
5 ___ A guidance counselor
6 ___ Your parents
7 ___ Your brother or sister
8 ___ Other students
9 ___ Other: _____

22 23 In your opinion what was the most valuable experience you had in high school? (Check one):

0 ___ The classwork
1 ___ Vocational Education
2 ___ Music
3 ___ Dramatics; plays, etc.
4 ___ Debate
5 ___ Athletics - interscholastic
6 ___ Athletics - within the school
7 ___ Meetings with school counselor
8 ___ Teacher interest and helpfulness
9 ___ Informal meetings with teachers
10 ___ Club membership
11 ___ Club officer
12 ___ School newspaper
13 ___ School annual
14 ___ Cheer Leader
15 ___ Social Activities
16 ___ Other: _____

24 Was your high school education helpful in the kinds of work that you have done since leaving school? (Check one):

0 ___ Very helpful
1 ___ Helpful
2 ___ Of some help, but could have been more worthwhile and helpful
3 ___ Was of little value
4 ___ Was of no value

25 26 In your judgment, what was the primary reason why you left high school prior to graduation? (Check one):

0 ___ To go to work
1 ___ Financial problems in family
2 ___ Doctor's certificate
3 ___ Conflict problems in home
4 ___ Illness - personal
5 ___ Illness - family
6 ___ Teacher-pupil conflict
7 ___ Discouraged - low grades
8 ___ Discouraged - various reasons
9 ___ Marriage
10 ___ Expelled
11 ___ Other: _____

27 If Vocational programs had been available would you have completed high school?

0____Yes; 1 ___No.

What program would have encouraged you to stay in school longer? (Check one or more):

Courses to help you improve:

28 ____ --in reading.
29 ____ --in arithmetic; mathematics.
30 ____ --in writing.
31 ____ --in how to study.
32 ____ A work/study program.
33 ____ Opportunity to earn money while in high school.
34 ____ Training for a skilled occupation.
35 ____ Other: _____

QUESTIONS FOR GRADUATES CONTINUING THEIR EDUCATION

36 You withdrew from high school prior to graduation with the class of 1967. Have you attended any kind of a school since that time? 0____Yes; 1____No.

If your answer is yes, check those schools you have attended:

			No. Months Attended	Diploma, certificate, degree received
37	____	A regular high school	50-1 ____	76 _____
38	____	Night high school	52-3 ____	77 _____
39	____	Adult evening school	54-5 ____	78 _____
40	____	Business college	56-7 ____	79 _____
41	____	Private school	58-9 ____	80 _____
42	____	Correspondence course	60-1 ____	81 _____
43	____	Institute (less than 2 yrs.)	62-3 ____	82 _____
44	____	Post h.s. technical program	64-5 ____	83 _____
45	____	Jr. or community college	66-7 ____	84 _____
46	____	College or university	68-9 ____	85 _____
47	____	Manpower program	70-1 ____	86 _____
48	____	Work-study program	72-3 ____	87 _____
49	____	Other:	74-5 ____	88 _____

89 Do you think that you should have gone further in school?
0____Yes; 1 ___ No.

90 How far do you wish that you could have gone, (or hope to go) in school? (Check one):

0 ___ Grade 10
1 ___ Grade 11
2 ___ Grade 12
3 ___ Bus. college
4 ___ Private school
5 ___ Correspond. course
6 ___ Institute (less than 2 yrs.)
7 ___ Post h.s. tech. prog.
8 ___ Jr. or community col.
9 ___ College or university
10 ___ Manpower program
11 ___ Work-study program
12 ___ Other:_____

INFORMATION CONCERNING EMPLOYMENT:

91 Did you have a part-time job while in high school?
0 ___ Yes; 1 ___ No.

92 Did you continue full-time on this job after leaving school? 0 ___ Yes; 1 ___ No.

93 Were you in an apprenticeship program?
0 ___ Yes; 1 ___ No.

94 Are you presently employed?
0 ___ Yes; 1 ___ No.

95 Does your present position provide an opportunity for advancement?
0 ___ Yes; 1 ___ No.

96 How many different jobs have you had
97 since leaving school?_____

98 Please list all of the jobs that you have had since leaving high school:

No. of months	Kind of job
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

99 Now that you have work experience, what do you think would have helped to make your years in high school more worthwhile? (Check one):

0 ___ More curriculum choices
1 ___ More extra curricular activities
2 ___ More support from your parents
3 ___ A chance for success
4 ___ Acceptance by your fellow students

Friendship and understanding by:

5 ___--your teachers.
6 ___--your principal.
7 ___--your guidance counselor.
8 ___--other pupils.
9 ___ Other:_____

100 Make one suggestion that you think would really help your high school to become a better school:_____

Form MU 4

High School No. ____

GRADUATES - CLASS OF 1970

PART I

1. Number of graduates planning to enter a college or university ____
2. Number of graduates planning to enter some kind of post-high school institutions other than a college or university ____
3. Number of graduates not planning any kind of post-high school training programs ____
4. Unknown ____

GRAND TOTAL (same as the number of high school graduates) ____

PART II

Indicate the number of high school graduates who planned to enter:

1. A 4-year college or university ____
2. A 2-year junior or community college ____
3. A business college ____
4. Nurses training ____
5. A technical institute ____
6. Other: _____ ____

_____ ____

GRAND TOTAL (should be same as the total for items 1, 2 and 3, above) ____
(Approximate date when post-high school plans were reported _____)

PART III

Indicate the number of 1970 graduates actually enrolling in some kind of post-high school training programs in the summer of 1970 or in September, 1970)

1. A 4-year college or university ____
2. A 2-year junior or community college ____
3. A business college ____
4. Nurses training ____
5. A technical institute ____
6. Other: _____ ____

_____ ____

7. Entered military service ____
8. Unknown ____

M U 5 High School: _____ City _____

COLLEGE BOUND GRADUATES, CLASSES OF 1964 1967

1. Total of number of graduates who planned to attend a college or univ. ___ ___
(Note: These numbers should correspond to those submitted in the "Annual Statistical Report" of the Superintendent to the State Department of Education. Schools in districts having more than one high school should report the numbers submitted to the central office for inclusion in the above report.)

2. Supply the following information as completely as it is possible for you to do so:
   a. No. of graduates actually enrolling in a college or university during the summer or fall terms following graduation from high school ___ ___
   b. No. of the above students that were not included or listed in item one, above; i.e., they did not report in the spring as planning to go to college, but did enroll in a college ___ ___
   c. No. of graduates enrolling in a college or university at some time later than the summer or fall term following graduation ___ ___
   d. Indicate the no. of students who enrolled in a college or university during the summer or fall terms following graduation from high school, and who:
      -- dropped out of college during the first year . . . . . ___ ___
      -- dropped out of college during the second year . . . . . ___ ___
      -- dropped out of college during the third year . . . . . ___ ___
      -- dropped out of college during the fourth year . . . . . ___ ___
      -- completed college with a degree . . . . . ___ ___

3. If the following is conveniently available, it would be useful. Thank you.

Type of college or university	No. planning to attend		No. grads. who actually enrolled	
	1964	1967	1964	1967
A junior or community college	___	___	___	___
A branch campus of a university	___	___	___	___
A four year college	___	___	___	___
A university	___	___	___	___
A business college	___	___	___	___
Nurses training	___	___	___	___
School of cosmetology	___	___	___	___
Academy (Post high school)	___	___	___	___
An institute	___	___	___	___
Proprietary non-public school (barber college and other private vocational schools	___	___	___	___
Other _____				
Unknown	___	___	___	___

APPENDIX B

X TABLES

X-3.1	Number of Graduates Planning to Enter College and Actual Enrollments
X-3.2	Types of Colleges Entered, Classes of 1964 and 1967
X-3.3	Types of Post Secondary Schools Entered (Other than College), Classes of 1964 and 1967
X-3.4	Male and Female Students
X-3.5	Student Withdrawals and Transfers - Class of 1967
X-3.6	Subject Areas Most Helpful and of Least Value
X-3.7	Value of High School Education
X-3.8	Suggestions to Improve the High School for Advanced Training
X-3.9	Students Withdrawing From College to Enter a Vocational or Technical School
X-3.10	Dropouts and Availability of Vocational Programs
X-3.11	Completion of Post-High School Non-College Programs
X-3.12	Part-time Employment While in High School
X-4.1	Suggestions For Improving the High School

TABLE X-3.1

NUMBER OF GRADUATES PLANNING TO ENTER COLLEGE AND ACTUAL ENROLLMENTS

BY SCHOOLS

MU 4,5

	School Number												
Graduates	1	2	3	4	5	6	7	8	9	10	11	12	Total
Number of graduates:													
Class of 1970	314	461	392	270	565	360	228	550	500	125	700	162	4629
Class of 1967	325	410	363	234	545	335	236	535	500	110	593	151	4337
Class of 1964	325	299	305	350	630	310	213	535	NA[1]	110	489	103	3669
Number who planned to enter college:													
Class of 1970	24	418[2]	185	148	262	183	91[3]	209	63	38	594	153	2368
Class of 1967	12	265	169	165	257	189	65	215	44	44	537	140	2103
Class of 1964	7	180	79	96	175	178	60	222	NA	x[4]	416	95	1508
Number of graduates enrolling in a post secondary institution:													
Class of 1970	22	363	157	121	108	197	95	198	44	33	615	151	2104
Class of 1967	14	245	165	60	75	175	59	209	53	53	528	140	1776
Class of 1964	18	165	79	30	61	151	57	215	NA	x	416	95	1287

[1]Penta County did not have a graduating class in 1964. Not applicable.

[2]The Superintendent of School #2 reported 300, or only those who planned to enter college. This figure has been adjusted to include those who enrolled in nursing, technical, business and cosmetology school.

[3]The figure for school #7 was increased from 76 to 91.

[4]X means unknown, no records, or not available.

4720

TABLE X-3.2

TYPES OF COLLEGES ENTERED
CLASSES OF 1964 AND 1967
BY SCHOOLS

MU 5

Type of Institution	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
A junior or community college:													
Class of 1964	-	x	x[1]	-	-	8	5	x	NA[2]	x	x	17	30
Class of 1967	-	x	-	-	-	26	3	x	25	25	28	18	125
A branch campus of a university:													
Class of 1964	3	x	x	-	-	-	3	x	NA	x	x	-	6
Class of 1967	7	x	23	-	-	-	5	x	-	-	-	5	40
A four year college:													
Class of 1964	1	x	x	7	12	21	9	x	NA	x	-	25	75
Class of 1967	1	x	101	10	17	17	14	x	16	16	119	29	340
A university:													
Class of 1964	13	x	x	-	-	112	24	x	NA	x	x	54	203
Class of 1967	5	x	6	-	-	120	27	x	-	-	345	86	589
Total entering a college or university:													
Class of 1964	17	x	x	7	12	141	41	215	NA	x	x	96	529
Class of 1967	13	x	130	10	17	163	49	200	41	41	492	138	1294
Percent of graduates entering a college or university:													
Class of 1964	5.2	x	x	2.0	1.9	45.5	19.2	40.2	NA	x	x	93.2	14.4
Class of 1967	4.0	x	35.8	4.3	3.1	48.7	20.8	37.4	8.2	37.3	83.0	91.4	29.8

[1]X means unknown, or no records. Not available.

[2]NA means not available.

4701

TABLE X-3.3

TYPES OF POST-SECONDARY SCHOOLS ENTERED (other than college)
CLASSES OF 1964 AND 1967
BY SCHOOLS

Type of Institution Entered	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
A business college:													
Class of 1964	-	x	x[1]	x	x	5	5	-	NA[2]	x	x	-	10
Class of 1967	-	x	9	x	x	5	2	2	-	-	3	2	23
A technical school:													
Class of 1964	-	x	x	x	x	-	-	-	NA	x	x	-	-
Class of 1967	-	x	-	x	x	-	-	-	-	-	-	-	-
Nurses training:													
Class of 1964	-	x	x	x	x	4	3	16	NA	x	x	1	24
Class of 1967	1	x	16	x	x	5	3	4	-	-	6	2	37
School of cosmetology													
Class of 1964	-	x	x	x	x	-	5	-	NA	x	x	-	5
Class of 1967	-	x	5	x	x	-	5	1	1	1	3	1	17
An institute:													
Class of 1964	1	x	x	x	x	5	3	-	NA	x	x	-	9
Class of 1967	-	x	-	x	x	-	-	1	1	1	3	-	6
Other (Academy, Proprietary, private, vocational school):													
Class of 1964	-	x	x	x	x	-	-	-	NA	x	x	-	-
Class of 1967	-	x	17	x	x	-	-	-	10	10	1	-	38
Total:													
Class of 1964	1	x	x	x	x	14	16	16	NA	x	x	1	48
Class of 1967	1	x	47	x	x	10	10	8	12	12	16	5	121
Percent of graduating class entering the above institutions:													
Class of 1964	.3	x	x	x	x	4.5	7.5	3.0	NA	x	x	1.0	1.3
Class of 1967	.3	x	13.0	x	x	3.0	4.2	1.7	2.4	10.9	2.7	3.3	2.8

[1]X means unknown or no record.
[2]NA - Not applicable.

4702

TABLE X-3.4

MALE AND FEMALE STUDENTS
BY SCHOOLS

Items 3-4, MU 1

Students	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
Class of 1964:													
Number of male students	169	290	-	113	231	112	97	246	-	60	239	47	1604
Number of female students	145	-	304	71	266	123	112	266	-	52	253	54	1646
Total	314	290	304	184	497	235	209	512	-	112	492	101	3250
Class of 1967:													
Number of male students	141	404	-	124	273	141	107	266	289	60	281	74	2160
Number of female students	142	-	360	111	255	162	128	267	116	57	308	77	1983
Total	283	404	360	235	528	303	235	533	405	117	589	151	4143
Total graduates (1964-1967):													
Number of male graduates	310	694	-	237	504	253	204	512	289	120	520	121	3764
Number of female graduates	287	-	664	182	521	285	240	533	116	109	561	131	3629
Total	597	694	664	419	1025	538	444	1045	405	229	1081	252	7393
Percent - male	52	100	-	57	49	47	46	49	71	52	48	48	51
Percent - female	48	-	100	43	51	53	54	51	29	48	52	51	49
Dropouts and withdrawals (class of 1967):													
Number of male students	47	91	-	140	142	55	54	151	55	19	52	1	807
Number of female students	34	-	48	90	131	57	47	118	27	18	36	-	606
Total	81	91	48	230	273	112	101	269	82	37	88	1	1413
Percent - male	58	100	-	61	52	49	53	56	67	51	59	100	57
Percent - female	42	-	100	39	48	51	47	44	33	49	41	-	43
Grand Total:													
Male	357	785	-	377	646	308	258	663	344	139	572	122	4571
Female	321	-	712	272	652	342	287	651	143	127	597	131	4235
Male and female	678	785	712	649	1298	650	545	1314	487	266	1169	253	8806

4703

TABLE X-3.5

STUDENT WITHDRAWALS AND TRANSFERS - CLASS OF 1967

Items 11-12, MU 1

Withdrawals and Transfers	Number of students by school number												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
Year of withdrawal from school[1]:													
1963-64	8	5	2	8	4	15	22	63	-	5	-	-	132
1964-65	21	46	23	155	44	48	24	68	-	11	23	12	475
1965-66	20	31	15	51	118	32	24	75	23	15	35	13	452
1966-67	21	8	8	14	92	15	28	60	51	5	22	6	330
Other	7	-	-	-	6	-	-	-	4	-	1	1	19
Total	77	90	48	228	264	110	98	266	78	36	81	32	1408
The student continued in school but did not graduate with the class of 1967:	51	14	11	219	150	30	50	168	56	13	25	1	788
The student withdrew to enter another school:	30	78	37	11	123	82	51	101	26	24	63	1	627
Percent of withdrawals and dropouts to the number graduating in 1967:	27	41	13	96	50	36	42	50	19	31	14	.007	34
Number of dropouts (or no record of as reason for withdrawal):	47	12	11	217	141	28	47	165	52	12	18	31	781
Percent of dropouts (or no record) to the number graduating in 1967:	16.6	2.9	3.0	91.5	26.7	9.0	20.0	30.9	12.8	10.0	3.0	20.5	18.0

[1]Includes dropouts and transfers to other schools.

4704

TABLE X-3.6

SUBJECT AREAS MOST HELPFUL AND OF LEAST VALUE

Items 4-5/20, MU 2

Subject Areas	School Number 1 +	1 -	2 +	2 -	3 +	3 -	4 +	4 -	5 +	5 -	6 +	6 -	7 +	7 -
Class of 1964:														
Art	7	22	2	14	6	17	2	6	6	24	7	10	6	8
Business education	24	7	19	8	35	2	4	1	37	8	11	6	11	1
Civics, sociology, economics	7	16	26	5	16	5	10	-	15	11	29	5	10	2
English	35	7	36	3	50	1	12	-	49	4	36	5	18	1
Foreign language	-	16	11	36	10	34	2	3	10	34	12	25	7	7
Health/Physical education	16	22	9	19	11	22	9	1	24	16	7	22	12	2
History/Government	17	20	31	6	23	7	7	2	24	14	21	10	12	1
Home Ec. (not vocational)	14	13	-	6	22	10	3	3	14	11	6	3	10	1
Industrial arts	18	6	1	7	1	7	4	4	19	13	3	9	10	2
Literature	14	16	15	11	22	11	8	1	25	12	18	12	13	5
Mathematics	49	4	48	9	40	7	9	1	43	12	31	5	18	3
Music	8	25	4	9	4	30	4	2	7	22	1	10	5	12
Science	17	16	33	10	23	12	9	-	29	10	21	11	10	6
Secretarial studies	24	4	1	10	28	4	3	1	32	8	9	4	5	5
Vocational (Vo. Ag., D. E., etc.)	32	3	1	5	3	5	4	2	13	7	4	6	2	3
TOTAL	282	197	234	158	294	174	90	27	347	206	216	143	149	59

+ most helpful
- of least value

4705

TABLE X-3.6 (Continued)

SUBJECT AREAS MOST HELPFUL AND OF LEAST VALUE

Subject Areas	+ 8	-	+ 9	-	+ 10	-	+ 11	-	+ 12	-	+ Total	-	Percent
Class of 1964:													
Art	12	67	NA	NA	-	7	17	49	7	8	72	232	23.7
Business education	64	21	NA	NA	12	2	39	15	5	5	258	76	77.2
Civics, sociology, economics	55	26	NA	NA	5	5	60	11	6	4	239	90	72.6
English	129	4	NA	NA	18	1	131	5	22	5	536	36	93.7
Foreign language	30	58	NA	NA	1	12	48	60	7	21	138	306	31.1
Health/physical education	45	55	NA	NA	5	9	26	45	4	16	168	229	42.3
History/Government	64	16	NA	NA	9	5	72	26	14	6	294	113	72.5
Home ec. (not vocational)	26	31	NA	NA	8	3	23	22	5	4	131	107	55.0
Industrial arts	20	31	NA	NA	3	3	15	27	6	12	100	121	45.2
Literature	42	34	NA	NA	7	10	55	25	18	1	237	138	63.2
Mathematics	100	12	NA	NA	15	1	86	21	18	7	457	82	84.8
Music	27	56	NA	NA	3	6	33	32	12	4	108	208	34.2
Science	65	35	NA	NA	12	5	82	25	18	4	319	134	70.4
Secretarial studies	51	24	NA	NA	12	4	24	20	6	5	195	89	68.7
Vocational (Vo. Ag., D. E., etc.)	26	21	NA	NA	10	3	9	22	-	3	104	80	56.5
TOTAL	756	491	NA	NA	120	76	720	405	148	105	3360	2041	62.2

NA - Not Applicable

4706

TABLE X-3.6 (Continued)

SUBJECT AREAS MOST HELPFUL AND OF LEAST VALUE

Subject Areas	+ 1	-	+ 2	-	+ 3	-	+ 4	-	+ 5	-	+ 6	-	+ 7	-
Class of 1967:														
Art	27	81	5	19	6	34	3	6	10	31	13	21	3	19
Business education	65	32	18	5	65	5	8	3	48	13	13	11	27	3
Civics, sociology, economics	51	39	19	6	31	10	10	3	32	17	32	8	12	8
English	179	17	41	10	76	8	17	--	74	5	54	1	41	2
Foreign language	56	82	13	33	21	59	1	8	19	34	13	33	5	24
Health/Physical education	48	64	17	16	23	47	8	6	45	25	14	23	20	13
History/Government	96	37	41	10	48	16	7	4	36	20	32	9	23	7
Home Ec. (not vocational)	39	42	-	10	35	27	4	7	16	22	6	15	16	6
Industrial arts	33	52	8	6	3	19	2	8	24	17	6	13	1	11
Literature	75	40	28	10	34	19	8	2	35	22	31	10	19	13
Mathematics	132	40	56	4	71	11	14	1	63	6	35	12	31	5
Music	38	61	6	17	14	45	4	7	15	26	8	20	12	16
Science	92	44	34	8	51	31	10	2	44	14	32	12	23	10
Secretarial studies	53	31	2	8	58	9	8	5	37	14	19	11	19	5
Vocational (Vo. Ag., D. E., etc.)	39	27	3	7	7	12	4	4	17	14	4	11	10	9
TOTAL	1023	689	291	169	543	352	108	66	515	280	312	210	262	151

4707

TABLE X-3.6 (Continued)

SUBJECT AREAS MOST HELPFUL AND OF LEAST VALUE

Subject Areas	+ 8	-	+ 9	-	+ 10	-	+ 11	-	+ 12	-	+ Total	-	Percent
Class of 1967:													
Art	14	54	5	25	6	4	32	57	12	32	136	383	26.2
Business education	51	19	29	11	14	4	45	26	14	7	397	139	74.1
Civics, sociology, economics	50	32	8	17	6	3	55	22	18	10	324	175	64.9
English	99	8	28	13	28	4	174	20	58	7	869	95	90.1
Foreign language	32	52	5	25	14	12	73	75	22	32	274	469	36.9
Health/Physical education	34	52	11	22	10	13	38	60	9	28	277	369	42.9
History/Government	46	30	19	19	13	8	89	29	33	5	483	194	71.3
Home Ec. (not vocational)	29	25	11	18	7	6	30	33	15	14	208	225	48.0
Industrial arts	10	30	11	15	1	7	22	44	7	14	128	236	35.2
Literature	48	30	14	14	15	1	78	24	33	6	418	191	68.6
Mathematics	82	12	28	10	30	3	92	47	48	7	682	158	81.2
Music	37	33	2	26	13	4	32	49	19	20	200	324	38.2
Science	60	26	13	16	16	6	97	34	41	5	513	208	71.2
Secretarial studies	39	25	17	17	6	6	39	25	15	10	312	166	65.3
Vocational (Vo. Ag., D. E., etc.)	23	23	27	9	4	6	6	29	6	8	150	159	48.5
TOTAL	654	451	228	257	183	87	902	574	350	205	5371	3491	60.6

4708

TABLE X-3.7

VALUE OF HIGH SCHOOL EDUCATION

Items 4-24, MU 2

Student Value	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total	Percent
Class of 1964:														
Very helpful	37	25	22	5	38	23	18	58	-	11	63	16	316	35.7
Helpful	19	28	35	4	24	18	6	72	-	18	68	9	301	34.0
Of some help; could have been more worthwhile and helpful	9	18	24	5	13	19	6	47	-	6	44	16	207	23.4
Was of little value	4	6	1	-	10	5	1	6	-	-	10	7	50	5.6
Was of no value	5	1	-	-	2	-	-	1	-	-	2	-	11	1.1
Total	74	78	82	14	87	65	31	184	-	35	187	48	885	
Class of 1967:														
Very helpful	102	24	53	8	46	30	29	57	40	13	71	25	498	32.8
Helpful	97	34	57	4	36	27	19	73	16	12	83	28	486	32.1
Of some help; could have been more worthwhile and helpful	63	16	49	4	21	23	14	52	12	18	71	38	381	25.1
Was of little value	27	7	8	3	3	11	5	10	4	4	26	11	119	7.8
Was of no value	6	2	2	-	6	2	2	4	-	1	6	1	32	2.1
Total	295	83	169	19	112	93	69	196	72	48	257	103	1516	
Member Class of 1967:														
Very helpful	3	-	12	4	3	6	23	2	2	2	-	-	57	34.5
Helpful	1	-	5	2	3	7	16	6	1	2	-	1	44	26.7
Of some help; could have been more worthwhile and helpful	2	-	6	-	6	7	7	8	2	2	-	1	41	24.8
Was of little value	1	-	2	-	3	1	1	2	2	1	1	1	15	9.0
Was of no value	1	-	-	1	1	1	3	-	-	-	-	1	8	4.8
Total	8	-	25	7	16	22	50	18	7	7	1	4	165	

42709

TABLE X-3.8

SUGGESTIONS TO IMPROVE THE HIGH SCHOOL FOR ADVANCED TRAINING

Item 4-38, MU 2

Suggestions to Improve	School Number 1	2	3	4	5	6	7
Class of 1964:							
Reading	6	14	4	2	9	10	3
Writing	3	1	5	2	4	7	3
Thinking	4	13	3	3	6	16	-
Oral communication	1	14	9	-	9	5	4
Study habits	7	13	9	4	15	8	3
Work habits	-	1	-	-	1	-	-
How to get along with others	1	-	1	-	1	-	-
High school training to actual situations in life and on the job	8	14	20	1	13	10	3
Total	30	70	51	12	58	56	16
Class of 1967							
Reading	52	13	12	1	10	12	1
Writing	28	11	8	-	3	5	1
Thinking	45	9	20	1	10	11	12
Oral communication	27	17	17	2	10	14	9
Study habits	30	16	14	2	7	22	8
Work habits	4	-	1	1	3	-	-
How to get along with others	4	2	4	-	2	-	-
High school training to actual situations in life and on the job	30	9	27	7	21	12	16
Total	220	77	103	14	66	76	47

4710

TABLE X-3.8 (continued)

SUGGESTIONS TO IMPROVE THE HIGH SCHOOL FOR ADVANCED TRAINING

Item 4-38, MU 2

Suggestions to Improve	School Number 8	9	10	11	12	Total	Percent
Class of 1964:							
Reading	20	-	1	41	10	120	18.2
Writing	9	-	3	15	2	54	8.2
Thinking	23	-	2	37	14	121	18.3
Oral communication	13	-	3	19	3	80	12.1
Study habits	33	-	2	32	9	135	20.4
Work habits	2	-	-	4	1	9	1.4
How to get along with others	3	-	-	5	-	11	1.7
High school training to actual situations in life and on the job	26	-	3	26	7	131	19.8
Total	129	-	14	179	46	661	
Class of 1967:							
Reading	21	3	5	57	20	207	18.8
Writing	6	2	3	21	13	101	9.1
Thinking	26	1	6	59	22	222	20.1
Oral communication	20	8	2	31	7	164	14.9
Study habits	20	2	7	36	13	177	16.0
Work habits	1	1	-	4	-	15	1.4
How to get along with others	-	-	2	4	2	20	1.8
High school training to actual situations in life and on the job	26	4	4	32	10	198	17.9
Total	120	21	29	244	87	1104	

4711

TABLE X-3.9

STUDENTS WITHDRAWING FROM COLLEGE TO ENTER A VOCATIONAL OR TECHNICAL SCHOOL

Items 4-39, MU 2

Students	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
Class of 1964:													
Yes	1	5	-	1	1	1	1	6	-	-	4	-	20
No	23	66	44	7	46	54	14	110	-	12	175	49	600
Total	24	71	44	8	47	55	15	116	-	12	179	49	620
Class of 1967:													
Yes	5	2	3	-	1	2	1	2	-	-	6	3	25
No	199	72	91	10	48	72	41	100	19	28	233	89	1002
Total	204	74	94	10	49	74	42	102	19	28	239	92	1027
Dropouts (Class of 1967):													
Yes	-	-	-	-	-	1	1	-	-	-	-	-	2
No	-	1	-	-	3	1	-	-	-	-	3	-	8
Total	-	1	-	-	3	2	1	-	-	0	3	-	10

4712

TABLE X-3.10

DROPOUTS AND AVAILABILITY OF VOCATIONAL PROGRAMS

Item 4-27, MU 3

Dropouts	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
If vocational programs had been available, would you have completed high school?													
Yes	-	-	11	1	5	7	17	6	1	1	-	2	51
No	3	-	15	3	5	7	6	4	2	2	-	1	48
Total	3	-	26	4	10	14	23	10	3	3	-	3	99

TABLE X-3.11

COMPLETION OF POST-HIGH SCHOOL NON-COLLEGE PROGRAMS

Items 4-51, MU 2

Programs Completed	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
Did you complete one or more of the post-high school (non-college) programs?													
Class of 1964:													
Yes	16	30	27	5	35	24	5	63	-	11	55	17	288
No	15	15	14	1	12	13	7	27	-	3	43	7	157
Total	31	45	41	6	47	37	12	90	-	14	98	24	445
Percent[1]	20.5	37.9	32.9	35.7	40.2	36.4	16.1	34.0	-	31.4	28.9	34.7	32.2
Class of 1967:													
Yes	58	20	47	5	30	16	11	40	11	6	47	9	300
No	60	27	31	2	18	31	16	34	7	7	41	25	299
Total	118	47	78	7	48	47	27	74	18	13	88	34	599
Percent	20.2	22.6	26.8	25.0	25.7	15.9	15.9	24.4	15.9	13.6	18.7	8.9	19.4
Dropouts:													
Yes	-	1	2	-	2	2	-	-	-	-	1	-	8
No	-	-	-	-	-	-	-	-	-	-	1	-	1
Total	-	1	2	-	2	2	-	-	-	-	2	-	9

[1]Percent of the total graduates (MU 2) by year plus totals 1964-67.

47113

TABLE X-3.12

PART-TIME EMPLOYMENT WHILE IN HIGH SCHOOL

Item 4-52, MU 2

Employment	School Number 1	2	3	4	5	6	7	8	9	10	11	12	Total
Did you have part-time employment while in high school?													
Class of 1964:													
Yes	39	59	27	6	47	25	15	86	-	9	60	11	384
No	27	17	50	7	36	39	10	93	-	18	124	38	459
Total	66	76	77	13	83	64	25	179	-	27	184	49	843
Percent[1]	50.0	74.7	32.9	42.9	54.0	37.9	48.4	46.5	-	25.7	31.6	22.4	43.0
Class of 1967:													
Yes	133	58	82	11	65	46	34	93	36	13	104	26	701
No	138	24	70	6	45	42	31	62	14	26	151	66	675
Total	271	82	152	17	110	88	65	155	50	39	255	92	1376
Percent	46.4	67.9	48.8	55.0	55.9	50.0	49.3	56.7	52.2	29.5	40.0	25.7	45.4
Member (Class of 1967):													
Yes	4	-	2	2	10	1	2	9	3	4	1	1	39
No	5	-	5	1	5	2	8	8	3	4	-	3	44
Total	9	-	7	3	15	3	10	17	6	8	1	4	83
Did you continue full-time on this job after leaving school?													
Member (Class of 1967):													
Yes	1	-	3	5	2	1	2	3	1	4	-	1	23
No	7	-	7	3	8	5	9	11	4	2	1	1	58
Total	8	-	10	8	10	6	11	14	5	6	1	2	81
Were you in an apprenticeship program?													
Member (Class of 1967):													
Yes	1	-	8	3	1	9	21	1	2	-	-	1	47
No	7	-	3	4	13	3	7	12	5	7	-	2	63
Total	8	-	11	7	14	12	28	13	7	7	-	3	110

[1]Percent of the total graduates (MU 2) by year plus totals 1964-67.

4714

TABLE X-4.1

SUGGESTIONS FOR IMPROVING THE HIGH SCHOOL

Areas for Improvement	Number of responses by school number												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
	Class of 1964												
I. CURRICULUM													
A. Expansion of the curriculum													
1. Advanced placement:													
a. Academic	1	-	1	-	3	1	-	4	NA	-	7	4	21
b. Vocational	3	-	4	-	2	4	-	3	NA	-	1	-	17
2. Program & course variety:													
a. Academic	8	13	10	1	4	15	2	23	NA	3	15	6	100
b. Vocational	7	15	14	-	11	18	5	25	NA	4	34	4	137
3. Special services	-	-	-	-	-	-	-	-	-	-	1	-	1
B. Relevancy of course content													
1. Academic	1	2	5	1	2	3	-	9	NA	-	8	-	31
2. Vocational	4	1	3	1	5	1	-	1	NA	-	-	-	16
TOTAL	24	31	37	3	27	42	7	65	NA	7	66	14	323
II. GUIDANCE													
A. Counselor: Personal	1	1	1	-	-	-	3	3	NA	-	1	-	10
Career	11	8	16	4	10	9	5	14	NA	2	15	9	103
B. Staff: Personal	1	1	1	-	-	-	-	-	NA	-	1	-	4
Career	4	-	2	1	2	1	-	-	NA	1	1	-	12
TOTAL	17	10	20	5	12	10	8	17	NA	3	18	9	129
III. BOARD & SCHOOL POLICIES													
A. School rules & regulations													
1. Personal	4	15	6	-	1	3	2	21	NA	2	8	3	65
2. Academic	2	4	10	-	12	3	1	8	NA	1	8	3	52
TOTAL	6	19	16	-	13	6	3	29	NA	3	16	6	117
IV. INTERPERSONAL RELATIONSHIPS													
A. Student-student	2	-	5	-	-	2	1	3	NA	1	7	1	22
B. Student-teacher	7	11	19	3	15	10	3	42	NA	6	19	7	142
C. Student-administration	-	1	1	-	1	4	1	6	NA	-	-	-	14
D. School-community	-	-	3	-	-	1	1	5	NA	1	4	1	16
TOTAL	9	12	28	3	16	17	6	56	NA	8	30	9	194

TABLE X-4.1 (continued)

SUGGESTIONS FOR IMPROVING THE HIGH SCHOOL

Areas for Improvement	Number of responses by school number												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
	Class of 1964												
V. FACILITIES													
A. Buildings	-	-	-	-	-	-	-	-	NA	-	-	-	-
B. Equipment	-	-	-	-	-	-	-	1	NA	-	-	-	1
TOTAL	-	-	-	-	-	-	-	1	NA	-	-	-	1
VI. QUALITY OF EDUCATION													
A. Maintain present quality	3	-	-	1	9	-	-	-	NA	-	5	-	18
B. Improve the quality	2	6	3	-	2	6	3	4	NA	2	11	4	43
TOTAL	5	6	3	1	11	6	3	4	NA	2	16	4	61
VII. ORGANIZATION													
A. Scheduling	3	-	-	-	-	-	-	-	NA	-	12	1	16
B. Program	-	-	-	-	5	-	-	1	NA	-	2	-	8
C. Personnel: Quality	3	2	1	-	1	3	2	4	NA	5	8	4	33
TOTAL	6	2	1	-	6	3	2	5	NA	5	22	5	57
VIII. INSTRUCTION													
A. Instructional materials	-	-	1	1	2	-	-	2	NA	1	-	3	10
B. Teaching methodology	8	5	5	4	11	4	3	20	NA	1	18	6	85
TOTAL	8	5	6	5	13	4	3	22	NA	2	18	9	95
IX. LEARNING OF ATTITUDES AND VALUES	5	4	8	2	9	4	1	13	NA	1	18	3	68
GRAND TOTAL	80	89	119	19	107	92	33	212	NA	31	204	59	1045

4716

TABLE X-4.1 (Continued)

SUGGESTIONS FOR IMPROVING THE HIGH SCHOOL

Areas for Improvement	Number of responses by school number												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
	Class of 1967												
I. CURRICULUM													
A. Expansion of the curriculum													
1. Advanced placement:													
a. Academic	-	1	2	-	-	1	1	8	-	-	4	2	19
b. Vocational	-	-	-	1	-	-	-	-	-	-	-	-	1
2. Program & course variety:													
a. Academic	13	13	13	2	12	7	5	13	3	6	35	10	132
b. Vocational	5	14	13	4	13	16	5	11	5	2	35	20	143
3. Special Services:	-	-	-	-	-	-	2	-	-	1	1	1	5
B. Relevancy of course content													
1. Academic	4	6	12	-	3	5	5	9	1	2	12	4	63
2. Vocational	4	-	8	-	3	2	4	7	2	2	8	-	40
TOTAL	26	34	48	7	31	31	22	48	11	13	95	37	403
II. GUIDANCE													
A. Counselor: Personal	1	5	7	2	5	7	3	7	2	2	15	-	56
Career	7	7	13	1	8	6	4	8	4	3	21	5	87
B. Staff: Personal	-	1	3	-	4	2	1	2	1	-	7	-	21
Career	1	-	1	-	2	2	1	3	-	-	9	-	19
TOTAL	9	13	24	3	19	17	9	20	7	5	52	5	183
III. BOARD & SCHOOL POLICIES													
A. School rules & regulations													
1. Personal	6	7	3	-	7	5	2	9	2	-	15	7	63
2. Academic	3	4	34	1	6	9	4	8	2	-	19	4	94
TOTAL	9	11	37	1	13	14	6	17	4	-	34	11	157
IV. INTERPERSONAL RELATIONSHIPS													
A. Student-student	-	2	7	-	3	9	3	11	-	-	2	-	37
B. Student-teacher	9	14	22	6	27	24	9	26	9	5	27	10	188
C. Student administrator	-	5	4	1	3	7	2	7	1	2	7	3	42
D. School-community	-	-	-	-	1	-	-	-	4	3	3	-	11
TOTAL	9	21	33	7	34	40	14	44	14	10	39	13	278

4217

TABLE X-4.1 (Continued)

SUGGESTIONS FOR IMPROVING THE HIGH SCHOOL

Areas for Improvement	Number of responses by school number												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
	Class of 1967												
V. FACILITIES													
A. Buildings	-	-	-	1	1	-	2	-	-	3	4	1	12
B. Equipment	-	-	2	1	2	-	3	-	-	1	1	-	10
TOTAL	-	-	2	2	3	-	5	-	-	4	5	1	22
VI. QUALITY OF EDUCATION													
A. Maintain present quality	9	2	4	-	5	1	2	5	3	-	6	-	37
B. Improve the quality	2	1	1	1	2	1	-	-	-	-	-	-	8
TOTAL	11	3	5	1	7	2	2	5	3	-	6	-	45
VII. ORGANIZATION													
A. Scheduling	-	-	3	-	2	1	1	2	1	-	7	-	17
B. Program	-	1	8	-	3	5	1	1	1	1	13	1	35
C. Personnel: Quality	-	1	5	3	4	7	4	19	1	4	9	7	64
Quantity	-	-	1	-	1	2	-	3	1	-	4	-	12
TOTAL	-	2	17	3	10	15	6	25	4	5	33	8	128
VIII. INSTRUCTION													
A. Instructional materials	-	-	-	-	1	-	1	-	-	4	1	-	7
B. Teaching methodology	9	15	20	1	12	26	11	22	1	8	31	28	184
TOTAL	9	15	20	1	13	26	12	22	1	12	32	28	191
IX. LEARNING OF ATTITUDES AND VALUES	4	6	5	-	4	5	6	19	3	3	19	3	77
GRAND TOTAL	77	105	191	25	134	150	82	200	47	52	315	106	1484

4718

APPENDIX C

SELECTED STATEMENTS FOR THE IMPROVEMENT OF THE HIGH SCHOOLS

Statements Related to the Curriculum[1]

Provision (should be made) for qualified students in any grade to take courses at OSU campus for both college credit and credit toward high school graduation.

In a vocational study the introduction of government (civics) would have been much help as even the common laborer must live under our government. And I feel he should know how it is run.

More curriculum choices for students thinking about enter college--(a) pre-calculus course; (b) English IV; (c) theme writing course; (d) chemistry. Also, changing the electrical course toward transistors and modern day devices than vacuum tubes study.

To offer courses required for entrance to college, for those students who have to pay their way through college and have to learn a vocation in order to pay their way. I know that if I had had the opportunity to take both college prep and vocational courses it would have helped tremendously.

If we had more of a choice I would of went to college. You didn't supply more fields to go into along with more information. I didn't receive the information till a year too late. With this delay I wasn't able to take the courses I needed. I know I would have been a better person and I guarantee others will be if you give them some meaning of understanding and living. Give them a field of agriculture so they work with their hands and get the real meaning of being here.

Go deeper in subject science, literature, math, and discuss more to make sure students understand. With Bible reading and Lord's Prayer in schools we should have them not only that we need them in the schools. Look at history we wouldn't be as far along today if we didn't have the Bible and Prayer.

Let the students of the vocational school participate in the special activities of the home school.

Problem -- loss of contact from home school when enrolling at Penta County. Solution -- make a total high school of Penta County instead of a branch of your home high school.

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[1]The statements have been kept intact as written by the respondent, even though what they have said may logically be classified under two or more headings of this report.

While a student is going to school, it is very hard for one who must work 30 to 40 hours a week in order to live. I know if I didn't have to work all the hours I had to, I could have made better grades in school.

I was lucky because Mrs. _____ and Mr. _____ helped me, so I could finish school and I will always be grateful to both of them. If there was only some way a child could get support so she or he would have to work long hard hours. It's good to work while in high school to learn responsibility.

Have vocational courses with subjects connected with the vocation intended. Why is it necessary for business students to take two years of language, algebra, and geometry? I don't think these subjects in any way help a person entering a business career.

The program offered should have more flexibility in offered courses and acquaint girls with business opportunities available. Students should have contact with business courses, aeschetic courses, domestic courses and basic courses. The decision for their futures would be much easier if they had contact with diverse studies and could make their choices based on knowledge rather than conjecture.

Employ a competent clinical psychologist.

I think offering more courses in the areas of government, sociology, psychology should be a great help to students as these three areas best deal with the problems they will be confronting in contemporary society. By introducing the basics of these courses at the high school level will at least allow students a basic understanding of the problems in this society. These are much more relevant and meaningful than any foreign language or home economics requirement will ever be.

High school should have offered more information in its courses. As a student at OSU, I have found through education courses there that most students thought high school was boring and of little value except socially. I don't think high school helps you learn to think and get along with people well.

High school puts too much emphasis on discipline just for the sake of discipline. I believe discipline is very necessary but not at the expense of education. High school, I think should make its education more practical and realistic and more thorough. Thus it will then prepare one for college and give the students a proper sense of justice and respect for his fellow man.

More application of courses to ones career choice of interest. This can be through actual work opportunities, and science or other course projects to be judged and supported and challenged by the project-maker and the judge. Have guest speakers to visit the class, have more seminars and discussions and oral presentations that can be challenged.

Statements Related to Guidance

An expanded counseling department that improves the ratio of counselors per students and that accommodates students who have personal, as well as academic problems. Perhaps a required yearly (or more frequently if desired) conference with a counselor, commencing with the eighth grade, would familiarize the student early to the mechanics and operations of the guidance department, and would facilitate compiling a more individualized program of information about each student.

Better teacher-pupil relations. Younger teachers who can understand this generation. Let the students choose more of their own courses.

A more helpful guidance department, catering not only to college-bound students, but to every pupil. Many students in my class were discouraged by the indifferent attitude of most of the teachers.

If possible, the teachers could talk with each of their students in order to help on an individual basis. Teachers can make a course and if the course is made interesting it can determine what the student will want to major in in college. And it will also help the student want to go to college.

I think that there should be more opportunities for teachers to get to know their pupils. Perhaps through individual conference. Maybe if the students knew that the teachers were interested in them they would not be so hesitant to go to the instructors for help.

Statements Related to Rules and Regulations

Let students choose between going to a study hall and going to an informal talk session with a teacher or other faculty members and group of students. In these groups, students could be encouraged to discuss social and academic problems. I'm ashamed of the way my high school handled the case of the boy who disobeyed the "dress code" by letting his hair grow. To let a person's appearance interfere with his attainment of a good education is a clear denial of civil rights. I believe the "dress code" should be abolished.

One suggestion would be to eliminate the dress code, which is by law illegal. I had trouble when I was in school about hair length, and I understand that this is still going on. The students are so used to seeing long hair, bright clothes, short skirts, etc., that no one thinks about it. The "disruptive" situation which the school has always referred to, is now being created by teachers and administrators who try to keep an illegal dress code. I have found that the way you look does not determine how you study, as the old argument went. If the school would get back to teaching instead of concentrating on combating the youth, the situation would be much better, schools are for teaching, not for control!

As a senior in high school, I feel that one should be allowed to take what courses one desires and most important I feel there should be a No Attendance Requirement on seniors only. Most kids who start to college and find that they are not required to attend most classes attend very few because this is the first time the teacher didn't care. Later they find out one has to attend most if he expects to pass. I feel it would be beneficial to people about to enter college to be able to self-govern themselves in high school so they can get more out of the time they have in college.

They should let students in the college preparatory course take courses in the other tracks. Students should be allowed to take sewing and cooking, and also in typing and shorthand as electives. These would be much more helpful in the future than some of the courses I took, such as chemistry and math IV.

Students should be allowed to make their own choice in choosing their subjects. I feel if they really want a particular course they will apply themselves and make a good try at it. There were a few subjects that I would of liked to have taken and no one asked me what I wanted, and at the time, I suppose I was afraid to speak up. Also, in place of study halls, you could throw in some extra courses instead of letting students waste hours in school doing nothing. Let them benefit more by extra subjects and let them be available to all students.

I do not think there should be one program strictly for college studies and one with preparation for the business world. I think there should be a combined course of study offered to everyone between the academic program and the business program. No one really knows what life will bring them after graduation but if one has a beginning knowledge of both these fields, he should be set for just about everything.

Statements Related to Interpersonal Relationships

For teachers to not show preference to the groups of kids who have money, and prestige in the town. For these kids to be friendly to poorer people, instead of only giving a smile, etc. when they want a class vote, or the such. There are a few who do not act in such a manner, but only a few. This is very discouraging to a student of low income and one who can not afford to stay in this group. There should be no such mixed feelings. They are not in school to show what they have, and therefore, should let this be known. For a poorer person, who otherwise would study, this makes it very difficult -- I know!

More integration of pupils in different programs. When I was there, students in the various curriculums seemed to be kept isolated from those in others. One bad effect of this seemed to be that business students were looked down as though they were less intelligent than those in college prep. This is both unfortunate and untrue. If there had been some integration of pupils in elective courses, perhaps this feeling would not have prevailed.

The teachers (not all, but some) are too quick. I don't mean in teaching the subject but if a student does his work the way he finds it easy for him, the teacher will say it is wrong and he should do it the way they teach it. I don't think it makes any difference if the person does it their way or his way, just so it gets done right and the person who is learning understands it. What I think I'm trying to say is that a teacher should listen to what the student has to say about it and then if the teacher doesn't think it is right, tell the student why and what he has done wrong. Treat them just like another person and not a dumb little kid.

As threadbare as this may sound, the biggest threat to the success of a high school program is a breakdown of the lines of communication between students and their faculty and administration. The problems that have developed at _____ since my own graduation are primarily due to a lack of understanding. While both the young and old agree that the purpose of _____ is to produce a knowledgeable Christian, neither of these groups accepts or understands the other's definition of this term. What is needed is talk. Open, free, uninhibited informal talk. Talk must be a regular and frequent ingredient of the _____ program. Perhpas a biweekly get-together of representatives of students, faculty and administrators.

I hated school, everything was a bore and I think it was because of a poor teacher-student relationship. Kids deserve better than what I had -- no time for extra help from teachers, the guidance counselor considered me a trouble maker, and I was there to learn! But who cared then? Who cares now?

Better communication among pupils, teachers and principals.

I think that parents and students need to take more interest in the school because they are the ones along with the help of the teachers can make the school into what they want it to be.

Become more actively involved in community affairs and to enable the student to feel more a part of his school and community by providing more actual experiences, coordinated with text book material.

Statements Related to Buildings and Facilities

While such things as new auditoriums and natatoriums are wonderful additions, I feel the school could use funds to much better advantages - such as alleviating crowded classroom conditions and providing newer texts and a wider curriculum. I also feel the school should be more personalized and the students could get more individual attention if the high school wasn't so crowded.

_____ needs another school, the present one is too large. It tends to be too impersonable. I find that I missed many experiences by going to such a large school. It is easier for a person to feel closer to a smaller school, than it is in _____ High School.

More funds for newer and better learning materials and equipment and supplies.

More equipment for advanced courses.

Statements Related to Quality Education

Basically, I think _____ is a very good high school (a vocational school).

_____ doesn't need any improvement. In my opinion _____ was great and it still is (a vocational school).

I think _____ High School was a very good educational institute with good programs in not only curriculum but in counseling. From all I have heard it sounds as though many changes have taken place since I have graduated, such as a liberal dress code, distributive education, etc. I can not make a suggestion because I liked _____ (an academic high school).

Better English program for student going to college - most difficult thing for me in college was to write compositions.

Off hand I cannot think of anything that would better _____. To me _____ is one of the best. I only regret that I didn't apply myself more while I was in school so that today, I can honestly say that I took advantage of all the things that were given to me and I didn't try to do any better, just what was asked of me to do (a vocational school).

Statements Related to Organization

Remove study halls and shorten the school day. I understand this is being done in a limited sense already. I think study halls were a horrible waste unless I spent them on extra-curricular activities such as the school news paper.

Cut out all study halls and require students to be in school only during a regular scheduled class. That way students have more time to plan. They could work or make doctor appointments, etc., and not worry about it if they are in school or not. Study halls never helped me. I rarely studied in them and have always felt they were a waste of time. Advantage having a split day with more time for either new courses or crowded courses.

When I think of my days at _____ High School, the one thing I remember the most is the fantastic amount of time which was wasted. Although my grades were not outstanding, I felt that the pace was entirely too slow for the amount of material we covered. With the long 55 minute periods, instructors rarely utilized the whole class period to best advantage. It resulted in 8 hour days when 4-5 hours a day should have been more than adequate.

I suggest more independence in the type of study students do. I found one of the most difficult but exciting things at OSU is the independent study program. The student sets up his own course to fit his interest. Example, explore possibilities of drawing the human figure as a landscape. The student works independently and then meets with his instructor for one hour once a week. Never experiencing this type of freedom in high school, it is difficult to handle this type of study at first the freedom overwhelms the student to the point where he doesn't know what to choose to study. I believe this type of study could be created at the high school level in perhaps a more limited form. To allow the student to choose his own course of study - it just seems any student would have to get excited. Why should a student attend a class, an elective if he would be happier and learning more if he could study in a more intense way something he was interested in. I'm not saying all courses should be this way, but perhaps one a year or semester at least once during high school. If staff time would be a problem the courses could be organized on a group basis.

I realize that the students out number the faculty, but sometimes the teachers and counselors are so busy that they do not take the student seriously when he or she comes to them with a problem. I think that the students of today need someone else who will share their burden and really try to help solve the problems facing them. Perhaps this is not the key to the student-faculty conflicts of today, but it is a beginning.

Smaller classes to give the teachers more of a chance to spend more time with each student individually.

Statements Related to Instruction

Students, especially brighter ones, need to be pushed more. Much more could be learned if the teacher asked more of the students and if the teacher improved the quality of his class and increased the difficulty of the material presented. If the teacher improved the clarity of his instruction and the organization of his class, he can expect the student to learn more. History and civics were especially poor when I was a student. This is not intrinsic in a subject but depends on the teacher. In other words, teachers should be improved. The value and lack of value of courses I marked in the first section of this questionnaire depended not so much on the subject itself, but on the teacher.

Better quality administrators, principals and deans who are able to command the respect of the student body. Make the school administration legitimate in the student's eyes.

The faculty must be qualified to teach or administrate. An unqualified person does not care enough about the students or their needs. If a person is placed in a job for which he is not qualified, he hurts the system. A 1 persons in the school system should be certified and placed in their major area of college study.

I think that there should be more visual aids to help the students in their work. I have been in the Army over two years and I find that with visual aids any person can learn anything and do a good job at it.

Improve equipment and available resource material, texts, library facility lab equipment, audio-visual aids, etc.

There should be more teaching centered around arousing curiosity in the student - to the point where he is eager to research. For this the library should be expanded and made more resourceful. The apathy (concerning major issues and community) at college is appalling - students don't care about important events (for the most part). Teachers don't teach interestingly and they don't present enough material of current value to the student of today. I must make another suggestion - students are discouraged by grades. I think a better reform is to let the teacher and student together determine grades to be assigned. This involves the students in his own education.

The tests that are given in high school are extremely inadequate for the need of the student. To memorize facts and figures is not an effective way of learning. The student should be made to think and reason out problems using the facts he has. A mere yes or no; true or false; or matching does not help the student. Essay tests are the answers. This type of test will show you what the student actually knows. Therefore, I believe that all test as much as possible should be essay.

This type of test is perhaps the best way to prepare a student for college. It will force him to use his thinking ability and will also give him good study habits.

With only one year of formal education remaining, I can honestly say that the most important single factor conducive to a good learning environment is a fresh stimulating, sincere approach to teaching on the part of all educators. I think a certain amount of added freedom concerning choice of curriculum is also essential. But high school students -- the "transition period" -- needs to be stimulated to learn through new ideas and young, pertinent approaches. Students will not learn if they are not interested; thus, spurning interest should be an educator's primary task -- then the learning will come of its own accord.

Curriculum geared toward making one think rather than note memorization of useless ----- one which explores philosophical and sociological questions one which deals with the reality of the world in which we live -- one which is geared to answering our questions and not stiffling our curiosity. A system which is not geared to "we must be up-to-page 403 by December 20th," but rather uses a variety of texts and draws from life its examples. Instruction must become more flexible and instruction increasingly rather than decreasingly personalized.

I understand there is no longer a teaching shortage. Perhaps a way can now be adopted to hire superior teachers, eliminate mediocre ones. I cannot judge how this can be done but certainly the students should help to judge. Poor teachers, and there are many, can completely ruin a course, a certain pupil and any students entire year. Teachers must be made aware of their delicate and vitally important relationship with students in all their training. Hopefully, this will result in class discussions rather than listening to lectures students have read the night before.

Student and teacher should be on an open exchange. Knowledge can be made exciting without expensive equipment if a learned and gifted person is teaching.

I realize the above is difficult to establish but it is certainly what will save education. The high school must be open to change and able to adapt to enlightened educational situations. Tests, grades, lectures need so much revision.

Statements Related to Learning of Attitudes and Values

Unfortunately, this form is typically conventional and makes me wonder if there's even the slightest hope of a purpose to it. I'm not interested in _____ becoming a better school - the students becoming real people is much more worthwhile. The best thing _____ High School, as well as any other institutions can do, is to let every person be his own TRUE SELF -- NOT to suppress one and conform him to mass nothingness. To even begin this _____ would have to be very OPEN in everything. However, we all know how sheltered and conforming it is.

For _____ to realize that it is it's responsibility to train and teach the students who are not going to college. Way too much emphasis on the A and B students. C and D students make it in college -- I have -- on Dean's list.

Please do not stress a college education so much. College is not everything, especially if you find out after two years and two quarters that you made a wrong choice, thus making it difficult to find a job. College education is even preached to six grade students. Make known, by voice not just pamphlets, the other possible job opportunities. Not everyone has money to pay for college then switch and pay for vocational training. I did not.

Get all this hippie nonsense out of school. When I was in school there was a dress code and we always had to be shaven and a hair cut. Now everything is allowed. This is only pushing these kids to become hippies. A decent person can not attend school and feel accepted. This is what is wrong with the nation now and the school is behind it all. There is no such thing as school anymore I don't think too much of the school board for allowing this.

For all kids to stay in school and get a good education. It's worthwhile at the end, because you can get a better job. My mother made me finish school. I didn't care for it, but now that I look back she was right. She said to me, "Lucy, if you want a good job stay in school. Now - a day's you have to have a diploma for any kind of job. I'm a nurses aide at _____ Hospital. I hope to become a license practical nurse, real soon. I use to work in the fields. I hated it.

PART II

SUGGESTIONS BY SCHOOL DROPOUTS

While I was in school I could have given many, but now that I am regretfully out I realize it is a fine school and I am honored that I once went there. Therefore, I think it is a fine school and I have no suggestions.

Principal to be more understanding.

Let all pupils know they are important to their school whether they are active in school activities or not. Make all students feel their treated equally regardless of their popularity.

Contrary to the present idea of adding more curriculum choices, more choices in selection to voice individual ideas on the rules and regulations of a high school and more choice in everything. I believe that our high schools would create better, more intelligent human beings if the students were told what was expected of them, instead of being able to choose how they want their school to be run, when they are neither mature enough nor smart enough to make such decisions for themselves. They are attending school to learn to make major decisions and to learn to grow up.

Mix some business subjects with college prep. Devote more time for more important subjects. Get better qualified teachers. Forget the strictness!

Have typing classes in all four grades. Teach things that you are more apt to use on a job.

More understanding from the teachers.

Not trying so hard in teaching the past but endeavoring to instill in the mind of today's youths. Ideals for the present and the future. To teach the facts of life outside in the adult world so that they may be better equipped to hand themselves in the right manner when they are on their own.

Get rid of hard-headed pupils and trouble makers.

Don't shelter the students. Make them aware of the world around them with its good points and bad points. Most high school graduates expect things to be handed to them when they graduate and have it easy like in high school. It is a rude awakening when they finally walk out into the real world.

A mandatory course in "why you should stay in school."

Hire some full time psychologists - let the students know that service is available. With this service I think that many students would profit from it and there would be less high school dropouts (because many high school dropouts are frustrated and they have the attitude, "I'll show you" and they show themselves). This service is greatly needed today, if you don't already have it. I think it's a must.

An opportunity to take classes in the morning and to work at the job in the afternoon.

Have more vocational training. It's to hard to find good jobs when you don't have special training. Make sure all students are aware of extra curricular activities and of how to join them.

I think _____ High School should rid itself of the "prison-like" atmosphere. Also the "guard-like" frame-of-mind that some teachers have. Granted, teachers should be respected, and deserve to be, but too many teachers view their classes as "platoons" rather than the youth of America that they really are.

When I was in school there was a lot of friction between students and teachers and students and students. Also, a lot of teachers were so interested, only in high grades and did not take time to get to know their students. If these problems could be eliminated, life in school would be easier and keep the students more interested.

Don't take sides with the teacher in a student-teacher argument. Some students are very sensitive, I was.

Concentrate more on teaching the students, rather than on their dress and whether they're pregnant or not.

More guidance from teachers, counselors, and parents.

Less time in shop projects and more time out on actual job sites.

I feel that vocational education should be encouraged at every grade level. The purpose of this is to have every individual to work within their own talents and enable anyone to get a well paying job in due time. College prep courses should be de-emphasized in order to make way to vocational education which will be more relevant to the need of our society.

To have a class of sex; to give the students a better understanding of the birds and bees, for they won't experiment and have to dropout of school and enter the hardships of married life. At least wait until you're in your 20's and they'll be fewer divorces, I believe.

It would be a great improvement if a high school could make their courses more pertinent and up-to-date. Also, if somehow, they could be more personalized. Guidance in selecting a career early would be very useful. Some stuffy attitudes should be discarded. There should most DEFINITELY be a well informed, unembarrassed, up-to-date sex education class. Also, some classes on how to cope with married life problems, money, sex, children, etc.

Try for more field trips. Get the students more interested in their subjects. Try throwing the books away, and get a more honest approach in their subjects. BE MORE HONEST -- The teachers don't give the students a chance.

APPENDIX D

R TABLES
(Tables available upon request)

R-3.1	Location of School Previously Attended
R-3.2	Months and Year in Which Students Dropped Out of School
R-3.3	The Dropout Returns to School
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R-3.6	Institutions Attended by High School Graduates Other than College
R-3.7	Suggestions For Making High School More Worthwhile
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R-3.15	Highest Earned Degree
R-3.16	College Graduates Entering a Vocational or Technical School
R-3.17	Suggestions by Dropouts to Make High School More Worthwhile

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HALEY, MARCIA K., AND OTHERS
PROJECT SURGE. FINAL REPORT.

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IDENTIFIERS - PROJECT SURGE

ABSTRACT - PROJECT SURGE, A UNIQUE PROGRAM TO UPGRADE AND PROVIDE JOB SECURITY FOR HOUSEHOLD WORKERS, WAS ESTABLISHED TO: (1) RECRUIT, TRAIN, EMPLOY, AND TRANSPORT 200 MALE AND FEMALE WORKERS, AND (2) BECOME A SELF-SUSTAINING COOPERATIVE BUSINESS. DURING THE FIRST TWO YEARS OF OPERATION, 277 APPLICANTS, WERE INTERVIEWED, AND 127 WERE PROCESSED AND ENTERED INTO THE PROGRAM. OF THE 127, 46 DROPPED OUT, 81 GRADUATED, AND 78 ENTERED THE SURGE WORKFORCE. PRESENTLY, THERE ARE 43 ON THE SURGE PAYROLL, AND 19 OF THE GRADUATES ARE KNOWN TO BE WORKING IN COMMUNITY INDUSTRIES. DEVELOPING SURGE AS A SELF-SUSTAINING COOPERATIVE HAS MADE RAPID PROGRESS DURING THE SECOND PHASE OF THE PROJECT, INCLUDING: (1) INCORPORATION IN OCTOBER 1970, (2) RECORDING OF BY-LAWS, (3) DOCUMENTATION OF OFFICERS AND COMMITTEES, (4) ESTABLISHING A BANKING ACCOUNT, AND (5) PUTTING MEMBERSHIP SHARES ON SALE TO THE WORKERS. THOUGH PROGRESS TOWARD SELF-SUFFICIENCY IS PROGRESSING STEADILY, THE COOPERATIVE MAY BE ABLE TO SUPPORT ONLY A MINIMUM OVERHEAD AND ADMINISTRATIVE EXPENSES, AND OTHER BENEFITS MAY BE ELIMINATED. THE PROJECT HAS SUCCEEDED IN: (1) UPGRADING AND OFFERING IMPROVED WORKING STATUS TO THOSE ON THE SURGE WORKFORCE, (2) ASSISTING GRADUATES IN OBTAINING OTHER GAINFUL EMPLOYMENT, AND (3) RAPIDLY BECOMING A FINANCIAL SUCCESS. (AUTHOR/SB)

VT 014 433

PROJECT SURGE

FINAL REPORT

March 15, 1971

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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PREFACE

This report on a special manpower project was prepared under a contract with the Manpower Administration, U. S. Department of Labor, under the authority of the Manpower Development and Training Act. Organizations undertaking such projects under the Government sponsorship are encouraged to express their own judgement freely. Therefore, points of view or opinions stated in this document do not necessarily represent the official position or policy of the Department of Labor.

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ABSTRACT

Funded in 1968 by the United States Department of Labor and the Department of Health, Education and Welfare, and sponsored by the Washington Urban League, Project SURGE[I] found its first home in the sixteenth tract of Alexandria, Virginia. The long range goals called for conversion of the project into an independent Co-operative business. Short term objectives were to recruit, train, employ and transport its own workers. Benefits such as social security, health and accident insurance, sick and annual leave complemented job security. Trainees and workers were projected to be groomed to be actively involved in a viable Co-operatively owned business at the end of a two year period. Contracted to recruit and train 200 male and female trainees within the two year period, SURGE interviewed 277 applicants; processed and entered in the program 127 persons, of which 46 dropped out of eleven classes. Of the 127, 81 graduated, 78 entered the SURGE workforce. Forty three are presently on the SURGE payroll; nineteen of the total number of graduates are known to be working elsewhere in community industries.

The long range objective of a self-sustaining Co-operative has made rapid progress in the second phase of the contract. The mechanics of setting up a service Co-op were an unknown, and no precedent was found for the formulation of this type of Co-operative. SURGE, Inc. was incorporated in October,1970; its by-laws have been recorded, officers and committees are documented. SURGE,Inc. has established its own banking account, and membership shares are now on sale to the workers.

The moves toward self-sufficiency are progressing steadily. However, the Co-op may be able to support only a minimum overhead and administrative

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expenses; it probably will not be able to support a training and counseling component; the sales force may be cut. Some benefits may be eliminated.

The Project has succeeded in three(3) observable ways: (1) it has upgraded and offered greatly improved working status for many women who are now on the SURGE workforce; (2) it has assisted many on-graduates to obtaining other gainful employment through skills training, counseling and supportive services; and (3) it is rapidly becoming a financial success with predictable monthly incomes from commercial, or heavy-duty cleaning contracts.

SECTION I
INTRODUCTION

Project SURGE, a unique program to up-grade and provide job security for household workers, has moved from raw concept to accountable reality through investment of Government funds. The project is now approaching the point where it will soon be a self-sustaining business; funds invested will start to flow back into the economy through services performed and taxes paid.

In addition to its business and finance success, SURGE has succeeded in a number of other ways that add real value to the society. It has influenced the lives of over 200 underpriveledged families in Northern Virginia. One hundred twenty-seven have received training and counseling in efficient household service; forty-four have full-time employment with the project, and more than one hundred additional persons have received job counseling and placement assistance.

Employees of SURGE are receiving better wages and benefits than they were previously earning (the typical SURGE worker now earns $1.90 per hour, receives sick and annual leave, health and accident insurance, social security, and other benefits), and a sense of pride has been observed in the ability to complete professional work.

The entrepreneur spirit is broadly in evidence among the SURGE workers who only recently were members of a large cadre of hard-core unemployed.

Phase I and II of the project brought SURGE to the point of having a well trained workforce and a limited business. (Phase III, i.e., contract extension has been devoted to the establishment of a Co-Operative business and the development of a sound financial base.) Current business income exceeds workers salaries by about $800.00 a month. This is hardly enough surplus to cover overhead costs such as office lease, transportation, and minimum

administrative costs. However, if trends continue, the surplus will soon be able to cover these operational costs. Only three months ago, income just equalled workers salaries. Projections indicate that in from six to nine months, overhead costs can be covered, and SURGE,Inc. will be a self-sustaining function in the modern-day competitive world of business.

SECTION II

ADMINISTRATION

A. Facilities

The first three months of gear-up were spent beneath a tar roof melting in the summer sun. Staff became familiar with the SURGE volunteer groups, met with local agencies and sought adequate housing for a training site. Finding such facilities was no small task. Two major criteria were found to be stumbling blocks; proper housing within the target population area; and a building large enough to house the proposed activities at a cost ameniable to the budget guide-lines. Real Estate personnel were engaged to advise the administration on locations, rents, and other factors. Although the sponsoring agency (Washington Urban League,Inc.) audited each step, the project was void of any direct legal advice or service when entering rental agreements.

The project has been housed in three different locations. The initial two-story building was found to be inadequate to carry on a full scale training program simultaneously with the business operation. Subsequently, towards the end of the first contract year the business component moved to a separate site. At the end of Phase I, both components were re-grouped in a single, large building wat more adequately housed both needs.

Specific criteria were established for a training center. Among these requirements were(1) to be located within the target area and on, or near a major public transportation route; (2) adequate space in which to set up a model apartment including modern kitchen and laundry facilities; (3) space adequate to conduct classes, meetings and conferences; (4) separate offices for specific activities such as interviewing, counseling, business

operations, administrative and clerical efforts.

The problems encountered in meeting the building requirements were formidable. The services of a local realtor were engaged by the Project. Findings were that rents were extremely high; that many houses in the target area were not adequate in space; many facilities large enough required extensive up-dating to meet City codes and regulations, and were in general disrepair. A subtle attitude of resistance by the community was encountered. A compromise had to be made in obtaining a building that was less than adequate.

Three months after the contract was let, a building was located within the target area. This building was formerly a two-story apartment house that was divided into several units. The space appeared to be adequate to conform to a model apartment, plus a class room and training office on the second floor. The first floor sufficiently housed offices and a large reception-meeting room. The landlord's lease conditions were difficult and it was agreed that SURGE would not only make necessary improvements to the property, but would restore the building to the conditions in which it was first found. Ultimately, it was found that the building failed to meet City codes and regulations for SURGE occupancy. Deficiencies such as improper wiring and plumbing had to be rectified before minimum kitchen and laundry facilities could be installed. The project bore the entire cost for both installation and repairs. Such improvements and the completion of the training site was not completed until fifteen months after the contract was granted.

The training director planned and arranged for the installation of a model kitchen and laundry to facilitate demonstration training in a

realistic environment, plus a complete apartment with an organized class room for lecture and study.

Bids from area contracting firms were invited. The project failed to locate minority contractors who were properly licensed . Extensive labor was required to bring the building up to City codes. Actual costs for properly equiping the site bore by the project was $4,547.53. Costs incurred for restoring the site to its original condition was $450.00

As graduations swelled the workforce, the physical plant proved incapable of providing enough work space for all the operations. A search for a suitable building to house the business operations was made. In October of the second phase, the fifty two workers, Business Manager and Field Representatives moved into a warehouse in an industrial district. Because of the limited time, authorization was granted to purchase additional office needs from the open market. Donated trading stamps plus furniture contributions furnished this installation. However, the physical qualities of the building were cold and sparce as compared to the training center. Workers demonstrated little interest or pride in their quarters. They "felt" the geographical distance from the training center, often phoning the training center seeking personal counseling, job counseling, or returning to the center after completing their job assignments.

With the Project Director, Administrative Assistant and the Training staff housed separately from the Business Manager and Field Representatives, there developed widening gaps of communication and control. Often neither arm of the centeral body knew of the problems, needs, or actions of the other. For example, customer billing and worker payroll data was difficult to document. The Administrative Assistant's temporary placement at the new business office to help train the up-graded receptionist/job scheduler, coordinate the composition of bills, and oversee the personnel procedures also presented problems.

This measure was helpful to the business component, but found administrative and training typing and secretarial work wanting. The trainees, on the other hand, completed in-center studies unhampered with overcrowded conditions and confusion, but suffered lack of transportation to scheduled field trips, and lack of floor care instruction from the Business Manager who was located in the new facility. The trainees were reluctant to leave the training center and enter their OJT phase of training because they had no contact or identification with the general workforce; were unfamiliar with supervisors, and knew the Business staff by name and rumor only. Joint socials were of no avail. It was evident that this was not the ideal training-working relationship.

Graduates of the training program soon found that standards they conformed to in training were not being applied in the real work situation. Workers, on the other hand, were suspicious of the new trainee who relied on performance standards. Trainees were timid of the large,experienced workforce and of the Field Representatives who were to secure job orders and counsel workers on specific jobs.

Thus, the impact on the workers and trainees and workers by the physical separation was evidenced in a lowering of general morale. With rents doubled, transportation problems increased, and communication between the two components at an all time low, efforts were made to regroup in one building.

In the last months of the initial contract, a large two-story building was leased. This building adequately houses the Business office and over 40 workers with storage space for work supplies, and the Training staff and materials. With visable combined efforts to strengthen the whole concept of training for up-graded employment, the SURGE worker feels the benefits of the physical remerging of the two components. Communication problems were resolved; control is more easily administered; trainees can more readily relate to the business function; and contact with all staff and personnel makes for

a more cohesive program.

B. Staffing

The Urban League recognized the importance of recruiting staff proficient in specific skills. Also taken into consideration was their sensitivity to the needs of the target population within the area of Northern Virginia, resourcefulness, and ability to communicate at all levels. The Urban League, as other employers, seldom can be guaranteed that all elements are balanced within the individuals they employ. Those selected were persons the Urban League felt would best temper their formal education with actual working experience with household workers, and embraced the philosophy of equality and opportunity for up-grading the social and economic status of household workers. If there were any real problems in staffing the project, they could best be defined as one of individual philosophy of implementing the goals of the demonstration project. Some applicants, for example, felt that the training was demeaning; others felt that more militancy should be displayed for social change .

Retention of staff has been good. The Urban League has been successful in fully orientating its entire staff to the goals of the project and has generated wide cooperation and understanding of the needs and support required by the project. Significant attributes of the selected staff has been committment, willingness to work many hours overtime without compensation; flexibility and ability to do the vast number of jobs not ordinarily prescribed in job discriptions.

During Phase I, the project had an initial staff of: Director, Business Manager, Community Services Coordinator, Counselor, Training Director, Home Economist, Administrative Assistant and Clerk typist. Within a

few short months the Community Services Coordinator resigned for another position. The Urban League recruited through several agencies for a replacement. In the interim, the counselor assumed the responsibilities of the Community Services Coordinator in concert with her regular duties.

At the mid-point of Phase I, it was felt that there was need for instruction in heavy-duty commercial cleaning techniques, inthat there were numerous customer requests for such job duties. A local black contractor was hired by the project to work on a part-time basis as instructor. Later, he was hired as a part-time sales consultant to dove-tail the heavy-duty and commercial cleaning instruction.

In the last quarter of the first year of contract, both the Training Director and Home Economist left SURGE for other positions. At the same time, the Office of Education required the ceasation of training until the training center met minimum standards of training materials. A general re-organization of staffing was seen as necessary. It was recommended that the Counselor be assigned to the position of Training Director; that the positions of Counselor and Community Services Coordinator be abolished. Major reasons for this recommendation were centered around the need for greater emphasis on training and job development, oriented to meet the business needs.

Shortly after the reorganization of staffing, the Business Manager left to re-enter the Public School system. He was replaced by the part-time heavy-duty cleaning/instructor/sales consultant.

Seventeen months after the contract was let, the Urban League reassigned the Project Director and the Administrative Assistant to establish separate quarters for the Alexandria Branch of the Washington Urban League.

With a new Project Director, SURGE moved from a heavily laced social concept of operation into a more intensive business-oriented structure. Three full time sales or Field Representatives were hired. The clerk typist was promoted to Administrative Assistant to the new Director. A Home Economist was recruited through the State Employment Commission, and an outstanding graduate worker was up-graded to assume the paraprofessional position of Instructor Aide.

During the ensuing months of the second year of Phase I, trainees were groomed for career ladder steps within the SURGE structure.

C. Promotion of Graduates

Three SURGE graduates have been up-graded to significant career ladder positions. These positions include : (1) the paraprofessional position of Instructor Aide, (2) Receptionist/Job Dispatcher, and (3) Stock Clerk. Also, four graduate workers were promoted to Supervisory positions, and two SURGE workers were retained as Drivers.

The first position to be filled by a SURGE graduate worker was that of Instructor Aide. The graduate selected was of superior ability and demostrated capibility to move from Instructor Aide to Assistant Staff Developer. Initial criteria formulated for the specific position was:

(1) High school education or equivelency.
(2) Completed the SURGE training program.
(3) Demonstrated continued responsibility in job proficiency.
(4) Ability to communicate well with all levels.
(5) Well adjusted to the system of a work world by recorded consistancy of attendance.

The Training Director outlined a job discription, and with the selected person, viewed the areas where additional occupational guidance would be of advantage. Although no formal curricula was devised to groom the person for this position

there were organized steps of responsibility with time allowed for research and study under the supervision of the Training Director. In addition to scheduled weekly consultations, the Training Director held daily conferences with the paraprofessional for specific guidance areas, and requested periodic progress reports. The constant and informal method of teaching the up-graded graduate was highly successful. The job discription of the Assistant Staff Developer, Stock Clerk, Receptionist/Job Dispatcher, Supervisors, Team Leaders, and Drivers are as follows:

SURGE JOB DISCRIPTION

ASSISTANT STAFF DEVELOPER
(ParaProfessional)

Basic functions and working relationships: The Assistant Staff Developer reports to the Director of Staff Development. Prime functions include research, supportative services including job counseling, and participation in training classes, seminars and workshops.

Responsibilities: The Assistant Staff Developer is responsible for the following:

1. Assisting in researching, collecting and reviewing training material and equipment to be used in class.

2. Assisting with scheduling of training sessions, including recruiting, interviewing, testing and evaluations.

3. Assisting in the presentation of training classes, including demonstrations, lectures, operating of folm, task supervision.

4. Provide on-the-job supervision of trainees and workers; keeping evaluations of such.

5. Maintaining training equipment and supplies, ordering and fitting of uniforms, advising on dress codes.

6. Assisting in reviewing commercial job orders, planning task performance, personnel assignments.

7. Assist in Staff Development activities for the promotion and education of Co-operative responsibilities, committees, etc.

8. Assist the Receptionist/Dispatcher with job scheduling, job assignments and transferrals, transportation needs.

9. Assist the Administrative Assistant/Bookkeeper in preparation of billings and notices, record keeping.

10. Maintains files, prepares drafts of letters and reports.

Qualifications:

1. High school education or equivelent.
2. Completed SURGE training, worked for at least six months on the SURGE workforce; served in the capacity of supervisor.
3. Superior attendance. Well groomed. Well spoken.
4. Able to communicate (written and oral) with all levels ofpersons.
5. Well organized; capable of working without maximum supervision.
6. Has knowledge of office procedures. Good handwriting or typing experience; capable of conducting and interpreting research.

Criteria for Evaluation: The Staff Development Assistant will be evaluated on the basis of the quality and the timeliness of supportive services and an assessment of the aquisition and development of skills required for the upward mobility of the SURGE workers.

The position of Stock Clerk was filled by a member of the second training class. The person chosen for this position had had little training in the techniques of fulfilling her duties. Little job counseling was performed and no meaningful follow-through was administered for career development. With the lack of guidance this person has functioned well within her limitations. It is regretable that the then Business Manager, under whom the Stock Clerk served, was unable to concieve the importance of staff development as it affects the individual, and the project as a whole. The up-grading career ladder step for this position is found lacking. The duties for this position are as follows:

SURGE JOB DESCRIPTION

STOCK CLERK

General Duties:

1. To keep active inventory of all cleaning agents, equipment and supplies. Compiles records and posts data in ledgers assigned.
2. To prepare orders for maintaining supplies.
3. To report to business manager many faulty or nonfunctioning equipment.
4. To maintain basic functioning of equipment. (empty and clean vacuum bags, tighten any loose screws or bolts; belts; handles.)
5. Orders, receives, stores, issues, dispatches all SURGE supplies.
6. Compiles stock control records, consumption data.
7. Prepare requisitions and orders for maintaining and ordering supplies and equipment.
8. Maintain a neat stock area of equipment in accordance to safety and health regulations.
9. Keeps materials and equipment for ready use. (liquids in transportable containers; brushes clean; rags clean and dry.)
10. Prepares work caddies for daily use. Items to include: clean cloths, oven cleaner, all-purpose cleaning agent, amonia, steel wool pads, wax, stripper, and other items as specified.

11. To maintain a high degree of cleanliness in SURGE business and reception areas, training and office areas. At least once a month an "initial" should be completed in one area General cleaning should be accomplished in all areas once a day including dusting, vacuuming, emptying waste cans.

Qualifications:
1. The Sock Clerk must have completed the basic training and orientation.
2. Show mechanical abilities.
3. Capable of keeping files, wiring simple reports and accounting.

The third position filled by a SURGE graduate is that of Receptionist/Dispatcher. In the beginning, the duties were vague, other than the need for a person to answer customer calls, make appointments for customers with Field Representatives, attend to the chore of arranging transportation to and from jobs of the workforce members. Later, it was found that in the business office, the person should also have the knowledge of customer billing, pricing indexes, and service information. Again, due to the lack of consideration of training advantages, the person selected for the position received little structured guidance. Her efforts have been extraordinary and well performed. Her job description is as follows:

RECEPTIONIST/DISPATCHER

General Duties:
1. Receives all phone calls; gives customer information, takes all messages, transfers calls, records worker calls into office as relating to attendance, emergencies, etc.
2. Logs and schedules all job order requests. Affirms dates, times of service to customers; special customer requests such as location of keys.
3. Records customer complaints and prepares such reports for the Business Manager, Field Representatives and Training Director.
4. Records worker complaints on specific jobs and reports such to the Business Manager.
5. Receives all visitors.

6. Prepares all daily job orders on suitable and established forms. Attaches driving directions to new job locations, and all pertnent information in detail.

7. Arranges and dispatches worker transportation between to and from job locations. Logs time workers call for transportation for transferal after completing assignments.

8. Maintains appropriate files, records, basic accounting and completion of required reports.

Qualifications:

1. Fully orientated and knowledgeable of SURGE concept and services.

2. Completed training and worked on work force at least three months.

3. Exceptional ability to communicate with all levels of persons.

4. Good handwriting or capability of typing.

5. Well organized, level headed person/knowledge of office procedures.

6. Knowledge of billing procedures.

Other in-service up-grading has substancially aided the project. SURGE team leaders entered a Supervisory Training course; women who were capable of operating an auto were advanced to positions of Drivers/Workers. The latter did not have the advantage of re-orientation or specialized training for up-grading. Job descriptions for each are as follows:

SURGE SUPERVISORS: REPORTS DIRECTLY TO BUSINESS MANAGER

I. Qualifications

A. Demonstrated ability to carry responsibility.
B. Capable of good judgement, resourcefulness.
C. Positive attitude toward SURGE goals.
D. Performed quality service through SURGE training,OJT, and work force for at least three months.
E. Communicates well with others.
F. "Model grooming" in appearance and conduct.

II. Job Description:

A. Will accompany teams to job sites. Will be responsible for (1) completion of job order (2) employee relations.
B. May be asked to make "spot checks" on several locations.
C. May be required to help team members on job duties.
D. Answer any questions pertaining to the job orders, equipment, or call to office for job information.
E. Arrange transportation to and from job sites with drivers and job dispatcher.
F. Responsible for keys, admit slips, etc. for entry into apartments, homes.
G. Work closely with job developers and staff.
H. Work closely with Supply clerk as to needs and inventory.
I. Report all faulty equipment, job accidents, etc.
J. Responsible for check lists, and other reports required.

SURGE DRIVERS: REPORTS DIRECTLY TO BUSINESS MANAGER

I. Qualifications:

A. Valid drivers permit.

B. No recent accidents; responsible.

C. Understands directions well (maps, verbal instructions, written material).

D. Capable of helping a work team on the job.

E. Gets along with people well. Sence of humor.

F. Good attendance; being prompt.

II. Job Description:

A. Work closely with Field Representatives and Supervisors.

B. Drives SURGE workers and supervisors to job locations.

C. May be required to work on a job.

D. Maintains schedule of trips, mileage and other required reports.

SURGE TEAM LEADERS: REPORTS TO SUPERVISORS

I. Qualifications:

A. Completed class sessions.

B. Served as team leader duting the OJT phase of training.

C. Responsible and dependable.

D. Well groomed.

II. Job Description:

A. Will head work groups of two or more on a job site.

B. Will evaluate job to be performed and make work assignments.

C. Will be responsible for the completion of the job; checking each task in each room; checking the check-list and job order.

D. Will be responsible for keys, admit slips, transportation arrangements, worker conduct on the job.

NOTE: The general workers will rotate the Team Leader assignments. Satisfactory performance such a leader will qualify for a Supervisory position.

Male employees were hired to help the SURGE ladies on commercial assignments. None of these employees entered the training, but were under the supervision of the Field Representatives. One male employee was considered to be an understudy for Field Representative. Perhaps due to the lack of an organized plan for achieving this role, the employee became discouraged and left SURGE before a meaningful assessment could be made. Another male employee was hired as driver/worker. His progress has been marred by lack of proper orientation on his responsibilities.

D. Steering Committee

SURGE is the child of its four sponsoring volunteer groups; the National Council of Catholic Women, the National Council of Negroe Women, the National Council of Jewish Women, and Church Women United. Members of the four groups met with community groups and approached the community business sector. The city in general responded with praise but made no concrete committment. The role of the representatives from the four church groups has diminished with time. They are now relatively inactive.

The Steering committee volunteers envisioned themselves as playing a large part in the training and supervision of the workers. Project staff felt that volunteers could best benefit the program by selling the concept and service in employer-education actions within the broad community. This difference of opinion resulted in little meaningful action by the volunteers. In the early phases of the Project a few volunteers responded to the need for Home Supervisors to supervise on-the-job training. Others manned booths in two apartment houses to actively sell SURGE services. Some volunteers were willing to support the project by speaking at clubs and social organizations.

Had these activities been continued, they could have been effective in creating the necessary public exposure to the Project goals and capabilities. However, they did not continue, probably due to the lack of adequate co-ordination. A recommendation for future projects would be to maintain a paid coordinator to better utilize the skills of volunteer groups.

E. Community Support

With the inception of a program to train and form a business for the up-grading of household workers in Northern Virginia, the volunteer members of the four sponsoring women's groups sought community support. Volunteers contacted the City in several ways. For example, businesses were asked to help train workers by lending their expertise in sales, accounting, materials and occassional personnel to demonstrate or lead a class discussion. Prior to the Government contract, the volunteers received many glittering generalities of praise from the community, but no actual commitment. Therefore, the Urban League was approached, and a joint proposal was submitted to the Federal Goverment. This effort resulted in the SURGE demonstration contract.

A sociological study of the historical community of Alexandria would best explain not only the need for a project such as SURGE, but also the reasons for the absence of such projects. The problems encountered by SURGE are only symptomatic of the sociological and human needs of the community. The lack of support, the historical indifferences to the social and economic needs of the community underpriveledged is evidenced by the failure of SURGE to leave any real or lasting imprint on the community conscience.

To draw valid conclusions, we have to consider the divisions within the community. The Black segment of the community may well have experienced its first token of action as opposed to the mutterings of recognizing the

need for economic gain. The dire need for relevant guidance to the youth in schools is manifested in the number of drop-outs who seek skilled jobs and reject the unskilled jobs available to them; the crisis of private industry within the community gives way to frustrations of unprepared Government applicants; the number of deprived families seeking welfare as the only means for survival depicts the crisis of the community's economic involvement; the absence of political participation is an indictment of the processes of practiced democracy; the utter neglect and disrepect of the untrained poor is demonstrated daily in the halls of the City and State Governments. The needs are staggering.

An "equal opportunity" sponsor, the Urban League, was best suited to offer credibility to such a project as SURGE. However, without Federal funds, the project could not have existed, or survived. The fact that SURGE exists today has lead to some positive reactions by individual members of the community, however those persons who have elected responsibility and power to affect social and economic change have remained aloof and indifferent. Graduations and open house ceremonies have attracted City officials on two occasions but their action has been limited only to attendance and smiling for news photos.

Community attitudes must change if the status of household workers is to improve. In this respect, SURGE has failed. It is too small a pebble to make wavew in the sea of apathy. Conversely, SURGE has netted some very positive results through the people it serves even though it failed to receive out-right support and community cooperation.

SECTION III
RECRUITMENT

A. General

There was little difficulty in recruiting female or male applicants and promoting intest in the training program. It is, however, difficult to attract sufficient numbers of qualified applicants. The counselor interviewed over 240 persons. Many were women who did not qualify under the terms of the MDTA requirements (specifically the Head of a Household requirement); many applicants were direct referrals from the Welfare Department, with only a few from the State Employment Service; many more were youthful applicants who were seeking job training advice or part-time employment. The counselor, as time allowed, attempted to place such applicants on known jobs. One distinct conclusion may be drawn: SURGE was the only job training program in the immediate area; and there remains a crying need for such job-oriented projects.

Achieving the interest of already employed persons was difficult. One main reason for this problem was that those employed felt they could not risk the loss of regular pay for a low training stipend. Heads of Households already employed were therefore discouraged. Many applicants already employed in the occupation felt that they had little need for training, and could not readily understand the concept of becoming a part-owner in a Co-operative business.

Recruitment found that many females already in the household occupation had basic knowledge of occupational tools, but needed among other things, to learn how to program their work and organize their tasks.

B. Methods

Methods used for recruiting trainees were: news ads, flyers dis-

tributed within the target area, public appearances by staff and trainees at different churches, clubs; TV appearances and spot announcements; letters to community agencies; recruitment booths at the State Employment Commission and other agency offices; bus stop recruitment; and commercial ads in local buses. Techniques producing the best results were: the recruitment booth at the Employment Commission, TV spot ads, and graduate referral. Techniques that were less favorable were: news ads (the local paper does not appeal to a broad section of the working poor) and letters to community agencies.

The SURGE staff initiated working relationships with all community agencies. The Director and Counselor met with each agency to explain the program in detail. Cooperation was rapidly met from most agencies such as the Neighborhood House, Health and Welfare Council, Vocational Rehabilitation Center. Difficulties, on the other hand, were experienced with the Welfare Department and the State Employment Commission. The Welfare Department reacted to SURGE as a ready depository for clients whom they deemed "capable of employment", and required many of their clients to accept " SURGE or nothing". In the early stages, SURGE felt obligated to offer such applicants the opportunity to train and work. It was soon learned that such trainees felt "conned" into the program. There were too many social adjustments to make; the world of work was too alien to them. SURGE found that it could no longer accomodate the Department of Welfare referrals.

The State Employment Commission appeared to harbor the attitude that SURGE was a competitor for their services. Rather than referring working applicants for upgrading, they continued to refer persons whom they could not place. The State Employment Counselor and the Welfare Workers often would, together, decide that a certain individual could work within the SURGE program and so build his hopes that SURGE appeared worse than the establishment when he was rejected because he did not qualify.

C. Phase I Recruitment

During Phase I, SURGE entrance requirements were less stringent than those later adopted. For example, it was felt that young applicants should have the opportunity to train for an occupation, and that work experience was less relevant because few women had the physical opportunity to work on a continuing basis. Since the MDTA permitted payment of a youth allowance, young people (age 16-18) were admitted into the program. It was soon learned that the younger applicants had less satisfactory child care arrangements and were not attuned to the responsibilities of the work world. Of the 32 trainees who dropped out of the training program, a majority listed the lack of adequate child care as their reasons. Youthful mothers, however, had no monoply on child care problems. Many trainees/workers sought hours of work that would correspond to school hours.

D. Phase II Recruitment

In Phase II, the criteria for selection was more selective, and SURGE sought more proof of satisfactory child care, and looked for stronger evidence of a consistant work background related to the specific occupation. Youth who had participated in NYC programs and had experience in offices were encouraged to seek other jobs related to their training; applicants who had worked for households longer than twelve months, or who had been employed by industry were desired. References were checked. An outline of the revised criteria are as follows:

1. Good health, including weight.
2. Age between 20 and 50.
3. Capable of reading and writing.
4. An established work record of more than 12 months in household, motel, hotel, or industry.
5. Positive attitude toward the occupation; toward upgrading occupational skills and self improvement.
6. Adequate proof of sufficient child care.

Rationale for the above revised entrance criteria are obvious for most employers. If a person has been regularly employed, she has adjusted to the world of work and has had satisfactory child care arrangements. The youth have had little work experience and will participate in the household occupation only as long as there are no other work-training programs. The occupation makes many physical demands, and good health is necessary for consistant work attendance.

The SURGE application form was designed to reflect health records, work records, and details of child care. An entrance test was given. This test was a job-related vocabulary test that measured reading comprehension, knowledge of the occupational equipment, and assessed degrees of work responsibilities known by the applicant.

E. Problems

The problems of the in-grown culture of the poor black community has been demonstrated many times over in the recruitment of SURGE applicants. For example: a few disruptive employees resulted in the loss of several potential trainees, and caused several others to drop out of the program. Rumors and news of the Project rapidly spread. In some cases, the Project benefited, but in others, it suffered from broad distribution of stories told by a few dissatisfied trainees/workers.

Another problem in recruitment was the need for part-time work as voiced by those interviewed. Many women wanted a 20 to30 work week, not the then guaranteed 40 hour week. Reasons for a shorter work week generally related to child care problems. This was substantiated during Phase II when the Business operations found that it was not feasible to guarantee a 40 hour week of work. This did not create any new problems in recruitment. If

adequate child care facilities had been available, there could have been a greater demand for the 40 hour work week.

The Project experienced difficulty in recruiting both female and male drivers. Most females interviewed for the driver positions did not have driving permits; workers interviewed for the driving positions (up-graded by 10 cents per hour) did not want the responsibility of transporting workers and equipment. Many interviewed for the driving positions were found to be under the age of 25, and not insurable. An appeal to the State Employment Commission with detailed job description and requirements was of no avail. Other agencies were notified of the needs. Nearly 100% of applicants were referred by the SURGE trainees and graduate workers.

In other areas, volunteers and citizens have not embraced the theory of referring their "own girls" or domestic help for up-grading. The slow process of re-educating the public servant and consumer of household help has been a deterrent in recruiting qualified applicants.

SECTION IV

TRAINING

A. Development of the Original Training Program

A major goal of the first training program was to aid in the development of self pride and work skills supported by the realities of the work world. In an eight week period, the curriculum included basic home economic courses in table setting, meal planning, nutrition, child care, first aid, laundry and sewing.

The teaching aids for planned course content were limited. Demonstration material was deficient. To counter these training deficiencies, the training component utilized guest speakers, scheduled field trips, and interviewed area housewives who agreed to volunteer their homes, appliances and talents to provide further skill development to the trainees. The use of such Home Supervisors proved inadequate for several reasons: (1) lack of transportation to the various geographical locations of the volunteer homes; (2) Home Supervisors were, on the whole, permissive of the individual techniques of the trainee and failed to accurately report or correct deficiencies; (3) the relationships between the Home Supervisor and the trainee was that of employer/employee; counseling of both was required; (4) trainees felt that the Home Supervisor was getting work done for nothing.

At the end of the third quarter, it was decided to eliminate the Home Supervisors from the training experience.

During the fourth cycle, trainee teams rotated cleaning the Instructors' one bedroom apartment. This too, proved to be too close a personal situation rather than a skill development process. Other apartment dwellers

were contacted and agreed to pay for trainee work. This proved to be more satisfactory.

Job inquiries producted the need for heavy duty cleaning. It was determined that 80 hours (10 hours a week) would be devoted to training in the maintance and care of flooring. No special curriculum was planned. An owner of a local commercial cleaning business was hired as instructor/consultant. For the most part, his classes consisted of lecture and demonstration of commercial floor machines. Practice on the machines was gained on the wood and asphalt composition tile flooring in the center, and the trainees accompanied the instructor to commercial on-site job locations where they were later hired as "spot labor". Only a few trainees were able to receive this special instruction as this instructor/consultant was then hired as Business Manager for the Project. In this capacity, he offered only two lectures on floor care to following classes.

During the early weeks of the second year of the contract, the Office of Education requested a full re-evaluation of the Project. The fifth class was suspended. Staff changes were made and assessments were made of the physical training plant, course content, training materials and the length of training cycles.

B. Re-Evaluation

Re-evaluation concluded that (1) comprehensive training materials are mandatory for a total learning environment; (2) the training center should be a model of dedicated and cohesive working relationships; (3) the business (job development) trends indicated that training should be re-oriented to cover more specialized household cleaning tasks including heavy-duty cleaning; (4) the training cycle was too long and should be geared to the

specific work tasks the graduates encountered on the job; (5) the low and late MDT's stipends were deterring recruitment; (6) the program needed codes and regulatory systems to instill pride motivation; (7) low prices for SURGE work was termed another form of racial submission, and was not considered consistant with good business practice.

C. Modifications

The new Training Director prepared plans and specifications to remodel the training center and add new equipment. Bids were requested from three contracting firms for building corrections to meet City codes and accomodate equipment installations.

The training goals were re-defined to meet specific needs of SURGE job requirements. They provided individual and collective skill development with emphasis on restructuring the image of the participants of the occupation through career ladder steps. Standards and production codes were established. Job descriptions were devised to relate to each career ladder step, qualific tions and criteria were established , and a program to implement business awareness and the mechanics of sound business development was introduced into the training curriculum.

With a completed training center, equipped with a modern kitchen and laundry facility, a new training course was initiated to keep the trainees moving toward skill development and full participation in the building of a Co-operative business. The new course began with a four week in-center training cycle. The trainees attended orientation sessions where they learned of training requirements, job performance standards, and become familiar with the mechanics of a Co-operative business structure.

D. <u>The Revised Training Program</u>

The length of the program was reduced to a total of six weeks. As mentioned previsously, the first four weeks were spent in the training center utilizing all training equipment. (During this period the trainees were still receiving weekly MDTA stipends.) The remaining two weeks of the training cycle were spent in actual on-the-job assignments under supervision of the training component. Schedules were so designed as to give each trainee four hours of work per day for which they were paid $1.50 per hour. This was in addition to the MDTA stipend. (The added sums were paid out of SURGE generated income.) After completing a four hour assignment each day, the trainee returned to the center for specific skill development. This arrangement proved to be very satisfactory, and morale was improved. Subject matter was geared to the individual needs as it related to the actual job situations. This provided realistic work problems such as understanding time-efficiency, job orders and human relations. Class discussions following the job assignments reimforced the quanitative and qualitative requirements of the SURGE service.

The training program stressed among other topics: learning to unerstand and follow instructions; operation of dials and equipment found in the homes as well as heavy duty floor machinery; developing efficient cleaning practices, the art of thoroughness; organizing cleaning tasks, sequences in logical order; produce quality work for successful business returns; human relations as applied to other workers, supervisors and clients. Other areas of instruction designed for individual enrichment were: grooming, health, basic nutrition, community development, etc.

Instructional techniques were broadened to utilize a complete training center with a model apartment and formalized class room, grooming center,

and worker lounge. Films were very useful; guest speakers and field trips, although limited because of transportation problems, were successful tools of instruction. The most profitable materials devised by the training component for skill development included :

1. An occupational glossary.
2. A "Guide to SURGE Job Orders".
3. A "Guide for Commercial Tasks".
4. Tests (both written and oral demonstration.
5. Individual trainee evaluation forms.
6. On-the-job Performance Evaluation Forms.
7. A "Customer Complaint File".[1]

The above materials were successful because they more completely related to the actual SURGE job needs, and were tailored to help motivate both skill development and personal achievement. SURGE graduates were consulted and helped compile material, thus creating a strong base of validity.

The training program interlaced skill development and personal enrichment to the greatest extent possible. However, the training director felt that there was much lacking in the opportunities for true up-grading.[2] In addition to films, guest speakers and assignments, trainees were encouraged to plan special events and socials that involved planning, organization and responsibility. Graduation exercises were the highlight of achievement. Trainees were often overheard comparing test scores, employer compliments, congratulatory gifts, and visable respect from their families.

Individual proficiency was measured in weekly increments of both staff and individual progress evaluations; on-the-job reports; tests; and

[1] Working from this file, workshops were organized to discuss in detail specific job orders, task sequences, work organization, equipment, recorded complaints and job deficiences, and cost factors.

recommendations from supervisors, team leaders, and graduate workers. At the end of the four week on-the-job phase it was planned that the Business Manager would then interview each trainee and discuss individual progress and qualifications related to the SURGE business, and explain the pay scale and working conditions. This was to be an appropriate time for re-evaluation of job entry for the trainee; and an opportune time to stress benefits of the Co-operative business, goals and standards. However, this practice was not consistantly applied which ultimately lead to disappointments. For example : although termed well qualified by criteria established for graduation, some individuals wanted to work only part-time; although assessments were made (by training component) on individual qualities and achievements, and shared with the business component, many trainees desired working assignments in special fields such as floor care, or laundry, and were disappointed that the Job Scheduler did not reflect such wishes in dispatching job assignments.

[2] Time was not available for other areas of up-grading. Positions such as Field Representative understudy, stock clerk, receptionist/dispatcher, and drivers were filled without sequencial qualification or proper training. Although these persons functioned well within SURGE, they will find difficulty securing employment in parallel positions in outside industry. The lack of training to meet positional descriptions tends to nullify the career ladder steps.

E. Additional Staff Development

1. In the last months of Phase I, the training component conducted in-service training workshops for the general workforce. The need and interest was evidenced by worker requests for job-related information, and customer complaints. The major instructional devices used were the "Customer Complaint File", and "Guide to SURGE Job Orders". Field Representatives were asked to participate by discussing special requirements of individual customers, needs of specific customers. Round table discussions centered around interpretations of job requests. Commercial cleaning experts were invited to demonstrate heavy duty equipment and techniques of utilization. A human relations clinic was very successful. Evolving from these re-training sessions were: a revival of worker morale; re-evaluation of standards; re-affirmation of goals; an opportunity to discuss the business process, and register personal grievences.

2. A thirty (30) hour Supervisory Training Workshop was also designed to enhance the skills and motivations of the five named supervisors. A "Supervisors Handbook" was created to meet the specific needs of the SURGE Supervisor. This workshop was founded because of the need for skilled supervisory personnel on job locations, and as training support for new workers during their probationary period. The workshop established an up-grading process with in-service staff development. Discussions, role playing, demonstrations, speakers and self evaluation sessions were useful in this program. There was much emphasis on production standards, job evaluations, human relations and work attitudes. It also was found to be an excellent time to re-inforce the Co-operative Business concept and begin a stepped-up educational process in cooperative responsibility, individual involvement and business management.

SECTION V
COUNSELING

A. Goals

The need for counseling of trainees drawn from the ranks of the "hard core" underemployed has been observed in many programs. The pr-blems faced by those of us who are not underpriveledged are relatively simple to solve: If we need a doctor, we go to a doctor; it we need a lawyer, we engage a lawyer; if we have a child care problem, we hire a babysitter or child nurse. The underpriveledged, however, must seek free or charitable service, often resulting in long delays and inferior service. We all have our problems, but the underpriveledged have more than their share. Counseling is the door to personal problem solving and is one of the most vital functions performed by a training project. A student cannot learn effectively; a worker cannot work efficiently when serious personal problems exist. In recognition of this need, SURGE established a counseling service. Its goals were to (1) assist individuals with personal problems that conflicted or restricted their entry into the mainstream of the work world, and (2) to orient the trainee toward the world of work.

B. Individual Counseling Methods

Individual counseling, required by schedule, or requested by the trainee, was conducted in an informal, relazed and confidential manner. Personal problems such as obsity and general health, family finances, child care, lack of proper housing, not wanting to work with certain individuals, or not liking an instructor, were among the many problems that caused anxieties. Once the problem was defined, the counselor and trainee/worker discussed alternate solutions. In some cases, the solutions required much effort on the trainee's part; in other cases the counselor referred the trainee to local agencies that could more readily meet specific needs.

Individual counseling documented problems of (a) child care, (b) school problems, (c) finances, (d) taxes, (e) welfare problems, (f) housing, (g) consumer problems.

Cooperation was maintained with the Employment Commission, the Welfare Department, Neighborhood House, Vocational Rehabilitation Center, Boys Club, Salvation Army, Red Cross, Community Action Agency, the Office of Economic Opportunity, the Housing Administration, Day Care Centers, Legal Aid, and Public Schools. Referrals were made to these organizations when appropriate. In some instances joint effort was required to help an individual family.

Late MDTA payments also created grave individual problems; reductions or suspension of Welfare support caused much concern; threats of eviction plagued many. Lack of child care affected a great percentage of the trainees and workers. Several trainees had to drop out of the program because they could not afford adequate child care.

C. Group Counseling Methods:

Group counseling was scheduled for at least once a week, for a two hour period. The successful techniques used were role playing and round table discussions. These measures provided the individuals, as well as the group, to see a problem and to discuss their reactions; to determine solutions and alternate solutions; to plan the steps of implementing the solutions. The Counselor used real-life and work oriented situations for material. Major topics were: (1) attitude toward self, (2) attitude toward others, including supervisory personnel, (3) attitude toward work and household occupation. Participants were allowed to express themselves freely, to voice their anxities and dreams, to assess capabilities, strengths and weaknesses. These sessions proved enjoyable and informative to the participants. They were guided in recognizing poor attitudes and habits as well as given positive motivation for self improvement.

D. Other Functions of the Counselor:

Performing another vital function, the Counselor kept informed of other jobs and training programs. Many SURGE applicants were either not interested in SURGE, wanted training in other occupations, or were not qualified for SURGE training under the MDTA requirements. Many of the applicants were relatives or friends of SURGE trainees and graduates.

The Counselor provided assistance to the Business Manager by soliciting job orders, issuing job assignments, scheduling and transporting the workers to job locations, and was active in job counseling and employer relations.

The Counselor cooperated with the Community Services Coordinator to establish a Domestic Task Force. The Task Force was composed of volunteers as well as interested SURGE graduates. Its main objective was to create a climate of public opinion in which wages, working conditions, and general status of the Household worker in Northern Virginia could be more readily up-graded. The Task Force, with the assistance of the local housing authorities Tenants'Council, made a survey in public housing in an effort to organize domestics into pressure groups for reform. The group became inactive after several months partly because some members were too aggressive, wanting more militant proposals for social change. This conflicted with the orderly intent of others.

E. Evaluation:

Considering the vast social and personal problems of the SURGE trainee/worker, the primary goals of counseling were met. Several trainees who were potential drop-outs found to their pleasure that many personal problems could be faced and solved by thoughtful planning; others found circumstances so overwhelmingly impossible (such as day care problems) that counseling supported their decision to leave the training program.

SECTION VI
Job Development

A. Techniques

In the early stages of Project SURGE job development for graduating trainees was one of the most difficult tasks faced by the staff. Graduates had been assured of 40 hours of work, and were dismayed when they found that jobs available were insufficient to provide all workers with full employment. The SURGE staff, lacking marketing and sales promotion experience, nonetheless tackled this problem with vigor. They succeeded in developing the required business by trial and error methods involving much evening and weekend work.

Early job development methods used were: radio and TV spot ads, ads in the local papers and distribution of flyers in apartment houses. Volunteers were called in to survey their neighborhoods for SURGE service. It was found that SURGE could not assure the graduate a 40 hour week of work. Many of the jobs found by the volunteers were one time favors to the individual volunteer/neighbor. Many resident managers of apartment houses displayed hostility toward the occupation and personnel involved, and did not allow the Project to distribute brochures and flyers. On the otherhand, many resident managers welcomed the Project goals and permitted the staff to put sales material in laundry rooms and beneath individual apartment doors. Newspaper ads and satisfied customer referrals continue to be the Project's main source of business development.

It was the belief of the Project that the volunteer-steering committee groups would engage in active employer training through organizational membership meetings and recruit influential support via publicity. However, SURGE did not have the benefits of such support, and no employer training or orientation programs to help change the customer attitudes were implemented by the sponsoring volunteer groups. The Urban League invited staff members to speak at general and special membership

meetings and Board of Director meetings to explain the project and gain exposure of the concept. The current Business Manager does not recommend employer training as useful.

Other techniques used to develop jobs for SURGE workers were: news ads, radio spot ads, TV appearances, distributing flyers in apartment houses. The most successful of the above techniques are the news ads. Such ads enable SURGE broad exposure at minimal costs. Next to door-to-door sales, the flyers proved to be the least beneficial. It is to be pointed out that the flyers were hurriedly made and lacked the luster of professionalism. Through trial and error precesses SURGE has adopted what it considers satisfactory promotion. This technique, briefly, is to promptly respond to each phone inquiry by setting up an appointment for consulting and viewing the job request. This visit is free of charge. The Field Representative is able to answer the various questions of the customer, assesses the time and materials required to do the job, as well as manpower and equipment needed to complete the job. At this time, the Field Representative quotes the price and makes a contractural agreement. It is estimated by the acting Business Manager that of three phone inquiries, two are retained as actual jobs on a more than one-time assignment.

B. Problems: Staff members were constantly frustrated when presenting proposals for business and training standards and procedures. Frequently proposals were received with negative responses. The lack of cohesive business operations has been a handicap. Two extreme cases in point:

a. Job Development: The Administrative Assistant receiving service inquiries, scheduled the three Field Representatives for a minimum of three visits a day, or 45 potential jobs a week. These visits were coordinated so that all three jobs were in the same or near by geographical locations; often

in the same neighborhoods as SURGE job sites for the same day. This sales process was discontinued for two major reasons: (1) Field Representatives were needed to supervise on-job locations; (2) Field Representatives were assigned to transport and transfer workers from one job site to another.

b. Based on contractual agreements, detailed commercial job schedule were developed by Staff Development so that the SURGE workers would have the benefit of concise daily tasks outlined and know what production was expected of her; the customer would have on file the services he was purchasing; the SURGE business office would have complete data of personnel time and costs, equipment and materials. This process would afford the SURGE business office commercial quality control for each given contract. Supervisors or team leaders were counseled as to the specific commercial contract and the methods of accomplishing the contractual agreements. However, this process has been met with indifference by the business operation, resulting in the lack of coordination and quality control. In one specific case, a sizeable commercial contract was lost due to not meeting the contractual comittments. Proper quality control procedures and supervision must be implrmented to assure continued success with commercial contracts.

C. Performance Evaluation

Performance of the SURGE worker is evaluated in several ways. A complaint file is kept by the Business Manager and Training component. Should workers' names assigned to the complaining jobs reappear consistantly, the workers are counseled. The amount of responsibility team members assume, the attitude of workers and their attendance is recorded. It has been noted that teams that work well together and produce well earn compliments; workers who are shifted frequently and are not members of a regular team perform less efficiently.

The use of task sheets and work evaluation forms has been discontinued. Such forms were devised to help team leaders and supervisors evaluate their jobs. However, it is felt that the forms are time consuming to fill out and cumbersome to evaluate for follow-up. To compensate, Field Representatives double-check specific jobs and five detailed job counseling. Supervisors are primarily used as "Job Foremen" on the job. They give direction to team members as to organizing tasks, gathering and assembling equipment, and give general counseling on the job. The utilization of worker-supervisors and team leaders has been minimized due, in part, to the inability to up-grade wages of supervisory personnel, and make the positions meaningful.

D. Customer Satisfaction:

Customer satisfaction has been determined in two concrete ways. Foremost, of course, is the number of re-calls for service or complaints; secondly, an inquiry form is mailed with the monthly billings. The inquiry sheet asks for customer comments to be returned with the remittence. Specific questions are asked that relate to their satisfaction of job performed, and the assigned teams.

E. Job Cancellations:

Customer turnover is carefully analyzed on a continual basis. SURGE has made the the following studies that account for customer cancellations: Normal customer dissatisfaction; mobility of the community; economic pressures caused termination of the SURGE service. For example, in the month of November of this year, there were four (4) jobs lost because of customer dissatisfaction; two (2) customers reported leaving town and no longer requiring the service; and another five (5) jobs lost due to economic pressures. SURGE serviced a total of three hundred and five (305) individual jobs during the month of November, 1970.

F. Effects of Increased Prices:

Although a number of jobs have been cancelled because of the price increase introduced by SURGE, it is generally felt that they were of little consequence. During the early stages of the business, prices for SURGE Cleaning Services were low. Prices ranged from $8.00 for an apartment to $16.00 for a home. These prices more closely followed the normal wages customers were accustomed to paying day help secured from the State Employment Commission. When the price structure was re-vamped, SURGE did not notice a rush of cancellations. Those old customers who did discontinue the cleaning service felt that the higher costs were too much; that they could retain help for less. Few appeared to consider the built-in benefits such as transportation, uniforms, social security, bonding, or training comensorate with their cleaning budgets.

It was found that the jobs lost were in scattered areas, but there was no high concentration of jobs in one geographical location. SURGE could withstand the small loss of jobs for increased pricing.

Those jobs retained or gained after the prices were elevated proved to be more lucritive and stable. One important observation is that the motivations of the workers increased. Workers felt proud that they were working on higher priced jobs; their efforts increased, and production rose accordingly. Field Representatives attempted to save jobs in desireable locations by offering a customer a reduced price if she could recruit additional jobs within her neighborhood or general location. This attempt is of little consequence. Most jobs secured by SURGE are within middle-income range of customers, although Alexandria is surrounded by areas of homes costing a buyer from $40,000 to $100,000. For example: a near-by settlement built in 1924 and extending over many acreas, houses 381 families of doctors, lawyers, political chiefs, retired military officers and

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SURGE campaigned heavily in this area for jobs, but few resulted. Most homeowners in this area employ day help from the State Employment Commission and require of their help more services than SURGE offers. Services that customers in higher income brackets desire include: food preparation, party service, child care, care of invalid relatives. Such customers do, on occassion, call SURGE for heavy duty cleaning and are quire willing to pay for the service.

G. Worker Benefits:

The SURGE worker benefits are listed on the following page.

H. Worker Assignments:

The work load assigned to individual teams is determined in three ways: (1) Field Representatives decide how many persons or teams will be required to fulfill a job based on the size of the house or apartment, the amount and details of duties contracted for; (2) the Business Manager screens each job and requested number of of workers to be assigned, and determines which teams would best complete the specific assignment; (3) the quanity of daily jobs, and the estimated level of effort required for each dictates the number of jobs assigned to each team.

I. Developing Stable Clientele:

Commercial contracts are by far the most stable, predictable sources of income. Such contracts are currently subject to change or termination with a joint thirty (30) day notice. Studies give evidence that a twelve (12) month contract would be more desireable. Contracts entered into with the homewoner have no deadlines for cancellation. To cut down on overhead expenses of transporting workers to wide geographical locations, the Field Representatives encourage customers to schedule jobs in neighboring locations on the same day, thereby more effectively utilizing team members. Customers have recorded preference for certain teams and are generally willing to cooperate with schedules that result in the desired team working relationships. This results in job stability.

J. Customer Complaints:

Customer complaints are handled in the business office. No longer does the worker have to suffer the humiliation of nagging complaints. The justification of the complaint is evaluated and recorded by the Business Manager. If the complaint appears to be justified three recourses are open for compensation: (1) to have teams return and complete the specific tasks as requested; (2) to re-emphasize the specific task on the next scheduled visit; (3) reduction on price for the specified deficiency.

K. Service Charges:

SURGE Cleaning Services charges fall into four basic categories. Apartments range from $12 to $20, for a general cleaning, depending on size and tasks required. Homes with from two to four bedrooms are charged from $20 upwards to $45 for a general cleaning. Jobs requesting heavy-duty cleaning and equipment, floor specialists and more personnel in a home have merited charges from $50 to $200. Commercial jobs are priced on the basis of size of areas to clean and maintain, equipment needed, hours and number of personnel required to complete the contracted assignment. An "initial cleaning" may be more expensive than general maintenance.

L. Billing Procedure:

Billing procedures are kept daily. Customers are currently being encouraged to return a check with the team leader or supervisor for services rendered. Other methods for collecting payment for services have included billing once a month, bi-monthly notices or reminders. All commercial customers are billied once a month. The customer is made aware of the cost of the job by the initial contractual agreement with the Field Representative, or, if she desires additional or fewer tasks, the customer calls the SURGE business office and makes

the proper adjustments. The customer never makes price arrangements with the workers. (However, it has been reported that some workers will do special favors for tips or clothing.)

M. Moves Toward Self Sufficiency:

The Project has experienced a slow pace towards ultimate self sufficiency. Without Federal funding the Project could not have moved past the staggering cost barriers such as bonding insurance, rents, utility charges, high costs of transportation, etc. It is the opinion of the Business Manager that obtaining commercial contracts with predictable incomes will be the life-blood of the SURGE business income. To continue the Project, cuts will be considered in overhead costs such as rent and utilities, transportation, and administrative personnel.

Additional areas of employment for the workforce are now now on the drawing board. Possible fields of specialization could, however, include property management, gardening and landscaping, house painting, exterior window washing, day care aides, sales persons, and heavy-duty equipment distributors.

SECTION VII
FOLLOW-UP

A. General

The Project has maintained its awareness of the follow-up needs of SURGE working graduates. Skill development courses are periodically scheduled and individual job counseling has continued. This has proved to be a valuable tool for clear understanding of the SURGE customers' requirements and the workers' tasks. Re-fresher workshops are periodically given to the work teams; training seminars are held as needed. Graduates who express the desire to attend special schools are encouraged, and often are helped to prepare enrollment forms, etc. (Example: at least three graduate/workers are currently attending adult education classes, taking typing, psychology, and office practice.) Individual counseling continues. Other services offered continue to be in the areas of aid in securing housing, legal aid and medical care. A prime effort extended to the worker has been regular sessions introducing them to the responsibilities of a Co-operative. Such sessions have included general meetings to discuss the operation of a Co-operative. Subjects include: procedures for selecting committees, rules of order, Articles of Incorporation, operation of an election for Board of Directors; and general informational meetings organized to educate the workforce in a service Cooperative business.

B. Employer-Employee Problems

SURGE has experienced only a minimal number of unhappy incidents between the graduate worker and the customer. In such cases, the worker was not re-assigned to the job if it was on a continuing basis; in one case, drivers were asked to take replacements to the job and return the objectionable workers.

C. Graduate Satisfaction

We could attempt to measure graduate satisfaction by statistical methods, comparing the number of trainees, dropouts and graduates. However, this would result only in a number which did not reflect the human element. Graduate satisfaction is subjective in nature and can be measured effectively only by observing many peripheral factors. Evidence of satisfaction are found in the individual progress shown on the job in terms of excellent production; willingness to carry responsibility; customer reports of outstanding performance; requests for further training to enrich skills and potential. The satisfied graduate worker also refers relatives and friends for training or to fill vacancies.

Graduates, for the most part, continue employment within SURGE, Inc. for two major reasons: (1) belief in the business progression towards a self-sustaining service Co-Operative; and (2) comfort of knowing the standards of the employer. Other factors might be termed as "social" in nature, in that the workers have leverage in the personnel practices that allows earned time off each month for personal matters. Workers vocalize that few employers offer, or even understandingly tollerate the employment freedoms needed by female heads of household.

Younger employees have left for various reasons. Some were able to establish a good work record with which recommendations lead to good jobs with industry, such as household departments in retail stores. Others were married, moved out of the area. Two returned to school.

Only a few workers have left because of accute child care problems, however 100% of the trainees and workers voice the desire for a babysitting facility within the framework of SURGE. A limited babysitting arrangement has

now been established on a trial basis. If it is successful, the feasibility of a more comprehensive child care facility will be investigated.

D. Profile of Successful Graduate

Mrs. W. aged 27, mother of one school aged daughter, came to SURGE with mixed feelings and hopes. A daughter of a well thought-of person within the black community, and sister of three others who had completed their high school education and were considered to "have made it", Mrs. W. herself a school drop-out in the 10th grade, entered the program only because she could forsee the possibility of a successful Co-operative business with which she could serve in a major capacity. Extremely over-weight, unmarried, unsuccessful work records, and a militant view of social ills, the trainee suffered accute inferiority feelings among her family members as well as other trainees. Her differing opinions and massive physical stature did not always win her popularity. In class, Mrs. W. (recently married) was well spoken, displayed an eagerness to learn, and understood the theories of organization. She was one of the leading members to voluntarily accept responsibilities. Hers was a quest for working for up-grading through the process of training, and equal opportunity to merit the steps of a career ladder . She was one of five women to be selected for Supervisory training. Mrs. W. was one of the first to be interested in heavy-duty cleaning instruction; she recommended additional training to qualify for bidding and seeking commercial job contracts. Her ideas and actual work have been of great value to the Project. As supervisor, she has demonstrated much tact, and success. Mrs. W. was elected to the Presidency of the SURGE Board of Directors, and serves in this capacity admirably. She has developed fine leadership capabilities and insight into the business mechanics.

E. Need for Continuing Follow-up

There is evidence that consistant follow-up service is advantageous to the graduate. Workers, no longer displaying great dependence upon welfare agencies, continue to have need for counseling that a regular employer cannot, or does not, supply. When considering "the whole person", the Project cannot overlook the many facets effecting production and successful business. Personal problems faced within the home atmosphere such as child care, legal problems, consumer affairs; job readiness and skill development are in need of support; the up-grading of personal goals need support through training workshops.

SECTION VIII

THE SURGE COOPERATIVE

General indoctrination in the methods of conducting business and committee meetings was a first step in organizing the main body of the workforce towards cooperative involvement. This was achieved through general and small committee meetings. The election of a Board of Directors was accomplished by careful guidence and active individual campaigning. The selection of committee members to serve the Board was a second step in learning the cooperative relationships of a business structure. The staff conducted educational sessions to familarize the groups with Roberts Rules of Order, and formalized methods and procedures for conducting meetings. Simple descriptions of committee functionaries were drawn to guide individual workers. The inter-relationships of the co-operative committees follow:

A. <u>The Central Control Committee</u>: will be composed of two (2) delegates from each of the committees as described on the following pages. Together, the combined delegates will form the Central Control Committee which is responsible for relaying all Committee recommendations to the Board of Directors. Each delegate brings with her, from her respective committee, those recommendations her committee wishes to express to the Board.

A prime duty of this Committee is to reflect the attitude and interest of the general workforce through the Committees. Requests for change or additions are to be presented to the Board for consideration and action.

1. Commercial Committee:

Qualifications: The members of this committee should have had commercial orientation, training seminars, and worked on jobs that encompass all aspects of industrial cleaning. Members should have strong knowledge in the scheduling of duties, customer requests, personnel capabilities, production measures, and use of heavy-duty equipment.

Duties: The major function of the Commercial Committee will be to review commercial bids and advise the Board of Directors , through the Central Committee,of collective suggestions for improvements of production, better utilization of personnel, and seeking new contracts. This committee will represent the commercial workers for all grievences and suggestions. Also, members will act as advisors when purchasing new equipment.

2. Heavy Duty Cleaning Committee:

Qualifications: Committee members should have a strong work background and practical experience operating heavy-duty and commercial equipment. Members should know first hand, the needs of both commercial and private household job orders that require heavy-duty cleaning tasks and materials.

Duties: It will be the responsibility of this committee to review current heavy - duty jobs as they relate to the capabilities of the workforce. They will make recommendations to the Board of Directors through the Central Committee for up-grading skills, seeking an increase in contracts for commercial and heavy-duty cleaning. Members will also make recommendations for pricing such jobs, wage scales, and benefits.

3. Household Committee:

Qualifications: Members of this committee must have completed SURGE training and worked on the various job assignments in private households and apartments.

Duties: Prime responsibilities of this committee will be to over-see the regulatory systems of job duties, personnel selections and production standards. Members will study customer relations and complaints to seek improvements in these areas of concern. They will make recommendations to the Board of Directors through the Central Committee for job pricing, transportation procedures, efficiency measures and production goals, employee wages and benefits. They will, in affect, act as "watch dog" on employment practices as they affect the Household worker.

4. Membership/Education Committee:

Qualifications: This committee will require that members be active participants and share-owners of the SURGE Co-operative. Each committee member must have graduated from the SURGE training program , can verbalize the concepts of SURGE, understand the present personnel needs of SURGE.

Duties: Members will promote worker memberships into the Cooperative. The committee will be sensitive to the development of the individual as well as the larger body of workers. This committee will keep abreast of occupational training programs, occupational demonstrations, equipment, scholorships, and adult education courses that meet the criteria for up-grading of occupational and personal advancement of the entire SURGE workforce.

5. Social Services Committee:

Qualifications: Members must have knowledge of community resources and be able to research new areas and agencies that can be of use to individuals and worker groups in need of specific help and interest. Members must be able to translate worker social needs into action-oriented programs. The ability to communicate both verbaly and in written form is required.

Duties: The committee will be sensitive to worker/member social needs. They will make recommendations to the Board of Directors through the Central Committee for instituting social programs as reflected by worker needs and desires. Examples of such needs may be: medical services and health check-ups, grooming and dress codes, child care, and housing.

6. Financial Committee:

Qualifications: Financial Committee members must be proficient in basic mathematics. It is desireable that members have had experience in bookkeeping, cost estimating and budgeting. Members should have knowledge of cost factors in business, and be familiar with normal cost accounting procedures. Members of this committee are required to be capable of reading and understanding financial statements.

Duties: Responsibilities of the Finance Committee are to recommend to the Board of Directors decisions on current and projected income, expenditures, savings, sale of stock and the benefit programs. A prime objective of the committee is to set forth financial policy and to moniter all Co-operative funds and records. The Financial Committee will measure financial progress against the financial goals established.

B. Co-op Development Procedures: Workers have been informed of, and many have participated in, the grueling, slow steps of forming an independent cooperative service business. No amount of wordage can adequately illustrate the pain and effort of accomplishing the meek steps as briefly outlined below. Staff members floundered for directions and answers. There were few areas of help. The project was told "it ought to do" many things, but the advice obtained was weakened with little, or no, concrete envidence of real support in establishing a service, profit-making Co-operative. Amid financial crisis, the challenge of obtaining and maintaining commercial contracts, re-training personnel, the additional chore of researching the paths to formulate a service co-operative seemed overwhelming. Convinced that the concept of SURGE was sound, and that Government funding made the venture possible, the staff was determined to work for the dreamed-of-rewards: independent, self-sustaining co-operative service business. The time consuming, and often times, heartbreaking steps toward this goal were:

1. Finding a lawyer for consultation and writing of Articles.
2. Authorization to have receipts for services mailed directly to SURGE; SURGE payroll cut on the premises.
3. Establishing banking and savings accounts in a local bank.
4. Educating the workforce of responsibilities due in a co-operative relationship,(including research,guest speakers, assignments,study sessions).
5. Stock issue.
6. Election of Board of Directors
7. Formation of committees responsible to the Board.
8. Establishing business and social goals of SURGE,Inc.
9. Stimulating action committees.

Such seemingly minor events as above had a tremendous impact on the general workforce. The impact was recorded in many ways. Workers wanting to know more about the financial status of their business , voiced opinions on: proposals for management control and increasing generated income; new interest in the occupational career ladder steps; assessing worker benefits such as insurance; individual contributions of ideas for social needs such as babysitting facilities for workers;

and, identification cards to facilitate cashing of pay checks. Perhaps one of the most exciting events, long worked and dreamed for, was the actual, official papers of incorporation. Electrical shocks of realization ran through the entire workforce. This event has only been surpassed by the astounding job of seeing and touching SURGE stock certificates.

C. Business Development and Planning

The early architects of SURGE envisioned a self supporting business at the end of twenty-four months of 100% funding by the Department of Labor, and the Department of Health, Education and Welfare. It was readily evident that the time frame alloted for accomplishing financial independence was unrealistic, and an extension of nine months was granted. However, at the termination of the extension, the evidence again indicated unrealistic expectations for developing a viable, profit-making co-operative service business. Evaluations clearly show that the project was expected to be financially independent too early.

SURGE has, however, moved steadily toward independence and is now taking a series of positive steps to phase-out government support and phase-in the self-sustaining co-operative business. One major move in this direction is the transfer of business records and responsibility for all daily transactions , including billing and payroll, from the business office of the sponsoring agent (Washington Urban League) to the SURGE location. There are various reasons that this move be included in the recommendations for future projects. Paramount, is that the Business Manager of the Project must not be separated from the day-to-day accounting of the business he is managing. It is vital that he be informed

and knowledgable of all budgetry requirements, project expenditures, billings, statements and records. It is incomprehensible that a responsible Business Manager operate through a third party in contractual negoiations, operational accounting, and business conduct. With such a handicap, the Business Manager is incapable of establishing a business plan, or judging his profit and loss. Specific lines of contract money may be misquoted or misinterpreted through poor communication between parties. As stated previously, this major move has been taken and accountability is now rightfully placed within the Project.

With fortunate foresight, the Project was adequately designed to provide a staff sufficient to train and guide its participants; to coordinate and solicit support through the purchasing community; to establish a clientele; and set into motion a cooperative business structure. From a private business man's point of view, such administrative costs would spell sure bankruptcy, and the cost of entry and up-grading training with counseling would be prohibitive. Over fifty (50) percent of the total cost of the Project was reportedly expended for administrative salaries, although no substantial raises or cost-of-living increases exceeded the lines provided for administrative costs. However, more recently salaries such as drivers, receptionist/dispatcher were transferred to the administrative costs.

As financial independence draws closer to reality, the structure of the staff must be more amenable to a profit-making corporation, with the high administrative and supportive figure sharply reduced. Cuts in professional staff are deemed imminent. Significant cuts include elimination of the position of Project Director, thus putting stronger emphasis on control within the position of the Business Manager. In another step to cut administrative costs, the function of the Project Accountant is being combined with the existing duties of the Administrative Assistant with the back-up of a para-professional who has

performed multi-duties as Assistant Instructor and Assistant Staff Developer, Receptionist and Job Dispatcher. Also, one Field Representative, chiefly responsible for developing home and apartment cleaning jobs, is working on a part time basis.

Other administrative cuts representing high over-head expenditures are being contemplated. Such cuts may require finding less expensive office facilities; reducing the number of vehicles; deducting from the workforce unproductive workers; re-evaluation of benefit programs; and elimination of high monthly rentals such as the Zerox machine. In analyzing an eleven month period (Jan. 1970 - Dec. 1970) the Project spent over $20,000 for facility rentals; workers salaries for this period were over $106,000; another $65,000 was spent for administrative salaries. One major expenditure can be traced directly to the transportation to and from job assignments. For example, during the month of June 1970, the Project was renting six station wagons. Costs averaged over $2500 a month, and the eleven month total was $31,000. This is indicitive of the many operational problems encountered; problems such as drivers being allowed to use the cars after work hours and on weekends. This was not well controlled, and accidents causing property damage resulted with subsequent additional costs. Staff mileage incurred for the purpose of developing jobs for the Project ran just under $3,000 for the eleven month period.

In July 1970 workers salaries were $6,929, whereas generated income for that month was $6,554, leaving a deficit of $375.00. The following months show progressive steps of the business supporting a workforce of forty two (42) workers. In October worker salaries totaled $8,777 with income generated at $10,115. This resulted in $1338 which could be applied to over-head expenses. November also resulted in $1000 income above the workers salaries.

During these months commercial contracts gave great strength and stability to the generated income. In December only one commercial contract remained. A sharp reduction of generated income is seen unless more commercial contracts can be retained on a continuing basis, or additional home contracts ranging from three to six months duration can be a base for predictable income.

The Project has observed significant differences between profit oriented business, and one developed around its trainees with planned steps toward self management through a Co-operative structure. Key differences relate to the delegation of authority for making all operational decisions to the workers through the elected Board of Directors. Conversely, in a corporate business structure, the Board of Directors gives the Business Manager operational responsibility with accountability for profit and loss. One argument in support of maintaining Business Manager authority until the business has a firm financial base is found in the lack of current business sophistication of the workforce members.

The phasing processes from Governmental support to 100% worker responsibility is a complex one. There have been few guidelines, and financial stability has been the major criteria for the various phases. However, somewhat neglected, but of equal importance, is the continuing need for in-service training for the operational know-how of a business. Unlike a farming Co-op, where participants manage their own individual, family-operated businesses, and make co-operative decisions that affect the welfare of the collective businesses, SURGE is a project that is engaged in developing a single service-business dedicated to making profit and is to be operated by the collective members.

Strong arguments for worker control through a Co-operative mechanism is found in the intent and language of the original proposal and contract.

It may be pointed out, however, that there has not been sufficient time to adequately prepare the workforce for business management and fiscal responsibility. Only a very few individuals are presently knowledgable of the rudiments of operational and financial responsibilities in Business Development. Zealous proponents of the Black Movement to independence have mislead frustrated, hard working SURGE workers to interpret a Co-operative to mean demanding complete control of all operational and fiscal decisions. Cloaked in rhetoric of equal opportunity and promises of pure democracy, the philosophy of a Co-operative structure has been construed to lead long disadvantaged persons to believe the social and economic fears of historical employment practices would be eliminated only through unequivocal self management. There are, however, a number of workers who realisticaly acknowledge the basic rudiments of sound business judgements and rely on the development of predictable income to establish a viable, on-going business in concert with a predictable number of qualified workers. Such knowledgable workers recognize that present job development has not yet exceeded a minimum of support to accomodate a business.

Obviously, this is a delicate period of transition. It may, in fact, be one of the most critical in future projects. Special care must be taken to implement the transition from project concept to the actual independence; the differing philosophies of Business Management and the various interpretations of worker control and ultimate authority add to the myriad of difficulties. One simple solution to this problem would be to establish the following in the early stages of transition:

1. The elected Board of Directors hire a Business Manager on a contractual basis, giving him full authority, responsibility and accountability for the planning, development and operation of the business. At the end of his contract

period, the workers, through the Board , have the option of not renewing his contract, and may seek a more compitent manager.

2. Changes in business practices by workers and to the Board of Directors can be sent to the Business Manager for his review and decision. It should be his responsibility to review each recommendation submitted for its social and economic merits. Following review, it would be his responsibility to report back to the Board and Committees his decision and economic analysis and recommendations. His authority should be final with respect to all proposed action relating to the profitability of the business, and has an equal vote with the Board of Directors on issues not directly related with profits and loss of business operation. His authority should be very clearly and explicitly defined in his contract.

Comprehensive analysis and Business Planning are essential for the development of a financially sound business. A new business venture with sufficient financial sophistication to acquire "front end" debt and equity financing would normally be required to establish a Business Plan/Prospectus with comprehensive Pro-Forma and cash flow projections. Its planning might well stress expenditures for the development and maintance of its source of income through aggressive advertising and sales promotion; its administrative over-head would be minimal but of high quality. SURGE is now only being required to develop such business plans.

In developing a business plan, SURGE must carefully evaluate three basic factors: (1) Ammount of income needed for coverage of 100% of business operational expenses at a minimum level; (2) Realistic forecasting of profit and loss projections on which to judge steps of independency and trends of solvency; (3) Needed changes in job development, promotion, in-service training, and work force productivity criteria. In addition, the Business Plan should outline

management plans and objectives; set criteria for implementation and measurement. The plan could identify the level and type of over-head staff necessary to direct and support the business; identify the professional skills to be developed by existing staff and worker personnel; and identify and set forth a plan for up-grading training to offer maximum opportunity for workers and staff to increase their earning potential and worth to the business.

As acertained, SURGE has made its mark on the socioeconomic status of many underpriveledged persons in Northern Virginia. Among other things, it has expanded awareness of personal potential and raised morale and elevated self esteem. As the project moves toward independence it must concentrate on the realities of the competitive business world: the economics of profit and loss. To accomplish this objective, it will be helpful to take a hypothetical case (based on a typical operating month) which assumes that SURGE is independent as of this date. To do this, we will assume that certain basic changes have been made to cut over-head costs. These include:

1. Reduction of over-head staff to a minimum level with:
   (a) Business Manager
   (b) Bookkeeper
   (c) Office Assistant

2. Rental of a less expensive facility.

3. Reduction of transportation costs ; better coordination of trips.

4. Increase in advertising costs to compensate for reduction of Field Representatives.

For the hypothetical case, a typical Pro-Forma statement is shown on the following page.

ITEM		$ PER MONTH*
INCOME		10,000 (recent average)
OPERATING EXPENSES		
Salaries:	Business Manager	1,000.
	Bookkeeper	500.
	Office Assistant	400.
Wages:	Workers	8,000.
Fringe: @ 10%		1,000.
Total Salaries:		10,900.
RENTAL OF SPACE		500.
UTILITIES		100.
BONDING & INSURANCE		50.
TRANSPORTATION		1,000.
CLEANING SUPPLIES		500.
OFFICE SUPPLIES		100.
TELEPHONE		200.
EQUIPMENT		100.
SALES PROMOTION		350.
MISC.		200.
TOTAL EXPENSES		14,000.
DEFICIT		(4,000.)

* Note: all numbers are rounded.

The above estimate shows a loss of $4,000. per month. This deficiency must be removed over the next few months, as Governmental support is phased out, if the Project is to become self-sustaining.

By careful planning, a few items may be further reduced. But, basically the Project needs more income to survive. And, this can best be provided by greater public exposure; more advertising and sales promotion. Three relatively inexpensive methods of effecting advertising are available.

1. Direct mailing of advertising material to selected residents in the service area where income is estimated at, or above, $10,000. Estimated cost: $40.00 per thousand.

2. Hand distribution of advertising material in selected areas. Average cost: $20.00 per thousand, using students for delivery.

3. Advertising in local papers.

Another recommendation might be to offer each steady customer the opportunity to

invest in SURGE by purchasing stock. Using November 1970 figures of steady customers, the sale of a $25 share would provide SURGE with $2,000 operational money, in addition to its generated income.

Other methods of increasing business, reducing over-head costs and promoting efficient business management are being developed. Because of its limited experience, SURGE has engaged the services of OMBE and MEDCO to assist in the preparation of a Comprehensive Business Plan. An accounting firm is helping to set up a consolidated bookkeeping system and give instruction to the Projects' up-graded Bookkeeper and an under-study. It is recommended that similar projects pursue such assistance in the beginning phases to assure proper direction. With this assistance, its own project know-how, the Department of Labor support, SURGE has a good chance of becoming a viable business in the remaining months of the contract.

SECTION IX
CONCLUSIONS

A. The Occupation:

The SURGE staff has gained exceptional first-hand knowledge of the untrained and unorganized corps of household employees in Northern Virginia. The Project has learned that the term "menial", as applied to this occupation, has had wide and lasting repercussions within the population of workers. There is also sufficient evidence that attitudes of SURGE customers perpetuates the down-grading exploitation of household workers.

The trainee/workers' low opinion of household employment is steeped in historical servitude, and current negative job experiences. The Bladk household worker faces many forms of racism in Alexandria, and experiences long, hard and demeaning hours of work for sub-standard wages. The occupation continues to be de-emphaised by the State Employment Commission in that prevailing attitudes and wages are not negotiated for the benefit of the worker; applicants are still called "girls" and are subtly reminded of their inferior occupational status. Societal attitudes that manipulated educational, housing, health, legal and employment opportunities for the Black and poor Alexandrian, also make the household worker dependent upon the "Madame" of a household for direction, instruction, and monitary compensation. The worker, having no opportunity to develop her skills, remained at the subsistance income level. A "good girl" may be paid for her loyality and faithfulness, her ability to sustain the injustices and biases, but she nonetheless suffers the end-of-the-road attitude toward her occupation.

SURGE has substantiated that there is an accute demand for household workers and the State Employment Commission has repeatedly stated that there are more jobs than workers. As cost-of-living raises are enjoyed by area Government workers and industry, the wages of the household worker remains

totteringly close to the national minimum wage, some earning much less.

SURGE cannot boast of revitalizing the occupation, or even changing many attitudes or values of the purchasing public or governing agencies. However, it has offered to the heretofore self employed Household worker a sense of organization through occupational training, established standards and codes, and fair employment practices that offer benefits paralleling other occupations. The SURGE worker has a sense of "belonging", and has regained self confidence and a new respect for her capabilities. For some, SURGE has offered the only steady employment the household worker has ever known, with the assurance that job security is rewarded by qualitative production in an expanding job market.

B. Changing Customer Demands:

In the beginning stages of planning the Volunteer Steering Committee chipped away at the social conscience of the community through their church and clubs. And, the Project has made inroads in up-lifting the image of the household worker by offering trained household personnel and an organized service. Surveys show that within the expanse of the metropolitan Washington service area, the customer is rapidly becoming "service oriented". The busy housewife and mother, the career girl and apartment dweller working away from home no longer have the time or inclination to be the "benevolent Madame" following her maid around ; counseling, guiding, chiding and motivating. The customer of today wants a service not unlike other services she purchases at the gasoline station, grocery or laundry. She does, however, seek a more qualitative service in the home than she may demand of other services. The home service is still considered the most intimate and precious; it allows for periodic invasion of the private confines of a family.

SURGE, as the buffer between worker and client, arranges the job orders

and tasks; explains the team organization of systematic cleaning; quotes prices , contracts the job, and bills the customer once a month. The customer is no longer responsible for the management problems of employing household help.

C. Restructuring the Occupation:

SURGE has been successful in stimulating and re-activating workers' individual motivations and allowed new perspectives for their personal worth and potential. Training has re-structured the deeply imbedded attitude of the occupation by the worker; has given voice to the silent cries for organization and support; has been sensitive to the economic needs intantim with the human needs of physical and emotional well being of household workers. Previously, it was found, the SURGE trainee/worker had no agency to prevail upon for better working conditions, employee benefits, or a source of training to up-grade her skills and earning potential. The household worker was, in essence, self employed and dependent upon the whims of the individual employers' conscience. Working conditions and compensation were not directly related to occupational competency.

The Project has projected new-found dignity of the worker by adopting a standard of employment practices and benefits. For example, starting wages are above the national minimum wage, social security is automaticaly processed, sick and annual leave are earned, a $10,000 health and accident insurance is profided.

SURGE acts as buffer between worker and customer. The customer makes her contract for service with the business office, and does not expect to supervise the worker. The worker is assured that the working conditions are acceptable, and is aided by job coaching. Her transportation is provided by SURGE. She does not have to worry about payment because she is on an organized payroll. Skill development and counseling support the workers' vocational job security and self confidence.

D. Career Ladders:

Members of the cadre of household workers may indeed set their sights on obtainable steps of a career ladder. With careful training and individual grooming, a project such as SURGE can over-turn the tide of dead end jobs, and provide a meaningful base for gainful employment, both within the Project and outward to other industries.

SURGE had difficulty with philosophical differences of interpretations of up-grading career ladders. One philosophy expounded that motivation was based on purely monitary gain. The opposing stance demonstrated that realistic training, counseling and personal development would lead to qualifying standards of performance and personal achievement with increased benefits and wages.

Utilizing the original concept (of the proposal) that Project staff members groom workers for career ladders, curricula was designed for each step. This was modified to match the basic staff requirements for a long-term self sustaining business. Standards of qualifications and performance were established and tailored to meet the specific occupational needs of a profit making business. The career ladders were distinguished by two related categories: (1) Worker production and job development, which included team leaders, supervisors, drivers and sales personnel, and; (2) Office personnel which included bookkeeping and office management, staff development, receptionist/job dispatcher, sotck clerk.

The vocational career-ladders were designed to offer laboratory experience in which a worker would perform job functions (as an understudy) through progressive steps of responsibility. Through job analysis, the worker and staff would determine specific instructional material for the specific function.

Because there were dividing factors of philosophy, structured and meaningful training was offered only for team leaders and supervisory positions.

To some extent, staff members held tenaciously to their positions and did not encourage preparation for field and clerical career objectives. The result is that two workers have been up-graded to perform the duties of (1) stock clerk and (2) receptionist/job dispatcher without an overview of these jobs or their potential. No meaningful training was offered; no standards or evaluations for individual measurement were instituted. Although both employees function well within the structure of SURGE, it is highly doubtful that either could qualify for parallel jobs in outside industry. This method of edifying career ladders holds weak promise for true up-grading.

Only one worker graduate has been trained and up-graded to replace a staff member. She is sufficiently diverse to adequately perform a multitude of responsible functions within SURGE. Her capabilities enhance her mobility within SURGE as instructor, supervisor, job dispatcher, job developer and bookkeeper; and qualifies for similar positions in outside industry as well.

APPENDIX

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TABLE 1. ADMINISTRATION December 15, 1970 Project SURGE

Staff Positions and Job Title		Reason for Leaving	Staff appointments and job title	
Name	Job Title		Name Job Title	Source of Recruit
Katrina Ross	Comm. Serv.	Better Job	Leo Burroughs-Comm. Ser.	County Pov. Pro.
Charlene Walker	Dir. of Trng.	Better pos. private industry	Marcia Haley-Dir. Trng.	up-graded position
Jean Louft	Home Economist	Better pos. private industry	Meredith Peterson-Home Eco.	State Employ.
George James	Bus. Mgr.	Re-enter public shhool admin.	Curtis Clark-Bus. Mgr.	
Leo Burroughs	Comm. Serv.	Position eleminated by Project		
E. Pete Ward	Director	Re-assigned by Urban League	Marcellus Boston-Dir.	Neighborhood house
Mary Brisker	Admin. Assist.	Re-assigned by Urban League	Adrianne Johnson-Adm. Asst.	up-graded position
Meredity Peterson	Home Econo.	Accepted public school assn.	Esther Medlock-Asst. Staff Dev.	up-graded position
Curtis Clark	Bus. Mgr.	Requested to leave	Charles Palmer-Bus. Mgr.	up-graded position
Linda Johns	Jr. Accnt.	Found better position	Adrianne Johnson-Jr. Accnt.	up-graded position

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Table 1A. ADMINISTRATION: PROJECT STAFFING March 15, 1971

Complete staff and job titles at completion of reporting period

NAME	JOB TITLE
Charles Palmer	Business Manager
Marcia Haley	Director, Staff Development
Esther Medlock	Assistant Staff Developer
Ronald Jewell	Field Representative
Adrianne Johnson	Accountant

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TABLE 4

AGE OF DEPENDENTS
ARRANGEMENTS FOR CHILD CARE

CLASS	TYPE OF DEPENDENT CARE					AGES			
	Sitter	Day Care	School	Relative	None	under 1 yr.	1-5	6-12	13-18
1	9	0	30	18	6	6	21	21	15
2	7	0	20	6	2	2	11	17	5
3	2	0	5	2	6	1	3	5	6
4	4	0	15	6	1	2	8	13	3
5	6	0	23	5	4	4	7	17	10
6	3	1	24	6	5	2	8	16	13
7	7	1	13	3	0	2	9	10	3
8	4	0	14	6	3	1	9	8	9
9	0	0	7	2	0	0	0	6	1
10	0	0	5	1	0	1	3	2	0
11	0	0	6	0	0	0	0	3	3
TOTALS	42	2	162	55	27	21	79	118	62

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TABLE 5 LEVEL OF EDUCATION

CLASS	GRADE				
	5	10-11	12	Some College	Technical Training
1	7	12	2	0	0
2	12	6	0	0	0
3	5	2	0	0	0
4	9	4	1	0	0
5	6	8	0	0	0
6	6	9	1	0	0
7	3	7	1	0	0
8	3	10	2	0	0
9	0	1	2	0	0
10	1	3	0	0	0
11	1	2	1	0	0
TOTALS	53	64	10	0	0

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TABLE 6 AGE, MARITAL STATUS, HEAD OF HOUSEHOLD

CLASS	AGE				MARITAL STATUS					No. of Trainees who are heads of households
	under 18	18-30	30-45	45-68	S	M	W	Sep	D	
1	0	14	7		7	1	2	11	0	21
2	7	5	6		6	0	1	11	0	18
3	1	4	2		2	0	0	5	0	7
4	0	7	6	1	7	1	0	6	0	14
5	0	7	6	1	3	1	3	7	1	14
6	1	9	6		5	3	0	8	0	13
7	1	5	5		3	2	0	5	1	11
8	1	9	5		9	1	0	5	0	14
9		2	1		1			2		3
10		3	1		2	2				4
11		3	1		3	1				3
TOTALS	11	68	46	2	48	12	5	60	2	124

TABLE 9 and 10

TRANSPORTATION

CLASS	METHOD BUS	CAR	WALK	driver's license
1	2	1	18	1
2	5	0	13	0
3	0	0	7	0
4	3	0	11	0
5	2	0	12	0
6	8	0	8	2
7	5	1	5	1
8	6	1	8	1
9	0	0	3	0
10	0	0	4	0
11	0	1	3	1
TOTALS	31	4	92	6

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TABLE 12. NAME OF PROJECT SURGE

PROFILE OF TRAINEE: FINANCIAL BACKGROUND OF TRAINEES FOR REPORTING PERIOD: December 15, 1970

Cycle or Class No.	Total no. of trainees	No income		Less than $500		$500-$999		$1000-$1999		$2000-$2999		$3000-$3999		$4000 and over	
		1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969
1	21				2		5		1		12		1		
2	18				1		9		5		3		1		
3	7						1		1		4		1		
4	14				1		2		5		3		2		1
5	14						5		2		4		1		3
6	16						5		8		1		1		1
7	11						2		6		2		1		
8	15						3		7		2		3		
9	3						2						1		
10	4						1				2				1
11	4				1		1				1				1

Cycle or Class No.	Total No. of Trainees	Household Work	Workmen's Compensation	Social Security	Relatives	Welfare	Other
1	21	10		1	3	7	
2	18	9			1	8	
3	7	3			2	2	
4	14	12			2		
5	14	11				3	
6	16	11			3	2	
7	11	10				1	
8	15	11			3	1	
9	3	3					
10	4	4					
11	4	2			1	1	

NAME OF PROJECT SURGE

Table 15. Training: Materials used in training and their Effectiveness; injudgment of trainees and staff

Training materials (list by type and subjtct)	Effectiveness in Trainee judgment				Effectiveness in Staff judgment			
	E*	G	A	P	E	G	A	P
Films		X					X	
Field Trips	X					X		
Speakers		X				X		
Demonstrations	X				X			
Round Table Discussions	X				X			
Phamplets, etc.				X				X
Tests			X			X		

*E = Excellent

G = Good

A = Average

P = Poor

TABLE 19. TRAINEE DROUPOUTS AND REASONS FOR LEAVING:

Reasons for Leaving	Class No. 1	2	3	4	5	6	7	8	9	10	11
Other Employment	3										
Personality										4	2
Illness	2	1									
Mental											
Financial	1	1				2					
Lack of Interest					14						
Relocation		2		1				1			
Released by Project		1		1				1			
Child Care	3	2	1	2		2					
TOTALS	10	7	1	4	14	4	0	2	0	4	2

TABLE 21. PLACEMENT: GRADUATES WHO LEFT SURGE WORKFORCE

Reasons	Class No. 1	2	3	4	5	6	7	8	9	10	11
Other Employment	2	1						2			
Illness				2			1			1	1
Personal Problems				1							
Lack of Interest								1,		1	
Child Care	1	2	1			3	1				
Relocation			1	2		1	1				
Released by Project		1				1					
Could not adjust to work world	2	2	1	1				1			
Set up own Business				1							
Internal Fiction						4	1	1		2	

TABLE 25

CUMMULATIVE DATE FROM BEGINNING OF PHASE II

No. contracted to train 200 - 2 yr. period	No. enrolled who commenced training	No. of dropouts	No. of graduates	No. of grad. placed by project and working**	No. of grad. known to be working elsewhere	Total No. of grad. working to date
Class 1	21	10	11	4	5	9
Class 2	18	7	11	5	4	9
Class 3	7	1	6	2		2
Class 4	14	4	10	3	2	5
Class 5	14	14*	0	0	0	0
Class 6	16	3	13	10	5	15
Class 7	11	0	11	8	1	9
Class 8	15	2	13	6	2	8
Class 9	3	0	3	3		3
Class 10	4	3	1	1	2	3
Class 11	4	2	2	1	2	3
TOTALS	127	46	81	43	23	66

* Class Termfnated
** Working for Project SURGE

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TABLE 26. EMPLOYMENT STATUS OF GRADUATES FROM BEGINNING OF PHASE I (1968) TO PRESENT REPORTING PERIOD

No. of graduates placed by project and working	43
No. of graduates known to be working elsewhere	23
Total No. of graduates working	66
No. of graduates unemployed	No Record
No. of graduates whose employment status is unknown	15
Total No. of graduates unemployed or status unknown	18
TOTAL NO. OF GRADUATES	81

VT 014 445
DENTAL HYGIENISTS LICENSED IN MINNESOTA, DISTRICT OF COLUMBIA, MISSISSIPPI, NORTH CAROLINA AND NORTH DAKOTA.

MINNESOTA STATE BOARD OF DENTAL EXAMINERS.
AMERICAN ASSOCIATION OF DENTAL EXAMINERS, CHICAGO, ILL.
NATIONAL INSTITUTES OF HEALTH (DHEW), BETHESDA, MD. DIV. OF DENTAL HEALTH
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IDENTIFIERS - MINNESOTA; DISTRICT OF COLUMBIA; MISSISSIPPI; NORTH CAROLINA; NORTH DAKOTA

ABSTRACT - THIS 5-VOLUME REPORT CONTAINS THE RESULTS OF FIVE STATE SURVEYS OF DENTAL HYGIENISTS CONDUCTED BY THE STATE DENTAL EXAMINING BOARDS. THE STATISTICAL TABLES IN EACH VOLUME INCLUDE PERSONAL CHARACTERISTICS, PROFESSIONAL STATUS, AND EMPLOYMENT STATUS OF HYGIENISTS LICENSED IN THE STATE IN 1966 OR 1967. OTHER STATE SURVEYS INCLUDED IN THIS NATIONWIDE STUDY ARE AVAILABLE AS VT 006 421 (ARM WINTER 1969), AND VT 010 891, VT 012 553, AND VT 013 694 (ALL IN ARM VOL. 5, NO. 1). (SB)

VT 014 445

..HANDBOOK OF STATISTICS...

DENTAL HYGIENISTS

LICENSED IN MINNESOTA

4820

1967

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DENTAL HYGIENISTS

LICENSED IN

MINNESOTA

1967

A

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OFFICE OF EDUCATION
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INTRODUCTION

In January 1967, the Minnesota State Board of Dental Examiners conducted a mail survey of all dental hygienists licensed to practice in the State. This survey was conducted concurrently with the hygienists' annual reregistration with the Board.

Statistics presented in this Handbook were tabulated from the information furnished by the dental hygienists who completed and returned their questionnaires. The location of each nonrespondent was obtained from the Board records.

This statistical presentation has been designed to provide most of the basic facts which were collected in the survey. Pertinent cross-tabulations of data have been presented when the number of hygienists in the specific population group was large enough to provide meaningful data.

Since this was a survey of hygienists licensed in Minnesota, the data exclude an unknown number of inactive hygienists who reside in the State but are not licensed to practice there. Also excluded may be a few nonlicensed hygienists who are working in the State either for the Federal Government or for some employer in an administrative or other nonclinical position in which licensure is not a prerequisite for employment.

The Minnesota survey is part of a National endeavor: Dental examining boards in virtually all of the States are utilizing the same questionnaire printed under their own letterheads, to survey dental hygienists licensed in their respective States. The American Association of Dental Examiners, under a contract with the Division of Dental Health of the National Institutes of Health, USPHS, is coordinating this National survey program to assist States in developing comparable information about their dental manpower resources. The preparation of this Handbook has been made possible through the cooperation of the American Association of Dental Examiners and the Division of Dental Health, Manpower Studies Branch.

ROM SURVEY QUESTIONNAIRE TO STATISTICAL TABLES

Information gathered by survey questionnaires is compiled into statistical tables which present a profile of the professional activities of dental hygienists licensed in this State. To see the uses made of data gathered by this questionnaire, turn to the tables listed on the right, which have been prepared from replies to questions on the left.....

Board of Dental Examiners

EXECUTIVE OFFICE

209 N. SNELLING AVENUE
ST. PAUL, MINNESOTA 55104

THE _____ STATE BOARD OF DENTAL EXAMINERS HAS UNDERTAKEN A COOPERATIVE PROJECT WITH THE AMERICAN ASSOCIATION OF DENTAL EXAMINERS AND THE PUBLIC HEALTH SERVICE TO DEVEVLOP AN ANALYSIS OF THE DISTRIBUTION AND AVAILABILITY OF DENTAL HEALTH SERVICES IN THE STATE OF _____ THE INFORMATION PROVIDED WILL BE USED FOR STATISTICAL PURPOSES ONLY.

Name: _____ (LAST) _____ (FIRST) _____ (MIDDLE) _____ (MAIDEN (if ever married))

Present Home Address: _____ (STREET) _____ (CITY) _____ (COUNTY) _____ (STATE) _____ (ZIP CODE)

License Number: _____ Social Security Number: _____

A. PERSONAL CHARACTERISTICS

1. Year of birth: _____ 2. Marital status: ☐ Single (1) ☐ Married (2) ☐ Widowed (3) ☐ Divorced (4) ☐ Separated (5)
3. If ever married, number of years in your current marital status: _____
4. Total number of dependent children: _____; Number in school: _____ (Grades 1-8) _____ (Grades 9-12) _____ (College or business school)
5. Number of children under 15 years: _____ (1 yr. or under) _____ (2-3 yrs.) _____ (4-5 yrs.) _____ (6-7-8 yrs.) _____ (9-10-11 yrs.) _____ (12-13-14 yrs.)

B. TRAINING AND EDUCATION

☐ Check here if no formal academic training in dental hygiene and skip to Section C

6. Name of dental hygiene school: _____
7. Type of certificate or degree in dental hygiene received:
   ☐ Bachelor degree (1) ☐ Associate degree (2) ☐ Certificate or diploma (3)
8. What was your Name at the time you completed your training? _____
9. Year granted: _____
10. Number of years of **additional** college training completed, if any: _____
    Degrees earned, if any: ☐ Bachelor degree (1) ☐ Master degree (2) ☐ Other Degree (specify _____)

C. PROFESSIONAL HISTORY

11. Complete a line for each state in which you have **ever been** licensed to practice:

	Name of State	Year first licensed	Are you licensed today? Yes	Are you licensed today? No	Have you ever practiced in this State? Yes	Have you ever practiced in this State? No	Number of years in practice	Last year in practice	Did you primarily work: Full-time	Did you primarily work: Part-time
A.	This State	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)
B.	_____	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)
C.	_____	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)
D.	_____	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)

12. Total number of years you have been licensed to practice: _____ years
13. Total number of years you have practiced: _____ years
14. Are you now a member of the American Dental Hygienists' Association? ☐ Yes (1) ☐ No (2)
    IF NO, have you ever been a member? ☐ Yes (1) ☐ No (2)

A-1
B-2a,2c,
B-3c
E-1

A-2
B-2b, 2c
B-5a, 5b,
5c

A-2
B-3a, 3b,
3c, 3d
E-2

A-2
B-3i
B-4a, 4b,
4c
B-6
E-3

A-2

B-1

D. CURRENT PROFESSIONAL ACTIVITY

15. Current professional status *(check one)*
   1☐ At work as a dental hygienist
   2☐ Employed as a dental hygienist, but temporarily absent from work *(because of vacation, sickness, school recess, etc.)*
   3☐ Seeking work as a dental hygienist
   4☐ Not working or seeking work as a dental hygienist
   If you checked one of these boxes, skip to Section E

16. Are you currently employed in this state? 1☐ Yes 2☐ No If in another state, where? _____
   In what county do you primarily work? _____

17. In a typical week how many hours do you work for your current employers? _____ hours
   (use last week if it was typical, otherwise select the most recent week which was typical)

B-1

C-1a,1c

E-1

18a. Check all places where you currently work:

18b. How many hours do you work in a typical week? *(complete only if 2 or more boxes are checked in Item 18a; hours should equal those in Item 17)*

- ☐ PRIVATE DENTAL OFFICE(S) ..... _____
- ☐ DENTAL HYGIENE SCHOOL OR OTHER DENTAL AUXILIARY PROGRAM ..... _____
- ☐ ELEMENTARY OR SECONDARY SCHOOL *(public or private)* ..... _____
- ☐ CITY OR COUNTY HEALTH AGENCY ..... _____
- ☐ STATE HEALTH AGENCY ..... _____
- ☐ OTHER LOCAL GOVERNMENT AGENCY *specify* _____ ..... _____
- ☐ OTHER STATE GOVERNMENT AGENCY *specify* _____ ..... _____
- ☐ ARMY, NAVY, AIR FORCE ..... _____
- ☐ OTHER FEDERAL AGENCY ..... _____
- ☐ PRIVATE ORGANIZATION *(voluntary agency, prepaid dental plan, etc.)* *specify organization* _____ ..... _____

C-2

19a. Check all types of activity you currently perform:

19b. How many hours do you spend at this activity in a typical week? *(complete only if 2 or more boxes are checked in Item 19a; hours should equal those in Item 17)*

- ☐ ORAL PROPHYLAXIS ..... _____
- ☐ OTHER CLINICAL SERVICE *(radiographs, fluoride applications, etc.)* ..... _____
- ☐ PATIENT DENTAL HEALTH EDUCATION *(time devoted exclusively to instruction of individual patients in oral hygiene, diet, etc.)* ..... _____
- ☐ MANAGEMENT OF DENTAL OFFICE OR DENTAL CLINIC *(recalls, pulling charts, answering telephone, receptionist duties, bookkeeping, etc.)* ..... _____
- ☐ DENTAL ASSISTING *(preparing tray set-ups, passing instruments, pouring models, etc.)* ..... _____
- ☐ GROUP DENTAL HEALTH EDUCATION *(classroom instruction of students in elementary schools, talks before civic groups, etc.)* ..... _____
- ☐ INSTRUCTION OF DENTAL HYGIENE STUDENTS OR OTHER DENTAL AUXILIARY STUDENTS ..... _____
- ☐ ADMINISTRATION *(Director of school of dental hygiene, coordinator of dental program in a school or local health dept., etc.)* ..... _____
- ☐ DENTAL RESEARCH *(basic science, clinical, behavioral, etc.)* ..... _____
- ☐ OTHER ACTIVITY *specify* _____ ..... _____

20. If you work in a private dental office and some place else, were the hours spent in these activities all devoted to your private dental practice?
   1☐ Yes
   2☐ No

■ **If you currently work in a private dental office complete Items 21-24; otherwise skip to Section E**

21. Number of different dental offices where you currently work _____

22. Number of dentists whose patients you care for in each dental office:
Office 1 _____ Office 2 _____ Office 3 _____ Office 4 _____ Other Offices _____

23. Are all of these dentists general practitioners? 1☐ Yes 2☐ No
IF NO, how many are specialists? _____ Specify type(s) _____

24. Which type of compensation do you receive? *(If type varies among offices check all that apply)*
1☐ Salary only 2☐ Commission (or percentage) only 3☐ Both salary (or guarantee) and commission

E. PROFESSIONAL ACTIVITY DURING LAST TWELVE MONTHS

☐ Check here if you were not employed as a dental hygienist and skip to Section F

25. How many weeks were you employed during the last 12 months? _____ How many of these weeks were you employed and paid but not at work? *(vacation, sick leave, school recess, etc.)* _____

26. How many weeks, if any, were you employed in this State? _____
How many weeks, if any, were you employed in another State(s)? _____ Name the State(s) _____

27a. Check all places where you worked during the last 12 months:	27b. Indicate whether you worked: Full-time only	Part-time only	Combination of full-time and part-time	27c How many weeks were you employed in the last 12 months? *(complete only if 2 or more boxes are checked in Item 27a.)*
☐ PRIVATE DENTAL OFFICE(S)	1☐	2☐	3☐	_____
☐ DENTAL HYGIENE SCHOOL OR OTHER DENTAL AUXILIARY PROGRAM	1☐	2☐	3☐	_____
☐ ELEMENTARY OR SECONDARY SCHOOL *(public or private)*	1☐	2☐	3☐	_____
☐ CITY OR COUNTY HEALTH AGENCY	1☐	2☐	3☐	_____
☐ STATE HEALTH AGENCY	1☐	2☐	3☐	_____
☐ OTHER LOCAL GOVERNMENT AGENCY *specify* _____	1☐	2☐	3☐	_____
☐ OTHER STATE GOVERNMENT AGENCY *specify* _____	1☐	2☐	3☐	_____
☐ ARMY, NAVY, AIR FORCE	1☐	2☐	3☐	_____
☐ OTHER FEDERAL AGENCY	1☐	2☐	3☐	_____
☐ PRIVATE ORGANIZATION *(voluntary agency, prepaid dental plan, etc.)* *specify* _____	1☐	2☐	3☐	_____

28. What were your gross earnings *(before deductions)* from dental hygiene practice during last 12 months? $ _____
(If exact figure is not available, give best estimate to the nearest $500)

F. CONTINUING EDUCATION

29. Have you taken any short-term courses in dental hygiene or related subjects in the last 12 months? 1☐ Yes 2☐ No
IF YES, who sponsored the course(s)? *(check all that apply)*
1☐ School of dental hygiene
2☐ State or local dental hygiene association
3☐ Dental school
4☐ State or local dental association

30. Have you seriously considered returning to college to continue your education? 1☐ Yes 2☐ No
IF YES, what is your current situation? *(check one)*
1☐ Now enrolled in college
2☐ Definitely planning to enroll
3☐ Still considering enrollment
4☐ Definitely decided not to enroll

31. What would be your goal for advancement if you did continue your education?
1☐ Instructor in a school of dental hygiene
2☐ Director of a school of dental hygiene
3☐ Dentist
4☐ Public health dental hygienist
5☐ Other goal in dental hygiene *(specify* _____*)*
6☐ Other goal outside dental hygiene *(specify* _____*)*

C-3a
C-3b
C-4a
C-1b
C-1c
D-3
C-4
B-3h
B-3e, 3g
B-3f

B-3g

32. If you would like to return to college, what is likely to keep you from doing so? *(check all that apply)*

1☐ Lack of course offerings in a nearby school
2☐ Lack of sufficient funds
3☐ Family obligations
4☐ Lack of specific information on opportunities available
5☐ Other reason *(please specify_____)*

B-3i

33. Would you be interested in taking refresher training in dental hygiene, if such training were available to you in a nearby school?
Yes ☐1 No ☐2 **IF YES,** in what areas do you feel you need refresher training? *(check all that apply)*

1☐ Theory of dental hygiene practice
2☐ Prophylaxis
3☐ X-ray techniques
4☐ Other clinical skills *(specify_____)*

■ **If you are currently working as a hygienist you have completed the questionnaire after answering Item 33**

G. STATUS OF CURRENTLY INACTIVE HYGIENISTS

D-1

34. Which of the following best describe why you are not in practice today? *(check all that apply)*

1☐ Full-time family obligations
2☐ Employment in another occupation *(specify_____)*
3☐ Attending school
4☐ Beyond age to practice
5☐ Poor health
6☐ Loss of skill to practice
7☐ Unable to find suitable position as hygienist
8☐ You prefer not to work
9☐ Husband does not want you to work
0☐ Not licensed in state where you currently reside
x☐ Other reason *(specify_____)*

E-4

35. Approximately when do you think you will return to practice, according to your present plans for the future? *(check one which most nearly approximates your present plans)*

1☐ Within the next year
2☐ Within the next 5 years
3☐ Within the next 10 years
4☐ Within the next 15 years
5☐ More than 15 years from now
6☐ Never

D-2b, 2c

36. How definite are your present plans
a. About ever returning to practice? 1☐ Very definite 2☐ Fairly definite 3☐ Not at all definite
b. About the time, if ever, when you will return? 1☐ Very definite 2☐ Fairly definite 3☐ Not at all definite

D-2a, 2b

37. If you do return to practice, would you prefer to work: *(check one)*

1☐ 8 hours a day, 5 days a week
2☐ 8 hours a day, less than 5 days a week
3☐ Less than 8 hours a day, 5 days a week
4☐ Less than 8 hours a day, less than 5 days a week

D-2c

38. What would be your reason for returning to practice? *(check all that might apply)*

1☐ For self satisfaction
2☐ To add to the family income for the education of your children
3☐ For other financial reasons
4☐ Other *(specify_____)*

D-2e

39. Under what conditions would you be likely to return to practice? *(check all that might apply)*

1☐ When your youngest child starts to elementary school
2☐ When your youngest child starts to high school
3☐ When your youngest child starts to college
4☐ When you obtain a license to practice in the state where you now live
5☐ When a position is available in your community
6☐ When your husband needs you in his practice, if he is a dentist
7☐ After completion of refresher training, if such training were available to you in a nearby community college or university
8☐ After completion of additional college training which would qualify you for a more advanced position as a hygienist
9☐ Other *(specify_____)*

D-2d

40. If you would like to practice again, what might keep you from seeking a position as a hygienist? *(check all that might apply)*

1☐ Difficulty in securing a license
2☐ Lack of opportunities for hygienists in your community
3☐ You feel you might be too old to practice again
4☐ You feel you might have lost your skill to practice
5☐ You have too great an investment in another occupation
6☐ Other *(specify_____)*

D-2f

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STATISTICAL TABLES

The general topic of each table, or series of tables, is listed below. An * before a topic heading indicates a series of tables.

A Licensed hygienists
- 1. Survey response
- 2. Selected characteristics of instate and out-of-state licensees

B Instate active and inactive hygienists
- 1. Current professional status
- *2. Location and age
- *3 Education
  (Dental hygiene and other college training, interest in returning to college and in taking refresher training)
- *4. Professional activity since licensure
- *5. Family characteristics
  (Marital status and dependent children)
- 6. Membership in American Dental Hygienists' Association

C. Instate practicing hygienists
(Hygienists employed in private dental offices)
- *1. Time worked
- 2. Activities performed
- *3 Employing dentists
- *4 Compensation
  (Type and amount)

D. Instate inactive hygienists
- 1. Reasons for not practicing
- *2. Future professional plans
- 3. Professional activity in last year

E Out-of-state hygienists
- 1. Location and current status
- 2. School attended for hygiene training
- 3. Past professional activity in this state
- 4. Reasons inactive hygienists are not practicing

EXPLANATION OF SELECTED TERMS USED IN STATISTICAL TABLES

Licensed dental hygienists are divided into three groups according to their location at the time of the survey:

1 Instate hygienists include respondents who were professionally active in the survey state, as well as inactive respondents and all nonrespondents who resided in the survey state (Excludes survey state residents who were active in another state)

2 Out of state hygienists include respondents who were professionally active in one of the other 49 states or the District of Columbia, as well as inactive respondents and all nonrespondents who resided in another state

3 Hygienists in foreign countries include all other hygienists surveyed

Respondents include hygienists who completed and returned their questionnaire and provided sufficient information to determine their current professional status Nonrespondents include all other hygienists surveyed.

The current professional status of hygienists was determined according to their reported activity in dental hygiene at the time of the survey:

1. Active hygienists include those who were employed as a dental hygienist in any position which required the special training of a dental hygienist, as well as unemployed hygienists who reported they were seeking employment as a dental hygienist

2. Inactive hygienists include those who were not professionally active (Includes hygienists who were employed in any occupation other than dental hygiene)

In the presentation of current employment statistics the term practicing hygienists relates specifically to those who were working in a private dental office However, in statistical presentations relating to inactive hygienists or to trends in professional activity the terms "practicing" or "in practice" are used in a broader connotation referring to all professionally active hygienists.

Table A-1 -- Survey Response

Location	Licensed hygienists		Respondents	Response rate
	Number	Percent		
Total	917	100	843	92
In Minnesota	588	64	548	93
In other states	319	35	285	89
In foreign countries	10	1	10	-

Table A-2 -- Selected Characteristics of Hygienists Licensed in Minnesota, by Location

Characteristics	Licensed hygienists	In Minnesota	In other states
Total respondents	833	548	285
Current status			
Active	450	299	151
Inactive	383	249	134
Age in 1966			
Under 25	157	111	46
25 - 29	152	98	54
30 - 34	128	83	45
35 & over	389	251	138
Dental hygiene school			
University of Minnesota	774	511	263
All other schools	53	33	20
Year hygiene training completed			
1962 - 1966	187	132	55
1957 - 1961	146	94	52
1952 - 1956	119	75	44
Before 1952	364	235	129
Professional activity in Minnesota			
Ever active in Minnesota	734	525	209
Never active in Minnesota	85	11	74

NOTE: Figures within a grouping will not add to the total if some hygienists did not report information for that particular item on the questionnaire.

Table B-1 -- Current Professional Status, by Place of Employment

Status and place of employment	Instate hygienists
Total	548
Active	299
Employed	297 1/
Private dental office	259
Dental hygiene school or other auxiliary program	4
Elementary or secondary school (public or private)	14
City or county health agency	8
State health agency	4
Other local government agency	-
Other state government agency	1
Army, navy, air force	-
Other federal agency	1
Private agency	1
Unemployed (seeking work as dental hygienist)	2
Inactive	249

1/ Figures will add to more than total if hygienists reported more than one type of employer.

Table B-2a -- County Location

County 1/	Licensed instate hygienists	Respondents			
		Total	Active		Inactive
			Total	Employed full time, year round	
Total	588	548	299	65	249
*Anoka	16	16	11	2	5
Becker	2	2	1	-	1
Beltrami	2	2	2	-	-
Benton	2	1	1	1	-
Blue Earth	4	4	1	-	3
Brown	2	2	1	-	1
Carlton	1	1	-	-	1
Carver	3	3	3	-	-
Chippewa	2	2	-	-	2
*Clay	1	1	1	-	-
Cook	2	2	-	-	2
Crow Wing	1	1	1	-	-
*Dakota	16	16	8	-	8
Douglas	1	1	1	-	-
Fillmore	2	2	1	-	1
Freeborn	6	5	3	1	2
Goodhue	3	3	-	-	3
*Hennepin	294	275	166	38	109
Itasca	4	4	-	-	4
Kandiyohi	5	5	1	-	4
Koochiching	1	1	1	-	-
Lake	1	1	-	-	1
Le Sueur	3	2	1	-	1
Lyon	3	3	1	-	2
McLeod	4	3	1	-	2
Martin	1	1	-	-	1
Mille Lacs	1	1	-	-	1
Morrison	4	4	1	-	3
Mower	3	3	-	-	3
Murray	1	1	-	-	1

(continued)

Table B-2a -- County Location (continued)

County 1/	Licensed instate hygienists	Respondents			
		Total	Active		Inactive
			Total	Employed full time, year round	
Nicollet	2	2	-	-	2
Norman	1	1	1	-	-
Olmsted	13	12	5	1	7
Otter Tail	7	6	3	2	3
Pine	1	1	1	-	-
Polk	2	1	-	-	1
*Ramsey	117	106	57	18	49
Renville	4	4	2	-	2
Rice	5	5	2	-	3
Rock	1	1	-	-	1
*St Louis	12	10	5	-	5
Scott	2	2	1	-	1
Sherburne	1	1	-	-	1
Stearns	4	4	2	-	2
Steele	8	7	4	-	3
Stevens	1	1	-	-	1
Swift	3	3	1	-	2
Waseca	1	1	1	-	-
*Washington	5	5	3	-	2
Watonwan	1	1	1	-	-
Winona	1	1	1	1	-
Wright	2	2	-	-	2
Yellow Medicine	1	1	-	-	1
Other locations 2/	2	2	2	1	-

* Counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, established by the U.S. Bureau of the Budget, Office of Statistical Standards.

1/ There were apparently no licensed hygienists in 34 of the 87 counties in Minnesota; none of the 34 counties are defined as metropolitan counties.

2/ Responding hygienists employed in Minnesota but residing in neighboring States.

Table B-2b -- Age Distribution in 1966

Age	Instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total, all ages	548	299	65	249
Under 25	111	92	38	19
25 - 29 years	98	57	5	41
30 - 34 years	83	34	3	49
35 - 39 years	64	31	2	33
40 - 44 years	63	26	2	37
45 - 49 years	51	25	4	26
50 - 54 years	33	12	3	21
55 - 59 years	17	11	3	6
60 years & over	23	10	5	13
Not reported	5	1	-	4
Median age	33.8	30.0	24.3	37.3

Table B-2c -- Age Distribution in 1966, By Current Professional Status for Minnesota, and Selected Counties 1/

County and status	Instate hygienists	By age in 1966				
		Under 25	25-29	30-34	35 & over	Not reported
State total	548	111	98	83	251	5
Active	299	92	57	34	115	1
Employed in private dental office	259	83	55	32	88	1
Other active	40	9	2	2	27	-
Inactive	249	19	41	49	136	4
*Anoka	16	3	7	2	4	-
Active	11	3	5	2	1	-
Employed in private dental office	10	2	5	2	1	-
Other active	1	1	-	-	-	-
Inactive	5	-	2	-	3	-
*Dakota	16	2	3	5	6	-
Active	8	2	-	3	3	-
Employed in private dental office	7	2	-	3	2	-
Other active	1	-	-	-	1	-
Inactive	8	-	3	2	3	-
*Hennepin	275	64	40	41	126	4
Active	166	53	28	18	66	1
Employed in private dental office	149	51	27	17	53	1
Other active	17	2	1	1	13	-
Inactive	109	11	12	23	60	3
Olmsted	12	2	5	2	3	-
Active	5	2	3	-	-	-
Employed in private dental office	4	1	3	-	-	-
Other active	1	1	-	-	-	-
Inactive	7	-	2	2	3	-

(continued)

Table B-2c -- Age Distribution in 1966, By Current Professional Status for Minnesota, and Selected Counties 1/ (continued)

County and status	Instate hygienists	By age in 1966				
		Under 25	25-29	30-34	35 & over	Not reported
*Ramsey	106	23	22	10	51	-
Active	57	19	10	4	24	-
Employed in private dental office	40	14	9	3	14	-
Other active	17	5	1	1	10	-
Inactive	49	4	12	6	27	-
*St. Louis	10	4	1	-	5	-
Active	5	2	-	-	3	-
Employed in private dental office	4	2	-	-	2	-
Other active	1	-	-	-	1	-
Inactive	5	2	1	-	2	-
All other counties 2/	113	13	20	23	56	1
Active	47	11	11	7	18	-
Employed in private dental office	45	11	11	7	16	-
Other active	2	-	-	-	2	-
Inactive	66	2	9	16	38	1

* Counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, established by the U.S. Bureau of the Budget, Office of Statistical Standards.

1/ Individual data presented for counties with 10 or more responding hygienists.

2/ Includes 2 responding hygienists employed in Minnesota but residing in neighboring States.

Table B-3a -- School Attended for Dental Hygiene Training

School	Instate hygienists	Active	Inactive
Total	548	299	249
With formal academic training	544	298	246
University of Minnesota	511	277	234
Marquette University	8	5	3
State University of Iowa	5	4	1
Indiana University	2	1	1
Ohio State University	2	2	-
Temple University	2	-	2
Northwestern University	1	-	1
Southern Illinois University	1	1	-
University of Detroit	1	1	-
University of Missouri at Kansas City 1/	1	1	-
Monroe Community College 2/	1	1	-
New York City Community College 3/	1	-	1
State University of New York at Farmingdale 4/	1	-	1
University of Oregon 5/	1	1	-
University of Pennsylvania	1	1	-
University of Rhode Island	1	1	-
School not reported	4	2	2
With no formal academic training	4	1	3

1/ Includes any graduates of Kansas City - Western Dental College.
2/ Includes any graduates of Eastman Dental Dispensary and Rochester Dental Dispensary.
3/ Includes any graduates of Brooklyn Community College, New York State Institute of Applied Arts and Sciences - Brooklyn.
4/ Includes any graduates of Long Island Agriculture and Technical Institute.
5/ Includes any graduates of North Pacific College of Oregon.

Table B-3b -- Year Dental Hygiene Certificate or Degree Was Received, by Selected Schools

Year	All schools		University of Minnesota		All other schools	
	Total	Active	Total	Active	Total	Active
Instate hygienists	544 1/	298	511	277	33	21
1966	28	26	27	25	1	1
1965	34	28	30	24	4	4
1964	24	20	21	17	3	3
1963	23	19	21	17	2	2
1962	23	12	18	8	5	4
1961	22	10	21	10	1	-
1960	14	7	12	7	2	-
1959	22	15	20	14	2	1
1958	24	13	22	12	2	1
1957	12	7	12	7	-	-
1956	17	9	17	9	-	-
1955	13	6	12	6	1	-
1954	18	7	17	7	1	-
1953	18	5	17	5	1	-
1952	9	5	9	5	-	-
1951	13	6	12	5	1	1
1950	10	4	10	4	-	-
1949	16	9	16	9	-	-
1948	17	6	17	6	-	-
1947	19	6	18	5	1	1
1946	9	6	8	5	1	1
1945	8	4	8	4	-	-
1944	8	3	8	3	-	-
1943	13	4	13	4	-	-
1942	22	9	22	9	-	-
1941	10	8	10	8	-	-
1940	13	5	13	5	-	-
1930 - 1939	54	25	52	23	2	2
Before 1930	23	12	22	12	1	-
Not reported	8	2	6	2	2	-

1/ Excludes 4 hygienists with no formal academic training.

Table B-3c -- County Location, by Selected Schools

County 1/	All schools		University of Minnesota		All other schools	
	Total	Active	Total	Active	Total	Active
Total	544 2/	298	511	277	33	21
*Anoka	16	11	16	11	-	-
Becker	2	1	2	1	-	-
Beltrami	2	2	1	1	1	1
Benton	1	1	1	1	-	-
Blue Earth	3	1	3	1	-	-
Brown	1	1	1	1	-	-
Carlton	1	-	1	-	-	-
Carver	3	3	3	3	-	-
Chippewa	2	-	2	-	-	-
*Clay	1	1	1	1	-	-
Cook	2	-	2	-	-	-
Crow Wing	1	1	1	1	-	-
*Dakota	16	8	14	8	2	-
Douglas	1	1	1	1	-	-
Fillmore	2	1	2	1	-	-
Freeborn	5	3	5	3	-	-
Goodhue	3	-	3	-	-	-
*Hennepin	274	166	256	154	18	12
Itasca	4	-	4	-	-	-
Kandiyohi	5	1	5	1	-	-
Koochiching	1	1	1	1	-	-
Lake	1	-	1	-	-	-
Le Sueur	2	1	2	1	-	-
Lyon	3	1	3	1	-	-
McLeod	3	1	3	1	-	-
Martin	1	-	1	-	-	-
Mille Lacs	1	-	1	-	-	-
Morrison	4	1	4	1	-	-
Mower	3	-	3	-	-	-
Murray	1	-	1	-	-	-
Nicollet	2	-	2	-	-	-
Norman	1	1	1	1	-	-
Olmsted	12	5	10	3	2	2
Otter Tail	6	3	6	3	-	-
Pine	1	1	1	1	-	-
Polk	1	-	1	-	-	-

(continued)

Table B-3c -- County Location, by Selected Schools (continued)

County 1/	All schools		University of Minnesota		All other schools	
	Total	Active	Total	Active	Total	Active
*Ramsey	106	57	98	52	8	5
Renville	4	2	4	2	-	-
Rice	5	2	5	2	-	-
Rock	1	-	1	-	-	-
*St. Louis	10	5	9	5	1	-
Scott	2	1	2	1	-	-
Sherburne	1	-	1	-	-	-
Sterns	4	2	4	2	-	-
Steele	7	4	7	4	-	-
Stevens	1	-	1	-	-	-
Swift	3	1	3	1	-	-
Waseca	1	1	1	1	-	-
*Washington	5	3	5	3	-	-
Watonwan	1	1	1	1	-	-
Wright	2	-	2	-	-	-
Yellow Medicine	1	-	1	-	-	-
Other locations 3/	2	2	1	1	1	1

* Counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, established by the U. S. Bureau of the Budget, Office of Statistical Standards.

1/ Counties with responding hygienists.

2/ Excludes 4 responding hygienists with no formal academic training.

3/ Responding hygienists employed in Minnesota but residing in neighboring States.

Table B-3d -- Highest Level of College Training Attained

Highest level attained	Instate hygienists	Active	Inactive
Total	548	299	249
Dental hygiene certificate only	280	155	125
Additional college, but no degree	174	95	79
Less than 1 year	-	-	-
1 year but less than 2 years	98	55	43
2 years but less than 3 years	63	34	29
3 years but less than 4 years	9	3	6
4 or more years	4	3	1
Number of years not reported	-	-	-
Bachelor's degree	38	22	16
Master's degree	2	2	-
Doctoral degree	-	-	-
Level of college training not reported	50	24	26
No college training	4	1	3

Table B-3e -- Current Plans for Returning to College

Current plans	Instate hygienists	Active	Inactive
Total	548	299	249
Have seriously considered returning	195	126	69
Now enrolled	24	16	8
Definitely planning to enroll	10	7	3
Still considering enrollment	131	83	48
Definitely decided not to enroll	25	15	10
Current plans not reported	5	5	-
Have never considered returning	292	156	136
Plans to continue education not reported	61	17	44

Table B-3f -- Goal for Advancement If College Education Were Continued

Goal for advancement	Selected instate hygienists 1/	Active	Inactive
Total	165	106	59
Goal reported 2/	151	99	52
Instructor in a school of dental hygiene	43	35	8
Director of a school of dental hygiene	7	6	1
Dentist	1	-	1
Public health dental hygienist 3/	28	20	8
Hygienist in elementary or high school 3/	-	-	-
Other goal in dental hygiene specified	16	9	7
Goal outside dental hygiene specified	92	54	38
Goal not reported	14	7	7

1/ Hygienists who reported they were enrolled, definitely planning to enroll, or still considering enrollment (see Table B-3e).

2/ Items will add to more than total if hygienists reported more than one goal.

3/ Some hygienists who are interested in working in the schools are probably included in the public health category.

Table B-3g -- Obstacles to Returning to College, by Current Plans for Returning

Obstacles	Selected instate hygienists 1/	By current plans for returning to college: Definitely planning to enroll	Still considering enrollment	Definitely decided not to enroll
Total	166	10	131	25
Obstacles reported 2/	155	9	126	20
Lack of course offerings in a nearby school	15	3	10	2
Lack of sufficient funds	44	2	33	9
Family obligations	108	5	90	13
Lack of specific information on opportunities available	19	-	17	2
Age 3/	-	-	-	-
Lack of time 3/	1	-	1	-
Other obstacle specified	17	1	15	1
Obstacles not reported	11	1	5	5

1/ Includes all hygienists who have seriously considered returning to college and who reported their current plans, except those now enrolled (see Table B-3e).
2/ Items will add to more than total if hygienists reported more than one obstacle.
3/ These obstacles were not included on the printed questionnaire, but were written in by the specified number of respondents.

Table B-3h -- Sponsors of Short-term Courses Taken in Dental Hygiene or Related Subjects in Last 12 Months

Sponsors	Instate hygienists	Active	Inactive
Total	548	299	249
Have taken courses 1/	81	66	15
School of dental hygiene	67	56	11
State or local dental hygiene association	7	4	3
Dental school	20	14	6
State or local dental association	8	6	2
Other sponsor	-	-	-
Sponsor not reported	1	1	-
Have not taken courses	442	227	215
If courses taken not reported	25	6	19

1/ Items will add to more than total if hygienists reported taking more than one course.

Table B-3i -- Interest in Taking Refresher Training in Dental Hygiene If Such Training Were Available in a Nearby School

Current status by past activity in this State	Instate hygienists	By interest in taking refresher training		
		Interested	Not interested	Not reported
Active hygienists, by total years active in this State	299	206	66	27
2 years or less	89	66	19	4
3 - 5	61	40	18	3
6 - 10	65	47	12	6
11 years or more	78	50	15	13
Years not reported	6	3	2	1
Inactive hygienists, by last year active in this State	249	126	70	53
1964 or later	54	26	19	9
1961 - 1963	26	14	9	3
1956 - 1960	40	18	9	13
Before 1956	98	51	27	20
Never active	12	10	1	1
Year not reported	19	7	5	7

Table B-4a -- Past Professional Activity in State by Hygienists Ever Active in the State

Year first licensed in State	Percent of ever active hygienists	Average years in State		Percent of licensed years active
		Licensed	Active	
Total	100	16.0	7.2	45
1963 - 1965	17	2.8	2.3	82
1960 - 1962	11	5.9	3.8	64
1957 - 1959	11	8.9	5.6	63
1954 - 1956	9	12.1	5.5	45
1951 - 1953	8	14.9	5.0	34
1948 - 1950	9	18.2	7.0	38
1945 - 1947	7	20.8	8.3	40
1942 - 1944	8	24.4	8.5	35
1939 - 1941	6	26.9	13.3	49
1936 - 1938	3	30.1	11.1	37
1933 - 1935	3	33.1	9.4	28
1930 - 1932	3	35.9	16.5	46
Before 1930	5	41.2	23.6	57

Table B-4b -- Other States in Which Previously Active, By Last Year in Practice in the Other State

State	Instate hygienists	By last year in practice				
		1964 or later	1961-1963	1958-1960	Before 1958	Not reported
Total	548	-	-	-	-	-
Have been active in other States 1/	84	33	14	7	38	8
Arizona	4	1	-	1	2	-
California	10	1	5	-	4	
Colorado	11	6	-	1	3	1
District of Columbia	1	-	-	-	1	-
Florida	1	-	-	-	1	-
Idaho	1	1	-	-	-	-
Illinois	5	-	-	1	3	1
Indiana	4	3	1	-	-	-
Iowa	5	-	1	-	3	1
Maryland	1	-	1	-	-	-
Michigan	4	1	1	1	1	-
Missouri	1	1	-	-	-	-
Montana	5	2	-	-	3	-
Nebraska	4	2	-	1	-	1
New Hampshire	1	-	-	-	-	1
New York	1	-	1	-	-	-
North Dakota	3	2	1	-	-	-
Ohio	5	5	-	-	-	-
Oregon	3	-	-	-	2	1
Pennsylvania	2	-	1	-	-	1
Rhode Island	1	-	1	-	-	-
South Dakota	8	2	-	1	5	-
Tennessee	2	-	-	-	2	-
Texas	1	-	-	-	1	-
Washington	2	1	-	-	1	-
Wisconsin	10	4	-	-	5	1
Wyoming	2	-	1	1	-	-
Hawaii	2	1	-	-	1	-
Have not been active in other States	455	-	-	-	-	-
If active in other States not reported	9	-	-	-	-	-

1/ Figures will add to more than total if hygienists reported practicing in more than one other State.

Table B-5a -- Marital Status

Marital status	Instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total	548	299	65	249
Single	68	59	24	9
Ever married	478	240	41	238
Now married	449	220	32	229
Other status	29	20	9	9
Status not reported	2	-	-	2

Table B-5b -- Presence of Dependent Children

Number of dependent children	Ever married instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total	478	240	41	238
With no children	98	69	28	29
With children	373	168	12	205
1	91	48	7	43
2	132	60	3	72
3	83	35	1	48
4	42	17	1	25
5 or more	25	8	-	17
Number of children not reported	7	3	1	4

Table B-5c -- School Status and Age of Dependent Children

School status and age of children	Ever married instate hygienists	Active	Inactive
Total with children	373	168	205
School status			
None in school	106	48	58
Some in school 1/	267	120	147
In grades 1 - 8	210	96	114
In grades 9 - 12	97	43	54
In college or business school	70	32	38
School status not reported	-	-	-
Age of children			
With children under 15 years 1/	326	148	178
1 year or more	81	33	48
2 - 3 years	110	43	67
4 - 5 years	93	36	57
6 - 7 - 8 years	126	55	71
9 - 10 - 11 years	117	45	72
12 - 13 - 14 years	94	42	52
With children 15 and over only	47	20	27
Age not reported	-	-	-

1/ Figures will add to more than total if hygienists reported children in more than one group.

Table B-6 -- Membership in American Dental Hygienists' Association 1/

Current membership status	Instate hygienists	Active	Inactive
Total	548	299	249
A member	105	86	19
Not a member, but a member at one time	306	153	153
Not a member, past membership not reported	6	2	4
Never a member	127	57	70
Current and past membership not reported	4	1	3

1/ Excludes junior memberships.

Table C-1a -- Hours Worked in a Typical Week In Private Dental Offices

Hours	Practicing hygienists	Aggregate hours reported
Total	259	-
Time reported 1/	241	5,994
Less than 8	18	93
8	18	144
9 - 15	25	304
16	30	480
17 - 23	25	490
24	9	216
25 - 31	22	612
32	8	256
33 - 34	2	67
35	2	70
36 - 39	21	777
40	50	2,000
41 or more	11	485
Time not reported	18	-

Table C-1b -- Weeks Worked in Private Dental Offices During 12 Months Preceding Survey

Weeks	Practicing hygienists	Aggregate weeks reported
Total	259	-
Time reported 1/	241	9,925
4 or less	3	10
5 - 8	5	29
9 - 12	9	97
13 - 16	4	64
17 - 20	9	168
21 - 24	10	232
25 - 28	14	369
29 - 32	7	215
33 - 36	12	425
37 - 40	12	475
41 - 44	6	256
45 - 47	14	640
48 - 49	22	1,064
50 - 52	114	5,881
Time not reported	18	-

1/ Hygienists who reported both hours and weeks.

Table C-1c -- Summary of Time Worked in Private Dental Offices

Time worked 1/	Practicing hygienists	Aggregate hours reported	Aggregate weeks reported
Total	259	-	-
Time reported	241	5,994	9,925
Full time	85	3,372	3,687
Year round	54	2,149	2,784
Less than year round	31	1,223	903
Part time	156	2,622	6,238
Year round	82	1,504	4,161
Less than year round	74	1,118	2,077
Time not reported	18	-	-

1/ Definitions of time worked:

Full time -- 35 hours or more in a typical week
Part time -- less than 35 hours
Year round -- 48 weeks or more in the 12 months preceding the survey
Less than year round -- less than 48 weeks

Table C-2 -- Activities Performed in Private Dental Offices By Time Spent At Each Activity in A Typical Week

Activity	Practicing hygienists	Time spent at activity: Hygienists reporting hours	Time spent at activity: Aggregate hours reported
Total	259	-	-
Activities reported	259	-	-
Oral prophylaxis	259	151	2,727
Other clinical services 1/	229	128	506
Patient dental health education 2/	180	103	290
Management of dental office 3/	105	60	222
Dental assisting tasks 4/	60	29	107
Activities not reported	-	-	-

1/ Radiographs, fluoride applications, etc.
2/ Time devoted exclusively to instruction of individual patients in oral hygiene, diet, etc.
3/ Recalls, pulling charts, answering telephone, receptionist duties, bookkeeping, etc.
4/ Preparing tray set-ups, passing instruments, pouring models, etc.

Table C-3a -- Employing Dentists, By Number of Dental Offices

Number of employing dentists 1/	Practicing hygienists	Number of dental offices in which employed				
		1	2	3	4 or more	Not reported
Total	259	209	39	5	-	6
Dentists reported	237	193	39	5	-	-
1	128	128	-	-	-	-
2	75	49	26	-	-	-
3	23	10	11	2	-	-
4 or more	11	6	2	3	-	-
Number of dentists not reported	22	16	-	-	-	6

1/ Includes only those dentists whose patients the hygienist cared for.

Table C-3b -- Type of Practice of Employing Dentists

Type of practice of employing dentists	Practicing hygienists
Total	259
Worked for general practitioner only	234
Worked for dental specialist 1/	17
Endodontist	-
Oral surgeon	-
Orthodontist	2
Pedodontist	7
Periodontist	8
Prosthodontist	-
Type not reported	8

1/ Figures will add to more than total if hygienists reported working for more than one type of specialist.

Table C-4a -- Type(s) of Compensation Received for Time Worked in Private Dental Office(s)

Type(s) of compensation	Practicing hygienists	By time worked in private dental offices 1/				
		Full time		Part time		Time not reported
		Year round	Less than year round	Year round	Less than year round	
Total	259	54	30	82	75	18
Reporting type(s) of compensation	251	53	29	82	71	16
Salary only	136	34	22	33	39	8
Commission only	74	5	4	34	25	6
Both salary and commission only	35	13	3	12	5	2
Salary only, commission only 2/	3	1	-	1	1	-
Salary only, both salary and commission 2/	2	-	-	1	1	-
Commission only, both salary and commission 2/	-	-	-	-	-	-
Salary only, commission only, both salary and commission 2/	-	-	-	-	-	-
Did not receive compensation 3/	1	-	-	1	-	-
Type of compensation not reported	8	1	1	-	4	2

1/ See Table C-1c for definitions of time worked.
2/ A hygienist working in more than one dental office may report more than one type of compensation.
3/ Generally reported by hygienists who indicated they were working for their dentist--husbands.

Table C-4b -- Gross Earnings From Dental Hygiene Practice During 12 Months Preceding Survey

Gross earnings 1/	Practicing hygienists	By time spent in private dental office 2/				
		Full time		Part time		Not reported
		Year round	Less than year round	Year round	Less than year round	
Total	259	54	30	82	75	18
Earnings reported	208	48	25	69	62	4
Under $1,000	20	1	1	-	18	-
1,000 - 1,999	38	1	1	21	15	-
2,000 - 2,999	38	-	11	14	13	-
3,000 - 3,999	24	3	4	9	6	2
4,000 - 4,999	21	3	3	10	4	1
5,000 - 5,999	32	17	3	8	3	1
6,000 - 6,999	20	15	1	3	1	-
7,000 - 7,999	7	2	1	3	1	-
8,000 - 8,999	6	5	-	-	1	-
9,000 - 9,999	1	1	-	-	-	-
10,000 & over	-	-	-	-	-	-
None 3/	1	-	-	1	-	-
Earnings not reported	51	6	5	13	13	14

1/ If exact figure for gross earnings (before deductions) was not available, respondent was requested to give best estimate to the nearest $500.

2/ See Table C-1c for definitions of time worked.

3/ Generally reported by hygienists who indicated they were working for their dentist-husbands.

Table D-1 -- Reason Why Inactive Hygienists Were Not Professionally Active

Reason	Inactive hygienists
Total	249
Reasons reported 1/	246
Full-time family obligations	187
Employment in another occupation	20
Attending school	7
Beyond age to practice	6
Poor health	4
Loss of skill to practice	14
Unable to find suitable position as hygienist	13
She prefers not to work	57
Husband does not want her to work	39
Another reason specified	15
Reasons not reported	3

1/ Figures will add to more than total if some hygienists reported more than one reason.

Table D-2a -- Degrees of Definiteness About Ever Returning to Practice and About Time of Return

Degree of definiteness about ever returning	Inactive hygienists	By degree of definiteness about time of return			
		Very definite	Fairly definite	Not at all definite	Not reported
Total	249	17	90	93	49
Degree reported	227	16	89	92	30
Very definite	31	14	9	1	7
Fairly definite	94	2	75	7	10
Not at all definite	102	-	5	84	13
Degree not reported	22	1	1	1	19

Table D-2b -- Approximate Length of Time Until Return to Practice, By Degree of Definiteness About Time of Return

Approximate time until return	Selected inactive hygienists 1/	By degree of definiteness about time of return			
		Very definite	Fairly definite	Not at all definite	Not reported
Total	125	16	84	8	17
Time until return reported	123	16	83	8	16
Within the next year	17	3	13	-	1
Within the next 5 years	47	6	37	3	1
Within the next 10 years	15	1	11	3	-
Within the next 15 years	4	-	3	1	-
More than 15 years from now	2	-	2	-	-
Never	38	6	17	1	14
Time not reported	2	-	1	-	1

1/ Includes only those inactive hygienists who reported that their present plans about ever returning to practice were very definite or fairly definite (see Table D-2a).

Table D-2c -- Time Preferred to Work If Hygienists Returned to Practice, By Approximate Length of Time Until Return

Time preferred to work	Selected inactive hygienists 1/	By length of time until return to practice				
		Within the next				More than 15 years from now
		Year	5 years	10 years	15 years	
Total	76	16	43	12	3	2
Preferred time reported	76	16	43	12	3	2
8 hours a day	27	8	16	3	-	-
5 days a week	3	-	2	1	-	-
Less than 5 days a week	24	8	14	2	-	-
Less than 8 hours a day	49	8	27	9	3	2
5 days a week	9	1	4	2	1	1
Less than 5 days a week	40	7	23	7	2	1
Time preferred not reported	-	-	-	-	-	-

1/ Includes only those inactive hygienists who reported length of time until return, and who were at least fairly definite both about ever returning and the time of return (see Table D-2b).

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Table D-2d -- Conditions Under Which Likely to Return to Practice

Conditions	Inactive hygienists
Total	249
Conditions reported 1/	213
When youngest child starts elementary school	87
When youngest child starts high school	31
When youngest child starts college	21
When a position is available in her community	51
When husband needs her in his practice, if he is a dentist	28
After completion of refresher training, if such training were available in a nearby community college or university	61
After completion of additional college training which would qualify her for a more advanced position as a hygienist	12
Because of illness, disability or death of husband 2/	8
Another condition specified	31
Condition not reported	36

1/ Figures will add to more than total if hygienists reported more than one condition.

2/ This condition was not listed on the printed questionnaire, but was written in by the specified number of respondents.

Table D-2e -- Reasons for Returning to Practice

Reasons	Inactive hygienists
Total	249
Reasons reported 1/	227
For self satisfaction	155
To add to the family income for children's education	98
For other financial reasons	47
To keep in practice 2/	-
Another reason specified	32
Reasons not reported	22

1/ Figures will add to more than total if hygienists reported more than one reason.

2/ This reason was not listed on the printed questionnaire, but was written in by the specified number of respondents.

Table D-2f -- Situations Which Might Keep Hygienists From Seeking A Position, If She Would Like to Practice Again

Situations	Inactive hygienists
Total	249
Situations reported 1/	172
Lack of opportunities for hygienist in her community	48
Feels she might be too old to practice again	40
Feels she might have lost her skill to practice	75
Has too great an investment in another occupation	13
Satisfactory working hours not available 2/	-
Unsatisfactory wages 2/	-
Another situation specified	45
No situation was reported	77

1/ Figures will add to more than total if hygienists reported more than one situation.

2/ This situation was not listed on the printed questionnaire, but was written in by the specified number of respondents.

Table D-3 -- Professional Activity During 12 Months Preceding Survey, By Time Worked

Professional activity during 12 months preceding survey 1/	Inactive hygienists	By time worked 2/			
		Full time	Part time	Combination of full time & part time	Not reported
Total	249	-	-	-	-
Employed in 3/					
Private dental office	27	11	13	3	-
Dental hygiene school or other dental auxiliary program	1	1	-	-	-
Elementary or secondary school	4	3	1	-	-
City or county health agency	1	1	-	-	-
State health agency	-	-	-	-	-
Other local government agency	-	-	-	-	-
Other state government agency	1	-	1	-	-
Army, navy, air force	1	1	-	-	-
Other federal agency	-	-	-	-	-
Private organization	-	-	-	-	-
Type of employer not reported	-	-	-	-	-
Not employed	219	-	-	-	-

1/ Includes activity in any state.

2/ Respondents were asked to check boxes labeled "Full time" and "part time." Therefore, these data are not comparable to "time worked" data presented in other tables.

3/ Figures will add to more than total if hygienists reported more than one type of employer.

Table E-1 -- Location and Current Professional Status

State	Out of state hygienists	Respondents				
		Total	Active			Inactive
			Total	In private dental offices	Other active	
Total	319	285	151	125	26	134
Northeast	19	18	7	4	3	11
Connecticut	1	-	-	-	-	-
Maine	-	-	-	-	-	-
Massachusetts	6	6	3	2	1	3
New Hampshire	-	-	-	-	-	-
New Jersey	2	2	1	-	1	1
New York	4	4	1	-	1	3
Pennsylvania	5	5	1	1	-	4
Rhode Island	1	1	1	1	-	-
Vermont	-	-	-	-	-	-
South	46	43	17	12	5	26
Alabama	3	2	-	-	-	2
Arkansas	-	-	-	-	-	-
Delaware	-	-	-	-	-	-
District of Columbia	-	-	-	-	-	-
Florida	7	7	2	2	-	5
Georgia	2	1	-	-	-	1
Kentucky	1	1	-	-	-	1
Louisiana	2	2	1	1	-	1
Maryland	9	9	6	3	3	3
Mississippi	-	-	-	-	-	-
North Carolina	2	2	-	-	-	2
Oklahoma	4	3	-	-	-	3
South Carolina	-	-	-	-	-	-
Tennessee	3	3	1	1	-	2
Texas	7	7	5	5	-	2
Virginia	6	6	2	-	2	4
West Virginia	-	-	-	-	-	-

(continued)

Table E-1 -- Location and Current Professional Status (cont'd.)

State	Out of state hygienists	Respondents				
		Total	Active			Inactive
			Total	In private dental offices	Other active	
North Central	103	92	45	34	11	47
Illinois	15	14	7	6	1	7
Indiana	3	3	1	-	1	2
Iowa	16	14	9	4	5	5
Kansas	4	3	1	-	1	2
Michigan	4	4	1	1	-	3
Minnesota 1/	2	2	2	2	-	-
Missouri	6	5	2	1	1	3
Nebraska	4	4	2	2	-	2
North Dakota	8	7	4	3	1	3
Ohio	4	3	1	1	-	2
South Dakota	5	5	3	3	-	2
Wisconsin	32	28	12	11	1	16
West	151	132	82	75	7	50
Alaska	-	-	-	-	-	-
Arizona	8	6	2	2	-	4
California	80	75	52	47	5	23
Colorado	19	19	11	11	-	8
Hawaii	2	2	1	1	-	1
Idaho	1	-	-	-	-	-
Montana	15	13	5	5	-	8
New Mexico	2	1	-	-	-	1
Nevada	1	1	1	1	-	-
Oregon	7	5	3	3	-	2
Utah	1	-	-	-	-	-
Washington	14	9	6	4	2	3
Wyoming	1	1	1	1	-	-

1/ Two responding hygienists who were residents of Minnesota indicated that they were employed in neighboring States.

Table E-2 -- School Attended for Dental Hygiene Training and Year Certificate or Degree Was Received, By Current Professional Status

School and year certificate or degree was received	Out-of-state hygienists	Active	Inactive
Total	285	151	134
With formal academic training	283	150	133
University of Minnesota	263	141	122
1966	11	11	-
1965	5	5	-
1964	12	11	1
1963	7	4	3
1962	14	11	3
1961	11	8	3
1960	12	6	6
1959	8	2	6
1958	11	6	5
1957	6	3	3
1956	15	5	10
1955	4	2	2
1954	9	1	8
1953	4	2	2
1952	9	4	5
1951	10	6	4
1950	5	2	3
1945 - 1949	37	15	22
1940 - 1944	29	16	13
1935 - 1939	21	10	11
1930 - 1934	14	8	6
1925 - 1929	6	2	4
Year not reported	3	1	2
All other schools	18	9	9
1962 - 1966	6	5	1
1957 - 1961	4	2	2
1952 - 1956	3	1	2
Before 1952	5	1	4
Year not reported	-	-	-
School not reported	2	-	2
No formal academic training	2	1	1

Table E-3 -- Past Professional Activity in Minnesota by Out-of-State Hygienists Ever Active in Minnesota

Year first licensed in State	Percent of ever active hygienists	Average years in state		Percent of licensed years active
		Licensed	Active	
Total	100	17.0	3.5	21
1963 - 1965	10	3.3	1.8	55
1960 - 1962	14	5.9	1.7	29
1957 - 1959	10	9.0	2.8	31
1954 - 1956	10	11.9	4.0	34
1951 - 1953	10	15.2	3.0	20
1948 - 1950	8	18.2	2.9	16
1945 - 1947	8	20.7	2.7	13
1942 - 1944	8	24.2	4.4	18
1939 - 1941	7	27.4	4.2	15
1936 - 1938	6	29.9	6.1	20
1933 - 1935	3	33.3	4.3	13
1930 - 1932	2	36.0	5.2	14
Before 1930	4	40.6	9.5	23

Table E-4 -- Reasons Why Inactive Hygienists Were Not Professionally Active

Reasons	Inactive out-of-state hygienists
Total	134
Reasons reported 1/	132
Full-time family obligations	95
Employment in another occupation	6
Attending school	2
Beyond age to practice	4
Poor health	-
Loss of skill to practice	11
Unable to find suitable position as hygienist	3
She prefers not to work	25
Husband does not want her to work	19
Not licensed in state where she currently resides	74
Another reason specified	9
Reasons not reported	2

1/ Figures will add to more than total if hygienists reported more than one reason.

HANDBOOK OF STATISTICS...

DENTAL HYGIENISTS

LICENSED IN NORTH CAROLINA

1966

4866

....HANDBOOK OF STATISTICS....HANDBOOK OF STATISTICS....HANDBOOK OF STATISTICS....

DENTAL HYGIENISTS LICENSED IN NORTH CAROLINA 1966

A

Cooperative Project of the

North Carolina State Board of Dental Examiners

and the American Association of Dental Examiners

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was supported under contract
with
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Division of Dental Health
Manpower Studies Branch

November 1971

4867

INTRODUCTION

In November, 1966 the North Carolina State Board of Dental Examiners conducted a mail survey of all dental hygienists licensed to practice in the State. This survey was conducted concurrently with the hygienists' annual reregistration with the Board.

Statistics presented in this Handbook were tabulated from the information furnished by the dental hygienists who completed and returned their questionnaires. The location of each nonrespondent was obtained from the Board records.

This statistical presentation has been designed to provide most of the basic facts which were collected in the survey. Pertinent cross-tabulations of data have been presented when the number of hygienists in the specific population group was large enough to provide meaningful data.

Since this was a survey of hygienists licensed in North Carolina, the data exclude an unknown number of inactive hygienists who reside in the State but are not licensed to practice there. Also excluded may be a few nonlicensed hygienists who are working in the State either for the Federal Government or for some employer in an administrative or other nonclinical position in which licensure is not a prerequisite for employment.

The North Carolina survey is part of a national endeavor: Dental examining boards in virtually all of the States are utilizing the same questionnaire printed under their own letterheads, to sruvey dental hygienists licensed in their respective States. The American Association of Dental Examiners, under a contract with the Division of Dental Health of the National Institutes of Health, USPHS, is coordinating this national survey program to assist States in developing comparable information about their dental manpower resources. The preparation of this Handbook has been made possible through the cooperation of the American Association of Dental Examiners and the Division of Dental Health, Manpower Studies Branch.

ROM SURVEY QUESTIONNAIRE TO STATISTICAL TABLES

Information gathered by survey questionnaires is compiled into statistical tables which present a profile of the professional activities of dental hygienists licensed in this State. To see the uses made of data gathered by this questionnaire, turn to the tables listed on the right, which have been prepared from replies to questions on the left.....

NORTH CAROLINA STATE BOARD
OF
DENTAL EXAMINERS

OFFICE OF THE SECRETARY
P.O. BOX 490
MORGANTON, N.C.

HE STATE BOARD OF DENTAL EXAMINERS HAS UNDERTAKEN A COOPERATIVE PROJECT WITH THE AMERICAN ASSOCIATION OF DENTAL EXAMINERS AND THE PUBLIC EALTH SERVICE TO DEVEVLOP AN ANALYSIS OF THE DISTRIBUTION AND AVAILABILITY OF DENTAL HEALTH SERVICES IN THE STATE OF THE INFORMATION PROVIDED ILL BE USED FOR STATISTICAL PURPOSES ONLY.

Name: _____ (LAST / FIRST / MIDDLE / MAIDEN (if ever married))

Present Home Address: _____ (STREET / CITY / COUNTY / STATE / ZIP CODE)

License Number: _____ Social Security Number: _____

A-1
B-2a, 2c,
B-3c
E-1

A. PERSONAL CHARACTERISTICS

1. Year of birth: _____ 2. Marital status: ☐ Single (1) ☐ Married (2) ☐ Widowed (3) ☐ Divorced (4) ☐ Separated (5)
3. If ever married, number of years in your current marital status: _____
4. Total number of dependent children: _____; Number in school: _____ Grades 1-8 _____ Grades 9-12 _____ College or business school
5. Number of children under 15 years: _____ 1 yr. or under _____ 2-3 yrs. _____ 4-5 yrs. _____ 6-7-8 yrs. _____ 9-10-11 yrs. _____ 12-13-14 yrs.

A-2
B-2b, 2c
B-5a, 5b,
5c

B. TRAINING AND EDUCATION

☐ Check here if no formal academic training in dental hygiene and skip to Section C

6. Name of dental hygiene school: _____
7. Type of certificate or degree in dental hygiene received:
   ☐ Bachelor degree (1) ☐ Associate degree (2) ☐ Certificate or diploma (3)
8. What was your Name at the time you completed your training? _____
9. Year granted: _____
10. Number of years of **additional** college training completed, if any: _____
    Degrees earned, if any: ☐ Bachelor degree (1) ☐ Master degree (2) ☐ Other Degree (specify _____)

A-2
B-3a, 3b,
3c, 3d
E-2

C. PROFESSIONAL HISTORY

11. Complete a line for each state in which you have **ever been** licensed to practice:

	Name of State	Year first licensed	Are you licensed today? Yes	Are you licensed today? No	Have you ever practiced in this State? Yes	Have you ever practiced in this State? No	Number of years in practice	Last year in practice	Did you primarily work: Full-time	Did you primarily work: Part-time
A.	This State	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)
B.	_____	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)
C.	_____	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)
D.	_____	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)

12. Total number of years you have been licensed to practice: _____ years
13. Total number of years you have practiced: _____ years
14. Are you now a member of the American Dental Hygienists' Association? ☐ Yes (1) ☐ No (2)
    IF NO, have you ever been a member? ☐ Yes (1) ☐ No (2)

A-2
B-3i
B-4a, 4b,
4c
B-6
E-3

A-2

B-1

D. CURRENT PROFESSIONAL ACTIVITY

15. Current professional status *(check one)*
    1☐ At work as a dental hygienist
    2☐ Employed as a dental hygienist, but temporarily absent from work *(because of vacation, sickness, school recess, etc.)*
    3☐ Seeking work as a dental hygienist
    4☐ Not working or seeking work as a dental hygienist
    } **If you checked one of these boxes, skip to Section E**

16. Are you currently employed in this state? 1☐ Yes 2☐ No If in another state, where? _____
    In what county do you primarily work? _____

17. In a typical week how many hours do you work for your current employers? _____ hours
    (use last week if it was typical, otherwise select the most recent week which was typical)

B-1

B-2c

C-1a,1c

E-1

18a. Check all places where you currently work:

18b. How many hours do you work in a typical week? *(complete only if 2 or more boxes are checked in Item 18a; hours should equal those in Item 17)*

- ☐ PRIVATE DENTAL OFFICE(S) ..... _____
- ☐ DENTAL HYGIENE SCHOOL OR OTHER DENTAL AUXILIARY PROGRAM ..... _____
- ☐ ELEMENTARY OR SECONDARY SCHOOL *(public or private)* ..... _____
- ☐ CITY OR COUNTY HEALTH AGENCY ..... _____
- ☐ STATE HEALTH AGENCY ..... _____
- ☐ OTHER LOCAL GOVERNMENT AGENCY *specify* _____ ..... _____
- ☐ OTHER STATE GOVERNMENT AGENCY *specify* _____ ..... _____
- ☐ ARMY, NAVY, AIR FORCE ..... _____
- ☐ OTHER FEDERAL AGENCY ..... _____
- ☐ PRIVATE ORGANIZATION *(voluntary agency, prepaid dental plan, etc.)* *specify organization* _____ ..... _____

C-2

19a. Check all types of activity you currently perform:

19b. How many hours do you spend at this activity in a typical week? *(complete only if 2 or more boxes are checked in Item 19a; hours should equal those in Item 17)*

- ☐ ORAL PROPHYLAXIS ..... _____
- ☐ OTHER CLINICAL SERVICE *(radiographs, fluoride applications, etc.)* ..... _____
- ☐ PATIENT DENTAL HEALTH EDUCATION *(time devoted exclusively to instruction of individual patients in oral hygiene, diet, etc.)* ..... _____
- ☐ MANAGEMENT OF DENTAL OFFICE OR DENTAL CLINIC *(recalls, pulling charts, answering telephone, receptionist duties, bookkeeping, etc.)* ..... _____
- ☐ DENTAL ASSISTING *(preparing tray set-ups, passing instruments, pouring models, etc.)* ..... _____
- ☐ GROUP DENTAL HEALTH EDUCATION *(classroom instruction of students in elementary schools, talks before civic groups, etc.)* ..... _____
- ☐ INSTRUCTION OF DENTAL HYGIENE STUDENTS OR OTHER DENTAL AUXILIARY STUDENTS ..... _____
- ☐ ADMINISTRATION *(Director of school of dental hygiene, coordinator of dental program in a school or local health dept., etc.)* ..... _____
- ☐ DENTAL RESEARCH *(basic science, clinical, behavioral, etc.)* ..... _____
- ☐ OTHER ACTIVITY *specify* _____ ..... _____

20. If you work in a private dental office and some place else, were the hours spent in these activities all devoted to your private dental practice?
    1☐ Yes
    2☐ No

■ **If you currently work in a private dental office complete Items 21-24; otherwise skip to Section E**

21. Number of different dental offices where you currently work _____

22. Number of dentists whose patients you care for in each dental office:
Office 1 _____ Office 2 _____ Office 3 _____ Office 4 _____ Other Offices _____

23. Are all of these dentists general practitioners? 1☐ Yes 2☐ No
IF NO, how many are specialists? _____ Specify type(s) _____

24. Which type of compensation do you receive? *(If type varies among offices check all that apply)*
1☐ Salary only 2☐ Commission (or percentage) only 3☐ Both salary (or guarantee) and commission

C-3a

C-3b

C-4a

E. PROFESSIONAL ACTIVITY DURING LAST TWELVE MONTHS

☐ Check here if you were not employed as a dental hygienist and skip to Section F

25. How many weeks were you employed during the last 12 months? _____ How many of these weeks were you employed and paid but not at work? *(vacation, sick leave, school recess, etc.)* _____

26. How many weeks, if any, were you employed in this State? _____
How many weeks, if any, were you employed in another State(s)? _____ Name the State(s) _____

C-1b

27a. Check all places where you worked during the last 12 months: 27b. Indicate whether you worked: 27c How many weeks were you employed in the last 12 months? *(complete only if 2 or more boxes are checked in Item 27a.)*

	Full-time only	Part-time only	Combination of full-time and part-time	
☐ PRIVATE DENTAL OFFICE(S)	1☐	2☐	3☐	_____
☐ DENTAL HYGIENE SCHOOL OR OTHER DENTAL AUXILIARY PROGRAM	1☐	2☐	3☐	_____
☐ ELEMENTARY OR SECONDARY SCHOOL *(public or private)*	1☐	2☐	3☐	_____
☐ CITY OR COUNTY HEALTH AGENCY	1☐	2☐	3☐	_____
☐ STATE HEALTH AGENCY	1☐	2☐	3☐	_____
☐ OTHER LOCAL GOVERNMENT AGENCY *specify* _____	1☐	2☐	3☐	_____
☐ OTHER STATE GOVERNMENT AGENCY *specify* _____	1☐	2☐	3☐	_____
☐ ARMY, NAVY, AIR FORCE	1☐	2☐	3☐	_____
☐ OTHER FEDERAL AGENCY	1☐	2☐	3☐	_____
☐ PRIVATE ORGANIZATION *(voluntary agency, prepaid dental plan, etc.)* *specify* _____	1☐	2☐	3☐	_____

C-1c

D-3

28. What were your gross earnings *(before deductions)* from dental hygiene practice during last 12 months? $ _____
(If exact figure is not available, give best estimate to the nearest $500)

C-4

F. CONTINUING EDUCATION

29. Have you taken any short-term courses in dental hygiene or related subjects in the last 12 months? 1☐ Yes 2☐ No
IF YES, who sponsored the course(s)? *(check all that apply)*
1☐ School of dental hygiene
2☐ State or local dental hygiene association
3☐ Dental school
4☐ State or local dental association

30. Have you seriously considered returning to college to continue your education? 1☐ Yes 2☐ No
IF YES, what is your current situation? *(check one)*
1☐ Now enrolled in college
2☐ Definitely planning to enroll
3☐ Still considering enrollment
4☐ Definitely decided not to enroll

31. What would be your goal for advancement if you did continue your education?
1☐ Instructor in a school of dental hygiene
2☐ Director of a school of dental hygiene
3☐ Dentist
4☐ Public health dental hygienist
5☐ Other goal in dental hygiene *(specify* _____*)*
6☐ Other goal outside dental hygiene *(specify* _____*)*

B-3h

B-3e, 3g

B-3f

B-3g

32. If you would like to return to college, what is likely to keep you from doing so? *(check all that apply)*

1☐ Lack of course offerings in a nearby school
2☐ Lack of sufficient funds
3☐ Family obligations
4☐ Lack of specific information on opportunities available
5☐ Other reason *(please specify* _____)

B-3i

33. Would you be interested in taking refresher training in dental hygiene, if such training were available to you in a nearby school?
Yes ☐1 No ☐2 **IF YES,** in what areas do you feel you need refresher training? *(check all that apply)*

1☐ Theory of dental hygiene practice
2☐ Prophylaxis
3☐ X-ray techniques
4☐ Other clinical skills *(specify* _____)

■ **If you are currently working as a hygienist you have completed the questionnaire after answering Item 33**

G. STATUS OF CURRENTLY INACTIVE HYGIENISTS

D-1

34. Which of the following best describe why you are not in practice today? *(check all that apply)*

1☐ Full-time family obligations
2☐ Employment in another occupation *(specify* _____)
3☐ Attending school
4☐ Beyond age to practice
5☐ Poor health
6☐ Loss of skill to practice
7☐ Unable to find suitable position as hygienist
8☐ You prefer not to work
9☐ Husband does not want you to work
0☐ Not licensed in state where you currently reside
x☐ Other reason *(specify* _____)

E-4

35. Approximately when do you think you will return to practice, according to your present plans for the future? *(check one which most nearly approximates your present plans)*

1☐ Within the next year
2☐ Within the next 5 years
3☐ Within the next 10 years
4☐ Within the next 15 years
5☐ More than 15 years from now
6☐ Never

D-2b, 2c

36. How definite are your present plans
a. About ever returning to practice? 1☐ Very definite 2☐ Fairly definite 3☐ Not at all definite
b. About the time, if ever, when you will return? 1☐ Very definite 2☐ Fairly definite 3☐ Not at all definite

D-2a, 2b

37. If you do return to practice, would you prefer to work: *(check one)*

1☐ 8 hours a day, 5 days a week
2☐ 8 hours a day, less than 5 days a week
3☐ Less than 8 hours a day, 5 days a week
4☐ Less than 8 hours a day, less than 5 days a week

D-2c

38. What would be your reason for returning to practice? *(check all that might apply)*

1☐ For self satisfaction
2☐ To add to the family income for the education of your children
3☐ For other financial reasons
4☐ Other *(specify* _____)

D-2e

39. Under what conditions would you be likely to return to practice? *(check all that might apply)*

1☐ When your youngest child starts to elementary school
2☐ When your youngest child starts to high school
3☐ When your youngest child starts to college
4☐ When you obtain a license to practice in the state where you now live
5☐ When a position is available in your community
6☐ When your husband needs you in his practice, if he is a dentist
7☐ After completion of refresher training, if such training were available to you in a nearby community college or university
8☐ After completion of additional college training which would qualify you for a more advanced position as a hygienist
9☐ Other *(specify* _____)

D-2d

40. If you would like to practice again, what might keep you from seeking a position as a hygienist? *(check all that might apply)*

1☐ Difficulty in securing a license
2☐ Lack of opportunities for hygienists in your community
3☐ You feel you might be too old to practice again
4☐ You feel you might have lost your skill to practice
5☐ You have too great an investment in another occupation
6☐ Other *(specify* _____)

D-2f

STATISTICAL TABLES

The general topic of each table, or series of tables, is listed below. An * before a topic heading indicates a series of tables.

A Licensed hygienists
- 1. Survey response
- 2. Selected characteristics of instate and out-of-state licensees

B Instate active and inactive hygienists
- 1. Current professional status
- *2. Location and age
- *3 Education
  (Dental hygiene and other college training, interest in returning to college and in taking refresher training)
- *4. Professional activity since licensure
- *5. Family characteristics
  (Marital status and dependent children)
- 6. Membership in American Dental Hygienists' Association

C. Instate practicing hygienists
(Hygienists employed in private dental offices)
- *1. Time worked
- 2. Activities performed
- *3 Employing dentists
- *4 Compensation
  (Type and amount)

D. Instate inactive hygienists
- 1. Reasons for not practicing
- *2. Future professional plans
- 3. Professional activity in last year

E Out-of-state hygienists
- 1. Location and current status
- 2. School attended for hygiene training
- 3. Past professional activity in this state
- 4. Reasons inactive hygienists are not practicing

EXPLANATION OF SELECTED TERMS USED IN STATISTICAL TABLES

Licensed dental hygienists are divided into three groups according to their location at the time of the survey:

1. Instate hygienists include respondents who were professionally active in the survey state, as well as inactive respondents and all nonrespondents who resided in the survey state. (Excludes survey state residents who were active in another state).

2. Out-of-state hygienists include respondents who were professionally active in one of the other 49 states or the District of Columbia, as well as inactive respondents and all nonrespondents who resided in another state.

3. Hygienists in foreign countries include all other hygienists surveyed

Respondents include hygienists who completed and returned their questionnaire and provided sufficient information to determine their current professional status. Nonrespondents include all other hygienists surveyed.

The current professional status of hygienists was determined according to their reported activity in dental hygiene at the time of the survey:

1. Active hygienists include those who were employed as a dental hygienist in any position which required the special training of a dental hygienist, as well as unemployed hygienists who reported they were seeking employment as a dental hygienist.

2. Inactive hygienists include those who were not professionally active. (Includes hygienists who were employed in any occupation other than dental hygiene).

In the presentation of current employment statistics the term practicing hygienists relates specifically to those who were working in a private dental office. However, in statistical presentations relating to inactive hygienists or to trends in professional activity the terms "practicing" or "in practice" are used in a broader connotation referring to all professionally active hygienists.

Table A-1 -- Survey Response

Location	Licensed hygienists		Respondents	Response rate
	Number	Percent		
Total	226	100	216	96
In North Carolina	159	70	151	95
In other states	64	29	62	97
In foreign countries	3	1	3	--

Table A-2 -- Selected Characteristics of Hygienists Licensed in North Carolina, by Location

Charactistics	Licensed hygienists	In North Carolina	In other states
Total respondents	213	151	62
Current status			
Active	151	116	35
Inactive	62	35	27
Age in 1966			
Under 25	61	43	18
25-29	68	44	24
30-34	48	34	14
35 & over	36	30	6
Dental hygiene school			
University of North Carolina	137	96	41
All other schools	76	55	21
Year hygiene training completed			
1963 - 1966	60	44	16
1959 - 1962	56	33	23
1955 - 1958	48	34	14
Before 1955	46	38	8
Professional activity in North Carolina			
Ever Active in North Carolina	187	145	42
Never Active in North Carolina	25	6	19

NOTE: Figures within a grouping will not add to the total if some hygienists did not report information for that particular item on the questionnaire.

Table B-1 -- Current Professional Status, by Place of Employment

Status and place of employment	Instate hygienists
Total	151
Active	116
Employed	116 1/
Private dental office	101
Dental hygiene school or other auxiliary program	8
Elementary or secondary school (public or private)	2
City or county health agency	-
State health agency	1
Other local government agency	-
Other state government agency	1
Army, navy, air force	-
Other federal agency	1
Private agency	-
Not reported	3
Unemployed (seeking work as dental hygienist)	-
Inactive	35

1/ Figures will add to more than total if hygienists reported more than one type of employer.

Table B-2a -- County Location

County 1/	Licensed instate hygienists	Respondents			
		Total	Active		Inactive
			Total	Employed full time, year round	
Total	159	151	116	36	35
Alamance	9	9	7	1	2
Alexander	2	1	1	1	-
Avery	1	1	1	-	-
Beaufort	1	1	-	-	1
*Boncombe	10	10	5	2	5
Burke	3	3	3	-	-
Cabarrus	1	1	1	-	-
Caldwell	1	1	1	-	-
Carteret	1	1	1	-	-
Catawba	1	1	1	-	-
Craven	5	4	3	3	1
*Cumberland	3	3	2	1	1
Davie	1	1	1	-	-
Duplin	1	1	-	-	1
*Durham	7	7	6	3	1
*Forsyth	6	5	4	1	1
Gaston	3	3	3	-	-
Granville	1	1	1	-	-
*Guilford	15	14	11	3	3
Haywood	1	1	1	1	-
Henderson	2	2	2	2	-
Iredell	3	3	3	1	-
Lenoir	4	4	4	1	-
*Meclenburg	25	24	17	7	7
Moore	1	1	1	-	-
Nash	1	1	1	-	-
Onslow	2	2	2	-	-
*Orange	14	13	11	3	2
Pasquotank	1	1	1	-	-
Pitt	2	2	2	-	-
*Randolph	2	2	2	1	-

(continued)

Table B-2a -- County Location

County 1/	Licensed instate hygienists	Respondents			
		Total	Active		Inactive
			Total	Employed full time, year round	
Richmond	1	-	-	-	-
Rockingham	1	1	1	1	-
Stanley	1	1	1	-	-
Swain	1	1	1	-	-
Translvania	1	1	-	-	1
Tyrrell	1	1	-	-	1
*Union	1	1	-	-	1
*Wake	12	11	7	1	4
Wayne	4	4	3	1	1
Wilkes	2	2	1	1	1
Wilson	3	3	2	-	1
*Yadkin	1	1	1	1	-

* Counties included in the latest 1967 definition of Standard Metropolitan Statistical areas, established by the U.S. Bureau of the Budget, Office of Statistical Standards.

1/ There were apparently no licensed hygienists in 58 of the 100 counties in North Carolina; 2 of the 58 counties are defined as metropolitan counties.

Table B-2b -- Age Distribution in 1966

Age	Instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total, all ages	151	116	36	35
Under 25	43	32	14	11
25 - 29 years	44	40	13	4
30 - 34 years	34	20	2	14
35 - 39 years	12	8	3	4
40 - 44 years	9	8	2	1
45 - 49 years	3	3	-	-
50 - 54 years	2	2	1	-
55 - 59 years	1	1	-	-
60 years & over	3	2	1	1
Not reported	-	-	-	-
Median age	28.7	28.2	26.5	30.9

Table B-2c -- Age Distribution in 1966, By Current Professional Status for North Carolina, and Selected Counties 1/

County and status	Instate hygienists	By age in 1966				
		Under 25	25-29	30-34	35 & over	Not reported
State Total	151	43	44	34	29	-
Active	116	32	40	20	24	-
Employed in private dental office	101	31	34	17	19	-
Other active	15	1	6	3	5	-
Inactive	35	11	4	14	5	-
Alamance	9	3	1	5	-	-
Active	7	3	1	3	-	-
Employed in private dental office	7	3	1	3	-	-
Other active	-	-	-	-	-	-
Inactive	2	-	-	2	-	-
*Buncombe	10	3	2	3	2	-
Active	5	1	1	1	2	-
Employed in private dental office	3	1	-	-	2	-
Other active	2	-	1	1	-	-
Inactive	5	2	1	2	-	-
*Durham	7	-	5	-	2	-
Active	6	-	4	-	2	-
Employed in private dental office	4	-	3	-	1	-
Other active	2	-	1	-	1	-
Inactive	1	-	1	-	-	-
*Guilford	14	1	6	1	5	-
Active	11	1	6	-	4	-
Employed in private dental office	8	1	5	-	2	-
Other active	3	-	1	-	2	-
Inactive	3	-	-	1	1	-

(continued)

Table B-2c -- Age Distribution in 1966, By Current Professional Status for North Carolina and Selected Counties 1/ (Continued)

County and status	Instate hygienists	By age in 1966				
		Under 25	25-29	30-34	35 & over	Not reported
*Mecklenburg	24	4	9	6	5	-
Active	17	3	8	2	4	-
Employed in private dental office	15	3	7	1	4	-
Other active	2	-	1	1	-	-
Inactive	7	1	1	4	1	-
*Orange	13	4	3	4	2	-
Active	11	3	3	3	2	-
Employed in private dental office	8	2	2	3	1	-
Other active	3	1	1	-	1	-
Inactive	2	1	-	1	-	-
*Wake	11	9	1	1	-	-
Active	7	6	1	-	-	-
Employed in private dental office	7	6	1	-	-	-
Other active	-	-	-	-	-	-
Inactive	4	3	-	1	-	-
All other counties	63	19	17	14	13	-
Active	52	15	16	11	10	-
Employed in private dental office	49	15	15	10	9	-
Other active	3	-	1	1	1	-
Inactive	11	4	1	3	3	-

* Counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, established by the U.S. Bureau of the Budget, Office of Statistical Standards.

1/ Individual data are presented for counties with 7 or more responding hygienists.

Table B-3a -- School Attended for Dental Hygiene Training

School	Instate hygienists	Active	Inactive
Total	151	116	35
University of North Carolina	96	75	21
Temple University	11	8	3
West Liberty State College	11	5	6
University of Pennsylvania	8	5	3
Monroe Community College 1/	5	5	-
University of Tennessee	5	4	1
Columbia University	3	3	-
Forsyth School for Dental Hygienists	2	2	-
Northwestern University	1	1	-
Baylor University	1	1	-
Ohio State University	1	1	-
University of Louisville	1	1	-
University of New Mexico	1	1	-
University of Hawaii	1	1	-
State University of New York at Farmingdale 2/	1	1	-
Palm Beach Junior College	1	1	-
Guggenheim School for Dental Hygienists	1	1	-
Erie County Technical Institute 3/	1	-	1

1/ Includes any graduates of Eastman Dental Dispensary and Rochester Dental Dispensary.
2/ Includes any graduates of Long Island Agriculture and Technical Institute.
3/ Includes any graduates of New York State Institute of Applied Arts and Science - Buffalo.

Table B-3b -- Year Dental Hygiene Certificate or Degree Was Received, by Selected Schools

Year	All Schools		University of North Carolina		All other schools	
	Total	Active	Total	Active	Total	Active
Instate hygienists	151	116	96	75	55	41
1966	17	13	16	12	1	1
1965	8	7	8	7	-	-
1964	8	6	7	5	1	1
1963	11	7	8	4	3	3
1962	6	5	5	4	1	1
1961	10	10	9	9	1	1
1960	10	9	8	7	2	2
1959	7	7	7	7	-	-
1958	7	5	5	4	2	1
1957	11	7	9	5	2	2
1956	9	6	7	5	2	1
1955	7	5	6	5	1	-
1950-1954	18	11	-	-	18	11
Before 1950	20	16	-	-	20	16
Not reported	2	2	1	1	1	1

Table B-3c -- County Location, by Selected Schools

County 1/	All Schools		University of North Carolina		All other schools	
	Total	Active	Total	Active	Total	Active
Total	151	116	96	75	55	41
Alamance	9	7	7	6	2	1
Alexander	1	1	1	1	-	-
Avery	1	1	1	1	-	-
Beaufort	1	-	1	-	-	-
*Buncombe	10	5	6	2	4	3
Burke	3	3	2	2	1	1
Cabarrus	1	1	1	1	-	-
Caldwell	1	1	1	1	-	-
Carteret	1	1	1	1	-	-
Catawba	1	1	1	1	-	-
Craven	4	3	4	3	-	-
*Cumberland	3	2	-	-	3	2
Davie	1	1	1	1	-	-
Duplin	1	-	-	-	1	-
*Durham	7	6	4	3	3	3
*Forsyth	5	4	2	2	3	2
Gaston	3	3	1	1	2	2
Grainville	1	1	1	1	-	-
*Guilford	14	11	6	6	8	5
Haywood	1	1	-	-	1	1
Henderson	2	2	1	1	1	1
Iredell	3	3	2	2	1	1
Lenoir	4	4	3	3	1	1
*Mecklenburg	24	17	13	11	11	6
Moore	1	1	-	-	1	1
Nash	1	1	1	1	-	-
Onslow	2	2	1	1	1	1
*Orange	13	11	8	6	5	5
Pasquotank	1	1	1	1	-	-
Pitt	2	2	2	2	-	-
Randolph	2	2	1	1	1	1
Rockingham	1	1	1	1	-	-
Stanly	1	1	1	1	-	-
Swain	1	1	1	1	-	-
Transylvania	1	-	1	-	-	-

(continued)

Table B-3c -- County Location, by Selected Schools
(continued)

County 1/	All schools		University of North Carolina		All other schools	
	Total	Active	Total	Active	Total	Active
Tyrrell	1	-	-	-	1	-
*Union	1	-	1	-	-	-
*Wake	11	7	9	5	2	2
Wayne	4	3	3	2	1	1
Wilkins	2	1	1	-	1	1
Wilson	3	2	3	2	-	-
*Yadkin	1	1	1	1	-	-

* Counties included in the latest 1967 definition of Standard Metropolitan Statistical areas, established by the U.S. Bureau of the Budget, Office of Statistical Standards.

1/ Counties with responding hygienists.

Table B-3d -- Highest Level of College Training Attained

Highest level attained	Instate hygienists	Active	Inactive
Total	151	116	35
Dental hygiene certificate only	101	73	28
Additional college, but no degree	35	30	5
Less than 1 year	3	2	1
1 year but less than 2 years	18	16	2
2 years but less than 3 years	7	5	2
3 years but less than 4 years	4	4	-
4 or more years	-	-	-
Number of years not reported	3	3	-
Bachelor's degree	15	13	2
Master's degree	-	-	-
Doctoral degree	-	-	-
Level of college training not reported	-	-	-
No college training	-	-	-

Table B-3e -- Current Plans for Returning to College

Current plans	Instate hygienists	Active	Inactive
Total	151	116	35
Have seriously considered returning	64	53	11
Now enrolled	11	8	3
Definitely planning to enroll	2	2	-
Still considering enrollment	43	36	7
Definitely decided not to enroll	6	5	1
Current plans not reported	2	2	-
Have never considered returning	80	57	23
Plans to continue education not reported	7	6	1

Table B-3f -- Goal for Advancement If College Education Were Continued

Goal for advancement	Selected instate hygienists 1/	Active	Inactive
Total	56	46	10
Goal reported 2/	50	43	7
Instructor in a school of dental hygiene	24	22	2
Director of a school of dental hygiene	7	6	1
Dentist	-	-	-
Public health dental hygienist 3/	11	10	1
Hygienist in elementary or high school 3/	-	-	-
Other goal in dental hygiene specified	8	6	2
Goal outside dental hygiene specified	10	9	1
Goal not reported	6	3	3

1/ Hygienists who reported they were enrolled, definitely planning to enroll, or still considering enrollment (see Table B-3e).

2/ Items will add to more than total if hygienists reported more than one goal.

3/ Some hygienists who are interested in working in the schools are probably included in the public health category.

Table B-3g -- Obstacles to Returning to College, by Current Plans for Returning

Obstacles	Selected instate hygienists 1/	By current plans for returning to college: Definitely planning to enroll	Still considering enrollment	Definitely decided not to enroll
Total	51	2	43	6
Obstacles reported 2/	49	2	41	6
Lack of course offerings in a nearby school	16	-	12	4
Lack of sufficient funds	10	1	9	-
Family obligations	29	1	26	2
Lack of specific information on opportunities available	4	-	4	-
Age 3/	-	-	-	-
Lack of time 3/	1	-	1	-
Other obstacle specified	11	1	10	-
Obstacles not reported	2	-	2	-

1/ Includes all hygienists who have seriously considered returning to college and who reported their current plans, except those now enrolled (see Table B-3e).
2/ Items will add to more than total if hygienists reported more than one obstacle.
3/ These obstacles were not included on the printed questionnaire, but were written in by the specified number of respondents.

Table B-3h -- Sponsors of Short-term Courses Taken in Dental Hygiene or Related Subjects in Last 12 Months

Sponsors	Instate hygienists	Active	Inactive
Total	151	116	35
Have taken courses 1/	16	15	1
School of dental hygiene	4	4	-
State or local dental hygiene association	8	8	-
Dental school	3	3	-
State or local dental association	8	8	-
Other sponsor	2	2	-
Sponsor not reported	2	1	1
Have not taken courses	128	96	32
If courses taken not reported	7	5	2

1/ Items will add to more than total if hygienists reported taking more than one course.

Table B-3i -- Interest in Taking Refresher Training in Dental Hygiene If Such Training Were Available in a Nearby School

Current status by past activity in this State	Instate hygienists	By interest in taking refresher training		
		Interested	Not interested	Not reported
Active hygienists, by total years active in this State	116	83	28	5
2 years or less	32	25	7	-
3 - 5	26	21	5	-
6 - 10	36	21	13	2
11 years or more	21	15	3	3
Years not reported	1	1	-	-
Inactive hygienists, by last year active in this State	35	17	14	4
1964 or later	14	9	5	-
1961 - 1963	5	2	2	1
1956 - 1960	4	1	2	1
Before 1956	5	3	1	1
Never active	6	2	3	1
Year not reported	1	-	1	-

Table B-4a -- Professional Activity in This State Since Licensure

Year first licensed in this State	Instate hygienists		Ever active hygienists				Currently active hygienists			
	Total hygienists	Aggregate years licensed	Total hygienists	Hygienists reporting years of activity 1/	Aggregate years licensed	Aggregate years ever active	Total hygienists	Hygienists reporting years of activity 1/	Aggregate years licensed	Aggregate years ever active
Total	151	-	145	-	-	-	116	-	-	-
Year reported	150	1112	114	126	1070	774.0	116	100	818	678.5
1966	20	-	17	-	-	-	15	-	-	-
1965	8	8	8	8	8	6.5	7	7	7	6.0
1964	9	18	9	9	18	16.5	7	7	14	12.5
1963	12	36	12	12	36	34.0	8	8	24	24.0
1962	5	20	4	4	16	16.0	4	4	16	16.0
1961	11	55	11	11	55	47.0	11	11	55	47.0
1960	9	54	9	9	54	49.0	8	8	48	47.0
1959	8	56	8	8	56	50.0	8	8	56	50.0
1958	8	64	7	7	56	41.0	5	5	40	33.0
1957	10	90	9	9	81	59.0	6	6	54	52.0
1956	9	90	9	9	90	56.0	7	7	70	51.0
1955	7	77	7	7	77	71.0	6	6	66	66.0
1954	6	72	6	6	72	45.0	4	4	48	27.0
1953	6	78	6	6	78	54.0	4	4	52	44.0
1952	4	56	4	4	56	23.0	3	3	42	21.0
1951	2	30	2	2	30	17.0	1	1	15	15.0
1950	-	-	-	-	-	-	-	-	-	-
Before 1950	16	308	16	15	287	189.0	12	11	211	167.0
Year not reported	1	-	1	-	-	-	-	-	-	-

1/ Hygienists reporting both years licensed and years ever active in State.

Table B-4b -- Past Professional Activity in State by Hygienists Ever Active in the State

Year first licensed in State	Percent of ever active hygienists	Average years in State		Percent of licensed years active
		Licensed	Active	
Total	100	8.5	6.1	72
1963 - 1965	23	2.1	2.0	95
1960 - 1962	19	5.2	4.7	90
1957 - 1959	19	8.0	6.2	78
1954 - 1956	17	10.9	7.8	72
1951 - 1953	10	13.7	7.8	57
1948 - 1950	2	18.0	12.3	68
1945 - 1947	10	19.4	12.7	65

Table B-4c -- Other States in Which Previously Active, By Last Year in Practice in the Other State

State	Instate hygienists	By last year in practice				
		1964 or later	1961-1963	1958-1960	Before 1958	Not reported
Total	151	-	-	-	-	-
Have been active in other States 1/	37	7	8	7	18	3
Arkansas	1	-	1	-	-	-
District of Columbia	1	-	1	-	-	-
Florida	6	-	1	2	2	1
Georgia	1	-	1	-	-	-
Hawaii	1	-	-	1	-	-
Illinois	1	-	1	-	-	-
Kentucky	1	-	-	1	-	-
Massachusetts	1	-	1	-	-	-
New Jersey	1	1	-	-	-	-
New York	7	2	-	-	5	-
Ohio	1	1	-	-	-	-
Pennsylvania	6	-	1	1	4	-
South Carolina	3	1	-	1	-	1
Tennessee	2	-	-	1	1	-
Texas	1	1	-	-	-	-
Utah	1	-	1	-	-	-
Vermont	1	-	-	-	1	-
Virginia	5	1	-	-	3	1
Washington	1	-	-	-	1	-
West Virginia	1	-	-	-	1	-
Have not been active in other States	113	-	-	-	-	-
If active in other States not reported	1	-	-	-	-	-

1/ Figures will add to more than total if hygienists reported practiving in more than one other State.

Table B-5a -- Marital Status

Marital status	Instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total	151	116	36	35
Single	30	27	17	3
Ever married	121	89	19	32
Now married	116	85	17	31
Other status	5	4	2	1
Status not reported	-	-	-	-

Table B-5b -- Presence of Dependent Children

Number of dependent children	Ever married instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total	121	89	19	32
With no children	35	30	11	5
With children	86	59	8	27
1	27	21	5	6
2	32	22	1	10
3	21	14	2	7
4	4	-	-	4
5 or more	2	2	-	-
Number of children not reported	-	-	-	-

Table B-5c -- School Status and Age of Dependent Children

School status and age of children	Ever married instate hygienists	Active	Inactive
Total with children	86	59	27
School status			
None in school	44	31	13
Some in school 1/	42	28	14
In grades 1 - 8	39	25	14
In grades 9 - 12	9	7	2
In college or business school	1	1	-
School status not reported	-	-	-
Age of children			
With children under 15 years 1/	83	56	27
1 year or less	23	10	13
2 - 3 years	35	24	11
4 - 5 years	34	24	10
6 - 7 - 8 years	30	20	10
9 - 10 - 11 years	19	13	6
12 - 13 - 14 years	10	4	6
With children 15 and over only	3	3	-
Age not reported	-	-	-

1/ Figures will add to more than total if hygienists reported children in more than one group.

Table B-6 -- Membership in American Dental Hygienists' Association 1/

Current membership status	Instate hygienists	Active	Inactive
Total	151	116	35
A member	77	69	8
Not a member, but a member at one time	54	37	17
Not a member, past membership not reported	1	-	1
Never a member	19	10	9
Current and past membership not reported	-	-	-

1/ Excludes junior memberships.

Table C-1a -- Hours Worked in a Typical Week In Private Dental Offices

Hours	Practicing hygienists	Aggregate hours reported
Total	101	-
Time reported 1/	95	2,861
Less than 8	4	25
8	2	16
9 - 15	3	43
16	9	144
17 - 23	7	142
24	7	168
25 - 31	7	193
32	9	288
33 - 34	5	170
35	4	140
36 - 39	9	337
40	20	800
41 or more	9	395
Time not reported	6	-

Table C-1b -- Weeks Worked in Private Dental Offices During 12 Months Preceding Survey

Weeks	Practicing hygienists	Aggregate weeks reported
Total	101	-
Time reported 1/	95	3,926
4 or less	1	4
5 - 8	2	14
9 - 12	2	22
13 - 16	9	137
17 - 20	5	95
21 - 24	2	46
25 - 28	1	27
29 - 32	2	60
33 - 36	2	68
37 - 40	3	118
41 - 44	4	173
45 - 47	3	138
48 - 49	6	288
50 - 52	53	2,736
Time not reported	6	-

1/ Hygienists who reported both hours and weeks.

Table C-1c -- Summary of Time Worked in Private Dental Offices

Time worked 1/	Practicing hygienists	Aggregate hours reported	Aggregate weeks reported
Total	101	-	-
Time reported	95	2,861	3,926
Full time	42	1,672	1,785
Year round	28	1,115	1,432
Less than year round	14	557	353
Part time	53	1,189	2,141
Year round	31	757	1,592
Less than year round	22	432	549
Time not reported	6	-	-

1/ Definitions of time worked:

Full time -- 35 hours or more in a typical week
Part time -- less than 35 hours
Year round -- 48 weeks or more in the 12 months preceding the survey
Less than year round -- less than 48 weeks

Table C-2 -- Activities Performed in Private Dental Offices By Time Spent At Each Activity in A Typical Week

Activity	Practicing hygienists	Time spent at activity: Hygienists reporting hours	Time spent at activity: Aggregate hours reported
Total	101	-	-
Activities reported	101	-	-
Oral prophylaxis	101	69	1,588
Other clinical services 1/	95	65	190
Patient dental health education 2/	79	52	146
Management of dental office 3/	44	32	91
Dental assisting tasks 4/	15	12	24
Activities not reported	-	-	-

1/ Radiographs, fluoride applications, etc.
2/ Time devoted exclusively to instruction of individual patients in oral hygiene, diet, etc.
3/ Recalls, pulling charts, answering telephone, receptionist duties, bookkeeping, etc.
4/ Preparing tray set-ups, passing instruments, pouring models, etc.

Table C-3a -- Employing Dentists, By Number of Dental Offices

Number of employing dentists 1/	Practicing hygienists	Number of dental offices in which employed				
		1	2	3	4 or more	Not reported
Total	101	83	13	4	-	1
Dentists reported	97	80	13	4	-	-
1	68	68	-	-	-	-
2	23	10	13	-	-	-
3	3	-	-	3	-	-
4 or more	3	2	-	1	-	-
Number of dentists not reported	4	3	-	-	-	1

1/ Includes only those dentists whose patients the hygienist cared for.

Table C-3b -- Type of Practice of Employing Dentists

Type of practice of employing dentists	Practicing hygienists
Total	101
Worked for general practitioner only	92
Worked for dental specialist 1/	6
Endodontist	-
Oral surgeon	-
Orthodontist	-
Pedodontist	1
Periodontist	5
Prosthodontist	-
Type not reported	3

1/ Figures will add to more than total if hygienists reported working for more than one type of specialist.

Table C-4a -- Type(s) of Compensation Received for Time Worked in Private Dental Office(s)

Type(s) of compensation	Practicing hygienists	By time worked in private dental offices 1/				
		Full time		Part time		Time not reported
		Year round	Less than year round	Year round	Less than year round	
Total	101	28	14	31	22	6
Reporting type(s) of compensation	98	28	14	30	22	4
Salary only	30	3	9	10	8	-
Commission only	44	10	3	20	8	3
Both salary and commission only	19	11	2	-	5	1
Salary only, commission only 2/	1	1	-	-	-	-
Salary only, both salary and commission 2/	1	1	-	-	-	-
Commission only, both salary and commission 2/	2	2	-	-	-	-
Salary only, commission only, both salary and commission 2/	-	-	-	-	-	-
Did not receive compensation 3/	1	-	-	-	1	-
Type of compensation not reported	3	-	-	1	-	2

1/ See Table C-1c for definitions of time worked.
2/ A hygienist working in more than one dental office may report more than one type of compensation.
3/ Generally reported by hygienists who indicated they were working for their dentist—husbands.

Table C-4b -- Gross Earnings From Dental Hygiene Practice During 12 Months Preceding Survey

Gross earnings 1/	Practicing hygienists	By time spent in private dental office 2/				
		Full time		Part time		Not reported
		Year round	Less than year round	Year round	Less than year round	
Total	101	28	14	31	22	6
Earnings reported	78	24	13	19	21	1
Under $1,000	6	-	1	-	5	-
1,000 - 1,999	11	-	1	1	9	-
2,000 - 2,999	8	-	4	1	3	-
3,000 - 3,999	7	1	1	4	1	-
4,000 - 4,999	9	-	3	4	2	-
5,000 - 5,999	6	2	1	3	-	-
6,000 - 6,999	9	6	1	2	-	-
7,000 - 7,999	13	9	-	3	-	1
8,000 - 8,999	4	3	-	1	-	-
9,000 - 9,999	2	1	1	-	-	-
10,000 & over	2	2	-	-	-	-
None 3/	1	-	-	-	1	-
Earnings not reported	23	4	1	12	1	5

1/ If exact figure for gross earnings (before deductions) was not available, respondent was requested to give best estimate to the nearest $500.
2/ See Table C-1c for definitions of time worked.
3/ Generally reported by hygienists who indicated they were working for their dentist-husbands.

Table D-1 -- Reason Why Inactive Hygienists Were Not Professionally Active

Reason	Inactive hygienists
Total	35
Reasons reported 1/	35
Full-time family obligations	26
Employment in another occupation	1
Attending school	3
Beyond age to practice	-
Poor health	-
Loss of skill to practice	-
Unable to find suitable position as hygienist	-
She prefers not to work	7
Husband does not want her to work	8
Another reason specified	4
Reasons not reported	-

1/ Figures will add to more than total if some hygienists reported more than one reason.

Table D-2a -- Degrees of Definiteness About Ever Returning to Practice and About Time of Return

Degree of definiteness about ever returning	Inactive hygienists	By degree of definiteness about time of return			
		Very definite	Fairly definite	Not at all definite	Not reported
Total	35	6	12	13	4
Degree reported	34	6	11	13	4
Very definite	8	5	1	-	2
Fairly definite	12	1	10	1	-
Not at all definite	14	-	-	12	2
Degree not reported	1	-	1	-	-

Table D-2b -- Approximate Length of Time Until Return to Practice, By Degree of Definiteness About Time of Return

Approximate time until return	Selected inactive hygienists 1/	By degree of definiteness about time of return			
		Very definite	Fairly definite	Not at all definite	Not reported
Total	20	6	11	1	2
Time until return reported	20	6	11	1	2
Within the next year	4	2	2	-	-
Within the next 5 years	6	2	4	-	-
Within the next 10 years	3	-	2	1	-
Within the next 15 years	3	1	1	-	1
More than 15 years from now	-	-	-	-	-
Never	4	1	2	-	1
Time not reported	-	-	-	-	-

1/ Includes only those inactive hygienists who reported that their present plans about ever returning to practice were very definite or fairly definite (see Table D-2a).

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Table D-2c -- Time Preferred to Work If Hygienists Returned to Practice, By Approximate Length of Time Until Return

Time preferred to work	Selected inactive hygienists 1/	By length of time until return to practice				
		Within the next				More than 15 years from now
		Year	5 years	10 years	15 years	
Total	14	4	6	2	2	-
Preferred time reported	14	4	6	2	2	-
8 hours a day	5	2	1	1	1	-
5 days a week	1	-	1	-	-	-
Less than 5 days a week	4	2	-	1	1	-
Less than 8 hours a day	9	2	5	1	1	-
5 days a week	4	1	1	1	1	-
Less than 5 days a week	5	1	4	-	-	-
Time preferred not reported	-	-	-	-	-	-

1/ Includes only those inactive hygienists who reported length of time until return, and who were at least fairly definite both about ever returning and the time of return (see Table D-2b).

Table D-2d -- Conditions Under Which Likely to Return to Practice

Conditions	Inactive hygienists
Total	35
Conditions reported 1/	32
When youngest child starts elementary school	14
When youngest child starts high school	5
When youngest child starts college	2
When a position is available in her community	4
When husband needs her in his practice, if he is a dentist	5
After completion of refresher training, if such training were available in a nearby community college or university	2
After completion of additional college training which would qualify her for a more advanced position as a hygienist	5
Because of illness, disability or death of husband 2/	3
Another condition specified	1
Condition not reported	3

1/ Figures will add to more than total if hygienists reported more than one condition.

2/ This condition was not listed on the printed questionnaire, but was written in by the specified number of respondents.

Table D-2e -- Reasons for Returning to Practice

Reasons	Inactive hygienists
Total	35
Reasons reported 1/	33
For self satisfaction	23
To add to the family income for children's education	19
For other financial reasons	6
To keep in practice 2/	-
Another reason specified	2
Reasons not reported	2

1/ Figures will add to more than total if hygienists reported more than one reason.

2/ This reason was not listed on the printed questionnaire, but was written in by the specified number of respondents.

Table D-2f -- Situations Which Might Keep Hygienists From Seeking A Position, If She Would Like to Practice Again

Situations	Inactive hygienists
Total	35
Situations reported 1/	17
Lack of opportunities for hygienist in her community	8
Feels she might be too old to practice again	1
Feels she might have lost her skill to practice	6
Has too great an investment in another occupation	1
Satisfactory working hours not available 2/	-
Unsatisfactory wages 2/	-
Another situation specified	2
No situation was reported	18

1/ Figures will add to more than total if hygienists reported more than one situation.

2/ This situation was not listed on the printed questionnaire, but was written in by the specified number of respondents.

Table D-3 -- Professional Activity During 12 Months Preceding Survey, By Time Worked

Professional activity during 12 months preceding survey 1/	Inactive hygienists	By time worked 2/			
		Full time	Part time	Combination of full time & part time	Not reported
Total	35	-	-	-	-
Employed in					
Private dental office	9	5	4	-	-
Dental hygiene school or other dental auxiliary program	1	-	1	-	-
Not employed	25	-	-	-	-

1/ Includes activity in any state.
2/ Respondents were asked to check boxes labeled "full time" and part time." Therefore, these data are not comparable to "time worked" data presented in other tables.

Table E-1 -- Location and Current Professional Status

State	Out of state hygienists	Respondents				
		Total	Active			Inactive
			Total	In private dental offices	Other active	
Total	64	62	35	29	6	27
Northeast	11	11	4	2	2	7
Connecticut	-	-	-	-	-	-
Maine	-	-	-	-	-	-
Massachusetts	2	2	2	1	1	-
New Hampshire	-	-	-	-	-	-
New Jersey	4	4	-	-	-	4
New York	4	4	2	1	1	2
Pennsylvania	1	1	-	-	-	1
Rhode Island	-	-	-	-	-	-
Vermont	-	-	-	-	-	-
South	46	44	27	23	4	17
Alabama	2	2	-	-	-	2
Arkansas	-	-	-	-	-	-
Delaware	-	-	-	-	-	-
District of Columbia	1	1	1	-	1	-
Florida	9	8	4	4	-	4
Georgia	7	7	4	3	1	3
Kentucky	1	1	1	1	-	-
Louisiana	-	-	-	-	-	-
Maryland	2	2	2	1	1	-
Mississippi	1	-	-	-	-	-
North Carolina 1/	2	2	2	2	-	-
Oklahoma	-	-	-	-	-	-
South Carolina	12	12	9	8	1	3
Tennessee	-	-	-	-	-	-
Texas	3	3	-	-	-	3
Virginia	6	6	4	4	-	2
West Virginia	-	-	-	-	-	-

(continued)

Table E-1 -- Location and Current Professional Status (cont'd.)

State	Out of state hygienists	Respondents				
		Total	Active			Inactive
			Total	In private dental offices	Other active	
North Central	3	3	3	3	-	-
Illinois	-	-	-	-	-	-
Indiana	-	-	-	-	-	-
Iowa	-	-	-	-	-	-
Kansas	-	-	-	-	-	-
Michigan	1	1	1	1	-	-
Minnesota	-	-	-	-	-	-
Missouri	1	1	1	1	-	-
Nebraska	-	-	-	-	-	-
North Dakota	-	-	-	-	-	-
Ohio	1	1	1	1	-	-
South Dakota	-	-	-	-	-	-
Wisconsin	-	-	-	-	-	-
West	4	4	1	1	-	3
Alaska	-	-	-	-	-	-
Arizona	-	-	-	-	-	-
California	2	2	-	-	-	2
Colorado	1	1	1	1	-	-
Hawaii	-	-	-	-	-	-
Idaho	-	-	-	-	-	-
Montana	-	-	-	-	-	-
New Mexico	-	-	-	-	-	-
Nevada	-	-	-	-	-	-
Oregon	-	-	-	-	-	-
Utah	-	-	-	-	-	-
Washington	-	1	-	-	-	1
Wyoming	-	-	-	-	-	-

1/ Two responding hygienists who are residents indicated that they are working in neighboring States.

Table E-2 -- School Attended for Dental Hygiene Training and Year Certificate or Degree Was Received, by Current Professional Status

Year certificate or degree was received	Out-of-state hygienists	Active	Inactive
Total	62	35	27
University of North Carolina	41	23	18
1965	4	4	-
1964	4	2	2
1963	4	3	1
1962	7	4	3
1961	2	1	1
1960	7	3	4
1959	2	-	2
1958	4	3	1
1957	3	2	1
1956	2	1	1
1955	2	-	2
All other schools	21	12	9
1963 - 1966	4	4	-
1959 - 1962	5	2	3
1955 - 1958	3	1	2
Before 1955	8	4	4
Year not reported	1	1	-

Table E-3 -- Year First Licensed in This State, By Past Professional Activity in This State

Year first licensed in this State	Out-of-State hygienists		Past professional activity in this State					
			Ever active hygienists					
	Total hygienists	Aggregate years licensed in this State	Total hygienists	Hygienists reporting years of activity 1/	Aggregate years licensed	Aggregate years ever active	Never active	Activity not reported
Total	62	-	42	-	-	-	19	1
Reporting years	61	390	42	41	298	123.5	19	-
1966	1	-	-	-	-	-	1	-
1965	5	5	2	2	2	2.0	3	-
1964	8	16	3	3	6	5.0	5	-
1963	5	15	4	4	12	4.5	1	-
1962	8	32	6	6	24	11.5	2	-
1961	4	20	2	2	10	3.0	2	-
1960	7	42	6	6	36	20.5	1	-
1959	3	21	2	2	14	3.0	1	-
1958	5	40	3	3	24	4.0	2	-
1957	2	18	2	2	18	8.0	-	-
1956	3	30	3	3	30	12.0	-	-
1955	3	33	2	2	22	6.5	1	-
1950 - 1954	3	41	3	3	41	17.0	-	-
1945 - 1949	4	77	4	3	59	21.5	-	-
Before 1945	-	-	-	-	-	-	-	-
Year not reported	1	-	-	-	-	-	-	1

Table E-4 -- Reasons Why Inactive Hygienists Were Not Professionally Active

Reasons	Inactive out-of-state hygienists
Total	27
Reasons reported 1/	27
Full-time family obligations	19
Employment in another occupation	1
Attending school	-
Beyond age to practice	-
Poor health	-
Loss of skill to practice	1
Unable to find suitable position as hygienist	5
She prefers not to work	2
Husband does not want her to work	2
Not licensed in state where she currently resides	16
Another reason specified	3
Reasons not reported	-

1/ Figures will add to more than total if hygienists reported more than one reason.

.HANDBOOK OF STATISTICS...

DENTAL HYGIENISTS

LICENSED IN NORTH DAKOTA

1966

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....HANDBOOK OF STATISTICS....HANDBOOK OF STATISTICS....HANDBOOK OF STATISTICS....

DENTAL HYGIENISTS LICENSED IN NORTH DAKOTA 1966

A

Cooperative Project of the

North Dakota State Board of Dental Examiners

and the American Association of Dental Examiners

This project
was supported under contract
with
U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service, National Institutes of Health
Division of Dental Health
Manpower Studies Branch

November 1971

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INTRODUCTION

In November 1966, the North Dakota State Board of Dental Examiners conducted a mail survey of all dental hygienists licensed to practice in the State. This survey was conducted concurrently with the hygienists' annual reregistration with the Board.

Statistics presented in this Handbook were tabulated from the information furnished by the dental hygienists who completed and returned their questionnaires. The location of each nonrespondent was obtained from the Board records.

This statistical presentation has been designed to provide most of the basic facts which were collected in the survey. Pertinent cross-tabulations of data have been presented when the number of hygienists in the specific population group was large enough to provide meaningful data.

Since this was a survey of hygienists licensed in North Dakota, the data exclude an unknown number of inactive hygienists who reside in the State but are not licensed to practice there. Also excluded may a few nonlicensed hygienists who are working in the State either for the Federal Government or for some employer in an administrative or other nonclinical position in which licensure is not a prerequisite for employment.

The North Dakota survey is part of a national endeavor: Dental examining boards in virtually all of the States are utilizing the same questionnaire printed under their own letterheads, to survey dental hygienists licensed in their respective States. The American Association of Dental Examiners, under a contract with the Division of Dental Health of the National Institutes of Health, USPHS, is coordinating this national survey program to assist States in developing comparable information about their dental manpower resources. The preparation of this Handbook has been made possible through the cooperation of the American Association of Dental Examiners and the Division of Dental Health, Manpower Studies Branch.

ROM SURVEY QUESTIONNAIRE TO STATISTICAL TABLES

Information gathered by survey questionnaires is compiled into statistical tables which present a profile of the professional activities of dental hygienists licensed in this State. To see the uses made of data gathered by this questionnaire, turn to the tables listed on the right, which have been prepared from replies to questions on the left.....

North Dakota
State Board of Dental Examiners
M. P. WICKS, D.D.S.
Secretary-Treasurer
Valley City, North Dakota 58072

THE STATE BOARD OF DENTAL EXAMINERS HAS UNDERTAKEN A COOPERATIVE PROJECT WITH THE AMERICAN ASSOCIATION OF DENTAL EXAMINERS AND THE PUBLIC HEALTH SERVICE TO DEVEVLOP AN ANALYSIS OF THE DISTRIBUTION AND AVAILABILITY OF DENTAL HEALTH SERVICES IN THE STATE OF THE INFORMATION PROVIDED WILL BE USED FOR STATISTICAL PURPOSES ONLY.

Name: _____ (LAST / FIRST / MIDDLE / MAIDEN (if ever married))

Present Home Address: _____ (STREET / CITY / COUNTY / STATE / ZIP CODE)

License Number: _____ Social Security Number: _____

A-1
B-2a
D-1

A. PERSONAL CHARACTERISTICS

1. Year of birth: _____ 2. Marital status: ☐ Single (1) ☐ Married (2) ☐ Widowed (3) ☐ Divorced (4) ☐ Separated (5)
3. If ever married, number of years in your current marital status: _____
4. Total number of dependent children: _____; Number in school: _____ Grades 1-8 _____ Grades 9-12 _____ College or business school
5. Number of children under 15 years: _____ 1 yr. or under _____ 2-3 yrs. _____ 4-5 yrs. _____ 6-7-8 yrs. _____ 9-10-11 yrs. _____ 12-13-14 yrs.

A-2
B-2b
B-5a, 5b, 5c

B. TRAINING AND EDUCATION

☐ Check here if no formal academic training in dental hygiene and skip to Section C

6. Name of dental hygiene school: _____
7. Type of certificate or degree in dental hygiene received:
   ☐ Bachelor degree (1) ☐ Associate degree (2) ☐ Certificate or diploma (3)
8. What was your Name at the time you completed your training? _____
9. Year granted: _____
10. Number of years of **additional** college training completed, if any: _____
    Degrees earned, if any: ☐ Bachelor degree (1) ☐ Master degree (2) ☐ Other Degree (3) *(specify* _____)

A-2
B-3a, 3b, 3c

C. PROFESSIONAL HISTORY

11. Complete a line for each state in which you have **ever been** licensed to practice:

	Name of State	Year first licensed	Are you licensed today? Yes	Are you licensed today? No	Have you ever practiced in this State? Yes	Have you ever practiced in this State? No	Number of years in practice	Last year in practice	Did you primarily work: Full-time	Did you primarily work: Part-time
A.	This State	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)
B.	_____	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)
C.	_____	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)
D.	_____	19___	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19___	☐ (1)	☐ (2)

12. Total number of years you have been licensed to practice: _____ years
13. Total number of years you have practiced: _____ years
14. Are you now a member of the American Dental Hygienists' Association? ☐ Yes (1) ☐ No (2)
    IF NO, have you ever been a member? ☐ Yes (1) ☐ No (2)

A-2
B-3h
B-4a, 4b,
B-6
D-2

A-2
B-1

D. CURRENT PROFESSIONAL ACTIVITY

15. Current professional status *(check one)*
   1☐ At work as a dental hygienist
   2☐ Employed as a dental hygienist, but temporarily absent from work *(because of vacation, sickness, school recess, etc.)*
   3☐ Seeking work as a dental hygienist
   4☐ Not working or seeking work as a dental hygienist
   If you checked one of these boxes, skip to Section E

16. Are you currently employed in this state? 1☐ Yes 2☐ No If in another state, where? _____
   In what county do you primarily work? _____

17. In a typical week how many hours do you work for your current employers? _____ hours
   (use last week if it was typical, otherwise select the most recent week which was typical)

B-1

18a. Check all places where you currently work:

18b. How many hours do you work in a typical week? *(complete only if 2 or more boxes are checked in Item 18a; hours should equal those in Item 17)*

C-1a,1c

☐ PRIVATE DENTAL OFFICE(S) ..... _____
☐ DENTAL HYGIENE SCHOOL OR OTHER DENTAL AUXILIARY PROGRAM ..... _____
☐ ELEMENTARY OR SECONDARY SCHOOL *(public or private)* ..... _____
☐ CITY OR COUNTY HEALTH AGENCY ..... _____
☐ STATE HEALTH AGENCY ..... _____
☐ OTHER LOCAL GOVERNMENT AGENCY
   specify _____ ..... _____
☐ OTHER STATE GOVERNMENT AGENCY
   specify _____ ..... _____
☐ ARMY, NAVY, AIR FORCE ..... _____
☐ OTHER FEDERAL AGENCY ..... _____
☐ PRIVATE ORGANIZATION
   (voluntary agency, prepaid dental plan, etc.)
   specify organization _____ ..... _____

D-1

19a. Check all types of activity you currently perform:

19b. How many hours do you spend at this activity in a typical week? *(complete only if 2 or more boxes are checked in Item 19a; hours should equal those in Item 17)*

C-2

☐ ORAL PROPHYLAXIS ..... _____
☐ OTHER CLINICAL SERVICE
   (radiographs, fluoride applications, etc.) ..... _____
☐ PATIENT DENTAL HEALTH EDUCATION
   (time devoted exclusively to instruction of individual patients in oral hygiene, diet, etc.) ..... _____
☐ MANAGEMENT OF DENTAL OFFICE OR DENTAL CLINIC
   (recalls, pulling charts, answering telephone, receptionist duties, bookkeeping, etc.) ..... _____
☐ DENTAL ASSISTING
   (preparing tray set-ups, passing instruments, pouring models, etc.) ..... _____
☐ GROUP DENTAL HEALTH EDUCATION
   (classroom instruction of students in elementary schools, talks before civic groups, etc.) ..... _____
☐ INSTRUCTION OF DENTAL HYGIENE STUDENTS OR OTHER DENTAL AUXILIARY STUDENTS ..... _____
☐ ADMINISTRATION
   (Director of school of dental hygiene, coordinator of dental program in a school or local health dept., etc.) ..... _____
☐ DENTAL RESEARCH
   (basic science, clinical, behavioral, etc.) ..... _____
☐ OTHER ACTIVITY
   specify _____ ..... _____

20. If you work in a private dental office and some place else, were the hours spent in these activities all devoted to your private dental practice?
   1☐ Yes
   2☐ No

■ **If you currently work in a private dental office complete Items 21-24; otherwise skip to Section E**

21. Number of different dental offices where you currently work _____ C-3a

22. Number of dentists whose patients you care for in each dental office: C-3b
Office 1_____ Office 2_____ Office 3_____ Office 4_____ Other Offices_____

23. Are all of these dentists general practitioners? 1☐ Yes 2☐ No
IF NO, how many are specialists?_____ Specify type(s)_____

24. Which type of compensation do you receive? *(If type varies among offices check all that apply)* C-4a
1☐ Salary only 2☐ Commission (or percentage) only 3☐ Both salary (or guarantee) and commission

E. PROFESSIONAL ACTIVITY DURING LAST TWELVE MONTHS

☐ Check here if you were not employed as a dental hygienist and skip to Section F

25. How many weeks were you employed during the last 12 months?_____ How many of these weeks were you employed and paid but not at work? *(vacation, sick leave, school recess, etc.)*_____ C-1b

26. How many weeks, if any, were you employed in this State?_____
How many weeks, if any, were you employed in another State(s)? _____ Name the State(s) _____

27a. Check all places where you worked during the last 12 months: 27b. Indicate whether you worked: 27c How many weeks were you employed in the last 12 months? *(complete only if 2 or more boxes are checked in Item 27a.)* C-1c

	Full-time only	Part-time only	Combination of full-time and part-time	
☐ PRIVATE DENTAL OFFICE(S)	1☐	2☐	3☐	_____
☐ DENTAL HYGIENE SCHOOL OR OTHER DENTAL AUXILIARY PROGRAM	1☐	2☐	3☐	_____
☐ ELEMENTARY OR SECONDARY SCHOOL *(public or private)*	1☐	2☐	3☐	_____
☐ CITY OR COUNTY HEALTH AGENCY	1☐	2☐	3☐	_____
☐ STATE HEALTH AGENCY	1☐	2☐	3☐	_____
☐ OTHER LOCAL GOVERNMENT AGENCY *specify*_____	1☐	2☐	3☐	_____
☐ OTHER STATE GOVERNMENT AGENCY *specify*_____	1☐	2☐	3☐	_____
☐ ARMY, NAVY, AIR FORCE	1☐	2☐	3☐	_____
☐ OTHER FEDERAL AGENCY	1☐	2☐	3☐	_____
☐ PRIVATE ORGANIZATION *(voluntary agency, prepaid dental plan, etc.)* *specify*_____	1☐	2☐	3☐	_____

28. What were your gross earnings *(before deductions)* from dental hygiene practice during last 12 months? $_____ C-4
(If exact figure is not available, give best estimate to the nearest $500)

F. CONTINUING EDUCATION

29. Have you taken any short-term courses in dental hygiene or related subjects in the last 12 months? 1☐ Yes 2☐ No B-3g
IF YES, who sponsored the course(s)? *(check all that apply)*
1☐ School of dental hygiene
2☐ State or local dental hygiene association
3☐ Dental school
4☐ State or local dental association

30. Have you seriously considered returning to college to continue your education? 1☐ Yes 2☐ No B-3d, 3f
IF YES, what is your current situation? *(check one)*
1☐ Now enrolled in college
2☐ Definitely planning to enroll
3☐ Still considering enrollment
4☐ Definitely decided not to enroll

31. What would be your goal for advancement if you did continue your education? B-3e
1☐ Instructor in a school of dental hygiene
2☐ Director of a school of dental hygiene
3☐ Dentist
4☐ Public health dental hygienist
5☐ Other goal in dental hygiene *(specify*_____*)*
6☐ Other goal outside dental hygiene *(specify*_____*)*

B-3f

B-3h

32. If you would like to return to college, what is likely to keep you from doing so? *(check all that apply)*

1☐ Lack of course offerings in a nearby school
2☐ Lack of sufficient funds
3☐ Family obligations
4☐ Lack of specific information on opportunities available
5☐ Other reason *(please specify_____)*

33. Would you be interested in taking refresher training in dental hygiene, if such training were available to you in a nearby school?
Yes ☐ 1 No ☐ 2 **IF YES,** in what areas do you feel you need refresher training? *(check all that apply)*

1☐ Theory of dental hygiene practice
2☐ Prophylaxis
3☐ X-ray techniques
4☐ Other clinical skills *(specify_____)*

■ **If you are currently working as a hygienist you have completed the questionnaire after answering item 33**

G. STATUS OF CURRENTLY INACTIVE HYGIENISTS

34. Which of the following best describe why you are not in practice today? *(check all that apply)*

1☐ Full-time family obligations
2☐ Employment in another occupation *(specify_____)*
3☐ Attending school
4☐ Beyond age to practice
5☐ Poor health
6☐ Loss of skill to practice
7☐ Unable to find suitable position as hygienist
8☐ You prefer not to work
9☐ Husband does not want you to work
0☐ Not licensed in state where you currently reside
x☐ Other reason *(specify_____)*

35. Approximately when do you think you will return to practice, according to your present plans for the future? *(check one which most nearly approximates your present plans)*

1☐ Within the next year
2☐ Within the next 5 years
3☐ Within the next 10 years
4☐ Within the next 15 years
5☐ More than 15 years from now
6☐ Never

36. How definite are your present plans
a. About ever returning to practice? 1☐ Very definite 2☐ Fairly definite 3☐ Not at all definite
b. About the time, if ever, when you will return? 1☐ Very definite 2☐ Fairly definite 3☐ Not at all definite

37. If you do return to practice, would you prefer to work: *(check one)*

1☐ 8 hours a day, 5 days a week
2☐ 8 hours a day, less than 5 days a week
3☐ Less than 8 hours a day, 5 days a week
4☐ Less than 8 hours a day, less than 5 days a week

38. What would be your reason for returning to practice? *(check all that might apply)*

1☐ For self satisfaction
2☐ To add to the family income for the education of your children
3☐ For other financial reasons
4☐ Other *(specify_____)*

39. Under what conditions would you be likely to return to practice? *(check all that might apply)*

1☐ When your youngest child starts to elementary school
2☐ When your youngest child starts to high school
3☐ When your youngest child starts to college
4☐ When you obtain a license to practice in the state where you now live
5☐ When a position is available in your community
6☐ When your husband needs you in his practice, if he is a dentist
7☐ After completion of refresher training, if such training were available to you in a nearby community college or university
8☐ After completion of additional college training which would qualify you for a more advanced position as a hygienist
9☐ Other *(specify_____)*

40. If you would like to practice again, what might keep you from seeking a position as a hygienist? *(check all that might apply)*

1☐ Difficulty in securing a license
2☐ Lack of opportunities for hygienists in your community
3☐ You feel you might be too old to practice again
4☐ You feel you might have lost your skill to practice
5☐ You have too great an investment in another occupation
6☐ Other *(specify_____)*

STATISTICAL TABLES

The general topic of each table, or series of tables, is listed below. An * before a topic heading indicates a series of tables.

A. Licensed hygienists
   1. Survey response
   2. Selected characteristics of instate and out-of-state licensees

B. Instate active and inactive hygienists
   1. Current professional status
   *2. Location and age
   *3. Education
      (Dental hygiene and other college training, interest in returning to college and in taking refresher training)
   *4. Professional activity since licensure
   *5. Family characteristics
      (Marital status and dependent children)
   6. Membership in American Dental Hygienists' Association

C. Instate practicing hygienists
   (Hygienists employed in private dental offices)
   *1. Time worked
   2. Activities performed
   *3. Employing dentists
   *4. Compensation
      (Type and amount)

D. Out-of-state hygienists
   1. Location and current status
   2. Past professional activity in this state

EXPLANATION OF SELECTED TERMS USED IN STATISTICAL TABLES

Licensed dental hygienists are divided into three groups according to their location at the time of the survey:

1. Instate hygienists include respondents who were professionally active in the survey state, as well as inactive respondents and all nonrespondents who resided in the survey state. (Excludes survey state residents who were active in another state)

2. Out-of-state hygienists include respondents who were professionally active in one of the other 49 states or the District of Columbia, as well as inactive respondents and all nonrespondents who resided in another state.

3. Hygienists in foreign countries include all other hygienists surveyed

Respondents include hygienists who completed and returned their questionnaire and provided sufficient information to determine their current professional status. Nonrespondents include all other hygienists surveyed.

The current professional status of hygienists was determined according to their reported activity in dental hygiene at the time of the survey:

1. Active hygienists include those who were employed as a dental hygienist in any position which required the special training of a dental hygienist, as well as unemployed hygienists who reported they were seeking employment as a dental hygienist.

2. Inactive hygienists include those who were not professionally active. (Includes hygienists who were employed in any occupation other than dental hygiene)

In the presentation of current employment statistics the term practicing hygienists relates specifically to those who were working in a private dental office. However, in statistical presentations relating to inactive hygienists or to trends in professional activity the terms "practicing" or "in practice" are used in a broader connotation referring to all professionally active hygienists.

Table A-1 -- Survey Response

Location	Licensed hygienists		Respondents	Response rate
	Number	Percent		
Total	31	100	16	52
In North Dakota	19	61	9	47
In other states	10	32	5	50
In foreign countries	2	7	2	-

Table A-2 -- Selected Characteristics of Hygienists Licensed in North Dakota, by Location

Characteristics	Licensed hygienists	In North Dakota	In other states
Total respondents	14	9	5
Current status			
Active	10	7	3
Inactive	4	2	2
Age in 1966			
Under 25	2	2	-
25 - 29	2	1	1
30 - 34	5	3	2
35 & over	5	3	2
Professional activity in North Dakota			
Ever active in North Dakota	11	8	3
Never active in North Dakota	2	-	2

NOTE: Figures within a grouping will not add to the total if some hygienists did not report information for that particular item on the questionnaire.

Table B-1 -- Current Professional Status, by Place of Employment

Status and place of employment	Instate hygienists
Total	9
Active	7
Employed	7
Private dental office	7
Dental hygiene school or other auxiliary program	-
Elementary or secondary school (public or private)	-
City or county health agency	-
State health agency	-
Other local government agency	-
Other state government agency	-
Army, navy, airforce	-
Other federal agency	-
Private agency	-
Unemployed (seeking work as dental hygienist)	-
Inactive	2

Table B-2a -- County Location

County 1/	Licensed instate hygienists	Respondents			
		Total	Active		Inactive
			Total	Employed full time, year round	
Total	19	9	7	2	2
Burliegh	1	-	-	-	-
*Cass	6	3	3	1	-
Grand Forks	2	1	-	-	1
McHenry	1	1	-	-	1
McKenzie	1	-	-	-	-
Stark	2	1	1	1	-
Stutsman	1	1	1	-	-
Walsh	1	-	-	-	-
Ward	3	1	1	-	-
Other locations 2/	1	1	1	-	-

* Counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, established by the U.S. Bureau of the Budget, Office of Statistical Standards.

1/ There were apparently no licensed hygienists in 44 of the 53 counties in North Dakota; none of the 44 counties are defined as metropolitan counties.

2/ One responding hygienist employed in North Dakota but residing in a neighboring State.

Table B-2b -- Age Distribution in 1966

Age	Instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total, all ages	9	7	2	2
Under 25	2	2	1	-
25 - 29 years	1	1	-	-
30 - 34 years	3	3	1	-
35 - 39 years	2	1	-	1
40 years and over	1	-	-	1
Not reported	-	-	-	-

Table B-3a -- School Attended for Dental Hygiene Training

School	Instate hygienists	Active	Inactive
Total	9	7	2
With formal academic training	8	7	1
University of Minnesota	6	5	1
Marquette University	1	1	-
Northwestern University	1	1	-
With no formal academic training	1	-	1

Table B-3b -- Year Dental Hygiene Certificate or Degree Was Received

Year	Instate hygienists	Active	Inactive
Total	9	7	2
With formal academic training	8	7	1
1965	1	1	-
1964	-	-	-
1963	1	1	-
1962	1	1	-
1961	-	-	-
1960	-	-	-
1959	-	-	-
1958	1	1	-
1957	-	-	-
1956	2	2	-
Before 1956	2	1	1
With no formal academic training	1	-	1

Table B-3c -- Highest Level of College Training Attained

Highest level attained	Instate hygienists	Active	Inactive
Total	9	7	2
Dental hygiene certificate only	3	3	-
Additional college, but no degree	4	3	1
Less than 1 year	-	-	-
1 year but less than 2 years	2	1	1
2 years but less than 3 years	2	2	-
3 years but less than 4 years	-	-	-
4 or more years	-	-	-
Number of years not reported	-	-	-
Bachelor's degree	1	1	-
Master's degree	-	-	-
Doctoral degree	-	-	-
Level of college training not reported	-	-	-
No college training	1	-	1

Table B-3d -- Current Plans for Returning to College

Current plans	Instate hygienists	Active	Inactive
Total	9	7	2
Have seriously considered returning	5	5	-
Now enrolled	-	-	-
Definitely planning to enroll	1	1	-
Still considering enrollment	4	4	-
Definitely decided not to enroll	-	-	-
Current plans not reported	-	-	-
Have never considered returning	4	2	2
Plans to continue education not reported	-	-	-

Table B-3e -- Goal for Advancement If College Education Were Continued

Goal for advancement	Selected instate hygienists 1/	Active	Inactive
Total	5	5	-
Goal reported 2/	3	3	-
Instructor in a school of dental hygiene	-	-	-
Director of a school of dental hygiene	1	1	-
Dentist	-	-	-
Public health dental hygienist 3/	1	1	-
Hygienist in elementary or high school 3/	1	1	-
Other goal in dental hygiene specified	-	-	-
Goal outside dental hygiene specified	-	-	-
Goal not reported	2	2	-

1/ Hygienists who reported they were enrolled, definitely planning to enroll, or still considering enrollment (see Table B-3d).

2/ Items will add to more than total if hygienists reported more than one goal.

3/ Some hygienists who are interested in working in the schools are probably included in the public health category.

Table B-3f -- Obstacles to Returning to College, by Current Plans for Returning

Obstacles	Selected instate hygienists 1/	By current plans for returning to college: Definitely planning to enroll	Still considering enrollment	Definitely decided not to enroll
Total	5	1	4	-
Obstacles reported 2/	5	1	4	-
Lack of course offerings in a nearby school	2	1	1	-
Lack of sufficient funds	1	1	-	-
Family obligations	4	1	3	-
Lack of specific information on opportunities available	-	-	-	-
Age 3/	-	-	-	-
Lack of time 3/	-	-	-	-
Other obstacle specified	1	-	1	-
Obstacles not reported	-	-	-	-

1/ Includes all hygienists who have seriously considered returning to college and who reported their current plans, except those now enrolled (see Table B-3d)
2/ Items will add to more than total if hygienists reported more than one obstacle.
3/ These obstacles were not included on the printed questionnaire, but were written in by the specified number of respondents.

Table B-3g -- Sponsors of Short-term Courses Taken in Dental Hygiene or Related Subjects in Last 12 Months

Sponsors	Instate hygienists	Active	Inactive
Total	9	7	2
Have taken courses 1/	1	1	-
School of dental hygiene	1	1	
State or local dental hygiene association	-	-	-
Dental school	-	-	-
State or local dental association	-	-	-
Other sponsor	-	-	-
Sponsor not reported	-	-	-
Have not taken courses	8	6	2
If courses taken not reported	-	-	-

1/ Items will add to more than total if hygienists reported taking more than one course.

Table B-3h -- Interest in Taking Refresher Training in Dental Hygiene If Such Training Were Available in a Nearby School

Current status by past activity in this State	Instate hygienists	By interest in taking refresher training		
		Interested	Not interested	Not reported
Active hygienists, by total years active in this State	7	5	2	-
2 years or less	4	2	2	-
3 - 5	3	3	-	-
6 - 10	-	-	-	-
11 years or more	-	-	-	-
Years not reported	-	-	-	-
Inactive hygienists, by last year active in this State	2	-	-	2
1964 or later	-	-	-	-
1961 - 1963	-	-	-	-
1956 - 1960	-	-	-	-
Before 1956	1	-	-	1
Never active	-	-	-	-
Year not reported	1	-	-	1

Table B-4a -- Professional Activity in This State Since Licensure

Year first licensed in this State	Instate hygienists		Ever active hygienists				Currently active hygienists			
	Total hygienists	Aggregate years licensed	Total hygienists	Hygienists reporting years of activity 1/	Aggregate years licensed	Aggregate years ever active	Total hygienists	Hygienists reporting years of activity 1/	Aggregate years licensed	Aggregate years ever active
Total	9	-	8	-	-	-	7	-	-	-
Year reported	8	52	8	8	52	20.0	7	7	37	18
1966	-	-	-	-	-	-	-	-	-	-
1965	3	3	3	3	3	4.0	3	3	3	3
1964	1	2	1	1	2	2.0	1	1	2	2
1963	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-
1960	1	6	1	1	6	4.0	1	1	6	4
1959	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-	-	-
1956	1	10	1	1	10	5.0	1	1	10	5
1955	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-
1951	1	15	1	1	15	1.0	-	-	-	-
1950	1	16	1	1	16	4.0	1	1	16	4
Before 1950	-	-	-	-	-	-	-	-	-	-
Year not reported	1	-	-	-	-	-	-	-	-	-

1/ Hygienists reported both years licensed and years ever active in State.

Table B-4b -- Other States in Which Previously Active, By Last Year in Practice in the Other State

State	Instate hygienists	By last year in practice				
		1964 or later	1961-1963	1958-1960	Before 1958	Not reported
Total	9	-	-	-	-	-
Have been active in other States 1/	6	1	2	-	2	1
Minnesota	5	1	1	-	2	1
Oklahoma	1	-	1	-	-	-
Have not been active in other States	2	-	-	-	-	-
If active in other States not reported	1	-	-	-	-	-

1/ Figures will add to more than total if hygienists reported practicing in more than one other State.

Table B-5a -- Marital Status

Marital status	Instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total	9	7	2	2
Single	2	1	1	1
Ever married	7	6	1	1
Now married	7	6	1	1
Other status	-	-	-	-
Status not reported	-	-	-	-

Table B-5b -- Presence of Dependent Children

Number of dependent children	Ever married instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total	7	6	1	1
With no children	2	2	1	-
With children	5	4	-	1
1	2	2	-	-
2	1	1	-	-
3	-	-	-	-
4	1	-	-	1
5 or more	1	1	-	-
Number of children not reported	-	-	-	-

Table B-5c -- School Status and Age of Dependent Children

School status and age of children	Ever married instate hygienists	Active	Inactive
Total with children	5	4	1
School status			
None in school	3	3	-
Some in school 1/	1	-	1
In grades 1 - 8	1	-	1
In grades 9 - 12	-	-	-
In college or business school	-	-	-
School status not reported	1	1	-
Age of children			
With children under 15 years 1/	4	3	1
1 year or less	-	-	-
2 - 3 years	4	3	1
4 - 5 years	1	1	-
6 - 7 - 8 years	1	-	1
9 - 10 - 11 years	1	-	1
12 - 13 - 14 years	1	-	1
With children 15 and over only	-	-	-
Age not reported	1	1	-

1/ Figures will add to more than total if hygienists reported children in more than one group.

Table B-6 -- Membership in American Dental Hygienists' Association 1/

Current membership status	Instate hygienists	Active	Inactive
Total	9	7	2
A member	4	3	1
Not a member, but a member at one time	3	3	-
Not a member, past membership not reported	-	-	-
Never a member	2	1	1
Current and past membership not reported	-	-	-

1/ Excludes junior memberships.

Table C-1a -- Hours Worked in a Typical Week In Private Dental Offices

Hours	Practicing hygienists	Aggregate hours reported
Total	7	-
Time reported 1/	6	141
Less than 8	1	5
8	1	8
9 - 15	1	14
16	-	-
17 - 23	-	-
24	-	-
25 - 31	-	-
32	-	-
33 - 34	-	-
35	-	-
36 - 39	2	72
40	1	40
41 or more	-	-
Time not reported	1	-

Table C-1b -- Weeks Worked in Private Dental Offices During 12 Months Preceding Survey

Weeks	Practicing hygienists	Aggregate weeks reported
Total	7	-
Time reported 1/	6	272
4 or less	-	-
5 - 8	-	-
9 - 12	-	-
13 - 16	-	-
17 - 20	-	-
21 - 24	-	-
25 - 28	-	-
29 - 32	-	-
33 - 36	1	34
37 - 40	1	40
41 - 44	1	44
45 - 47	-	-
48 - 49	-	-
50 - 52	3	154
Time not reported	1	-

1/ Hygienists who reported both hours and weeks.

Table C-1c -- Summary of Time Worked in Private Dental Offices

Time worked 1/	Practicing hygienists	Aggregate hours reported	Aggregate weeks reported
Total	7	-	-
Time reported	6	141	272
Full time	3	114	142
Year round	2	78	102
Less than year round	1	36	40
Part time	3	27	130
Year round	1	5	52
Less than year round	2	22	78
Time not reported	1	-	-

1/ Definitions of time worked:

Full time -- 35 hours or more in a typical week
Part time -- less than 35 hours
Year round -- 48 weeks or more in the 12 months preceding the survey
Less than year round -- less than 48 weeks

Table C-2 -- Activities Performed in Private Dental Offices by Time Spent At Each Activity in A Typical Week

Activity	Practicing hygienists	Time spent at activity: Hygienists reporting hours	Time spent at activity: Aggregate hours reported
Total	7	-	-
Activities reported	7	-	-
Oral prophylaxis	7	4	57
Other clinical services 1/	5	2	4
Patient dental health education 2/	5	2	3
Management of dental office 3/	4	1	2
Dental assisting tasks 4/	4	2	5
Activities not reported	-	-	-

1/ Radiographs, fluoride applications, etc.
2/ Time devoted exclusively to instruction of individual patients in oral hygiene, diet, etc.
3/ Recalls, pulling charts, answering telephone, receptionist duties, bookkeeping, etc.
4/ Preparing tray set-ups, passing instruments, pouring models, etc.

Table C-3a -- Employing Dentists, By Number of Dental Offices

Number of employing dentists 1/	Practicing hygienists	Number of dental offices in which employed				
		1	2	3	4 or more	Not reported
Total	7	7	-	-	-	-
Dentists reported	7	7	-	-	-	-
1	6	6	-	-	-	-
2	1	1	-	-	-	-
3	-	-	-	-	-	-
4 or more	-	-	-	-	-	-
Number of dentists not reported	-	-	-	-	-	-

1/ Includes only those dentists whose patients the hygienist cared for.

Table C-3b -- Type of Practice of Employing Dentists

Type of practice of employing dentists	Practicing hygienists
Total	7
Worked for general practitioner only	7
Worked for dental specialist	-
Type not reported	-

Table C-4b -- Gross Earnings From Dental Hygiene Practice During 12 Months Preceding Survey

Gross earnings 1/	Practicing hygienists	By time spent in private dental office 2/				
		Full time		Part time		Not reported
		Year round	Less than year round	Year round	Less than year round	
Total	7	2	1	1	2	1
Earnings reported	7	2	1	1	2	1
Under $1,000	-	-	-	-	-	-
1,000 - 1,999	-	-	-	-	-	-
2,000 - 2,999	2	-	-	1	1	-
3,000 - 3,999	1	-	-	-	-	1
4,000 - 4,999	2	2	-	-	-	-
5,000 - 5,999	1	-	1	-	-	-
6,000 - 6,999	-	-	-	-	-	-
7,000 - 7,999	-	-	-	-	-	-
8,000 - 8,999	-	-	-	-	-	-
9,000 - 9,999	-	-	-	-	-	-
10,000 & over	-	-	-	-	-	-
None 3/	1	-	-	-	1	-
Earnings not reported	-	-	-	-	-	-

1/ If exact figure for gross earnings (before deductions) was not available, respondent was requested to give best estimate to the nearest $500.
2/ See Table C-1c for definitions of time worked.
3/ Generally reported by hygienists who indicated they were working for their dentist-husbands.

Table C-4a -- Type(s) of Compensation Received for Time Worked in Private Dental Office(s)

Type(s) of compensation	Practicing hygienists	By time worked in private dental offices 1/				
		Full time		Part time		Time not reported
		Year round	Less than year round	Year round	Less than year round	
Total	7	2	1	1	2	1
Reporting type(s) of compensation	7	2	1	1	2	1
Salary only	3	1	1	-	1	-
Commission only	2	-	-	1	-	1
Both salary and commission only	1	1	-	-	-	-
Did not receive compensation 2/	1	-	-	-	1	-
Type of compensation not reported	-	-	-	-	-	-

1/ See Table C-1c for definitions of time worked.
2/ Generally reported by hygienists who indicated they were working for their dentist-husbands.

Table B-1 -- Location and Current Professional Status

State	Out of state hygienists	Respondents				
		Total	Active			Inactive
			Total	In private dental office	Other active	
Total	10	5	3	2	1	2
California	4	3	2	1	1	1
Illinois	1	-	-	-	-	1
Indiana	1	-	-	-	-	-
Michigan	1	1	-	-	-	1
Minnesota	2	-	-	-	-	-
Oklahoma	1	1	1	1	-	-

Table D-2 -- Year First Licensed in This State, By Past Professional Activity in This State

Year first licensed in this State	Out-of-State hygienists		Past professional activity in this State					
			Ever active hygienists					
	Total hygienists	Aggregate years licensed in this State	Total hygienists	Hygienists reporting years of activity 1/	Aggregate years licensed	Aggregate years ever active	Never active	Activity not reported
Total	5	-	3	-	-	-	2	-
Year reported	4	55	2	2	22	2	2	-
1957 2/	1	9	-	-	-	-	1	-
1956	1	10	1	1	10	1	-	-
1955	-	-	-	-	-	-	-	-
1950 - 1954	1	12	1	1	12	1	-	-
1945 - 1949	-	-	-	-	-	-	-	-
1940 - 1944	1	24	-	-	-	-	1	-
Before 1940	-	-	-	-	-	-	-	-
Year not reported	1	-	1	-	-	-	-	-

1/ Hygienists reporting both years licensed and years ever active in this State.

2/ None of the responding out-of-State hygienists reported that they were first licensed in North Dakota after 1957.

..HANDBOOK OF STATISTICS...

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DEC 7 1971

DENTAL HYGIENISTS

LICENSED IN DISTRICT OF COLUMBIA

1967

4945

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DENTAL HYGIENISTS

LICENSED IN

DISTRICT OF COLUMBIA

1967

A

Cooperative Project of the

District of Columbia Board of Dental Examiners

and the American Association of Dental Examiners

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Division of Dental Health
Manpower Studies Branch

September 1971

4946

INTRODUCTION

In January, 1967, the District of Columbia Board of Dental Examiners conducted a mail survey of all dental hygienists licensed to practice in the District. This survey was conducted concurrently with the hygienists annual reregistration with the Board.

Statistics presented in this Handbook were tabulated from the information furnished by the dental hygienists who completed and returned their questionnaires. The location of each nonrespondent was obtained from the Board records.

This statistical presentation has been designed to provide most of the basic facts which were collected in the survey. Pertinent cross-tabulations of data have been presented when the number of hygienists in the specific population group was large enough to provide meaningful data.

Since this was a survey of hygienists licensed in the District of Columbia, the data exclude an unknown number of inactive hygienists who reside in the District but are not licensed to practice there. Also excluded may be a few nonlicensed hygienists who are working in the District either for the Federal Government or for some employer in an administrative or other nonclinical position in which licensure is not a prerequisite for employment.

The District of Columbia survey is part of a national endeavor: Dental examining boards in virtually all of the States are utilizing the same questionnaire printed under their own letterheads, to survey dental hygienists licensed in their respective States. The American Association of Dental Examiners, under a contract with the Division of Dental Health of the National Institutes of Health, USPHS, is coordinating this national survey program to assist States in developing comparable information about their dental manpower resources. The preparation of this Handbook has been made possible through the cooperation of the American Association of Dental Examiners and the Division of Dental Health, Manpower Studies Branch.

FROM SURVEY QUESTIONNAIRE TO STATISTICAL TABLES

Information gathered by survey questionnaires is compiled into statistical tables which present a profile of the professional activities of dental hygienists licensed in this State. To see the uses made of data gathered by this questionnaire, turn to the tables listed on the right, which have been prepared from replies to questions on the left.....

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF OCCUPATIONS AND PROFESSIONS
1145 19TH STREET, N. W.
WASHINGTON, D. C. 20036
BOARD OF DENTAL EXAMINERS

THE _____ STATE BOARD OF DENTAL EXAMINERS HAS UNDERTAKEN A COOPERATIVE PROJECT WITH THE AMERICAN ASSOCIATION OF DENTAL EXAMINERS AND THE PUBLIC HEALTH SERVICE TO DEVEVLOP AN ANALYSIS OF THE DISTRIBUTION AND AVAILABILITY OF DENTAL HEALTH SERVICES IN THE STATE OF _____ THE INFORMATION PROVIDED WILL BE USED FOR STATISTICAL PURPOSES ONLY.

Name: _____
LAST FIRST MIDDLE MAIDEN (if ever married)

Present Home Address: _____
STREET CITY COUNTY STATE ZIP CODE

License Number: _____ Social Security Number: _____

A 1
B 2b
E 1

A. PERSONAL CHARACTERISTICS

1. Year of birth: _____ 2. Marital status: ☐ Single (1) ☐ Married (2) ☐ Widowed (3) ☐ Divorced (4) ☐ Separated (5)
3. If ever married, number of years in your current marital status: _____
4. Total number of dependent children: _____; Number in school: _____ Grades 1-8 _____ Grades 9-12 _____ College or business school
5. Number of children under 15 years: _____ 1 yr. or under _____ 2-3 yrs. _____ 4-5 yrs. _____ 6-7-8 yrs. _____ 9-10-11 yrs. _____ 12-13-14 yrs.

A-2
B-2a, 2b
B-5a, 5b, 5c

B. TRAINING AND EDUCATION

☐ Check here if no formal academic training in dental hygiene and skip to Section C

6. Name of dental hygiene school: _____
7. Type of certificate or degree in dental hygiene received:
   ☐ Bachelor degree (1) ☐ Associate degree (2) ☐ Certificate or diploma (3)
8. What was your Name at the time you completed your training? _____
9. Year granted: _____
10. Number of years of **additional** college training completed, if any: _____
    Degrees earned, if any: ☐ Bachelor degree (1) ☐ Master degree (2) ☐ Other Degree (3) (specify _____)

A-2
B-3a, 3b, 3c
E-2

C. PROFESSIONAL HISTORY

11. Complete a line for each state in which you have **ever been** licensed to practice:

	Name of State	Year first licensed	Are you licensed today? Yes	Are you licensed today? No	Have you ever practiced in this State? Yes	Have you ever practiced in this State? No	Number of years in practice	Last year in practice	Did you primarily work Full-time	Did you primarily work Part-time
A.	This State	19____	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19____	☐ (1)	☐ (2)
B.	_____	19____	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19____	☐ (1)	☐ (2)
C.	_____	19____	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19____	☐ (1)	☐ (2)
D.	_____	19____	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19____	☐ (1)	☐ (2)

12. Total number of years you have been licensed to practice: _____ years
13. Total number of years you have practiced: _____ years
14. Are you now a member of the American Dental Hygienists' Association? ☐ Yes (1) ☐ No (2)
    IF NO, have you ever been a member? ☐ Yes (1) ☐ No (2)

A-2
B-3h
B-4a, 4b,
B-6
E-3

D. CURRENT PROFESSIONAL ACTIVITY

A-2

B-1

15. Current professional status *(check one)*
    1☐ At work as a dental hygienist
    2☐ Employed as a dental hygienist, but temporarily absent from work *(because of vacation, sickness, school recess, etc.)*
    3☐ Seeking work as a dental hygienist
    4☐ Not working or seeking work as a dental hygienist
    If you checked one of these boxes, skip to Section E

16. Are you currently employed in this state? 1☐ Yes 2☐ No If in another state, where? _____
    In what county do you primarily work? _____

17. In a typical week how many hours do you work for your current employers? _____ hours
    (use last week if it was typical, otherwise select the most recent week which was typical)

B-1

B-2b

C-1a,1c

E-1

18a. Check all places where you currently work:

18b. How many hours do you work in a typical week? *(complete only if 2 or more boxes are checked in Item 18a; hours should equal those in Item 17)*

- ☐ PRIVATE DENTAL OFFICE(S) ..... _____
- ☐ DENTAL HYGIENE SCHOOL OR OTHER DENTAL AUXILIARY PROGRAM ..... _____
- ☐ ELEMENTARY OR SECONDARY SCHOOL *(public or private)* ..... _____
- ☐ CITY OR COUNTY HEALTH AGENCY ..... _____
- ☐ STATE HEALTH AGENCY ..... _____
- ☐ OTHER LOCAL GOVERNMENT AGENCY *specify* _____ ..... _____
- ☐ OTHER STATE GOVERNMENT AGENCY *specify* _____ ..... _____
- ☐ ARMY, NAVY, AIR FORCE ..... _____
- ☐ OTHER FEDERAL AGENCY ..... _____
- ☐ PRIVATE ORGANIZATION *(voluntary agency, prepaid dental plan, etc.)* *specify organization* _____ ..... _____

C-2

19a. Check all types of activity you currently perform:

19b. How many hours do you spend at this activity in a typical week? *(complete only if 2 or more boxes are checked in Item 19a; hours should equal those in Item 17)*

- ☐ ORAL PROPHYLAXIS ..... _____
- ☐ OTHER CLINICAL SERVICE *(radiographs, fluoride applications, etc.)* ..... _____
- ☐ PATIENT DENTAL HEALTH EDUCATION *(time devoted exclusively to instruction of individual patients in oral hygiene, diet, etc.)* ..... _____
- ☐ MANAGEMENT OF DENTAL OFFICE OR DENTAL CLINIC *(recalls, pulling charts, answering telephone, receptionist duties, bookkeeping, etc.)* ..... _____
- ☐ DENTAL ASSISTING *(preparing tray set-ups, passing instruments, pouring models, etc.)* ..... _____
- ☐ GROUP DENTAL HEALTH EDUCATION *(classroom instruction of students in elementary schools, talks before civic groups, etc.)* ..... _____
- ☐ INSTRUCTION OF DENTAL HYGIENE STUDENTS OR OTHER DENTAL AUXILIARY STUDENTS ..... _____
- ☐ ADMINISTRATION *(Director of school of dental hygiene, coordinator of dental program in a school or local health dept., etc.)* ..... _____
- ☐ DENTAL RESEARCH *(basic science, clinical, behavioral, etc.)* ..... _____
- ☐ OTHER ACTIVITY *specify* _____ ..... _____

20. If you work in a private dental office and some place else, were the hours spent in these activities all devoted to your private dental practice?
    1☐ Yes
    2☐ No

■ **If you currently work in a private dental office complete Items 21-24; otherwise skip to Section E**

21. Number of different dental offices where you currently work _____

22. Number of dentists whose patients you care for in each dental office:
Office 1 _____ Office 2 _____ Office 3 _____ Office 4 _____ Other Offices _____

23. Are all of these dentists general practitioners? 1☐ Yes 2☐ No
IF NO, how many are specialists? _____ Specify type(s) _____

24. Which type of compensation do you receive? *(If type varies among offices check all that apply)*
1☐ Salary only 2☐ Commission (or percentage) only 3☐ Both salary (or guarantee) and commission

E. PROFESSIONAL ACTIVITY DURING LAST TWELVE MONTHS

☐ Check here if you were not employed as a dental hygienist and skip to Section F

25. How many weeks were you employed during the last 12 months? _____ How many of these weeks were you employed and paid but not at work? *(vacation, sick leave, school recess, etc.)* _____

26. How many weeks, if any, were you employed in this State? _____
How many weeks, if any, were you employed in another State(s)? _____ Name the State(s) _____

27a. Check all places where you worked during the last 12 months:

	27b. Indicate whether you worked: Full-time only	Part-time only	Combination of full-time and part-time	27c How many weeks were you employed in the last 12 months? *(complete only if 2 or more boxes are checked in Item 27a.)*
☐ PRIVATE DENTAL OFFICE(S)	1☐	2☐	3☐	_____
☐ DENTAL HYGIENE SCHOOL OR OTHER DENTAL AUXILIARY PROGRAM	1☐	2☐	3☐	_____
☐ ELEMENTARY OR SECONDARY SCHOOL *(public or private)*	1☐	2☐	3☐	_____
☐ CITY OR COUNTY HEALTH AGENCY	1☐	2☐	3☐	_____
☐ STATE HEALTH AGENCY	1☐	2☐	3☐	_____
☐ OTHER LOCAL GOVERNMENT AGENCY *specify* _____	1☐	2☐	3☐	_____
☐ OTHER STATE GOVERNMENT AGENCY *specify* _____	1☐	2☐	3☐	_____
☐ ARMY, NAVY, AIR FORCE	1☐	2☐	3☐	_____
☐ OTHER FEDERAL AGENCY	1☐	2☐	3☐	_____
☐ PRIVATE ORGANIZATION *(voluntary agency, prepaid dental plan, etc.)* *specify* _____	1☐	2☐	3☐	_____

28. What were your gross earnings *(before deductions)* from dental hygiene practice during last 12 months? $ _____
(If exact figure is not available, give best estimate to the nearest $500)

F. CONTINUING EDUCATION

29. Have you taken any short-term courses in dental hygiene or related subjects in the last 12 months? 1☐ Yes 2☐ No
IF YES, who sponsored the course(s)? *(check all that apply)*
1☐ School of dental hygiene
2☐ State or local dental hygiene association
3☐ Dental school
4☐ State or local dental association

30. Have you seriously considered returning to college to continue your education? 1☐ Yes 2☐ No
IF YES, what is your current situation? *(check one)*
1☐ Now enrolled in college
2☐ Definitely planning to enroll
3☐ Still considering enrollment
4☐ Definitely decided not to enroll

31. What would be your goal for advancement if you did continue your education?
1☐ Instructor in a school of dental hygiene
2☐ Director of a school of dental hygiene
3☐ Dentist
4☐ Public health dental hygienist
5☐ Other goal in dental hygiene *(specify* _____*)*
6☐ Other goal outside dental hygiene *(specify* _____*)*

C-3a
C-3b
C-4a
C-1b
C-1c
D-3
C-4
B-3g
B-3d, 3f
B-3e

4950

32. If you would like to return to college, what is likely to keep you from doing so? *(check all that apply)*

1☐ Lack of course offerings in a nearby school
2☐ Lack of sufficient funds
3☐ Family obligations
4☐ Lack of specific information on opportunities available
5☐ Other reason *(please specify_____)*

B-3f

33. Would you be interested in taking refresher training in dental hygiene, if such training were available to you in a nearby school?
Yes ☐ 1 No ☐ 2 **IF YES,** in what areas do you feel you need refresher training? *(check all that apply)*

1☐ Theory of dental hygiene practice
2☐ Prophylaxis
3☐ X-ray techniques
4☐ Other clinical skills *(specify_____)*

B-3h

■ **If you are currently working as a hygienist you have completed the questionnaire after answering Item 33**

G. STATUS OF CURRENTLY INACTIVE HYGIENISTS

34. Which of the following best describe why you are not in practice today? *(check all that apply)*

1☐ Full-time family obligations
2☐ Employment in another occupation *(specify_____)*
3☐ Attending school
4☐ Beyond age to practice
5☐ Poor health
6☐ Loss of skill to practice
7☐ Unable to find suitable position as hygienist
8☐ You prefer not to work
9☐ Husband does not want you to work
0☐ Not licensed in state where you currently reside
x☐ Other reason *(specify_____)*

D-1

E-4

35. Approximately when do you think you will return to practice, according to your present plans for the future? *(check one which most nearly approximates your present plans)*

1☐ Within the next year
2☐ Within the next 5 years
3☐ Within the next 10 years
4☐ Within the next 15 years
5☐ More than 15 years from now
6☐ Never

D-2b, 2c

36. How definite are your present plans
a. About ever returning to practice? 1☐ Very definite 2☐ Fairly definite 3☐ Not at all definite
b. About the time, if ever, when you will return? 1☐ Very definite 2☐ Fairly definite 3☐ Not at all definite

D-2a, 2b

37. If you do return to practice, would you prefer to work: *(check one)*

1☐ 8 hours a day, 5 days a week
2☐ 8 hours a day, less than 5 days a week
3☐ Less than 8 hours a day, 5 days a week
4☐ Less than 8 hours a day, less than 5 days a week

D-2c

38. What would be your reason for returning to practice? *(check all that might apply)*

1☐ For self satisfaction
2☐ To add to the family income for the education of your children
3☐ For other financial reasons
4☐ Other *(specify_____)*

D-2e

39. Under what conditions would you be likely to return to practice? *(check all that might apply)*

1☐ When your youngest child starts to elementary school
2☐ When your youngest child starts to high school
3☐ When your youngest child starts to college
4☐ When you obtain a license to practice in the state where you now live
5☐ When a position is available in your community
6☐ When your husband needs you in his practice, if he is a dentist
7☐ After completion of refresher training, if such training were available to you in a nearby community college or university
8☐ After completion of additional college training which would qualify you for a more advanced position as a hygienist
9☐ Other *(specify_____)*

D-2d

40. If you would like to practice again, what might keep you from seeking a position as a hygienist? *(check all that might apply)*

1☐ Difficulty in securing a license
2☐ Lack of opportunities for hygienists in your community
3☐ You feel you might be too old to practice again
4☐ You feel you might have lost your skill to practice
5☐ You have too great an investment in another occupation
6☐ Other *(specify_____)*

D-2f

STATISTICAL TABLES

The general topic of each table, or series of tables, is listed below. An * before a topic heading indicates a series of tables.

A Licensed hygienists
- 1. Survey response
- 2. Selected characteristics of instate and out-of-state licensees

B Instate active and inactive hygienists
- 1. Current professional status
- *2. Age
- *3 Education
  (Dental hygiene and other college training, interest in returning to college and in taking refresher training)
- *4. Professional activity since licensure
- *5. Family characteristics
  (Marital status and dependent children)
- 6. Membership in American Dental Hygienists' Association

C. Instate practicing hygienists
(Hygienists employed in private dental offices)
- *1. Time worked
- 2. Activities performed
- *3 Employing dentists
- *4 Compensation
  (Type and amount)

D. Instate inactive hygienists
- 1. Reasons for not practicing
- *2. Future professional plans
- 3. Professional activity in last year

E Out-of-state hygienists
- 1. Location and current status
- 2. School attended for hygiene training
- 3. Past professional activity in this state
- 4. Reasons inactive hygienists are not practicing

EXPLANATION OF SELECTED TERMS USED IN STATISTICAL TABLES

Licensed dental hygienists are divided into three groups according to their location at the time of the survey:

1 Instate hygienists include respondents who were professionally active in the survey state, as well as inactive respondents and all nonrespondents who resided in the survey state (Excludes survey state residents who were active in another state)

2 Out of state hygienists include respondents who were professionally active in one of the other 49 states or the District of Columbia, as well as inactive respondents and all nonrespondents who resided in another state.

3 Hygienists in foreign countries include all other hygienists surveyed

Respondents include hygienists who completed and returned their questionnaire and provided sufficient information to determine their current professional status. Nonrespondents include all other hygienists surveyed.

The current professional status of hygienists was determined according to their reported activity in dental hygiene at the time of the survey:

1. Active hygienists include those who were employed as a dental hygienist in any position which required the special training of a dental hygienist, as well as unemployed hygienists who reported they were seeking employment as a dental hygienist

2. Inactive hygienists include those who were not professionally active (Includes hygienists who were employed in any occupation other than dental hygiene)

In the presentation of current employment statistics the term practicing hygienists relates specifically to those who were working in a private dental office. However, in statistical presentations relating to inactive hygienists or to trends in professional activity the terms "practicing" or "in practice" are used in a broader connotation referring to all professionally active hygienists.

Table A-1 -- Survey Response

Location	Licensed hygienists		Respondents	Response rate
	Number	Percent		
Total	427	100	344	81
In District of Columbia	168	39	134	80
In other states	252	59	204	81
In foreign countries	7	2	6	-

Table A-2 -- Selected Characteristics of Hygienists Licensed in the District of Columbia, by Location

Characteristics	Licensed hygienists	In District of Columbia	In other states
Total respondents	338	134	204
Current status			
Active	221	113	108
Inactive	117	21	96
Age in 1966			
Under 25	107	37	70
25 - 29	40	16	24
30 - 34	45	14	31
35 & over	139	65	74
Dental hygiene school			
Howard University	98	52	46
Georgetown University	23	13	10
All other schools	214	68	146
Year hygiene training completed			
1957 - 1966	167	62	105
1947 - 1956	81	25	56
1937 - 1946	40	19	21
Before 1937	40	24	16
Professional activity in District of Columbia			
Ever Active in District of Columbia	263	131	132
Never Active in District of Columbia	72	-	72

NOTE: Figures within a grouping will not add to the total if some hygienists did not report information for that particular item on the questionnaire.

Table B-1 -- Current Professional Status, by Place by Employment

Status and place of employment	Instate hygienists
Total	134
Active	113 1/
Employed	113 2/
Private dental office	78
Dental hygiene school or other auxiliary program	5
Elementary or secondary school (public or private)	6
Local health agency	14
Other local government agency	2
Army, navy, air force	4
Other federal agency	3
Private agency	7
Not reported	5
Unemployed (seeking work as dental hygienist)	-
Inactive	21

1/ Includes 57 responding hygienists employed in the District of Columbia but residing in neighboring States.

2/ Figures will add to more than total if hygienists reported more than one type of employer.

Table B-2a -- Age Distribution in 1966

Age	Instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total, all ages	134	113	45	21
Under 25 years	37	35	14	2
25 - 29 years	16	15	5	1
30 - 34 years	14	12	6	2
35 - 39 years	14	11	5	3
40 - 44 years	11	8	2	3
45 - 49 years	8	5	2	3
50 - 54 years	16	12	6	4
55 - 59 years	9	8	4	1
60 years & over	7	6	1	1
Not reported	2	1	-	1
Median age	34.6	32.5	32.9	*

* Number of hygienists too small to compute median.

Table B-2b -- Age Distribution in 1966, By

Current Professional Status

Current Professional Status	Instate hygienists	By age in 1966				
		Under 25	25-29	30-34	35 & over	Not reported
Total	134	37	16	14	65	2
Active	113	35	15	12	50	1
Employed in private dental office	79	30	9	5	35	-
Other active	34	5	6	7	15	1
Inactive	21	2	1	2	15	1

Table B-3a -- School Attended for Dental Hygiene Training

School	Instate hygienists	Active	Inactive
Total	134	113	21
With formal academic training	133	113	20
Howard University	52	45	7
Georgetown University	13	9	4
Temple University	18	15	3
University of Pennsylvania	16	14	2
Columbia University	6	4	2
Monroe Community College 1/	5	4	1
Forsyth School for Dental Hygienists	3	3	-
West Liberty State College	2	1	1
Fairleigh Dickenson University	2	2	-
University of Bridgeport 2/	2	2	-
University of Michigan	1	1	-
University of Minnesota	1	1	-
University of Rhode Island	1	1	-
University of Vermont	1	1	-
University of North Carolina	1	1	-
Indiana University	1	1	-
Northwestern University	1	1	-
West Virginia University	1	1	-
Meharry Medical College	1	1	-
Guggenheim School for Dental Hygienists	1	1	-
Onandoga Community College	1	1	-
Robin Adair School of Oral Hygiene 3/	1	1	-
Erie County Technical Institute 4/	1	1	-
School not reported	1	1	-
With no formal academic training	1	-	1

1/ Includes any graduates of Eastman Dental Dispensary and Rochester Dental Dispensary.
2/ Includes any graduates of Fones School of Dental Hygiene.
3/ Includes any graudates of Atlanta School of Oral Hygiene.
4/ Includes any graduates of New York State Institute of Applied Arts and Sciences -- Buffalo.

Table B-3b -- Year Dental Hygiene Certificate or Degree was Received, By Selected Schools

Year	All Schools		Howard University		Georgetown University		Temple University		University of Pennsylvania		All Other Schools	
	Total	Active	Total	Active	Total	Active	Total	Active	Total	Active	Total	Active
Instate hygienists	133 1/	113	52	45	13	9	18	15	16	14	34	30
1966	9	9	7	7	-	-	-	-	1	1	1	1
1965	13	13	5	5	-	-	3	3	3	3	2	2
1964	14	12	4	3	-	-	3	2	2	2	5	5
1963	6	5	4	3	-	-	-	-	-	-	2	2
1962	6	6	2	2	-	-	1	1	-	-	3	3
1961	4	3	3	3	-	-	1	-	-	-	-	-
1960	3	3	-	-	-	-	2	2	-	-	1	1
1959	6	5	4	4	-	-	-	-	2	1	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-
1957	1	1	-	-	-	-	-	-	-	-	1	1
1956	4	3	2	1	-	-	-	-	-	-	2	2
1955	3	3	2	2	-	-	-	-	-	-	1	1
1954	2	2	1	1	-	-	-	-	-	-	1	1
1953	4	3	2	2	-	-	-	-	-	-	2	1
1952	-	-	-	-	-	-	-	-	-	-	-	-
1951	7	6	1	1	-	-	1	1	5	4	-	-
1950	3	2	2	1	-	-	-	-	-	-	1	1
1949	-	-	-	-	-	-	-	-	-	-	-	-
1948	1	-	1	-	-	-	-	-	-	-	-	-
1947	1	1	-	-	-	-	1	1	-	-	-	-
1946	4	3	2	2	-	-	1	1	-	-	1	-
1945	-	-	-	-	-	-	-	-	-	-	-	-
1944	1	-	-	-	-	-	-	-	-	-	1	-
1943	2	2	1	1	-	-	1	1	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-

(Continued)

Table B-3b -- Year Dental Hygiene Certificate or Degree was Received, By Selected Schools (Continued)

Year	All Schools		Howard University		Georgetown University		Temple University		University of Pennsylvania		All Other Schools	
	Total	Active	Total	Active	Total	Active	Total	Active	Total	Active	Total	Active
1941	2	2	1	1	-	-	-	-	-	-	1	1
1940	4	3	3	3	-	-	1	-	-	-	-	-
1939	2	2	-	-	-	-	1	1	-	-	1	1
1938	1	1	-	-	-	-	1	1	-	-	-	-
1937	3	3	2	2	1	1	-	-	-	-	-	-
1936	2	1	-	-	2	1	-	-	-	-	-	-
1935	4	2	2	1	2	2	-	-	-	-	-	-
1930 - 1934	11	9	-	-	7	5	-	-	2	2	2	2
Before 1930	7	7	-	-	-	-	1	1	1	1	5	5
Year not reported	3	-	1	-	1	-	-	-	-	-	1	-

1/ Excludes one responding hygienist with no formal academic training.

Table B-3c -- Highest Level of College Training Attained

Highest level attained	Instate hygienists	Active	Inactive
Total	134	113	21
Dental hygiene certificate only	80	67	13
Additional college, but no degree	37	35	2
Less than 1 year	3	3	-
1 year but less than 2 years	12	12	-
2 years but less than 3 years	19	17	2
3 years but less than 4 years	3	3	-
4 or more years	-	-	-
Number of years not reported	-	-	-
Bachelor's degree	11	6	5
Master's degree	3	3	-
Doctoral degree	-	-	-
Level of college training not reported	2	2	-
No college training	1	-	1

Table B-3d -- Current Plans for Returning to College

Current plans	Instate hygienists	Active	Inactive
Total	134	113	21
Have seriously considered returning	66	62	4
Now enrolled	4	2	2
Definitely planning to enroll	9	8	1
Still considering enrollment	39	38	1
Definitely decided not to enroll	13	13	-
Current plans not reported	1	1	-
Have never considered returning	59	44	15
Plans to continue education not reported	9	7	2

Table B-3e -- Goal for Advancement If College Education Were Continued

Goal for advancement	Selected instate hygienists 1/	Active	Inactive
Total	52	48	4
Goal reported 2/	48	45	3
Instructor in a school of dental hygiene	14	13	1
Director of a school of dental hygiene	3	3	-
Dentist	4	3	1
Public health dental hygienist 3/	14	13	1
Hygienist in elementary or high school 3/	1	1	-
Other goal in dental hygiene specified	9	9	-
Goal outside dental hygiene specified	14	13	1
Goal not reported	4	3	1

1/ Hygienists who reported they were enrolled, definitely planning to enroll, or still considering enrollment (see Table B-3d).

2/ Items will add to more than total if hygienists reported more than one goal.

3/ Some hygienists who are interested in working in the schools are probably included in the public health category.

Table B-3f -- Obstacles to Returning to College, by Current Plans for Returning

Obstacles	Selected instate hygienists 1/	By current plans for returning to college: Definitely planning to enroll	Still considering enrollment	Definitely decided not to enroll
Total	61	9	39	13
Obstacles reported 2/	56	9	37	10
Lack of course offerings in a nearby school	17	2	10	5
Lack of sufficient funds	18	3	11	4
Family obligations	26	1	21	4
Lack of specific information on opportunities available	14	3	11	-
Age 3/	2	-	1	1
Lack of time 3/	1	-	-	1
Other obstacle specified	4	1	1	2
Obstacles not reported	5	-	2	3

1/ Includes all hygienists who have seriously considered returning to college and who reported their current plans, except those now enrolled (see Table B-3d)
2/ Items will add to more than total if hygienists reported more than one obstacle.
3/ These obstacles were not included on the printed questionnaire, but were written in by the specified number of respondents.

Table B-3g -- Sponsors of Short-term Courses Taken in Dental Hygiene or Related Subjects in Last 12 Months

Sponsors	Instate hygienists	Active	Inactive
Total	134	113	21
Have taken courses 1/	22	20	2
School of dental hygiene	6	5	1
State or local dental hygiene association	7	7	-
Dental school	5	4	1
State or local dental association	5	5	-
Other sponsor	2	2	-
Sponsor not reported	4	4	-
Have not taken courses	106	87	19
If courses taken not reported	6	6	-

1/ Items will add to more than total if hygienists reported taking more than one course.

Table B-3h -- Interest in Taking Refresher Training in Dental Hygiene If Such Training Were Available in a Nearby School

Current status by past activity in the District	Instate hygienists	By interest in taking refresher training		
		Interested	Not interested	Not reported
Active hygienists, by total years active in the District	113	64	35	14
2 years or less	39	19	16	4
3 - 5	19	11	5	3
6 - 10	13	9	2	2
11 years or more	40	24	11	5
Years not reported	2	1	1	-
Inactive hygienists, by last year active in the District	21	9	6	6
1964 or later	8	4	4	-
1961 - 1963	4	2	-	2
1956 - 1960	3	1	1	1
Before 1956	3	1	1	1
Never active	-	-	-	-
Year not reported	3	1	-	2

Table B-4a -- Past Professional
Activity in the District by Hygienists
Ever Active in the District

Year first licensed in District	Percent of ever active hygienists	Average years in District		Percent of licensed years active
		Licensed	Active	
Total	100	14.7	10.7	73
1963 - 1965	28	2.7	2.0	74
1960 - 1962	13	5.5	4.2	76
1957 - 1959	7	8.2	5.2	63
1954 - 1956	4	12.0	11.4	95
1951 - 1953	13	15.5	12.2	79
1948 - 1950	3	17.7	7.7	44
1945 - 1947	5	21.0	17.7	84
1942 - 1944	5	24.0	20.7	86
1939 - 1941	5	26.8	19.8	74
1936 - 1938	4	30.4	22.8	75
Before 1936	13	35.9	23.2	65

Table B-4b -- Other States in Which Previously Active, By Last Year in Practice in the Other State

State	Instate hygienists	By last year in practice				
		1964 or later	1961-1963	1958-1960	Before 1958	Not reported
Total	134	-	-	-	-	-
Have been active in other States 1/	66	36	11	4	24	5
Arkansas	1	1	-	-	-	-
California	1	1	-	-	-	-
Connecticut	1	-	-	-	1	-
Florida	3	1	-	-	1	1
Indiana	1	-	-	1	-	-
Kentucky	1	-	1	-	-	-
Maryland	28	22	2	1	1	2
Massachusetts	4	2	-	-	2	-
Michigan	2	1	-	-	1	-
Minnesota	1	1	-	-	-	-
New York	17	2	4	-	10	1
North Carolina	2	1	-	-	1	-
Ohio	1	-	-	-	1	-
Pennsylvania	10	2	2	1	4	1
Utah	1	-	-	-	1	-
Virginia	5	2	2	1	-	-
Wisconsin	1	-	-	-	1	-
Have not been active in other States	65	-	-	-	-	-
If active in other States not reported	3	-	-	-	-	-

1/ Figures will add to more than total if hygienists reported practicing in more than one other State.

Table B-5a -- Marital Status

Marital status	Instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total	134	113	45	21
Single	45	40	21	5
Ever married	89	73	24	16
Now married	67	52	12	15
Other status	22	21	12	1
Status not reported	-	-	-	-

Table B-5b -- Presence of Dependent Children

Number of dependent children	Ever married instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total	89	73	24	16
With no children	34	31	13	3
With children	46	35	11	11
1	20	16	7	4
2	19	13	4	6
3	5	4	-	1
4	1	1	-	-
5 or more	1	1	-	-
Number of children not reported	9	7	-	2

Table B-5c -- School Status and Age of Dependent Children

School status and age of children	Ever married instate hygienists	Active	Inactive
Total with children	46	35	11
School status			
None in school	9	5	4
Some in school 1/	37	30	7
In grades 1 - 8	29	23	6
In grades 9 - 12	9	7	2
In college or business school	10	8	2
School status not reported	-	-	-
Age of children			
With children under 15 years 1/	37	27	10
1 year or less	5	4	1
2 - 3 years	8	4	4
4 - 5 years	7	5	2
6 - 7 - 8 years	10	7	3
9 - 10 - 11 years	14	10	4
12 - 13 - 14 years	9	9	-
With children 15 and over only	9	8	1
Age not reported	-	-	-

1/ Figures will add to more than total if hygienists reported children in more than one group.

Table B-6 -- Membership in American Dental Hygienists' Association 1/

Current membership status	Instate hygienists	Active	Inactive
Total	134	113	21
A member	80	73	7
Not a member, but a member at one time	25	17	8
Not a member, past membership not reported	1	1	-
Never a member	26	20	6
Current and past membership not reported	2	2	-

1/ Excludes junior memberships.

Table C-1a -- Hours Worked in a Typical Week In Private Dental Offices

Hours	Practicing hygienists	Aggregate hours reported
Total	78	-
Time reported 1/	70	2,074
Less than 8	1	4
8	2	16
9 - 15	2	22
16	8	128
17 - 23	5	101
24	8	192
25 - 31	5	144
32	6	192
33 - 34	1	34
35	5	175
36 - 39	8	291
40	13	520
41 or more	6	255
Time not reported	8	-

Table C-1b -- Weeks Worked in Private Dental Offices During 12 Months Preceding Survey

Weeks	Practicing hygienists	Aggregate weeks reported
Total	78	-
Time reported 1/	70	3,078
4 or less	1	2
5 - 8	-	-
9 - 12	1	12
13 - 16	-	-
17 - 20	1	20
21 - 24	4	96
25 - 28	3	77
29 - 32	4	120
33 - 36	-	-
37 - 40	4	158
41 - 44	3	131
45 - 47	4	183
48 - 49	11	531
50 - 52	34	1,748
Time not reported	8	-

1/ Hygienists who reported both hours and weeks.

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Table C-1c -- Summary of Time Worked in Private Dental Offices

Time worked 1/	Practicing hygienists	Aggregate hours reported	Aggregate weeks reported
Total	78	-	-
Time reported	70	2,074	3,078
Full time	32	1,241	1,575
Year round	24	920	1,219
Less than year round	8	321	306
Part time	38	833	1,553
Year round	21	488	1,060
Less than year round	17	345	493
Time not reported	8	-	-

1/ Definitions of time worked:

Full time -- 35 hours or more in a typical week
Part time -- less than 35 hours
Year round -- 48 weeks or more in the 12 months preceding the survey
Less than year round -- less than 48 weeks

Table C-2 -- Activities Performed in Private Dental Offices By Time Spent At Each Activity in A Typical Week

Activity	Practicing hygienists	Time spent at activity: Hygienists reporting hours	Time spent at activity: Aggregate hours reported
Total	78	-	-
Activities reported	78	-	-
Oral prophylaxis	78	49	1151
Other clinical services 1/	65	39	124
Patient dental health education 2/	55	37	99
Management of dental office 3/	38	26	112
Dental assisting tasks 4/	14	10	55
Activities not reported	-	-	-

1/ Radiographs, fluoride applications, etc.
2/ Time devoted exclusively to instruction of individual patients in oral hygiene, diet, etc.
3/ Recalls, pulling charts, answering telephone, receptionist duties, bookkeeping, etc.
4/ Preparing tray set-ups, passing instruments, pouring models, etc.

Table C-3a -- Employing Dentists, By Number of Dental Offices

Number of employing dentists 1/	Practicing hygienists	Number of dental offices in which employed				
		1	2	3	4 or more	Not reported
Total	78	50	21	5	1	1
Dentists reported	72	45	21	5	1	-
1	35	35	-	-	-	-
2	25	7	18	-	-	-
3	10	3	3	4	-	-
4 or more	2	-	-	1	1	-
Number of dentists not reported	6	5	-	-	-	1

1/ Includes only those dentists whose patients the hygienist cared for.

Table C-3b -- Type of Practice of Employing Dentists

Type of practice of employing dentists	Practicing hygienists
Total	78
Worked for general practitioner only	62
Worked for dental specialist 1/	11
Endodontist	2
Oral surgeon	3
Orthodontist	1
Pedodontist	1
Periodontist	5
Prosthodontist	2
Type not reported	5

1/ Figures will add to more than total if hygienists reported working for more than one type of specialist.

Table C-4a -- Type(s) of Compensation Received for Time Worked in Private Dental Office(s)

Type(s) of compensation	Practicing hygienists	By time worked in private dental offices 1/				
		Full time		Part time		Time not reported
		Year round	Less than year round	Year round	Less than year round	
Total	78	24	8	21	17	8
Reporting type(s) of compensation	77	23	8	21	17	8
Salary only	33	7	4	13	7	2
Commission only	24	6	3	5	5	5
Both salary and commission only	18	8	1	3	5	1
Salary only, commission only 2/	-	-	-	-	-	-
Salary only, both salary and commission 2/	1	1	-	-	-	-
Commission only, both salary and commission 2/	1	1	-	-	-	-
Salary only, commission only, both salary and commission 2/	-	-	-	-	-	-
Did not receive compensation 3/	-	-	-	-	-	-
Type of compensation not reported	1	1	-	-	-	-

1/ See Table C-1c for definitions of time worked.
2/ A hygienist working in more than one dental office may report more than one type of compensation.
3/ Generally reported by hygienists who indicated they were working for their dentist—husbands.

Table C-4b -- Gross Earnings From Dental Hygiene Practice During 12 Months Preceding Survey

Gross earnings 1/	Practicing hygienists	By time spent in private dental office 2/				
		Full time		Part time		Not reported
		Year round	Less than year round	Year round	Less than year round	
Total	78	24	8	21	17	8
Earnings reported	58	21	6	19	12	-
Under $1,000	1	-	-	-	1	-
1,000 - 1,999	2	-	-	-	2	-
2,000 - 2,999	3	-	1	1	1	-
3,000 - 3,999	11	1	-	6	4	-
4,000 - 4,999	5	-	2	2	1	-
5,000 - 5,999	6	-	1	3	2	-
6,000 - 6,999	6	2	1	3	-	-
7,000 - 7,999	13	9	-	4	-	-
8,000 - 8,999	4	3	1	-	-	-
9,000 - 9,999	5	5	-	-	-	-
10,000 & over	2	1	-	-	1	-
None 3/	-	-	-	-	-	-
Earnings not reported	20	3	2	2	5	8

1/ If exact figure for gross earnings (before deductions) was not available, respondent was requested to give best estimate to the nearest $500.
2/ See Table C-1c for definitions of time worked.
3/ Generally reported by hygienists who indicated they were working for their dentist-husbands.

Table D-1 -- Reason Why Inactive Hygienists Were Not Professionally Active

Reason	Inactive hygienists
Total	21
Reasons reported 1/	21
Full-time family obligations	12
Employment in another occupation	2
Attending school	2
Beyond age to practice	-
Poor health	4
Loss of skill to practice	-
Unable to find suitable position as hygienist	-
She prefers not to work	5
Husband does not want her to work	5
Another reason specified	2
Reasons not reported	-

1/ Figures will add to more than total if some hygienists reported more than one reason.

Table D-2a -- Degrees of Definiteness About Ever Returning to Practice and About Time of Return

Degree of definiteness about ever returning	Inactive hygienists	By degree of definiteness about time of return			
		Very definite	Fairly definite	Not at all definite	Not reported
Total	21	3	6	8	4
Degree reported	16	3	5	7	1
Very definite	3	3	-	-	-
Fairly definite	5	-	5	-	-
Not at all definite	8	-	-	7	1
Degree not reported	5	-	1	1	3

Table D-2b -- Approximate Length of Time Until Return to Practice, By Degree of Definiteness About Time of Return

Approximate time until return	Selected inactive hygienists 1/	By degree of definiteness about time of return			
		Very definite	Fairly definite	Not at all definite	Not reported
Total	8	3	5	-	-
Time until return reported	8	3	5	-	-
Within the next year	1	1	-	-	-
Within the next 5 years	4	2	2	-	-
Within the next 10 years	-	-	-	-	-
Within the next 15 years	1	-	1	-	-
More than 15 years from now	-	-	-	-	-
Never	2	-	2	-	-
Time not reported	-	-	-	-	-

1/ Includes only those inactive hygienists who reported that their present plans about ever returning to practice were very definite or fairly definite (see Table D-2a).

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Table D-2c -- Time Preferred to Work If Hygienists Returned to Practice, By Approximate Length of Time Until Return

Time preferred to work	Selected inactive hygienists 1/	By length of time until return to practice				
		Within the next				More than 15 years from now
		Year	5 years	10 years	15 years	
Total	6	1	4	-	1	-
Preferred time reported	6	1	4	-	1	-
8 hours a day	2	-	2	-	-	-
5 days a week	1	-	1	-	-	-
Less than 5 days a week	1	-	1	-	-	-
Less than 8 hours a day	4	1	2	-	1	-
5 days a week	1	-	1	-	-	-
Less than 5 days a week	3	1	1	-	1	-
Time preferred not reported	-	-	-	-	-	-

1/ Includes only those inactive hygienists who reported length of time until return, and who were at least fairly definite both about ever returning and the time of return (see Table D-2b).

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Table D-2d -- Conditions Under Which Likely to Return to Practice

Conditions	Inactive hygienists
Total	21
Conditions reported 1/	18
When youngest child starts elementary school	4
When youngest child starts high school	1
When youngest child starts college	-
When a position is available in her community	-
When husband needs her in his practice, if he is a dentist	2
After completion of refresher training, if such training were available in a nearby community college or university	3
After completion of additional college training which would qualify her for a more advanced position as a hygienist	3
Because of illness, disability or death of husband 2/	-
Another condition specified	7
Condition not reported	3

1/ Figures will add to more than total if hygienists reported more than one condition.

2/ This condition was not listed on the printed questionnaire, but was written in by the specified number of respondents.

Table D-2e -- Reasons for Returning to Practice

Reasons	Inactive hygienists
Total	21
Reasons reported 1/	19
For self satisfaction	15
To add to the family income for children's education	5
For other financial reasons	4
To keep in practice 2/	-
Another reason specified	1
Reasons not reported	2

1/ Figures will add to more than total if hygienists reported more than one reason.

2/ This reason was not listed on the printed questionnaire, but was written in by the specified number of respondents.

Table D-2f -- Situations Which Might Keep Hygienists From Seeking A Position, If She Would Like to Practice Again

Situations	Inactive hygienists
Total	21
Situations reported 1/	13
Lack of opportunities for hygienist in her community	2
Feels she might be too old to practice again	6
Feels she might have lost her skill to practice	1
Has too great an investment in another occupation	2
Satisfactory working hours not available 2/	-
Unsatisfactory wages 2/	-
Another situation specified	3
No situation was reported	8

1/ Figures will add to more than total if hygienists reported more than one situation.

2/ This situation was not listed on the printed questionnaire, but was written in by the specified number of respondents.

Table D-3 -- Professional Activity During 12 Months Preceding Survey, By Time Worked

Professional activity during 12 months preceding survey 1/	Inactive hygienists	By time worked 2/			
		Full time	Part time	Combination of full time & part time	Not reported
Total	21	-	-	-	-
Employed in private dental office	2	1	1	-	-
Not employed	19	-	-	-	-

1/ Includes activity in any state.
2/ Respondents were asked to check boxes labeled "full time" and "part time." Therefore, these data are not comparable to "time worked" data presented in other tables.

Table E-1 -- Location and Current Professional Status

State	Out of state hygienists	Respondents				
		Total	Active			Inactive
			Total	In private dental offices	Other active	
Total	252	204	108	94	14	96
Northeast	42	33	15	12	3	18
Connecticut	3	2	2	2	-	-
Maine	-	-	-	-	-	-
Massachusetts	5	3	2	2	-	1
New Hampshire	-	-	-	-	-	-
New Jersey	7	5	2	2	-	3
New York	12	8	1	-	1	7
Pennsylvania	13	13	7	6	1	6
Rhode Island	3	2	1	-	1	1
Vermont	-	-	-	-	-	-
South	167	130	73	63	10	57
Alabama	-	-	-	-	-	-
Arkansas	-	-	-	-	-	-
Delaware	-	-	-	-	-	-
District of Columbia 1/	6	6	6	2	4	-
Florida	8	8	3	3	-	5
Georgia	1	1	-	-	-	1
Kentucky	-	-	-	-	-	-
Louisiana	-	-	-	-	-	-
Maryland	96	76	46	42	4	30
Mississippi	1	-	-	-	-	-
North Carolina	2	-	-	-	-	-
Oklahoma	-	-	-	-	-	-
South Carolina	-	-	-	-	-	-
Tennessee	1	1	-	-	-	1
Texas	4	3	2	-	2	1
Virginia	47	35	16	16	-	19
West Virginia	1	-	-	-	-	-

(continued)

Table E-1 -- Location and Current Professional Status (cont'd.)

State	Out of state hygienists	Respondents				
		Total	Active			Inactive
			Total	In private dental offices	Other active	
North Central	19	19	10	10	-	9
Illinois	4	4	1	1	-	-
Indiana	-	-	-	-	-	-
Iowa	1	1	1	1	-	-
Kansas	1	1	-	-	-	1
Michigan	3	3	1	1	-	2
Minnesota	3	3	2	2	-	1
Missouri	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-
North Dakota	-	-	-	-	-	-
Ohio	5	5	4	4	-	1
South Dakota	-	-	-	-	-	-
Wisconsin	2	2	1	1	-	1
West	24	22	10	9	1	12
Alaska	-	-	-	-	-	-
Arizona	2	1	-	-	-	1
California	20	19	9	8	1	10
Colorado	1	1	1	1	-	-
Hawaii	-	-	-	-	-	-
Idaho	-	-	-	-	-	-
Montana	-	-	-	-	-	-
New Mexico	-	-	-	-	-	-
Nevada	-	-	-	-	-	-
Oregon	-	-	-	-	-	-
Utah	-	-	-	-	-	-
Washington	1	1	-	-	-	1
Wyoming	-	-	-	-	-	-

1/ Six responding hygienists who were residents of the District of Columbia indicated that they were employed in neighboring States.

Table E-2 -- School Attended for Dental Hygiene Training and Year Certificate or Degree Was Received, By Current Professional Status

School and year certificate or degree was received	Out-of-state hygienists	Active	Inactive
Total	204	108	96
With formal academic training	202	107	95
Howard University	46	33	13
1966	6	4	2
1965	6	6	-
1964	3	3	-
1963	6	3	3
1962	3	1	2
1961	-	-	-
1960	2	1	1
1959	-	-	-
1958	2	2	-
1957	3	2	1
1956	3	2	1
1955	2	2	-
1954	1	-	1
1953	2	2	-
1952	3	3	-
1951	-	-	-
1950	1	1	-
Before 1950	2	-	2
Year not reported	1	1	-
Georgetown University	10	3	7
1930 - 1937	10	3	7
All other schools	146	71	75
1957 - 1966	74	44	30
1947 - 1956	44	12	29
1937 - 1946	17	10	10
Before 1937	8	5	3
Year not reported	3	-	3
With no formal academic training	2	1	1

Table E-3 -- Past Professional Activity in the District of Columbia by Out-of-State Hygienists Ever Active in the District of Columbia

Year first licensed in District of Columbia	Percent of ever active hygienists	Average years in the District		Percent of licensed years active
		Licensed	Active	
Total	100	13.9	5.5	40
1963 - 1965	23	2.9	1.6	55
1960 - 1962	13	5.9	2.5	42
1957 - 1959	11	9.3	3.3	35
1954 - 1956	14	12.2	5.0	41
1951 - 1953	7	14.9	4.8	32
1948 - 1950	7	18.2	8.2	45
1945 - 1947	7	21.0	7.9	38
1942 - 1944	4	24.0	9.2	38
1939 - 1941	3	26.0	5.7	22
1936 - 1938	4	30.0	9.6	32
Before 1936	7	42.4	18.4	43

Table E-4 -- Reasons Why Inactive Hygienists Were Not Professionally Active

Reasons	Inactive out-of-state hygienists
Total	96
Reasons reported 1/	96
Full-time family obligations	61
Employment in another occupation	13
Attending school	1
Beyond age to practice	-
Poor health	2
Loss of skill to practice	1
Unable to find suitable position as hygienist	3
She prefers not to work	16
Husband does not want her to work	15
Not licensed in state where she currently resides	31
Another reason specified	6
Reasons not reported	-

1/ Figures will add to more than total if hygienists reported more than one reason.

..HANDBOOK OF STATISTICS...

DENTAL HYGIENISTS

LICENSED IN MISSISSIPPI

1967

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A

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INTRODUCTION

In July 1967, the Mississippi State Board of Dental Examiners conducted a mail survey of all dental hygienists licensed to practice in the State. This survey was conducted concurrently with the hygienists' annual reregistration with the Board.

Statistics presented in this Handbook were tabulated from the information furnished by the dental hygienists who completed and returned their questionnaires.

This statistical presentation has been designed to provide most of the basic facts which were collected in the survey. Pertinent cross tabulations of data have been presented when the number of hygienists in the specific population group was large enough to provide meaningful data.

Since this was a survey of hygienists licensed in Mississippi, the data exclude an unknown number of inactive hygienists who reside in the State but are not licensed to practice there. Also excluded may be a few nonlicensed hygienists who are working in the State either for the Federal Government or for some employer in an administrative or other nonclinical position in which licensure is not a prerequisite for employment.

The Mississippi survey is part of a national endeavor: Dental examining boards in virtually all of the States are utilizing the same questionnaire printed under their own letterheads, to survey dental hygienists licensed in their respective States. The American Association of Dental Examiners, under a contract with the Division of Dental Health of the National Institutes of Health, USPHS, is coordinating this national survey program to assist States in developing comparable information about their dental manpower resources. The preparation of this Handbook has been made possible through the cooperation of the American Association of Dental Examiners and the Division of Dental Health, Manpower Studies Branch.

ROM SURVEY QUESTIONNAIRE TO STATISTICAL TABLES

Information gathered by survey questionnaires is compiled into statistical tables which present a profile of the professional activities of dental hygienists licensed in this State. To see the uses made of data gathered by this questionnaire, turn to the tables listed on the right, which have been prepared from replies to questions on the left.....

MISSISSIPPI
STATE BOARD OF DENTAL EXAMINERS

THE _____ STATE BOARD OF DENTAL EXAMINERS HAS UNDERTAKEN A COOPERATIVE PROJECT WITH THE AMERICAN ASSOCIATION OF DENTAL EXAMINERS AND THE PUBLIC HEALTH SERVICE TO DEVEVLOP AN ANALYSIS OF THE DISTRIBUTION AND AVAILABILITY OF DENTAL HEALTH SERVICES IN THE STATE OF _____ THE INFORMATION PROVIDED WILL BE USED FOR STATISTICAL PURPOSES ONLY.

Name: _____
LAST FIRST MIDDLE MAIDEN (if ever married)

Present Home Address: _____
STREET CITY COUNTY STATE ZIP CODE

License Number: _____ Social Security Number: _____

A-1
B-2a, 2c,
B-3c
D-1

A. PERSONAL CHARACTERISTICS

1. Year of birth: _____ 2. Marital status: ☐ Single (1) ☐ Married (2) ☐ Widowed (3) ☐ Divorced (4) ☐ Separated (5)
3. If ever married, number of years in your current marital status: _____
4. Total number of dependent children: _____; Number in school: _____ Grades 1-8 _____ Grades 9-12 _____ College or business school
5. Number of children under 15 years: _____ 1 yr. or under _____ 2-3 yrs. _____ 4-5 yrs. _____ 6-7-8 yrs. _____ 9-10-11 yrs. _____ 12-13-14 yrs.

A-1
B-2b, 2c
B-5a, 5b,
5c

B. TRAINING AND EDUCATION

☐ Check here if no formal academic training in dental hygiene and skip to Section C

6. Name of dental hygiene school: _____
7. Type of certificate or degree in dental hygiene received:
   ☐ Bachelor degree (1) ☐ Associate degree (2) ☐ Certificate or diploma (3)
8. What was your Name at the time you completed your training? _____
9. Year granted: _____
10. Number of years of **additional** college training completed, if any: _____
    Degrees earned, if any: ☐ Bachelor degree (1) ☐ Master degree (2) ☐ Other Degree (3) *(specify* _____)

A-1
B-3a, 3b,
3c, 3d
D-2

C. PROFESSIONAL HISTORY

11. Complete a line for each state in which you have **ever been** licensed to practice:

	Name of State	Year first licensed	Are you licensed today? Yes	Are you licensed today? No	Have you ever practiced in this State? Yes	Have you ever practiced in this State? No	Number of years in practice	Last year in practice	Did you primarily work Full-time	Did you primarily work Part-time
A.	This State	19____	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19____	☐ (1)	☐ (2)
B.	_____	19____	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19____	☐ (1)	☐ (2)
C.	_____	19____	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19____	☐ (1)	☐ (2)
D.	_____	19____	☐ (1)	☐ (2)	☐ (1)	☐ (2)	_____	19____	☐ (1)	☐ (2)

12. Total number of years you have been licensed to practice: _____ years
13. Total number of years you have practiced: _____ years
14. Are you now a member of the American Dental Hygienists' Association? ☐ Yes (1) ☐ No (2)
    IF NO, have you ever been a member? ☐ Yes (1) ☐ No (2)

A-1
B-3i
B-4a, 4b,
B-6

D. CURRENT PROFESSIONAL ACTIVITY

A-1
B-1

15. Current professional status *(check one)*
    1☐ At work as a dental hygienist
    2☐ Employed as a dental hygienist, but temporarily absent from work *(because of vacation, sickness, school recess, etc.)*
    3☐ Seeking work as a dental hygienist
    4☐ Not working or seeking work as a dental hygienist
    } **If you checked one of these boxes, skip to Section E**

16. Are you currently employed in this state? 1☐ Yes 2☐ No If in another state, where? _____
    In what county do you primarily work? _____

17. In a typical week how many hours do you work for your current employers? _____ hours
    (use last week if it was typical, otherwise select the most recent week which was typical)

B-1
B-2c
C-1a,1c
D-1

18a. Check all places where you currently work:

18b. How many hours do you work in a typical week? *(complete only if 2 or more boxes are checked in Item 18a; hours should equal those in Item 17)*

- ☐ PRIVATE DENTAL OFFICE(S) ..... _____
- ☐ DENTAL HYGIENE SCHOOL OR OTHER DENTAL AUXILIARY PROGRAM ..... _____
- ☐ ELEMENTARY OR SECONDARY SCHOOL *(public or private)* ..... _____
- ☐ CITY OR COUNTY HEALTH AGENCY ..... _____
- ☐ STATE HEALTH AGENCY ..... _____
- ☐ OTHER LOCAL GOVERNMENT AGENCY *specify* _____ ..... _____
- ☐ OTHER STATE GOVERNMENT AGENCY *specify* _____ ..... _____
- ☐ ARMY, NAVY, AIR FORCE ..... _____
- ☐ OTHER FEDERAL AGENCY ..... _____
- ☐ PRIVATE ORGANIZATION *(voluntary agency, prepaid dental plan, etc.)* *specify organization* _____ ..... _____

C-2

19a. Check all types of activity you currently perform:

19b. How many hours do you spend at this activity in a typical week? *(complete only if 2 or more boxes are checked in Item 19a; hours should equal those in Item 17)*

- ☐ ORAL PROPHYLAXIS ..... _____
- ☐ OTHER CLINICAL SERVICE *(radiographs, fluoride applications, etc.)* ..... _____
- ☐ PATIENT DENTAL HEALTH EDUCATION *(time devoted exclusively to instruction of individual patients in oral hygiene, diet, etc.)* ..... _____
- ☐ MANAGEMENT OF DENTAL OFFICE OR DENTAL CLINIC *(recalls, pulling charts, answering telephone, receptionist duties, bookkeeping, etc.)* ..... _____
- ☐ DENTAL ASSISTING *(preparing tray set-ups, passing instruments, pouring models, etc.)* ..... _____
- ☐ GROUP DENTAL HEALTH EDUCATION *(classroom instruction of students in elementary schools, talks before civic groups, etc.)* ..... _____
- ☐ INSTRUCTION OF DENTAL HYGIENE STUDENTS OR OTHER DENTAL AUXILIARY STUDENTS ..... _____
- ☐ ADMINISTRATION *(Director of school of dental hygiene, coordinator of dental program in a school or local health dept., etc.)* ..... _____
- ☐ DENTAL RESEARCH *(basic science, clinical, behavioral, etc.)* ..... _____
- ☐ OTHER ACTIVITY *specify* _____ ..... _____

20. If you work in a private dental office and some place else, were the hours spent in these activities all devoted to your private dental practice?
    1☐ Yes
    2☐ No

■ **If you currently work in a private dental office complete Items 21-24; otherwise skip to Section E**

21. Number of different dental offices where you currently work _____

22. Number of dentists whose patients you care for in each dental office:
Office 1 _____ Office 2 _____ Office 3 _____ Office 4 _____ Other Offices _____

23. Are all of these dentists general practitioners? 1☐ Yes 2☐ No
IF NO, how many are specialists? _____ Specify type(s) _____

24. Which type of compensation do you receive? *(If type varies among offices check all that apply)*
1☐ Salary only 2☐ Commission (or percentage) only 3☐ Both salary (or guarantee) and commission

C-3a
C-3b
C-4a

E. PROFESSIONAL ACTIVITY DURING LAST TWELVE MONTHS

☐ Check here if you were not employed as a dental hygienist and skip to Section F

25. How many weeks were you employed during the last 12 months? _____ How many of these weeks were you employed and paid but not at work? *(vacation, sick leave, school recess, etc.)* _____

26. How many weeks, if any, were you employed in this State? _____
How many weeks, if any, were you employed in another State(s)? _____ Name the State(s) _____

C-1b

27a. Check all places where you worked during the last 12 months:

27b. Indicate whether you worked:

27c How many weeks were you employed in the last 12 months? *(complete only if 2 or more boxes are checked in Item 27a.)*

	Full-time only	Part-time only	Combination of full-time and part-time	27c
☐ PRIVATE DENTAL OFFICE(S)	1☐	2☐	3☐	_____
☐ DENTAL HYGIENE SCHOOL OR OTHER DENTAL AUXILIARY PROGRAM	1☐	2☐	3☐	_____
☐ ELEMENTARY OR SECONDARY SCHOOL *(public or private)*	1☐	2☐	3☐	_____
☐ CITY OR COUNTY HEALTH AGENCY	1☐	2☐	3☐	_____
☐ STATE HEALTH AGENCY	1☐	2☐	3☐	_____
☐ OTHER LOCAL GOVERNMENT AGENCY *specify* _____	1☐	2☐	3☐	_____
☐ OTHER STATE GOVERNMENT AGENCY *specify* _____	1☐	2☐	3☐	_____
☐ ARMY, NAVY, AIR FORCE	1☐	2☐	3☐	_____
☐ OTHER FEDERAL AGENCY	1☐	2☐	3☐	_____
☐ PRIVATE ORGANIZATION *(voluntary agency, prepaid dental plan, etc.)* *specify* _____	1☐	2☐	3☐	_____

C-1c

28. What were your gross earnings *(before deductions)* from dental hygiene practice during last 12 months? $ _____
(If exact figure is not available, give best estimate to the nearest $500)

C-4

F. CONTINUING EDUCATION

29. Have you taken any short-term courses in dental hygiene or related subjects in the last 12 months? 1☐ Yes 2☐ No
IF YES, who sponsored the course(s)? *(check all that apply)*
1☐ School of dental hygiene
2☐ State or local dental hygiene association
3☐ Dental school
4☐ State or local dental association

B-3h

30. Have you seriously considered returning to college to continue your education? 1☐ Yes 2☐ No
IF YES, what is your current situation? *(check one)*
1☐ Now enrolled in college
2☐ Definitely planning to enroll
3☐ Still considering enrollment
4☐ Definitely decided not to enroll

B-3e, 3g

31. What would be your goal for advancement if you did continue your education?
1☐ Instructor in a school of dental hygiene
2☐ Director of a school of dental hygiene
3☐ Dentist
4☐ Public health dental hygienist
5☐ Other goal in dental hygiene *(specify* _____*)*
6☐ Other goal outside dental hygiene *(specify* _____*)*

B-3e

B-3g

32. If you would like to return to college, what is likely to keep you from doing so? *(check all that apply)*

1☐ Lack of course offerings in a nearby school
2☐ Lack of sufficient funds
3☐ Family obligations
4☐ Lack of specific information on opportunities available
5☐ Other reason *(please specify_____)*

B-3i

33. Would you be interested in taking refresher training in dental hygiene, if such training were available to you in a nearby school?
Yes ☐1 No ☐2 **IF YES,** in what areas do you feel you need refresher training? *(check all that apply)*

1☐ Theory of dental hygiene practice
2☐ Prophylaxis
3☐ X-ray techniques
4☐ Other clinical skills *(specify_____)*

■ **If you are currently working as a hygienist you have completed the questionnaire after answering Item 33**

G. STATUS OF CURRENTLY INACTIVE HYGIENISTS

D-3

34. Which of the following best describe why you are not in practice today? *(check all that apply)*

1☐ Full-time family obligations
2☐ Employment in another occupation *(specify_____)*
3☐ Attending school
4☐ Beyond age to practice
5☐ Poor health
6☐ Loss of skill to practice
7☐ Unable to find suitable position as hygienist
8☐ You prefer not to work
9☐ Husband does not want you to work
0☐ Not licensed in state where you currently reside
x☐ Other reason *(specify_____)*

35. Approximately when do you think you will return to practice, according to your present plans for the future? *(check one which most nearly approximates your present plans)*

1☐ Within the next year
2☐ Within the next 5 years
3☐ Within the next 10 years
4☐ Within the next 15 years
5☐ More than 15 years from now
6☐ Never

36. How definite are your present plans
a. About ever returning to practice? 1☐ Very definite 2☐ Fairly definite 3☐ Not at all definite
b. About the time, if ever, when you will return? 1☐ Very definite 2☐ Fairly definite 3☐ Not at all definite

37. If you do return to practice, would you prefer to work: *(check one)*

1☐ 8 hours a day, 5 days a week
2☐ 8 hours a day, less than 5 days a week
3☐ Less than 8 hours a day, 5 days a week
4☐ Less than 8 hours a day, less than 5 days a week

38. What would be your reason for returning to practice? *(check all that might apply)*

1☐ For self satisfaction
2☐ To add to the family income for the education of your children
3☐ For other financial reasons
4☐ Other *(specify_____)*

39. Under what conditions would you be likely to return to practice? *(check all that might apply)*

1☐ When your youngest child starts to elementary school
2☐ When your youngest child starts to high school
3☐ When your youngest child starts to college
4☐ When you obtain a license to practice in the state where you now live
5☐ When a position is available in your community
6☐ When your husband needs you in his practice, if he is a dentist
7☐ After completion of refresher training, if such training were available to you in a nearby community college or university
8☐ After completion of additional college training which would qualify you for a more advanced position as a hygienist
9☐ Other *(specify_____)*

40. If you would like to practice again, what might keep you from seeking a position as a hygienist? *(check all that might apply)*

1☐ Difficulty in securing a license
2☐ Lack of opportunities for hygienists in your community
3☐ You feel you might be too old to practice again
4☐ You feel you might have lost your skill to practice
5☐ You have too great an investment in another occupation
6☐ Other *(specify_____)*

STATISTICAL TABLES

The general topic of each table, or series of tables, is listed below. An * before a topic heading indicates a series of tables.

A. Licensed hygienists

1. Selected characteristics of instate and out-of-state licensees

B. Instate active and inactive hygienists

1. Current professional status

*2. Location and age

*3. Education
(Dental hygiene and other college training, interest in returning to college and in taking refresher training)

*4. Professional activity since liecnsure

*5. Family characteristics
(Marital status and dependent children)

6. Membership in American Dental Hygienists' Association

C. Instate practicing hygienists
(Hygienists employed in private dental offices)

*1. Time worked

2. Activities performed

*3. Employing dentists

*4. Compensation
(Type and amount)

D. Out-of-state hygienists

1. Location and current status

2. School attended for hygiene training

3. Reasons inactive hygienists are not practicing

EXPLANATION OF SELECTED TERMS USED IN STATISTICAL TABLES

Licensed dental hygienists are divided into three groups according to their location at the time of the survey:

1 Instate hygienists include respondents who were professionally active in the survey state, as well as inactive respondents and all nonrespondents who resided in the survey state. (Excludes survey state residents who were active in another state)

2 Out-of-state hygienists include respondents who were professionally active in one of the other 49 states or the District of Columbia, as well as inactive respondents and all nonrespondents who resided in another state.

3. Hygienists in foreign countries include all other hygienists surveyed

Respondents include hygienists who completed and returned their questionnaire and provided sufficient information to determine their current professional status. Nonrespondents include all other hygienists surveyed.

The current professional status of hygienists was determined according to their reported activity in dental hygiene at the time of the survey:

1. Active hygienists include those who were employed as a dental hygienist in any position which required the special training of a dental hygienist, as well as unemployed hygienists who reported they were seeking employment as a dental hygienist.

2. Inactive hygienists include those who were not professionally active. (Includes hygienists who were employed in any occupation other than dental hygiene)

In the presentation of current employment statistics the term practicing hygienists relates specifically to those who were working in a private dental office. However, in statistical presentations relating to inactive hygienists or to trends in professional activity the terms "practicing" or "in practice" are used in a broader connotation referring to all professionally active hygienists.

Table A-1 -- Selected Characteristics of Hygienists Licensed in Mississippi, by Location

Characteristics	Licensed hygienists	In Mississippi	In other States
Total respondents	33	21	12
Current status			
Active	26	17	9
Inactive	7	4	3
Age in 1966			
Under 25	13	8	5
25 - 29	5	3	2
30 - 34	4	3	1
35 & over	11	7	4
Year hygiene training completed			
1957 - 1966	18	11	7
1947 - 1956	7	4	3
1937 - 1946	3	1	2
Before 1937	5	5	-
Professional activity in Mississippi			
Ever active in Mississippi	26	21	5
Never active in Mississippi	7	-	7

NOTE: Figures within a grouping will not add to the total if some hygienists did not report information for that particular item on the questionnaire.

Table B-1 -- Current Professional Status, by Place of Employment

Status and place of employment	Instate hygienists
Total	21
Active	17
Employed	17 1/
Private dental office	15
Dental hygiene school or other auxiliary program	-
Elementary or secondary school (public or private)	-
City or county health agency	-
State health agency	2
Other local government agency	-
Other state government agency	1
Army, navy, air force	-
Other federal agency	-
Private agency	-
Unemployed (seeking work as dental hygienist)	-
Inactive	4

1/ Figures will add to more than total if hygienists reported more than one type of employer.

Table B-2a -- County Location

County 1/	Instate hygienists	Active Total	Active Employed full time, year round	Inactive
Total	21	17	9	4
Alcorn	2	2	2	-
Bolivar	1	1	1	-
De Soto	1	1	-	-
Grenada	1	-	-	1
*Hinds	4	3	2	1
Jackson	1	1	-	-
Jones	1	1	1	-
Lawrence	1	1	-	-
Leflore	1	1	1	-
Lowndes	1	1	1	-
Pike	3	3	-	-
Simpson	1	1	1	-
Warren	2	-	-	2
Washington	1	1	-	-

* Counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, established by the U.S. Bureau of the Budget, Office of Statistical Standards.

1/ There were apparently no licensed hygienists in 68 of the 82 counties in Mississippi; two of the 68 counties are defined as metropolitan counties.

Table B-2b -- Age Distribution in 1966

Age	Instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total, all ages	21	17	9	4
Under 25	8	7	4	1
25 - 29 years	3	3	1	-
30 - 34 years	3	3	1	-
35 - 39 years	1	-	-	1
40 - 44 years	-	-	-	-
45 - 49 years	1	1	1	-
50 - 54 years	3	3	2	-
55 - 59 years	-	-	-	-
60 years & over	2	-	-	2
Not reported	-	-	-	-

Table B-2c -- Age Distribution in 1966, By Current Professional Status for Mississippi

Current professional status	Instate hygienists	By age in 1966				
		Under 25	25-29	30-34	35 & over	Not reported
Total	21	8	3	3	7	-
Active	17	7	3	3	4	-
Employed in private dental office	15	7	3	3	2	-
Other active	2	-	-	-	2	-
Inactive	4	1	-	-	3	-

Table B-3a -- School Attended for Dental Hygiene Training

School	Instate hygienists	Active	Inactive
Total	21	17	4
With formal academic training	21	17	4
University of Tennessee	15	14	1
Forsyth School for Dental Hygienists	3	1	2
Northwestern University	2	1	1
Loyola University of New Orleans	1	1	-
With no formal academic training	-	-	-

Table B-3b -- Year Dental Hygiene Certificate or Degree Was Received, by Selected Schools

Year	All schools		University of Tennessee		All other schools	
	Total	Active	Total	Active	Total	Active
Instate hygienists	21	17	14	13	7	4
1964 - 1966	6	5	5	4	1	1
1961 - 1963	3	3	3	3	-	-
1958 - 1960	2	2	1	1	1	1
1955 - 1957	3	3	3	3	-	-
Before 1955	7	4	2	2	5	2

Table B-3c -- County Location, by Selected Schools

County	All schools		University of Tennessee		All other schools	
	Total	Active	Total	Active	Total	Active
Total	21	17	14	13	7	4
Alcorn	2	2	2	2	-	-
Bolivar	1	1	1	1	-	-
De Soto	1	1	1	1	-	-
Grenada	1	-	1	-	-	-
*Hinds	4	3	1	1	3	2
Jackson	1	1	1	1	-	-
Jones	1	1	1	1	-	-
Lawrence	1	1	-	-	1	1
Leflore	1	1	1	1	-	-
Lowndes	1	1	1	1	-	-
Pike	3	3	3	3	-	-
Simpson	1	1	1	1	-	-
Warren	2	-	-	-	2	-
Washington	1	1	-	-	1	1

* Counties included in the latest 1967 definition of Standard Metropolitan Statistical Areas, established by the U.S. Bureau of the Budget, Office of Statistical Standards.

Table B-3d -- Highest Level of College Training Attained

Highest level attained	Instate hygienists	Active	Inactive
Total	21	17	4
Dental hygiene certificate only	9	8	1
Additional college, but no degree	10	8	2
Less than 1 year	-	-	-
1 year but less than 2 years	3	2	1
2 years but less than 3 years	6	5	1
3 years but less than 4 years	1	1	-
4 or more years	-	-	-
Number of years not reported	-	-	-
Bachelor's degree	1	-	1
Master's degree	1	1	-
Doctoral degree	-	-	-
Level of college training not reported	-	-	-
No college training	-	-	-

Table B-3e -- Current Plans for Returning to College

Current plans	Instate hygienists	Active	Inactive
Total	21	17	4
Have seriously considered returning	8	8	-
Now enrolled	-	-	-
Definitely planning to enroll	-	-	-
Still considering enrollment	6	6	-
Definitely decided not to enroll	1	1	-
Current plans not reported	1	1	-
Have never considered returning	10	7	3
Plans to continue education not reported	3	2	1

Table B-3f -- Goal for Advancement If College Education Were Continued

Goal for advancement	Selected instate hygienists 1/	Active	Inactive
Total	6	6	-
Goal reported 2/	6	6	-
Instructor in a school of dental hygiene	2	2	-
Director of a school of dental hygiene	1	1	-
Dentist	2	2	-
Public health dental hygienist 3/	1	1	-
Hygienist in elementary or high school 3/	-	-	-
Other goal in dental hygiene specified	-	-	-
Goal outside dental hygiene specified	2	2	-
Goal not reported	-	-	-

1/ Hygienists who reported they were enrolled, definitely planning to enroll, or still considering enrollment (see Table B-3e).

2/ Items will add to more than total if hygienists reported more than one goal.

3/ Some hygienists who are interested in working in the schools are probably included in the public health category.

Table B-3g -- Obstacles to Returning to College, by Current Plans for Returning

Obstacles	Selected instate hygienists 1/	By current plans for returning to college: Definitely planning to enroll	Still considering enrollment	Definitely decided not to enroll
Total	7	-	6	1
Obstacles reported 2/	7	-	6	1
Lack of course offerings in a nearby school	3	-	3	-
Lack of sufficient funds	1	-	1	-
Family obligations	4	-	3	1
Lack of specific information on opportunities available	1	-	1	-
Age 3/	-	-	-	-
Lack of time 3/	-	-	-	-
Other obstacle specified	-	-	-	-
Obstacles not reported	-	-	-	-

1/ Includes all hygienists who have seriously considered returning to college and who reported their current plans, except those now enrolled (see Table B-3e).
2/ Items will add to more than total if hygienists reported more than one obstacle.
3/ These obstacles were not included on the printed questionnaire, but were written in by the specified number of respondents.

Table B-3h -- Sponsors of Short-term Courses Taken in Dental Hygiene or Related Subjects in Last 12 Months

Sponsors	Instate hygienists	Active	Inactive
Total	21	17	4
Have taken courses 1/	3	3	-
School of dental hygiene	2	2	-
State or local dental hygiene association	-	-	-
Dental school	1	1	-
State or local dental association	-	-	-
Other sponsor	-	-	-
Sponsor not reported	-	-	-
Have not taken courses	17	13	4
If courses taken not reported	1	1	-

1/ Items will add to more than total if hygienists reported taking more than one course.

Table B-3i -- Interest in Taking Refresher Training in Dental Hygiene If Such Training Were Available in a Nearby School

Current status by past activity in this State	Instate hygienists	By interest in taking refresher training		
		Interested	Not interested	Not reported
Active hygienists, by total years active in this State	17	13	4	-
2 years or less	7	6	1	-
3 - 5	3	2	1	-
6 - 10	1	-	1	-
11 years or more	3	3	-	-
Years not reported	3	2	1	-
Inactive hygienists, by last year active in this State	4	-	1	3
1964 or later	2	-	1	1
1961 - 1963	1	-	-	1
1956 - 1960	-	-	-	-
Before 1956	1	-	-	1
Never active	-	-	-	-
Year not reported	-	-	-	-

Table B-4a -- Past Professional Activity in State by Hygienists Ever Active in the State

Year first licensed in State	Percent of ever active hygienists	Average years in State		Percent of licensed years active
		Licensed	Active	
Total	100	11.0	8.4	76
1964 - 1966	41	1.7	1.7	100
1961 - 1963	18	4.3	3.0	70
1958 - 1960	12	7.5	5.5	73
1955 - 1957	-	-	-	-
1951 - 1954	-	-	-	-
Before 1951	29	29.4	22.2	76

Table B-4b -- Other States in Which Previously Active, By Last Year in Practice in the Other State

State	Instate hygienists	By last year in practice				
		1964 or later	1961-1963	1958-1960	Before 1958	Not reported
Total	21	-	-	-	-	-
Have been active in other States 1/	13	5	5	3	5	-
Alabama	1	-	-	1	-	-
Arkansas	1	-	1	-	-	-
California	1	1	-	-	-	-
Florida	1	1	-	-	-	-
Illinois	1	-	1	-	-	-
Louisiana	2	2	-	-	-	-
Massachusetts	1	-	-	-	1	-
Michigan	1	-	-	-	1	-
Oklahoma	1	-	-	-	1	-
South Carolina	1	-	1	-	-	-
Tennessee	7	1	2	2	2	-
Have not been active in other States	7	-	-	-	-	-
If active in other States not reported	1	-	-	-	-	-

1/ Figures will add to more than total if hygienists reported practicing in more than one other State.

Table B-5a -- Marital Status

Marital status	Instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total	21	17	9	4
Single	7	5	4	2
Ever married	14	12	3	2
Now married	13	11	2	2
Other status	1	1	1	-
Status not reported	-	-	-	-

Table B-5b -- Presence of Dependent Children

Number of dependent children	Ever married instate hygienists	Active		Inactive
		Total	Employed full time, year round	
Total	14	12	5	2
With no children	3	3	-	-
With children	11	9	5	2
1	7	6	5	1
2	3	2	-	1
3	-	-	-	-
4	1	1	-	-
5 or more	-	-	-	-
Number of children not reported	-	-	-	-

Table B-5c -- School Status and Age of Dependent Children

School status and age of children	Ever married instate hygienists	Active	Inactive
Total with children	11	9	2
School status			
None in school	6	5	1
Some in school 1/	5	4	1
In grades 1 - 8	4	3	1
In grades 9 - 12	1	-	1
In college or business school	1	1	-
School status not reported	-	-	-
Age of children			
With children under 15 years 1/	10	8	2
1 year or less	2	1	1
2 - 3 years	3	3	-
4 - 5 years	3	3	-
6 - 7 - 8 years	1	1	-
9 - 10 - 11 years	3	3	-
12 - 13 - 14 years	1	-	1
With children 15 and over only	1	1	-
Age not reported	-	-	-

1/ Figures will add to more than total if hygienists reported children in more than one group.

Table B-6 -- Membership in American Dental Hygienists' Association 1/

Current membership status	Instate hygienists	Active	Inactive
Total	21	17	4
A member	13	10	3
Not a member, but a member at one time	8	7	1
Not a member, past membership not reported	-	-	-
Never a member	-	-	-
Current and past membership not reported	-	-	-

1/ Excludes junior memberships.

Table C-1a -- Hours Worked in a Typical Week In Private Dental Offices

Hours	Practicing hygienists	Aggregate hours reported
Total	15	-
Time reported 1/	15	435
Less than 8	-	-
8	1	8
9 - 15	2	21
16	1	16
17 - 23	1	21
24	1	24
25 - 31	2	58
32	-	-
33 - 34	-	-
35	-	-
36 - 39	-	-
40	5	200
41 or more	2	87
Time not reported	-	-

Table C-1b -- Weeks Worked in Private Dental Offices During 12 Months Preceding Survey

Weeks	Practicing hygienists	Aggregate weeks reported
Total	15	-
Time reported 1/	15	724
4 or less	-	-
5 - 8	-	-
9 - 12	-	-
13 - 16	-	-
17 - 20	-	-
21 - 24	-	-
25 - 28	-	-
29 - 32	-	-
33 - 36	-	-
37 - 40	2	78
41 - 44	-	-
45 - 47	2	91
48 - 49	3	145
50 - 52	8	410
Time not reported	-	-

1/ Hygienists who reported both hours and weeks.

Table C-1c -- Summary of Time Worked in Private Dental Offices

Time worked 1/	Practicing hygienists	Aggregate hours reported	Aggregate weeks reported
Total	15	-	-
Time reported	15	435	724
Full time	7	287	338
Year round	6	247	300
Less than year round	1	40	38
Part time	8	148	386
Year round	5	87	255
Less than year round	3	61	131
Time not reported	-	-	-

1/ Definitions of time worked:

Full time -- 35 hours or more in a typical week
Part time -- less than 35 hours
Year round -- 48 weeks or more in the 12 months preceding the survey
Less than year round -- less than 48 weeks

Table C-2 -- Activities Performed in Private Dental Offices By Time Spent At Each Activity in A Typical Week

Activity	Practicing hygienists	Time spent at activity: Hygienists reporting hours	Time spent at activity: Aggregate hours reported
Total	15	-	-
Activities reported	15	-	-
Oral prophylaxis	15	9	171
Other clinical services 1/	13	7	44
Patient dental health education 2/	14	8	39
Management of dental office 3/	8	5	18
Dental assisting tasks 4/	5	2	10
Activities not reported	-	-	-

1/ Radiographs, fluoride applications, etc.
2/ Time devoted exclusively to instruction of individual patients in oral hygiene, diet, etc.
3/ Recalls, pulling charts, answering telephone, receptionist duties, bookkeeping, etc.
4/ Preparing tray set-ups, passing instruments, pouring models, etc.

Table C-3a -- Employing Dentists, By Number of Dental Offices

Number of employing dentists 1/	Practicing hygienists	Number of dental offices in which employed				
		1	2	3	4 or more	Not reported
Total	15	11	2	2	-	-
Dentists reported	12	8	2	2	-	-
1	6	6	-	-	-	-
2	3	1	2	-	-	-
3	2	1	-	1	-	-
4 or more	1	-	-	1	-	-
Number of dentists not reported	3	3	-	-	-	-

1/ Includes only those dentists whose patients the hygienist cared for.

Table C-3b -- Type of Practice of Employing Dentists

Type of practice of employing dentists	Practicing hygienists
Total	15
Worked for general practitioner only	14
Worked for dental specialist	-
Type not reported	1

Table C-4a -- Type(s) of Compensation Received For Time Worked in Private Dental Office(s)

Type(s) of compensation	Practicing hygienists	By time worked in private dental offices 1/				
		Full time		Part time		Time not reported
		Year round	Less than year round	Year round	Less than year round	
Total	15	6	1	5	3	-
Reporting type(s) of compensation	14	5	1	5	3	-
Salary only	2	1	-	1	-	-
Commission only	11	4	1	4	2	-
Both salary and commission only	1	-	-	-	1	-
Type of compensation not reported	1	1	-	-	-	-

1/ See Table C-1c for definitions of time worked.

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Table C-4b -- Gross Earnings From Dental Hygiene Practice During 12 Months Preceding Survey

Gross earnings 1/	Practicing hygienists	By time spent in private dental office 2/				
		Full time		Part time		Not reported
		Year round	Less than year round	Year round	Less than year round	
Total	15	6	1	5	3	-
Earnings reported	10	3	1	4	2	-
Under $1,000	-	-	-	-	-	-
1,000 - 1,999	-	-	-	-	-	-
2,000 - 2,999	1	-	-	1	-	-
3,000 - 3,999	2	-	-	1	1	-
4,000 - 4,999	1	-	-	-	1	-
5,000 - 5,999	3	2	1	-	-	-
6,000 - 6,999	2	-	-	2	-	-
7,000 - 7,999	-	-	-	-	-	-
8,000 - 8,999	1	1	-	-	-	-
9,000 - 9,999	-	-	-	-	-	-
10,000 & over	-	-	-	-	-	-
None 3/	-	-	-	-	-	-
Earnings not reported	5	3	-	1	1	-

1/ If exact figure for gross earnings (before deductions) was not available, respondent was requested to give best estimate to the nearest $500.
2/ See Table C-1c for definitions of time worked.
3/ Generally reported by hygienists who indicated they were working for their dentist-husbands.

Table D-1 -- Location and Current Professional Status

State	Out of State hygienists	Active			Inactive
		Total	In private dental offices	Other active	
Total	12	9	7	2	3
Alabama	4	3	2	1	1
California	1	1	-	1	-
Florida	1	-	-	-	1
Louisiana	1	1	1	-	-
New York	1	1	1	-	-
Oklahoma	1	1	1	-	-
Tennessee	3	2	2	-	1

Table D-2 -- Year Certificate or Degree Was Received, by Current Professional Status

Year certificate or degree was received	Out-of-state hygienists	Active	Inactive
Total	12	9	3
With formal academic training	12	9	3
1964 - 1966	6	5	1
1961 - 1963	1	-	1
1958 - 1960	-	-	-
1955 - 1957	1	1	-
Before 1955	4	3	1
With no formal academic training	-	-	-

Table D-3 -- Reasons Why Inactive Hygienists Were Not Professionally Active

Reasons	Inactive out-of-state hygienists
Total	3
Reasons reported 1/	3
Full-time family obligations	1
Employment in another occupation	2
Attending school	-
Beyond age to practice	-
Poor health	-
Loss of skill to practice	-
Unable to find suitable position as hygienist	-
She prefers not to work	1
Husband does not want her to work	1
Not licensed in state where she currently resides	1
Another reason specified	-
Reasons not reported	-

1/ Figures will add to more than total if hygienists reported more than one reason.

VT 014 446
SPECIAL IMPROVEMENT GRANTS.

NATIONAL INSTITUTES OF HEALTH (DHEW),
BETHESDA, MD. DIV. OF ALLIED HEALTH MANPOWER.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - ND 16P.

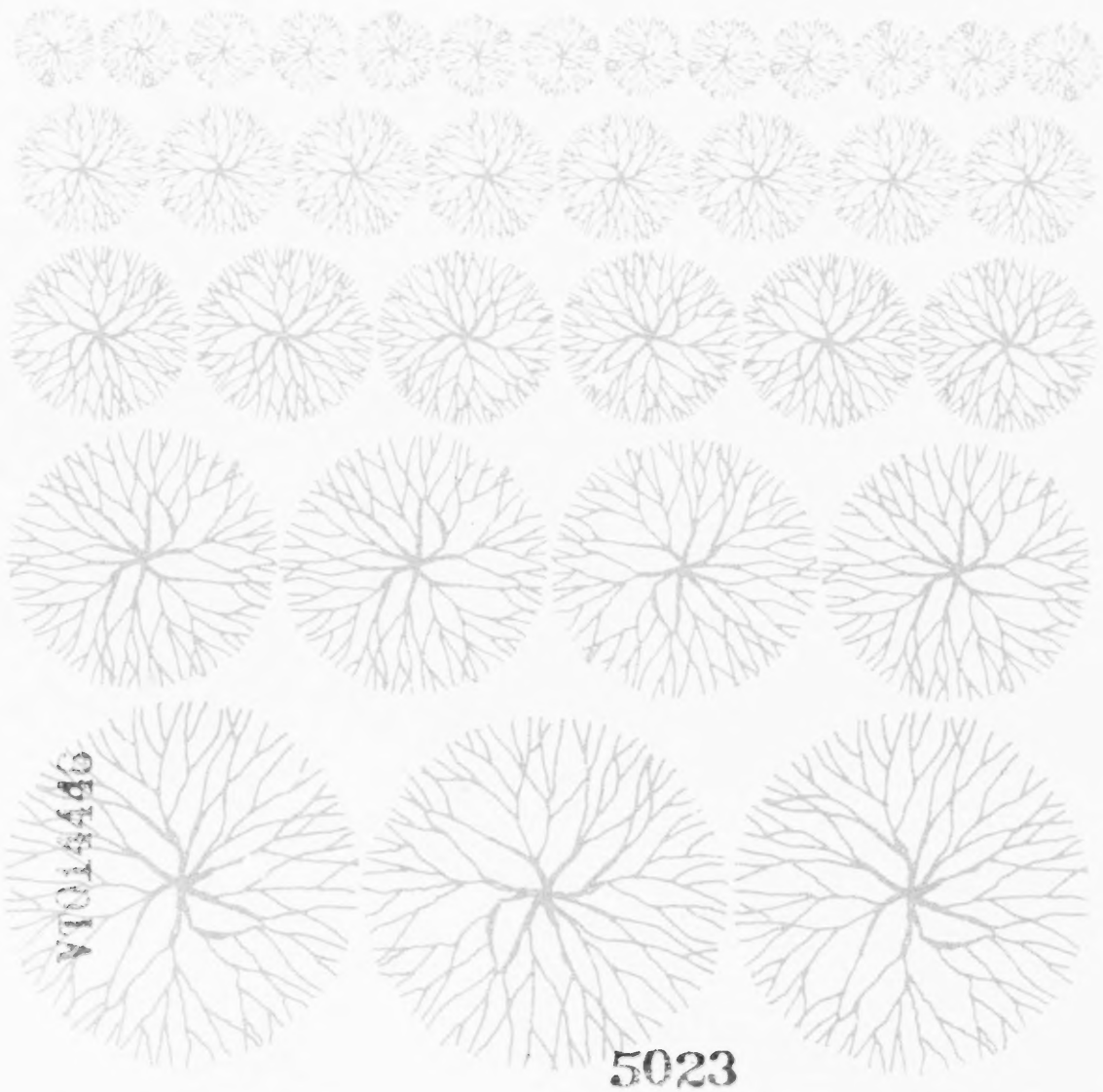
DESCRIPTORS - HEALTH OCCUPATIONS EDUCATION; *EDUCATIONAL PROGRAMS; *PARAMEDICAL OCCUPATIONS; HEALTH OCCUPATIONS; *GUIDELINES; EDUCATIONAL FINANCE; *IMPROVEMENT PROGRAMS; FEDERAL AID; *FINANCIAL SUPPORT; INCENTIVE GRANTS; JUNIOR COLLEGES; COMMUNITY COLLEGES; COLLEGES; UNIVERSITIES

ABSTRACT - THIS DOCUMENT DESCRIBES THE POLICIES AND PROCEDURES GOVERNING SPECIAL IMPROVEMENT GRANTS AUTHORIZED BY SECTION 792 (B) OF THE PUBLIC HEALTH SERVICE ACT TO JUNIOR COLLEGES, COLLEGES, AND UNIVERSITIES WHICH QUALIFY AS TRAINING CENTERS FOR THE ALLIED HEALTH PROFESSIONS. INFORMATION PERTAINS TO: (1) ADMINISTRATION OF THE IMPROVEMENT PROGRAM, (2) ELIGIBILITY REQUIREMENTS, (3) ACCREDITATION, (4) APPLICATION PROCEDURES AND REVIEW PROCESS, (5) UTILIZATION OF GRANT FUNDS, METHOD OF PAYMENT, AND CONTINUED, SUPPLEMENTAL, AND RENEWAL SUPPORT, (6) ANNUAL PROGRESS REPORTS, AND (7) REPORTING EXPENDITURES AND MAINTAINING RECORDS. (SB)

VT 014 446

Allied Health Professions

Special Improvement Grants



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DISCRIMINATION PROHIBITED

Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

Therefore, the Allied Health Professions — Special Improvement Grants, like every program or activity receiving financial assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.

Special Improvement Grants

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
BUREAU OF HEALTH MANPOWER EDUCATION
Division of Allied Health Manpower
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Bethesda, Maryland 20014

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ALLIED HEALTH PROFESSIONS
SPECIAL IMPROVEMENT PROGRAM

INTRODUCTION

Section 792(b) of the Public Health Service Act, as amended, authorizes special improvement grants to junior colleges, colleges and universities which qualify as training centers [1] for the allied health professions. These grants may be awarded to conduct projects for the provision, maintenance, or improvement of the specialized function which the center serves, including the following:

expansion of the enrollment in allied health educational programs presently offered;

improvement of the allied health curriculum(s) offered through revision, improved teaching methods and aids (for example, audio-visual equipment, laboratory equipment), better coordination between academic and clinical portions of the curriculum, etc.;

establishment of additional allied health educational and training programs in fields not currently offered at that institution; [2]

implementation of special programs which have been developed through other mechanisms to reach special groups, such as returning veterans in a health field, the economically or culturally deprived, or persons reentering any of the allied health fields; [2]

development and implementation of better coordinated programs, both within the institutions and among cooperating institutions, for the training of allied health professions personnel.

This document describes the policies and procedures governing special improvement grants. These grants are governed by the policies in this document, and the applicable portions of *Public Health Service Grants for Training Projects — Policy Statement.* [3] However, where this document differs from

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1 The requirements for qualifying as a training center are on pages 2–4, (Eligible Applicants).

2 Special improvement grants are not designed for experimentation or demonstration. For information on development of such projects, refer to the Special Project Grant document.

3 Referred to throughout the remainder of this document as the "Policy Statement."

the Policy Statement, the policies set forth in this document take precedence. *Because there are a number of instances in which the policies governing these grants differ from those in the Policy Statement, it is recommended that the grantee institutions review this document before referring to the Policy Statement.*

ADMINISTRATION

The Allied Health Professions Educational Improvement Program (Special Improvement Grants) is administered by the Division of Allied Health Manpower, Bureau of Health Manpower Education, National Institutes of Health. Questions concerning the professional program aspects of these grants (such as consultation relating to the development and content of projects for which support is sought), as well as questions concerning the procedural and management aspects of these grants (such as application and award procedures, financial reports, etc.) should be directed to:

Division of Allied Health Manpower
Bureau of Health Manpower Education
National Institutes of Health
9000 Rockville Pike
Bethesda, Maryland 20014

ELIGIBLE APPLICANTS – QUALIFYING AS A TRAINING CENTER

To be eligible to apply for a special improvement grant, an applicant must qualify as a training center for the allied health professions. To qualify as a training center, the applicant must:

(1) Be a public or other nonprofit junior college, college, or university located in a State, the District of Columbia, Puerto Rico, the Virgin Islands, American Samoa, or Guam.

(2) Provide training for at least 20 students in the program years as specified under A and B below, *with no fewer than 6 students* enrolled in each program in the years specified.

A. Educational programs which qualify students for the baccalaureate degree, its equivalent, or a higher degree to the extent required to prepare graduates for basic professional certification, registration, or licensure and for employment as one of the following:

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1. Medical Technologist
2. Optometric Technologist
3. Dental Hygienist
4. Radiologic Technologist
5. Medical Record Librarian
6. Dietitian
7. Occupational Therapist
8. Physical Therapist
9. Sanitarian

In the educational programs which include a clinical component or other professional component that is undertaken in whole or in part, after the awarding of the baccalaureate degree, but is not creditable to a higher degree, the certificate or document which signifies satisfactory completion of the training experience is considered to be the equivalent of a baccalaureate.

Students eligible to be counted must be enrolled in the 3rd, 4th, 5th or 6th year as of October 15 in the Federal fiscal year in which application is made. This will permit the inclusion of students enrolled in clinical training taken after the award of the baccalaureate degree, which does not exceed 24 months, when such training is required for basic professional preparation.

Likewise, students enrolled in these curriculums in higher degree programs (e.g., Masters), when such is required for basic preparation, also may be counted.

B. Educational programs which qualify students for the associate degree or its equivalent and for employment as one of the following:

1. X-ray Technician
2. Medical Record Technician
3. Inhalation Therapy Technician
4. Dental Laboratory Technician
5. Dental Hygienist
6. Dental Assistant
7. Ophthalmic Assistant
8. Occupational Therapy Assistant
9. Dietary Technician
10. Medical Laboratory Technician
11. Optometric Technician
12. Sanitarian Technician

A certificate, diploma or other document awarded by the training center which signifies satisfactory completion of a program of study carrying not less than two years of academic credit is considered to be the equivalent of an associate degree.

Students eligible to be counted in associate degree programs must be enrolled in the 2nd or final year as of October 15 of the Federal fiscal year in which application is made.

(3) Provide assurance that it is affiliated with one or more teaching hospitals which provide the clinical training, if required, for completion of the curriculums listed in A and B above by means of an agreement [4] which stipulates —

(a) the responsibilities of the center, the responsibilities of the hospital, and their joint responsibilities with respect to the clinical components of such curriculums;

(b) the procedure by which the center and the hospital will coordinate the academic and clinical training of students in such curriculums; and

(c) that, with respect to the clinical component of each such curriculum, the teaching plan and resources have been jointly examined and approved by the appropriate faculty of the center and staff of the hospital.

(4) Meet the following accreditation requirements:

Colleges and Universities must be accredited by a recognized body or bodies recognized for such purpose by the Commissioner of Education.

Junior Colleges must be accredited by the regional accrediting agency for the region in which they are located or provide satisfactory assurance afforded by such accrediting agency that reasonable progress is being made toward accreditation. Junior colleges that wish to apply on the basis of reasonable assurance of accreditation must include, as part of the grant application, a supporting statement from the regional accrediting agency.

ACCREDITATION

The bodies recognized by the Commissioner of Education for accrediting institutions of higher education are the following:

New England Association of Colleges and Secondary Schools
Middle States Association of Colleges and Secondary Schools, Commission on Institutions of Higher Education

4 Applications (including continuation applications) submitted after July 1, 1972 must contain copies of written affiliation agreements with all facilities in which students are placed for the clinical portion of the curriculum when such facilities are not an institutional component of the applicant institution.

North Central Association of Colleges and Secondary Schools, Commission on Higher Schools

Northwest Association of Secondary and Higher Schools, Commission on Higher Schools

Southern Association of Colleges and Schools

Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities, and Accrediting Commission for Junior Colleges

An applicant institution which is not a part of a college or university accredited by one of the bodies listed above, will be considered accredited for the purposes of this grant program if it is approved by a professional accrediting body, recognized by the Commissioner of Education, to award the principal professional degree granted by the institution.

APPLICATION PROCEDURES

Training centers that wish to apply for a special improvement grant must submit a completed application form. Detailed instructions concerning the preparation and the time of submission are provided with the application.

REVIEW PROCESS

New, supplemental, and renewal applications will be reviewed for technical merit by an expert review committee and then reviewed in terms of the effect of the application toward attainment of national objectives by the National Advisory Allied Health Professions Council.

Applications will also be reviewed to ascertain the following:

(1) That the purposes for which the center proposes to expend the funds are within the intent of the authorizing legislation.

(2) That the application contains assurance satisfactory to the Secretary that during the Federal fiscal year in which the grant is made the training center will expend in support of those specified curriculums which qualify the applicant as a training center, an amount (other than amounts for construction) of non-Federal funds which is at least as great as the average amount of non-Federal funds expended by the center for such purposes during the three Federal fiscal years immediately preceding the fiscal year in which the grant is sought.

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This requirement is to insure that special improvement funds supplement, not supplant, non-Federal support of the center's activities.

The authorizing legislation requires that in determining priority among special improvement grants, consideration will be given to:

The relative financial need of the applicant for such a grant,
The relative effectiveness of the applicant's plan in carrying out the purposes of such grants,
The extent to which the applicant's proposal contributes to an equitable geographic distribution of training centers offering high—quality training of allied health professions personnel.

Reasons for the actions recommended by review bodies on an application will be given only upon receipt of a written request from the designated program director or official whose name appears on the application face sheet as representing the institution.

GRANT AWARDS

Each school receiving a special improvement grant will be sent annually a Notice of Grant Awarded. The initial Notice of Grant Awarded will indicate the period for which support of the approved project has been recommended (the project period), the approved budget (by types of expenditures authorized) and the amount available for expenditure during the portion of the project period covered by the approved budget (the budget period), and the level of support recommended for the remainder of the project period.

Five years is the maximum period for which special improvement grant support may be requested. Continued support for the second through the fifth years of a project will be subject to satisfactory progress toward project objectives, the availability of funds for special improvement grants, and continuation of the authorizing legislation. Funds for an approved project will be awarded annually on the basis of the needs for each budget period.

Unobligated funds available at the end of each budget period will remain in the grant account but will be applied as partial payment of future awards within the project period and may be used only within the limits of the budgets approved for the budget periods covered by these awards. The continuation award may include funds in the amount of an approved budget, or funds to be added to those funds remaining from a previous grant to provide an amount equal to the approved budget. At the end of the project period, unobligated funds remaining in the grant account must be accounted for according to instructions that will be provided.

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EXPENDITURE OF GRANT FUNDS

Special improvement grant funds must be used solely for the purposes described in the approved application or for such related purposes as may subsequently be approved as necessary to the project.

A. **Allowable Costs** – Typical allowable expenditures include salaries and associated fringe benefits of professional and supportive staff, purchase of supplies and equipment, alterations and renovations, books and periodicals, and other necessary costs related to carrying out the objectives of the grant award. Salaries and wages of professional staff may be charged to the grant in proportion to the distribution of their total effort between activities within the scope of the award and other activities, such as research (see the *Policy Statement*).

B. **Unallowable Costs** – Special improvement grant funds may not be used for the operation of teaching hospitals, other patient care costs, financial assistance to students (e.g., stipends, tuition and fees, travel allowances), research (except for research regarding the educational process as it relates to the various allied health professions), research training or construction. The prohibition against payment of operating costs of teaching hospitals does not preclude using these funds to pay salaries of clinical teaching staff engaged in the approved project and other closely related costs of conducting the approved project.

Construction includes (1) the construction of new buildings or the acquisition of existing buildings (including related costs, such as architects' fees, acquisition of land, and off–site improvements), (2) the expansion, remodeling, alteration and repair of existing buildings, except where the cost during a budget period does not exceed $50,000, and (3) the initial equipping of such buildings. The prohibition against expending special improvement grant funds in excess of $50,000 for remodeling, alteration and repair of existing buildings during a budget period may be waived when it is determined that such expenditures are necessary to carry out the approved purposes of the grant proposal.

For more detailed information concerning the definitions of the costs described above and the principles governing their allocation to an approved grant, training centers should refer to the Policy Statement and Bureau of the Budget Circular A–21, which are available in financial offices of most grantee institutions, or from the Division of Allied Health Manpower (see section on "Administration" for address).

INDIRECT COSTS

An indirect cost allowance will be provided at the rate of 8 percent of allowable direct costs, subject to downward adjustment if the actual rate is less. (See Policy Statement for Definition of Indirect Costs.)

METHOD OF PAYMENT

Grantees will be paid under a letter of credit or cash request system. Questions concerning the methods of payment should be directed to the individual designated as the payee on the Notice of Grant Awarded. If necessary, that individual may contact the following office for additional information:

Federal Assistance Financing Branch
Office of Financial Management
National Institutes of Health
Bethesda, Maryland 20014

CONTINUED SUPPORT

Continued support must be requested for each subsequent budget period. An application form for requesting continuation support will be mailed to grantees at the appropriate time. The continuation application must be submitted in accordance with the instructions attached thereto. Continued support is contingent upon availability of funds, the demonstrated progress of the project in meeting the stated objectives, and continuation of the authorizing legislation.

SUPPLEMENTAL SUPPORT

If a grantee wishes to request additional funds over those budgeted and approved by the Division of Allied Health Manpower for the remaining portion of the project period, a supplemental application for additional funds must be submitted. Supplemental applications for the expansion of a special improvement grant are subject to the same deadlines and processed in the same manner as new and renewal applications. In addition, they must compete with new and renewal applications for available funds. Appropriate application materials will be provided upon request.

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RENEWAL SUPPORT

If additional support is desired to continue support beyond the approved project period, an application for renewal support must be submitted. Renewal applications are subject to the same deadlines and processed in the same manner as new and supplemental applications. In addition, they must compete with new and supplemental applications for available funds. If approved and awarded, an initial grant for a new project period will be made. Appropriate application materials will be provided upon request.

PROGRESS REPORTS

Annual progress report must accompany applications for continued Special Improvement Grant support. Its purpose is to identify and quantify progress toward meeting objectives of the approved project. Instructions for preparing the report will be sent to grantees with materials for submitting continuation applications.

REPORT OF EXPENDITURES

A report of expenditures for each budget period is required within 120 days after the end of the budget period. The report forms are routinely mailed to the grantee before the end of the budget period and should be completed in accordance with the instructions attached thereto. A continuation grant will not be awarded if the required expenditures report has not been received.

ACCOUNTING, RECORDS AND AUDIT

Grantees must maintain grant accounting records, identifiable by grant number. Records may be destroyed three years after the end of the budget period, if audit by or on behalf of the Department of Health, Education, and Welfare has occurred. If such an audit has not occurred by that time the records must be retained until audit or until five years following the end of the budget period, whichever is earlier. In all cases an overriding requirement exists to retain records until any audit questions relating to individual grants are resolved.

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ADDITIONAL POLICY INFORMATION

For additional information on policies concerning the following items, refer to the *Policy Statement*.

Rebudgeting
Refunds
Reports
Publication and Publicity
Patents and Inventions

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VT 014 447
CALIFORNIA COMMUNITY LABOR MARKET SURVEYS, 1969-1970.

CALIFORNIA STATE HUMAN RELATIONS AGENCY, SACRAMENTO. DEPT. OF HUMAN RESOURCES DEVELOPMENT.
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ABSTRACT - THESE SURVEYS PROVIDE BASIC ECONOMIC INFORMATION RELATING TO 92 CALIFORNIA COMMUNITIES IN WHICH THE DEPARTMENT OF HUMAN RESOURCES DEVELOPMENT MAINTAINED LOCAL OFFICES IN 1970. ECONOMIC TRENDS AND COMMUNITY AND LABOR FORCE CHARACTERISTICS ARE DESCRIBED, AND DATA ARE PROVIDED COVERING EMPLOYMENT, POPULATION, AND STARTING WAGE RATES. (BH)

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CALIFORNIA COMMUNITY LABOR MARKET SURVEYS 1969--1970

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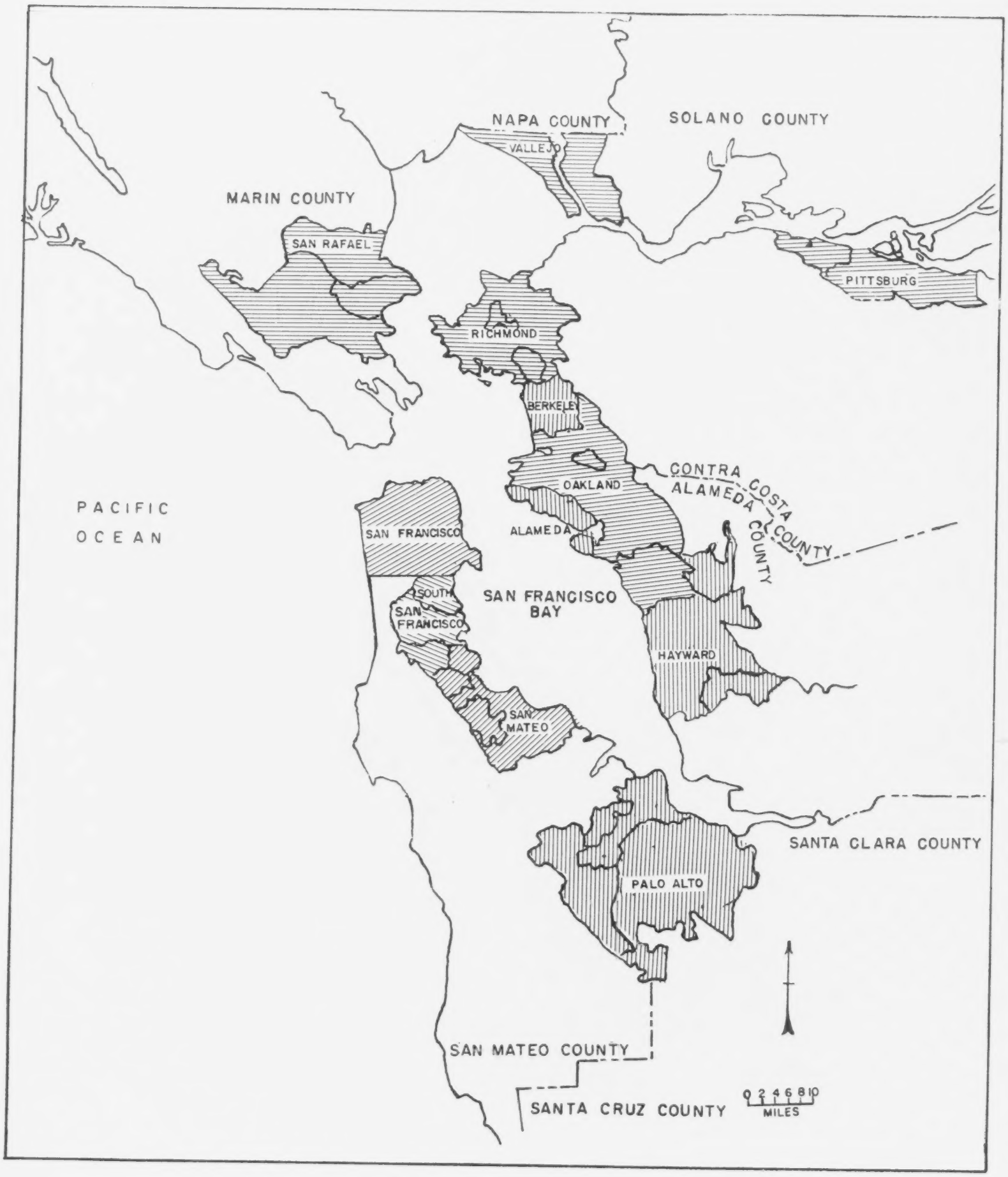
METROPOLITAN LOS ANGELES

COMMUNITY LABOR MARKET AREA BOUNDARIES

SAN FRANCISCO BAY REGION

COMMUNITY LABOR MARKET AREA BOUNDARIES



State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEYS

Foreword

These surveys provide basic economic information relating to 92 California communities in which the Department of Human Resources Development maintained local offices during 1970. Materials for these surveys were developed by Department of Human Resources Development personnel in the respective communities with the cooperation of interested local groups.

BOUNDARIES: For the majority of communities, boundaries are defined in terms of complete Census County Divisions as used in the census. (See U.S. Department of Commerce, Bureau of the Census, Final Report PC (1)-6A, Number of Inhabitants, California.) In Los Angeles County, it was necessary to define all communities according to Census Tract numbers. In a few communities, a combination of Census County and Census Tract boundaries was used. For all communities whose boundaries do not coincide with complete Census County Divisions as defined in the heading of the individual survey, a descriptive supplement has been prepared and appears in the Technical Appendix at the back of this volume.

COMPARABILITY: Surveys for most of the communities appearing in this volume are comparable with those in the 1967-1968 edition. Exceptions are as follows:

Avalon-Florence: Formerly Florence Community, now includes Bell, Bell Gardens, Huntington Park, Maywood, Vernon and portions of Los Angeles City and unincorporated county.

Compton: Portion of Los Angeles City added.

Duarte: Irwindale now in West Covina.

East Los Angeles: Now includes Boyle Heights district of Los Angeles City, City of Commerce, Monterey Park, and portions of unincorporated county.

Inglewood: Lawndale and Manhattan Beach now in Torrance.

Monterey: Fort Ord Census Division added.

Oxnard-Ventura: Formerly Ventura Community, now includes Oxnard, Port Hueneme, Point Mugu, Ventura (San Buena Ventura, Rincon, Saticoy, Montalvo, and Camarillo).

Pasadena: Alhambra and San Gabriel added.

Torrance: Lawndale and Manhattan Beach added from Inglewood.

West Covina: Irwindale added from Duarte.

Yreka: Now consists of Yreka and immediate environs.

POPULATION: Population figures are preliminary counts of the 1970 United States Census.

EMPLOYMENT TABLES: Employment figures represent the estimated number of workers employed within the community regardless of their place of residence. Workers residing in and employed outside the community are not included.

Employment tables are available for the following communities in the Coastal Area that were not included in this publication:

Alamo-Danville	Livermore
Concord	Los Gatos
Crockett	Martinez
Cupertino	Orinda-Moraga
Daly City	Redwood City
Fairfield	Sunnyvale
Fremont	

These tables may be obtained by request to:

Area Manpower Analyst
Department of Human Resources Development
745 Franklin Street
San Francisco, California 94102

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COMMUNITY LABOR MARKET SURVEYS

List of Communities Surveyed

Alameda
Alturas
Auburn
Avalon-Florence
Bakersfield
Berkeley
Bishop
Chico
Compton
Crescent City
Culver City
Duarte
Dunsmuir-Mt. Shasta-Weed
East Los Angeles
El Centro
Escondido
Eureka
Fort Bragg
Fresno
Fullerton
Gilroy
Glendale
Grass Valley
Hanford
Hayward
Hollister
Hollywood
Indio
Inglewood
Lancaster
Lodi
Long Beach
Los Angeles-Central District
Los Angeles Harbor
Los Angeles-South Central District
Madera
Marysville-Yuba City
Merced
Modesto
Monterey
Napa
North Hollywood
Norwalk
Oakland
Oceanside
Ontario

Oroville
Oxnard-Ventura
Palo Alto
Pasadena
Petaluma
Pittsburg
Placerville
Pomona
Porterville
Quincy
Red Bluff
Redding
Richmond
Riverside
Sacramento
Salinas
San Bernardino
San Diego
San Fernando
San Francisco
San Jose
San Luis Obispo
San Mateo
San Rafael
Santa Ana
Santa Barbara
Santa Cruz
Santa Maria
Santa Monica
Santa Rosa
Sonora
South Lake Tahoe
South San Francisco
Stockton
Susanville
Torrance
Turlock
Ukiah
Vallejo
Van Nuys
Visalia
Watsonville
West Covina
Whittier
Woodland
Yreka

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COMMUNITY LABOR MARKET SURVEY - ALAMEDA

Areas Included in Community: Alameda Census Division, coextensive with Alameda City

Civilian Population, July 1970: Community: 66,100 Alameda: 66,100

County: Alameda

Employment[a] by Industry

Industry	July 1970	July 1969
Total	22,000	24,400
Agriculture, forestry, and fisheries	100	100
Contract construction	500	600
Manufacturing	2,000	2,600
Nondurable goods	400	400
Durable goods	1,600	2,200
Transportation, communications, and utilities	600	600
Wholesale and retail trade	2,700	2,700
Finance, insurance, and real estate	700	700
Service	2,900	2,900
Government (b)	12,500	14,200

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The island community of Alameda is located in San Francisco Bay, just off the west shore of Oakland. Government establishments provide more than half of the jobs in the community, the principal employer being the Alameda Naval Air Station.

Alameda is tied to Oakland by bridges and underwater vehicular tubes. Buses offer the chief means of public transportation, both locally and for commuter service to Oakland and San Francisco. Rail service is provided by the Western Pacific, Santa Fe and Southern Pacific railroads. The Alameda Belt Line furnishes switching service for users of the deep-sea terminals located on the island. Air service is handled by the major airlines using nearby Oakland International Airport.

CHARACTERISTICS OF THE LABOR MARKET: Alameda's economy is largely dominated by the level of activity at the Naval Air Station. With decreased military activity in Vietnam in 1970, the demand for civilian workers declined and reductions in force were undertaken.

Warehousing, retail trade, and service establishments demand experienced workers. The wives of servicemen stationed at the Naval Air Station constitute a substantial pool of available workers. Commuting has long been an important element in the local picture, and a number of Alameda residents hold jobs in neighboring communities, while many Alameda jobs are filled by workers from other cities.

Ship repair, metal fabrication, and construction are largely unionized. A large proportion of the Alameda labor force is not organized because of the predominance of government employment.

ECONOMIC TRENDS: There will be continued residential development in the southshore area. Sharp fluctuations that characterize ship repair and conversion work can be expected to continue. Further changes in government defense appropriations or plans, particularly in regard to the Vietnam War will greatly influence the local job market.

Plans are underway for regional shopping center, composed of two or three major stores and about 75 smaller outlets in the Pacific Marina Area. The College of Alameda is completed and opened this September with 2,500 students.

Alameda is becoming a center for water recreation. Nearly 1,500 berths are available for private boats and plans are underway to add almost that many more in the near future. Facilities for pleasure-craft building and maintenance are the most complete in the East Bay.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$475.00	Month	--
Typist (clerical).....	203.588	435.00	Month	--
Salesperson, general (retail trade)....	289.458	1.95-2.35	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.445	Hour	2.445
Machinist (machine shop).....	600.280	4.81	Hour	4.81
Service station attendant.....	915.867	2.00-2.35	Hour	--

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COMMUNITY LABOR MARKET SURVEY - ALTURAS

Areas Included in Community: Alturas and immediate environs

Civilian Population, July 1970: Community: 4,000 Alturas: 3,025

County: Modoc

Employment[a] by Industry

Industry	July 1970	July 1969
Total	1,850	1,900
Agriculture, forestry, and fisheries	225	225
Mining	50	50
Contract construction	25	25
Manufacturing	100	125
Transportation, communications and utilities	100	125
Wholesale and retail trade	300	300
Finance, insurance and real estate	100	75
Services	225	250
Government (b)	725	725

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The area adjacent to Alturas, the largest city in Modoc County, is well known as a hunting area particularly for deer, duck, dove, quail, and pheasant. The town is located about 42 miles from the Oregon border. The climate is cold during the winter months with temperatures dropping as low as ten degrees below zero; during the summer in contrast it may reach 95 degrees. Alturas is at the junction of two state highways, and private automobile is the only means of local transportation. The Redding bus line provides service from Alturas to Redding, and transportation to Klamath Falls, Oregon or Reno, Nevada is available on the Greyhound bus lines. Four major truck lines and the Southern Pacific Railroad carry freight to the area.

CHARACTERISTICS OF THE LABOR MARKET: Job opportunities in the Alturas labor market area depend upon conditions in a number of seasonal industries, agricultural, manufacturing, trade, and services. There is also considerable fluctuation in employment in government since many of the jobs depend upon the summer tourist season in recreational areas. The principal agricultural crops are potatoes, small grain, and hay. There is also a considerable amount of livestock raising. Agricultural employment is fairly stable throughout the

year reaching a peak during the fall months. The majority of workers in the community are nonunion, the only exceptions being those who are working for public utilities.

ECONOMIC TRENDS: The development of recreational facilities, primarily in the Modoc National Forest and Lava Beds National Monument, has created additional jobs with the Federal Government during the summer months. More people are employed in government than in any other industry with the county and Federal Government being the largest employers. There has been a decline in job opportunities in the principal manufacturing industry, lumber and wood products, because of the cutback in the demand for lumber products. During the last two years, a new convalescent hospital has been opened, and a land development company has begun operations.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union scale
Stenographer (clerical).....	202.388	$400-450	Month	--
Typist (clerical).....	203.588	325-375	Month	--
Lumber checker (sawmill).....	223.588	3.39-3.80	Hour	--
Salesperson, general (retail trade)....	289.458	1.65-1.75	Hour	--
Grocery checker (retail trade).....	299.468	2.00	Hour	--
Nurse, Aid (Med. Services).....	355.878	1.65	Hour	--
Shirt presser (laundry).....	363.885	1.75	Hour	--
Automobile mechanic.....	620.281	3.00-4.50	Hour	--
Millwright.....	638.281	4.00-4.10	Hour	--
Edgerman.....	667.782	3.85-3.92	Hour	--
Grader (lumber).....	669.587	4.30-4.80	Hour	--
Chainman (sawmill).....	669.886	3.33-3.39	Hour	--
Automobile body repairman.....	807.381	4.25-5.00	Hour	--
Construction worker.....	869.887	2.50-3.50	Hour	--
Log-truck driver.....	904.883	3.65-3.85	Hour	--
Service station attendant.....	915.867	2.00-2.25	Hour	--
Lumber handler (sawmill).....	922.887	3.58-4.00	Hour	--
Tractor operator.....	929.883	3.50-3.75	Hour	--
Material handler (sawmill).....	929.887	3.30	Hour	--
Log scaler (lumber & wood).....	941.488	3.40-3.65	Hour	--
Chokerman.....	942.887	3.40-3.65	Hour	--

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COMMUNITY LABOR MARKET SURVEY - AUBURN

Areas Included in Community: Auburn Census County Division

Civilian Population, July 1970: Community: 23,500 Auburn: 6,600

County: Placer

Employment[a] by Industry

Industry	July 1970	July 1969
Total	7,775	7,700
Agriculture, forestry, and fisheries	550	525
Contract construction	350	300
Manufacturing	675	650
Transportation, communications, and utilities	800	775
Wholesale and retail trade	1,700	1,725
Finance, insurance, and real estate	400	400
Service	925	900
Government (b)	2,375	2,425

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The community of Auburn is located in the foothills of the Sierra Nevada Mountains, 35 miles northeast of Sacramento. Auburn, the county seat, is the second largest city in Placer County and serves as the shopping center for those who live in the smaller rural areas. Job opportunities are centered in government, trade, and service industries. A number of Auburn residents work at Weimar Sanitarium, a multi-county tuberculosis sanitarium or at DeWitt State Hospital. Many residents commute to Sacramento to work at the air materiel base or at various state departments. Others work in Roseville at the Southern Pacific Railroad yard. Auburn area residents must have private cars to commute to and from work. A transcontinental Southern Pacific line passes through Auburn, and transportation service east and west is also provided by Greyhound Bus Lines. During the summer, there are jobs in fruit packing sheds in the community to pack the pear and plum crops. Cattle raising is also a major agricultural industry.

CHARACTERISTICS OF THE LABOR MARKET: Employment in the community is relatively stable with a slight seasonal peak during July and August. Both pear and plum harvests were good this year slightly increasing the need for farm workers. There have been cutbacks in employment in state government, but job opportunities with various levels of government continue to offer stable, permanent employment with good wages. Unskilled workers are finding it increasingly difficult to get and hold jobs. Usually there is a surplus of light and heavy

truck drivers, service station attendants, waitresses and bartenders, cashier-checkers, stenographers, general office clerks, and stock clerks. Union membership is required by private industry in lumber and construction work, and nearly all bartenders and culinary workers are union members.

ECONOMIC TRENDS: There has been little change in the economy of Auburn during the last two years. According to the 1970 Census, there has been some movement of people from the City of Auburn into the community. The principal manufacturing industry is lumber and wood products, and there is a firm in the community which manufactures seat belts. Auburn dates back to the gold rush days, and there are a number of old buildings still standing. Some of "Old Auburn" has been redeveloped with excellent restaurant facilities. There has been considerable sale of farm land for developmental purposes. Money has been appropriated for the Auburn Dam, and preliminary site work is well under way. One contract will be let by early summer of 1971 for approximately $8,000,000 to construct the diversion tunnel which is expected to stimulate the local economy creating additional job opportunities in most industry divisions. A $50,000,000 contract will be let in the fall of 1972 to excavate for and construct the foundation for the dam. The prime contract for the dam proper will be let in 1975 and will be an estimated $125,000,000. It is hoped that this will more than offset the cutbacks in jobs at DeWitt State Hospital.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375.00	Month	--
Typist (clerical).....	203.588	350.00	Month	--
Clerk, general office (clerical).....	219.388	325.00	Month	--
Lumber checker (sawmill).....	223.588	3.615	Hour	$3.615
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	4.015
Waitress.....	311.878	12.40 per shift plus meals		12.40 per shift plus meals
Shirt presser (laundry).....	363.885	1.65	Hour	--
Automobile mechanic.....	620.281	3.00	Hour	--
Construction worker.....	869.887	4.675	Hour	4.675
Service station attendant.....	915.867	1.75-2.00	Hour	--
Packer, agricultural produce (wholesale trade).....	920.887	1.65 or piecework	Hour	--

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COMMUNITY LABOR MARKET SURVEY - AVALON-FLORENCE

Areas Included in Community: Bell, Bell Gardens, Huntington Park, Maywood, Vernon, and portions of Los Angeles City and unincorporated county

Civilian Population, July 1970: Community: 311,800

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	173,100	174,100
Mining	100	100
Contract construction	3,300	3,600
Manufacturing	70,300	73,900
Food and kindred products	12,000	11,800
Primary metal products	7,200	8,000
Fabricated metal products	11,600	12,200
Machinery, except electrical	6,600	7,000
Electrical machinery	4,400	5,300
Other manufacturing	28,500	29,600
Transportation, communications, and utilities	12,400	12,000
Wholesale and retail trade	44,500	44,000
Wholesale trade	22,600	22,500
Retail trade	21,900	21,500
Finance, insurance, and real estate	2,900	2,800
Service	29,000	27,800
Government (b)	10,600	9,900

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.

(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Avalon-Florence community is immediately to the south of the Central District of Los Angeles. It includes the heavily industrialized Central Manufacturing District and some of the more densely populated residential sections of Los Angeles City. There are five incorporated cities in the community ranging in size from Huntington Park with 33,000 residents, to Vernon, the smallest city in the county, with less than 200. Approximately two of every three residents in the community, however, live in parts of the City of Los Angeles where there is a high concentration of Negroes. All of the community east of the Harbor Freeway to Alameda Street is within the boundaries of the Model Neighborhood target area where poverty-related problems are most acute.

CHARACTERISTICS OF THE LABOR MARKET: The industrial City of Vernon makes this a labor demand area. There is widespread in-commuting from other sectors of the Metropolitan Area. Most of the commuting is by automobile since public transportation is inadequate. Manufacturing dominates the industrial structure, accounting for 40 percent of the local jobs. There is also a relatively large proportion of the workers employed in wholesale trade, trucking and warehousing. Demand for production workers, including the metal trade crafts, has slackened in the current economic downturn, and few shortages exist currently. Job opportunities are available for experienced stenographers and other clerical workers. Journeyman automobile mechanics are in demand, but there is a surplus of partially trained mechanics.

ECONOMIC TRENDS: Manufacturing showed a rather sharp decline over the past year in spite of the fact that the hard-hit aerospace production constitutes a relatively small proportion of the local industrial base. Mergers and plant relocations to new facilities in less congested areas of the county accounted for most of the drop in factory jobs. This trend is expected to continue. Employment gains in nonmanufacturing industries, except construction, partially offset the decline in manufacturing. The Hoover urban renewal project, in the vicinity of the University of Southern California, is well under way. It will expand low and low-moderate income rental housing and improve local shopping and service facilities.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	375-400	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - BAKERSFIELD

Areas Included in Community: Bakersfield, Bakersfield East, Bakersfield Northwest, Bakersfield South, and Oildale Census County Divisions

Civilian Population, July 1970: Community: 195,000 Bakersfield: 68,300

County: Kern

Employment[a] by Industry

Industry	July 1970	July 1969
Total	65,200	64,000
Agriculture, forestry, and fisheries	3,200	3,100
Mining	1,800	1,900
Contract construction	2,300	3,000
Manufacturing	3,900	3,500
Food and kindred products	1,100	900
Petroleum refining	700	600
All other manufacturing	2,100	2,000
Transportation, communications, and utilities	6,400	6,200
Wholesale and retail trade	17,900	17,500
Finance, insurance, and real estate	2,700	2,600
Service	11,800	11,400
Government (b)	15,200	14,800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Bakersfield, the county seat and largest city in Kern County, is where most job opportunities exist for residents of the surrounding area. The city itself is located at the southern end of the San Joaquin Valley on U. S. Highway 99 and State Route 58 midway between Los Angeles and Fresno. Because of its location in the valley, Bakersfield is a major convention center. The community continues to be served by two railroads, four bus lines, and two airlines. Meadows Field in Bakersfield serves as an alternate landing point for transcontinental and trans-Pacific flights. Regularly scheduled bus service is available within the city of Bakersfield, but most travel within the community is by automobile.

CHARACTERISTICS OF THE LABOR FORCE: The labor force of the Bakersfield area reflects a basic attachment to the land through its agricultural and mineral extraction activities. These activities account for more than one-fourth of peak season employment. Agricultural employment usually begins to gain momentum in April and tapers off in mid-November following the grape and cotton harvests. During the agricultural season, there is a greater demand for unskilled

and semiskilled workers than during the late fall and winter months. The extensive use of mechanical farm equipment has created a demand for more highly skilled farm hands who can operate most kinds of mechanical equipment. There has been a continual demand for registered nurses and licensed vocational nurses as the number of convalescent homes and hospitals in the community have increased. Also in demand are caseworkers, preferably with post-graduate degrees in social work and qualified color television repairmen, automobile mechanics and auto body repairmen. There is generally a large number of unskilled and semiskilled workers in the area who are unemployed between December and March when the need for agricultural workers is low. Workers in other occupations usually in surplus are general office clerks, cashiers, bookkeepers, salesclerks, receptionists, service station attendants, forklift operators, truck drivers, porters and janitors. Most of the butchers, sheet metal workers and teamsters belong to unions. The construction trades in the area are highly unionized.

ECONOMIC TRENDS: Agriculture and allied industries are among the most important industries in Kern County. In recent years, dairies, which have relocated from Los Angeles have shown tremendous growth. Agribusiness will become even more dominant as additional water is brought into the area through the California Aquaduct. Industries which have moved into the community in the last two years include three convalescent hospitals, two foreign car agencies, an almond processing plant, and a wine bottling plant. The new state college has also been opened. Most of these establishments anticipated future growth and expanded payrolls. There has been a decline in contract construction during the last two years as the Central Valley Project and several road projects neared completion and residential construction decreased. The number working in trade has been spurred by the establishment of several large retail discount department stores in the community. Service employment has shown considerable growth in the last two years and is expected to be the greatest source of new jobs in the future. Expansion of the service industry has resulted from the rise in tourism and convention trade. Population growth and the demand for services has contributed to the two-year rise in government employment particularly on the local level.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$450	Month	--
Typist (clerical).....	203.588	350	Month	--
Salesperson, general (retail trade)....	289.458	1.80	Hour	$2.56
Grocery checker (retail trade).....	299.468	3.00	Hour	3.85
Shirt presser (laundry).....	363.885	1.70	Hour	--
Machinist (machine shop).....	600.280	3.00	Hour	4.21
Electrician (construction).....	824.281	4.00-5.00	Hour	6.90
Construction worker.....	869.887	2.00	Hour	4.145
Service station attendant.....	915.867	1.85	Hour	--
Driller.....	930.782	5.90	Hour	--
Derrickman.....	930.782	4.15	Hour	--
Well puller.....	930.883	3.50	Hour	--
Rotary driller helper.....	930.884	3.62	Hour	--

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Department of Human Resources Development

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COMMUNITY LABOR MARKET SURVEY - BERKELEY

Areas Included in Community: Berkeley and Albany Census Divisions

Civilian Population, July 1970: Community: 128,700 Berkeley: 113,200

County: Alameda

Employment[a] by Industry

Industry	July 1970	July 1969
Total	72,400	71,200
Contract construction	2,500	2,600
Manufacturing	9,100	9,000
Food products	1,200	1,200
Chemicals	2,100	2,100
Primary and fabricated metals	1,200	1,300
Nonelectrical and electrical machinery	2,200	2,000
Other manufacturing	2,400	2,400
Transportation, communications, and utilities	2,100	2,100
Wholesale and retail trade	9,200	9,100
Finance, insurance, and real estate	3,000	3,000
Service	14,400	14,000
Government (b)	31,800	31,100
Other	300	300

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: On the east shore of San Francisco Bay, five miles north of Oakland and 12 miles from San Francisco, is the community of Berkeley. As the home of the University of California, Berkeley has gained world renown. Its population is distinguished by its concentration of scientific and other professional workers, many of them world famous. These workers are employed not only in education, but also in the community's industrial and governmental laboratories and in private research organizations. Establishments such as the University of California help to account for the high proportion of clerical occupations in Berkeley's work force, while local manufacturing firms and retail stores are significant sources of employment opportunities for production and sales workers.

Three transcontinental railroads, Western Pacific, Southern Pacific, and the Santa Fe, serve Berkeley. The city's heliport provides direct service to both San Francisco and Oakland International Airports. Oakland's Airport, 12 miles away, is served by many leading air carriers. Transit buses supply local transportation to Richmond, Oakland, and San Francisco. Greyhound buses offer transportation to other communities.

CHARACTERISTICS OF THE LABOR MARKET: Berkeley's offices provide a continuing demand for well-qualified workers in clerical categories, particularly bookkeepers, stenographers, secretaries, and bookkeeping machine operators. Skilled workers such as machinists can usually find jobs, as can medical laboratory technologists, licensed medical technicians, registered nurses, and live-in domestics.

From June to mid-September, there is a surplus of college, divinity school, and high school students seeking summer vacation work. Women factory workers and unskilled workers in most occupations find it difficult to obtain jobs in the immediate area. Retired persons have found the community attractive so that a supply of older workers in various professional occupations is always available for part-time or full-time employment. Also, women whose husbands are attending school provide a potential labor supply, especially in the clerical field.

Berkeley, where a wide variety of products is manufactured, is predominately union, with the exception of professional and office workers. The majority of industries are covered by agreements with the major unions for machinists, foundry workers, auto mechanics, steel workers, and building craftsmen. Government and most University employees are nonunion.

ECONOMIC TRENDS: The University of California is not only the community's largest single employer, but its building program has been a major stimulus to construction employment in Berkeley.

One economic development in Berkeley involves development of the Marina and a Marine Park along the shore of the Bay. Ground leases are available for private development of motel and restaurant complexes, shops, docks and other recreational facilities. About 200 acres of filled waterfront have been set aside for industrial development.

The Bay Area Rapid Transit system will provide service to and from San Francisco, Oakland and parts of southern Alameda and Western Contra Costa counties in 1972, greatly facilitating intercity travel.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$450.00	Month	--
Typist (clerical).....	203.588	410.00	Month	--
Salesperson, general (retail trade)....	289.458	1.95-2.35	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.445	Hour	2.445
Machinist (machine shop).....	600.280	4.81	Hour	4.81
Service station attendant.....	915.867	2.00-2.35	Hour	--

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COMMUNITY LABOR MARKET SURVEY - BISHOP

Areas Included in Community: Bishop Census County Division

Civilian Population, July 1970: Community: 8,100 Bishop: 3,400

County: Inyo

Employment[a] by Industry

Industry	July 1970	July 1969
Total	4,225	4,075
Mining	525	500
Contract construction and manufacturing	150	150
Transportation, communications, and utilities	450	475
Wholesale and retail trade	1,225	1,175
Finance, insurance, and real estate	125	100
Service	725	675
Government (b)	1,025	1,000

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Bishop is situated near the border of Inyo and Mono counties, 271 miles northeast of Los Angeles and 204 miles south of Reno, Nevada. It lies at the northern end of the Owens Valley which is bounded on the west by the Sierra Nevada and on the east by the White Mountains. The proximity of Bishop to the eastern slope of the Sierra and its many lakes, streams, camp sites, and ski slopes makes the community an important resort area. Because it is located near the Inyo and Mono counties border, Bishop also serves as a commercial center for the two-county area. Mining activity, including the extraction of tungsten, talc, marble, and stone, takes place in the mountains surrounding the Owens Valley. The Owens River, which runs through the community of Bishop, receives water from many mountain streams, and is an important water supply for the City of Los Angeles. Access to this water supply by local residents is limited, and determinations of local needs are made annually. Another scarce resource in the Bishop community is land. Outside of the town of Bishop, most of the land is government owned, and is only made available in the form of leases, usually for grazing purposes. Bishop has increased its population by just 1,550 residents since 1960. However, the area has considerable potential for growth because of its appeal as a retirement location with its mild, high desert climate and ample recreational facilities. The Bishop community population figure includes approximately 875 Paiute Indians who live on a reservation bordering the town and in the residential area of west Bishop.

Public transportation to Bishop is provided by bus and daily air service from Los Angeles and Reno. There is no railroad connection to the area. Facilities for private planes or small chartered aircraft are provided by several county operated airports in the community.

CHARACTERISTICS OF THE LABOR MARKET: Workers in the combined trade, government, and services sectors account for 70 percent of all employment in the Bishop community. There is considerable seasonal fluctuation in the total number of jobs in the area. Between May and late September there is an influx of tourists, hunters, and fishermen, and during the winter months many winter sports enthusiasts visit the area. The jobs created by seasonal expansion in restaurants, motels, resorts, and shops are filled mainly by transient workers or local residents who enter the labor market during the peak periods. Road maintenance and forestry work account for some seasonal variation in government employment. Most construction trades, as well as mining and utility workers, are under union contract.

ECONOMIC TRENDS: Growth in employment since 1960 in the community of Bishop has taken place primarily in the three largest sectors: trade, services, and government. Although the total number of workers in Bishop has doubled during this period, most of the expansion has been in activities affected by population increases and a growth in tourism. Economic expansion in the community is limited by restrictions on the local supply of additional land and water.

One of the few areas of land in the Bishop area which currently has potential for development is in the Paiute Indian reservation. The reservation has been designated by the U. S. Department of Labor as an area of substantial unemployment, and is eligible for assistance from the Federal Government for planning and carrying out economic development projects. Efforts are now underway within the Indian community to establish indigenously controlled enterprises and to provide facilities for other firms to locate on Paiute land.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$450.00	Month	--
Typist (clerical).....	203.588	375.00	Month	--
Salesperson, general (retail trade)....	289.458	1.65	Hour	--
Grocery checker (retail trade).....	299.468	3.00	Hour	$3.85
Shirt presser (laundry).....	363.885	1.65	Hour	--
Construction worker.....	869.887	3.00	Hour	4.15
Service station attendant.....	915.867	1.75-2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - CHICO

Areas Included in Community: Chico and Chico Rural Census County Divisions

Civilian Population, July 1970: Community: 42,800 Chico: 19,400

County: Butte

Employment[a] by Industry

Industry	July 1970	July 1969
Total	12,000	11,450
Agriculture, forestry, fisheries, and mining	300	300
Contract construction	550	500
Manufacturing	1,350	1,300
Lumber and wood products	475	425
All other manufacturing	875	875
Transportation, communications, and utilities	850	850
Wholesale and retail trade	3,775	3,625
Finance, insurance, and real estate	575	500
Service	2,050	2,025
Government (b)	2,550	2,350

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Chico is the largest city in Butte County and the urban center for the surrounding agricultural area. Chico is located approximately 100 miles north of Sacramento on U. S. 99E. Passenger Service is offered by two bus lines, and one airline. Several truck lines and two railroads provide freight service. There is a local bus system; however, most commuting is done by private car. Agriculture plays a dominant role in the economy of the area. Principal crops grown in the county are almonds, walnuts, grain, prunes, olives, peaches and row crops. Employment opportunities start expanding in the spring and build up to a peak during the fall harvest period. The community also has a variety of recreational activities in the summer and fall including boating, water skiing, swimming, fishing, and hunting; and during the winter there is skiing in the nearby mountains. Chico State College, located in the heart of the community, offers undergraduate work and advanced degrees.

CHARACTERISTICS OF THE LABOR MARKET: Seasonality of job opportunities in agriculture and in the lumber and wood industry creates a serious problem in the local economy. The college, with its large administrative and teaching staff provides some stability. During the college year students and their wives are looking for full or part-time work. Job opportunities are at a peak through

the summer and into early autumn. In the winter and early spring, there is a large surplus of semiskilled and unskilled workers and skilled craftsmen from the construction industry. Employment in trade and services also suffers at this time although to a less extent. Most workers in construction, manufacturing, transportation, utilities and grocery clerks are union members. Stenographers and service station attendants who are highly qualified can also usually find work.

ECONOMIC TRENDS: There generally have been economic gains in the Chico community during the past two years. A large lumber and wood products firm with a payroll of about 200 has moved into the community from another area. Two other firms, a fairly large nut processing company, and a convalescent hospital have moved into the community. The opening of a new shopping center brought in several new retail stores and some small eating places and beauty shops. This has more than offset the loss of a trucking company, a few retail stores, and several small eating places. A manufacturer of aircraft interiors hiring mostly women is expected to begin operations in the fall of 1970 adding to the job opportunities in the community.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of Pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375-400	Month	--
Typist (clerical).....	203.588	350-375	Month	--
Salesperson, general (retail trade)....	289.458	1.65	Hour	--
Grocery Checker (retail trade).....	299.468	2.25	Hour	3.825
Shirt presser (laundry).....	363.885	1.75	Hour	1.74
Sheller operator (nut processing).....	521.885	2.80	Hour	2.80
Nut sorter (nut processing).....	521.887	2.39	Hour	2.39
Machinist (machine shop).....	600.280	3.25	Hour	3.25
Woodworking Shophand (male).....	769.887	2.75-3.00	Hour	2.75-3.00
Woodworking Shophand (female).....	769.887	2.00	Hour	2.00
Construction worker.....	869.887	2.50-3.50	Hour	4.925
Service station attendant.....	915.867	1.50	Hour	--
Chokerman (logging).....	942.887	3.25-3.50	Hour	3.25-3.50
Tractor operator.....	929.883	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - COMPTON

Areas Included in Community: Compton, Lynwood, Paramount, and portions of Carson, Los Angeles City and unincorporated county

Civilian Population, July 1970: Community: 235,800 Compton: 75,300

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	84,000	83,300
Agriculture, forestry, and fisheries	500	600
Mining	300	400
Contract construction	2,500	2,200
Manufacturing	36,500	38,600
Furniture	3,200	3,500
Primary metals	2,300	2,900
Fabricated metals	5,200	5,300
Machinery, except electrical	7,000	7,100
Transportation equipment	3,500	4,100
Other manufacturing	15,300	15,700
Transportation, communications, and utilities	4,200	3,900
Wholesale and retail trade	16,400	15,600
Wholesale trade	6,300	6,000
Retail trade	10,100	9,600
Finance, insurance, and real estate	1,700	1,600
Service	13,000	12,200
Government (b)	8,900	8,200

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Compton, located in the south central part of the county, is a community of high population density. Annexations contributed to the growth of its cities during the 1960-70 period, but the overall population increase was at a rate below the county average. The proportion of minorities, however, has grown progressively larger over the years, and currently approximates half the total. Willowbrook, where nearly all residents are Negro, is a large unincorporated area immediately adjacent to the Watts district, and shares most of its problems related to unemployment and low income. This section of the community has qualified under the Model Neighborhood Program. In addition the City of Compton has a Model Cities Program. There

are also other Federal and State programs channeling vocational training and needed special services to the community. Local Community Action Programs are administered by the Compton-Willowbrook-Enterprise Community Action Agency headquartered in Compton.

CHARACTERISTICS OF THE LABOR MARKET: The Compton community is a widely diversified manufacturing center and wholesale distribution firms provide a substantial number of jobs. However, the community is still a labor supply area and outcommuting to other areas is sizable. Skilled and semiskilled production workers, including the machine trades, are currently in surplus. There is also an oversupply of construction workers, truck drivers, and in many service occupations. Registered nurses and licensed vocational nurses are in high demand and job opportunities are usually available for experienced clerical workers and sewing machine operators. A variety of training programs, both public and private, are available to meet the changing needs of industry. Compton Community College and California State College at Dominguez offer training in a number of technical and vocational courses. Unionization occurs most frequently in construction, transportation, retail food and drug stores, and some manufacturing groups.

ECONOMIC TRENDS: The availability of vacant land on the periphery of the community has attracted many industrial plants from the highly congested areas of central Los Angeles. The long term growth in manufacturing, however, was interrupted in 1970 as work force reductions occurred in most local industries. Growth in wholesale trade has continued in the large industrial parks that have been developed in the area. A major aerospace firm moved into a new plant early this year to provide production jobs for local residents of the concentrated unemployment area. Improvement of housing and shopping facilities are major goals of urban renewal plans for the area. Several hundred new jobs in medical specialties will be added when the Martin Luther King Hospital is completed next year in Willowbrook.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	375-400	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - CRESCENT CITY

Areas Included in Community: Crescent City Census Division: Crescent City, Crescent City Northwest, Northcrest, Fort Dick

Civilian Population, July 1970: Community: 11,000 Crescent City: 2,700

County: Del Norte

Employment[a] by Industry

Industry	July 1970	July 1969
Total	4,300	4,400
Agriculture, forestry, and fisheries	300	300
Contract construction	200	200
Manufacturing	900	1,000
Lumber and wood products	700	900
Other manufacturing	200	100
Transportation, communications, and utilities	300	300
Wholesale and retail trade	1,000	1,000
Finance, insurance, and real estate	100	100
Service	600	600
Government (b)	900	900

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Crescent City, a small lumber town and seaport, is located north of San Francisco, 375 miles by land and 350 miles by coastwise shipping route. There is no rail service into the community. Passenger traffic is served by Greyhound Bus and Air West Air Lines; freight, by various trucking companies with scheduled and charter service; and coastal freight shipping, by tug and barge lines.

CHARACTERISTICS OF THE LABOR MARKET: Lumber and wood products dominate the Crescent City labor market. During the summer months, a demand exists typically in a wide range of occupations, but with the beginning of the rainy season in late fall, the need for workers subsides. Many logging roads become inaccessible, and the fishing fleet and fish processors curtail operations. Tourism also drops off sharply in the fall as vacations end. With the general slackening of seasonal activity, many workers remain idle, until late spring brings about a renewal of employment opportunities.

Skilled and experienced semiskilled workers for motels and restaurants are in demand throughout the busy dry season. Graders, resawyers, edgermen and material handlers are needed in the mills, while there are abundant opportunities

for catskinners, buckers, fallers, and chokermen in the woods. Usually there are too few qualified waitresses, fry cooks, and motel maids. During the fishing season, especially at the height of the shrimp and crab catches, shortages of female help for the canneries commonly develop. In addition, the daffodil bud harvest in February and the bulb harvest in September and October provide many short-term jobs for housewives.

Longshoremen are completely unionized, the construction industry almost completely; transportation, partly, and the lumber industry to a small degree. Beyond these industries, unionization is confined to checkers in large grocery stores.

ECONOMIC TRENDS: The establishment of the Redwood National Park in Del Norte County coincided with a sharp decline in the local lumber industry, as the nationwide downtrend in construction cut back sales of wood products. Several mills closed in 1969, and the county's unemployment rate rose rapidly. But, while the short-term outlook was disappointing, the 1970's appear to hold promise. In a report to the National Park Service, an independent research company has estimated that tourism in the area will increase fivefold by 1976. The Federal Government estimates that by 1974, 1,200,000 people will have visited the Redwood National Park. If these predictions are realized, seasonal tourism and related job opportunities will be boosted considerably.

Two modern fish processing plants were first opened in 1969, as part of Crescent City's $4 million reconstruction following the 1964 tidal wave. An Economic Development Program proposal has been made, calling for the development of mooring facilities for two hundred more commercial fishing boats in Crescent City's harbor. The catch from these boats would be processed locally, greatly increasing payrolls in the fish plants and stimulating the local economy year-round.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$350.00	Month	--
Typist (clerical).....	203.588	325.00	Month	--
Salesperson, general (retail trade)....	289.458	1.65-1.85	Hour	--
Grocery checker (retail trade).....	299.468	3.825	Hour	$3.825
Machinist, maintenance (lumber).....	600.280	4.10-4.47	Hour	--
Grader (wood working).....	669.587	3.50-4.05	Hour	--
Service station attendant.....	915.867	1.65-1.75	Hour	--
Material handler (sawmill).....	929.887	2.85-3.30	Hour	--
Chokerman (logging).....	942.887	3.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - CULVER CITY

Areas Included in Community: Culver City and portions of Los Angeles City and unincorporated county

Civilian Population, July 1970: Community: 276,900 Culver City: 35,300

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	84,400	85,500
Agriculture, forestry, and fisheries	300	300
Mining	300	300
Contract construction	5,000	4,700
Manufacturing	26,500	30,900
Rubber and plastics	1,900	1,900
Fabricated metals	2,600	3,100
Machinery, except electrical	2,000	2,100
Electrical machinery	10,500	11,600
Transportation equipment	3,100	4,800
Other manufacturing	6,400	7,400
Transportation, communications, and utilities	1,000	900
Wholesale and retail trade	21,600	20,700
Wholesale trade	5,400	5,300
Retail trade	16,200	15,400
Finance, insurance, and real estate	2,800	2,700
Service	21,100	19,600
Government (b)	5,800	5,400

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Culver City community is actually part of a greater community known as the West Los Angeles area. Population increased by about 15 percent during the 1960-70 period, nearly matching the countywide experience. Better than four of every five residents live in the City of Los Angeles, including sections generally known as Mar Vista, Palms and Venice. The latter has a notable concentration of Negroes and Mexican-Americans, and also a significant number of low income families. Remedial programs are providing vocational training and needed services. Culver City, the only incorporated city, accounts for only slightly more than 12 percent of the total population. The fastest expansion rate occurred in the unincorporated areas of Ladera Heights-Baldwin Hills and Marina del Rey. While their combined

population is still comparatively small, the Marina section continues to show relatively strong housing development, mainly in high priced multiple dwelling units.

CHARACTERISTICS OF THE LABOR MARKET: Manufacturing is the largest industry in the community with a heavy concentration of aerospace employment which accounts for half of the factory jobs, but there is sizeable outcommuting of resident population from the labor supply area. The downturn in aerospace employment here and in neighboring communities has virtually halted demand for engineering and related technicians and created an excess supply of these workers. Production workers at all skill levels also exceed the demand although replacement needs in light manufacturing offer current job opportunities. Stenographers, typists, and other clerical workers, salespersons are in frequent demand and expansion in the Marina del Rey area has increased the job market for service workers with restaurant and hotel experience.

ECONOMIC TRENDS: The long term downtrend in manufacturing employment was accelerated in the 1969-70 period because of substantial cutbacks in the aerospace group. Manufacturing also lost ground as two large food products employers closed their production facilities during the past year. Industrial zoned land within the community is limited so that the most favorable outlook for future growth is in nonmanufacturing, particularly retail trade and service industries. A major department store chain will open a new branch store in the Palms district early this fall. The current upswing in construction reflects the expanded building activities underway in the Marina boat harbor area. Employment in motion picture production continued a slow decline and is not apt to be reversed in the near future.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-500	Month	--
Typist (clerical).....	203.588	390-425	Month	--
Salesperson, general (retail trade)....	289.458	1.65-2.25	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - DUARTE

Areas Included in Community: Duarte, Arcadia, Azusa, Bradbury, Glendora, Monrovia, Sierra Madre, Temple City and unincorporated county

Civilian Population, July 1970: Community: 235,800 Duarte: 14,900

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	65,700	65,000
Agriculture, forestry, and fisheries	800	800
Mining	800	900
Contract construction	2,200	2,500
Manufacturing	18,100	19,600
Fabricated metal products	2,400	2,400
Machinery, except electrical	1,900	2,100
Electrical machinery	2,000	2,100
Transportation equipment	3,700	4,600
Instruments	2,600	2,900
Other manufacturing	5,500	5,500
Transportation, communications, and utilities	3,200	3,000
Wholesale and retail trade	14,800	14,400
Wholesale trade	2,200	2,100
Retail trade	12,600	12,300
Finance, insurance, and real estate	2,400	2,200
Service	14,800	13,800
Government (b)	8,600	7,800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Duarte community is located along the foothills of the San Gabriel Mountains, 10 miles east of Pasadena and 20 miles northeast of downtown Los Angeles. Population trends closely paralleled the countywide experience both in terms of the 15 percent increase since 1960, and the fact that most of the gain occurred early in the decade. There are eight incorporated cities within the community and Arcadia, the largest, ranks 26th in the county. The two cities in the eastern portion of the community, Azusa and Glendora, recorded the largest population gains since 1960 due to annexations of unincorporated county area. There is a high rate of individual home ownership throughout the community, which remains primarily residential. Therefore, a substantial number of workers commute to jobs in other communities.

CHARACTERISTICS OF THE LABOR MARKET: Employment growth in the service-producing industries accounted for a net increase in jobs over the past year, continuing the trend evident in recent years. The number of factory jobs has declined steadily because of cutbacks in the aerospace group of industries and allied industries. A wide variety of occupations have been affected by the reduction in force and surpluses of workers have developed in tooling, production machine operators and assemblers, as well as in engineering and supporting occupations. Residential housing construction remained weak, depressing the current job market for building trades workers. Expansion in medical facilities and public schools and long term growth trends in retail trade and in the public utilities and finance groups, however, sustained the overall demand for labor despite the job losses which occurred in manufacturing and construction. The local labor supply is more than adequate to meet employer needs, except in medical and health service fields. There is little seasonal fluctuation in employment except for the thoroughbred racing season at Santa Anita Race Track during the winter months.

ECONOMIC TRENDS: The continuing diversification in the industrial base of the community and long term expansion in the service-producing sector of the economy point to a steady upward trend in employment. The location of new firms in industrially zoned acreage along rail and freeway routes in the eastern sector of the community is continuing, while the outlook for trade, service, and government is especially good as new jobs are added to serve the needs of the local residents. A new discount department store is under construction in Monrovia and a shopping center in Duarte. Work on the Santa Anita Fashion Park complex will be under way by mid-1971. Employment in the aerospace industries is expected to represent a declining proportion of the factory jobs in the community as the slowdown in defense work continues.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	360-375	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	3.75-4.25	Hour	--
Assembler, small parts.....	706.887	2.00-2.25	Hour	--
Service station attendant.....	915.867	1.65-2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - DUNSMUIR - MT. SHASTA - WEED

Areas Included in Community: Dunsmuir, Mt. Shasta, McCloud-Medicine Lake, Census County Divisions

Civilian Population, July 1970: Community: 16,500

Dunsmuir:	2,900
Mt. Shasta:	2,500
McCloud:	2,700
Weed:	4,700

County: Siskiyou

Employment[a] by Industry

Industry	July 1970	July 1969
Total	4,475	4,375
Mining	50	50
Contract construction	425	325
Manufacturing	1,600	1,650
Transportation, communications, and utilities	575	550
Wholesale and retail trade	600	575
Finance, insurance, and real estate	150	150
Service	600	600
Government (b)	475	475

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which the employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Dunsmuir, a former railway division point for the Southern Pacific Railroad, is located north of the Shasta-Siskiyou County line on Interstate Route 5. The area is well known for its recreational facilities including hunting, fishing and skiing. Mt. Shasta, which rises to a height of 14,162 feet, is located eight miles north of Dunsmuir, in the Shasta recreation area. This is a prime tourist area. The largest industries in the area are the railroad, lumber and wood products, and the tourist trade. There is considerable commuting by private car between Dunsmuir, Mt. Shasta, McCloud and Weed and passenger service to communities outside the area is provided by the Greyhound Bus Lines and the Southern Pacific Railroad, and the McCloud River Railroad. The closest commercial airport to which flights are scheduled is 55 miles away in Redding. The City of Dunsmuir, however, owns and operates an airport five miles north of the city which has facilities for small planes. As employment prospects diminish because of technological change and increased mechanization in the railroads and sawmills, the area is developing its tourist and recreational facilities. The Box Canyon Dam and McCloud-Pit River Dam recreational areas have added some impetus to this trend.

CHARACTERISTICS OF THE LABOR MARKET: Most of the employment opportunities in the community are seasonal. Peak employment in lumber and wood products is from May until about mid-November when the weather halts logging operations. Sawmills operate year-round if the season's cut has been adequate. During both summer and winter tourist seasons there is a demand for experienced dinner cooks, chefs, waitresses and resort workers, but the local supply is usually able to meet employer demands. Skilled logging men and experienced sawmill workers are generally in short supply between June and October. There is a surplus of workers from all industries from November until May and a sizeable group of housewives and older people who would like at least part-time work. Railroad employees are completely unionized and a high percentage of grocery store, restaurant and bar employees are union members. The majority of sawmill and lumber workers are organized.

ECONOMIC TRENDS: There has been little change in total employment over the past two years and, according to preliminary 1970 Census figures, the population of Siskiyou County has declined slightly since 1960. Further automation in the lumber and wood products industry has lowered employment while increasing tourist trade has resulted in higher levels of employment in trade and service industries. Contract construction employment in the area has decreased since the completion of recreation facilities adjoining the Box Canyon Dam and the work on Interstate 5 north of the city. A continuing increase in the tourist trade is expected which should develop more job opportunities in trade and service industries.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$325-375	Month	--
Typist (clerical).....	203.588	280-325	Month	--
Salesperson, general (retail trade)....	289.458	1.65-1.85	Hour	--
Grocery checker (retail trade).....	299.468	2.00-2.25	Hour	--
Waitress (amusement & recreation).....	311.878	1.65	Hour	--
Shirt presser (laundry).....	363.885	1.65	Hour	--
Machinist (machine shop).....	600.280	4.00-4.45	Hour	--
Auto mechanic.....	620.281	3.50	Hour	--
Edgerman (sawmill).....	667.782	4.10-4.20	Hour	--
Grader (lumber).....	669.587	3.75-4.46	Hour	--
Chainman (sawmill).....	669.886	3.51-3.59	Hour	--
Auto body repairman.....	807.381	4.00-5.00	Hour	--
Construction worker.....	869.887	3.00-4.50	Hour	--
Log truck driver.....	904.883	4.12	Hour or 30-35% gross	
Service station attendant.....	915.867	1.75-2.00	Hour	--
Lumber handler.....	922.887	3.24	Hour	--
Log scaler (lumber & wood).....	941.488	3.76	Hour	--
Chokerman (logging).....	942.887	3.46	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - EAST LOS ANGELES

Areas Included in Community: Boyle Heights district of Los Angeles City, Commerce, Monterey Park, unincorporated county

Civilian Population, July 1970: Community: 254,700

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	157,600	154,900
Mining	100	100
Contract construction	2,500	2,300
Manufacturing	52,100	52,900
Paper products	5,200	5,300
Primary metal products	3,800	4,000
Fabricated metal products	6,000	6,000
Machinery, except electrical	5,100	5,300
Electrical machinery	3,800	4,400
Other manufacturing	28,200	27,900
Transportation, communications, and utilities	10,400	10,000
Wholesale and retail trade	51,400	50,400
Wholesale trade	33,600	33,000
Retail trade	17,800	17,400
Finance, insurance, and real estate	1,800	1,700
Service	18,500	17,500
Government (b)	20,800	20,000

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The East Los Angeles community is immediately adjacent to the Los Angeles Central District, and consists of three distinctly diverse sections. The City of Monterey Park, with a population of 48,700, is primarily residential, and accounted for most of the recent home building in the community. The City of Commerce, where the population has stabilized at less than 11,000, was planned mainly for industry and commerce, and has been the focal point of the community's developments in these activities in recent years. The remainder of the community, which houses over 75 percent of the total population, is one of the oldest developed sections of the county, and has the many socio-economic problems associated with blighted urban areas. Mexican-American residents constitute a substantial and steadily increasing majority. A significant number are foreign born, and language handicaps are typical of the native as well as the foreign born in all age groups.

The average educational and family income levels are low. The section has been designated as a special target for remedial programs including basic education, English as a second language, and vocational training.

CHARACTERISTICS OF THE LABOR MARKET: Not only does unemployment in the major section of the community tend to be higher than the county average, but many of the local residents employed full time have low earnings. This reflects a substantial concentration in lesser skilled production jobs. There is direct access to a complex network of freeways, but for local residents a strong dependence on public transportation limits the practical commuting radius. The principal employers in the community draw in workers from outside areas to meet much of their staffing needs. Several subsidized vocational training and transportation programs have been attempting to resolve the problem.

ECONOMIC TRENDS: Manufacturing employment has been on a moderate downtrend for several years. This reflects the fact that firms in the older sections of the community relocated when they required modernized or expanded facilities. Nonmanufacturing employment, however, has shown a slow, but steady gain, and this trend is expected to continue. The community is one of the major goods distribution centers in Southern California, and will maintain this role with further expansion in manfacturers' sales branches, warehousing facilities and trucking operations. Public service employment is also expected to continue its long term uptrend because of the large number of government facilities which are located in the community.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	375-400	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - EL CENTRO

Areas Included in Community: El Centro, El Centro Rural, Imperial Census County Division

Civilian Population, July 1970: Community: 32,000 El Centro: 18,800

County: Imperial

Employment[a] by Industry

Industry	July 1970	July 1969
Total	14,300	14,200
Agriculture, forestry, and fisheries	2,650	2,850
Contract construction	600	550
Manufacturing	700	700
Transportation, communications, and utilities	850	850
Wholesale and retail trade	3,400	3,350
Finance, insurance, and real estate	350	350
Service	2,000	2,000
Government (b)	3,750	3,550

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The community of El Centro is situated in the middle of the Imperial Valley, a highly productive agricultural region in southeastern California. Included within the community's boundaries are the towns of Imperial, Seeley, and the principal urban center of the county - El Centro - which is located 220 miles southeast of Los Angeles and 114 miles east of San Diego. Although Imperial County has a total area almost the size of Connecticut, over 80 percent of its 73,600 residents live within twenty minutes driving time of the City of El Centro. The city thus serves as a commercial center for the Valley, having 25 percent of the population while providing 36 percent of the annual taxable retail sales in the county. Contributing significantly to the retail sales revenue of the county are the nearly 340,000 residents of Mexicali, Mexico, which lies 11 miles south of El Centro. The cash value of the county's total agricultural production in 1969 was over 246 million dollars. The principal crops grown in the El Centro community include hay and alfalfa, cotton, lettuce, sugar beets, vegetables, and melons, but nearly half of all local farm income originates in the cattle feeding business. About half a million acres of farmland in Imperial County are irrigated by a canal system which utilizes water from the Colorado River. El Centro is linked to major markets by two railroad systems, the state freeway system, and an airline.

CHARACTERISTICS OF THE LABOR MARKET: During July 1970, the community of El Centro was the source of 54 percent of all the jobs in Imperial County. The level of total employment during July is usually fairly close to the annual average. Farm and farm-related activity in the county is at a peak between November and March, and a smaller harvest season takes place in spring and early summer. Farm employment in July is usually well below the annual average. Over three-fourths of all the community's nonfarm jobs are in the trade, service, or government sectors, and 45 percent are either retail trade or local government jobs. The occupational structure of the local work force has not changed substantially since the 1960 Census, which showed that a relatively small percent of the county's workers were employed at a high skill level. Compared with the rest of California, a small proportion of the jobs in Imperial County are in the manufacturing sector and many of these are in the food processing industry which is subject to seasonal fluctuation. Migrant workers fill many of the jobs in the food packing and processing industries, as well as most of the seasonal farm jobs in the county. Most of these migrant workers reside in Mexicali while working at local jobs, and commute daily across the border. Unionization exists in building trades, restaurants, retail food stores, and in most food packing, food processing, and trucking establishments.

ECONOMIC TRENDS: For several years research has been conducted into the potential of local geothermal wells as a source of electric power. Increasing interest has developed in this energy source, particularly with the current problem of pollution associated with power generation in populous urban areas, and the perfection of a system to effectively utilize this heat source could greatly alter the county's future. However, at least for the next few years, agriculture should continue to dominate the economy of the El Centro community as well as that of the entire county. Considering all aspects of the business of agriculture: growing, harvesting, servicing, processing, packing, and transporting of farm supplies and products, plus all of the other economic activity in the private and public sectors which is dependent upon sales or services to farm and farm-related enterprises and income derived therefrom, the agricultural complex accounts for more than eight of every ten jobs in Imperial County. Besides farm-related business, only a small percent of the manufacturing division, some federal and state government facilities, and to a slight extent some tourist-oriented service and retail establishments could be considered primary income-earning activities. However, in recent years, technological changes in the agricultural sector have steadily reduced the need for workers, and there has been only sporadic growth in farm-connected activities. The distance from major markets and distribution centers, the lack of an extensive and diversified labor force, and a limited local market are but some of the restraints to the development of other income-earning industries. The above factors, combined with the seasonal nature of agricultural work, have produced a chronically high rate of unemployment, and the county currently qualifies for economic assistance under the Public Works and Economic Development Act of 1965.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$400-450	Month	--
Typist (clerical).....	203.588	320-400	Month	--
Salesperson, general (retail trade)....	289.458	1.65	Hour	$2.19-3.25
Grocery checker (retail trade).....	299.468	1.75-2.25	Hour	2.30-3.84
Shirt presser (laundry).....	363.885	1.65	Hour	--
Machinist (machine shop).....	600.280	2.50-3.50	Hour	--
Construction worker.....	869.887	1.75-2.00	Hour	4.54
Service station attendant.....	915.867	1.65-2.00	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - ESCONDIDO

Areas Included in Community: Escondido, San Marcos, and Valley Center Census County Divisions

Civilian Population, July 1970: Community: 66,627 Escondido: 40,100

County: San Diego

Employment[a] by Industry

Industry	July 1970	July 1969
Total	18,100	17,200
Agriculture, forestry, fisheries, and mining	1,000	1,000
Contract construction	1,400	1,300
Manufacturing	3,100	2,900
Transportation, communications, and utilities	900	900
Wholesale and retail trade	4,600	4,400
Finance, insurance, and real estate	500	500
Service	3,300	3,100
Government (b)	3,300	3,100

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The City of Escondido is set in a valley five miles long and three miles wide in the west central portion of the county. The hills surrounding the valley rise into mountains on the north and east. Until recently the economy of the region has been based primarily on agriculture with the City of Escondido serving as its trading center. Growing, packing, and shipping of avocados and citrus are among the major activities, and new shopping centers have brought a modern look to the business district. Escondido Village, an attractive complex of shops, even boasts a closed air-conditioned mall. The first high-rise building in Escondido, a nine-story hospital, was recently completed. Because of the pleasant climate, the apparent remoteness, and the recreational aspects, the valley has developed into a popular tourist attraction. The area is especially known for the numerous golf courses available within a short drive from Escondido.

Escondido and San Marcos are connected by freeway to Interstate 5, the main north-to-south route along the coast. Escondido and downtown San Diego also are linked by freeway, U. S. 395. Highway 395 continues north from Escondido to Riverside and points beyond. Several trucking firms service the area and busses make scheduled runs to Los Angeles and San Diego. Palomar Airport with executive and commercial aircraft facilities is approximately 10 miles to the west while San Diego International Airport is about 32 miles to the south.

CHARACTERISTICS OF THE LABOR MARKET: With more than 800 acres zoned for industry in and around the City of Escondido, and almost twice that space available in San Marcos the community has succeeded in attracting a widely diversified group of firms. Representative products manufactured locally include golf clubs, electronic instruments and components, wire and cable, ballpoint pen ink, and aircraft parts. Manufacturing establishments employ about 17 percent of the working force. The largest number of workers, however, are employed by the wholesale and retail trade group which accounts for one out of every four employees. Government and services each accounts for approximately 18 percent of the local payrolls.

Building trades are almost exclusively unionized and retail food stores, other than independents, are organized. Manufacturing workers are only partially unionized. Prejob training in a variety of vocational fields is available at Palomar College and union-supported apprenticeship training programs are among the courses offered.

ECONOMIC TRENDS: The Escondido area is expected to continue its rapid population growth over the next few years. There is potential for expansion of manufacturing firms within the geographical area as well as just outside of the defined community. The City of Escondido is in the path of a population surge from San Diego along Highway 395 that may eventually link the two cities. Because of the potential population increase, employment in the distributive and service industries should show substantial gains over the next few years.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425.00	Month	--
Typist (clerical).....	203.588	325.00	Month	--
Salesperson, general (retail trade)....	289.458	1.65	Hour	--
Grocery checker (retail trade).....	299.468	2.00	Hour	$3.84
Shirt presser (laundry).....	363.885	1.75	Hour	--
Machinist (machine shop).....	600.280	3.50	Hour	4.10
Construction worker.....	869.887	2.75	Hour	4.68
Service station attendant.....	915.867	1.75	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - EUREKA

Areas Included in Community: Eureka and Eureka Southeast Census Divisions

Civilian Population, July 1970: Community: 38,100 Eureka: 24,100

County: Humboldt

Employment[a] by Industry

Industry	July 1970	July 1969
Total	22,700	23,400
Agriculture, forestry, and fisheries	1,300	1,400
Contract construction	900	1,000
Manufacturing	3,800	4,100
Food products	700	800
Lumber and paper pulp	2,600	2,800
Other manufacturing	500	500
Transportation, communications, and utilities	2,300	2,400
Wholesale and retail trade	5,200	5,300
Finance, insurance, and real estate	800	800
Service	4,000	4,000
Government (b)	4,400	4,400

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Eureka, the capital of a vast lumber empire, is located in the heart of the famous redwood region, 277 miles north of San Francisco on U. S. Highway 101. The city is the largest coastal community between the San Francisco Bay Area and Portland, Oregon. Its primary industrial activity is the manufacture of lumber and related products. However, the community also serves as the major trade center for Humboldt County residents and as a stopping place for vacationers enjoying nearby recreational areas. The fine harbor at Humboldt Bay is the home of a large fishing fleet, fish processing plants, and a commercial oyster bed. From this port much of the lumber produced in the area is shipped to distant parts of the world.

Educational facilities are good. Humboldt State College, located in Arcata eight miles north of Eureka, and the College of the Redwoods, a junior college located eight miles south of Eureka, offer a wide variety of courses.

Eureka is served by several truck lines and foreign and domestic cargo ships. The Northwestern Pacific Railroad provides passenger service as far south as Willits. Air West and Golden Pacific Airlines and Greyhound Bus Lines provide

daily passenger and light freight service. Private air service, bus companies, and a ferry supply transportation to other towns.

CHARACTERISTICS OF THE LABOR MARKET: During late spring, summer, and early fall, activities in the forest products industry reach a peak, and a demand arises for skilled and semiskilled workers in the woods and mills. Rigid physical requirements cause occasional shortages of unskilled workers for the lumber industry. The summer tourist season also creates many openings for waitresses, cooks, and body and fender repairmen. Job opportunities, both seasonal and permanent, are provided for women by offices and stores, in fisheries and creameries, at the oyster plant, and in domestic service. During the summer months many job seekers migrate to the area and find work; but in the off season, from October through March, large numbers of logging and sawmill workers, construction workers, truck drivers, and working housewives are unemployed.

The community has some unionization. Industries showing the heaviest union membership are construction, transportation, communication, public utilities, and eating and drinking establishments. For the most part, manufacturing, wholesale and retail trade, finance, insurance, and real estate are not organized. Lumber and wood products are almost completely organized in the immediate Humboldt Bay Area, but less so throughout Humboldt County.

ECONOMIC TRENDS: The Humboldt Bay Bridge, connecting Eureka and Samoa, is due to be completed in June 1971. The bridge will greatly shorten workers' commutes to Samoa's lumber and paper pulp manufacturing plants. The continued improvement of roads to the Eureka area, as well as growing population in the metropolitan areas to the south, are bringing more visitors each year. The Redwoods National Park is expected to further expand the tourist industry.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$415.00	Month	--
Typist (clerical).....	203.588	375.00	Month	--
Salesperson, general (retail trade)....	289.458	1.65-1.85	Hour	--
Grocery checker (retail trade).....	299.468	3.825	Hour	$3.825
Shirt presser (laundry).....	363.885	1.75	Hour	1.75
Machinist, maintenance (lumber).....	600.280	4.50-4.85	Hour	--
Grader (woodworking).....	669.587	3.90-4.10	Hour	--
Service station attendant.....	915.867	2.00	Hour	--
Material handler (sawmill).....	929.887	3.25-3.45	Hour	--
Chokerman (logging).....	942.887	3.50-4.00	Hour	--

State of California
Department of Human Resources Development

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September 1970

COMMUNITY LABOR MARKET SURVEY - FORT BRAGG

Areas Included in Community: Fort Bragg Census Division

Civilian Population, July 1970: Community: 10,000 Fort Bragg: 5,000

County: Mendocino

Employment[a] by Industry

Industry	July 1970	July 1969
Total	3,900	3,800
Agriculture, forestry, and fisheries	100	100
Contract construction	100	100
Manufacturing	1,400	1,300
Lumber and wood products	1,300	1,200
Other manufacturing	100	100
Transportation, communications, and utilities	200	200
Wholesale and retail trade	700	700
Finance, insurance, and real estate	100	100
Service	900	900
Government (b)	400	400

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Situated 180 miles north of San Francisco and 35 miles from U. S. Highway 101 by secondary State road lies Fort Bragg, a pleasant seaside community. The community's primary industry is lumbering. Large stands of redwood and fir suitable for commercial purposes surround the community. Heavy rainfall drastically reduces the area's economic activity during the late fall and winter months. Major industries in the community include sawmills and logging operations, commercial fishing and fish processing, tourist services, and retail trade.

The California Western Railroad and a coordinated bus line link Fort Bragg with Willits, and Greyhound Bus Lines provides service to San Francisco. Taxis and independent truck operators furnish other transportation facilities.

CHARACTERISTICS OF THE LABOR MARKET: Employment in the community is highly seasonal, depending as it does on weather and tourism. Activities start up in late spring, reach peak in July and August, and continue through Labor Day. Workers for the area's sawmills and logging operations are in demand throughout the summer months. Usually, jobs are open throughout the summer for green chainmen, chokermen, catskinners and millwrights. During July and August there

is generally a shortage of workers in restaurants and motels, particularly among cooks, motel maids, and waitresses. During the winter months, December through February, there is a surplus of workers in almost every occupational category. Normally, there is a year-round supply of women seeking clerical, sales, and unskilled jobs.

In the building trades, laborers, carpenters, and operating engineers are almost completely unionized, and painters only partially unionized. The fish processing industry is almost completely unionized. Grocery checkers are unionized only in chain stores, while cooks and waitresses are slightly unionized.

ECONOMIC TRENDS: Employment in the Fort Bragg lumber industry, as in other Mendocino and Sonoma County communities, has decreased in recent years because many of the large stands of timber have been logged off. Suffering most from this have been the small marginal producers, both in sawmill and logging operations. Conflicting with this trend was the establishment in 1969 of a new $5 million plywood plant in Fort Bragg, which added about 200 year-round jobs to the local economy.

The Noyo Harbor project was completed in August 1969. It has mooring space for 265 boats. Nearly thirty acres of land next to the harbor are to be let for construction of restaurants and tourist shops. Mendocino County's only harbor offers excellent facilities for commercial fishing and pleasure boating and can become a deep water lumber port.

The new Mendocino Coast Hospital, just south of Fort Bragg, will be completed in mid-1971. It will add 51 hospital beds to the community's medical resources.

The continued development of an artist's colony in Mendocino, located about 11 miles south of Fort Bragg, and the settling of retirement age persons in the area is having a definite impact upon the local economy.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$350.00	Month	--
Typist (clerical).....	203.588	325.00	Month	--
Salesperson, general (retail trade)....	289.458	1.65-1.85	Hour	--
Grocery checker (retail trade).....	299.468	3.825	Hour	$3.825
Grader (woodworking).....	669.587	3.65-3.73	Hour	--
Service station attendant.....	915.867	1.75-2.00	Hour	--
Material handler (sawmill).....	929.887	2.75-3.28	Hour	--
Chokerman (logging).....	942.887	3.50-3.89	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - FRESNO

Areas Included in Community: Fresno, Bullard, College, Clovis, Pinedale, Figarden, Calwa-Malaga, McLane, South Fresno, West Fresno, Sunnyside, Fowler and Sanger County Census Divisions

Civilian Population, July 1970: Community: 296,300 Fresno: 162,300

County: 407,408 Fresno

Employment[a] by Industry

Industry	July 1970	July 1969
Total	103,500	103,400
Agriculture, forestry, and fisheries	2,000	2,100
Mining	200	200
Contract construction	5,600	5,700
Manufacturing	18,200	18,400
Food and kindred products	6,900	7,000
Textiles and apparel	1,500	1,500
Lumber and wood products	900	900
Paper and printing	1,100	1,100
Nonelectrical machinery	1,800	1,900
All other manufacturing	6,000	6,000
Transportation, communications, and utilities	7,300	7,200
Wholesale and retail trade	27,900	27,900
Finance, insurance, and real estate	4,600	4,600
Service	19,700	19,600
Government (b)	18,000	17,700

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Fresno is located nearly midway between San Francisco and Los Angeles in the agriculturally rich San Joaquin Valley. The economy of Fresno is becoming increasingly diversified but is still heavily dependent upon agriculture and related industries and the area remains one of the most important centers of agriculture business in the nation. The major nonagricultural industries in the community are trade, service, government and manufacturing. Seasonal factors play an important part in the community as much as manufacturing and trade activity is closely allied with agriculture and subject to the same seasonality. Fresno is the principal trading and business center for the central San Joaquin Valley and is increasingly attracting major conventions in their outstanding Convention Center. Fresno is the site of

Fresno State College and Fresno City College, and there are several community colleges in adjacent areas. The community provides good rail and trucking facilities to all points of California and beyond together with adequate water and power and a substantial labor supply.

CHARACTERISTICS OF THE LABOR MARKET: Employment opportunities in the Fresno area are highly seasonal, reflecting the major dependence of the economy on agriculture and allied industries. Increased job opportunities usually begin with late spring agricultural activities and continue through September. During this time there is a demand for fruit and vegetable packers, forklift operators, truckers and warehousemen and there is also increased activity in trade and service occupations. A gradual decline in activity occurs in most industries in late September extending through mid-December although the cotton harvest maintains substantial employment in agriculture and related services into December. A surplus of semiskilled and unskilled labor exists from December through May. Shortage occupations in the area are generally those which require extensive professional or industrial training such as engineers, nurses, machinists and color television repairmen. Most workers in skilled trades, sales and cannery work are union members.

ECONOMIC TRENDS: Despite the increase in diversification in Fresno, agriculture and agriculturally related industries are the foundation of the economy. Nonagricultural employment has increased steadily over the past few years and is expected to continue this trend. Within the last two years a varied group of businesses has moved into the Fresno area including a large motel, eight manufacturing plants, several rest and convalescent homes, several retail outlets and a car dealer. Several firms including a large hotel and a large motel, are currently building in Fresno and the Internal Revenue Service Center is in the planning stage. The increased diversification of the economy will tend to stabilize employment throughout the year and it is anticipated that trade, services, manufacturing and government will provide more jobs in the future.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$350	Month	--
Typist (clerical).....	203.588	325	Month	--
Salesperson, General (retail trade)...	289.458	1.65-1.85	Hour	$4.015
Grocery checker (retail trade).....	299.468	3.18	Hour	--
Shirt presser (laundry).....	363.885	2.25	Hour	--
Cellarman (winery).....	521.885	2.90	Hour	--
Cannery worker, male.....	529.886	2.93	Hour	2.93
Cannery worker, female.....	529.886	2.93	Hour	2.93
Machinist (machine shop).....	600.280	3.90	Hour	4.57
Automobile mechanic.....	620.281	3.50	Hour	--
Construction worker.....	869.887	4.67	Hour	4.67
Service station attendant.....	915.867	1.65	Hour	2.505

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COMMUNITY LABOR MARKET SURVEY - FULLERTON

Areas Included in Community: Fullerton, Anaheim, Brea, Buena Park, La Palma, Cypress, La Habra, Placentia, and Stanton

Civilian Population, July 1970: Community: 478,400 Fullerton: 85,000

County: Orange

Employment[a] by Industry

Industry	July 1970	July 1969
Total	194,700	193,900
Agriculture, forestry, and fisheries	2,100	1,900
Mining	900	1,000
Contract construction	11,400	10,600
Manufacturing	65,200	74,300
Food and kindred products	5,900	5,500
Paper, printing, and publishing	5,100	4,800
Rubber and plastic products	2,400	2,400
Fabricated metals	4,600	4,800
Nonelectrical machinery	5,200	5,400
Electrical machinery	28,300	37,600
Transportation equipment and ordnance	3,700	3,700
Scientific instruments	3,800	3,900
All other manufacturing	6,200	6,200
Transportation, communications, and utilities	5,100	4,900
Trade	45,600	41,400
Wholesale	7,300	6,300
Retail	38,300	35,100
Finance, insurance, and real estate	6,400	5,900
Services	38,100	35,000
Government (b)	19,900	18,900

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Fullerton community constitutes most of the northern section of Orange County and was an early beneficiary of freeway access from adjacent Los Angeles County and the "spill over" of manufacturing firms. Disneyland, Knott's Berry Farm, the Anaheim Convention Center, and the Angels' Stadium are also in the Fullerton community area and these attractions have been a stimulus to satellite services such as restaurants and hotels. Anaheim, the largest city in the community and in the county, is approximately 20 miles from the City of Los Angeles and 8 miles from Santa Ana, the county

seat. The area is served by three interstate railroads - the Santa Fe, the Union Pacific, and the Southern Pacific, while the Metropolitan Transit Authority and Greyhound Bus Lines provide interurban transportation. The Riverside, Santa Ana, and Newport Freeways cut through the Fullerton community and provide easy access to the freeway network of the greater Los Angeles area. The Orange County Airport provides nonstop jet service to several cities in the West. Helicopter service is available to the Los Angeles International Airport, and a municipal airport is located in Fullerton.

CHARACTERISTICS OF THE LABOR MARKET AND ECONOMIC TRENDS: Manufacturing plants provide one-third of all jobs in the Fullerton community and production of electrical machinery and electronics components remains the largest single employment sector. Massive layoffs in the electronics industry have reduced employment in this group, however, to 28,300 in mid-1970 for a decrease of 9,300 from a year earlier and a loss of nearly 15,000 from the peak record in 1967. Metals, machinery, and scientific instruments have experienced modest losses over the past year but food processing and the paper-printing industry have continued to expand. Trade and services continue to be the most important source of new jobs in the community. The finance industry has recorded an impressive growth rate over the past two years and construction is moving ahead rapidly.

On October 1, 1970, Orange County was declared an area of substantial unemployment by the U.S. Department of Labor, which gives local firms preference in the award of federal contracts. Aerospace layoffs have created large labor surpluses in every major occupational division. Unemployed engineers and draftsmen, especially in electronic, electrical, and mechanical fields are rapidly increasing in number. The oversupply of secretaries and other clerical workers is very large. Very few hard-to-fill positions remain in any occupation as the number of highly educated and experienced job seekers increases.

The community's manufacturing complex is highly sensitive to federal spending and the outlook for the year ahead is for a continuation of the long-lasting downward trend.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-500	Month	--
Typist (clerical).....	203.588	350-425	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.50	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Machinist (machine shop).....	600.280	3.75-4.50	Hour	--
Electronic assembler.....	726.781	2.50-3.50	Hour	--
Auto body repairman.....	807.381	3.50-4.25	Hour	--
Electrician.....	824.281	4.00-5.00	Hour	8.15
Service station attendant.....	915.867	1.75-2.25	Hour	--

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COMMUNITY LABOR MARKET SURVEY - GILROY

Areas Included in Community: Gilroy, San Martin, and Morgan Hill Planning Areas

Civilian Population, July 1970: Community: 31,000 Gilroy: 12,800

County: Santa Clara

Employment[a] by Industry

Industry	July 1970	July 1969
Total	9,800	10,500
Agriculture, forestry, and fisheries	1,900	2,500
Contract construction	200	200
Manufacturing	2,400	2,700
Food products	1,300	1,600
Other manufacturing	1,100	1,100
Transportation, communications, and utilities	500	500
Wholesale and retail trade	1,800	1,700
Finance, insurance, and real estate	200	200
Service	1,400	1,300
Government (b)	1,400	1,400

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Farming is still the major industry in the southern part of Santa Clara County. Gilroy serves as a trade and service center for the surrounding agricultural area, and is the location of a number of canning and drying companies. Additionally, the community houses small manufacturers of farm and construction machinery, agricultural pesticides, and explosives. Morgan Hill, ten miles north of Gilroy, is expanding its employment as new small industries locate there. Passenger transportation is provided by Greyhound Bus Lines and the Southern Pacific Railroad, while railroad and truck lines furnish freight service.

CHARACTERISTICS OF THE LABOR MARKET: Employment and job opportunities in Gilroy are closely linked to the agricultural season with over half of all workers employed directly in farm work or food processing. Between May and October many farm workers are needed, and many migrant workers come into the community for the season. Between November and April, unemployed farm and food processing workers make up the larger segment of the seasonal labor surplus. Trade and service workers experience shorter periods of slack employment between January

and April as many of them find new jobs in the northern part of the county. A steady, year-round demand exists, however, for experienced stenographers and secretaries. From June to November restaurants experience shortages of qualified waitresses. Domestic workers are also in short supply. Workers in construction, manufacturing, including food processing plants, restaurants, and the transportation industry are unionized. Two chain grocery stores are organized, but most commercial establishments are not.

ECONOMIC TRENDS: The job total in this growing community has increased steadily in recent years despite the downtrend in farm employment. However, agriculture remains the predominant activity, even though spillover of San Jose tract housing and space-age industry has reached Gilroy. Almost one-third of the available land in the Gilroy area has been zoned for agriculture in order to ensure the maintenance of a greenbelt area. Recent establishment of large industrial parks encouraged the moving of several industrial plants to the Gilroy area.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$400.00	Month	--
Typist (clerical).....	203.588	375.00	Month	--
Salesperson, general (retail trade)....	289.458	1.85-2.00	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Cannery worker (men).....	529.886	2.66	Hour	2.66
Cannery worker (women).....	529.886	2.66	Hour	2.66
Machinist (machine shop).....	600.280	4.72	Hour	4.72
Service station attendant.....	915.867	2.00-2.25	Hour	--

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COMMUNITY LABOR MARKET SURVEY - GLENDALE

Areas Included in Community: Glendale and portions of Los Angeles City and unincorporated county

Civilian Population, July 1970: Community: 278,700 Glendale: 131,700

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	88,700	87,600
Mining	100	100
Contract construction	3,900	4,000
Manufacturing	22,800	24,100
Food products	3,900	3,800
Chemical products	2,100	2,500
Fabricated metal products	2,200	2,500
Electrical machinery	3,100	3,300
Instruments	3,100	3,500
Other manufacturing	8,400	8,500
Transportation, communications, and utilities	2,800	2,600
Wholesale and retail trade	22,600	21,900
Wholesale trade	5,600	5,400
Retail trade	17,000	16,500
Finance, insurance, and real estate	5,500	5,300
Service	21,200	20,400
Government (b)	9,800	9,200

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Glendale community covers an area about 12 miles north of the Central District of Los Angeles. The overall population growth rate of approximately 12 percent in the 1960-70 period was under the county average, with different sections of the community experiencing varying rates. The slowest increase occurred in the portions of the City of Los Angeles bordering the Central District, while the fastest was in the unincorporated sections in the northern part of the community. Reflecting its relatively slow expansion since 1960, the City of Glendale slipped in size rank from 3rd to 4th among the 77 cities in the county. Of the four largest, however, the City of Glendale, which includes over 29 square miles, had the lowest population density by a considerable margin. Minority residents in the community constitute only a small proportion of the total population with Mexican-Americans representing the largest segment of this group.

CHARACTERISTICS OF THE LABOR MARKET: The local economy closely resembles the county distribution of employment with manufacturing, trade, and service industries providing about an equal number of jobs. The community is an important source of labor supply and, as such, the economy of this area is closely related to that of surrounding communities. Opportunities usually exist for well-qualified office workers, engineers, electronic specialists and highly skilled machinists, but beginning in mid-1969 and thus far in 1970, a surplus has emerged in most classifications. There is the usual requirement for replacement needs in cleaning establishments, restaurants and automobile service establishments. Peak labor demand in trade and service occur in the final quarter of the year.

ECONOMIC TRENDS: The long term decline in manufacturing was accelerated in 1970 by reductions in aerospace subcontracting to local firms. When the industry stabilizes, this work will undoubtedly pick up again. Industrial acreage in the community is limited and firms which wish to expand tend to relocate to other less urbanized areas. The outlook for future employment growth is primarily in the nonmanufacturing sector, particularly trade, service, finance, and government. The expansion of hospital and convalescent facilities continues to add to the growth in job opportunities for medical personnel. Local construction employment has remained relatively stable during the past two years, but has not recovered to the level of the early sixties.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$400-425	Month	--
Typist (clerical).....	203.588	350-375	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - GRASS VALLEY

Areas Included in Community: Grass Valley and Nevada City Census County Divisions

Civilian Population, July 1970: Community: 25,000 Grass Valley: 5,050 Nevada City: 2,275

County: Nevada

Employment[a] by Industry

Industry	July 1970	July 1969
Total	4,775	4,850
Agriculture, forestry, and fisheries	200	200
Contract construction	225	225
Manufacturing	425	475
Lumber and wood products	300	350
All other manufacturing	125	125
Transportation, communications, and utilities	250	250
Wholesale and retail trade	1,050	1,075
Finance, insurance, and real estate	175	175
Service	1,025	1,025
Government (b)	1,425	1,425

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Grass Valley is located in the foothills of the Sierra Nevada Mountains. The city is closely linked with the nearby community of Nevada City. Grass Valley is the larger of the two communities, and Nevada City is the county seat of Nevada County. Both cities attract tourists who come to visit the historic sites of the Gold Rush era. Grass Valley is also within commuting distance of Sacramento, 57 miles away. Grass Valley has become popular as a retirement community and as a recreation area. The summers are warm with cool evenings, but the area is often deluged with heavy rains during the winter months as the community lies just below the snowline. The principal manufacturing industry continues to be lumber and wood products, but employment opportunities are greater in nonmanufacturing industries such as government, trade, and service. The community has no railroad service, but Greyhound Bus Lines provides passenger service twice a day. All freight coming into or going out of the area is shipped by truck. Most of the people who live in the community but who work in other cities commute by private car.

CHARACTERISTICS OF THE LABOR MARKET: Employment in the labor market area is highly seasonal, rising from a low point in the winter to a peak in the summer months when additional job opportunities are created by tourists who come into the area and by others looking for a pleasant and quiet community in which to live. There normally is a need for highly skilled workers in the lumber industry during the season until rains fall in the foothill area and the snow curtails logging operations in the late fall. Current market conditions have made the supply of labor more than adequate to meet demands. Employment opportunities are greatest between May and November. The labor supply is generally adequate, however, because of retired persons who wish to supplement their incomes and housewives who wish part-time work. During the winter months there is a surplus of experienced workers except for highly skilled specialized workers. Carpenters and construction laborers employed in heavy construction are union members. About half of the lumber and sawmill workers belong to local unions, and nearly all bartenders and culinary workers are union members.

ECONOMIC TRENDS: There have been few changes in the economy of the Grass Valley community during the last two years although the community has been affected by market conditions in the lumber industry. Only one sawmill has actually closed, but mill operations throughout the area have been substantially reduced. It is unlikely that any major gain in production will occur because of the rapidly decreasing supply of timber. One manufacturing plant in the area has established a research and development plant, and may establish a production plant if a satisfactory product is developed. Another firm has left the area leaving only a few maintenance employees. Some growth has also occurred in medical facilities in the community. There are three hospitals and a number of convalescent homes in the community. There has been considerable interest in real estate development in recent years. A number of people have built retirement homes in the area, and others have bought property intending to build later. When these areas are developed local job opportunities, particularly in trade, service industries and government will tend to increase.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$350.00	Month	--
Typist (clerical).....	203.588	300.00	Month	--
Salesperson, general (retail trade)....	289.458	1.65	Hour	--
Grocery checker (retail trade).....	299.468	1.75	Hour	$3.825
Shirt presser (laundry).....	363.885	1.65	Hour	--
Machinist (machine shop).....	600.280	3.00	Hour	--
Sawmill worker.....	667.782	3.25	Hour	3.875
Service station attendant.....	915.867	2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - HANFORD

Areas Included in Community: Hanford, Lemoore, and environs

Civilian Population, July 1970: Community: 57,500 Hanford: 15,100 Lemoore: 5,200

County: Kings

Employment[a] by Industry

Industry	July 1970	July 1969
Total	13,700	14,100
Agriculture, forestry, fisheries, and mining	2,700	2,800
Contract construction	150	175
Manufacturing	1,000	1,500
Transportation, communications, and utilities	625	625
Wholesale and retail trade	2,750	2,700
Finance, insurance, and real estate	325	325
Service	1,900	1,875
Government (b)	4,250	4,100

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Hanford, the county seat of Kings County, is the service and trading center of a fertile agricultural area. Agriculture and associated agri-businesses dominate the economy together with a major tire manufacturing plant and the Lemoore Naval Air Station. Commuting from nearby communities is mostly by private automobile although passenger transportation is provided by two bus lines and the Santa Fe Railroad. Freight service is provided by several truck companies and the Santa Fe and Southern Pacific railroads.

CHARACTERISTICS OF THE LABOR MARKET: The economy of the Hanford labor market is substantially influenced by the seasonal fluctuations in agriculture and related industries. Work is scarce during the first and third quarters of the year. April is normally the beginning of expanding job opportunities leading to the spring peak in June as peaches, apricots and melons are harvested at the same time that spring cultivation is going on.

Farm employment dips during the third quarter to rise abruptly to the fall peak in October when harvests of cotton, olives, walnuts and wine grapes are under way. Employment is maintained in cotton harvesting and ginning into December and trade employment is high during the holiday season. During peak employment

periods skilled workers are in demand, particularly mechanics, job shop machinists, automobile mechanics and experienced farm machinery maintenance men. Paramedical workers are needed all year as are qualified combination cooks. Many servicemen at the Lemoore Naval Air Base and their dependents are available for either part-time or full-time employment.

Construction, communications, meat packing, petroleum refining and milk processing workers are predominately union members. Food market and drug store employees and some mechanics and electrical workers are unionized.

ECONOMIC TRENDS: Trade continues to be an important part of the Hanford economy and tends to add stability to the seasonal fluctuations of the area. Increased government employment has also contributed to stability. Agricultural employment has decreased during the last year mainly because of increased mechanization and automation coupled with a weaker market demand for some products. This situation will probably not change appreciably in the next year. Trade, government and service industries will continue to expand and offer the bulk of the job opportunities in the future.

Manufacturing activity was considerably curtailed by a trade dispute involving over 500 workers. This industry division will expand when the dispute is resolved.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$350.00	Month	--
Typist (clerical).....	203.588	315.00	Month	--
Salesperson, general (retail trade)....	289.458	1.75	Hour	--
Grocery checker (retail trade).....	299.468	2.00	Hour	$2.41 apprentice 4.01 journeyman
Shirt presser (laundry).....	363.885	1.65	Hour	--
Machinist (machine shop).....	600.280	4.00	Hour	--
Tire assembler.....	750.887	5.00	Hour	5.00
Automobile body repairman.....	807.381	4.50	Hour	--
Electrician (construction).....	824.281	3.50-5.00	Hour	7.48
Construction worker.....	869.887	3.50	Hour	4.935
Service station attendant.....	915.867	2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - HAYWARD

Areas Included in Community: Hayward (including San Lorenzo and Union City) and Castro Valley Census Divisions

Civilian Population, July 1970: Community: 196,000 Hayward: 92,300

County: Alameda

Employment[a] by Industry

Industry	July 1970	July 1969
Total	54,900	53,200
Agriculture, forestry, and fisheries	500	500
Contract construction	3,800	3,900
Manufacturing	9,200	9,600
Foods	1,900	2,000
Paper, printing, and publishing	800	800
Other nondurable goods	300	300
Stone, clay, and glass	700	800
Primary and fabricated metals	4,300	4,500
Electrical and nonelectrical machinery	500	500
Other durable goods	700	700
Transportation, communications, and utilities	3,000	3,000
Wholesale and retail trade	12,800	12,200
Finance, insurance, and real estate	1,600	1,600
Service	14,400	13,500
Government (b)	9,500	8,800
All other	100	100

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Hayward, which experienced rapid population growth in the 50's is still growing, but at a reduced rate. Ideally located in the geographic center of the Bay Area, it has become a transportation and commercial capital. It has three railroad lines, and over 50 trucking concerns, plus a city operated air terminal. Both the Nimitz and MacArthur Freeways provide easy access to Oakland and San Francisco to the north, and the new San Mateo Bridge and Highway 50 provide west to east express routes. Within a few miles of Hayward's City Hall lies a community population of nearly two hundred thousand; because of this large bedroom community, Hayward has become established as a major metropolitan shopping and services center. Industry is slowly changing from seasonal food processing to permanent year-round employment, as new factories and retail and service establishments locate in the

community. Although three bus lines provide service to and from Hayward, most commuters rely on private transportation. Hayward will be a major station in the Bay Area Rapid Transit System, upon its 1972 completion. Hayward's educational facilities include California State College, a four-year school enrolling 11,000 students, and Chabot College, a two-year school with an enrollment of 12,000.

CHARACTERISTICS OF THE LABOR MARKET: Although permanent job opportunities have increased with the influx of new industries, surpluses of semiskilled and unskilled workers still exist, particularly among youths and women cannery workers. Skilled workers remain in demand, particularly machinists, maintenance mechanics and sheet metal workers. Fremont's automobile and truck assembly plants provide a good market for these skilled workers. Although demand is generally good in a wide variety of occupations, opportunities in the professional, technical, and clerical occupations are scarce. A large number of residents commute to Oakland, San Francisco, and the Peninsula cities.

Construction, transportation, factory, culinary workers, and grocery checkers are almost completely unionized. Salespersons are partially unionized, but not in the major stores. Office worker unionization remains slight.

ECONOMIC TRENDS: During the summer of 1969, a new City Hall and government office building was completed. Among new manufacturing plants scheduled to open in the near future are a $5 million acrylic emulsions production center and a 225-employee paperbox container factory. Warehouse and trucking facilities will continue to expand.

The Hayward area's steady population growth will encourage the growth of present retail trade and services firms, while continuing to attract new firms, singly and in major shopping centers.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$460.00	Month	--
Typist (clerical).....	203.588	420.00	Month	--
Salesperson, general (retail trade)....	289.458	1.85-2.20	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.445	Hour	2.445
Machinist (machine shop).....	600.280	4.77	Hour	4.77
Service Station attendant.....	915.867	1.75-2.25	Hour	--

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COMMUNITY LABOR MARKET SURVEY - HOLLISTER

Areas Included in Community: Hollister Census Division

Civilian Population, July 1970: Community: 12,000 Hollister: 7,750

County: San Benito

Employment[a] by Industry

Industry	July 1970	July 1969
Total	6,000	6,000
Agriculture, forestry, and fisheries	1,500	1,200
Contract construction	100	100
Manufacturing	1,300	1,700
Food products	700	1,100
Other manufacturing	600	600
Transportation, communications, and utilities	200	200
Wholesale and retail trade	1,000	1,000
Finance, insurance, and real estate	100	100
Service	800	800
Government (b)	1,000	900

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Hollister, the San Benito County seat, is situated in the San Juan Valley, 85 miles southeast of San Francisco, 41 miles south of San Jose, and 27 miles northeast of Salinas. Center of a rich agricultural area, the community's most important manufacturing industry is the canning and drying of fresh fruit. Also significant are the manufacture of cement and of explosive ordnance devices used in missiles. Hollister, in addition, is the trade and service center for all of San Benito County. This county is not only noteworthy for its agricultural production but also possesses a number of mineral resources that are commercially exploited, including cinnabar, dolomite, lime, petroleum, and natural gas.

The community is served by a branch freight line of the Southern Pacific Company and several trucking companies. Greyhound bus service makes connections for passenger travel to the area. Local public transportation is provided by taxicab, and an airfield provides services to businessmen.

CHARACTERISTICS OF THE LABOR MARKET: Hollister's labor market is characterized by considerably more activity between early July and mid-November than at other periods of the year. In July, demand is heavy for fruit harvesters, a need met

by the in-migration of large numbers of farm workers. In September and October, a great number of farm workers also enter the area to help with the tomato crop. Many women workers, too, are needed during these months for food processing.

Although a large proportion of the local labor force finds employment in seasonal work, employers offering full-time, year-round work find little difficulty obtaining an adequate work force. Training for typists, stenographers, and bookkeepers is available through Gavilan College, and the supply of these workers has been adequate to meet the local demand.

Although Hollister workers are predominately nonunion, construction, food processing, and cement manufacturing workers are organized.

ECONOMIC TRENDS: Although the general decline in farm employment continues with increased mechanized harvesting, agriculture remains the major source of employment in the county. Crops grown in the area include apricots, prunes, garlic and tomatoes. Food processing has historically been the major manufacturing industry, but several new plants have moved into the area in recent years, notably in the ordnance field. A slowdown in government contracts for defense materials brought layoffs of production workers and engineers in 1970, but this may be a short-term situation. This slowly changing pattern in the county's economic base, from agriculture to a more diversified state, is expected to continue in the future.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375.00	Month	--
Typist (clerical).....	203.588	340.00	Month	--
Salesperson, general (retail trade)...	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	1.65	Hour	--
Cannery worker, men.....	529.886	2.66	Hour	2.66
Cannery worker, women.....	529.886	2.48	Hour	2.48
Service station attendant.....	915.867	1.75-2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - HOLLYWOOD

Areas Included in Community: Beverly Hills, Hollywood and West Wilshire district of Los Angeles City and unincorporated county

Civilian Population, July 1970: Community: 322,400

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	214,100	210,600
Mining	300	400
Contract construction	8,700	8,100
Manufacturing	13,700	13,600
Food and kindred products	1,100	1,200
Apparel	1,600	1,600
Printing and publishing	4,300	4,200
Electrical machinery	2,300	2,300
Other manufacturing	4,400	4,300
Transportation, communications, and utilities	9,400	9,300
Wholesale and retail trade	52,700	51,800
Wholesale trade	7,800	7,700
Retail trade	44,900	44,100
Finance, insurance, and real estate	27,500	26,800
Service	92,700	92,000
Government (b)	9,100	8,600

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Hollywood community extends along the foothills of the Santa Monica Mountains from Griffith Park west through Beverly Hills. Downtown Hollywood is an easily accessible trade and service center, well known for its motion picture, television, radio and recording studios. There is a large concentration of finance, insurance, and real estate firms in the West Wilshire and Beverly Hills areas. Large apartment buildings have replaced many older dwellings and permitted sustained population growth. Apartment dwellers constitute an exceptionally large proportion of the local residents, and the transiency rate is high. Compared with most other parts of the county, public transportation, both local and interurban, is reasonably adequate. There is direct access to an extensive freeway system, and the in-and-out commuting of workers is substantial.

CHARACTERISTICS OF THE LABOR MARKET: Motion picture production, tourism and related activities continue to be strong influences in the community's economy. In addition, the community is a major center for finance and insurance with about one out of eight persons employed in these industries. Turnover and expansion needs normally create a steady demand for accountants with a graduate degree, registered nurses, qualified secretaries, stenographers and typists, skilled culinary workers, and journeyman automobile mechanics. Motion picture and other entertainment workers represent a chronic surplus. A high degree of unionization characterizes the entertainment industry, construction, drugstores and food markets, first class hotels and restaurants.

ECONOMIC TRENDS: The service-producing sector of the economy will continue to sustain expansion in local employment, although the current depressed state of the motion picture industry has tempered overall growth. Manufacturing accounts for a relatively small proportion of employment and is largely restricted to light industry including printing and publishing, food processing, electronics and apparel. Aerospace related employment is minimal and production of consumer goods provides a relative stability in factory jobs. Construction of apartments and commercial structures is active and additional building is anticipated. New and expanded facilities in medical health services will create additional job opportunities in this field.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	365-385	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - INDIO

Areas Included in Community: Indio (city only)

Civilian Population, July 1970: Community: 14,600 Indio: 14,600

County: Riverside

Employment[a] by Industry

Industry	July 1970	July 1969
Total	9,900	9,300
Agriculture, forestry, and fisheries	300	300
Mining	200	200
Contract construction	400	400
Manufacturing	600	600
Transportation, communications, and utilities	800	800
Wholesale and retail trade	3,000	2,700
Finance, insurance, and real estate	400	400
Services	2,300	2,100
Government (b)	1,900	1,800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Indio is located in the center of the Coachella Valley, a highly productive desert agricultural area in Riverside County. The city serves as a shopping and service center for the Valley, and provides such agricultural-related activities as food processing, packing of fruits and vegetables, transportation, and equipment repair services. While Indio is known as the date capitol of the United States, grapes, citrus, and salad vegetables are the major money crops. The city is 22 feet below sea level, and the area's agricultural lands have been reclaimed from the desert. Water from the All American Canal is used for intensive irrigation.

The community has developed as a winter resort area, with tourists and desert aficionados coming in greater number each year. To the north is Palm Springs, an internationally known desert playground, and to the south is the Salton Sea, an inland ocean resort and sports area. In February, the Riverside County Fair is held in Indio in conjunction with the National Date Festival. U.S. Interstate Highway 10 runs through Indio, and State Highway 111 connects the city to the communities of Palm Springs and El Centro. Indio is also a division point of the transcontinental Southern Pacific Railroad line with services for both freight and passengers. Greyhound Bus Lines, as well as many trucking firms, serve the area. The nearest airport is at Palm Springs, which has facilities

adequate for large jet liners, and has regularly scheduled flights by Air West, Western Air Lines, and American Airlines. Commuter service to Los Angeles is available.

CHARACTERISTICS OF THE LABOR MARKET AND ECONOMIC TRENDS: The economy of the community is geared to agriculture and agri-business and a growing volume of tourist-related activities. In consequence, employment is subject to fairly sharp seasonal swings, with labor demand changing in intensity and occupational scope in accordance with the time of the year. The peaks in farm employment and in the resort season overlap in early spring. Mechanization of farm operations continue to advance, with worker needs slowly declining. The supply of agricultural labor still depends on migratory workers. The packing sheds and food processing plants draw from the local work force. Many of the resort hotel and restaurant workers are transients.

Demand for fully-qualified office workers and various types of repairmen usually exceeds supply. A small light manufacturing sector has developed in recent years providing jobs for approximately 150 to 175 assembly workers. Food processing is the largest manufacturing industry by far.

Railroad and construction workers are highly unionized, and many of the grocery clerks, packing shed workers, and restaurant workers are organized. Grape workers are now unionized.

The addition of a new major shopping center this year provided 200 to 300 additional jobs. Employment expansion will continue to be concentrated in trade and services. Completion of a 100-room motel and the addition of a new wing to a local hospital will increase jobs for domestic and medical service workers. Agriculture and related activities will remain among the most important industries in the community.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375-450	Month	--
Typist (clerical).....	203.588	330-375	Month	--
Salesperson, general (retail trade)....	289.458	1.65-2.00	Hour	--
Grocery checker (retail trade).....	299.468	400-420	Month	$2.30-3.84 hr.
Shirt presser (laundry).....	363.885	1.65-2.00	Hour	--
Machinist (machine shop).....	600.280	3.00-3.50	Hour	--
Construction worker.....	869.887	2.50-3.50	Hour	4.59 hr.
Service station attendant.....	915.867	375-500	Month	--
Packer, agri. produce (whl. trade).....	920.887	1.75	Hour	1.65-1.85 hr.

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COMMUNITY LABOR MARKET SURVEY - INGLEWOOD

Areas Included in Community: Inglewood, El Segundo, Hawthorne, and portions of Los Angeles City and unincorporated county

Civilian Population, July 1970: Community: 433,100 Inglewood: 88,800

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	231,400	241,000
Agriculture, forestry, and fisheries	300	300
Mining	400	400
Contract construction	7,300	7,600
Manufacturing	79,700	95,100
Food and kindred products	3,700	3,800
Fabricated metal products	4,400	4,400
Machinery, except electrical	16,600	17,600
Electrical machinery	20,300	22,200
Transportation equipment	17,300	28,600
Other manufacturing	17,400	18,500
Transportation, communications, and utilities	31,900	30,900
Wholesale and retail trade	36,800	35,500
Wholesale trade	9,600	9,100
Retail trade	27,200	26,400
Finance, insurance, and real estate	6,800	6,400
Service	44,200	42,200
Government (b)	24,000	22,600

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Inglewood community extends from the Harbor Freeway on the east to the Pacific Ocean, and from Slauson-Vernon Avenues on the north to Rosecrans Boulevard on the south. The City of Inglewood, which is twelve miles southwest of downtown Los Angeles, advanced to 7th in population ranking among the cities in the county in 1970 from 13th in 1960. More than half of the resident population in the community live in the City of Los Angeles where there is a sizable representation of Negroes, Mexican-Americans, and other minority groups. The economy of the area is closely allied to the aerospace complex of industries which surround the Los Angeles International Airport.

CHARACTERISTICS OF THE LABOR MARKET: Despite severe cutbacks in aircraft manufacturing and phase out of missile and aerospace contracts, the community retained its rank as the largest aerospace center in the county. Work force reductions, however, have created a surplus of engineers and supporting technicians, as well as craftsmen in the machine trades and assembler occupations. Qualified typists and stenographers continue to be in demand but to a much lesser extent than in the previous year. Nonaerospace firms have maintained fairly stable employment but there is a surplus of applicants for most of their replacement needs. There is currently little demand for A & P mechanics or flight-line mechanics, and the supply of flight crew personnel exceeds the demand.

ECONOMIC TRENDS: New high rise commercial buildings in the International Airport and El Segundo areas, recently completed and under development, have stimulated expansion in white collar and service occupations. Many manufacturing firms have moved and others contemplate moving from this area due chiefly to high rents, taxes and property values, especially in the Los Angeles International Airport area. The long term employment growth in air transportation has leveled off due to the softening in the economy and financing problems involved in transition to larger aircraft. Some offset has been provided by an influx of new firms engaged in air freight shipping and supportive services. The contract award for design and development of the B-1 bomber to a local prime contractor slowed the employment downtrend in aerospace employment, but any positive large scale recalls or new hiring for this project will not occur in the immediate future.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	375-400	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - LANCASTER

Areas Included in Community: Lancaster, Palmdale, and portions of North Los Angeles County

Civilian Population, July 1970: Community: 82,300

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	26,300	22,800
Agriculture, forestry, and fisheries	1,600	1,500
Mining	100	100
Contract construction	2,900	3,000
Manufacturing	5,000	2,800
Durable goods	4,300	2,100
Aerospace	4,300	2,100
Nondurable goods	700	700
Transportation, communications, and utilities	900	800
Wholesale and retail trade	4,000	3,700
Wholesale trade	300	300
Retail trade	3,700	3,400
Finance, insurance, and real estate	1,000	900
Service	5,300	5,000
Government (b)	5,500	5,000

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Lancaster community, located in the Antelope Valley on the southwest edge of Mojave Desert, occupies the northernmost part of the county, 75 miles from downtown Los Angeles. It is the trade center for the valley and government is an important source of jobs. Many local residents are employed at Edwards Air Force Base and Rocket Test Center situated about 35 miles to the northeast in Kern County. Population growth in the community during the 1960-1970 period was well above the county rate. Palmdale, the only incorporated city, has the lowest population density of any city in the county. It has 8,500 residents and covers an area of almost 32 square miles. Much of the commuting to work is done in car pools, but a bus run provides transportation timed with scheduled shift changes at Edwards AF Base. A local airport has daily commuter flights between Lancaster and Los Angeles. Southern Pacific Railroad runs through Antelope Valley, and the community is also served by Greyhound Bus.

CHARACTERISTICS OF THE LABOR MARKET: The local economy is heavily dependent on developments in the aerospace industry. In contrast to other districts in the county, Lancaster was the only community to record expansion in aerospace employment over the past year because of the staffing of a new facility at Palmdale for final assembly and flight test of the L-1011. The change from flight test and maintenance operations to production has resulted in new occupational requirements. There is currently a shortage of basic structures assemblers for aircraft, while professional, technical and craft workers from aerospace have moved into a surplus category. At midyear government and service were the two leading industry divisions, but manufacturing will move into first place before the end of the year. The demand for medical personnel persists, but there is an adequate supply of clerical, sales, and service workers. A two-year Community College has numerous certificated vocational evening adult courses, and both the high school and the college have remedial courses for adults.

ECONOMIC TRENDS: The anticipated uptrend in manufacturing employment during the next twelve months will be concentrated in the aerospace group. New instrument landing systems will be installed at Air Force Plant 42 runways later this year. The Feather River projects are well advanced with water delivery scheduled for early in 1972. Antelope Valley-East Kern Water District (AVEK) will have a bond election to develop the delivery system for this new water supply. Medical facilities have been increased and there is no shortage of hospital beds for either surgical or long term care. A 17-bed mental health facility has been added to the Antelope Valley hospital this year. Rapid growth of this labor market will result when the 17,000 acre International Airport development is approved and started at Palmdale. A housing shortage exists, especially for rentals, but the building industry is in the planning stage for many apartments and dwellings.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Secretary (clerical).....	201.368	$450	Month	--
Stenographer (clerical).....	202.388	400	Month	--
Typist (clerical).....	203.588	350	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.25	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-2.00	Hour	--
Machinist (machine shop).....	600.280	4.25-4.74	Hour	--
Assembler, A/C, structures & surfaces..	806.381	3.31-3.75	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - LODI

Areas Included in Community: Lodi and Lodi Rural Census County Divisions

Civilian Population, July 1970: Community: 50,300 Lodi: 28,600

County: San Joaquin

Employment[a] by Industry

Industry	July 1970	July 1969
Total	11,700	12,025
Agriculture, forestry, and fisheries	2,750	2,725
Contract construction	350	400
Manufacturing	2,200	2,650
Food and kindred products	1,075	1,450
All other manufacturing	1,125	1,200
Transportation, communications, and utilities	600	625
Wholesale and retail trade	2,400	2,300
Finance, insurance, and real estate	425	425
Service	1,575	1,550
Government (b)	1,400	1,350

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Lodi, situated in the northern end of San Joaquin County, is the second largest city in the county. The economic base of the community is agriculture, and Lodi produces virtually all of the Tokay grapes grown in the United States. The principal nonagricultural industries in the community are manufacturing and wholesale and retail trade whose prosperity is allied to agricultural production. There are a number of wineries and distilleries in the area, a breakfast cereal manufacturing plant, several food processing plants, a large plant which manufactures tire molds, one garment manufacturing firm, and a furniture plant. Many residents of the community commute to work in Stockton or Sacramento, mostly by private car. There is no local bus service available, but passenger and freight service is provided by Greyhound bus lines and the Southern Pacific Railroad. Freight service is also provided to the community by the Central California Traction Company.

CHARACTERISTICS OF THE LABOR MARKET: A substantial portion of the job opportunities in the labor market are seasonal and directly related to agricultural production, food processing, and shipping. There is generally a surplus of unskilled workers in the area although many can find some work during the harvest

season as a result of the normal turnover. During the summer and fall when employment is at a peak in the community, there may be some shortage of workers. Continued demand exists for professional and highly qualified skilled workers. Most workers in construction and manufacturing industries are union members while those working in retail trade, transportation, and service industries are partially unionized.

ECONOMIC TRENDS: There has been little industrial growth in Lodi during the past two years. The opening of establishments for the manufacture of mobile homes and modular homes did not offset the loss in employment resulting from the closing of a pipe fabricating and a trailer manufacturing plant. The development that has occurred in the community has been in the areas of trade and service, as new businesses are established to meet the demands of a growing population. Six restaurants have opened since 1968 and several retail stores have been located in shopping centers on the fringe of Lodi.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$350	Month	--
Typist (clerical).....	203.588	300	Month	--
Salesperson, general (retail trade)....	289.458	1.75	Hour	--
Grocery checker,(retail trade).....	299.468	2.20	Hour	$ 3.29
Shirt presser (laundry).....	363.885	1.75	Hour	--
Cellarman (vinous liquids).....	521.885	3.66	Hour	3.66
Cannery worker (male).....	529.886	2.93-3.17	Hour	2.93-3.17
Cannery worker (female).....	529.886	2.73-2.84	Hour	2.73-2.84
Sewing machine operator.....	786.782	1.75	Hour	--
Construction worker.....	869.887	4.935	Hour	4.935
Service station attendant.....	915.867	1.85	Hour	--
Laborer, male (packing house).....	922.887	1.75-2.25	Hour	--

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COMMUNITY LABOR MARKET SURVEY - LONG BEACH

Areas Included in Community: Long Beach, Hawaiian Gardens, Lakewood, Signal Hill and portions of unincorporated county

Civilian Population, July 1970: Community: 451,900 Long Beach: 347,000

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	188,000	194,100
Agriculture, forestry, and fisheries	200	200
Mining	4,000	4,200
Contract construction	7,700	8,600
Manufacturing	41,000	49,500
Durable goods	34,200	42,500
Aerospace	27,400	35,600
Nondurable goods	6,800	7,000
Transportation, communications, and utilities	10,100	10,000
Wholesale and retail trade	44,400	42,700
Wholesale trade	8,000	7,700
Retail trade	36,400	35,000
Finance, insurance, and real estate	6,500	6,200
Service	37,900	36,200
Government (b)	36,200	36,500

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Long Beach occupies the southernmost portion of the county bounded on the west by the Los Angeles Harbor District, and on the east by the Orange County line. The community is one of the leading, but also one of the slower growing, population centers. The City of Long Beach showed a population increase of less than one percent in the past decade according to the preliminary count of the returns of the 1970 census. The city continues to account for over three-fourths of all the residents in the community, however, and maintains a firm hold on its position as the second largest in the county. Minorities constitute a relatively low proportion of the total population when compared to the county average, but there is a sizable representation of Negroes and Mexican-Americans among the poor families housed in and around the central district of Long Beach. Antipoverty programs are active locally under the direction of the Long Beach Commission on Economic Opportunities.

CHARACTERISTICS OF THE LABOR MARKET: The recent downturn in employment has eliminated most occupational shortages and produced numerous surpluses in the local area, particularly among workers with aircraft and shipyard experience. As these industries are still dominant in the industrial structure of the community, alternative job opportunities within the local area are limited. Current shortages exist in a small number of industrial and clerical jobs. There is a demand for journeyman machinists, auto mechanics, tailors, sewing machine operators, and well-qualified secretaries and stenographers. In the professional group there is a continuing need for registered and licensed vocational nurses. Seasonal fluctuations in employment relate primarily to tourist and resort activity, which peaks in the summer months, when hotel-motel, restaurant and recreational workers are in heavy demand.

ECONOMIC TRENDS: The decline in aerospace and reductions in federal defense activities during the past year has had an overall depressing effect on the economy. Retail trade and service industries recorded modest increases with tourism and recreational activities exerting their usual seasonal influence. Wholesale and retail trade has replaced manufacturing as the largest industry group. Although some recovery in aircraft production is anticipated in 1971, recall lists will be more than adequate to meet any requirements which develop. Work on the much delayed Queen Mary project is expected to get under way again and when completed will stimulate increased tourist and convention activity. The 250 million dollar shoreline development in the downtown area is well under way and construction on the new Civic Center will be started soon. Residential construction has slackened in the community, but commercial and industrial construction, which has been delayed during the past year, will be started, including a new major hotel, an office building and a shopping area complex.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	360-375	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - LOS ANGELES-CENTRAL DISTRICT

Areas Included in Community: Central Los Angeles

Civilian Population, July 1970: Community: 472,000

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	571,500	561,100
Mining	1,200	1,300
Contract construction	10,500	10,400
Manufacturing	95,100	95,200
Food and kindred products	9,100	9,000
Apparel	33,400	33,600
Printing and publishing	15,500	15,100
Petroleum	7,100	6,600
Electrical machinery	4,800	5,700
Other manufacturing	25,200	25,200
Transportation, communications, and utilities	43,600	44,100
Wholesale and retail trade	109,500	107,800
Wholesale trade	53,000	52,400
Retail trade	56,500	55,400
Finance, insurance, and real estate	83,400	80,900
Service	139,300	135,200
Government (b)	88,900	86,200

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Central District of Los Angeles covers a wide geographic area and has a diversified employment base. A large proportion of its work force commutes from surrounding cities and suburbs. The district provides 18 percent of all jobs in the county, but accounts for only about six percent of the population. Among the local residents there is a substantial representation of racial and ethnic minorities who are faced with such problems as substandard housing, educational deficiencies, and inadequate vocational skills. Several sections housing low-income families are eligible for various manpower development and urban renewal programs. Downtown Los Angeles has a high concentration of employment in public utilities, trade, finance and government. The services group, however, leads all others because of substantial employment in hotels, hospitals, and in varied business and professional services including legal, advertising, accounting, architectural and engineering.

The district is the central terminal for railroads, trucking companies, and bus lines, and is the hub of an extensive freeway system. Traffic congestion and parking problems are typical of metropolitan central areas during normal business hours.

CHARACTERISTICS OF THE LABOR MARKET: The diversity of the economy in the Central District provides jobs in a wide occupational range, but there are few shortages in the current job market. Layoffs in aerospace industries outside the district itself and the general economic slowdown have adversely affected local job opportunities. Registered nurses, medical technicians, therapists and other licensed medical specialists, however, are still in demand. Programmers qualified in the financial and insurance fields, accountants, and medical and psychiatric social workers with MSW degrees, experienced typists, stenographers and bookkeepers can usually find work, as can specialty salespersons in jewelry, home furnishings and high-priced ladies' garments. Service and industrial workers are for the most part in surplus, although openings usually exist for experienced sewing machine operators.

ECONOMIC TRENDS: The construction of high-rise office buildings, including twin 52-story towers now well under way, has attracted new administrative and sales offices to the district and provided expansion space for firms already in the downtown area. Work continues on the Bunker Hill redevelopment project and new public buildings are under construction in the Civic Center. A convention and exhibition center is scheduled to open in mid-1971. In addition to the expected economic stimulus, it will serve to upgrade the blighted area immediately surrounding the site. The proportion of manufacturing in the local industrial structure will continue to diminish as producers of durable goods relocate to less congested areas.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	360-375	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - LOS ANGELES HARBOR

Areas Included in Community: San Pedro, Terminal Island, Wilmington, and portions of Carson and unincorporated county

Civilian Population, July 1970: Community: 127,600

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	50,300	52,700
Agriculture, forestry, and fisheries	1,000	1,000
Mining	700	800
Contract construction	1,800	1,600
Manufacturing	15,400	18,100
Food products	5,100	5,100
Chemicals	1,000	1,100
Petroleum refining	3,200	3,300
Transportation equipment	3,100	5,600
Other manufacturing	3,000	3,000
Transportation, communications, and utilities	7,600	8,400
Wholesale and retail trade	8,600	8,000
Wholesale trade	2,200	2,100
Retail trade	6,400	5,900
Finance, insurance, and real estate	1,000	1,000
Service	7,400	7,000
Government (b)	6,800	6,800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Los Angeles Harbor District is in the southern portion of the county, immediately west of Long Beach and 22 miles from downtown Los Angeles. The sections commonly known as San Pedro and Wilmington are parts of the City of Los Angeles, and account for well over 90 percent of the total population. Among the residents there is a large proportion of Mexican-Americans, and also a sizable Negro representation, with low family incomes. Population growth in the community over the past decade has exceeded that of the County and City of Los Angeles.

CHARACTERISTICS OF THE LABOR MARKET: Blue collar workers account for a large proportion of the local labor force in this maritime center. High turnover rates and seasonal fluctuations, particularly in fish canning, ship repair and

longshoring activities are characteristic of the job market and worker attachment to these industries is well defined. A sharp reduction in shipbuilding and repair over the past year has created a surplus of shipyard workers at all skill levels who find it difficult to transfer into other employment. There is an excess supply of unskilled workers, many of whom are of minority groups with various barriers to employment. No current labor shortages exist in the Harbor area. With the exception of government and finance, most local industry is unionized.

ECONOMIC TRENDS: Continued expansion of Los Angeles Port facilities is planned to keep pace with rising foreign trade. Automation and technological changes have resulted in increased tonnage being handled through the Port with lower manpower requirements. The outlook for shipbuilding and repair, down at present, is favorable, depending upon government maritime policies and the approval of proposals to revitalize the merchant marine. A local shipyard is planning a 21-million-dollar expansion program which will incorporate the most advanced shipbuilding techniques and equipment, capable of producing large tankers and bulk ships. The long-term downtrend of commercial fishing has leveled off with increased tonnage and higher prices which have raised fishermen's earnings. The Beacon Street Redevelopment Project in San Pedro, adjacent to the main channel of the Port of Los Angeles, is a 60-acre project now being implemented by the Los Angeles Community Redevelopment Agency. Groundbreaking has begun for parcel "A", devoted to garden apartments for larger families, and parcel "B", a high-rise building and terraced housing for senior citizens. Plans are also being formulated in Wilmington to convert an area zoned for industry into a modern industrial park development. Completion and total utilization is planned for 1975. This will provide for future growth in manufacturing which in the past has been limited to industries allied to maritime activities.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	360-400	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - LOS ANGELES-SOUTH CENTRAL DISTRICT

Areas Included in Community: Cudahy, South Gate and portions of Los Angeles City and unincorporated county

Civilian Population, July 1970: Community: 225,100

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	49,000	45,800
Contract construction	1,300	1,200
Manufacturing	21,500	19,900
Durable goods	15,300	13,500
Aerospace	700	700
Other durable goods	14,600	12,800
Nondurable goods	6,200	6,400
Transportation, communications, and utilities	2,100	2,000
Wholesale and retail trade	8,400	8,100
Wholesale trade	2,600	2,500
Retail trade	5,800	5,600
Finance, insurance, and real estate	1,200	1,200
Service	7,400	7,100
Government (b)	7,100	6,300

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Los Angeles South Central community is a heterogeneous area comprising districts of Los Angeles City known as Watts and Green Meadows, the incorporated cities of Cudahy and South Gate, and unincorporated Graham and Walnut Park. Population growth in the community has been well below that of the county in the period from 1960 to 1970. Minority groups, particularly Negroes account for a large proportion of the resident population in the Los Angeles City portion. The Watts section is classified by the Department of Labor as an area of concentrated unemployment and underemployment. A larger area within the community has been designated a Model Cities target area by the Department of Housing and Urban Development.

CHARACTERISTICS OF THE LABOR MARKET: Local employment opportunities are extremely limited and many workers must commute to other areas for work. The community had 3.2 percent of the county's population, but only 1.5 percent of the jobs in July of 1970. For many residents the inadequacy of public transportation is a major barrier to getting and holding a job. Manufacturing is the

dominant industry in the community and a sizable proportion of the factory jobs are located in South Gate, an industrial city of diversified manufacturing. The rise in manufacturing employment over the year does not reflect new industrial development but was due to the fact that model changeover in a large automobile assembly plant occurred earlier than usual in 1969 and workers were on "layoff" status in the mid-July report period. Extensive training programs including basic and remedial education, prevocational and vocational courses are offered to residents of the area to upgrade skills so they can compete more adequately in the job market.

ECONOMIC TRENDS: On a long-term basis the community has suffered reverses in local job opportunities because plants in or near the area have tended to relocate to other sectors of the county. The Watts industrial park is located on the periphery of the area and a feeder plant of a major aerospace company is now in operation. The Martin Luther King Hospital in nearby Willowbrook is under construction and when completed will provide many hundreds of jobs in allied health occupations as well as improved medical service to residents of the community. Acquisition of land is well under way to implement an urban renewal project which will provide better housing for low-income families, new shopping and recreational facilities.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	375-400	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - MADERA

Areas Included in Community: Madera and immediate environs

Civilian Population, July 1970: Community: 21,400 Madera: 15,900

County: Madera

Employment[a] by Industry

Industry	July 1970	July 1969
Total	5,825	5,775
Agriculture, forestry, and fisheries	525	550
Contract construction	250	250
Manufacturing	675	625
Transportation, communications, and utilities	250	225
Wholesale and retail trade	1,600	1,625
Finance, insurance, and real estate	225	225
Service	850	850
Government (b)	1,450	1,425

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Madera, the county seat and largest city in Madera County, is located just off U.S. Highway 99 about midway between Merced and Fresno. Agriculture and allied industries form the basis of the economy of the community. A significant number of workers from Madera commute daily to Fresno, mostly by private automobile. Daily passenger service is offered by the Greyhound and Continental bus lines as well as by the Southern Pacific and Santa Fe Railroads.

CHARACTERISTICS OF THE LABOR MARKET: The peak period of agricultural employment occurs in the summer and early fall. Workers in agriculture, food processing and the lumber and wood industries are most affected by seasonal factors and trade and service industries are affected to a lesser degree. During summer and early fall demand is strong for farmhands, tractor operators, truck drivers, winery workers and general laborers. Normally the local labor supply is adequate to meet employer needs. The period from November through April is a period of increasing labor surplus and high unemployment. A high degree of unionization exists for construction workers, teamsters, grocery clerks, meat processors and cannery and winery operators.

ECONOMIC TRENDS: Madera has one of the largest and most modern winery and bottling plants in the state and ground has been broken for a new wine bottle manufacturing plant. This plant is expected to be fully operative in 1972 and

producing 200 million bottles a year for the nearby winery. In addition, there is an olive processing plant, several cotton gins, a farm equipment manufacturing plant and a large slaughter house. The employment pattern of the area is subject to seasonal variations due to the agricultural base, but diversification is lending a stabilizing influence to the economy. Trade, service and government provide year-round job opportunities. Population increase as well as economic growth has contributed to the growth in employment in trade, manufacturing and government. Further mechanization of agriculture will continue to limit employment expansion in this industry division but industrial growth is expected to continue expansion and offer more job opportunities. Recently a plywood manufacturing plant acquired a site in Chowchilla and is expected to start production early in 1971 and a vigorous campaign is being conducted to attract other new industries.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375.00	Month	--
Typist (clerical).....	203.588	325.00	Month	--
Salesperson, general (retail trade)...	289.458	1.75	Hour	$1.90
Grocery checker (retail trade).....	299.468	2.25	Hour	(2.40) apprentice (4.15 1 yr. ex.)
Shirt presser (laundry).....	363.885	1.75	Hour	--
Cellarman.....	521.885	3.23	Hour	3.23
Machinist (machine shop).....	600.280	3.25	Hour	--
Construction worker.....	869.887	4.675	Hour	4.675
Service station attendant.....	915.867	1.75	Hour	2.65
Bottling line attendant.....	920.887	2.87	Hour	2.87

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COMMUNITY LABOR MARKET SURVEY - MARYSVILLE-YUBA CITY

Areas Included in Community: Marysville, Live Oak, Yuba Rural, Yuba City, Linda, and Olivehurst-Arboga Census County Divisions

Civilian Population, July 1970: Community: 54,000 — Marysville: 9,150; Yuba City: 13,750

Counties: Sutter and Yuba

Employment[a] by Industry

Industry	July 1970	July 1969
Total	19,225	17,700
Agriculture, forestry, and fisheries	1,600	1,200
Contract construction	725	925
Manufacturing	3,225	1,875
Lumber and wood products	650	700
Food and kindred products	2,125	625
All other manufacturing	450	550
Transportation, communications, and utilities	1,375	1,375
Wholesale and retail trade	4,325	4,350
Finance, insurance, and real estate	675	675
Service	2,775	2,750
Government (b)	4,525	4,550

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Marysville-Yuba City community is about 43 miles north of Sacramento near the confluence of the Feather and Yuba Rivers. Marysville is the county seat of Yuba County, and Yuba City is the county seat of Sutter County but the economics of the two cities are intertwined. North-southbound Highways 65, 70, 99E, and 113 converge in the community and leave as Highways 99 and 70 northbound and 20 east-west. Freight and passenger service are provided by Greyhound Bus Lines, several truck lines, the Southern Pacific Railroad, and Air West Airlines. There is little public transportation available, and most commuting is done by private car. There is an abundance of recreational facilities in the area, swimming, boating, fishing, hunting, all within easy driving distance. Shopping facilities in the community features many small businesses and several large chain stores. Temperatures in the area generally range from near freezing to the low 100's.

CHARACTERISTICS OF THE LABOR MARKET: Much of the economy of the community is based on agriculture and allied industries. Job opportunities in food processing plants and small manufacturing plants producing farm machinery, metal storage tanks, lumber and wood products, and plastics are highly seasonal. Peak employment is in August and September, and at a low point from January through April when semiskilled and unskilled workers have difficulty finding jobs. Most construction workers, butchers, and employees in sawmills and logging operations are union members as are about half of the bartenders and culinary workers and one-third of the retail clerks.

ECONOMIC TRENDS: Despite year-to-year changes in the timing of seasonal activities in the community, there has been considerable economic growth in the community during the last two years. Weather conditions during the late spring of 1969 delayed the harvesting of many major crops and the peak of food processing activities. In 1970, conditions were more normal, and activity was close to the peak in mid-July. Current economic conditions, however, have had an adverse effect on job opportunities in industries such as lumber and wood products, wholesale and retail trade, contract construction, and government. Most of the major changes during the last two years have been in manufacturing industries - a major manufacturer of mobile homes moved into the community in 1969 bringing to three the total of mobile home manufacturers. At the present time, there are prospects that three new manufacturing firms will move into the community. Job opportunities in service industries declined slightly between 1968 and 1969, but employment gains occurred in the industry between 1969 and 1970 because of the growth in medical services, the expansion of hospital facilities, and the openings of convalescent homes. During the next few years, substantial employment gains are expected to occur among service industries in the community as the recreational area around the new Bullard's Bar Dam is fully developed.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$303-450	Month	--
Typist (clerical).....	203.588	1.65-2.00	Hour	--
Salesperson, general (retail trade)....	289.458	1.75	Hour	--
Grocery checker (retail trade).....	299.468	1.75-2.00	Hour	$3.635
Machinist (machine shop).....	600.280	2.25-3.50	Hour	--
Construction worker.....	869.887	2.50	Hour	4.92
Service station attendant.....	915.867	1.75	Hour	--

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COMMUNITY LABOR MARKET SURVEY - MERCED

Areas Included in Community: Merced and immediate environs

Civilian Population, July 1970: Community: 45,000 Merced: 22,700

County: Merced

Employment[a] by Industry

Industry	July 1970	July 1969
Total	16,650	16,750
Agriculture, forestry, and fisheries	1,500	1,550
Contract construction	275	300
Manufacturing	1,600	1,700
Food and kindred products	500	550
All other manufacturing	1,100	1,150
Transportation, communications, and utilities	1,275	1,275
Wholesale and retail trade	5,125	5,150
Finance, insurance, and real estate	925	925
Service	2,300	2,250
Government (b)	3,650	3,600

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Merced, long known as the gateway to Yosemite National Park, is the largest city in the county and the county seat. Some of the richest agricultural land in the world is in Merced County and farming and farm related activities are the basis of Merced's economy. The city is also the principal shopping center for adjacent agricultural communities as well as for Castle Air Force Base which is located a few miles away. Two major railroads, the Southern Pacific and the Santa Fe, provide both freight and passenger service. Greyhound and Continental Trailways Bus Lines as well as daily airline flights connect Merced with other cities. There is considerable commuting by workers into Merced by private car from outlying communities such as Atwater and Livingston.

CHARACTERISTICS OF THE LABOR MARKET: Employment in Merced is highly seasonal with the major share of employment opportunities occurring in agriculture and allied industries. Peak employment in the community occurs during the summer and early fall months. During this period there is considerable in-migration of farm workers and packing shed workers, tractor operators, harvest hands and cannery workers are in demand. In winter months when the season is over many workers move elsewhere but some remain and become unemployed as there is not

enough year-round industry to keep everyone employed. There has been a continuous shortage of Registered Nurses and Licensed Vocational Nurses in hospitals and convalescent homes. There is a demand also for full charge bookkeepers, secretaries with strong typing and shorthand skills, journeyman automobile and diesel mechanics and experienced frycooks and waitresses. Both elementary and secondary school teachers are in surplus as are social service caseworkers. There are many more applicants for clerical and sales work than there are jobs available and most unskilled or semiskilled workers are in surplus during the winter months. Most workers in food processing, construction, utilities and communications belong to unions. A large percentage of the retail clerks in supermarkets and drugstores and many truckers are also union members.

ECONOMIC TRENDS: Although total employment declined between 1969 and 1970 principally in seasonal industries there has been a continuous trend of diversification apparent in the community. New industries in the area include several restaurants and drug stores, a large discount retail store, two car dealers and two convalescent hospitals. Food processing is the largest manufacturing industry. A new cannery is in operation in Merced and another one is considering locating there further increasing employment in this industry.

The Merced Mall shopping center has been completed and a variety of retail outlets are located there. Government, trade and service are the fastest growing industry divisions in the Merced area. Recreation and tourism is increasing because of Merced's proximity to Yosemite and other recreation areas. Trade employment is expected to continue to expand as is government.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375	Month	--
Typist (clerical).....	203.588	325	Month	--
Clerk, general office.....	219.388	325-359	Month	--
Salesperson, general (retail trade)....	289.458	1.85	Hour	--
Grocery checker (retail trade).....	299.468	160.63	Week	$160.63
Shirt presser (laundry).....	363.885	1.75	Hour	--
Cannery worker, male.....	529.886	2.93	Hour	2.67-3.06
Cannery worker, female.....	529.886	2.93	Hour	2.67-3.06
Machinist (machine shop).....	600.280	3.50	Hour	--
Automobile mechanic.....	620.281	3.50	Hour	--
Construction worker.....	869.887	4.675	Hour	4.675
Service station attendant.....	915.867	1.90	Hour	--

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COMMUNITY LABOR MARKET SURVEY - MODESTO

Areas Included in Community: Modesto, Ceres, Salida, Modesto Northwest, South and East Census County Divisions

Civilian Population, July 1970: Community: 130,000 Modesto: 60,400

County: Stanislaus

Employment[a] by Industry

Industry	July 1970	July 1969
Total	44,875	44,275
Agriculture, forestry, fisheries and mining	1,400	1,425
Contract construction	2,050	2,300
Manufacturing	11,825	11,025
Food and kindred products	8,500	7,500
Paper and printing	750	750
Chemicals	325	325
All other manufacturing	2,250	2,450
Transportation, communications, and utilities	2,625	2,625
Wholesale and retail trade	10,025	9,950
Finance, insurance, and real estate	1,350	1,325
Service	6,800	6,625
Government (b)	8,800	9,000

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Modesto, the largest city in Stanislaus County, is located on State Highway 99 at the northern end of the San Joaquin Valley. It is the major industrial and trade center of the county. The economy of the area, like that of other Central Valley cities, is closely allied to agriculture. Employment trends follow the crop seasons with peak employment occurring in the late summer then declining sharply during the winter months. Workers commute by private automobile to jobs in the Modesto area from Salida, Ceres, Empire, and other nearby towns. Local bus service provides intracity transit while Greyhound and Continental Trailways offer transportation to other cities. The Southern Pacific and Santa Fe railroads provide passenger and freight service. Local freight service is handled by the Tidewater-Southern and Modesto-Empire Traction Company.

CHARACTERISTICS OF THE LABOR MARKET: The economy of the community continues to reflect its dependence upon agriculture and its related industries. Maximum employment usually occurs during August and September. A large surplus of unskilled and semiskilled workers is available except during the harvest season.

Frozen food plants, dehydrators and wineries operate year-round, adding personnel in peak seasons as needed. Canneries and turkey processing plants, however, use skeleton crews to perform warehousing and maintenance activities during the off-season. Jobs providing year-round employment are centered in durable goods, paper products and chemicals. New establishments processing prepared foods have increased year-round employment opportunities. Skilled craftsmen in building trades can find employment when weather and economic conditions permit. There is generally a surplus of service industry workers, but dependable and experienced workers are able to find employment. Union membership is extensive in the commercial construction industry, but residential construction is generally nonunion. Those employed in the food processing, paper products, wine-making industries, and miscellaneous occupations in the service industry are highly organized.

ECONOMIC TRENDS: Employment gains resulting from the opening of new food processing and paper products establishments have more than offset losses in government and durable goods manufacturing. The closing of the Modesto State Hospital eliminated about 800 jobs. Many of the affected workers transferred to jobs in other institutions. Others left the community or withdrew from the labor market. Two new canneries began operations in 1969; Tri Valley is the largest food processing plant in the state.

In 1971, a substantial number of year-round jobs will be created by the opening of another paper products establishment and additional food processing plants.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375.00	Month	--
Typist (clerical).....	203.588	350.00	Month	--
Salesperson, general (retail trade)....	289.458	1.65	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	1.76	Hour	--
Cellarman (winery).....	521.885	3.45	Hour	3.45
Cannery worker, male.....	529.886	2.66	Hour	2.66
Cannery worker, female.....	529.886	2.48	Hour	2.48
Machinist (machine shop).....	600.280	3.50	Hour	4.29
Maintenance mechanic II.....	638.281	4.65	Hour	4.65
Construction worker.....	869.887	2.75	Hour	5.185
Service station attendant.....	915.867	2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - MONTEREY

Areas Included in Community: Monterey, Carmel, Monterey Peninsula, Pacific Grove and Seaside Census Divisions

Civilian Population, July 1970: Community 85,000 Monterey: 27,600

County: Monterey

Employment[a] by Industry

Industry	July 1970	July 1969
Total	34,800	33,800
Agriculture, forestry, and fisheries	200	200
Mining	100	100
Contract construction	1,900	2,100
Manufacturing	1,200	1,200
Durable goods	300	300
Nondurable goods	900	900
Food products	200	200
Other nondurable goods	700	700
Transportation, communications, and utilities	1,400	1,400
Wholesale and retail trade	8,200	8,100
Finance, insurance, and real estate	1,800	1,800
Service	10,200	9,500
Government (b)	9,800	9,400

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Monterey, the capital of California under Spain, Mexico, and the early American regime, is a mecca for visitors drawn by its scenic beauty and historic monuments. This community is located 125 miles south of San Francisco on the Cabrillo Highway and 20 miles west of U. S. Highway 101 and the City of Salinas. It is the home of the U.S. Naval Postgraduate School; Fort Ord, the Army's largest west coast training center; and the Defense Language Institute (West) at the Presidio of Monterey.

Monterey Harbor, although not a port of original entry, shelters a small commercial fishing fleet and has berthing facilities for 385 pleasure craft. In addition to highway motor transport, including Western Greyhound Lines, the Monterey Peninsula is served by the Southern Pacific Railroad, Air West Airlines, and United Air Lines. Bus service to Monterey, Pacific Grove, Carmel, and Seaside is provided by the Bay Rapid Transit Company.

CHARACTERISTICS OF THE LABOR MARKET: Major economic support for the area is provided by a flourishing trades and services industry, catering to tourists, military personnel, and their dependents. Peak activity in these industries occurs between May and September. Typical of a trades and services economy, off-season slowdown is a factor, particularly in retail trade, construction, and in fishing and fish processing. Throughout the summer, many openings exist for hotel, motel and restaurant workers. Opportunities in government service are available, and many of these jobs are filled by wives of servicemen or by retired military personnel.

Manufacturing plays a small role in the economy, with less than five percent of the work force employed in these industries, principally in apparel and other fabricated textile products, food processing, and printing and publishing. There is little need for industrial workers at present, and no significant industrial expansion is anticipated for the foreseeable future. Unionization of canneries and construction trades is complete, while about half of the hotel, motel and restaurant workers are unionized. Organization of sales and other service personnel is slight, chain retail food store workers being the exception.

ECONOMIC TRENDS: Recent growth has occurred in the community's restaurant business, and with increasing numbers of tourists enjoying the area's cultural and recreational attractions throughout the year, continued expansion is predicted in hotel and restaurant facilities. The Monterey area has gained some prominence as a retirement community. Further development in this direction combined with year-round tourism should exert a stabilizing influence on the highly seasonal economy. Retail trade and services are expanding, and additional establishments are planned or under construction.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$400.00	Month	--
Typist (clerical).....	203.588	375.00	Month	--
Salesperson, general (retail trade)....	289.458	1.85-2.20	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	1.78	Hour	1.78
Machinist (machine shop).....	600.280	4.10	Hour	--
Service station attendant.....	915.867	1.75-2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - NAPA

Areas Included in Community: Napa and Napa Southeast Census Divisions

Civilian Population, July 1970: Community: 54,500 Napa: 34,900

County: Napa

Employment[a] by Industry

Industry	July 1970	July 1969
Total	17,900	17,400
Agriculture, forestry, and fisheries	200	200
Contract construction	1,000	1,100
Manufacturing	2,500	2,800
Durable goods	1,400	1,600
Nondurable goods	1,100	1,200
Transportation, communications, and utilities	1,200	1,200
Wholesale and retail trade	4,000	3,900
Finance, insurance, and real estate	600	600
Service	3,300	3,100
Government (b)	5,100	4,500

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Napa, the largest city and county seat of Napa County, offers pleasant suburban living, a mild climate, and a location central to many areas of interest. Excellent roads connect Napa with U. S. Highways 40 and 101 which provide good access to Sacramento, Oakland and San Francisco--all within a 60-mile radius of Napa. The resort areas of Lake County and Russian River in Sonoma County are within easy driving distance. Lake Berryessa, created by Monticello Dam, is 20 miles away and provides a year-round haven for water sports enthusiasts. A major residential and recreational area has been developed just outside Napa. The Napa Valley is widely known for its production of fine wines from the many vineyards in the area.

Contrasted with this rural setting are several large manufacturing plants. The largest steel pipe manufacturing plant in the West is located just outside Napa. A deposit of basalt rock has been the basis of establishment of a major building materials plant. A large apparel manufacturer is located within the City of Napa. Nearby State and Federal establishments constitute a major source of employment in the area.

Freight service for the Napa area is provided by Southern Pacific Railroad and a number of truck lines. The Napa River is navigable by barges and similar

craft. Passenger service is operated by Western Greyhound Lines. Golden Pacific Airlines provides air passenger service to San Francisco and other area points.

CHARACTERISTICS OF THE LABOR MARKET: The State hospital, a community hospital, and the many rest homes and convalescent hospitals in the area account for shortages of medical service workers, particularly registered nurses. The tourist season provides employment for many service workers such as cooks, waitresses, and motel maids. These workers are generally in surplus during the off-season. Experienced sewing machine operators and well-qualified clerical workers are generally in demand on a replacement basis. During the winter months construction, winery, fruit processing, resort workers and agricultural workers are generally in surplus. In the summer months there are no significant groups of surplus workers other than those who lack the skills necessary to enter the labor market.

Unionization is almost complete among construction workers, metal tradesmen, garment workers, grocery clerks, butchers, printers, and winery and food processing workers. Retail trade workers are partially unionized.

ECONOMIC TRENDS: The City of Napa is the trade and service center of Napa County. Steady gains in residential population have prompted commensurate growth in the trades and services industries. The major manufacturing plants in the community have decreased their employment levels in recent months. The level of employment in State and local government has increased with area growth. Federal employment at the Mare Island Naval Shipyard in Vallejo has been on the decline in recent months as the level of defense spending has fallen. Additional development of recreational facilities will further stimulate growth in the trade and services industries. In the City of Napa, a $3 million redevelopment project will soon be underway.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer.....	202.388	$450.00	Month	--
Typist.....	203.588	410.00	Month	--
Salesperson, general (retail trade)....	289.458	1.85-2.20	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	1.75	Hour	1.75
Cannery worker, men.....	529.886	2.83	Hour	2.83
Cannery worker, women.....	529.886	2.65	Hour	2.65
Machinist (machine shop).....	600.280	4.72	Hour	4.72
Service station attendant.....	915.867	1.85-2.10	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - NORTH HOLLYWOOD

Areas Included in Community: Burbank, North Hollywood, Studio City, and Sun Valley districts of Los Angeles City and unincorporated county

Civilian Population, July 1970: Community: 277,000

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	134,900	133,300
Agriculture, forestry, and fisheries	100	100
Mining	500	500
Contract construction	4,300	4,600
Manufacturing	53,300	53,800
Rubber and miscellaneous plastics products	2,100	2,000
Fabricated metal products	3,500	3,700
Machinery, except electrical	3,200	2,900
Electrical machinery	5,800	6,100
Transportation equipment	28,800	29,100
Other manufacturing	9,900	10,000
Transportation, communications, and utilities	5,300	4,900
Wholesale and retail trade	28,900	28,000
Wholesale trade	7,500	7,300
Retail trade	21,400	20,700
Finance, insurance, and real estate	3,800	3,600
Service	29,500	28,900
Government (b)	9,200	8,900

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The North Hollywood community occupies the eastern portion of the San Fernando Valley. In this more densely populated area of the Valley the population growth rate in recent years has been below the countywide average. According to preliminary count of the 1970 Census, the City of Burbank was one of two major cities in the county to show a population decline since 1960. The result was that Burbank dropped in size ranking from 6th to 8th among the county's 77 cities. The proportion of minorities in the community is relatively minor, with Mexican-Americans representing the largest segment of this group.

CHARACTERISTICS OF THE LABOR MARKET: The community is one of the major aerospace centers in the metropolitan area, and employment declines over the past year in this complex of industries was less severe than in most such areas. However, there is little current demand for engineers, related scientific personnel and supporting technicians because research and development work has been curtailed. Along with a surplus of scientific personnel there is also a surplus of production workers in machine trades and assembly occupations. The supply of sales and service workers is more than adequate to meet employer demands. Job opportunities are good for auto mechanics and fully experienced auto body repairmen who are willing to work on a commission basis. The demand for registered nurses, licensed vocational nurses and medical technicians continues to exceed the number of qualified applicants.

ECONOMIC TRENDS: Employment trends in the community are largely contingent upon developments in aerospace as this complex of industries accounts for two-thirds of the factory jobs. In addition there are a large number of aerospace-oriented firms in other industry divisions which have felt the impact of employment cutbacks. In the near term, employment is expected to remain at the current plateau although occupational requirements may fluctuate. The motion picture industry is an important source of jobs in the community, but employment in film production has trended downward over the past year. The general economic slowdown has also affected tourism. The expected upswing in the construction industry failed to materialize due primarily to the tight money market and accelerating mortgage interest rates.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	360-375	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

State of California
Department of Human Resources Development

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COMMUNITY LABOR MARKET SURVEY - NORWALK

Areas Included in Community: Norwalk, Artesia, Bellflower, Cerritos, Downey, La Mirada, and portions of Santa Fe Springs, South Gate and unincorporated county

Civilian Population, July 1970: Community: 320,600 Norwalk: 91,200

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	103,000	105,100
Agriculture, forestry, and fisheries	1,100	1,200
Mining	900	1,000
Contract construction	6,300	6,500
Manufacturing	26,700	32,100
Durable goods	20,500	25,900
Aerospace	11,400	16,100
Nondurable goods	6,200	6,200
Transportation, communications, and utilities	3,400	3,100
Wholesale and retail trade	27,700	26,300
Wholesale trade	6,300	6,000
Retail trade	21,400	20,300
Finance, insurance, and real estate	3,100	2,800
Service	18,700	17,500
Government (b)	15,100	14,600

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Norwalk community covers the southeast portion of the county. Its two largest cities, Norwalk and Downey, showed a population increase of 3 and 6 percent respectively in the 1960-70 span. The growth rate in four of the smaller cities within the community, however, far exceeded the countywide average because of new residential developments on land previously used for agriculture. For example, population in the City of Cerritos increased from 3,500 in 1960 to 16,400 in 1970. Throughout the community there is a sizable Mexican-American population, but the total proportion of minorities is well under the county average.

CHARACTERISTICS OF THE LABOR MARKET: Total employment in the community declined over the year under the impact of substantial work force reductions in the aerospace group. As a result the trade industries supplanted manufacturing as

the leading source of jobs in the community. Local job opportunities are inadequate for these residential communities so there is extensive commuting to work in other sections of Los Angeles County and to Orange County. The surplus of aerospace workers includes all skill levels from professional through entry level occupations, but the most sizable group is the aircraft assembler. The supply of clerical workers also exceeds the demand. With the general increase in labor supply, hiring specifications have become more stringent. Job opportunities are excellent for nurses, medical technicians, and other related medical occupations in both public and private hospitals in the area. Construction, transportation, and petroleum industries are the most highly unionized in the community.

ECONOMIC TRENDS: Severe employment cutbacks in the important aerospace industry have masked the diversified industrial growth represented by new medium sized firms which have relocated to the community from more congested sections of the Metropolitan Area. A turnabout in the aerospace sector is not expected in the near future so that trade and service will be the leading growth industries. New shopping centers with department stores, discount stores, supermarkets and satellite shops will provide the growth in retail trade. Medical services continue to expand at a rapid rate with the completion of a 150-bed community hospital and three convalescent hospitals totaling 300 beds during the past year. Several small medical-dental centers with supporting laboratory services have also been built. Redevelopment of the civic center in Norwalk is progressing with the completion of the new county courthouse building.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425.00	Month	--
Typist (clerical).....	203.588	360-375	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Injection Molding Machine Oper.(plastic)	556.782	2.25-2.75	Hour	--
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

State of California
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COMMUNITY LABOR MARKET SURVEY - OAKLAND

Areas Included in Community: Oakland, Emeryville, Piedmont, and San Leandro Census Divisions

Civilian Population, July 1970: Community: 439,500 Oakland: 357,500

County: Alameda

Employment[a] by Industry

Industry	July 1970	July 1969
Total	253,700	254,700
Contract construction	13,800	13,900
Manufacturing	51,700	53,400
Seasonal foods	2,500	2,700
Other food	7,900	8,400
Paper, printing, and publishing	6,300	6,400
Other nondurables	4,000	4,200
Stone, clay, and glass	2,700	2,800
Primary and fabricated metals	10,700	11,600
Nonelectrical and electrical machinery	12,400	11,900
Other durables	5,200	5,400
Transportation, communications, and utilities	27,100	27,200
Wholesale and retail trade	62,800	61,500
Wholesale trade	21,600	20,900
Retail trade	41,200	40,600
Finance, insurance, and real estate	12,400	12,100
Service	48,000	47,600
Government (b)	37,100	38,200
All other	800	800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The City of Oakland, lying on the east side of San Francisco Bay, has traditionally been the industrial heart of the San Francisco-Oakland Metropolitan Area. Among its more important manufacturing industries are food processing, nonelectrical machinery, and metals. Wholesale trade is also an important activity. The city is the western terminus of three transcontinental railroads and several interstate trucking firms, while the Port of Oakland provides 19 miles of deep water berthing facilities. Located 10 miles from downtown is the Oakland International Airport, fast becoming a major facility.

The Oakland flatlands, an area running the entire north to south length of the city and extending from the Bay on the west to the foothills on the east, is the location of Oakland's industry and commerce. This area is also characterized by housing that is substandard, and a rate of joblessness three times that of the remainder of Oakland.

CHARACTERISTICS OF THE LABOR FORCE: The resident Oakland work force is characterized by substantial numbers of persons competing for jobs in lesser-skilled occupations such as laborer, operative, and service worker. Well-qualified stenographers and typists are usually in demand. Skilled metal workers, such as machinists, are often in short supply. There is always demand for medical personnel, particularly for registered nurses. Many of Oakland's professional, technical, and clerical jobs are filled by commuters, the majority of whom live in Contra Costa County. Canning and related industries supplying containers to canneries give rise to many job opportunities for unskilled workers during the summer months, and turnover of manufacturing employees allows some low-skilled workers to obtain year-round production jobs. Oakland industries as a whole are highly unionized.

ECONOMIC TRENDS: Oakland has many of the problems that typically are associated with central cities of metropolitan areas. The downtown business area has had difficulty competing with outlying shopping centers.

Construction of a $100 million City Center project will begin in the summer of 1971, with occupancy expected in 1974. The six-square-block development will have two office towers, a shopping mall and a 400-room hotel with convention facitities for 1,000. The project is intended to revitalize the downtown area. The Oakland Museum, which opened in 1969, has drawn considerable nationwide attention and praise for its "California--Art, History and Ecology" exhibits.

Manufacturing firms in congested areas have tended to relocate from Oakland to more spacious areas, particularly southern Alameda County, when they expand or modernize their plants.

Construction of the Bay Area Rapid Transit (BART) system, with its central headquarters in Oakland, maintained building trades employment in Oakland at a time when other segments of construction were in a slump. At the same time, however, significant disruptions occurred in the central business districts of Oakland. Limited BART service between Oakland and Fremont will begin in late 1971, with full service to San Francisco and parts of Contra Costa County to start in 1972.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$475.00	Month	--
Typist (clerical).....	203.588	435.00	Month	--
Salesperson, general (retail trade)....	289.458	1.95-2.35	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.445	Hour	2.445
Cannery worker (male).....	529.886	2.66	Hour	2.66
Cannery worker (female).....	529.886	2.66	Hour	2.66
Machinist (machine shop).....	600.280	4.81	Hour	4.81
Service station attendant.....	915.867	2.00-2.35	Hour	2.00-2.50

State of California
Department of Human Resources Development

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COMMUNITY LABOR MARKET SURVEY - OCEANSIDE

Areas Included in Community: Oceanside, Carlsbad, Fallbrook, (including Camp Pendleton), and Vista Census County Divisions

Civilian Population, July 1970: Community: 133,391 Oceanside: 41,450

County: San Diego

Employment[a] by Industry

Industry	July 1970	July 1969
Total	31,400	29,600
Agriculture, forestry, fisheries, and mining	3,300	3,300
Contract construction	1,100	1,000
Manufacturing	2,900	2,200
Transportation, communications, and utilities	1,500	1,400
Wholesale and retail trade	6,500	6,200
Finance, insurance, and real estate	1,000	900
Service	5,800	5,400
Government (b)	9,300	9,200

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The City of Oceanside is located in the northwest portion of San Diego County on the warm coastal plain. The city serves as the primary trade and service center for the North County area which includes the cities of Carlsbad, Fallbrook, and Vista. Camp Pendleton, the world's largest Marine Base, is located adjacent to the Oceanside community. The base generates business for most sectors of the area's economy as well as providing jobs for a large number of local civilians. Sport fishing, several miles of beaches, and a small boat harbor contribute to the support of a substantial tourist trade. Agriculture, particularly the production of flowers, winter vegetables, and fall tomatoes, is also of major importance. Several new manufacturing firms have located in the area during the past few years giving a boost to the area's employment.

Interstate 5, the main north-south highway in the state, bisects the communities of Carlsbad and Oceanside while Vista is located on a freeway linking the coastal cities with Escondido. Fallbrook is located just off U. S. 395. All four cities are served by major bus lines and approximately 50 truck carriers are authorized to serve the community. The main rail line runs north and south along the coast with a branch at Oceanside to Fallbrook and Escondido. Passenger service to San Diego and Los Angeles is available at Oceanside. Palomar

Airport provides commercial air service while private and executive-type aircraft can use Oceanside Municipal or the Fallbrook airport. San Diego's International Airport is 36 miles from Oceanside while port facilities are approximately 39 miles distant.

CHARACTERISTICS OF THE LABOR MARKET: Nearly 30 percent of the jobs in the community are in the public sector. This high proportion of government workers stems from civilian employment at Camp Pendleton. Trade and services have always been important to the area's economy and have recently received added impetus with the opening of a 68-acre shopping center and a new hotel now under construction. Approximately 2,500 acres have been set aside for industrial use in the cities of Oceanside and Carlsbad. Additional industrial-zoned land is available in Vista and Fallbrook. Over the past few years an electronics industry has been developing; however, the total number of workers employed by manufacturing firms comprises only about nine percent of the working force.

Several high schools and a junior college serve the educational needs of the community. Unionization is limited to the construction trades, grocery checkers, bartenders, and to some of the culinary workers.

ECONOMIC TRENDS: The growth of the Oceanside area is expected to slow somewhat during the next year. Pending reductions in the Department of Defense budget could bring cutbacks in personnel at Camp Pendleton. The downturn in the national economy may affect local business, if there should be a reduction in spending by tourists or a very conservative approach to expansion plans by industry. Certain parts of the community are becoming fashionable retirement and second-home locations. These areas should continue to grow over the next few years.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425.00	Month	--
Typist (clerical).....	203.588	1.85	Hour	--
Salesperson, general (retail trade)....	289.458	1.65	Hour	--
Grocery checker (retail trade).....	299.468	2.25	Hour	$3.84
Shirt presser (laundry).....	363.885	1.75	Hour	--
Machinist (machine shop).....	600.280	3.85	Hour	--
Construction worker.....	869.887	3.00	Hour	4.92
Service station attendant.....	915.867	1.75	Hour	--

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Department of Human Resources Development

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COMMUNITY LABOR MARKET SURVEY - ONTARIO

Areas Included in Community: Ontario, Chino, Cucamonga, Montclair, Upland

Civilian Population, July 1970: Community: 168,300 Ontario: 64,200

County: San Bernardino

Employment[a] by Industry

Industry	July 1970	July 1969
Total	46,100	45,300
Agriculture, forestry, and fisheries	1,400	1,400
Contract construction	3,600	3,500
Manufacturing	10,900	11,400
Durable goods	7,700	8,200
Nondurable goods	3,200	3,200
Transportation, communications, and utilities	1,200	1,100
Wholesale and retail trade	12,100	11,700
Wholesale trade	1,700	1,600
Retail trade	10,400	10,100
Finance, insurance, and real estate	1,200	1,200
Service	8,500	8,000
Government (b)	7,200	7,000

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Ontario community is a tightly-knit group of four small cities clustered around the central City of Ontario. It is situated at the foot of the San Bernardino Mountains at the extreme western edge of San Bernardino County. The City of Ontario is located about 35 miles west of Los Angeles and 25 miles west of San Bernardino adjacent to the San Bernardino Freeway. Good highways provide access to jobs in neighboring Los Angeles County and to the resort area of both Riverside and San Bernardino counties.

Ontario is served by three major rail lines, and scheduled commuter air service to Los Angeles, as well as scheduled daily flights by Air West, American, Continental, Pacific Southwest, United, and Western Airlines from Ontario International Airport. Ontario currently has jet-sized runways and an expansion program is under way to accommodate 747 size aircraft.

CHARACTERISTICS OF THE LABOR MARKET AND ECONOMIC TRENDS: The community has grown at a relatively rapid rate and developed a sizeable industrial sector. Primary manufacturing industries include aircraft modification, plastics,

electrical appliances, and food products. Of increasing importance is the rapidly growing mobile home industry. Agriculture remains an important part of the economy, with wine grapes and citrus as the major crops.

This year marked the inaugural "California 500" race at the new Ontario Motor Speedway. Events will be held throughout the year and the Speedway should attract related industries to the community.

Recent cutbacks in defense-related industries both within the community and in neighboring Los Angeles County have adversely affected the job outlook in many occupations. Engineers and related technicians, electronics assemblers, and aircraft mechanics are in oversupply. At present there is an ample supply of semiskilled and unskilled labor available. Registered nurses and other skilled medical personnel are generally in demand. With the exception of fully-qualified secretaries and stenographers and most clerical occupations are in excess supply.

The construction trades, aircraft service, garment workers, grocery checkers, and meat cutters are highly unionized. Retail workers are nonunion for the most part.

Trade became the largest single industry division when Montclair Plaza opened in 1968 with 1,500 new jobs. Manufacturing now ranks second and accounts for just under one-fourth of all employment. The opening of new plants helped offset defense-related cutbacks this year. The community has encouraged industrial development and has attracted many new employers. New manufacturing facilities are currently under construction, including several in the mobile home and allied fields.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$400-500	Month	--
Typist (clerical).....	203.588	340-400	Month	--
Salesperson, general (retail trade)...	289.458	1.65-2.45	Hour	--
Grocery checker (retail trade).....	299.468	1.85	Hour	$2.30-3.85
Shirt presser (laundry).....	363.885	1.75-1.85	Hour	--
Machinist (machine shop).....	600.280	3.00-3.50	Hour	4.25-4.75
Construction worker.....	869.887	1.80-2.75	Hour	4.54-4.99
Service station attendant.....	915.867	1.80-2.25	Hour	--

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Department of Human Resources Development

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COMMUNITY LABOR MARKET SURVEY - OROVILLE

Areas Included in Community: Oroville Census County Division

Civilian Population, July 1970: Community: 28,000 Oroville: 7,700

County: Butte

Employment[a] by Industry

Industry	July 1970	July 1969
Total	6,450	6,375
Agriculture, forestry, and fisheries	100	100
Contract construction	375	300
Manufacturing	675	575
Lumber and wood products	350	275
All other manufacturing	325	300
Transportation, communications, and utilities	975	1,100
Wholesale and retail trade	1,450	1,425
Finance, insurance, and real estate	275	275
Service	825	800
Government (b)	1,775	1,800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the acitivity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Oroville, the county seat and the second largest city in Butte County, is situated on California Highway 70 on the eastern edge of the Sacramento Valley near the site of the Oroville Dam, the largest earth filled dam in the world. The community is the gateway to the Feather River recreation area. The major industries of the area are agriculture, lumber and wood products, food products, and services associated with the surrounding recreational area. The farming and food processing communities of Biggs, Palermo, Richvale and Gridley are located near Oroville and during the peak season many local residents commute to jobs in these communities. Most local commuting is by private car. Intercity passenger service is provided by the Greyhound Bus Lines. The Western Pacific and Southern Pacific Railroads and several truck lines provide freight service.

CHARACTERISTICS OF THE LABOR MARKET: Employment opportunities in the Oroville area are highly seasonal since they depend upon activities in the lumber industry and in farming. Employment reaches a peak in the late summer and early fall with the harvesting and processing of peaches, almonds, prunes, olives and walnuts. Following the harvest the number of job opportunities declines, and there

is a substantial surplus of workers available for jobs. There is some demand for skilled automotive and diesel mechanics, for workers in the paramedical occupations, and for fully qualified clerical workers. Graduates of local high schools provide an excellent source of labor. Most workers employed in construction and manufacturing and some culinary workers are union members.

ECONOMIC TRENDS: There was a slight drop in employment between 1968 and 1969 as the completion of the Oroville Dam affected not only employment levels in the construction industry but in trade. One large lumber mill has moved its operation to Oroville, and a railcar manufacturer and several manufacturers of fiberglass boats have also come into the community. These gains have more than offset the relocation of Western Pacific roundhouse operations and the loss of several retail stores and service industries. At the present time, there is no indication of further industrial development, but the development of recreational facilities around the Oroville Dam area is expected to affect job opportunities in service and trade.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375.00	Month	--
Typist (clerical).....	203.588	350.00	Month	--
Salesperson, general (retail trade)....	289.458	1.65	Hour	$1.65
Grocery checker (retail trade).....	299.468	2.25	Hour	3.82
Shirt presser (laundry).....	363.885	1.75	Hour	--
Cannery worker, male.....	529.886	2.93-4.64	Hour	2.93-4.64
Cannery worker, female.....	529.886	2.73-3.96	Hour	2.73-3.96
Machinist (machine shop).....	600.280	3.75	Hour	4.90
Construction worker.....	869.887	2.50	Hour	4.725
Service station attendant.....	915.867	1.75	Hour	--
Packer, agricultural produce.....	920.887	2.25	Hour	--
Tractor operator.....	929.883	3.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - OXNARD-VENTURA

Areas Included in Community: Oxnard* (including Mandalay Beach, Wagon Wheel, and Colonia sectors), Port Hueneme*, Point Mugu, Ventura* (San Buenaventura), Rincon, Saticoy, Montalvo, and Camarillo*

Civilian Population, July 1970: Community: 209,700

*Incorporated cities:	
Oxnard	71,300
Ventura	57,700
Camarillo	19,500
Port Hueneme	14,300

County: Ventura

Employment[a] by Industry

Industry	July 1970	July 1969
Total	82,000	79,700
Agriculture, forestry, and fisheries	7,400	7,600
Mining	1,600	1,700
Contract construction	4,800	4,400
Manufacturing	8,300	8,400
Transportation, communications, and utilities	3,400	3,300
Wholesale and retail trade	18,400	16,800
Wholesale trade	3,200	2,900
Retail trade	15,200	13,900
Finance, insurance, and real estate	2,500	2,400
Service	12,900	12,300
Government (b)	22,700	22,800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Oxnard, the largest city in Ventura County, is located on the shore of the Pacific Ocean, 60 miles northwest of Los Angeles. The boundaries of the community lie within a broad coastal plain noted for its high soil fertility. Agriculture remains a dominant industry in terms of income produced, although its share of employment has fallen. Major crops include lemons, Valencia oranges, lima beans, celery, tomatoes, and strawberries. For years a leader in agriculture and related activities, Oxnard has also developed a sizeable industrial base and is fast becoming a retail trade and finance center. Ventura City - San Buenaventura - is the seat of county administration and is one of the oldest communities in California.

Located about eight miles northwest of Oxnard, Ventura traditionally has served as the center of trade, service, and government for the surrounding areas. The Oxnard-Ventura coastline has been developed with parks, marinas, and other recreational facilities as well as ocean front housing.

The community is traversed by Highway 101, a major north-south route, which provides easy access to the Los Angeles area. In addition to several truck lines, the area is served by Greyhound Bus Lines. Air transportation is available at the Ventura County Airport in Oxnard, including commuter air service to the Los Angeles International Airport. The only deepwater port between Los Angeles and San Francisco, Port Hueneme, is a rapidly growing source of freight transportation. Freight service is provided by the main coast line route of the Southern Pacific Railroad.

CHARACTERISTICS OF THE LABOR MARKET: Nearly two-thirds of the total employment in the community is in the government sector, trade, or services. The Federal Government is a major employer operating the Pacific Missile Range at Point Mugu and other military facilities at Port Hueneme. An indication of Oxnard's growing importance within the county is the establishment of a new 66,000 square foot post office at the northern edge of the city. Oxnard's industrial mix includes the Facelle Division of International Paper, Falcon Plastics, Kaiser Aluminum, Raytheon, Statham Instruments, and recently, Xerox Corporation. The Esplanade is a massive, new Spanish-style regional shopping complex at the Wagon Wheel junction in Oxnard, anchored on one end by a two-story Sears facility and on the other end by a three-story May Company store.

Moderate industrial expansion during the past few years created a need for engineering and related technical support personnel and for many of the machine trade occupations. However, continuing cutbacks in the aerospace industry since early 1969 have resulted in a sharp reduction of the demand for many professional and technical skills. A more than adequate labor supply is currently available to meet seasonal peaks in food processing, retail trade, and service industries.

ECONOMIC TRENDS: The expansion of manufacturing facilities in the community bolstered factory payrolls and in turn stimulated growth in trade and service sectors, and produced a resurgence of construction activity. The rapid pace of economic development evidenced during the past few years has, however, been moderated by recent slowdowns in aerospace and defense-related activities. Retail trade employment should continue to grow while the outlook for the aerospace complex is for continued sluggishness in view of announced cuts in defense spending.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$464-555	Month	--
Typist (clerical).....	203.588	413-496	Month	--
Salesperson, general (retail trade)....	289.458	1.85-3.30	Hour	$1.885-2.69
Grocery checker (retail trade).....	299.468	2.00-3.50	Hour	2.308-3.845
Shirt presser (laundry).....	363.885	1.75-2.50	Hour	--
Cannery worker, male.....	529.886	1.78-2.26	Hour	2.56-4.39
Cannery worker, female.....	529.886	1.78-2.26	Hour	2.42-4.19
Machinist (machine shop).....	600.280	4.05-4.52	Hour	--
Production machine operator.....	609.885	2.23-3.51	Hour	--
Construction worker.....	869.887	2.50-4.00	Hour	4.795
Service station attendant.....	915.867	2.00-2.81	Hour	--

State of California
Department of Human Resources Development

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COMMUNITY LABOR MARKET SURVEY - PALO ALTO

Areas Included in Community: Palo Alto, Menlo Park, Atherton, Los Altos-Mountain View, Los Altos Hills, East Palo Alto, and Woodside Census Divisions

Civilian Population, July 1970: Community: 240,900 Palo Alto: 55,700

Counties: Santa Clara and San Mateo

Employment[a] by Industry

Industry	July 1970	July 1969
Total	150,400	147,300
Agriculture, forestry, and fisheries	600	600
Contract construction	6,600	6,700
Manufacturing	42,400	42,400
Printing and publishing	2,800	2,700
Other nondurable goods	2,600	2,500
Electrical machinery	29,300	29,700
Other durable goods	7,700	7,500
Transportation, communications, and utilities	2,900	2,800
Wholesale and retail trade	22,600	21,500
Finance, insurance, and real estate	5,500	5,300
Service	55,400	53,900
Government (b)	14,400	14,100

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Palo Alto, the home of Stanford University, is Santa Clara County's center of engineering research and education. The area is recognized as a center for research in electronics, medicine, atomic energy, and economics. Stanford Research Institute, one of the West's largest applied research centers, is located here, as are the laboratories and executive offices of many large companies. The Stanford Medical School and a Veterans Administration Hospital, together with other Peninsula medical research facilities, pursue extensive research programs in psychiatry and other fields of medicine. Stanford University, luxury motels, and the community's central location have contributed to the area's role as a headquarters for summer visitors and conferences. Also of importance to the community is a regional shopping center at Stanford which attracts customers from well beyond the community's limits.

The community is served by a city airport, local city bus lines, Western Greyhound buses and the Southern Pacific trains running between San Jose and San Francisco.

CHARACTERISTICS OF THE LABOR MARKET: The Palo Alto labor market is strongly influenced by the type of labor need that characterizes the new technology with its emphasis upon research and development. In expansive periods demand for workers in scientific, engineering, and technical occupations is directly related to national trends. Clerical workers with high proficiency in typing and stenographic skills and a good educational background are usually wanted. Except in the construction trades, there is little seasonality in local employment. There is little opportunity for the unskilled male, but there are many openings for women domestic workers.

Construction workers, hotel and restaurant employees, and grocery checkers are almost completely unionized. Production workers in the electronics industry are partially organized as are retail salesclerks.

ECONOMIC TRENDS: Anticipated development of the Palo Alto area is expected to take place along the same general lines that its growth has followed over the past decade. Electronics research and production, reflecting both civilian demands, and work in other scientific and technical fields should continue as important sources of job opportunity. However, periodic reversals of this trend should be expected, as government space and defense programs undergo contract changes. Large administrative headquarters are located in the community, and new motels and retail stores are opening in increasing numbers.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$450.00	Month	--
Typist (clerical).....	203.588	415.00	Month	--
Salesperson, general (retail trade)....	289.458	1.90-2.25	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.20	Hour	2.20
Machinist (machine shop).....	600.280	4.72	Hour	4.72
Service station attendant.....	915.867	2.00-2.25	Hour	--

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COMMUNITY LABOR MARKET SURVEY - PASADENA

Areas Included in Community: Pasadena, Alhambra, San Gabriel, San Marino, South Pasadena, and portions of unincorporated county

Civilian Population, July 1970: Community: 327,300 Pasadena: 111,800

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	131,500	131,000
Agriculture, forestry, and fisheries	200	200
Mining	200	200
Contract construction	4,200	3,900
Manufacturing	19,900	22,500
Printing and publishing	1,400	1,400
Fabricated metal products	1,200	1,300
Machinery, except electrical	4,900	6,600
Electrical machinery	4,200	4,500
Instruments	1,200	1,500
Other manufacturing	7,000	7,200
Transportation, communications, and utilities	6,400	6,200
Wholesale and retail trade	33,400	32,700
Wholesale trade	4,600	4,500
Retail trade	28,800	28,200
Finance, insurance, and real estate	8,200	7,800
Service	42,800	41,500
Government (b)	16,200	16,000

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The City of Pasadena, the fifth largest city in Los Angeles County, is situated in the West San Gabriel Valley region, about 10 miles from downtown Los Angeles. Three of the five cities in the community recorded population increases from 1960 to 1970, but all shifted to a lower ranking among the 77 cities in the county. Pasadena's central section houses most of the city's low income families, predominantly Negro, but there is a sizable group of Mexican-American residents in the community. The Pasadena Commission on Human Need and Opportunity administers local community action programs. The city is widely known for the annual Tournament of Roses and Rose Bowl game, as well as for the California Institute of Technology and its research role in the nation's space program.

CHARACTERISTICS OF THE LABOR MARKET: The service industry, including many research and development firms, private schools and medical facilities, dominates the economy of the community. Manufacturing has a strong representation of data processing equipment producers, scientific instruments, and electronic systems and components industries. These firms employ engineers, physicists, tool and die makers, machinists, skilled office personnel and supervisors, and employees in many other related categories, and there is no current shortage of workers in any of these skills. Opportunities for employment with space program related companies are practically nonexistent. Many firms retain extensive recall lists, which are used when replacement needs develop. Unionization is characteristic of the construction and printing trades, retail food and drug chains. Union organization in other industries is limited.

ECONOMIC TRENDS: As a result of the limited industrial space in the community, many manufacturing firms, large and small, have moved elsewhere as expansion dictated. A major redevelopment project under way within the city limits includes approximately eleven acres of land zoned for light industrial development. Other new projects authorized for improvement of city services are: an electric power receiving station nearing completion, a water treatment plant, Central Business District Redevelopment, and remodeling the Civic Auditorium. Both the public and the private sectors have been working to attract new business and retain the present ones. Types of firms being solicited are: insurance companies, technically-oriented firms, those in educational and medical fields, financial institutions, and organizations engaged in large business development projects on a nationwide basis. The Economic Development Program is expected to result in a marked and continuing expansion of business activity in the Pasadena community.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$400-425	Month	--
Typist (clerical).....	203.588	360-375	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - PETALUMA

Areas Included in Community: Petaluma Census Division and Petaluma Rural Census Division, excluding the incorporated cities of Cotati and Rohnert Park

Civilian Population, July 1970: Community: 43,600 Petaluma: 24,700

County: Sonoma

Employment[a] by Industry

Industry	July 1970	July 1969
Total	9,900	9,500
Agriculture, forestry, and fisheries	1,000	1,000
Mining	100	100
Contract construction	300	300
Manufacturing	1,200	1,100
Durable goods	500	400
Nondurable goods	700	700
Food products	500	500
Other nondurable goods	200	200
Transportation, communications, and utilities	400	400
Wholesale and retail trade	3,100	2,900
Finance, insurance, and real estate	300	300
Service	1,800	1,700
Government (b)	1,700	1,700

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The City of Petaluma, located 37 miles north of San Francisco and 16 miles south of Santa Rosa, is rapidly becoming suburbanized, but still retains much of the farm character historically associated with poultry raising and dairying. Petaluma is a trade and services center for the surrounding agricultural area. However, many of the community's residents work in Santa Rosa, San Francisco and northern Marin County.

Transportation facilities serving the city are the Northwestern Pacific Railroad, the Petaluma and Santa Rosa railroad, Greyhound Bus Lines, and other common and contract carriers. The Petaluma River, which empties into nearby San Francisco Bay, is navigable by shallow draft vessels. Petaluma Airport is a terminal for freight and passenger charter services.

CHARACTERISTICS OF THE LABOR MARKET: Turnover usually creates a small but continuous demand for office workers, salesclerks, and restaurant workers. Normally there is some demand for machine milkers from the dairies, and for nurse

aids and orderlies from local medical facilities. There is little seasonality in the local job market, with construction, which is influenced by the weather, being the only truly seasonal industry. Supply and demand for the experienced work force are normally in good balance. There is, however, an excellent supply of trainees, consisting of recent graduates, housewives, and wives of servicemen stationed in northern Marin County. In addition, many Petaluma workers who commute to other localities would prefer to work in Petaluma if local jobs were available to them.

The construction industry, dairy products, processing, machine and automotive shops, and feed mills are completely unionized. Manufacturing, restaurants, and grocery stores are almost entirely unionized, while department store employees, and clerical workers are generally not organized.

ECONOMIC TRENDS: Employment is slowly but steadily increasing in industries serving the community's growing suburban population. Local leaders express confidence in the area's industrial future. Among the assets are good transportation facilities, good planning, and low cost industrial land. Sonoma State College at nearby Rohnert Park also enhances the attractiveness of Petaluma.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$350.00	Month	--
Typist (clerical).....	203.588	310.00	Month	--
Salesperson, general (retail trade)....	289.458	1.65-1.85	Hour	--
Grocery checker (retail trade).....	299.468	3.825	Hour	$3.825
Shirt presser (laundry).....	363.885	2.05	Hour	2.05
Machinist (machine shop).....	600.280	4.77	Hour	4.77
Service station attendant.....	915.867	1.75-2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - PITTSBURG

Areas Included in Community: Pittsburg, Ambrose, and Antioch Census Divisions

Civilian Population, July 1970: Community: 54,900 Pittsburg: 20,900

County: Contra Costa

Employment[a] by Industry

Industry	July 1970	July 1969
Total	20,200	20,000
Contract construction	1,000	1,000
Manufacturing	9,200	9,600
Durable goods	3,900	4,500
Nondurable goods	5,300	5,100
Food and kindred products	400	400
Paper, printing, and publishing	2,600	2,500
Chemicals	2,300	2,200
Transportation, communications, and utilities	1,500	1,500
Wholesale and retail trade	3,000	2,700
Finance, insurance, and real estate	400	400
Service	2,600	2,500
Government (b)	2,500	2,300

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Thirty-two miles northeast of Oakland, near the confluence of the Sacramento and San Joaquin rivers, is the industrial community of Pittsburg. Nearby are the residential areas of Concord and Walnut Creek and the manufacturing towns of Antioch and Martinez. Pittsburg has long been the center of an industrial complex, and important locally manufactured products include steel, petroleum, paper, chemicals, and glass. Pittsburg's climate is mild and its central location provides access to many types of recreation.

City and intra-area transportation is provided by bus lines. The Southern Pacific, the Santa Fe, and the Sacramento Northern railways provide rail service. Facilities for docking oceangoing freighters are available in Pittsburg and Antioch.

CHARACTERISTICS OF THE LABOR MARKET: The Vietnam War, industrial growth, and growing population have been major factors in changing the East Contra Costa

County labor market. A large percentage of the workers in the community work in manufacturing. Many central county residents work in San Francisco or East Bay communities, and this trend is expected to increase with the completion of the Bay Area Rapid Transit System in 1972. Wives in this "bedroom community" compose the largest group of surplus workers in the area, primarily in the clerical and sales fields. Occupations which are in demand in periods of economic expansion include some categories of engineers, electronic and chemical laboratory technicians, electronic draftsmen and machinists. In the retail trade industry, some job opportunities occur for qualified specialty salespeople.

Construction and manufacturing are highly organized. Office workers in the steel industry and most culinary workers are unionized as are most retail clerks and other department store employees. Additionally, some clerical workers are union members.

ECONOMIC TRENDS: An increasingly large portion of Pittsburg's work force lives in Concord, Walnut Creek and other suburban Contra Costa County communities. Further employment growth in this highly industrialized area is not expected to alter the basic characteristics of the community in the near future. Manufacturing of steel, paper, and chemicals will continue to dominate the economy of the community's industrial center. The rapid population growth of the suburban areas has brought about the construction of large shopping centers with full service department stores as their core. Even more trade and services establishments will be set up in the near future. In the Concord area, several major business services firms are likely to open offices, providing several hundred clerical and managerial jobs in the next few years.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$460.00	Month	--
Typist (clerical).....	203.588	420.00	Month	--
Salesperson, general (retail trade)....	289.458	1.85-2.20	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.445	Hour	2.445
Machinist (machine shop).....	600.280	4.77	Hour	4.77
Service station attendant.....	915.867	2.00-2.25	Hour	2.00-2.25

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COMMUNITY LABOR MARKET SURVEY - PLACERVILLE

Areas Included in Community: Placerville and adjacent communities

Civilian Population, July 1970: Community: 16,700 Placerville: 5,300

County: El Dorado

Employment[a] by Industry

Industry	July 1970	July 1969
Total	6,275	6,500
Agriculture, forestry, and fisheries	325	275
Mining	125	125
Contract construction	225	450
Manufacturing	650	700
Lumber and wood products	475	550
All other manufacturing	175	150
Transportation, communications, and utilities	225	250
Wholesale and retail trade	1,525	1,500
Finance, insurance, and real estate	425	425
Service	975	950
Government (b)	1,800	1,825

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Placerville is the county seat of El Dorado County and the largest city in the western half of the county. Placerville is located between Sacramento and Lake Tahoe and is a stopping point for those traveling to snow areas during the winter months and to lakeside mountain resorts during the summer. Job opportunities are available principally in service industries, and government, particularly during the summer months. Most commuting is done by private car. There is no local public transportation, but Greyhound Bus Lines provides transportation to adjacent communities. The Southern Pacific Railroad and several trucking companies handle freight moving into and out of the community.

CHARACTERISTICS OF THE LABOR MARKET: Employment in the Placerville area is highly seasonal with peak employment usually occurring in August or September. Job opportunities in government, trade and service industries expand during the summer months and in recent years, there has been some trade created by winter sports enthusiasts. During the winter months, there is a large surplus of semi-skilled and unskilled workers; and while this surplus is reduced during the summer, it does not disappear. Shortages are concentrated in occupations requiring a college education and professional or technical experience. Construction workers, bartenders and culinary workers are mostly union members.

The majority of workers who are employed in sawmills belong to unions while those employed in logging operations do not.

ECONOMIC TRENDS: All of the growth in the Placerville community during the last two years has been in nonmanufacturing industries; trade, finance, insurance and real estate, service industries, and government. The population growth in the area has been in the outlying communities increasing the demand for goods and services. The development of recreational facilities continues, and the apple festival during the fall months is attracting large numbers of tourists. There is less emphasis on the manufacture of lumber and wood products where job opportunities continue to decline and more interest in the development of tourist attractions reminiscent of the Gold Rush days. Several small firms have moved into the community during the last two years. There is also a golf academy sponsored by Arnold Palmer, but the academy is open only during the summer months. A large firm manufacturing plastic pipe is considering establishing in an adjacent area while a manufacturer of specialized mining equipment is expected to start operations within the community.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$325-450	Month	--
Typist (clerical).....	203.588	275-325	Month	--
Salesperson, general (retail trade)....	289.458	1.65-2.00	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Nurse's aide.....	355.878	336.00	Month	--
Shirt presser (laundry).....	363.885	1.65	Hour	--
Machinist (machine shop).....	600.280	3.50	Hour	--
Construction worker.....	869.887	4.935	Hour	4.935
Service station attendant.....	915.867	1.75-2.25	Hour	--

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COMMUNITY LABOR MARKET SURVEY - POMONA

Areas Included in Community: Pomona, Claremont, La Verne, San Dimas, Walnut, and unincorporated county including Diamond Bar

Civilian Population, July 1970: Community: 168,200 Pomona: 88,500

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	58,600	59,800
Agriculture, forestry, and fisheries	400	300
Contract construction	3,200	3,500
Manufacturing	15,400	18,300
Durable goods	12,700	15,500
Aerospace	6,600	9,100
Nondurable goods	2,700	2,800
Transportation, communications, and utilities	2,200	2,100
Wholesale and retail trade	10,300	10,100
Wholesale trade	1,200	1,200
Retail trade	9,100	8,900
Finance, insurance, and real estate	1,800	1,700
Service	13,600	12,800
Government (b)	11,700	11,000

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Pomona community, home of the annual Los Angeles County Fair, occupies the eastern portion of the county bordering on San Bernardino County and extending south to the Orange County line. Although population growth has tapered off, the increases in both the incorporated and unincorporated areas during the 1960-70 period were at rates substantially above the county average. During this same period the areas covered by the community's cities increased from less than 35 to almost 60 square miles. In addition to the incorporation of San Dimas, this trend reflected significant territorial annexations by each of the other four cities. Compared with many other communities in the county, population density remains fairly low, and single homes continue to be strongly dominant in the prevailing housing pattern. The City of Pomona, the largest in the community and ninth ranked in the county, is about 28 miles east of downtown Los Angeles. Negroes and Mexican-Americans constitute about 20 percent of the community population with

the latter having slightly the larger representation. California State Polytechnic College is located in the outskirts of the City of Pomona, and the Claremont Colleges (with a total of six separate colleges) are located in the City of Claremont.

CHARACTERISTICS OF THE LABOR MARKET: As is typical of the Metropolitan Area, there is an extensive pattern of cross-commuting of workers between other sectors of the San Gabriel Valley and communities in the western section of San Bernardino County. Manufacturing accounts for about one-fourth of the total employment with a large proportion of jobs in the missile-aircraft-electronics complex of industries. In the last year because of cutbacks in the aerospace industries many occupations that were previously shortage occupations now have surpluses of skilled workers. These include both electronic and mechanical engineers, electronic technicians, electronic assemblers as well as skilled machinists and machine operators such as turret lathe, engine lathe, drill press, milling machine, etc. The supply of clerical and sales and service workers is in balance with demand. Current local shortages are in the medical field and include registered nurses and licensed vocational nurses.

ECONOMIC TRENDS: The outlook for manufacturing is dependent upon the volume of federal spending in the defense and aerospace sectors, and the near-term outlook is not favorable. Local employment in aerospace industries experienced sharp reductions in staff the past year which more than offset gains recorded in the nonmanufacturing industries. The community has industrial acreage available, including sites in established industrial parks, which will continue to attract firms from the more congested areas of the county. Service and government, which both have a large concentration of employment in educational and medical facilities, provide the best potential for continued growth in the community. Residential building has declined in the past year although new home building has been active in the Diamond Bar area. When all available land for housing is used it is anticipated that this will be a community of in excess of 75,000.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425	Month	--
Typist (clerical).....	203.588	375	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - PORTERVILLE

Areas Included in Community: Porterville and immediate environs

Civilian Population, July 1970: Community: 37,500 Porterville: 12,400

County: Tulare

Employment[a] by Industry

Industry	July 1970	July 1969
Total	12,275	11,725
Agriculture, forestry, and fisheries	3,750	3,600
Contract construction	400	450
Manufacturing	725	675
Transportation, communications, and utilities	525	525
Wholesale and retail trade	2,425	2,275
Finance, insurance, and real estate	225	225
Service	1,650	1,500
Government (b)	2,575	2,475

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Porterville is the center of citrus culture in Tulare County, and agriculture forms the basis for many community activities. Other important crops are olives, prunes, grapes, cotton, peaches, plums, sugar beets and flowers. The county is located at the junction of two State highways and is not far from U. S. Highway 99. Most commuting is done by private car but some public transportation is available on the Orange Belt Stages. Truck lines and the Southern Pacific and Santa Fe railroads provide services to the major metropolitan areas. Although agriculture is the most important industry in the area with food processing plants, packinghouses and other allied industries located in the community trade, government and service industries have grown rapidly during the last two years.

CHARACTERISTICS OF THE LABOR MARKET: The economy is highly seasonal, although it varies somewhat from seasonal patterns in other San Joaquin communities since the citrus crop ripens during the winter and early spring. The supply of labor in the community has proven sufficient to meet most employers' demands with the help of excellent training programs established in the public schools and under the Federal Manpower Programs. The community is small enough so that entry workers with qualifications find it relatively easy to obtain work, particularly with the newly opened industrial plants. All the workers in heavy

construction are union members as are the majority of those engaged in other types of construction work. Grocery checkers are also union workers as are retail clerks employed in chain stores. Workers employed in the food processing industry and in transportation are generally union members. There is a constant demand for nurse aids, licensed vocational nurses and other paramedical personnel to work in the State hospital in Porterville. There has also been some need for medical personnel in other hospitals in the area.

ECONOMIC TRENDS: Over the last two years there has been a decided gain in employment and agriculture as new land has been planted to fruit and nut crops. One of the major employers new to the community is a citrus association. There has been considerable expansion in manufacturing, service industries, and government. It is anticipated that two new firms employing approximately 200 people will locate in the community within the next year. Most of the gain in trade and services reflects the continued development of the tourist trade as Porterville is a major stopping place for those going to major recreational areas in the Sequoia National Forest.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$388-479	Month	--
Typist (clerical).....	203.588	325-400	Month	--
Clerk, general office.....	219.388	305	Month	--
Salesperson, general (retail trade)....	289.458	1.65-2.00	Hour	--
Grocery checker (retail trade).....	299.468	2.409	Hour	$2.409
Shirt presser (laundry).....	363.885	1.65	Hour	--
Cannery worker, male.....	529.886	2.30	Hour	2.30
Cannery worker, female.....	529.886	2.00	Hour	2.00
Machinist (machine shop).....	600.280	552-695	Month	--
Production worker, female.....	723.884	1.70	Hour	--
Construction worker.....	869.887	409-520	Month	4.925 Hour
Service station attendant.....	915.867	2.00	Hour	--
Packer, agricultural produce.....	920.887	2.00	Hour	--
Laborer, male (packing house).....	922.887	1.70-2.50	Hour	--

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Department of Human Resources Development

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COMMUNITY LABOR MARKET SURVEY - QUINCY

Areas Included in Community: Quincy and immediate environs

Civilian Population, July 1970: Community: 6,100 Quincy: 4,800

County: Plumas

Employment[a] by Industry

Industry	July 1970	July 1969
Total	2,800	2,900
Agriculture, forestry, and fisheries	75	75
Contract construction	300	300
Manufacturing	375	450
Lumber and wood products	350	425
All other manufacturing	25	25
Transportation, communications, and utilities	325	350
Wholesale and retail trade	425	425
Finance, insurance, and real estate	125	125
Service	375	375
Government (b)	800	800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Quincy is a mountain community located in a valley in the Sierra Nevada Mountains on the Feather River Route, Highway 70. Quincy is the largest town in Plumas County as well as the county seat. Headquarters of the U. S. Forest Service for the Plumas National Forest are also in Quincy. When weather conditions permit, many tourists are attracted to the Quincy area by the beauty of the locale and the recreational opportunities. There is a local airport which can accommodate small planes which are often chartered by sportsmen who come to the area for the excellent hunting and fishing. The Greyhound Bus Lines provide transportation to the community, but most workers commute by private car because there is no local transportation.

CHARACTERISTICS OF THE LABOR MARKET: The economy of the community is highly seasonal with employment opportunities at peak in the lumber industry in the summer and fall months and in service and allied industries during the tourist season. During the summer months there is a demand for skilled sawmill and lumber workers and for cooks, waitresses, and other resort workers. The need for medical personnel particularly registered nurses and licensed vocational nurses is increasing. When recreational facilities and logging operations are shut down for the winter there is a large surplus of labor. Quite often there

is also a surplus of construction workers. Most of the graduates from local high schools seek jobs in other areas where year-round job opportunities are available. Those who continue their schooling seldom return to the area because of lack of job opportunities in their occupations. The lumber and wood industry is completely organized except in logging operations, and most grocery clerks and construction workers are union members. There is little union organization in other industries in the community.

ECONOMIC TRENDS: There has been a decline in employment and a comparable rise in unemployment between 1969 and 1970 because of current conditions in the lumber industry. Consequently, Plumas County remains an area of substantial and persistent unemployment. Mineral exploration continues but without any definite results. A community college, the Feather River College, opened in September 1969 and the new campus will be ready soon. Construction on the new campus did not raise employment levels in the community, however, because much of the construction work was done off-site. There is little prospect of expansion in the lumber and wood industry, and economic conditions in the community will depend upon the development of recreational facilities. One development at Grayeagle will include summer homes and a golf course. At the present time, it appears that the major industry in the area will become the further development of recreational facilities to accommodate the growing number of tourists in the area.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$350-434	Month	--
Typist (clerical).....	203.588	300-350	Month	--
Lumber checker (sawmill).....	223.588	3.53	Hour	$ 3.53
Grocery checker (retail trade).....	299.468	2.06-3.825	Hour	3.825
Machinist (machine shop).....	600.280	3.25	Hour	--
Automobile mechanic.....	620.281	3.50	Hour	--
Millwright (sawmill).....	638.281	4.45	Hour	4.45
Edgerman (sawmill).....	667.782	4.115	Hour	4.115
Grader (sawmill).....	669.587	4.005-4.74	Hour	4.005-4.74
Chainman (sawmill).....	669.886	3.32	Hour	3.32
Construction worker.....	869.887	5.435	Hour	5.435
Log truck driver.....	904.883	3.25	Hour	--
Service station attendant.....	915.867	2.00	Hour	--
Chokerman (logging).....	942.887	3.20	Hour	--

State of California
Department of Human Resources Development

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COMMUNITY LABOR MARKET SURVEY - RED BLUFF

Areas Included in Community: Red Bluff and Antelope - Los Robles Census County Divisions

Civilian Population, July 1970: Community: 19,000 Red Bluff: 7,800

County: Tehama

Employment[a] by Industry

Industry	July 1970	July 1969
Total	7,050	7,400
Agriculture, forestry, and fisheries	775	850
Contract construction	50	75
Manufacturing	2,125	2,350
Lumber and wood products	1,425	1,675
All other manufacturing	700	675
Transportation, communications, and utilities	475	475
Wholesale and retail trade	1,400	1,425
Finance, insurance, and real estate	150	150
Service	800	800
Government (b)	1,275	1,275

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Red Bluff is the county seat of Tehama County and the largest city of the county. Most of the population in the community lives within the city limits of Red Bluff. The largest industries are manufacturing, trade and government. The chief manufacturing industry is lumber and wood products; six of the lumber plants are located in the immediate vicinity of Red Bluff. Livestock raising is an important industry, and the Red Bluff Livestock Auction held every January is famous throughout California. The principal agricultural crops grown in the area are peaches, prunes, walnuts, and olives. Most commuting is done by private car, but passenger service is provided by Greyhound and Trailways Bus Lines.

CHARACTERISTICS OF THE LABOR MARKET: Employment in lumber and wood products and in agriculture is seasonal with activity at a high during the summer months and low during the winter. There is a general surplus of labor even of those in skilled occupations from November through April. Turnover is relatively low in local firms because of the difficulty of finding year-round jobs in the area. During the summer there is generally a need for experienced waitresses, cooks, licensed vocational nurses, and day workers. Skilled sawmill workers and

journeyman auto mechanics are also in demand. Workers employed in the manufacture of pulp products are all union members, grocery store workers are predominantly union, and a small percentage of the employees in sawmills belong to unions. Nearly all of the culinary workers, bartenders, and musicians in the area are union members.

ECONOMIC TRENDS: The decline in the lumber market has had serious effects on Red Bluff in recent months counteracting the affect of new industry which has moved into the area during the last two years. The largest of the new firms is a moulding company and another is a manufacturer of plastic helmets. The preliminary 1970 Census figures indicate some growth in the community but a slight population decline in the city. A few retail and service industries have gone out of business. The future of the lumber industry is uncertain; there seems little doubt, however, that it will remain Red Bluff's leading manufacturing industry. At the present time, the outlook seems most favorable for expansion of service industries as the development of recreational areas continues. Hunting, fishing, and skiing are all available within one hour's drive from Red Bluff, a feature which attracts not only local residents but those outside the community also.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$385-450	Month	--
Typist (clerical).....	203.588	375-400	Month	--
Salesperson, general (retail trade)....	289.458	1.70-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.825	Hour	$3.825
Waitress.....	311.878	1.65	Hour	--
Construction worker.....	869.887	4.935	Hour	4.935
Service station attendant.....	915.867	1.75	Hour	--

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COMMUNITY LABOR MARKET SURVEY - REDDING

Areas Included in Community: Redding, Enterprise, Anderson and Cottonwood, Southwest Shasta and Shasta Dam Census County Divisions

Civilian Population, July 1970: Community: 67,000 Redding: 16,400

County: Shasta

Employment[a] by Industry

Industry	July 1970	July 1969
Total	22,325	23,475
Agriculture, forestry, fisheries and mining	575	550
Contract construction	750	1,550
Manufacturing	3,575	3,825
Lumber and wood products	3,100	3,375
All other manufacturing	475	450
Transportation, communications, and utilities	1,725	1,775
Wholesale and retail trade	5,150	5,200
Finance, insurance, and real estate	750	750
Service	5,175	5,150
Government (b)	4,625	4,675

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Redding is the county seat of Shasta County and the industrial center for much of the northern Sacramento Valley and the northern Sierra Cascade region. The principal industries are service, wholesale and retail trade, government, and the manufacturing of lumber and wood products. Because of its location, Redding has also a number of relatively large Federal and State establishments where the stability of employment offers a marked contrast to the seasonal employment patterns in the lumber industry and in those industries affected by the tourist trade. Transportation services are offered by the Southern Pacific Railroad, two interstate and two intrastate bus lines, and several trucking companies. There are daily scheduled airline departures from the municipal airport which has been enlarged to accommodate jet aircraft. Most commuting between Redding and nearby communities is by private car. The community, located on the Sacramento River, is the gateway to the mountain recreational areas which attract large numbers of hunters, fishermen, and campers.

CHARACTERISTICS OF THE LABOR MARKET: Because many of the industries in Redding are highly seasonal, there is little work available during the winter months

and newcomers in the area may encounter problems in finding employment. In recent years there has been a small but steady growth in nonseasonal employment. Medical and paramedical workers and qualified clerical workers are in demand at most times of the year. In the summer, there is an active demand for highly skilled workers in the lumber industry and for cooks, waitresses, and other resort workers. The community is highly unionized. Construction workers, lumber and sawmill workers, and most workers in trade and service are covered by union contracts.

ECONOMIC TRENDS: There has been diversified industrial growth in Redding during the last two years despite the fact that current market conditions have adversely affected the lumber industry. A new industrial park has been developed, and the first tenant will be a manufacturer of metal louvres used in air conditioning. Work has started on a downtown mall which is expected to stimulate job opportunities in trade. Medical facilities in the area continue to expand, and Redding has become the region's major medical center. The new convention center continues to attract businessmen and other groups to Redding for conferences and meetings which has served as a stimulus to both trade and service industries.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Surgical R.N.	075.378	$698-891	Month	--
Registered nurse	075.378	698-891	Month	--
Licensed vocational nurse	079.378	350-558	Month	--
Stenographer (clerical)	202.388	400-475	Month	--
Typist (clerical)	203.588	325-350	Month	--
Lumber checker (sawmill)	223.588	3.55	Hour	$ 3.55
Salesperson, general (retail trade)	289.458	2.50	Hour	2.75
Grocery checker (retail trade)	299.468	2.409	Hour	4.015
Machinist (machine shop)	600.280	4.00	Hour	4.17
Millwright (any industry)	638.281	4.55-4.69	Hour	4.55-4.69
Edgerman (sawmill)	667.782	4.13	Hour	4.13
Grader (lumber)	669.587	4.00-4.56	Hour	4.00-4.56
Construction worker	869.887	4.935	Hour	4.935
Truck driver (construction)	905.883	5.675-6.86	Hour	5.675-6.86
Service station attendant	915.867	1.65	Hour	--
Log scaler (lumber and wood)	941.488	4.21	Hour	4.21
Chokerman (logging)	942.887	2.50-3.50	Hour	2.50-3.50

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COMMUNITY LABOR MARKET SURVEY - RICHMOND

Areas Included in Community: Richmond, Kensington, El Cerrito, and San Pablo Census Divisions

Civilian Population, July 1970: Community: 166,400 Richmond: 78,400

County: Contra Costa

Employment[a] by Industry

Industry	July 1970	July 1969
Total	49,700	49,900
Agriculture, forestry, and fisheries	100	100
Mining	100	100
Contract construction	3,000	3,100
Manufacturing	10,500	11,100
Food and kindred products	700	700
Paper, printing, and publishing	500	500
Petroleum and chemicals	4,400	4,400
Other nondurables	100	100
Primary and fabricated metals	2,300	2,500
Nonelectrical and electrical machinery	1,000	1,000
Transportation equipment	500	800
Other durables	1,000	1,100
Transportation, communications, and utilities	4,300	4,300
Wholesale and retail trade	10,900	10,900
Finance, insurance, and real estate	1,300	1,300
Service	10,700	10,700
Government (b)	8,800	8,300

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Some 10 miles north of Oakland, near the north end of the East Bay industrial strip, is the community of Richmond, site of many large industrial establishments. Manufacturing is a particularly important source of employment in this community. Included among local manufacturing industries are such diverse activities as petroleum refining, primary and fabricated metals production, chemical and food processing, ship repair, and the production of electronics equipment. Warehousing and shipping are also important activities.

The community is linked to the major job centers surrounding the San Francisco Bay by bridge and freeway, enabling two-fifths of the workers living in Richmond to work outside of Contra Costa County. Many residents of other areas work in Richmond.

Richmond is served by two transcontinental bus lines and by two local lines, the North Bay Line and the interurban A-C Transit. The Bay Area Rapid Transit District's terminal will facilitate travel from Richmond around and across San Francisco Bay upon the system's completion. Richmond is the western terminus of the Santa Fe Railroad and is served by the Southern Pacific as well. Many local and long distance trucking lines provide freight service. The Port of Richmond, with four deep water terminals, is a major Pacific Coast facility.

CHARACTERISTICS OF THE LABOR MARKET: Like many other highly industrialized communities, the Richmond area is frequently characterized by a shortage of skilled, professional, technical, and clerical personnel, while at the same time there is a surplus of lesser-skilled workers. Shortages often exist in the chemical industry for chemist assistants and lab technicians. Maintenance mechanics and skilled production workers are required in most manufacturing industries. Clerical workers, such as medical and legal secretaries, can readily find work. Experienced specialty salespeople are in demand, while less-qualified persons are often unable to find work in the field. Even at the height of the canning and construction season, there is a surplus of unskilled workers.

Construction and manufacturing industries are highly organized, with the exception of the electronics industry, which is slightly unionized. Most meat cutters and restaurant workers are union members, as are laundry and culinary workers, and a few clerical workers are unionized. Retail trade is partially organized.

ECONOMIC TRENDS: Manufacturing in 1970 lost its leading position as the major source of employment in the area. Although chemicals and petroleum production will continue to provide most of the jobs in this sector, metals fabrication and machinery manufacture will account for the majority of the new industrial jobs in the years ahead.

As part of its redevelopment program, the City of Richmond is undergoing considerable change downtown, with a main street being rebuilt with underground utilities and a planter strip. Efforts are being made to attract new trade and service firms to Richmond's downtown area. Considerable street reconstruction work is going on in North Richmond, as well as efforts toward developing new industrial areas.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$465.00	Month	--
Typist (clerical).....	203.588	425.00	Month	--
Salesperson, general (retail trade)....	289.458	1.85-2.20	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.445	Hour	2.445
Machinist (machine shop).....	600.280	4.54	Hour	4.54
Service station attendant.....	915.867	2.00-2.15	Hour	2.15

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COMMUNITY LABOR MARKET SURVEY - RIVERSIDE

Areas Included in Community: Riverside, Rubidoux, Highgrove, Mira Loma, Pedley, and March Air Force Base

Civilian Population, July 1970: Community: 200,600 Riverside: 137,400

County: Riverside

Employment[a] by Industry

Industry	July 1970	July 1969
Total	70,100	68,600
Agriculture, forestry, and fisheries	1,500	1,700
Contract construction	4,100	3,900
Manufacturing	12,600	12,700
Durable goods	9,800	10,000
Nondurable goods	2,800	2,700
Transportation, communications, and utilities	1,900	1,900
Trade	14,700	14,100
Wholesale	3,400	3,300
Retail	11,300	10,800
Finance, insurance, and real estate	3,500	3,400
Service	14,800	14,300
Government (b)	17,000	16,600

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Riverside is the largest city in Riverside County and is the county seat. Located in the northwestern corner of the county, Riverside City is 11 miles southwest of the City of San Bernardino, and approximately 50 miles east of the Los Angeles Civic Center. Riverside is connected by freeway or major highway with other major population centers of Southern California and is served by the Union Pacific, Southern Pacific, and Santa Fe Railroad. Ontario International Airport, 18 miles to the northwest, offers flights to major cities throughout the country. A municipal airport is located in Riverside, and commuter airline and helicopter service is available to the Los Angeles International Airport.

A campus of the University of California and several private colleges are located in Riverside, or within easy commuting distance.

CHARACTERISTICS OF THE LABOR MARKET AND ECONOMIC TRENDS: Because of their proximity, a good deal of commuting occurs between Riverside and San Bernardino and

other nearby communities. Government, services, and trade represent the largest industries in Riverside, and together account for two-thirds of all jobs. The largest manufacturing plants produce aircraft components, electronics, and aluminum products. Mobile home and recreational vehicle manufacturing in and around Riverside has expanded rapidly and has been a major source of new factory jobs.

Cutbacks in defense expenditures during 1970 halted the uptrend in manufacturing employment. Several nondefense industries recorded sluggish growth because of the general economic slowdown experienced this year.

Layoffs created surpluses in many engineering and drafting jobs, particularly in the aeronautical, electronic, and mechanical specialties. Many production worker classifications are in oversupply, including machinists, assemblers, and welders.

Construction activity made a moderate recovery in 1970, but surpluses in most building trades persist. There is an ample supply of clerical, sales, and service workers. Current shortages include licensed and registered nurses, auto body repairmen, diesel mechanics, and television repairmen (color).

Unionization is predominant in the building trades, and in the larger manufacturing plants. Culinary workers, bartenders, and retail clerks at larger establishments generally belong to unions.

Trade, services, and government will continue to expand as the population grows. A new major shopping complex is scheduled to open in the fall of 1970.

A large amount of land is available for industrial use and the County Department of Development's efforts to attract new plants to the area should insure the resumption of growth in the manufacturing sector.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$400-500	Month	--
Typist (clerical).....	203.588	350-400	Month	--
Salesperson, general (retail trade)....	289.458	1.65-2.50	Hour	--
Grocery checker (retail trade).....	299.468	1.85-2.50	Hour	$2.30-3.85
Shirt presser (laundry).....	363.885	1.65-2.00	Hour	--
Machinist (machine shop).....	600.280	3.00-3.75	Hour	4.00-4.65
Framer, mobile home.....	806.884	2.00-3.00	Hour	2.50-3.30
Construction workers.....	869.887	2.25-3.00	Hour	4.55-4.99
Service station attendant.....	915.867	1.65-2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - SACRAMENTO

Areas Included in Community: Sacramento, Mather, Natomas, North Highlands, Rio Linda, Arden-Arcade, Carmichael, North Sacramento, and San Juan Census County Divisions in Sacramento County and East Yolo Census County Division in Yolo County

Civilian Population, July 1970: Community: 636,200 Sacramento: 256,100

County: Sacramento

Employment[a] by Industry

Industry	July 1970	July 1969
Total	237,900	232,100
Agriculture, forestry, fisheries, and mining	700	700
Contract construction	10,000	9,700
Manufacturing	19,600	20,100
Food and kindred products	6,200	5,600
Printing and publishing	2,300	2,200
Primary and fabricated metals	1,300	1,200
Transportation equipment	4,400	5,800
All other manufacturing	5,400	5,300
Transportation, communications, and utilities	14,200	14,000
Wholesale and retail trade	47,000	46,600
Finance, insurance, and real estate	9,200	9,100
Service	40,400	39,100
Government (b)	96,800	92,800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Sacramento is the capitol of the State and also the largest metropolitan area in interior California. The city is located about 90 miles northeast of San Francisco and is the junction point for three major highways: U. S. 99, 50 and 80. Interstate 5, when completed, will also cross Sacramento. Passenger service to the Sacramento area is provided by one transcontinental railroad, two interstate bus lines and one local bus line. Seven major airlines provide service to the Sacramento Metropolitan Airport. There is also a deep water port which handles oceangoing vessels.

CHARACTERISTICS OF THE LABOR MARKET: About 40 percent of the employment in the Sacramento community is in government. Because government employment is relatively stable, the seasonal effect of some of the other industries such as

agriculture is lessened. Agricultural food processing and related industries, however, have a strong influence on the labor market particularly on the secondary wage earners. Employment is normally at a low point in February and rises to a peak in September. There is a continuous surplus of unskilled and semi-skilled labor. Except for those employed in government, most retail trade and service workers are union members.

ECONOMIC TRENDS: During the last two years, the major economic growth in the community has been confined to wholesale and retail trade, service industries and government. This expansion has more than offset the cutbacks in defense establishments. The population increases both in the city and in the suburban areas have created a demand for additional shopping centers and a major one has been opened in south Sacramento. Most of the expansion in retail trade has been the opening of new branches of firms already in the area. Safeway Stores, however, has opened a regional warehouse in the southern part of the city. Redevelopment work continues in old Sacramento. Several new restaurants have opened, and the downtown mall is near completion. The expansion of exposition facilities at Cal Expo created additional employment opportunities during the spring and summer months. Within the next two years Cal Expo is expected to operate on a year-round basis.

One liquid hydrogen plant was closed in July 1970 principally because of changes in defense requirements. A sausage plant was also closed, as was an agricultural packing company. Other new establishments in the community are an electronic accounting service and additional firms offering personal and business services. The population expansion has put a heavy load on local educational facilities. The faculty at Sacramento State College and staff at the Community Medical Center has been greatly enlarged in the last two years.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375	Month	--
Typist (clerical).....	203.588	350	Month	--
Salesperson, general (retail trade)....	289.458	1.65	Hour	$1.65
Grocery checker (retail trade).....	299.468	2.20	Hour	3.825
Waitress.....	311.878	1.65	Hour	10.40-11.40 (shift)
Shirt presser (laundry).....	363.885	1.74	Hour	1.74
Nut sorter (nut processing).....	521.887	2.73	Hour	--
Cannery worker (male).....	529.886	2.93	Hour	2.93
Cannery worker (female).....	529.886	2.73	Hour	2.73
Machinist (machine shop).....	600.280	3.50	Hour	4.50
Construction worker.....	869.887	4.675	Hour	4.675
Service station attendant.....	915.867	1.65	Hour	--
Laborer, male (packing house).....	922.887	4.285	Hour	4.285

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COMMUNITY LABOR MARKET SURVEY - SALINAS

Areas Included in Community: Salinas and Salinas South Census Divisions

Civilian Population, July 1970: Community: 59,800 Salinas: 58,400

County: Monterey

Employment[a] by Industry

Industry	July 1970	July 1969
Total	33,000	32,200
Agriculture, forestry, and fisheries	3,200	3,200
Contract construction	1,300	1,400
Manufacturing	5,800	5,300
Durable goods	1,200	1,000
Nondurable goods	4,600	4,300
Food products	2,900	2,600
Other nondurable goods	1,700	1,700
Transportation, communications, and utilities	1,900	1,800
Wholesale and retail trade	9,400	9,500
Finance, insurance, and real estate	1,100	1,100
Service	5,300	5,200
Government (b)	5,000	4,700

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Salinas, the county seat of Monterey County, is the heart of a rich agricultural region. Located 106 miles south of San Francisco on U. S. Highway 101, this city is the largest in the county and is a commercial center for portions of Monterey, Santa Cruz and San Benito counties.

The Southern Pacific Railroad provides freight and passenger service to northern and southern California cities. Greyhound Bus Lines furnishes commuter transportation to nearby towns, freight service is offered by major trucking lines, and an airport is available for air shipments. The community is within an hour's drive of the Monterey Peninsula and Santa Cruz recreational facilities; and, eleven miles away, at Moss Landing, there is a deep water harbor.

CHARACTERISTICS OF THE LABOR MARKET: While retaining its position as a leading agricultural region, Salinas is rapidly becoming a diversified industrial area as well. Although food processing continues to dominate the community's manufacturing, employment gains have occurred in chemicals and allied products, in

machinery manufacture and in such nonrelated industries as rubber, spice, and chocolate products. The pool of seasonal workers available for year-round factory employment has been sufficient to fill openings for production workers; however, a consistent demand exists for maintenance electricians, combination welders and maintenance mechanics who are also needed for permanent jobs in basically seasonal industries. Also in short supply throughout much of the year are machinists, registered nurses, licensed vocational nurses, social workers and secretaries.

The wide seasonal fluctuations that characterize an agriculturally based economy are being tempered somewhat, as firms locating in Salinas represent a variety of manufacturing industries and, also, by the scheduling of year-round operations by a number of food processors. Nevertheless, the economy reflects the substantial employment gains of the wholesale produce and canning and preserving industries between May and October. During most other months the area has a surplus of forklift operators, material handlers, sorters and packers.

The local labor supply can be supplemented with workers from surrounding communities who will commute to Salinas from a radius of about 30 miles. Hartnell College, a local junior college, and an adult school offering trade and business courses will assist in training persons in the usual skills, as well as for new occupations brought to the community by new industries.

Construction, fresh vegetable packing, and manufacturing are almost completely organized. Unionization is extensive in transportation and public utilities, among culinary workers, and in the larger food markets. Other retail establishments are only partially unionized.

ECONOMIC TRENDS: Growth both in population and employment is expected to continue. Employment gains in manufacturing, including food processing, will absorb the community's reserve supply of workers; however, since Salinas is more industrialized than surrounding areas, the established commute pattern to this locality should continue. In line with this growth, other industries, particularly retail trade and services, will continue to expand. The nearby Moss Landing area has ample space and favorable conditions for heavy industry.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425.00	Month	--
Typist (clerical).....	203.588	385.00	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.00	Hour	2.00
Cannery worker, men.....	529.886	2.66	Hour	2.66
Cannery worker, women.....	529.886	2.49	Hour	2.49
Machinist (machine shop).....	600.280	4.10	Hour	--
Service station attendant.....	915.867	1.75-2.00	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - SAN BERNARDINO

Areas Included in Community: San Bernardino, Colton, Highland, Muscoy, Rialto, Patton

Civilian Population, July 1970: Community: 227,500 San Bernardino: 106,700

County: San Bernardino

Employment[a] by Industry

Industry	July 1970	July 1969
Total	84,200	82,600
Agriculture, forestry, and fisheries	800	800
Mining	200	200
Contract construction	3,700	3,700
Manufacturing	6,000	5,800
Durable goods	3,100	2,900
Nondurable goods	2,900	2,900
Transportation, communications, and utilities	6,000	5,900
Trade	22,500	22,100
Wholesale	4,100	4,000
Retail	18,400	18,100
Finance, insurance, and real estate	3,600	3,500
Service	18,300	17,800
Government (b)	23,100	22,800

(a) Employment figure includes wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The City of San Bernardino is the county seat and the largest city in San Bernardino County. It is located 60 miles east of Los Angeles and 11 miles northeast of Riverside. San Bernardino serves as the retail center of the Inland Empire, and ranks 11th in the state in sales volume. A major 900,000 square foot regional shopping center, as well as other shopping areas, serve residents from surrounding areas as well as the local populace. Redevelopment of the downtown area with an air-conditioned mall is under way. The city is the largest inland wholesale and distribution center in Southern California. Three transcontinental railroads - the Santa Fe, Union Pacific, and Southern Pacific - serve the community. Major freeways connect San Bernardino with Los Angeles, Riverside, Barstow, and Indio. Ontario International Airport, 25 miles to the west, provides jet service and regular helicopter and commuter airline service is available to Los Angeles International Airport.

San Bernardino Valley College and California State College, as well as nearby private institutions, are important assets to the community. Norton Air Force Base, one of the largest military bases in the west, is located here, and is home installation for the 63rd Military Airlift Wing (MAC), the Space and Missiles System Organization (SAMSO), the Aerospace Audio-Visual Service (AAVS), and other groups. Aerospace Corporation, TRW Systems, and other contractors and technical and marketing offices that service Norton Air Force Base are located here.

CHARACTERISTICS OF THE LABOR MARKET AND ECONOMIC TRENDS: A large number of residents commute to Fontana, Ontario, Redlands, or Riverside where they commonly work in aircraft factories, a steel mill, or electronics plants. A large supply of service and sales workers is available and a number of them work intermittently in nearby mountain and desert resorts. Clerical workers are generally in oversupply, but fully-qualified secretaries and stenographers are usually in demand. The oversupply of carpenters and other construction workers has been reduced considerably over the past two years. Demand is high for trained medical care workers.

Recent cutbacks in manufacturing jobs in surrounding areas have left a surplus of workers in many industrial occupations including machinists, assemblers, and welders. Engineers and related technical personnel are also in oversupply.

Trade and services will continue to be the major source of new jobs. Redevelopment of the central city will have a major impact on the local economy. Included in the project are several major department stores and financial service centers. While the manufacturing sector has grown steadily in recent years, it represents a relatively small portion of total jobs in the community. A large supply of land is available for industrial development and a concentrated effort is being made to bring new industry to the area.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$440-584	Month	--
Typist (clerical).....	203.588	375-500	Month	--
Salesperson, general (retail trade)....	289.458	1.65-2.50	Hour	$1.75-3.00
Grocery checker (retail trade).....	299.468	2.00-3.50	Hour	2.50-3.67
Shirt presser (laundry).....	363.885	1.65	Hour	1.80
Machinist (machine shop).....	600.280	3.75-4.25	Hour	4.00-4.50
Construction worker.....	869.887	2.50-3.50	Hour	4.50
Service station attendant.....	915.867	1.65-2.00	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - SAN DIEGO

Areas Included in Community: San Diego, Chula Vista, Coronado, El Cajon, Imperial Beach, La Mesa, Lemon Grove, National City, and Spring Valley Census County Divisions

Civilian Population, July 1970: Community: 1,068,618 San Diego: 712,900

County: San Diego

Employment[a] by Industry

Industry	July 1970	July 1969
Total	379,200	369,900
Agriculture, forestry, fisheries, and mining	6,300	6,200
Contract construction	21,600	21,100
Manufacturing	61,300	64,600
Food and kindred products	3,600	3,400
Apparel and textiles	2,400	2,700
Printing and publishing	3,600	3,400
Nonelectrical machinery	5,200	5,500
Electrical machinery	5,600	5,900
Aircraft and ordnance	28,300	32,100
Shipbuilding	5,500	5,300
Other manufacturing	7,100	6,300
Transportation, communications, and utilities	18,700	18,300
Wholesale and retail trade	82,900	78,900
Finance, insurance, and real estate	19,700	18,700
Service	87,600	81,900
Government (b)	81,100	80,200

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The San Diego community includes seven incorporated cities and is located at the southwest corner of California. The community borders one of the finest natural harbors in the world and shares a common boundary with Mexico to the south. The area is situated 120 miles south of Los Angeles and 525 miles south of San Francisco. The closest major city to the east is Phoenix, approximately 400 miles away. About 78 percent of San Diego County's population resides in the community area.

The largest of the incorporated cities in the community is the City of San Diego with a population of 712,900. Currently San Diego is ranked 14th

among the most populous cities of the United States and is fifth in land area. Chula Vista and El Cajon both have populations exceeding 50,000 and are the next largest incorporated cities within the community.

Transportation to and from the community is available over three major freeways originating in San Diego, Interstates 5 and 8 and U. S. 395. Two bus lines and approximately 50 trucking firms offer regular daily service to nearby communities as well as providing regional and transcontinental service. The Santa Fe Railroad provides passenger and freight services. However, San Diego and Arizona Eastern offers freight service only. About 50 steamship lines list San Diego as port of call and nine airlines offer passenger service to San Diego.

CHARACTERISTICS OF THE LABOR MARKET AND ECONOMIC TRENDS: San Diego's economic base has broadened over the past few years. During the late 1950's the community depended heavily upon aircraft-ordnance production but current employment figures show services, trade, and government each outnumbering manufacturing payrolls.

The famous San Diego Zoo, Sea World, numerous golf courses, and many other attractions have made San Diego well known as a tourist and convention spot. During the past year nine hotels have been completed and facilities for conventions were expanded by the opening of a new center which seats 3,000 persons. Health care is another growing industry in San Diego. There are 18 general hospitals in the community and a new Veterans Hospital is scheduled to open in 1971. Over the coming few years, current plans call for the addition of 2,200 hospital beds. The recent addition of the University of California medical school, along with the Salk Institute, has helped to boost San Diego as a center of biomedical research.

Growth in the government sector has been slowed recently by cutbacks in civilian employment at defense bases. However, the development of the University of California campus plus the expansion of other educational facilities have made public employment one of the three largest employment divisions.

Unionization in San Diego is most heavily concentrated in construction, fishing, trucking, and most sectors of manufacturing. In recent years unions have had some success in organizing the hotel and retail trade groups.

San Diego has an adequate supply of labor. To augment the ready pool of unskilled and semiskilled men and women, is a steady stream of highly skilled professionals attracted to this area by the superior living conditions and the excellent educational facilities.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$400.00	Month	--
Typist (clerical).....	203.588	350.00	Month	--
Salesperson, general (retail trade)....	289.458	1.75	Hour	$2.30
Grocery checker (retail trade).....	299.468	2.50	Hour	3.45
Shirt presser (laundry).....	363.885	1.65	Hour	1.80
Cannery worker, men.....	529.886	--	Hour	4.25
Cannery worker, women.....	529.886	--	Hour	2.50
Machinist (machine shop).....	600.280	3.65	Hour	3.85
Construction worker.....	869.887	3.00	Hour	4.68
Service station attendant.....	915.867	2.00	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - SAN FERNANDO

Areas Included in Community: San Fernando and portions of Los Angeles City known as Granada Hills, Mission Hills, Pacoima, and Sylmar, and unincorporated Saugus, Newhall and Valencia

Civilian Population, July 1970: Community: 264,400 San Fernando: 16,800

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	56,300	54,900
Agriculture, forestry, and fisheries	1,400	1,300
Contract construction	5,600	5,700
Manufacturing	14,400	15,600
Chemicals	2,300	2,500
Fabricated metal products	1,700	1,600
Machinery, except electrical	2,000	2,100
Electrical machinery	1,900	2,900
Transportation equipment	1,800	2,000
Other manufacturing	4,700	4,500
Transportation, communications, and utilities	1,400	1,200
Wholesale and retail trade	10,300	9,700
Wholesale trade	1,200	1,100
Retail trade	9,100	8,600
Finance, insurance, and real estate	1,900	1,800
Service	9,500	8,800
Government (b)	11,800	10,800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The San Fernando community is located along the northern stretch of the San Fernando Valley, and extends into a part of the Antelope Valley. Total population during the 1960-70 period increased at an exceptionally fast rate, more than three times the county average. The City of San Fernando, however, showed only a minor gain since it contains little more than two square miles, and had a high population density as far back as 1960. This city is completely surrounded by sections of the City of Los Angeles where about three of every four community residents live. Substantial growth occurred in these sections, but on a relative basis, the fastest expansion was in unincorporated Saugus-Newhall-Valencia, with a current population about triple the

15,000 reported in 1960. The City of San Fernando and the neighboring Pacoima section of Los Angeles have a sizable Negro and Mexican-American population, accounting for a substantial share of all minorities in the entire valley.

CHARACTERISTICS OF THE LABOR MARKET: The local employment base is comparatively small so that the community continues to be essentially a labor supply area. Limitations in the available public transportation causes commuters to jobs both in and outside the community to depend mainly on private automobiles. The local growth trend in manufacturing employment was interrupted during the past year largely because of the reduction in aerospace related activities. Nonmanufacturing, however, continued to post gains in response to the needs of the growing population. The most consistent demand was for workers in medical support occupations. Remedial programs are providing vocational counseling and training to promote the employability of the disadvantaged jobseekers among local residents.

ECONOMIC TRENDS: The prospect for an expanding economic base is favorable because of the continued availability of open land. It is reasonable to expect that this will attract both residential and nonresidential building projects. In addition, freeway construction will remain active to provide needed east-west routes to supplement the north-south San Diego and Golden State freeways now serving the community. The immediate outlook for manufacturing, however, is clouded by the current uncertainties faced by the aerospace-electronics industries. Local business groups are involved in an active program to attract new industrial and commercial firms to the community.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Secretary (clerical).....	201.368	$520.00	Month	--
Typist (clerical).....	203.588	375-400	Month	--
Salesperson, general (retail trade)....	289.458	1.80	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Machinist (machine shop).....	600.280	4.00	Hour	--
Service station attendant.....	915.867	1.75	Hour	--
Laborer, stores.....	922.887	2.25	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - SAN FRANCISCO

Areas Included in Community: City and County of San Francisco

Civilian Population, July 1970: Community: 704,400 San Francisco: 704,400

County: San Francisco

Employment[a] by Industry

Industry	July 1970	July 1969
Total	536,300	537,700
Contract construction	21,800	22,100
Manufacturing	58,100	60,100
Food products	13,900	14,400
Textiles and apparel	8,900	8,700
Paper, printing, and publishing	12,600	13,300
Primary and fabricated metals	6,600	7,000
Nonelectrical and electrical machinery	3,000	3,300
Shipbuilding and repair	1,800	2,000
Other manufacturing	11,300	11,400
Transportation, communications, and utilites	61,400	62,300
Wholesale and retail trade	111,700	112,200
Wholesale trade	45,000	44,900
Retail trade	66,700	67,300
Finance, insurance, and real estate	69,000	67,900
Service	122,600	118,800
Government (b)	90,400	93,200
All other	1,300	1,100

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Located on the tip of a narrow peninsula, San Francisco's location, topography, and moderate climate afford it many aesthetic and commercial advantages. The city functions as the administrative center for the Bay Area, providing headquarters for many financial, transportation, manufacturing, and government establishments. The city also remains as the area's focal point for many specialized trade and service activities, while its port facilities are extensive.

Like other large cities, there exists in San Francisco a disparity between the types of skills which are required to run the city's diverse economy and the types of skills that are possessed by its residents. As a result tens of thousands of commuters, mainly in the professional, technical, and managerial occupations, enter the city daily from the surrounding Bay counties, while workers

residing in the city who lack skills and training required for these jobs are often frustrated in the search for work. This problem has been growing more serious in recent years. Concentrated in the core of the city is a growing number of Negro and Chinese workers and workers of Latin-American ancestry who carry the twin burdens of discrimination and poor job market preparation.

CHARACTERISTICS OF THE LABOR MARKET: San Francisco's industrial pattern and its role as a central city in an expanding metropolitan area do much to explain its labor supply-demand relationships. Heavy in-migration from out of state serves as one of the sources for filling job openings and gives the city a competitive edge over less attractively located communities. After becoming established in new jobs, many in-migrants move to the suburbs. These new workers are valuable in some professional and technical occupations, but only add to an existing surplus in glamor fields such as commercial art, advertising, photography, and entertainment.

Late in 1970, the nationwide economic slowdown brought a declining labor market for many professional occupations, including teachers, engineers, architects and draftsmen, stock brokerage and personnel workers. Lesser-skilled clerical workers were in surplus. But even at this time, the expansion of hospitals created a need for licensed medical technicians, registered nurses and licensed vocational nurses. The market for hotel and restaurant workers in San Francisco is seasonal, but opportunities usually exist. Demand for industrial and construction workers varies with the economy and seasonal patterns, but the usual picture is one of job opportunity for well-qualified skilled workers, particularly in the metal trades. Although there is always a surplus of unskilled workers, many do find jobs as a result of normal turnover. Most industries in San Francisco are highly unionized.

ECONOMIC TRENDS: The limited land area available for competing uses in San Francisco is shaping the development of the community. As a longterm trend, manufacturing activities in San Francisco are gradually declining. As plants become obsolete or cramped, employers desert loft-type buildings in the city and relocate in one of the surrounding counties in spacious single-story buildings. This is particularly true in durable goods manufacturing. However, more than compensating for these losses has been an office building boom, unparalleled in local history, to house expanding company headquarters and financial institutions. The construction of the Bay Area Rapid Transit system is underway, and it will be in operation in 1972. The system will initially serve San Francisco, Alameda, and Contra Costa commuters and is expected to enhance the development of the Bay Area communities along the lines of existing trends. For San Francisco, this means continued growth as a financial and administrative center.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union scale
Stenographer (clerical).....	202.388	$475.00	Month	--
Typist (clerical).....	203.588	435.00	Month	--
Salesperson, general (retail trade)....	289.458	1.95-2.35	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.38	Hour	2.38
Machinist (machine shop).....	600.280	4.77	Hour	4.77
Service station attendant.....	915.867	2.25-2.60	Hour	2.60

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - SAN JOSE

Areas Included in Community: San Jose, Alum Rock, Berryessa, Santa Clara, Campbell, Edenvale, Evergreen, Agnew, and Alviso Planning Areas

Civilian Population, July 1970: Community: 577,000 San Jose: 440,500

County: Santa Clara

Employment[a] by Industry

Industry	July 1970	July 1969
Total	212,900	211,600
Agriculture, forestry, and fisheries	4,800	6,500
Contract construction	14,300	14,500
Manufacturing	53,200	55,800
Seasonal foods	9,600	12,000
Other foods	3,900	4,100
Paper, printing, and publishing	4,900	4,600
Other nondurable goods	3,100	2,900
Stone, clay, and glass	2,000	2,300
Fabricated metals	2,700	2,600
Nonelectrical machinery	11,900	11,400
Electrical machinery	8,300	8,300
Other durable goods	6,800	7,600
Transportation, communications, and utilities	11,700	10,900
Wholesale and retail trade	46,500	45,100
Finance, insurance, and real estate	10,400	9,800
Service	39,000	38,300
Government (b)	33,000	30,700

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: San Jose is the central city of one of the nation's most rapidly growing metropolitan areas. Between 1960 and 1969, San Jose showed the fastest growth and in 1970 it became 30th among the nation's largest cities. Together with the surrounding areas of Santa Clara County, the San Jose area is the second largest aerospace manufacturing center of California and ranks close to the nation's top in space and defense-oriented industries, including advanced research, development and production of missiles, space vehicles and electronic equipment. About 600 factories are located in and around San Jose, Santa Clara and Campbell, comprising nearly 70 percent of Santa Clara County's manufacturing plants. The community remains as the

State's leading canning, freezing, and drying center with nearly 50 plants operating during the peak season. The community's business and residential districts reach from east to west across Santa Clara Valley. Over 60 of the nation's 500 largest industrial corporations have manufacturing, distribution, or research and development centers in Santa Clara County, many of them in or near San Jose.

San Jose is served by the Southern Pacific and Western Pacific railroads, Greyhound Bus Lines and Peerless Stages. More than 60 interstate and over 400 local contract carriers furnish trucking services. Both passenger and freight services are provided at the municipal airport.

CHARACTERISTICS OF THE LABOR MARKET: During the past ten years, the area's aerospace equipment and machinery manufacturing and research oriented plants had a strong demand for professional, technical, clerical, and skilled industrial personnel. At the same time, less skilled workers were also needed during peak food processing activities. During periods of downturn in defense-related activities, the service industries, including hospitals, schools, and wholesale and retail trade offer most of the job opportunities. The area's labor needs, however, remain selective, and training programs and upgrading are used. Normally, there exists a year-round surplus of semiskilled, unskilled and lesser qualified workers in various occupations. Several trade schools, colleges and universities provide technical as well as academic training.

All construction and major manufacturing industries are unionized, as are most public utilities. Trade and service establishments are unionized to a limited extent.

ECONOMIC TRENDS: A large share of the spectacular expansion of Santa Clara County's economy has taken place in San Jose. The city's recent growth has come from the expansion of durable goods industries; research and development in the fields of electronics, ordnance, computers, and nucleonics; large scale shopping centers and government services. During periods of economic slowdown, service-producing industries which cater to the needs of the growing population remain the area's major suppliers of job opportunities. Agricultural employment, conversely, is declining as arable land is converted from farm to urban uses.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union scale
Stenographer (clerical).....	202.388	$475.00	Month	--
Typist (clerical).....	203.588	435.00	Month	--
Salesperson, general (retail trade)....	289.458	1.85-2.10	Hour	$2.61
Grocery checker (retail trade).....	299.468	4.015	Hour	4.015
Shirt presser (laundry).....	363.885	2.18	Hour	2.18
Cannery worker, men.....	529.886	2.93	Hour	2.93
Cannery worker, women.....	529.886	2.73	Hour	2.73
Machinist (machine shop).....	600.280	4.72	Hour	4.72
Service station attendant.....	915.867	1.85-2.20	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - SAN LUIS OBISPO

Areas Included in Community: City of San Luis Obispo and surrounding rural area

Civilian Population, July 1970: Community: 36,700 San Luis Obispo: 27,900

County: San Luis Obispo

Employment[a] by Industry

Industry	July 1970	July 1969
Total	19,400	18,500
Agriculture, forestry, and fisheries	300	300
Mining	50	50
Contract construction	950	900
Manufacturing	550	550
Transportation, communications, and utilities	1,100	1,000
Wholesale and retail trade	4,500	4,350
Finance, insurance, and real estate	650	600
Services	4,200	4,000
Government (b)	7,100	6,750

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: San Luis Obispo,, the largest city in San Luis Obispo County, is located along coastal Highway 101 midway between Los Angeles and San Francisco. The city serves mainly as the center for government and commercial functions for the surrounding areas of the county. In addition to the city's own charm, nearby attractions such as Hearst Castle and the colorful seacoast stretching from Pismo Beach to San Simeon draw large numbers of tourists to the area. The community's location between California's two largest metropolitan areas enables it to capture much of the in-transit traffic. Among the most important assets of the community are two institutions of higher education. California State Polytechnic College's 2,850-acre campus accommodates more than 12,100 students. Cuesta Junior College has an enrollment of nearly 2,000 day and 2,100 evening students. Only limited industrial development has occurred.

The community is served by the main line of the Southern Pacific Railroad, which carries both freight and passengers. Scheduled airline connections can be made at Paso Robles or Santa Maria, each about 30 miles distant. Greyhound Bus Lines provide passenger service while numerous common carrier truck lines serve the area. Petroleum pipeline terminals at Port San Luis and Cayucos supply tankers which transport oil to coastal refineries.

CHARACTERISTICS OF THE LABOR MARKET: San Luis Obispo is a relatively isolated economic unit. With the exception of seasonal migrant farm workers, the labor market is self-contained. Vandenberg Air Force Base, 50 miles to the south, is no longer a significant source of jobs for local residents. Major economic activity is centered in trade, services, and government, and is reflected in a labor force composed largely of professional, sales, service, and clerical workers. Manufacturing plays a very minor role in providing employment, and no extensive pool of skilled industrial workers has developed. Factory employment accounts for only 4.0 percent of the work force within the community. The labor supply is adequate, although peak tourist trade during the summer months has resulted in some shortages of food service and hotel and motel workers.

ECONOMIC TRENDS: Economic growth in the community during the past few years has been very substantial with an annual employment gain of 7.0 percent posted since 1967. Trade, services, and the government sectors have traditionally been the sources of year-over-year employment gains although construction and the transportation-communications-utilities complex have both posted considerable advances since 1968.

San Luis Obispo offers a combination of factors that should serve to attract new industry. Local educational institutions provide a supply of workers with a variety of technical specialties. A three-million-dollar shopping center and a 96-unit motel were recently completed, giving impetus to further growth and development in the area. Construction is well underway for the Pacific Gas and Electric Company's multi-million dollar modern plant at Diablo Canyon, about 12 miles from San Luis Obispo. Considerable potential for San Luis Obispo exists in the extensive development of Port San Luis. Future plans call for both deep-craft and small-craft harbor facilities.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$325-450	Month	--
Typist (clerical).....	203.588	325-375	Month	--
Salesperson, general (retail trade)....	289.458	1.65-1.85	Hour	$2.47
Grocery checker (retail trade).....	299.468	1.75	Hour	2.308-3.845
Waitress (hotel/restaurant).....	311.878	1.65	Hour	11.25 shift plus meals
Cook, short order (hotel/restaurant)...	314.381	2.00-2.50	Hour	19.10-22.50 shift
Motel maid II (maid, any industry).....	323.887	1.65	Hour	--
Shirt presser (laundry).....	363.885	1.65	Hour	--
Construction worker.....	869.887	2.50-3.00	Hour	4.545
Service station attendant.....	915.867	1.75-2.00	Hour	--
Packer, agri. produce.....	920.887	2.22	Hour	2.22

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COMMUNITY LABOR MARKET SURVEY - SAN MATEO

Areas Included in Community: San Mateo, Burlingame, Hillsborough, and Millbrae Census Divisions

Civilian Population, July 1970: Community: 129,700 San Mateo: 78,800

County: San Mateo

Employment[a] by Industry

Industry	July 1970	July 1969
Total	59,900	56,900
Agriculture, forestry, and fisheries	800	800
Contract construction	3,600	3,600
Manufacturing	3,200	3,100
Food and kindred products	500	400
Paper, printing, and publishing	1,000	900
Other nondurables	200	200
Electrical and nonelectrical machinery	400	400
Other durables	1,100	1,200
Transportation, communications, and utilities	2,600	2,600
Wholesale and retail trade	20,500	19,000
Finance, insurance, and real estate	3,200	3,200
Service	15,400	14,700
Government (b)	10,600	9,900

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: San Mateo, one of the Bay Area's many attractive residential communities, is just 18 miles south of San Francisco. Primarily a trade and service center, it is bordered north and south by communities which provide facilities for various types of manufacturing. Transportation services are plentiful. The San Francisco International Airport lies on the northeast border of the community, a 10-minute drive from town. A large space-oriented manufacturing center extends from the southern edge of San Mateo, down the peninsula into Santa Clara County.

San Francisco International Airport on the north and San Jose Airport on the south provide passenger and freight jet service. Southern Pacific Railroad and Greyhound Bus Lines furnish local transportation, and several major truck lines also serve the community. Deep-water port facilities are available at Redwood City, San Francisco, and Oakland. A network of freeways and the Hayward-San Mateo Bridge link San Mateo to the East Bay and other peninsula cities.

Stanford University, San Francisco State College, and two campuses of the College of San Mateo serve the educational needs of the community. Recreational facilities continue to expand with such additions as Marine World, a large aquatic center in the Belmont area.

CHARACTERISTICS OF THE LABOR MARKET: As wholesale and retail trade, services, and manufacturing facilities expand, the community becomes increasingly complex and economically integrated. The demand for stenographers, typists, and other highly qualified office workers remains generally high. Well-qualified sales and restaurant workers are usually in steady demand. The community's high income residential sections, such as Hillsborough, offer domestic workers opportunities for employment. There is also an ample supply of inexperienced job applicants in the community, including students and housewives, who are available for trainee positions. The supply-demand relationship for engineers and technicians is subject to change, according to federal allocations for defense and aerospace.

Construction is completely unionized, manufacturing is almost entirely organized, and trade and service industries are about half organized. Grocery and drugstores are generally organized as are cleaning plants and restaurants.

ECONOMIC TRENDS: San Mateo should maintain the steady growth experienced in recent years, primarily because of the community's attractive setting and proximity to other major market centers. Light manufacturing, trade, finance, services, and government will continue to expand. Although residential construction has been curtailed due to "tight" money, population increases necessitate new building construction, particularly in planned communities such as Foster City and Redwood Shores. Industrial parks, shopping centers, churches, playgrounds, and schools will broaden the community's economic and social base in the years ahead.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$450.00	Month	--
Typist (clerical).....	203.588	410.00	Month	--
Salesperson, general (retail trade)....	289.458	1.95-2.25	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.20	Hour	2.20
Machinist (machine shop).....	600.280	4.77	Hour	4.77
Service station attendant.....	915.867	2.00-2.25	Hour	--

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COMMUNITY LABOR MARKET SURVEY - SAN RAFAEL

Areas Included in Community: San Rafael, Ross Valley, and Lucas-Gallinas Valley Census Divisions

Civilian Population, July 1970: Community: 113,600 San Rafael: 38,600

County: Marin

Employment[a] by Industry

Industry	July 1970	July 1969
Total	35,900	35,300
Agriculture, forestry, and fisheries	400	400
Contract construction	2,100	2,300
Manufacturing	2,600	2,900
Transportation, communications, and utilities	1,700	1,600
Wholesale and retail trade	8,600	8,400
Finance, insurance, and real estate	1,900	1,900
Service	11,300	10,900
Government (b)	7,300	6,900

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The City of San Rafael, the major trade and service center in Marin County, is primarily a residential community. Two of every five Marin County residents commute to other Bay counties for their jobs. San Francisco and the East Bay are both very accessible. San Francisco is 13 miles south of San Rafael and can be reached by freeway and the Golden Gate Bridge, while the route to East Bay cities is across the San Rafael-Richmond Bridge and takes approximately 30 minutes.

Greyhound Bus Lines furnishes commuter service to Bay Area cities, and passenger ferries provide a pleasant commute from Sausalito and Tiburon to San Francisco. The Northwestern Pacific Railroad, in combination with barge service, provides limited freight transportation to the north and east. Other freight is moved by truck.

CHARACTERISTICS OF THE LABOR MARKET: In this primarily residential community, significant labor shortages periodically exist in personal service occupations, and the area's hospitals need nurse aids and orderlies. Restaurants frequently have openings for cooks and waitresses. Domestic workers are usually in demand for work in private households. Jobs are often available for qualified workers in skilled clerical categories, and experienced salespersons can usually be

placed in retail trade establishments. Turnover of government workers in the area and at nearby locations also provides a number of job opportunities. A large and currently under-utilized supply of women workers exists in the area.

Unionization of the construction industry is complete. Most culinary workers and teamsters and some laundry and retail trade workers are also organized.

ECONOMIC TRENDS: San Rafael's labor force growth stems from the needs of its growing population. Housing, retail stores, service, and school facilities have expanded in recent years and, as a result, trade, services and government employment have experienced the biggest gains. Construction and related real estate activity continues well below previous years, despite record low vacancy rates, due to the continuing tight money situation.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$450.00	Month	--
Typist (clerical).....	203.588	410.00	Month	--
Salesperson, general (retail trade)....	289.458	1.95-2.25	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.35	Hour	2.35
Machinist (machine shop).....	600.280	4.77	Hour	4.77
Service station attendant.....	915.867	1.85-2.15	Hour	--

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COMMUNITY LABOR MARKET SURVEY - SANTA ANA

Areas Included in Community: Santa Ana, Costa Mesa, Fountain Valley, Garden Grove, Huntington Beach, Laguna Beach, Los Alamitos, Newport Beach, Orange, Seal Beach, Tustin, Villa Park, and Westminster

Civilian Population, July 1970: Community: 848,300 Santa Ana: 154,600

County: Orange

Employment[a] by Industry

Industry	July 1970	July 1969
Total	268,300	253,800
Agriculture, forestry, and fisheries	4,500	3,900
Mining	800	900
Contract construction	16,800	15,600
Manufacturing	56,900	57,700
Food and kindred products	1,900	1,900
Paper, printing, and publishing	3,200	2,900
Rubber and plastic products	3,500	3,800
Fabricated metals	3,500	4,100
Nonelectrical machinery	6,700	6,600
Electrical machinery	8,300	9,600
Transportation equipment and ordnance	17,300	16,900
Scientific instruments	3,200	2,700
All other manufacturing	9,300	9,200
Transportation, communications, and utilities	9,300	8,500
Trade	65,800	60,300
Wholesale trade	8,500	7,500
Retail trade	57,300	52,800
Finance, insurance, and real estate	15,400	14,200
Service	53,000	48,800
Government (b)	45,800	43,900

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Santa Ana is the county seat of Orange County - one of California's most rapidly developing areas. The proximity and easy access to adjacent Los Angeles County have always proved convenient for interurban commuting, but the economy of Orange County is becoming increasingly self-sufficient. While the community first gained stature as a trade and service center for the surrounding agricultural belts, manufacturing is now an important part of the economy. Over 21 percent of all employment in the Santa Ana

community is in manufacturing and half of all factory jobs are in aerospace. Wholesale and retail trade outlets employ one-fourth of the working force; "The City", a large trade and finance complex in Orange which opened in 1970, exemplifies the type of recent development in this industry. The service industry accounts for one job in five in the southern portion of Orange County. In the recreational service sector, "Lion Country Safari" opened during the past year and tourist trade flourishes in the beach communities. Government agencies represent 17 percent of all employment, and the Santa Ana area remains an important center of activity for the finance-insurance-real estate industry.

The area is served by the Santa Fe, Southern Pacific, and Union Pacific Railroads, and major trucking lines. The Santa Ana, Garden Grove, San Diego, and Newport Freeways link the community with the entire Southern California freeway network. The Orange County Airport provides nonstop jet flights to several western cities and commuter flights and helicopter service are available to the Los Angeles International Airport.

CHARACTERISTICS OF THE LABOR MARKET AND ECONOMIC TRENDS: Manufacturing employment peaked in 1969 and showed a net loss of 800 workers in the year ending July 1970. Electronics firms in the Santa Ana community cut back by 1,300 during the year but were still well above the July 1968 level. A rubber factory closed and substantial layoffs took place in the fabricated metals group since mid-1969. Transportation equipment and ordnance recovered somewhat from the severe reductions experienced between July 1967 and 1969. Employment in the scientific instrument industry more than doubled in the past two years. The Irvine Industrial Complex has grown rapidly as new firms move in and local companies relocate to new facilities.

Aerospace layoffs in the Fullerton community have affected the labor supply in the Santa Ana community as well, since the entire county is essentially one labor market. Throughout the county large surpluses exist of unemployed engineers and draftsmen, especially in electronic, electrical, and mechanical fields. The oversupply of secretaries and other clerical workers is very large. Very few hard-to-fill positions remain in any occupation as the number of highly educated and experienced jobseekers increases. On October 1, 1970, Orange County was declared an area of substantial unemployment by the U. S. Department of Labor, giving local firms preference in the award of federal contracts.

Further defense layoffs are slated for 1971 and a rubber factory will close, but some offset to the factory employment decline will be provided as employees from Los Angeles based manufacturing firms are transferred to Orange County. Industrial and commercial as well as residential construction was at a high level during 1970 and use of the new facilities will be actively promoted during the coming two years.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$390-475	Month	--
Typist (clerical).....	203.588	340-425	Month	--
Salesperson, general (retail trade)....	289.458	1.85-2.10	Hour	$3.30
Grocery checker (retail trade).....	299.468	--	Hour	3.845
Machinist (machine shop).....	600.280	4.09-4.71	Hour	3.69-5.00
Electronic assembler.....	726.781	2.00-3.00	Hour	2.13-3.03
Fiberglass worker (laminator).....	807.884	2.00-2.50	Hour	3.10-3.15
Construction worker.....	869.887	2.50-3.00	Hour	4.545
Service station attendant.....	915.867	1.75-2.10	Hour	--

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COMMUNITY LABOR MARKET SURVEY - SANTA BARBARA

Areas Included in Community: Santa Barbara, Carpenteria, Goleta, Montecito

Civilian Population, July 1970: Community: 144,200 Santa Barbara: 69,600

County: Santa Barbara

Employment[a] by Industry

Industry	July 1970	July 1969
Total	59,500	57,900
Agriculture, forestry, and fisheries	1,900	2,000
Mining	400	400
Contract construction	3,300	3,400
Manufacturing	5,000	5,100
Transportation, communications, and utilities	2,300	2,200
Trade	14,400	13,600
Wholesale	2,400	2,200
Retail	12,000	11,400
Finance, insurance, and real estate	2,900	2,700
Service	18,300	17,700
Government (b)	11,000	10,800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian **employees** of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The City of Santa Barbara and its neighboring areas have long been noted for an excellent climate and beautiful oceanside location, attracting tourists and retirees alike. Easy accessibility to Los Angeles, 100 miles to the south via four-lane highway, and to Vandenberg Air Force Base, 50 miles to the north have been important factors in the area's economic development. The University of California at Santa Barbara has been an important source of income and employment. The campus has also contributed to the cultural atmosphere of the community and has been an influential factor in attracting new firms to the area. Although no longer a major source of jobs, agriculture remains a valuable source of income.

In addition to common carrier truck lines, the area is served by Greyhound Bus Lines and Southern Pacific Railroad. Regular flights are scheduled out of Santa Barbara to both Los Angeles and San Francisco by Air West and United Air Lines.

CHARACTERISTICS OF THE LABOR MARKET: During the late 1950's and the early part of the 1960's, installation of facilities for missile testing at Vandenberg Air Force Base exerted a pronounced influence on the growth of employment in the

Santa Barbara community. In recent years, however, cutbacks in federal civil service employment and staff reductions by defense contractors have greatly diminished the potential of the base as a source of employment. The largest source of job opportunities in the south county area is the service industry which utilizes a wide variety of occupations ranging from highly technical business service skills to medical and dental occupations.

Despite growth in retail establishments, persons seeking sales positions have outnumbered available jobs. A more than sufficient supply of workers exists to meet seasonal peaks in tourist-related trade and service industries. Clerk-typists, general office clerks, and bookkeepers represent a large portion of the surplus of clerical workers. The community is relatively self-contained with only limited numbers of workers now commuting to Vandenberg Air Force Base or to other areas for jobs.

ECONOMIC TRENDS: Relatively substantial gains in employment were achieved between 1967 and 1969 in construction, manufacturing, retail trade, and in service industries. Local industrial growth slowed during the past year, probably as a result of the general cutbacks in defense contracts and because of the overall weakness in the housing industry. Building permit valuations and contract construction employment are both down over the year after showing a steady, though slight increase since 1966. Some factors expected to have a significant impact on the community's economy include a $7 million expansion program at the University of California at Santa Barbara and several research and development contracts recently awarded to local firms. Service industries, retail establishments, and the government sector are expected to continue providing most of the jobs in the area.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Nurse, general duty (med. ser.).....	075.378	$598-628	Month	--
Secretary (clerical).....	201.368	499-599	Month	--
Stenographer (clerical).....	202.388	428-530	Month	--
Typist (clerical).....	203.588	398-455	Month	--
Salesperson, general (retail trade)....	289.458	1.65-1.75	Hour	--
Grocery checker (retail trade).....	299.468	2.00-2.50	Hour	$3.945 hour
Waitress, informal (hotel/restaurant)..	311.878	1.65	Hour	10.00 shift
Cook, short order (hotel/restaurant)...	314.381	18.00-20.00	Shift	19.55 shift
Shirt presser (laundry).....	363.885	1.85	Hour	--
Porter I (any ind.).....	381.887	350-400	Month	--
Machinist (machine shop).....	600.280	3.50-4.00	Hour	--
Electronics assembler (electronics)....	726.781	2.14-2.60	Hour	--
Construction worker I (construction)...	869.884	2.00-2.50	Hour	4.845 hour
Service station attendant (auto serv.).	915.867	1.75-2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - SANTA CRUZ

Areas Included in Community: Santa Cruz, Capitola-Live Oak, and Soquel-Aptos Census Divisions

Civilian Population, July 1970: Community: 67,900 Santa Cruz: 30,800

County: Santa Cruz

Employment[a] by Industry

Industry	July 1970	July 1969
Total	25,200	25,100
Agriculture, forestry, and fisheries	900	900
Contract construction	1,600	1,600
Manufacturing	2,600	3,000
Durable goods	1,400	1,900
Nondurable goods	1,200	1,100
Food products	600	600
Other nondurable goods	600	500
Transportation, communications, and utilities	700	700
Wholesale and retail trade	6,300	6,300
Finance, insurance, and real estate	1,000	1,000
Service	6,700	6,500
Government (b)	5,400	5,100

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Santa Cruz lies on the northern shore of Monterey Bay, 74 miles south of San Francisco and 30 miles southwest of San Jose. An important resort area, the community attracts a large number of tourists to its nearby beaches and State Parks in the summer. Year-round, it is the residence of many retired persons and of workers who commute as far as the San Jose area. Trade and service remain the dominant economic activities, although manufacturing achieved new importance in recent years with the establishment of space-age electronics firms. The University of California at Santa Cruz is one of the major employers in the area, as well as a growing economic and social influence throughout the central coast. Natural resources such as redwood and fir, sand, limestone, and tanbark provide the basis for other manufacturing in and around Santa Cruz. The processing of fruits, vegetables and other foodstuffs is also an important activity.

Rail transportation is provided by the Southern Pacific Company. Greyhound Bus Lines also furnishes service to other cities, while a local bus line serves the community.

CHARACTERISTICS OF THE LABOR MARKET: With the arrival of vacationers in early June and continuing through September, there is a heavy demand for waitresses, cooks, dishwashers, and hotel and motel maids. During the winter, service workers are in surplus. Occasionally, demand is strong for workers in food processing, but as in industries catering to tourists, the duration of high employment is brief. Throughout the two-thirds of the year when neither tourism nor canning is strong, there is a general surplus of the lesser-skilled.

While the community has a considerable reserve of workers available for permanent jobs, it experiences shortages of secretaries, machinists, automobile mechanics, and sheet-metal workers. Additionally, Santa Cruz has chronic shortages of registered nurses, licensed vocational nurses and medical technicians. The labor force is supplemented, however, with retired persons residing in the area who are available and qualified for part-time work in a variety of occupations. Also, a significant increase has occurred in the work-age population. Cabrillo College, a local junior college, offers a wide range of vocational training programs in addition to academic courses.

Building trades are almost completely unionized. Most manufacturing plants are organized, including the food processors, while few retail trade establishments except chain groceries are unionized.

ECONOMIC TRENDS: A sudden increase in manufacturing employment between 1966 and 1968 resulted from increased aerospace spending. In the past two years, the electronics industry experienced a sharp decline in employment, as government contracts were cancelled or not renewed. No change in this trend can be foreseen in the near future.

The University of California campus, opened in the fall of 1965 with 650 students, has a present enrollment of about 3,200. Enrollment is expected to reach 25,000 or more by 1995. As well as adding new jobs, the University has boosted the expansion of trade and service facilities and should continue to have a stimulating effect upon the now seasonal economy.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographers (clerical).....	202.388	$435.00	Month	--
Typist (clerical).....	203.588	395.00	Month	--
Salesperson, general (retail trade)....	289.458	1.95-2.25	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	1.86	Hour	1.86
Cannery worker, men.....	529.886	2.66-2.93	Hour	2.66-2.93
Cannery worker, women.....	529.886	2.49-2.73	Hour	2.49-2.73
Machinist, maintenance.....	600.280	4.10	Hour	--
Service station attendant.....	915.867	1.85-2.10	Hour	--

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COMMUNITY LABOR MARKET SURVEY - SANTA MARIA

Areas Included in Community: Santa Maria, Betteravia, Guadalupe, Orcutt

Civilian Population, July 1970: Community: 58,800 Santa Maria: 32,300

County: Santa Barbara

Employment[a] by Industry

Industry	July 1970	July 1969
Total	22,300	22,100
Agriculture, forestry, and fisheries	3,300	3,400
Mining	600	600
Contract construction	700	800
Manufacturing	2,800	2,700
Transportation, communications, and utilities	1,300	1,300
Trade	5,300	5,200
Wholesale	800	800
Retail	4,500	4,400
Finance, insurance, and real estate	500	500
Service	4,700	4,500
Government (b)	3,100	3,100

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Santa Maria is the largest city of northern Santa Barbara County. It is located on Highway 101, 31 miles south of San Luis Obispo and 74 miles north of the City of Santa Barbara. Traditionally, Santa Maria has served as a trade center for the surrounding agricultural areas. Although activities related to trade and service continue to account for the majority of jobs within the community, a large segment of the population relies on nonlocal areas for employment, particularly at Vandenberg Air Force Base, 18 miles distant. An important asset to the area is Allan Hancock College with an approximate enrollment of 4,800 students. Several manufacturing employers have been attracted to the area; however, food processing remains the dominant manufacturing activity. Despite the area's close proximity to Vandenberg, no major space or defense firms have located here.

The completion of a four-lane divided highway between Vandenberg Air Force Base and the environs of Santa Maria has relieved peak hour congestion and cut commuting time down substantially. Rail transportation is provided by the Santa Maria Valley Railroad and Southern Pacific Railroad. Greyhound Bus Lines provide scheduled service while common carrier truck lines have overnight

delivery to Los Angeles and San Francisco. In addition, Santa Maria Airport is served by Air West Airlines with direct flights to San Francisco and Los Angeles.

CHARACTERISTICS OF THE LABOR MARKET: Continuing moderate layoffs of civil service employees and defense contract workers at Vandenberg Air Force Base have affected the economy of the Santa Maria community. Reductions are attributable to the cutback in missile and rocket contracts and the cancellation of the Manned Orbital Laboratory (MOL) Program. Nearly all sectors of the local economy have been adversely affected, but particularly hard hit have been the construction industry and consumer-oriented sales and services. Sizeable surpluses of building trades, clerical and sales, and food service personnel have existed generally throughout the past year. A more than adequate labor supply is available for seasonal peaks in food processing and the trade and service industries. A ready source of labor is provided by military dependents, particularly for clerical, service, and sales occupations.

ECONOMIC TRENDS: Annual employment growth in the community between 1967 and 1969 averaged a little over 5.0 percent, a relatively high rate of increase considering the effects of the Vandenberg work force reductions. A large portion of the employment gain during that two-year period took place in manufacturing - mainly because of an expansion by a local magnetic tape-producing firm - as well as in retail trade and agriculturally related activities. Growth in the area continued during the past year though at a much slower rate. Efforts to attract new industry has met with some success with the recent addition of a manufacturer of outboard motors. A small but steady increase in nondefense factory work is anticipated but the ongoing downturn in aerospace work, which is of greater economic significance, is expected to continue for at least another year. No relief is in sight to reverse the present downward trend in building permit valuations and contract construction employment.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375-500	Month	--
Typist (clerical).....	203.588	325-350	Month	--
Salesperson, general (retail trade)....	289.458	1.65-2.25	Hour	$1.91
Grocery checker (retail trade).....	299.468	1.65	Hour	3.845
Shirt presser (laundry).....	363.885	1.65-1.75	Hour	1.71-1.81
Cannery worker (male).....	529.886	--	Hour	2.66
Cannery worker (female).....	529.886	--	Hour	2.49
Machinist (machine shop).....	600.280	3.60-5.00	Hour	--
Construction worker.....	869.887	2.00-3.00	Hour	5.545
Service station attendant.....	915.867	1.65-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - SANTA MONICA

Areas Included in Community: Santa Monica and Los Angeles City sections of Brentwood, Pacific Palisades, Venice, Westwood, West Los Angeles and unincorporated county

Civilian Population, July 1970: Community: 280,200 Santa Monica: 87,300

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	154,200	157,200
Agriculture, forestry, and fisheries	200	200
Mining	600	600
Contract construction	7,900	7,500
Manufacturing	22,900	29,100
Durable goods	19,300	25,500
Aerospace	14,100	20,700
Nondurable goods	3,600	3,600
Transportation, communications, and utilities	7,400	7,000
Wholesale and retail trade	31,300	30,300
Wholesale trade	5,000	4,800
Retail trade	26,300	25,500
Finance, insurance, and real estate	9,300	8,900
Service	41,800	42,300
Government (b)	32,800	31,300

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Santa Monica community covers the area west of Beverly Hills to the Pacific Coast, and extends up the coast to the Ventura County line. The long stretch of coastline provides popular recreation and vacation areas. About three of every five residents live in the City of Los Angeles, while the City of Santa Monica itself accounts for only 31 percent of the total. The overall population increase during the 1960-70 period was at a slightly faster rate than the county average, with most of the growth occurring in the Los Angeles sections and in unincorporated Malibu and Topanga. Reflecting its relatively slow expansion during the period, the City of Santa Monica slipped in size rank from 8th to 11th among the 77 cities in the county. The southern portion of the city and the adjacent Venice section have a comparatively large representation of minority residents.

CHARACTERISTICS OF THE LABOR MARKET: The industrial pattern of the Santa Monica community, a labor demand area, requires an unusually high proportion of professional, technical, managerial and other white collar occupations. Workers with aerospace experience, however, are currently in surplus. There are usually vacancies for medical vocations such as medical technicians and nurses, both registered and licensed vocational. In the crafts there is an active demand for automobile mechanics, frequently required to have foreign car experience. Although needs are dropping, there are occasional openings for class "A" machinists while jobs for linemen and installer repairmen in the communications industry are frequently available. Well-qualified secretaries and clerical help with good typing ability are in demand throughout the various industries.

ECONOMIC TRENDS: The service industries provide the largest number of jobs in the community. The unusual decline in this group over the past year reflected a sharp cutback in motion picture production and reductions in force at research and development firms. Government ranks second and recent growth reflects the opening of a high rise federal office building adjacent to the large Veterans Administration and nearby UCLA. Manufacturing is continuing a long term downtrend paced by large reductions in the aerospace-electronics complex. New industrial growth is discouraged by rising land costs in the area. A number of established firms have relocated or are planning to relocate to less urbanized areas. High rise commercial and residential buildings allow a more intensive use of available land and recent increases in construction reflect this trend in the Century City and Westwood districts. The Pacific Ocean Park area between Santa Monica and Venice is undergoing extensive redevelopment that over the next several years should give a much needed boost to this currently depressed area. Trade, service, and government will continue to expand and the outlook for future growth in communications and finance is very favorable.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425-450	Month	--
Typist (clerical).....	203.588	375-400	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

State of California
Department of Human Resources Development

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COMMUNITY LABOR MARKET SURVEY - SANTA ROSA

Areas Included in Community: Santa Rosa, Santa Rosa North, Santa Rosa South Census Divisions, and the cities of Cotati and Rohnert Park

Civilian Population, July 1970: Community: 98,400 Santa Rosa: 48,800

County: Sonoma

Employment[a] by Industry

Industry	July 1970	July 1969
Total	34,900	34,300
Agriculture, forestry, and fisheries	900	900
Contract construction	2,600	2,700
Manufacturing	2,300	2,300
Durable goods	1,200	1,200
Lumber and wood products	200	200
Other durable goods	1,000	1,000
Nondurable goods	1,100	1,100
Food products	600	600
Other nondurable goods	500	500
Transportation, communications, and utilities	2,000	2,000
Wholesale and retail trade	9,400	9,300
Finance, insurance, and real estate	2,900	2,900
Service	8,300	8,100
Government (b)	6,500	6,100

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Santa Rosa, the business, financial, and trading center of a rich agricultural and lumbering area, is located 58 miles north of San Francisco on U. S. Highway 101, and 16 miles east of the Russian River resorts. Retail trade and service industries provide most of the employment opportunities within the community. However, government also employs a substantial number of workers, as does insurance.

Two railroads, the Northwestern Pacific and the Petaluma and Santa Rosa, serve the city. Overnight truck transportation is available to northern and southern California cities, while Air West provides passenger and express freight service from the County Airport located six miles north of Santa Rosa. Commuter service to nearby cities is furnished by Greyhound Bus Lines, and a municipal system provides local workers with daytime bus routes. Barge service to San Francisco Bay is available at Petaluma, 16 miles to the south of the city.

CHARACTERISTICS OF THE LABOR MARKET: The labor market in the Santa Rosa area is changing. Agriculture and the lumber and wood products industry, while still providing considerable seasonal employment in adjacent areas, no longer dominate the economy. The retail trade and service industries, which cater to an increasing residential population, and insurance provide most of the community's jobs, and well-trained workers in clerical occupations are usually in demand. The area's major medical facilities create a continuing demand for most classes of professional and technical medical personnel, particularly registered nurses and nurse aids. On the other hand, there is a surplus of workers in semiskilled occupations and untrained youth. Seasonal and part-time workers and commuters to other areas are potentially available for industries offering year-round employment.

Many educational facilities are available in and near Santa Rosa. The 4,000-student campus of Sonoma State College lies just south of town at Rohnert Park. Within Santa Rosa, a junior college and two business colleges offer courses keyed to local industry demand.

Construction workers are almost completely unionized, as are food checkers, garment, meat, poultry, winery, shoe, and cannery workers. Culinary workers, machinists, auto mechanics, and transportation occupations are also almost entirely organized. Unionization is slight among retail clerks and office workers.

ECONOMIC TRENDS: the rapid development that has characterized the Bay Area in recent years is progressing in Santa Rosa, too. For every job in Santa Rosa in 1960, there were two and one-half in 1970. During the past few years, Santa Rosa has expanded its importance as the major coastal area city north of San Francisco, becoming the commercial, industrial, medical services, educational and recreational center for Sonoma County and its neighboring areas. Population growth has not only expanded the local consumer market, but also created a potential labor supply of housewives, youths and commuters for jobs throughout the county. A long-range forty-acre urban renewal program is underway in downtown Santa Rosa. The projected complex of commercial buildings, parking facilities and high-rise office and apartment buildings should be completed in the mid-1970's.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$400.00	Month	--
Typist (clerical).....	203.588	375.00	Month	--
Salesperson, general (retail trade)....	289.458	1.85-2.10	Hour	--
Grocery checker (retail trade).....	299.468	3.825	Hour	$3.825
Shirt presser (laundry).....	363.885	2.13	Hour	2.13
Cannery worker.....	529.886	3.19	Hour	3.19
Machinist (machine shop).....	600.280	4.77	Hour	4.77
Service station attendant.....	915.867	1.75-2.00	Hour	--

State of California
Department of Human Resources Development

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COMMUNITY LABOR MARKET SURVEY - SONORA

Areas Included in Community: Sonora Census County Division

Civilian Population, July 1970: Community: 13,800 Sonora: 4,200

County: Tuolumne

Employment[a] by Industry

Industry	July 1970	July 1969
Total	5,075	5,125
Agriculture, forestry, and fisheries	100	125
Contract construction	200	225
Manufacturing	975	1,075
Lumber and wood products	775	825
All other manufacturing	200	250
Transportation, communications, and utilities	275	275
Wholesale and retail trade	925	925
Finance, insurance, and real estate	175	175
Service	575	550
Government (b)	1,850	1,775

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Sonora, the largest city and the county seat of Tuolumne County, is the entrance to a large and attractive recreational area in the Sierra Nevada Mountains. The community has a history dating back to the Gold Rush days; and Columbia State Park, four miles from Sonora, is a replica of an old mining town and a popular tourist attraction. Sportsmen are also attracted to the area with its numerous lakes and streams. The city is located at the junction of State Highways 49 and 108. The community is served by the Sierra Railroad, which connects with both the Southern Pacific and Santa Fe Railroads. Greyhound Bus Lines provide transportation to Stockton, and the county airport is located at Columbia. Most commuting in the area is done by private car. A community college, Columbia Junior College, has opened within the last two years on a beautiful lakeshore site which will attract both faculty and students. The current emphasis at the college is on prevocational training. Job opportunities were also increased by the opening of a State Conservation Center.

CHARACTERISTICS OF THE LABOR MARKET: Employment in lumber and wood products, the community's principal manufacturing industry, and the construction industry are both seasonally affected. While sawmills can operate at full capacity during the winter months, operations in the wood come to a halt after the first

heavy storm. The recreation industry, which affects job opportunities in both trade and services, is expected to offset to some degree the seasonal loss of job opportunities in manufacturing. Promotion of the area as a retirement locality has had a decided impact on job opportunities in the community. The desire of many to move from urban to rural areas has created a problem of finding jobs for professional workers and highly skilled workers. There is currently a surplus of accountants and business and production managers. Shortages are primarily in the service occupations such as waitresses, cooks, chambermaids, and day workers. Most construction workers are union members, but slightly under half of the workers in the lumber and wood industry belong to unions.

ECONOMIC TRENDS: There has been a slight gain in total employment in the community since 1968, despite a decided decline in manufacturing, because of the opening of the State conservation center and the community college. Government is now the largest employer in the community followed by manufacturing and trade. Market conditions have caused a sharp decline in the lumber industry and a manufacturer of prefabricated vacation homes closed. Mining and processing of lime has stopped at one plant although the rotary kiln is still operating. These losses have been more than offset by gains in government, trade, and service. A rock crushing plant whose products are used for terrazo has also opened in the community. Little major economic change is expected in the Sonora area, but as recreational facilities are expanded around the Don Pedro Dam area, job opportunities should increase in both trade and service industries.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375.00	Month	--
Typist (clerical).....	203.588	300.00	Month	--
Lumber checker (sawmill).....	223.588	3.295	Hour	$3.295
Salesperson, general (retail trade)....	289.458	1.65	Hour	--
Grocery checker (retail trade).....	299.468	2.00	Hour	4.01
Waitress.....	311.878	1.65	Hour	--
Shirt presser (laundry).....	363.885	1.65	Hour	--
Machinist (machine shop).....	600.280	3.84	Hour	6.66
Automobile mechanic.....	620.281	3.50-4.00	Hour	--
Millwright.....	638.281	4.45	Hour	4.45
Edgerman (sawmill).....	667.782	3.945-4.10	Hour	--
Construction worker.....	869.887	2.50	Hour	4.935
Log truck driver.....	904.883	37-42	Day	--
Service station attendant.....	915.867	1.75	Hour	--
Tractor operator.....	929.883	3.00-4.50	Hour	6.91
Chokerman (logging).....	942.887	2.25	Hour	3.395

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COMMUNITY LABOR MARKET SURVEY - SOUTH LAKE TAHOE

Areas Included in Community:	Lake Valley and Lake Tahoe Census County Divisions, California, and those portions of Washoe and Douglas counties, Nevada, contiguous to Lake Tahoe and extending a distance of 12 miles into Nevada
Civilian Population, July 1970:	Community: 36,400 South Lake Tahoe: 12,000
Counties:	El Dorado and Placer, California Douglas and Washoe, Nevada

Employment[a] by Industry

Industry	July 1970	July 1969
Total	16,400	15,475
Agriculture, forestry, fisheries and mining	25	25
Contract construction	1,150	1,150
Manufacturing	175	175
Transportation, communications, and utilities	350	300
Wholesale and retail trade	2,300	2,200
Finance, insurance, and real estate	800	750
Service	10,750	10,075
Government (b)	850	800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Lake Tahoe, one of the tourist meccas of the West, is 12 miles wide and 22 miles long, the highest lake of its size in the North American continent. The community of South Lake Tahoe is located adjacent to the lake at an elevation of 6,229 feet and encompasses several small communities. South Lake Tahoe became an incorporated city in 1965. The area provides year-round sporting activities, catering to ski enthusiasts during the winter and fishermen, boat owners and sun-bathers during the summer months. The gaming casinos in Nevada are another major attraction of the area. Although gambling is the major attraction of the area, big-name entertainment in the plush resort hotels has also drawn large crowds to the Lake Tahoe area. South Lake Tahoe can be reached on U. S. Highway 50 from the east and west. From the north, Highway 89 connects U. S. Highway 80 with South Lake Tahoe and from the south with Highway 88. The area is served by one bus line and one airline. Facilities at the airport have been expanded to accommodate the increased air traffic.

CHARACTERISTICS OF THE LABOR MARKET: Employment in the South Lake Tahoe area is highly seasonal. Peaks are reached in both the summer and winter seasons depending upon such factors as weather and road conditions. Job opportunities normally start to increase in early summer and are maintained at a relatively high level until mid-September or early October. The largest number of employment opportunities are in service industries: casino occupations, maids, waitresses, cooks, busboys and dishwashers. During the summer months, a number of these jobs are filled by students. There is a year-round demand for a few highly skilled office workers. With the end of summer tourist season, a number of establishments close until the peak of the winter season while the work force in other establishments may be drastically reduced. Construction workers and those employed in some occupations in retail trade are generally union members. There is little union membership among other occupational groups in the community.

ECONOMIC TRENDS: Although there has been steady growth in employment in the Tahoe area, the rate of growth has slowed considerably during the last year. The summer season which usually brings millions of dollars into the area was much less profitable in 1970 than in prior years principally because of generally unfavorable economic conditions. Major construction continues, however, on the north side of the lake with a new hotel complex and shopping center. Job opportunities in services industries in both the summer and winter months continue to show gains from the levels of past years. Employment in finance, insurance, and real estate establishments is also higher as people continue to invest in summer homes. There was a slight upward trend in the number working in transportation, communications, and utilities between 1969 and 1970, a trend which is expected to continue as the population of the community increases.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$350-500	Month	--
Typist (clerical).....	203.588	300-400	Month	--
Salesperson, general (retail trade)....	289.458	1.65-3.25	Hour	--
Grocery checker (retail trade).....	299.468	3.825	Hour	$3.825
Chambermaid (hotel and restaurant).....	323.887	1.75-2.25	Hour	--
Gambling dealer.....	343.468	25.00	Shift	--
Shirt presser (laundry).....	363.885	1.65-2.50	Hour	--
Construction worker.....	869.887	5.78	Hour	5.78
Service station attendant.....	915.867	1.75-3.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - SOUTH SAN FRANCISCO

Areas Included in Community: South San Francisco, Bayshore-Brisbane and San Bruno Census Divisions

Civilian Population, July 1970: Community: 85,800
South San Francisco: 46,800

County: San Mateo

Employment[a] by Industry

Industry	July 1970	July 1969
Total	61,100	61,400
Agriculture, forestry, and fisheries	200	200
Contract construction	3,100	3,000
Manufacturing	8,500	8,800
Food and kindred products	1,500	1,400
Chemicals	1,200	1,200
Printing and paper	1,100	1,100
Other nondurables	700	800
Primary metals	900	900
Fabricated metals	1,400	1,600
Electrical and nonelectrical machinery	900	900
Other durables	800	900
Transportation, communications, and utilities	26,300	27,100
Wholesale and retail trade	12,500	12,100
Finance, insurance, and real estate	1,100	1,100
Service	6,500	6,200
Government (b)	2,900	2,900

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: South San Francisco, 10 miles south of the City of San Francisco, is the site of the San Francisco International Airport. The airlines and their maintenance shops are the most important source of employment in the area. Recent development of industrial parks in South San Francisco and Brisbane has attracted a number of new firms into the area. Construction of warehouses and distribution centers continues, as long-established firms expand into modern facilities. Manufacturing processes include candy, paints, chemicals, electronics, home furnishings, plastics, and machinery. The community is the location of a well-established produce market. Adjoining the San Francisco International Airport is a complex of specialty shops, car rental agencies, luxury hotels and motels, and restaurants to accommodate travelers.

Commuter service to San Francisco, San Jose, and other peninsula points is provided by the Southern Pacific Railroad, Greyhound Bus, and Peninsula Bus Lines. Freight transportation costs are the same as in San Francisco; motor freight, railroad and airline freight are available.

CHARACTERISTICS OF THE LABOR MARKET: Well-qualified workers with skills utilized by airlines generally have little difficulty in finding employment in South San Francisco. Licensed aircraft mechanics, aircraft machinists, and pilots are often in demand, while opportunities are usually available for well-qualified stewardesses. Motels and restaurants have a steady replacement need for front desk clerks, room maids, cooks and waitresses. Journeyman sheet-metal mechanics and machinists can usually find jobs in the local metal trade industries. There is also a demand for exceptionally well-qualified secretaries. In contrast, there is at all times a surplus of unskilled persons seeking factory work. Almost all industries in South San Francisco are unionized.

ECONOMIC TRENDS: The outlook for South San Francisco is excellent. While competition from eastern airports for passengers to Hawaii brought reductions in airline payrolls early in 1970, recurrence of past growth trends in air transportation is anticipated. Ten million dollars will be spent in the next year to rebuild and expand the airport's road system, while airlines continue construction of multi-million dollar facilities to serve the passengers of the 747 jets. Additionally, further expansion is expected in wholesale trade. Because of the city's central location and the availability of industrial acreage, South San Francisco is becoming one of the chief distribution centers in the Bay Area.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$450.00	Month	--
Typist (clerical).....	203.588	410.00	Month	--
Salesperson, general (retail trade)....	289.458	1.95-2.25	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	2.20	Hour	2.20
Machinist (machine shop).....	600.280	4.77	Hour	4.77
Service station attendant.....	915.867	2.25-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - STOCKTON

Areas Included in Community: Stockton and Stockton North, South and East Census County Divisions

Civilian Population, July 1970: Community: 163,100 Stockton: 102,700

County: San Joaquin

Employment[a] by Industry

Industry	July 1970	July 1969
Total	73,400	73,600
Agriculture, forestry, fisheries, and mining	2,900	3,300
Contract construction	3,200	3,300
Manufacturing	10,000	10,600
Food and kindred products	3,700	4,100
Lumber and wood products	1,000	1,000
Paper and allied products	500	500
Stone, clay and glass	1,000	1,000
Nonelectrical machinery	1,000	1,100
All other manufacturing	2,800	2,900
Transportation, communications, and utilities	5,600	5,500
Wholesale and retail trade	18,600	18,200
Finance, insurance, and real estate	2,600	2,500
Service	12,900	12,600
Government (b)	17,600	17,600

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activities in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Stockton, the largest city and the county seat of San Joaquin County, is the industrial center of the Delta region and the northern San Joaquin Valley. Stockton has a large inland port from which are shipped a variety of products on oceangoing vessels as well as on smaller ships. Three transcontinental railroads, three local railroads, and two bus lines serve the community. There are also two regularly scheduled airlines, and the metropolitan airport also serves as a training field for jet pilots. The major highways in the area are U. S. Highway 99 which runs the length of the Central Valley, and U. S. Highway 50 which connects Stockton with the San Francisco Bay Area. The University of Pacific and the San Joaquin Delta College are located in the City of Stockton. Residents of communities adjacent to Stockton commute by private car because job opportunities are more plentiful in the larger city.

CHARACTERISTICS OF THE LABOR MARKET: Agriculture and allied industries continue to dominate the economy of Stockton, but job opportunities in government, service industries and trade have continued to increase since 1968. Despite some cutbacks, two large Federal installations, Tracy Defense Supply Depot and Sharpe Army Depot, have had a significant impact on jobs in the labor market area during recent years. Stockton also is the location of a state hospital which specializes in the care and rehabilitation of the mentally ill. Despite these expansions, there is a consistent surplus of unskilled and semiskilled workers even at the peak of the season. Most workers employed in manufacturing, construction, and in transportation, communications, and utilities industries are union members as are a substantial number of those working in service industries and retail trade.

ECONOMIC TRENDS: The economic growth of Stockton has not kept pace with its population growth although increases have been evident since 1968. The changes from July, 1969 to July, 1970 are caused principally by two factors: A change in the timing of agricultural activities and the general economic recession throughout the state. The most significant loss was in manufacturing with year-to-year declines in food processing and in nonelectrical machinery. There was also a loss in construction and in agricultural employment. These losses, however, were nearly offset by gains in service industries, finance, insurance, and real estate and trade. During the last year, cutbacks of permanent personnel have occurred at the two major defense installations, Sharpe Army Depot and Tracy Defense Supply Depot. Swift and Company have established a meat packing plant which employs nearly 400 people and Philco-Ford has established a small manufacturing plant. Five companies, all in manufacturing, have left the community during the last two years.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$400.00	Month	--
Typist (clerical).....	203.588	350.00	Month	--
Salesperson, general (retail trade)....	289.458	1.70-1.80	Hour	$1.70
Grocery checker (retail trade).....	299.468	3.82	Hour	3.82
Shirt presser (laundry).....	363.885	1.83	Hour	1.83
Cannery worker, men.....	529.886	2.66	Hour	2.66
Cannery worker, women.....	529.886	2.48	Hour	2.48
Machinist (machine shop).....	600.280	4.42	Hour	4.42
Construction worker.....	869.887	4.925	Hour	4.925
Service station attendant.....	915.867	400.00	Month	--

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COMMUNITY LABOR MARKET SURVEY - SUSANVILLE

Areas Included in Community: Susanville and Honey Lake Census County Divisions

Civilian Population, July 1970: Community: 14,500 Susanville: 6,600

County: Lassen

Employment[a] by Industry

Industry	July 1970	July 1969
Total	4,275	4,775
Contract construction	100	125
Manufacturing	425	475
Lumber and wood products	400	450
Transportation, communications, and utilities	150	175
Wholesale and retail trade	650	675
Finance, insurance, and real estate	75	75
Service	300	300
Government (b)	2,575	2,950

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Susanville, the largest city in Lassen County and the county seat, is located on the Susan River. The area is well-known for its excellent hunting and fishing which attracts many sportsmen during the summer and fall seasons. Recreation has played an important part in the economy during the past few years, and the continued expansion of facilities is expected to attract tourists to the community. The biggest employer in the area is government which far outranks the largest manufacturing industry, lumber and wood products, and also wholesale and retail trade and service industries. Susanville can be reached from the west by State Highways 36 or 44 and from the north or south by Highway 395. Transportation to the community is provided by Greyhound Bus Lines, but most local travel is done by private automobile even in the often severe winter weather conditions.

CHARACTERISTICS OF THE LABOR MARKET: Job opportunities are more plentiful during the summer months when activity is at peak but drop sharply during the winter months. From May to November, shortages of skilled and experienced lumber workers occur; but there is a surplus of unskilled workers throughout the year. During the tourist season, there may be temporary shortages in service occupations and in retail trade; however, these openings are often filled by

housewives or students from Lassen College who are seeking summer work. Young people tend to leave the community to search for year-round job opportunities in larger cities. Lassen College graduates students in gunsmithing and forestry as well as in commercial courses in auto mechanics, drafting, and secretarial work. About half of the retail clerks and meat cutters in grocery stores are union members. The lumber and wood industry is not organized.

ECONOMIC TRENDS: Located in a highly scenic hunting and fishing area, the community has continued its efforts to develop recreational facilities. The U.S. Forest Service and the Bureau of Land Management operate a program of recreational site and campground development. Cutbacks at the Sierra Ordnance Depot during recent months have caused a decrease in job opportunities with the Federal Government. Payrolls have also dropped in the lumber industry because of lack of demand for lumber products. The California Conservation Center, a minimum security prison, maintains a fairly large permanent staff contributing to the economy of the community. No new industries have been established in recent years nor has there been any major expansion of existing firms. There is no expectation of any major change in the economic composition of the community, and Lassen County is expected to remain a county of substantial and persistent unemployment.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375-405	Month	--
Typist (clerical).....	203.588	325-377	Month	--
Salesperson, general (retail trade)....	289.458	1.65-2.70	Hour	$2.70
Grocery checker (retail trade).....	299.468	3.825	Hour	3.825
Shirt presser (laundry).....	363.885	1.75	Hour	--
Correctional officer.....	372.868	644	Month	--
Machinist (machine shop).....	600.280	3.50-4.00	Hour	4.505
Ordnanceman.....	632.281	3.13-3.96	Hour	--
Construction worker.....	869.887	4.00-4.935	Hour	4.935
Service station attendant.....	915.867	2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - TORRANCE

Areas Included in Community: Torrance, Gardena, Hermosa Beach, Lawndale, Lomita, Manhattan Beach, Palos Verdes Estates, Redondo Beach, Rolling Hills, Rolling Hills Estates, and portions of Carson, Los Angeles City and unincorporated county

Civilian Population, July 1970: Community: 484,300 Torrance: 135,800

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	162,100	160,900
Agriculture, forestry, and fisheries	1,300	1,400
Mining	300	300
Contract construction	13,100	13,600
Manufacturing	56,700	59,600
Primary metals	4,800	5,200
Fabricated metal products	4,900	4,800
Machinery, except electrical	2,600	2,700
Electrical machinery	16,000	15,900
Transportation equipment	11,800	13,000
Other manufacturing	16,600	18,000
Transportation, communications, and utilities	4,000	3,800
Wholesale and retail trade	36,400	34,600
Wholesale trade	5,300	4,900
Retail trade	31,100	29,700
Finance, insurance, and real estate	4,400	4,000
Service	26,300	24,800
Government (b)	19,600	18,800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Torrance covers the southwest portion of the county including the Palos Verdes Peninsula. In terms of population this community ranks second in the county and is one of the fastest growing communities. The peninsula, which houses only a minor proportion of the total residents, is one of the county's outstanding high income, low population density sections. During the 1960-70 period the City of Torrance advanced from 5th to 3rd ranking position among the 77 cities in the county. This city is 17 miles southwest of downtown Los Angeles, and 7 miles northwest of Los Angeles Harbor.

The City of Gardena has a notably high concentration of Japanese residents, but Mexican-Americans represent the largest minority group in the community as a whole.

CHARACTERISTICS OF THE LABOR MARKET: There is a broad scope of light and heavy industrial activity available in the community. Manufacturing accounts for over one-third of total employment and almost half of the factory jobs are in the aerospace industries. The recent cutback in aerospace employment here and in neighboring communities has resulted in growing unemployment among highly skilled and experienced workers including engineers and associated technicians, machine shop workers, electronic assemblers, and clerical workers. Expansion in retail trade, services, and government more than offset the manufacturing losses over the past year to sustain the continued growth in total employment. Many residents, however, still commute to jobs in other communities from this labor supply area. Local job openings are usually available for medical workers, well-qualified secretaries, clerk-typists, automobile mechanics, and sewing machine operators.

ECONOMIC TRENDS: This community is one of the few areas in greater Los Angeles in which there is open land for commercial and industrial development and expansion. Partly for this reason, the number of jobs in the Torrance area has increased at a faster rate than in the county in recent years and this growth is expected to continue. Two large industrial tracts are being developed which will attract new firms to the area. Torrance ranked third in retail sales volume in Los Angeles County during 1969, and it is anticipated that a very significant increase in sales will occur when the Del Amo Fashion Square expansion project is completed and the new shopping developments are opened to the public. Additional professional, medical, and clerical workers will be needed as a result of the multi-million dollar expansion programs at the Los Angeles County Harbor General Hospital and Torrance Memorial Hospital. A major redevelopment project has been announced for the downtown area of Redondo Beach.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425.00	Month	--
Typist (clerical).....	203.588	360-375	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Porter.....	381.887	2.00-2.50	Hour	--
Machinist (machine shop).....	600.280	3.50-4.00	Hour	--
Truck driver, light.....	906.883	2.25-3.00	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - TURLOCK

Areas Included in Community: Turlock Census County Division

Civilian Population, July 1970: Community: 40,500 Turlock: 13,900

County: Stanislaus

Employment[a] by Industry

Industry	July 1970	July 1969
Total	9,775	9,500
Agriculture, forestry, fisheries, and mining	1,750	1,900
Contract construction	375	400
Manufacturing	2,075	2,000
Food and kindred products	1,600	1,550
All other manufacturing	475	450
Transportation, communications, and utilities	575	550
Wholesale and retail trade	1,650	1,600
Finance, insurance, and real estate	300	300
Service	1,850	1,750
Government (b)	1,200	1,000

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The economy of Turlock, 13 miles south of Modesto, is based upon agriculture and allied industries. The economy is becoming more diversified with the expansion on medical services. The community is also the principal supplier of goods and services for the surrounding communities where much of the population growth has occurred. Many residents commute to work in Modesto, Stockton, or Merced. Passenger service to and from Turlock is offered by Greyhound Bus Lines and the Southern Pacific Railroad. Freight service is provided by the Southern Pacific and Tidewater Southern railroads and several trucking firms. Stanislaus State College is located in Turlock, and its rapid growth in recent years has increased the number of job opportunities in the community.

CHARACTERISTICS OF THE LABOR MARKET: The economy is primarily agriculturally based with many products processed locally. This creates a seasonal pattern of employment in Turlock not uncommon to other valley communities. Peaches and grapes are the principal crops and poultry raising and packing constitute a major industrial activity. Opportunities for work are good during the height of agricultural activity, both in the fields and in food processing plants. The seasonality of employment opportunities causes a sizeable labor surplus of

semiskilled and unskilled workers during winter months. Nearly all construction, trucking, and warehousing workers are union members. Unionization exists to a lesser extent among retail clerks and culinary workers.

ECONOMIC TRENDS: Much of the economic growth in the Turlock community has been the result of the sizeable population growth in the area and the increased demand for goods and services. There has also been a continued expansion and modernization of the food processing plants in the area. A manufacturer of portable steel buildings with a payroll of over 100 employees has moved into the area, and the addition of mental health facilities to a local hospital will be completed in September, 1970. An egg-packing plant with a potential payroll of 40 persons will be in operation by March, 1971. One grain processing and distributing firm has moved from the area to a smaller community in the San Joaquin Valley.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$350	Month	--
Typist (clerical).....	203.588	1.80	Hour	--
Salesperson, general (retail trade)....	289.458	1.80	Hour	--
Grocery checker (retail trade).....	299.468	130	Week	$160 Week
Shirt presser (laundry).....	363.885	1.77	Hour	--
Laborer, male (poultry production).....	525.887	2.37	Hour	2.37
Laborer, female (poultry production)...	525.887	2.37	Hour	2.37
Cannery worker, male.....	529.886	2.66	Hour	2.66
Cannery worker, female.....	529.886	2.58	Hour	2.58
Machinist (machine shop).....	600.280	3.00	Hour	4.25
Construction worker.....	869.887	3.00	Hour	5.18
Service station attendant.....	915.867	2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - UKIAH

Areas Included in Community: Ukiah and Ukiah Rural-Talmage Census Divisions

Civilian Population, July 1970: Community: 18,200 Ukiah: 10,000

County: Mendocino

Employment[a] by Industry

Industry	July 1970	July 1969
Total	9,000	9,300
Agriculture, forestry and fisheries	300	300
Contract construction	400	600
Manufacturing	1,400	1,500
Lumber and wood products	1,200	1,300
Other manufacturing	200	200
Transportation, communications, and utilities	600	600
Wholesale and retail trade	2,300	2,300
Finance, insurance, and real estate	300	300
Service	1,400	1,400
Government (b)	2,300	2,300

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Situated 118 miles north of San Francisco and 62 miles north of Santa Rosa on U. S. Highway 101, is the City of Ukiah, a trade and service center for the surrounding lumbering and agricultural area. In addition to being the principal supplier of goods and services to Mendocino County residents, the community is the county seat, has several wood products firms within its environs, is the site of a major State hospital, and hosts considerable tourist traffic during the summer months. The woods that ring the community contain logging camps and lumber mills, as well as outdoor recreation. Vineyards and pear orchards blanket much of the cultivated land of the area.

Passenger transportation is provided by Greyhound Bus Lines and the Northwestern Pacific Railroad between Willits and Eureka. Railroad passenger service is also provided from Willits to Fort Bragg by California Western Railroad. Several truck lines provide freight service. Golden Pacific Airlines provides daily passenger service to points north and south. There is no local bus service, but taxis operate within the city.

CHARACTERISTICS OF THE LABOR MARKET: Labor supply and demand undergo considerable fluctuation over the year in the Ukiah area. The peak season for workers

in both agriculture and the lumber and wood products industry occurs in August and September.

As a reflection of the continuing growth in trade and services, the demand for labor is fairly good in these groups. There is demand for salespeople, office workers, skilled mechanics and repairmen, and hospital workers. With expanding medical services there have been chronic shortages of registered nurses, licensed vocational nurses, and nurse aids. In metal manufacturing industries there is generally a shortage of machinists. Electronic assemblers have been in limited demand and local inexperienced workers have been recruited and trained to meet these needs. At periods of peak demand the local supply of construction, logging, and sawmill laborers is sufficient and during winter months there are heavy surpluses. During the summer seasonal shortages of cooks, waitresses, maids, and harvest workers often occur.

The construction, pressboard, electronics, and metals industries are almost completely unionized, and transportation is largely organized. Logging is partially unionized, but few sawmill workers are union members. Grocery checkers are partly unionized and culinary workers are to a small extent.

ECONOMIC TRENDS: Controlled logging and sustained-yield lumber production should help to maintain current levels of employment in the regionally important lumber industry, also supported by the manufacture of new wood products. Some diversification in manufacturing can be expected, along the lines of a carpet manufacturer recently located in Ukiah.

Over the past few years employment gains have been small and limited mainly to retail trade, service and government. Because of the development of nearby recreation areas Ukiah is capturing a greater volume of tourist trade. The new Redwood Forest National Park, to the north in Del Norte County, should bolster this trend as vacationers travel through the area.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375.00	Month	--
Typist (clerical).....	203.588	340.00	Month	--
Salesperson, general (retail trade)....	289.458	1.65-1.80	Hour	--
Grocery checker (retail trade).....	299.468	3.825	Hour	$3.825
Machinist, maintenance (lumber).....	600.280	3.50-3.75	Hour	--
Grader (woodworking).....	669.587	3.50-4.00	Hour	--
Service station attendant.....	915.867	2.00	Hour	--
Material handler (sawmill).....	929.887	2.75-3.00	Hour	--
Chokerman (logging).....	942.887	3.20-3.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - VALLEJO

Areas Included in Community: Vallejo Census Division

Civilian Population, July 1970: Community: 79,500 Vallejo: 71,000

County: Solano

Employment[a] by Industry

Industry	July 1970	July 1969
Total	29,300	30,500
Contract construction	1,000	1,000
Manufacturing	900	900
Food products	500	500
Other manufacturing	400	400
Transportation, communications, and utilities	1,100	1,200
Wholesale and retail trade	4,800	4,800
Finance, insurance and real estate	900	900
Service	5,200	5,200
Government (b)	15,400	16,500

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: On the west shore of San Pablo Bay, 28 miles north of Oakland and 35 miles from San Francisco, is the industrial city of Vallejo. The local economy is dominated by Mare Island Naval Shipyard in Vallejo and Travis Air Force Base near Fairfield. Most of the employment opportunities in the community are provided by the Naval Shipyard. Vallejo has numerous retail trade outlets and serves as a shopping center for the neighboring towns of Benicia, Fairfield, and Suisun.

Rail service is furnished by the Southern Pacific Railroad. Three bus lines provide commuter service to other Bay cities. Deep water transportation serves plants located along the channel near Vallejo.

CHARACTERISTICS OF THE LABOR MARKET: Developments at Mare Island Naval Shipyard greatly affect employment levels in the Vallejo area. During periods of high activity, such as the late 1960's boom in support activities for the Vietnam War, shortages can arise at the shipyard for journeymen and technicians. At the beginning of 1969, a policy of letting attrition gradually reduce Mare Island's employment was undertaken. The shipyard's payrolls fell by 2,000 in the first 18 months. No end to the gradual employment cutback can be foreseen in the near future.

Retail sales, clerical and janitorial workers without special skills are in oversupply. Crowds of applicants invariably respond to advertisements for trainee or entry positions. Vallejo Junior College offers courses in office, industrial, and academic fields.

ECONOMIC TRENDS: Apart from the present reduction in operations at Mare Island and the negative impact on the local economy, the long-term outlook for Vallejo is good. The community's economy should continue to expand and diversify as industrialization spreads outward from the other Bay Area counties. The central business district is undergoing a thorough renewal. Approximately 125 acres in the business district have been cleared for the Marina Vista Urban Renewal Project, and construction of many new residential and commercial buildings have been completed.

The development of the Benicia Industrial Park (six miles from Vallejo) has been of major significance. A large oil refinery is in operation there, and about seventy-five smaller industrial and warehouse firms have moved into the park.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$450.00	Month	--
Typist (clerical).....	203.588	420.00	Month	--
Salesperson, general (retail trade)....	289.458	2.00	Hour	$2.00
Grocery checker (retail trade).....	299.468	4.015	Hour	4.015
Shirt presser (laundry).....	363.885	2.35	Hour	2.35
Machinist (machine shop).....	600.280	4.34	Hour	4.65
Service station attendant.....	915.867	2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - VAN NUYS

Areas Included in Community: Van Nuys, Canoga Park, Chatsworth, Encino, Northridge, Panorama City, Reseda, Sepulveda, Sherman Oaks, Tarzana, Woodland Hills, Hidden Hills, and unincorporated county

Civilian Population, July 1970: Community: 533,600

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	211,700	212,000
Agriculture, forestry, and fisheries	500	500
Contract construction	18,400	18,800
Manufacturing	55,200	61,800
Food products	1,600	1,700
Printing and publishing	2,700	2,500
Machinery, except electrical	11,200	11,400
Electrical machinery	15,400	19,500
Transportation equipment	12,600	13,900
Other manufacturing	11,700	12,800
Transportation, communications, and utilities	5,700	5,500
Wholesale and retail trade	52,100	49,600
Wholesale trade	6,200	5,900
Retail trade	45,900	43,700
Finance, insurance, and real estate	10,000	9,400
Service	45,600	43,600
Government (b)	24,200	22,800

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Van Nuys community covers the central and west portions of San Fernando Valley to the Ventura County line. It is the most populous community in the county, and all but three percent of the community's residents live in the City of Los Angeles. During the 1960-70 period these valley sections accounted for more than one-third of the growth recorded by the City of Los Angeles. Mexican-Americans constitute the principal minority group in the community, but the overall minority representation is relatively small. The community is suburban in character with a strong dominance of single family homes although the older central valley area is now dotted with multiple apartment complexes. Automobiles provide the principal means of transportation to work from this labor supply area.

CHARACTERISTICS OF THE LABOR MARKET: The aerospace oriented industries, which form a vital part of the local manufacturing structure, experienced sharp reductions in force over the past year. As a result there is a growing surplus of engineers, scientists, and technicians as well as production workers in assembly and machinery occupations. Other manufacturers have supplied little in the way of offsetting employment, and employers report a large supply of job applicants to fill the job vacancies which develop. Well-qualified secretaries and other clerical workers and salespersons are in ample supply. In fact there are few occupational shortages although qualified technical persons with experience in the medical field continue in demand and journeyman auto mechanics can usually find work. There is a moderate turnover in lower skilled jobs, and some employers participate in government subsidized training programs to help cover the cost of training new employees. The West Valley Occupational Center and the junior colleges offer a wide variety of vocational training courses.

ECONOMIC TRENDS: There are no indications of any significant improvement in the employment trend in the immediate future. The aerospace-electronics complex, which is heavily dependent on government programs and policy, will compete for contracts in a period of declining markets for defense and space work. Trade, services, and government, which offset most of the decline in manufacturing over the past year, will continue to expand, but at a slower rate than in recent years. Growth in finance and insurance reflects the relocation of firms from the central City of Los Angeles, but frequently the managerial and administrative personnel are transferred here and new hiring is largely in clerical classifications. Industrial development is expected to continue in the northern and western sections of the community as employers engaged in light manufacturing relocate from the more congested areas of the county.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425.00	Month	--
Typist (clerical).....	203.588	360.00	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

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COMMUNITY LABOR MARKET SURVEY - VISALIA

Areas Included in Community: Visalia and immediate environs

Civilian Population, July 1970: Community: 58,000 Visalia: 27,600

County: Tulare

Employment[a] by Industry

Industry	July 1970	July 1969
Total	24,400	23,475
Agriculture, forestry, and fisheries	6,500	6,200
Contract construction	1,025	1,100
Manufacturing	2,750	2,575
Transportation, communications, and utilities	1,700	1,675
Wholesale and retail trade	4,925	4,750
Finance, insurance, and real estate	625	625
Service	3,475	3,300
Government (b)	3,400	3,250

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Visalia, the county seat of Tulare County, is halfway between Los Angeles and San Francisco. In recent years the population has grown rapidly with the result that the city limits have been expanded. Agriculture remains a vital and important industry in the community and there has been steady and rapid growth in nonagricultural industries. State Highway 198, which goes through Visalia connects with U. S. Highway 99, an important link in the highway system. The Santa Fe and Southern Pacific railroads and interstate and local truck lines provide adequate freight service. Also, passenger service is available on Greyhound and Santa Fe Bus Lines and the Orange Belt Stages. Most of the workers in the community commute to their job by private car.

CHARACTERISTICS OF THE LABOR MARKET: The dependency of the community upon seasonal job opportunities has lessened, but severe fluctuation in employment remains. Workers in most of the food processing industries are union members, as are grocery checkers in the larger retail associations. Most of the employees of construction firms in both heavy and residential construction belong to unions.

ECONOMIC TRENDS: Weather, crop conditions, and the development of additional agricultural land, have raised employment in agriculture to a new level. Most

of the additional land has been planted in citrus and nut crops. During the last two years there has been a sizeable growth in manufacturing. One manufacturer of truck trailers presently employs 50 workers and will expand to 200. Another firm, a paper manufacturer, is also manufacturing plastic trays. Other employers new to the community during the past two years manufacture plastic irrigation pipe, plastic and rubber compounds, and gift wares. A manufacturer of aluminum doors and windows, who will employ approximately 150, and another who will store and manufacture small parts are expected to come to the community within the next year. Despite the considerable population growth the number working in government has not increased as rapidly as expected because of curtailment in county medical services. Services and trade have shown steady growth and continue to be major employers in the community.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$325.00	Month	--
Typist (clerical).....	203.588	285-300	Month	--
Clerk, general office.....	219.388	300-325	Month	--
Salesperson, general (retail trade)....	289.458	1.70	Hour	--
Grocery checker (retail trade).....	299.468	2.25	Hour	$3.635
Waitress.....	311.878	1.65	Hour	--
Shirt presser (laundry).....	363.885	1.65	Hour	--
Cannery worker, male.....	529.886	1.65-2.00	Hour	3.08
Cannery worker, female.....	529.886	1.65-2.00	Hour	2.24
Machinist (machine shop).....	600.280	3.25	Hour	--
Machine operator.....	649.885	1.95	Hour	--
Construction worker.....	869.887	5.185	Hour	5.185
Service station attendant.....	915.867	1.70	Hour	--
Packer (agricultural produce).....	920.887	1.75-2.00	Hour	--
Laborer, male (packing house).....	922.887	1.75-2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - WATSONVILLE

Areas Included in Community: Watsonville, Pajaro (Santa Cruz County), and Pajaro (Monterey County) Census Divisions

Civilian Population, July 1970: Community: 40,100 Watsonville: 14,200

Counties: Santa Cruz and Monterey

Employment[a] by Industry

Industry	July 1970	July 1969
Total	16,400	15,900
Agriculture, forestry, and fisheries	4,300	4,500
Contract construction	800	800
Manufacturing	3,700	3,100
Durable goods	500	500
Nondurable goods	3,200	2,600
Food products	2,700	2,100
Other nondurable goods	500	500
Transportation, communications, and utilities	1,100	1,000
Wholesale and retail trade	3,000	3,000
Finance, insurance, and real estate	300	300
Service	1,900	1,900
Government (b)	1,300	1,300

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Watsonville is the business and shopping center of Santa Cruz County's Pajaro Valley. The community is 90 miles south of San Francisco, 50 miles southwest of San Jose, and 29 miles north of Monterey. Activities related to agriculture are prominent in the community, as the surrounding area is notable for production of apples, Brussels sprouts, snap beans, lettuce, cauliflower, artichokes, bushberries, and strawberries. Most of these products are frozen and processed by plants in the community. In addition to numerous food processing and warehousing operations that provide substantial employment, principal industries include an aluminum extrusion plant and manufacturers of apparel, furniture and wooden containers. Cabrillo College, a junior college located in the Aptos area, is about 11 miles north of Watsonville. The University of California at Santa Cruz is only 20 minutes away by automobile.

The community is on the main line of the Southern Pacific Railroad. Long-distance truck lines provide service to all major California markets. Greyhound Bus Lines furnishes passenger transportation to nearby cities, and a

small airport for private and charter planes is located about two miles north of Watsonville--at present about 100 private or corporate planes are stationed there.

CHARACTERISTICS OF THE LABOR MARKET: Activity in the local labor market is subject to wide seasonal fluctuations through the year, owing to the dependence on agriculture; a large number of migrant workers enter the area to work on its farms and ranches. Although needs for unskilled and semiskilled workers are also heavy in the community's food processing plants, the supply of local workers is sufficient to meet peak requirements, and a surplus of women food processing workers exists during most of the year. One of the major food processing plants has enlarged to a maximum capacity that makes it the largest food processing plant in California.

Construction and food processing workers are unionized. Lettuce packers in the sheds are organized, but in the fields, where most of the packing is done, unionization is slight. Many culinary workers are organized, while few clerical workers and retail clerks are union members.

ECONOMIC TRENDS: It is anticipated that Watsonville will remain predominantly an agricultural and food processing center. While employment in agriculture has been dropping with mechanization of jobs formerly requiring manual labor, there has been limited growth in the number of year-round manufacturing jobs over the past few years. The Highway 1 bypass, opened in 1968, offers greater accessibility and will enhance industrial sites adjacent to the City of Watsonville. Further development is expected at Moss Landing, 10 miles to the south of Watsonville. The deep water harbor at Moss Landing is particularly attractive to industry and has already attracted a number of major establishments.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$380.00	Month	--
Typist (clerical).....	203.588	350.00	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	4.015	Hour	$4.015
Shirt presser (laundry).....	363.885	1.86	Hour	1.86
Cannery worker, men.....	529.886	2.66	Hour	2.66
Cannery worker, women.....	529.886	2.49-2.54	Hour	2.49-2.54
Service station attendant.....	915.867	2.00	Hour	--

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COMMUNITY LABOR MARKET SURVEY - WEST COVINA

Areas Included in Community: West Covina, El Monte, Baldwin Park, Covina, Industry, Irwindale, La Puente, Rosemead, South El Monte, and unincorporated county

Civilian Population, July 1970: Community: 450,800 West Covina: 67,800

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	139,000	134,300
Agriculture, forestry, and fisheries	500	500
Mining	400	400
Contract construction	6,000	5,500
Manufacturing	50,900	51,200
Fabricated metal products	5,900	6,600
Machinery, except electrical	6,900	5,900
Electrical machinery	7,800	8,200
Transportation equipment	4,500	5,600
Other manufacturing	25,800	24,900
Transportation, communications, and utilities	4,100	3,800
Wholesale and retail trade	33,300	31,600
Wholesale trade	5,800	5,500
Retail trade	27,500	26,100
Finance, insurance, and real estate	2,900	2,600
Service	23,700	22,500
Government (b)	17,200	16,200

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The West Covina community covers the southern portion of the San Gabriel Valley. The 1960-70 rate of population growth in the community was well above the county average, but here too most of the increase occurred early in the decade. Developments in the local cities illustrated the extremes experienced countywide since 1960. On one hand, El Monte, South El Monte and Rosemead ranked with the fastest growing cities in the county. An important factor in the local trend was the considerably more than doubling of the geographic areas included in the three cities as the result of annexations. On the other hand, Irwindale and City of Industry were among the very few cities in the county to show a population loss. The unincorporated areas lost about 14 square miles to annexations, and currently house about one-third the

total residents of the community, compared to almost one-half in 1960. There is a sizable Mexican-American population in the community, although the overall representation of minorities is less than exists in the county as a whole.

CHARACTERISTICS OF THE LABOR MARKET: The community has a widely diversified manufacturing base with aerospace constituting a small proportion of the total jobs. Although employment in manufacturing was off slightly over the past year, the net increase in total employment surpassed all other communities in the county except for the Central District of Los Angeles City. The community remains an area of labor supply, however, and many residents commute to work in other sections of Los Angeles and Orange counties. The impact of aerospace cutbacks has been evident among residents of this community, and engineers, supporting technicians and production workers constitute a local surplus. Occupations in demand are automotive repairmen, experienced and well-qualified clerical workers, power sewing machine operators, and household domestics. The number of job openings for entry level workers has lessened but is still quite active. Seasonal fluctuations in the demand for workers occur mainly in retail trade, construction, and in the production of apparel, campers, mobile homes, and toys.

ECONOMIC TRENDS: Relocations of firms to the community from the more congested areas of the county continue to be an important factor in local industrial expansion. The City of Industry has adequate space for further growth, while other cities are encouraging industrial growth by zoning changes. In addition several established employers have built major additions to their plants. The loss of subcontracts for aerospace work, however, has reduced employment in local machine shops, tooling, and metalworking plants. Although a larger percentage of new construction is in multiple dwellings, overall residential building activity has not been as active as expected due to high interest rates, higher construction costs, and slower population growth.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$400-450	Month	--
Typist (clerical).....	203.588	325-375	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Welder, arc.....	810.884	3.25-4.00	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - WHITTIER

Areas Included in Community: Whittier, Montebello, Pico Rivera, portions of Santa Fe Springs and unincorporated county

Civilian Population, July 1970: Community: 246,900 Whittier: 67,000

County: Los Angeles

Employment[a] by Industry

Industry	July 1970	July 1969
Total	84,100	82,400
Agriculture, forestry, and fisheries	400	400
Mining	400	400
Contract construction	3,600	3,300
Manufacturing	21,100	21,900
Food and kindred products	2,300	2,800
Furniture and fixtures	1,300	1,300
Fabricated metal products	2,300	2,400
Machinery, except electrical	3,000	3,100
Transportation equipment	4,000	4,400
Other manufacturing	8,200	7,900
Transportation, communications, and utilities	9,200	9,100
Wholesale and retail trade	21,200	20,200
Wholesale trade	5,600	5,200
Retail trade	15,600	15,000
Finance, insurance, and real estate	3,100	2,900
Service	15,300	14,700
Government (b)	9,800	9,500

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: The Whittier community covers the southeastern part of the county extending to the Orange County line. While total population showed only a relatively small increase in the 1960-70 period, significant internal changes occurred as annexations shifted the residents of about seven square miles of unincorporated territory to the community's three cities. One result was that the geographic size of the City of Whittier more than doubled, and this accounted for the near doubling of its population since 1960. Pico Rivera, with 54,000 residents is the second largest city in the community. It has the highest population density, and houses a large number of Mexican-American families.

CHARACTERISTICS OF THE LABOR MARKET: The local employment base is well diversified, but relatively small in terms of the community's size. A sizable portion of the resident labor force commutes to jobs in other sections of Los Angeles County, and in nearby Orange County. Manufacturing employment declined during the past year, reflecting the closing of a large food processing plant, as well as the general economic slowdown apparent throughout the county. Trade supplanted manufacturing as the largest industry group in the community. Recruitment remains active for clerical workers with good skills, and there are usually openings for waitresses, cooks and housekeepers. The overall slackening in demand, however, limits job prospects for the unskilled, marginally skilled and the aerospace specialists affected by the substantial layoffs in surrounding areas.

ECONOMIC TRENDS: Because of the limited direct dependence on aerospace activities, and also the less-than-average rate of population growth, local economic trends have been less volatile than the countywide developments in recent years. No change in this situation is anticipated for the near future. New job opportunities are expected to stem mainly from the nonmanufacturing industries which will continue to record a moderate expansion trend.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$425.00	Month	--
Typist (clerical).....	203.588	360.00	Month	--
Salesperson, general (retail trade)....	289.458	1.75-2.00	Hour	--
Grocery checker (retail trade).....	299.468	3.845	Hour	$3.845
Shirt presser (laundry).....	363.885	1.75-1.95	Hour	1.96
Machinist (machine shop).....	600.280	4.00-4.50	Hour	--
Welder, arc.....	810.884	3.50-4.00	Hour	--
Service station attendant.....	915.867	2.00-2.50	Hour	--
Material handler (any ind.).....	929.887	2.50-3.00	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - WOODLAND

Areas Included in Community: Woodland and Woodland Rural Census County Divisions

Civilian Population, July 1970: Community: 24,000 Woodland: 20,400

County: Yolo

Employment[a] by Industry

Industry	July 1970	July 1969
Total	10,275	10,175
Agriculture, forestry, fisheries and mining	1,025	1,025
Contract construction	800	775
Manufacturing	2,075	2,150
Food and kindred products	1,225	1,350
All other manufacturing	850	800
Transportation, communications, and utilities	725	725
Wholesale and retail trade	2,100	2,000
Finance, insurance, and real estate	350	350
Service	1,650	1,600
Government (b)	1,550	1,550

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Woodland is the largest city in Yolo County, the county seat, and serves a vast agricultural area. The community is a center for agricultural research and food processing; among the largest firms are a sugar mill and a cannery. The community is located in the Sacramento Valley, 18 miles northwest of Sacramento and 85 miles northeast of San Francisco. The area is served by the deep water port at Sacramento, by five major airlines, by the Southern Pacific Railroad, a large number of trucking lines, and a network of highways. Woodland is eight miles from the Sacramento Metropolitan Airport. Passenger and freight service is provided by Greyhound Bus Lines, but most commuting to work is done by private automobile.

CHARACTERISTICS OF THE LABOR MARKET: There has been considerable industrial expansion and diversification in Woodland during the last two years, but agriculture continues to have a significant influence upon job opportunities in the Woodland labor market. Employment is seasonal, although less so than in prior years, with the peak extending from August to November. Unskilled workers are generally in surplus throughout the year, and there is a surplus of farm workers and cannery workers during the winter months. Workers employed in the construction industry, in food processing plants, and in the sugar refinery are

all union members. About half of the retail clerks in grocery stores and those working in the trucking industry belong to unions.

ECONOMIC TRENDS: Although employment opportunities have increased steadily in the Woodland community, there was a considerable drop in manufacturing employment between 1969 and 1970 because of a year-to-year change in the timing of agricultural harvests which affected the size of the July labor force working in food processing. One meat packing plant has moved out of the community, but this has been offset somewhat by the establishment of new firms in the community with the three largest firms manufacturing trailers and mobile homes. This has attracted suppliers of goods for mobile homes to the community. Other industry divisions in the area have expanded or remained the same with the exception of manufacturing. Job opportunities in agriculture have not increased because of the impact of mechanization and the sale of land for other uses. Employment in the construction industry dropped between 1968 and 1969, following national trends, but a slight gain occurred between 1969 and 1970.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$375-400	Month	--
Typist (clerical).....	203.588	300-350	Month	--
Clerk, general office.....	219.388	325-375	Month	--
Salesperson, general (retail trade)....	289.458	1.65-2.00	Hour	$2.70
Grocery checker (retail trade).....	299.468	1.75-2.00	Hour	4.015
Shirt presser (laundry).....	363.885	1.65	Hour	--
Cannery worker, male.....	529.886	2.93	Hour	2.93
Cannery worker, female.....	529.886	2.73	Hour	2.73
Laborer, sugar.....	529.887	2.595	Hour	2.595
Construction worker.....	869.887	2.50-3.50	Hour	4.935
Service station attendant.....	915.867	1.75-2.25	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEY - YREKA

Areas Included in Community: Yreka and immediate environs

Civilian Population, July 1970: Community: 8,000 Yreka: 5,700

County: 32,850 Siskiyou

Employment[a] by Industry

Industry	July 1970	July 1969
Total	4,600	4,600
Contract construction	150	175
Manufacturing	425	450
Transportation, communications, and utilities	425	450
Wholesale and retail trade	1,250	1,225
Finance, insurance, and real estate	100	100
Service	450	425
Government (b)	1,800	1,775

(a) Employment figures include wage and salary workers, self-employed, unpaid family workers, and domestics.
(b) Includes all civilian employees of Federal, State, and local governments regardless of the activity in which employees are engaged.

CHARACTERISTICS OF THE COMMUNITY: Yreka is located on Interstate Highway 5, midway between San Francisco and Portland, Oregon. It is the largest city in Siskiyou County, the county seat and the business center for the northern part of the county. Yreka is the terminus of the Yreka Western Railway which connects with the Southern Pacific railroad at Montague, six miles away. Passenger service is provided by Greyhound and Trailways bus lines, but most local travel is by private car. Several major bus lines serve the community. There is one community college, the College of the Siskiyous, located in Weed.

CHARACTERISTICS OF THE LABOR MARKET: Employment in the Yreka labor market area is highly seasonal, rising in the spring and remaining at a relatively high level until the first heavy storm of the year, about mid-November. June through September is the peak employment season when skilled lumber and sawmill workers are in greatest demand. However, in recent years increased automation has lowered the demand for semiskilled and unskilled workers in agriculture and in the lumber industry. Log truck drivers and tractor operators are also in demand during the peak employment period. Most construction workers are union members as are most of those working in the lumber and trucking industries. Governmental agencies in Yreka add stability to the labor market and there has been a steady employment increase in wholesale and retail trade.

ECONOMIC TRENDS: Completion of the Fall Creek water project in mid-1969 has caused a cutback in construction jobs but plans for developing the Greenhorn Dam area for recreation purposes should create job opportunities. The possibility of an increase in jobs in the lumber and wood industry does not seem favorable since automation and market conditions have substantially decreased the demand for workers in this industry.

Service industries offer the greatest potential for job development in the Yreka area as recreation development assumes a more important roll. Trade will also be favorably affected by an increase in tourism.

Starting Wage Rates for Qualified Workers
July 1970

Occupation	Code	Rate of pay	Period	Union Scale
Stenographer (clerical).....	202.388	$350	Month	--
Typist (clerical).....	203.588	275	Month	--
Salesperson, general (retail trade)....	289.458	1.65	Hour	--
Grocery checker (retail trade).....	299.468	3.43	Hour	$3.45
Shirt presser (laundry).....	363.885	1.65	Hour	--
Machinist (machine shop).....	600.280	3.50	Hour	--
Construction worker.....	869.887	4.21	Hour	4.21
Service station attendant.....	915.867	1.75	Hour	--

State of California
Department of Human Resources Development

Research and Statistics
September 1970

COMMUNITY LABOR MARKET SURVEYS

Technical Appendix

EMPLOYMENT ESTIMATES: Total civilian employment was estimated by combining independent estimates of seven component parts: Employment covered under the California Unemployment Insurance Code; Federal Government employment; railroad employment; noninsured wage and salary employment; employment in private households; agricultural employment; self-employed and unpaid family workers.

Punched and interpreted cards were prepared for all establishments employing ten or more persons in activities covered by the California Unemployment Insurance Code. The cards contained the name of the community, information identifying the employer and industry, and the number of wage and salary workers employed in July 1970. To estimate employment in establishments with one to nine workers, ratios of community to county employment in establishments of ten or more were prepared. Unless other evidence supported a contrary belief, it was assumed that these same ratios would apply to establishments employing fewer than ten workers. Estimates were prepared from data supplied by employers.

All civilian employment for federal establishments was obtained from records of the Department. Employment data for other industries not subject to the Unemployment Insurance Code were collected or estimated by local office personnel.

Agricultural employment was estimated by the Department's Farm Placement Representative in the community or by local office personnel.

Employment estimates for the remaining blocks were prepared by Department of Human Resources Development personnel from their knowledge of the community and were validated insofar as possible through the use of correlative data.

INDUSTRY DEFINITIONS: The definitions used conform to those in the Standard Industrial Classification Manual.

OCCUPATION DEFINITIONS AND CODES: The definitions and codes used conform to the coding structure contained in the Dictionary of Occupational Titles, Third Edition.

WAGE RATES: The wage rates quoted are those at which an employer could hire an experienced qualified worker rather than a trainee. Data on wage rates were obtained from orders filled by local offices of the Department, from employers, and from unions.

Most union scale wage rates were provided by the Division of Labor Statistics and Research, Department of Industrial Relations, from their files of union contracts.

BOUNDARY DEFINITIONS

Note: Communities listed below are those whose boundaries do not coincide with complete Census County Divisions as defined on the individual survey.

LOS ANGELES COUNTY

Numbers are given to include all consecutive numbers from the first through the last number shown. Tracts which are underlined denote a split between two communities. A list of split census tracts appears at the end of the Los Angeles County data.

Community	1970 Census tracts included (A decimal suffix indicates a division of a 1960 Census tract.)
Avalon-Florence	2192-2197, 2224-2227, 2281-2289, 2291-2294, 2311-2319, 2321-2328, 2341-2344, 2361-2362.02, 2364, 2371-2376, 2391-2394, 5324-5342
Compton	2414-2416, 5400-5433.02, 5434-5435.01, 5438, 5535-5539, 5543
Culver City	2164-2169, 2171, 2183-2185, 2198-2199, 2201-2202, 2363, 2691-2699.02, 2701-2703, 2711.01-2719, 2721-2723.02, 2738-2739, 2741-2742, 2751.01-2756, 7024-7030
Duarte	4004.01-4004.02-4006, 4008-4012.03, 4039.01-4046, 4300.01-4321.02, 4325, 4812.01
East Los Angeles	2031-2039, 2041-2049, 2051, 4817.01-4817.02, 4820.01-4822, 4826-4828, 5303-5319, 5323.01-5323.02
Glendale	1011-1014, 1031.01-1034, 1811-1816, 1851-1852.02, 1853, 1861-1864, 1871, 1873, 1881, 1883, 3001-3025, 4605.01-4607
Hollywood	1882.01-1882.02, 1891-1899, 1901-1909, 1911-1919.02, 1921-1927, 1941-1945, 1952-1953, 2116, 2141-2149, 2151-2153, 2162-2163, 2611.01-2612, 7001-7010
nglewood	2345-2349, 2351-2352.02, 2377-2379, 2381-2383-2386, 2403-2404, 2412-2413, 2761-2769, 2771-2774, 2781, 2911, 6001-6030.01, 6200-6202, 7031-7032
Lancaster	9001-9012.02, 9100-9110, 9300-9302
Long Beach	5433.03, 5440, 5550-5552.02, 5700.01-5776.03
Los Angeles Central District	1831.01-1838, 1872-1873, 1951, 1954-1959, 1971-1977, 1991-1999, 2011-2017, 2061-2065, 2071-2079, 2081-2089, 2091-2098, 2111-2115, 2117-2119, 2121-2129, 2131-2134, 2161, 2172, 2181-2182, 2186-2189, 2191, 2211-2219, 2221-2223, 2241-2247, 2261-2267
Los Angeles Harbor	2941-2943, 2945-2949, 2951, 2961-2969, 2971-2976, 5439, 5990-5991, 6099, 6707.01-6707.02

Community	1970 Census tracts included
Los Angeles South Central	2377, 2383, 2395-2399, 2401-2402, 2405-2409, 2411, 2421-2429, 2431, 5343-5345, 5347-5361
North Hollywood	1021.01-1021.02, 1211-1212-1214, 1216-1219, 1221-1224, 1231.01-1233.02, 1237-1239, 1241.01-1244, 1247-1249.02, 1251-1256, 1431-1439.02, 3101-3118, 3200
Norwalk	5028, 5030-5031.02, 5036-5041.02, 5362, 5500-5524, 5526-5534, 5540-5542, 5544.01-5549
Pasadena	4322, 4600-4604, 4608-4642, 4800-4811, 4812.02-4816.02, 4818-4819.02, 4823.01
Pomona	4002-4003, 4004.02, 4013-4013.02, 4015-4030, 4032-4034, 4088
San Fernando	1041.01-1048, 1061.01-1068, 1091-1098.02, 1111.01-1112.02, 1113.01-1114.02, 1191-1192, 1194-1198, 1212, 9200.01-9203.02
Santa Monica	2621-2628, 2641.01-2643.02, 2651-2657, 2671-2679, 2731-2737, 7012.01-7023, 8001-8005
Torrance	2911-2913, 2921, 2931-2933, 2944, 5433.03-5434-5435.01-5438-5439, 6030.01-6041, 6203-6214, 6500-6514, 6700-6706
Van Nuys	1081-1082, 1112.03-1112.04, 1131-1134.02, 1151.01-1154.02, 1171-1176, 1193, 1199, 1201.01-1204, 1215, 1234-1236.02, 1245-1246, 1271.01-1279, 1281-1289, 1311-1319, 1321-1329, 1331.01-1331.02, 1341.01-1349.02, 1351.01-1352.03, 1371.01-1376, 1391-1398.02, 1411-1417, 9203.03
West Covina	4035-4038, 4046-4087.02, 4323-4324, 4326-4329, 4331-4340, 4823.02-4825.02
Whittier	5001-5010, 5012-5027, 5029.01-5029.02, 5032.01-5035.02, 5300.01-5302, 5320-5322

SPLIT CENSUS TRACTS

Tract numbers	Communities
1212	North Hollywood and San Fernando
2377, 2383	Inglewood and Los Angeles South Central
2911	Inglewood and Torrance
4004.02	Duarte and Pomona
4046	Duarte and West Covina
5433.03	Long Beach and Torrance
5434, 5435.01, 5438	Compton and Torrance
5439	Los Angeles Harbor and Torrance
6030.01	Inglewood and Torrance

OTHER COUNTIES

Community	County	Census boundaries
Alturas[a]	Modoc	The City of Alturas and the densely settled area contiguous to it.
Fullerton	Orange	Census Tracts A1-17, H63-79, J101-106
Gilroy[b]	Santa Clara	Gilroy: Census Tracts X123-126 San Martin: W125 Morgan Hill: V123
Indio	Riverside	Census Tracts 152A, 152C, 152D, and 153-155
Madera[a]	Madera	The City of Madera and the densely settled area contiguous to it.
Merced[a]	Merced	The City of Merced and the densely settled area contiguous to it.
Ontario	San Bernardino	Chino, Cucumonga, Montclair, Ontario, Ontario Southeast, and Upland Census County Divisions
Palo Alto[b]	San Mateo	Atherton, Menlo Park, Woodside, and East Palo Alto Census Divisions
	Santa Clara	Palo Alto: Census Tracts O 106-116 Los Altos Hills: Census Tract P117 Mountain View-Los Altos: Census Tracts N92-105

Community	County	Census boundaries
Porterville[a]	Tulare	The City of Porterville and the densely settled area contiguous to it.
Quincy[a]	Plumas	The City of Quincy and the densely settled area contiguous to it.
Riverside	Riverside	Jurupa, Riverside, and Alvord Census County Divisions plus Census Tracts 121, 122, 123
San Bernardino	San Bernardino	Colton, Highland, Rialto, Rialto North, San Bernardino, San Bernardino East, Northwest, and Southeast Census County Divisions
San Jose[b]	Santa Clara	San Jose: Census Tracts A1-32 Evergreen Area: Census Tracts B33-35 Alum Rock: Census Tracts C36-42 Berryessa: Census Tract D43 Alviso: Census Tracts F46-47 Agnew: Census Tracts G48-50 Santa Clara: Census Tracts H51-61 Campbell: Census Tracts I62-67 Edendale: Census Tract S120
Santa Ana	Orange	Census Tracts E24-25, F26-39, G40-62, H80-91, I92-99, J100
Santa Barbara	Santa Barbara	Santa Barbara, Carpinteria, Goleta, Goleta Valley, and Montecito Census County Divisions
Santa Maria	Santa Barbara	Guadalupe and Santa Maria Census County Divisions plus Tract OR 20
Visalia[a]	Tulare	The City of Visalia and the densely settled area contiguous to it.

---

a/ Not defined by Census boundaries.

b/ Communities in Santa Clara County are composed of Planning Areas rather than Census County Divisions. The Planning Areas have been defined in terms of Census Tracts.

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VT 014 455
HOLT, JAMES S., AND OTHERS
AGRICULTURAL LABOR IN THE NORTHEAST STATES.

PENNSYLVANIA STATE UNIV., UNIVERSITY PARK.
DEPT. OF AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY.
NORTHEAST AGRICULTURAL EXPERIMENT STATIONS.
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IDENTIFIERS - *NORTHEASTERN STATES

ABSTRACT - THIS REPORT COMPILES AND INTEGRATES THE AVAILABLE DATA NECESSARY FOR AN UNDERSTANDING OF THE FARM LABOR PROBLEM IN THE NORTHEAST. THE MAJOR ISSUES ARE THE ADEQUACY OF AGRICULTURAL LABOR SUPPLY AND THE WELFARE OF THE PRESENT AGRICULTURAL WORK FORCE. THE REPORT PREDICTS A CONTINUATION OF THE TREND TOWARD HIGHER WAGES AND LOWER EMPLOYMENT IN AGRICULTURE. AN ACTUAL SHORTAGE OF FARM WORKERS SEEMS UNLIKELY, IN THE FORCE OF INCREASED MECHANIZATION AND DECLINING MANPOWER NEEDS. SUBSTANTIAL IMPROVEMENT IN THE WELFARE OF FARM WORKERS WILL REQUIRE ACTION TO MOVE WORKERS OUT OF AGRICULTURE, REMOVE THE AGRICULTURAL EXEMPTIONS FROM EXISTING LABOR LEGISLATION, AND PROVIDE ADEQUATE WELFARE SUPPORT FOR THE DISPLACED WORKERS. (BH)

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VT 014 455

AGRICULTURAL LABOR IN THE NORTHEAST STATES

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The Pennsylvania State University

Prepared Under Contract No. 81-40-68-12,
Office of Manpower Research, Manpower Administration
U.S. Department of Labor

In Conjunction With

Regional Research Project NE-58
Northeast Agricultural Experiment Stations

August 1970

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PREFACE

Agriculture is an industry of fundamental importance to the economy of the United States. Its importance derives from the fact that it is a primary industry, producing food and fiber needed by all consumers, and it is a major source of employment and income to many members of the labor force. Agriculture in the United States has become so efficient that by 1969 it employed less than five percent of the civilian labor force. Yet in recent years, there has been growing concern about a "farm labor problem." This concern has manifested itself in repeated attempts to organize farm workers, in intense battle over a wide variety of labor and social welfare legislation for farm workers, in crash programs of engineering and plant breeding research to mechanize agricultural operations, and in many other ways. Farmers, farm workers, citizens groups, labor organizations, and legislators and public policy makers all have expressed concern about manpower problems in agriculture and the rural economy.

Despite widespread concern about a "farm labor problem," there is a dearth of knowledge and sophistication about agricultural labor. Much of the rhetoric on farm labor is based on suppositions and facts that are incorrect or only partly true. This lack of knowledge has hindered accurate delineation of the nature of the farm labor problem and development of effective solutions.

The geographic focus for the study reported herein encompasses Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, and West Virginia. The Region is a highly industralized and highly populated area. Many of the manpower problems in agriculture derive from these two facts. However, as the economy and population of the nation grow, it is likely that other regions of the country will face, as indeed, many are already facing, farm labor problems that presently prevail in the Northeast. In the Northeast, they differ more in degree than in basic nature. Thus, this study has relevance to agriculture and farm workers beyond the Northeast.

The philosophy behind the report was that progress cannot be made in solving a problem until the problem itself is understood. Its purpose was to compile and integrate data presently available to provide the comprehensive background necessary in understanding the farm labor problem in the Northeast. It is intended to serve as input to manpower researchers, manpower policy

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makers and other interested persons seeking to understand this relevant social problem. The report was developed under contract to the Manpower Administration, U. S. Department of Labor in conjunction with Project NE-58, "An Economic and Sociological Study of Agricultural Labor in the Northeast States," a cooperative regional research project of the Agricultural Experiment Stations.

This study was based exclusively on secondary data. No new surveys were conducted or new data collected. The availability of data was the major limitations on the scope and depth of the study and the extent to which the organic components of general problems could be examined. In some cases, the observation and judgment of persons familiar with individual situations proved to be valuable supplements to available data. A by-product of this study was a critical review of farm labor data and their sources, and a number of suggestions for improvement entitled, Agricultural Labor Statistics With Special Reference to the Northeast States, published as a companion volume to this report.

The authors are indebted to many people whose assistance and suggestions were invaluable in preparing this report. These include the state Farm Labor Service staffs, our colleagues in the Agricultural Colleges of the Region, and personnel of the U. S. Departments of Agriculture and Labor. The authors, however, are solely responsible for the content of the report.

THIS REPORT WAS PREPARED UNDER A CONTRACT WITH THE MANPOWER ADMINISTRATION, U. S. DEPARTMENT OF LABOR, UNDER THE AUTHORITY OF THE MANPOWER DEVELOPMENT AND TRAINING ACT. RESEARCHERS UNDERTAKING SUCH PROJECTS UNDER THE GOVERNMENT SPONSORSHIP ARE ENCOURAGED TO EXPRESS THEIR OWN JUDGMENT. INTERPRETATIONS AND VIEWPOINTS STATED IN THIS DOCUMENT DO NOT NECESSARILY REPRESENT THE OFFICIAL POSITION OR POLICY OF THE DEPARTMENT OF LABOR.

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SECTION I: SUMMARY

Although the "farm labor problem: has many facets, there are two basic issues upon which most of the concern is focused.

One major issue of concern is the adequacy of supply of farm workers to meet current and future manpower needs in agriculture. During the past several decades, rural society has undergone profound changes which have had far reaching effects on the rural labor market. Modern transportation has greatly increased the mobility of the rural labor force and at the same time facilitated the growth of urban centers and the decentralization of industry. Universal public education and modern means of mass communication have altered the values and expectations of the rural work force, brought them in touch with urban living and working conditions, and improved the skills of rural workers. In the labor market, earnings levels have risen steadily while hours of work have declined and conditions of employment have improved. Agriculture has found itself under intense competitive pressure in an increasingly unfamiliar and alien labor market. Many farm employers are concerned about the ability of agriculture to compete in this labor market and obtain adequate labor supplies.

The second major issue is the welfare of the present agricultural work force. The income and social status of farm workers are low. Their economic security is tenuous. Working and living conditions of many farm workers are poor. They lack most of the legislative and social protections afforded other occupational groups. Farm workers are clearly in the backwater of our affluent society. In its efforts to improve the welfare of disadvantaged and low income groups, society has identified farm workers as a major target.

In this section, the major findings of this study are summarized and their implications for these farm labor problems are discussed. The relationship between the farm labor problem and the more general rural manpower problem is discussed. Some directions for manpower programming in agriculture are suggested. Finally, further farm labor research needs are presented.

The Adequacy of Farm Labor Supply in the Northeast

Whether there will be sufficient labor available to meet future agricultural manpower needs depends on the magnitude of these needs and the magnitude of the supply of workers available to meet them. There are

many factors affecting both the demand and supply of agricultural workers in the Northeast. These factors and their expected direction of future change are summarized below.

Factors Affecting Hired Farm Labor Demand. The demand for hired farm labor in the Northeast is affected by a number of phenomena, including the volume of farm production in the Region, the composition of this production with respect to labor intensive products, the technology of production, including the degree of mechanization achieved and the efficiency of labor management, and the use of operator and unpaid family labor. Wage rates also affect labor demand, as well as labor supply, but will be included in the discussion of factors affecting supply.

The Northeast, which includes about 8 percent of the nation's commercial farms, produces from 8 to 10 percent of the nation's farm receipts. The output of many important agricultural products has increased in the Region since 1950, while the production of some others has declined. On balance, the value of agricultural production in the Region has increased in quantity and value amounting to $3.8 billion in 1969. Agricultural production nationally has grown at a slightly more rapid rate, so that the Region's importance as a national supplier of agricultural output has declined since 1950. However, it is important to note that agricultural production is not declining in the Northeast, as is often assumed, but merely increasing less rapidly than in other regions of the country.

It is likely that there will be a continued increase in the quantity and value of agricultural output of the Region, but at a less rapid rate than in the rest of the nation. While agriculture in the Region has felt the pressure of competition from other users of labor and land, there is no evidence that the pressures of urbanization will produce an imminent rapid decline of agriculture in the Northeast. The greatest pressure on the industry is likely to come from producers in other regions who are able to produce more efficiently because of more complete environmental control and better adaptability of new technological innovations.

The agriculture of the Northeast region has historically been heavily oriented toward livestock, especially dairying (market milk production) and poultry. Livestock and their products accounted for 57 percent of the Region's cash receipts from farm marketings in 1965-67. The production of meat animals and poultry has declined in the region since 1950, while dairy production, in which improvements in labor productivity have been less rapid, has increased.

The agriculture of the Region has become less specialized in the production of livestock and livestock feed and more highly committed to the production of cash crops. This has tended to retard somewhat the decline in labor demand in the Region, and retard the reduction of seasonal fluctuation in farm employment.

The Region's processing vegetable producers are feeling the competitive pressure of growers in other regions who have a climate, topography and soil conditions more conducive to mechanization and the attendant changes in cultural practices which are required. There has, for example, been a shift westward in potato production as a result of these factors. Tomato producers in the Northeast are now beginning to feel competitive pressures from California producers who are rapidly mechanizing their harvest and obtaining yields substantially greater than those in the Northeast. The progress of mechanization in the Northeast has been considerably less rapid and may ultimately prove to be impossible to the degree realized in the West. The Northeast's production of processing vegetables may decline as a result, with an attendant decline in both field and processing plant employment.

Technology has had a dramatic impact on farm labor requirements, reducing labor requirements and seasonality of labor demand in virtually every product. Farm production per man-hour increased 225 percent nationally from 1950 to 1969, but only 166 percent in the Northeast. Labor productivity has risen least in production of fruits, vegetables and tobacco, crops in which the Northeast is a major supplier. Mechanization of fresh fruit and vegetables has generally proceeded less rapidly than mechanization of processing crops. In addition, technological progress has generally favored large farms and areas of uniform climate, which does not characterize the Northeast.

Whether technological developments result in the mechanization of agricultural production in the Northeast or its relocation to other regions of the country, the ultimate impact will be to reduce the Region's farm manpower requirements. Mechanization is either in hand or imminent which will result in substantial reductions in labor requirements for asparagus, tomatoes, grapes, cranberries, sour cherries and apples for processing. Technological developments are also occurring in the nursery industry which may reduce labor requirements substantially, thus reducing the importance of nursery labor as a factor offsetting declining vegetable labor demand.

Empirical data to study the intensity of utilization of the labor force are not available. Yet this is a potentially important factor in labor

demand. It has been observed that labor requirements are, to some extent, affected by labor supply; that the number of individual workers and the number of total man-hours required to do the job has a considerable degree of flexibility. It has also been observed that as labor costs increase, and obtaining labor supplies becomes more difficult, that labor management practices are tightened and labor requirements contract. Efficient labor management and utilization is receiving little systematic study in the agricultural industry of the Northeast and, thus, improvements in productivity from this source have been slow. However, with continued increasing labor costs and industrialization of the agricultural industry, further reductions in labor requirements from this source are likely.

There was an average of 290 thousand farm operators and family workers and 98 thousand hired workers employed on Northeast farms in 1969. The labor supplied by the farm operator and unpaid family members has first claim on farm jobs and only the surplus work is available to hired labor. Thus, hired labor demands are a function of family labor supply. There has been a somewhat more rapid decline in the hired farm work force than the family work force in the Region since 1950, resulting in a decline from 30 to 26 in the percentage of total farm employment represented by hired workers. However, it is likely that part of the reason for the apparent slower decline in family labor is due to labor resource trapped in agriculture because they are tied to immobile non-labor resources. Eventually this under-employed family labor will find productive employment alternatives or drop out of the labor force. Thus, it seems likely that in terms of effective labor input, hired labor will increase its proportionate contribution to the farm labor force of the Region.

The size of farming units in the Region and nation is increasing. Although various sources of evidence on the subject are not consistent, there are indications of an increasing reliance on hired labor on the larger farms of the Region. Whether or not hired labor becomes a relatively more or less important source of labor in agriculture is partly a technological question. If technical innovations continue to require farm enlargement to be profitably exploited and if managerial and supervisory adjustments occur to make hired labor productive, then hired labor will become a more important input in agriculture. If this is not the direction of future innovation, or if the productivity of hired labor is so low that it offsets the advantages of enlargement, then the use of hired labor will diminish. The evidence available

suggests that hired labor will likely become a greater proportion of the farm work force of the future.

Predicting Farm Labor Demand. Many agricultural operations, particularly crop operations, require the performance of labor-intensive practices during short periods of time. Frequently, the tolerance in the timing of such jobs may be only a few days, or at most a few weeks. Typical of these operations are planting of most crops, a few mid-season cultural practices (as for example with tobacco), and harvest activities, especially in fruits and vegetables. Harvest operations are the greatest source of short-term seasonal labor demands. Tolerance in the timing of harvesting varies greatly depending on the crop. In mushrooms, for example, it may be only a matter of hours, in strawberries or asparagus a couple of days and in tomatoes, peaches and many other crops one to two weeks.

For crops that mature over an interval of time (e.g., strawberries, asparagus, tomatoes and others) harvest labor needs fluctuate on a daily basis. On any given day they are determined by the amount of crop mature that day and the amount that can be picked by one worker. Generally in such crops, daily yield peaks and then tapers off. Other crops are more determinate in yield (for example, many tree fruits) with the entire crop maturing at once. As the harvest progresses there is generally some loss in yield and quality. In such a case, given the uncertainty of weather (tomorrow could always bring a steady week of rain or a hurricane) an individual grower's harvest labor requirements are determined by how many workers can be effectively supervised and/or the capacity to transport or receive the product at its destination. In this case, each man-day of work done today is one less to do in the uncertain tomorrow and growers have an incentive to hire large numbers of workers to harvest the crop in the shortest possible time.

Because of the numerous factors affecting yield and the rate of growth, the demand for labor for most crop operations can be predicted only approximately with respect to numbers and timing until shortly before the workers are actually needed. Since there is some tolerance in the timing of the operation, the actual number of workers required is flexible. Under such circumstances, the translation of man-hours of work into numbers of workers required involves a considerable element of arbitrariness. Securing a work force large enough to assure that each activity is performed at the optimum time can lead to under-utilization of the work force during some periods.

On balance, farm labor demand in the Northeast will certainly continue to decline as technology and labor management practices improve. It is unlikely that the influences moderating this decline in the past--a somewhat greater specialization in crop production and increased labor requirements in nursery production--will continue to the same extent in the future. While continued rapid mechanization of processing crops is likely, reductions in labor requirements resulting from further mechanization of fresh fruits and vegetables are likely to be more modest. Reduction in labor requirements in livestock production will likely continue at a modest rate. Thus, with the exception of labor involved in the growing of fruits and vegetables for processing, which is likely to continue to decline markedly, labor requirements will decline only slowly for technological reasons, and in the Northeast region will depend on how competitive the industry can be with that of the remainder of the country.

The Supply of Hired Workers. The number of persons employed in agriculture at any point in time does not indicate worker supply or demand, but the interaction of the two in the labor market. The supply of farm workers must be considered in the functional sense--as a function of the many variables that induce people to take employment. That is, the number and kinds of workers who will make themselves available for farm jobs--worker "supply"--depends upon wage rates, hours and working conditions of the farm job relative to other jobs available, long-run earnings and job security prospects, the social status of the job, and a host of other psychological and sociological factors. These variables will affect the proportion of workers in the population who make themselves available for a job and the kinds of people they are. The actual number of workers available will also be affected by the size of the population and labor force, the physical location of the job relative to the population, the efficiency of the labor market, the intensity of recruitment and, of course, the supply of non-local workers. The present status and trends in these variables are summarized below.

Wage rates and working conditions in alternative employment are obviously an important factor in worker's decisions. These variables, especially hours and working conditions, will also have an effect on the kind of workers who make themselves available. For example, if the hours are convenient to school schedules and the type of work is suitable, housewives may be a part of the labor supply. With different hours, or with containers

that are too heavy or other unsuitable working conditions, few women would make themselves available for farm work. With the proper timing and wage rates, "moonlighters" may be part of the supply. The conditions of employment of seasonal jobs may be a more important factor affecting worker supply than the basic wage rate for those jobs.

In general, farm wage rates in the Region and nationally have not increased as rapidly as the general wage level, thus relative wage levels have declined. Farm wage rates varied from 48 to 70 percent of gross hourly earnings of manufacturing workers in the various states of the Region in 1950. In 1969 the range was 42 to 67 percent. There is, however, substantial variation in wage rates among various types of workers, local areas, and commodities which undermines the value of an average farm wage level.

The nature and value of fringe benefits offered in non-agricultural employment have undergone considerable transition, while those in agriculture, primarily housing and commodities, still reflect a paternalistic relationship between employer and employee. There is evidence that employers of permanent farm workers are becoming aware of the importance of the fringe benefit package, and rapid change in this component of remuneration seems likely.

While empirical measures of working conditions are not possible, it seems clear that the gap between agricultural and non-agricultural working conditions is widening. Progress in improving agricultural working conditions in the Northeast has been more rapid in the livestock industry than in many crop activities. But improvements in agriculture have proceeded at a slower pace than in industry. In crop activities, mechanization has in some cases improved working conditions to the extent of reducing the physical demands of the job and permitting a modest improvement in environmental conditions. Progress in this field continues, particularly as employers seek to make more harvest jobs suitable for women and youth. However, much manual harvest work is done under essentially the same conditions now as has been the case in the past. Control of environmental conditions and the necessity for stoop work is likely to be attained slowly so that a continued widening of the gap in working conditions between farm and non-farm work seems to be in prospect.

It is interesting to note that compared to the current efforts to adapt agricultural production to mechanization through plant breeding, and changes in field layout, relatively little effort or resouce was expended on adapting production to enhance efficiency in manual operations. The prevailing philosophy was that the worker should adapt to the plant or animal. Recent

interest in semi-dwarf, dwarf and trellised fruit trees, while induced partially by the prospects of mechanization, may also improve efficiency and enhance potential supply of manual workers.

While progress in making farm work easier and pleasanter is constrained by a number of engineering and biological factors, no such constraints exist to retard efforts to improve the work environment. Improving the cleanliness, lighting, and ventilation in agricultural buildings, provision of sunshades, water, and toilet facilities for field workers, providing work breaks and facilities for wash up, and numerous other improvements can be made by farm employers to improve working conditions to compete more effectively with non-farm employers. Such improvements may have an effect not only on the number but kind of workers who make themselves available for farm work.

Not only are the alternative wages and working conditions offered by competing employers relevant to farm labor supply, but also the amount of employment available at these rates and the resulting unemployment. The ratio of peak hired farm employment to December employment increased from 2.4 in 1950 to 2.9 in 1969 in the Northeast. Differential success in mechanizing agricultural production has led to this increase in the seasonality of farm employment by disrupting established sequences of jobs. This factor coupled with the absence of income protection through unemployment compensation or collective bargaining agreements has made seasonal farm work relatively less attractive to those members of the labor force seeking steady income, and thus, forced farm employers to rely more on persons not usually in the labor force and unemployed workers to perform seasonal tasks.

Unemployment rates have been quite variable in the Region, but generally have been low and declining. The unemployed have, in most cases, not been an effective labor supply for a number of reasons including geographical distribution, inability to perform agricultural work and the difficulty of recruitment. In areas of high concentration of unemployed, in metropolitan areas which are within reasonable commuting distance of seasonal farm work sites, unemployed and underemployed workers can participate in seasonal farm work through day-haul programs. There are some areas where a large enough permanent pool of these workers exists to represent a significant farm labor supply. However, the number of areas fulfilling the conditions necessary to effectively and economically utilize unemployed workers is limited. Furthermore, an objective of manpower policy is to further reduce the

size of the unemployment pool. It is conceivable that in some areas seasonal agricultural needs will diminish to the point where they can be satisfied out of the local permanent pool of unemployed workers, but this does not appear to be the case at present.

Recruitment and training augment supply by providing knowledge of job opportunities to potential workers and enabling workers to acquire the necessary skills to qualify for employment. All of the states in the Region maintain a Farm Labor Service within their respective State Employment Services. Employment Services' Agricultural Reporting Areas, which are the focus of Farm Labor Service activities, include the counties producing 80 percent of the Region's farm receipts. In these areas, a significant proportion of seasonal farm worker requirements are handled by the Farm Labor Service. In a few areas of particularly intensive seasonal labor use, growers' associations have also been active in recruitment and placement. In contrast, the Employment Service's proportion of permanent farm job placements has been low. Modest recruitment activities have been undertaken from time to time by Employment Service personnel, but there are no producers' organizations active in the recruitment and placement of permanent workers. Recruitment of permanent farm workers is done directly by employers and, in general, is haphazard.

A few attempts have been made, through MDTA, growers' associations and agricultural schools, to train workers in specific skills for employment as hired farm workers. These have focused on permanent jobs, such as dairy hands and farm machinery operators and have been on a modest scale. Formal training in the manual skills required in seasonal harvest work is rare. Such skill is usually acquired gradually through practice. Substantial differences in the earnings of skilled and unskilled piece rate workers have been observed. The possibility of reducing seasonal labor requirements and increasing the earnings of harvest workers through skill training may well deserve exploration.

However, it must be noted that the agricultural industry does not suffer so much from a shortage of workers with the requisite skills and experience, as from an inability to retain such workers in agricultural jobs. Literally tens of thousands of farm operators and hired workers with the skills currently required to perform agricultural work have left farm jobs in the Region in the past two decades. It has been noted by persons close to agriculture that it is frequently the more skilled members of the farm work force

who are inclined to leave agriculture because their earnings potential is far greater in other occupations.

A good deal of concern has been expressed about the adequacy of workers with the requisite skills for modern agriculture in the future. There is little doubt that knowledge and skill requirements for many agricultural jobs are increasing. With a rapidly declining farm work force in agriculture, a larger proportion of new workers in this industry are likely to have to come from the non-farm sector and to lack much of the knowledge accumulated by living close to agricultural work. Undoubtedly agriculture in the future is going to have to give increased attention to formalized skill training as a means of augmenting worker supply and improving labor productivity. However, there is no evidence at present of a shortage of skilled agricultural workers when one considers the rate of exodus from these jobs.

The location of production relative to centers of population affects effective farm worker supply. Shifts in the location of both population and production are occurring within the Region. In general, the rural areas are growing less rapidly than urban and urban fringe areas, and population in some rural areas is actually declining. In addition, the composition of the rural population is changing, resulting in a declining or only slowly increasing labor force in many rural areas.

Likewise, production in the Region has shown some tendency toward concentration. This has resulted from a rapid decline in production of small, marginal producers coupled with some increased production of larger, specialized producers. In particular, the production of high seasonal labor using crops in the Region has tended toward increased concentration in areas adjacent to centers of population. This has been less true of tree fruit production than of other commodities. Such concentration should augment potential labor supply but at the same time puts producers in more direct competition with non-agricultural users for labor and other resources.

With respect to farm labor supply, not only the absolute size of the population and labor force, but their relative size in relation to farm labor demand is important. The population in the Northeast region has increased while the demand for labor has diminished, so that "relative supply" has increased even more rapidly than absolute supply. In 1969 farm employment was less than 2 percent of non-agricultural employment. The Northeast region has the most favorable "relative supply" (magnitude of population and

labor force relative to labor demand) of any region in the country. Labor force participation rates have also been increasing so that the labor force is growing more rapidly than the population. This growth in labor force participation has been greatest among women, who at present do not constitute an important part of the full-time farm labor force in the Northeast, though they are an important component of the seasonal labor force.

Population growth will continue to increase potential farm labor supply, and with an expected contined (though slower) reduction in farm labor demand, will increase "relative supply" at a rapid rate. The supply of seasonal workers will be influenced by trends in multiple job holding and casual or supplementary employment, and thus, should expand at a less rapid rate than the supply of permanent workers. However, as mechanization and other changes in farm working conditions result in opening employment opportunities to a larger proportion of the labor force (especially women) this could increase effective supply.

The potential supply of non-local workers to any particular agricultural area is affected not only by the factors previously discussed, but by the extent to which the legislative and regulatory climate facilitates or impedes migration to work. Substantial migration from Puerto Rico and the Southern States into the Northeast Region occurs at present. Some foreign workers and Texas migrants are also used. The amount of migratory labor used in the Region has diminished, though less rapidly than seasonal employment. The number of foreign workers used has decreased substantially, and the supply will likely be restricted further. The use of Mexican-Americans in the Region is relatively new and may well increase. While employment and earnings have improved somewhat in the home areas of the Region's migratory work force and some employers have claimed difficulty in obtaining adequate numbers of migrant workers, there is no substantial evidence yet of a relative decline in the supply of southern migrants and Puerto Ricans.

Overall potential farm labor supply in the Region will undoubtedly continue to grow as population grows, labor force participation increases and consolidation of production increases the local commuting population. The potential supply of temporarily unemployed workers, multiple job holders and casual workers is likely to increase much more slowly than population growth, however, thus dampening the growth of the potential seasonal work force. The potential supply of migratory workers appears relatively stable. It is possible

that improved recruitment and training could augment labor supply somewhat, but a factor restricting labor supply is undoubtedly the growing divergence in wages and working conditions in farm and non-farm work.

The Adequacy of Labor Supply. The number of agricultural workers employed in the Northeast region has declined substantially since 1950. At the same time wage rates, fringe benefits, and working conditions of farm workers in the Region have improved. The reasons for these phenomena are clear. Agriculture is a small component of the Northeast economy. Competition from non-farm employment opportunities and other income alternatives have increased the wage rates, fringe benefits and working conditions workers were willing to accept to remain in or enter agricultural work. As this occurred, farm employers found it increasingly economical to substitute capital for labor. As a result, the amount of labor required to produce the Region's agricultural output declined. Reduced labor requirements have not entirely offset rising wage demands, so that the level of wage rates has risen. It is likely that wage rates would have risen even more rapidly and labor requirements contracted still further, but for the continued existence of workers who lack education and skills, are geographically immobile, or have strong personal preferences for farm work and who cannot or prefer not to move into more remunerative employment.

There is no evidence of anything but a continuation of both trends--a more costly labor supply as the alternatives faced by the work force improve and the number of persons "trapped" in farm work declines and declining employment as some producers reduce their scale of operations and others mechanize to reduce labor requirements. On balance, it is unlikely that reduced labor supply will offset rising wage demands, therefore, a rising wage level is expected. As population growth increases the demand for agricultural products, and mechanization becomes increasingly difficult, it is possible that labor use in agriculture may actually increase. While it is clear that farm employment cannot continue to decline indefinitely, at least at the rate which has occurred in the past, there is no evidence yet that the bottom of the decline has been reached (or that it ever will in the Northeast region).

The phenomena described above do not constitute evidence of a "worker shortage," but the normal functioning of the labor market. With farm labor demand continuing to decline and farm labor supply increasing, the likelihood of an actual shortage of farm workers in the Region seems remote. It is likely,

however, that the wage rates and working conditions necessary to obtain the number of workers desired may increase more rapidly than they have in the past because of the rapid improvement taking place in alternative earning opportunities of potential workers and the likely slower progress in the mechanization of fresh market products than has occurred in processing.

There are two circumstances that could foreseeably lead to farm worker shortages:

(1) If the cost of farm labor in one area increases more rapidly than it increases in another area producing the same or competitive products, and if this increase is not offset by productivity differentials, then producers in the high labor cost area will be put at a competitive disadvantage relative to other areas and production may gradually shift out of that area into lower labor cost areas. There is no strong evidence that this is occurring generally throughout the Northeast region, although there are specific instances where this has happened when local non-farm employment opportunities expanded rapidly. A similar result could occur by subjecting farm employers in one state or one commodity to labor regulations more stringent than those imposed on producers in other areas or of competitive products. Such action might have the effect of temporarily improving the farm employment conditions that were the target of the regulation, but in the longer run it would reduce or eliminate production of that commodity in that region unless other jurisdictions were brought into line competitively. This has implications for the efficacy of state and local laws and regulations in the improvement of conditions of the farm work force, particularly in the Northeast, which is not a major supplier of most agricultural commodities.

(2) Farm worker shortages could also occur in areas where seasonal labor demand is high relative to the size of the local labor force. Employers in such areas must either utilize sources of non-local labor or, if non-local sources are inadequate, incur high employment costs to attract sufficient local workers to work. Supplies of non-local workers could prove inadequate because of natural economic forces or they could be reduced through legislative or regulatory design. The effect of either condition would at first be to bid up wages and working conditions of local workers, but eventually to reduce production to the level that could be sustained by the local labor force at wage rates and working conditions prevailing for other producers of the same commodity.

It is in this sense that a farm labor shortage for some producers could exist--when sufficient workers cannot be obtained in a region at employment costs similar to those of competitive producers in other regions, recognizing differentials in productivity among regions. Differences in employment costs among producers could occur because of differential changes among regions in the economic and social factors affecting farm labor supply and demand or they could result from actions of legislative and regulatory bodies.

Northeast producers have felt the competitive pressure of non-farm employers more intensely than have the producers of other regions of the country. On the other hand, they have also had a larger local labor market from which to draw. This is probably the reason that agricultural employers have been able to remain in business in this Region. There is some evidence that the rate of growth of non-farm employment in the Northeast is now less rapid than that of other regions of the country. Furthermore, there is likely to be some movement to include farm workers under coverage of labor legislation. This will tend to make labor costs among farmers in various regions of the country more uniform and thus, actually work to the benefit of Northeastern employers.

Improving the Welfare of Farm Workers

Hired farm workers are unquestionably a disadvantaged occupational group. Many work at relatively low wage rates, under poor working conditions and experience substantial unemployment. Furthermore, if wage rates are an indication, the gap in the level of well-being of farm and non-farm workers appears to be increasing.

Strategies for Affecting the Welfare of Farm Workers. A major factor contributing to the economic problems of farm workers is the inability of many to qualify for better jobs or their inability or unwillingness to take advantage of opportunities for improvement. Thus, there are characteristics of farm workers as well as of their occupations that lead to low-income jobs with no hope of improvement. They are economically disadvantaged and farm workers for some of the same reasons. Strategies for improving the welfare of farm workers must be aimed not only at improving undesirable aspects of farm occupations, but at altering those characteristics of farm workers that resign them to low income status.

Many farm workers are trapped in agricultural work because they lack the job skills and other attributes to compete successfully in the non-farm

economy. This is also true of many marginal and low-income farm operators. Improving this condition will require a massive effort at skill training for low-income farm workers, accompanied by efforts at developing new jobs in the areas where these workers are located and/or relocation to areas where employment is available. There are a number of obstacles that will have to be overcome in making this strategy successful.

Many farm workers have strong ties to rural life and farm work, although this is becoming less true all the time. They are not anxious to make the transition to non-agricultural employment and are unfamiliar with and afraid of urban life. Many lack the labor force discipline required in non-agricultural employment. Yet most skill training programs are aimed at preparing workers for non-agricultural, and often urban based occupations. They require a sudden break with past occupational and residence patterns which is difficult for farm workers to make.

Increased emphasis should be placed on training and relocation programs for farm workers and other rural people that would smooth this transition, even at the cost of somewhat reduced immediate economic improvement. Training to upgrade agricultural skills, particularly skills such as farm machinery operation and maintenance, that have transferability to non-farm jobs, may be most appropriate. Although earnings in post-training farm employment may be below levels that would be desired in other circumstances, workers who gain proficiency in the new skills should find it easier to move into local non-farm occupations or upgrade their farm employment.

A further problem in improving the employment and earnings of farm workers is the fact that many are located in areas where good jobs--farm or non-farm--are not available and are not likely to become available. Here again increased consideration could be given to relocation of farm workers to farm job vacancies in other areas. In some areas where rapid economic growth has occurred, the supply of local labor has been drawn off farms creating severe local agricultural labor shortages. Relocating farm workers from other areas into these jobs would greatly ease their transition problems and at the same time would place them in areas where demand for non-farm labor was strong and where they would be susceptible to movement into other occupations.

Only a portion of the farm work force will participate in retraining and relocation programs to improve their employment and earnings. There are many farm workers who cannot or will not be transferred out of the farm work

force. Retraining and relocation should help them indirectly by reducing the supply and increasing the competition for farm workers, thereby improving wage rates, fringe benefits and working conditions.

A second major strategy for improving the welfare of persons in the farm work force, aimed basically at those remaining in farm work, is through direct legislative action. This would include wage and hour legislation, compulsory workmen's compensation and unemployment insurance and legislation protecting the right of farm workers to bargain collectively. There is little reason, in the face of the increasing industrialization of agriculture, for maintaining legislative distinctions between farm and non-farm workers, except those required by the nature of agricultural production processes and to protect the public interest. Termination of this legislative discrimination could also result in improving the competitive position of agricultural employers in the labor market.

Agriculture is still basically a highly atomistic and competitive industry. This is true not only of the industry as a whole, but also for the producers of most individual agricultural commodities. Thus, no individual grower or group of growers in a particular state, no matter how well intentioned, can take actions that will substantially increase labor costs without placing themselves at a competitive disadvantage. Uniform legislative treatment of agriculture in broad regions or nationally could have significant impact on the welfare of farm workers without undermining the competitive position of producers in any one region or commodity. (The competitive position of growers producing agricultural commodities for export or which compete directly with non-farm commodities and growers of labor intensive agricultural commodities which compete with less labor intensive commodities, could be adversely affected by such action.)

Equalizing the legislative treatment of farm and non-farm workers would undoubtedly result in the displacement of some of the lowest productivity farm workers from the labor force. These persons would require public support. While the number of such persons cannot be estimated with any degree of precision, it is likely to be small.

It is likely that all three strategies discussed above, (1) moving workers out of the agricultural work force, (2) removing the agricultural exclusions from labor legislation, and (3) adequate welfare support for workers displaced from agriculture will have to be applied together if substantial improvement in the welfare of agricultural workers is to be affected.

Reducing the Seasonality of Farm Labor Demand. While new technology has reduced drastically the level and seasonal fluctuation of labor requirements for producing many agricultural products, it has increased the relative seasonal fluctuation in total agricultural employment by interrupting the complementary pattern of seasonal jobs that existed in agriculture. Through the recombining of the remaining complementary agricultural jobs and use of larger numbers of temporary local workers not usually in the labor force, the amount of employment achieved by farm workers has been affected relatively little by differential rates of mechanization. Through programs such as the Annual Worker Plan, the Employment Service has facilitated the combining of a succession of short-term agricultural jobs into a continuous period of employment. This, of course, is difficult to achieve without migrancy.

The Northeast Region employed more than 35 thousand domestic migrant workers at peak employment in 1969. Most of the migrants were from the southeastern states, principally Florida and Georgia, and from Puerto Rico. A small proportion were Mexican-Americans from Texas or intra-state migrants.

While migrancy entails a host of evils, not all of which can be remedied even by the most stringent regulation, it does at least increase the amount of employment of otherwise unemployed workers. The elimination of migrancy without a definite program of assistance to the displaced workers would merely eliminate the visible migrant farm labor problem, but not the economic problem that leads to migrancy. While every effort should be made to move into other occupations those migrants who can be trained for better jobs, the welfare of the majority of migrants would best be served by providing all possible assistance to those remaining in the migrant stream to obtain the most complete period of employment under the most reasonable of conditions. At the same time, vigorous efforts must be made, both during the migrant's itinerary and in their home areas, to help migrants and their children to break out of the migrant stream.

As technology continues to reduce peak labor demand in agriculture, seasonality of farm employment in the aggregate will undoubtedly be reduced. This should ultimately lead to a reduced need for migrant workers and the increased capacity of the local temporary work force and permanent farm workers to supply seasonal labor needs. Hopefully by the time the need for migrant farm workers is eliminated, society will have been successful in finding other means of support for the displaced migrants.

Another means of supplying seasonal labor needs in agriculture without the attendant evils of migrancy would be through the development of complementary farm and non-farm jobs. There is a small component of the hired farm work force that combines farm and non-farm work. Some of these are persons making a more or less permanent change in occupations. In other cases this is a regular annual pattern. It has been suggested from time to time that greater use be made of this mechanism for reducing seasonality of employment.

In areas where the seasonal farm work force consists primarily of local workers who are available for work throughout the year, such a mechanism may provide a potential solution to the problem of seasonality. However, the constraints on the complementary non-farm industry would be substantial--it must have a complementary seasonal employment pattern, require an unskilled or at most semi-skilled labor force, and be fairly flexible in location.

In the Northeast, the majority of seasonal farm workers who are available for employment year-round are non-local workers. The complementary farm-non-farm job mechanism would require the development, through relocation or other means, of a permanent work force to work in the two industries. Furthermore, the seasonal labor demands of many Northeast crops are of short duration at any given location. Thus, the amount of complementary non-farm employment needed would be substantial.

Certainly prompt consideration should be given to the extension of Unemployment Insurance protection to those farm workers permanently in the work force who experience unemployment. Such a plan will have to take cognizance of the large number of interstate farm workers and the large number of temporary farm workers not ordinarily in the labor force. However, it is unreasonable to assume that alternative jobs can be quickly found for workers already among the most marginally productive to society.

While the search for combinations of jobs to increase the employment of seasonal workers must be continued, the history of technological development both in industry and agriculture has been one of increasing job specialization. Workers permanently attached to the labor force also prefer the security of steady employment. Multiple job holders lack security and cannot accumulate job rights. Not only migratory farm workers, but non-migratory workers who combine farm jobs or farm and non-farm jobs, are subject to these problems. It seems unlikely that farm-non-farm employment packages will be desirable alternatives for workers in the long run.

The Impact of Foreign Agricultural Workers. Northeast farmers employed nearly 4 thousand foreign agricultural workers in 1969, about half the Nation's total. The Region has been far less successful in reducing its use of foreign agricultural workers than have other regions. About one-third of the Region's foreign agricultural workers are employed in Maine.

It is clearly inaccurate to assert that the use of foreign agricultural workers has no depressing effect on the wages and working conditions of domestic workers in the areas where they work. It is fair to say that for the most part in the areas of the Region using foreign workers, sufficient domestic workers could not be obtained to supply grower's seasonal labor needs at wages and benefit levels that would enable growers to remain competitive with other domestic producers in more populated areas or in the major migratory streams. On the other hand, Puerto Rican workers are in such widespread use through the Region and in such large numbers that they clearly set the ceiling on wage and benefit levels for farm workers in areas where they are used. The wages of thousands of southern migrants and metropolitan day-haul workers are determined during the course of Puerto Rican contract negotiations.

Farm Labor Research Needs. One of the important factors contributing to the severity of the farm labor problem in the Northeast and the United States, and frustrating attempts at its solution, is the general lack of knowledge about farm labor. More is known about virtually every aspect of farming and agricultural processing and marketing than is known about the work force in agriculture. More is known about the labor force in virtually every other industry and occupation than agriculture. Little of what is known about the efficient management and utilization of labor in non-agricultural industries has been successfully transferred to agriculture. There are textbooks and courses in agricultural colleges dealing with the management of virtually every agricultural input, but no courses and no well-known textbooks dealing with the management of hired labor. In the agricultural extension systems of the Northeast, there are few persons trained in labor management and personnel relations or who specialize in labor problems. In most states, there are none.

This "knowledge gap" extends to both the agricultural industry and society. It has hampered the realistic assessment of the present farm labor problem and the development and testing of appropriate solutions. We must develop a great deal more sophistication about agricultural labor than is presently possessed.

There are two basic goals toward which overall farm labor research should be oriented. One is to develop knowledge to help assure that the manpower needs of agricultural production and processing industries are met as adequately and economically as possible. These industries are an important segment of the Nation's economy and a source of employment and income to thousands of persons. An adequate and reliable supply of productive workers is essential in keeping the industry healthy and competitive. The second general problem area is that of developing knowledge to help improve employment, income and the general welfare of the agricultural work force. It must be recognized that the agricultural work force is one of the relatively less prosperous segments of society, therefore, it is a source of special social concern.

These goals are not conflicting but complementary. There is a direct relationship between the income and welfare of workers and the adequacy of the work force on the one hand and between the adequacy and productivity of the work force and the health of the basic industry and its ability to generate a competitive reliable income stream on the other. This is not to minimize the potential areas of conflict between employer and employee, but to point out that any effort to improve the welfare of either group must recognize the interdependency of both in the total economic system.

There are five important objectives that should be included in a farm labor research program, all of which should be developed in an area and regional as well as national context. The first major research objective must be one of problem definition. It is essential that perceptions of the farm labor problem be based upon reality. There is an inclination to perceive farm labor as a homogenous group and the farm labor problem as one problem when, in fact, there are many farm labor forces and many farm labor problems. While there are characteristics common to all of agriculture, there are many characteristics and problems which are unique to specific commodities, areas, and workers. Agriculture is not <u>an</u> industry, but many industries with some similarities and many differences. There are many different kinds of workers, tasks, and skill levels included among farm workers. The farm labor problem must be disaggregated into its operational components before meaningful research can be undertaken. Reference to some of the specific types of information needed are made in the companion volume to this report (*6*).

The second objective of farm labor research must be to find ways to make farm employment more competitive with non-farm employment. Effective and economical packages of wages and fringe benefits that will attract and

retain the quality and quantity of workers required for modern agriculture must be found. Ways to provide competitive working conditions, including supervisory and personnel management practices, most economically must be developed. Mechanisms for insuring job security and a chance for advancement for permanent workers to enhance the career attraction of agricultural employment have to be found. More effective techniques for recruitment, evaluation and training of agricultural workers are needed. Improving the welfare of those persons who remain as workers in the agricultural industry and insuring the adequacy of labor supply must come about through the labor market mechanism, that is through the effective interaction of employers and employees in the labor market.

A third objective of farm labor research should be to determine how hired agricultural labor can be utilized more efficiently and economically. Improvement of worker productivity is an important factor underlying improvement in the employer's competitive position in the labor market and the general welfare of workers. Improvement in labor productivity is also important to the consuming public as it governs the effect of increased labor costs on product prices. Some of the more pressing problems in agricultural labor can be identified with activities in which productivity has improved little, if at all, in the postwar period. Many hand harvest activities are examples. It must also be recognized that mechanization is only one route to increasing worker productivity and reducing labor requirements. Other industries have long recognized a variety of other ways of accomplishing this as well. These techniques need to be explored in agriculture.

A fourth objective of farm labor research should be the determination of appropriate labor policy and legislation for agricultural workers. Society and government are turning increasingly to legislation and regulation to solve farm labor problems. The legislative distinction between farm and non-farm workers is diminishing. The impact of alternative policies on employment and earnings of agricultural workers, labor costs, producer incomes and agricultural product prices must be evaluated.

A fifth objective for farm labor research is the prediction and development of solutions for the problem created by those displaced from agricultural employment by the upgrading of jobs, continued mechanization and legislation of wages and working conditions necessary to improve the welfare of farm workers. This is a part, though by no means all, of the general rural manpower problem. Employment opportunities in agriculture have shrunk rapidly,

reducing the identifiable farm labor problem but augmenting a rural poverty problem. It must not be assumed that improving incomes and working conditions in agriculture, or reducing migrancy, is necessarily going to improve the conditions of all farm workers. For some, those now most marginally productive and probably among the worst off, agricultural employment will cease to be an alternative and the circumstances of such workers will become even more desperate than they are at present.

A serious effort to find solutions to the farm labor problem will entail an ambitious research program. The magnitude of the effort required may, in fact, seem out of proportion to the importance of agriculture in the economy and of labor in agriculture. However, agricultural labor has been, for the most part, ignored both by agricultural scientists and manpower researchers. Thus, a serious research backlog has developed which will require a substantial effort to overcome.

The cost of failure to find solutions to farm labor problems will be high both for the agricultural industry and society. For the industry, the cost will be loss of market to those producers and areas which develop a progressive employment policy and learn to use the labor input economically. To society, the cost will be continued unrest among the disadvantaged and the continued frustrations of both the affluent and disadvantaged sectors of society as resources are expended to little effect.

SECTION II. AGRICULTURAL PRODUCTION IN THE NORTHEAST

Three factors characterize the agricultural industry of the Northeast. First, it is extremely diverse, including nearly every crop and kind of livestock produced in the Nation, many in substantial quantity. This leads to a wide diversity of labor demands, both in terms of skills and seasonality.

Secondly, farming in the Northeast is an old industry, the Nation's original agricultural area. It retains many of the farm buildings, land use patterns, production technology, input and product market organizations and business traditions of a past era. New areas better suited to production of some commodities and new production technology not well adapted to the Northeast have in some instances, seriously undermined the competitive position of Northeastern farmers. While there has been considerable progress, agriculture in the Northeast derives its principal competitive advantage from proximity to large metropolitan markets.

Third, agriculture is of minor importance to the economy and employment of the Region as a whole, although extremely important in some subregions. This means that in the Northeast competition for inputs, particularly labor is more severe than in any other region. This factor is important in more subtle ways as well. The educational system, labor market mechanism, informal channels of job-market communications among workers are not oriented to the needs or in some cases, even cognizant of agriculture. Much of the Northeast lacks the social sanction of farm work that derives from having a recognizable proportion of the work force in agriculture. The population is unaware of and unfamiliar with agricultural occupations.

All this is not to say that the economic problems of agriculture in the Northeast are unimportant. There are areas of the Region in which agricultural production and processing are major industries. The agricultural output of the Region represents a considerable proportion of national production of many important commodities. Although agriculture in the Region is declining in importance, areas of the Northeast will undoubtedly continue in agriculture, and the Region's production is likely to remain important for many decades. Furthermore, the present problems of agriculture in the Northeast are harbingers of the future of this basic industry in the overall economy. They differ more in degree than in basic nature from those of other areas.

Numbers of Farms. The 1964 Census of Agriculture enumerated about a quarter of a million farms in the 12 Northeastern States, Table 1. About two-thirds of these, or 169 thousand farms, were classified as commercial.[1/] Noncommercial farms are generally small, low-volume part-time and part-retirement farms, rural residences, or institutional farms. The Northeast's commercial farms constituted 7.8 percent of all commercial farms in the United States.

During 1950-64, the number of commercial farms in the Region declined by nearly half. The decline in farm numbers prevailed throughout the country and nearly as rapidly. Consequently, the proportion of the Nation's commercial farms in the Northeast declined only slightly.

All states in the Region experienced significant declines in farm numbers during 1950-64, but the drop was not uniform among states, Table 2. Percentage declines in commercial farms were highest in the New England states, particularly New Hampshire and Massachusetts. The loss was somewhat less rapid in the Mid-Atlantic states except in New Jersey where metropolitan growth was especially pronounced. However, the Mid-Atlantic states had far more farms, and accounted for the major portion of the absolute loss. New York alone lost about 40 thousand commercial farms during this period. By 1964, the New England states accounted for less than 20 percent of the commercial farms of the Region while Pennsylvania and New York included well over half of them.

Farm Size. The decline in farm numbers was accompanied by a rapid growth in size of farms particularly the larger farms or those classified as commercial. Size of farm can be indicated a number of ways including sales of products per farm. By this measure in current prices, commercial farms in the Northeast averaged almost two and a half times as large in 1964 as in 1949 and in the entire nation were about two and three-fourths times as large, Table 3.[2/] However, these values understate the upward climb in

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[1/] Commercial farms in 1950 and 1954 were those with a value of sales amounting to $1,200 or more and in 1959 and 1964, $2,500 or more, provided the farm operator worked off the farm fewer than 100 days, and provided the income of the farm family from non-farm sources was less than the value of farm sales. In 1959, the requirement that the operator of a commercial farm must be under 65 years of age was added, and in 1964 the criteria regarding non-farm income was dropped.

[2/] Increases to 1959 and 1964 from previous years were enhanced by a more limiting definition of a commercial farm adopted in 1959.

Table 1. Number of All Farms and Commercial Farms, Northeast and United States, Indicated Years 1950-64.

Year	All Farms			Commercial Farms		
	Number	Percentage Change	Northeast--Percentage of U. S.	Number	Percentage Change	Northeast--Percentage of U. S.
	1,000	Percent	Percent	1,000	Percent	Percent
			Northeast			
1950	525	--	9.8	305	--	8.2
1954	446	-15.0	9.3	276	-13.7	8.3
1959	329	-26.3	8.9	196	-29.0 1/	8.1
1964	262	-20.4	8.3	169	- 9.8	7.8
			United States			
1950	5379	--	--	3706	--	--
1954	4783	-11.1	--	3328	-10.2	--
1959	3717	-22.4	--	2416	-27.4 1/	--
1964	3158	-14.9	--	2166	-10.4	--

Source: (1).

1/ Some of this decline is attributable to the change in definition of a commercial farm.

Table 2. Number of All Farms and Commercial Farms, Northeast States, 1950 and 1964.

State	All Farms			Commercial Farms		
	1950	1964	Percentage Change	1950	1964	Percentage Change
	Number	Number	Percent	Number	Number	Percent
Maine	30,358	12,875	-57.6	15,768	7,910	-49.8
New Hampshire	13,391	4,648	-65.3	6,393	2,656	-58.5
Vermont	19,043	9,247	-51.4	13,056	7,168	-45.1
Massachusetts	22,220	8,019	-63.9	13,079	5,649	-56.8
Rhode Island	2,598	1,110	-57.7	1,560	748	-52.1
Connecticut	15,615	6,068	-61.1	9,157	4,148	-54.7
New York	124,977	66,510	-46.8	87,889	48,376	-45.0
New Jersey	24,838	10,641	-57.2	18,071	8,317	-54.0
Pennsylvania	146,887	83,086	-43.4	88,230	52,962	-40.0
Delaware	77,448	4,401	-40.9	5,554	3,452	-37.9
Maryland	36,107	20,760	-42.5	23,452	14,467	-38.3
West Virginia	81,434	34,504	-57.6	23,286	12,978	-44.3

Source: (1).

Table 3. Value of Marketings per Commercial Farm in Current and 1949 Prices, Northeast and United States, Indicated Years 1949-64.

Year	Northeast		United States	
	Per Farm	Percentage Change	Per Farm	Percentage Change
	Dollars	Percent	Dollars	Percent
		In Current Prices		
1949	7,145	--	5,858	--
1954	na	--	7,304	+ 25
1959	13,562	--	12,195	+ 67
(1949-59	--	+ 90	--	+108)
1964	17,462	+ 29	15,869	+ 30
		In 1949 Prices[1/]		
1949	7,145	--	5,858	--
1954	na	--	7,423	+ 27
1959	14,127	--	12,703	+ 71
(1949-59	--	+ 98	--	+117)
1964	18,420	+ 30	16,739	+ 32

[1/] Value of sales in current prices with the effect of price change removed. Computed by dividing value of sales in current prices by the United States published by the U. S. Department of Agriculture (2). A regional price index is not available. Components of this index were used by the Census of Agriculture in computing the current values.

Source: (1).

production per farm because prices received for farm products were higher in 1949 than during the other years for which data are presented. Thus with price effects removed, the increase in size of farm was greater. Production per commercial farm in the Region was almost 2.6 times as high in 1964 as fifteen years earlier and in the whole country was 2.9 times as high.

The Region's commercial farms have historically produced a higher value of sales and production per farm than the United States. The difference has declined since 1949 but production per farm was still 10 percent higher in 1964 in the Northeast than in the Nation. Thus the scale of agricultural enterprise is somewhat larger in the Region but is growing at a slightly lower rate than in the Nation as a whole.

Acres per farm, another measure of farm size, also rose between 1950 and 1964, in both the Region and Nation, Table 4. This resulted chiefly

Table 4. Acres per Farm: All Farms and Commercial Farms, Northeast and United States, Indicated Years 1950-64.

Year	All Farms		Commercial Farms	
	Northeast	United States	Northeast	United States
	acres			
1950	110	195	143	276
1954	119	242	156	310
1959	141	303	181	404
1964	157	352	192	446

Source: (1).

from a rapid disappearance of smaller farms and consolidation of land into farms of remaining operators. However, farms in the Northeast, which already contained fewer acres than those in the United States as a whole, grew at a less rapid rate.

In most states of the Region, the average acreage per commercial farm rose by about one-third from 1950 to 1964, Table 5. Commercial farmers in Vermont added the most land--87 acres--but the relative growth was the greatest in New Jersey, where the relative disappearance of commercial farms was among the highest of the Northeast states.

Because of the increase in acres per farm and in value per acre, the value of land and buildings per farm also rose. It more than tripled in the Northeast during 1950-64, Table 6. The corresponding increase for the United States was greater. There is a great deal of variation in real estate values per farm in the Northeast. Farms in Maine and West Virginia in particular, while of sizeable acreage, are rather low value operations. The high real estate values in New Jersey, Connecticut and Maryland can be identified with intensive agricultural enterprises and considerable demand for land for urban housing and other non-farm uses.

The Northeast Region is sometimes characterized as one in which commercial agriculture is disappearing and being replaced with part-time and noncommercial units. It is true that the Region has historically had a larger than average component of noncommercial farms, probably due to its proximity to urban areas and the Appalachian sector that contains large

Table 5. Acres per Farm: All Farms and Commercial Farms, Northeast States, 1950 and 1964.

State	All Farms			Commercial Farms		
	1950	1964	Percentage Change	1950	1964	Percentage Change
	acres	acres	percent	acres	acres	percent
Maine	138	201	+46	187	254	+36
New Hampshire	128	194	+52	176	243	+38
Vermont	186	273	+47	231	318	+38
Massachusetts	75	113	+51	93	133	+43
Rhode Island	74	94	+27	90	101	+12
Connecticut	82	119	+45	105	142	+35
New York	128	185	+45	156	221	+42
New Jersey	70	109	+56	83	125	+51
Pennsylvania	96	130	+35	123	160	+30
Delaware	114	163	+43	136	190	+40
Maryland	112	153	+37	147	192	+31
West Virginia	101	153	+52	190	226	+19

Source: (*1*).

Table 6. Value of Farm Land and Buildings per Farm, Northeast States and United States, Indicated Years 1950-64.

State	1950	1954	1959	1964
	- - - - - - - - - - - Dollars - - - - - - - - - - - -			
Maine	7,462	9,392	14,756	19,979
New Hampshire	9,323	11,989	18,046	25,402
Vermont	10,314	12,662	19,837	29,733
Massachusetts	14,163	18,552	31,692	43,492
Rhode Island	17,062	26,475	37,571	46,030
Connecticut	20,189	25,791	47,372	67,429
New York	11,742	15,844	23,936	32,797
New Jersey	20,343	29,635	46,397	73,487
Pennsylvania	10,299	14,039	21,892	29,836
Delaware	13,043	20,287	34,551	53,443
Maryland	14,048	21,258	39,095	64,999
West Virginia	5,983	7,248	10,230	13,882
Northeast	12,831	17,764	28,781	41,709
United States	13,911	20,405	33,173	50,646
Northeast--Percent of U. S.	92.2	87.1	86.8	82.4

Source: (*1*).

number of small marginal farms. However, the Region's commercial agriculture is maintaining its relative position in the Nation and adjusting in a similar manner.

Sales of Agricultural Products. Value of farm marketings in the Northeast rose from about $2.9 billion in 1950 to almost $3.8 billion in 1969, Table 7.[3/] Nearly all of these sales were by commercial farms. The Region includes about 8 percent of the Nation's commercial farms and has generated from 8 to 10 percent of the Nation's farm receipts. This percentage shows a slight downward trend since 1950.

Table 7. Value of Farm Marketings, Northeast and United States, Indicated Years 1950-69.

Year	Northeast	United States	Northeast--Percentage of U. S.
	Mil.	Mil.	Percent
1950	$2,895	$28,328	10.2
1955	3,013	29,542	10.2
1960	3,177	34,012	9.3
1965	3,391	39,350	8.6
1966	3,535	43,180	8.2
1967	3,419	42,693	8.0
1968	3,531	44,218	8.0
1969	3,767	47,229	8.0

Source: (3)

[3/] Data on value of sales of agricultural products (also referred to as cash or gross receipts from farm marketings) are used copiously in this report as an indication of production. These data were used because they are available in considerable detail among products and areas and because they provide a vehicle for summing diverse farm products into meaningful totals. However, receipts are only a fair approximation of production, particularly for indicating changes over time or among areas. Changes or differences in prices have a profound effect on receipts particularly for an individual or limited group of farm products. To illustrate, according to data from the U.S.Department of Agriculture, farm production rose 4.4 percent from 1966 to 1967 but value of farm marketings fell about 1 percent because prices of farm products were nearly 5 percent lower in 1967 than in 1966. In addition, products consumed in the household or fed to livestock on the same farm on which they were produced do not generate sales. On the other hand, there is double counting in a set of data on cash receipts. Feed grains, for example, sold by one farmer, purchased and fed to livestock by another which is later sold, is in effect double counted. These factors should be kept in mind in interpreting the data on sales of farm products.

There was considerable variation among states in the growth of agricultural sales within the Region from 1950 to 1969, Table 8. Growth in sales in the New England states was particularly erratic, with half of them showing declines. Sales in New Jersey and West Virginia decreased markedly. New York and Pennsylvania which make major contributions to the Region's production, show an increased value of farm marketings since 1950. All major producing states except New Jersey increased their share of regional receipts from 1950 to 1969, indicating some geographic concentration of production.

Table 8. Value of Farm Marketings, Northeast States, 1950 and 1969.

	Value of Farm Marketings		Percent Change	Percent of Regional Total	
	1950	1969		1950	1969
	1,000	1,000	Percent	Percent	Percent
Maine	$160,911	$ 239,499	+49	5.6	6.4
New Hampshire	60,310	57,099	- 5	2.1	1.5
Vermont	102,347	151,828	+48	3.5	4.0
Massachusetts	181,275	166,000	- 8	6.3	4.6
Rhode Island	22,393	21,021	- 6	0.8	0.6
Connecticut	146,871	166,121	+13	5.1	4.4
New York	785,679	1,080,795	+38	27.1	28.7
New Jersey	292,717	249,567	-15	10.1	6.6
Pennsylvania	697,948	989,144	+42	24.1	26.3
Delaware	99,066	150,920	+52	3.4	4.0
Maryland	228,704	389,325	+70	7.9	10.3
West Virginia	116,614	105,796	- 9	4.0	2.8

Source: (3).

Major Commodity Groups. The Northeast is primarily a livestock area. About two-thirds of the cash receipts from farm marketings in 1965-67 came from livestock and livestock products, Table 9. Dairying and poultry are the major livestock enterprises. Dairy products alone account for more than a third of the Region's cash farm receipts. All crops account for about one-third of the Region's cash receipts. Vegetables are the most important crop, accounting for about 12 percent of total cash receipts.

Since 1950 crops have increased relative to livestock as a source of cash receipts in the Northeast. Part of this shift was due to changes in prices. They were lower for both crops and livestock in 1965-67 than in

Table 9. Cash Receipts from Farm Marketings: Percentage by Major Commodity Groups, Northeast and United States, 1950-52 and 1965-67.

Commodity	Northeast		United States	
	1950-52	1965-67	1950-52	1965-67
	- - - - - - - - - - Percent - - - - - - - - -			
All Commodities	100.0	100.0	100.0	100.0
Livestock Products	71.5	67.7	57.7	56.9
Meat	11.8	9.7	32.8	33.9
Dairy	31.2	37.5	13.4	13.0
Poultry	28.0	19.5	10.6	9.1
Other livestock products	.5	1.0	.8	.9
Crops	28.5	32.3	42.3	43.1
Field crops	4.2	5.4	13.5	15.3
Tobacco	2.1	2.2	3.6	3.0
Vegetables	11.5	11.7	5.5	6.2
Fruit and nuts	3.9	4.9	3.9	4.1
Nursery products	5.7	7.0	1.8	2.1
Other crops	1.1	1.1	14.1	12.3

Source: (3 and special tabulations).

1950-52 but the decrease in livestock prices were greater. There was a more significant shift within sales of livestock and livestock products--chiefly from meat animals and poultry to dairy products. There was a decrease in production of meat animals but the drop in receipts for poultry resulted more from decreases in prices. For example, the price of broilers decreased from 28 cents a pound in 1950-52 to 16 cents in 1965-67. Other chickens in 1950-52 sold for the same price as broilers but brought 10 cents a pound during the later period. On the other hand, dairy prices rose; milk sold for $5.05 per hundredweight in 1950-52 and for $5.40 in 1965-67. A small gain in the share of cash receipts from nursery products was also registered, but otherwise the regional production pattern has been quite stable.

The Region is more specialized in livestock, dairying, and poultry than the United States. Although it is less specialized in crops than the United States the kinds grown are high labor-using crops, specifically vegetables, fruits and nursery products. In general, commodities in which the greatest strides have been made toward reducing labor requirements are those in which the Region is less intensively engaged than the remainder of the Nation.

Receipts from Vegetables and Fruits. Although fruit and vegetable receipts account for only about 16 percent of the Northeast's agricultural receipts they are a major source of seasonal labor problems in the Region. Presentation of detailed information concerning products in these groups and trends in their receipts was made available on special request by the Economic Research Service, U. S. D. A.

The most important vegetable commodity produced in the Region is potatoes. This crop accounts for a little more than a third of all cash receipts from vegetabels, Table 10. Although potatoes is a crop particularly vulnerable to variations in price and yield, it constitutes about the same proportion of vegetable receipts in 1967 as in 1950.

Tomatoes are the second most important vegetable crop in dollar volume in the Region, accounting for about 13 percent of cash receipts from vegetables. Slightly less than half of the crop was sold for fresh consumption in 1967. Since 1963, when separate data by utilization became available, the crop for fresh consumption has remained fairly stable while the processing crop has varied considerably in value. However, total receipts from tomatoes has accounted for about 9 to 13 percent of all vegetable receipts throughout the 1950-1967 period.

Snap beans have accounted for 6 to 7 percent of cash receipts from vegetables since 1950. Approximately two-thirds of the crops is for processing. The value of the fresh market snap bean harvest has been steady. Processing production has been erratic but shows no clearcut trend.

The other major vegetable crops produced in the Region are sweet corn, asparagus, cabbage, onions, lettuce, cucumbers and peas. Most peas and about two-thirds of the asparagus are for processing, while most of the sweet corn and about half the cucumbers are produced for the fresh market. The pattern of cash receipts from vegetable production has been remarkably stable since 1950. There were slight increases in proportions of cabbage and lettuce in the total. During the early 60's there was an apparent increase in cash receipts from onions, which has since declined.

Apples are the principal fruit crop in the Region, accounting for over half the cash receipts from fruits and nuts, Table 11. In 1967, the Region's apple crop was valued at $88 million. While the dollar value of the apple crop has varied considerably from year to year, it has accounted for a stable proportion of cash receipts from all fruits and nuts.

Table 10. Cash Receipts from Vegetables, Northeast, Indicated Years 1950-67.

Item	1950		1960		1967	
	Cash Receipts	Percent of Total	Cash Receipts	Percent of Total	Cash Receipts	Percent of Total
	1,000	Percent	1,000	Percent	1,000	Percent
Asparagus	$ 11,062	3.6	$ 11,830	3.3	$ 13,157	3.6
Fresh					4,096	
Processed					9,061	
Snap Beans	17,488	5.7	21,907	6.1	25,215	6.8
Fresh					8,060	
Processed					17,155	
Cabbage	7,039	2.3	9,656	2.7	13,603	3.7
Sweet Corn	16,107	5.3	23,107	6.5	20,795	5.6
Fresh					15,827	
Processed					4,968	
Peas	5,917	1.9	5,992	1.7	7,117	1.9
Fresh					578	
Processed					6,539	
Potatoes	120,351	39.6	143,477	40.3	133,619	36.1
Tomatoes	41,593	13.7	37,244	10.5	46,830	12.7
Fresh					18,861	
Processed					27,969	
Onions	6,937	2.3	8,742	2.5	15,716	4.3
Lettuce	6,622	2.2	6,412	1.8	11,846	3.2
Cucumbers	5,521	1.8	5,415	1.5	10,052	2.7
Fresh					4,729	
Processed					5,323	
Other Vegetables	65,688	21.6	82,140	23.1	71,717	19.4
Total	304,325	100.0	355,922	100.0	369,667	100.0

Source: (3 and special tabulations).

Table 11. Cash Receipts from Fruits and Nuts, Northeast, Indicated Years 1950-67.

Item	1950		1960		1967	
	Cash Receipts	Percent of Total	Cash Receipts	Percent of Total	Cash Receipts	Percent of Total
	1,000	Percent	1,000	Percent	1,000	Percent
Apples	$ 61,668	52.6	$ 81,250	52.6	$ 87,814	52.7
Cherries	4,966	4.2	4,486	2.9	9,657	5.8
Grapes	12,002	10.2	16,846	10.9	23,223	13.9
Peaches	13,399	11.4	20,573	13.3	12,543	7.5
Strawberries	9,192	7.8	8,988	5.8	8,143	4.9
Cranberries	4,586	3.9	7,548	4.8	11,279	6.8
Other berries	8,289	7.1	11,034	7.1	9,341	5.6
Other fruits and nuts	3,208	2.7	3,838	2.5	4,558	2.7
Total	117,310	100.0	154,563	100.0	166,558	100.0

Source: (3 and special tabulations).

In 1950, peaches were the second most important fruit crop in the Region accounting for 12 to 15 percent of cash receipts from fruits. In the 1960's peach production declined relative to other fruit; however, part of the apparent decline was due to adverse weather conditions. In 1966 and 1967, two bad years for peaches, receipts dropped below 10 percent of total fruit receipts.

Sales of grapes in the Region have increased relative to other fruits. In 1967, they accounted for 14 percent of cash receipts from all fruit and are now the second most important fruit in the Region.

Other important fruit crops are cherries, strawberries and cranberries. While receipts from cherries have been erratic there has been no clear cut trend. Strawberries have been declining in importance as a fruit crop in the Region, while cranberries have increased. The proportion of receipts from other fruits and berries has been relatively stable.

In summary, the data on cash receipts indicate that there has been virtually no change in the Region's vegetable product-mix during the 1950-67 period. In fruits there has been a small decline in the relative importance of peaches and strawberries and a small increase in the importance of grapes and cranberries. However, these shifts have been relatively minor. There

has also been little shift in the relative importance of the Region as a national supplier of those vegetables and fruits commodities it produces in quantity.

State Shares of Regional Receipts. The previous section indicated that total regional production has remained fairly stable with respect to product-mix and has declined only slightly in its proportionate contribution to national receipts of major commodity groups since 1950. However, within the Region there were shifts in production patterns.[4/]

From 1950 to 1969, there was a shift in state shares of regional receipts in favor of the Mid-Atlantic and larger producing states, Figure 1. Six states gained a total of about seven percent of the Region's receipts during this period. New York, Pennsylvania and Maryland were the largest gainers, while Maine and Delaware also increased their share of regional cash receipts. New Jersey was the largest loser. West Virginia and the remaining New England states all reduced their share of regional cash receipts.

Livestock, particularly dairying, predominates in Northeast agriculture. New York, Pennsylvania and Maryland in the aggregate increased their already substantial proportion of the Region's livestock receipts by nearly eight percent from 1950 to 1969, Figure 2. Maine and Vermont also increased receipts slightly. New Jersey's share of the Region's livestock receipts fell from 9 to 3.9 percent and other states had small percentage declines. In most cases, prices, such as for poultry and dairy products, had a major impact on changes in state shares of farm receipts.

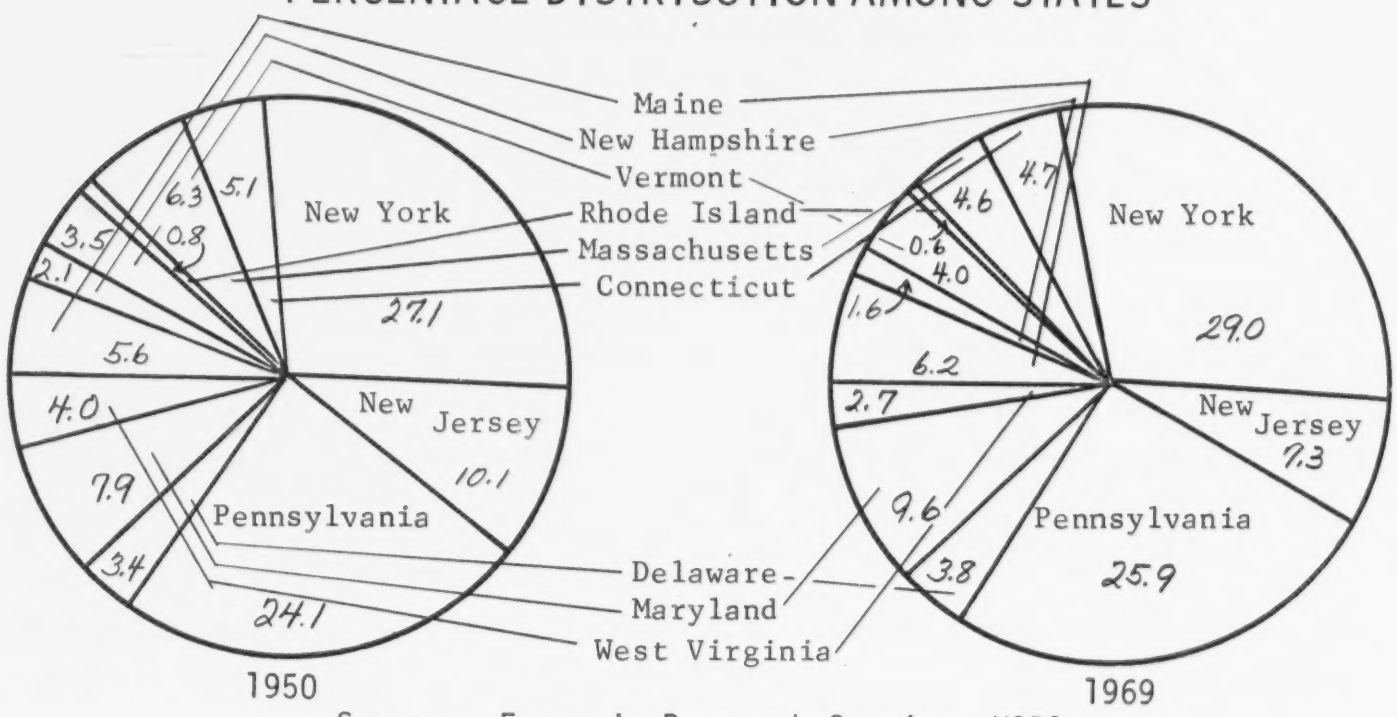
State shares of crop receipts changed only slightly from 1950 to 1967, Figure 3. Maine, New York, New Jersey, Pennsylvania and Maryland are the leading producers of all crops except tobacco. Tobacco production is heavily concentrated in Connecticut, Massachusetts, Pennsylvania and Maryland.

State Receipts by Commodity Groups.[5/] Maine is an important producer of potatoes, a crop susceptible to great fluctuations in yields and prices. There has been a small increase in fruit sales from 1950 to 1967.

[4/] The data upon which this discussion is based are shown in Appendix Tables 1 to 12.

[5/] Farm marketings by major commodity groups for each state for 1950 and 1967 shown in Appendix Tables 1 to 12.

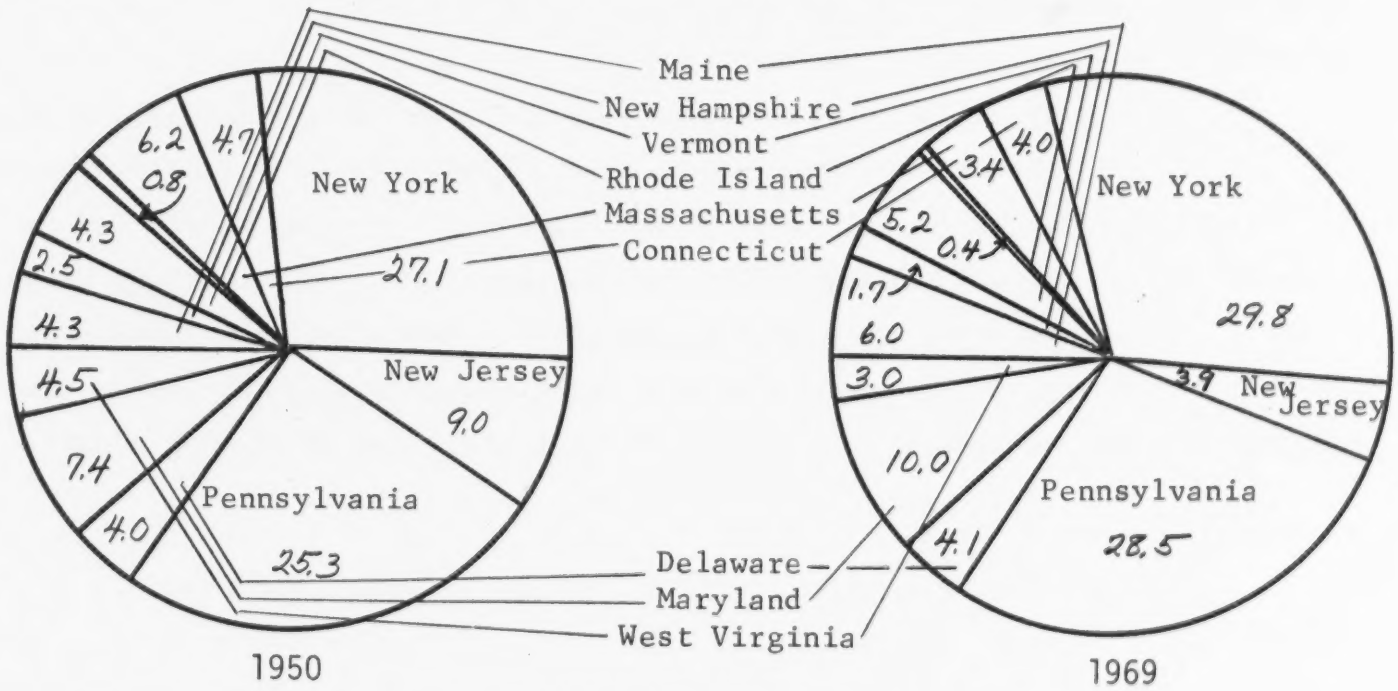
SALES OF FARM PRODUCTS, NORTHEAST
PERCENTAGE DISTRIBUTION AMONG STATES



Source: Economic Research Service, USDA.

FIGURE 1

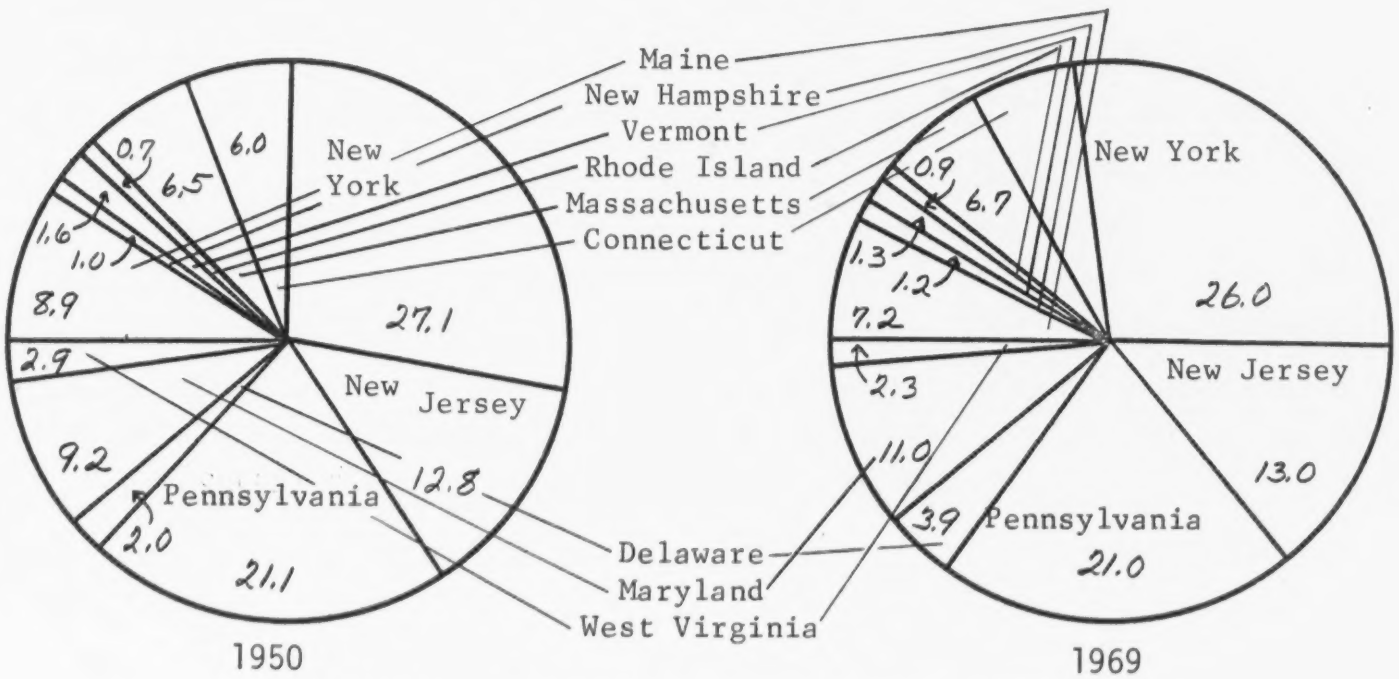
SALES OF LIVESTOCK AND LIVESTOCK PRODUCTS, NORTHEAST
PERCENTAGE DISTRIBUTION AMONG STATES



Source: Economic Research Service, USDA.

FIGURE 2

SALES OF CROPS, NORTHEAST
PERCENTAGE DISTRIBUTION AMONG STATES



Source: Economic Research Service, USDA.

FIGURE 3

However, there appears to be some tendency toward increased specialization in livestock, particularly poultry, which increased from about 30 to about 40 percent of the State's cash receipts from 1950 to 1967. The State maintains a relatively small, but stable dairy industry.

New Hampshire is heavily specialized in livestock production which accounts for more than three-fourths of cash receipts. However, the proportion of receipts accruing to livestock dropped considerably during 1950-67, owing principally to a large decline in poultry receipts. Vegetables, fruit and nursery products are important sources of crop receipts which increased in relative importance in the State.

Vermont specializes heavily in livestock production, which accounts for nearly 90 percent of State cash farm receipts, with dairying accounting for more than three-quarters. Receipts from dairying increased from 1950 to 1967 while those from poultry and meat animals declined. There was little change in the crop product-mix other than a decline in the income produced by and importance of maple products in the State's agriculture.

Massachusetts was much less specialized in livestock in 1967 than it was in 1950, owing to a decline in poultry receipts from 38 to 16 percent of the State's farm receipts. Dairying has increased somewhat in relative importance but has not increased much in volume of receipts. Crops have increased substantially in relative importance (from 29 to 44 percent). This has come about through sizeable increases in receipts from vegetables and nursery products.

Livestock agriculture in Rhode Island declined substantially in relative and absolute importance in the State from 1950 to 1967 with substantial declines in poultry and dairy. Crops have increased in relative importance, with growth concentrated in vegetables and nursery products. Fruit has remained a stable but small proportion of cash receipts.

Livestock and livestock products make up about 58 percent of the cash farm receipts in Connecticut. However, the importance of livestock declined both relatively and absolutely from 1950 to 1967. There was a substantial decline in poultry and only a modest increase in dairying. Crops have increased in importance as a source of income. Tobacco, accounting for about 19 percent of cash receipts and nursery products, accounting for about 12 percent of cash receipts, have increased in relative importance since 1950. Vegetable and fruit production have maintained their importance, but are not major contributors to cash receipts.

Seventy percent of New York's cash receipts accrue to livestock. This proportion declined only slightly after 1950. Dairying increased considerably in relative importance, accounting for 53 percent of the State's total farm receipts in 1967. Poultry declined considerably in relative importance in the State from 15.7 percent in 1950 to 7.8 percent in 1967. Meat production also declined in relative importance in the State.

Crops accounted for about 30 percent of the State's cash farm receipts, with vegetables accounting for a stable 11 percent. Fruit and nuts increased slightly in importance in the State while nursery products remained stable.

In New Jersey, there was substantial absolute and relative decline in livestock receipts; they accounted for about 64 percent of the State's receipts in 1950 and only 40 percent in 1967.

At the same time, crop receipts increased in importance, accounting for nearly 60 percent of the State's total receipts in 1967. The most important class of crops is vegetables, which accounted for 31 percent of the

State's farm cash receipts in 1967, a substantial increase from 1950. Nursery products and fruit also increased their share of State receipts after 1950.

Pennsylvania's agriculture is heavily oriented toward livestock which accounted for 74 percent of the State's cash farm receipts in 1967. This proportion declined slightly after 1950. There was a considerable decline in poultry receipts, but a substantial increase in dairy receipts.

The proportion of the State's cash farm receipts from vegetables and fruit have declined slightly, while the proportion of receipts from field crops and nursery products have increased. The over-all effect has been an increase in the proportion of the State's cash farm receipts from crops.

Two-thirds of Delaware's farm receipts result from livestock and livestock products. Livestock receipts increased only slightly from 1950 to 1967 while crop receipts rose steadily so that the proportion of receipts from crops increased from 16 to 34 percent of total receipts. Field crops and vegetables account for virtually all crop receipts while poultry products account for more than 90 percent of livestock receipts, making Delaware one of the least diversified agricultural states in the Region.

In Maryland, there were virtually no changes in the proportion of receipts from livestock and crops from 1950 to 1967. Within the livestock sector a relatively greater proportion of receipts came from dairying in 1967 than in 1950, while there were small declines in the proportion of receipts from meat and poultry.

Crops accounted for a third of the State's cash receipts in 1967. This resulted from an increase since 1950 in the proportion of cash receipts from field crops and slight declines in the proportion from other crop commodities. Tobacco and vegetables are important sources of crop receipts in Maryland, while fruit and nursery products are relatively unimportant.

West Virginia is heavily committed (78 percent of receipts) to livestock production. Meat products, dairy and poultry each account for a quarter of total state production. Since 1950 there has been a slight increase in dairy receipts relative to poultry and meat products, although all classes of livestock have declined in actual dollar value. The relative importance of various crop catagories has changed only slightly since 1950. Again, however, actual dollar value of receipts in all important categories has declined.

Interstate Shifts in Vegetable Production. Vegetables are an important source of regional receipts and a disproportionately important source of labor problems. Since this is a diverse commodity group, changes in receipts from important individual products within this group are examined here. In making the analysis which follows, receipts from individual vegetables for two three-year periods, 1950-52 and 1965-67, were averaged to minimize variations among crops due to shortrun weather or price variations. However, prices still have an effect, often substantial, in the changes in receipts between these 3 year periods.

Table 12 and 13 indicate that from 1950-52 to 1965-67 there was a redistribution in the sources of receipts from potatoes, the most important vegetable commodity of the Region. Maine, New York and Pennsylvania were still the major producers, but the shares of Maine and Pennsylvania declined. This resulted in an increase in the production of receipts from New York and smaller producing states. Overall, there appears to be some tendency toward decentralization in the production of this crop.

While potato production became somewhat decentralized, tomato production appears to be concentrated in New Jersey (42.7 percent in 1965-67). New York and Maryland bore the brunt of this reallocation with their percentages of regional receipts falling from 23.3 and 16.6 percent, respectively, to 11.1 and 11.4 percent.

There was some shift in the proportion of receipts from "other vegetables" among the 12 states. New Jersey increased its proportion of receipts from other vegetables from 26.9 to 30.8 percent from 1950-52 to 1965-67. New York and Pennsylvania were the major losers, declining 3.3 percent and 3.5 percent, respectively.

New Jersey still accounts for the major portion (76.4 percent) of asparagus receipts. Delaware and Maryland increased their proportion of these receipts, while Massachusetts and other states lost part of their former small shares. Compared to the 1950-52 period, production of this crop became more concentrated into a small area of the Region. New Jersey, Delaware and Maryland produced 93.6 percent of the crop in 1965-67; the earlier percentage was 84.8 percent.

All major states declined in their proportion of snap bean receipts when the two periods are compared except New Jersey. The increased concentration there is particularly significant, from 10.2 percent to 18.5 percent. New York state, the production leader, declined slightly.

Table 12. Receipts from Vegetables: Percentage Distribution Among Northeast States, 1950-52.[1/]

State	Asparagus	Snap Beans	Cabbage	Sweet Corn	Peas	Potatoes	Tomatoes	Onions	Lettuce	Cucumbers	Other Vegetables
	Percent										
Maine	--	--	--	--	10.1	42.5	--	--	7.9	--	--
New Hampshire	--	--	--	--	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--	--	--	--	--
Massachusetts	5.0	--	7.3	10.1	--	--	5.6	--	13.0	12.5	6.6
Rhode Island	--	--	--	--	--	--	--	--	--	--	--
Connecticut	--	--	--	6.5	--	--	--	--	8.6	--	--
New York	--	53.2	52.7	27.3	41.3	25.9	23.3	83.5	30.5	25.5	40.0
New Jersey	77.4	10.2	11.5	16.7	8.1	6.0	28.9	10.1	37.5	14.1	26.9
Pennsylvania	--	10.5	15.6	17.8	22.2	15.2	16.4	--	--	8.0	8.9
Delaware	--	--	--	--	--	--	--	--	--	5.6	--
Maryland	--	11.6	--	9.8	12.2	--	16.6	--	--	26.0	6.7
West Virginia	--	--	--	--	--	--	--	--	--	--	--

[1/] Percentages are shown only for States with 5 percent or more of regional receipts for each vegetable.

Source: (3 and special tabulations).

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Table 13. Receipts from Vegetables: Percentage Distribution Among Northeast States, 1965-67.[1/]

State	Asparagus	Snap Beans	Cabbage	Sweet Corn	Peas	Potatoes	Tomatoes	Onions	Lettuce	Cucumbers	Other Vegetables
	Percent										
Maine	--	--	--	--	18.6	36.4	--	--	--	--	--
New Hampshire	--	--	--	--	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--	--	--	--	--
Massachusetts	--	--	5.9	12.4	--	--	5.2	--	8.6	10.1	6.4
Rhode Island	--	--	--	--	--	--	--	--	--	--	--
Connecticut	--	--	--	7.2	--	--	--	--	5.6	--	--
New York	--	50.7	52.5	24.9	20.1	30.0	14.1	85.6	38.3	27.2	36.7
New Jersey	76.4	18.5	19.7	16.7	--	6.4	42.7	13.6	40.8	27.7	30.8
Pennsylvania	--	7.5	10.5	17.9	15.6	13.9	16.7	--	--	--	5.4
Delaware	9.1	--	--	--	19.6	--	--	--	--	--	6.1
Maryland	8.1	12.0	--	9.2	22.2	--	11.4	--	--	23.8	7.6
West Virginia	--	--	--	--	--	--	--	--	--	--	--

[1/] Percentages are shown only for States with 5 percent or more of regional receipts for each vegetable.

Source: (3 and special tabulations).

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New Jersey increased its share of cabbage production mostly at the expense of Massachusetts and Pennsylvania. New York produced over half the crop throughout the entire period.

Massachusetts and Connecticut increased their shares of sweet corn receipts slightly but New York still produces more than 25 percent of the crop, followed by Pennsylvania and New Jersey.

The data in Tables 12 and 13 indicate that the major sources of pea receipts changed considerably. New York, which in the earlier period produced a little over 40 percent of the receipts, dropped to half that in the latter period. Pennsylvania also lost about seven percent. Delaware increased its proportion to 19.6 percent. Maryland and Maine also made appreciable increases while New Jersey's share fell from 8.1 percent to less than one percent.

Concentration in receipts from onions in apparent; New York and New Jersey had 93.6 percent of them in 1950; this proportion increased to 99.2 percent in 1965-67.

In the 1950-52 period, lettuce receipts originated primarily in New York (30.5 percent) and New Jersey (37.2 percent). In the later period this proportion increased to a combined total of 79.1 percent. This was accompanied by declines in the percentage of this crop grown in most other states. Maine, Massachusetts and Connecticut were especially affected by significant declines in their proportions of lettuce receipts.

New Jersey experienced a major increase in the proportion of the Region's receipts from cucumbers from 1950-52 to 1965-67. New York also had a slight increase. These two states produced 54.9 percent of this crop's receipts during the 1965-67 period while they formerly produced only 39.6 percent. All other major states lost some of their previous share of cucumber receipts.

In general, the data indicate that for most crops, production has been concentrating into several specialized areas. This has not meant relocation of the industry but rather a concentration of production into areas of considerable previous consequence.

Interstate Shifts in Fruit Production. Data for the two periods reported in Tables 14 and 15 indicate no major changes in the sources of apple receipts in the Northeast Region. However, New York increased its already sizeable proportion of the Region's production. For the most part,

Table 15. Receipts from Fruits and Nuts: Percentage Distribution Among Northeast States, 1965-67.[1/]

State	Apples	Cherries	Grapes	Peaches	Straw-berries	Cran-berries	Other Berries	Other Fruits and Nuts
	- - -

Table 14. Receipts from Fruits and Nuts: Percentage Distribution Among Northeast States, 1950-52.[1/]

State	Apples	Cherries	Grapes	Peaches	Straw-berries	Cran-berries	Other Berries	Other Fruits and Nuts
	Percent							
Maine	--	--	--	--	5.7	--	24.7	--
New Hampshire	--	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--	--
Massachusetts	8.6	--	--	--	7.5	83.6	--	--
Rhode Island	--	--	--	--	--	--	--	--
Connecticut	5.0	--	--	--	5.8	--	--	--
New York	33.1	68.7	74.6	17.4	32.7	--	27.4	51.4
New Jersey	8.5	--	--	28.0	19.3	15.8	31.8	--
Pennsylvania	17.3	31.2	24.1	33.2	10.0	--	--	15.7
Delaware	--	--	--	--	--	--	--	--
Maryland	--	--	--	6.7	11.0	--	--	--
West Virginia	11.2	--	--	8.2	--	--	--	13.9

[1/] Percentages are shown only for States with 5 percent or more of regional receipts for each vegetable.

Source: (3 and special tabulations).

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its nine percent increase in the share of receipts came from small-producing states. Pennsylvania, the second largest producer of apples, maintained its previous share.

Receipts from cherries are divided between New York and Pennsylvania. A comparison of the two periods indicates that the latter State lost about ten percent of its proportion of cherry receipts which increased the concentration in New York.

Production of grapes is also highly concentrated in New York and Pennsylvania. However, their shares of receipts remained almost the same between the two periods. New York and Pennsylvania lost significant proportions of their receipts from peaches from 1950-51 to 1965-67. New Jersey increased in relative importance from 28.0 percent in the earlier period to 44.9 percent in 1965-67. Small declines in the shares of Maryland and West Virginia also occurred.

Receipts from strawberries are concentrating in two states, New Jersey and Pennsylvania. They increased their shares by 10.4 percent and 6.9 percent, respectively. New York, although still the second most important producer of strawberries, saw its share decline from 32.7 percent to 26.5 percent. Maine, Massachusetts, Connecticut and Maryland declined significantly.

Cranberry production is highly concentrated in Massachusetts and New Jersey. A slight decline in Massachusetts and a similar gain in New Jersey occurred between 1950-52 and 1965-67.

Other berries showed a considerable concentration in its receipts. The largest change occurred in New Jersey which produced 31.8 percent of the crop in the 1950-52 period and 58.9 percent in 1965-67. This increase was mostly at the expense of New York which lost over 20 percent of its former share. Maine, with about one-fourth of regional production, increased its share slightly.

Location of Intensive Areas of Production

In this section counties with high agricultural production, particularly of labor-intensive crops are identified. The highest twenty counties in receipts from (1) all farm products, (2) vegetables, (3) fruit and nuts, and (4) nursery products are shown

for 1964. In addition, a list of them along with their product receipts and other data for both 1950 and 1964 are in Appendix Tables 13 to 20. The source of information was the Census of Agriculture data on sales by commodity groups. They indicate that the highest 20 of the 298 counties in the Region generated 39.8 percent of receipts for all farm products in 1950 and 30.2 percent in 1964, Appendix Tables 13 and 14.

All Farm Products. There was a substantial decline in the proportion of total sales accounted for by the top five counties. In 1950, these five counties had 21 percent of the Region's agricultural sales. This declined to 14.6 percent in 1964, although four of the five counties remained in the top five in 1964.

Aroostook County, Maine no longer dominates the agricultural production of the State or Region as it did in 1950, although it still generates an enormous amount of receipts, principally from potatoes. The other four of the five leading counties in 1950 also declined in relative importance in their State and the Region. Sussex County, Delaware increased its proportion of sales in the State and Region greatly and replaced Wayne County, New York in the top five counties in 1964.

Eight of the 20 counties with sales in 1964 were in New York, Figure 4. This was two more than in 1950. In both years they were clustered either near the Great Lakes or New York City. Suffolk County on Long Island still maintained its rank of fourth despite great population pressure from New York City.

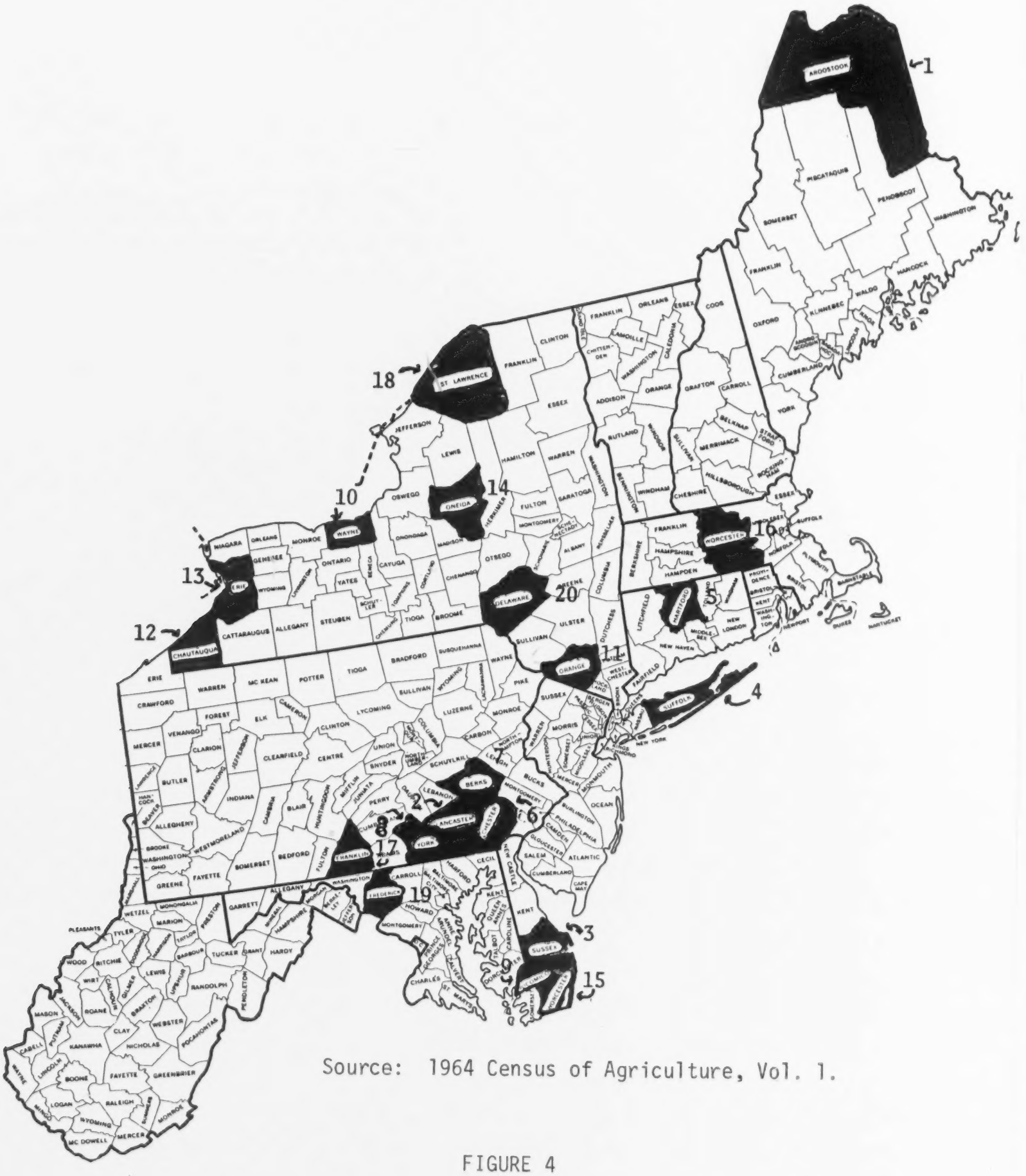
Neither the general location of the top counties in Pennsylvania changed greatly nor their rankings. There is some indication that agricultural production in the State is concentrating somewhat, but the general location remains in the Southeast and Southcentral.

New Jersey's three ranked counties in 1964 had greater regional influence in 1950, while three counties in Maryland grew in this respect and entered the 1964 rankings.

In 1964, Worchester County, Massachusetts was in the top 20, but in 1950 three other counties in the State ranked from tenth to eighteenth.

The location of the other three counties in the Region which ranked in the top 20 counties remained the same. The regional influence of Sussex County, Delaware increased greatly; that of Hartford County, Connecticut declined somewhat while that of Aroostook County, Maine although less than in 1950, still remained substantial.

SALES OF FARM PRODUCTS
TWENTY RANKING COUNTIES



Source: 1964 Census of Agriculture, Vol. 1.

FIGURE 4

For the Region as a whole, no particular pattern of change in the location of centers of sales of agricultural products is evident in comparing the data for these two years. There was some tendency for counties removed from areas of population density to enter in the rankings or to increase their 1950 rank. For some states, this has resulted in a dispersion of agricultural activity, for others a concentration of areas of agricultural activity, and for still others a general decline in agricultural production.

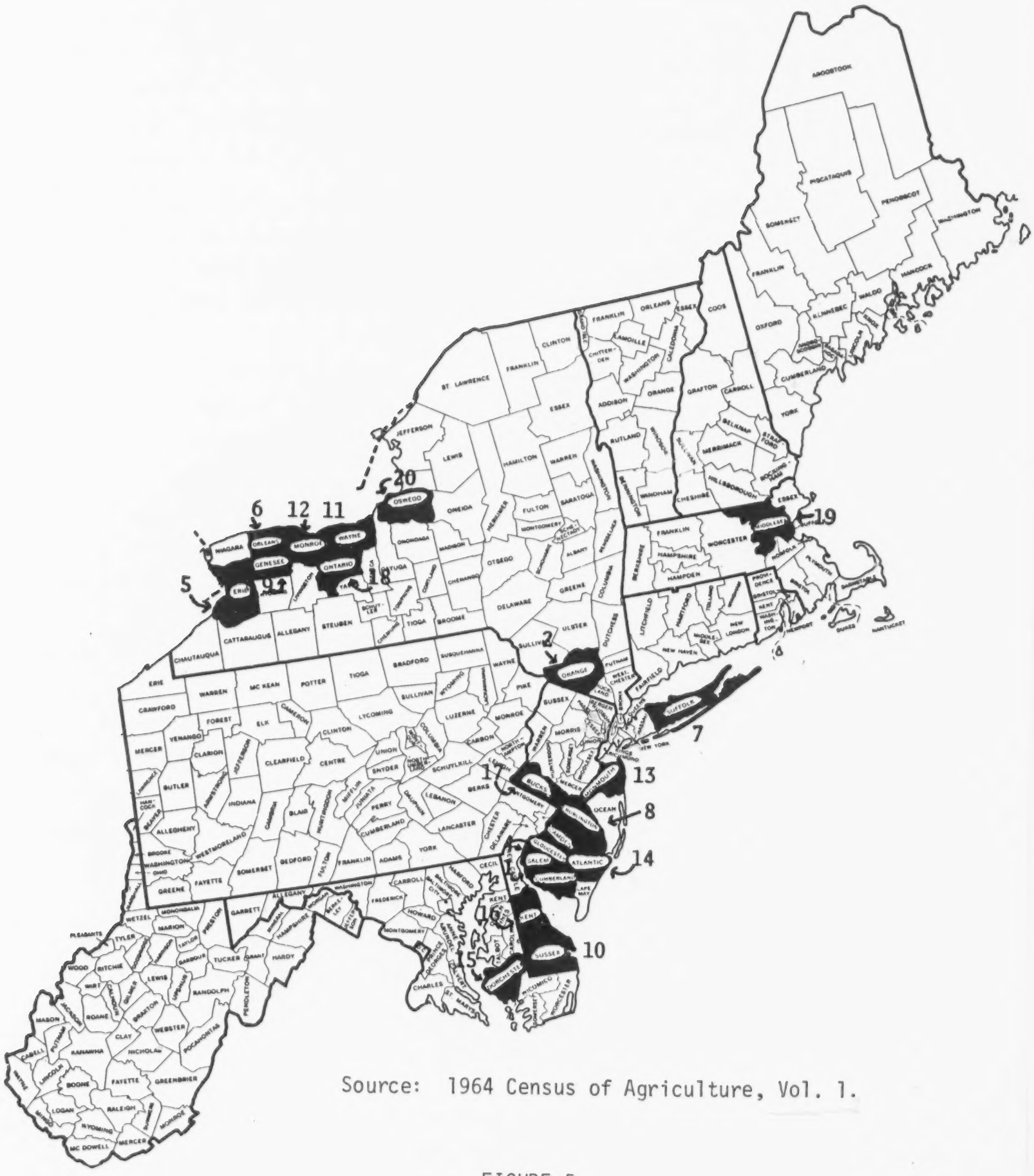
Vegetables. In strong contrast to total agricultural sales there was a significant increase (19.8 percent) in the proportion of regional vegetable sales in the leading 20 counties in 1964 as compared to 1950, Appendix Tables 15 and 16. Considerable amount of this increase was accounted for by the top five counties in 1964. However, all counties ranked shared this tendency toward concentrate of vegetable sales.

Cumberland County, New Jersey had the highest sales in 1964 which was a three percent increase from 1950, Figure 5. Salem and Gloucester County, New Jersey also increased their percentage of regional vegetable sales and in 1964 these three counties had slightly over 18 percent of the Region's vegetable sales. In 1964, New York had 9 of the 20 leading counties in the Region which produced 24.6 percent of the Region's vegetable sales. In 1950, there was an additional New York County ranked, and the 10 had 15.7 percent of regional sales.

Figure 5 indicates that vegetable areas are concentrated near large centers of population except for the Great Lakes area of New York. The reasons for this development are many and complex and outside the scope of this study. The continued concentration of vegetable production indicates that growers are able to compete with other potential users of land. Apparently, too, producers do not find labor conditions sufficiently unattractive to lead to a dispersion of production. While substantial numbers of non-local workers are employed in seasonal work on vegetable farms in the Region the implications of this concentration for labor supply are clear. Substantial quantities of vegetables are produced near large centers of population which serve as sources of seasonal labor if these potential workers could be attracted into the fields.

Fruits and Nuts. Comparison of location of fruit production in 1950 and 1964 also gives evidence of some concentration of production in the major producing counties, although the change is not as dramatic as that for

SALES OF VEGETABLES
TWENTY RANKING COUNTIES



Source: 1964 Census of Agriculture, Vol. 1.

FIGURE 5

vegetables, Appendix Tables 17 and 18. Fruit production was already quite highly concentrated in 1950 with the 20 leading counties accounting for more than half of regional production. By 1964, this had increased to about 64 percent. The longer cycle of production and more extensive size of production units in fruit tends to retard rapid relocation.

Although there has been some concentration of fruit receipts in the major producing counties this has not resulted in much overall relocation of the industry. The addition of Erie County, New York, to the rankings in 1964 added to the already considerable concentration along the Great Lakes, Figure 6. Southeastern New York lost one county which ranked 19th in 1950.

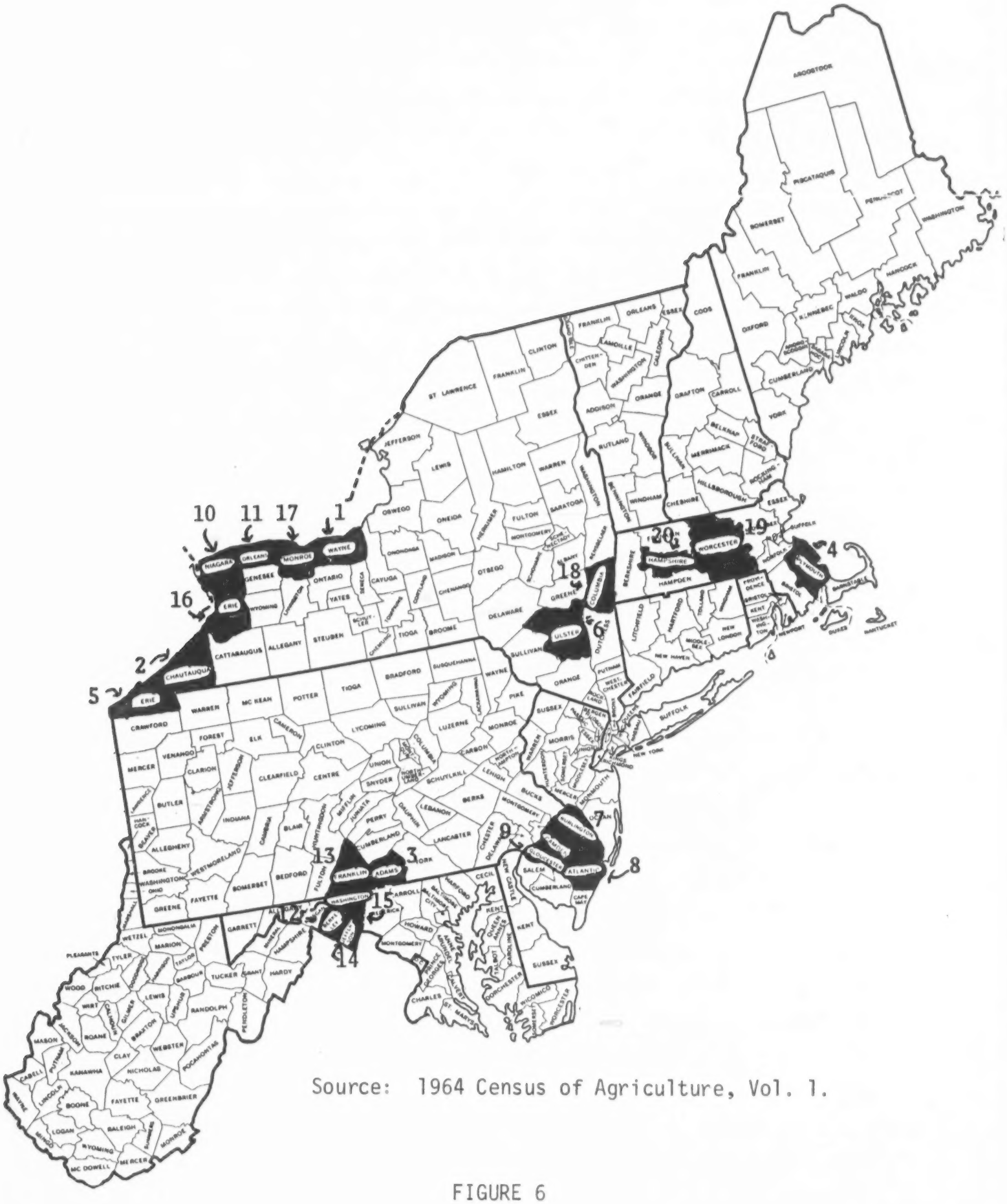
Atlantic County, New Jersey was number eight in 1964, producing 3.3 percent of the Region's sales. The entrance of this county into the rankings clustered the fruit and nut producing counties around Camden in a pattern similar to the vegetable counties.

Three Pennsylvania counties were ranked in both 1950 and 1964, but Berks County was also on the list in 1950. Despite the loss of this county, increases in the value of sales in the remaining counties (except Franklin) was such that Pennsylvania increased its proportion of sales from 9.7 percent in 1950 to 11.3 percent in 1964. One county in Maryland and two in West Virginia were in the top twenty both years and increased in regional importance from 1950 to 1964.

Fruit production in the Region is highly concentrated and located somewhat more remote from centers of population than vegetable production. Unlike vegetables, increasing concentration in fruit production may compound seasonal labor problems of producers.

Nursery Products. Nursery production has shown less tendency toward concentration of production than either of the other labor intensive commodity groups. In 1950, the 20 counties with the greatest nursery product sales had 46.3 percent of sales and 50.3 percent in 1964, Appendix Tables 19 and 20. The five leading counties in 1964 included four repeaters from 1950, Figure 7. In most cases, they increased their share of state production. But only two, Chester County, Pennsylvania and Suffolk County, New York, increased their share of regional sales. These two counties produced almost 15 percent of regional sales in 1964. In general, the lower ranked counties in 1964 earned smaller proportions of their state's nursery product receipts than was true in 1950, reflecting the spatial growth of nurseries.

SALES OF FRUITS AND NUTS
TWENTY RANKING COUNTIES



Source: 1964 Census of Agriculture, Vol. 1.

FIGURE 6

SALES OF NURSERY PRODUCTS
TWENTY RANKING COUNTIES

Source: 1964 Census of Agriculture, Vol. 1.

FIGURE 7

In 1964, four of the leading counties were in New York, a decrease of three from 1950. Three of the counties ranked in 1964 were near New York City, and the other one was in the Great Lakes area.

Pennsylvania had seven of the leading counties in 1964, producing 21.7 percent of regional sales of nursery products. This was an increase from four in 1950 that had 12.8 percent of regional sales. Five of seven ranked in 1964 ring the Philadelphia metropolitan area. Production in the western part of the State is adjacent to Pittsburgh.

New Jersey had five leading counties in 1964 and three in 1950. The largest of these, Monmouth County, had 14.4 percent of the State's sales in 1964. Bergen County, the most important county in 1950, produced 22.2 percent of the State's total in that year but declined to 12.8 percent by 1964. The growth in nursery production in New Jersey also appears to be directed toward metropolitan areas.

A substantial part of the production of nursery products in Connecticut remained in the same three counties as in 1950. Massachusetts' contribution to regional sales declined by about two percent from 1950 to 1964, although Middlesex County is still a major center of nursery production in the Region.

Nursery sales increased considerably in the Region from 1950 to 1964. Production concentrated around metropolitan centers, and this concentration has increased somewhat. Nursery producers have utilized local labor to a greater extent than vegetable and fruit growers. The trends in the location of nursery production in the Northeast suggests that the industry will continue to be well located with respect to local labor sources.

SECTION III: THE AGRICULTURAL LABOR FORCE IN THE NORTHEAST

During 1969, there was an average of 388 thousand persons employed in agriculture in the Northeast as farm operators, unpaid family and hired workers (4). This was 8.5 percent of national farm employment.

Numbers of farm workers in the Region have declined substantially since 1950 when the region's farm work force numbered over a million. The decline prevailed throughout the nation, but was somewhat more rapid in the Region, table 16. The Northeast lost almost two-thirds of its farm workers during 1950-69 while the nation lost a little more than half.

Farm and Non-Farm Employment

The deline in farm employment combined with growth in number of employees on nonagricultural payrolls has led to a substantial decline since 1950 in the proportion of those engaged in farm work as compared with nonagricultural work both regionally and nationally (4) and (5, Establishment Data).[6/] By 1969, farm workers in the Northeast comprised less than a third the proportion of nonagricultural employees as nationally, table 16.

The decrease in farm employment prevailed throughout the Northeast. Nonagricultural employees increased significantly in all states, except West Virginia, which led to a substantial decline in the relative importance of farm employment, table 17. However, there continues to be considerable variation among states in the relative importance of farming. Farm employment still constitutes a major component of total employment in Maine, Vermont, and West Virginia. In the remaining states, the proportion of persons employed in farming is below the regional average.

[6/] Estimates of workers from the two sources are neither strictly comparable no additive. They were used because comparable estimates are available only on a national basis (4, Household Data) rather than for states or regions. The estimates cited consist of: (1) agricultural employment which includes farm operators, inpaid family and hired workers, and (2) non-farm employment consisting only of employees on nonagricultural payrolls, that is, proprietors, self-employed, unpaid volunteer or family workers and domestic workers in households are excluded. It is generally conceded that another group of workers is not included in either series. It includes workers in "agricultural service firms" that are employed by farmers on a contract or fee basis to perform such operations as spraying agricultural chemicals with airplane or ground machine; harvesting, sorting, grading, packaging, packing and shipping many products; and grinding and mixing feed. However, the Statistical Reporting Service, USDA is currently engaged in a development program to include these workers in their estimates of employment (5).

TABLE 16. Employment: Farm and Nonagricultural, Northeast and United States, Indicated Years, 1950-69.

	Unit	1950	1960	1969	1950-69 Percent Change
NORTHEAST					
Farm Workers	1,000	1,056	679	388	-63.3
Nonagricultural Workers	1,000	15,582	17,123	20,641	+32.5
Farm of Nonagricultural	Percent	6.8	4.0	1.9	--
UNITED STATES					
Farm Workers	1,000	9,926	7,057	4,590	-53.8
Nonagricultural Workers	1,000	45,222	54,234	70,141	-55.1
Farm of Nonagricultural	Percent	21.9	13.0	6.5	--

Source: (4) and (5, Establishment Data).

Note: Estimates of farm employment and of workers on nonagricultural payrolls are neither comparable nor additive. Comparable series of farm and non-farm employment (4, Household Data) show that for the United States farm as a percentage of nonagricultural employment was as follows: 1950--13.8, 1960--9.0, and 1969--4.9.

TABLE 17. Employment: Farm and Nonagricultural, Northeast States, 1950 and 1969.

State	Farm Employment		Nonagricultural Employment		Farm Employment As A Percentage of Nonagricultural	
	1950	1969	1950	1969	1950	1969
	----------Thousands----------				------Percent------	
Maine	58	21	253.9	330.3	22.8	6.4
New Hampshire	22	7	168.3	258.0	13.1	2.7
Vermont	43	15	96.9	145.2	44.4	10.3
Massachusetts	58	18	1761.0	2238.6	3.4	.8
Rhode Island	4	2	298.6	343.4	1.3	.6
Connecticut	34	14	766.1	1194.9	4.4	1.2
New York	248	100	5576.0	7180.9	4.4	1.4
New Jersey	66	21	1657.1	2582.1	4.0	.8
Pennsylvania	302	115	3643.3	4369.6	8.3	2.6
Delaware	19	7	120.5	207.9	15.8	3.4
Maryland	82	32	716.1	1277.4	11.5	2.5
West Virginia	120	37	524.3	512.9	22.9	7.2

Source: (4) and (5, Establishment Data).

The decline in farm employment, both absolutely and relatively, is primarily a reflection of the declining manpower requirement for production of agricultural output in the Region. Since population and the labor force are growing in all states of the Region potential labor supply is increasing relative to labor demand. However, the declining relative importance of agriculture in the labor force can have subtle negative supply effects as well. Farm work as an occupation in the Region has become less of a rural norm than it was. Rather than being a usual occupational choice it is now an unusual one. This has made the occupation less visible to potential workers and undoubtedly has helped to reinforce the sense of stigma commonly attached to the occupation of farm work.

Even in some areas of intensive agricultural production, agriculture employs a small proportion of the labor force. Data in table 18 show the percentage of the civilian labor force that is employed in agriculture in the 20 counties in the Region with the highest value of farm sales. These data are not comparable with the data previously cited for reasons to be discussed in detail later but are indicative of the same factors. In eight of the leading agricultural counties, agriculture employs fewer than five percent of the civilian labor force, while in only seven does it employ more than ten percent. Employment in agriculture during seasonal peaks was, of course, considerably higher than that shown.

Composition of the Farm Work Force

Farm operators and unpaid members of their families make up the greatest portion of the farm work force, both in the Region and the Nation, table 19. In 1969, about three-quarters of the farm work force was composed of family members. Family members have increased slowly but steadily as a proportion of the farm work force in the Northeast in the 1960's. In the United States as a whole in 1950, family workers constituted a higher proportion of all workers than in the Northeast but the differences began declining in the late 1950's so that now there is little difference in the percentage of family workers between the Region and Nation. The data in table 19 includes all farm workers regardless of age, thus family workers should be fully represented.

An attempt was made to estimate the size of the unpaid family worker component of farm employment utilizing estimates of numbers of farms (8). Since operators are included in the family worker count if they do one or more

TABLE 18. Persons in Civilian Labor Force and Employed in Agriculture, Twenty Counties With the Highest Value of Sales of Agricultural Products, Northeast, 1960.

County[1/]	Persons		Percentage of Civilian Labor Force Employed in Agriculture
	Civilian Labor Force[2/]	Employed in Agriculture[2/]	
	number	number	Percent
Aroostook, Me.	29,728	5,077	17.1
Lancaster, Pa.	116,679	9,744	8.4
Sussex, Del.	28,341	4,448	15.7
Suffolk, N. Y.	224,977	5,175	2.3
Hartford, Conn.	298,577	5,356	1.8
Chester, Pa.	79,855	5,102	6.4
Berks, Pa.	121,838	4,255	3.5
York, Pa.	100,274	4,383	2.3
Wicomico, Md.	21,061	1,915	9.1
Wayne, N. Y.	26,269	3,370	12.9
Orange, N. Y.	68,755	3,314	4.8
Chautauqua, N. Y.	57,531	3,632	6.3
Erie, N. Y.	416,940	3,716	0.9
Oneida, N. Y.	99,653	3,403	3.4
Worcester, Mass.	237,327	3,203	1.4
Worcester, Md.	9,499	1,618	17.0
Franklin, Pa.	34,755	2,948	8.5
St. Lawrence, N. Y.	37,804	3,922	10.4
Frederick, Md.	27,698	3,210	11.6
Delaware, N. Y.	17,215	3,662	21.3

[1/] Counties ranked by value of farm products sold as reported in the 1964 Census of Agriculture.

[2/] Source: (7).

hours of farm work during the reference week, it was assumed that the number of farms would be a fairly good, though high, estimate of the number of farm operators. Using this assumption, the estimates in table 20 were made.

These data indicate that farm operators constituted 59 percent of the Region's farm work force in 1969. While this percentage has been somewhat erratic, it seems to have increased in the 1960's. The percentage of the regional farm work force made up of unpaid family workers (who do 15 or more hours of farm work per week), while also erratic, seems to be trending downward in the 1960's. As previously noted, hired farm workers have been declining as a proportion of the farm work force in the 1960's.

There is considerable variation in the composition of the farm work force, and in the changes in this composition, among the states of the Region. Despite the increased reliance on family labor regionally, in five states the

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TABLE 19. Annual Farm Employment: Family and Hired Workers, Northeast and United States, 1950-69.

Year	Northeast				United States			
	Family	Hired	Total	Percent Family	Family	Hired	Total	Percent Family
	thousands							
1950	744	312	1,056	70.5	7,597	2,329	9,926	76.5
1951	717	307	1,024	70.0	7,310	2,236	9,546	76.6
1952	693	289	982	70.6	7,005	2,144	9,149	76.6
1953	670	277	947	70.7	6,775	2,089	8,864	76.4
1954	649	268	917	70.8	6,570	2,081	8,651	75.9
1955	618	250	868	71.2	6,345	2,036	8,381	75.7
1956	565	234	799	70.7	5,900	1,952	7,852	75.1
1957	551	229	780	70.6	5,660	1,940	7,600	74.5
1958	532	233	765	69.5	5,521	1,982	7,503	73.6
1959	508	204	713	71.2	5,390	1,952	7,342	73.4
1960	485	194	679	71.4	5,172	1,885	7,057	73.3
1961	469	185	654	71.7	5,030	1,890	6,920	72.7
1962	447	176	623	71.7	4,873	1,827	6,700	72.7
1963	421	167	588	71.6	4,737	1,783	6,520	72.6
1964	400	150	550	72.7	4,504	1,607	6,111	73.7
1965	369	137	506	72.9	4,128	1,482	5,610	73.6
1966	344	121	465	74.0	4,129	1,361	5,490	75.2
1967	318	110	428	74.3	3,899	1,256	5,155	75.6
1968	302	102	404	74.8	3,533	1,213	4,746	74.4
1969	290	98	388	74.7	3,516	1,174	4,590	76.6

Source: (4).

proportion of hired workers in the farm labor force increased between 1950 and 1969, table 21. Four of these were states which experienced a decrease in value of farm marketings during this period, and the other state, Connecticut, had a much smaller increase in the value of marketings (13 percent) than any of the remaining states. This suggests that in those areas experiencing a contraction in agricultural production the remaining farms rely more heavily on hired labor.

New Jersey, Connecticut, Massachusetts and Delaware rely heavily on hired farm workers. Pennsylvania and West Virginia use significantly lower proportions of hired labor than the other states of the Region. This is probably accounted for by the type of agriculture and size of farm, specifically large numbers of small livestock and general farms.

In summary, the farm work force in the Northeast Region is a small and dwindling component of total regional employment. Regionally, the farm work force constitutes a much smaller proportion of total employment than nationally. All states of the Region experienced substantial declines in the number of farm

TABLE 20. Annual Farm Employment: Operators, Unpaid Family and Hired Workers, Northeast, Indicated Years, 1950-69.

Year	Number of Workers			Percent of Workers		
	Operators	Unpaid Family	Hired	Operators	Unpaid Family	Hired
	----------thousands--------					
1950	582	162	312	55.1	15.3	29.5
1955	433	185	250	49.9	21.3	28.8
1957	400	151	229	51.3	19.4	29.4
1959	371	137	204	52.0	19.2	28.8
1961	335	134	185	51.2	20.5	28.3
1963	303	118	167	51.5	20.1	28.4
1964	287	113	150	52.5	20.5	27.3
1966	262	82	121	56.3	17.6	26.0
1967	250	68	110	58.4	15.9	25.7
1969	229	61	98	59.0	15.7	25.3

Source: Computed from (4) and (8).

TABLE 21. Annual Farm Employment: Hired Workers, Northeast States, 1950 and 1969.

State	1950		1969	
	Hired Workers	Percentage of Total Workers	Hired Workers	Percentage of Total Workers
	1,000	Percent	1,000	Percent
Maine	23	39.7	7.9	37.8
New Hampshire	5	22.7	2.3	32.9
Vermont	11	25.6	3.7	25.2
Massachusetts	22	37.9	7.7	43.3
Rhode Island	1	25.0	.8	38.1
Connecticut	9	26.5	6.0	43.5
New York	89	35.9	27.0	27.0
New Jersey	29	43.9	11.0	52.4
Pennsylvania	67	22.2	16.0	13.9
Delaware	9	47.4	3.0	42.9
Maryland	28	34.2	8.0	25.0
West Virginia	19	15.8	5.0	13.5
Northeast	312	29.5	98.4	25.3

Source: (4).

workers during 1950-1969, as did the Nation as a whole. The decline in farm employment was somewhat less rapid in the Mid-Atlantic areas, where production is tending to concentrate, than in other parts of the Region. However, even many of the leading agricultural counties in the Region have only a small proportion of the labor force employed in agriculture.

Farm operators and members of their families make up about three-quarters of both the regional and national farm work force. Operator and family labor is increasing somewhat in the Nation. The relative importance of hired labor varies considerably among states of the Region. It has increased as a proportion of total farm employment in those states where agricultural production has declined the most.

Labor Productivity on Farms

According to estimates of the Economic Research Service, U. S. Department of Agriculture, 513 million man-hours of labor were used on farms in the 11 Northeast states in 1968. (9).[7/] In line with other measures of the importance of the Region in the Nation's agricultural economy, this constituted 7.5 percent of the seven billion man-hours used for farm work in the entire country, table 22. Of the regional total, 247 million were spent on livestock, other than horses and mules, and 212 million man-hours were devoted to crops. Overhead jobs accounted for most of the remainder.

The dominance of livestock in the Region, particularly dairying, as compared with the Nation, is indicated in the distribution of labor-use among enterprises. Milk cows required almost 30 percent of the regional total which is more than twice the percentage of national farm labor used in caring for these animals. The high percentage of dairy work in the Northeast is not due to inferior work methods, rather to the large numbers of milk cows and the great quantity of milk produced. Milk cows are in large herds in the Region which reduces time per cow. Modern machines and methods are used and man-hours per cow are lower than in the country as a whole.

Poultry also looms larger in the Region workload than in the nation. Work on meat animals, on the other hand, is only a third as important in the Region as nationally.

[7/] The Northeast Region as delineated by ERS does not include West Virginia.

TABLE 22. Man-hours of Labor Used for Farm Work, by Groups of Enterprises, Northeast and United States, 1969.

Enterprise	Northeast		United States	
	Man-Hours	Percentage of Total	Man-Hours	Percentage of Total
	Mil.	Percent	Mil.	Percent
All Farm Work[1/]	513	100.0	6,851	100.0
All Livestock and Livestock Products[2/]	234	45.6	2,448	35.7
Meat Animals	26	5.1	1,002	14.6
Milk Cows	148	28.8	900	13.1
Poultry	45	8.8	387	5.6
All Crops[2/]	206	40.2	3,431	50.1
Feed Grains	20	3.9	468	6.8
Hay and Forage	47	9.2	488	7.1
Food Grains	5	1.0	175	2.6
Vegetables	56	10.9	417	6.1
Fruits and Nuts	37	7.2	470	6.9
Sugar Crops	2	.4	78	1.1
Cotton	--	--	279	4.1
Tobacco	21	4.1	446	6.5
Oil Crops	2	.4	228	3.3

[1/] Includes labor used on crops, livestock, and overhead.

[2/] Includes minor enterprises not shown separately.

Source: (9).

Work on crops as a whole required about two-fifths of Northeast farm workers' time in 1969. This is a somewhat smaller proportion than in the rest of the nation. However, for three groups of crops--hay and forage, vegetables, fruits and nuts--a larger proportion of man-hours were required in the Region than in the nation. Growing and harvesting vegetables required 11 percent of all farm work in the Region and about half of this percentage in the nation. Sizeable quantities of vegetables are produced in the Northeast and more of them are grown for fresh market which takes more man-hours per acre than those for processing. In addition, vegetables are mostly short season crops and must be harvested at the optimum time for high quality. This means that large numbers of workers are needed for short periods which intensifies many aspects of the labor problem such as recruitment, housing, and supervision.

Like numbers of workers, farm labor requirements have exhibited a sharp downward trend over the years. In the Northeast, they dropped from 1,278 million man-hours in 1950 to 513 million in 1969 or 60 percent. The national decrease was a little lower--55 percent, table 23. The greater decrease in all farm work in the Region than in the nation was due to a greater decline in

TABLE 23. Man-Hours of Labor Used on Farms, Northeast and United States, Indicated Years, 1950-69.

Year	All Farm Work[1/]		Livestock and Livestock Products		Crops	
	Million Man-Hours	Percent Change	Million Man-Hours	Percent Change	Million Man-Hours	Percent Change
			Northeast			
1950	1,278		633		428	
1955	1,051	-17.8	563	-11.1	339	-20.8
1960	803	-23.6	424	-24.7	268	-20.9
1965	625	-22.2	308	-27.4	230	-14.2
1969	513	-17.9	234	-24.0	206	-10.4
1950 to 1969	--	-59.9	--	-63.0	--	-51.9
			United States			
1950	15,137		5,548		6,922	
1955	12,808	-15.4	4,948	-10.8	6,012	-13.1
1960	9,795	-23.5	3,826	-22.7	4,590	-23.7
1965	7,775	-20.6	2,964	-22.5	3,719	-19.0
1969	6,851	-11.9	2,448	-17.4	3,431	- 7.7
1950 to 1969	--	-54.7	--	-55.9	--	-50.4

[1/] Includes labor used on crops, livestock, and overhead.
Source: (9).

work on livestock. The proportionate drop in work on crops was about the same in the Region and Nation. Caring for livestock and their products took less than 40 percent as much time in 1969 as in 1950 in the Northeast compared with about 45 percent as much in the entire country. Overhead jobs contributed about a fifth of the overall decline in farm work during the period in both areas.

A little less than two-thirds of the drop in labor used for livestock in the Northeast was in work on milk cows while a little less than one-third was in poultry work. The small remainder was a decline in work on meat animals. A similar combination of livestock enterprises was responsible for the national decrease except that meat animals contributed a little more. For all kinds of livestock in both areas, the decrease in labor was due to greater use of equipment and methods that cut man-hours per animal or bird. The new equipment includes automatic and self-feeders, feed and litter carriers and mechanical barn cleaners. Milking parlors and other kinds of specialized labor-saving buildings, and convenient water supply also contribute. In addition, herds and flocks grew larger during the period and as certain jobs on

livestock can be done for a large herd or flock in almost the same time as for smaller ones, this helped reduce man-hours per animal or bird.

Even though the percentage decrease in work on crops as a whole during 1950-69 was nearly the same in the Region and Nation, the significant contributors among crops varied. Mechanization of cotton production made great strides during the period. Cotton and feed grains were responsible for a fourth of reduction in farm labor input in the Nation. In the Northeast, vegetables, feed grains, hay and forage, and fruits and nuts were, in the order named, the heaviest contributors to the drop in crop work. Advances in mechanization was the underlying factor in the reduction in work on all kinds of crops.

Factors Affecting Labor Productivity. Each man-hour of farm work in the Northeast and the nation in 1969 turned out two and two-thirds times and more than three times as much product, respectively, as in 1950, table 24. The gain in livestock production per man-hour in the Northeast was a little greater than in the nation. But, the national rise in crop labor productivity exceeded the increase in the Northeast.

Advances in productivity of farm labor have resulted directly from fewer hours of farm work and from greater farm production. Many related and interrelated forces, including engineering and biological developments and economic and social changes, have been behind these direct causes. The multiplicity of causes and their interrelationships may be illustrated by considering the two sides of the labor-productivity ratio in crop production. On the labor side, fewer man-hours per acre have contributed to the upward climb. The labor reduction per acre has resulted from such factors as adoption of more effective power sources, greater use of many large and sophisticated machines for all phases, from seedbed preparation to harvest, of crop production, widespread use of labor-saving methods, such as minimum tillage, and the combining of operations with tandem or integrated arrangement of machines for tasks formerly done separately. On the production side of the drop-labor-productivity ratio, higher yields have also made a contribution. They have resulted from the application of greater quantities of higher analysis fertilizers, use of more productive hybrids and varieties of crops, and more effective pesticides, and other biological factors.

This is not a clear-cut distinction, however, as man-hours per acre and yield are interrelated. For example: If more fertilizer is applied to a

TABLE 24. Index Numbers of Farm Production Per Man-Hour, Northeast and United States, 1950 and 1969.

Enterprise	Northeast			United States		
	Index 1957-59=100		Percent Change	Index 1957-59=100		Percent Change
	1950	1969		1950	1969	
Farm Output[1/]	67	178	166	61	189	225
All Livestock and Products[2/]	69	208	201	68	203	199
Meat Animals	92	179	95	84	169	101
Milk Cows	71	212	199	67	218	225
Poultry	54	241	346	48	253	427
All Crops[2/]	71	143	101	63	170	170
Feed Grains	52	213	310	49	237	384
Hay and Forage	74	133	80	73	136	86
Food Grains	65	158	143	53	151	185
Vegetables	72	119	65	69	122	77
Fruits and Nuts	81	139	72	88	156	77
Sugar Crops	93	113	22	55	177	222
Cotton	--	--	--	53	241	355
Tobacco	98	110	12	82	122	49
Oil Crops	62	174	181	61	147	141

[1/] Man-hours in ratio includes labor used on crops, livestock, and overhead.

[2/] Includes minor enteprises not shown separately.

Source: (9).

crop and results in a higher yield, additional time is needed to obtain and to apply the fertilizer and to harvest and market the extra yield. The relation between yield and time for harvest depends on the extent of mechanization. Additional yield of a highly mechanized crop adds little to the time for harvest but for crops that are gathered by hand the increase in harvest time is almost proportional to the added produce.

Lower labor requirements and higher yields per acre in 1969 than in 1950, combined to double crop production per man-hour between these years in the Northeast. It more than doubled for food grains and oil crops and more than tripled for feed grains. Significant increases were also recorded for hay and forage, vegetables, and fruits and nuts. Somewhat greater gains for most groups of crops and for all crops aided greatly by cotton, were achieved in the country as a whole. Northeast farm workers, however, excelled in in-increasing production of oil crops per man-hours.

Like crops, the factors that have raised labor productivity in producing livestock may be divided into those that have reduced man-hours per

head and those that have increase production. Improved breeding, including artificial insemination and hybridization, more productive feeds, including feed additives, better feeding methods and more effective insect and disease control have served to increase production per animal and thus to raise livestock production per man-hour. Reduced labor requirements per animal also helped and they resulted chiefly from mechanization and automation in and around farm buildings. The availability of electricity to farms aided this mechanization process. Many of the machines and installations that save chore labor depend on electric power. The effect of these developments was to triple livestock production per man-hour in the Northeast between 1950 and 1969. The United States increase was a little lower. In both areas, poultry headed the list. Commericalization of poultry production, especially broilers and turkeys, continued during the period with significant growth in size of flocks and widespread adoption of automatic equipment. The increase for milk cows was not as spectacular, but nevertheless, significant. Least progress was made in raising meat animal production per man-hour.

Thus far in the discussion of farm labor productivity, the technological factors that were more or less directly responsible for raising crops and livestock production per man-hour have been stressed. Many adjustments in organization and mangement of farms and related industries developed concurrently with the advance in farm technology. Indeed, they were part of it.

An all-inclusive discussion of factors leading to increased labor efficiency in farming would include consideration of most of the forces behind growth in the total economy. These include expanding human wants, stable government and institutions, public and private research for new and adaptable products and techniques, education of workers and managers, particularly regarding adoption of innovations, and a favorable economic climate. Space does not permit an exhaustive discussion of all these factors but a few examples might be cited.

Prices have generally favored the adoption of technology. An example is the cost of farm labor and the cost of items that can be substituted for labor. Farm wage rates averaged 85 percent higher in 1966 than in 1950. During this period, average prices paid for tractors, trucks and automobiles rose 50 percent; farm machinery, 59 percent; and fuel, tires and other motor supplies about 20 percent. Other price relationships that favor the adoption of technology are those paid for fertilizer and improved seed. Their cost has generally been considerably less than the value of their additions to production.

Education and job training have enhanced skills of both farm workers and farm operators. Measurement of effects of these items is difficult because exact and full data are lacking but their influence on farm labor productivity has been significant.

Changes in the structure of farming that have aided the upward climb in output per man-hour include larger and more specialized farms. Specialization has occurred in two ways. First, individual farmers tend to specialize in the production of fewer products, and second, they perform fewer functions. Agriculture was once largely self-sufficient in terms of draft animals, feed, tools, fertilizer and other materials needed for production. The modern farmer has retained primarily the function of a producer of crops and livestock. He sells most of what he produces and buys what he needs from non-farm business firms. There has been a dispersion of jobs or functions from farms to farm supply industries.

Workers in the farm supply industries, by taking over functions formerly performed by farm workers, have contributed greatly to the advance in farm output per hour of farm labor. The extent of this contribution can be indicated by adding farm supply workers to the farm labor force and comparing the sum with farm output. Complete data are lacking, but economists in the Department of Agriculture have estimated that 1.4 million workers were engaged in final manufacture and distribution of farm supplies in both 1950 and 1964 (*10*). If the standard 40-hour per week is assumed, farm supply workers spent almost three billion hours in producing and distributing goods and services purchased and used by farmers during both these years.

Output per hour of farm labor rose 136 percent during this period. If the time of farm supply workers is included, the increase is reduced to 108 percent. Thus, at least a fifth of the gain in farm labor productivity between 1950 and 1964 could be attributed to transferring functions from farm workers to workers in non-farm but farm related industries.

The mechanization and automation of farm jobs is expected to continue unabated. Many challenges, such as machines for harvesting tender fruits and vegetables, will be met and overcome. On the production side, plant and animal breeders indicate that the prospects for hybridization and the development of higher yielding crops and livestock are far from exhausted. The scale of farm enterprises will continue to grow and thus reduce labor needs. Results of experimentation and research have aided in the gains in labor productivity in the past and their contribution will continue to be made.

SECTION IV: HIRED LABOR USE IN NORTHEAST AGRICULTURE

Number of Farms Hiring Workers

The use of hired farm workers is widespread in the agriculture of the Northeast States. Nearly two-thirds of all commercial farms in the Region hired some labor in 1964, Table 25. The proportion of farms reporting expenditures for hired labor has varied somewhat in the Agricultural Census years since 1950, but shows no consistent trend. Because of the declining number of farms, the actual number of farms hiring labor declined by about one-half from 1950 to 1964.

The proportion of commercial farms hiring labor in the individual states of the Region is fairly uniform. Only 45 percent of West Virginia farms and about 57 percent of farms in Delaware hired labor in 1964. In all other states, 60 to 70 percent or more of farms hired labor, with hired labor most widespread in Maine and New Jersey.

A substantial proportion of farms in the Region used only seasonal workers. In 1964 about 26 percent of commercial farms hired regular workers, while an additional 35 percent hired seasonal workers only. The proportion of farms using regular workers has varied but shows no clear trend.

In 1964 regular hired labor use varied from 10 percent of commercial farms in West Virginia to 43 percent of commercial farms in New Jersey. In general, livestock farms and large farms of all types tend to be the major users of regular workers. However, the small size of many livestock farms in West Virginia precluded the use of many regular workers in that state.

Dairy farms employed 38 percent of the regular hired workers in the Region but accounted for only 30 percent of the payroll in 1964, Table 26. On the other hand, fruit farms accounted for 12.7 percent of the Region's farm payroll but hired only 8.9 percent of the regular workers. Hired labor use was most intensive in field crop, miscellaneous, vegetable and fruit farms.

Regular Hired Workers

About 110 thousand regular hired workers were employed on commercial farms in the Region in 1964. This represented a decline from nearly 150 thousand regular workers in 1950, or about 27 percent, Table 25. However, during the same period the number of commercial farms declined from 305 thousand to 169 thousand, a decline of 45 percent. The average number of regular workers per farm hiring regular workers increased from 1.89 in 1950 to 2.47

in 1964, although a large part of this increase occurred between 1959 and 1964 when the Census regular worker counts were not strictly comparable.

There is considerable variation in the intensity of use of regular workers per farm in the Region, Table 27. In 1964 Vermont farmers hiring regular workers averaged only 1.7 regular workers per farm while Connecticut farmers averaged 4.9 workers per farm. New Jersey and Massachusetts also averaged relatively more regular workers per farm than other states in the Region. The high Connecticut and Massachusetts averages result from the very large number of regular workers employed on tobacco farms in those states. The high average number of regular workers per farm in New Jersey resulted from the large number of fruit and vegetable farms in that state. These types of farms hired the largest numbers of regular workers per farm in all states of the Region.

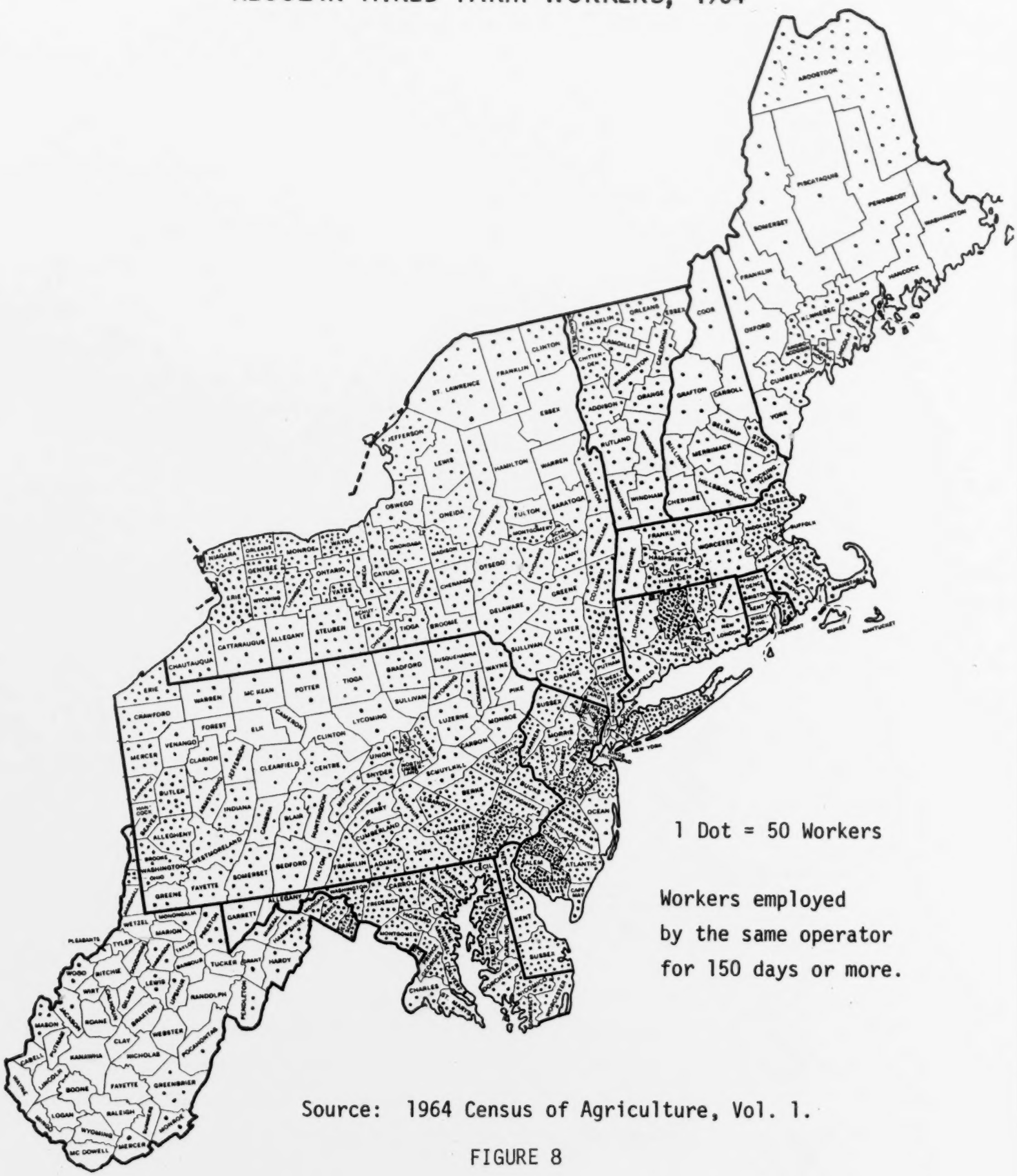
Table 25. Characteristics of Commercial Farms Hiring Labor, Northeast, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Farms Hiring Labor				
Number	206,294	165,497	126,245	103,621
Percent	67.5	60.0	64.5	61.4
Farms Hiring Regular Workers				
Number	79,029	58,547	49,675	44,686
Percent	25.9	21.2	25.4	26.5
Hired Labor Expenditures				
Dollars (millions)	$320.6	$302.8	$326.3	$325.8
Dollars Per Farm	$1,554	$1,829	$2,584	$3,144
Regular Hired Workers				
Number	149,548	117,479	98,422	110,237
Number Per Farm	1.89	2.01	1.98	2.47

Source: (7).

Figure 8 indicates the regional pattern of concentration in the employment of regular hired farm workers. In general, employment is concentrated in those areas identified earlier as major agricultural counties of the Region. However, it is interesting to note that the employment of regular hired farm workers tends to be concentrated in and near the Region's population centers.

REGULAR HIRED FARM WORKERS, 1964



Source: 1964 Census of Agriculture, Vol. 1.

FIGURE 8

Table 26. Distribution of Regular Hired Workers and Labor Expenditures by Type of Farm, Northeast, 1964.

Type of farm	Farms	Labor Expenditures	Regular Hired Workers
	- - - - - - - - - - - -	percent	- - - - - - - - - - - -
Cash Grain	5.1	1.5	1.6
Other Field Crop	2.2	7.0	4.6
Vegetable	2.9	8.8	8.7
Fruit and Nut	3.7	12.7	8.9
Poultry	10.0	8.1	8.4
Dairy	46.8	30.0	38.5
Other Livestock	11.3	3.5	4.0
General	7.6	3.4	3.5
Miscellaneous	8.2	19.9	17.8
Tobacco	2.3	5.0	4.2
All Types	100.0	100.0	100.0

Note: Percentages may not add to 100 due to rounding.

Source: (7).

Expenditures for Hired Labor

As a consequence of declining farm employment but rising farm wage rates, farm labor expenditures in the region remained nearly constant during the 1950-64 period, Table 25. Average labor expenditures per farm, however, nearly doubled. Three states, New York, Pennsylvania, and New Jersey, accounted for about 62 percent of the Region's hired farm labor expenditures. The regional pattern of hired labor expenditures, both total and per farm, is additional evidence of coastal concentration, except for Aroostook County, Maine, Figures 9 and 10. Areas of particular concentration were the south New Jersey counties of Gloucester, Cumberland, and Salem, with combined hired farm labor expenditures of $13.7 million; the eight county area of New Jersey and New York surrounding New York City with hired farm labor expenditures of $26.8 million; Hartford County, Connecticut, with hired labor expenditures of $14.6 million; and Aroostook County, Maine, with hired labor expenditures of $11.8 million in 1964.

Seasonality of Hired Labor Use

Seasonality of labor demand is a problem for employers because it creates the recurring need for worker recruitment and training and adds an

Table 27. Regular Hired Workers By Type of Farm: Number per Farm Hiring Regular Workers, Northeast States, 1964.

State	Cash Grain	Tobacco	Other Field Crop	Vegetable	Fruit and Nut	Poultry	Dairy	Other Livestock	Misc. and General	Total
	number									
Maine	1.4	--	2.6	5.5	3.6	2.3	1.7	1.2	3.3	2.3
Vermont	--	--	2.8	7.5	3.0	2.1	1.6	1.3	2.3	1.7
New Hampshire	--	--	2.8	3.3	3.2	2.4	1.6	2.0	2.6	2.0
Connecticut	--	61.0	4.7	6.8	3.8	2.9	2.1	1.4	6.1	4.9
Massachusetts	--	63.8	3.9	4.2	4.9	2.6	2.0	2.1	4.4	3.7
Rhode Island	--	--	6.4	2.0	2.1	2.1	1.9	2.1	5.4	2.9
New York	1.5	--	3.1	4.8	3.1	3.0	1.6	2.0	4.3	2.2
New Jersey	1.8	--	2.7	5.3	6.9	1.7	2.2	3.3	4.9	3.6
Pennsylvania	1.6	1.0	2.7	3.5	5.1	2.1	1.5	1.1	4.1	2.1
Delaware	1.4	--	3.1	10.7	11.0	2.3	1.6	2.6	5.9	2.9
Maryland	1.7	1.7	2.3	3.4	6.2	2.3	1.8	2.0	3.7	2.2
West Virginia	1.0	3.0	--	1.8	9.2	2.3	1.9	1.5	4.4	2.5
Northeast	1.6	10.3	2.9	4.9	4.5	2.3	1.7	1.8	4.3	2.5

Source: (7).

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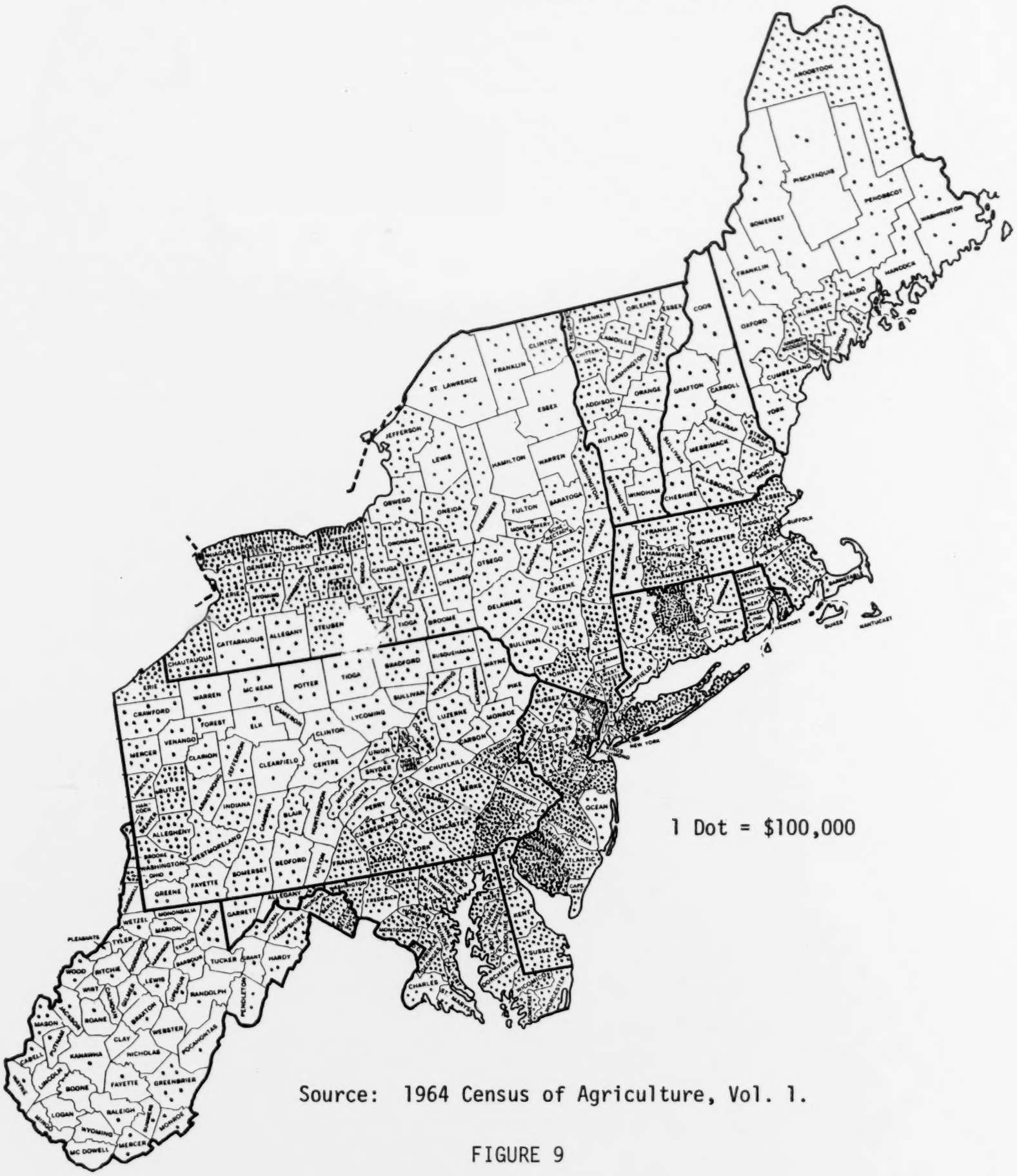
EXPENDITURES FOR HIRED LABOR ON FARMS, 1964

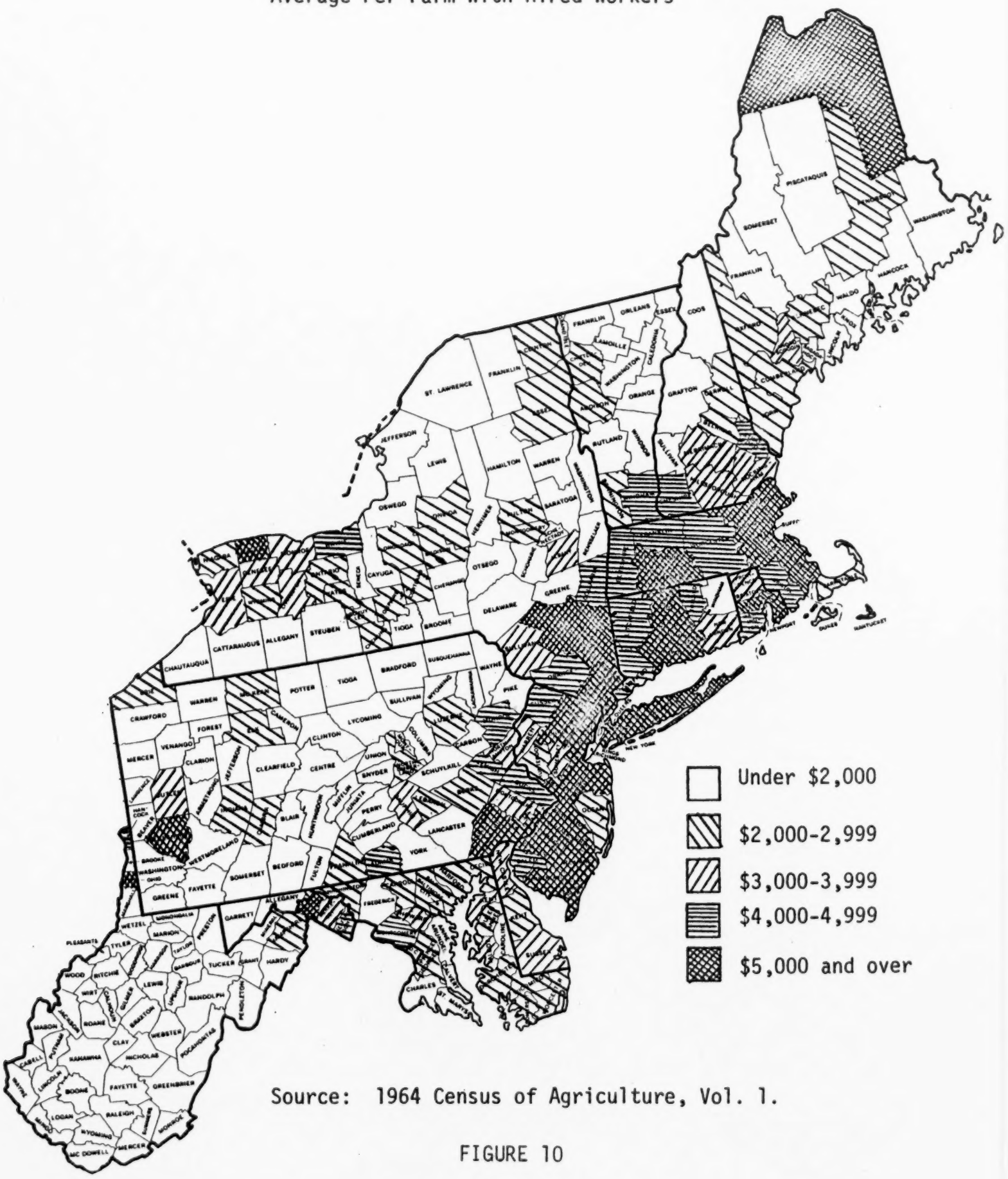


Source: 1964 Census of Agriculture, Vol. 1.

FIGURE 9

EXPENDITURES FOR HIRED LABOR, 1964

Average Per Farm With Hired Workers



Source: 1964 Census of Agriculture, Vol. 1.

FIGURE 10

additional source of uncertainty regarding availability, cost and performance of labor. Seasonality is a problem for workers because it reduces employment and earnings and creates uncertainty regarding income flows. Some farm workers working at seasonal farm jobs migrate in an attempt to prolong their period of employment encountering additional problems in housing, education, health and welfare services and other areas.

Seasonality in farm labor requirements is, of course, most pronounced in crop production, where the production cycle is directly regulated by the weather. However labor demand in livestock agriculture also fluctuates seasonally. This results in part from the necessity to produce and store feed during the growing season for use during the winter months and also in part from differences in the manner in which livestock must be handled in hot and cold seasons.

In livestock agriculture much progress is being made in reducing seasonal differences in work procedures. This has been particularly pronounced in the poultry industry where there is now very little difference in the housing and handling of birds from one season to another. Confinement and environmental control are becoming more common in dairying and other livestock enterprises as a means of increasing production and improving labor efficiency. As such developments continue they should lead to improvements in the amount of employment and earnings of farm workers, and to improvement in working conditions. Working conditions on livestock agriculture can be expected to become more like industrial working conditions.

Seasonality of Farm Employment in the Northeast. Hired farm employment in the Northeast is characterized by a gradual increase from January through August and September and then a rapid decline in employment to a December and January low, Table 28. Although the employment of hired farm workers has declined steadily throughout the 1950 to 1969 period, the seasonal pattern of employment has changed relatively little in the Region. The month of peak employment has shown some tendency in recent years to shift from August to July, however there has usually been little difference in employment in the July through September period.

Seasonality of hired farm employment in the Region has shown some tendency to increase in recent years, Table 29. However, the ratio of peak to low employment in any given year in the data reported in Table 43 varies greatly with weather conditions on and immediately preceding monthly survey periods, as well as with variations in the size of the crop.

Table 28. Hired Farm Workers by Month, Northeast, 1950-69.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average
	thousands												
1950	179	197	218	267	332	400	437	453	452	381	249	187	313
1951	171	191	218	265	323	401	436	461	438	357	243	177	307
1952	161	177	212	248	312	388	416	433	411	328	223	169	290
1953	146	168	199	241	308	384	373	409	397	321	219	168	278
1954	148	172	200	231	295	349	366	403	396	303	204	157	269
1955	138	159	184	225	282	338	351	369	341	275	185	143	249
1956	131	142	163	201	251	299	320	364	345	273	179	140	234
1957	125	143	171	207	248	297	318	352	326	255	168	135	229
1958	121	140	160	200	260	306	324	371	344	270	174	136	234
1959	114	130	151	177	221	272	292	317	293	214	159	122	205
1960	110	118	135	175	201	264	279	302	280	205	148	118	195
1961	104	115	131	162	200	248	278	284	263	199	136	114	186
1962	102	108	124	151	193	245	252	266	252	179	132	111	176
1963	94	97	117	151	188	252	251	247	247	157	114	93	167
1964	82	85	103	134	174	227	236	220	220	140	99	85	150
1965	77	79	88	116	159	207	219	212	209	132	91	78	139
1966	66	71	85	110	145	164	186	182	178	112	79	70	121
1967	65	66	72	85	114	155	174	179	174	113	73	64	111
1968	59	60	64	85	107	142	171	171	158	101	70	60	102
1969	56	57	64	79	105	135	156	166	148	96	66	58	98

Source: (4).

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Table 29. Hired Farm Workers: Seasonal Range, Northeast, 1950-69.

Year	December Workers	High Month Workers	High Month Month	Ratio of High Month to December
	(thousands)	(thousands)		
1950	187	453	August	2.42
1951	177	461	August	2.60
1952	169	433	August	2.56
1953	168	409	August	2.43
1954	157	403	August	2.57
1955	143	369	August	2.58
1956	140	364	August	2.60
1957	135	352	August	2.61
1958	136	371	August	2.73
1959	122	317	August	2.59
1960	118	302	August	2.56
1961	114	284	August	2.49
1962	111	266	August	2.40
1963	93	252	June	2.71
1964	85	236	July	2.78
1965	78	219	July	2.81
1966	70	186	July	2.66
1967	64	179	August	2.80
1968	60	171	Jul-Aug.	2.85
1969	58	166	August	2.86

Source: (4).

Generally seasonal variations in hired farm employment in the Region have been lower than in the Nation. Annual changes in the ratio of peak to low monthly hired employment in the Nation have been very erratic, but there appears to be a tendency toward reduction in seasonality from 1950 to 1969, Table 30. In recent years there has been little difference in seasonality of hired farm employment among the two groups. Nationally, hired farm employment is peaking earlier in the 60's than it did in the 50's. This has been a desirable change from the standpoint of labor supply since more students are available for farm work in the summer months than in September.

Seasonality of employment of farm operators and unpaid family members is naturally lower than for hired workers because the population from which to draw on a seasonal basis is more limited. Employment of farm operators and unpaid family workers has tended to peak somewhat earlier, and seasonality of

Table 30. Hired Farm Workers: Seasonal Range, United States, 1950-69.

Year	December Workers	High Month Workers	High Month Month	Ratio of High Month to December
	(thousands)	(thousands)		
1950	1,100	3,752	September	3.41
1951	1,069	3,510	September	3.28
1952	1,031	3,498	September	3.39
1953	945	3,315	September	3.51
1954	1,020	3,253	September	3.19
1955	1,019	3,094	September	3.04
1956	961	2,970	September	3.09
1957	1,019	2,971	July	2.77
1958	1,047	2,984	August	2.85
1959	984	2,840	September	2.88
1960	958	2,825	July	2.95
1961	947	2,847	July	3.01
1962	929	2,704	July	2.91
1963	814	2,768	July	3.40
1964	784	2,542	July	3.24
1965	770	2,350	July	3.05
1966	758	2,042	July	2.69
1967	675	1,974	July	2.92
1968	672	1,891	July	2.81
1969	659	1,856	July	2.82

Source: (4).

employment of these workers, though also variable, seems to be declining in the 1960's, Table 31. Seasonality of employment of farm operators and unpaid family workers in the United States has shown a slow but fairly steady decline since 1950, Table 32.

Variations in Seasonality Among States. There is considerable variation among states in the Northeast in the period of peak hired farm employment and seasonality of hired farm employment, Table 33. Maine and New Hampshire both peak in September. The magnitude of the seasonal peak in Maine is substantial, five to eight times its low. Seasonality of employment in Maine has increased considerably since 1954 when individual state figures first became available. Both the magnitude and timing of Maine's peak farm labor needs make obtaining an adequate labor supply difficult.

All the remaining states in the Region have peak hired farm labor needs which fall in the June through August period. Massachusetts, Connecticut,

Table 31. Farm Operators and Unpaid Family Workers: Seasonal Range, Northeast, 1950-69.

Year	December Workers	High Month Workers	High Month Month	Ratio of High Month to December
	(thousands)	(thousands)		
1950	614	852	July	1.39
1951	586	821	July	1.40
1952	573	799	July	1.39
1953	545	763	July	1.40
1954	525	734	July	1.40
1955	476	696	July	1.46
1956	459	661	July	1.44
1957	449	610	July	1.36
1958	446	612	August	1.37
1959	419	579	August	1.38
1960	400	563	August	1.41
1961	384	546	August	1.42
1962	371	508	July	1.37
1963	368	482	July	1.31
1964	336	464	July	1.38
1965	314	418	Jul.-Aug.	1.33
1966	295	388	July	1.32
1967	272	357	July	1.31
1968	257	346	July	1.35
1969	249	330	August	1.33

Source: (4).

New Jersey and Delaware have substantially more seasonality of hired farm employment than the Region. In Massachusetts and Connecticut this is associated with shade tobacco growing and in New Jersey it results from fruit and vegetable production. Connecticut and New Jersey have had substantial increases in seasonality of hired farm labor demand.

Estimates of employment of seasonal hired farm workers in the Northeast from In-Season Farm Labor Reports prepared by State employment security agencies show essentially the same pattern of seasonality as total hired farm employment, Table 34. In most years peak seasonal hired employment in the Region occurs in August. Peak seasonal employment declined by about one-third from 1955 to 1969. However, there was little decline during the spring and fall months. Only in July, August and September has seasonal labor use shown a consistent decline.

Table 32. Farm Operators and Unpaid Family Workers: Seasonal Range, United States, 1950-69.

Year	December Workers	High Month Workers	High Month Month	Ratio of High Month to December
	(thousands)	(thousands)		
1950	6,038	9,254	September	1.53
1951	5,754	8,962	September	1.56
1952	5,498	8,622	September	1.57
1953	5,288	8,180	September	1.55
1954	5,140	7,978	September	1.55
1955	4,887	7,728	September	1.58
1956	4,605	7,140	September	1.55
1957	4,696	6,689	September	1.42
1958	4,608	6,447	September	1.40
1959	4,307	6,325	September	1.47
1960	4,230	6,140	September	1.45
1961	4,106	5,888	September	1.43
1962	4,034	5,684	September	1.41
1963	3,953	5,528	September	1.40
1964	3,578	5,072	September	1.42
1965	3,434	4,684	September	1.36
1966	3,228	4,395	September	1.36
1967	3,026	4,145	September	1.37
1968	2,946	4,004	September	1.36
1969	2,829	3,894	September	1.38

Source: (4).

Table 33. Hired Farm Workers: Seasonal Range, Northeast States, 1969.

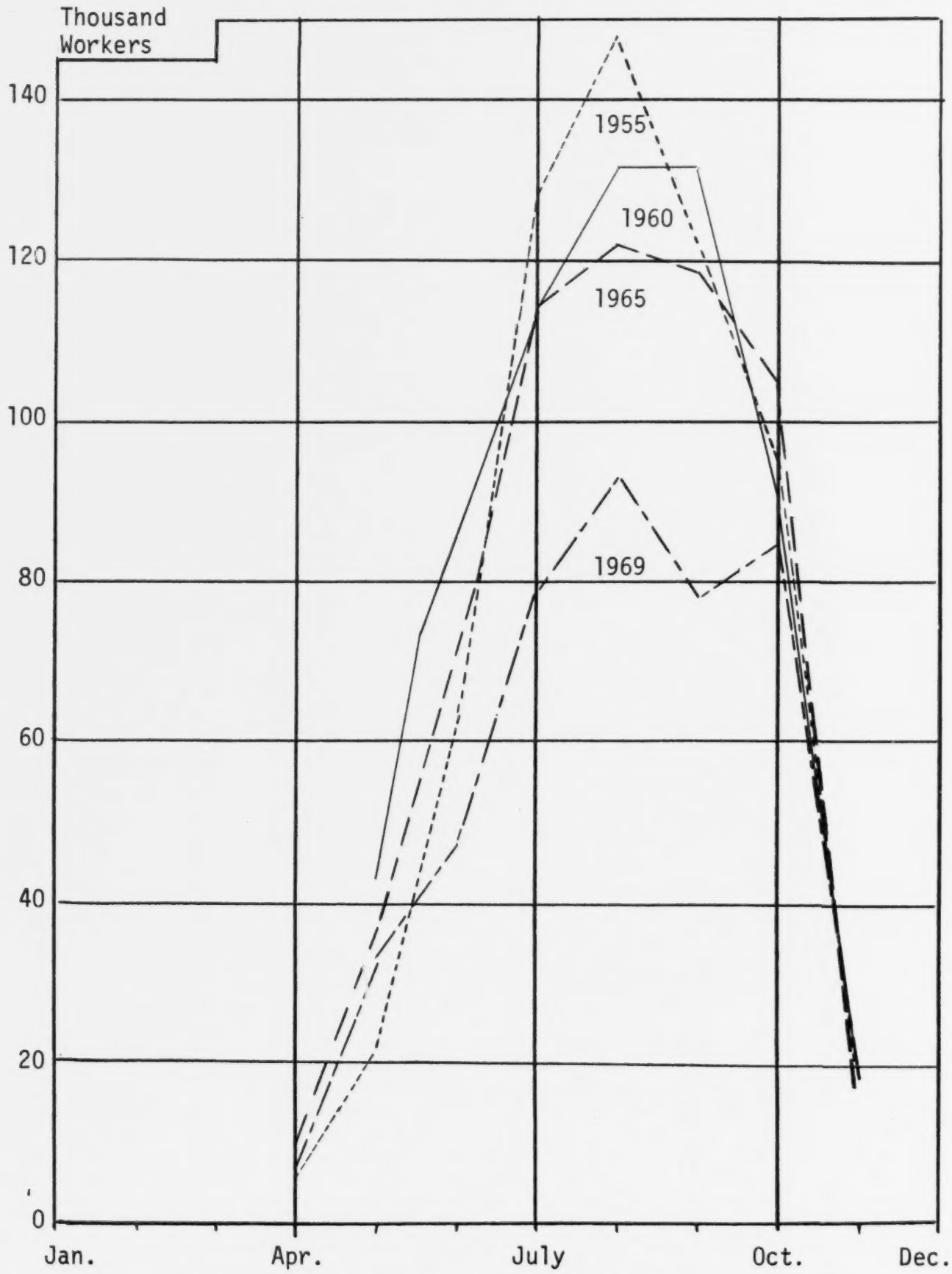
State	December Workers	High Month Workers	High Month Month	Ratio of High Month to December
	(thousands)	(thousands)		
Maine	4.7	26.0	September	5.5
New Hampshire	1.7	3.8	September	2.2
Vermont	3.3	4.5	July	1.4
Massachusetts	4.3	15.0	Aug.-Sept.	3.5
Rhode Island	0.6	1.0	June	1.6
Connecticut	2.2	15.0	July	6.8
New York	17.0	45.0	August	2.6
New Jersey	5.0	23.0	July	4.6
Pennsylvania	11.0	29.0	August	2.6
Delaware	1.0	5.0	July-Aug.	5.0
Maryland	4.0	14.0	August	3.5
West Virginia	3.0	11.0	June	3.7

Source: (4).

Table 34. Seasonal Hired Workers by Months, Northeast, 1955-69.

Year	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
	- - -

SEASONAL HIRED FARM WORKERS
INDICATED YEARS, 1955-69



Source: U.S. Testing and Employment Service, USDL.

FIGURE 11

The seasonal worker estimates also indicate a much smaller decline in employment from September to October than in total hired employment shown in Table 28. The fall period has usually been a difficult period in which to obtain seasonal farm workers in the Northeast. If the trends indicated by the estimates in Table 34 are correct the problem of obtaining an adequate seasonal work force cannot be expected to diminish proportionally to the decline in farm employment. In Section V it will be seen that students represent the major expanding sector of the hired farm work force. However this source will not be available to meet spring and fall seasonal labor needs.

Trends in Farm Labor Demand

In 1967 the U.S. Department of Agriculture made extensive projections of future trends in the agricultural industry (*10*). These projections took into account expected changes in population, national income, labor efficiency, imports and exports and other factors affecting farm production and employment. Farm production was projected to increase at an annual rate of about 1.9 percent per year, or by 32 percent for the period 1965 to 1980. About the same percentage increase was projected for crop and livestock production. Commodity groups requiring large amounts of seasonal labor were projected to grow at a less rapid rate. A 23 percent increase in output was projected for fruit and nuts and a 20 percent increase was projected for vegetable production.

Farm output per man-hour was expected to continue to rise more rapidly than the increase in production. Crop output per man-hour was expected to increase 103 percent from 1965 to 1980 while livestock production per man-hour was expected to increase about 87 percent in the same period. As a consequence, labor requirements were expected to decline 29 percent in livestock production and 34 percent in crop production between 1965 and 1980. Productivity in fruit production was projected to continue to lag behind that of other crops, with labor requirements for these crops declining by about 20 percent. Tobacco production was expected to continue to resist mechanization so that improvements in labor productivity would be modest. Rapid growth in mechanization of processing vegetables was anticipated, leading to improvements in output per man-hour in these crops.

With these projections as background, average United States farm employment was projected to be 3.6 million workers by 1980, a 36 percent decrease from 1965. Hired farm workers were expected to decline at a somewhat slower rate than operators and family workers, with annual average hired

worker employment reaching 1 million by 1980. Hired workers would then constitute about 38 percent of the farm work force compared to 26 percent in 1965.

Farm employment in the Northeast as a proportion of national farm employment declined from about 10.6 percent to 9.0 percent of the Nation's farm labor force from 1950 to 1965. If a similar decline in the Region's proportion of farm workers occurs from 1965 to 1980, the Region would employ approximately 7.5 percent of the projected national farm work force or 270,000 persons.

Alternatively, if the annual average rate of decline in the Region's farm employment of 4.25 percent which prevailed from 1950 to 1965 were projected to 1980, farm employment in that year would be 264 thousand workers.

The proportion of the farm work force consisting of operators and unpaid family workers declined nationally from 1950 to 1963 (see Table 19). Since then it has increased. In the Northeast the proportion of farm workers who were farm operators and unpaid family workers has increased slowly but steadily since 1950. The U.S. Department of Agriculture projections do not expect this trend to continue nationally, and it seems unlikely to continue in the Northeast. Data from the 1964 Census of Agriculture suggest that hired farm workers are increasing in importance on larger farms. On the other hand smaller farms are the ones which are disappearing most rapidly. A more definitive picture of the trends in the use of hired workers will probably result from the 1969 Agricultural Census. It is likely that this Census will indicate a trend toward a greater proportion of hired workers both nationally and in the Northeast.

If the projected 38 percent of farm workers hired in the United States also prevailed in the Northeast, the Region would hire an annual average of about 103 thousand workers in 1980. If the approximately 25 percent of farm workers hired in 1967 prevailed in 1980, average hired farm employment would be about 68 thousand workers in 1980. Annual average hired farm employment in the Region had already reached 102 thousand workers by 1968. Continued decline in this figure is expected. While it is not unlikely that the decline in hired farm employment in the Region will slow down, and following that might possibly increase, nevertheless it appears unlikely that hired employment will exceed current levels. Thus the range in average hired farm employment in the Region appears to be bracketed by the 68 thousand to 103 thousand figures.

SECTION V. THE AGRICULTURAL WORK FORCE IN THE NORTHEAST

Labor is unique among production inputs in that it is supplied by human beings who are objects of social concern that transcends their contribution to production. Unlike fertilizer, which has value only in the extent to which it increases agricultural production, farm workers have value in their own right as people, quite apart from their economic value. Thus to present a complete picture of farm labor in the Northeast it is not enough to understand the role and function of labor in producing the agricultural products of the Region. We must also seek to understand who performs farm work and inquire into the welfare of this sector of the population.

A growing concern about the welfare of disadvantaged groups in our society has resulted in increased attention to the problems of farm workers. To society generally the farm worker has been stereotyped as a poorly paid, underemployed, poorly educated migrant worker, usually a member of an ethnic or racial minority. As with many stereotypes, this one has substantial basis in fact. However, it vastly simplifies a very complex sector of the labor force and omits many factors that are vital in understanding the labor problems of farm workers and employers and in developing practical solutions to their problems.

There are many people who do farm work in the Northeast. To many of these workers farm work is merely incidental employment--a source of pocket money for some special purpose. To some it is a career and a way of life. Farm workers run the gamut from the poorest paid totally unskilled laborer to highly paid professionals and specialists. Some farm workers migrate, following a particular job as it moves with the season. Most farm workers live and work year 'round in the same community. Many ethnic and racial minorities are represented in the farm work force of the Northeast, including southern and northern Negroes, island and mainland Puerto Ricans, Texas-Mexicans, Indians, Canadians, off-shore foreign workers and Appalachian whites. The majority of the Region's farm workers, however, share the ethnic and racial characteristics of the Region's population--that is, they are local and white. Some farm workers live on farms. Most farm workers, like most of the population, live in the Region's towns and cities and non-farm countryside and commute to their farm jobs.

In this section these and other characteristics of the farm work force in the Northeast Region are discussed in detail. Unfortunately, the state of knowledge about farm workers is less adequate than our knowledge of the jobs at which they work. This is particularly true when one attempts to disaggregate the work force into geographic or other functional parts. In discussing demographic characteristics of farm workers in this section it has often been necessary to resort to statistics for the United States as a rough approximation of the characteristics of the Region's workers. Much of the detailed information about farm workers, especially at the state and local level, is derived from the Census of Population. Besides the obvious problem of its age, Census data has the additional problem that many of the persons who do farm work in the Region do not have this as their primary occupation or do not live in the Region and therefore are not represented in the statistics on farm workers. Farm workers included in Census statistics for the Northeast Region are primarily local full-time workers. Where other sources of data are available they have been utilized in this report. Where only Census data is available the user is cautioned as to its limitations.

Demographic Characteristics of the Farm Work Force

The Hired Farm Work Force. The U. S. Department of Agriculture estimates that in 1969 about 2.6 million residents of the United States did some farm work for pay at some time during the year, Table 34. Only about 9 percent of these persons resided in the Northeast Region.[8/] Nearly half lived in the South. Male workers dominated the farm work force in both the Region and Nation. More than 80 percent of the Region's hired farm work force was male. Women were more prevalent in the South and West where there are more seasonal workers engaged in hand harvest activities. Only about 10 percent of the hired farm work force migrated to do farm work and only about one-quarter lived on farms. About a quarter were non-white.

Less than half of the hired farm work force was in the labor force most or all of the year. These were predominantly male long term seasonal or permanent farm workers who constituted the backbone of the hired farm work force. More than half of all persons who did some farm work during the year

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[8/] In Table 34 and the discussion based upon it, the Northeast Region excludes Delaware, Maryland and West Virginia.

Table 34. Selected Characteristics of the Hired Farm Working Force, by Sex of Worker, 1969.

Characteristics	Number of Workers			Percent Distribution		
	Male	Female	Total	Male	Female	Total
	- - - - - - - - - - - - thousands - - - - - - - - - -					
Color						
White	1553	431	1984	78	22	100
Non-white	353	243	587	59	41	100
Age						
14-17 years	685	205	890	77	23	100
18-24 years	406	113	519	78	22	100
25-34 years	199	90	289	69	31	100
35-44 years	176	100	277	64	36	100
45-54 years	169	83	252	67	33	100
55-64 years	168	52	220	78	24	100
65 and older	104	21	125	83	17	100
Migratory Status						
Nonmigratory	1075	609	2314	74	26	100
Migratory	201	55	257	79	21	100
Residence						
Farm	529	144	673	79	21	100
Non-farm	1378	521	1898	73	27	100
Chief Activity						
Farm work	596	41	637	94	6	100
Non-farm work	292	47	342	86	14	100
Unemployed	47	4	50	92	8	100
Keeping house	--	325	325	--	100	100
Attending school	842	244	1086	78	22	100
Other	128	2	131	98	2	100
Region						
Northeast	177	61	239	74	26	100
Northcentral	521	67	588	89	11	100
South	731	355	1086	67	33	100
West	477	181	658	72	28	100
Total	1907	665	2571	74	26	100

Source: (*12*).

were not in the labor force most of the year. Most of these were short term seasonal workers, the majority of them housewives and students. More than three-quarters of the students were males.

Because of the large number of students, the age distribution of the hired farm work force shows a preponderance of young workers. In 1969,

more than half the hired farm work force was under 25 years of age. Nearly four-fifths of these youths were males. In the middle age groups 30 to 40 percent of the workers were women. It can be surmised that most of these women were housewives not usually on the labor force while most of the men in this age group were those chiefly employed at farm or non-farm work. Only 4 percent of the hired farm workers were 65 or older.

In general the women in the hired farm work force are younger than the men, Table 35. There has been some tendency toward a higher proportion of men and younger workers doing farm wage work in the 1960's. In 1966-68 one quarter of all persons doing hired farm work were boys under 18 years of age. An additional 8 percent of the workers were girls in this age bracket, making youths of essentially high school age fully one-third of all persons doing hired farm work in 1966-68. The corresponding percentage for the 1960-62 period was only 25 percent.

Table 35. Percentage Distribution of Farm Wage Workers by Age and Sex, United States, 1960-1968.

Age and Sex	1960-1962 Average	1966-1968 Average
Males, all	70	73
14-17 years	18	25
18-24 years	15	16
25-34 years	9	8
35-44 years	9	6
45-54 years	9	7
55-64 years	6	7
65 and over	4	4
Females, all	30	27
14-17 years	7	8
18-24 years	5	4
25-34 years	5	4
35-44 years	5	4
45-54 years	4	4
55-64 years	3	2
65 and over	1	1

Source: Calculated from data reported in (12).

The Total Farm Work Force. The percentages distribution of all persons (farm operators, unpaid family workers and hired workers) employed in agriculture by age and sex in 1955 are presented in Table 36. Women have remained a relatively constant proportion of the total farm labor force even though this was a period in which the participation of women in the labor force generally was increasing. The age distribution of female farm workers also showed little change. Women were an important part of the seasonal labor force, constituting more than one-fifth of the work force at peak employment. The data on the age distribution of male farm workers at peak and low employment is consistent with the data on hired workers in indicating an increased proportion of young seasonal workers. However, the proportion of males in the 20-34 year age group declined, both in peak and low employment periods.

Figure 12 shows the seasonal distribution of total farm employment by age and sex of worker in 1966. Young and middle-aged women and young men 19 and under made up the bulk of the seasonal work force. Employment of women age 55 and older and men age 20 and older showed relatively little seasonal change.

Northeast Farm Workers. In 1960 approximately 66 percent of all employed persons in the Northeast were males, Table 37. In agriculture a much higher proportion of employed persons were men. Farm operators (owners and managers) were substantially older than other employed persons. On the other hand hired farm workers were substantially younger than employed persons generally.[9/] Sixty percent of male farm laborers and foremen were under 35 years of age while only 34 percent of all employed persons were in that age group. This clearly indicates movement of hired farm workers out of farm work at a rather young age. The relatively few women who were farm laborers and foremen were heavily concentrated in the older age categories.

Except in color, there was a high degree of similarity in the characteristics of farm laborers and foremen throughout the Region, Table 38. Connecticut, New Jersey, Delaware and Maryland had relatively high proportions of non-white workers.

[9/] These Census statistics include relatively few seasonal agricultural workers, who tend to be younger than the labor force generally.

Table 36. Number and Percentage Distribution of Persons Employed in Agriculture by Age and Sex for Month of Peak and Low Employment, United States, 1955 and 1966.

Age and Sex	1955				1966			
	Peak Month (June)		Low Month (December)		Peak Month (June)		Low Month (December)	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
	1,000		1,000		1,000		1,000	
Males, total	5981	77	5001	85	4050	78	2960	85
19 and under	1049	14	463	8	954	18	324	9
20-34 years	1255	16	1133	19	677	13	521	15
35-54 years	2102	27	1884	32	1283	25	1156	33
55 and older	1575	20	1521	26	1136	22	959	28
Females, total	1702	22	884	15	1139	21	505	15
19 and under	293	4	75	1	224	4	28	1
20-34 years	400	5	210	4	227	4	98	3
35-54 years	706	9	384	6	442	8	244	7
55 and older	303	4	215	4	246	5	135	4
Total, all ages	7683	99	5885	100	5189	99	3465	99

Source: (5).

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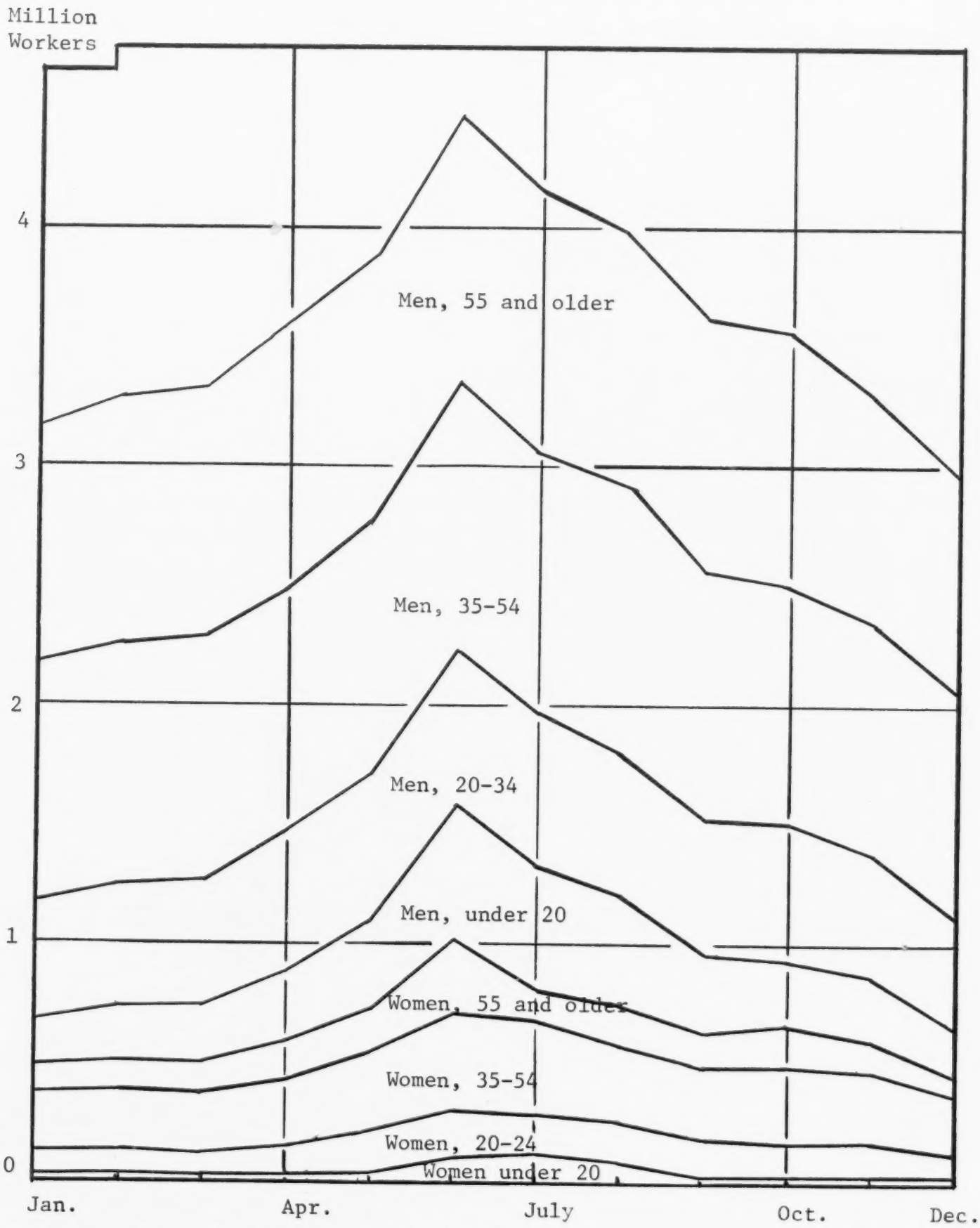
SEASONAL AGRICULTURAL EMPLOYMENT: TOTAL WORKERS BY AGE AND SEX, UNITED STATES, 1969



Source: Bureau of Labor Statistics, USDL

FIGURE 12

Table 37. Number and Percentage Distribution of All Employed Persons and Farm Workers by Sex, Age and Color, Northeast Region, 1960.

	Number			Percentage Distribution		
	Male	Female	Total	Male	Female	Total
	1,000	1,000	1,000			
Employed Persons, total	12,559	6,383	18,942	100	100	100
Age						
19 and under	587	499	1,086	5	8	6
20-34	3,676	1,764	5,440	29	28	29
35-54	5,810	2,955	8,765	46	46	46
55 and older	2,487	1,165	3,651	20	18	19
Color						
White	11,758	5,792	17,550	94	90	93
Non-White	802	590	1,392	6	10	7
Farmers and Farm Managers, total	195	12	207	100	100	100
Age						
19 and under	4.1	0.2	4.4	2	2	2
20-34	33	1.3	35	17	10	17
35-54	85	5.5	90	44	44	44
55 and older	73	5.5	78	37	44	38
Color						
White	192	12	204	98	99	99
Non-white	2.5	0.1	2.6	2	1	1
Farm Laborers and Foremen, total	131	22	152	100	100	100
Age						
19 and under	38	2.6	40	29	12	26
20-34	40	4.4	44	31	20	29
35-54	32	10	42	24	46	28
55 and older	21	4.7	25	16	22	16
Color						
White	119	20	139	91	91	91
Non-white	11	1.4	13	9	9	9

Source: (7).

Table 38. Number of Farm Laborers and Foremen and Percentage Distribution by Sex, Age and Color for States, Northeast Region, 1960

State	Number	Percentage Distribution							
		Sex		Age				Color	
		Male	Female	19 & under	20-34	35-54	55 & over	White	Nonwhite
Maine	6,667	91	9	23	30	29	17	99	1
Hew Hampshire	2,884	87	13	29	29	26	16	100	--
Vermont	7,085	90	10	32	32	24	12	100	--
Rhode Island	1,237	93	7	26	34	25	17	97	3
Massachusetts	8,508	86	14	27	24	29	19	98	2
Connecticut	7,500	87	13	21	30	31	18	89	11
New York	40,965	85	15	27	29	27	17	95	5
New Jersey	12,479	82	18	18	28	33	20	81	19
Pennsylvania	38,378	83	17	32	29	25	14	98	2
Maryland	14,734	89	11	22	28	31	19	68	32
Delaware	3,339	87	13	14	29	35	22	64	36
West Virginia	8,514	93	7	25	30	30	16	96	4

Source: (7).

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While time series data on the characteristics of hired farm workers in the Northeast are not available, it is likely that in the Region, as well as in the Nation, agriculture is heavily dependent on young workers in both seasonal and regular jobs. It appears increasingly dependent on youth, both male and female, as a source of seasonal workers and seems to be relying increasingly on male workers. In most of the Northeast Region the resident farm labor force is almost completely white.

Increased dependence on youth and males has some serious implications for employment stability in agriculture. While the potential supply of such workers is expanding, stable work patterns that would be expected to be repeated year after year do not exist among youth workers who lack career attachment to agricultural work. Thus continuous recruitment of workers will be required. Similarly a high proportion of the work force will be untrained and inexperienced so that substantial annual training efforts are indicated.

The trend toward increasing use of male workers is at variance with trends in labor force growth. The most rapidly expanding sector of the labor force has been in female employment. It seems clear that agriculture will have to rely to an increasing degree on women and youth for seasonal and some permanent jobs. Substantial efforts to make farm jobs and working conditions suitable to this source of labor will be required. Specific focusing of recruitment and training efforts at this sector of the labor market would also appear desirable.

Migratory Status of the Northeast's Hired Farm Work Force

The U. S. Department of Agriculture estimated that of the 2.6 million domestic persons who did some hired farm wage work in 1969 in the United States, 257 thousand or 10 percent were migratory workers (*12*). These workers, at some time during the year, left home overnight to perform farm wage work in another state or another county in the same state. These domestic migrants performed about 10 percent of the man-days of farm work performed by the domestic hired farm working force. In addition to domestic migrants, all foreign workers and off-shore Puerto Rican farm workers are, by definition, migrants.

About 40 percent of the domestic migratory farm work force were residents of the western states and an additional 27 percent came from the South (the states below the Mason-Dixon Line westward including Texas). About one-third were residents of the Northeast or Northcentral states. However,

the Southern migrants, particularly those of the southeastern states, have historically been a major source of non-local seasonal farm workers for Northeast agriculture. Since few Northeast workers migrate out of the Region to do farm work, migrancy is a more important factor in the supply of seasonal workers than the proportion of migrants among Northeast farm workers indicates.

Most of the regular hired workers on Northeast farms live on or nearby the farms where they work. A large proportion of the Region's seasonal farm work force also consists of local people. In 1969, nearly two-thirds of the seasonal hired farm work force in the Region consisted of local workers during most of the active farm work season, Table 39. Intra-state migrants, who live overnight at work sites within their own state are a small proportion of the farm work force in the Region. Besides local workers, interstate workers are the other major component of the Region's seasonal work force, constituting 30 to 40 percent of the seasonal workers during the active season. (They are a much smaller percentage of the Region's total hired farm work force.)

These interstate workers are predominately from the southern states and Puerto Rico. A high proportion of the southern migrants are Negroes. In addition, there is a small force of intra-regional migrants, mainly emanating from the Region's major cities, and an even smaller complement of Texas-Mexicans. A relatively small proportion (5 percent at peak in 1969) of seasonal agricultural workers are foreign workers imported from Canada and the British West Indies.

Local workers perform nearly all of the seasonal agricultural work in the winter and early spring. The proportion of non-local workers in the seasonal farm work force rises in April and remains relatively constant through October. Except for the shift from foreign to local and interstate workers, the pattern of seasonal composition has not altered substantially since 1955.

All sources of workers have declined in numerical importance since 1955 when state data on sources of workers first became universally available. The decline in foreign worker employment received further impetus in the mid-1960's from the termination of Public Law 78 and the subsequent tightening of regulations governing the importation of foreign farm workers. Employment of local workers declined less rapidly, so that there was a slightly higher proportion of these workers in the Region's seasonal labor force in 1969 than in 1955, Table 40.

Table 39. Number and Percentage Distribution of Seasonal Workers by Source and Month, Northeast Region, 1955 and 1969.

Month	1955					1969				
	Local	Intra-State	Inter-State	Foreign	Total	Local	Intra-State	Inter-State	Foreign	Total
	Number of Workers									
April	3,880	--	150	874	4,904	3,486	--	2,715	--	6,156
May	10,261	319	9,452	1,243	21,275	20,692	325	12,437	--	33,474
June	37,401	1,000	21,568	2,873	62,842	30,283	530	15,920	--	46,733
July	78,190	2,427	44,173	3,265	128,055	53,198	955	24,522	--	78,675
August	84,854	2,537	56,789	3,502	147,682	57,179	1,880	33,636	--	92,695
September	65,434	2,534	48,188	7,087	123,243	43,841	1,290	31,009	1,785	77,825
October	52,456	2,255	35,222	5,104	95,037	54,080	1,480	25,486	3,884	84,930
November	16,478	165	3,199	1,392	21,234	13,839	492	3,059	222	17,612
	Percentage of Workers									
April	79	--	3	18	100	57	--	43	--	100
May	48	1	45	6	100	62	1	37	--	100
June	59	2	34	5	100	65	1	34	--	100
July	61	2	34	3	100	68	1	31	--	100
August	57	2	39	2	100	62	2	36	--	100
September	53	2	39	6	100	56	2	40	2	100
October	55	2	37	6	100	64	1	30	5	100
November	78	1	15	6	100	79	3	17	1	100

Source: (11).

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Table 40. Number and Percentage Distribution of Seasonal Workers by Source at Peak Seasonal Employment, Northeast Region, 1955 to 1969.

Year	Number of Workers					Percent Distribution				
	Local	Intra-State	Inter-State	Foreign	Total	Local	Intra-State	Inter-State	Foreign	Total
1955	84,854	2,537	56,789	3,502	147,682	57	2	39	2	100
1956	87,271	2,745	60,817	3,309	154,142	57	2	39	2	100
1957	83,343	3,660	60,853	4,038	151,894	55	2	40	3	100
1958	90,752	2,310	57,379	1,579	152,020	60	1	38	1	100
1959	87,434	2,822	58,718	1,685	150,659	58	2	39	1	100
1960	81,253	2,306	46,696	1,831	132,086	62	2	35	1	100
1961	79,369	1,832	50,105	1,731	133,037	60	1	38	1	100
1962	75,494	2,701	42,152	2,534	122,881	60	4	34	2	100
1963	76,692	2,131	41,831	1,950	122,604	62	2	34	2	100
1964	76,292	2,018	43,436	2,168	123,914	61	2	35	2	100
1965	78,050	2,140	41,221	555	121,966	64	2	34	--	100
1966	65,725	1,270	39,688	--	106,683	62	1	37	--	100
1967	61,565	885	39,414	--	101,864	60	1	39	--	100
1968	57,425	1,620	36,568	--	95,613	60	2	38	--	100
1969	57,179	1,880	33,636	--	92,695	62	2	36	--	100

Source: (*11*).

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There is substantial difference among states in the Region in their dependence on interstate workers and in the trends in employment of these workers. Table 41 compares data on peak employment of interstate workers in 1955 and 1969, and the proportion these workers constituted of all seasonal hired farm workers in the month of peak interstate worker employment. In the New England states, which used few interstate workers in 1955, the number of interstate workers reported in 1969 increased in absolute numbers and as a percentage of the seasonal farm work force. Some of this increase represents substitution of interstate workers for foreign workers. In all remaining states, except Pennsylvania and West Virginia, the number of interstate workers employed at peak and their proportion of all workers declined from 1955 to 1969. The decline was most substantial in New York (15 thousand workers) and New Jersey (3 thousand workers) and relatively modest in the remaining states.

Table 41. Peak Employment of Inter-State Workers and Month of Peak Employment by State and for the Northeast Region, 1955 and 1969.

State	1955			1969		
	Month of Peak Employment	Inter-State Workers		Month of Peak Employment	Inter-State Workers	
		No.	Percent of Total		No.	Percent of Total
Maine	Sept.	80	--	Oct.	634	4
New Hampshire	--	--	--	Sept.	167	14
Vermont	July-Aug.	220	6	Oct.	107	14
Connecticut	Aug.	2,400	15	Aug.	4,240	32
Massachusetts	Aug.	1,887	11	Aug.	2,176	17
Rhode Island	not available			Oct.	40	30
New York	Sept.	27,269	61	Sept.	12,130	54
New Jersey	Aug.	14,005	68	Aug.	10,745	63
Pennsylvania	Sept.	5,173	32	Sept.	5,295	31
Delaware	July	2,516	80	Aug.	2,070	49
Maryland	Aug.	3,772	35	Aug.	1,834	29
West Virginia	Oct.	35	3	Oct.	464	18
Northeast	Aug.	56,789	39	Aug.	33,636	36
United States	July	194,504	17	June	146,132	15

Source: (*11*).

Foreign workers, while of substantial importance as a labor supply to growers in certain areas of the Region, have never been a substantial proportion of the Region's seasonal hired farm work force, Table 42. Foreign worker employment peaked at 11.6 thousand workers in 1957 and has declined, though somewhat erratically, since that time. The use of foreign workers in vegetable production (except potatoes) and shade tobacco was eliminated by 1965. All foreign workers employed in the Region in 1969 worked at apple and potato harvest. About a third of these workers were Canadian potato harvest workers employed in Aroostock County, Maine. Late-season apple growers in New England, New York and West Virginia have been singularly unsuccessful in obtaining domestic labor sources, and foreign worker employment in this crop has shown little decline.

Foreign worker employment has declined substantially in the United States in the 1960's so that the Northeast Region, which employed only about five percent of the foreign workers in the September-October period in 1955, employed two-thirds of the foreign workers used in that period in 1969, Table 43. Mechanization holds some prospect for further reducing the employment of foreign agricultural workers in Maine, although the sparse population and extremely high seasonal employment peak in the Aroostock potato area makes this questionable. There are no technological developments in apple harvest that are likely to reduce apple harvest labor requirements in the near future, and growers in New England have been unsuccessful in attracting Puerto Ricans or southern migrant workers in any numbers into their area. The short duration of the apple harvest and the cold weather during harvest are two major disadvantages to growers in recruiting domestic non-local workers.

Employment and Earnings of the Hired Farm Work Force

The National Picture. Among the major occupational groups defined by the Bureau of Census, farm laborers and foremen, the bulk of the hired farm work force, consistently rank near the bottom in measures of income. Table 44 shows estimates of median incomes in 1967 of households and unrelated individuals whose head had any employment in 1967. Persons were classified according to the occupation of the job they held longest in 1967; however, the income data relates to household money income from all sources. The median household income of households headed by a farm laborer or foreman was $3,509. Only private household workers (i.e., domestics) had a lower median income.

Table 42. Peak Seasonal Employment of Foreign Agricultural Workers in the Northeast Region, by States, with Comparisons to United States, 1955-1967.

State	Number of Workers								
	1955	1956	1957	1958	1959	1960	1961	1962	1963
Maine	3,300	4,168	6,896	3,202	2,000	7,522	2,695	2,346	2,632
New Hampshire	--	79	134	41	181	210	--	225	182
Vermont	402	212	155	41	12	70	30	55	11
Connecticut	1,340	1,300	1,240	1,140	1,170	1,110	1,140	1,210	1,190
Massachusetts	506	320	799	175	391	534	436	585	344
Rhode Island	--	--	--	--	--	--	--	--	53
New York	846	1,088	1,583	196	397	510	538	591	350
New Jersey	450	1,420	741	124	65	23	766	904	814
Pennsylvania	--	--	--	--	--	--	--	--	--
Delaware	--	--	--	--	--	--	--	--	--
Maryland	132	81	78	23	49	22	--	10	--
West Virginia	111	190	60	108	--	--	--	--	--
Northeast	7,087	8,858	11,619	5,050	4,265	10,001	5,605	5,926	5,576
United States	240,841	290,156	272,435	284,835	308,168	246,675	220,934	127,032	105,454

Source: (*11*).

Table 42. (continued)

State	Number of Workers					
	1964	1965	1966	1967	1968	1969
Maine	4,642	2,748	2,586	2,548	744	1,294
New Hampshire	103	85	41	277	213	202
Vermont	81	15	--	161	81	219
Connecticut	1,370	400	--	90	64	100
Massachusetts	910	300	31	142	185	335
Rhode Island	59	25	58	29	23	22
New York	350	250	125	919	766	976
New Jersey	45	--	--	--	--	--
Pennsylvania	--	--	--	--	--	--
Delaware	--	--	--	--	--	--
Maryland	--	--	--	--	--	--
West Virginia	--	--	--	327	403	736
Northeast	7,560	3,823	2,841	4,493	2,479	3,884
United States	92,784	23,698	12,169	12,531	8,890	8,665

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Table 43. Northeast Seasonal Farm Workers as a Percentage of United States Totals by Source of Worker, September and October, Selected Years.

Year	September					October				
	Local	Intra-State	Inter-State	Foreign	Total	Local	Intra-State	Inter-State	Foreign	Total
1955	8.1	2.1	31.6	4.8	10.1	6.6	2.0	27.6	2.2	7.5
1959	7.8	3.4	30.9	1.8	9.0	6.1	1.6	27.1	1.2	6.7
1964	8.7	3.7	27.7	8.1	10.9	6.8	3.9	29.9	6.5	8.8
1967	8.8	2.9	25.7	30.1	11.5	11.5	3.8	28.1	38.6	13.7
1969	7.4	2.3	23.5	69.8	10.0	10.2	3.5	29.9	67.7	12.7

Source: (*11*).

Table 44. Median Income in 1967 of Households and Unrelated Individuals Whose Head Worked in 1967, by Occupation of Longest Job Held.

Occupation	Median Income, 1967
Professional, Technical and kindred	$11,593
Farmers and Farm Managers	4,670
Managers, Officials and Proprietors, except farm	11,269
Clerical and kindred	8,186
Sales Workers	9,430
Craftsmen, Foremen and kindred	9,009
Operatives and kindred	7,678
Private Household Workers	3,208
Service Workers, except private household	6,619
Laborers, except farm and mine	6,398
Farm Laborers and Foremen	3,509

Source: (13).

Since workers were classified according to the occupation held longest, many seasonal agricultural workers were not included. The farm laborers and foremen were primarily regular workers, many of whom also received non-cash perquisites such as housing and some agricultural products. Even allowing for the fact that some farm workers also receive non-cash compensation, however, this group is clearly in a disadvantageous income position compared to others. Farm laborers' median household income is only about 40 percent of the average of all households with a head who had some employment in 1967. The value of perquisites received would not be enough to make up such a large difference.

In Table 45 the distribution of farm laborer households among income groups is compared with that of all households headed by workers. More than 40 percent of all farm laborer households had total money incomes of $3,000 or less in 1967 compared to only 7 percent of all households with an employed head. On the other hand about 66 percent of all households had total money incomes of $7,000 or more while only 14 percent of farm laborer households fared as well.

One of the factors accounting for low income and earnings of agricultural workers is the fact that a high proportion of agricultural workers are seasonal workers. Only 47 of employed males with income in 1967 who were farm laborers and foremen were classified as year 'round full-time workers, i.e., workers who worked primarily at full-time (35 hours or more per week) jobs for 50 weeks or more during 1967, Table 46. Among all employed males, 76 percent were year 'round full-time

Table 45. Income in 1967 of Households and Unrelated Individuals Employed in 1967 by Occupation of Longest Job Held.

Item	Percent Distribution	
	All Households with Employed Heads	Farm Laborers and Foremen
Under $1,000	1.2	7.5
$1,000 - $1,999	2.3	18.3
$2,000 - $2,999	3.6	16.5
$3,000 - $3,999	4.9	7.7
$4,000 - $4,999	5.8	21.2
$5,000 - $6,999	16.5	14.7
$7,000 - $9,999	26.8	9.5
$10,000 - $14,999	25.3	2.4
$15,000 and over	13.7	2.4
Total	100	100
No. Households (thousands)	42,167	660
Median Income	$8,651	$3,509

Source: (13).

Table 46. Selected Characteristic of Farm Laborers and Foremen, with Comparisons to All Employed Persons, 1967.

Characteristic	Farm Laborers and Foremen	All Employed Persons
Employed males with income (thousands)	917	47,016
Median Income	$2,321	$6,610
Percent year 'round (full-time)	47.1	75.9
Median Income	$2,694	$7,357
Families with employed heads (thousands)	468	39,496
Median Income	$3,866	$8,825
Percent year 'round (full-time)	64.0	82.0
Median Income	$4,150	$9,356

Source: (13).

workers. These statistics suggest substantial unemployment (and probably underemployment) among hired farm workers. However when only year 'round full-time workers are considered, the median income of male farm laborers and foremen was $2,694. This was only 37 percent of the $7,357 median income for all employed males in 1967.

Median income comparisons among family heads who were year 'round full-time workers is only slightly less disadvantageous to farm workers. Sixty-four percent of farm laborers and foremen who were family heads were year 'round full-time workers and their families had a median income of $4,150 in 1967. The 82 percent of all families whose heads were year 'round full-time workers had a median income of $9,356 in 1967. Among families whose heads were year 'round full-time workers in 1967, those whose head was a farm laborer or foreman had median incomes of 44 percent of that of all such families. Thus, the seasonality of employment of all farm workers does not account for the disparity in median income between farm workers and all workers. The disparity in incomes is almost as great among year 'round full-time workers as among all workers.

From the standpoint of labor market behavior, the farm work force consists of three groups: those primarily in the labor force who work at hired farm work only; those primarily in the labor force who are multiple job-holders, that is, who combine farm wage work with other labor force activities during the year; and those persons not usually in the labor force who do farm work on a temporary basis to supplement their incomes.

Workers who perform farm work only constitute about 16 to 20 percent of all persons doing farm work for pay during the year, Table 47. Their number has fluctuated considerably, declining during periods of declining farm output and increasing in years of increasing farm output. On balance, the declines have outweighed the advances, and the overall pattern has been consistent with the trend in farm employment, namely declining employment with rising output. These workers are the backbone of the hired farm work force, contributing more than half of the man days of hired labor, Table 48.

Multiple jobholders in the farm work force have declined steadily in numbers and relative importance from 1.2 million workers, one-third of the total, in 1962 to 610 thousand workers, less than a quarter of the total, in 1969. Almost all of this decline has been accounted for by a decline in farm operators and unpaid family workers who also do work on other farms for pay, and in workers who are primarily unemployed but do some farm work for wages.

Table 47. Hired Farm Work Force by Chief Activity, 1962-1969.

Chief Activity	1962		1963		1964		1965		1966	
	No. 1,000	%	No. 1,000	%	No. 1,000	%	No. 1,000	%	No. 1,000	%
Hired Farm Work Only	616	17	685	19	629	19	631	20	460	17
Multiple Jobholders	1,212	34	1,047	29	916	27	797	26	746	27
Primarily Farm Wage Workers	171	5	139	4	190	6	177	6	139	5
Primarily Work on Own Farm[1/]	359	10	327	9	218	6	143	5	158	6
Primarily Non-Farm Workers	411	11	379	10	412	12	390	12	403	15
Primarily Unemployed	271	8	202	6	96	3	87	3	46	2
Temporary Workers	1,794	50	1,866	52	1,826	54	1,699	54	1,557	56
Homemakers	635	18	571	16	548	16	473	15	320	12
Students	961	26	1,099	31	1,122	33	1,074	34	1,034	37
Others	197	5	195	5	155	5	153	5	204	7
Total Hired Farm Work Force[2/]	3,622	100	3,597	100	3,370	100	3,128	100	2,763	100
Annual Average Unemployment Rate[3/]	5.5		5.7		5.2		4.5		3.8	
Index of Total Farm Output (1957-59=100)[4/]	107		112		111		114		113	

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Table 47. (continued).

Chief Activity	1967 No. 1,000	1967 %	1968 No. 1,000	1968 %	1969 No. 1,000	1969 %
Hired Farm Work Only	582	19	525	18	419	16
Multiple Jobholders	726	24	668	23	610	24
Primarily Farm Wage Workers	156	5	124	4	110	5
Primarily Work on Own Farm[1/]	166	5	134	5	108	4
Primarily Non-Farm Workers	378	17	373	13	342	13
Primarily Unemployed	26	1	37	1	50	2
Temporary Workers	1,769	57	1,725	59	1,542	60
Homemakers	442	14	449	15	325	13
Students	1,155	37	1,107	38	1,086	42
Others	172	6	170	6	131	5
Total Hired Farm Work Force[2/]	3,078	100	2,919	100	2,571	100
Annual Average Unemployment Rate[3/]	3.8		3.6		3.5	
Index of Total Farm Output (1957-59=100)[4/]	118		120		121	

[1/] Workers who are primarily engaged in operating their own farm or as an unpaid family worker.

[2/] Source of data and numbers of workers: (12).

[3/] Source: (5).

[4/] Source: (9).

Note: Percentages may not add to totals due to rounding.

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Table 48. Percent of Man-days of Hired Farm Work, by Chief Activity of Workers, 1962-69.

Chief Activity	Percent of Man-days[1/]							
	1962	1963	1964	1965	1966	1967	1968	1969
Hired Farm Work Only	52.1	58.1	55.5	58.6	52.7	55.8	54.8	51.3
Multiple Activity Workers	27.2	21.6	21.2	19.1	23.7	21.0	19.3	21.2
Primarily Farm Wage Workers	9.7	9.0	11.1	11.0	10.3	10.6	9.5	10.0
Primarily Work on Own Farms	6.1	5.4	3.5	2.3	5.3	4.4	3.4	3.9
Primarily Non-Farm Workers	5.3	3.5	5.2	4.5	7.0	6.0	6.3	6.6
Primarily Unemployed	6.1	3.7	1.4	1.3	1.1	--	--	0.8
Temporary Workers	20.5	19.8	24.3	22.6	23.6	23.2	25.9	27.6
Homemakers	6.9	5.8	7.7	6.2	4.6	6.0	6.4	5.7
Students	10.5	10.8	14.6	14.1	15.4	14.7	16.8	18.4
Others	3.1	3.2	2.0	2.3	3.6	2.5	2.6	3.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1/] Detail may not add to total due to rounding.

Source: Computed from data in (*12*).

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The decline in primarily unemployed workers doing farm work accompanied a substantial improvement in the national unemployment rate and underscores the effect of general economic conditions on the supply of farm workers. The decline in farm operators and unpaid family workers doing hired farm work may also be a response to more non-farm employment opportunities as well as reflecting a decline in the number of marginal farm units.

By contrast, the number of multiple jobholders principally engaged in farm or non-farm wage work has declined only slightly since 1962. In general, the decline in numbers of these workers has paralleled the decline in numbers of workers doing hired farm work only. Multiple jobholders who are primarily farm wage workers constitute about five percent of the hired farm work force and perform about ten percent of the man days of hired farm work. Persons who are engaged primarily in non-farm jobs constitute about 12 percent of the hired farm work force and perform about 6 percent of the man days of hired farm work.

Temporary workers, that is, those not in the labor force most of the time, have filled the gap created by the decline in primarily unemployed workers and farm operators and unpaid family workers who do farm wage work. The number of temporary workers has declined only slightly and their proportion of all workers has increased steadily since 1962. Well over half of these workers are students and most of the rest are homemakers. The number and proportion of students in the hired farm work force has increased considerably in this six-year period. Temporary workers perform about a fifth of the man days of hired farm work.

Workers who did hired farm work only were employed an average of 246 days in 1969 and had total cash farm earnings of $2,840, Table 49. Workers who were primarily engaged in farm work but also did non-farm work had about the same amount of total employment and earnings. Workers who were primarily engaged in non-farm work had substantially higher daily earnings at non-farm work than at farm work and thus had higher total annual earnings even though they had fewer total days of employment than workers primarily engaged in farm work. The number of primarily non-farm workers in the hired farm work force and their proportion of days at farm and non-farm work has changed relatively little since 1962, suggesting that for these workers this may be a stable employment pattern with little opportunity to increase non-farm work at the expense of farm work.

Temporary workers had relatively few days of total employment and a high proportion of it was in farm work. Their daily and total earnings were low. Nevertheless, this is a growing component of the hired farm work force.

Table 49. Employment and Earnings of the Hired Farm Working Force by Chief Activity, 1968.

Chief Activity	Workers		Days of Wage Work		Daily Earnings (dollars)		Annual Earnings 1/ (dollars)	Percent Doing Non-Farm Work	Days of Non-Farm Work
	Number	Percent	Farm	Total	Farm	Non-Farm			
Hired Farm Work Only	419	16	246	246	11.55	--	2,840	--	--
Multiple Jobholders	610	24	--	--	--	--	--	--	--
Primarily Farm Wage Workers	110	5	183	249	10.60	13.05	2,790	100	65
Primarily Work on Own Farm	108	4	72	88	17.25	19.35	1,551	21	16
Primarily Non-Farm Workers	342	13	39	228	11.10	18.90	3,989	92	188
Primarily Unemployed	50	2	35	75	10.20	14.70	931	56	39
Temporary Workers	1,542	60	--	--	--	--	--	--	--
Homemakers	325	13	35	50	7.15	9.05	377	23	14
Students	1,086	42	34	54	8.10	7.00	417	34	20
Others	131	5	53	73	9.60	6.95	647	21	20
Total or Average 2/	2,571	100	78	119	10.75	15.40	1,453	37	40

1/ From all farm and non-farm work.

2/ Percentages may not add to totals due to rounding.

Source: (12).

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The Northeast. Approximately half the Northeast's hired farm work force works fewer than 25 days at hired farm work annually, Table 50. (In 1969 the percentage dropped to 35.) These are workers who enter the farm labor market to work on a particular activity or meet a specific earning objective and then leave farm work.

Table 50. Percentage Distribution of Farm Wage Workers by Duration of Farm Wage Work, Northeast Region 1961-1968 and All Regions, 1969.

Region and Year	Total Workers (thousands)	Percentage Working				
		Less than 25 days	25-74 days	75-149 days	150-249 days	250 days or more
Northeast						
1961	285	45	21	10	5	19
1962	286	42	na	na	na	na
1963	305	52	20	9	3	16
1964	292	42	24	8	6	20
1965	287	49	20	8	6	17
1966	216	56	20	8	2	14
1967	207	50	18	6	11	15
1968	279	47	20	11	8	14
1969						
Northeast	239	35	29	12	7	17
Northcentral	588	47	28	10	4	11
South	1,086	47	27	8	8	10
West	658	36	29	13	9	13
United States	2,571	43	28	10	7	12

Source: (12).

In 1969, seventeen percent of the Northeast's hired farm workers were essentially year 'round workers, working 250 days or more at farm work. This is a slightly higher proportion of year 'round workers than in the rest of the nation and reflects the fact that Northeast agriculture is highly committed to dairy and poultry farming. About half of the Region's farm work force worked 25 to 250 days at farm work.[10/]

[10/] It should be noted that employment statistics in Section IV show considerably more regular workers on Northeast farms in 1964 than those reported here. The difference is due in large measure to non-local workers, the fact that a regular worker is anyone who works 150 days or more on the same farm, the fact that Delaware and Maryland are not included in the statistics in Table 50 and sampling error.

Hired farm workers in the Northeast find more total employment, more farm employment and receive higher annual earnings than the average U. S. farm worker, Table 51. Only workers in the Western region fare better, while workers in the South have the least employment and lowest earnings. However, the differences in employment and earnings estimates for the Region's farm work force and that of the Nation are not so different as to cast doubt on the general applicability of the conclusions on income disparity among farm and non-farm workers discussed earlier. It is clear that farm workers in the Northeast, even full-time year 'round farm workers, receive far less for their efforts than the average non-farm worker.

Agricultural Wage Rates. Annual average farm wage rates for workers paid by the hour without housing or meals ranged from a low of $1.14 per hour in West Virginia to a high of $1.81 per hour in Connecticut, Table 52. Massachusetts, Connecticut and Rhode Island traditionally have had the highest farm wage rates in the Region. West Virginia has always been the lowest. Wage rates have risen substantially in all states since 1950, but have risen somewhat more rapidly in the Nation as a whole than they have in the Northeast.

The Northeast has generally been a high farm wage area relative to the remainder of the country. Farm wage rates in the Northeast exceed those of all others except the Pacific coast states. Farm wage rates are lowest in the South. However, farm wages in the Corn Belt and Lake States dairy region, which compete with the Northeast in the production of many commodities, do not differ substantially from those prevailing in the Region.

It is as important to know how representative average wage rates are as to know the averages themselves. Special tabulations of Enumerative Survey data for May, 1968 provided estimates of distribution of workers by earnings classes for a nine-state region excluding Delaware, Maryland and West Virginia. These estimates indicated that in May, 1968, only 20 percent of the Region's hired farm workers were earning less than $1.25 per hour while one quarter were earning $1.75 per hour or more, Table 53. The Region had a slightly higher average farm wage rate and a smaller proportion of lower paid workers than did the United States as a whole. The Region's largest farms, in terms of hired labor, paid considerably higher wage rates than smaller farms.

Seasonal workers and piece rate workers received higher average cash earnings than did regular or time rate workers, Table 54. This was probably accounted for, at least in part, by the value of perquisites provided

Table 51. Employment and Earnings of Hired Farm Workers in the Northeast and United States by Combinations of Farm and Non-Farm Work, 1969.

	All Hired Farm Workers		Worker Doing 25 or More Days of Hired Farm Work		Workers Doing Hired Farm Work Only	
	Northeast	United States	Northeast	United States	Northeast	United States
Total Workers (thousands)	239	2,571	156	1,466	129	1,616
Days Worked						
Farm	99	78	147	131	133	95
Non-Farm	57	40	47	32	--	--
Total	159	119	194	163	133	95
Annual Earnings						
Farm	$ 992	$ 837	$1,467	$1,406	$1,292	$1,030
Non-Farm	980	616	916	479	--	--
Total	1,972	1,453	2,383	1,886	1,292	1,030

Source: (12).

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Table 52. Annual Average Farm Wage Rates Per Month with House and Per Hour, Northeast States, Indicated Years, 1950-69.

State	Per Hour			Per Month with House		
	1950	1960	1969	1950	1960	1969
	- - - - - - - - - - - - dollars - - - - - - - - - - - -					
Maine	0.79	1.09	1.60	105	200	297
New Hamshire	0.88	1.13	1.69	132	211	315
Vermont	0.85	1.14	1.73	125	195	311
Massachusetts	0.87	1.22	1.81	141	224	356
Rhode Island	0.89	1.21	1.80	143	225	345
Connecticut	0.90	1.31	1.81	142	225	347
New York	0.89	1.13	1.65	134	210	321
New Jersey	0.84	1.16	1.78	145	215	347
Pennsylvania	0.73	1.07	1.49	117	189	301
Delaware	0.68	1.03	1.37	na	na	264
Maryland	0.69	1.04	1.50	na	na	266
West Virginia	0.53	0.76	1.14	na	na	na
New England	0.85	1.16	1.72	128	209	327
Middle Atlantic	0.81	1.11	1.64	128	204	320
United States	0.69	0.97	1.58	121	192	307

Source: (4).

Table 53. Average Hourly Cash Earnings and Cumulative Percentage of Workers Earning Less than Indicated Wages Per Hour, by Use of Hired Workers, Northeast and United States, May 1968.

Average Hourly Earnings	Farms by Use of Hired Workers[1/]					
	All Farms		500 Man Days or Fewer		More than 500 Man Days	
	United States	North-east	United States	North-east	United States	North-east
All Workers	$1.47	$1.52	$1.27	$1.39	$1.65	$1.68
	Percentage of Workers Earning:					
Under $0.50	2.1	2.0	3.7	3.4	0.3	0
Under 0.75	7.8	5.9	12.5	9.4	2.0	1.0
Under 1.00	15.9	11.2	24.3	17.5	5.6	2.2
Under 1.15	28.1	17.8	43.2	27.8	9.6	3.6
Under 1.25	36.1	20.9	48.7	31.3	20.7	6.3
Under 1.50	55.5	46.8	67.3	51.5	41.1	40.3
Under 1.75	80.5	73.0	84.6	77.6	75.5	66.6
Under 2.00	86.4	82.8	88.6	84.6	83.6	80.1

[1/] Classified according to use of hired workers in the peak quarter of 1967.

Source: (14).

Table 54. Average Hourly Cash Earnings and Cumulative Percentage Earning Less than Indicated Wages Per Hour, by Regular and Seasonal and Method of Payment, Northeast Region, May 1968.

Average Hourly Earnings	Type of Worker[1/]		Method of Payment	
	Regular	Seasonal	Paid Time Rate	Paid Piece Rate
All Workers	$1.48	$1.58	$1.51	$1.75
	Percentage of Workers Earning:			
Under $0.50	3.1	0.4	2.1	0
Under 0.75	8.4	2.0	5.9	5.4
Under 1.00	15.7	4.3	11.3	9.2
Under 1.15	22.7	10.4	18.2	9.9
Under 1.25	26.5	12.5	21.2	15.3
Under 1.50	43.4	52.0	47.8	29.5
Under 1.75	69.7	78.0	74.2	49.7
Under 2.00	81.3	84.9	83.2	74.5

[1/] Classified according to use of hired workers in the peak quarter of 1967.

Source: (*14*).

to regular, time-rate workers. However it dispels the notion that a high proportion of seasonal workers accounts for the low average wage rates reported in agriculture.

Wage rates paid to farm workers have historically compared unfavorably with those paid in other occupations. Average hourly earnings in manufacturing and hourly farm wage rates are compared in Table 55. Farm wage rates are most competitive with manufacturing in New England where they are about two-thirds the average manufacturing rate. In the Middle Atlantic states higher manufacturing wages and lower farm wage rates make the spread greater--more than 50 percent. Between 1950 and 1960 the spread between farm wage rates and hourly earnings of manufacturing workers widened considerably. From 1960 to 1969, there was some improvement, but even in 1969 the farm rates were not as competitive with earnings in manufacturing as they had been in 1950.

There is, of course, a considerable diversity in average hourly earnings among manufacturing workers, Table 56. In general durable goods industries produce higher earnings than non-durables. Food processing and textile mill products manufacturing, which compete with seasonal farm work in many areas of the Region and utilize many of the same kinds of workers, provides average earnings considerably in excess of farm work. Thus it is

Table 55. Gross Annual Average Hourly Earnings of Production Workers on Manufacturing Payrolls and Comparisons with Farm Wage Rates, Northeast States, Indicated Years, 1950-69.

State	Manufacturing 1/			Percent Farm of Manufacturing 2/		
	1950	1960	1969	1950	1960	1969
Maine	$1.19	$1.77	$2.55	66	62	63
New Hampshire	1.21	1.77	2.61	73	64	65
Vermont	1.21	1.85	2.76	70	62	63
Massachusetts	1.38	2.09	3.04	63	58	60
Rhode Island	1.28	1.88	2.69	70	64	67
Connecticut	1.43	2.32	3.28	63	56	55
New York	1.52	2.31	3.24	59	49	51
New Jersey	1.51	2.37	3.25	56	49	55
Pennsylvania	1.43	2.31	3.18	51	46	47
Delaware	1.42	2.31	3.23	48	45	42
Maryland	1.36	2.26	3.22	51	46	47
West Virginia	na	2.41	3.20	--	32	36

1/ Source: (5).

2/ Manufacturing compared with hourly rate without board or room from (4).

Table 56. Gross Average Hourly Earnings of Production Workers on Manufacturing Payrolls, Selected Industries, 1968.

State	Durables	Non-Durables			
		All	Food and Kindred Products	Textile Mill Products	Apparel
Maine	$2.47	$2.39	$2.13	$2.13	$1.97
New Hampshire	2.49	2.41	2.68	2.24	2.05
Vermont	2.66	2.46	2.48	2.24	1.82
Massachusetts	3.04	2.68	2.74	2.38	2.28
Rhode Island	2.72	2.42	2.94	2.30	2.02
Connecticut	na	na	2.98	2.40	2.21
New York	3.25	2.90	3.03	2.58	2.67
New Jersey	3.13	3.02	3.24	7.25	2.41
Pennsylvania	3.24	2.62	2.80	2.24	2.21
Delaware	3.57	2.94	2.28	2.46	2.10
Maryland	3.30	2.66	2.59	2.15	2.21
West Virginia	3.10	2.92	2.20	1.99	1.91

Source: (5).

not difficult to understand why workers who have or can acquire the requisite skills leave the fields when a processing plant opens or a new mill comes to town. Even apparel manufacturing, which employs a high percentage of women, and is generally considered a low-paying occupation, has a higher average hourly rate than farm work.

The hourly farm rates referred to in this discussion are those without perquisites. Even the most ordinary non-agricultural job generally carries some fringe benefits. Many provide the security of unemployment compensation or union seniority rights. Thus when fringe benefits are considered, the competitive position of agriculture in hiring workers is further weakened.

SECTION VI. HIRED WORKERS IN IMPORTANT LABOR DEMAND ACTIVITIES

The Northeast is primarily a region of livestock agriculture, and the majority of agricultural workers work in livestock activities. Nevertheless, some of the Region's most pressing farm labor problems involve its crop agriculture. Seasonality of labor demand is greater in crop production than livestock production. At peak employment the number of workers employed on crop farms tends to be quite large relative to the labor force on livestock farms. Furthermore crop production tends to be somewhat more geographically concentrated. Thus labor use in crop production in the Northeast merits special attention.

A wide variety of crop activities contribute to the need for seasonal hired farm workers in Northeast agriculture. The most important of these are potatoes, tomatoes, asparagus, apples and nursery products. However many other crops generate important seasonal labor requirements in specific areas. Since the location as well as the magnitude of seasonal worker requirements are important the following discussion is organized on a state-by-state basis.

The sources of workers for specific seasonal farm labor demand activities vary throughout the Northeast region. Few generalizations about sources of workers for particular activities are valid. Local workers are sufficient to perform seasonal farm work in areas where seasonal labor requirements are low relative to the size of the local labor force and/or where alternative employment opportunities are limited. Since industrialization is taking place in rural areas at a rapid rate in the Region there are few areas that lack alternative employment opportunities to farm work. In some areas non-local workers are used. Since these areas are generally those that generate the largest volume of production and have the highest farm employment these are the areas for which the adequacy of labor supply is of greatest concern.

In this section labor use and the sources of workers for commodities or commodity groups generating high seasonal farm labor demand are discussed. Formal sources of this type of information are almost entirely lacking. The data cited below were gathered in discussions with state farm placement personnel and from annual reports prepared by state farm placement agencies. Data on labor requirements for important crops and its monthly distribution were obtained from ES-223 forms completed by local farm placement representatives

in the respective states.[11/] These data were collected during 1968 and in most cases refer to the year 1967. While numbers of workers employed in various activities have changed somewhat since that time, the distribution of labor use among crops has probably not changed much. In most states seasonal employment is reported only during the active farm labor season, so that only those months for which data were available for a particular state are included. ES-223 forms reporting employment by activity were not always consistent with total seasonal employment data from (*11*). It was not practical to discuss every crop in every state; only those crops which are major users of seasonal labor in particular states are included.

Maine

The most important crop in the agriculture of Maine is potatoes. This crop requires seasonal workers for planting in June through harvesting in October, Table 57. However, the harvest labor requirement overshadows all other crops and activities. Tree fruits, principally apples, and other crops, principally berries, generate the only sizeable seasonal labor requirements.

Table 57. Monthly Seasonal Hired Labor Requirements for Major Crops, Maine, 1967.

Crop	June	July	August	Sept.	Oct.
Potatoes	1,475	2,940	2,975	4,215	26,324
Sugar Beets	150	325			
Tree Fruit		100	1,550	535	850
Strawberries		300			
Peas		150	100		
Miscellaneous Vegetables		35	35	156	104
Other Crops		225	585	650	20

Source: ES-223 Reports.

11/"Seasonal" farm workers reported on In-Season Farm Labor Reports (ES-223) are those who work fewer than 150 days a year on the same farm.

Maine's seasonal farm employment shows wide monthly and yearly fluctuations depending upon plantings, yield and anticipated prices for potatoes. Planting and mid-summer labor requirements have declined substantially since 1955 due to mechanization and improvements in cultural practices, Table 58. Mechanization of harvest activities has also reduced fall labor requirements somewhat.

Table 58. Monthly Distribution of Seasonal Hired Farm Employment, Maine, Selected Years, 1955-69.

Year	May	June	July	Aug.	Sept.	Oct.
1955			8,024	17,812	16,185	6,553
1957	6,600	8,200	12,625	23,737	33,790	1,981
1959		7,976	9 592	17,778	17,896	7,987
1960	7,539	7,847	10,029	14,893	21,591	7,847
1963	7,414	7,603	9,605	12,137	10 122	12,273
1964	6,949	7,033	8,737	10,109	13,727	5,342
1965		3,725	5,406	5,930	19,015	22,098
1966	3,293	3,397	5,109	6,520	13,475	3,169
1967		1,625	4,075	5,245	4,884	27,372
1968	1,550	2,625	4,100	5,197	7,825	4,218
1969	na	2,410	2,885	4,809	3,884	16,149

Source: (*11*).

Nearly all of the state's potato crop is grown in Aroostook County, which had a civilian labor force in 1960 of approximately 30,000 people. Peak labor demand periods in potato production include planting which extends from the middle of May to the middle of June, and harvest which begins in the middle of September and extends well into October. There is also considerable labor demand in potato storage house operations beginning in late October and continuing through the winter. Seed potato cutting and planting, which used to require a large number of seasonal workers, has now been nearly completely mechanized. This activity is carried out by local adult men and women, a few Indians, and occasionally some school children. The three principal sources of potato harvest workers for this activity are school children, local adults, and Canadian workers.

Canadian workers engage principally in hand picking; such workers seldom work on mechanical harvesters. Canadian workers are recruited mainly

from the Saint Rose and Edmunston area cooperatively by Canadian and Maine Employment Service personnel. Although the number of Canadian harvest workers used in the Maine potato crop has declined substantially, it may now be leveling off due to a slowdown in mechanization of the potato crop. Twenty-eight hundred Canadian workers were used in the potato harvest in Maine in 1967.

Local adult workers, including 15- and 16-year-olds, are employed on mechanical harvesting machines. The majority of these harvest machine workers are women and girls employed at sorting. Men and boys are employed in driving and in potato house work. School children of high school age and younger workers are employed in stoop picking of potatoes. Approximately 13,000 youths were employed in the 1967 potato harvest. A sufficiency of supply of potato harvest workers is contingent on, among other factors, the continued closing of schools during the potato harvest period. There is increasing pressure from the non-agricultural population and school teachers to end the potato harvest school closing.

There has been an increase in the local processing of Maine's potato crop. Processors are beginning to compete with potato growers for workers during the harvest season, and processing employment has offset somewhat the effects of harvest mechanization on full employment in the potato growing areas. Processing labor demand begins at approximately the same time as field harvest labor demand but extends for a longer period and generally represents a more desirable type of employment, particularly for women.

Mechanization of the Maine potato crop is now about 60 percent complete. It is anticipated that mechanization will continue, but at a slower rate than in the past. Vacuum sorting to reduce the need for manual sorters on potato machines has just been introduced. At present only a small proportion of the crop is vacuum sorted. If this technology becomes more widespread it would reduce the demand for women and children in the potato harvest.

Blueberry production requires seasonal workers in the mid-summer harvest period. School children, local adults, and Indians all are important sources of blueberry harvest workers. An increasing number of blueberry harvest workers are day-haul workers. A few Canadian workers are also used in the blueberry harvest. Blueberry harvest offers lucrative pay for a short period of time and in general labor problems in this crop have not been too severe. In addition considerable progress is being made in mechanization by some growers.

Most of Maine's apple crop is of the MacIntosh variety. Apple growers utilize Canadian workers and local pickers for the short late fall harvest period. The mainstay of the apple harvest labor force is the Canadian worker; approximately 400 Canadians were employed in the 1967 apple harvest. Growers utilizing Canadian workers produce approximately one-half of the state's apple crop. Little change in apple harvest labor demand is anticipated, and the adequacy of supply of apple harvest workers in Maine will continue to hinge on the availability of Canadian workers. The Maine apple harvest appears to be of too short duration, too late in the season, and too far north to attract domestic migratory workers.

Two crops of somewhat lesser importance in Maine are sugar beets and market vegetables. Sugar beets are a relatively new crop and have produced little or no labor problem because of nearly complete mechanization. Market vegetable production, which takes place in the southern part of Maine, has been diminishing because of the competitive pressure of urban growth. Non-contract Puerto Ricans and youth day-haul workers are the principal sources of labor for these crops. In 1967 approximately 40 non-contract Puerto Ricans were used in market vegetable production. Declining vegetable production and the proximity of vegetable producing areas to Portland should make the labor supply to market vegetable producers adequate in the future.

New Hampshire

Apples generate the largest seasonal hired worker requirement in New Hampshire, Table 59. Peak seasonal labor demand for apples is the October

Table 59. Monthly Seasonal Labor Requirements in Major Crops, New Hampshire, 1967.

Crop	June	July	Aug.	Sept.	Oct.	Nov.
Poultry	150	150	150	150	100	50
Dairy	300	300	350	300	100	50
Tree Fruit				400	1,000	20
Miscellaneous Vegetables	250	450	500	300	50	
Other Crops	200	300	350	300	100	50

Source: ES-223 Reports.

harvest period. Vegetables also generate a small mid-summer labor requirement. New Hampshire's seasonal hired farm labor requirements have declined slowly but steadily since 1955, Table 60.

Table 60. Monthly Distribution of Seasonal Hired Farm Employment in New Hampshire, Selected Years, 1957-69.

Year	June	July	Aug	Sept.	Oct.	Nov.
1957		1,850	1,900	2,150	1,400	
1959	1,239	1,650	1,850	2,500	1,897	
1960	1,200	1,650	1,900	2,700	700	
1963	1,000	1,500	1,900	2,750	1,300	
1964	1,000	1,250		2,350	800	
1965	950	1,150	1,450	1,800	850	
1966	950	1,146	1,500	1,850	1,350	200
1967	900	1,200	1,350	1,450	1,350	170
1968	885	1,150	1,250	1,200	1,300	190
1969		1,130	1,310	1,344	1,425	170

Source: *(11)*.

The apple crop is highly concentrated in Hillsboro and Rockingham Counties. The predominant variety is MacIntosh, characterized by a short picking season and easy bruising. Apple harvest work occurs in late fall and is performed by local workers, southern migrant crews, and workers imported from Canada and the British West Indies. Local workers, consisting of moonlighters, a few persons on vacation or temporarily without work, some students on weekends and servicemen and dependents from Pease Air Force Base, are the largest source of apple harvest workers. About 400 foreign workers were used in the New Hampshire apple harvest in 1968. In addition about 200 southern migrant workers, all males organized into four crews, were used in 1968. These crews came directly from Florida.

As in the Maine apple harvest, the principal problem in recruiting additional domestic migrant workers for New Hampshire is the short duration of the work and the cold weather during the harvest season. A high rate of employment in New Hampshire, and the relative isolation of the apple producing areas makes it likely that continued recourse to foreign sources of apple harvest workers will be necessary.

Vermont

There is little seasonal hired farm labor demand in Vermont, a state heavily engaged in dairying. Peak seasonal demand occurs in October for apple harvest, Table 61.

Table 61. Monthly Seasonal Labor Requirements for Major Crops, Vermont, 1967.

Crop	May	June	July	Aug.	Sept.	Oct.
Tree Fruit			10			912
Dairy			30	30	30	50
Potatoes						17
Miscellaneous Vegetables			15	10	10	
Other Crops	20	125	295	130	130	

Source: ES-223 Reports.

Rhode Island

Rhode Island employs relatively few seasonal agricultural workers but a small number of foreign workers are employed in the potato and apple harvest. Potato producing areas of Rhode Island are in relatively unpopulated sections of the state. Hiring of seasonal workers usually begins in August for some preharvest activities and peaks at the end of September during the potato harvest. Rhode Island potato harvest is completely mechanized and no stoop labor is required. Seasonal harvest labor is provided by local workers who are mostly young women in their late 20's and early 30's working in the potato harvesting machines. Canadian men work at packing, sorting, grading, and as shed workers, generally doing heavier jobs that women and students cannot perform. During 1968 peak seasonal employment of Canadian workers consisted of 10 persons. In 1968 one Rhode Island potato grower secured a crew of southern migrants for potato harvest.

The apple crop in Rhode Island is relatively small and consists of late season apples for fresh market and storage. The harvest season extends from Labor Day through approximately November 20. Most harvest workers are local people, but in 1968 eighteen Canadians were utilized. Canadian workers were all males from the apple growing regions of Nova Scotia. Local workers were predominantly males and consisted of college students working part-time, workers on vacation or lay-off, and some housewives.

The use of Canadian workers in Rhode Island is declining and it is expected that growers will attempt to switch to Puerto Rican workers to supplement locally available labor. Contract and non-contract Puerto Rican workers are presently brought into Rhode Island to serve the seasonal labor needs of the nursery industry.

Connecticut

Shade tobacco is the major source of seasonal farm employment in Connecticut. Peak demand for seasonal workers occurs in the July and August harvest period when 13 thousand to 16 thousand workers are employed, but labor demand is substantial during all months of the year.

Harvest of shade tobacco is a laborious process requiring the removal by hand of each leaf from the tobacco stalk when it has reached proper maturity. Labor requirements during the harvest peak have changed very little since 1955, Table 62. Various improvements in pre-harvest and post-harvest

Table 62. Monthly Distribution of Seasonal Farm Employment in Connecticut, Selected Years, 1955-69.

Year	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.
1955			4,400	3,900	6,600	12,500	16,500	6,500	7,100	4,900
1957			4,100	5,000	7,300	11,000	14,500	7,000	6,000	5,100
1959					7,340	13,180	14,460	8,270	5,870	4,930
1960				4,500	7,360	13,000	14,910	7,300	5,180	4,800
1963		3,970	3,550	3,950	5,600	13,790	16,540	6,930	7,100	5,520
1964	4,920	4,820	5,000	4,740	5,390	13,660	16,890	6,270	7,250	5,690
1965	5,590	5,440	5,770	4,800	5,220	14,530	16,970	6,630	6,280	3,750
1966	3,310	2,960	3,790	3,960	5,100	13,640	16,900	5,190	4,780	2,610
1967	2,100	1,660	2,400	3,510	4,980	13,630	15,200	5,010	4,530	2,530
1968	2,060	1,330	2,370	3,380	4,340	11,880	14,620	4,645	4,960	2,640
1969	1,170	1,190	2,700	3,100	3,380	10,710	13,200	4,820	5,410	3,110

Source: (*11*).

handling operations have reduced labor requirements substantially in other months.

In-season farm labor reports in Connecticut cover only the Tobacco Valley area and include, for the most part, only workers employed in shade tobacco. However Connecticut also uses seasonal workers in nursery and

greenhouse operations, apples and vegetables. About 1300 seasonal workers were employed throughout the active season in 1968 in nursery and greenhouse operations. About 950 seasonal workers were employed on fruit farms, most of them during the October apple harvest period. Vegetable farms required relatively few workers.

Shade tobacco is the major source of seasonal labor requirements in Connecticut. The shade tobacco industry is highly concentrated; more than 90 percent of the crop is grown in Hartford County. Worker turnover rates on shade tobacco are high so that many more workers are required than indicated by peak employment data. Several sources of workers are used for shade tobacco, the source varying to some extent with the type of job to be performed. Local adults, local and out-of-state youth, southern migrants, and contract Puerto Ricans are used in large numbers. Recruitment is carried out by the Connecticut Farm Labor Service and the Shade Tobacco Growers Association, which operates large housing facilities for out-of-state youths and adult workers.

The active season for shade tobacco employment extends from mid-March through December. Local and out-of-state adults perform pre-planting activities, but local workers predominate in this activity. Approximately 75 percent of these local adults are non-whites recruited from metropolitan areas. Field operations, including hoeing and suckering, are performed primarily by local and out-of-state adults. Youths are also sometimes used in these activities. Top tying, required as the plants grow taller, is usually performed by youths. Harvest begins approximately July 1. Leaves are picked individually beginning at the bottom of the plant. As the harvest progresses, the job gradually changes from a stoop to a stand-up job. Youths are used almost exclusively for harvesting since a person of adult size could damage the leaves while passing between the rows. Boys age 14 and 15 pick and drag the crop out of the field. Girls and adult women sew the leaves. Hanging and other shed work is performed by local and non-local adults.

In 1967 approximately 2700 out-of-state youths and 6300 (at peak) local day-haul youths were employed in shade tobacco. Most out-of-state youths are white and come from Alabama, Florida, North Carolina, Virginia, West Virginia, and Pennsylvania. Lodging for out-of-state youths is provided free by the Shade Tobacco Growers Association and a modest charge is made for meals. A modest planned recreational program is provided for free time.

Local youths are paid the same rate as those from out-of-state but are provided transportation rather than lodging.

Domestic migrant workers come from Alabama, Louisiana, Mississippi, North Carolina, and New York City. Transportation is provided by the Shade Tobacco Growers Association. Most workers are males. Turnover among workers is high and the use of these workers is declining. The use of local adult workers is also declining, with principal reliance being put on local and out-of-state youths and contract Puerto Ricans. In 1967, about 5500 contract Puerto Ricans and southern migrants were employed with peak employment at about 2400 workers. Peak employment of local adults was about 3100 workers.

Nearly all operations in the production of shade tobacco that can be mechanized have been mechanized and not much change in the quantity or quality of labor demand is expected from this source. Labor requirements may decline somewhat however as increasing wage rates result in improvements in supervision and labor efficiency. Labor requirements may also be affected by increasing use of reconstituted wrappers on lower price cigars which could reduce the demand for leaf wrapper.

Seasonal workers are also required in Connecticut during the apple harvest season which extends from the beginning of September through October. Most apples are picked for storage to eventually enter the fresh market. The main source of labor supply is local workers, including students, part-time unemployed or vacationing workers, moonlighters, weekend workers and church groups. Local workers were supplemented by about 50 contract Puerto Ricans, 50 non-contract Puerto Ricans and southern migrants from Florida, North Carolina, and 100 British West Indians in 1968. Out-of-state workers were males and were mostly professional pickers who came direct to Connecticut from their home areas. A few day-hauls have been operated on a modest scale and growers have also tried recruiting southern migrants but have had only limited success. There is no family housing on most Connecticut apple farms and zoning laws are a problem in new construction. The use of non-local workers in apple harvest in Connecticut has never been great and appears to be on the decline.

Nursery and greenhouse operators rely on local workers and contract and non-contract Puerto Ricans. Greenhouses use local youths and elderly workers in suitable activities. Most field work in nurseries is performed by island Puerto Ricans and day-haul Puerto Ricans from Hartford and New Haven.

Massachusetts

Shade tobacco is also an important seasonal labor using crop in Massachusetts. The northern end of Connecticut's Tobacco Valley extends into the State. Tobacco labor demand is substantial throughout the summer, peaking in August, Table 63. Cranberries and apples generate heavy labor demand in

Table 63. Monthly Seasonal Labor Requirements for Major Crops, Massachusetts, 1967.

Crop	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Cranberries	480	542	710	877	1,198	2,480	1,298	512
Landscape	687	896	686	673	583	467	197	185
Greenhouse	383	492	330	286	277	196		70
Nursery	276	723	351	495	274	67		
Tobacco	1,114	1,953	5,381	6,010	3,465	1,099	702	
Potatoes	80			159		279		
Lettuce	60							
Cabbage	100	63						
Asparagus		300						
Peppers		70						
Tomatoes		55						
Miscellaneous Vegetables	389	596	1,152	2,322	1,791	892	166	
Tree Fruit	35	17	110	270	759	917		
Strawberries			393					
Blueberries				440	150			
Dairy	65	73	153	109	162	24		
Poultry	30	32				15	161	209
Miscellaneous	439	669	1,158	922	1,255	897	674	260

Source: ES-223 Reports.

October. A wide variety of fresh market vegetables are grown in the State which require labor for preharvest and harvest operations in July, August and September.

Seasonal farm labor requirements have declined somewhat in all months except November, Table 64. Increasing cranberry production has resulted in a modest but steady increase in labor requirements in November.

Massachusetts shade tobacco growers rely on the same sources of workers as those in Connecticut. Most recruitment of out-of-state workers is carried on through the Shade Tobacco Growers Association as in Connecticut. Local workers, out-of-state youth, contract Puerto Ricans, and southern

Table 64. Monthly Distribution of Seasonal Farm Employment in Massachusetts, Selected Years, 1955-69.

Year	April	May	June	July	Aug.	Sept.	Oct.	Nov.
1955			8,826	14,677	17,368	13,959	10,969	2,710
1957		6,344	9,601	14,837	16,378	12,258	8,224	2,140
1959			8,575	13,142	14,698	10,888	8,754	2,088
1960		6,092	8,313	13,776	15,409	11,874	9,134	2,767
1963	537	5,682	7,442	13,881	14,864	10,736	9,822	3,630
1964	340	5,559	7,271	13,956	14,643	10,451	9,748	3,722
1965	1,303		7,435	18,835	15,146	11,892	9,287	3,528
1966		4,438	6,568	12,447	13,854	10,461	8,216	3,308
1967		3,019	5,441	10,424	12,566	9,914	7,333	3,398
1968		3,736	5,319	10,790	13,050	8,935	6,073	2,960
1969		2,774	3,965	9,668	12,478	7,141	6,324	2,541

Source: (*11*).

migrants are all employed. There is considerable interchange of workers among shade tobacco growers in Massachusetts and Connecticut.

Massachusetts is the Nation's leading producer of cranberries. Pre-harvest activities from April to August require a relatively low volume of workers. Farm operators, members of their families, and a few local workers supply pre-harvest labor requirements. The cranberry harvest period extends from mid-September to mid-October and normally lasts from 6-7 weeks.

About 60 percent of the cranberry harvest workers are local adults, mostly housewives who tend the cranberry harvest machines. Many local adults are day-haul workers, while others are drive-in workers. About 40 percent of the cranberry harvest work force consists of "walk-in" Puerto Ricans and southern migrants. Most of these are from vegetable farms in Massachusetts, New Jersey, and other states whose work in these areas has ended. Growers seem to be increasingly relying on migrant workers and Puerto Ricans because of the uncertain supply of local workers. Cranberry harvest is highly mechanized. New water harvest techniques are being tried. These will not reduce the amount of labor required but may increase yield and make harvest less dependent on weather.

Massachusetts is also a large producer of apples. The state's apple harvest season extends from mid-September to mid-October and the crop consists of a high proportion of MacIntosh harvested for eventual fresh market sales. Many local adults, principally male workers, are used on weekends in

the apple harvest. Sometimes weekend apple pickers are actually in excess supply. Off-duty service personnel recruited from nearby military bases are also a source of local workers.

In 1967, sixty-nine southern migrants were employed in apple harvest work. These were family groups of experienced tree fruit pickers, principally from Virginia and New Jersey. The decision of migrants to extend their itinerary into Massachusetts appears to be marginal on the part of many potential workers since this is a short stop at the end of a long trip and not a traditional part of the eastern seaboard pattern. This factor and a lack of family housing limit the availability of southern migrants. The mainstay of the apple harvest work force is provided by Canadian and British West Indian male workers who are brought in specifically for apple harvest activities in Massachusetts. Three hundred and eighty such workers were imported in 1967. Apple producers in Massachusetts have shown some interest in semi-dwarf and dwarf trees to reduce or eliminate ladder work and open employment opportunities to women. A few growers have experimented with picking aides for women workers but the use of these devices is not widespread.

Vegetable growers and nursery stock producers generate a substantial demand for seasonal agricultural workers in Massachusetts from April through October. A mainstay of this work force consists of contract and non-contract Puerto Ricans who come directly to Massachusetts. About 300 contract Puerto Ricans were used in the nursery and vegetable work in 1968. These workers are augmented by students and local day-haul workers. Some of these workers go on to cranberry harvest toward the end of the vegetable and nursery season. Combined demand for vegetable and nursery workers is strong. There appears to be little prospect that mechanization will reduce the requirements for such workers in the near future.

In general Massachusetts farm labor supply seems to be sustained reasonably well by local sources for short term seasonal work, particularly during the summer school vacation period. Because of the high level of industrial employment in Massachusetts longer term seasonal work requirements in shade tobacco, vegetable, and nursery production will probably continue to rely heavily on out-of-state workers. The apple harvest which requires a large number of workers for a very short period of time and occurs at the end of the agricultural season will undoubtedly continue to present recruiting problems for growers. It is unlikely that any substantial number of southern

migrant workers will be attracted into this crop, and up to this point growers' efforts to recruit increased numbers of local workers have not met with success.

New York

Both fruits and vegetables generate substantial seasonal hired farm labor requirements in New York. Peak seasonal labor demand occurs in October, but employment is high through the summer and fall season, Table 65. The

Table 65. Monthly Seasonal Labor Requirements for Major Crops, New York, 1967.

Crop	May	June	July	Aug.	Sept.	Oct.
Potatoes	695	635	620	1,885	5,725	6,725
Tomatoes	105	680	695	790	3,235	1,410
Peas	40		115	10		
Onions	270	550	750	1,025	1,110	515
Lettuce	195	510	955	790	170	145
Beans	95	390	960	2,080	1,240	
Cole Crops	80	210	925	565	1,755	2,015
Sugar Beets	45	355	620	375	105	165
Sweet Corn		125	160	910	940	395
Miscellaneous Vegetables	1,045	1,860	2,830	4,450	3,475	3,025
Tree Fruit	515	550	3,325	6,050	5,334	8,925
Grapes	445	135	115	120	850	3,615
Strawberries	140	500	485	50		
Berries	105	35	1,105	10	25	
Nursery	40	55		10		
Miscellaneous	1,785	2,305	3,650	3,240	1,900	1,865

Source: ES-223 Reports.

largest single peak demand crop is apples. Some peaches and cherries are also produced, making tree fruit labor demand high from July through October. Grapes and berries also require considerable numbers of workers. New York's major vegetable crop is potatoes, which generates high labor requirements during the September and October harvest period. Tomatoes, onions, snap beans and cabbage all require large numbers of seasonal workers. Tomatoes and cabbage still require many workers in October, accentuating the peak seasonal labor created by apples and potatoes.

Seasonal labor requirements during July, August have declined substantially, due in large measure to the mechanization of pea and snap bean harvest since 1955, Table 66. Labor demand in October has changed very little during this period.

Table 66. Monthly Distribution of Seasonal Hired Farm Employment in New York for Selected Years, 1955-69.

Year	May	June	July	August	Sept.	Oct.	Nov.
1955	5,749	13,546	35,712	41,912	44,695	35,836	4,459
1957	6,296	14,343	31,033	44,367	47,289	28,079	3,348
1959		13,308	30,441	37,040	37,355	29,795	2,820
1960	6,403	11,588	24,671	28,751	37,599	30,553	4,429
1963	6,756	10,737	21,937	25,448	32,465	31,117	150
1964	7,060	12,653	24,907	25,605	31,700	31,166	370
1965	7,080	13,075	22,995	25,170	30,525	29,405	255
1966	6,195	10,215	19,800	20,825	26,800	28,657	1,253
1967	5,655	8,950	16,445	22,360	25,864	28,800	375
1968	5,255	8,400	14,965	16,520	23,429	24,356	40
1969	4,770	7,665	13,575	17,605	22,370	22,639	389

Source: *(11)*.

Although vegetables are grown in many areas of New York state, the three major areas of concentration are in western New York, the Hudson Valley including Orange County muck areas, and Long Island. Local day-haul workers are an important source of seasonal labor especially in western New York state and Long Island. Contract and non-contract Puerto Ricans are also important in the Hudson Valley and Long Island areas. Southern migrant workers are used in all areas. These are mixed groups but predominantly male. Most come direct to New York state but some stop in Virginia for vegetable harvest activities before arriving in New York state. A few vegetable growers are experimenting with Texas-Mexicans as a source of workers. About 80 Texas-Mexicans were employed in New York vegetable farms in 1968 in Orange County. These workers were attracted from Ohio and Michigan sources. The shortage of family housing has retarded the shift to Texas-Mexican workers. Competition from non-agricultural industry and from vegetable processors in major vegetable producing areas has presented major recruitment problems to New York state growers.

Pre-harvest activities in tree fruit are undertaken almost exclusively by local workers. Harvest activities, which occur in mid-summer for sour cherries and late fall for apples, are performed by a variety of workers. Local workers predominated in the cherry harvest although some other sources of workers are utilized. These local workers are adult day-hauls and some youth workers, some of whom are former migrants. Southern migrant crews of adult males and family groups are brought into New York state for tree fruit harvest. These come from the citrus areas of Florida, and also from Georgia and the Carolinas. In western New York state they come direct from cherries and stay on for the apple harvest. Southern migrants coming into the Hudson Valley generally stop in Maryland, Delaware and Virginia for tree fruit harvest and also come from a variety of other activities. Non-local tree fruit workers fill in the gap between cherry and apple harvest with tomato, pickle, onion, and lettuce work. Foreign workers are also an important source of supply for apple harvest activities in the Hudson and Champlain Valleys where sour cherry growing is limited. Much of this area is relatively remote from population centers and has not attracted southern migrant crews to the same extent as western New York state.

The New York state grape harvest, principally of wine grape varieties, occurs in late September and extends into late October. This activity is rapidly becoming mechanized. Grape harvest labor is supplied almost exclusively by adult and youth day-haul workers. The proportion of urban workers among these day-hauls is increasing rapidly.

Potato growing in New York state is a highly specialized activity. The principal areas of production are Long Island, Wyoming, and Stuben Counties. Seed cutting and potato harvesting activities are highly mechanized. For harvest workers, growers rely on southern migrant crews who are specialized potato workers and also use large numbers of local workers. Many of these growers have been successful in developing regular and fairly reliable sources of labor supply.

The number of farm workers required in New York state agriculture has declined substantially with mechanization in snap beans, sweet corn, grapes, and sour cherries. The greatest part of this mechanization is over however. Mechanization of the apple harvest is the next big factor in the farm labor market, but that development is not imminent. The eastern apple growing areas of New York state share many of the characteristics of the New England apple industry which makes it undesirable for southern migrant apple harvest

crews. However because of its closer proximity to other areas employing southern migrant apple harvest crews it would appear feasible to gradually substitute such sources of workers for foreign workers.

New Jersey

New Jersey is one of the Region's leading producers of fruits and vegetables. Seasonal hired farm labor requirements are high from June through September, Table 67. The largest peak seasonal labor demand is created by tomatoes which have a relatively long harvest season beginning in July and extending well into September. Asparagus is the other major vegetable requiring a large seasonal labor force. Harvest starts in late April and extends into July. In New Jersey asparagus and tomato production have been successfully combined by many workers to provide a four to five month period of employment. However both crops appear close to becoming mechanized.

Table 67. Monthly Seasonal Labor Requirements for Major Crops, New Jersey, 1967.

Crop	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.
Potatoes	115	350	150	300	280	870	1,400	1,430	420
Asparagus	75	270	4,106	5,200	7,100				
Lettuce			150	525			275	350	30
Tomatoes			900	150	250	6,890	7,575		
Beans						600			
Cucumbers					1,350	200	50		
Sweet Corn						365			
Onions					1,225				
Miscellaneous Vegetables	165	725	1,000	1,800	5,535	4,495	4,100	3,385	790
Tree Fruit	260	265	300	300	490	1,500	1,595	2,100	145
Grapes							100		
Berries	70	135				2,760	300	385	
Strawberries				3,700					
Nursery	635	1,130	1,100	1,400	2,100	1,150	1,920	1,850	695
Landscape	55	250	530	395		500			115
Greenhouse	130	235	120	200			95		275
Sod				150	120	120	50		
Miscellaneous	135	170	550	1,680	1,580	1,680	960	1,380	430

Source: ES-223 Reports.

Both apples and peaches are important tree fruits in New Jersey. Many workers work on both crops beginning with peach harvest in late July and ending with apple harvest in October. Berries, principally strawberries and blueberries, are also an important seasonal labor user.

Seasonal labor demand in New Jersey during the active season has changed very little since 1955, Table 68. Decreases in labor requirements due to the mechanization of such crops as snap beans, sweet corn and potatoes have been offset by growing demand in other commodities, particularly nursery and landscape work.

Table 68. Monthly Distribution of Seasonal Hired Farm Employment in New Jersey for Selected Years, 1955-69.

Year	April	May	June	July	August	Sept.	Oct.	Nov.
1955	350	8,899	15,790	20,120	20,545	13,425	11,080	2,400
1957	350	9,040	14,155	18,818	19,867	15,959	11,202	1,518
1959			14,864	19,325	25,612	17,690	13,685	1,919
1960		9,934	15,480	20,905	24,015	16,565	13,141	2,122
1963	1,490	11,115	15,856	21,925	23,335	17,265	12,286	2,390
1964	2,050	10,896	18,100	24,040	24,890	16,900	11,148	2,153
1965	1,890	10,805	17,405	23,640	24,650	16,115	11,410	850
1966	2,500	9,870	15,550	20,390	22,170	17,830	11,240	1,310
1967	1,740	8,320	15,570	19,790	21,045	18,120	10,110	1,800
1968	2,700	9,000	13,370	19,870	18,769	15,850	9,470	580
1969	2,790	8,710	10,975	18,695	17,100	10,400	8,345	1,170

Source: (*11*).

Production of fruit, vegetables and nursery stock in New Jersey is a highly intensive and highly concentrated industry producing requirements for enormous volumes of seasonal labor in relatively small areas. However, New Jersey producers are uniquely situated with respect to metropolitan population centers in New York City and Philadelphia and have developed large day-haul activities to meet seasonal farm labor needs.

Asparagus harvest begins in April and extends into early July. The labor force consists largely of contract Puerto Ricans with some local women and children employed for bunching of fresh market asparagus. Many of the

workers stay on for work in the subsequent tomato crop. There is about a three week lag between the two crops when some workers return to Puerto Rico at their own expense for a vacation. Mechanical harvesting of asparagus has been tried by several growers and appears imminent. This development could cut labor requirements for asparagus harvest by at least half.

Tomatoes is one of the most important vegetable crops in New Jersey and the major "money" crop for non-local workers. The tomato harvest produces coat-tail supplies of labor to many other smaller users of non-local seasonal workers. Planting, which up until recently consisted almost entirely of transplanting seedlings into the fields, is performed by adult local workers and by small scale day-haul operations. There is an increasing tendency to direct seeding of tomatoes which has and will continue to reduce planting labor requirements. The major labor demand period for tomatoes is the August and September harvest period. About 45 percent of the tomato harvest labor force in New Jersey consists of day-haul workers from Philadelphia and central New Jersey cities. These workers are non-white adults both males and females. About 40 percent of the tomato harvest workers are contract Puerto Rican males. There are some southern migrant family groups, sometimes working both tomatoes and potatoes or working in tomatoes to fill in during lulls in other vegetable harvest activities. The use of day-haul workers has increased but now appears to be stabilizing. The mechanization of tomato harvest is imminent, and this development will have drastic effects on employment and labor supply for other crops. Day-haul workers will probably be the first and hardest hit since that is the source of supply which is most easily "shut off." Later the employment of contract Puerto Ricans will almost certainly decline as mechanization of tomato harvest or movement of the industry to other areas becomes more complete.

Potato harvest activities require relatively large numbers of seasonal workers in New Jersey from August through October. Growers without adequate housing facilities rely principally on local workers. The remaining growers rely on southern migrant family groups. These migrants are specialized potato crews from the potato growing areas of Florida who work their way through South Carolina, the eastern shore of Maryland and other seaboard potato producing areas on their way to New Jersey. As housing of seasonal workers becomes more of a problem the use of southern migrant crews in the potato harvest has been decreasing. The mechanization of the potato crop in

New Jersey is complete both for seed cutting and harvest. The present labor force is employed in sorting and handling of the crop. Further reductions in labor requirements are not likely to occur unless there is a decline in potato production.

New Jersey produces a large volume of miscellaneous vegetables which require hired workers from May through October starting with strawberries in the spring. About 40 percent of miscellaneous vegetable workers are southern migrant family groups. Another 40 percent are contract Puerto Ricans, and about 20 percent are made up of local day-haul workers both male and female. Local workers and youths predominate in the strawberry harvest while southern migrant and contract workers predominate in other activities. There is a good deal of shifting of workers from one activity to another in the vegetable harvest. The southern migrants come from the Pompano, Bell Glade, and Del Ray Beach vegetable areas of Florida. They come direct to New Jersey with only infrequent stops along the way. As with potato workers, the use of southern migrants in the vegetable harvest has decreased somewhat due to tightening housing regulations. Demand for vegetable workers has remained relatively steady.

The harvest period for blueberries extends from mid-June through mid-August. A few southern migrant and Puerto Rican crews who are idle from other activities engage in blueberry harvest, but they seem to dislike this work. Some walk-in Puerto Ricans from Florida are also used in the blueberry harvest. The predominate supply of blueberry harvesters are day-haul workers from Philadelphia, Camden, and Trenton. About 60 percent of these day-haul workers are female and about 30 percent are high school youths. The technique for harvesting blueberries consists of rolling them off the bush with the fingers requiring a great deal of finger dexterity. Many adult male workers find this work tedious. Some mechanical harvesters are being tried in blueberries but these are expensive and require cultural changes, so that adoption of mechanical harvesters probably will be slow.

Peaches in New Jersey are picked primarily for the fresh market, while apples enter both fresh and processing markets. The harvest season begins with peaches in late July and continues with apples extending well into October. Nearly all tree fruit harvest workers are adult males. Employment is about equally divided among day-hauls, contract Puerto Ricans, and southern migrants. Some women are employed in packing house work. Southern migrants

are specialized tree fruit pickers who come direct from Florida for this activity. Growers would prefer this source but have been unable to satisfy their needs. Puerto Ricans engaged in tree fruit harvest are diverted from other activities. There is some resistance among tree fruit workers and stoop harvest workers to interchange work in order to extend the employment season. However, tree fruit harvesters are in some cases being attracted to higher paying farm work. Growers are showing some interest in dwarf trees to accommodate female harvest workers. Chemical thinning of peaches has reduced the spring hand labor requirements for this activity. Beyond this, there is little prospect soon for a reduction in tree fruit harvest labor requirements. A decline in acreage devoted to this activity in New Jersey is reducing employment slightly.

Nursery and ornamental horticultural products for nearby metropolitan markets are an important crop in New Jersey. Principal sources of labor for this industry are specialized nursery day-haul crews and contract Puerto Ricans who do only nursery work. The overall demand for workers in this industry is growing and the use of Puerto Ricans is increasing with this growth. Some Puerto Ricans have moved into landscaping work with developers and stay a year 'round basis, qualifying them for unemployment compensation during the off season.

In summary, the most important factor affecting seasonal labor requirements in New Jersey will be the rapidity and extent of the mechanization of the tomato harvest. This will affect not only tomato employment, but also the supply of workers for other activities. Whether the supply of workers to other activities will increase because of displacement from tomato harvesting or whether it will decrease because the tomato crop will no longer attract workers into the area is problematical. It is likely that without this lucrative source of employment, many southern migrants and contract Puerto Ricans will be discouraged from making the long trip to New Jersey and that an increasing proportion of seasonal labor requirements will have to be supplied from metropolitan day-haul workers. In the longer run, the growth of metropolitan centers surrounding New Jersey will undoubtedly reduce the volume of agricultural production and farm employment in the state.

Pennsylvania

Concentration in dairying and the relatively small size of farms in Pennsylvania is reflected in low seasonal hired farm labor requirements

relative to the volume of agricultural production in the state. Peak seasonal farm labor demand occurs in September and October when tomatoes, potatoes, apples, and nursery work combine seasonal peaks, Table 69. Potatoes and tomatoes are the major vegetable crops using seasonal labor. Labor requirements for peas, snap beans and sweet corn have already declined substantially due to mechanization.

Table 69. Monthly Seasonal Labor Requirements for Major Crops, Pennsylvania, 1965.

Crop	May	June	July	Aug.	Sept.	Oct.	Nov.
Potatoes	416	214	243	705	1,631	5,404	131
Peas	30	303	115	49			
Tomatoes	1,078	297	275	5,264	7,598	172	
Onions	10						
Radishes	5	24	20				
Lettuce	15	12	25	15	25	15	
Beans	20	111	567	1,030	625	60	
Sweet Corn	539	128	740	728	521	497	35
Sugar Beets	200						
Miscellaneous Vegetables	1,515	1,087	1,237	1,015	997	915	490
Tree Fruit	372	1,820	8,048	2,996	3,861	6,275	640
Berries	180	183	1,050				
Grapes	75			37		484	62
Strawberries	42	2,747	145	10	190		
Nursery	4,296	3,697	1,967	3,167	3,189	3,294	1,898
Mushrooms	359	262	135	47	45	364	500
Miscellaneous	335	2,187	2,887	1,612	2,055	675	800

Source: ES-223 Reports.

Sour cherries, peaches and apples all contribute to high seasonal demand for tree fruit pickers. Mechanization has substantially reduced sour cherry labor requirements in the past few years. Tree fruit labor demand is now heaviest during the September-October apple harvest period. Nursery labor demand has to some extent replaced declining labor requirements for other crops. Nursery labor demand is highest during the spring and fall digging season.

Seasonal hired farm labor requirements in Pennsylvania have declined substantially during July and August due to mechanization of sour cherry and snap bean harvest, Table 70. Employment in the spring period has remained

Table 70. Monthly Distribution of Seasonal Hired Farm Employment in Pennsylvania for Selected Years, 1955-69.

Year	May	June	July	Aug.	Sept.	Oct.	Nov.
1955		9,225	19,405	16,570	16,320	15,825	6,495
1957		10,330	18,955	16,690	20,470	15,660	5,150
1959		13,793	21,981	19,780	21,552	18,332	7,384
1960	5,902	12,050	16,234	16,160	21,304	18,483	5,050
1963	7,500	10,566	16,390	13,292	20,047	18,335	2,890
1964	8,066	11,642	19,244	16,050	20,428	17,280	5,850
1965	9,075	12,445	18,630	16,460	20,308	18,240	6,755
1966	7,908	9,275	14,435	13,100	16,405	17,455	7,675
1967	6,519	9,709	10,180	11,465	17,595	17,590	8,810
1968	8,225	9,070	11,770	12,100	17,625	16,960	7,650
1969	8,215	9,990	12,225	14,685	17,100	15,358	8,687

Source: (*11*).

relatively stable as rising nursery demand has offset declining demand in other crops. Labor requirements in September through November have remained constant as growing demand in other crops, especially nursery work, has offset declining labor demand for potato harvest workers.

Vegetable production occurs in three general areas of the state, the southeast area surrounding Philadelphia, the northwest area surrounding Erie, and a portion of the center of the state, centered at the town of Milton. Sources of workers for vegetable harvest are affected by proximity of each area to metropolitan labor markets. The southeast and northwest Pennsylvania growers rely primarily on local workers. Approximately 20 percent of the vegetable harvest workers in southeast Pennsylvania are contract Puerto Ricans, while about 20 percent of those in the Erie area are migrant workers from a variety of sources. Nearly 80 percent of the vegetable harvest workers in the Milton area are southern migrants. Southern migrant vegetable workers used in the state are family groups who come to Pennsylvania from South Carolina, Virginia, and occasionally Maryland. Many of the Puerto Ricans are obtained through the Glassboro Service Association in New Jersey and, in general, come to Pennsylvania from the asparagus harvest in New Jersey and Delaware. Industrialization in all three vegetable growing areas has made the seasonal labor supply tight. The overall trend in the use of seasonal workers is downward, but migrant workers appear to be making up a larger percentage of

this declining work force. Mechanization of the tomato harvest on the east coast will have a profound effect on the Milton vegetable growing area, a high proportion of which is devoted to tomatoes. It is anticipated that much of the tomato acreage in this area will either be mechanized or drop out of production.

Potato production, which once used a large volume of seasonal labor in Pennsylvania, is rapidly being mechanized and the number of non-local workers employed in this crop has declined substantially in the past decade. Progress in mechanization has been somewhat slower in Pennsylvania than major potato producing areas. Out-of-state workers are still used in several potato growing areas. These are primarily southern migrant crews of specialized potato workers. Local workers are employed in sheds and on potato harvesting machines. It is anticipated that mechanization will virtually eliminate the use of non-local workers in this crop in the future.

Grape production in the northwest part of the state has until very recently been a major user of seasonal workers. In 1967, approximately 100 Puerto Rican and southern migrants and 78 Texas-Mexicans were used in this crop. The remainder of the harvest workers were local persons, generally from ethnic minorities and small farmers. Housewives made up a large proportion of this work force. Mechanical harvesting of grapes has made rapid strides in the last three years, and it is anticipated that most large vineyards will be completely mechanized within the next five years. It is unlikely that many of the small vineyards will automate, but whether they will remain in production in the face of competitive pressure of mechanized vineyards remains to be seen.

Tree fruit production, centered in the south-central part of the state, uses large numbers of seasonal workers beginning with sour cherry harvest in July, continuing with peach harvest in August, and ending with apple harvest in September and October. Of the tree crops, apples is the largest source of employment. Sour cherry harvest in July is almost completely accomplished with the use of local school-age youth. These are both male and female workers 14 years old and older who are obtained through day-hauls from local towns. A small number of adult southern migrant workers are also used in sour cherry harvest.

Peach harvest requires a relatively small volume of seasonal labor and is accomplished primarily by Puerto Rican and southern migrant crews.

Southern migrant crews are mixed male and female, while the Puerto Rican crews are adult males. These peach harvest workers stay on for the apple harvest.

Apple harvest uses essentially the same workers as peaches but in considerably larger numbers. Non-local apple harvest workers come from Florida and Georgia into Pennsylvania, some direct and others through a tree fruit harvest itinerary in states to the south. Migrant workers from New Jersey and Connecticut non-agricultural employment, including mainland Puerto Ricans, are also used.

Employment in peaches and apples has remained stable while that in cherries has declined considerably due to the inroads of mechanization. A rather large volume of sour cherries are still picked by hand in years when favorable prices prevail. Little change in labor requirements for peaches is expected. Several growers in the Pennsylvania apple growing areas now have apple harvesting machines, but so far these have not proved sufficiently reliable or economical to make inroads into apple harvest employment. Much of the apple production in Pennsylvania's principle apple growing areas are processing varieties, so that the development of an economical and reliable mechanical harvester could have substantial impact on employment.

Nursery production in Pennsylvania is concentrated in the area immediately surrounding Philadelphia in the southeast and north of Pittsburgh in the western part of the state. Virtually all nursery workers are local. The few out-of-state workers employed are Puerto Ricans. Local workers are predominantly men out of the surrounding towns and cities. Negroes and mainland Puerto Ricans dominate this labor force. Rates of pay for workers in nursery work have been relatively competitive with other agricultural occupations and the source of workers seems to be adequate. The volume of production and employment are both increasing in this industry.

Mushroom production, which centers in southeastern Pennsylvania, requires relatively long-term seasonal workers. It is hard to separate migrant and non-migrants in this work force. Most workers are local adult males, including members of ethnic minorities and industrial workers, high school students, and day-haul workers from Philadelphia. There is a high turnover in many jobs intended to be permanent. Some contract Puerto Ricans are employed in mushroom production. Employment in mushroom production has remained fairly stable, but growers are actively searching for techniques to reduce labor requirements in the face of stiff competition from imported mushroom supplies.

In summary, future prospects for seasonal farm employment in Pennsylvania depend heavily on developments in the mechanization of tomato and apple harvest. With the exception of these two crops, there appears to be little reason to anticipate more than a modest decline in seasonal farm employment in Pennsylvania in the future. In areas adjacent to metropolitan centers, Pennsylvania growers are relying heavily on local workers and this will probably continue to prevail. It is unlikely that local labor sources will be adequate to meet demand in the vegetable and fruit producing areas in the central portion of the state, unless mechanization makes drastic inroads in labor requirements.

Maryland

The crop agriculture of Maryland is diversified and generates substantial seasonal labor demand, Table 71. Tomatoes and cucumbers are the most important seasonal labor using crops. Demand from these two crops is high from July through September. However, a variety of other crops also generate considerable employment during this period. Peaches and apples require tree fruit pickers from July through November. Maryland is unique in the Northeast region in having several crops requiring winter and early spring labor, namely tobacco and strawberry plant production.

Yearly fluctuations in seasonal farm employment in Maryland have been substantial, Table 72. There is some indication of a declining seasonal labor demand in June and July, with no clear-cut trend apparent in other months.

Asparagus harvest begins in the latter part of April and employs about 600 Puerto Rican workers. About 150 of these come directly to Maryland and the remainder enter from Delaware. Some of these workers remain for the tomato harvest while others go on to agricultural work in other parts of the region.

Tomato harvest begins early in July and extends until frost. About 60 percent of the harvest labor force consists of southern migrants most of which are Florida based. Both male and family crews are employed. Some Puerto Ricans and local workers, mostly women and school-age youths, are also employed. Some Maryland growers have experimented with mechanical tomato harvesting and it is anticipated that mechanization will make substantial inroads on tomato harvest labor requirements in the near future.

Table 71. Monthly Distribution of Seasonal Labor Requirements for Major Crops, Maryland, 1967.

Crop	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Potatoes			30	30			98	284	154	47		
Sweet Potatoes				150	100	300			115			
Tomatoes					193			3,421	1,732	425		
Beans				20				535				
Cucumbers					95	122	1,902	300	95			
Sweet Corn								839				
Asparagus					309	746						
Miscellaneous Vegetables			35	40	209	1,247	1,229	458	1,647	1,102	30	25
Tree Fruit							717	601	723	1,176	550	
Strawberries	288	283	278	100	25	821						200
Nursery	25	25	108	95	65	175	152	42	152	120	100	15
Sod								50		25		
Tobacco	100	100	100	200			325	475	1,000		40	40
Miscellaneous	150	282	220	510	657	1,111	1,695	1,393	1,121	1,373	972	245

Source: ES-223 Reports.

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Table 72. Monthly Distribution of Seasonal Hired Farm Employment in Maryland for Selected Years, 1955-69.

Year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1955		2,385	6,388	10,852	13,618	7,732	4,436	
1957		2,224	2,145	9,199	8,660	5,626	3,510	
1959			5,326	15,263	12,586	5,492	653	
1960		809	5,779	9,151	10,278	11,809	3,950	
1963		2,989	3,700	8,882	8,255	5,564	3,834	
1964		1,878	3,726	8,358	10,103	9,193	3,892	1,509
1965	688	2,298	4,622	8,859	10,951	8,222	3,984	1,016
1966	919	1,703	4,604	7,176	7,275	6,920	3,992	1,328
1967		1,551	4,647	6,131	8,108	6,205	4,308	1,640
1968	1,306	2,366	4,062	7,066	8,732	6,041	3,222	654
1969	666	2,788	4,229	5,619	6,305	5,627	3,614	810

Source: (*11*).

Pickle and cucumber harvest begins in July and continues through August. For the most part, the same labor force is used on this crop as tomatoes. In both tomato and pickle harvest, many local workers are recruited by migrant crew leaders. Some seasonal workers are still required for the harvest of mid-summer fresh market vegetables, including snap beans. However, the harvest of these crops is now nearly completely mechanized and little seasonal employment in these crops is expected in the future. The increased use of irrigation in Maryland has resulted in growers being able to attract and hold migrant crews for the entire harvest season, instead of their entering to harvest a particular crop. Overall, the volume of vegetable production and the number of seasonal workers employed in Maryland has declined. Mechanization of the asparagus and tomato harvest will likely result in continued substantial declines in vegetable employment.

Apples are the most important fruit crop grown in Maryland, and have increased considerably in importance. Apple harvest activities begin in September in Maryland. About half the workers harvesting apples are Florida-based migrant crews, predominately males. The balance of the work force is comprised of local workers, including some school-age youths and a small percentage of adult women. In general, Maryland growers have not had much difficulty in attracting adequate supplies of out-of-state workers for this activity.

A small number of southern male migrants from Louisiana enter Maryland for approximately six weeks for employment in the harvesting of tobacco. In addition, the nursery industry employs a small number of Puerto Rican workers. The volume of employment in both crops is low.

Delaware

Delaware's seasonal hired farm labor demand is relatively large and quite diversified from May through October, Table 73. Asparagus harvest in May

Table 73. Monthly Distribution of Seasonal Labor Requirements for Major Crops, Delaware, 1967.

Crop	May	June	July	Aug.	Sept.	Oct.
Potatoes			40	1,053	635	334
Beans			125	355	389	186
Cucumbers			341	283	14	
Sweet Corn			52	120		
Asparagus	1,798	1,518				
Peas		184				
Tomatoes				729	631	30
Sweet Potatoes						25
Miscellaneous Vegetables		76	88	130	209	245
Tree Fruit			196	65	161	131
Strawberries		191				
Berries			250			
Nursery	160	160	159	165	161	256
General Farm	1,287	1,091	1,131	1,375	1,360	1,296

Source: ES-223 Reports.

and June creates a high spring demand. Potato and tomato harvest produce high demand in the August and September period. General farm workers were employed principally on dairy and poultry farms.

Seasonal worker demand during the May-June period has increased substantially since 1955 when only about one thousand workers were used. This was due to substantial increases in asparagus production. Seasonal labor demand during mid-summer and fall has fluctuated considerably, but indicates no clear-cut trend, Table 74.

Table 74. Monthly Distribution of Seasonal Hired Farm Employment in Delaware for Selected Years, 1955-69.

Year	May	June	July	Aug.	Sept.	Oct.
1955	342	1,187	3,140	2,967	2,320	1,012
1957	1,742	1,816	2,850	3,595	2,657	1,505
1959		2,055		5,304	2,962	727
1960	1,715	2,102	3,090	4,470	3,149	1,277
1963	2,989	3,700	4,373	6,433	3,077	1,691
1964	2,844	2,926	3,981	5,104	2,303	1,588
1965	2,694	3,522	3,878	4,759	2,695	1,964
1966	2,709	3,538	3,058	4,246	3,195	2,394
1967	3,245	3,220	2,382	4,275	3,560	5,303
1968	3,469	3,154	3,312	4,065	3,045	2,185
1969	3,117	3,234	3,456	4,235	3,219	2,394

Source: (11).

Seasonal employment on vegetable farms starts in March with the arrival of small numbers of migrants from Florida who are employed as tractor operators on potato farms. Normally these same operators assist in setting out tomato plants in April, as these two commodities are usually grown on the same farms. This setting out operation is generally mechanized. Tomatoes and asparagus are harvested largely by Puerto Rican males brought into the state under contract. In addition, approximately 5 percent are Texas-Mexican family groups. Since the size of the farms growing tomatoes are relatively small, workers are frequently transported from one farm to another. Asparagus harvest workers consist primarily of contract Puerto Ricans and Texas-Mexicans, and potatoes are harvested mostly by southern migrants, about half family groups and the other half mixed crews. Many of these workers move onto potato harvest in other areas of the region. Smaller quantities of other vegetables are harvested by the same crews engaged in a harvest of the principal vegetables.

Most fruit orchards in Delaware are small and consequently few seasonal workers are employed except at harvest. No migrants enter Delaware expressly to harvest fruits; crews or portion of crews remaining after vegetable harvest undertake this activity. In recent years, there has been a tendency among berry producers toward public picking at a per unit price. Where seasonal workers are employed, they are exclusively local. A small number of Puerto Rican workers are employed by the larger nursery producers for the purposes of

pruning, digging, packaging nursery stock. This work normally begins in March and extends to November. Most nursery operations, however, are family operations employing few seasonal workers.

West Virginia

Tomatoes, peaches and apples are the only crops requiring substantial numbers of seasonal workers in West Virginia, Table 75. Seasonal labor requirements have fluctuated widely from year to year because of weather-induced yield variations, Table 76. Tree fruit production intentions appear

Table 75. Monthly Distribution of Seasonal Labor Requirements for Major Crops, West Virginia, 1967.

Crop	July	Aug.	Sept.	Oct.	Nov.
Tomatoes			317		
Tree Fruit	610	610	1,485	2,237	275

Source: ES-223 Reports.

Table 76. Monthly Distribution of Seasonal Hired Farm Employment in West Virginia for Selected Years, 1955-69.

Year	July	Aug.	Sept.	Oct.	Nov.
1955			850	1,116	
1957			2,156	2,442	2,052
1959				653	
1960					
1963				811	
1964				1,195	
1965				740	
1966				695	
1967			803	1,073	
1968	512	905	802	2,306	821
1969	692	1,028	1,373	2,510	669

Source: (*11*).

to be stable and annual labor demand will continue to vary with the year's crop. Tomato production has been increasing. However, tomato labor demand in the future will likely be influenced by the progress of mechanization in other states.

Tomato harvest, most of which is for processing, begins in August and extends into early October. The seasonal work force harvesting tomatoes is approximately half local and half migrant. Local workers consist of adult males, females and a few school-age youths. The migrant crews are mostly from Florida and consist of family groups. Few of these workers come directly to West Virginia; many harvest cucumbers and tomatoes in Georgia and the Carolinas.

About 60 percent of the pre-harvest peach work is performed by local workers, both adults and youths. The remainder is accomplished by southern migrant crews which are induced to arrive early enough for this work and then remain for the harvest season. The picking of peaches is accomplished by a labor force about equally divided between local and migrant workers. Local workers seem less attracted to peach picking than other harvesting activities. Migrant crews consist mostly of adult males, but some mixed crews are also involved.

The most important seasonal farm employment activity in West Virginia is apple harvest. The harvest season for apples extends from July through November. Harvest workers are about equally divided in number between local, migrant, and foreign workers. Foreign workers were all adult males from Jamaica, and numbered 450 workers at peak employment in 1967. Local workers are mostly adult males, in addition to some husband and wife teams. Southern migrant workers are about 70 percent male and are largely Florida based.

Puerto Rican workers were not used in West Virginia prior to 1968. In 1968, a pilot program was instituted involving the use of 42 Puerto Rican workers. This newly instituted program of worker recruitment, restricted to apple harvesting, was undertaken largely to replace foreign workers.

The future of the West Virginia processing tomato industry depends on developments in mechanical harvesting elsewhere. It is unlikely that many West Virginia growers will successfully mechanize, but employment is likely to decline in this crop in any event. Although West Virginia's apple growers are located predominantly in more remote areas of the state, they are situated reasonably close to other areas using domestic non-local

labor. With adequate housing, competitive pay rates, a cooperative grower attitude, and vigorous recruitment, replacements for foreign workers should become available.

SECTION VII. THE FARM LABOR MARKET

It is often assumed that the terms "farm" and "rural" are more or less synonymous and, therefore, that the farm labor and rural manpower problems are, if not identical, then at least closely related. At one time these two problems were indeed closely related. Even now farm workers are still an important component of the rural labor force. However, as the rural economy has become less agricultural, the identity between the farm and the rural work force has diminished. Now in much of the Northeast, and in many other regions of the country, farm labor and rural manpower must be considered as two separate and distinct problems. The rural population no longer consists primarily of farmers and farm workers. Furthermore, most farm workers no longer live on farms. In fact, many no longer live in rural areas.

Residence of Farm Workers

In 1960 nearly eight in ten residents of the Northeast states lived in urban places, Table 77. The Region was more urban-oriented than the nation as a whole. Only about two percent of the Region's population lived on farms. Nearly 19 percent were classified as rural non-farm residents. These were rural residents living in the countryside, outside the towns and cities, but not operating or living on farms. This segment of the population has been nearly universally ignored both by those concerned with urban people and their problems and those concerned about farm people and their problems.

The occupational pattern of farm and rural non-farm residents in the Northeast Region is similar to that in the United States, however, the dependence of agriculture on non-farm residents is more pronounced in the Northeast. Similarly the Region's rural labor force is less dependent on agriculture for employment than is true in the nation. Fully one quarter of farmers and farm managers in the Northeast did not live on farms in 1960, Table 78. Fifty-six percent of farm laborers and foremen did not live on farms. In the Northeast, only slightly more than one-third of employed farm residents were farmers or farm managers and only 15 percent were farm laborers and foremen in 1960. The Region's rural non-farm population was overwhelmingly non-agricultural. In 1960 only three percent of employed rural non-farm residents worked at farm occupations.

Table 77. Percentage Distribution of Population and Farm employed Persons by Place of Residence, Northeast and United States, 1960.

Item	Northeast			United States		
	Urban	Rural Non-Farm	Farm	Urban	Rural Non-Farm	Farm
Total Population	79.0	18.6	2.3	69.9	22.6	7.5
Civilian Labor Force	80.6	17.1	2.3	73.3	19.6	7.1
Employed Persons	80.7	16.9	2.3	73.3	19.4	7.2
Farmers and Farm Managers	8.1	15.9	75.9	5.2	12.9	81.8
Farm Laborers and Foremen	16.7	39.8	43.5	14.9	35.7	49.0
Unpaid Farm Family Workers	7.2	12.3	80.5	4.6	8.1	87.4
Experienced Unemployed	76.2	22.3	1.5	72.4	23.5	4.1
Farmers and Farm Managers	28.7	42.2	29.1	25.2	36.9	37.8
Farm Laborers and Foremen	37.1	54.8	8.1	34.7	48.0	17.3

Source: (7).

Table 78. Number and Percentage Distribution of Population by Farm Work Occupations and Place of Residence, Northeast, 1960.

Item	Number of Persons				Percent of Employed Persons			
	Total	Urban	Rural Non-Farm	Farm	Total	Urban	Rural Non-Farm	Farm
	- - - - - Thousands - - - - -							
Total Population	36,321	28,726	6,762	833	--	--	--	--
Civilian Labor Force	19,995	16,123	3,416	455	--	--	--	--
Employed	18,942	15,305	3,198	440	100	100	100	100
Farmers and Farm Managers	207	17	33	157	1.1	0.1	1.0	35.7
Farm Laborers and Foremen	152	25	61	66	0.8	0.2	1.9	15.0
Unpaid Family Laborers	29	2	4	23	0.2	--	--	5.2

Source: (7).

As would be expected, much of the Northeast's farm population is occupationally oriented toward agriculture. In 1960, 35.7 percent of employed persons living on farms were classified as farmers and farm managers, 5.2 percent as unpaid family workers and 15.0 percent as farm laborers and foremen, Table 79. Nevertheless, about 44 percent of employed farm residents were working at non-farm operations.

Table 79. Number and Percentage Distribution of Population by Farm Work Occupations and Place of Residence, United States, 1960.

Item	Number of Persons				Percent of Employed Persons			
	Total	Urban	Rural Non-Farm	Farm	Total	Urban	Rural Non-Farm	Farm
	- - - - - Thousands - - - - -							
Total Population	179,326	125,284	40,597	13,445	--	--	--	--
Civilian Labor Force	68,144	49,932	13,395	4,816	--	--	--	--
Employed	64,639	47,390	12,576	4,673	100	100	100	100
Farmers and Farm Managers	2,506	130	324	2,051	3.7	0.3	2.4	42.6
Farm Laborers and Foremen	1,445	216	519	710	2.1	0.4	3.9	14.7
Unpaid Family Workers	129	6	10	112	0.2	0.1	0.1	2.3

Source: (7).

The rural non-farm population is considerably less oriented toward farm work. Little more than three percent of rural non-farm employed persons worked on farms. Not surprisingly, fewer than one-half of one percent of employed urban residents worked on farms.

However, though farm work is relatively unimportant as a source of employment to rural non-farm and urban persons, the reverse is not the case. Agriculture is heavily dependent on non-farm residents for its labor force. Nearly one out of every four farmers and farm managers in the Northeast did not live on a place classified as a farm in 1960. More important to agriculture is the fact that about 16 percent of farm laborers and foremen were

urban residents and another 41 percent were in the rural non-farm population in 1960. Fewer than half of the Region's farm laborers and foremen lived on farms.

It should be noted that the Census assigns persons to the occupation at which they were employed the greatest number of hours during a reference week, usually April. Thus the Census count of farm laborers and foremen included only those persons primarily engaged in farm work in April, 1960. Since the Census was taken before the major seasonal increase in farm employment in the Northeast it includes primarily regular farm workers. This group is more likely to live on or near farms than the seasonal work force.

Comparison of 1950 and 1960 Census data show an increase in the proportion of farm workers living off farms. This is consistent with United States Department of Agriculture estimates that only 27 percent of all persons who did any hired farm work in 1967-68 lived on farms. As recently as 1948-49, 65 percent of all persons doing hired farm work lived on farms (*12*).

The states of the Region vary considerably in the extent to which they have become urbanized, Table 80. Vermont, in which only 40 percent of the civilian labor force is classified as urban, is the most rural state in the Region. In most of the Region's leading agricultural states, three percent or less of the civilian labor force lives on farms. The size of the rural non-farm population also varies considerably. In the states of Maine, New Hampshire, Vermont, and West Virginia, it accounts for more than a third to nearly one-half of the total civilian labor force. In the Region as a whole, 17.1 percent of the civilian labor force is rural non-farm.

In several states of the Region, the rural non-farm population is the most important single source of farm laborers and foremen, Table 81. In the Northeast, this residence group supplies from one-third to more than one-half of all farm laborers and foremen. It is interesting to note that in several of the most urbanized states of the Region the farm population supplies as few as 20 percent of farm laborers and foremen. In Rhode Island, Massachusetts, and Connecticut, more farm laborers live in urban areas than live on farms. As a result of this employment pattern, farm laborers and foremen constitute a relatively small percentage of employed persons even in the farm population, Table 82. With the exception of Vermont and New Jersey, 15 percent or less of the farm population were employed farm laborers and

Table 80. Percentage Distribution of Total Civilian Labor Force by Place of Residence, Northeast Region, 1960.

State	Place of Residence		
	Urban	Rural Non-Farm	Farm
	- - - - - - - - - - - percent - - - - - - - - - -		
Maine	54.7	40.4	5.0
New Hampshire	60.0	36.8	3.2
Vermont	39.6	47.0	13.3
Rhode Island	88.1	11.4	0.5
Massachusetts	85.3	13.9	0.7
Connecticut	80.0	18.9	1.0
New York	87.2	10.9	1.9
New Jersey	89.6	9.4	0.9
Pennsylvania	73.7	23.1	3.1
Maryland	75.8	20.8	3.6
Delaware	67.8	26.9	5.2
West Virginia	45.8	47.9	6.4

Source: (7).

Table 81. Percentage Distribution of Farm Laborers and Foremen by Place of Residence, Northeast Region, 1960.

State	Place of Residence		
	Urban	Rural Non-Farm	Farm
Maine	18.3	51.2	30.4
New Hampshire	21.7	44.1	34.3
Vermont	4.5	32.3	63.1
Rhode Island	43.5	36.5	20.0
Massachusetts	38.8	40.3	20.8
Connecticut	30.4	48.7	20.9
New York	15.8	34.0	50.2
New Jersey	30.9	37.2	31.9
Pennsylvania	13.3	36.6	50.0
Maryland	7.5	47.5	45.0
Delaware	5.8	56.6	37.6
West Virginia	5.5	53.4	41.1

Source: (7).

Table 82. Percent of Employed Persons Who are Farm Laborers and Foremen by Place of Residence, Northeast Region, 1960.

State	Place of Residence			Total
	Urban	Rural Non-Farm	Farm	
Maine	0.6	2.4	11.6	1.9
New Hampshire	0.4	1.4	12.5	1.2
Vermont	0.6	3.3	22.7	4.8
Rhode Island	0.2	1.2	15.1	0.4
Massachusetts	0.2	1.2	11.4	0.4
Connecticut	0.3	1.8	14.2	0.7
New York	0.1	1.8	15.6	0.8
New Jersey	0.2	2.0	18.0	0.5
Pennsylvania	0.2	1.4	13.9	0.8
Delaware	0.2	4.1	14.0	2.0
Maryland	0.1	2.8	15.3	1.2
West Virginia	0.2	1.6	9.3	1.4

Source: (7).

foremen in 1960. This occupational group is, of course, a very small component of total employment in all states of the Region. In many states, fewer than one percent of employed persons worked as farm laborers and foremen.

This residence and employment pattern which is prevalent throughout the United States, but more pronounced in the Northeast, has clear implications for worker supply and the nature of the farm labor market. Farm employers are not now drawing the majority of their workers from the farm population and clearly will be able to depend even less on this source in the future. The labor markets from which most farm workers come are not oriented primarily toward agriculture. In fact, agriculture is a relatively unimportant source of employment in many labor markets in the Northeast. Farm employers are clearly in competition with non-farm employers in the markets from which they are presently securing their workers.

Organization of the Labor Market

It has been noted in the preceding discussion that both the number and proportion of labor market participants doing farm work has diminished steadily. In much of the Region hired farm workers constitute a relatively

small proportion of the labor force even in rural areas. Most farm employers in the Region employ relatively few workers and are active in the labor market only infrequently. Thus it is not surprising that the farm labor market operates in a relatively unstructured and informal manner.

Most recruitment of permanent workers is carried on by farm operators and managers and in a very informal manner. Word of mouth among workers and employers and workers' canvassing of employers who have jobs available are the most common procedures for obtaining workers. Some farmers use the more formal approach of newspaper advertisements and fewer still utilize organized employment services. Of those workers recruited through organized employment services virtually all are handled by the Federal-State Employment Services. However, the number of permanent workers hired as a result of these more formal arrangements is relatively small (*14*, *15* and *11*, Nov. 1968).

There are no employer or worker organizations to organize the market for permanent hired farm workers except labor unions on a very few of the Region's largest farms. Very few employers are large enough to organize the market or recruit workers on any substantial scale on their own behalf. This lack of organization in the market for permanent agricultural workers is undoubtedly a major contributor to inefficiency and instability in that market.

Seasonal hired agricultural workers are used by fewer farmers and in much larger numbers per farm than permanent workers, and in general must be recruited at least annually. As a result the market for seasonal agricultural workers is far better organized than that for regular workers.

Many employers have developed relationships of long standing with particular sources of workers. The same workers, with new additions to replace drop-outs, return to the same employer each year. These relationships prevail both where workers are local and where they are distant migrants. Some are formalized around a crew chief or labor contractor while others are more informal personal relationships. Many growers actively sustain these relationships by contact with key workers during the off-season.

Formal recruitment campaigns by growers, using mass media, are utilized by some large individual employers, by grower organizations and by the State Employment Services. In areas of large scale use of seasonal workers the Employment Service has achieved a relatively high level of penetration of the seasonal farm worker market. In addition to recruitment activities, individual employer and grower organizations and the Employment

Service sometimes provide transportation, housing, training, and other services in an attempt to bring employers and workers together. A substantial proportion of seasonal workers employed in agriculture are either regular repeat workers or are obtained through these procedures.

The Farm Labor Service is the principle institution responsible for organizing the farm labor market in the Northeast. There are farm labor representatives assigned to cover 172 of the 298 counties in the Region, Table 83. About 80 percent of the Region's agricultural production is produced in these counties.

Table 83. Counties and Percentage of Value of Farm Products Sold in Agricultural Labor Market Reporting Areas, Northeast Region.

State	Counties		Percent of Value of Farm Products Sold Produced in Agricultural Labor Market Reporting Areas, 1964[1/]
	In Agricultural Labor Market Reporting Areas	Not in Agricultural Labor Market Reporting Areas	
Maine	16	--	100
New Hampshire	10	--	100
Vermont	14	--	100
Connecticut	3	5	48
Massachusetts	10	4	82
Rhode Island	5	--	100
New York	35	27	75
New Jersey	17	4	97
Pennsylvania	37	30	75
Delaware	3	--	100
Maryland	18	5	90
West Virginia	4	51	24
Northeast Region	172	126	80

[1/] Source: (1).

While there are many agricultural organizations that are active in the labor market, either alone or in cooperation with the Farm Labor Service, there are three that recruit, transport, and provide other services to large numbers of workers in the Region. The Shade Tobacco Agricultural Association has already been mentioned. This is the principle trade organization of the shade tobacco industry. This organization recruits and transports

virtually all the seasonal workers employed in its industry. Recruitment activities cover the eastern seaboard extending as far south as Alabama and into Puerto Rico. The Association operates several large housing facilities for non-local workers in addition to smaller ones operated by individual growers. The Shade Tobacco Agricultural Association often provides workers to other agricultural employers in Connecticut and Massachusetts when they are not needed in tobacco operations.

Two major labor cooperatives operate in New Jersey, the Glassboro Service Association and the much smaller Farmers' and Gardeners' Association. These cooperatives serve about 1000 growers in New Jersey and surrounding states. They are principally active in recruiting and transporting contract Puerto Ricans. The Glassboro Service Association operates a reception center which provides housing for a pool of about 100 to 150 workers used essentially as day-haul workers to provide flexibility in meeting members' needs. Most workers are housed by the growers.

The Changing Rural Labor Market.

Rural society has undergone profound changes that have altered the nature of the labor market in which farm employers and workers meet. Some of these changes have been dramatic, rapid and visible; others have been slow and subtle. These changes have proceeded further in some parts of the Region than others, but they are occurring throughout the Region and, in fact, throughout the nation.

The rural labor market was for a long time an essentially captive and insulated labor market. It was held captive by barriers to transportation, communication, education and training in rural areas, by the norms and traditions of rural society. Rural workers faced the choice of accepting a job on a local farm or one of the few jobs in town on the one hand, or the monumental move to the city on the other. While many workers migrated to cities, nevertheless the high rural fertility rate and reluctance to migrate assured a ready supply of workers for local employers. Competition existed in this market, of course, but it was direct competition only among farmers and small town businesses. Conditions in the urban labor markets affected the rate of migration out of rural areas, but this effect was slow and indirect.

Even those areas of intensive commercial agriculture in which local labor was insufficient to meet seasonal demands had available a pool of local workers with few alternatives. This pool consisted of Braceros and other

foreign workers, Puerto Ricans, southern Negroes and other minority and low-income groups.[12/] These workers were available in essentially unlimited numbers and could be obtained and released almost at will.

But the conditions that once insulated the farm labor market have changed. Spectacular improvements in transportation have made the rural labor force mobile. The possibility of commuting to work has vastly increased the "local" labor market for rural people. Workers can experiment with migration by first going to the city to explore, then commute to the city, returning home to the rural areas on weekends, and finally making a permanent move.

Advances in transportation also facilitated the decentralization of industry. The factory has moved to the rural town, offering local rather than distant non-farm employment opportunities to the rural worker. Many of these industrial employers came seeking the reservoir of rural labor unwilling or unable to migrate to the cities. While some of this industry sought the low wage rates of rural areas, nevertheless many of these employers offered wage rates, hours, fringe benefits, and other conditions of urban employment substantially better than those existing on farms.

Great strides have been made in mass communications. Television in particular has brought urban living standards into rural homes. This has reduced the sense of unfamiliarity and uncertainty that retarded potential rural migrants. It has increased the level of desire and expectations of rural people, particularly the youth.

Universal public education has improved the opportunities of new labor market entrants. At the same time it has been instrumental in altering the pattern of expectations of rural youth, and in fact, the whole value system of rural society.

As farm work has declined and non-farm employment has increased in rural areas, we have seen farm work become the exception rather than the rule in many communities. Farm work is no longer an expected pattern or social norm for new labor market entrants. Furthermore, the technology of agricultural production has long since rendered the "agricultural ladder"--the progression from hired worker to farmer to farm owner--an impossible dream. The status and social sanction that once graced this occupation in rural society is gone.

[12/] While the Northeast did not employ Mexican farm workers directly, it does employ workers who substituted for the Braceros in the Mid-West Migrant Stream. Thus the termination of P. L. 78 indirectly affected the seasonal farm labor supply in the Northeast.

At the same time a number of factors have collectively acted to construct the potential supply of non-local workers for areas of high seasonal agricultural labor demand. The supply of foreign workers has been all but eliminated. Even where they are still in use, foreign workers are no longer available with the certainty that they once were. Improved local economic conditions, reduced racial discrimination, and massive public and private efforts to improve the economic opportunities of minorities and the economically disadvantaged are having an effect on the sources of migrant farm workers. Even improving economic conditions and hard bargaining by worker representatives in Puerto Rico are reducing the supply and increasing the cost of non-local farm workers.

As these changes leading to increased urbanization of the rural labor market were taking place, changes in conditions of employment were also occurring in the economy. Wage rates in all occupations increased while hours of work declined. A change in the concept of fringe benefits has occurred. The company town, company store and commodity benefits have given way to vacations, sick leave, wash-up time and other more liberal employment conditions. Employer paternalism has yielded to a sense of worker's rights. Much of this change in attitude has occurred as a result of the widespread unionization of non-agricultural workers.

Employers have also made improvements in the work environment. Clean, comfortable work surroundings with music, adequate lighting, and pleasant accomodations for workers away from the job site have become more common. Technology has changed rapidly in many industries so that the work performed is less physically demanding.

Finally, workers have shown increasing concern for income security. They are no longer preoccupied with the hourly wage scale, but are also concerned about how many hours of work will be available each week and each year. Numerous mechanisms have been negotiated into employment contracts and legislated to protect the security of workers' incomes.

These changes in the conditions of non-agricultural employment have been slow in coming to agriculture. Wage rates have lagged behind those of other industries. Hours of work on many farm jobs have remained long. Fringe benefits are often either nonexistent or consist of a package of commodities. The employer-employee relationship is often highly paternalistic. The physical work environment is frequently unpleasant and the work is physically demanding. Finally there is little security to even a permanent farm

job. Workers are not protected by unemployment insurance, or in many states by workman's compensation, they have no union contract to fall back on, they are vulnerable to business decisions and often even the health of the farm operator. For these reasons many workers have chosen to leave or not to enter agriculture in favor of non-agricultural occupations or leisure time. Agriculture has generally been unsuccessful in competing for the more efficient, stable, career-oriented workers.

LITERATURE CITED

(1) U. S. Dept. of Comm., Bur. of the Census:
1950 Census of Agriculture, Vol. I, State Part(s) for Northeast States, and Vol. II, General Report, Wash., D. C. 1952.

1954 Census of Agriculture, Vol. I, State Part(s) for Northeast States, and Vol. II, General Report, Wash., D. C., 1956.

1959 Census of Agriculture, Vol. I, State Part(s) for Northeast States, and Vol. II, General Report, Wash., D. C., 1962.

1964 Census of Agriculture, Vol. I, State Part(s) for Northeast States, and Vol. II, General Report, Wash., D. C., 1967 and 1968.

(2) U. S. Dept. of Agr., Stat. Rptg. Serv., Agricultural Prices, Wash., D. C., Monthly and Annual Summary.

(3) U. S. Dept. of Agr., Econ. Res. Serv., Farm Income Situation, Wash., D. C., Quarterly and Annual Supplement.

(4) U. S. Dept. of Agr., Stat. Rptg. Serv., Farm Labor, Wash., D. C. Monthly.

(5) U. S. Dept. of Labor. Bur. of Labor Stat., Employment and Earnings, Wash., D. C., Monthly.

(6) The Penna. State Univ., Dept. of Agr. Econ. and Rural Socio., Agricultural Labor Statistics With Special Reference to the Northeast States, Univ. Park, Penna., August 1970.

(7) U. S. Dept. of Comm., Bur. of the Census:
U. S. Census of Population: 1950, Vol. II, Characteristics of the Population, Part 1, U. S. Summary and Part(s) for Northeast States, Wash., D. C., 1952.

U. S. Census of Population: 1960, Vol. I, Characteristics of the Population, Part 1, U. S. Summary and Part(s) for Northeast States, Wash., D. C., 1963.

(8) U. S. Dept. of Agr., Stat. Rptg. Serv., Wash., D. C., Sept. 1958.

(9) U. S. Dept. of Agr., Econ. Res. Serv., Stat. Bull. No. 233, Changes in Farm Production and Efficiency, Wash., D. C., Annual.

(10) U. S. Senate, 90th Cong., 1st Session, Hearings on Dept. of Agr. and Related Agencies Approp., Part 4, Farm Labor in a Changing Agriculture, Wash., D. C., 1967.

(11) U. S. Dept. of Labor, U. S. Training and Emp. Serv., Farm Labor Developments, Wash., D. C., (irregularly several times a year).

(12) U. S. Dept. of Agr., Econ. Res. Serv., Agr. Econ. Report No. 180, The Hired Farm Working Force of 1969, Wash., D. C., Apr. 1970.
(Additional data were from other of these annual reports; since 1963 they have been in the USDA, Agricultural Economic Report series.)

(13) U. S. Dept. of Comm., Bur. of the Census, Income of Families and Persons in the United States, Wash., D. C., Annual. (Published in the CPS P-60 series.)

(14) U. S. Dept. of Labor, Wage and Hour and Public Conts. Divs., Hired Farmworkers, A Study of the Effects of the $1.15 Minimum Wage Under the Fair Labor Standards Act, Wash., D. C., 1969.

(15) Cornell Univ. Agr. Exp. Sta., New York State College of Agr., An Economic Study of Regular Hired Labor, Bulletin 1026, Ithaca, N. Y., July, 1969.

(16) Cornell Univ. Agr. Exp. Sta., New York State College of Agr., Workers In Agribusiness, Bulletin 1029, Ithaca, N. Y., March 1970.

STATISTICAL APPENDIX

APPENDIX TABLE 1. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, Maine.

Item	1950			1967		
	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts
All commodities	160,911	100.0	5.6	212,397	100.0	6.2
Livestock and livestock products	88,803	55.2	4.3	133,041	62.6	5.7
Meat animals	9,836	6.1	2.7	6,363	2.9	2.0
Dairy	29,363	18.2	3.2	37,131	17.5	2.8
Poultry	49,133	30.5	6.2	88,878	41.8	14.3
Other	471	.3	4.6	669	.3	1.9
Crops	72,108	44.8	8.9	79,356	37.4	7.2
Field crops	2,971	1.8	2.5	2,372	1.1	1.2
Tobacco	--	--	--	--	--	--
Vegetables	57,408	35.7	19.4	60,929	28.7	16.5
Fruit and nuts	4,739	2.9	3.6	6,618	3.1	4.0
Nursery products	2,428	1.5	1.5	3,041	1.4	1.2
Other	4,562	2.8	13.2	6,396	3.0	19.1

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

APPENDIX TABLE 2. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, Massachusetts.

Item	1950			1967		
	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts
All commodities	181,275	100.0	6.3	156,048	100.0	4.6
Livestock and livestock products	127,946	70.6	6.2	87,453	56.0	3.8
Meat animals	13,658	7.5	3.8	10,435	6.6	3.2
Dairy	45,417	25.1	4.9	48,399	31.1	3.6
Poultry	68,677	37.9	8.7	25,391	16.3	4.1
Other	194	.1	1.9	3,228	2.0	9.2
Crops	53,329	29.4	6.5	68,595	44.0	6.2
Field crops	1,546	.9	1.3	1,245	.8	.6
Tobacco	9,376	5.2	13.6	10,619	6.8	15.0
Vegetables	9,574	5.3	3.2	16,085	10.3	4.3
Fruit and nuts	13,579	7.5	10.3	14,684	9.4	8.8
Nursery products	18,413	10.2	11.1	25,317	16.2	10.5
Other	841	.5	2.4	645	.4	1.8

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

APPENDIX TABLE 3. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, Connecticut.

Item	1950			1967		
	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts
All commodities	146,871	100.0	5.1	159,844	100.0	4.7
Livestock and livestock products	97,911	66.7	4.7	93,444	58.4	4.0
Meat animals	9,305	6.3	2.6	6,663	4.1	2.1
Dairy	38,605	26.3	4.2	44,420	27.8	3.3
Poultry	49,795	33.9	6.3	40,093	25.0	6.4
Other	206	.1	2.0	2,268	1.5	6.4
Crops	48,960	33.3	6.0	66,400	41.6	6.0
Field crops	1,102	.8	.9	1,187	.8	.6
Tobacco	23,907	16.3	34.8	30,301	19.0	42.7
Vegetables	6,469	4.4	2.2	11,095	6.9	3.0
Fruit and nuts	4,288	2.9	3.3	3,600	2.2	2.2
Nursery products	12,342	8.4	7.4	19,960	12.5	7.7
Other	852	.6	2.5	257	.1	.8

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

APPENDIX TABLE 4. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, Vermont.

Item	1950			1967		
	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts
All commodities	102,347	100.0	3.5	136,931	100.0	4.0
Livestock and livestock products	88,980	86.9	4.3	122,908	89.7	5.3
Meat animals	14,257	13.9	4.0	12,397	9.0	3.8
Dairy	65,004	63.5	7.0	105,163	76.8	7.8
Poultry	9,420	9.2	1.2	4,276	3.1	.7
Other	299	.3	2.9	1,072	.8	3.0
Crops	13,367	13.1	1.6	14,023	10.3	1.3
Field crops	1,898	1.9	1.6	2,673	1.9	1.3
Tobacco	--	--	--	--	--	--
Vegetables	1,476	1.4	.5	1,739	1.3	.5
Fruit and nuts	1,939	1.9	1.5	3,121	2.3	1.9
Nursery products	708	.7	.4	1,149	.8	.4
Other	7,346	7.2	21.3	5,341	3.9	15.9

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

APPENDIX TABLE 5. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, New Hampshire.

Item	1950			1967		
		Percent of			Percent of	
	Receipts ($1000)	State Receipts	Regional Receipts	Receipts ($1000)	State Receipts	Regional Receipts
All commodities	60,310	100.0	2.1	56,090	100.0	1.6
Livestock and livestock products	52,227	86.6	2.5	44,185	78.7	1.9
Meat animals	5,543	9.1	1.5	3,957	7.0	1.2
Dairy	17,110	28.4	1.9	23,455	41.8	1.7
Poultry	29,356	48.7	3.7	15,633	27.8	2.5
Other	218	.4	2.1	1,140	2.1	3.2
Crops	8,083	13.4	1.0	11,905	21.3	1.1
Field crops	1,067	1.8	.9	990	1.8	.5
Tobacco	--	--	--	--	--	--
Vegetables	1,977	3.3	.7	2,536	4.5	.7
Fruit and nuts	2,537	4.2	1.9	3,168	5.6	1.9
Nursery products	1,922	3.2	1.2	3,718	6.6	1.4
Other	580	1.0	1.7	1,493	2.7	4.4

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

APPENDIX TABLE 6. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, Rhode Island.

Item	1950			1967		
		Percent of			Percent of	
	Receipts ($1000)	State Receipts	Regional Receipts	Receipts ($1000)	State Receipts	Regional Receipts
All commodities	22,393	100.0	.8	19,537	100.0	.6
Livestock and livestock products	16,590	74.1	.8	10,361	53.0	.4
Meat animals	1,384	6.2	.4	1,210	6.1	.4
Dairy	8,417	37.6	.9	5,599	28.7	.4
Poultry	6,203	27.7	.8	3,523	18.0	.6
Other	586	2.6	5.7	29	.1	.1
Crops	5,803	25.9	.7	9,176	47.0	.8
Field Crops	134	.6	.1	114	.6	.1
Tobacco	--	--	--	--	--	--
Vegetables	2,205	9.8	.7	4,041	20.7	1.1
Fruit and nuts	554	2.5	.4	399	2.0	.2
Nursery products	2,910	13.0	1.8	4,604	23.6	1.8
Other	--	--	--	18	*	.1

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

* Less than 0.05 percent.

APPENDIX TABLE 7. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, New York.

Item	1950			1967		
	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts
All commodities	785,679	100.0	27.1	994,103	100.0	29.0
Livestock and livestock products	563,555	71.7	27.1	698,517	70.2	30.0
Meat animals	94,461	12.0	26.3	78,888	7.9	24.4
Dairy	343,446	43.7	37.2	531,914	53.5	39.4
Poultry	123,175	15.7	15.6	77,958	7.8	12.5
Other	2,473	.3	23.9	9,757	1.0	27.7
Crops	222,124	28.3	27.1	295,586	29.8	26.9
Field crops	29,704	3.8	25.3	39,758	3.9	20.0
Tobacco	--	--	--	--	--	--
Vegetables	92,082	11.7	31.0	115,659	11.6	31.3
Fruit and nuts	46,351	5.9	35.3	72,728	7.3	43.7
Nursery products	46,385	5.9	28.0	58,904	5.9	22.7
Other	7,602	1.0	22.0	8,537	.9	25.4

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

APPENDIX TABLE 8. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, New Jersey.

Item	1950			1967		
	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts
All commodities	292,717	100.0	10.1	251,976	100.0	7.3
Livestock and livestock products	188,136	64.3	9.0	101,807	40.4	4.4
Meat animals	16,780	5.7	4.7	12,350	4.9	3.8
Dairy	60,172	20.6	6.5	49,069	19.4	3.6
Poultry	110,681	37.8	14.1	38,081	15.1	6.1
Other	503	.2	4.9	2,307	.9	6.5
Crops	104,581	35.7	12.8	150,169	59.6	13.7
Field crops	5,501	1.9	4.7	11,492	4.5	5.8
Tobacco	--	--	--	--	--	--
Vegetables	59,406	20.3	20.0	79,346	31.5	21.4
Fruit and nuts	13,984	4.8	10.6	21,552	8.5	12.9
Nursery products	25,690	8.8	15.5	37,096	14.7	14.3
Other	--	--	--	683	.3	2.0

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

APPENDIX TABLE 9. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, Pennsylvania.

Item	1950			1967		
	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts
All commodities	697,948	100.0	24.1	888,285	100.0	25.9
Livestock and livestock products	526,346	75.4	25.3	657,441	74.0	28.2
Meat animals	127,248	18.2	35.4	125,625	14.1	38.9
Dairy	227,964	32.7	24.7	384,853	43.3	28.5
Poultry	168,673	24.2	21.4	135,497	15.2	21.8
Other	2,461	.4	23.8	11,466	1.3	32.5
Crops	171,602	24.6	21.1	230,844	26.0	21.0
Field crops	44,898	6.4	38.2	63,032	7.0	31.7
Tobacco	13,438	1.9	19.5	9,668	1.1	13.6
Vegetables	37,228	5.3	12.6	40,863	4.6	11.0
Fruit and nuts	26,337	3.8	20.0	25,556	2.8	15.3
Nursery products	41,833	6.0	25.2	86,054	9.7	33.1
Other	7,868	1.1	22.8	5,671	.7	16.9

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

APPENDIX TABLE 10. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, Delaware.

Item	1950			1967		
	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts
All commodities	99,066	100.0	3.4	131,953	100.0	3.8
Livestock and livestock products	82,855	83.6	4.0	87,379	66.2	3.8
Meat animals	4,100	4.1	1.1	3,421	2.5	1.1
Dairy	8,194	8.3	.9	8,293	6.3	.6
Poultry	70,116	70.8	8.9	75,451	57.1	12.1
Other	445	.4	4.3	214	.2	.6
Crops	16,211	16.4	2.0	44,574	33.8	4.1
Field crops	5,508	5.6	4.7	23,580	17.9	11.9
Tobacco	--	--	--	--	--	--
Vegetables	6,564	6.6	2.2	14,903	11.3	4.0
Fruit and nuts	1,344	1.4	1.0	1,125	.8	.7
Nursery products	2,226	2.2	1.3	4,564	3.4	1.8
Other	569	.6	1.6	402	.4	1.2

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

APPENDIX TABLE 11. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, Maryland.

Item	1950			1967		
	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts
All commodities	228,704	100.0	7.9	328,087	100.0	9.6
Livestock and livestock products	154,133	67.4	7.4	219,523	66.9	9.4
Meat animals	30,014	13.1	8.4	35,161	10.7	10.9
Dairy	56,078	24.5	6.1	89,169	27.2	6.6
Poultry	67,168	29.4	8.5	93,770	28.6	15.1
Other	873	.4	8.4	1,423	.4	4.0
Crops	74,571	32.6	9.2	108,564	33.1	9.9
Field crops	19,241	8.4	16.4	49,559	15.1	24.9
Tobacco	19,963	8.7	29.0	17,436	5.3	24.6
Vegetables	20,525	9.0	6.9	21,679	6.6	5.9
Fruit and nuts	5,199	2.3	4.0	5,794	1.7	3.5
Nursery products	7,790	3.4	4.7	11,965	3.6	4.6
Other	1,853	.8	5.4	2,131	.6	6.3

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

APPENDIX TABLE 12. Cash Receipts from Farm Marketings by Major Commodity Groups for Selected Years, West Virginia.

Item	1950			1967		
	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts	Receipts ($1000)	Percent of State Receipts	Percent of Regional Receipts
All commodities	116,614	100.0	4.0	93,679	100.0	2.7
Livestock and livestock products	92,717	79.5	4.5	72,978	77.9	3.1
Meat animals	32,715	28.1	9.1	26,186	27.9	8.1
Dairy	23,590	20.2	2.6	21,572	23.0	1.6
Poultry	34,801	29.8	4.4	23,521	25.1	3.8
Other	1,611	1.4	15.6	1,699	1.8	4.8
Crops	23,897	20.5	2.9	20,701	22.1	1.9
Field crops	3,953	3.4	3.4	2,770	2.9	1.4
Tobacco	2,085	1.8	3.0	2,998	3.2	4.2
Vegetables	1,693	1.5	.6	1,072	1.1	.3
Fruit and nuts	10,517	9.0	8.0	8,213	8.8	4.9
Nursery products	3,237	2.8	2.0	3,657	3.9	1.4
Other	2,412	2.1	7.0	1,991	2.1	5.9

SOURCE: ECONOMIC RESEARCH SERVICE, U.S.D.A.

APPENDIX TABLE 13. Total agricultural sales: Twenty highest counties, Northeast, 1950.

Rank	County and State	Sales	Percentage of State	Percentage of Region
		1,000	Percent	Percent
1.	Aroostook, Me.	$51,511	78.5	8.1
2.	Hartford, Conn.	31,963	70.6	5.0
3.	Lancaster, Pa.	21,188	15.7	3.3
4.	Suffolk, N. Y.	18,921	11.5	2.9
5.	Wayne, N. Y.	11,131	6.9	1.7
6.	Chester, Pa.	11,097	8.2	1.7
7.	Cumberland, Pa.	10,260	14.1	1.6
8.	Monroe, N. Y.	8,948	5.6	1.4
9.	Bucks, Pa.	8,809	6.5	1.4
10.	Middlesex, Mass.	8,634	13.6	1.4
11.	Monmouth, N. J.	8,585	11.8	1.3
12.	Nassau, N. Y.	8,019	5.0	1.3
13.	Gloucester, N. J.	7,922	10.9	1.2
14.	Hampshire, Mass.	7,419	11.7	1.2
15.	Burlington, N. J.	7,261	9.9	1.1
16.	York, Pa.	7,226	5.4	1.1
17.	Erie, N. Y.	6,994	4.4	1.1
18.	Hampden, Mass.	6,730	10.6	1.1
19.	Sussex, Del.	6,491	53.7	1.0
20.	Ontario, N. Y.	5,983	3.7	.9
	Total	$255,090	--	39.8

Source: U. S. Census of Agriculture, 1950.

APPENDIX TABLE 14. Total agricultural sales: Twenty highest counties, Northeast, 1964.

Rank	County and State	Sales	Percentage of State	Percentage of Region
		1,000	Percent	Percent
1.	Aroostook, Me.	$123,058	48.1	4.4
2.	Lancaster, Pa.	109,107	13.8	3.9
3.	Sussex, Del.	81,280	75.5	2.9
4.	Suffolk, N. Y.	48,713	5.7	1.7
5.	Hartford, Conn.	46,709	33.6	1.7
6.	Chester, Pa.	44,885	5.7	1.6
7.	Berks, Pa.	35,038	4.4	1.2
8.	York, Pa.	34,846	4.4	1.2
9.	Wicomico, Md.	30,546	11.1	1.1
10.	Wayne, N. Y.	30,203	3.5	1.1
11.	Orange, N. Y.	29,931	3.5	1.1
12.	Chautaugua, N. Y.	29,171	3.4	1.0
13.	Erie, N. Y.	27,266	3.2	1.0
14.	Oneida, N. Y.	25,991	3.0	.9
15.	Worcester, Md.	25,767	9.3	.9
16.	Worcester, Mass.	25,548	18.4	.9
17.	Franklin, Pa.	25,432	3.2	.9
18.	St. Lawrence, N. Y.	25,325	3.0	.9
19.	Frederick, Md.	25,320	9.2	.9
20.	Delaware, N. Y.	25,286	2.8	.9
	Total	$849,423	--	30.2

Source: U. S. Census of Agriculture, 1964.

APPENDIX TABLE 15. Vegetable sales: Twenty highest counties, Northeast, 1950.

Rank	County and State	Sales	Percentage of State	Percentage of Region
		1,000	Percent	Percent
1.	Cumberland, N. J.	$6,953	26.4	4.7
2.	Bucks, Pa.	4,966	31.4	3.4
3.	Gloucester, N. J.	4,743	18.0	3.2
4.	Suffolk, N. Y.	3,852	10.4	2.6
5.	Salem, N. J.	3,627	13.8	2.4
6.	Orange, N. Y.	3,351	9.0	2.3
7.	Erie, N. Y.	2,716	7.3	1.8
8.	Wayne, N. Y.	2,571	6.9	1.7
9.	Sussex, Del.	2,432	68.1	1.6
10.	Nassau, N. Y.	2,388	6.4	1.6
11.	Burlington, N. J.	2,215	8.4	1.5
12.	Orleans, N. Y.	2,123	5.7	1.4
13.	Monroe, N. Y.	2,058	5.5	1.4
14.	Middlesex, Mass.	1,793	32.7	1.2
15.	Genessee, N. Y.	1,533	4.1	1.0
16.	Madison, N. Y.	1,527	4.1	1.0
17.	Lancaster, Pa.	1,512	9.6	1.0
18.	Wicomico, Md.	1,510	15.4	1.0
19.	Monmouth, N. J.	1,493	5.7	1.0
20.	Oneida, N. Y.	1,376	3.7	.9
	Total	$54,737	--	36.7

Source: U. S. Census of Agriculture, 1950.

APPENDIX TABLE 16. Vegetable sales: Twenty highest counties, Northeast, 1964.

Rank	County and State	Sales	Percentage of State	Percentage of Region
		1,000	Percent	Percent
1.	Cumberland, N. J.	$9,622	26.1	7.7
2.	Orange, N. Y.	7,064	16.1	5.6
3.	Gloucester, N. J.	6,816	18.5	5.4
4.	Salem, N. J.	6,390	17.3	5.1
5.	Erie, N. Y.	4,804	10.9	3.8
6.	Orleans, N. Y.	4,334	9.8	3.5
7.	Suffolk, N. Y.	3,571	8.1	2.8
8.	Burlington, N. J.	3,146	8.5	2.5
9.	Genessee, N. Y.	3,965	6.7	2.4
10.	Sussex, Del.	2,846	54.7	2.3
11.	Wayne, N. Y.	2,680	6.1	2.1
12.	Monroe, N. Y.	2,485	5.6	2.0
13.	Monmouth, N. J.	2,244	6.1	1.8
14.	Atlantic, N. J.	2,220	6.0	1.8
15.	Worcester, Md.	1,882	17.3	1.5
16.	Kent, Del.	1,703	32.7	1.4
17.	Bucks, Pa.	1,672	12.4	1.3
18.	Ontario, N. Y.	1,472	3.3	1.2
19.	Middlesex, Mass.	1,471	22.3	1.2
20.	Oswego, N. Y.	1,427	3.2	1.1
	Total	$70,816	--	56.5

Source: U. S. Census of Agriculture, 1964.

APPENDIX TABLE 17. Fruit and nut sales: Twenty highest counties, Northeast, 1950.

Rank	County and State	Sales	Percentage of State	Percentage of Region
		1,000	Percent	Percent
1.	Wayne, N. Y.	$4,889	18.1	6.4
2.	Ulster, N. Y.	2,996	11.1	3.9
3.	Burlington, N. J.	2,915	28.7	3.8
4.	Plymouth, Mass.	2,792	39.1	3.6
5.	Niagara, N. Y.	2,673	9.9	3.5
6.	Adams, Pa.	2,387	16.2	3.1
7.	Chautauqua, N. Y.	1,944	7.2	2.5
8.	Franklin, Pa.	1,935	13.1	2.5
9.	Columbia, N. Y.	1,838	6.8	2.4
10.	Erie, Pa.	1,793	12.1	2.3
11.	Orleans, N. Y.	1,761	6.5	2.3
12.	Monroe, N. Y.	1,422	5.3	1.9
13.	Monmouth, N. J.	1,406	13.8	1.8
14.	Berks, Pa.	1,387	9.4	1.8
15.	Jefferson, W. Va.	1,364	27.8	1.8
16.	Worcester, Mass.	1,337	18.7	1.7
17.	Washington, Md.	1,298	44.8	1.7
18.	Gloucester, N. J.	1,285	12.6	1.7
19.	Dutchess, N. Y.	1,234	4.6	1.6
20.	Berkeley, W. Va.	1,105	22.5	1.4
	Total	$39,760	--	51.7

Source: U. S. Census of Agriculture, 1950.

APPENDIX TABLE 18. Fruit and nut sales: Twenty highest counties, Northeast, 1964

Rank	County and State	Sales	Percentage of State	Percentage of Region
		1,000	Percent	Percent
1.	Wayne, N. Y.	$12,818	22.6	8.5
2.	Chautauqua, N. Y.	8,306	14.6	5.5
3.	Adams, Pa.	7,716	28.3	5.1
4.	Plymouth, Mass.	6,196	47.0	4.1
5.	Erie, Pa.	5,857	21.5	3.9
6.	Ulster, N. Y.	5,595	9.9	3.7
7.	Burlington, N. J.	5,343	24.2	3.5
8.	Atlantic, N. J.	4,980	22.6	3.3
9.	Gloucester, N. J.	4,911	22.3	3.3
10.	Niagara, N. Y.	4,649	8.2	3.1
11.	Orleans, N. Y.	3,913	6.9	2.6
12.	Berkeley, W. Va.	3,850	35.7	2.6
13.	Franklin, Pa.	3,471	12.7	2.3
14.	Jefferson, W. Va.	3,219	29.8	2.1
15.	Washington, Md.	2,993	60.7	2.0
16.	Erie, N. Y.	2,927	5.2	1.9
17.	Monroe, N. Y.	2,865	5.1	1.9
18.	Columbia, N. Y.	2,522	4.4	1.7
19.	Worcester, Mass.	2,223	16.9	1.5
20.	Hampshire, Mass.	1,904	14.4	1.3
	Total	$96,259	--	63.9

Source: U. S. Census of Agriculture, 1964.

APPENDIX TABLE 19. Sales of nursery products: Twenty highest counties, Northeast, 1950.

Rank	County and State	Sales	Percentage of State	Percentage of Region
		1,000	Percent	Percent
1.	Chester, Pa.	$8,618	21.9	6.5
2.	Middlesex, Mass.	5,573	36.0	4.2
3.	Nassau, N. Y.	4,480	13.0	3.4
4.	Bergen, N. J.	4,266	22.2	3.2
5.	Suffolk, N. Y.	4,180	12.1	3.1
6.	Montgomery, Pa.	3,514	8.9	2.6
7.	Westchester, N. Y.	2,803	8.1	2.1
8.	Queens, N. Y.	2,696	7.8	2.0
9.	Allegheny, Pa.	2,588	6.6	1.9
10.	Essex, Mass.	2,502	28.6	1.9
11.	Middlesex, Conn.	2,427	27.7	1.8
12.	Union, N. J.	2,411	12.5	1.8
13.	Delaware, Pa.	2,397	6.1	1.8
14.	Hartford, Conn.	2,055	23.5	1.5
15.	Baltimore, Md.	2,014	36.2	1.5
16.	Monmouth, N. J.	2,010	16.5	1.5
17.	Greene, N. Y.	2,007	5.8	1.5
18.	Monroe, N. Y.	1,823	5.3	1.4
19.	Erie, N. Y.	1,772	5.1	1.3
20.	New Haven, Conn.	1,746	20.0	1.3
	Total	$61,878	--	46.3

Source: U. S. Census of Agriculture, 1950.

APPENDIX TABLE 20. Sales of nursery products: Twenty highest counties, Northeast, 1964.

Rank	County and State	Sales	Percentage of State	Percentage of Region
		1,000	Percent	Percent
1.	Chester, Pa.	$19,246	30.0	9.9
2.	Suffolk, N. Y.	9,555	21.6	4.9
3.	Middlesex, Mass.	7,804	40.0	4.0
4.	Nassau, N. Y.	5,573	12.6	2.9
5.	Butler, Pa.	4,965	7.7	2.6
6.	Hartford, Conn.	4,507	20.3	2.3
7.	Berks, Pa.	4,356	6.8	2.2
8.	Monmouth, N. J.	4,034	14.4	2.1
9.	Allegheny, Pa.	3,778	5.9	1.9
10.	Bucks, Pa.	3,776	5.9	1.9
11.	Middlesex, Conn.	3,698	24.9	1.9
12.	Bergen, N. J.	3,590	12.8	1.8
13.	Montgomery, Pa.	3,580	5.6	1.8
14.	Westchester, N. Y.	2,991	6.8	1.5
15.	Cumberland, N. J.	2,909	10.4	1.5
16.	Union, N. J.	2,891	10.3	1.5
17.	Erie, N. Y.	2,807	6.4	1.4
18.	New Haven, Conn.	2,747	18.5	1.4
19.	Lancaster, Pa.	2,742	4.3	1.4
20.	Middlesex, N. J.	2,719	6.2	1.4
	Total	$98,270	--	50.3

Source: U. S. Census of Agriculture, 1964.

APPENDIX TABLE 21. Employment: Farm and Nonagricultural, Maine, Indicated Years, 1950-69.

Year	Employment		Percent Farm of Nonagricultural
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	58	253.9	22.8
1955	51	275.1	18.5
1960	32	277.5	11.5
1961	32	277.1	11.6
1962	31	279.5	11.1
1963	32	279.6	11.4
1964	31	285.1	10.9
1965	29	295.4	9.8
1966	28	309.2	9.1
1967	24	316.9	7.6
1968	22	323.2	6.8
1969	21	330.3	6.4

Source: STATISTICAL REPORTING SERVICE, USDA AND BUREAU OF LABOR STATISTICS, USDL.

Note: Estimates of farm employment and of workers on nonagricultural payrolls are neither comparable nor additive. The former consists of farm operators, unpaid family and hired workers while the latter includes hired employees only, that is, proprietors, unpaid family and certain other workers are excluded. Still other workers are probably not included in either series. For more detail see footnote, page 56.

APPENDIX TABLE 22. Employment: Farm and Nonagricultural, New Hamshire, Indicated Years, 1950-69.1/

Year	Employment		Percent Farm of Nonagricultural
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	22	168.3	13.1
1955	17	183.5	9.3
1960	12	197.6	6.1
1961	11	198.7	5.5
1962	10	204.6	4.9
1963	10	205.4	4.9
1964	10	209.4	4.8
1965	9	217.2	4.1
1966	10	231.6	4.3
1967	8	244.0	3.3
1968	7	251.8	2.8
1969	7	258.0	2.7

1/ Sources and Note: See Appendix Table 21.

APPENDIX TABLE 23. Employment: Farm and Nonagricultural, Vermont, Indicated Years, 1950-69.1/

Year	Employment		Percent Farm of Nonagricultural
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	43	96.9	44.4
1955	35	102.1	34.3
1960	28	107.9	25.9
1961	26	107.3	24.2
1962	24	110.5	21.7
1963	24	111.5	21.5
1964	23	113.7	20.2
1965	21	121.3	17.3
1966	20	130.8	15.3
1967	17	136.3	12.5
1968	15	140.3	10.7
1969	15	145.2	10.3

1/ Sources and Note: See Appendix Table 21.

APPENDIX TABLE 24. Employment: Farm and Nonagricultural, Massachusetts, Indicated Years, 1950-69.1/

Year	Employment		Percent Farm of Nonagricultural
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	58	1,761.0	3.3
1955	48	1,818.4	2.6
1960	36	1,909.9	1.9
1961	35	1,920.8	1.8
1962	32	1,951.9	1.6
1963	30	1,950.9	1.5
1964	27	1,963.7	1.4
1965	26	2,018.9	1.3
1966	25	2,105.2	1.2
1967	21	2,165.3	1.0
1968	19	2,200.2	.9
1969	18	2,238.6	.8

1/ Sources and Note: See Appendix Table 21.

APPENDIX TABLE 25. Employment: Farm and Nonagricultural, Rhode Island, Indicated Years, 1950-69.1/

Year	Employment		Percent Farm of Nonagricultural
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	4	298.6	1.3
1955	5	295.0	1.7
1960	4	291.7	1.4
1961	4	291.6	1.4
1962	4	298.3	1.3
1963	3	298.1	1.0
1964	3	303.9	1.0
1965	3	316.7	.9
1966	3	330.0	.9
1967	3	338.3	.9
1968	3	343.0	.9
1969	2	343.4	.6

1/ Sources and Note: See Appendix Table 21.

APPENDIX TABLE 26. Employment: Farm and Nonagricultural, Connecticut, Indicated Years, 1950-69.1/

Year	Employment		Percent Farm of Nonagricultural
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	34	766.1	4.4
1955	32	874.8	3.7
1960	25	915.4	2.7
1961	24	922.6	2.6
1962	25	949.8	2.6
1963	22	969.3	2.3
1964	22	991.2	2.2
1965	20	1032.9	1.9
1966	18	1095.4	1.6
1967	14	1130.1	1.2
1968	14	1158.0	1.2
1969	14	1194.9	1.2

1/ Sources and Note: See Appendix Table 21.

APPENDIX TABLE 27. Employment: Farm and Nonagricultural, New York, Indicated Years, 1950-69.1/

Year	Employment		Percent Farm of Nonagricultural
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	248	5576.0	4.4
1955	200	5917.1	3.4
1960	164	6181.9	2.7
1961	160	6157.7	2.6
1962	153	6261.3	2.4
1963	143	6273.3	2.3
1964	131	6370.7	2.1
1965	122	6518.7	1.9
1966	112	6709.5	1.7
1967	105	6858.3	1.5
1968	101	7001.7	1.4
1969	100	7180.9	1.4

1/ Sources and Note: See Appendix Table 21.

APPENDIX TABLE 28. Employment: Farm and Nonagricultural, New Jersey, Indicated Years, 1950-69.1/

Year	Employment		Percent Farm of Nonagricultural
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	66	1657.1	4.0
1955	58	1865.3	3.1
1960	44	2017.1	2.2
1961	42	2033.7	2.1
1962	41	2096.1	2.0
1963	39	2129.3	1.8
1964	37	2168.5	1.7
1965	33	2255.7	1.5
1966	27	2357.7	1.1
1967	23	2420.8	.9
1968	23	2489.7	.9
1969	21	2582.1	.8

1/ Sources and Note: See Appendix Table 21.

APPENDIX TABLE 29. Employment: Farm and Nonagricultural, Pennsylvania, Indicated Years, 1950-69.1/

Year	Employment		Percent Farm of Nonagricultural
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	302	3643.3	8.3
1955	244	3747.8	6.5
1960	194	3712.9	5.2
1961	185	3635.2	5.1
1962	171	3692.4	4.6
1963	162	3692.0	4.4
1964	153	3773.0	4.1
1965	137	3914.4	3.5
1966	131	4073.3	3.2
1967	128	4167.2	3.1
1968	121	4259.5	2.8
1969	115	4369.6	2.6

1/ Sources and Note: See Appendix Table 21.

APPENDIX TABLE 30. Employment: Farm and Nonagricultural, Delaware, Indicated Years, 1950-69.1/

Year	Employment		Percent Farm of
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	19	120.5	15.8
1955	13	143.6	9.1
1960	12	153.8	7.8
1961	12	151.9	7.9
1962	12	156.1	7.7
1963	12	163.4	7.3
1964	10	170.5	5.9
1965	10	184.1	5.4
1966	9	192.7	4.7
1967	8	197.3	4.1
1968	7	202.4	3.5
1969	7	207.9	3.4

1/ Sources and Note: See Appendix Table 21.

APPENDIX TABLE 31. Employment: Farm and Nonagricultural, Maryland, Indicated Years, 1950-69.1/

Year	Employment		Percent Farm of Nonagricultural
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	82	716.1	11.5
1955	65	835.4	7.8
1960	57	896.4	6.4
1961	54	910.5	5.9
1962	56	948.4	5.9
1963	54	979.3	5.5
1964	50	1011.8	4.9
1965	47	1059.9	4.4
1966	39	1134.8	3.4
1967	36	1181.7	3.0
1968	34	1227.0	2.8
1969	32	1277.4	2.5

1/ Sources and Note: See Appendix Table 21.

APPENDIX TABLE 32. Employment: Farm and Nonagricultural, West Virginia, Indicated Years, 1950-69.1/

Year	Employment		Percent Farm of Nonagricultural
	Farm	Nonagricultural	
	(1000)	(1000)	
1950	120	524.3	22.9
1955	92	480.5	19.1
1960	71	460.0	15.4
1961	69	448.1	15.4
1962	64	447.5	14.3
1963	57	449.9	12.7
1964	53	460.9	11.5
1965	49	476.6	10.3
1966	42	495.1	8.5
1967	41	503.6	8.1
1968	39	508.4	7.7
1969	37	512.9	7.2

1/ Sources and Note: See Appendix Table 21.

APPENDIX TABLE 33. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1950.

State	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	Farm Operators and Unpaid Family Workers											
	thousands											
New England	124	128	138	152	158	168	174	162	161	153	136	125
New York	138	142	147	150	156	166	172	172	182	178	160	144
New Jersey	33	34	34	34	38	42	41	43	43	38	33	28
Pennsylvania	197	208	225	244	251	265	268	270	263	236	203	188
Delaware-Maryland	45	48	61	71	74	75	76	74	78	71	64	43
West Virginia	76	76	83	98	110	113	121	119	122	108	96	86
Northeast	613	636	689	752	787	829	852	840	849	784	692	614
United States	6,034	6,413	7,050	7,921	8,458	8,257	7,886	8,132	9,254	8,626	7,094	6,038

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

APPENDIX TABLE 34. Hired farm workers by months for states, the Northeast Region and the United States, 1950.

State	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	Hired Farm Workers											
	thousands											
New England	37	42	50	58	75	87	97	98	111	99	58	42
New York	48	51	58	76	96	110	130	140	132	104	68	59
New Jersey	14	16	17	23	29	40	45	44	45	40	23	14
Pennsylvania	46	50	51	55	64	81	85	95	98	81	56	42
Delaware-Maryland	21	22	25	33	44	53	55	55	46	38	27	19
West Virginia	13	16	17	22	24	29	25	21	20	19	17	11
Northeast	179	197	218	267	332	400	437	453	452	381	249	187
United States	1,110	1,303	1,587	1,900	2,389	3,003	3,425	3,441	3,752	3,052	1,883	1,100

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

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APPENDIX TABLE 35. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1955.

State	Farm Operators and Unpaid Family Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	23	22	23	25	27	34	34	27	31	28	23	22
New Hampshire	11	12	13	14	13	13	13	13	15	13	10	9
Vermont	24	25	28	28	28	28	29	26	23	22	22	20
Massachusetts	23	23	28	31	33	33	33	35	30	29	25	22
Rhode Island	3	3	3	4	4	4	4	5	4	4	3	3
Connecticut	19	21	24	24	26	23	26	23	22	21	19	18
New York	116	125	130	130	136	147	144	147	164	149	135	111
New Jersey	30	32	34	33	34	38	34	37	39	34	32	24
Pennsylvania	159	180	191	202	202	221	228	232	210	200	168	151
Delaware	6	7	8	8	9	9	8	9	9	8	7	6
Maryland	30	30	40	42	46	47	51	48	48	43	42	30
West Virginia	56	59	67	77	84	88	92	93	94	84	74	60
Northeast	500	539	589	618	642	685	696	695	689	635	560	476
United States	4,966	5,355	5,878	6,653	7,038	6,861	6,666	6,875	7,728	7,224	6,009	4,887

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

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APPENDIX TABLE 36. Hired farm workers by months for states, the Northeast Region and the United States, 1955.

State	Hired Farm Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	7	10	14	16	22	32	40	41	47	35	13	10
New Hampshire	2	3	4	5	6	8	6	7	6	5	4	2
Vermont	7	8	9	11	13	13	13	11	12	10	8	7
Massachusetts	12	12	16	21	28	26	21	23	22	18	16	10
Rhode Island	1	1	1	1	1	1	1	2	1	1	1	1
Connecticut	7	7	8	8	9	10	10	15	17	13	10	7
New York	36	42	51	61	68	75	90	115	77	68	45	41
New Jersey	9	12	13	20	26	33	42	37	37	29	16	12
Pennsylvania	33	35	35	41	48	69	66	65	69	55	39	30
Delaware	2	5	4	3	7	6	7	5	10	5	4	2
Maryland	13	13	16	21	33	37	35	34	29	22	17	12
West Virginia	9	11	13	17	21	28	20	14	14	14	12	9
Northeast	138	159	184	225	282	338	351	369	341	275	185	143
United States	978	1,154	1,388	1,621	2,177	2,770	3,037	2,999	3,094	2,578	1,592	1,019

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

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APPENDIX TABLE 37. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1960.

State	Farm Operators and Unpaid Family Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	18	18	18	19	19	23	23	21	25	20	19	17
New Hampshire	8	8	8	9	9	10	12	11	11	9	8	7
Vermont	20	20	21	23	21	23	25	20	20	20	19	18
Massachusetts	18	18	21	23	27	27	27	26	25	21	18	17
Rhode Island	2	3	3	3	3	3	5	5	4	3	3	2
Connecticut	13	15	17	17	16	16	18	21	18	17	15	13
New York	96	97	101	100	108	115	117	118	121	111	104	95
New Jersey	22	23	24	24	25	28	28	29	28	26	22	19
Pennsylvania	132	145	153	160	165	180	184	190	170	162	141	126
Delaware	6	6	7	7	8	9	7	9	8	8	7	5
Maryland	29	28	34	40	41	42	44	42	40	39	34	31
West Virginia	46	45	52	60	63	65	69	71	71	64	64	50
Northeast	410	426	459	485	505	541	559	563	541	500	444	400
United States	4,121	4,286	4,694	5,331	5,580	5,577	5,566	5,673	6,140	5,922	4,949	4,230

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

5232

APPENDIX TABLE 38. Hired farm workers by months for states, the Northeast Region and the United States, 1960.

State	Hired Farm Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	6	6	7	8	12	13	14	14	35	10	7	7
New Hampshire	2	2	2	2	3	4	4	4	5	3	2	2
Vermont	6	6	7	7	8	8	8	8	9	7	6	6
Massachusetts	8	9	11	13	14	19	21	21	20	17	11	7
Rhode Island	1	1	1	1	1	1	2	2	2	2	2	1
Connecticut	5	5	5	6	9	13	18	14	11	10	6	6
New York	32	36	43	54	53	72	76	99	76	60	40	37
New Jersey	9	10	11	13	22	26	32	35	27	23	14	10
Pennsylvania	22	23	21	31	34	49	49	50	51	37	30	22
Delaware	2	3	4	4	5	7	9	9	9	6	5	3
Maryland	10	10	14	17	23	32	30	32	21	20	16	10
West Virginia	7	7	9	17	17	20	16	14	14	10	9	7
Northeast	110	118	135	175	201	264	279	302	280	205	148	118
United States	943	1,032	1,248	1,639	1,988	2,656	2,825	2,627	2,769	2,350	1,593	958

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

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APPENDIX TABLE 39. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1961.

State	Farm Operators and Unpaid Family Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	19	18	18	18	21	23	24	22	24	21	18	17
New Hampshire	7	7	8	9	8	9	10	9	10	8	6	7
Vermont	18	20	22	21	21	21	22	21	21	20	19	18
Massachusetts	17	17	20	24	24	26	27	26	22	21	17	16
Rhode Island	2	2	3	3	3	3	4	5	3	3	3	2
Connecticut	13	15	16	15	16	14	18	17	15	16	15	12
New York	95	97	99	96	100	111	113	117	123	110	105	92
New Jersey	20	22	23	23	24	27	26	28	27	25	21	19
Pennsylvania	124	141	146	151	157	175	176	182	165	157	131	121
Delaware	6	6	7	7	8	9	7	8	7	8	7	5
Maryland	29	30	35	41	41	39	42	46	42	38	34	29
West Virginia	43	45	49	56	59	62	64	65	69	62	50	46
Northeast	393	420	446	464	482	519	533	546	528	489	426	384
United States	3,992	4,216	4,627	5,152	5,440	5,522	5,504	5,501	5,888	5,652	4,758	4,106

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

APPENDIX TABLE 40. Hired farm workers by months for states, the Northeast Region and the United States, 1961.

State	Hired Farm Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	6	6	7	8	12	13	14	14	35	10	7	7
New Hampshire	2	2	2	3	3	4	5	4	6	4	3	2
Vermont	5	5	6	6	6	7	7	6	7	6	5	5
Massachusetts	7	7	9	11	12	17	20	21	19	16	10	6
Rhode Island	1	1	1	1	1	1	2	2	2	2	1	1
Connecticut	5	5	5	6	9	13	18	14	11	10	6	6
New York	31	37	40	51	56	72	82	89	72	60	39	37
New Jersey	9	10	11	13	21	24	21	32	26	22	13	10
Pennsylvania	20	21	24	27	33	45	44	50	46	37	25	21
Delaware	2	3	3	5	6	7	8	10	8	4	5	2
Maryland	9	9	13	16	22	23	32	26	18	18	13	10
West Virginia	7	9	10	15	19	22	15	16	13	10	9	7
Northeast	104	115	131	162	200	248	278	284	263	199	136	114
United States	916	1,038	1,267	1,571	1,992	2,761	2,847	2,712	2,784	2,342	1,502	947

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

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APPENDIX TABLE 41. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1962.

State	Farm Operators and Unpaid Family Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	17	18	18	17	20	22	23	21	22	19	18	15
New Hampshire	6	7	7	8	8	8	9	8	8	7	6	6
Vermont	19	18	20	22	20	20	21	18	21	18	17	17
Massachusetts	16	17	19	24	23	23	25	20	23	21	17	15
Rhode Island	2	2	3	3	3	3	3	3	3	3	3	2
Connecticut	13	15	16	15	16	16	18	20	16	15	14	12
New York	93	93	99	95	98	106	107	106	117	107	100	91
New Jersey	20	22	23	23	24	26	26	27	26	25	20	17
Pennsylvania	116	127	138	143	147	164	163	167	152	145	120	113
Delaware	5	5	7	8	9	9	8	9	8	7	6	5
Maryland	26	28	35	41	42	41	44	46	42	40	36	30
West Virginia	41	42	46	52	57	58	61	62	65	57	50	48
Northeast	374	394	431	451	467	496	508	507	503	464	407	371
United States	3,831	4,108	4,488	5,029	5,339	5,350	5,221	5,383	5,684	5,395	4,606	4,034

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

5236

APPENDIX TABLE 42. Hired farm workers by months for states, the Northeast Region and the United States, 1962.

State	Hired Farm Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	6	6	7	8	12	13	14	14	35	10	7	7
New Hampshire	2	2	2	3	4	4	4	5	6	4	3	2
Vermont	5	5	5	5	5	5	6	5	6	5	5	5
Massachusetts	6	6	7	9	11	16	20	20	19	16	11	6
Rhode Island	1	1	1	1	1	1	1	1	1	1	1	1
Connecticut	5	5	5	6	9	13	18	14	11	10	6	6
New York	31	33	40	45	51	71	71	82	74	54	38	37
New Jersey	9	10	10	12	24	28	33	33	22	15	12	9
Pennsylvania	20	19	22	26	32	45	34	41	41	32	24	19
Delaware	2	3	3	5	6	6	8	9	7	5	4	3
Maryland	9	10	13	17	21	24	30	28	21	17	12	10
West Virginia	6	8	9	14	17	19	13	14	9	10	9	6
Northeast	102	108	124	151	193	245	252	266	252	179	132	111
United States	875	1,039	1,248	1,588	1,993	2,638	2,704	2,610	2,648	2,203	1,463	929

SOURCE: STATISTICAL RESEARCH SERVICE, U.S.D.A.

5237

APPENDIX TABLE 43. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1963.

State	Farm Operators and Unpaid Family Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	19	19	19	19	20	22	23	22	23	20	20	19
New Hampshire	7	7	7	7	8	8	8	8	8	7	7	7
Vermont	17	17	18	18	18	19	18	18	19	18	17	17
Massachusetts	16	16	17	20	20	21	20	20	20	19	17	16
Rhode Island	2	2	2	2	2	2	3	2	2	1	2	2
Connecticut	13	13	14	14	15	16	17	16	15	14	14	13
New York	87	87	88	90	92	103	107	104	109	103	93	86
New Jersey	20	20	20	19	21	23	25	24	25	21	18	17
Pennsylvania	110	126	131	133	136	156	156	154	149	135	112	117
Delaware	6	5	6	7	8	9	7	8	7	7	6	5
Maryland	27	27	35	42	39	41	45	43	43	39	34	29
West Virginia	37	38	41	47	51	55	53	54	59	52	43	40
Northeast	361	377	398	418	430	475	482	473	479	436	383	368
United States	3,785	3,991	4,444	4,853	5,167	5,240	5,111	5,113	5,528	5,354	4,300	3,953

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

52238

APPENDIX TABLE 44. Hired farm workers by months for states, the Northeast Region and the United States, 1963.

State	Hired Farm Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	5	6	7	9	13	14	16	17	40	10	6	6
New Hampshire	2	2	2	3	4	4	4	4	5	3	3	2
Vermont	5	5	5	6	6	6	7	6	6	5	5	4
Massachusetts	5	6	9	10	13	15	20	20	16	11	7	6
Rhode Island	1	1	1	1	1	1	1	1	1	1	1	1
Connecticut	4	5	6	7	9	13	17	15	8	7	5	4
New York	29	30	34	43	48	68	67	67	74	48	32	29
New Jersey	8	8	9	17	25	29	35	33	23	14	9	8
Pennsylvania	17	17	19	24	29	44	38	42	39	30	23	16
Delaware	2	2	3	5	7	7	9	7	6	4	4	2
Maryland	10	9	13	14	21	29	25	24	17	15	12	9
West Virginia	6	6	9	12	12	22	12	11	12	9	7	6
Northeast	95	97	117	151	188	252	251	247	247	157	114	93
United States	864	1,008	1,224	1,542	1,869	2,564	2,768	2,571	2,659	2,199	1,308	814

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

52239

APPENDIX TABLE 45. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1964.

State	Farm Operators and Unpaid Family Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	18	18	19	20	22	22	22	22	22	21	20	19
New Hampshire	7	7	7	7	8	8	8	7	7	7	7	7
Vermont	16	16	17	18	18	19	19	19	19	18	17	17
Massachusetts	15	15	16	19	20	20	19	19	18	17	15	15
Rhode Island	1	1	1	1	2	2	2	2	2	2	2	2
Connecticut	12	12	13	13	15	15	16	17	16	14	11	11
New York	82	80	80	85	98	98	101	98	101	93	76	76
New Jersey	17	17	19	19	21	21	24	20	21	22	15	15
Pennsylvania	104	119	126	125	152	152	154	149	138	128	110	107
Delaware	5	4	5	6	8	8	8	8	7	7	5	4
Maryland	27	26	33	35	40	40	42	42	39	36	31	26
West Virginia	33	37	42	45	50	50	49	52	49	49	40	37
Northeast	337	352	378	393	455	455	464	455	439	414	360	336
United States	3,694	3,860	4,224	4,677	5,057	5,057	4,958	4,906	5,072	5,057	4,053	3,578

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

5240

APPENDIX TABLE 46. Hired farm workers by months for states, the Northeast Region and the United States, 1964.

State	Hired Farm Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	5	5	6	8	12	14	14	16	21	7	5	5
New Hampshire	2	2	2	2	3	4	4	4	7	2	2	2
Vermont	4	4	4	6	6	6	6	5	18	4	4	4
Massachusetts	5	5	6	7	12	16	19	17	17	11	6	6
Rhode Island	1	1	1	1	1	1	1	1	2	1	1	1
Connecticut	3	4	4	7	8	14	19	16	14	6	5	4
New York	24	26	32	36	43	64	61	58	93	44	29	25
New Jersey	8	7	9	16	24	29	35	30	22	15	9	8
Pennsylvania	15	16	19	22	26	35	36	34	128	26	18	15
Delaware	2	2	2	4	5	5	7	6	7	4	3	2
Maryland	8	7	10	13	19	21	24	24	36	13	11	8
West Virginia	5	6	8	12	15	18	10	9	49	7	6	5
Northeast	82	85	103	134	174	227	236	220	414	140	99	85
United States	809	887	1,077	4,911	1,793	2,412	2,542	2,268	5,057	1,987	1,175	784

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

APPENDIX TABLE 47. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1965.

State	Farm Operators and Unpaid Family Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	17	18	19	19	21	21	22	21	22	20	19	19
New Hampshire	6	6	7	7	8	8	8	8	8	7	7	6
Vermont	17	16	17	17	17	18	18	18	17	17	16	16
Massachusetts	15	15	15	17	18	18	17	17	16	16	16	14
Rhode Island	1	1	1	2	2	2	2	2	2	2	2	1
Connecticut	11	11	12	12	13	14	14	14	13	12	11	11
New York	75	75	75	78	81	91	92	88	98	92	83	77
New Jersey	15	15	15	17	18	18	19	19	18	19	13	12
Pennsylvania	96	105	112	117	120	133	131	136	121	116	102	94
Delaware	4	4	5	6	7	8	8	8	7	7	5	4
Maryland	23	24	29	36	37	38	41	40	38	34	31	24
West Virginia	30	33	37	41	48	48	46	47	48	43	39	36
Northeast	310	323	344	369	390	417	418	418	408	385	344	314
United States	3,329	3,492	3,705	4,219	4,482	4,596	4,474	4,593	4,684	4,633	3,911	3,434

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

APPENDIX TABLE 48. Hired farm workers by months for states, the Northeast Region and the United States, 1965.

State	Hired Farm Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	4	5	5	6	11	10	11	12	34	7	4	4
New Hampshire	2	2	2	2	3	3	3	3	4	2	2	2
Vermont	4	4	4	5	5	5	5	5	6	4	4	3
Massachusetts	5	5	6	7	12	17	20	17	16	10	6	5
Rhode Island	1	1	1	1	1	1	1	1	1	1	1	1
Connecticut	4	4	4	8	8	14	20	16	9	6	4	3
New York	21	22	27	28	39	55	56	59	58	43	28	25
New Jersey	8	7	8	15	22	28	35	39	22	14	8	7
Pennsylvania	15	15	14	18	22	32	29	31	30	23	16	14
Delaware	1	1	2	4	5	6	7	7	6	4	3	2
Maryland	7	8	9	12	18	20	23	23	15	12	9	7
West Virginia	5	5	6	10	13	16	9	8	8	6	6	5
Northeast	77	79	88	116	159	207	219	212	209	132	91	78
United States	745	842	972	1,325	1,642	2,276	2,350	2,036	1,978	1,749	1,148	770

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

52413

APPENDIX TABLE 49. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1966.

State	Farm Operators and Unpaid Family Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	17	16	17	18	19	21	22	20	20	18	18	18
New Hampshire	6	6	6	7	7	7	7	7	7	7	6	6
Vermont	16	15	16	16	16	17	17	16	17	16	15	16
Massachusetts	14	14	14	15	16	17	15	15	16	15	14	13
Rhode Island	1	1	1	1	2	2	2	2	2	2	2	1
Connecticut	10	10	11	11	12	12	12	12	11	10	10	9
New York	72	73	73	77	78	86	88	83	92	83	79	71
New Jersey	15	15	13	16	16	16	16	18	17	15	12	11
Pennsylvania	87	98	108	112	116	128	130	127	121	115	100	93
Delaware	4	4	5	5	6	7	7	8	6	6	5	4
Maryland	22	24	29	31	32	30	33	31	28	27	26	22
West Virginia	29	30	34	40	43	40	39	41	42	42	37	32
Northeast	293	306	327	349	363	383	388	380	379	356	324	295
United States	3,134	3,324	3,660	4,011	4,269	4,216	4,156	4,258	4,395	4,376	3,759	3,228

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

APPENDIX TABLE 50. Hired farm workers by months for states, the Northeast Region and the United States, 1966.

State	Hired Farm Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	4	5	5	5	10	10	11	13	33	6	5	4
New Hampshire	2	2	2	2	3	3	3	4	4	2	2	2
Vermont	3	4	4	4	4	5	5	5	5	4	3	3
Massachusetts	5	4	5	5	10	10	18	16	15	10	6	5
Rhode Island	1	1	1	1	1	1	1	1	1	1	1	1
Connecticut	3	3	4	6	7	7	18	16	8	5	3	2
New York	19	20	27	32	42	43	45	47	46	32	23	21
New Jersey	6	6	7	14	20	20	29	26	18	13	7	6
Pennsylvania	11	14	14	17	20	32	27	25	26	21	14	13
Delaware	1	1	2	4	5	4	6	6	4	3	2	1
Maryland	7	6	8	12	14	16	17	17	12	10	8	7
West Virginia	4	5	6	8	9	13	6	6	6	5	5	5
Northeast	66	71	85	110	145	164	186	182	178	112	79	70
United States	676	793	993	1,140	1,481	2,028	2,042	1,917	1,845	1,563	1,095	758

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

5245

APPENDIX TABLE 51. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1967.

State	Farm Operators and Unpaid Family Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	13	14	13	13	15	15	17	16	16	15	14	14
New Hampshire	5	5	5	5	6	6	7	6	6	5	5	5
Vermont	13	13	13	14	13	13	14	13	13	13	13	13
Massachusetts	11	11	11	12	13	13	13	12	12	11	11	10
Rhode Island	1	1	1	1	2	2	2	2	2	2	2	1
Connecticut	8	8	8	9	9	9	10	9	9	8	8	7
New York	70	70	71	74	76	82	83	79	88	84	78	70
New Jersey	10	10	10	11	11	12	11	11	11	10	10	9
Pennsylvania	90	98	105	108	114	125	126	129	114	110	97	89
Delaware	3	3	4	4	5	6	5	6	6	6	5	3
Maryland	20	22	25	26	28	30	31	29	29	27	23	21
West Virginia	27	28	32	35	37	40	38	39	41	38	34	30
Northeast	271	283	298	309	329	353	357	351	347	329	300	272
United States	2,290	3,079	3,430	3,654	3,917	3,946	3,983	4,007	4,145	4,082	3,520	3,026

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

APPENDIX TABLE 52. Hired farm workers by months for states, the Northeast Region and the United States, 1967.

State	Hired Farm Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	4	5	5	5	8	8	11	11	33	8	4	4
New Hampshire	2	2	2	2	2	3	3	4	4	2	2	2
Vermont	3	3	4	3	4	4	5	4	4	4	3	3
Massachusetts	5	5	5	6	8	13	16	16	13	9	6	5
Rhode Island	1	1	1	1	1	1	1	1	1	1	1	1
Connecticut	2	3	3	4	6	11	18	14	7	4	3	2
New York	19	17	19	20	26	35	43	46	45	32	20	19
New Jersey	6	6	6	11	15	20	26	25	20	12	6	5
Pennsylvania	12	12	13	16	18	28	25	30	26	22	15	13
Delaware	1	1	1	2	4	4	5	5	4	3	2	1
Maryland	6	6	7	8	12	14	15	17	11	10	7	5
West Virginia	4	5	6	7	10	14	6	6	6	6	4	4
Northeast	65	66	72	85	114	155	174	179	174	113	73	64
United States	692	744	915	1,049	1,389	1,772	1,974	1,830	1,611	1,400	1,023	675

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

5247

APPENDIX TABLE 53. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1968.

State	Farm Operators and Unpaid Family Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	13	13	12	13	14	15	16	14	15	13	13	12
New Hampshire	4	4	5	5	6	6	6	6	6	5	5	5
Vermont	12	12	13	12	12	12	14	13	12	12	12	12
Massachusetts	10	10	11	12	12	12	13	11	10	11	11	10
Rhode Island	1	1	1	1	2	2	2	2	2	2	2	1
Connecticut	7	8	8	9	9	9	9	9	9	8	7	7
New York	66	68	68	72	73	79	81	79	84	81	75	67
New Jersey	9	9	10	10	10	11	11	11	10	10	10	9
Pennsylvania	86	96	101	109	109	118	120	124	110	105	89	84
Delaware	3	3	4	4	5	4	5	5	5	5	4	3
Maryland	18	20	26	27	29	21	32	32	32	24	22	20
West Virginia	26	27	31	35	36	37	37	37	38	36	32	27
Northeast	255	271	290	309	317	326	346	343	333	312	282	257
United States	2,835	3,008	3,323	3,643	3,759	3,825	3,833	3,889	4,005	3,955	3,399	2,946

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

52248

APPENDIX TABLE 54. Hired farm workers by months for states, the Northeast Region and the United States, 1968.

State	Hired Farm Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	4	5	5	5	7	8	10	10	27	6	5	4
New Hampshire	2	2	2	2	2	3	3	3	4	2	2	2
Vermont	3	3	3	3	3	4	5	4	4	3	3	3
Massachusetts	4	4	5	5	8	12	16	16	13	8	6	5
Rhode Island	1	1	1	1	1	1	1	1	1	1	1	1
Connecticut	2	2	3	5	6	11	17	14	6	4	3	3
New York	17	17	18	22	25	33	41	44	42	31	19	18
New Jersey	5	5	6	10	15	22	26	23	18	11	6	5
Pennsylvania	12	11	11	16	17	23	26	28	23	18	12	11
Delaware	1	1	1	2	4	5	6	6	4	3	2	1
Maryland	5	5	5	7	12	8	14	15	9	8	6	4
West Virginia	3	4	4	7	7	12	6	7	7	6	5	3
Northeast	59	60	64	85	107	142	171	171	158	101	70	60
United States	664	730	876	1,044	1,284	1,717	1,891	1,809	1,566	1,378	971	672

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

5249

APPENDIX TABLE 55. Farm operators and unpaid family workers by months for states, the Northeast Region and the United States, 1969.

State	Farm Operators and Unpaid Family Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	12.0	12.0	12.0	13.0	13.0	14.0	14.0	14.0	13.0	12.0	12.0	11.0
New Hampshire	3.9	3.8	4.2	4.7	5.0	5.3	5.3	5.4	5.3	5.0	4.7	4.1
Vermont	11.0	12.0	11.0	11.0	12.0	12.0	12.0	12.0	11.0	11.0	11.0	11.0
Massachusetts	9.6	9.0	9.0	10.0	11.0	12.0	11.0	11.0	10.0	10.0	9.6	9.2
Rhode Island	1.0	1.0	1.3	1.3	1.4	1.5	1.4	1.4	1.3	1.2	1.2	1.1
Connecticut	6.7	8.0	7.4	7.5	8.5	8.5	8.2	8.7	8.7	7.8	7.3	6.6
New York	65.0	67.0	67.0	70.0	71.0	76.0	80.0	79.0	83.0	79.0	72.0	68.0
New Jersey	9.0	9.0	9.0	10.0	11.0	10.0	10.0	10.0	9.0	9.0	9.0	10.0
Pennsylvania	82.0	90.0	96.0	101.0	106.0	110.0	111.0	118.0	106.0	102.0	87.0	80.0
Delaware	3.0	3.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	3.0
Maryland	18.0	19.0	24.0	24.0	26.0	26.0	28.0	29.0	25.0	24.0	23.0	20.0
West Virginia	25.0	25.0	29.0	32.0	34.0	36.0	34.0	36.0	38.0	35.0	30.0	26.0
Northeast	246.2	258.8	273.9	287.5	302.9	317.3	319.9	329.5	316.3	301.0	270.8	249.0
United States	2,775	2,910	3,177	3,499	3,686	3,660	3,725	3,739	3,894	3,817	3,287	2,829

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

5250

APPENDIX TABLE 56. Hired farm workers by months for states, the Northeast Region and the United States, 1969.

State	Hired Farm Workers											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	thousands											
Maine	4.4	4.6	4.7	5.1	6.3	7.6	10.0	10.0	26.0	6.3	4.9	4.7
New Hampshire	1.8	1.7	1.9	2.0	2.0	2.9	3.1	3.2	3.8	1.7	1.8	1.7
Vermont	3.4	3.3	3.3	3.4	3.6	3.9	4.5	4.1	4.2	3.5	3.7	3.4
Massachusetts	3.7	3.5	3.9	5.0	7.7	11.0	15.0	15.0	11.0	7.9	4.9	4.3
Rhode Island	0.7	0.7	0.8	0.8	0.8	1.0	0.9	0.9	0.8	0.8	0.7	0.6
Connecticut	2.2	2.9	2.6	4.5	5.5	9.5	15.0	13.0	6.5	4.5	3.0	2.2
New York	16.0	17.0	20.0	20.0	26.0	31.0	41.0	45.0	41.0	30.0	19.0	17.0
New Jersey	5.0	4.0	5.0	9.0	13.0	17.0	23.0	21.0	13.0	11.0	5.0	5.0
Pennsylvania	11.0	10.0	11.0	14.0	16.0	24.0	20.0	29.0	23.0	16.0	12.0	11.0
Delaware	1.0	1.0	1.0	2.0	4.0	4.0	5.0	5.0	4.0	3.0	2.0	1.0
Maryland	4.0	5.0	6.0	7.0	10.0	12.0	13.0	14.0	10.0	7.0	5.0	4.0
West Virginia	3.0	3.0	4.0	6.0	10.0	11.0	6.0	6.0	5.0	4.0	4.0	3.0
Northeast	56.2	56.7	64.2	78.8	104.9	134.9	156.5	166.2	148.3	95.7	66.0	57.9
United States	629	696	807	1,053	1,312	1,579	1,856	1,689	1,500	1,330	968	659

SOURCE: STATISTICAL REPORTING SERVICE, U.S.D.A.

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APPENDIX TABLE 57. Hired Labor on Commercial Farms, Maine, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	15,768	13,221	9,785	7,910
Reporting labor expenditures				
Number	11,519	8,900	7,005	5,727
Percent	73.1	67.3	71.6	72.4
Labor expenditures				
Total (1000)	$22,808	$18,108	$21,085	$21,640
Per farm reporting	$1,980	$2,035	$3,010	$3,779
Reporting regular hired workers				
Number	3,164	2,656	2,234	2,292
Percent	20.1	20.1	22.8	29.0
Regular hired workers				
Total	5,536	4,743	3,915	5,356
Per farm reporting	1.75	1.79	1.75	2.34

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 58. Hired Labor on Commercial Farms, Vermont, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	13,056	11,891	9,006	7,168
Reporting labor expenditures				
Number	9,407	7,559	6,111	4,878
Percent	72.0	63.6	67.9	68.1
Labor expenditures				
Total (1000)	$10,812	$9,991	$10,607	$9,775
Per farm reporting	$1,149	$1,322	$1,736	$2,004
Reporting regular hired workers				
Number	3,805	3,134	2,700	2,360
Percent	29.1	26.4	30.0	32.9
Regular hired workers				
Total	5,677	4,523	4,069	4,074
Per farm reporting	1.49	1.44	1.50	1.73

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 59. Hired Labor on Commercial Farms, New Hampshire, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	6,393	5,425	3,419	2,656
Reporting labor expenditures				
Number	4,206	3,037	2,195	1,607
Percent	65.8	56.0	64.2	60.5
Labor expenditures				
Total (1000)	$7,235	$5,180	$6,279	$5,364
Per farm reporting	$1,720	$1,706	$2,861	$3,338
Reporting regular hired workers				
Number	1,681	1,192	1,074	834
Percent	26.3	22.0	31.4	31.4
Regular hired workers				
Total	3,359	1,947	2,011	1,671
Per farm reporting	2.00	1.63	1.87	2.00

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 60. Hired Labor on Commercial Farms, Connecticut, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	9,157	7,761	5,378	4,148
Reporting labor expenditures				
Number	6,094	4,984	3,703	2,756
Percent	66.6	64.2	68.9	66.4
Labor expenditures				
Total (1000)	$22,457	$17,559	$21,660	$25,746
Per farm reporting	$3,685	$3,523	$5,849	$9,342
Reporting regular hired workers				
Number	3,091	2,176	1,881	1,578
Percent	33.8	28.0	35.0	38.0
Regular hired workers				
Total	8,792	5,926	5,621	7,685
Per farm reporting	2.84	2.72	2.99	4.9

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 61. Hired Labor on Commercial Farms, Rhode Island, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	1,560	1,103	1,086	748
Reporting labor expenditures				
Number	975	597	720	511
Percent	62.5	54.1	66.3	68.3
Labor expenditures				
Total (1000)	$2,588	$1,766	$2,909	$2,583
Per farm reporting	$2,655	$2,959	$4,040	$5,054
Reporting regular hired workers				
Number	544	236	393	280
Percent	34.9	21.4	36.2	37.4
Regular hired workers				
Total	1,259	565	922	821
Per farm reporting	2.31	2.39	2.35	2.93

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 62. Hired Labor on Commercial Farms, Massachusetts, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	13,079	10,966	7,153	5,649
Reporting labor expenditures				
Number	7,965	6,665	4,763	3,660
Percent	60.9	60.8	66.6	64.8
Labor expenditures				
Total (1000)	$24,367	$22,832	$25,518	$24,632
Per farm reporting	$3,059	$3,426	$5,358	$6,730
Reporting regular hired workers				
Number	3,813	3,110	2,424	2,078
Percent	29.2	28.4	33.9	36.8
Regular hired workers				
Total	9,452	8,840	6,766	7,737
Per farm reporting	2.48	2.84	2.79	3.72

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 63. Hired Labor on Commercial Farms, New York, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	87,889	77,290	56,760	48,376
Reporting labor expenditures				
Number	62,009	46,593	36,994	30,898
Percent	70.6	60.3	65.2	63.9
Labor expenditures				
Total (1000)	$90,371	$85,193	$89,595	$90,465
Per farm reporting	$1,457	$1,828	$2,422	$2,928
Reporting regular hired workers				
Number	23,808	17,344	15,376	14,033
Percent	27.1	22.4	27.1	29.0
Regular hired workers				
Total	39,593	31,844	27,825	31,186
Per farm reporting	1.66	2.39	2.35	2.22

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 64. Hired Labor on Commercial Farms, New Jersey, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	18,071	17,086	11,726	8,317
Reporting labor expenditures				
Number	12,655	11,386	8,679	5,923
Percent	70.0	66.6	74.0	71.2
Labor expenditures				
Total (1000)	$37,693	$41,066	$41,261	$40,362
Per farm reporting	$2,979	$3,607	$4,757	$6,815
Reporting regular hired workers				
Number	6,892	5,719	4,159	3,541
Percent	38.1	33.5	35.5	42.6
Regular hired workers				
Total	16,909	15,386	9,993	12,834
Per farm reporting	2.45	2.69	2.40	3.62

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 65. Hired Labor on Commercial Farms, Pennsylvania, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	88,230	82,358	58,843	52,962
Reporting labor expenditures				
Number	58,340	46,981	35,794	30,062
Percent	66.1	57.0	60.8	56.8
Labor expenditures				
Total (1000)	$62,256	$59,973	$66,805	$66,936
Per farm reporting	$1,067	$1,277	$1,866	$2,148
Reporting regular hired workers				
Number	19,917	14,779	12,269	11,380
Percent	22.6	18.0	20.9	21.5
Regular hired workers				
Total	33,896	25,750	22,944	24,222
Per farm reporting	1.70	1.74	1.87	2.13

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 66. Hired Labor on Commercial Farms, Delaware, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	5,554	5,005	3,887	3,452
Reporting labor expenditures				
Number	3,504	3,212	2,356	1,979
Percent	63.1	64.2	60.6	57.3
Labor expenditures				
Total (1000)	$5,605	$7,707	$5,989	$6,705
Per farm reporting	$1,600	$2,399	$2,542	$3,388
Reporting regular hiring workers				
Number	1,385	1,014	747	820
Percent	24.9	20.3	19.2	23.8
Regular hired workers				
Total	2,992	2,779	1,675	2,339
Per farm reporting	2.16	2.74	2.24	2.85

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 67. Hired Labor on Commercial Farms, Maryland, Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	23,452	22,042	15,979	14,467
Reporting labor expenditures				
Number	16,806	14,726	11,322	9,786
Percent	71.7	66.8	70.9	67.6
Labor expenditures				
Total (1000)	$24,917	$25,071	$25,220	$23,196
Per farm reporting	$1,483	$1,702	$2,227	$2,370
Reporting regular hired workers				
Number	7,653	5,397	4,673	4,140
Percent	32.6	24.5	29.3	28.6
Regular hired workers				
Total	15,583	11,564	8,857	8,981
Per farm reporting	2.04	2.14	1.90	2.17

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 68. Hired Labor on Commercial Farms, West Virginia Indicated Years, 1950-64.

Item	1950	1954	1959	1964
Commercial farms, Number	23,286	21,479	12,605	12,978
Reporting labor expenditures				
Number	12,814	10,857	6,603	5,834
Percent	55.0	50.6	52.4	45.0
Labor expenditures				
Total (1000)	$9,490	$8,305	$9,323	$8,377
Per farm reporting	$741	$765	$1,412	$1,436
Reporting regular hiring workers				
Number	3,276	1,790	1,745	1,350
Percent	14.1	8.3	13.8	10.4
Regular hired workers				
Total	6,500	3,612	3,824	3,331
Per farm reporting	1.98	2.02	2.19	2.47

SOURCE: CENSUS OF AGRICULTURE

APPENDIX TABLE 69. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, Maine, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	913,774	683,324	472,000	356,710	319,946	292,803	121,828	33,811
Civilian Labor Force	338,000	353,398	188,990	193,146	107,640	142,674	41,370	17,578
Employed	307,820	330,584	172,345	182,042	96,610	131,623	38,865	16,919
Farmers and farm managers	16,853	8,084	1,339	872	1,196	1,548	14,318	5,664
Farm operators and tenants	16,690	7,913	--	839	--	1,484	--	5,590
Farm managers	163	171	--	33	--	64	--	74
Farm laborers and foremen	11,213	6,667	1,422	1,219	4,005	3,417	5,786	2,031
Unpaid family workers	1,687	566	99	90	193	128	1,395	348
Experienced Unemployed	29,697	22,399	15,993	10,806	11,040	10,939	2,664	654
Farmers and farm managers	158	51	27	--	47	40	84	11
Farm laborers and foremen	1,121	663	253	188	615	412	253	63
Unpaid family workers	66	29	14	--	26	--	26	--

SOURCE: CENSUS OF POPULATION.

52258

APPENDIX TABLE 70. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, New Hampshire, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	533,242	433,134	306,806	254,264	179,266	165,170	47,170	13,700
Civilian Labor Force	213,320	244,857	128,445	146,845	66,245	90,090	18,630	7,922
Employed	199,460	234,444	119,900	140,613	61,770	86,141	17,790	7,690
Farmers and farm managers	7,278	3,118	721	426	693	428	5,864	2,264
Farm operators and tenants	7,077	3,058	--	409	--	418	--	2,231
Farm managers	201	60	--	17	--	10	--	33
Farm laborers and foremen	5,116	2,884	777	626	1,854	1,269	2,485	989
Unpaid family workers	794	440	89	74	82	60	623	306
Experienced Unemployed	13,982	10,079	8,663	6,025	4,479	3,831	840	223
Farmers and farm managers	44	25	11	5	17	4	16	16
Farm laborers and foremen	288	141	79	54	154	79	55	8
Unpaid family workers	14	4	2	--	5	--	7	--

SOURCE: CENSUS OF POPULATION.

5259

APPENDIX TABLE 71. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, Vermont, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	377,747	273,514	137,612	107,563	159,003	132,385	81,132	33,566
Civilian Labor Force	141,735	148,234	56,105	58,738	55,795	69,764	29,835	19,732
Employed	134,265	141,596	52,600	55,961	52,335	66,323	29,330	19,312
Farmers and farm managers	13,545	8,840	160	157	693	1,083	12,692	7,600
Farm operators and tenants	13,320	8,701	--	147	--	1,047	--	7,507
Farm managers	225	139	--	10	--	36	--	93
Farm laborers and foremen	11,050	7,085	351	324	2,789	2,290	7,910	4,471
Unpaid family workers	2,506	1,558	24	16	161	93	2,321	1,449
Experienced Unemployed	7,794	6,497	3,485	2,713	3,549	3,368	760	416
Farmers and farm managers	48	43	9	--	20	14	19	29
Farm laborers and foremen	365	179	60	39	209	124	96	16
Unpaid family workers	14	15	--	--	6	--	8	--

SOURCE: CENSUS OF POPULATION.

5260

APPENDIX TABLE 72. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, Massachusetts, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	4,690,514	3,740,142	3,959,239	3,159,217	651,299	554,533	79,976	26,392
Civilian Labor Force	1,923,925	2,087,874	1,659,235	1,781,327	232,010	290,998	32,680	15,549
Employed	1,811,640	2,000,312	1,559,610	1,705,960	220,385	279,179	31,645	15,173
Farmers and farm managers	14,408	7,763	2,692	2,001	2,247	1,583	9,469	4,179
Farm operators and tenants	13,812	7,500	--	1,936	--	1,473	--	4,091
Farm managers	596	263	--	65	--	110	--	88
Farm laborers and foremen	13,928	8,508	4,224	3,305	5,098	3,431	4,606	1,772
Unpaid family workers	800	1,075	165	235	123	225	512	615
Experienced Unemployed	109,797	84,654	97,435	72,824	11,405	11,465	957	365
Farmers and farm managers	201	85	105	31	56	27	40	27
Farm laborers and foremen	939	624	502	394	379	219	58	11
Unpaid family workers	35	--	16	--	12	--	7	--

SOURCE: CENSUS OF POPULATION.

5261

APPENDIX TABLE 73. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, Rhode Island, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	791,896	627,705	667,212	546,846	114,346	77,934	10,338	2,925
Civilian Labor Force	321,240	335,069	279,575	295,264	37,665	38,164	4,000	1,641
Employed	297,710	317,272	258,390	279,502	35,475	36,185	3,845	1,585
Farmers and farm managers	1,941	1,112	484	399	302	182	1,155	531
Farm operators and tenants	1,839	1,076	--	391	--	178	--	507
Farm managers	102	36	--	8	--	4	--	24
Farm laborers and foremen	1,794	1,237	606	538	664	452	524	247
Unpaid family workers	142	142	20	47	26	21	96	74
Experienced Unemployed	22,892	17,005	20,536	15,057	2,170	1,896	186	52
Farmers and farm managers	35	8	20	4	9	4	6	--
Farm laborers and foremen	133	57	56	38	58	19	19	--
Unpaid family workers	12	--	4	--	2	--	6	--

SOURCE: CENSUS OF POPULATION.

5262

APPENDIX TABLE 74. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, Connecticut, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	2,007,280	1,824,322	1,558,642	1,445,777	385,982	360,214	62,656	18,331
Civilian Labor Force	859,480	1,058,750	688,555	847,365	143,745	200,390	27,180	10,995
Employed	812,565	1,010,444	648,540	806,336	137,645	193,422	26,380	10,686
Farmers and farm managers	11,249	6,036	1,357	1,387	1,619	1,340	8,273	3,309
Farm operators and tenants	10,651	5,680	--	1,273	--	1,180	--	3,227
Farm managers	598	356	--	114	--	156	--	86
Farm laborers and foremen	9,984	7,500	2,329	2,285	3,663	3,649	3,992	1,566
Unpaid family workers	1,103	825	93	194	143	180	867	451
Experienced Unemployed	46,099	46,194	39,284	39,163	6,022	6,736	793	295
Farmers and farm managers	116	63	61	44	32	11	23	8
Farm laborers and foremen	532	825	343	594	149	207	40	24
Unpaid family workers	23	--	8	--	9	--	6	--

SOURCE: CENSUS OF POPULATION.

5263

APPENDIX TABLE 75. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, New York, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	14,830,192	12,388,705	12,682,446	10,703,302	1,570,092	1,455,196	577,654	230,207
Civilian Labor Force	6,282,470	6,958,335	5,516,395	6,068,143	545,350	758,892	220,725	131,300
Employed	5,895,470	6,599,462	5,165,955	5,763,370	515,310	709,471	214,205	126,621
Farmers and farm managers	97,468	62,286	4,851	4,144	7,853	8,323	84,764	49,819
Farm operators and tenants	95,588	61,257	--	3,832	--	8,007	--	49,418
Farm managers	1,880	1,029	--	312	--	313	--	404
Farm laborers and foremen	65,495	40,965	7,259	6,466	16,688	13,923	41,548	20,576
Unpaid family workers	13,997	8,762	387	478	1,015	917	12,595	7,367
Experienced Unemployed	374,006	217,018	338,387	181,290	28,953	32,795	6,666	2,933
Farmers and farm managers	744	587	378	192	167	255	199	140
Farm laborers and foremen	2,907	2,327	1,033	906	1,207	1,199	667	228
Unpaid family workers	203	66	46	--	53	--	104	--

SOURCE: CENSUS OF POPULATION.

52264

APPENDIX TABLE 76. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, New Jersey, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	4,835,329	4,404,234	4,186,207	3,917,536	543,822	449,100	105,300	37,598
Civilian Labor Force	2,045,935	2,457,722	1,815,725	2,203,245	185,690	232,389	44,520	22,088
Employed	1,939,210	2,345,496	1,719,305	2,102,114	176,445	221,712	43,460	21,670
Farmers and farm managers	21,821	13,930	3,858	3,775	2,431	2,501	15,532	7,654
Farm operators and tenants	21,188	13,597	--	3,721	--	2,400	--	7,476
Farm managers	633	333	--	54	--	101	--	178
Farm laborers and foremen	22,531	12,479	5,186	3,853	7,154	4,640	10,191	3,986
Unpaid family workers	3,037	1,983	644	447	707	274	1,686	1,262
Experienced Unemployed	102,798	107,474	92,767	96,750	8,916	10,343	1,115	381
Farmers and farm managers	149	143	85	84	36	32	28	27
Farm laborers and foremen	809	755	337	435	358	275	114	45
Unpaid family workers	53	18	14	--	26	--	13	--

SOURCE: CENSUS OF POPULATION.

52965

APPENDIX TABLE 77. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, Pennsylvania, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	10,498,012	8,186,086	7,403,036	5,939,360	2,389,769	1,993,811	705,207	252,915
Civilian Labor Force	4,125,770	4,401,898	3,048,435	3,245,017	820,130	1,018,388	257,205	138,493
Employed	3,896,875	4,127,208	2,875,940	3,047,966	772,100	944,949	248,835	134,293
Farmers and farm managers	94,234	60,386	2,589	2,671	7,032	9,188	84,613	48,527
Farm operators and tenants	92,876	59,646	--	2,581	--	8,914	--	48,151
Farm managers	1,358	740	--	90	--	274	--	376
Farm laborers and foremen	61,559	38,378	4,903	5,118	16,397	14,049	40,259	19,211
Unpaid family workers	17,833	9,969	259	347	1,320	1,221	16,254	8,401
Experienced Unemployed	218,107	261,014	164,167	186,476	46,306	70,532	7,634	4,006
Farmers and farm managers	516	505	150	111	171	225	195	169
Farm laborers and foremen	2,389	2,550	678	828	1,140	1,553	571	169
Unpaid family workers	243	97	25	--	75	--	143	--

SOURCE: CENSUS OF POPULATION.

5266

APPENDIX TABLE 78. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, Delaware, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	318,085	309,184	199,122	204,255	84,738	89,041	34,225	15,888
Civilian Labor Force	128,135	170,752	83,525	116,168	31,560	45,618	13,050	8,966
Employed	124,015	162,950	80,455	110,745	30,680	43,440	12,880	8,765
Farmers and farm managers	5,960	3,843	121	154	510	736	5,329	2,953
Farm operators and tenants	5,865	3,757	--	146	--	703	--	2,908
Farm managers	95	86	--	8	--	33	--	45
Farm laborers and foremen	4,667	3,339	228	194	2,035	1,890	2,404	1,255
Unpaid family workers	502	318	6	19	52	38	444	261
Experienced Unemployed	4,007	7,445	2,981	5,131	838	2,117	188	197
Farmers and farm managers	13	117	2	79	3	34	8	4
Farm laborers and foremen	100	172	19	21	60	120	21	31
Unpaid family workers	4	41	--	--	--	--	4	--

SOURCE: CENSUS OF POPULATION.

52697

APPENDIX TABLE 79. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, Maryland, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	2,343,001	2,155,258	1,615,902	1,570,502	543,623	506,290	183,476	78,466
Civilian Labor Force	931,130	1,190,791	682,375	898,987	180,230	248,357	68,525	43,447
Employed	887,000	1,133,968	648,980	857,097	171,040	234,768	66,980	42,103
Farmers and farm managers	27,670	18,007	606	658	2,656	3,016	24,408	14,333
Farm operators and tenants	26,945	17,451	--	618	--	2,824	--	14,009
Farm managers	725	556	--	40	--	192	--	324
Farm laborers and foremen	24,619	14,743	1,186	1,102	8,554	6,999	14,879	6,642
Unpaid family workers	4,249	2,089	44	107	392	182	3,813	1,800
Experienced Unemployed	42,026	53,886	31,943	39,586	8,690	13,025	1,393	1,275
Farmers and farm managers	87	128	30	11	35	61	22	56
Farm laborers and foremen	792	790	142	150	474	531	176	109
Unpaid family workers	63	19	9	--	27	--	27	--

SOURCE: CENSUS OF POPULATION.

52668

APPENDIX TABLE 80. Total Population, Civilian Labor Force, Employed Persons and Experienced Unemployed in Agriculture by Place of Residence, West Virginia, 1950 and 1960.

Item	Total		Urban		Rural Nonfarm		Farm	
	1950	1960	1950	1960	1950	1960	1950	1960
Total Population	3,005,552	1,295,415	694,487	520,855	900,143	685,203	410,922	89,357
Civilian Labor Force	654,765	587,232	275,185	268,872	261,280	280,722	118,300	37,638
Employed	623,560	538,214	262,640	252,900	246,670	250,339	114,250	34,975
Farmers and farm managers	37,291	13,696	306	197	1,963	3,091	35,022	10,408
Farm operators and tenants	36,943	13,520	--	185	--	3,009	--	10,326
Farm managers	348	176	--	12	--	82	--	82
Farm laborers and foremen	23,174	8,514	541	468	5,874	4,549	16,759	3,497
Unpaid family workers	9,249	1,424	41	38	680	252	8,528	1,134
Experienced Unemployed	29,899	46,630	12,059	15,110	13,976	29,001	3,864	2,519
Farmers and farm managers	157	228	17	8	30	129	110	91
Farm laborers and foremen	734	1,030	74	115	348	801	312	114
Unpaid family workers	573	60	71	--	306	--	196	--

SOURCE: CENSUS OF POPULATION.

5269

APPENDIX TABLE 81. Employed Persons and Farm Workers by Age, Sex, and Color, Maine, 1950 and 1960.

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	9,705	7,260	16,965	13,273	9,335	22,608
20-34	73,805	30,248	104,053	65,946	28,360	94,306
35-54	92,648	36,310	128,958	96,275	49,481	145,756
55 and older	47,822	14,515	62,337	44,615	23,299	67,914
Color						
White	223,487	88,179	311,666	219,530	110,027	329,557
Nonwhite	493	154	647	579	448	1,027
Total	223,980	88,333	312,313	220,109	110,475	330,584
Farmers and Farm Managers						
Age						
19 and under	114	8	122	113	8	121
20-34	2,869	50	2,919	1,249	39	1,288
35-54	6,872	211	7,083	3,214	147	3,361
55 and older	6,513	216	6,729	3,183	131	3,314
Color						
White	16,368	485	16,853	7,750	325	8,075
Nonwhite	--	--	--	9	--	9
Total	16,368	485	16,853	7,759	325	8,084
Farm Laborers and Foremen						
Age						
19 and under	1,969	63	2,032	1,491	58	1,549
20-34	4,261	196	4,457	1,873	130	2,003
35-54	2,784	260	3,044	1,666	294	1,960
55 and older	1,534	146	1,680	1,067	88	1,155
Color						
White	10,548	665	11,213	6,054	570	6,624
Nonwhite	--	--	--	43	--	43
Total	10,548	665	11,213	6,097	570	6,667

SOURCE: CENSUS OF POPULATION

APPENDIX TABLE 82. Employed Persons and Farm Workers by Age, Sex, and Color, New Hampshire, 1950 and 1960

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	5,849	5,198	11,047	9,426	7,496	16,922
20-34	44,356	22,321	66,677	42,915	21,808	64,723
35-54	58,474	26,569	85,043	66,606	38,396	105,002
55 and older	29,646	10,255	39,901	30,481	17,316	47,797
Color						
White	238,115	64,257	302,372	149,124	84,763	233,887
Nonwhite	210	86	296	304	253	557
Total	238,325	64,343	302,668	149,428	85,016	234,444
Farmers and Farm Managers						
Age						
19 and under	51	4	55	44	--	44
20-34	1,143	36	1,179	397	32	429
35-54	2,690	154	2,844	1,174	72	1,246
55 and older	3,030	170	3,200	1,291	108	1,399
Color						
White	6,914	364	7,278	2,906	212	3,118
Nonwhite	--	--	--	--	--	--
Total	6,914	364	7,278	2,906	212	3,118
Farm Laborers and Foremen						
Age						
19 and under	892	32	924	802	34	836
20-34	1,569	117	1,686	760	78	838
35-54	1,269	204	1,473	557	183	740
55 and older	922	111	1,033	396	74	470
Color						
White	4,652	464	5,116	2,510	364	2,874
Nonwhite	--	--	--	5	5	10
Total	4,652	464	5,116	2,515	369	2,884

SOURCE: CENSUS OF POPULATION

APPENDIX TABLE 83. Employed Persons and Farm Workers by Age, Sex, and Color, Vermont, 1950 and 1960.

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	5,960	3,473	9,433	7,197	4,490	11,687
20-34	31,992	12,810	44,802	27,353	11,283	38,636
35-54	40,485	15,242	55,727	40,979	20,704	61,683
55 and older	20,841	6,461	27,302	19,690	9,900	29,590
Color						
White	99,155	37,922	137,077	95,043	46,300	141,343
Nonwhite	123	64	187	176	77	253
Total	99,278	37,986	137,264	95,219	46,377	141,596
Farmers and Farm Managers						
Age						
19 and under	68	5	73	135	3	138
20-34	2,670	35	2,705	1,374	55	1,429
35-54	6,098	215	6,313	3,943	235	4,178
55 and older	4,312	142	4,454	2,887	208	3,095
Color						
White	13,142	394	13,536	8,339	501	8,840
Nonwhite	6	3	9	--	--	--
Total	13,148	397	13,545	8,339	501	8,840
Farm Laborers and Foremen						
Age						
19 and under	2,812	139	2,951	2,154	86	2,240
20-34	3,856	271	4,127	2,078	209	2,287
35-54	2,115	378	2,493	1,407	320	1,727
55 and older	1,375	104	1,479	711	120	831
Color						
White	10,147	889	11,036	6,334	735	7,069
Nonwhite	11	3	14	16	--	16
Total	10,158	892	11,050	6,350	735	7,085

SOURCE: CENSUS OF POPULATION

APPENDIX TABLE 84. Employed Persons and Farm Workers by Age, Sex, and Color, Massachusetts, 1950 and 1960.

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	41,102	47,555	88,657	73,302	66,369	139,671
20-34	401,681	228,975	630,656	370,092	185,131	555,223
35-54	524,199	235,533	759,732	572,439	323,373	895,812
55 and older	257,095	90,438	347,533	261,582	148,024	409,606
Color						
White	1,205,385	591,659	1,797,044	1,251,453	703,946	1,955,399
Nonwhite	18,692	10,842	29,534	25,962	18,951	44,913
Total	1,224,077	602,501	1,826,578	1,277,415	722,897	2,000,312
Farmers and Farm Managers						
Age						
19 and under	184	15	199	147	25	172
20-34	2,482	108	2,590	1,064	27	1,091
35-54	5,320	329	5,649	2,928	260	3,188
55 and older	5,660	310	5,970	3,056	256	3,312
Color						
White	13,560	755	14,315	7,125	560	7,685
Nonwhite	86	7	93	70	8	78
Total	13,646	762	14,408	7,195	568	7,763
Farm Laborers and Foremen						
Age						
19 and under	1,945	97	2,042	2,187	131	2,318
20-34	4,523	345	4,868	1,866	187	2,053
35-54	3,581	557	4,138	1,972	522	2,494
55 and older	2,605	275	2,880	1,322	321	1,643
Color						
White	12,424	1,251	13,675	7,192	1,144	8,336
Nonwhite	230	23	253	155	17	172
Total	12,654	1,274	13,928	7,347	1,161	8,508

SOURCE: CENSUS OF POPULATION

APPENDIX TABLE 85. Employed Persons and Farm Workers by Age, Sex, and Color, Rhode Island, 1950 and 1960.

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	7,375	8,490	15,865	10,945	9,482	20,427
20-34	68,742	41,291	110,033	56,732	29,259	85,991
35-54	85,410	40,691	126,101	95,567	54,203	149,770
55 and older	38,838	13,650	52,488	40,184	20,900	61,084
Color						
White	197,598	102,500	300,098	199,991	111,742	311,733
Nonwhite	2,767	1,622	4,389	3,437	2,102	5,539
Total	200,365	104,122	304,487	203,428	113,844	317,272
Farmers and Farm Managers						
Age						
19 and under	38	5	43	26	--	26
20-34	371	16	387	149	15	164
35-54	744	37	781	502	23	525
55 and older	694	36	730	381	16	397
Color						
White	1,847	94	1,941	1,054	54	1,108
Nonwhite	--	--	--	4	--	4
Total	1,847	94	1,941	1,058	54	1,112
Farm Laborers and Foremen						
Age						
19 and under	275	14	289	323	--	323
20-34	629	42	671	405	16	421
35-54	476	29	505	259	45	304
55 and older	320	9	329	168	21	189
Color						
White	1,700	94	1,794	1,123	82	1,205
Nonwhite	--	--	--	32	--	32
Total	1,700	94	1,794	1,155	82	1,237

SOURCE: CENSUS OF POPULATION

APPENDIX TABLE 86. Employed Persons and Farm Workers by Age, Sex, and Color, Connecticut, 1950 and 1960.

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	17,365	17,895	35,260	33,489	27,291	60,780
20-34	190,013	105,044	295,057	191,820	89,387	281,207
35-54	242,327	105,869	348,196	316,779	166,017	482,796
55 and older	114,205	34,892	149,097	123,095	62,566	185,661
Color						
White	550,605	255,153	805,758	640,680	328,788	969,464
Nonwhite	13,305	8,547	21,852	24,503	16,473	40,976
Total	563,910	263,700	827,610	665,183	345,261	1,010,440
Farmers and Farm Managers						
Age						
19 and under	141	10	151	103	4	107
20-34	2,008	77	2,085	795	44	839
35-54	4,049	323	4,372	2,484	240	2,724
55 and older	4,356	285	4,641	2,110	256	2,366
Color						
White	10,515	692	11,207	5,476	544	6,020
Nonwhite	39	3	42	16	--	16
Total	10,554	695	11,249	5,492	544	6,036
Farm Laborers and Foremen						
Age						
19 and under	1,197	90	1,287	1,438	114	1,663
20-34	3,133	276	3,409	2,109	117	2,226
35-54	2,574	466	3,040	1,876	479	2,355
55 and older	1,982	266	2,248	1,071	296	1,367
Color						
White	8,667	1,058	9,725	5,760	929	6,689
Nonwhite	219	40	259	734	77	811
Total	8,886	1,098	9,984	6,494	1,006	7,500

SOURCE: CENSUS OF POPULATION

APPENDIX TABLE 87. Employed Persons and Farm Workers by Age, Sex, and Color, New York, 1950 and 1960.

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	121,191	129,923	251,114	179,168	163,540	342,708
20-34	1,305,139	740,714	2,045,853	1,265,327	634,039	1,899,366
35-54	1,859,839	765,678	2,625,517	1,966,467	1,039,129	3,005,596
55 and older	812,071	238,423	1,050,494	919,254	432,538	1,351,792
Color						
White	3,874,665	1,702,425	5,577,090	4,007,493	2,006,961	6,014,454
Nonwhite	223,575	172,313	395,888	322,723	262,285	585,008
Total	4,098,240	1,874,738	5,972,978	4,330,216	2,269,246	6,599,462
Farmers and Farm Managers						
Age						
19 and under	1,139	51	1,190	1,223	77	1,300
20-34	18,763	435	19,198	10,314	405	10,719
35-54	39,048	1,508	40,556	25,549	1,532	27,081
55 and older	35,207	1,317	36,524	21,565	1,621	23,186
Color						
White	93,836	3,275	97,111	58,334	3,607	61,941
Nonwhite	321	36	357	317	28	345
Total	94,157	3,311	97,468	58,651	3,635	62,286
Farm Laborers and Foremen						
Age						
19 and under	11,924	730	12,654	10,491	711	11,202
20-34	20,375	2,537	22,912	10,811	1,193	12,004
35-54	13,989	4,053	18,042	8,047	2,949	10,996
55 and older	10,207	1,680	11,887	5,389	1,374	6,763
Color						
White	54,854	8,663	63,517	32,930	6,031	38,961
Nonwhite	1,641	337	1,978	1,808	196	2,004
Total	56,495	9,000	65,495	34,738	6,227	40,965

SOURCE: CENSUS OF POPULATION

APPENDIX TABLE 88. Employed Persons and Farm Workers by Age, Sex, and Color, New Jersey, 1950 and 1960.

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	39,253	43,144	82,397	64,653	55,902	120,555
20-34	456,356	239,944	696,300	457,908	209,421	667,329
35-54	612,662	236,160	848,822	760,033	367,710	1,127,743
55 and older	264,746	69,513	334,259	300,058	129,811	429,869
Color						
White	1,295,776	536,809	1,832,585	469,274	681,795	2,151,069
Nonwhite	77,241	51,952	129,193	113,378	81,049	194,427
Total	1,373,017	588,761	1,961,778	1,582,652	762,844	2,345,496
Farmers and Farm Managers						
Age						
19 and under	196	23	219	189	20	209
20-34	3,868	154	4,022	2,115	84	2,199
35-54	8,567	631	9,198	5,583	591	6,174
55 and older	7,880	502	8,382	4,777	571	5,348
Color						
White	20,100	1,277	21,377	12,362	1,245	13,607
Nonwhite	411	33	444	302	21	323
Total	20,511	1,310	21,821	12,664	1,266	13,930
Farm Laborers and Foremen						
Age						
19 and under	2,536	236	2,772	2,053	190	2,243
20-34	7,303	934	8,237	3,165	373	3,538
35-54	5,521	1,681	7,202	3,085	1,079	4,164
55 and older	3,576	744	4,320	1,974	560	2,534
Color						
White	15,800	3,132	18,932	8,398	1,728	10,126
Nonwhite	3,136	463	3,599	1,879	474	2,353
Total	18,936	3,595	22,531	10,277	2,202	12,479

SOURCE: CENSUS OF POPULATION

APPENDIX TABLE 89. Employed Persons and Farm Workers by Age, Sex, and Color, Pennsylvania, 1950 and 1960.

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	103,208	97,909	201,117	134,449	111,503	245,952
20-34	963,342	454,073	1,417,415	808,287	381,289	1,189,576
35-54	1,212,283	418,778	1,631,061	1,308,607	618,939	1,927,546
55 and older	550,744	130,318	681,062	533,823	230,311	764,134
Color						
White	2,687,629	1,020,845	3,708,474	2,610,006	1,221,015	3,831,021
Nonwhite	141,948	80,233	222,181	175,160	121,027	296,187
Total	2,829,577	1,101,078	3,930,655	2,785,166	1,342,042	4,127,208
Farmers and Farm Managers						
Age						
19 and under	1,367	37	1,404	1,419	47	1,466
20-34	19,953	318	20,271	10,805	380	11,185
35-54	37,033	1,087	38,120	25,270	1,481	26,751
55 and older	33,360	1,079	34,439	19,561	1,423	20,984
Color						
White	91,490	2,505	93,995	56,895	3,311	60,206
Nonwhite	223	16	239	160	20	180
Total	91,713	2,521	94,234	57,055	3,331	60,386
Farm Laborers and Foremen						
Age						
19 and under	13,712	1,070	14,782	11,286	984	12,270
20-34	20,321	2,515	22,836	9,666	1,494	11,160
35-54	10,639	3,443	14,082	6,552	2,900	9,452
55 and older	8,395	1,464	9,859	4,187	1,309	5,496
Color						
White	51,861	8,268	60,129	30,960	6,618	37,578
Nonwhite	1,206	224	1,430	731	69	800
Total	53,067	8,492	61,559	31,691	6,687	38,378

SOURCE: CENSUS OF POPULATION

APPENDIX TABLE 90. Employed Persons and Farm Workers by Age, Sex, and Color, Delaware, 1950 and 1960.

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	3,678	2,751	6,429	5,165	3,851	9,016
20-34	31,836	14,614	46,450	34,915	16,694	51,609
35-54	38,244	14,492	52,736	50,338	24,892	75,230
55 and older	16,646	4,392	21,038	18,372	8,723	27,095
Color						
White	78,749	29,802	108,551	95,693	45,195	140,888
Nonwhite	11,655	6,447	18,102	13,097	8,965	22,062
Total	90,404	36,249	126,653	108,790	54,160	162,950
Farmers and Farm Managers						
Age						
19 and under	48	1	49	49	--	49
20-34	1,031	27	1,058	579	21	600
35-54	2,554	76	2,630	1,559	109	1,668
55 and older	2,146	77	2,223	1,448	78	1,526
Color						
White	5,779	181	5,960	3,478	204	3,682
Nonwhite	--	--	--	157	4	161
Total	5,779	181	5,960	3,635	208	3,843
Farm Laborers and Foremen						
Age						
19 and under	639	62	701	467	12	479
20-34	1,385	164	1,549	878	94	972
35-54	1,360	214	1,574	953	216	1,169
55 and older	770	73	843	614	105	719
Color						
White	4,154	513	4,667	1,807	319	2,126
Nonwhite	--	--	--	1,105	108	1,213
Total	4,154	513	4,667	2,912	427	3,339

SOURCE: CENSUS OF POPULATION

APPENDIX TABLE 91. Employed Persons and Farm Workers by Age, Sex, and Color, Maryland, 1950 and 1960.

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	27,922	19,821	47,743	38,400	27,836	66,236
20-34	229,435	106,368	335,803	239,524	113,039	352,563
35-54	274,504	105,148	379,652	354,364	181,061	535,425
55 and older	101,758	29,225	130,983	124,259	55,485	179,744
Color						
White	538,487	207,549	746,036	648,348	306,652	955,000
Nonwhite	95,132	53,013	148,145	108,199	70,769	178,968
Total	633,619	260,562	894,181	756,547	377,421	1,133,968
Farmers and Farm Managers						
Age						
19 and under	471	13	484	422	12	434
20-34	5,522	134	5,656	2,945	94	3,039
35-54	11,568	329	11,897	7,473	499	7,972
55 and older	9,325	308	9,633	6,181	381	6,562
Color						
White	23,827	716	24,543	15,599	925	16,524
Nonwhite	3,059	68	3,127	1,422	61	1,483
Total	26,886	784	27,670	17,021	986	18,007
Farm Laborers and Foremen						
Age						
19 and under	4,427	312	4,739	3,063	239	3,302
20-34	7,382	887	8,269	3,880	311	4,191
35-54	6,389	1,209	7,598	3,736	763	4,499
55 and older	3,554	459	4,013	2,399	352	2,751
Color						
White	14,536	1,942	16,478	8,795	1,200	9,995
Nonwhite	7,216	925	8,141	4,283	465	4,748
Total	21,752	2,867	24,619	13,078	1,665	14,743

SOURCE: CENSUS OF POPULATION

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APPENDIX TABLE 92. Employed Persons and Farm Workers by Age, Sex, and Color, West Virginia, 1950 and 1960.

Item	1950			1960		
	Male	Female	Total	Male	Female	Total
All Employed Persons						
Age						
19 and under	23,144	12,318	35,462	17,574	11,733	29,307
20-34	182,887	54,405	237,292	115,137	44,108	159,245
35-54	204,601	51,587	256,188	181,291	71,235	252,526
55 and older	85,336	13,994	99,330	71,151	25,985	97,136
Color						
White	468,944	123,529	592,473	371,167	145,005	516,172
Nonwhite	27,024	8,775	35,799	13,986	8,056	22,042
Total	495,968	132,304	628,272	385,153	153,061	538,214
Farmers and Farm Managers						
Age						
19 and under	497	11	508	275	11	286
20-34	5,762	69	5,831	1,702	59	1,761
35-54	13,345	330	13,675	4,824	274	5,098
55 and older	16,830	447	17,277	6,064	487	6,551
Color						
White	36,245	855	37,100	12,821	831	13,652
Nonwhite	189	2	191	44	--	44
Total	36,434	857	37,291	12,865	831	13,696
Farm Laborers and Foremen						
Age						
19 and under	5,873	187	6,060	1,999	88	2,087
20-34	8,048	348	8,396	2,392	160	2,552
35-54	4,876	504	5,380	2,284	230	2,514
55 and older	3,113	225	3,338	1,240	121	1,361
Color						
White	21,463	1,252	22,715	7,615	589	8,204
Nonwhite	447	12	459	300	10	310
Total	21,910	1,264	23,174	7,915	599	8,514

SOURCE: CENSUS OF POPULATION

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ABSTRACT - DIVIDED INTO TWO PARTS, THIS STUDY IS AN ATTEMPT TO CLARIFY THE CANADIAN SITUATION WITH RESPECT TO THE SHORTRUN BEHAVIOR OF THE LABOR FORCE, BOTH REGIONALLY AND NATIONALLY. PART 1 PRESENTS AN EXAMINATION OF THE TWO CENTRAL HYPOTHESES WHICH HAVE BEEN PUT FORWARD TO EXPLAIN CYCLICAL VARIATION IN LABOR FORCE PARTICIPATION, NAMELY THE DISCOURAGED WORKER AND THE ADDITIONAL WORKER HYPOTHESES. FOLLOWING A COMMENT ON THE PREVAILING VIEW IN AMERICA AND A REVIEW OF RECENT CANADIAN EVIDENCE, A LABOR SUPPLY MODEL FOR TIME SERIES DATA IS DEVELOPED. METHODOLOGY EMPLOYED TO CONSTRUCT AN INDEX OF LABOR DEMAND FOR CANADA AND EACH OF THE REGIONS IS DISCUSSED. IN PART 2 THE REGRESSION RESULTS OBTAINED BY APPLYING THE LABOR SUPPLY MODEL TO DATA OVER THE PERIOD 1953-68 ARE EXAMINED. TRENDS IN LABOR FORCE PARTICIPATION ARE EXAMINED. A MAJOR CONCLUSION OF THE STUDY STATES THAT THE LEVEL OF LABOR FORCE PARTICIPATION OVER THE PERIOD 1953-68 WAS CYCLICALLY SENSITIVE TO THE GENERAL LEVEL OF AND CHANGES IN LABOR MARKET CONDITIONS AND THAT EVIDENCE TENDS TO SUPPORT THE DOMINANCE OF THE DISCOURAGED WORKER EFFECT. (AUTHOR/JS)

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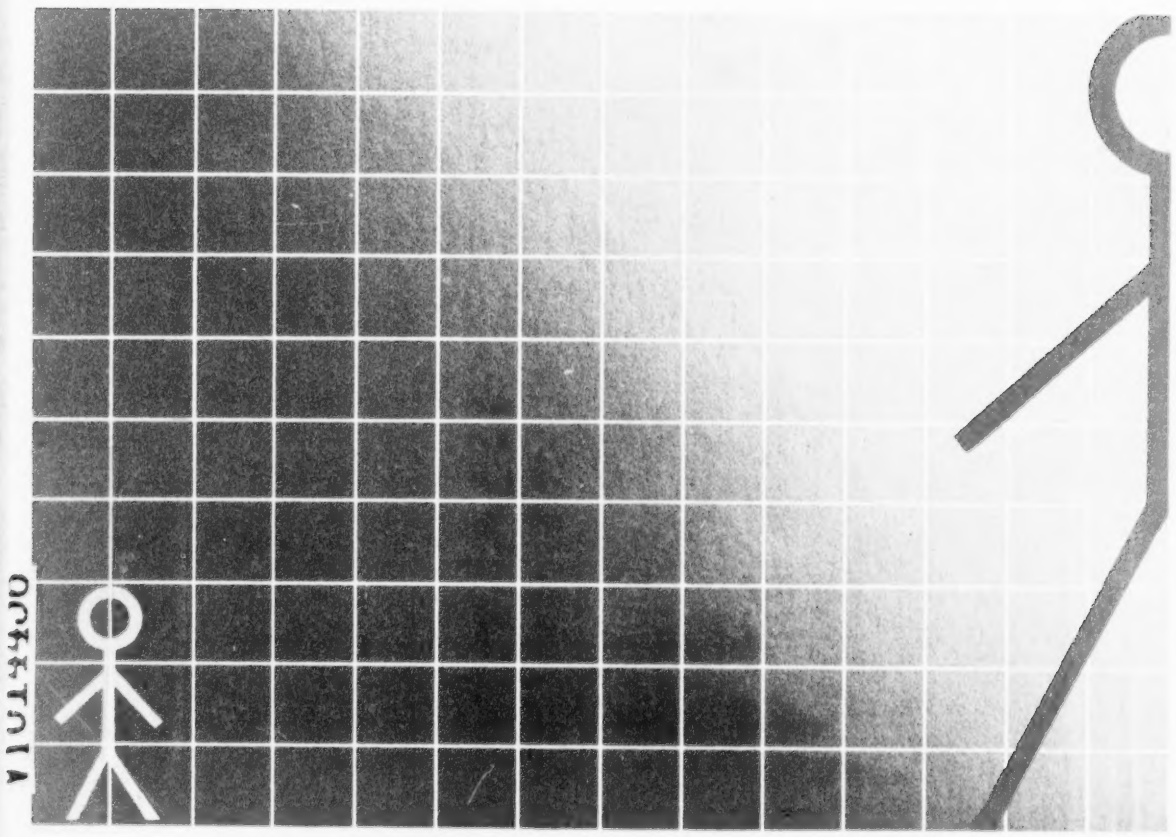

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Special Manpower Studies

SPECIAL LABOUR FORCE STUDIES

Series B, No. 5

CYCLES AND TRENDS IN LABOUR FORCE PARTICIPATION

1953 - 1968

by

N. H. W. Davis

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FOREWORD

This is the fifth report in the Special Labour Force Studies (Series B). Using monthly and annual data on labour force participation, the investigation is principally designed to test for the presence of any "additional" and/or "discouraged" worker effect in response to changes in the demand for labour. Separate examinations are made at the Canada level and for the five regions.

The study was prepared under the direction of Dr. Sylvia Ostry, at that time the Director, Special Manpower Studies and Consultation.

The responsibility for the analysis and interpretation of the data is that of the author and not of the Dominion Bureau of Statistics.

Walter E. Duffett,

Dominion Statistician.

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AUTHOR'S PREFACE

This study was begun under the direction of Dr. Sylvia Ostry when she was Director, Special Manpower Studies and Consultation Division, DBS. I would like to thank Dr. Ostry for the interest which she continued to show following her appointment as a Director of the Economic Council of Canada and in particular for a critical reading of an early draft. I am also particularly grateful to Mrs. Helen Buckley, Chief, Special Manpower Studies, for her helpful comments during the final stages of the study and for her careful reading and editing of the final draft.

I would also like to acknowledge my considerable debt to Mr. Gerry Gray of the Sampling and Survey Research Division of the Bureau for providing me with the data from which the sampling variances of labour force estimates were calculated and for his help in the preparation of Appendix B at the end of the study.

Thanks are also due to Mr. Paul C. Langley of the Bureau for reading drafts of the study and for many discussions and to Professor S.F. Kaliski of Queen's University who, at short notice, read and commented on the study.

Much of the credit for the improvements in the study must go to these, but for the many deficiencies that remain and any errors I am entirely responsible.

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INTRODUCTION

In 1966 Jacob Mincer began his introduction to *Labor Force Participation and Unemployment: A Review of Recent Evidence,*[1] with "After three decades of research . . . . . the short-run behaviour of the United States labour force is still not well understood." Today no less a statement could be made concerning our understanding of the Canadian experience in this respect. At the time of his writing Mincer had before him the results of a number of recent and often conflicting U.S. studies. Today, Canadian analysts are faced with a similar array of even more conflicting evidence.

The two hypotheses which have been put forward to explain the short-run response of the labour force to changing economic conditions owe their origins to the depression of the 1930's,[2] but the major preoccupation which many United States labour economists have had in this subject in the 1960's undoubtedly arose out of a desire to understand more clearly the effect, on the level of labour force participation, of the recessions of the late 1950's and early 1960's in the United States.

The more general reasoning behind the interest in the short-run behaviour of the labour force was given by Tella.[3] "If labour force changes do reflect variations in the economic environment, it should then be possible to estimate the extent to which labour force and unemployment are likely to be affected by alternative levels of economic activity or changes in government programs." And Tella's own research added force to the view.

He calculated[4] that when in 1962 the official unemployment rate in America was 5.6 per cent, the rate corrected for "hidden unemployment" would have been 8.5 per cent. Clearly, if Tella was right,[5] the policy implications of these two figures could be very different.

This study is an attempt to clarify the Canadian situation with respect to the short-run behaviour of the labour force, both regionally and nationally. It is divided into two parts. Part I begins with an examination of the two central hypotheses which have been put forward to explain cyclical variation in labour force participation, namely the "discouraged worker"

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[1] In *Prosperity and Unemployment,* Robert A. Gordon and Margaret S. Gordon (eds), New York, 1966.

[2] See page 00 for a discussion of the two hypotheses, and page 00 for a review of United States and Canadian literature.

[3] Tella, Alfred, "The Relation of Labour Force to Employment", *Industrial and Labour Relations Review,* Vol. 17, No. 3, April 1964.

[4] *Ibid,* page 463.

[5] See Bowen, William G. and Finegan, T. Aldrich, *The Economics of Labour Force Participation,* Princeton, 1969 and references cited therein.

and "additional worker" hypotheses. Following a comment on the prevailing view in America and a review of recent Canadian evidence a labour supply model for time series data is developed. This part of the study is concluded with a discussion of the methodology employed to construct an index of labour demand for Canada and each of the regions.

In Part II the regression results obtained by applying the labour supply model to data over the period 1953-68 are examined. The first section looks at labour force participation in Canada as a whole. Both monthly and annual observations are used to test for any significant cyclical response to changing labour market conditions and results are obtained for each of five broad age groups for males and females separately. A comparison is then made with results of a recent similar study by Proulx.[6] Following this examination of the Canadian evidence the model is applied to annual data only for the same age-sex groups within each of the five economic regions.

Turning from an examination of cyclical response, the next section examines trends in labour force participation and compares the regional experience in this respect by the same broad age-sex groups in the population. The study is concluded with a summary of its main findings together with some thoughts on possible short-run developments over the next few years.

Two appendices are provided. Appendix A contains a brief description of the Monthly Labour Force Survey from which the data on labour force participation were obtained, with special reference to certain features of the survey design which affect the quality of the data for time series analysis. Appendix B is an examination of the regression results in the light of the discussion of the data given in Appendix A.

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[6] Proulx, Pierre-Paul, "La variabilité cyclique des taux de participation à la main d'oeuvre au Canada", *Canadian Journal of Economics*, May 1969.

PART I

SHORT CYCLE VARIATIONS IN THE SUPPLY OF LABOUR

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The Discouraged and Additional Worker Hypotheses

In the Introduction, reference was made to two hypotheses which have been put forward to explain the short-run behaviour of the labour force in response to changes in the demand for labour. The first, due to Douglas,[7] is that when the demand for labour increases, with an associated increase in wage rates, some individuals whose primary attachment is to non-labour force activity (i.e., going to school, keeping house, etc.) will be drawn into the labour force. The second, due to Woytinsky,[8] is that when the demand for labour falls so that incomes also fall (due to increased unemployment, short-time working etc.), secondary workers will be drawn into the labour force in an attempt to stabilize the income flow of the family. The latter hypothesis, following Woytinsky's own terminology, has been termed the "additional worker" hypothesis. And because the Douglas hypothesis, also viewed in a situation of falling demand, would lead to workers leaving the labour force it has been labelled the "discouraged worker" hypothesis. The initial conflict between these two hypotheses – one suggesting that there is an outflow and the other an inflow of workers at times of depressed demand – has long been reconciled. It is now recognized that both the additional worker effect and the discouraged worker effect can and will typically operate at the same time. What is of most interest for aggregate economic policy is which, if either, of the two dominates and what is the magnitude of the net effect.

A Review of Recent Evidence

The more recent United States studies,[9] whether based on time series or cross-section data, tend to provide evidence in support of the overall dominance of the discouraged worker effect. This is in contrast with the conclusion reached earlier by Long[10] whose work indicated that the size of the labour force was relatively insensitive to the level of demand except during wartime or in conditions of severe depression. Mincer[11] in this review of the literature found that " . . . . . a growing number (of recent studies) gave unqualified support to the notion that the labour force, as measured, responds positively even to the relatively mild fluctuations characteristic of the postwar period." He further concluded after his own

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[7] Douglas, Paul H., *Real Wages in the United States, 1890-1926*, Cambridge, Massachusetts, 1930, pp. 439-441.

[8] Woytinsky, W.S., *Additional Workers and the Volume of Unemployment in the Depression*, Committee on Social Security, Social Science Research Council, Washington, 1940 (Mimeo.).

[9] See references cited by Mincer in *Prosperity and Unemployment, op. cit.* and Bowen and Finigen, *op. cit.*

[10] Long, C.D., *The Labour Force Under Changing Income and Employment*, Princeton, 1958.

[11] Mincer, *op. cit.*

examination of the evidence that "positive cyclical sensitivity (net "discouragement" effect) is readily discernible in the annual behaviour of the secondary labor force" but added that "so is the added worker response in some low income groups." This, then, is perhaps a reasonable synthesis of the prevailing view. There is cyclical sensitivity in labour force participation in the United States and the procyclical, discouraged worker effect dominates. While considerable uncertainty and controversy still surround the best specification of the relationship and, hence, of the strength of this net discouragement effect, there does seem to be general agreement among U.S. researchers that they have both a real and recognizable phenomenon to explain.

This view has to be contrasted with that which currently prevails in Canada. A reading of the most recent literature on the Canadian experience would appear to indicate that it is the additional worker and not the discouraged worker effect which dominates in this country. Proulx,[12] examining annual data for the periods 1948-67 and 1953-67 concludes: "Nos résultats indiquent au contraire que c'est l'hypothèse des **travailleurs d'appoint** qui domine au Canada." Officer and Anderson[13] using quarterly data for the years 1950-67 find an equation to explain variation in the total labour force participation rate which "exhibits an additional worker effect". Both studies support the view that in Canada it is the stronger additional worker response among females (with some age group exceptions) which in the aggregate dominates over the discouraged worker response among males—again with some age group exceptions.

Some earlier authors have been more agnostic in the interpretation of their findings. Whittingham,[14] after his examination of cross-section data, concluded: "To the extent that married women in Canada change their labour force status when labour market conditions deteriorate, this change occurs in one direction only, that is, a movement out of the labour force. The statistical evidence, however, suggests this labour force withdrawal is not a very common phenomenon." This study would therefore appear to give guarded support to a discouraged worker response among married women. Hutton and Polianski,[15] following their analysis of gross movement data, suggest: "A conclusion offers itself that for the years under analysis no predominant cyclical influences exerted any significant impact, and

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[12] Proulx, Pierre-Paul, *op. cit.*

[13] Officer, Lawrence H. and Anderson, Peter R., "Labour Force Participation in Canada", *Canadian Journal of Economics*, May 1969.

[14] Whittingham, Frank J., "Short-run Labour Force Participation of Married Women" Seminar Paper, Queen's University, Kingston, August 1968 (Mimeo.).

[15] Department of Manpower and Immigration, Manpower Supply Studies, Report No. 1, "Gross Movements in the Labour Force" by Hutton, M. and Polianski, A.N., Ottawa, 1966.

trends therefore predominated both in entries and withdrawals. Otherwise, results show the prevalence of **discouraged worker effect.''** Kaliski[16] analysed data for the period 1946 - 59 and concluded: ''Those groups for which participation responds to unemployment display a variety of directions and intensities of response.'' But added in his suggestions for further work: ''The computations presented here are extremely inconclusive, if not completely useless, partly because of the difficulties of multicolinearity and the presence of trend.'' More recently Swidinsky[17] analysed both time series and cross-section data and concluded, by way of comparison: ''Generally, the findings from the cross-section are comparable neither qualitatively nor quantitatively with those from the time series. In the aggregate, the time series implies no net response for the male labour force (a discouragement response among the 14 - 19 and 65 + age groups equalising an additional worker effect among the 20 - 24 age group), whereas the cross-section implies a sizeable net withdrawal of males from the labour force as unemployment rises. For the aggregate female labour force, the cross-section implies a much stronger negative relationship with unemployment than does the time series.''

The only other study examining Canadian data is that of Montague and Vanderkamp.[18] They limited their attention to the cyclical variation in the British Columbian labour force and concluded that the discouraged worker response dominated in that province over the period 1949 to 1964.

The conclusion that must be drawn from this admittedly brief review of the Canadian literature is that considerable uncertainty exists. Moreover, this uncertainty is not only about which of the two competing hypotheses appears to dominate in Canada but whether cyclical variation in response to changing labour market conditions exists to any significant extent. The Canadian studies include both cross-section as well as time series analysis. The periods of analysis vary and the choice of explanatory variables also vary considerably. Some researchers attempted to isolate both the additional worker and the discouraged worker effect while others concerned themselves with detecting only the ''net'' response, i.e., to find the dominant effect. And two of the studies focussed their attention only on sub-groups of the population.

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[16] Kaliski, S.F., *The Relationship between Labour Force Participation and Unemployment in Canada: Interim Report on a Pilot Study*, A paper read to the Political Science Association Conference on Statistics, McMaster University, June 1962.

[17] Swidinsky, Robert, ''Unemployment and Labour Force Participation: The Canadian Experience,'' Discussion Paper No. 15, Department of Economics, University of British Columbia, March 1969.

[18] Montague, J.T. and Vanderkamp, J., *A Study in Labour Market Adjustment*, Institute of Industrial Relations, University of British Columbia, 1966.

However, notwithstanding these differences in the investigations, it might be thought that some consensus of opinion should be emerging by now. Perhaps the two recent studies by Proulx[19] and Officer and Anderson[20] in their support for a net "additional worker" response come nearest to this and because their findings, in the aggregate, suggest that the Canadian experience is the reverse of that in the United States, particular attention may well be paid to their results.[21]

A Labour Supply Model

Despite conventional terminology the additional worker and the discouraged worker hypotheses were originally conceived only in terms of an inflow of workers into the labour force following a change in the demand for labour. Neither hypothesis included any explicit reference to an outflow of workers when the level of demand, or change in demand for workers, is the reverse of that considered, i.e. when demand is rising (additional worker) or falling (discouraged worker). From the point of view of developing a labour supply model there would appear to be three competing but not mutually exclusive hypotheses which can be put forward concerning these outflows. The first is that no outflows occur due to a price or income effect; all outflows are then assumed to occur for demographic or social reasons independent of changes in wage rates and incomes. This is equivalent to assuming that both the price and income inflow effects operate like a ratchet with no slip back. The second hypothesis is that inflows and outflows are equal for equal but opposite changes in demand. No ratchet effect is assumed and no permanent increase or decrease in the size of the labour force results from a temporary change in wage rates or income levels. The third possibility is that the true situation lies between these two extreme positions. A shift in demand for labour causes an inflow or outflow to occur but that in the process some members of the inflow or outflow populations develop a "permanent" shift in attachment, either to the labour force from non-labour force activity or to non-labour force activity from the labour force.

Ideally, it is the third hypothesis that should be tested. However, although initially some attempt was made to construct models which would allow for the detection of a significant, even if partial, ratchet effect, it was found impossible to isolate this effect from the long run trend. As in

[19] *Op. cit.*
[20] *Op. cit.*
[21] See Officer, Lawrence H. and Anderson, Peter R., "The Cyclical Variability of Labour Force Participation Rates in Canada: Comment" and Swidinsky, Robert, "A Note on Labour Force Participation and Unemployment," *The Canadian Journal of Economics*, February 1970.

other studies, therefore, an assumption is made that inflows and outflows are equal for equal but opposite changes in demand. But this and the subsequent results should not be interpreted as meaning that the family of indifference curves for an individual are not subsequently adjusted following a change in their labour force status (the required condition for a ratchet effect). It is to be understood in the model developed below that coefficients, excepting that of the time trend, will be estimated net of this effect and that the trend coefficient (see page 22) will include any "ratchet" effect that might be present.

The time series models which have usually been tested, and which provide the starting point for the model developed in this study have been either of the form:

$$P = a_0 + a_1 W + a_2 Y + \text{other variables} + \epsilon \qquad (1)$$

or

$$P = a_0 + a_1 D + \text{other variables} + \epsilon \qquad (2)$$

where P is the labour force participation rate[22] and W, Y and D are variables designed to represent the wage rate, or more generally the substitution and job opportunity effect, the income effect and a total demand effect. In a model in the form of equation (1) the coefficient of W would be expected to have a positive sign in support of the discouraged worker effect and that of Y a negative sign in support of the additional worker hypothesis. The sign of D in equation (2) could be either positive or negative and could give support to the dominance of either effect.

Some of the earlier United States studies were faulted not in their choice of model but in the series which they used to represent the independent variables. Given adequate data, the ideal variables for equation (1) above would be those which directly reflect relevant wage rates and income levels. However, this would mean that information was available on the demand-induced effect on changes in wage rates for those members of the population who are near the threshold between participating and not participating, and that the income variable similarly reflected the change in incomes of those most affected by changing labour market conditions. Since such data are not available for time series studies, indicators which are particularly sensitive to changing labour market conditions have been employed instead. The employment rate and the unemployment rate are two such indicators. But the use of such data presents certain problems. Participation rates in both the United States and Canada are obtained from monthly household surveys. These surveys are also the source of estimates

[22] The labour force participation rate is defined as the ratio of the labour force to the corresponding non-institutional population of the same age and sex, expressed as a percentage.

of employment (E) and unemployment (U). If, therefore, the level of employment or unemployment or some variant of these is used as an indicator of general labour market conditions such that they can act as proxies for the level of, or changes in, wage rates and income, then two major statistical problems are encountered. First, the dependent variable in equation (1), P, is a definitional function of U and E[23] and secondly, as U and E and therefore P are obtained from the same sample survey, they will have correlated sampling errors.

The first of these problems has been reduced in those studies in which the participation rate of one population group has been regressed on the employment or unemployment rate of another.[24] And in studies in which lagged relationships have been employed the effect of correlated sampling errors will also have been reduced. However, neither of these two approaches, for which there may be good economic arguments, entirely overcome the statistical problems. First, the sampling errors of estimates of, say, labour force participation for one age-sex group and the unemployment rate of another group are still correlated and, secondly, the survey design introduces autoregressiveness into the series so that even lagged observations will also have correlated sampling errors (see Appendix A at the end of this study). These problems necessarily introduce doubts about the inferences which can be drawn from observed statistical relationships and for this reason analysts have recently sought to dispense with both the employment rate and the unemployment rate as explanatory variables. This is the course which will be followed in this study.

Returning to the form of the model to be used, consider equation (1) which postulates that the level of labour force participation, after allowing for the effect of population growth, is a function of wage rates and income levels in the form:

$$P_t = a_0 + a_1 W_t + a_2 Y_t + \epsilon_t \qquad (3)$$

In the discussion above, mention was made of relevant wage rates and income levels which should be included in the model, emphasizing that it is the demand-induced components which are of primary concern. It is therefore assumed that while long-run increases in wage rates and incomes will influence long-run participation behaviour, such effects will be included in the trend component which will be incorporated in the model (see page 23). Similarly, the effect on participation rates of changes in wage

[23] This follows because the labour force is the sum of the employed plus the unemployed.

[24] This is done primarily because certain age-specific employment or unemployment rates are judged to be better indicators of demand than the overall rates.

rates which only compensate for price changes is assumed to be negligible. If the W_t and Y_t in equation (3) are therefore assumed to be measured free of price and long-run effects then:

$$W = w(D) \tag{4}$$

$$Y = y(D) \tag{5}$$

It is now necessary to consider what form w(D) and y(D) should take. These will depend on the form of D, the demand variable. Let D be an index of demand such that D>1 represents a state of excess demand and D<1 a state of deficient demand. While the relationship between the level of demand for labour and the level of incomes is complex, for relatively small changes in demand, the demand-induced income effect can be assumed to be proportional to the level of demand. That is:

$$Y_t = \beta_2 D_t \tag{6}$$

However, the relationship between the wage rate and the demand for labour is likely to be of the form:

$$\frac{W_t}{W_{t-1}} = D_t^{\beta_1} \tag{7}$$

or

$$\frac{W_t}{W_{t-1}} = \beta_1 D_t. \tag{8}$$

Dow and Dicks-Mireaux[25] developed a general model for changes in wage rates in the form of equation (7) but concluded that one in the form of equation (8) would have produced almost identical results. Because of its greater simplicity the relationship given by equation (8) is therefore the one which is developed in this study.[26] Given equation (8) it follows that:

$$W_t = \beta_1^t \prod_t D_t \tag{9}$$

In other words, the current level of trend-free real wage rates is proportional to the product of all past levels of demand.

And substituting from equations (6) and (9) into equation (3) gives:

$$P_t = \alpha_0 + \alpha_1 \beta_1^t \prod_t D_t + \alpha_2 \beta_2 D_t + \epsilon_t \tag{10}$$

---

[25] Dicks-Mireaux, L.A. and Dow, J.C.R., "The Determinants of Wage Inflation: United Kingdom, 1946-56" *Journal of the Royal Statistical Society*, Series A, Vol. 122, Part 2, 1959.

[26] No alternative formulations were examined, i.e., based on the work of Phillips and Lipsey, but it is felt that for the purpose of this study the simple model employed captures the main relationship between wage rates and demand for labour suggested by recent empirical evidence.

By combining coefficients this yields:

$$P_t = \gamma_0 + \gamma_1 \prod_t D_t + \gamma_2 D_t + \epsilon_t \qquad (11)$$

where $\gamma_0 = \alpha_0$, $\gamma_1 = \alpha_1 \beta_1^t$ and $\gamma_2 = \alpha_2 \beta_2$

Equation (11) now states that the level of labour force participation, P, is a linear function not only of the level of demand for labour but also of the product of the current and all past levels of demand. In this sense, therefore, it is a distributed lag model and arguments which might have otherwise existed for specifically including distributed lags into the model have been answered in this special way. The relationship between the two variables is that while the slope of the curve traced by D_t at time t – n would depend on whether D_{t-n} were greater or less than D_{t-n-1}, the slope of the curve traced by $\prod_t D_t$ at time t – n would be either positive or negative depending on whether D_{t-n} was greater or less than one.

Before discussing the interpretation which should be placed on the coefficients, γ_1, and γ_2, a point of practical significance needs to be discussed. A model in the form of equation (11) calls for a knowledge of all possible past levels of demand and, by definition, a knowledge of the level of the demand variable when a state of zero excess demand obtains. This is only the case, however, before a trend variable is added.

Consider equation (11) with a linear trend variable[27] and where t extends over the range $-\infty \ldots\ldots\ldots 0, 1, 2, \ldots\ldots\ldots T$ and where $t > 0$ refers to a period for which data is available. Then:

$$P_t = \gamma_0 + \gamma_1 \prod_t D_t + \gamma_2 D_t + \gamma_3 T + \epsilon_t \qquad (12)$$

Now if D_t is set equal to $(1 + D'_t)$ then:

$$\prod_t D_t = (1 + D'_{-\infty}) \ldots\ldots\ldots (1 + D'_0)(1 + D'_1) \ldots\ldots (1 + D'_T) \qquad (13)$$

such that if the range of values $D'_{-\infty} \ldots\ldots\ldots D'_0, D'_1, D'_2$, etc. are small and take both positive and negative values

$$\prod_t D_t \approx 1 + \sum_t D'_t$$

$$\approx 1 + \sum_{t=-\infty}^{0} D'_t + \sum_{t=1}^{T} D'_t \qquad (14)$$

---

[27] Because a participation rate is theoretically bounded in the range of zero to 100 percent it would be unrealistic to assume that, over a long period, the trend in these rates would be linear. This problem could be overcome by transforming the participation rates (See DBS Special Labour Force Studies, Series B, No. 3, (*Some Methods of Analysing Cross-Classified Census Data – The Case of Labour Force Participation Rates* by N.H.W. Davis, Ottawa, 1969). However, since over the relatively short period covered in this study, trends are not likely to depart to a great extent from a straight line, this is the assumption which has been made in this study.

Equation (12) can now be written:

$$P_t = \gamma_0 + \gamma_1 + \gamma_2 + \gamma_1 \sum_{t=-\infty}^{0} D'_t + \gamma_1 \sum_{t=1}^{T} D'_t + \gamma_2 D'_t + \gamma_3 T + \epsilon_t \tag{15}$$

Now if D'_t is unobservable but X_t is, where X_t is some measure of the demand for labour for which there is an associated but unknown value $\tilde{X}_t$, then:

$$D'_t = X_t - \tilde{X}_t \tag{16}$$

In other words $\tilde{X}_t$ is that value of X_t which would obtain if the labour market was in a state of zero excess demand at time t. Let

$$D'_t = (X_t - \tilde{X})_t = (X_t - \bar{X}) + (\bar{X} - \tilde{X}_t) \tag{17}$$

where $\bar{X}$ is the average level of demand X_t over the observable period. The term $\gamma_1 \sum_{t=1}^{T} D'_t$ in equation (15) can now be written as:

$$\gamma_1 \sum_{t=1}^{T} D'_t = \gamma_1 \left\{ \sum_{t=1}^{T} (X_t - \bar{X}) + \sum_{t=1}^{T} (\bar{X} - \tilde{X}_t) \right\} \tag{18}$$

If now, over the limited observable range, $\tilde{X}_t$ is assumed to be constant for all t, say $\tilde{X}$ then:

$$\gamma_1 \sum_{t=1}^{T} D'_t = \gamma_1 \sum_{t=1}^{T} (X_t - \bar{X}) + \gamma_1 (\bar{X} - \tilde{X})\, T \tag{19}$$

Similarly:

$$\gamma_2 D'_t = \gamma_2 X_t - \gamma_2 \tilde{X} \tag{20}$$

By substitution from equations (16), (18) and (20) into equation (15) and rearranging:

$$\begin{aligned} P_t = & \left\{ \gamma_0 + \gamma_1 \left[1 + \sum_{t=-\infty}^{0} (X_t - \tilde{X}_t) \right] + \gamma_2 (1 - \tilde{X}) \right\} + \left\{ \gamma_1 \sum_{t=1}^{T} (X_t - \bar{X}) \right\} \\ & + \left\{ \gamma_2 X_t \right\} + \left\{ \left[\gamma_3 + \gamma_1 (\bar{X} - \tilde{X}) \right] T \right\} + \epsilon_t \end{aligned} \tag{21}$$

which can be simplified to:

$$P_t = \xi_0 + \xi_1 \sum_{t=1}^{T} (X_t - \bar{X}) + \xi_2 X_t + \xi_3 T + \epsilon_t \tag{22}$$

This is the form of the model which has been tested in this study. It can be seen that the constant term will include the cumulative demand effect up to the beginning of the period covered in the empirical analysis. Similarly the coefficient of the trend variable will include the effect of any long-term net discouraged or added worker response over the period examined.

In the discussion earlier it was seen that the original interpretations of the coefficients (equation 3) were those of the substitution and income effects. However, following the transformation of the model to equation (22), this interpretation should be relaxed. Rather, in examining the empirical results, the coefficients of $\sum_t (X_t - \bar{X})$, if significant, should now be more correctly interpreted as the net response of the population to the cumulative demand situation (of which the **level** of average wage rates and earnings are one aspect), while the coefficient of X_t will be interpreted as the response to the **level** of labour demand (of which the **rate of change** in wage rates are also only one aspect). When interpreting the regression results, $\sum_t (X_t - \bar{X})$ will be referred to as the **cumulative demand** variable and X_t as the **level of demand** variable. The next section will discuss the method used to construct X_t, the measure of labour demand employed in this study.

Measurement of the Demand for Labour

Mention has been made in the previous section of some of the statistical problems encountered when using the unemployment rates or employment rates as a measure of labour demand. For these reasons an alternative measure was sought. The purpose of this section is to describe the method which has been used to construct the indices of demand for labour employed in this study.

In a recent article Marion[28] discusses the method which he employed to calculate an index of excess demand for labour in Canada. Briefly the Marion formula is:

$$\frac{D - S}{S}$$

where D = Demand for Labour
S = Supply of Labour

The demand for labour is equated with the level of employment desired by employers and is estimated using a Koyck distributed time lag function from data on employment, hours worked and production. The supply of labour is the employed plus the unemployed.

The advantage of this type of index of labour demand is that it includes the effect of adjustments to demand within the firm, i.e. in hours of work and productivity. Its disadvantage is that it does not specifically

[28] Marion, Gérald, "La Demande excédentaire de travail et la variation des salaires dans l'industrie manufacturière au Canada," *Canadian Journal of Economics*, August 1968.

allow for adjustments to changing demand as reflected outside the firm; that is, it does not include job vacancies. Moreover, the index is only available for Canada and could not have been constructed for the regions separately. This would have precluded its use in this study since an examination of regional data was also planned.

What has been calculated, therefore, is an index for which regional as well as national data are available. This necessarily means that the measure is restricted to one which ignores adjustments to demand within the firm. It should also be added at this stage that since the purpose of this variable in the model is to represent cyclical fluctuations in demand, its ordinal accuracy is of greater importance than its cardinal accuracy. That is, its ability to fluctuate in phase with the economic cycle is more important than its ability to represent the level of economic activity. It might be thought that this is nothing more than a tautological requirement, since it is the fluctuations in the demand for labour that the index is designed to measure and this is itself a measure of economic activity. However, the unemployment rate was rejected as the measure of demand not because it is an unreliable barometer of the state of the labour market but for statistical reasons. In fact it shall be regarded as a good measure and the calculated index will be judged by its ability to reflect the general pattern of demand as described by the unemployment rate.

Throughout the period of this study monthly data were collected on the number of vacancies reported by employers to the National Employment Service – in more recent years, The Canada Manpower Centres – and also on the number of these reported vacancies which were unfilled at the end of each month. While these data are available at a fine level of disaggregation both geographically and occupationally, the coverage is limited because firms are not required to notify vacancies and would typically do so only if they thought that the NES (or, later, the CMC) could help them. This means that the count of both the notified vacancies during the month and of the vacancies unfilled at the end of the month is not only understated but that the understatement is of unknown dimensions. If this understatement could in some way be allowed for, then a corrected level of unfilled vacancies could be estimated and used to construct vacancy rates. This is what has been attempted in this study. Again it must be stressed that the purpose is not to obtain a true measure of the level of unfilled vacancies – this would be ideal but it is not necessary. Rather, since there is reason to believe that the practice of firms in their reporting habits may be different at different times in the economic cycle, the primary purpose of the exercise is to correct for cyclical variation in the amount of under or

over reporting. For example, in periods of high demand, firms may "load" their reported vacancies so as to increase their chances of recruiting and also to provide a selection of candidates from which they can fill their vacant position(s). On the other hand, they might "give up" and stop reporting some occupations altogether if they felt that there was little chance of getting applicants.

In order to make some allowance for this net under or over reporting, data from another survey are utilised. Until August 1966 monthly data on hirings and separations were obtained by a survey conducted by the Department of Labour. While this survey did not cover all establishments, all major industrial groups were included and the amount of under-representation within each industry group could be estimated.[29] Also the data were identified by region. This information, together with estimates of total employment, made it possible to calculate hiring and separation rates for Canada and the regions separately.

Two assumptions must be made in order to combine the unfilled vacancy data and the hirings data to construct an index of labour demand. First, it is assumed that each external hiring is the consequence of a vacancy and secondly that the rate of net under- or over-statement in unfilled vacancies at the end of the month is the same as the rate of under- or over-statement in the vacancies notified during the preceding month.[30]

With these two assumptions the index of demand for labour, X, can be calculated as an adjusted unfilled vacancy rate as follows:

$$X = \frac{H.W}{V}\ 100u \left\{ \frac{H.W.u}{V} + E \right\}^{-1} = 100\tilde{V}\ (\tilde{V} + E)^{-1} \qquad (23)$$

Where H = The hiring rate
W = Number of paid workers
V = Vacancies reported
u = Vacancies unfilled at the end of the month
E = The total number in employment
$\tilde{V}$ = Adjusted unfilled vacancies

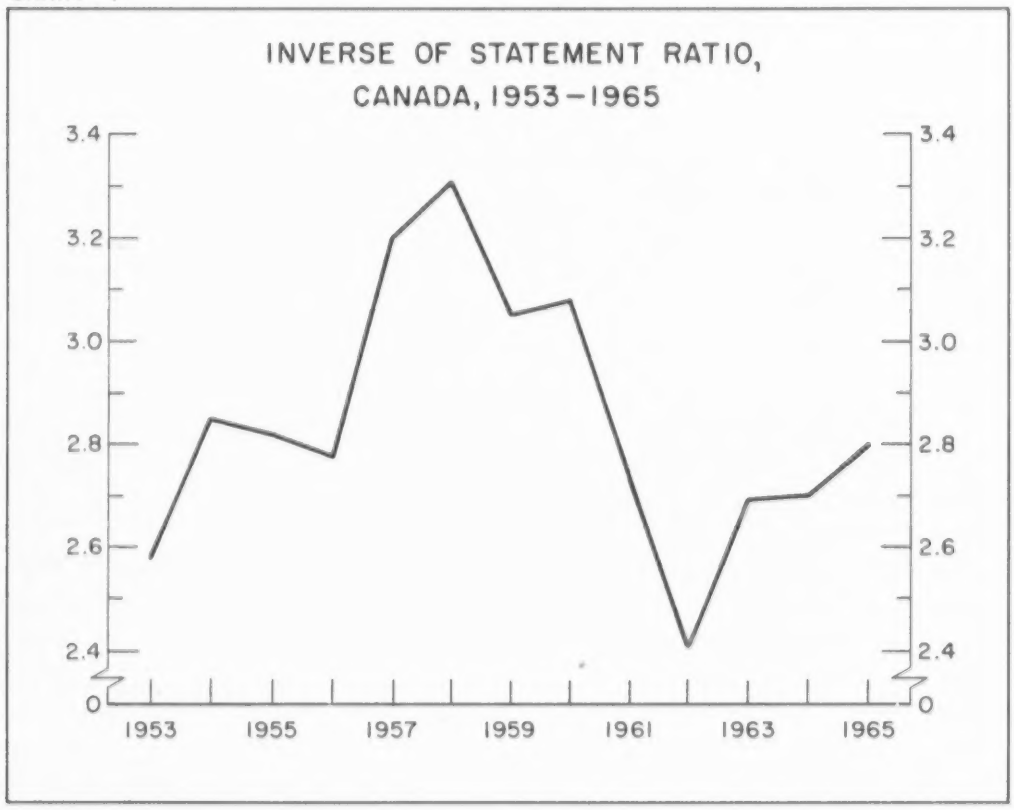
and where $\frac{H.W}{V}$ is an estimate of the inverse of the "statement ratio." This inverse of the "statement ratio" is plotted for Canada only for the years

[29] See Dow, J.C.R. and Dicks-Mireaux, L.A., "Excess Demand for Labour", *Oxford Economic Papers*, Vol. 10, 1968 for a discussion on the use of turnover data to correct for mis-statement of vacancies.

[30] See a comment by Sylvia Ostry in *The Measurement and Interpretation of Job Vacancies*, A Conference Report of the National Bureau of Economic Research, New York, 1966, pp. 306-313.

1953-65 in Chart 1 which shows how the extent of under-reporting varied over the period. In 1958 it is estimated that the actual reported vacancies were only 30 per cent of the total, so that the vacancies unfilled at the end of the month have been multiplied by a factor of about 3.3; while in 1962 when over 41 per cent of vacancies were reported a correction factor of 2.4 has been employed.

CHART – I



Before discussing the results obtained by applying the above formula to the Canadian data, the validity of the two assumptions will be considered. The first would not appear to be in doubt. It is true that for each external hiring to be a consequence of a vacancy is a matter of definition – in particular, on how one defines a job vacancy – but it is no more than that. The second assumption, however, is undoubtedly open to question. Given that some vacancies are more difficult to fill than others, it would not be surprising if firms were more likely to report their hard-to-fill vacancies to the government employment service because they wished to use all available recruiting media for such workers. But since the hard-to-fill

vacancies are also more likely to be unfilled at the end of the month, the unfilled vacancies could be closer to the "true" level of unfilled vacancies than the vacancies reported during the month are to the "true" level of vacancies arising in the month. If such were the case, then the second assumption made above would not hold. However, even if this situation did exist, the use of hiring data as described above would still be valid as an ordinal index of labour demand if over the period of our analysis:

$$\frac{V_T}{V_R} \cdot \frac{U_R}{U_T} = k$$

where V_T and V_R are the "true" and "reported" number of vacancies arising during the month, U_T and U_R are the true and reported level of unfilled vacancies at the end of the month, and k is either some constant or some variable which is distributed over time independently of the level of economic activity. There is no evidence one way or the other regarding the above relationship in the Canadian experience and to this extent the ordinal accuracy of the index is uncertain.

Vacancy rates were calculated using equation (23) for each month from January 1953 to August 1966 – the last month of the hirings and separations survey. Estimates for the period September 1966 to December 1968 were then obtained by first regressing the reported unfilled vacancies on the calculated unfilled vacancies for each month (January to December) separately over the period January 1953 to August 1966, and then using these twelve regression equations to estimate the missing values from the known reported unfilled vacancies for the period September 1966 to December 1968.

Six series of vacancy rates were calculated in this way – one for Canada and one for each of the five regions. They were then seasonally adjusted.[31] Table 1 below gives the annual rates for the period 1953-68 and the same data are plotted against the corresponding unemployment rates on Chart 2 using a logarthmic scale. The chart helps to illustrate how the two series describe similar proportionate movements over the economic cycle. From this chart it can be seen that the calculated vacancy rates at least meet the primary requirements of reasonably good ordinal accuracy.

[31] By the U.S. Bureau of the Census X-11 variant of the Census method II Seasonal Adjustment Program as modified by the Bank of Canada and DBS. See Department of Commerce, Bureau of the Census, Technical Paper No. 5, February, 1967.

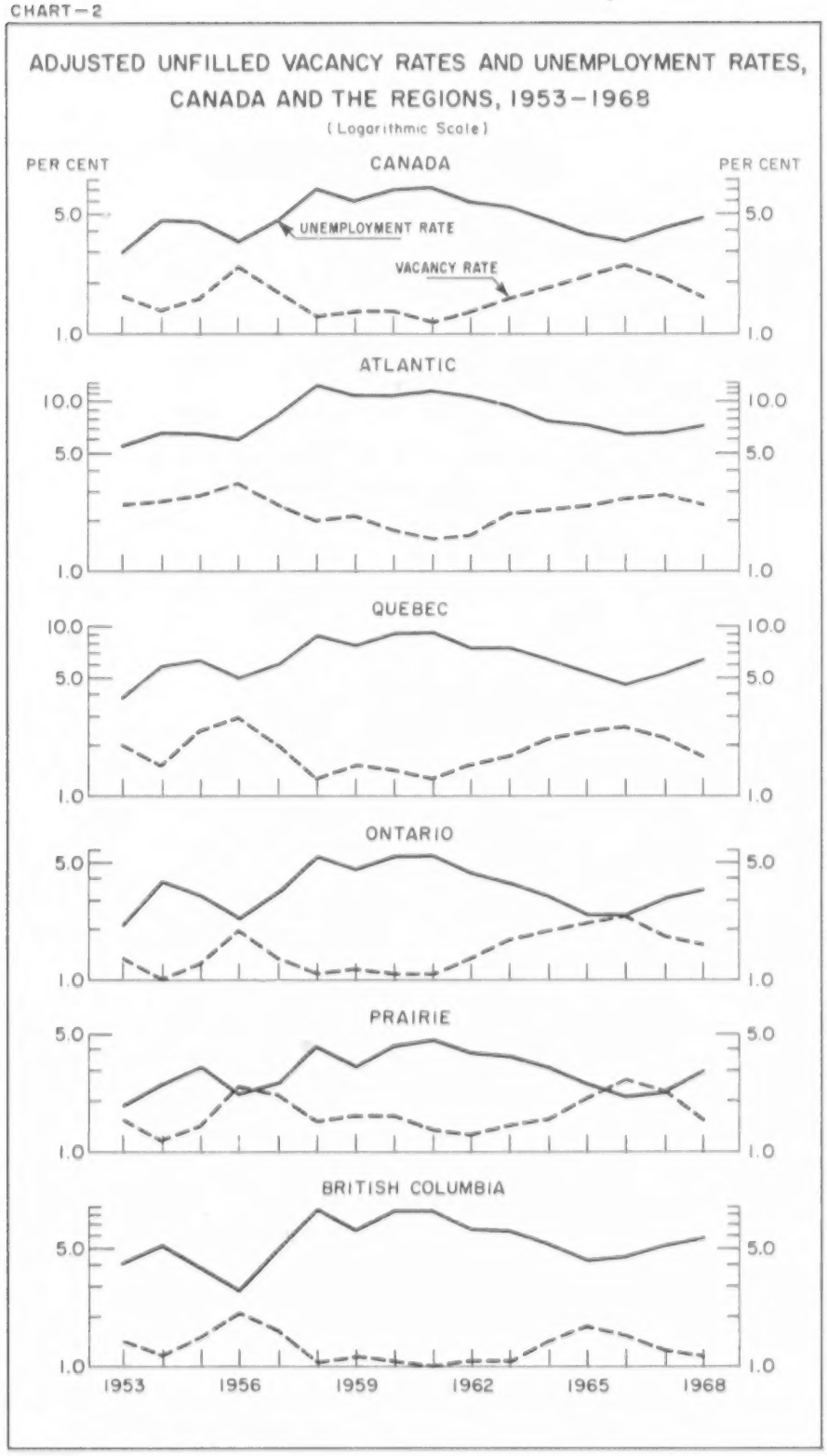
TABLE 1. Adjusted Job Vacancy Rates,[1] 1953 - 68

Year	Region					
	Canada	Atlantic	Quebec	Ontario	Prairie	British Columbia
1953	1.68	2.47	1.97	1.39	1.59	1.49
1954	1.35	2.70	1.60	1.04	1.25	1.21
1955	1.72	2.91	2.41	1.27	1.51	1.56
1956	2.43	3.26	3.04	1.96	2.41	2.08
1957	1.82	2.51	2.04	1.38	2.15	1.73
1958	1.28	1.95	1.26	1.08	1.62	1.09
1959	1.45	2.07	1.58	1.21	1.67	1.23
1960	1.37	1.84	1.47	1.14	1.68	1.10
1961	1.23	1.62	1.27	1.11	1.40	1.03
1962	1.42	1.73	1.60	1.40	1.31	1.08
1963	1.71	2.15	1.85	1.77	1.54	1.14
1964	1.94	2.29	2.19	1.97	1.65	1.52
1965	2.25	2.44	2.50	2.27	2.09	1.76
1966	2.50	2.74	2.74	2.50	2.70	1.65
1967	2.09	2.94	2.32	1.88	2.31	1.34
1968	1.74	2.51	1.84	1.74	1.61	1.17

[1] Calculated from equation (23).

At the same time the regional differences in the calculated vacancy rates appear to be in conflict with the regional differences in unemployment rates. The Atlantic region has both the highest unemployment rate and the highest vacancy rate. Similarly Quebec's calculated vacancy rate has been persistently higher than that of Ontario over the 16 year period, which is certainly in conflict with the generally accepted understanding of the state of the labour market in these two provinces. In addition, for Canada and each region, the vacancy rates are considerably lower than the unemployment rates. This could be interpreted as indicating that at least over the period 1953-68 a state of excess labour supply has prevailed across the country. While such a view of the situation in the Atlantic provinces would not be in conflict with conventional knowledge this would not be so in the case of, say, Ontario.

CHART – 2


ADJUSTED UNFILLED VACANCY RATES AND UNEMPLOYMENT RATES, CANADA AND THE REGIONS, 1953–1968
(Logarithmic Scale)
PER CENT
PER CENT
CANADA
UNEMPLOYMENT RATE
VACANCY RATE
ATLANTIC
QUEBEC
ONTARIO
PRAIRIE
BRITISH COLUMBIA
10.0
5.0
1.0
1953
1956
1959
1962
1965
1968

However, these conclusions would not take into account the extent of maladjustment in the Canadian labour market and the results should not be rejected out of hand. Arthur M. Ross[32] has reported that ". . . . . experimental job vacancy surveys in the United States indicate that vacancies and unemployment in the labour market area tend to be equal in the range of 2.0 to 2.5 per cent of the labour force." It is interesting to note that the calculated vacancy rates for Ontario, which is structurally the nearest of the Canadian regions to a United States labour market area, are consistent with this view. However, further support for the method used in the study as an estimator of historical job vacancy data must await the release on data from the new job vacancy survey now being developed by DBS[33] on behalf of the Department of Manpower and Immigration.

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[32] Ross, Arthur M., "Guideline Policy" in Shultz, G.P. and Aliber, R.Z., (eds), *Guidelines, Informal Controls and the Market Place*, Chicago, 1966.

[33] Ostry, Sylvia and Sunter, Alan, "The Canadian Job Vacancy Survey: A Measure of Labour Demand," A paper read to the International Statistical Institute, London, 1969.

PART II

ANALYSIS OF THE DATA

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Data Considerations

In Part I of this study the response of the population to changing labour market conditions was discussed in terms of two competing hypotheses – the discouraged worker and additional worker hypotheses. A labour supply model was developed and indices of labour demand were calculated. Part II will now be devoted to an examination of the empirical evidence.

Because it is expected that the direction and intensity of response to cyclical variations in the demand for labour will be different for different age-sex groups, the population was divided into 10 such groups – ages 14-19, 20-24, 25-44, 45-64 and 65 and over for males and females separately.[34] Also, because it was thought that the cyclical response might vary across the country, similar data were obtained for the five standard geographic regions. However, only at the Canada level are reasonably good data on labour force participation available monthly for these age-sex groupings. For this reason, the analysis at the regional level has been made using only annual data, but for completeness the Canadian evidence is examined using both annual and monthly observations. Ignoring this duplication, a total of 72 data series are examined in this study – 12 age-sex groups (including two aggregate series for males and females) for each of Canada and the five regions.

Before turning to an examination of the results a question arises of whether, when using monthly observations, to use original or seasonally-adjusted data. If the response of seasonal participation to short-run changes in labour market conditions was being considered as part of the analysis, then clearly original data should be used. While this is not a meaningless question it is not considered in this study and all data series have therefore been seasonally adjusted in order to avoid the possibility that correlation between the seasonal components will statistically swamp all other effects.

This approach is not entirely without its problems. It has been shown that standard techniques for obtaining seasonally-adjusted data which allow for both an additive and multiplicative effect and which incorporate adjustments for trend in the seasonals do not as yet allow for short-run changes in seasonal variation. And as Fairbarns has shown,[35] labour force participation is not without such an effect. If, therefore, the demand series

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[34] Ideally, groupings based on skills and other socio-economic characteristics would be preferable but in the absence of such data for use in time series analysis, age-sex groups are employed to act as proxies for these.

[35] Fairbarns, David, "On Fluctuations in Seasonal Components of Economic Time Series", A paper prepared for discussion at the CPSA Conference on Statistics, Ottawa, June 1967.

employed in this study also has a seasonal component which is not invariant in the short-run, the regression coefficients derived from standard seasonally-adjusted data will be biased according to whether short-run variation in the seasonals of the two series are procyclically or contracyclically related. While recognising this problem, it would be beyond the scope of this study to investigate it.

Cyclical Response – The Canadian Experience

In this section data for Canada over the period 1953-68 are fitted to the labour supply model developed earlier using the classical linear regression estimating procedure. The regression model which was developed is:

$$P_t = \xi_0 + \xi_1 \sum_{t=1}^{T} (X_t - \bar{X}) + \xi_2 X_t + \xi T + \epsilon_t$$

where P_t stands for the labour force participation rate for a particular age-sex group; X_t is the indicator of labour demand calculated in Part I of this study as an imputed vacancy rate; $\bar{X}$ is the average level of demand over the period examined and T is a linear trend variable taking a value of one at January 1953 when monthly data are employed. A problem now arises concerning the assumptions which can be made about the nature of the disturbance term ϵ_t. When using the classical linear regression estimating procedure the variance of ϵ_t must be constant for all t, and cov (ϵ_s, ϵ_t) must be zero for $s \neq t$, if the best linear unbiased estimates are to be obtained. Unfortunately the Monthly Labour Force Survey (see Appendix A at the end of this study) from which the labour force participation rates are obtained yields estimates whose sampling errors are not independent over time. Also, since a participation rate is a binomial variable, their variances will not be constant but some function of the true but unknown participation rates – and these will typically vary over the period examined.

This latter problem can be largely discounted since for most series the range of observations will not be unduly large. However, the autoregressiveness introduced into the series by the survey design cannot be ignored completely. Ideally, if the autoregressive structure were known, then a generalised least-squares estimating procedure could be used. But this is not the case as only limited information is available. It is for this reason that classical regression analysis has been employed but in Appendix B a critical examination of the results obtained from monthly data will be given in the light of what is known about the sampling variabilities and their nature.

Analysis of Monthly Data

The regression results are given below in Table 2. Because neither of the coefficients of the demand variables was significant for males 45-64, the results for this age-sex group are not included. As was to be

expected, the trend coefficient was significant for all age-sex groups at the Canada level. The participation rates of all male age groups declined over the sixteen year period while for females the opposite prevailed, with the exception of the 14-19 age group in which female participation also declined. This strong trend effect is undoubtedly the major factor contributing to the high explanatory power of the model. This effect is illustrated in Table 3 below in which the variation explained by a model with only a time trend variable is compared with the total explained variation as given by the full model. This table is self-explanatory and no comment is called for.[36]

[36] Note the use of $\bar{R}^2$ in Table 2 and R^2 in Table 3.

TABLE 2. Regression Results – Canada (Monthly Data)

Age-sex group	Coefficient of					Durbin-Watson statistic	Variance of estimates
	Constant term	Cumulative demand	Demand	T	$\bar{R}^2$		
Males							
Totals	**83.67**	**0.037 (10.05)**	**−0.108 (−1.58)**	**−0.033 (−57.23)**	**.964**	**0.357**	**0.1456**
14-19 years	49.97	0.175 (16.25)	0.768 (3.89)	−0.070 (−42.53)	.946	0.710	1.211
20-24 "	94.11	−0.037 (−4.10)	−0.254 (−1.54)	−0.044 (−31.60)	.869	0.301	0.8410
25-44 "	97.69	−0.012 (−5.15)	0.003 (0.08)	−0.002 (−5.04)	.156	0.426	0.0608
65 years and over	35.18	0.059 (7.04)	0.239 (1.54)	−0.057 (−43.95)	.938	0.339	0.7461
Females							
Totals	**22.21**	**0.037 (9.81)**	**0.073 (1.065)**	**0.064 (112.04)**	**.988**	**0.384**	**0.1459**
14-19 years	33.67	0.077 (9.39)	0.049 (0.32)	−0.013 (−10.52)	.643	0.643	0.704
20-24 "	42.43	0.117 (8.13)	1.136 (4.30)	0.066 (29.75)	.857	0.177	2.163
25-44 "	21.52	0.042 (8.15)	0.048 (0.501)	0.079 (98.07)	.985	0.456	0.284
45-64 "	16.94	−0.027 (−4.43)	−0.270 (−2.381)	0.106 (112.22)	.989	0.350	0.397
65 years and over	4.36	−0.014 (−3.44)	−0.270 (−3.63)	0.013 (21.51)	.774	0.502	0.172

Note: Figures in parentheses are the "t" values of the coefficients.

TABLE 3. Variation in Labour Force Participation Rates Explained by Two Models

Age-sex group	With time trend only	With time trend plus demand variables
	per cent	
Males		
Totals	**94.6**	**96.5**
14-19 years	85.7	94.6
20-24 "	85.6	87.1
25-44 "	5.8	16.9
65 years and over	92.0	93.9
Females		
Totals	**98.2**	**98.8**
14-19 years	47.8	64.9
20-24 "	78.5	85.9
25-44 "	97.9	98.5
45-64 "	98.7	98.9
65 years and over	74.3	77.8

All coefficients of the cumulative demand variable, $\Sigma (X_t - \overline{X})$ were significant, except for males 45-64, at well above the one per cent level. But only for males 14-19 and females 20-24, 45-64 and 65+ was the coefficient of the level of demand variable also significant.

The coefficients of the cumulative demand variable for both total males and total females were positive and significant, suggesting that during periods when the level of demand was below the average for the period—the condition required for the cumulative demand variable to be falling—labour force participation will also be falling relative to trend. This finding can be interpreted as evidence of the dominance of a cumulative discouraged worker effect. Given this interpretation, it also can be concluded, from the sign of the coefficient for the individual age groups, that the cumulative discouraged worker effect dominates for males aged 14-19 and 65 years of age and over and for all female age groups up to ages 25-44, while the cumulative additional worker effect dominates for males aged 20-24 and 25-44 and for females 45-64 and 65 and over.

By similar reasoning a significant positive coefficient of the level of demand variable is evidence of a dominant **transitory** discouraged worker effect, and with a negative sign as a dominant **transitory** additional worker effect. Dominant transitory discouragement was found for males aged 14-19 and females 20-24, whereas the transitory additional worker effect appears to be stronger among women 45 years of age and over.

The effect of these two variables in the model can be illustrated by examining more closely the participation rates of males aged 14-19. For this age-sex group both coefficients were highly significant. It is recognised that for this particular age group the alternatives open to the population are not necessarily ones of deciding whether to stay or not to stay in the labour force but also of whether to enter or remain out of the labour force. However, the term discouraged worker, rather than discouraged entrant, is retained in discussing the significant responses that have been observed.

In Chart 3 below are plotted:

1. The departures from the observed participation rates of the sum of (i) the constant term (ii) the trend effect and (iii) the effect associated with the average level of demand. This is equivalent to the observed cyclical plus residual components in the series.
2. The sum of the cumulative demand effect plus the effect associated with deviations from the average level of demand.[37] In other words, the point estimates of (1) obtained from the regression equation.
3. That part of (2) due to the estimated cumulative demand effect.
4. That part of (2) due to the estimated effect of deviations from the average level of demand.
5. The residuals, i.e. (1)−(2).

To simplify the presentation, annual values have been plotted; these were obtained from calculations based on the monthly observations. The first two lines are plotted together and illustrate the good predictive power of the model in capturing the overall cyclical variation in participation rates. This also illustrates, as does the plot of residuals, the nature of the positive serial correlation in the error term indicated by the significantly low Durbin-Watson statistics (see Table 2). This is a point that will be discussed in Appendix B.

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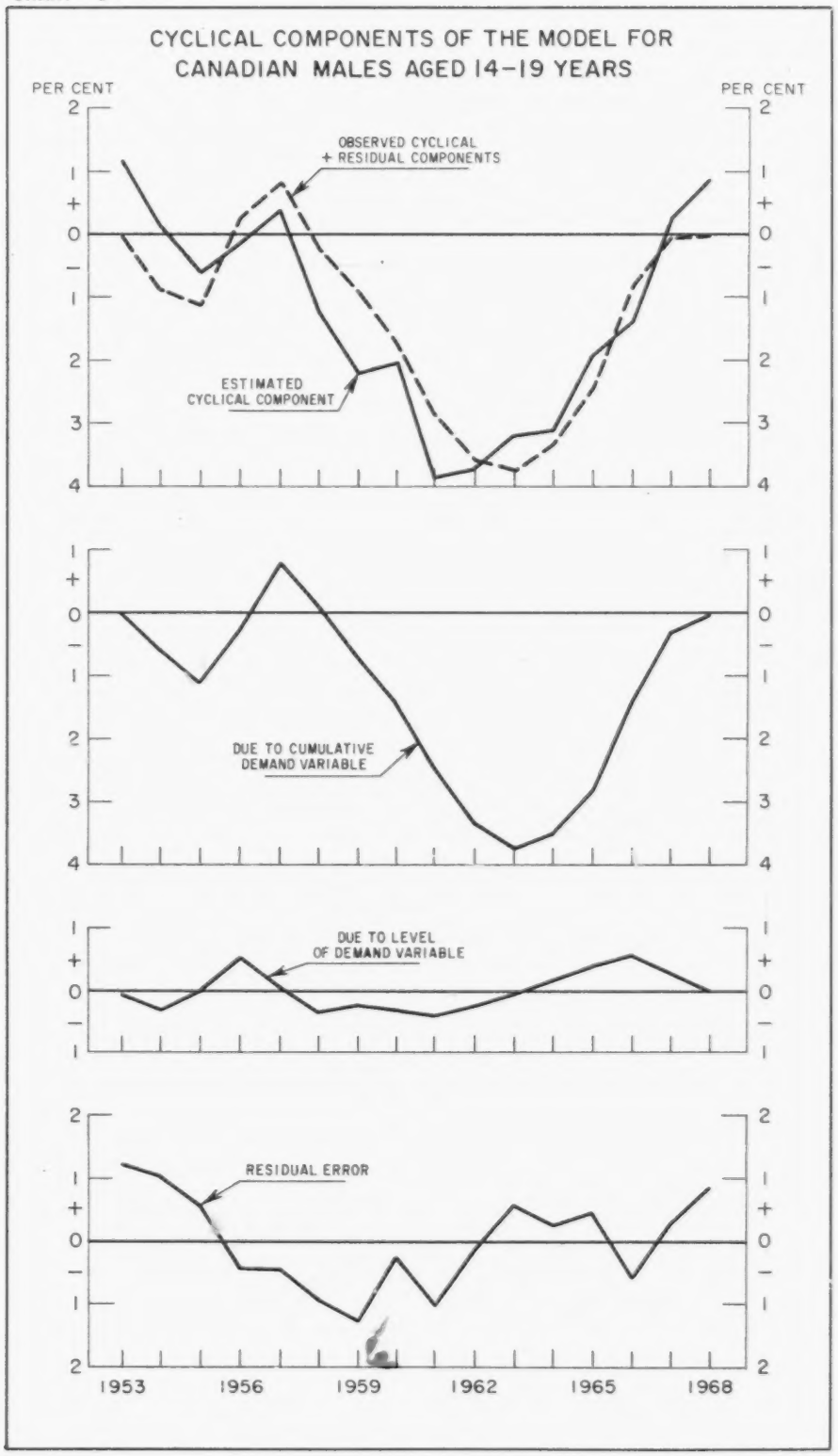
[37] This gives the result that would have been obtained if the level of demand variable had been included as deviations from its mean with a consequent adjustment to the constant term.

CHART – 3


CYCLICAL COMPONENTS OF THE MODEL FOR
CANADIAN MALES AGED 14–19 YEARS
PER CENT
PER CENT
OBSERVED CYCLICAL
+ RESIDUAL COMPONENTS
ESTIMATED
CYCLICAL COMPONENT
DUE TO CUMULATIVE
DEMAND VARIABLE
DUE TO LEVEL
OF DEMAND VARIABLE
RESIDUAL ERROR
1953
1956
1959
1962
1965
1968

The strong net discouragement effect associated with the cumulative demand variable is clear. In particular, it captures well the turning points in the early years of the period and also the decline in participation rates from 1958 to 1961 when demand was fairly stable but at a low level. Unfortunately, the period of analysis is too short to see the full interplay of the two variables over a whole cycle. However, for this particular age group (i.e., males 14-19 years) it can be seen that when, in 1962, the demand for labour began to rise, the effect of the transitory discouraged worker response was to exert an upward influence on participation, while the cumulative discouraged worker effect worked in the opposite direction for a further two years. It was not until 1964, when demand was back to a level above the average for the period, that both the cumulative and transitory demand variables were moving in the same direction.

It should also be mentioned, however, that insofar as the cumulative demand variable can also be thought of as a measure of the cumulative departure from labour force expectations (including such things as wage rates and job opportunities), then some allowance might have been made for the length of labour market experience on which such expectations could have been based. School-leavers, for example, will possess knowledge through experience of only that period since their entry into the labour force. They may be expected therefore, to regard any existing level of labour demand as high or low to the extent that it departs positively or negatively from their limited experience levels. Older workers on the other hand, will have had extensive experience, perhaps over several business cycles, and will therefore evaluate a current level of demand vis-a-vis some long run average.

So far the examination of the results has been confined to their statistical interpretation on which has been superimposed a shorthand for the general economic interpretation. But the estimates should also be judged by the "sense" that they make. On this score, certain of the results clearly stand up to such a "test". For the 14-19 age groups, for both males and females, it does not seem unreasonable to expect that deteriorating economic conditions would on balance discourage them from looking for work. The assumption is that they would prefer to stay on at school or to return to school, either to improve their chances at a later date or to wait for conditions to improve or – more likely – both. And it is perhaps not surprising that this discouragement effect is stronger than the desire or necessity, in the aggregate, to help supplement the family income which could be reduced at such times. One would also expect a tight labour market to discourage older males, over 65 years of age, from seeking employment on the assumption that many of them would have access to other incomes such as retirement pensions.

For females of 45 years and over, the observed net additional response is certainly consistent with the possible desire among members of this group to help make up any short-fall in family income during an economic downturn. But for the other age groups no simple interpretation offers itself. Moreover, one should clearly treat as suspect a result supporting net additional worker response for males aged 25-44. Whose income is being supported when more men in this age group go out to work? Also, is it possible that males aged 20-24 are drawn into the labour force to support their "discouraged" sisters in the same age group?

The regression results cannot answer this type of question or be used to test this type of hypothesis, but they do provide other evidence which can be used to examine the reliability of the results. The regression coefficients and their significance have been considered only on the assumption that the model met the usual requirements necessary for a standard least-squares solution. From the comment made in the introduction to this section concerning autoregressiveness in the series of labour force participation rates, it is clear that these requirements have not been met. As was expected, the Durbin-Watson statistics indicate that significant serial correlation is present in the calculated residuals obtained in all the regressions.

It was for this reason that the results were subjected to a critical examination in the light of the known statistical properties of series generated by the Monthly Labour Force Survey (see Appendix B). It is a conclusion of the examination, however, that while the questions raised cannot be completely answered there is sufficient evidence to suggest that the results obtained above should be accepted. But because when annual data are used the sampling variances will be smaller, while at the same time the expected serial correlation will be greatly reduced, the next part of this section examines the same model applied to annual data for Canada.

Analysis of Annual Data

The regression results obtained by fitting annual data to the labour supply model are given in Table 4. The full list of results are given in this table. This has been done for two reasons: first, so that a more complete comparison can be made with the results using monthly data; secondly, so that a more detailed comparison can be made with the results of the Proulx study. In general, these results confirm the findings based on monthly observations except for the fact that the significance of the results has been reduced, so that some coefficients which were previously significant at the five per cent level are no longer so. This is particularly the case for males where only for the total and for the 14-19 age group is the coefficient of the cumulative demand variable significant, whereas significant

results were obtained in all age groups (except 45-64) when monthly data were employed. The rather unexpected additional worker response among males aged 20-24 and 25-44 which was observed earlier is no longer significant, but there is still some evidence at the ten per cent level of significance of a discouraged worker response among males 65 and over. It is, of course, possible that in using annual data some of the cyclical variation has been smoothed out. While this is true, the periodicity of the economic cycle over the sixteen years examined in this study is such that the amount of smoothing of the series would be small relative to any "real" cyclical variation. Moreover, such an effect may well have been more than compensated for by the reduced amount of "noise" in the series.

TABLE 4. Regression Results – Canada (Annual Data)

Age-sex groups	Coefficient of						Variance of estimates
	Constant	Cumulative demand	Demand	T	$\bar{R}^2$	D.W.	
Males							
Totals	84.28	**0.450** (2.93)	**-0.354** (-1.30)	**-0.393** (-17.26)	**.979**	**0.581**	**0.1270**
14-19 years	51.65	2.092 (5.97)	0.142 (0.23)	-0.862 (-16.57)	.971	0.959	0.6623
20-24 "	93.78	-0.467 (-1.48)	0.067 (0.12)	-0.525 (-11.16)	.914	1.329	0.5409
25-44 "	97.54	-0.140 (-1.35)	0.062 (0.34)	-0.163 (-1.05)	.206	0.681	0.0586
45-64 "	92.31	-0.019 (-0.10)	-0.094 (-0.286)	-0.027 (-0.96)	.125	0.731	0.1875
65 years and over	36.13	0.706 (1.94)	-0.085 (-0.13)	-0.688 (-12.70)	.945	1.143	0.7189
Females							
Totals	**22.25**	**0.456** (3.29)	**-0.138** (-0.56)	**0.773** (37.51)	**.992**	**0.858**	**0.1039**
14-19 years	34.43	0.969 (3.94)	-0.339 (-0.78)	-0.154 (-4.22)	.791	1.507	0.3266
20-24 "	43.33	1.610 (2.60)	0.490 (0.45)	0.792 (8.62)	.866	0.593	2.0624
25-44 "	21.37	0.525 (2.34)	-0.106 (-0.266)	0.941 (28.20)	.986	0.879	0.2727
45-64 "	16.21	-0.403 (-1.93)	-0.232 (-0.63)	1.277 (41.18)	.994	1.140	0.2352
65 years and over	4.03	-0.283 (-2.03)	-0.085 (-0.34)	0.151 (7.31)	.852	1.275	0.1044

Note: Figures in parentheses are the "t" values of the coefficients.

For females, the use of annual data has also resulted in a loss in the number of age – group regressions yielding significant coefficients to the cumulative demand variable. Whereas, when using monthly observation, all age groups gave evidence of either some discouraged and/or additional worker response, only for the three age groups up to and including females 25-44 does the annual data provide results at the same high level of significance. Again, however, the additional worker response (to the cumulative demand variable) is still indicated at a 10 per cent level of significance for the two older age groups. But in contrast to the earlier evidence, in no case do the results using annual data indicate any significant response to changes in the level of demand.

Notwithstanding these differences, the two sets of results give clear support to the view that for both males and females there is in total a significant discouraged worker response to labour market conditions, and that this discouragement is related to the cumulative effect of the level of demand rather than to changes in the current labour market situation. It is also interesting to note that this aggregate net effect is also almost exactly the same for the two sexes, a one percentage point increase or decrease in the cumulative demand variable being associated with a little less than a one-half percentage point change in labour force participation. This result again confirms that found earlier using monthly data (see Table 2) when the same coefficients were identical for total males and total females.

Returning now to the results for individual age-sex groups, males aged 14-19 are again found to be the most responsive. From Table 4 it can be seen that for these teen-age males, when the cumulative demand variable falls by one percentage point there is a two percentage point drop in their participation rate. Under similar labour market conditions the participation rates for females aged 14-19, 20-24 and 25-44 would decline by 1.0 per cent, 1.6 per cent and 0.5 per cent respectively. If the evidence in support of an additional worker response among females age 45-64 and over is accepted, then these same labour market conditions would tend to increase their labour force participation rates by 0.4 and 0.3 per cent respectively.

Comparison with the Proulx Study

So far this study has provided clear support for the view that, in the Canadian experience, it is the discouraged worker effect which dominates

in determining the cyclical behaviour of labour force participation. A comparison will now be made between these results and those of another study which used similar data over almost the same period. This is the study by Pierre-Paul Proulx[38] published in 1969 which seeks to explain cyclical variation in annual labour force participation rates for Canada with the same age-sex breakdown used in this study. Proulx employed data for the periods 1948-67 and 1953-67. He also avoided using employment or unemployment data directly as a demand variable in his regressions for 1953-67 by making use of the labour demand component of the index of excess demand for labour constructed by Professor Marion.[39] As in the present study, Proulx set out to test for evidence of the dominance of either a discouraged worker or an additional worker effect. However, the Proulx model only included one demand variable, that for the current level of demand, and since no lagged relationship was employed he was not able to test for the effect of the past levels of demand or for any cumulative effect.

This major difference in the models employed makes it virtually impossible to make direct comparisons of the results. Nevertheless, since Proulx's conclusion based on his results – that it is a net additional worker response that prevails in Canada – is clearly contrary to the conclusion reached in this study, some explanation is called for.

In trying to explain this difference in conclusions it is natural to look first at the difference in the three basic dimensions of the studies: the data used, the models employed and the time periods covered. In this respect, a comparison will be made with Proulx's work on data for the period 1953-67. On the first of these differences no direct comparison can be made of the two demand series employed because the exact form of Proulx's data has not yet been published, but it must be assumed that the series of labour force participation rates are common to both studies. Moreover, differences between the models employed and the time periods covered can be reconciled and this has been done by rerunning the Proulx model for the period 1953-67 but using the demand series employed in this study. The results from this exercise together with a comparison with those obtained by Proulx are shown in Table 5. Only age-sex groups whose regression results had a significant demand coefficient in either study are included in the table.

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[38] Proulx, Pierre-Paul, *op. cit.*
[39] Marion, Gerald, *op. cit.*

TABLE 5. Comparison of Regression Results Obtained by Proulx and Davis, 1953 - 67

Dependent variables	Coefficients of					
	Standard error		Constant		Demand variable[1]	
	Proulx	Davis	Proulx	Davis	Proulx	Davis
Labour force participation rates of:						
Females:						
20 - 24 years	0.74	1.40	45.53	40.87	+14.363 (3.18)	+ 2.206 (2.25)
45 - 64 "	0.32	0.37	16.99	16.85	– 5.209 (2.63)	– 0.722 (2.83)
65 years and over	0.23	0.30	3.76	4.47	– 3.582 (2.5)	– 0.398 (1.90)
Males:						
14 - 19 years	0.757	1.18	51.37	48.50	+ 10.057 (2.18)	+ 2.222 (2.70)
20 - 24 "	0.48	0.60	93.12	94.52	– 7.923 (2.73)	– 0.516 (1.23)

	Coefficients of					
	Trend variable		R^2		Durbin-Watson	
	Proulx	Davis	Proulx	Davis	Proulx	Davis
Labour force participation rates of:						
Females:						
20 - 24 years	+ 0.619 (8.25)	+ 0.577 (6.33)	0.888	0.847	1.891	0.768
45 - 64 "	+1.299 (40.5)	+ 1.344 (56.7)	0.9969	0.997	1.7118	1.390
65 years and over	+0.183 (7.95)	+ 0.191 (9.85)	0.9466	0.894	1.7990	1.429
Males:						
14 - 19 years	– 1.085 (14.0)	– 1.107 (14.5)	0.9788	0.948	1.6860	1.129
20 - 24 "	– 0.507 (12.25)	0.443 (11.3)	0.9338	0.933	2.1626	1.837

[1] For methods of calculating the demand variables see: *La variabilité cyclique des taux de participation à la main-d'oeuvre au Canada* by Pierre-Paul Proulx, "The Canadian Journal of Economics", May 1969 and page 24 ff of this study.

Note: Figures in parentheses are the "t" values of the coefficients.

What these results show is that had the period 1953-67 been used in the present study, together with the Proulx model, results very similar to those obtained by Proulx would have been obtained. Clearly, the demand variable employed in this study and that used by Proulx have the same shape over time. This is not really a surprising result since they purport to be measuring the same thing. The new demand coefficients have the same sign and in three of the five age groups the coefficients are significant in both sets of regressions. However, the generally weaker predictive power of the demand series employed in this study (see the coefficient of multiple correlation), with associated lower "t" socres, left the coefficients in the regression for males aged 20-24 and females 65 and over not significant at the 5 per cent level. Apart from a question of emphasis, therefore, the same conclusions would have been reached. This is not to say that these results are also in support of Proulx's general conclusion that it is the additional worker hypothesis which dominates in Canada in contrast to the earlier results of this study. The strength of Proulx's conclusions come not so much from his analysis of the period 1953-67 but from his work covering the period 1948-67.[40]

In order to compare the results from models which include and exclude the cumulative demand variable, a Proulx-type model was also fitted to data for the period 1953-68. Table 6 shows the estimated demand coefficients and "t" statistics from this equation, together with those obtained earlier from the model which includes the cumulative demand variable. This table is of particular interest for two reasons. First, a comparison of the coefficients in the model without the cumulative demand variable with those given in the previous table indicates that the small increase in the period covered (from 1953-67 to 1953-68) results in such a weakening in the significance of the coefficients of demand that none remain so at even the 10 per cent level. This point will be further considered below. The second point of note is that when the cumulative demand variable is included, what strength had remained in the demand coefficient virtually disappears, while, as indicated earlier, good results are obtained for the coefficient of the cumulative demand variable. Since the "t" test is a test for the additional contribution of a variable when all other variables are included in the equation, these results show that what significance was attached to the coefficient of demand, when only it was included in the model, is largely because of its correlation with the cumulative demand

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[40] For his analysis over the period 1948 to 1967 Proulx uses as his demand variable the ratio of the number unemployed to the population for males age 25-44. His conclusions based on these results may, therefore, be unduly influenced by the experience of the earlier years not covered in this study or by the correlation between sampling errors in his dependent and independent variables.

variable. In contrast, it is quite clear from these results that the cumulative demand variable in general makes a real additional contribution to the explanatory power of the model over and above the contribution which is common to both the demand and the cumulative demand variables. This point is illustrated below in Table 7 where the variation in the participation rates of males aged 14-19 for Canada is allocated to its source as estimated by the model.[41] This table shows that a model with only a time trend variable would have explained 88.8 per cent (R^2) of the total variation. The inclusion of the two demand variables increases the explanatory power of the model by 8 8 percentage points, of which 1.9 percentage points was due to the association between the two variables and the remainder to the cumulative demand variable. The individual contribution of the demand variable is negligible. However, if the cumulative demand variable is not included in the model, then the association effect is picked up by the demand variable. Similarly, if the demand variable is excluded then this effect is included with that of the cumulative demand variable.

[41] For a discussion of this approach to the analysis of regression results see Newton, R.G. and Spurrell, D.J., "A Development of Multiple Regression for the Analysis of Routine Data," *Journal of the Royal Statistical Society*, Series C, Applied Statistics, Vol. 16, No. 1, 1967 and "Examples of the Use of Elements for Clarifying Regression Analyses", by the same authors in the *Journal of the Royal Statistical Society*, Series C, Applied Statistics, Vol. 16, No. 2, 1967.

TABLE 6. Comparison of Results from Models Including and Excluding the Cumulative Demand Variable, 1953-68

Age-sex groups	With demand variable only		Including cumulative demand variable			
	Demand coefficient	t statistic	Cumulative demand		Demand	
			Coefficient	t statistic	Coefficient	t statistic
Males						
14-19 years	+ 1.737	+ 1.62	+ 2.092	+ 5.97	+ 0.142	+ 0.23
20-24 "	- 0.290	- 0.55	- 0.467	- 1.48	+ 0.067	+ 0.12
25-44 "	- 0.109	- 0.39	- 0.019	- 0.10	- 0.094	- 0.29
65 years and over	+ 0.434	+ 0.71	+ 0.706	+ 1.94	- 0.085	- 0.13
Females						
14-19 years	+ 0.399	+ 0.70	+ 0.969	+ 3.94	- 0.339	- 0.78
20-24 "	+ 1.717	+ 1.45	+ 1.610	+ 2.60	+ 0.490	+ 0.45
25-44 "	+ 0.294	+ 0.71	+ 0.525	+ 2.34	- 0.106	- 0.27
45-64 "	- 0.540	- 1.47	- 0.403	- 1.93	- 0.232	- 0.63
65 years and over	- 0.300	- 1.21	- 0.283	- 2.03	- 0.085	- 0.34

TABLE 7. Source of Variation in Annual Participation Rates of Males Aged 14 - 19 in Canada, 1953 - 68

Source of sum of squares	S of S	%
Due to cumulative demand variable	23.6	6.9
Due to demand variable	–	–
Due to association between cumulative demand variable and demand variable	6.3	1.9
Due to trend variable and association between the trend and the demand variables	302.0	88.8
Residual = unexplained sum of squares	7.9	2.3
Total sum of squares	**339.9**	**100.0**

Note: – Denotes less than 0.05.
Figures do not add because of rounding.

This approach to the interpretation of regression results enables one to conclude that if the demand variable is excluded from the model, since it makes no additional contribution, then the significance of the coefficients of the cumulative demand variable will be generally increased (because of the positive association between the two variables). We can therefore have some confidence in including the results for males 65 + and females 65 + among those which have a significant cumulative demand coefficient.

This information on the effects of collinearity between the two demand variables suggests that certain patterns may emerge when using only the demand variable, as in the case of the Proulx study, but when working with different time periods. Given the method by which the cumulative demand variable was constructed, it is almost certain that the correlation between the two variables would have varied systematically over time. In a certain sequence of years the two variables will be moving in the same direction and this is likely to be followed by a number of years when they move in opposite directions. In the first case, the correlation between the two variables would rise as the period of analysis was increased, while in the latter case it would decline. If now, as in the case in this study, it is known that the strength of the demand variable, when it alone is included in the model, is because of its association with the cumulative demand variable, then this would suggest that the significance of the regression coefficients would also vary systematically when different time periods are

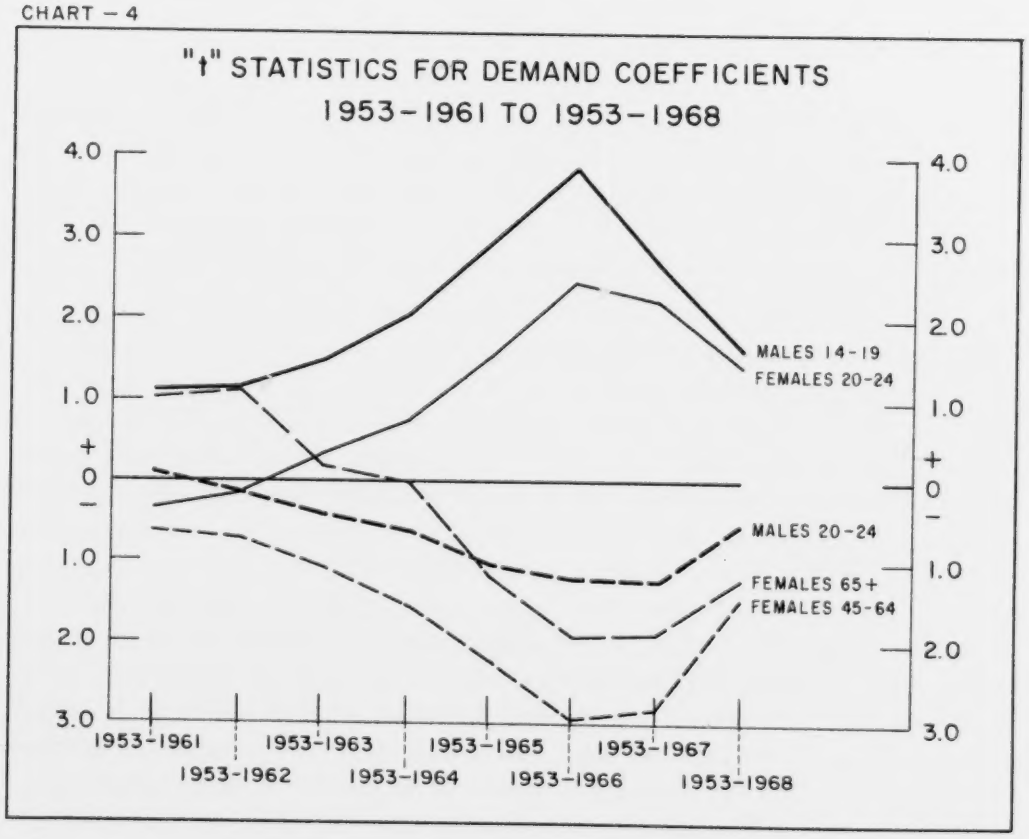
employed. That this is in fact the case can be seen from Chart 4 on which are plotted the "t" statistics for the demand coefficients estimated for different age group regressions for all periods 1953-61 to 1953-68. These are the same age groups in which Proulx found a significant response to his demand variable.

What this chart shows is that had Proulx worked with data for 1953-68, instead of for 1953-67, he would likely have had results that were very much less significant than those which he did obtain. Alternatively, if he had used the period 1953-66 his results would have looked even better. Clearly, however, there can be little confidence in results which are so sensitive to the period of analysis.

A Final Comment

In the analysis of annual data no comments have been made so far on two statistics which were discussed at some length in the analysis of monthly data, namely the Durbin-Watson statistic and the variance of the estimates.

CHART – 4



As regards the latter, estimates of the variances of annual averages calculated from the sample for Canada, in comparison with variances of the estimates from the regressions, indicate that the variation that has been "explained" by the model is not sampling variation. Thus, even though the estimated coefficients using annual data have a lower level of significance compared with those estimated from monthly data, more confidence can be had that no spurious correlation with sampling errors has been picked up in the results. This is also confirmed to a certain extent by the values of the Durbin-Watson statistics. These indicate that some autocorrelation remains in the residuals. But this was expected since even with annual averages the sample design still produces some year to year correlation. While the problem should also have been allowed for in the estimating procedure, the evidence of serial correlation in the residuals is not regarded as entirely unsatisfactory in this study. It would be more disturbing if none were present. However, it is still desirable to make the usual qualifications concerning results with low D.W. values even though they are thought to be not important in the context of this study and when using annual data.

Cyclical Response – The Regional Experience

The previous section was devoted to the analysis and interpretation of the results for Canada only, using both monthly and annual data. In this section an examination will be made of the experience of the same age-sex groups within each of the five standard regions of Canada using annual data.

Atlantic Region

Table 8 below contains the results for this region which contained significant demand coefficients. This practice will be adopted for the other regions also. The cut-off for significance is at the 5 per cent level, although for a number of age-sex groups in this and other regions demand coefficients which were significant at the 10 per cent level were also found. These will only be referred to when they appear in conjunction with coefficients of higher significance and where their interpretation is meaningful in the context of the set of regressions for that region.

The first point that should be noted is that no significant response to changing labour market conditions was observed in the participation rates of females, either in total or for any of the age-specific subgroups. This is perhaps a surprising result since the theory would suggest that it is among

females that the largest number of secondary workers is to be found and that cyclical variation in labour force participation, if present, should be found in these age-sex groups. However, it would seem reasonable to suggest that in the Atlantic Region the persistent structural deficiencies in job opportunities have had the effect of hardening the response of female workers to changing short-run conditions. Also it would be expected that, with the high level of unemployment in the region, there is a sufficient reserve within the labour force for gross movements between labour force and non labour force activity to be less important as a market regulator in these provinces.

The results for men in the Atlantic provinces indicate that, in the aggregate, they are drawn into the labour force in response to a downturn in the level of labour market conditions, a 1.1 per cent fall in the "vacancy" rate being significantly associated with a one per cent rise in labour force participation. But there is also weaker evidence, at between the 5 and 10 per cent levels of significance, which suggests that when demand falls to below the average level of recent years, such that the cumulative demand variable will be falling, a discouraged worker response is also present. Results for individual age groups show that this aggregate response is the result of transitory additional worker effect among the 65 and over age group and a cumulative discouraged worker response among 14 - 19 year olds.

Labour force participation in the Atlantic provinces would therefore appear to be fairly insensitive to changing levels of demand. Only among the oldest and youngest male age-groups is there any significant response.

TABLE 8. Regression Results – Atlantic Region

Age-sex groups	Constant	Coefficient of			$\bar{R}^2$	D.W.	Variance of estimates
		Cumulative demand	Demand	T			
Males							
Totals	**78.46**	**0.332 (1.71)**	**−0.898 (−2.72)**	**−0.435 (−10.72)**	**.938**	**1.694**	**0.3378**
14 - 19 years	44.09	0.882 (2.13)	−1.022 (−1.44)	−0.619 (−7.12)	.888	1.554	1.5498
65 years and over	40.79	0.510 (1.70)	−2.637 (−5.14)	−0.925 (−14.68)	.965	1.835	0.8135

Note: Figures in parentheses are the "t" values of the coefficients.

Quebec

In Quebec the picture is somewhat different although, as in the case of the Atlantic Region, it is among males that the most significant results were found. For total males, see Table 9, there is a very strong cumulative discouraged worker effect while, at the same time, there is also a significant net additional worker response to the changing level of demand. The regression equation for total males explained 99.4 per cent of the total variation in participation rates and although the trend effect clearly accounts for the largest part of this explanatory power (see Chart 5) the ability of the two demand variables to capture the cyclical component is well illustrated.

Again it is in the two extreme male age groups that the most significant coefficients were found. The results show that, both for the 14-19 and 65 and over age groups, labour force participation would decline relative to the trend by about two percentage points in every year that the level of demand, as measured by the vacancy rate, was one percentage point below the period average. Conversely, when the level of demand was one percentage point above the average, a two per cent increase in the labour force participation rates of these age groups would be expected.

TABLE 9. Regression Results – Quebec

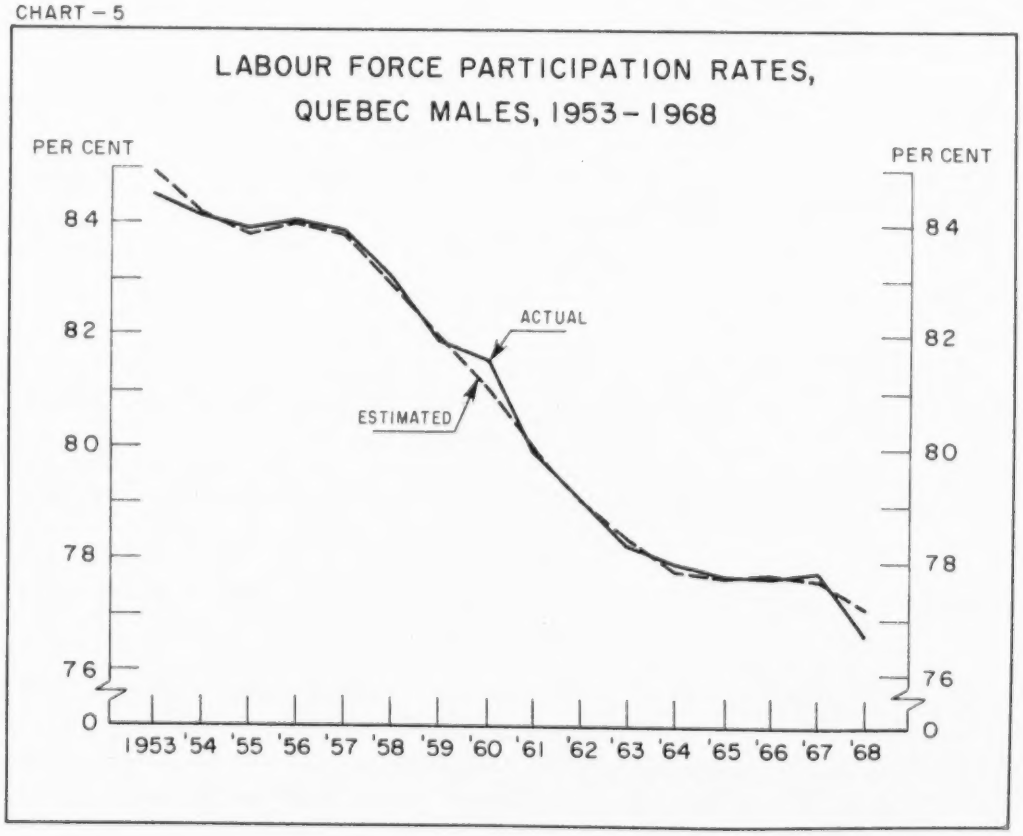
Age-sex groups	Constant	Coefficient of			$\bar{R}^2$	D.W.	Variance of estimates
		Cumulative demand	Demand	T			
Males							
Totals	**86.09**	**0.850** (**10.51**)	**–0.304** (**–2.43**)	**–0.523** (–36.67)	**.994**	**1.798**	**0.0537**
14-19 years	58.44	2.357 (5.71)	–0.433 (–0.68)	–1.481 (–20.37)	.979	1.285	1.3961
45-64 "	93.33	0.537 (3.00)	–0.022 (–0.08)	–0.161 (–5.11)	.798	2.360	0.2620
65 years and over	36.09	2.001 (4.98)	–0.546 (–0.876)	–0.493 (–6.96)	.896	1.077	1.3237

Note: Figures in parentheses are the "t" values of the coefficients.

Quebec, however, is different from all other regions in one respect. Only in this region was a significance coefficient present in the 45-64 age group for males. This is rather surprising since most men in this age group have a near-permanent attachment to the labour force and little sensitivity to changing labour market conditions would be expected. What this result suggests is that some men in this age group become discouraged from seeking employment when faced with a deficient demand situation. It is also interesting to note that only in Quebec was there a significant downward trend in participation rates for males in this age group. This evidence would support the view that in Quebec it is the higher-than-average unemployment experienced which has caused the steady decline in labour force participation of this age group.[42] The general interpretation of the trend coefficient as representing the effect of long-run social factors may therefore not be applicable in this case and some "long-run" discouragement may have been in evidence over the period.

[42] A possible reason why a similar experience was not found in the Atlantic Region is that this region has witnessed a large outflow of workers to other regions over the period covered by this study.

CHART – 5



Although as mentioned above a significant net additional worker effect in response to changes in the **level** of demand was also observed for total males, the standard errors of the estimates were sufficiently large that none of the associated coefficients in the separate age group regressions was significant.

As in the Atlantic Region, labour force participation of Quebec females does not appear to be sensitive to changes in labour demand. But there is weak evidence at just below the 5 per cent significance level that females aged 14-19 are increasingly discouraged from looking for work when the level of demand remains depressed.

Ontario

The results for Ontario given in Table 10 show that in half of the ten age-sex groups examined a significant coefficient to the cumulative demand variable was obtained, and in one other age group the same coefficient was very close to being significant. No coefficient of the demand variable was significant. While it can be concluded from this that, in terms of their labour force attachment, the Ontario population is highly responsive to the cumulative demand situation, the absence from the table of any significant results for either total males or total females indicates that this responsiveness cancels out in the aggregate.

Considering males first, and always referring to the cumulative demand variable, a dominant net discouraged worker effect among the 14-19 age group is partially offset by a net additional worker response in the 25-44 age group. This latter result is unexpected since this is a high participation age group in which, on *a priori* reasoning, one would expect to find little cyclical sensitivity. However, the significance of this result is supported by the two further pieces of evidence. First, the presence of a net additional worker response in the 20-24 age group which was almost significant would, since these age groupings are to some extent arbitrary, support the view that net "discouragement" in the younger ages is transformed to a net additional worker response as age increases. Secondly, and more interestingly, the trend coefficient, although small, was significantly negative for males age 25-44 in Ontario. This effect may again be attributed to long-run social and economic factors.[43] But since demand for labour has been typically high in Ontario, the effect of an additional worker response to the cumulative demand situation would be progressively to reduce the

[43] Examples are the growth of further education opportunities and retraining, increasing wealth and welfare, declining work ethic and declining mortality of the chronically ill.

size of the labour force. It should again be recalled that in the construction of the cumulative demand variable the average level of demand over the period was used such that any departures of this average from the "true" zero excess demand level will mean that the trend effect will also include a long-run noncyclical demand component. For the majority of age groups it can be assumed that long-run demand effects will be small compared with other trend effects, but for males 25-44 (as in Ontario) and 45-64 (as in Quebec – see above) this may not be the case and it is for this reason that special emphasis has been placed on the significant trend coefficients for these age-sex groups in the two provinces.

TABLE 10. Regression Results – Ontario

Age-sex groups	Coefficient of						Variance of estimates
	Constant	Cumulative demand	Demand	T	$\bar{R}^2$	D.W.	
Males							
14-19 years	53.57	1.819 (4.59	0.074 (0.07)	-0.918 (-9.66)	.931	1.753	1.6600
25-44 "	98.54	- 0.249 (-4.331)	0.156 (1.05)	-0.054 (-3.93)	.680	0.753	0.0348
Females							
20-24 years	48.41	1.973 (5.13)	0.741 (0.74)	0.547 (5.95)	.870	1.880	1.5608
45-64 "	19.42	- 0.759 (-3.20)	0.370 (0.60)	1.246 (21.98)	.984	1.977	0.5923
65 years and over....	5.23	- 0.591 (-2.91)	-0.039 (-0.07)	0.062 (1.26)	.418	1.385	0.4371

Note: Figures in parentheses are the "t" values of the coefficients.

As in the case of males, there is no significant evidence to suggest that either of two competing effects dominates among females in Ontario. But there is strong evidence that within individual age groups cyclical sensitivity is present although offset in the aggregate. Since unemployment in Ontario has been generally low, it may be more appropriate to interpret the coefficients of the cumulative demand variable in a situation of excess demand. In this situation females age 20-24 are clearly "encouraged" to

seek employment (interestingly, no similar significant effect was found in the 14-19 age group). On the other hand, older women (i.e. 45 to 64, and 65 and over) would on balance be less inclined to seek employment in similar circumstances. Clearly in the case of the older females this is support for the view that it is the greater family financial security resulting from a high level of demand for labour that reduces the attraction of work on her decision to enter or not to enter the labour force. It may be further suggested that for females aged 20-24 it is their own increased earning power at a time of excess demand for labour that dominates their decision.

Prairie Region

Of all the regions in Canada the Prairies is the one in which the level of labour force participation appears to be least influenced by labour market conditions. As Table 11 shows, only for females aged 20-24 was either of the demand coefficients significant at the five per cent level and, as in Ontario, entry into the labour force rises, or withdrawals decline, as cumulative demand increases. A similar result was found for females in the 14-19 age group at just below the 5 per cent level of significance.

While a study of this kind can provide no clues as to the reason for the observed insensitivity of labour force attachment in this region, certain observations can be made. The industrial mix of this region, relative to other regions, includes a higher concentration of agriculture. Insofar that employment in agriculture is characterized by both the presence of a strong downward trend and a cyclicality which may not move in phase with the rest of the economy, its weight in the overall economy of the region could give some cyclical stability to labour force participation.

TABLE 11. Regression Results – Prairie Region

Age-sex groups	Coefficient of						Variance of estimates
	Constant	Cumulative demand	Demand	T	$\bar{R}^2$	D.W.	
Females							
20-24 years	41.96	2.461 (3.35)	−0.812 (−0.793)	0.998 (11.83)	.913	2.168	2.0464

Note: Figures in parentheses are the "t" values of the coefficients.

A further factor which might be mentioned as possibly contributing to these results is again that of migration. The known outward movement of persons from the Prairie Region (in particular from Manitoba and Saskatchewan) may be such as to transfer the effect on labour force participation and on employment, due to changing labour market conditions, from the Prairies to other regions—notably British Columbia and Ontario. Thus, shortages of jobs which might have discouraged students from seeking employment or encouraged wives to find employment may instead have caused the family to seek their fortune in another part of Canada. This is a point which is also relevant to the level of, and trends in, labour force participation to be discussed in the next section.

British Columbia

The regression results for British Columbia are shown in Table 12. As in Ontario and Quebec there is evidence that in British Columbia participation in the labour force on the part of males is influenced by the state of the labour market and in particular is procyclically related to the pressure of demand as calculated by the cumulative demand variable. This support for the dominance of a "cumulative" discouraged worker effect is relatively weak, at just over the five per cent significance level, but from the results for individual age groups the reason for this is seen. For males aged 20-24, the negative sign of the coefficient indicates that a period of depressed labour market conditions is likely to cause a net inflow into the labour force from this age group. For the over 65 age group the opposite effect is strongest and under the same conditions older men would leave the labour force. Since the population of persons 65 and over in British Columbia is considerably greater than that of persons aged between 20-24, this would account for the dominance of discouraged worker effect in the population as a whole.

For females, only among the 20-24 age group was there any statistical evidence of cyclical response in labour force participation to changing labour market conditions. The discouraged worker effect again dominates but this time it is in response to short-run changes in the level of demand, a one per cent increase in the vacancy rate being associated with no less than a 6 percentage point rise in labour force participation.

The above results for British Columbia do not in general conflict with the earlier findings of Montague and Vanderkamp. They concluded that their results ". . . . . clearly support the notion that, on balance, higher unemployment tends to discourage people from participating in the labour force." Despite the differences in the periods covered and models employed, the findings of this study also support this conclusion.

TABLF 12. Regression Results – British Columbia

Age-sex groups	Coefficient of						Variance of estimates
	Constant	Cumulative demand	Demand	T	$\bar{R}^2$	D.W.	
Males							
Totals	**76.05**	**0.667** (2.29)	**0.646** (1.57)	**−0.013** (−0.47)	**.418**	**1.135**	**0.2130**
20-24 years	89.62	−4.329 (−3.62)	3.247 (1.92)	−0.482 (−4.36)	.608	2.249	3.6064
65 years and over	22.59	1.713 (2.64)	0.491 (0.54)	−0.347 (−5.77)	.800	1.873	1.0599
Females							
20-24 years	35.86	−0.652 (−0.33)	6.246 (2.27)	0.359 (1.99)	.283	1.689	9.5911

Note: Figures in parentheses are the "t" values of the coefficients.

Summary

The foregoing regional analysis may be summarized by reference to Table 13. With two sexes, five regions and five age groupings, a total of 50 regression results have been examined excluding those for total males and females in each region. In 14 of these, demand coefficients were observed which were significant at the five per cent level. The signs of nine of these were in support of the discouraged worker hypothesis, with five in support of some additional worker response. But the evidence, in the ratio of 12 to 2, is also in support of the view that labour force participation is most sensitive to the cumulative demand situation rather than to changes in the current level of demand. The conclusion that is perhaps most surprising is that at the regional level it is male labour force participation which appears to be most sensitive. However, this result may be due to the fact that because, age for age, labour force participation among females is lower than that of males, and therefore sampling errors for the females rates are sufficiently large to mask much of the cyclical movement that may be present. There is some support for this view. (In the previous section, in which the results for Canada were examined, this "regional" picture was reversed in that, at the national level, it was among females that the greatest cyclical sensitivity was found.)

TABLE 13. Number of Regression Equations with Significant Demand Coefficients

	Discouraged worker response to		Additional worker response to		Total
	Cumulative demand	Demand	Cumulative demand	Demand	
Males	6	0	2	1	9
Females	2	1	2	0	5
Totals	**8**	**1**	**4**	**1**	**14**

Trends in Labour Force Participation

The primary purpose of this study was to examine the extent of cyclical variation in labour force participation in response to changing labour market conditions. However, a prerequisite for such an examination was that the effects of short-run trends should be isolated by the inclusion of a trend variable in the model. In the section dealing with the specification of the model the form which this trend variable should take was briefly discussed, with the conclusion that over the short-period examined in this study no great loss in efficiency would be encountered if this trend effect was assumed to be a linear function of time. It has also been shown in the immediately previous sections that, notwithstanding the significance of the demand variables, the short-run trend was the factor explaining most of the variations in labour force participation.

This section is devoted to an examination of these trends. In any time series analysis which includes a trend variable this variable is necessarily ill-defined. It is typically included as a "catch all" variable to pick up all kinds of long and medium-term social, economic or cultural effects. In the context of this study the case of, say, the 20-24 age group, may be taken for illustrative purposes. Such factors as the increasing emphasis on and need for higher education, the tendency for the average age at marriage to decline, the changing social mores with respect to family planning, to working wives in general and to working mothers in particular will all operate in such a way as to affect the trend of the supply of labour in this age group. Some will tend to increase the supply of labour while others will reduce the flow of persons seeking employment. But there are also long-run and medium term factors which will operate on the demand

side. A low level of demand for labour relative to the available supply, as in the case of Quebec, may have contributed to the trends in labour force participation in this province. Similarly, a changing industrial mix will affect the job opportunities for different age-sex groups differently.

A further cautionary note seems indicated at this stage to ensure that the situation of high or increasing participation rates is not necessarily equated with a high level of labour demand. This can be illustrated with the case of the Prairie Region where labour force participation increased at noticeably more than the national average although, as shown in Table 14, the region had the second lowest rate of growth in employment over the period 1953-68. Quebec, on the other hand, experienced declining labour force participation and high unemployment and at the same time had an employment growth rate not much below the national average and significantly above the Prairies'. These two divergent patterns appear to reflect, at least in part, the differences in population growth rates which also are shown in the table. Quite clearly, the relatively slow growth of employment on the Prairie has been more than compensated for by net out-migration from the region, and thus labour force participation could increase with only a modest increase in labour demand. By the same token, the employment increase in Quebec was larger but not enough to keep pace with the growth in population.

It is beyond the scope of this study to examine reasons for these different population growth rates and no attempt is made to isolate the trend determinants. This section will be limited to a descriptive analysis of the differences among the regions in trends in labour force participation by age groups.

TABLE 14. Growth of Population and Employment, 1953-68

Region	Per cent increase 1953-68		Average unemployment rate 1953-68
	Population	Employment	
	per cent		
Atlantic	24.0	24.7	8.4
Quebec	44.4	41.5	6.6
Ontario	44.0	48.4	3.7
Prairie	26.9	36.5	3.1
British Columbia	60.1	73.6	5.7
Canada	**40.3**	**44.0**	**5.0**

In Chart 6 below are plotted the trend lines for the age specific participation rates of males in each region and for Canada as a whole. The lines that have been plotted were obtained from a model with only a time trend variable together with the constant term. This was necessary because had we used the trend coefficient and constant term which was estimated using the full regression model, this constant term, which fixes the level of demand, would have excluded the average effect of the demand variables. It can be seen that while within each age-sex group there is in general a similarity in the trends for each region, there are also the noticeable differences referred to earlier. What follows is a closer examination of each age group, for males and females separately.

Males aged 14-19

For Canada as a whole the trend of labour force participation in this age group has been markedly downward. In 1953 half of all teenage males were either working or looking for work. By 1968 the trend participation rate had fallen to little more than one third (36 per cent). But of all the age-sex groups this, together with the corresponding one for females, is the one which shows the greatest disparities among regions both in the level and slope of the trends.

The most marked departures from the national average are found in Quebec and British Columbia. In the former case the trend participation rate of teenage males has fallen from nearly 57 per cent to less than 32 per cent, while for British Columbia it has risen slightly from a little under to just over 40 per cent. Another development of significance in this age group is that in the Prairie region the decline in participation rates has been only modest compared with the average, falling only from 49 per cent in 1953 to 45 per cent in 1968. At this level, proportionately more teenagers in the Prairie Region are working today than in any other region in Canada, compared with an average position 16 years ago. With British Columbia moving up from last place to that of the region with the second-highest labour force participation and Quebec moving down through the ranking from first place to join the Atlantic Region as the area with the lowest participation rates, a clear geographic pattern appears to have developed. The regions to the east of Ontario are now characterized by a low level of labour force participation relative to the average, while those to the west of Ontario have above-average rates in this age-sex group. The picture for Ontario both with regard to the level and slope of the rate is virtually no different from that for Canada as a whole. As was mentioned earlier, an examination of trends in participation rates can provide no clues as to the reason for any pattern which has developed. However, the picture which has emerged for the 14-19 age group is to a lesser extent also repeated among older males.

CHART-6a

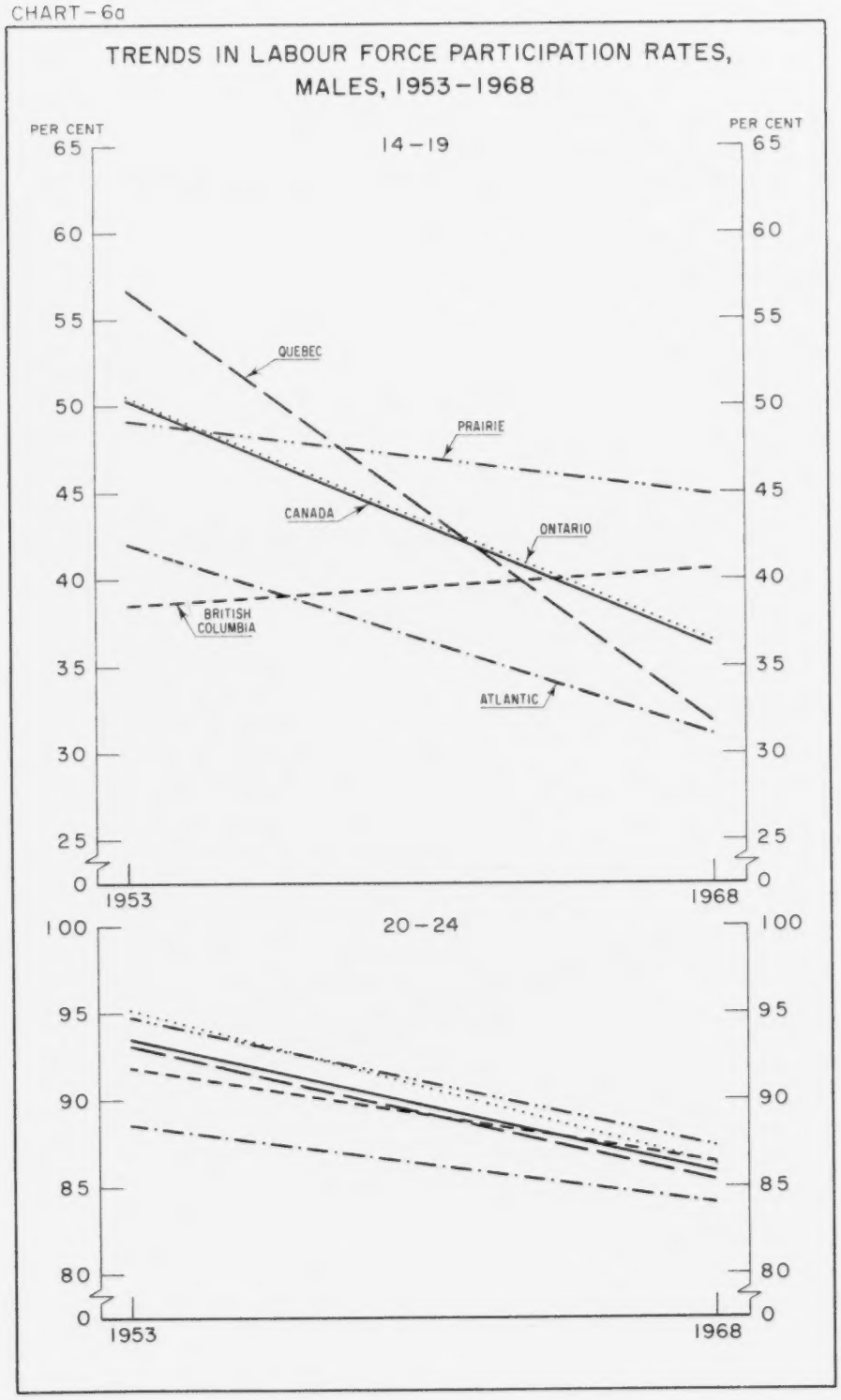
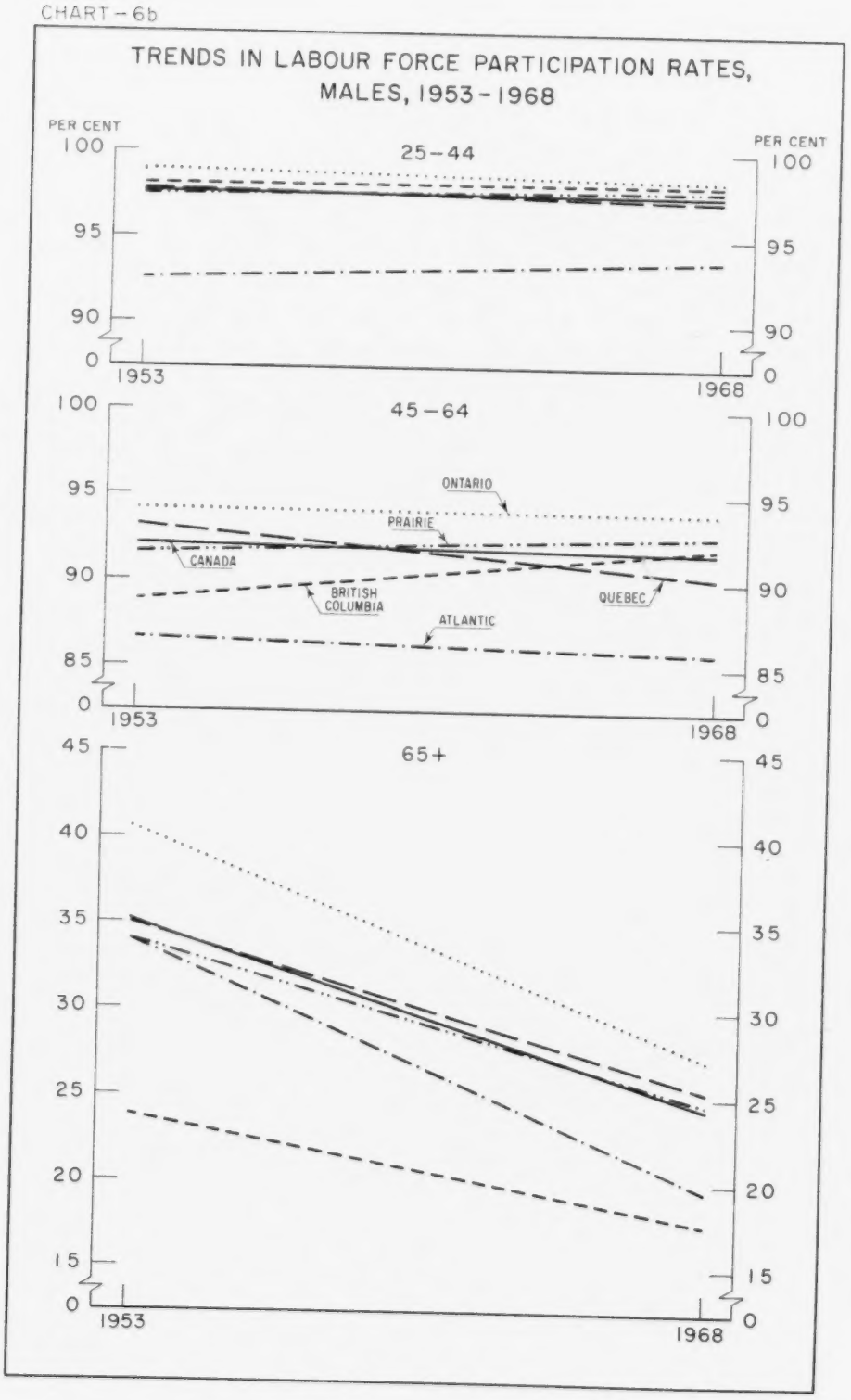

TRENDS IN LABOUR FORCE PARTICIPATION RATES,
MALES, 1953-1968
PER CENT
14-19
QUEBEC
PRAIRIE
CANADA
ONTARIO
BRITISH COLUMBIA
ATLANTIC
1953
1968
20-24

CHART – 6b


TRENDS IN LABOUR FORCE PARTICIPATION RATES,
MALES, 1953 – 1968
PER CENT
25 – 44
45 – 64
65+
ONTARIO
PRAIRIE
CANADA
BRITISH COLUMBIA
QUEBEC
ATLANTIC
1953
1968

Males 20 - 24

In all regions the trend among males in this age group has been that each year relatively fewer of them have been employed or have been seeking employment. At the national level the decline has been approximately of the order of one percentage point every two years. What little difference there has been between regional trends has tended to narrow the regional disparities. In 1953 participation rates varied between 95 per cent in Ontario to less than 89 per cent in the Atlantic region. By 1968 this gap had been halved so that only 3 percentage points separated the five regions. However, as in the case of the 14 - 19 age group, a pattern has developed such that by 1968 the Atlantic Provinces and Quebec had the lowest participation rates and the Prairie Provinces and British Columbia the two highest rates.

Males 25 - 44

For males in this age group trends were, as expected, generally not very significant. However, the chart clearly shows the relatively low level of participation in the Atlantic Region which, despite a slight rise over the 16 years, was still three and one half percentage points below the next lowest province – Quebec.

Males 45 - 64

In many respects the picture among the 45 - 64 year old males is similar to that found in the 14 - 19 age group. In the western regions, particularly in British Columbia, participation rates have been rising both in absolute terms and relative to the national trend. In contrast, declining participation is evident in the eastern provinces, particularly Quebec. In 1968 Ontario had the highest trend participation rate for this age group at nearly 94 per cent and the Atlantic region had the lowest with 86 per cent. This gap of 8 percentage points is only a half percent less than it was between these same two regions 16 years earlier. But as in the case of the three younger age groups the changed ranking has meant that Quebec has joined the Atlantic provinces in having one of the two lowest levels of labour force participation while both the Prairie Region and British Columbia now have rates above the average in contrast to the position in 1953.

Males 65 and Over

For these older males the results generally conform to expectations. Greater economic prosperity and the increased provision of retirement benefits have no doubt been the main factors contributing to the decline

in participation rates which is evident in all regions. Because of the dominance of these economic factors regional differences in the trends appear to be small in comparison with those for other age groups. Only for the Atlantic Region where the decline in participation has been greater than in the rest of Canada is there any noticeable departure from the national trend. However, the same cannot be said for the level of participation. In 1968 trend participation in Ontario at a little over 26 per cent was nearly 10 percentage points higher than in British Columbia. These differences almost certainly include demographic effects such as variations in the age distributions within this older age group and also of the tendency for retired people to migrate to certain parts of Canada, particularly to the West coast. Since the effects of the trend towards earlier retirement and of demographic factors are likely to dominate the pattern of participation rates for this age group, the summary of trends in male participation which follows will be limited to young and prime-age men.

In summary, the main finding of this examination of trends in male labour force participation is that excluding the Atlantic Region the current trend participation rates in Quebec are lower than in any other region of Canada.

The differences are not always large but, insofar as they represent a reversal of the position at the beginning of the period, special factors are clearly at work in Quebec which either encourage non-market activity or discourage job seeking. There is unfortunately real evidence that it is the latter effect which likely dominates. In the analysis of cyclical response in the previous section Quebec was unique in providing evidence of a significant cumulative discouraged worker effect among males aged 45-64. It was suggested in that section that since only the cyclical response could be picked up by this variable any long or medium run effects would be included in the trend variable. It was further suggested that this might in fact be the case given the significant negative trend in participation of this age group. A discouraged worker response was also in evidence among the 14-19 year old males in Quebec and ,following the reasoning given above it is also possible that for this age group the calculated trend includes a long-run discouragement effect. Although the opportunity to stay on at school has improved in Quebec over the past decade – contributing to the overall decline in labour force participation – the fact that the participation rate for this age group rate is now lower than in Ontario is unlikely to be due to regional differences in educational opportunity. What is known is that employment grew more slowly in Quebec (Table 14) and a shortage of employment opportunities is likely to be most keenly felt by young workers.

The conclusion for Quebec as a whole is that while for a number of age groups, participation rates are still significantly higher than those in the Atlantic Region, there is real evidence to suggest that one of the effects of relatively poor job opportunities has been increasingly to make Quebec's participation rate structure more like that of the eastern provinces.

In contrast the picture in the west is one of increasing labour force participation. In British Columbia among the 14-19, 20-24 and 45-64 age groups the participation rate not only increased relative to the national average but in two of the age groups increased in absolute terms as well. A similar situation was also present in the Prairie Region. There is, however, no evidence, as there was in Quebec, that the same forces which determine the short-run participation behaviour also influence the long run trend. Indeed it was shown in the previous section that for Prairie males no significant cyclical response could be detected while in British Columbia it was the discouraged worker effect which dominated.

It is beyond the scope of this study to pursue this further and in particular its implications for general economic and political stability. However, an earlier study in this series[44] did investigate in considerable detail the question of manpower utilisation over an almost identical period (1953-67) in which the effects on underutilisation of both low participation and high unemployment were considered and quantified. Tandan's approach was to consider what the level of manpower underutilisation would have been if all regions had had the same unemployment rates as obtained in Ontario in 1952-53 and the same target participation rates – the target being the linear trend for age-sex specific subgroups in Ontario between 1952-53 and 1965-66. Ontario was chosen because of its typically high participation rates and the period 1952-53 because of its low and presumably attainable unemployment rate. This approach allowed the "participation" and "unemployment" effects to be calculated separately. Although the calculations over the 1953-67 period were based on actual rather than trend participation rates in each region, the results of the participation effect provide a clear insight into some of the developments observed so far in this section. Thus, for males, 47 per cent of the underutilisation of manpower due to "less than Ontario participation" in 1953 was found in the two western regions. By 1967 this had fallen to less than 15 per cent.

In Chart 7 are plotted the trends in female labour force participation by age groups. As in the case of males our primary interest is to see to what extent regional differences exist within age groups.

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[44] See DBS Special Labour Force Studies, No. 8, *Underutilisation of Manpower in Canada*, by Nand K. Tandan, Ottawa, 1969.

CHART – 7a

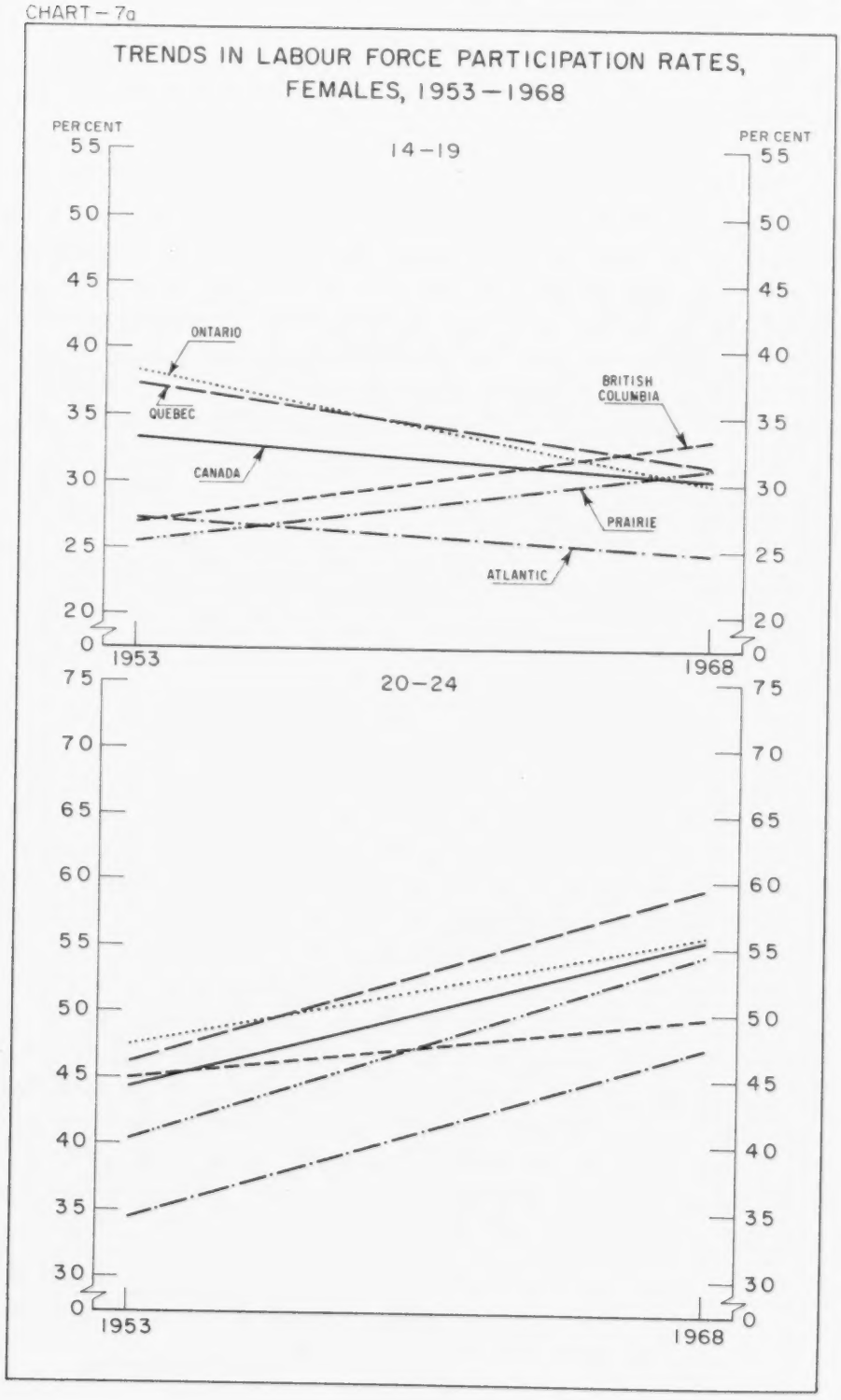
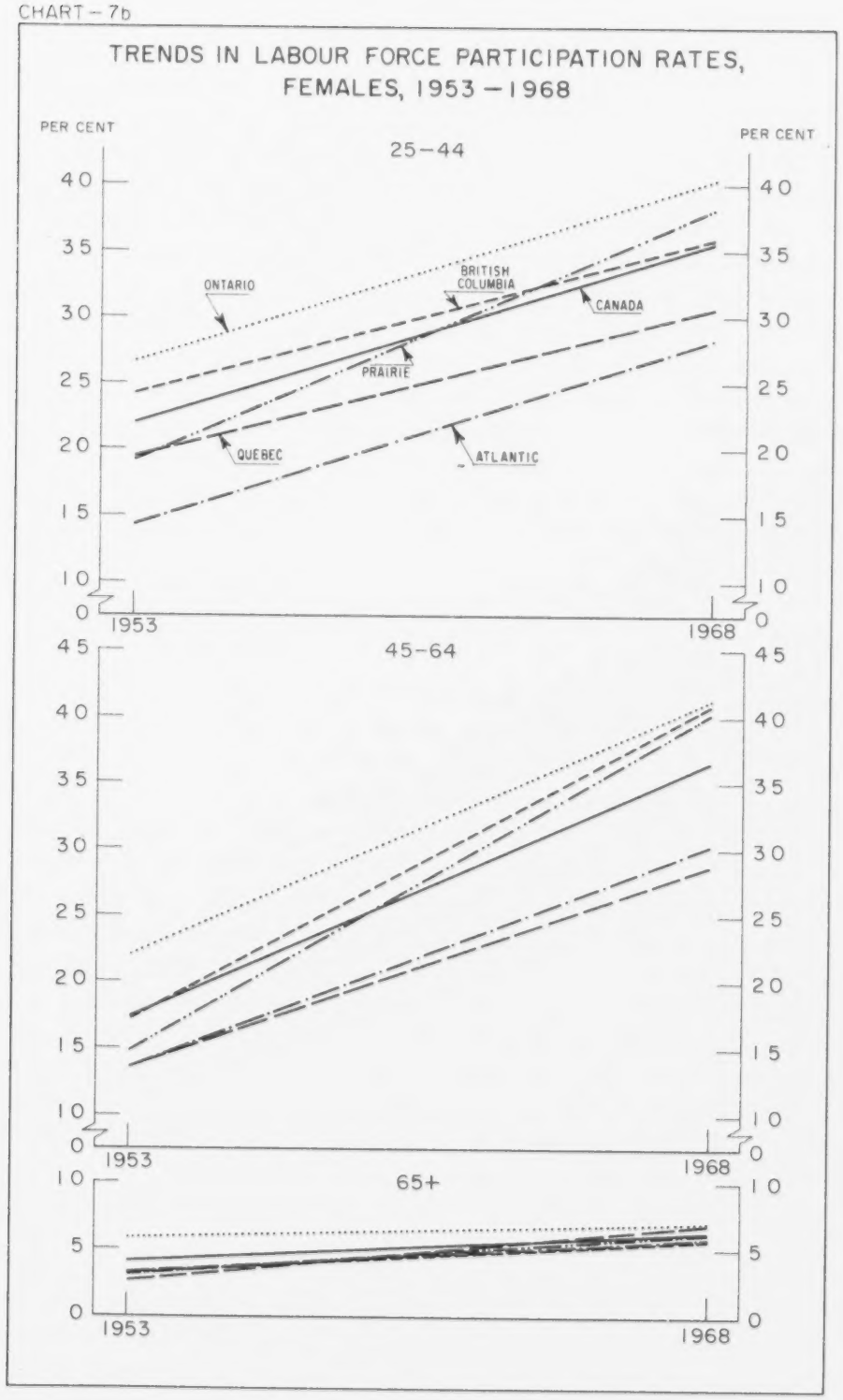

TRENDS IN LABOUR FORCE PARTICIPATION RATES,
FEMALES, 1953 – 1968
PER CENT
14 – 19
ONTARIO
QUEBEC
CANADA
BRITISH COLUMBIA
PRAIRIE
ATLANTIC
1953
1968
20 – 24
55
50
45
40
35
30
25
20
0
75
70
65
60

CHART - 7b


TRENDS IN LABOUR FORCE PARTICIPATION RATES,
FEMALES, 1953 - 1968
PER CENT
PER CENT
25-44
ONTARIO
BRITISH COLUMBIA
CANADA
PRAIRIE
QUEBEC
ATLANTIC
1953
1968
45-64
1953
1968
65+
1953
1968

Females 14-19

In 1953 the regional pattern of female labour force attachment in the 14-19 age group was that of high participation in two regions – Ontario and Quebec – and low rates in the remaining three regions. Within these two regional groups the differences were small. By 1968 the picture had changed considerably. The Ontario and Quebec rates had declined from 37-38 per cent to 30-31 per cent. At the same time the proportion of teenagers at work or seeking work in the two western regions has increased from a trend point of 25.5 per cent in the Prairies and 27.0 per cent in British Columbia to over 31 per cent and 33 per cent respectively. The result of these developments is that the West has now either caught up to or overtaken the central provinces as the ones with the highest level of participation. At the same time while the disparity between the Atlantic region and the rest of Canada has in fact narrowed slightly, it has become more noticeable because of the comparative isolation of the trend position of the Atlantic Region.

Females 20-24

In general the trends in labour force participation of females in this age group conform to expectations. In all regions there is evidence of an increasing attachment to labour force activity. Significantly, however, and in contrast to participation in any other age-sex group, proportionately more females in this age group in Quebec were working in 1968 compared to other regions. This result has been observed elsewhere and has been attributed among other reasons to the later age of marriage in this province. Also of interest is that the growth of participation in British Columbia has been markedly lower than in the rest of Canada. This again is in contrast to the general pattern which has developed over the period and also in contrast to the Prairie Region where labour force participation has been rising fast at close to 1 percentage point a year. The effect of these various movements is that, although participation in the Atlantic region throughout the period has remained significantly below that of other parts of Canada, no other geographical pattern has developed.

Females 25-44 and 45-64

Because of the similarity in the experiences of these two age groups they will be reviewed together. A considerable literature already exists on the growth in, and determinants of, the labour force attachment of married women. This has been the most important factor influencing the long-run upward trend in participation of these two age groups. The principal

observation to be made here is that, while over the period Ontario has been the province with the highest labour force participation rates in these two groups, the gap between Ontario and the western provinces has virtually been closed – particularly for women aged 45-64. On the other hand there is no evidence of a narrowing of the gap between Ontario on the one hand and Quebec and the Atlantic regions on the other. By 1968, when the trend participation rate of women in this age group for total Canada was a little over 36 per cent, the rates for Ontario, the Prairies and British Columbia were in the range of 40-41 per cent. The average rate in Quebec and the Atlantic Region in the same year was less than 30 per cent. Although the pattern of participation rates in the younger, 25-44 age group is a little more open, the same type of situation is in evidence. These two age groups combined contain the largest proportion of the female population and the low level of labour force participation in the Atlantic and Quebec regions in this age range is a measure of the underutilisation of manpower in these two regions.

Females 65 and Over

Very few females 65 years of age and over are working and although the tendency in all regions is for more women in this age group to seek employment the national average participation rate in 1968 as indicated by the trend position was only a little over 6 per cent – a rise of 2 percentage points from 1953. Within what are necessarily very small limits the most noticeable increase has been in Quebec from less than 3 per cent in 1963 to nearly 7 per cent in 1968 – the same as in Ontario.

These observations on trends in female participation rates show that, even though as was to be expected, they differ in the aggregate from those of males, the regional differences about these trends for specific age groups have much in common with the male experience. This was particularly evident in the case of the western provinces in which the level of labour force participation in 1968 was with a few exceptions above that of Canada as a whole, compared with the situation in 1953 when their rates were generally at or below the national average. The study on underutilisation which was cited earlier[45] can again be used for comment on the aggregate effect of these developments. Tandan estimated that for the Prairie Region in 1953 the lower level of female participation (relative to Ontario) was equivalent to an underutilisation rate of 26 per cent. By 1967 this rate had declined to only 6 per cent. The corresponding decline in British Columbia over the same period was from 10 to 3 per cent. Thus, the gap between

[45] *Ibid.*

Ontario and the western provinces has substantially declined. For the provinces east of Ontario, however, the results are rather different. Quebec, with a 1953 underutilization rate that was close to British Columbia's, reveals very little change in the fourteen year period (from 13 to 12 per cent). The Atlantic provinces have seen more improvement – the underutilization rate dropping from 35 per cent in 1953 to 22 per cent in 1967 – but the amount of underutilization is still substantial.

Putting these results in another way and combining the calculations for males and females, Tandan found that if the level of labour force participation in Ontario is regarded as a reasonable goal that all provinces might achieve, then four out of every five persons who are underutilised according to this measure are in Quebec and the Atlantic Region.

Summary and Conclusions

The primary purpose of this study has been to test certain hypotheses concerning the responsiveness of the Canadian and regional populations in terms of labour force participation rates to changing labour market conditions. In addition, and in part as a by-product of this analysis, an examination of trends in labour force participation was also made. Three main conclusions emerge.

(1) The level of labour force participation in Canada over the period 1953-68 was cyclically sensitive to the general level of and changes in labour market conditions, and of the two competing hypotheses the evidence supports the overall dominance of the discouraged worker effect. That is, when unemployment is high, the number of workers or potential workers who are discouraged from seeking employment is greater than the number who decide to join the labour force to help supplement the family's income. It was found, however, that it was not the changes in the current level of demand but rather the cumulative effect of current and past levels of demand which explained most of the cyclical variation in labour force participation.

(2) There were marked regional differences in the extent of variation in labour force participation about the long-run trend and in the responsiveness of the two sexes to the level of labour demand.

(3) Regional trends in labour force participation rates over the period examined have been one of the factors tending to increase the economic disparity between Quebec and the Atlantic provinces on the one hand and Ontario and the western provinces on the other.

The analysis that has been made hitherto has been carried out in terms of percentages – participation rates and vacancy rates. In this summary an attempt will be made to translate the conclusions, referred to above, from percentage movements to estimates of numbers of persons.

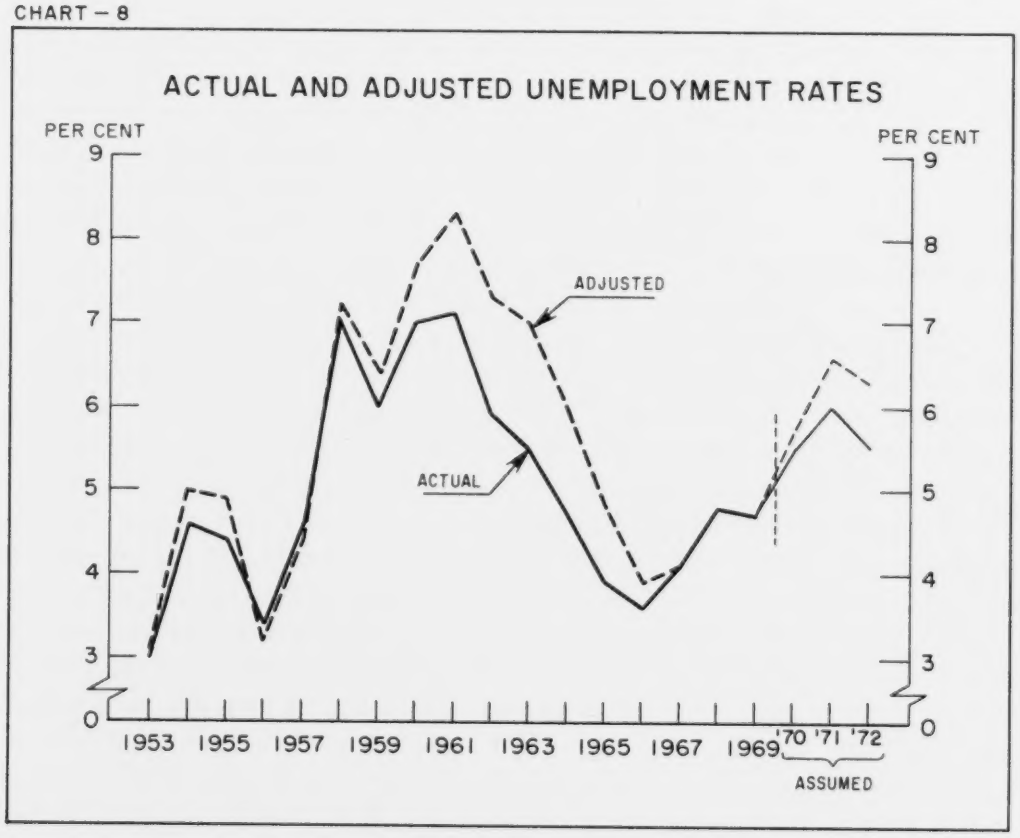
From the regression models for Canada as a whole, it is estimated that in 1963, when the cumulative demand variable was at its largest negative value, some 100,000 persons were discouraged from seeking employment. In the same year the observed unemployment rate was 5.5 per cent, but corrected for these "discouraged workers" it would have been close to 7.0 per cent. Earlier, in 1961, the unemployment rate itself was 7.1 per cent. Had there been no discouraged worker effect, so that all persons without jobs remained in the labour force, the unemployment rate in Canada would have been 8.3 per cent.

Chart 8 below traces the actual and adjusted unemployment rates for the period 1953-68 together with some indication of what might happen over the next three years. These projections through 1972 are not forecasts; they are simply the results obtained when certain assumptions are made to illustrate how the discouraged worker effect might operate over the next three years. The assumptions are that the recorded level of unemployment rose to an average rate of 5.5 per cent in 1970 and to 6.0 per cent in 1971. It is then assumed that it falls back to a rate of 5.5 per cent in 1972. Given these assumptions, it is estimated that apart from any trend effects the level of labour force participation will be some 0.4 to 0.5 percentage points or 70,000 persons lower than it would have been if unemployment had not risen above the 1968-69 level. These calculations assume that the population 14 years of age and over in 1972 will be in the region of 15.5 million, of whom 8.5 million will be in the labour force. On this figuring the loss of 70,000 workers to non-labour force activity would represent about 0.8 per cent of the total and this is the amount which is added to the assumed unemployment rate of 5.5 per cent in 1972 to arrive at the adjusted rate.

Still focusing on the potential loss to the labour force of 70,000 persons by 1972, given the assumptions made above, an examination of sex differences indicates that the net decline would be the same for both males and females – about 35,000. But as indicated by the regression results using annual data, the age composition of this decline would vary between the sexes. Among males, nearly all the loss would be among the 14-19 age group, perhaps some 30,000 of the total, with the remaining 5,000 found among men 65 years of age and over. In contrast the expected

experience among females is that in each of three younger age groups – 14-19, 20-24 and 25-44 – about 15,000 potential workers would be discouraged from seeking employment but that this combined reduction of 45,000 would be partially offset by an increase of 10,000 in the number of women 45 and over in employment or seeking employment.

CHART – 8



While these figures indicate that, given a certain increase in the level of unemployment over the next two to three years, some net discouragement to participation in the labour force may be felt, the magnitude of such response will not only be small but will be spread over a number of age-sex groups. More teenagers, particularly males, will likely stay on at school or return to full-time schooling, and some young women, particularly those with young children, may prefer to stay at home rather than seek employment as they might have otherwise done. The smallness of the net movements ranging from minus 30,000 to plus 10,000 for age groups of often over 1 million persons, while judged statistically significant, justifies the attention which was paid earlier in the study to the sampling variability in the data.

It will be borne in mind that this particular outcome is related to certain assumed levels of unemployment. It would also be a conclusion of this study that if the observed level of unemployment should rise to 6.5 or 7 per cent, instead of 6 per cent, and remain at these higher levels for one extra year, then the picture would be very different. Under these circumstances the loss to the labour force because of the net discouraged worker effect would be close to double the number estimated above.

A closer look at possible developments in the regions must be premised on some assumptions about the variations in labour market conditions across the country. The only assumption that can be reasonably made in the context of this study is that the past relationship between unemployment in the regions and the national level will hold for the short run future. This assumption ignores the possibility of any selective measures to control inflation or create employment which might change previous regional patterns during periods of slackening demand. However, unless forecasts were being made for a considerable number of years ahead, and these years were also expected to be ones of persistent slack demand, these assumptions are not too important.

Given the assumptions made in this study, the net discouragement effect would be most felt in Quebec. In this province a loss to the labour force of 25-30,000 persons could be expected, corresponding to hidden unemployment of the order of a little over one percent. Some decline could also be expected in British Columbia, at 5,000 to 10,000 persons. This loss to the labour force would also correspond to a hidden unemployment rate of about one per cent. The balance of the estimated total reduction of 70,000 would be spread over the remaining regions but the effect would be small.

In the case of Ontario all the evidence suggests that while some response within particular age groups might be felt the net effect would be a cancelling out i.e. some decline in labour force participation by young men and women being largely offset by an accelerated increase in the proportion of older women returning to work. As suggested earlier, labour force participation in the Atlantic and Prairie regions appears to be relatively insensitive to changing labour conditions, although almost certainly for different reasons. If unemployment does increase, some cyclical decline in participation can be expected among males aged 14-19 in the Atlantic provinces but the largest effect in this age group is likely to be felt in Quebec where, if past relationships hold, a fall of over 4 percentage points in the proportion of teenage males working or seeking

work could be expected. This would be in addition to the long run trend decline in participation by this age group which in the past has been particularly strong in Quebec.

What this summary has shown so far is that while there is good evidence that labour force participation in Canada is cyclically sensitive to changing labour market conditions, only when the demand for labour departs quite markedly from the average, and also remains for some time in a state of excess or deficient demand, does the effect manifest itself in numerically significant terms. Such was the position in the years 1958 to 1962 and the indications are that until a similar recessionary situation occurs again (with recorded unemployment rising to a rate of 7 per cent and remaining at that level for two or three years) cyclical variation in labour force participation will not be a strong factor influencing the level of labour supply in Canada.

Finally in this summary the various trends in participation rates which have been observed within the regions are combined so as to arrive at measures which can be compared one with another and against the national average. It would, of course, have been possible to calculate for each region a trend based on the actual aggregate regional participation rates; however, such a measure would necessarily have included the effect of both the level of and changes in the age structures within the region. In other words, the effect of different and changing weighting patterns would have been included. What has been calculated, therefore, are trend participation rates for each region standardised on the age-sex distribution of the total Canadian population in 1968. In this way overall trends can be compared which are free of weighting effects.

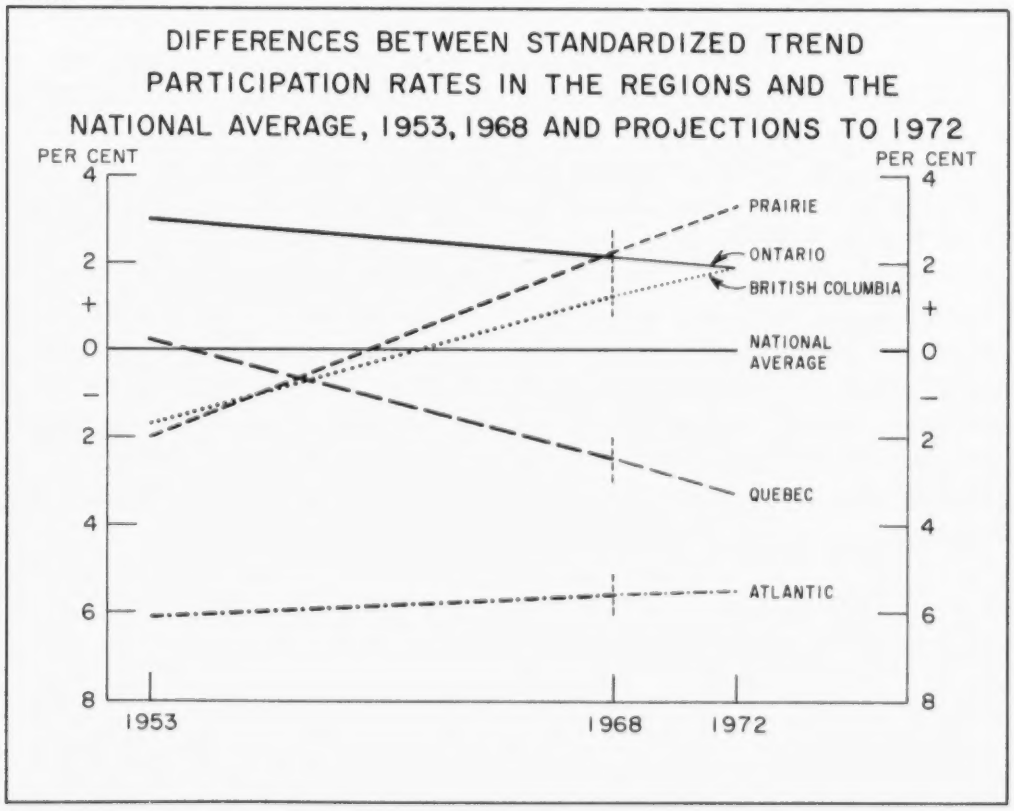
While the age groupings used for this exercise are generally satisfactory there is one exception. The age group of 65 and over will include sub-age-groups, say 65 - 69, with relatively high participation rates while the rates for persons over 70 will be much lower. The observed participation rates for the 65 and over age group will therefore be influenced to a considerable extent by regional differences in the age structure within this group. This effect cannot be removed by standardising on the Canadian age distribution and for this reason the standardised rates compared below have been calculated only from age-specific rates in the age range 14 - 64.

In examining the effect of cyclical variations, projections to 1972 were also made given certain assumptions. The same procedure is adopted here in the case of trends. All that is assumed is that past trends based on 1953 - 68 evidence continue up to 1972. It should be stressed that there is

no particular significance in the year 1972 and to some extent 1973 might have been better so as to give a 20 year comparison. However, the picture that would emerge would be little different from that over the slightly shorter period. Also there is some merit both in not stretching trend projection too far into the future and also in being consistent in time with the cyclical projections made earlier.

On Chart 9 below are plotted the **differences** between the standardised trend participation rates (males and females combined) for each region and the corresponding national average rates for 1953 and 1968 together with the 1972 projections. The overall effect of the trends in different age groups which was alluded to at the end of the previous section can now be clearly seen. In 1953 Ontario had the highest regional participation rate at 3.0 percentage points above the national trend rate. The Quebec rate was then also slightly above the average. In both the Prairies and British Columbia the rate was close to 2 percentage points lower while in the Atlantic Region the trend level of labour force activity was over 6 points off the national rate and over 9 points less than in Ontario. By

CHART – 9



1968 the picture had changed considerably. Labour force participation in the western regions had risen relative to the national average, to a point where both could be regarded as high participation regions at over one per cent (British Columbia) and over two per cent (Prairies) above the national rate. In contrast, participation in Quebec had declined to a point where in 1968 it was two and a half percentage points below the trend rate for Canada. For the two regions which were at the extreme ends of the participation range in 1953, the relative advantage in the case of Ontario and disadvantage in the Atlantic Region appears to have moderated – in the case of Ontario to a point where it was slightly below that of the Prairie Region.

If these trends continue to 1972 the polarization of the country into two groups – Ontario and the west with high labour force participation rates and Quebec and the east with low rates – will become more marked. By then the Prairie Region may well have a standardised trend participation rate 3.5 percentage points above the trend rate for Canada as a whole, and British Columbia may have caught up with Ontario at some two points higher than the national average. On the other hand, labour force participation in Quebec could by then be between 3 and 3.5 points below the projected Canadian level and only 2 percentage points above the rate for the Atlantic Region.

In interpreting these trends it will be recognized that high participation rates are not necessarily a reflection of strong economic growth (see page 61 above). Nor would one wish to minimize the desirability of declining participation on the part of young persons seeking further education and older workers able to enjoy an earlier retirement. But a high participation rate – in total terms – is a good indication of successful adjustment between population and economic opportunity and is likely to be associated with greater production and higher income. In the Canadian context, the above-noted trends in participation rates appear very closely associated with persistent spacial inequalities in job opportunities, together with economic and social barriers to inter-regional mobility. This kind of polarization, dividing the country both economically and politically, is obviously undesirable.

APPENDICES

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APPENDIX A

MONTHLY LABOUR FORCE SURVEY

The purpose of this appendix note is to draw attention to certain features of the design of the Monthly Labour Force Survey which have a direct bearing on the use of data for time series analysis. In order to do this it is first necessary to describe in some detail the method by which the units (households) are selected for inclusion in the sample and the way in which households are rotated into and out of the sample. The following are two short sections from the Canadian Labour Force Survey[46] which cover these topics.

Design and Selection of Sampling Units

Basic Design

The Labour Force Survey is a multi-stage probability sample of the civilian, non-institutional population of age 14 and over of Canada excluding the Northwest Territories and Yukon. The survey is comprised of two distinct parts: non-self-representing units and self-representing units.

Non-self-representing Units

The non-self-representing units are the areas lying outside the self-representing units. Due to the relatively low density of population in these areas and consequently the increased distances involved in travelling, the non-self-representing units are sampled in four stages. The first stage unit is called the primary sampling unit – (p.s.u.). It consists of contiguous rural enumeration areas and reasonably nearby urban areas associated with them. Its size varies from province to province depending upon the density of population, but within a province the size is fairly constant. In contrast to the self-representing areas, enumeration is conducted only in a sample of the primary sampling units. Each primary sampling unit in the sample represents several other primary sampling units in the population; hence the name of "non-self-representing units." Each primary sampling unit is divided into second stage units called segments which are made up of one or more enumeration areas. The area was assigned to a single enumerator during the 1961 Census of Canada and is the smallest area for which census data are available. Consequently, the first and the second stages

[46] Dominion Bureau of Statistics, *Canadian Labour Force Survey: Methodology*, Sampling and Survey Research Staff, Ottawa, 1965.

of selection are made on the basis of census data, while the subsequent stages of selection are based on current field counts and listings. The selected segments are divided into third stage units called clusters. Clusters are well defined areas with boundaries identifiable on maps as well as in the field. They usually contain four or five households. Clusters are formed by sub-dividing selected segments on the basis of a current field count of households. The fourth and the final stage unit is of course the household.

Self-representing Units

The self-representing units are cities whose population exceeds 15,000 persons or whose unique characteristics demand their establishment as self-representing units. All of these cities are sub-sampled directly and so each is represented in the survey by a sub-sample of its own population; hence the name "self-representing."

The larger self-representing areas are divided into sub-units which in turn are self-representing (i.e. directly sub-sampled). For administrative purposes, the sub-units are referred to as primary sampling units, although this is not strictly consistent with sample terminology. The sub-units are further sub-divided into segments, which are areas with well defined boundaries and consist normally of a city block. The segment is the first stage of selection within sub-units of self-representing units, the second and the final stage being the household.

The purpose of a multi-stage sample, as described above, is to concentrate the entire sample in a relatively few selected areas such as primary sampling units, in a few segments within selected primary sampling units, etc. The effect of such concentration of the sample is a reduction in the travel cost which would otherwise be excessive. Since each selected primary sampling unit represents several other primary sampling units, it is essential that the socio-economic characteristics of similar groups of primary sampling units not in the sample are represented by selected primary sampling units of the same kind.

Rotation of the Sample

Rotation of the sample is a complete or partial replacement of the sample unit. It is conducted in a systematic way every month at certain defined intervals. The rotation of the sample must be such that every month the sample is a probability sample of the population

covered by the survey. The main purpose of rotation is to relieve survey respondents from the burden of reporting after six months in the survey. It is quite possible that if the same respondents were asked to provide information month after month it might substantially increase the refusal rate thus reducing the efficiency of the sample. Furthermore, through rotation of the sample information is accumulated from additional households each month. This may be utilized to reduce the sampling error through the application of a procedure known as "composite estimation."

Non-self-representing Units

When selected segments have been clustered, they are numbered in a serpentine way starting with 01, 02, 03, etc. All these clusters are listed by "size" (number of households contained within the clusters). The clusters are systematically divided into as many samples as is indicated by the denominator of the segment sub-sampling ratio. For example, if the segment sub-sampling ratio is ¼, then each month one-fourth of the clusters in that segment are to be in the sample. Thus there are four different samples of clusters in that segment. One sample of clusters is selected and the households within these clusters are enumerated for six consecutive months, then the clusters are replaced by the next sample of clusters which remain in the sample for six months, etc. It is clear that the households in a particular segment always rotate in the same two months of the year, which are six months apart. Thus the segment belongs to one of six rotation groups (1, 2, 3, 4, 5, or 6). These numbers specify the months in which the households in the segments, belonging to these groups, rotate, e.g. group 1 rotates in January and July, group 2 rotates in February and August, etc. In constructing the six rotation groups, the sampled segments have been distributed in such a way that each group of segments rotating at the same time provides a representative sub-sample of all the sampled segments within a province. Thus, each of the six rotation groups constitutes a sub-sample of approximately 1/6 of both the urban and the rural population. Eventually, all the households in the segment will be enumerated and in this case it is said that the segment is exhausted. When a segment is exhausted it is replaced by another segment from the same primary sampling unit. The segment group number not only specifies the month for the rotation of households within a segment, but also in conjunction with the sampling ratio provides the date for the replacement of exhausted segments. It is seen from the foregoing description that in the rotation process households are replaced every six months but the segments within a primary sampling unit are replaced at a much slower rate (about 2 years).

Self-representing Units

As in the non-self-representing unit, segments in the self-representing units are assigned to either group 1, 2, 3, 4, 5 or 6. These group numbers, like the group numbers for segments in the non-self-representing unit, specify the months in which the households within the segments or segments themselves rotate. The selected households within each segment remain in the sample for six consecutive months and after that period they are replaced by a group of households from the same segment. When all the households within a segment have been enumerated six times, the segment is considered exhausted and it must be replaced by the next segment on the list from the same sub-unit and with the same group number.

. . . . . .

The fact that the sample is rotated in the way described above means that of the households interviewed in any month, say January, five-sixths will remain in the sample in February, two-thirds in March, a half in April and so on. Not until July would the sample be free of all households interviewed in January. If this were the only kind of rotation then, while it would be expected that the sampling errors of estimates two months apart would be highly correlated, this correlation would be progressively reduced as the interval between observations increased until it would disappear with intervals of six months or more. But because when a household is replaced after six months its replacement is drawn from a new cluster within the same segment some correlation between the characteristics of households rotated out and those rotated in would also be expected. The serial correlation generated in this way will therefore be superimposed on that caused by the inclusion of households for a six month period. As indicated above this rotation within segments will last until the segment is exhausted and replaced by a new segment after about two years.

Rotation of households and of clusters is common to both the self-representing and non-self-representing units in the sample. However, for the non-self-representing units an additional source of serial correlation is present. It may be recalled that a primary sampling unit, P.S.U., is selected from within a non-self-representing area to represent the whole of this area. Thus a small rural community might be selected to represent a number of such communities in the same area. But after some time this P.S.U. will also become exhausted; in other words all the households in the P.S.U. will have been sampled. In the old survey design which was in operation until 1963, or for the first eleven years of the period examined in this study, P.S.U.'s became exhausted, on average after about four

years and were then replaced. This means that for the non-self-representing units three sources of serial correlation were present in the old design compared with only two in the case of self-representing units.

The importance of this difference is that prior to 1963 as much as 75 per cent of the total sampling error of estimates from the survey could be attributed to the greater heterogeneity of the population in these non-self-representing areas even though they comprise only about one-third of the population.

As a result of the redesign of the Survey in 1963 the sampling variation attributable to the non-self-representing areas was reduced considerably and this was a major factor reducing the total sampling error of the estimates. Also with the new design no rotation of P.S.U.'s within the non-self-representing areas was necessary during the period examined in the study, thus removing this source of serial correlation from estimates for the period after 1963.

While no complete study has been made to quantity the full extent of serial correlation in estimates from either the old or new design so that it could not be explicitly taken into account in the estimating procedure, this appendix has shown that there is at least good cause why some *ex post* consideration should be given to the possible influence that serial correlation may have had on the results and this is done in Appendix B.

APPENDIX B

THE REGRESSION RESULTS AND THE QUALITY OF THE DATA – A CRITICAL EXAMINATION

This appendix is an examination of the results for Canada based on the analysis of monthly data, which were discussed on page 36 ff in the light of the known statistical properties of series generated by the Monthly Labour Force Survey. As suggested earlier a full consideration of the question would have imposed prior conditions on the model and on the estimating procedure in particular. However, because only limited information is available, it is doubtful whether many of the theoretical problems introduced by the use of such survey data could have been satisfactorily resolved. For this reason a frankly empirical approach of *ex post* consideration has been adopted.

With the exception of some work by Kaliski,[47] this is a subject which has received little attention in the literature, but it is one which becomes progressively more important as the data are used to gain an ever increasing insight into the operations of the labour market. It is hoped that future researchers may be stimulated to look into the topic in greater detail. The approach employed here is premised on the assumption that if the variance estimated from the observed series is significantly larger than the sample variance then this could be regarded as evidence that additional explainable variation is present in the series. It should be pointed out, however, that the alternative situation does not necessarily mean that no additional variation is present. This is because the observed series is in effect only one sample of all possible series that could have been generated and that the sampling "noise" in observed series may well have been less than expected.

In order to proceed it is necessary to make two other initial assumptions. The first is that the sampling variance of a seasonally adjusted series is close to that of the original observations, and the second is that variation in the observations over time has three components, sampling variation, non-sampling variation, and a linear time trend effect. Given these assumptions the trend effect can be removed from the seasonally adjusted series, such that the variance calculated from the residuals from this trend will comprise the effect of the remaining two sources of variation. Variances obtained in this way for ten age-sex groups are compared with those estimated directly from the sample in Table B.1.

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[47] Kaliski, *op. cit.*

Because the survey design has changed over the period and because the sample variances are not independent of the size of the estimate, which has also varied, two sampling variances are given. One based on the old, pre-1964, design using 1958 participation rates and one based on the new design with 1968 participation rates. But because the majority of observations (11 out of 16 years) relate to a period prior to 1964, the observed variances should be compared more against the variance estimated from the old sample design rather than from the new one.

While the data contain too many departures from the conditions required to perform a variance ratio test it can be seen that for the age group 65 and over, for both males and females, the variances of the detrended observations are very close to the sampling variance in the old survey design. For four other age groups they were less than twice as large so that only in four of the ten series were the observed variances more than twice as large as that expected from sampling reasons only.

TABLE B 1. Variance Estimates of Labour Force Participation Rates

Age-sex groups	Sample variances		Variance of detrended observations Jan. 1953 to Dec. 1968
	Old design	New design	
Males			
14 - 19 years	0.90	0.40	3.17
20 - 24 "	0.38	0.33	0.93
25 - 44 "	0.02	0.02	0.07
45 - 64 "	0.14	0.08	0.22
65 years and over	0.97	0.53	0.96
Females			
14 - 19 years	0.81	0.38	1.04
20 - 24 "	1.22	0.60	3.27
25 - 44 "	0.23	0.19	0.38
45 - 64 "	0.36	0.25	0.45
65 years and over	0.21	0.14	0.20

While these comparisons are clearly inconclusive in a general sense they do point to the fact that much of the observed variation about the trend may be attributable to sampling variation. And for the over 65 age groups the earlier results (see Table 2 on page 37) must be regarded as suspect on the grounds that while one or both of the demand coefficients

were significant by the standard test, the variances of the estimates were **lower** than those which were expected to be present in the original observations.

There are a number of weaknesses in the approach employed above. The variances of the detrended series will include the effect of any serial correlation in the original series, while the sample estimates refer to a point in time. Moreover the process by which the trend line was obtained was that of "least-squares" which by definition minimized the variance of the residuals. In order to remove the effect of serial correlation and to avoid the necessity of having to estimate the trend from the observed series, variances were calculated for each series after taking first differences. The results together with the variances of first differences estimated from the survey are given in Table B.2. These show that, with the exception of males aged 14 - 19, the variances of the observed month to month changes are not noticeably higher and in some cases are considerably lower than the corresponding sample variances. In the light of this it was not surprising to find that only for one age-sex group was a demand coefficient significant when a regression equation was fitted to first differences of the observations. However it is almost certain that, by taking first differences, the autoregressiveness introduced into the series by the survey design has been over corrected for. Such a procedure implies that the month to month relationship follows a simple Markov scheme in which $\rho = 1$. This condition

TABLE B 2. Variance Estimates of First Differences of Monthly Labour Force Participation Rates

Age-sex groups	Sample variances		Variances of 191 first differences Feb. 1953 to Dec. 1968
	Old design	New design	
Males			
14 - 19 years	0.45	0.24	0.84
20 - 24 "	0.19	0.20	0.24
25 - 44 "	0.01	0.01	0.02
45 - 64 "	0.07	0.05	0.06
65 years and over	0.48	0.32	0.26
Females			
14 - 19 years	0.41	0.22	0.45
20 - 24 "	0.61	0.36	0.34
25 - 44 "	0.11	0.11	0.13
45 - 64 "	0.18	0.15	0.14
65 years and over	0.10	0.08	0.08

does not hold. Also it is not impossible that some of the results given in Table 5 might have arisen from a series in which a significant cyclical response was superimposed on an underlying autoregressive structure. It is for these reasons that a model in first differences was not used to test the hypotheses examined in the study. It has been included here only to illustrate both some of the problems encountered in the use of data generated by the Monthly Labour Force Survey and to gain further insight into the interpretation of the results actually obtained.

So far in this discussion the only type of disturbance in the series introduced by the survey design that has been considered is the sampling variation in a single month's estimate, together with some allowance that month to month observations are also correlated. We now turn to an examination of the point made above that significant cyclical response may be superimposed on an underlying autoregressive structure. To undertake a complete examination of this kind presupposes that a quantitative knowledge of the autoregressive system generated by the survey design exists such that it could be removed from the series. But this is not the case. Only certain aspects of the system are known in a general sense. It has been estimated, for example, that over a twelve month period the average correlation between errors in the estimates of labour force participation rates one month apart is of the order of +0.7 for the new survey design and perhaps as high as +0.8 under the old design. While some calculations have been made of the correlations between observations more than one month apart, no precise estimates are available which take into account variations over a year. However it is thought that because of the special features of the survey design the average correlation falls by above 0.05 a month as the time difference between observations increases from one month to six months. After remaining relatively stable for a number of months it then gradually declines. While it is not impossible that the correlation between lagged observations may at times drop below zero, the plot of the autocorrelation coefficients (correlogram) would in general be asymptotic to zero.

This then is the general picture. The "true" shape of the correlogram for different age-sex groups will undoubtedly depart from the average pattern and with the further inclusion of a regional dimension even greater variation would be expected. No adequate prior knowledge of the expected autoregressive structure of estimates of labour force participation rates for age-sex groups is available to permit a direct comparison with the observed serial correlations. However the fact that it is known to exist means that if demand induced cyclical variation is also present then, as suggested earlier, the autoregressiveness in the original series will contain

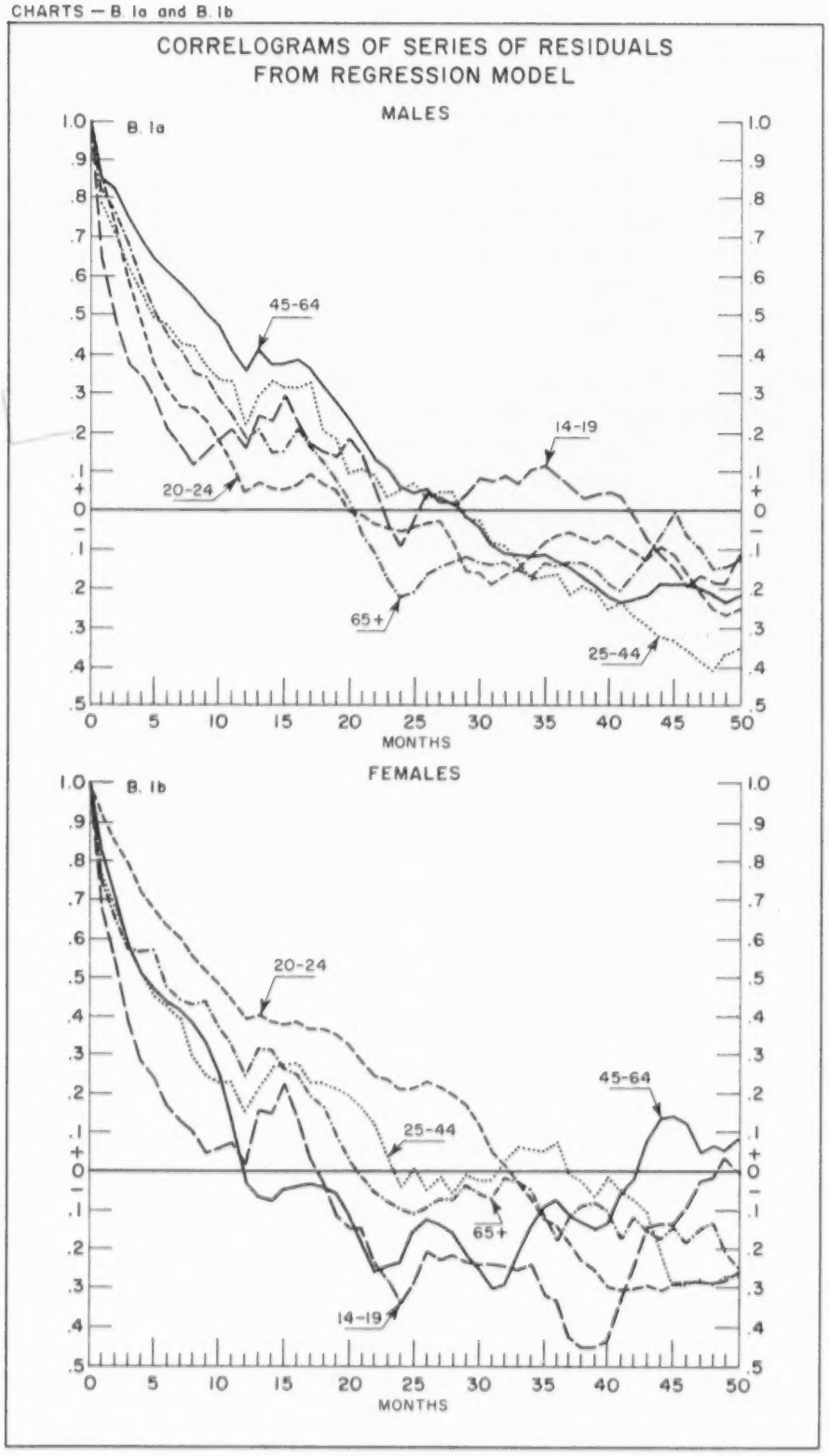
two components – that generated by the sample design and that due to the cyclical variation. Now if the model that has been put forward to explain the demand induced cyclical component has in fact done no more than this then the correlogram of the residuals estimated from the model should at least have some of the general characteristics of the expected correlogram described above – even allowing for uncertainty about the magnitudes of the autocorrelations for different age-sex groups. In addition if there is some cyclical component not picked up by the model then evidence of this might also be observed.

Serial correlations of the series of residuals from the full regression model have been calculated, up to a lag of fifty months, for each of six series (total and five age groups) for males and females separately. These are plotted on charts B.1a and B.1b. Also calculated were the corresponding serial correlations of the original series with only the time trend removed. These are not plotted but in each case where the regression model gave evidence of a significant cyclical response – all series except males 45-64 – the low order serial correlations of the detrended series were appreciably higher.

Turning now to the charts it can be seen that with a lag of one month the serial correlations vary from a low of about 0.65 to a high of over 0.9. These are of course in agreement with the Durbin-Watson statistics given in Table 2 on page 37. Lagged 12 months, the correlations fall to within the range of zero to over 0.4. While, as has been mentioned, there is no way of knowing whether these observed correlograms are significantly different from the "true" correlograms the picture that emerges is one which is not inconsistent with the generally expected pattern, at least for low order lags.

From the point of view of the interpretation of the regression results this is encouraging since there is good reason to believe that those results did not arise out of a spurious relationship between the time path of the explanatory variables and the autoregressiveness in the series introduced by the survey design. In fact, from the longer run picture, there is evidence that for some series additional variation is still present. For females aged 14-19 the high negative serial correlation observed with a lag of about three years suggests that cyclical variation in the series of residuals is present that might have been captured with an improved model. Similarly for females aged 20-24, the high positive serial correlations in the series for lags of even up to two years and more suggest that for this age group also the model has not captured all of the explainable variation.

CHARTS — B. Ia and B. Ib



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LABOR MOBILIZATION: THE MOROCCAN EXPERIENCE.

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IDENTIFIERS - *MOROCCO; PROMOTION NATIONALE

ABSTRACT - THE SHORTAGE OF CAPITAL (BOTH PHYSICAL AND HUMAN) IS A MAJOR BARRIER TO ECONOMIC DEVELOPMENT. LABOR MOBILIZATION IN A PUBLIC WORKS PROGRAM CAN CONTRIBUTE TO CAPITAL FORMATION AND AGRICULTURAL DEVELOPMENT, CREATE EMPLOYMENT, AND SPREAD THE BENEFITS OF GROWTH MORE WIDELY. THIS STUDY REVIEWS AND EVALUATES MOROCCO'S MAJOR WORKS PROGRAM ADDING TO CAPITAL FORMATION, THE PROMOTION NATIONALE (PN). THE EVIDENCE INDICATES THAT PN HAS HELPED TO SPREAD THE BENEFITS OF GROWTH AND ALLEVIATE THE IMMEDIATE EMPLOYMENT PROBLEM, AND TO A CERTAIN EXTENT, IT HAS CONTRIBUTED TO CAPITAL FORMATION AND AGRICULTURAL DEVELOPMENT. HOWEVER, THERE ARE AREAS FOR IMPROVEMENT, ESPECIALLY IN AVOIDING DUPLICATION AND EXCESSIVE CENTRALIZATION OF ADMINISTRATION AND IMPROVING SKILL LEVEL AND MOBILITY OF WORKERS ON PN PROJECTS. (BH)

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LABOR MOBILIZATION: THE MOROCCAN EXPERIENCE

by

Rajaona Andriamananjara

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ABBREVIATIONS

C.S.P.N. = Conseil Supérieur de la Promotion Nationale (Supreme Council of Promotion Nationale).

C.S.P.P.N. = Conseil Supérieur du Plan et de la Promotion Nationale (Supreme Council of Planning and of Promotion Nationale).

D.G.P.N. = Délégation Générale à la Promotion Nationale (General Delegation to Promotion Nationale).

D.R.S. = Defense and Restoration of Soils.

I.L.O. = International Labour Office.

I.V.S. = International Voluntary Service.

O.E.C.D. = Organisation for Economic Cooperation and Development.

O.R.M.V.A.H. = Office Régional de Mise en Valeur Agricole du Haouz [Marrakech] (Regional Office for the Agricultural Development of the Haouz [Marrakech]).

O.R.M.V.A.O. = Office Régional de Mise en Valeur Agricole de Ouarzazate (Regional Office for the Agricultural Development of Ouarzazate).

O.R.M.V.A.T. = Office Régional de Mise en Valeur Agricole du Tafilalt [Ksar Es Souk] (Regional Office for the Agricultural Development of the Tafilalt [Ksar Es Souk]).

P.N. = Promotion Nationale.

S.C.E.T. = Société Centrale [Française] pour l'Equipement du Territoire ([French] Central Firm for the Outfitting of the [National] Territory).

S.R.I. = Stanford Research Institute.

U.S.A.I.D. = United States Agency for International Development.

U.S. P.L. 480 = United States Public Law 480 [basic document for the U.S. surplus commodity disposal program].

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CHAPTER 1

INTRODUCTION

The shortage of capital has always been viewed as one of the crucial bottlenecks in the process of economic development--although recently the emphasis seems to have shifted to the shortage of skilled manpower as the critical area. Whether capital is defined to include only physical capital or also human capital (i.e., training, education, and health), capital formation still constitutes the cornerstone of the theory of, and plans for, economic development. Almost by definition, underdeveloped countries are short on capital. And the way to remedy this shortage is through capital formation.

Section I considers how labor mobilization fits into capital formation. Section II presents an overview of the employment situation and labor mobilization in Morocco. Section III contains a brief outline of the work.

I. The Theory of Labor Mobilization

It is usually assumed that there exist only two alternative sources of capital formation: one is domestic savings; the other is foreign capital inflow either through direct business investment or through international loans and grants. There exists, however, a third possibility which Ragnar Nurkse was among the first to explore systematically in 1953 in his work on Problems of Capital Formation in Underdeveloped Countries (especially Chapter ii).[1] Nurkse starts out with the observation that the underdeveloped countries--and especially, but not exclusively, those with high population density--suffer from large-scale unemployment: even with unchanged techniques of production, a large part of the population engaged in agriculture could be removed without reducing agricultural output. He goes on to note that the surplus people could be taken away from the land and be set to work on producing real capital.

Working on capital projects is only one among three of the possible uses of the underemployed. The other possibilities are either purely

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[1] (Nurkse, 1953).

welfare support work such as leaf-raking, or the direct production of "consumption" goods such as the digging of village wells. Actual programs usually contain elements of all three. Furthermore, even though Nurkse's theory was formulated in terms of rural underemployment, it can be easily applied to urban unemployment and underemployment as well. If the rural underemployed can be set to work on irrigation canals, the urban unemployed can certainly be set to work on low-cost housing.

This process of unorthodox capital formation through labor mobilization is based on the assumption that labor is available for a labor mobilizing works program. This premise, however, gives rise to problems both of definition and of measurement. On the conceptual side, what must be defined are the notions of unemployment and underemployment, since these phenomena are the ones responsible for the existence of a labor surplus, which constitutes a labor reserve: this, in turn, represents the 'virtual' savings, or the potential labor-savings (or épargne-travail). No universally acceptable definitions have emerged so far despite many a conference, study and publication by numerous organisms and individuals. The definition of unemployment used in the more developed countries--whereby a person is unemployed if he or she does not presently hold a job and is looking for work--seems to be gaining international acceptance.[1] It is the concept of underemployment which still remains to be satisfactorily defined. The confusion here seems to arise from the diversity of its manifestations, which has given rise to a multitude of terms to qualify unemployment and underemployment. The most current are visible, invisible, disguised, hidden; they are by no means the only ones.[2] It is not our purpose here to review all of these terms or to introduce new ones. Suffice it to say that they are all intended to describe one phenomenon, namely that in underdeveloped countries available labor is not fully utilized either because the workers are idle part or all of the time, or because they are engaged in low productivity activities. If the concepts themselves have not yet been unequivocally defined, it is to be expected that attempts at measurement

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[1]See (I.L.O., 1959), p. 45. Even this definition of unemployment and its application in underdeveloped countries are, however, being criticized from many quarters. In particular, Myrdal rejects what he calls the "volitional" approach: see (Myrdal, 1968), Part 5 (especially Chapter 21) and Appendix 16.

[2]See (Myrdal, 1968), Appendix 6 for "A Critical Appraisal of the Concept and Theory of Underemployment."

will be less than satisfactory. Myrdal's conclusion on South Asia that data-gathering efforts there have produced results that are far from satisfactory[1] is echoed in a recent study[2] which considered the available data for the underdeveloped countries in general.

For our present purpose it is not important that no generally acceptable definition and measurement scheme has yet been devised for unemployment and underemployment. What is important is that there is agreement among most writers (1) that labor in underdeveloped countries is not fully utilized, and (2) that something can/should be done not only to alleviate the employment problem but also to turn the apparent scourge of unemployment and underemployment into a boon as one of the means to a better future for all. Interest in labor mobilization through works programs in the immediate postwar period stemmed from its potential contribution to capital formation. Some recent developments have given new emphasis to the whole idea. They relate to an increased awareness of the employment problem (associated with the population explosion), a recognition of the importance of agricultural development, a concern about spreading the benefits of growth more evenly, and finally the growing share of commodity aid in foreign aid.

The population problem is directly reflected in the supply side of the employment problem. From 1950 to 1965 the labor force in the less developed countries rose at an annual rate of 1.7 per cent; this rate is expected to go up to 2.2 per cent for the period 1965-1980 and to 2.3 per cent for the decade 1970-1980. These represent massive increases as can be seen by comparing them with the corresponding rates for the more developed countries: 1.1 per cent, 1.0 per cent and 1.0 per cent, respectively.[3] By themselves however these large increases on the supply side would not represent a very serious problem if they were offset by at least equivalent increases on the demand side. This condition has not been, and in the near future is not likely to be, satisfied in most underdeveloped countries. In particular the non-agricultural sectors, although they have grown faster than agriculture, have not provided employment at a corresponding rate. Thus for all less developed countries, whereas output in

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[1] (Myrdal, 1968), p. 1027.

[2] (Turnham, 1970), p. 10.

[3] (Turnham, 1970), Table 5, p. 34.

industry rose at the rate of 7.1 per cent in the period 1955-1965, employment in that sector increased by only 4.4 per cent.[1] That is, while the supply of labor has grown (at an accelerating rate), the demand for it has not grown nearly as fast. The gap between the two will continue to widen unless something is done to control the population/labor force growth rate on the one hand and, on the other, to provide more jobs. Works programs are directly related to the second aspect. In the short run they provide temporary jobs at least to some of the unemployed and underemployed. In the long run it is hoped that the work accomplished through them will create more jobs, and permanent ones.

The emphasis on the employment problem has led to some rethinking about the entire strategy of development. Formerly it used to be that most plans would incorporate a massive effort toward industrialization. Such a strategy did not always create enough jobs although in some cases it may have been successful in achieving the desired output target. This is why many observers have now come to the conclusion that agricultural development must play a prime role in improving employment prospects in underdeveloped countries.[2] The rediscovery of agriculture adds even more importance to works programs.

Not only can a works program contribute to an increase in capital formation and employment, but it can also represent a way of "spreading" the benefits of economic growth more widely among the population. In fact there is an increasing concern, among development theorists and policy makers alike, that the "quality" of growth may be as important as its quantity. That is to say, the already highly skewed distribution of income[3] should not be allowed to be accentuated further. The spreading effects of the works program are to come partly from the wages (if any) and other incomes that it distributes directly, but mostly from the effects of these expenditures on the future productive capacity of the agricultural sector.

Finally, another factor in the renewed interest in works programs is the growing share of commodity aid (especially food aid) in foreign aid.

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[1] (Turnham, 1970), Table 1, p. 131.

[2] (Turnham, 1970), p. 162.

[3] For some quantitative information on income distribution, see (Turnham, 1970), pp. 97-108.

To take a specific example, in Morocco the average share of food aid in total aid rose from 25.2 per cent in the period 1960-1965 to 38.8 per cent for 1966-1969.[1] This increasing proportion of food aid may represent an unfortunate turn of events from the viewpoint of the aid recipients. They must nevertheless adjust to this new--and probably lasting--development by making good use of food aid. One way of doing so is through a works program. To put things in very simple terms, a small-works program of the type discussed above requires (at least) four distinct elements: the laborers; administrative, technical and supervisory staff; tools, materials and equipment; and food to feed the workers. The laborers are to come from the labor reserve. The staff, tools and materials will have to be provided by the government from its own resources, increased taxation, or through external assistance. As for the food, it can originate from three alternative sources. One is domestic procurement, which is a form of taxation. Another is commercial food imports. And the third is foreign food aid.

In summary, the importance of a works program stems from its (potential) contribution to capital formation and to agricultural development, the creation of present and future employment, its role in spreading the benefits of growth more widely, and the availability of food aid.

II. Labor Mobilization in Morocco

Morocco represents almost a textbook example with respect to the preconditions for labor mobilization. During the preparation of the first Five-Year Plan (1960-1964), the employment picture was found rather dismal due to the combined actions of two factors: on the one hand, the high (Muslim) population growth rate (at 2.9 per cent per year) results in a fast increase of the labor force (at over 2 per cent per year); on the other hand, the expected growth of the industrial and other non-agricultural sectors would not create enough employment to absorb even just the addition to the labor force. In fact the 1960-64 Plan estimated that the number of unemployed and underemployed would be greater at the end than at the beginning of the planning period.

On the basis of Plan figures, the rate of urban unemployment and

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[1]These figures are computed from the data shown on Table A4.5 in Appendix 4.

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rural underemployment can be computed to be, respectively, 29 per cent and 52 per cent by 1965, as shown on Table 1.1. The definition of labor force

Table 1.1 — The 1965 Employment Situation in Morocco
(estimated in 1960)

Sectors	Labor Force (number) (1)	Unemployed or Underemployed (number) (2)	Rate of unemployment or underemployment (percent) (3)
Non-agriculture	1,940,000	570,000	29.38
Agriculture	3,390,000	1,750,000	51.62
Total	5,330,000	2,320,000	43.53

Sources: (1) (Plan 1960-64), p. 50.
(2) (Plan 1960-64), p. 54.
(3) Calculated: (3) = (2)/(1).

(or active population) recommended by the United Nations is the one used in Morocco: the active population includes all persons working or seeking work during a given period.[1] Morocco has also adopted the standard definition of unemployment.[2] As for underemployment the figure is obtained according to the labor surplus approach. This is one of the most widely used types of measurement. It compares the maximum labor input that the existing labor force could supply with the minimum labor input needed to achieve the present output. The difference between the two represents the labor surplus or labor reserve (expressed in man-days or man-years). This approach suffers from many shortcomings, which need not be dwelled upon here.[3] But it is the most relevant insofar as the theory of labor mobilization is concerned. The actual method used in Morocco[4] assumes that an adult man can provide 250 workdays annually and an adult woman 150 workdays. The number of man-days required for a unit of each agricultural activity is

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[1] (Recensement 1960, II), p. 165.

[2] See for instance the instructions given the census takers in 1960: (Recensement 1960, II), p. 167.

[3] The labor surplus approach as well as alternative approaches to measurement are discussed in (Myrdal, 1968), Chapter 21 and Appendix 6: and (Turnham, 1970), pp. 10-19 and Chapter III.

[4] This is described in (Plan 1960-1964), pp. 51-53; and also in (Tiano, 1963), pp. 10-13.

then computed. Given these two sets of data on the one hand, and the labor force and the levels of the various activities on the other, estimating the magnitude of underemployment becomes a matter of simple arithmetic. In 1960, rural underemployment was put at 300 million man-days, out of a total potential labor supply of 670 million. The underemployed men alone could provide 140 million.[1]

These figures must, however, be treated with extreme caution. As was previously mentioned, the concept of underemployment--let alone its measurement--cannot be easily and satisfactorily defined. One of the main sources of difficulties is that most definitions attempt to transplant Western (industrialized society) concepts into non-Western settings. In particular it is usually assumed that a given activity constitutes employment only if it is obviously productive. And "obviously," if people spend their time, say, just visiting each other or going from festivities to festivities, they are not productively employed. The next step in this line of logic is that, therefore, any time which is not spent on formal work--after allowing a given number of days for nonproductive activities--is being wasted, and could be utilized in a more productive fashion.

In the context of the Moroccan countryside, and probably in most "traditional" societies, such a reasoning is usually quite unrealistic. Take the case of the peasant in the Haouz plain around Marrakech,[2] an area which is quite typical of most arid and semi-arid regions of Morocco. The principal characteristic of agricultural activity in this region is that the means of production are separately owned by various people: one owns a piece of land, the other the water rights, a third one the draught animals, another the seeds, and still another one the financial means, etc. What the vast majority of workers have is their labor. Each year associations for production are formed among the owners of the various means of production; and each year they are dissolved after the harvest. The formation of these associations--truly a challenge to entrepreneurial spirit--necessitates long negotiations among the various owners and last several weeks in September-October before the start of the plowing season. With his very limited--if any--financial resources, the farmer usually cannot

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[1] (P.N. au Maroc, 1964), p. 19.

[2] This area has been studied in detail from the viewpoint of the rural employment problem in (Pascon, 1966), Parts I and II.

afford to buy the means of production. Whether or not he becomes a tenant or a mere laborer thus depends a great deal partly on his negotiating skills and, at least to an equal degree, on his social and personal relations with the owners who might lend him their productive factors. Cultivating these relations, especially during the period of negotiations, is thus particularly important. Any casual observer, seeing these farmers apparently idle, talking among themselves while waiting to exchange a few social amenities with landowners, might conclude that they are wasting their time, that they are "under-employed," etc.... But are they really? It is true that during this period, all the comings and goings, all the talking do not appear to be directly productive in terms of immediate output or income. Consider, however, the alternatives that confront these farmers. A farmer could go and work somewhere else, let us say on a P.N. worksite, and earn DH 4.00 per day.[1] But if he did so, another who stayed at the village might improve his chances of getting the land. Supposing this second one does conclude the association with the landowner, then how does the first one stand? He earned DH 4.00 for the one day he worked on Promotion Nationale, but what he lost was a chance to have as much as half of the next harvest if he had stayed around and succeeded in becoming a tenant or sharecropper. Thus insofar as each individual farmer is concerned, the expected value of his time is not zero: it is positive and may even be quite high.

In view of these considerations, one may quarrel with any figure on underemployment in Morocco--and in any country for that matter. The official estimate of over 50 per cent underemployment appears to be rather high. Nevertheless hardly anybody would argue that the problem is non-existent. This is in part what has led the Moroccan government to initiate some form of labor mobilization in the early 1960's.

Morocco is among the few underdeveloped countries with a truly systematic program designed to make use of the unutilized labor force.[2] It has in fact several programs. The Entraide Nationale (or National Mutual

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[1] DH = dirham: U.S. $1.00 = Moroccan DH 5.05.

[2] Other recent experiences of labor mobilization include those in China, "community development" in India, the Rural Public Works Program in East Pakistan, the various programs of animation rurale and service civique in French-speaking African countries, and the successors to the "worksites for unemployment" in North Africa. They have met with varying degrees of success.

Help) includes a self-help part (building of schools, orphanages, etc.) but is mainly a welfare undertaking. It receives U.S. P.L. 480 commodities through the agency of the Catholic Relief Service and the American Joint Distribution Committee. The Community Development program built 6024 housing units during the 1965-1967 Plan period.[1] The World Food Program is also active: besides financing a large school lunch program, it has participated in several rural housing projects. Under the 1968-1972 Plan its activities will increase substantially. It will take part in the construction of 90,000 rural dwelling units, mainly through the provision of foodstuffs as wage payments. The Moroccan government will put up DH 100 million in cash for this program.[2] Finally there is the Promotion Nationale program which has been in existence since 1961: the 1968-1972 Plan provides for a cash expenditure of DH 451.7 million[3] for it. This study will concentrate exclusively on Promotion Nationale for various reasons. First, it is the program with the longest continuous existence. Secondly, through the nature of work undertaken, it constitutes a works program designed to add to capital formation--to a much higher degree than the other programs. And, finally, it was by far the biggest program in the 1960's, and will remain so in the future, both in terms of total expenditures and of man-days employed.

III. Plan of Work

The present study is an attempt to review and evaluate the performance of Promotion Nationale in its ten years of existence. The next chapter describes the aims and the workings of Promotion Nationale, and its institutional framework.

Chapter 3 analyzes in detail a series of ten projects realized under the Promotion Nationale program.

Chapter 4 examines the impact of Promotion Nationale on the population in general and on the Promotion Nationale labor force in particular: it will rely heavily--but not exclusively--on the results of a survey of Promotion Nationale workers conducted in the region of Goulmima, Province of Ksar Es Souk.

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[1] (Plan 1968-1972), Vol. II, p. 731.
[2] (Plan 1968-1972), Vol. II, p. 732.
[3] (Plan 1968-1972), Vol. II, p. 174.

Chapter 5 attempts to define the impact of Promotion Nationale on the national economy through the various aggregates: a linear programming model will be developed.

A concluding chapter presents an overall appraisal of Promotion Nationale.

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CHAPTER 2

THE AIMS AND ORGANIZATION OF PROMOTION NATIONALE

Prior to 1961, the government of Morocco had opened "worksites for the relief of unemployment" (chantiers de chômage) from time to time. These worksites were designed to meet localized emergency conditions, especially in times of severe droughts or floods. The work was concentrated in urban areas or on country roads and, as a rule, had little or no economic value. In essence these early worksites were a way of disguising charity, of channeling an income supplement to the "worker" without making it too obvious. An effort was made to change this state of affairs at the beginning of the 1960's.

The conditions leading to the creation of Promotion Nationale, and the role and goals assigned to it are reviewed in Section I. The institutional framework is described in Section II. Some comments on the existing organizational structure are offered in Section III.

I. Role and Aims

In the early part of 1961 the country was faced with a particularly severe drought. As had been usual up to that time, "worksites for the relief of unemployment" were opened in various parts of the country in the spring. One thing had changed, however, namely the existence of a new awareness of and concern about not only urban unemployment but also rural underemployment as well. During the preparation of the First Five-Year Plan (1960-1964), in considering the employment situation the planners came to the conclusion that unemployment and underemployment constituted the most serious social and economic problems in Morocco.[1] Various means could be used to improve the situation. Among other things, the planners proposed that the worksites be turned into a more productive venture. This recommendation was implemented. On July 15, 1961, a royal decree (dahir no. 1-61-205) created the Promotion Rurale program which, a few months later,

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[1] (Plan, 1960-1964), p. 55.

became Promotion Nationale.[1] The change from simply "rural" to "national" probably indicates that the action was to encompass the urban unemployed as well as the rural underemployed. Thus, at least in its origins, Promotion Nationale (P.N.) was an undertaking designed to make the best out of a bad situation: since the unemployed or underemployed received an income supplement from the government anyway, why not require from them some compensation under the form of labor contribution?

Promotion Nationale was born in the emergency drought conditions of 1961. But it had deeper raisons d'être than these short-term circumstances. There exist at least three sets of interacting reasons: the importance of rural underemployment and urban unemployment; the poverty of the marginal regions; and the existence of possible activities which were both simple and productive. With all due reservations, it may be reiterated that the official estimates put the rate of rural underemployment at around 50 per cent in Morocco (see Table 1.1). In particular in 1960, out of a potential supply of 670 million man-days, 300 million remained unused--with the men accounting for 140 million. Of these, 80 million were located in what is known as marginal regions.[2] This brings in the second factor in the creation of Promotion Nationale, namely the existence of marginal regions. In Morocco, the term "marginal regions" is used to designate the Saharan and the mountain (especially Rif) provinces. These areas are marginal in two senses: they are mostly border provinces and, more importantly, they are poorer than the other provinces because they have been left at the margin of the general economic development. In general they are under-equipped in terms of infrastructure (relative to the provinces of the plains and the Atlantic) and they have the greatest number of underemployed. This disequilibrium among the various parts of the country could create serious economic, social and political problems. Promotion Nationale was partly designed to remedy this situation. Finally, before the unemployed and underemployed could be usefully put to work, it was necessary to find areas

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[1]Throughout this study the term "Promotion Nationale" is used in its original French form. The reason is that no English equivalent was deemed satisfactory for conveying the intended meaning. Phrases such as "National Development Works" translate only a part of the meaning. In this context, "promotion" does indeed imply development; but it also includes a sense of improvement in the quality of life and an uplifting of the population's value and skills that the word development usually does not carry.

[2](P.N. au Maroc, 1964), p. 19.

of action where this type of intervention would be appropriate. The projects would have to be technically simple, would require relatively little capital investments and a lot of unskilled labor, and they must not be completely unproductive like the worksites for the relief of unemployment. Such areas of action were/are quite numerous in Morocco: the fight against erosion on over 3 million hectares, new or improved irrigation for 3.25 million hectares, infrastructure works (roads, tracks), and equipment or community works (wells, cattle shelters, community buildings)[1]--these are only some of the more obvious possibilities. The availability of these relatively simple and yet productive (at least for the first two groups) projects, together with the need to do something for and in the marginal provinces and the widespread prevalence of unemployment and underemployment, constitute the official reasons which prompted the initiation of Promotion Nationale in Morocco.

The proclaimed aims[2] of Promotion Nationale have essentially remained unchanged from 1961 to 1970. It is stated that Promotion Nationale's "mission" is fourfold: to mobilize the rural underemployed; to associate the population to the development effort; to slow down the migration to the urban areas by improving the economic and social conditions in the countryside; and, finally, to develop the road infrastructure of the marginal regions.[3] It must be noted that this fourth aim no longer appears in the latest (June 1970) statement. It is not clear whether its nonappearance signifies that this consideration will be ignored in the preparation of future P.N. programs.

The place of Promotion Nationale in the economic development of Morocco can best be understood by putting it properly in its role as a part of the effort to develop the rural areas in general and the agricultural sector in particular; and also as an effort to involve the population in the development action. The former can be seen to be directly economic; but the latter, though indirect, is no less economic. Thus to determine

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[1] (P.N. au Maroc, 1964), p. 15.

[2] These aims are repeated in almost all official Promotion Nationale publications. Among the earlier statements see (P.N. au Maroc, 1964), or (P.N. Bilan, 1961-1966). The latest statement available at the time of writing appears in (P.N. Aide-Memoire, 1970).

[3] (P.N. Bilan, 1961-1966), p. 1.

the place in national economic activity of Promotion Nationale over its ten-year existence, one must look at the priority ranking given in the successive Plans to agriculture, the mobilization of the population, and the concern with the employment (and thereby the population) problem. Briefly stated, the first Plan[1] (written in the late 1950's) recognizes and analyzes in some detail the conditions that made the initiation of an undertaking such as Promotion Nationale imperative. As a result Promotion Nationale was created in this Plan period, and the idea of Promotion Nationale gained increasing acceptance among technicians and administrators. The second Plan[2] reaffirms and consolidates the existence and role of Promotion Nationale. The third[3] continues the work, eliminates the less productive or nonproductive projects and tries to expand P.N. activities in the more profitable areas.

II. The Institutional Framework: A Description

Before examining the results and performance of Promotion Nationale, it is necessary to know how it works on the institutional side. The P.N. projects can be classified according to either of two different schemes: one is functional (in terms of the kinds of projects), the other is administrative (in terms of who administers the project). The functional classification is left for discussion at a later time. The administrative groupings are presented here first by way of an introduction to the institutional aspects of Promotion Nationale.

During the first two years, P.N. projects were administered directly by the provincial and local authorities, with some occasional advice from the technical services. Starting in 1963, probably in an effort to elicit a greater degree of involvement and interest in Promotion Nationale from the various technical services, the P.N. program was divided into two parts. Part I projects are run by the technical services[4] as part of their regular

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[1] (Plan, 1960-1964).

[2] (Plan, 1965-1967).

[3] (Plan, 1968-1972).

[4] The term "technical services" refers to the operational ministries or departments. Those which are specifically involved with Promotion Nationale projects include (1) the Water and Forestry Service, (2) the Direction of (Agricultural) Land Development, (3) the Public Works Service. The Local Authorities, the Provincial Services, and special programs such as the

programs. The technical service pays all cash expenditures out of its own budget. These include the cash wages of skilled and unskilled workers, small equipment, supplies and transportation. Promotion Nationale provides only the payment in kind. Part I is also known as Category A. Part II projects require the technical approval of the relevant technical service, which also may--but does not have to--provide some technical supervision during their execution. But they are run by the provincial and local authorities and financed directly by Promotion Nationale itself on its special budgetary account. Part II projects are divided into three different groups. For Category B, Promotion Nationale incurs all expenditures, both in cash and in kind. Under Category C the unskilled workers receive only a payment in kind and no payment in cash; the wages of skilled workers and all other cash expenditures are paid by Promotion Nationale. For Category D, the unskilled workers receive no payment at all; Promotion Nationale pays the skilled workers and other expenditures.

At the time of the creation of Promotion Nationale, two main principles governed its institutional aspects: "maximum administrative simplification" and "permanent links with the Provinces." An effort was made to keep the administrative machinery to the strict minimum because the creation of a new service would have involved an additional demand for scarce skills and further expansion of an already complex system.[1] The P.N. institutions and their functions are specified in detail in the royal decree creating Promotion Nationale.[2]

At the national level the Conseil Supérieur de la Promotion Nationale or C.S.P.N.--which later became the Conseil Supérieur du Plan et de la Promotion Nationale or C.S.P.P.N.--is chaired by the King. It includes all ministers and public administrators whose departments are in any way concerned with the conception, formulation, financing, and execution of Promotion Nationale programs. This means that practically all ministers and administrators of public agencies sit on the C.S.P.N. This Council was

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D.E.R.R.O. (Développement Economique et Rural du Rif Occidental) are also usually listed as "technical services" in the classification of projects under Promotion Nationale.

[1] (P.N. au Maroc, 1964), p. 26.

[2] This decree is reproduced as an annex to (P.N. au Maroc, 1964), pp. 190-191.

originally scheduled to meet in May for the purpose of approving the Promotion Nationale program for the following fiscal (or agricultural) year. Since 1965, however, the programs are for the calendar rather than the fiscal year, and the S.C.P.N. usually meets a little earlier than May. In fact in the last few years the C.S.P.N. (or C.S.P.P.N. later on) has met twice a year: first, late in the year to establish the P.N. program for the following year; and second, early in the year to review P.N.'s performance in the previous year.

A permanent secretariat was established to keep Promotion Nationale working during the rest of the year when the S.C.P.N. is not in session. This Délégation Générale à la Promotion Nationale (D.G.P.N.) is headed by a Delegate General appointed by and directly responsible to the King, whose functions are to present yearly reports, to prepare and submit annual drafts-programs, to see that the decisions of the S.C.P.N. are duly and properly executed. This involves coordinating the Promotion Nationale activities of the various technical services and keeping in touch with the provinces. The Delegate General is assisted in his task by a small staff; he can also appeal to a Technical Committee made up of representatives from the various technical services. The D.G.P.N. as an agency was originally on its own. Later on it was transferred, successively, to the State Secretariat for Planning (at which time C.S.P.N. became C.S.P.P.N.), and to the Ministry of Agriculture and Agrarian Reform. Finally in late 1969 it became a co-ministry in the Ministry of Promotion Nationale and Handicrafts. (Thus the old D.G.P.N. and Delegate General are formally no longer in existence.) These various changes could be interpreted as an increase in the attention devoted to Promotion Nationale and the problems underlying its existence. But in terms of staff, they have involved very little--if any--expansion. As the organization stands in 1970 the Ministry consists of two separate divisions: one for Handicrafts, the other for Promotion Nationale. The Promotion Nationale Division is made up of an Accounting Section and a Planning Section; the latter, in turn, consists of the "Planning" Office, the Study Office, and the Preparation Office.

At the provincial level,[1] the governor chairs the Provincial Council

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[1]The administrative divisions of Morocco are, from the top down, the province (headed by a governor), the cercle (headed by a supercaïd), the caïdat or commandement (headed by a caïd). Then come the communes, which elect municipal councils.

of Promotion Nationale, made up of administrators, representatives of the technical services, and elected representatives of the communes. He is responsible for the drafting of an annual P.N. program for his province and for the proper execution of the approved program. The day to day operations are supervised by a caïd who heads the P.N. section in the governor's office. (This role was formerly assumed by an army officer.) At the local level the supercaïd, in consultation with the local representatives and the technical services, draws up the program request for Promotion Nationale and assures that the projects are properly executed.

What has just been presented may be called the backbone of P.N. institutions. There exist limbs to this body which also play vital roles. There are, first of all, the technical services which carry out Part I of the P.N. program as mentioned earlier. The technical services function in a way similar to the central part. At the national level the ministries have a P.N. section. Then the provincial technical service has a P.N.-Bureau. Finally there are local "technical service - Promotion Nationale" agents. As an example one may consider the case of the Office Régional de Mise en Valeur Agricole du Haouz or O.R.M.V.A.H. in Marrakech, which depends on the Ministry of Agriculture. (The province of Marrakech has six cercles; the O.R.M.V.A.H. has operations in four of them.) The Promotion Nationale Bureau of the O.R.M.V.A.H. is headed by an agent technique who is a full-time civil servant. He directs all P.N. activities of the O.R.M.V.A.H. Each cercle has one adjoint technique and one conducteur de travaux, both full-time civil servants. The adjoint technique prepares the fiche technique which contains a very simple kind of technical feasibility study for each project, and supervises the O.R.M.V.A.H.'s P.N. activities in his area. In addition, another adjoint technique at the central O.R.M.V.A.H. - P.N. Bureau acts as a secretary-treasurer-record keeper. The conducteur de travaux supervises the actual day to day work on the projects and ensures that the work conforms to the blueprint shown in the fiche technique. He has usually been trained at the School for Conducteurs de Travaux in Rabat. Finally, on each project, the worksite leader or chef de chantier is a permanent employee of O.R.M.V.A.H.--although some chefs de chantiers are occasionally recruited from private enterprises when there are a great many worksites in operation.

Another limb to the central body of Promotion Nationale institutions is made up of the apparatus for handling the payment in kind (the payment

in cash being handled by the central body and the technical services). Payment in kind means mostly wheat and, earlier, flour or other cereal-based foodstuffs. The unskilled worker receives five kilograms of wheat per day (the equivalent of DH 2.00). Prior to March 1969 the totality of the payment in kind came from the U.S. P.L. 480 program. Now four kilograms are supplied through P.L. 480 and one by the Moroccan government. The handling of the wheat, from dockside to project site, has been assigned to the Cereals Board or Office Chérifien Interprofessionnel des Céréales, with a central office in Rabat and branch offices in the provinces. This office enters into contractual agreement with the Office National des Transports to ensure timely deliveries of wheat to sites and in amounts specified by the Promotion Nationale Division in Rabat. In fact the wheat is received by, stored in, and delivered from local agricultural cooperatives--the Sociétés Coopératives Agricoles Marocaines and the Coopératives Marocaines Agricoles.

This completes the description of the formal P.N. institutional framework.

III. The Institutional Framework: Comments

The most outstanding feature of the whole organization is that, except at the very bottom, the administration of Promotion Nationale occurs mostly as an appendix to the normal activities of all departments involved or at least as one among many responsibilities of the persons dealing with it. Although originally designed for Promotion Nationale only, the C.S.P.P.N. now has an economy-wide scope and Promotion Nationale receives very little attention.[1] Similarly the Ministry is shared by Promotion Nationale and Handicrafts. For the governor and supercaïd, Promotion Nationale is only one activity--probably a minor one so far as they are concerned--that is to be performed besides their primary administrative and other roles. Thus for most offices and people involved in its administration, Promotion Nationale is a part-time activity. This basic fact has many far-reaching implications which in the end determine whether P.N. projects will succeed

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[1] In fact the Conseil Supérieur du Plan et de la Promotion Nationale has now become an organ for reviewing the yearly execution of the Plan. Promotion Nationale does not even have a separate specialized commission of its own but has to share one. The various commissions of C.S.P.P.N. are for (1) Promotion Nationale and Handicrafts, (2) Culture, (3) Tourism, (4) Commerce, Industry, Energy, Mines, Sea Fishing, and Merchant Marine, (5) Education and Training of Cadres, Health, Youth, Sports and Justice, (6) Infrastructure, Transportation and Housing, and (7) Telecommunications and Moroccan Radio-Television.

or fail.

First, as a general rule, Part I projects (run by the technical services) work better than Part II projects (run by the local authorities). This is certainly because of continued technical supervision of the former, but also because in general the local authorities and the supercaïd do not have much time to devote to the supervision of the latter.

Secondly, confusion results even among people who are part of the P.N. machinery as to the proper procedures, despite many a memorandum. The aspect that has most often given rise to confusion concerns the proper channels for and timing of sending the "opening notice" before a given worksite is initiated. A certain rigidity in that area results in longer and longer delays in the payment in kind.[1] Such a situation in general produces a crisis, and only then will it be remedied. (The effects of such delays on the specific project and on other future P.N. projects are quite detrimental: low productivity due to low morale, strikes, and workers' fleeing P.N. work--these are only a few.)

Thirdly, there exist some duplications in the present institutions. One instance of duplication resides in the fact that, to effect the cash payments, the technical services and the local authorities have each their own paymasters. This is certainly a waste of scarce resources, since the paymaster of one service cannot be "lent" to another, and paymasters are far from being in excess supply. It also produces delays in the payment in cash. Another sort of duplication resides in the fact that, at least for Type A projects, the payments in cash and the payments in kind are handled by two different offices. Surely this is wasteful, and the two ought to be put into one hand. This proposal would be opposed by each office, however. The local authorities are reluctant to turn control of the payment in kind to the technical services because that would take away one means of political control over the workers. Similarly the technical services would be most inimical to the idea of turning control over part of their budgetary credit to an outside authority.

Thus the existing institutional system is not close to being free of faults. It is not devoid of merits, however. One that deserves to be

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[1] It must be noted that this particular rigidity in turn derives directly from the fact that the wheat used as payment in kind comes in as foreign aid which has to be accounted for: hence the need for control, entailing lengthy and voluminous bookkeeping.

mentioned is the introduction of the "P.N. way" to the technical services: the technical services now think of Promotion Nationale as a way of doing things--a labor-intensive technique. This adoption and acceptance of the "P.N. way" by the technical services represents no small achievement: it militates against any radical remodeling of the existing institutional framework.

Nevertheless, two questions must be asked and tentative answers provided. The first is: Can the existing system be improved? The answer is undoubtedly that it can, and even that it should in order for Promotion Nationale to continue its work with an acceptable degree of success. The second question then is: How could it be improved? There are at least two alternative answers depending upon whether one takes a piecemeal or an integrated approach. The piecemeal approach would consist in trying--through localized and limited reforms--to attenuate existing rigidities and defining more clearly the lines of responsibility and rules of procedures. The integrated approach would accomplish these aims, and others as well, by the formal bringing together into one department of all the dispersed elements of the P.N. apparatus. This formal step need not involve the creation of new jobs, recruiting of new staff members, or incurring any new budgetary expenditures. The elements of this new unit--which might be called the Promotion Nationale Service--already exist. The administrator is there in the form of the provincial P.N. caïd. The technicians likewise are already there in the various technical services. The concentration of the administrative function in one unit might even result in some economy in manpower because some of the personnel now running the P.N. programs of various technical services would be freed for other duties. The same applies to financial resources as to manpower. No new expenditures will be created. What will happen is simply a partial transfer of credit from some of the old technical services at least insofar as the budget is concerned. It may be noted that the first and most important step in the formation of a separate P.N. apparatus has already been taken. This occurred when in late 1969 Promotion Nationale, together with Handicrafts, was erected into a ministry of its own for the first time. In effect the present proposal consists only in advocating that the logical next step be taken in formalizing the existence of Promotion Nationale.

In addition to the merits already stated one may mention several beneficial effects of the integrated approach. One of the first results

will be the attentuation or elimination of the major problems in the existing setup. There will be a clearer definition of the lines of responsibility, a reduction in the friction arising from the unduly large amount of paperwork as well as a reduction in unnecessary duplications of functions. Secondly it implies that the staff will deal with and only with Promotion Nationale and on a full-time basis. This may reduce or entirely eliminate the existing lack of interest which is sometimes exhibited by some--either intentionally, or unintentionally because they are already overburdened with their other responsibilities. Thirdly, the proposed setup will lessen the load on these overburdened officials; they might then perform their other functions more efficiently.

But there are also some problems associated with the proposal. One is that Promotion Nationale would then simply become another technical service, fighting for its share of the budgetary pie like the other technical services, with no guarantee that it will not be outcompeted and, as a result, that the effort devoted to the "P.N. idea" will not be drastically reduced. Secondly, the formalization of Promotion Nationale as a separate entity will probably be interpreted by the other technical services to mean that they no longer will have to make an effort to use the "P.N. way" as much as possible. They will then adopt capital intensive methods and the net result, despite the existence of Promotion Nationale, might be a smaller volume of employment than is achieved under the present system. Thirdly, at the local level there may be competition between Promotion Nationale and the other technical services. Unlike at the national level, competition here will be not for financial resources but for labor, especially skilled labor. Here too Promotion Nationale might not come up on top; and if the present Promotion Nationale wage rate were to be kept, it will surely be the loser as it now is in many areas where worksites of the technical services and of Promotion Nationale exist simultaneously and side by side.

Thus the institutional reform proposed here should not be carried out in isolation. It affects the very nature of Promotion Nationale. Consequently it must be envisaged in the entire context of the P.N. experience. A change in the institutions will be of little or no use unless accompanied by the appropriate adjustments in the various aspects of Promotion Nationale. Among these aspects one may include a clearer definition of the goal of Promotion Nationale at the national level (e.g., employment

vs. productivity), a systematization and standardization of the criterion of choice among projects and of allocation of funds at the local level, and finally a revision of the remuneration system. This last aspect would involve the examination of two questions, namely those relating, first, to the payment in kind and, secondly, to the level of wage rates (which is generally acknowledged to be too low).[1]

The problems associated with the present proposal can by no means be ignored. But in our opinion they are not enough to outweigh the merits of the proposed system. The piecemeal approach will work only as a stop-gap measure, and may for instance be used to gain time to study the problems mentioned and find remedies to them. In the end, however, the overall approach will impose itself as being both necessary and desirable for the continuation of the "P.N. way" as an efficient and profitable proposition.

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[1]See Chapter 4 below.

CHAPTER 3

THE PROMOTION NATIONALE PROJECTS

The types of projects undertaken under the P.N. program can be grouped under three main headings: land improvement (or mise en valeur), road building or infrastructure, and community works or equipment. Land improvement includes all those projects relating to the retention of soil, the extension of cultivable land and/or grazing area, and the control and use of waters. They all have an impact on the conditions of production in the agricultural sector, either directly as in the case of small- and medium-scale irrigation, or indirectly as in the case of reforestation and "defense and restoration of soils" or D.R.S. Under infrastructure are grouped all those projects which involve the building or maintenance of dirt roads. Finally, equipment refers to various types of construction activities either in the urban areas (e.g., sewage systems) or in the rural areas (e.g., marketplaces) or in both (e.g., health centers, schools).

Ten projects will be analyzed here. All fall under the heading of land improvement. Three are of the small-scale irrigation type (Group I), four of the medium-scale irrigation type (Group II), and three are D.R.S. projects (Group III). There are several reasons why only land improvement projects and why these specific projects were chosen for detailed study. First, land improvement constitutes the economically more interesting part of Promotion Nationale: they are the P.N. projects which can be considered to be in the nature of directly productive investment. Secondly, the effects of land improvement projects are more readily measurable than those of infrastructure or equipment work. A third reason is simply that it was possible for me to visit these projects--and many others similar to them--and to interview the people directly concerned by their effects. Finally, one may also cite the fact that for a few of these projects the necessary data had already been presented, at least partially, in various reports and/or could be derived from such reports.[1]

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[1]Projects 05, 06 and 07 have been studied in (S.C.E.T., 1966 b); part of Project 08 (Ajdir III) was analyzed in (I.V.S., June 1969).

The methodology to be followed is presented in Section I. The projects and the elements of the analysis are described in Section II. Section III presents the results, compares them with the results of other studies, and puts them in the proper perspective.

I. The Methodology

The aims of this analysis are twofold. One is to evaluate each project in order to find out whether it was an economically worthwhile undertaking. The other is to compare the projects in the three groups considered here. These two aims do not explicitly or directly contain any attempt at choosing among the various projects. There is no longer anything to choose since they have been completed. However, the methodology developed here can certainly be applied to future projects to establish the best combination of alternative projects.

The evaluation and comparison of different projects can be accomplished with three measures or criteria:[1] the present value, the benefit-cost ratio, and the internal rate of return. One criterion is more appropriate than the other two depending on the situation under consideration.[2] The criteria used in the present study are the benefit-cost ratio and the internal rate of return.

The benefit-cost ratio is defined as the discounted present value of benefits over the discounted present value of costs or, in mathematical notation,

$$\frac{B}{C} = \frac{\sum_{t=1}^{N} \frac{B(t)}{(1+d)^t}}{\sum_{t=1}^{N} \frac{C(t)}{(1+d)^t}}$$

where B(t) = the benefits from the project in year t,

C(t) = the costs of the project in year t,

d = the discount rate, and

N = the length (in years) of the period of analysis.

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[1]The main points in the theoretical development of this type of project analysis can be found in (Eckstein, 1958), Chapters III-IV and (McKean, 1958), Part 3. An overview of this field is provided by (Prest and Turvey, 1967).

[2]The respective advantages and weak points of the different criteria have given rise to much controversy. For a concise statement, see (Seagraves, 1970), pp. 438-439.

The ratio of present values is preferred to the alternative form--the ratio of annual benefits to annual costs--because of the peculiar time structure of benefits and costs for the projects under study. For all of them the costs are considerable in the first few years and become almost negligible a few years later. The benefits, on the contrary accrue only slowly at the beginning and in large magnitudes later on. This asymmetry can be attributed to the agricultural nature of the projects (e.g., fruit trees must be x years old before they start producing, and y years old before they reach maturity output) and, in some cases, to the assumptions made regarding the time lag between a given investment and the resulting increase in production. If the ratio is greater than unity, the project can be said to be profitable or economically justifiable in the sense that over time it generates more resources than it uses up. The benefit-cost ratio can of course be used to compare, i.e. to rank, various projects. However, given that the streams of benefits and costs do not necessarily have the same time paths from one project to another, the ranking will not be unique. It will vary with the discount rate being used. Projects whose costs are concentrated in the early years and benefits in later years will rank very low for high discount rates, and high for low discount rates. This makes any comparison based on the benefit-cost ratio highly unreliable in the sense that it does not provide a unique ranking among different projects. Hence the need for a criterion giving a less arbitrary ranking. This criterion is the internal rate of return.

The internal rate of return r is defined by the formula

$$\sum_{t=1}^{N} \frac{B(t) - C(t)}{(1 + r)^t} = 0$$

to be the discount rate which equates the present values of benefit and cost streams. The higher r, of course, the more profitable the project. According to Descartes' rule of sign, the definitional equation may have multiple roots if the sequence of net benefits changes sign more than once. This possibility does not create any problem in the projects considered here, however, since in all cases the flow of net benefits changes sign only once. Furthermore, it will be assumed that future opportunities will resemble current ones so that the problem of reinvestibility does not arise.[1]

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[1] (Seagraves, 1970), p. 439.

This assumption is entirely justified for the projects considered here because two of the conditions giving rise to Promotion Nationale are likely to persist in the foreseeable future. These are the existence of rural underemployment and the vast possibilities of, and needs for, undertaking numerous projects similar to those analyzed in the present study.

In order to compute the benefit-cost ratio and the internal rate of return, certain parameters must be selected. They relate to the period of analysis, and the discount rate. The considerations which must be taken into account in this selection include of course the aims of the analysis, namely evaluation and comparison. In addition, they must encompass the length of the project's life, the time it takes for the effects of the project to be fully felt, and the availability of capital. In theory the period of analysis should extend over the life of the project. Potential project life is over 30 years for Group I projects (small-scale irrigation), over 40 years for Group II (medium-scale irrigation), and over 50 years for Group III (defense and restoration of soils). To allow for risk elements, the periods of analysis have been chosen substantially shorter than the theoretical lives of the various projects: 15, 20, and 30 years, respectively. As for the proper rate of discount to be used in computing the benefit-cost ratio, in the ideal one would take the opportunity cost (or shadow value) of capital[1] in the agricultural sector since the projects studied here are all agricultural. One "rough" estimate puts this rate at 8.0 per cent in Morocco,[2] based on the institutional lending rate to agriculture adjusted for risk. This, however, appears to be too low for various reasons. One is that medium- or long-term Moroccan government bonds are issued at 6.5 - 7.0 per cent. Secondly, the Banque Nationale pour le Développement Economique makes loans at an interest rate of 7.0 per cent, mostly in non-agricultural sectors. Thirdly, in the late 1950's - early 1960's the return on private investment in non-agricultural enterprises (actual dividend payments) averaged 9.5 - 10.0 per cent.[3] One must thus assume that the shadow value of capital in the entire economy is around 7.0 per cent at the lowest, and at least 9.0 to 10.0 per cent in the non-

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[1]On the controversy surrounding the choice of discount rate and the different considerations that should govern such a choice, see (Baumol, 1968) and also (Seagraves, 1970), pp. 440-450.

[2](S.R.I., 1967), p. 26.

[3](Belal, 1968), pp. 284-285.

agricultural sector. Presumably, capital is more abundant in the non-agricultural than in the agricultural sector. The shadow price of capital must thus be higher in agriculture than in other sectors. The projects analyzed here are very small relative to total investment, so that the present study should reflect (rather than try to correct) the distortions caused by the existing relative scarcity of capital between the various sectors. Consequently the appropriate discount rate must be at least 10.0 per cent. It is not clear by how much this should be adjusted for risk Since selecting one single rate of discount rate would clearly be quite arbitrary under these circumstances, it appears preferable to present the results for three different rates--10, 15 and 20 per cent--in the belief that the "true" rate of discount must lie within that range. If one were really pressed to pick one and only one rate, the middle value should be chosen. In fact there exists another way of choosing one single rate, which consists in taking the average return to investment in agriculture. In this instance, it would be possible to take the average internal rate of return for all ten projects as the discount rate. This was not done, however, because this value (14.0 per cent) falls within the range already considered.

The benefit-cost ratio as well as the internal rate of return are based on a comparison of benefits from and costs of the project. The way benefits and costs are specified thus determines to a great extent the nature of the results. For the present study, cost is defined to include initial costs, opportunity costs (if any),[1] and yearly maintenance costs. Initial costs include all expenditures in cash (for wages, supplies, and equipment) as well as payment in kind. Opportunity costs can best be seen in the following terms. When, for instance, some crops are displaced by other crops as a result of an improvement, the total value of the latter should not be attributed to the improvement. The value of the former must be netted out since it represents what would have been produced on the given land area without the improvement. This is done by entering the value of the alternative use of the land--the opportunity costs--as an element of cost. The yearly maintenance costs are determined by the following considerations. For all projects it is assumed that the landowners voluntarily

[1]The term "opportunity costs" is used here as a shorthand for the cost of displaced activities: e.g., the loss of output for those crops which are no longer grown after the improvement is completed.

incur an annual cost, mostly in labor contribution, equivalent to one per cent of the present value in year 1 of total initial costs for the upkeep of the project. In addition the State is also assumed to contribute one per cent for small-scale irrigation and D.R.S. projects, and four per cent for medium-scale irrigation projects. The State contribution may for instance be for repair supplies and equipment, or technical supervision. The one per cent figures are more or less arbitrary but, on the basis of past performance, they are probably more than adequate; the four per cent figure is based on an official estimate on how much it costs the State to maintain (large-scale) irrigation works in good repair.[1] To summarize, the yearly maintenance costs are 2 per cent of the present value in year 1 of initial costs for Groups I and III, and 5 per cent for Group II.

The calculation of benefits consists in evaluating the effects of the project (say, through the availability of more water) on the output of various crops. Benefits are defined as the value of the additional output of various crops attributable to the project under consideration. In addition, the concomitant savings are also included. The method for evaluating benefits can be further specified. First, the prices used are the prices obtained by the farmers at the nearest market. Since these are agricultural crops, their prices are generally subject to wide seasonal variations. Whenever such variations are reported by the sources, no attempt is made to "average" the various prices. Instead, in order to make the analysis as conservative as possible, a price close to the lower end of the range is chosen.[2] Secondly, the value of the additional output is net of production costs. This is accomplished by subtracting 20 per cent from the gross value,[3] and by excluding outputs which are also inputs to production. In the projects considered here they were essentially reed (used as support

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[1] (Plan 1960-1964), p. 41.

[2] Theoretically one should use a weighted average under these circumstances --unless the projects alter the timing of output. The projects do not alter this timing. But detailed enough information on the timing of output is not available to allow the computation a weighted average.

[3] The figure of 20 per cent is used in studies of medium-scale irrigation projects contained in (S.C.E.T., 1966b), p. 35. It is probably on the high side. Another study finds that in the Tessaout region a typical farming unit generates annually a gross output of DH 3 125.00 and incurs production costs of DH 302.00--i.e., less than 10 per cent: see (Lahlimi, 1967), p. 28. The higher figure is chosen in order that the analysis, if it should err, would err on the conservative rather than the over-optimistic side.

for the grape vine) and cattle feed (alfalfa).

Some final notes on project, benefit and cost are indispensable. First, in order to avoid the type of overcounting due to the attribution to the project of benefits which, strictly speaking, arise from other sources, particular attention has been paid to the precise delimitation of "the project" and of its effects in terms of both cost and benefit. This has proved especially important in the case of medium-scale irrigation projects. They consist of three parts: the dam, the canal (canal de tête-morte), and the irrigation network inside the perimeter. It would obviously be erroneous to consider the project to be made up of only the first two elements and attribute all the benefits to them. The irrigation network must be included as an integral part because without it the benefits from the dam and the canal alone would be very low, perhaps even nil. Secondly, some provision must be made for the risk element which is particularly important in Moroccan agriculture. In the areas where the present projects are located, droughts and floods can produce extreme variations in output. In this analysis the risk element is taken into account in two different ways: by choosing a low price when the price varies over a wide range, and by taking short periods of analysis. From the theoretical standpoint, it would have been more appropriate to use expected benefits and costs. The elements necessary for such an analysis are, unfortunately, not available.

II. The Projects

The method of analysis having been specified, it is now possible to proceed with the analysis itself. The projects will be presented according to the three-group classification previously specified. For each group, an introductory paragraph or two put the projects into the proper context. The projects themselves are then briefly described, and the elements of costs and benefits are derived. The results for all groups (in terms of benefit-cost ratios and internal rate of return) are presented in the next section.

A. Group I: Small-Scale Irrigation

The three small-scale irrigation projects are located in the province of Marrakech. This is an area classified as semi-arid. Water is a scarce and precious commodity, so scarce and precious that, like land, it belongs to private individuals. In fact, it is often said that the three factors

of production in this and other water-short areas of Morocco are land, water, and labor. Annual contracts for land and water are negotiated separately since water is a bachelor.[1] Rents for either or both are paid by part of the harvest. For instance, water rights can be rented at one-sixth of the crop for cereals and one-half for vegetables or alfalfa. For land, the rent may be two-fifths of the crop.[2] Thus a man who has to rent both land and water may end up with from two-fifths to as little as one-tenth of the crop depending upon whether he grows cereals or vegetables --assuming that he does not also have to hire additional labor besides his family's and his own. This shows that in some cases water (or, more precisely, the cost of water) is as important as land for purposes of agricultural production. This importance of water has long been recognized by the Moroccan farmer who, for centuries, has been bringing water to his fields from miles away either overground with dirt ditches (seguia) and/or underground with tunnels (khettara). The traditional means are, however, very inefficient. It has been estimated that, on the average, the existing system delivers only 40 per cent of the water that could be tapped from the rivers or the sources. This overall productivity can be raised to 80 or 90 per cent[3] by relatively simple improvements, such as cementing or concreting the existing networks to protect them from floods and reduce infiltration. It is intuitively evident that undertaking such improvements must be "profitable." The following analysis in fact bears out this expectation.

Project 01, the Ain M'Kelkem source in the Cercle des Rehamna-Sud, consisted in repairing the source and the attached canal which regularly caved in every year following heavy rains. The source was cemented; concrete walls were put on the 750 metre long underground canal and the 240 metre long open air canal. Work started in 1968 and, even though the entire project was not completed until mid-1969, its effects were already felt by the end of 1968. Project 02, the El Kouhliyne source in the Cercle des Ait Ourir, was essentially similar to Project 01. It was completed in 1968. Project 03 is the improvement of the Taddarte seguia in the Cercle de Marrakech Banlieue. It consisted in building a small (67 metre long) diversion dam on a river to feed the seguia, and putting concrete walls on

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[1] (Haouz, 1968), p. 53.

[2] (Haouz, 1968), p. 53; see also (Lahlimi, 1967).

[3] (Haouz, 1968), p. 64.

322 metres of underground canal and 1848 metres of seguia. The project was started in 1968 and completed in 1969.

All three projects were carried out as part of the Promotion Nationale program of the Office Régional de Mise en Valeur Agricole du Haouz (O.R.M.V.A.H.), that is, as Part I projects. Their respective initial costs are presented in Table 3.1.

Table 3.1 - Initial Costs of the Three Small-Scale Irrigation Projects

	Project 01 Ain M'Kelkem	Project 02 El Kouhliyne	Project 03 Taddarte
Cash initial expenditures (DH):			
1968	17,264	32,712	63,008
1969	54,804	-	23,413
Payment in kind (DH equivalent)[a/]			
1968	7,854	10,414	11,152
1969	29,470	-	12,924

Source: Bureau-P.N. of the O.R.M.V.A.H.

Note: [a/] The payment in kind is obtained by multiplying the number of man-days actually used by DH 2.00. This procedure introduces a slight upward error (maybe up to 10 per cent) due to the fact that the skilled workers do not receive any payment in kind but are paid all in cash.

Strictly speaking, the improvements have a direct effect only on the waterflow. This effect is shown on Table 3.2. But in fact the greater and more certain availability of water shows up in the agricultural production with a very short time-lag. It is this second impact of the improvements that is of greatest interest for the economic evaluation of the projects. The magnitude of the impact can be determined from a comparison of the situation without the improvement and the situation with the improvement. The two situations in the three projects studied here are shown in Appendix 1 (Table A1.1). They can be briefly characterized as follows. First, in Projects 01 and 02 the cultivated land area increased from 101.5 to 150 hectares and from 59 to 73 hectares, respectively. In Project 03 no similar expansion of cultivated area was registered, but the number of fruit trees rose from 4650 to 6950. Secondly, some reshuffling occurred in the allocation of the land area among the various crops. Of the twenty-five crops whose areas are listed for the three projects (excluding fig), five

Table 3.2 - Effects of the Improvements on the Waterflow

	Project 01 Ain M'Kelkem	Project 02 El Kouhliyne	Project 03 Taddarte
Waterflow without the improvement:			
Maximum (litre/second)	4.34	7.71	318.54
Minimum (litre/second)[a/]	1.45	3.66	119.49
Waterflow with the improvement:			
Maximum (litre/second)	15.61	13.93	429.66
Minimum (litre/second)	6.15	4.56	180.77

Source: Bureau-P.N. of the O.R.M.V.A.H.

Note: [a/] These are "normal" summer minima. In fact the absolute minima are zero when the diversion dam and/or khettara, seguia and source are destroyed by heavy rains.

saw their areas reduced, eight unchanged and twelve increased. There is a highly significant tendency for yields to be lower in those crops whose areas were reduced or remained stable than in those whose areas increased.[1] Thirdly, no decrease in yields has been reported. This is what is to be expected because the completion of the various projects could not possibly result in a worsening of the overall conditions of production.

It is now possible to establish the streams of costs and benefits for each project. In order to avoid cluttering the text with too many numerical tables, however, the total benefits and costs, as well as the details of their derivations, appear in Appendix 1. For Project 01 the benefits arise from the increase in yields and/or land areas of apricot, grape, olive, and orange; in addition there are the benefits to cattle raising, and the savings in repair costs. The costs include the opportunity costs attributable to the displacement of barley, wheat, tomato and zucchini, the initial costs, and the maintenance costs. For Project 02 the benefits derive from barley, corn, wheat, carrot, turnip, tomato, zucchini, apricot, grape, olive, orange, and the savings on repair costs. The opportunity costs arise from a reduction in the herd of sheep and cows; the other cost items are the same as for Project 01. For Project 03 the benefits are attributable to barley, corn, wheat, vegetables, apricot, grape, olive, orange and the

[1] The mean yields are, respectively, DH 475.35 (σ = 135.72) and DH 2222.33 (σ = 921.25). The F-ratio is 42.521, which is significant at better than the 0.1 per cent level. These figures are based on the situation without the improvement.

savings on repairs. Unlike in the two previous cases there are no immediately perceivable opportunity costs; the other cost items are the same.

The last step in the computations is fairly straightforward. The processing of the data as prepared in Appendix 1 yields the final results presented in Table 3.7 for all projects.

B. Group II: Medium-Scale Irrigation

The four medium-scale irrigation projects are located in the Cercle of Goulmima, Province of Ksar Es Souk. This area is considered to be transitional between the (Atlas) mountain and the (Sahara) desert. In fact almost all activities there, as in the desert proper, are carried out in oases or palm groves located along more or less permanent rivers and/or around wells. Water is the crucial element. Whatever was said previously about water in the province of Marrakech applies here, only with added strength. But what is more, whatever little rainwater is received falls during a very few days of the year, and on those days during only a few hours. Typically these occasional rains result in flashfloods. Among other things, two effects of this situation must be noted. First, the floods carry away good soil, crops and usually part of the physical infrastructure for irrigation. Secondly, most of the rainwater is lost to cultivation because only a very small part of it has time to infiltrate the soil. It is to remedy this unfortunate state of affairs that projects like the four studied here are undertaken. They are aimed partly at reducing the damage resulting from floods. But their main purpose is to harness the floodwater and put it to good use. For instance, in the Cercle of Goulmima alone, only 45 per cent of the potentially cultivable area is actually cultivated[1] at the present time as a result of the failure to make good use of the floodwater. There is ample room for improvement here.

Some technological limitations exist, however. The floods are as violent as they are sudden. Consequently no attempt has yet been made to use the water when the flood is at its height. What is being done at the present time is to let the flood crest go by and then catch the "flood tail" water. This is accomplished through the use of such devices as building dams with "fusible" portions which are gradually carried away by the flood but which can be reconstructed rapidly, easily and inexpensively with

[1] (S.C.E.T., 1966b), p. 31.

rocks and meshed wires. The water can be used for three purposes: to increase the supply of water on the existing palm grove, or to expand the permanently cultivated area of the palm grove, or to bring into temporary cultivation areas that otherwise would have remained dry and sterile. In fact it is usually a combination of all three.

The four projects studied here are typical of other projects in this area designed for the purposes previously stated. The core of the project is a medium-size low dam varying in length from under fifty meters to over two hundred meters. The dam consists of concrete foundations and sides. The central part may be concrete; but more often it consists of a few sections made up of rocks held together by meshed wire. Each section is designed to "melt" away as the flood water reaches a certain volume. In addition to the dam, a project has a fairly large concrete canal (known as the "dead-head" canal) to bring the water from the dam to the area of intended use, and an irrigation network of smaller canals in that area. Even where an irrigation network already exists it is usually inefficient and very precarious. Therefore part of the project is to install and/or improve the necessary irrigation network: this part of the project is referred to as perimeter equipment.

For the purpose of the present analysis it is assumed that the construction of the dam starts in the first year and takes one year; the dead-head canal is started in the second year and takes two years; and the perimeter equipment is initiated in the third year and takes three years.[1] Thus the entire project should be completed in five years. This is indeed the case for Projects 05, 06, and 07. Project 04 will take seven years because a two-year gap exists between the time when the dam was completed and the time when work on the dead-head canal started. The projects to be analyzed are Tadiroust (04), Tazmout (05), Tazourmit (06), and Yfegh (07). The respective initial cash expenditures and payments in kind are shown on Table 3.3.

As with the small-scale irrigation projects, the improved conditions in water availability are translated into increased yields and/or increased cultivated land area almost immediately. The existing and future cultivated areas for each perimeter are shown on Table 3.4. A few assumptions are necessary for deriving from this table the benefits attributable to the

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[1]These are the assumptions made by the engineers who designed these projects: see (S.C.E.T., 1966b), pp. 33-43.

Table 3.3 - Initial Costs of the Four Medium-Scale Irrigation Projects (dirhams or dirham equivalent)

	Project 04 Tadiroust	Project 05 Tazmout	Project 06 Tazourmit	Project 07 Yfegh
1966				
Cash expenditures	720 928	-	-	176 735
Payments in kind	95 072	-	-	45 792
1967				
Cash expenditures	0	283 932	349 850	52 500
Payments in kind	0	121 672	115 650	35 000
1968				
Cash expenditures	0	89 130	388 531	76 125
Payments in kind	0	38 390	137 208	49 176
1969				
Cash expenditures	91 001	217 405	516 806	23 625
Payments in kind	42 824	115 020	213 836	14 176
1970				
Cash expenditures	142 907	128 275	128 275	23 625
Payments in kind	73 568	76 630	76 630	14 175
1971				
Cash expenditures	51 906	128 275	128 275	-
Payments in kind	30 744	76 630	76 630	-
1972				
Cash expenditures	51 906	-	-	-
Payments in kind	30 744	-	-	-

Sources: (S.C.E.T., 1966a), (S.C.E.T., 1966b), (S.C.E.T., 1969).

Table 3.4 - Total Existing and Future Cultivated Areas in the Medium-Scale Irrigation Projects (hectares)

Project	Existing Palm Grove	Flood Irrigated Area	Extension of Palm Grove
Project 04: Tadiroust	240	310	50
Project 05: Tazmout	200	1300	0
Project 06: Tazourmit	200	1300	0
Project 07: Yfegh	125	150	0

Sources: See Table 3.3.

various projects. First, the yields on the existing palm grove start increasing the year after the canal is completed and are felt in their entirety at the end of three years. Secondly, production on the flood

irrigated areas starts when the dead-head canal is completed and attains the full potential after ten years. Thirdly, the extensions of the palm grove start after the perimeter has been fully equipped and reach the maximum output after eight years.[1] The streams of benefit and cost appear in Appendix 1.

C. Group III: Defense and Restoration of Soil (D.R.S.)

The erosion of land by water, and sometimes by wind also, is a problem which plagues many a tropical or equatorial country. Its most spectacular manifestations are entire hillsides scarred with deep ravines. "Top erosion," whereby a thin slice of the topsoil is carried away year after year, is certainly less obvious but its long run effects are no less disastrous than those of the more evident kind of erosion. The resulting losses are well-known: loss of crop land, faster siltage of dams, etc. In Morocco it is estimated that erosion takes away 60,000 hectares of good land every year.[2] This problem, together with the existence of underemployment, was one of the official reasons cited for initiating the Promotion Nationale program.

The fight against erosion can take various forms. The most widely used approach is reforestation, and there is some of that in Morocco. Another is known as "defense and restoration of soils" or D.R.S. To some extent this is only a variant of reforestation in that it involves the planting of trees. It is indeed reforestation, but it is also more. To put it briefly, the D.R.S. treatment attempts to keep the land from being eroded away by planting trees on horizontally parallel banquettes and by building small dry rock dams. The dams and banquettes are designed to slow down the flow of rainwater and help it to infiltrate into the soil. The distinctive feature of D.R.S. is that it tries not simply to slow down the erosion process but it tries to do so in a positive way, that is, in a directly productive way. This is achieved by using mostly or wholly fruit trees instead of forest trees, by leaving enough room between tree rows to allow the plantation of cereals or other crops, etc. The last three Promotion Nationale projects to be studied here are D.R.S. projects.

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[1] For assumptions two and three, 8 and 5 years, respectively, are retained in (S.C.E.T., 1966b), p. 36. But actual experience since 1966 has shown that these periods were going to be too short. Hence longer periods, corresponding to the revised estimates, have been selected here.

[2] (P.N. au Maroc, 1964), p. 13.

Project 08, the Al Hoceima D.R.S. project, is located 5 to 7 miles outside the provincial capital of Al Hoceima. It consists of four perimeters: Ajdir I through IV. Similarly Project 09, the Imintanoute D.R.S. project (located in Imintanoute, Province of Marrakech), is made up of four different perimeters, themselves divided into consecutively numbered plots: Talainine II to V, Inzuma I to IV, N'Daina I to III, and Douirane I to IV. One or more plots from one or more perimeters are treated every year: 15 plots were treated in 9 years. Project 10, the Sahrij D.R.S. project, is located in the Cercle des Sraghna Zemrane, Province of Marrakech. The areas treated for each project and the corresponding initial costs are shown in Tables 3.5 and 3.6, respectively. It must be noted that initial costs here include the cost of planting the original trees as well as the cost of replacing the mortality victims up to five years old.

The streams of total benefits and total costs are shown in Appendix 1. For the Al Hoceima project (08) the benefits derive from almond trees and forest trees. The costs include the initial costs, the opportunity costs attributable to the loss of 20 per cent of the wheat-grown area, and the maintenance charges. For the Imintanoute project (09) the benefits stem from barley, almond trees and carob trees. The cost items are similar except for the fact that there was no immediately discernible opportunity

Table 3.5 - Total Areas Treated in the Three D.R.S. Projects (hectares)

Year	Project 08 Al Hoceima	Project 09 Imintanoute	Project 10 Sahrij
1961	-	56	-
1962	-	399	-
1963	-	100	-
1964	-	200	-
1965	672	300	-
1966	245	408	-
1967	284	149	-
1968	313	209	500
1969	0	14	1000

Sources: (08) Water and Forestry Service, Al Hoceima.
(09) Water and Forestry Service, Amizmiz and Imintanoute; Promotion Nationale Section, Province of Marrakech.
(10) O.R.M.V.A.H.

Table 3.6 - Initial Costs of the Three D.R.S. Projects
(dirhams or dirham equivalent)

Year	Project 08 Al Hoceima		Project 09: Imintanoute		Project 10: Sahrij	
	Cash Expenditures	Payments in Kind	Cash Expenditures	Payments in Kind	Cash Expenditures	Payments in Kind
1961	-	-	37 290	11 760	-	-
1962	-	-	164 037	87 390	-	-
1963	-	-	156 730	21 000	-	-
1964	-	-	131 546	42 000	-	-
1965	282 130	184 922	160 740	63 000	-	-
1966	105 676	89 032	282 142	85 680	-	-
1967	129 334	85 140	133 074	31 290	-	-
1968	135 845	82 762	80 502	43 890	393 656	106 344
1969	39 581	32 356	53 299	2 940	236 394	63 706
1970	28 427	22 048	-	-	73 776	18 444
1971	19 243	14 516	-	-	66 664	16 666
1972	10 866	8 196	-	-	38 616	9 654
1973	1 563	1 180	-	-	27 688	6 922

Sources: See Table 3.5.

cost. As for the Sahrij project (10) the benefits arise from almond trees. The cost items are similar to those of Project 08, with the opportunity costs coming from the loss of 20 per cent of the area grown in barley. The total areas treated for each project are, respectively, 1514, 1835 and 1500 hectares.

III. The Results

Before presenting the results, it must be noted that the present calculations do not--and could not--include all benefits and costs. Some of the omitted benefits or costs are potentially quantifiable, others may not be and belong to the "intangibles." Among the omitted costs figures prominently the possible lowering of the water table as a result of the improved irrigation systems tapping more water from the sources and/or rivers in the case of the small-scale irrigation projects. There were some fears expressed by technicians that, if these projects were carried out in large numbers, the ultimate result would be a lowering of the general level of the water table. Such a phenomenon would mean that some of the systems whose tapping levels are higher than the resulting water table level would become partially or completely deprived of water, and the yields on the fields that they irrigate would be drastically reduced. This is certainly

a real cost, but it would be very hard to quantify without substantial hydrological studies. Another example of cost not accounted for can be taken from the Imintanoute D.R.S. project (09). Prior to the beginning of D.R.S. work there, the hillsides were used as grazing area for sheep. With the initiation of D.R.S., sheep and all other farm animals are banned from the hillsides. This is certainly a cost to the animals' owners because they now have to find an alternative pasture area. In this case, however, this cost was deemed to be more than made up by a benefit which also was not counted in the analysis. This benefit stems from the fact that the farmers now cut the grass that grows along the D.R.S. banquettes between the various trees. This grass is fairly abundant and can be used to feed the sheep as well as the cattle. (Previously the grazing area was so poor that only sheep could survive on it. Now both sheep and cattle can benefit from the hillsides' grass.) Also in this area one effect of the project was to produce a noticeable lowering of the temperature, especially in the summer season. This cooling off phenomenon--probably attributable to the increased humidity of the soil--is certainly appreciated by the inhabitants; it may also somehow be beneficial to their crops. Unfortunately, there does not seem to be any way of taking this intangible benefit into account. Furthermore the D.R.S. works, by reducing the amount of soil carried away and by slowing down the water flow, have many other effects which may be considered benefits. They may raise the water table by infiltrating more water. They may reduce the rate of silting of dams situated downstream. And they can cause the seguia situated in the valley to be carried away by floods less often. Another type of intangible benefit is associated with small- and medium-scale irrigation projects: more water means more water not only for irrigation purposes but also for domestic uses (cooking, drinking, and washing). Finally, the increase in land value has not been included although data were available in some cases: its inclusion would constitute double-counting.[1]

The results are presented on Table 3.7 for all ten projects. Columns (1) - (3) contain the benefit-cost ratios for three alternative discount rates: 10, 15 and 20 per cent. Column (4) shows the internal rate of return. An analysis of variance performed on these results shows that the most profitable projects--the ones with the highest internal rates of

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[1]See (McKean, 1958), p. 152.

Table 3.7 - Results of the Benefit-Cost Analysis

Project or Group	Benefit-Cost Ratio			Internal Rate of Return (%) (4)
	d = .10 (1)	d = .15 (2)	d = .20 (3)	
1: Ain M'Kelkem	1.571	1.309	1.101	23.0
2: El Kouhliyne	1.186	0.956	0.776	14.0
3: Taddarte	4.016	2.825	2.044	33.1
4: Tadiroust	0.927	0.636	0.444	9.1
5: Tazmout	0.925	0.631	0.442	9.1
6: Tazourmit	2.042	1.363	0.931	19.1
7: Yfegh	1.331	0.956	0.705	14.3
8: Al Hoceima	0.504	0.266	0.149	5.0
9: Imintanoute	0.815	0.523	0.366	8.0
10: Sahrij	0.574	0.334	0.203	5.0
I: Small-scale irrigation	2.258	1.697	1.307	23.4
II: Medium-scale irrigation	1.306	0.896	0.630	12.9
III: D.R.S.	0.631	0.374	0.239	6.0
All Projects	1.389	0.980	0.716	14.0
F-Ratio	2.511	3.947	5.811	6.243
Significance Level	-	0.10	0.05	0.05

return--are the small-scale irrigation projects with 23.4 per cent (σ = 5.5). Then come the medium-scale irrigation projects with 12.9 per cent (σ = 2.4), and the D.R.S. projects are last at 6.0 per cent (σ = 1.0). The differences between the group means are significant at better than the 5 per cent level.[1] The benefit-cost ratios also confirm the profitability ranking of the groups of projects. Although the differences among the various group mean benefit-cost ratios are not significant when the discount rate is 10 per cent, they are significant at the 10 and 5 per cent levels when the discount rate is 15 and 20 per cent, respectively.

The results obtained here become more meaningful when compared with the results of other studies of similar projects. There exist three groups of such studies.[2] For P.N. projects, there are the I.V.S.[3] reports and the S.C.E.T.[4] study. For non-P.N. projects, the Stanford Research Institute

[1]To say that the differences between sample means are significant at the x per cent level is a shorthand for the statement that there is only an x per cent risk that these observed differences could be the result of an accident. In empirical economic research the 5 per cent level is considered to be "significant" and the 1 per cent level "highly significant."

[2]The specific references are given in the sources for Table 3.8.

[3]International Voluntary Service.

[4]Société Centrale pour l'Equipement du Territoire.

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has done some analyses. During the period 1969-1970, the two I.V.S. volunteers stationed in Al Hoceima and Ouarzazate wrote a series of brief reports. They examined various aspects and problems of Promotion Nationale in their respective regions and carried out benefit-cost analyses of several specific projects. The I.V.S. results shown here come from these studies. The S.C.E.T. is a French engineering firm which, under the French technical cooperation program, has been involved in Morocco's Promotion Nationale since 1964. It has been active in the provinces of Béni-Mellal, Marrakech, Tétouan, and especially Ksar-Es-Souk where it has been closely associated with the more successful projects. Its participation covers most phases of P.N. projects. The S.C.E.T. engineers, in cooperation with the regional Offices de Mise en Valeur Agricole, carry out technical feasibility studies as well as studies in adapting various methods to the "P.N. way." In addition, they also supervise directly the actual work on the projects. The results used here come from a summary and an evaluation of their experience, written in late 1966. In 1966-1967 the Stanford Research Institute (S.R.I.) undertook a series of studies on Moroccan agriculture. Among them was an analysis of various projects in the Lower Moulouya irrigation perimeter. The aim was to find the best projects and to establish five-year programs for carrying them out. Several of these projects have been included in the present comparison.

The results of the I.V.S., S.C.E.T., and S.R.I. analyses are presented in Table 3.8. The assumptions of these various studies are not consistent with each other, nor with those of the present study. The differences lie not only in the definitions of benefit and cost, but also in the choice of period of analysis. They are, however, not so great as to foreclose any comparison between these results and those of the present study, especially if the figures on Table 3.8 are taken to indicate no more than rough orders of magnitude. Only the internal rates of return are shown since they are more "reliable" than the benefit-cost ratios.

The general conclusions from such a comparison are twofold. First, projects in the P.N. program have a higher internal rate of return than those outside it. The mean is 13.2 per cent for the ten projects analyzed in this study and those in Group A of Table 3.8, as opposed to 9.9 per cent for non-Promotion Nationale projects in Group B of the same table. The difference is, however, not statistically significant. Thus the projects undertaken under Promotion Nationale are no worse than those carried

Table 3.8 - Results of Other Studies of Agricultural Projects

Project Number and Name	Project Type (1)	Internal Rate of Return (%) (2)	Author(s) (3)
A. P.N. Projects			
2-01. Ternata (Zagora)	Group I	11.4	I.V.S.
2-02. Draa Valley	"	9.1	"
2-03. Ktaoua (Draa)	"	7.0	"
2-04. Tazmout (Goulmima)	Group II	14.0	S.C.E.T.
2-05. Tazourmit (Goulmima)	"	24.5	"
2-06. Yfegh (Goulmima)	"	23.5	"
2-07. Ajdir III (Al Hoceima)	Group III	4.0	I.V.S.
2-08. Asmoud (Al Hoceima)	"	4.0	"
B. Non-P.N. Projects[a/]			
2-09. Cereals project	Lower Moulouya	25.0	S.R.I.
2-10. Range Management project	"	14.0	"
2-11. Triffa Main	large-scale irrigation	20.0	"
2-12. Sector 27	"	8.0	"
2-13. Sector 28	"	9.0	"
2-14. Triffa East	"	6.0	"
2-15. Triffa High Service	"	5.0	"
2-16. Zebra Collective	"	5.0	"
2-17. Zebra Remainder	"	5.0	"
2-18. Bou Areg Central	"	6.0	"
2-19. Bou Areg Remainder	"	6.0	"

Sources: 2-01 to 2-03: (I.V.S., April 1969).
2-04 to 2-06: (S.C.E.T., 1966b), pp. 34-43.
2-07 to 2-08: (I.V.S., January 1969), (I.V.S., June 1969).
2-09 : (S.R.I., 1967), p. 49.
2-10 : (S.R.I., 1967), p. 59.
2-11 to 2-19: (S.R.I., 1967), p. 185.

Note: a/ Projects 2-09 through 2-19 are all part of an integrated regional development plan in the delta region of the Lower Moulouya. This plan involves large-scale irrigation as well as other schemes. The S.R.I. study considers several alternatives. The figures presented here relate to gross output and total costs, with the assumption that 90 per cent of potential output will be achieved and a 25 per cent contingency markup on costs.

out under other programs. If anything, they are better. Secondly, water-related projects are more profitable than other types. In particular, small- and medium-scale irrigation projects are more profitable than all others: 15.1 per cent vs. 9.3 per cent for those appearing in Table 3.11. And small- and medium-scale irrigation are more profitable than large-scale

irrigation: 16.2 per cent vs. 7.8 per cent, the difference being significant at the 10 per cent level.

Thus the results of other studies do not seem to contradict the findings obtained here. The present results are somewhat higher than the other results (14.0 vs. 10.9 per cent), despite the fact that the assumptions made in this study are consistently and purposely on the conservative side. However, the difference is not statistically significant. One may thus conclude that, although the projects studied here can be considered to be among the showcase projects of Promotion Nationale, they are not much more profitable than other similar projects in the agricultural sector. In particular, the difference with P.N. projects analyzed by other people is very small: 14.0 vs. 12.3 per cent.

It is important that the results obtained here be put in the proper perspective. First, it must be remembered that land improvement constitutes only one of the three types of P.N. projects (the other two being infrastructure and equipment),[1] and that the three sub-groups represented here do not include all of land improvement. Secondly, these projects may be typical of similar projects in their areas but it is not known whether they are typical of similar projects in other areas. In addition, thirdly, it is not even sure that they are representative in their areas. Consequently, the results cannot--or, at least, should not--be considered to be typical of all projects of this nature, and even less to Promotion Nationale as a whole.[2] These projects are more or less showcase displays. What made them particularly successful (at least for Groups I and II) was a combination of various factors such as--among other things--good design and good execution by the technical services[3] and local authorities, popular interest and participation. What the results show is not that Promotion

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[1]Over the period 1964-1969, in each year land improvement constituted an average of 63.0 per cent of all P.N. worksites and 51.5 per cent of all P.N. man-days: see (P.N. Bilan, 1964 through 1969).

[2]These are only 10 projects: the average yearly number of land improvement P.N. worksites is 1186 in the period 1964-1969: see (P.N. Bilan, 1964 through 1969).

[3]All ten projects analyzed here were realized in Part I (or Category A) of the P.N. program: Projects 01-03 and 10 by the Office Régional de Mise en Valeur Agricole du Haouz (Marrakech), Projects 04-07 by the Office Régional de Mise en Valeur Agricole du Tafilalt (Ksar Es Souk), Projects 08 and 09 by the Water and Forestry Services in Al Hoceima and Imintanoute, respectively.

Nationale is or has been a success but that it can be or can become a worthwhile undertaking even in the narrow economic sense. We say "even in the narrow economic sense"--of measurable benefit and cost--because it may be argued that Promotion Nationale has been successful in achieving certain goals which are not directly economic in their nature. Among them may be the generation of popular participation in the development effort, or the attenuation of potential sources of political problems such as un- or underemployment, or the poverty of the marginal regions.[1]

One last note must be added. The study so far has not considered the income distribution aspect of these projects. For programs such as Promotion Nationale it is of the utmost importance that the workers also be those who benefit from the works--or at least that some, preferably most, of them benefit. If after their completion the projects do not increase the means of production at the disposal of most workers, Promotion Nationale becomes no more than a channel for a temporary subsidy in the form of wage payment. It would then be no different, and no better, than the "worksites for the relief of unemployment" upon which it is supposed to improve. The benefit-cost ratios and the internal rates of return may all be very favorable, but they do not say anything about who gets what. The question of who gets all of those benefits is at least as important as the fact that the benefits exceed the costs. This consideration must always temper any optimism in the interpretation of the statistical results. The next chapter will try to determine, among other things, whether the P.N. workers do benefit from the projects on which they work.

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[1]These various aspects are considered in Chapter 4, Section III.

CHAPTER 4

PROMOTION NATIONALE AND THE PEOPLE

People are ultimately what development is all about. Its success depends on people. Its fruits--when and if they come--go to people. This is especially true of works programs like Promotion Nationale. This chapter is an attempt at establishing more clearly the nature of the interrelationships between people and the P.N. program.

Ideally what would be needed to gain an insight into these questions is a country-wide survey of P.N. workers and projects. This, however, has not been possible due to the material and time limitations inherent in any one-man undertaking. The next best thing is to concentrate on one specific region. A survey of P.N. workers was conducted in the cercle of Goulmima (Province of Ksar-Es-Souk) during the early part of June 1970.[1] Its results constitute the source of the major part of the information used in this chapter. The region of Goulmima is probably not representative of all Morocco. But it is representative of most of Morocco south of the Atlas mountains and, at least in such aspects as poverty, of the Rif region as well. These two regions absorb about three-fourths of the P.N. effort every year. Thus, although the survey does not produce results that are "typical" in all of Morocco, its results are acceptable as representative of the greatest part of Morocco insofar as Promotion Nationale is concerned.

The impact of Promotion Nationale--through the payment and spending of wages--is undoubtedly felt by the entire community where projects are undertaken. To that extent one might wish to survey the entire community which, for the purpose at hand, is neither necessary nor practical. It appears more desirable and useful to study the people that are directly concerned, namely the P.N. workers themselves. The major characteristic of this labor force is that it is exclusively male. In all, 251 workers were interviewed at five different worksites situated within a radius of 25 miles from the town of Goulmima. There were 206 unskilled laborers,

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[1]A detailed description of the nature and circumstances of this survey is provided in Appendix 2. This survey will be subsequently referred to as the Goulmima survey.

35 skilled workers (all masons), and 10 supervisory workers (chefs de chantiers, caporaux, and pointeurs).

Their age structure is shown in columns (1) and (2) of Table 4.1.

Table 4.1 - Age Structure of the P.N. Labor Force in Goulmima and of the Rural Active Muslim Males in Ksar Es Souk Province

Age Group (years)	P.N. Labor Force (Goulmima)		Rural Active Muslim Males (Ksar-Es-Souk)	
	Number (1)	Percent (2)	Number (3)	Percent (4)
Less than 15	4	1.6	2 551	2.8
15-24	72	28.7	18 865	20.8
25-44	105	41.8	42 817	47.1
45-64	68	27.1	21 414	23.6
65-74	0	0.0	3 644	4.0
75 and over	2	0.8	1 489	1.6
Age not declared	-	-	42	0.1
All ages	251	100.0	90 822	100.0

Sources: Goulmima survey.
(Recensement 1960, II), p. 459.

The mean age is 34 years, with minimum and maximum of 12 and 85, respectively. Compared to the rural male labor force in the province of Ksar-Es-Souk (columns 3 and 4) it appears that the P.N. labor force is slightly younger: 72.1 per cent are below the age of 45 and 99.2 per cent below 65 as opposed to 70.7 per cent and 94.3 per cent, respectively, for the larger labor force. Of all 251 workers, 188 are married and 63 are not. Among the 74.9 per cent that are married the mean number of children was 3.4, with the following distribution:

0	child :	21
1-2	children:	50
3-4	children:	61
5-6	children:	40
7 and more	children:	16

(The highest number of children reported was 11.) This implies that the mean number of persons per family (as distinct from the household) among the P.N. labor force is 5.4. Another survey shows the corresponding figure to be 4.3 for the rural population in the Tafilalt region,[1] which includes Goulmima. Thus it would appear that Promotion Nationale tends to

[1] (Mennesson, 1965).

attract people with families larger than average which, as it turns out, are also poorer than average. This fact is very relevant to the question of whether or not Promotion Nationale is a vehicle for income transfer, which is taken up in the next section.

This chapter examines the impact of Promotion Nationale on income (Section I) and on employment (Section II). Section III attempts to determine the level of popular participation in the selection of projects and in the enjoyment of benefits therefrom.

I. Impact on Income

A. The Remuneration System

The distinguishing feature of food for work programs is that their workers are paid partially or wholly in foodstuffs. P.N. "workers" can be grouped into four different categories. The unskilled workers constitute the great majority. A second group is constituted by animals, or more precisely, workers who bring their animals--especially mules--to carry rocks, water, etc. A third group is made up of the skilled workers who, on P.N. projects, are almost exclusively masons. The supervisory personnel constitute the last category. They include the supervisor (surveillant des travaux), the foreman (caporal), the supervisor-trainee, and the timekeeper. Their respective remunerations before 1970 and starting in 1970 are shown on Table 4.2.[1] Thus under Morocco's Promotion Nationale, up to 1970 the

Table 4.2 - The Remuneration of P.N. Workers
(in dirham equivalent per day)

Worker Categories	Prior to 1970			1970		
	Payment in kind (1)	Payment in cash (2)	TOTAL (3)	Payment in kind (4)	Payment in cash (5)	TOTAL (6)
Unskilled worker	2.00	2.00	4.00	1.60	2.40	4.00
Worker with animal	4.00	2.00	6.00	3.60	2.40	6.00
Masons	-	8.00	8.00	-	8.00	8.00
Supervisor	-	8.00	8.00	-	8.00	8.00
Corporal, supervisor-trainee, timekeeper	2.00	4.00	6.00	1.60	4.40	6.00

Sources: (1)-(3): (P.N. au Maroc, 1964), (P.N. Bilan, 1961 through 1969), (P.N.: Trois Années, 1964).
(4)-(6): (P.N. Aide-Mémoire, 1970).

[1]There exists another member of the supervisory staff who does not appear on Table 4.2: the worksite leader (chef de chantier). The reason is that

great majority of the unskilled workers receive half their wage in cash and half in kind, while the supervisory and skilled workers are generally paid all in cash.

On the basis of consumer theory alone, one would assume that a rational consumer would always wish to receive all cash (as opposed to part in cash and part in kind) in all circumstances since if he needed the foodstuffs he could go out and buy them with the cash. Thus one would expect, and many observers contend, that the P.N. workers would prefer to receive cash instead of the wheat part of their remuneration. Indeed in many places the workers do go and sell their sack of wheat on payday, sometimes only a few yards from where they just got their P.N. payment.

The survey findings in the Goulmima region, shown on Table 4.3, do not confirm this expectation.[1] Out of 251 workers, only 48 stated that

Table 4.3 - P.N. Workers' Attitude Towards Payment in Kind

Worker Category	"Would you prefer to receive cash instead of wheat?"									
	YES		NO		INDIFFERENT		OTHER[a/]		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Supervisory	4	40.0	3	30.0	2	20.1	1	10.0	10	100.0
Skilled	13	37.1	5	14.3	8	22.9	9	25.7	35	100.0
Unskilled	31	15.0	72	35.0	94	45.6	9	4.4	206	100.0
All	48	19.1	80	31.9	104	41.4	19	7.6	251	100.0

Source: Goulmima survey.
Note: a/ "I am paid all in cash," "It is up to the State to decide."

they would prefer to receive cash instead of the wheat: of these, 17 did not receive wheat but only cash in the first place! The great majority either favor the existing system or are indifferent. Does this mean that they value wheat as much as cash? The evidence would indicate that this is so.

Twice a month the workers are paid for their twelve days of work: for the unskilled, DH 24.00 in cash and a 60 kg sack of wheat worth DH 24.00

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he is almost always a full-time employee of the technical service. In the cases where he is not, he receives DH 13.00 a day, all in cash.

[1]The results obtained here may, however, have been influenced by the circumstances of the survey--which was conducted either at the supercaïd's office and/or with the help of his aides as interpreters: see Appendix 2.

in theory. When asked whether they would accept a certain amount of cash instead of the wheat sack only 20 (7.97 per cent) said they would take DH 12.00, 21 (8.37 per cent) DH 15.00 or DH 18.00, and 23 (9.16 per cent) DH 21.00. As for the unskilled workers alone, the corresponding figures are 3, 3, and 4. This means that 98 per cent of the unskilled workers value wheat at about the P.N. exchange rate. One may wonder why this would be so. Are these workers simply behaving in a quite irrational fashion? This is definitely not the case, as will be seen presently in studying their spending pattern for the cash part of their wages.

When asked what he spent his cash wages on, the average worker named three different items. The number of times each item was mentioned and the corresponding percentage have been grouped in columns (1) and (2) of Table 4.4. Foodstuffs constitute the largest group by far (over 70 per cent), out of which wheat and flour represent more than one-fourth. In view of this it is hardly surprising that the majority of workers see no particular advantage in being paid all in cash. Their behavior may in fact be more rational than that of the hypothetical rational consumer previously referred to. Given the market conditions in his area, at times Promotion Nationale may represent a cheaper way of acquiring wheat than the market when transport and other costs are duly taken into account. Thus one may conclude that while consumers usually prefer cash to payment in kind, there exist circumstances under which they might prefer payment in kind to cash. This would be the case, for instance, if the payment in kind takes a form which falls nicely into their consumption pattern--as wheat apparently does in this region.

While wheat and flour are important, it is sugar and tea which are the most popular items. This is hardly surprising in view of the fact that in Morocco extremely sweet mint tea constitutes the national drink which is enjoyed at any time of day. This is so true that some families would skip a meal in order to buy more sugar for the tea. In some cases mint tea has become an addiction, not unlike alcoholic beverages in other non-Muslim societies. Together with wheat and flour, sugar and tea constitute more than half of all items mentioned. This fact may have other ramifications beyond Promotion Nationale itself.

Clothing also is very popular; it is in fact second only to tea and sugar. The other items are fairly minor. The main thing which stands out, however, is that virtually all of the cash wage is consumed. The only form

Table 4.4 - Spending Pattern of P.N. Cash Wages and Consumption Pattern in the Rural Areas of Morocco

	Consumption of P.N. Cash Wages		General Consumption in Rural Areas Percentage (3)
	Frequency (1)	Percentage (2)	
Foodstuffs	534	70.54	75.90
of which:			
tea and sugar	(279)	(36.86)	
wheat and flour	(147)	(19.42)	
meat	(42)	(5.55)	
vegetable	(34)	(4.49)	
other[a]	(32)	(4.23)	
Clothing	175	23.12	8.10
Housing[b]	10	1.32	5.30
Hygiene[c]	15	1.98	2.30
Transportation, entertainment, miscellaneous[d]	23	3.04	8.40
TOTAL	757	100.00	100.00

Sources: (1) and (2): Goulmima survey;
(3): (Consommation 1959-60), p. 129.

Notes: [a] "Foodstuffs," dates, oil.
[b] Rent, kerosene.
[c] Soap.
[d] School supplies, cigarettes, tobacco, cycle needs, debt repayment, entertainment.

of saving was debt repayment: but it only was mentioned twice out of 757 times!

These findings of the Goulmima survey do not by any means constitute an attempt at estimating the consumption pattern of the rural dweller. But it is interesting to put them side by side with the consumption pattern in rural areas derived by a 1959-60 survey on consumption. This is done in the last column of Table 4.4. Despite the admitted difference in their nature, one cannot help concluding that there exists definitely some family resemblance between columns (2) and (3).

As was briefly mentioned above, the findings here do have larger implications. One of the oft-stated reasons for initiating or continuing a works program is that the wages paid the workers will contribute to a widening of the domestic market, and hence will contribute to the growth of

domestic industries through increased demand. The results shown on Table 4.4 raise doubts about this notion. It is true that all P.N. payments are consumed, thereby expanding the domestic market. But relatively little is spent on domestically manufactured goods, mainly clothing. Thus the market expansion effect is rather small. A potential source of more serious problems, however, is the fact that a large share of the goods demanded are imports. Foremost among them are tea and sugar; and in some years wheat and flour may also have to be brought in from abroad in sizeable quantities.[1]

B. The Regional Redistribution Effects

Among the four aims of Promotion Nationale, two seem to imply an official policy of using it for income transfer, if not from the rich to the poor, at least from the richer (or useful) to the poorer (or marginal) provinces of the country. One statement mentions the improvement of the conditions of living and of production in the disinherited areas, and the social development of their inhabitants. The other says that part of Promotion Nationale's "mission" is to develop the (road) infrastructure of the marginal regions.[2] The question then is: Has Promotion Nationale in fact been successful as a vehicle of income transfer, which it was in part designed to be? The answer will consist of two parts. This one will consider the regional distribution of P.N. activities. The next will study how important Promotion Nationale is in fact in the livelihood of individual workers.

The "marginal" provinces include the border provinces of Oujda, Ksar-Es-Souk, Ouarzazate, Agadir, Tarfaya, and the Rif provinces of Tétouan, Tanger, Nador, and Al Hoceima. The "other" provinces include the Atlantic provinces of Casablanca (now: El Jadida, Khouribga, and Settat), Kénitra, the prefectures of Casablanca and Rabat-Salé, and the central provinces: Taza, Fès, Meknès, Béni-Mellal and Marrakech. Marginal in this case is a euphemism for poor. The marginal provinces are poorer and more crowded than the other provinces.[3] Per capita agricultural income in the former

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[1] In the years 1960 to 1968, tea and sugar accounted for 11.74 per cent of all imports on the average, with a high of 18.65 per cent in 1965 and a low of 7.20 per cent in 1968. For wheat and flour, the corresponding figures are 6.08 per cent, 12.10 per cent in 1967 and 2.55 per cent in 1963. The four items put together average 17.81 per cent over this period. See (Annuaire Statistique, 1960 through 1967) and (Situation Economique, 1968).

[2] (P.N. Bilan, 1961-1966), p. 1.

[3] In the following discussion, the province of Tarfaya is not included due

is less than half that in the latter: DH 157.12 vs. DH 326.29.[1] Population density per square kilometer of arable land is almost three times as high in the former as in the latter: in 1960 they were 282 and 100; by 1968 the figures had risen to 344 and 125, respectively.[2] A slight reduction in the ratio of the densities can be perceived between those two years, from 2.82 to 2.75. This may indicate an improvement in the relative position of the marginal provinces, which can be attributed to different causes. One possible explanation is that the population in the marginal provinces has not increased as fast as in the rest of the country either because of a lower natural growth rate or because of domestic migration from the former region to the latter. Another is that arable land increased relatively faster in the marginal region: this may or may not be attributable in part to Promotion Nationale. Or it could be a combination of these two phenomena. Due to the lack of more detailed information it is not possible to determine at this point, first, whether the decline in the ratio is significant; and, secondly, what is causing the decline.

Per capita agricultural income and population density on arable land (or its inverse) both provide a good measurement of poverty, at least in Morocco. The two are inversely correlated. In regressing arable land density on per capita agricultural income, the following equations are obtained:

$$Y = \underset{(41.71)}{348.83} - \underset{(0.174)}{0.573}\, X_1 \qquad R^2 = 0.4560$$

$$Y = \underset{(42.80)}{352.81} - \underset{(0.147)}{0.483}\, X_2 \qquad R^2 = 0.4546$$

where Y = per capita agricultural income,

X_1 = inhabitants per sq. km. of arable land in 1960,

X_2 = inhabitants per sq. km. of arable land in 1968.

The regression coefficients are significant at better than the 1 per cent level. This correlation is important for the following discussion to the extent that even though data on agricultural income must be treated with caution due to the existence of auto-consommation or subsistence consumption, data on population and arable area (and hence on arable land density) are usually

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to lack of information. Neither are the two prefectures, partly for lack of data but mainly because they do not have any rural or agricultural population.

[1]See Table 4.5 below. The differences are significant at the 10 per cent level.

[2]See Table 4.5 below. The differences are significant at better than the 1 per cent level.

more reliable. Thus the following discussion is in terms of both income and density.

In comparing the P.N. effort in the various provinces, it is obvious that one cannot take the raw number of man-days employed in each year. Clearly if one assumes that the rate of underemployment is uniform all over the country, a province with a large population will be able to absorb or produce a greater number of P.N. man-days than one with a smaller population--other things being the same. The number of man-days must therefore be adjusted for differences in population size. One possible deflator would be the rural population. The resulting criterion could be called "P.N. per capita." It would be expressed in terms of P.N. man-days for every rural inhabitant. One unit of "P.N. per capita" would have the following interpretation: each and every inhabitant of the province could have worked on a P.N. project for one day during the year, if each one had wished to do so. For institutional reasons, however, only males can work on P.N. worksites. Thus it appears that a more appropriate deflator would be the rural active male labor force. This is indeed what has been done here: the 1960 "rural active males" is the deflator. The resulting unit will still be loosely called "P.N. per capita" for lack of a better term. Only the words "active male" need be inserted in front of "inhabitant" in the definition given above.

The results of analyses of variance performed on agricultural income, arable land density and P.N. per capita over nine years are reproduced on Table 4.5. From 1961 to 1969, the P.N. per capita in the marginal provinces was, on the average, more than 2.5 times that in the other provinces. In every year, except 1965, the differences are significant; for four out of the nine years they are highly significant. Available data are thus consistent with the proposition that Promotion Nationale has indeed been a vehicle for income transfer from the richer to the poorer provinces. This hypothesis of course assumes that the rate of taxation is no higher in the poorer provinces than in the rest of the country. (Strictly speaking it is only necessary that this rate not be more than 2.5 times higher.) There is every evidence that this is the case, in view of the fact that the peasants in especially poor provinces like Ksar-Es-Souk and Ouarzazate pay insubstantial amounts of--in some cases, no--direct taxes.

Table 4.5 - Analysis of the Regional Distribution of P.N. Activities

	Marginal Provinces	Other Provinces	All Provinces	F-Statistic	Significance Level
1960 per Capita Agricultural Income (DH/Year)	157.12	326.29	236.07	2.812	0.10
1960 Arable Land Density (inhab./sq. km. arable land)	281.75	99.86	196.87	25.148	0.01
1968 Arable Land Density (inhab./sq. km. arable land)	343.50	125.43	241.73	29.278	0.01
Promotion Nationale per capita (man-days per rural active male/year)					
1961	9.416	2.657	6.262	79.362	0.01
1962	16.281	5.826	11.402	33.511	0.01
1963	11.506	5.348	8.632	7.638	0.02
1964	14.130	6.583	10.608	6.460	0.02
1965	11.200	6.171	8.853	1.695	-
1966	20.214	8.305	14.656	6.112	0.01
1967	18.131	8.028	13.416	2.909	0.10
1968	20.201	7.731	14.382	6.221	0.02
1969	22.667	6.427	15.088	12.086	0.01
Mean	15.972	6.342	11.478		

Source: See Appendix 3, Tables A3.1 and A3.2.

B. The Effects on Individual Income

The other aspect of the question is to ascertain the importance of P.N. wages in the incomes of the workers. The results of the Goulmima survey show that Promotion Nationale plays an extremely large role in providing a supplement to the workers' incomes, especially their cash incomes. Only 6 out of 251 workers said that they had any other source of cash incomes[1] besides Promotion Nationale. The average cash wage received on

[1]The question was: "Do you have any other sources of income?" From conversations with persons who have had long experience in this area, it became evident that "income" would be interpreted by the workers to mean "cash income," not including the output of their land which was not sold. This was confirmed in cross-checking the various answers. In particular, even though only 2.39 per cent said that they had any sources of income other than Promotion Nationale, 68.92 per cent reported that they owned some land.

Promotion Nationale is DH 210.16 per year, with the supervisory worker getting DH 1556.00, the skilled worker DH 281.77 and the unskilled worker DH 132.66. These figures must be interpreted in terms of the general economic situation of the worker.

The overwhelming majority of the P.N. workers interviewed are peasants. Their livelihood depends directly on whether they own any land, and if so, how much. Table 4.6 shows the pattern of landownership and income for the P.N. workers. Significantly fewer supervisory workers than other

Table 4.6 - P.N. Cash Wages and Landownership Among P.N. Workers

Worker Category	Own No Land % (1)	Own Some Land % (2)	Mean Size of Land-holding Moud[a] (3)	Value of Corre-sponding Output[b] DH (4)	Mean Cash Income from P.N. (DH) (5)	Mean Total Income DH (6)= (4)+(5)	Share of P.N. in Total Income % (7)= (5)/(6)
Supervisory	40.0	60.0	3.300	333.48	1556.00	1889.48	82.35
Skilled	31.2	68.6	1.657	167.45	281.77	449.22	62.72
Unskilled	17.5	82.5	1.563	157.95	132.66	290.61	45.65
All	20.3	79.7	1.647	166.24	210.16	376.40	55.83
F-Ratio	-	3.083	5.815	-	83.704	-	-
Level of Significance	-	0.05	0.01	-	0.01	-	-

Source: Goulmima survey.

Notes: [a] Strictly speaking, a moud is a measure of volume for grains used to indicate the "decalitre" (or 10 litres) which is equivalent to 0.35 cubic feet. It is also used as a measure of area: it then designates the area which can be sown with a "decalitre" or moud of wheat. Clearly this area is not fixed, and varies with the fertility of the soil and with how densely the grains are sown. But, on the average, the moud in the southern Moroccan palm groves is about 0.1 ha or 0.2471 acre.

[b] Valued at DH 1010.55 per hectare (see Table A3.3 in Appendix 3).

workers own land because many of them are full time civil servants or permanent employees of the technical services. (The average size of their holdings is however twice that of the other groups.) Fewer skilled workers than unskilled workers own land probably because they have to spend more time off the land practicing their trade. However it may also be that they originally had to acquire these skills precisely because they did not own enough (or any) land.

The small sizes of the holdings show that it is the poorer inhabitants who tend to work on P.N. projects. If it is assumed that each P.N. worker is the head of a household (close to three-fourths are married; of these 79.8 per cent own land), it comes out that the average P.N. worker household owns about one-fifth of the average household's landholding in the region: 1.645 vs. 8.7 mouds.[1]

Very detailed agricultural engineering studies of this area show that the crop patterns and the yields do not vary too widely from one village or palm grove to the next. The average total yield has been estimated to be DH 1010.55 per hectare.[2] Applying this value to the landholdings and assuming that Promotion Nationale and land are the sole sources of income to the workers, it comes out--as shown on Table 4.6--that the proportion of income derived from Promotion Nationale is inversely related to the size of the landholding. However if the P.N. payments in kind to the unskilled workers are included (by multiplying their cash income by 2) the difference between skilled and unskilled workers is almost nil: 62.724 per cent vs. 62.683 per cent! The important point to be made here is not, however, that supervisory and skilled workers derive a greater proportion of their incomes from Promotion Nationale than do unskilled workers. Rather it is that Promotion Nationale contributes a very sizable share of the incomes of all P.N. workers: 55.9 per cent if only cash is considered, and 63.5 per cent if payment in kind is also included. It is not known what proportion of all households every year have one or more of their members work on Promotion Nationale: but for those that do, Promotion Nationale can in no way be considered to be a marginal factor.

II. Effect on Employment

In 1960, agricultural income per capita in the province of Ksar-Es-Souk was DH 165.00 per year.[3] This would work out to DH 874.50 for the typical P.N. family of 5.3 persons and DH 709.50 for the general average family of 4.3 persons. Assuming an increase of one per cent for agricultural per capita income, the corresponding figures for 1970 are, respectively,

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[1]This figure is derived from data on four neighboring palm groves, presented in Appendix 3, Table A3.3.

[2]See Appendix 3, Table A3.3.

[3](Plan 1968-1972), Vol. III, p. 20.

DH 965.99 and DH 783.73.[1] The average income from land and Promotion Nationale estimated here (DH 376.40) is, however, less than half the lower figure. The findings thus have two possible implications. First, the P.N. workers are much poorer than average: this is the more likely alternative. Or, secondly, the households of the workers included in this survey must have other sources of income besides their land and Promotion Nationale. Such possibilities would include occasional and temporary work off the fields for the skilled workers, and working as farm laborers either locally or in more distant places for the unskilled laborers. This brings us into the question of employment and underemployment, which is at the core of the problem at hand.

Attempts at measuring the level of underemployment, as when estimating the availability of labor to Promotion Nationale, use a group as the unit. Ultimately, however, underemployment can make sense only at the level of the individual worker. The survey conducted in Goulmima partially investigated this question. The main characteristic of the Goulmima survey is the fact that the sample was made up exclusively of P.N. workers. For the study of such a large question as underemployment, however, a more appropriate sample would have included members of the rural labor force at large, or at least of the male labor force. Despite this severe limitation the survey nonetheless yields some interesting results which may provide clues to the answers to the larger problem.

Almost by definition, the presence of a worker on a P.N. worksite is proof that he is underemployed or at least he felt that he would earn more there than elsewhere. Thus it becomes quite relevant to find out whether the workers have looked for work elsewhere before coming to the P.N. worksite, and what other activities they would have engaged in had there been no P.N. worksite.

The results concerning these questions, as well as the length of time spent on Promotion Nationale, are produced in the next three tables. The proportion of those who looked for work before coming to the P.N. worksite is unexpectedly low: 47.4 per cent. It could be attributed to the socio-economic tasks mentioned by Pascon.[2] This is quite unlikely, however,

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[1] It is interesting to note that the output corresponding to the average landholding in the cercle of Goulmima (8.7 mouds) falls almost exactly halfway between these two figures. The halfway point is DH 876.86, while the output from 0.87 ha is DH 879.18. In this respect the region of Goulmima is thus quite representative of at least the whole province.

[2] (Pascon, 1966), Part I.

since the survey took place in early June, a time of harvest and not yet of negotiations or festivities. Two other alternative explanatory hypotheses relate to the nature of the labor market in this area. First, given the type of work available, these workers may have felt that Promotion Nationale represented the optimum solution in their effort-minimizing/income-maximizing calculations. To illustrate: the average product per available man-day spent in agriculture in this area has been estimated to be DH 3.66.[1] This is less than the total P.N. earnings of an unskilled worker (DH 2.00 in cash, DH 2.00 in kind), and certainly much less than those of a skilled worker (DH 8.00 in cash). Secondly, there may have been a manifestation of the "discouraged worker" phenomenon: a worker may not have gone out to look for work because he somehow "knew" that the

Table 4.7 - Search for Employment and Length of Time Spent on Promotion Nationale

	Looked for Work Elsewhere Before Coming to P.N. (%)	Number of Years on P.N. (Years)	Number of 2-Week Periods per Year on P.N. (2-week periods)
By Worker Category			
Supervisory	50.0	6.30	17.400
Skilled	57.1	5.60	6.514
Unskilled	45.6	3.32	4.966
All	47.4	3.76	5.677
F-ratio	0.8046	9.7516	37.9727
Level of Significance	-	0.01	0.01
By Employment Search Category			
Did not look for work	-	3.27	5.06
Looked for work	-	4.29	6.36
F-ratio		5.4354	4.1816
Level of Significance		0.025	0.05

Source: Goulmima survey.

labor market was saturated. In fact the labor market accessible to these workers is very limited. Out of 251 workers, 4 came to work on motorized bicycle (3 of whom were supervisors), 59 on bicycle and all the remaining 188 had to come on foot. The furthest distance travelled by these workers

[1]See Appendix 3, Table A3.3.

--in this case, a mason--from home to work was 30 km (about 19 miles) on bicycle. However the largest employer--and probably one of the very few for masons and unskilled workers in this area--was the Ziz dam construction situated near Ksar-Es-Souk at a distance of over 50 miles. Clearly, short of moving there these workers could not have access to that employment. Thus a hypothesis combining the discouraged worker phenomenon and the attraction of P.N. money appears to be the one most consistent with the data in explaining the relatively low number of workers who looked for work elsewhere. In addition, there is the possibility of a voluntary element. Promotion Nationale may be what the worker wants, certainly because of the wages but also because the flexibility of the two-week P.N. employment period fits conveniently into the timing of his other occupations. In fact, to the question "Have you looked for work somewhere else before coming to the present worksite?", two or three workers answered that they looked for work elsewhere only when no P.N. worksite was in operation in their area.

Table 4.8 - Frequency Distribution of Length of Work per Year on Promotion Nationale

Number of Two-Week Periods	Supervisory Workers	Skilled Workers	Unskilled Workers	All Workers
2 or less	1	5	60	66
3 - 5	0	16	92	108
6 - 9	1	10	42	53
10 - 19	1	2	8	11
20 and over	7	2	4	13
Mean (number of periods)	17.400	6.514	4.966	5.677

Source: Goulmima survey.

In order to appreciate the value of P.N. money the workers presumably must have had prior experience on P.N. worksites. This is indeed the case. Although there were about 50 beginners the great majority had previously worked on P.N. worksites for periods of up to 10 years--that is, ever since Production Nationale was officially instituted. (Three of the supervisors and two of the masons reported periods in excess of 10 years, probably because they were confusing working for the technical services with working for Promotion Nationale. For them, perhaps, both are "the government.") The average period of work on Promotion Nationale is 3.76 years, with the supervisory and skilled workers indicating significantly

longer periods. This does not mean that for all those years they have worked continuously and on a full time basis on P.N. worksites. One year a man may decide to work because his crops failed. The next he may be more fortunate and not feel as pressing a need. And even if some do work every year only very few do so on a year-round basis.

The mean working period on Promotion Nationale comes out to about 5.7 two-week periods (almost three months) a year. Again the supervisory and skilled workers work for very significantly longer periods. (See Tables 4.7 and 4.8.) The unskilled worker apparently spends 10 weeks a year on Promotion Nationale--about two and a half months. Can it be concluded that the "rate of underemployment" is about 20 per cent? This is possible. However this may be an under-estimate due to the fact that in this area, and probably in other areas still, P.N. employment is rationed. With very few exceptions, workers--especially unskilled ones--are not permitted to work two successive periods, in order that as many workers as possible can be reached by Promotion Nationale. Thus the 5 periods must not be compared to the theoretical 24, but rather to 12. The effect is to double the rate of underemployment to 40 per cent. This however can constitute no more than a very rough estimate.[1]

One feature which comes out of the findings shown on Table 4.7 is that those who do look for employment elsewhere work for Promotion Nationale more weeks per year than those who do not. This is probably evidence that even though the workers are not fully satisfied with what Promotion Nationale has to offer, it still represents the best source of income for them--second after land only.

What indeed are the alternatives to Promotion Nationale? The findings are shown on Table 4.9, classified according to worker category and to landownership status. The importance of "work in the fields" is to be expected. The very fact that almost half mention it is proof that there is excess labor in agriculture. For at the moment the survey is taken they are working on Promotion Nationale and not in the fields; thus they probably feel that their presence on the fields would not add to the output of the other members of the family. It is interesting to note that almost all

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[1]This 40 per cent estimate is not far from the mean figure of 34.4 per cent obtained independently from the S.C.E.T. studies. See: Appendix 3, Table A3.3. (It is reiterated that figures such as these can only be considered as rough orders of magnitude.)

Table 4.9 - Alternative Activities of P.N. Workers

	"Nothing" (1)	Work in Fields (2)	Work at Home (3)	Trade (4)	Seasonal Emigra-tion (5)	Long-Term Emigra-tion (6)	All Activ-ities (7)
By Worker Category							
Supervisory							
- Frequency	2	3	0	2	3	0	10
- Percentage	20.0	30.0	0.0	20.0	30.0	0.0	100.0
Skilled							
- Frequency	10	7	2	0	16	0	35
- Percentage	28.6	20.0	5.7	0.0	45.7	0.0	100.0
Unskilled							
- Frequency	43	112	5	1	42	3	206
- Percentage	20.9	54.4	2.4	0.5	20.4	1.4	100.0
All							
- Frequency	55	122	7	3	61	3	251
- Percentage	21.9	48.6	2.8	1.2	24.3	1.2	100.0
By Landownership Status							
Own no land							
- Frequency	16	17	1	0	17	0	51
- Percentage	31.4	33.3	2.0	0.0	33.3	0.0	100.0
Own some land							
- Frequency	39	105	6	3	44	3	200
- Percentage	19.5	52.5	3.0	1.5	22.0	1.5	100.0

Source: Goulmima survey.

those that would have worked in the fields (105 out of 122) own land. As previously mentioned, the survey took place during harvest time. Thus this could mean that they hired outside labor to do their harvesting while they worked on Promotion Nationale--a very unlikely proposition in view of the small sizes of their landholdings and of the fact that P.N. wages are almost always lower than the wages he would have to pay harvesters. Or it could mean that other members of the family do the harvest and/or he himself comes back after work to do it or help do it. This last alternative is indeed quite possible--and even probable--for many workers. In this area work on P.N. worksites starts around 6:30-7:00 o'clock in the morning and is usually over by 3:00 o'clock in the afternoon. This leaves them enough daylight to do work in their own fields if they so wish.

Seasonal emigration is the next alternative to P.N. work, with "nothing" coming a close third. Could it be that the proportion of those who

would do "nothing" if they were not on Promotion Nationale provides an indication of the level of open unemployment? Trading and working at home barely need to be mentioned. However, the low frequency of "long-term emigration"--probably to the cities, very rarely abroad--makes one wonder where the oft-talked about rural exodus is coming from. P.N. workers being generally among the less well-off, could this mean that it is those who are fairly well-to-do who are leaving the countryside? Or, alternatively, those who work on Promotion Nationale are less prone to migrate to the cities? This last aspect, if it exists, would be one of the more promising aspects of Promotion Nationale and could bear more detailed studies.[1]

III. Popular Participation

The general impression that one gets in studying the findings presented so far is that Promotion Nationale must certainly be very important for the community, and especially for the workers' families. This, however, does not constitute the whole picture. One can distinguish three stages at which Promotion Nationale affects the people and their feelings towards the whole program. The first one is at the preparatory stage when project selection takes place. Then comes the execution of the program itself. Finally, and probably of greatest importance, is the final stage: what effects does it all have on the worker's livelihood? Virtually everything that has been discussed so far is directly related to the execution stage. It is now proposed to examine the interactions at the other two stages; for they, too, determine how the worker perceives Promotion Nationale, and consequently the extent to which he will cooperate in the whole exercise.

A. The Peasant in the Preparatory Phase

During the preparatory phase, in theory the peasant is to participate in the selection of projects collectively and indirectly through the village or communal council. He can, and in many instances does, present a list of the projects he would most like to see undertaken in his area in the following year. But in the end he has very little influence on what is finally selected. This is due to the form of local administration in

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[1] It must be remembered that the Goulmima survey sample does not include those--if any--who have already emigrated.

Morocco, which is a somewhat uneasy mixture of centralization and decentralization.

On the one hand, the elected communal council and its president in theory possess certain important prerogatives. Very generally speaking, the communal council settles by its deliberations the affairs of the commune.[1] In practice, however, things do not usually work that way. For, on the other hand, there are the local authorities, the caïd, the sheikh and the moqqadem, who are the representatives of the Ministry of the Interior. A certain rivalry seems to exist in many areas of the country between the two parts of this two-headed executive, the council president and the local authority. By the sheer power of the State, the local authorities always come up on top in the solution of any actual or potential conflict.[2]

This situation--which may be described by saying that in Morocco, the farmers are still minor in the legal sense--is recognized by the official use of the words autorité de tutelle (tutelage authority or guardian) to designate the State and its representatives. This minor's status of the local collectivities manifests itself in the selection of P.N. projects where in the end it is the local authorities who, for budgetary or other reasons, decide how many projects and which projects are to be undertaken. Some people contend that such a system tends to produce--and in some cases has produced--the selection of projects which benefit only a few, especially the retired agents of the State. It would thus be interesting to find out how many of the P.N. workers benefit from their work, and how much they benefit.

B. The Distribution of Benefits

In the Goulmima survey, one way to try to get at this question is through the study of land ownership, land distance, and whether or not the land benefits from the work. As in all traditional societies, family ties in Goulmima are very strong. Consequently questions were asked relating not only to the workers themselves but also to their relatives. The projects were all related to irrigation. Therefore the questions--and the

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[1]Dahir of June 23, 1960 (modified and completed by the dahir 1-62-279 of November 9, 1962) cited in (Ben Bachir, 1969), p. 166.

[2]For further discussion see (Ben Bachir, 1969), especially Part II, pp. 111-233; and (Chambergeat, 1965).

Table 4.10 - Landownership and the Distribution of Benefits Among P.N. Workers and Their Relatives

	Distance from Worksite to Village	SELF				RELATIVES			
		Land Owner (%)	Land Area (moud)	Land Distance (km)	Land Bene-fitting (%)	Land Owner (%)	Land Area (moud)	Land Distance (km)	Land Bene-fitting (%)
By Worker Category									
Supervisory	5.700	60.0	3.300	3.250	40.0	90.0	6.300	4.700	60.0
Skilled	4.723	68.6	1.657	2.914	45.7	57.1	1.914	2.700	37.1
Unskilled	3.912	82.5	1.563	3.527	70.0	69.9	2.233	3.207	56.8
All	4.096	79.7	1.645	3.431	62.9	68.9	2.351	3.196	54.2
F-ratio	2.302	3.083	5.815	0.584	4.165	2.300	8.958	1.184	2.416
Significance	-	0.05	0.01	-	0.05	-	0.01	-	0.10
By Landownership Status									
No Land	4.837	0.0	0.0	0.00	0.0	31.4	1.265	1.882	23.5
Some Land	3.908	100.0	2.065	4.306	79.0	78.5	2.628	3.530	62.0
All	4.096	79.7	1.645	3.431	62.9	68.9	2.351	3.196	54.2
F-ratio	3.480	0.0	91.971	109.395	190.328	50.237	7.894	8.603	26.601
Significance	0.10	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Source: Goulmima survey.

answers--were fairly straightforward. The findings appear in Table 4.10.

Over 60 per cent of all workers feel that their lands benefit directly from the projects they are working on. And, more importantly, a greater proportion of the unskilled than of the other workers feel that way. Furthermore, over half report that their relatives benefit. These facts may be significant in explaining their participation on the worksites. If one adds the proportion of those who benefit directly (62.9 per cent) to the proportion among those who do not benefit but whose relatives benefit (16.1 per cent) then an impressive total of 79.0 per cent does benefit in one way or another, directly or indirectly. (These results must be interpreted with caution, however, for the survey included P.N. workers only and not the entire population.) At least in the Goulmima region, people work on Promotion Nationale partly because they or their relatives benefit from the P.N. projects.

When the results are broken down according to landownership status, certain characteristics of the rural society emerge. To put it very simply, if land be taken as an index of wealth, the poor have poor relatives and the rich have rich relatives. More precisely, those who themselves have land tend very significantly to have relatives who own land; and furthermore these relatives have more land than the relatives of those who do not own land. It is this significant correlation which explains why, of those who own land almost three times as many as of those who do not own land feel that their relatives benefit.

C. The Training Function

Benefits to the land constitute only one aspect of P.N. effects on the workers. There are others which may affect equally how the workers view Promotion Nationale. Among them, one may cite the social overheads, such as better roads, better public buildings, etc. Another aspect relates to training or skill-acquisition.

The term "promotion nationale" means national development, national improvement, national uplifting not only in terms of aggregate physical output of goods and services but also in terms of individual life and inner quality. Thus, by definition, "promotion" in this sense implies that the program is to carry out some training function so that the worker has a better chance to improve his lot. On the type of projects undertaken in the Goulmima region, the only kind of skills that can be taught and acquired

are those of masons. When asked whether or not they had learned any skills on P.N. worksites, only 20 out of the 251 workers (or less than 8 per cent) answered affirmatively. Such a figure is quite low. This is definitely one area where much can be done to improve the performance of Promotion Nationale.

CHAPTER 5

A LINEAR PROGRAMMING MODEL OF AN ECONOMY WITH A WORKS PROGRAM

The last two chapters have dealt mainly with the micro aspects of Promotion Nationale, namely individual workers and projects. At this point the question is whether to consider its macro aspects. More precisely, is the program large enough to justify a macro approach? On the average, total expenditures on Promotion Nationale (both in cash and in kind) over the period 1961-1969 amounted to

0.62 per cent of gross domestic product,
4.57 per cent of gross investment,
2.35 per cent of budgetary expenditures, and
10.33 per cent of public investment.[1]

Thus although Promotion Nationale represents a small effort in comparison with the output of goods and services, it constitutes a fairly significant undertaking relative to either total investment or public investment. Hence an attempt at identifying its impact on the economy is both justified and desirable.

Section I presents the model which is applied to Morocco (1961-1969) in Section II. Some implications and alternative forms of the model are discussed in Section III.

I. The Model

The problem is to estimate the aggregate effects of a works program. The solution offered here is a linear programming model of an economy which originally has a single sector producing goods and services that are consumed, invested, or exported. The initiation of the works program introduces a second sector whose output cannot be exported but can be consumed or invested. However only the investable part of this output is of interest since the consumable part does not satisfy effective demand. The investable (or useful) part can go into investment for the goods and services sector.

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[1]Sources: see Tables A4.3, A4.5, and A4.7 in Appendix 4.

The model consists of an objective function and a series of constraints. The objective is to maximize a social welfare function. The constraints consist of definitions, behavioral and functional constraints, as well as policy constraints. The variables and the parameters are first defined before the model itself is presented.

A. The Variables

A = non-food aid actually used.

A^* = non-food aid available (exogenous).

C = consumption.

F = food aid actually used.

F^* = food aid available (exogenous).

I = investment into the goods and services sector.

I_x = investable part of the works program's output.

W = welfare function.

X = output of the works program.

Y = output of the goods and services sector.

B. The Parameters

a = maximum feasible rate of growth of investment ("absorptive capacity").

b = maximum proportion of investment which can originate from the works program.

d = social rate of discount.

f = ratio of the works program's output over food aid.

g = ratio of the works program's output over government expenditures.

i = minimum rate of growth of investment.

k = marginal capital coefficient (= inverse of the incremental capital-output ratio).

p = population growth rate.

q = quality-adjustment factor for the investable part of the works program's output.

r = average rate of raising domestic resources ("rate of taxation").

t = time index.

T = terminal year of the program.

u = maximum proportion of the works program's output which is investable (u for useful).

C. The Welfare Function and the Constraints

The objective function to be maximized is the sum of the discounted value of consumption in each year during the period under consideration:

$$W = \sum_{t=1}^{T} \frac{C(t)}{(1 + d)^t} .$$

The first constraint is the national income equality, which can be formulated as a definition of consumption. Since there is effective demand only for the investable part of the works program's output, the equality takes the form[1]

(1) $C(t) = Y(t) + A(t) + F(t) + I_x(t) - I(t)$.

This simply states that available resources must match their uses. The availabilities consist of the domestic production of goods and services, the net imports of goods and services (equal to total foreign aid), and the output of the works program that is available for investment. The uses are consumption and investment.

All food aid that is made available should be used, otherwise it becomes a lost resource. In addition more foodstuffs can always be commercially purchased so that

(2) $F(t) \geqq F(t)^*$.

However the sum of food and non-food aid actually used cannot exceed the total amount of aid available:

(3) $A(t) + F(t) \leqq A(t)^* + F(t)^*$.

Relations (2) and (3) together imply that no more non-food aid can be used than is made available. In other words, while non-food aid can be transformed into food aid if necessary, the reverse transformation cannot be accomplished. This reflects the aid situation for most less developed countries.

One of the main reasons (possibly the only one) for instituting a works program is the recognized widespread prevalence of unemployment and/or underemployment. Consequently it is assumed here that labor is in surplus, and capital constitutes the only limitation to output in the goods and services sector:

(4) $Y(t) \leqq Y(t - 1) + k \cdot I(t - 1)$,

where k is the capital coefficient. Because of the form of the welfare function and of Equation (1), the model would have a tendency to keep investment low as possible. To avoid this phenomenon, which would produce

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[1]The foreign trade sector has been eliminated from the present model by using the fact that the trade gap must be filled through an inflow of external resources (both food aid and non-food aid). This relation allows the substitution of A(t) plus F(t) for the difference between imports and exports in Equation (1).

unrealistic declines in output, investment in any given year is required to be at least equal to investment in the previous year. In fact, since the model refers to a less developed country, it is assumed that one of the policy goals or constraints is that investment must grow at an annual rate of at least i:

(5) $I(t) \geqq (1 + i) \cdot I(t - 1)$.

There exists, however, an upper bound to the increase in investment. This limitation in absorptive capacity of the economy is expressed by the constraint

(6) $I(t) \leqq (1 + a) \cdot I(t - 1)$

where a is the maximum feasible rate of investment.

On the one hand, the works program must at least use up all food aid allocated to it:

(7) $X(t) \geqq f \cdot F(t)$.

This is because food aid is allocated by the donors for specific purposes, and is not transferable from one use to another. In particular the donors may insist, for reasons of their own, that at least a given proportion x of food aid be used to finance the works program. If the payment in kind accounts for a proportion h of the program's output, then it can be shown that f is simply equal to the ratio of x over h.

On the other hand, the works program must not exceed the budgetary expenditures earmarked for it. The cash part of the expenditures on the works program is financed by the government. The government's expenditures cannot exceed the sum of resources available to it. These originate from cash external assistance [A(t)], or from domestic sources. Domestic resources include tax revenues as well as domestic borrowings and treasury advances (i.e., deficit financing). They depend on the output of goods and services. The budget constraint on the works program is thus

(8) $X(t) \leqq g \cdot [r \cdot Y(t) + A(t)]$

where r is the average rate of raising domestic resources (or "rate of taxation"). The government will usually insist that the works program must not absorb more than a given proportion z of its total expenditures. The reason is that there always exist competing uses for its resources: some of these are at least as urgent and/or as productive as the works program. Given the parameters h (proportion of payment in kind over total expenditures on the works program) and z, it can be shown that g is the ratio of z over (1 - h).

The present formulation of the "production function" of the works program approximates quite closely the actual procedure. In drawing up a program for the next one or several years, the decision-maker probably has some idea of what the amount of food aid and government expenditures will be. Given these elements and the experience of the past, he can determine what the minimum and maximum output of the works program can be on the basis, respectively, of the food aid and the government expenditures.

The output of the works program consists of a consumable part--such as cleaning the municipal gardens or the streets--for which there is assumed to be no effective (or, at least, monetary) demand, and an investable part. The investable part is determined by two factors. First, it depends on the proportion u of the output which can be considered to add to the productive capacity, such as the building of irrigation networks. Secondly, one must also take into account the possibility that the same work may not be as good when accomplished under the labor mobilization program as it would be under a private contractor. This can be due to several reasons, such as less thorough project preparation, less skilled technical supervision, use of labor intensive techniques where capital intensive ones would be more appropriate, etc. Consequently, a quality adjustment factor q must be introduced. This factor could be equal to 1 if it is deemed that there is no difference in work quality between the works program and private contractors; otherwise it is less than 1. Thus the following constraint prevails on the supply side of investable output of the works program:

$$(9) \quad I_x(t) \leqq q(t)u(t) \cdot X(t) \ .$$

On the demand side there exists also a limitation on the amount of investable output of the works program which can be effectively absorbed by the economy:

$$(10) \quad I_x(t) \leqq b \cdot I(t) \ .$$

This merely states that only a certain (maximum) proportion b of the investment into the goods and services sector can originate from the labor intensive works program method. To take the extreme case, it is clearly not possible for all investment goods to come from the works program. Assuming, for example, that the program builds all the necessary roads, irrigation canals and dams, the economy would still need generators and other types of machinery which the works program could not produce.

It is assumed in the model that it is politically infeasible to allow declines in per capita consumption. This policy constraint can be formulated

thus:

(11) $C(t) \geqq (1 + p) \cdot C(t - 1)$,

where p is the annual population growth rate.

Finally, the model contains the usual non-negativity constraints on the variables: $A(t)$, $A(t)^*$, $C(t)$, $F(t)$, $F(t)^*$, $I(t)$, $I_x(t)$, $X(t)$, and $Y(t)$ must all be greater than or equal to zero.

This completes the specification of the model. For convenience, it is presented in summary form in Table 5.1. The model consists in fact of

Table 5.1 - The Linear Programming Model of An Economy With a Works Program: Summary

Maximize $W = \sum_{t=1}^{T} \frac{C(t)}{(1 + d)^t}$ subject to the following constraints:	
Constraint No:	Constraint
Sub-Model I: The Goods and Services Sector	
1	$C(t) = Y(t) + I_x(t) + A(t) + F(t) - I(t)$
2	$F(t) \geqq F(t)^*$
3	$A(t) + F(t) \leqq A(t)^* + F(t)^*$
4	$Y(t) \leqq Y(t - 1) + k \cdot I(t - 1)$
5	$I(t) \geqq (1 + i) \cdot I(t - 1)$
6	$I(t) \leqq (1 + a) \cdot I(t - 1)$
11	$C(t) \geqq (1 + p) \cdot C(t - 1)$
Sub-Model II: The Works Program	
7	$X(t) \geqq f \cdot F(t)$
8	$X(t) \leqq g \cdot [rY(t) + A(t)]$
9	$I_x(t) \leqq q(t)u(t) \cdot X(t)$
10	$I_x(t) \leqq b \cdot I(t)$
	$A(t), C(t), F(t), I(t), I_x(t), X(t), Y(t) \geqq 0$

two sub-models: one for the goods and services sector (constraints 1-6, 11), the other for the works program (constraints 7-10). The two are connected by the appearance of $I_x(t)$ in equation (1), and of $Y(t)$ and $I(t)$ in relations (8) and (10), respectively.

At this point, a few comments are offered. First, the formulation of the national income equality in equation (1) specifies the fact that,

other things the same, the higher the investable part of the works program's output, the higher total investment in the economy. This brings out the importance of the usefulness factor and quality adjustment factor on the one hand, and of food aid [through relations (2) and (7)] and of non-food aid [through relations (3) and (8)] on the other hand. In theory, there is general agreement that a labor mobilization program or works program --and, through it, foreign aid in cash as well as in foodstuffs--can actively contribute to capital formation. As one of its achievements, the present model makes it possible to establish not only whether--or the conditions under which--but also how much such a program adds to investment.

Secondly, even though the model is supposed to simulate the effects of a labor mobilization program, labor does not appear anywhere in its present formulation. This is because, by assumption, labor is in surplus and, at least in the foreseeable future, will not represent an upper limit to output. A lower limit on employment could, however, be introduced. Suppose, for instance, the government has decided that employment either in absolute or in percentage terms must be above a certain level. This situation could be reflected in the model by introducing an additional policy constraint, such as

$$v\,Y(t) + v_x X(t) \geqq (1 - j) \cdot L(0)e^{nt}$$

where j is the minimum acceptable rate of unemployment, n the growth rate of the labor force, v and v_x are the labor coefficients, and L(0) the labor force in the base year (the year before the program). Although the problems of measuring underemployment and making it comparable to straight unemployment are quite sizable,[1] they are not insurmountable. With the proper set of conventions, the labor coefficients can be estimated and the constraint introduced.

II. Application to Morocco: 1961-1969

In order to apply the model to a specific case, as we now propose to do, it is necessary to estimate the various parameters and establish certain initial values as well as the values of the exogenous variables. The data used in obtaining these different magnitudes are reproduced in Appendix 4.

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[1] See Chapter 1.

A. Parameters, Foreign Aid, and Initial Values

For reasons already discussed in a previous part of this study, it is estimated that the minimum appropriate discount rate in Morocco is

$$d = 0.10$$

which is the value used here.

The capital coefficient k has been estimated on the basis of the 1960-1964 Plan and the actual experience in 1951-1954. The 1960-1964 Plan projected an increase in value added of 2870 (in million of dirhams) from 1960 to 1965[1] for a total investment of 5447 in the period 1960-1964.[2] The capital coefficient used in the Plan was thus 0.52. This, however, appears to be too high in the light of past experience. Since the period just before and just after Moroccan independence in 1956 was marked by large outflows of capital and uncharacteristically low levels of investment, only the years 1951-1954 should be considered. In that period value added increased by 79.6 (in billions of dirhams at 1951 prices), while total investment amounted to 243.6 from 1951 to 1953.[3] The actual capital coefficient was thus 0.32. The value used in the model is the average of the 1960-1964 Plan figure and the one actually experienced in the early 1950's, namely

$$k = 0.42 .$$

Similarly, the minimum growth rate of investment i was determined on the basis of the Plan value and an actual value. Gross investment (in millions of constant dirhams) was planned to increase from 1219 in 1961[4] to 3010 in 1970,[5] which represents an annual growth rate of 10.5 per cent. Between 1956 and 1960[6] actual investment rose from 756 to 911 when properly deflated (in terms of 1958-59 prices)--a growth rate of 4.7 per cent. Thus the figure used here is

$$i = 0.076 .$$

The coefficient of absorptive capacity a was estimated solely on the basis of actual observations. When expressed in constant prices, net investment rose by over 15 per cent between 1951 and 1952,[7] and by over 20

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[1] (Développement Industriel 1960-1964), p. 33.

[2] (Développement Industriel 1960-1964), p. 2.

[3] These figures are derived from Table A4.1 in Appendix 4.

[4] (Développement Industriel 1960-1964), p. 34.

[5] (Développement Industriel 1960-1964), p. 41.

[6] (Annuaire Statistique 1960), p. 340.

[7] See Appendix 4, Table A4.1.

per cent from 1960 to 1961.[1] Thus the maximum possible growth rate of investment is assumed to be

$$a = 0.20 .$$

In establishing the values of f and g, the output of the works program is defined to be equal in value to total expenditures on it (both in cash and in kind); and government expenditures is the sum of current (including debt service) and investment expenditures. Thus

$$f = \frac{\text{output of the works program (DH)}}{\text{food aid (DH)}} ,$$

$$g = \frac{\text{output of the works program (DH)}}{\text{government expenditures (DH)}} .$$

For year 1, f and g are set equal to the observed values of these ratios. For years 2 through 9, these values are multiplied by 2 because Promotion Nationale existed for only half the first year. They are assumed to be, respectively, the minimum ratio of the works program's output over food aid and the maximum ratio of the works program's output over government expenditures:

$$f = 0.22 \quad \text{for } t = 1 ,$$

$$f = 0.45 \quad \text{for } t \neq 1$$

(the difference between 0.45 and 0.22 x 2 being due to rounding); and

$$g = 0.016 \quad \text{for } t - 1 ,$$

$$g = 0.032 \quad \text{for } t \neq 1 .$$

The P.N. program is divided along two lines.[2] On the one hand, projects are classified into three categories according to their nature: mise en valeur (or land improvement), infrastructure, and equipment. It is assumed--and, admittedly, this is quite arbitrary--that only the first two constitute useful or productive projects. Hence

$$u = \frac{\text{mise en valeur + infrastructure (man-days)}}{\text{total Promotion Nationale (man-days)}} .$$

On the other hand, the projects fall under Part I or Part II depending on whether they are administered by a technical service or the local authorities. There is some evidence that, for various reasons discussed earlier, projects under Part I are better done than those under Part II. In many cases they are even reported to be of a quality comparable to those done by private contractors or to regular projects of the technical services.

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[1] See Appendix 4, Tables A4.3 and A4.4.

[2] See Chapter 3 for more details.

Consequently the quality adjustment factor is estimated on the basis of the assumption that Part I projects are as good as privately done projects, and Part II projects are only half as good, that is,

$$q = \frac{\text{Part I}}{\text{Total P.N.}} + 0.5\,\frac{(\text{Total P.N.} - \text{Part I})}{\text{Total P.N.}}\,,$$

$$q = 0.5\,\left(1 + \frac{\text{Part I}}{\text{Total P.N.}}\,\frac{\text{(man-days)}}{\text{(man-days)}}\right)\,.$$

The investable coefficient is the product of q and u. It is higher with a higher proportion of mise en valeur and infrastructure projects, and with a greater share of the P.N. program administered by the technical services. A 1960 observer endowed with perfect foresight would have been able to forecast the actual values of $q \cdot u$ in 1961 and 1969. The values used in the model are computed on the assumption that the coefficient grew in linear fashion from the value

$$q \cdot u = 0.415$$

actually observed in 1961 to the value

$$q \cdot u = 0.600$$

actually observed in 1969.[1]

The maximum proportion b of investment which can originate from the works program can only be roughly estimated. The value used here was chosen as

$$b = 0.05\,.$$

This appears to be a reasonably low figure.

The population is assumed to grow at an annual rate of

$$p = 0.025$$

on the basis of the figure used in the 1960-1964 Plan.[2]

From observed values in 1957-1960, the average propensity to raise domestic resources ("rate of taxation") has been estimated to be[3]

$$r = 0.23\,.$$

The (exogenous) available foreign aid figures are taken to be equal to the observed values. Total foreign aid is obtained from O.E.C.D. publications. Food aid--which, for the present study, is assumed to come exclusively from U.S. P.L. 480--is obtained from a U.S.A.I.D. source. The values of (A* + F*), F*, and A* are shown in Appendix 4, Table A4.5.

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[1] See Appendix 4, Table A4.7.

[2] (Plan 1960-1964), p. 7.

[3] This figure is derived from Table A4.2 in Appendix 4.

In addition to the various parameters and the availability (and composition) of foreign aid, initial values are needed in order for the model to start at the appropriate level. They are taken as the values observed in 1960:[1]

$$Y(0) = 8200 ,$$
$$I(0) = 520 ,$$
$$C(0) = 7880$$

It must be noted that consumption in this model includes not only consumption in the usual sense but also depreciation and changes in inventories. This is necessary for internal consistency of the data since investment is defined as net investment.

B. The Optimal Solution: Morocco, 1961-1969

1. General performance. The variable values and the shadow prices in the optimal solution are on Table 5.2 and Table 5.3, respectively. Overall the model performs remarkably well in retracing the evolution of the 1960's. Except in the first year (and for reasons discussed later), all foreign aid available is used up. The model values of the other variables are, on the average, higher than the observed values. Ignoring offsetting errors, the mean divergences between observed and model values[2] for the different values are:

Consumption C: 3.8 per cent,
Gross domestic product Y: 3.6 per cent,
Net investment I: 13.4 per cent, and
Works program's output X: 30.5 per cent.

The differences between model and observed values originate from various sources. First, the model yields optimal values. The actual observations may be feasible in terms of the present model, but they are not necessarily optimal. And even if they were optimal in terms of some other

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[1]See Appendix 4, Table A4.3.

[2]The error criterion used is

$$\frac{\sum_{t=1}^{9} \frac{|V^a(t) - V^m(t)|}{V^a(t)}}{9}$$

where V^a = actual value of variable V,
V^m = model value of variable V.

Table 5.2 - Actual and Model Values of Variables in the Optimal Solution: Morocco, 1961-1969 (in millions of dirhams at 1960 prices)

	C^a (1)	C^m (2)	Y^a (3)	Y^m (4)	I^a (5)	I^m (6)	I_x^m (7)
1961	7 738	8 133	7 936	8 418	631	625	0
1962	8 697	8 337	8 924	8 681	676	750	31
1963	8 950	8 562	9 399	8 996	847	900	35
1964	8 845	8 888	9 474	9 374	764	968	38
1965	8 921	9 253	9 696	9 780	783	1 042	43
1966	8 875	9 530	9 469	10 218	860	1 121	44
1967	9 483	9 780	10 125	10 689	1 162	1 206	45
1968	10 671	10 409	11 345	11 195	1 206	1 298	53
1969	10 470	10 847	11 383	11 741	1 326	1 397	58
	X^a (8)	X^m (9)	A^a (10)	A^m (11)	F^a (12)	F^m (13)	
1961	34	34	400	186	152	154	
1962	64	71	226	226	149	149	
1963	52	76	301	301	131	131	
1964	54	79	299	299	146	146	
1965	47	85	412	412	60	60	
1966	79	84	267	267	122	122	
1967	76	82	96	96	156	156	
1968	70	93	323	323	135	135	
1969	67	96	300	300	145	145	

Source: The actual values are computed from the data contained in Appendix 4.

Notes:
1. The values are rounded to the nearest unit.
2. Superscripts: a = actual (observed) unit.
   m = model values.
3. Consumption figures include depreciation allowances and changes in inventories. Investment figures are net of depreciation. For depreciation, see Table A4.4.

system, the actual welfare function probably differs from the one used here.

Second, the model does not take into account the cyclical and other variations (due mainly to weather factors) in the output Y, especially in the agricultural sector.

Third, the model produces net investment much higher than the observed values. This is attributable to a high absorptive capacity coefficient which allowed investment to grow at a rapid pace in the first three years. It is also due in large part to the minimum required growth rate of investment, which was fairly high.

Table 5.3 - Shadow Prices in the Optimal Solution: Morocco, 1961-1969

Year	National Income Equality (1)[a]	Food Aid Utilization Constraint (2)	Total Foreign Aid Constraint (3)	Productive Capacity Constraint (4)	Minimum Growth of Investment Constraint (5)	Absorptive Capacity Constraint (6)
1961	0.0[b]	[b]		5.75679		2.52467
1962	1.71283	.02401	1.73684	5.75679		.08901
1963	.75100	.01108	.76208	4.03844		.08808
1964	.68300	.01058	.69358	3.28489	.50239	
1965	.62100	.01008	.63108	2.59946	.84680	
1966	.56400	.00957	.57357	1.97614	.98121	
1967	.51300	.00908	.52208	1.40994	.93809	
1968	.46700	.00861	.47561	.89485	.74436	
1969	.42400	.00814	.43214	.42587	.42400	

Year		Food Aid Constraint on Works Program (7)	Budget Constraint on Works Program (8)	Supply Constraint on Investable X (9)	Absorption Constraint on Investable X (10)	Minimum Growth of Consumption Constraint (11)
1961		0.0	0.0			
1962			.75022	1.71283		.88683
1963			.34621	.75100		
1964			.33057	.68300		
1965			.31485	.62100		
1966			.29892	.56400		
1967			.28369	.51300		
1968			.26899	.46700		
1969			.25440	.42400		

Notes: [a] The column number corresponds to the constraint number in the model.

[b] Blanks are associated with basic variables, i.e., constraints that are not effective or binding.

0.0 indicates that the activity is part of an alternate optimum.

Fourth, the relatively large errors in the model values of X is caused by an over-optimistic view of how much of its resources the government was willing to put into the works program, i.e., the g coefficient (ratio of X over government expenditures) must have been chosen too high. This is in fact confirmed by computing the actual ratio of X over government expenditures. This figure approaches 0.032 (the value used in this application)

only in 1962, 1966 and 1967.[1] In the other years it remains in the neighborhood of 0.020. This means that in reality the government allocated to the works program a much smaller share of its resources than the model--on the basis of the first year's experience--assumed it would do.

Finally, the g coefficient also explains why the model values of X experienced a decline from 1965 to 1967. The cause is the drastic fall in available non-food aid which occurred in that period: this affects the output of the works program X through the budget constraint (8).

2. The first year. An analysis of the variable values and of the shadow prices yields much insight into the workings of the model. A notable feature arises in connection with the first year. It is the apparent inability or unwillingness of the model to use all available resources. In particular, foreign aid is not used up. This appears to go against the intuitive notion that, surely, all foreign aid can always be channeled into consumption. Although irrational at first sight, this behavior is in fact quite optimal in terms of the model. In brief, the whole trouble arises from requiring a minimum growth of consumption in each and every year (constraint 11). If consumption in year 1 is allowed to rise above a certain level (in this case: 8133), the increase in productive capacity in that year will not make it possible to produce a p (= 2.5) per cent increase in year 2's consumption.

Since the resources available for consumption are already not fully utilized, it is evident that making one more unit of, say, foreign aid available would not change the optimum. The shadow price here is zero. In fact it is possible that in some cases the shadow price be negative. Such results have actually been achieved in earlier versions of the model. Under those situations, making one more unit of resources available is positively harmful. To give a specific example, "forcing" the economy to consume one more unit of food aid under such circumstances makes it so hard to satisfy the requirement for a minimum growth of consumption that the economy is willing to pay somebody a positive amount to throw away that extra unit!

In more general terms, there may be cases where food aid is so counterproductive (in terms of the social welfare function) that the intended recipient country would be willing to pay the donor country in order to reduce

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[1]The errors in X for those three years average to only 8.4 per cent, as opposed to 30.5 per cent for the entire period 1961-1969. Thus g is indeed the crucial element here.

the food aid, or at least not to force any more of it into the recipient country. This payment would be in the form of a reduction in the total volume of aid. This phenomenon must account in a large part for the fact that each unit of commodity aid is valued by the recipient country at only a fraction of the nominal value.

3. Pattern of investment. The requirement for a minimum growth of consumption also explains the pattern of investment. In the first three years, investment grows at the maximum possible rate. This is in order to build up enough productive capacity so that consumption can grow at the rate p. In the later years, the need is no longer so pressing. The accumulated productive capacity is enough to satisfy the requirement. Consequently, investment grows only at the minimum acceptable rate.

The pattern of investment is quite sensitive to the discount rate, at least in the range from 10 to 20 per cent. At 10 per cent, investment in year 2 is at its maximum (750) and therefore consumption at a minimum (8337). Since investment and consumption represent the only uses of resources, and since they are alternatives to each other, in any given year the only way to increase one is to reduce the other. On an intuitive basis it is obvious that, given the formulation of the social welfare function, the higher the discount rate the more the model will value consumption in earlier years. Consequently, the higher d the more it will try to increase early year consumption. This is confirmed by trying different values of d. At d = .15, investment in year 2 is reduced to 692 and consumption rises correspondingly to 8395 (which is reflected in a higher value for year 1 also: 8190). For d = .20, the respective figures are 673, 8414 (and 8209). Given the requirement for a minimum growth in investment, 673 is the lowest possible value. Thus d = .10 yields the lowest possible value of consumption (or highest value of investment) for year 2, and hence for year 1 as well; and d = .20 yields the highest. Since the constraints on absorptive capacity and on minimum growth of investment cannot be violated it is evident, first, that any discount rate below 10 per cent will not change the optimal variable values obtained from d = .10. And, secondly, any discount rate above 20 per cent will not change the optimal variable values obtained from d = .20. In general terms, compared with d = .10 or less, d = .15 or .20 or higher are associated with consumption values that are higher in the first four years and lower in the last five years for the period 1961-1969.

In considering the pattern of investment and consumption, the main conclusion is that the only way to increase consumption in a given year is to reduce investment in that year--with the limits imposed by the constraints on absorptive capacity and minimum growth of investment. Whether it is optimal to reduce investment in this fashion depends on the social rate of discount: the higher this rate, the more profitable (in terms of the social welfare function) such reductions become. It is in fact conceivable that for high enough discount rates it would become optimal to reduce investment to very low levels, possibly to zero. This is precisely the reason why the model contains a requirement for a minimum growth of investment.

4. Value of foreign aid and national income equality. After year 1, the shadow price associated with the national income equality (column 1, Table 5.3) is simply $1/(1 + d)^t$. Each unit of resource available for consumption is valued at its contribution to welfare, which is equal to the coefficient associated with it in the objective function. The only exception arises in year 2 where the shadow price is

$$1.71283 = 1/(1 + d)^2 + 0.88683.$$

This is because each additional unit made available in that year not only increases the welfare function by 0.826 in year 2 but also raises consumption in future years by an amount valued at 0.88683 (the shadow price of constraint 11). In terms of the model, the value of the shadow price associated with the national income equality is

$$\frac{dW}{dC(t)} = \frac{dW}{dRHS(t)} = \frac{1}{(1 + d)^t},$$

where RHS is the right hand side of equation (1).

The contribution of food aid and non-food aid to the social welfare function can be determined. Each additional unit of non-food aid contributes that unit--properly discounted--to consumption, directly through the national income equality; and indirectly, through the government budget, it adds $g \cdot qu$ --properly discounted. Except for year 1 when foreign aid is in surplus, the total contribution of cash aid in year t is therefore

$$\frac{1}{(1 + d)^t}(1 + g \cdot qu)$$

which is simply $dW/dA(t)$. It can be checked that this expression corresponds to column (3) in Table 5.3, where 0.88693 must be added in year 2 for reasons already discussed. Thus column (3) represents the value or shadow price of

non-food aid to the economy.

Each additional unit of food aid also contributes directly to consumption an amount equal to $1/(1 + d)^t$. However, given that available total foreign aid is fixed in any year, one more unit of food aid used means one less unit of non-food aid (by relations 2 and 3). Consequently a unit increase in food aid actually used beyond the amount of food aid available has two effects. On the one hand it raises consumption by $1/(1 + d)^t$. But, on the other, it occasions a reduction in cash aid which, through the government budget (constraint 8), implies a reduction of $g \cdot qu$ in the social welfare function. The net effect of substituting a unit of food aid for cash aid is thus a reduction in the social welfare function in the amount of

$$\frac{1}{(1 + d)^t} (g \cdot qu)$$

which is equal to $-dW/dF(t)$. Column 2 of Table 5.3 is this discounted value of $g \cdot qu$. It can be interpreted in two different ways. First, it shows the loss in social welfare resulting from using one unit of cash aid to purchase foodstuffs above the amount of food aid available. Secondly, it represents the gain that could be derived if, given the total amount of foreign aid, one unit of food aid could be exchanged for a unit of non-food aid.

This aspect of the model supports a notion that one would hold on the basis of a priori reasoning, namely that food aid is less productive or useful than non-food aid. This is because commodity aid represents the extreme form of aid tying, and aid tying always reduces the true value (as opposed to the nominal value) of aid to the recipient country--except in the unlikely case where the recipient country would have imported, at the same cost and in the same amount, precisely the commodity to which aid is tied.

In considering constraints 1 (national income equality), 2 (food aid utilization constraint), 8 (budget constraint on works program), and 9 (supply constraint on investable X) some relationships emerge which throw additional light on the nature of the difference between food and non-food aid. Let s.p.(c) stand for the shadow prices corresponding to constraint c. Since the food aid constraint on the works program and the absorption constraint on investable X are not effective in the present solution, the following equalities can be observed. First,

$$s.p.(1) = s.p.(9).$$

This is because according to the national income equality, each additional unit of $I_x(t)$ increases $C(t)$ by one unit--other things the same. Secondly,

$$s.p.(2) = g \cdot [s.p.(8)] .$$

In words the difference in the value of food aid and non-food aid is equal to the value of X as represented by s.p.(8), multiplied by g--the ratio of X over government expenditures, which provides an indication of government resources used in the works program. Thirdly, however, X itself is only valued because it contributes to I_x, which is associated with column (9). This explains why

$$s.p.(8) = q(t)u(t) \cdot [s.p.(9)] ,$$

and ultimately

$$s.p.(2) = g \cdot q(t)u(t) \cdot [s.p.(9)] .$$

5. Productive capacity and works program. Constraint (4)--the productive capacity constraint--represents the crucial element for determining the true role of a works program in the process of capital formation. The first noteworthy characteristic is that the economy works at full capacity every year. The productive capacity constraint is always effective; or, alternatively, all available productive capacity is fully used. The shadow prices associated with the productive capacity constraint (column 4, Table 5.3) reveal a very interesting relationship with various parameters of the model, except for year 1 which presents certain problems already discussed. For each year y = 2 to 9, the shadow price is

$$s.p.(4) = \sum_{t=y}^{9} \frac{1}{(1 + d)^t} \cdot (1 + r \cdot g \cdot q(t)u(t)).$$

(For year 2, when the requirement for a minimum growth in consumption is effective, the shadow value of 0.88683 must be added to the term $1/(1 + d)^t$.)

This pattern has the following--very logical--explanation. An additional unit of productive capacity in year t is represented by a unit increase in the magnitude $[Y(t - 1) + k \cdot I(t - 1)]$. Each unit increase in the productive capacity in year t has the following effects. First, it contributes one unit to C(t), which enters into the welfare function with the proper discount rate, i.e. $1/(1 + d)^t$. Secondly, since the model does not have any physical deterioration or obsolescence working on the productive capacity, this same unit also contributes to consumption in subsequent years. The sum of these two direct effects is

$$\sum_{t=y}^{9} \frac{1}{(1 + d)^t} .$$

Thirdly, indirect effects of this increase in productive capacity are felt through the investable output of the works program. A unit increase in

productive capacity raises government resources by r--the average rate of raising domestic resources. This allows the works program output to increase by $r \cdot g$ since the budget represents the effective constraint on X. In turn, since the supply constraint on investable X prevails, this occasions a rise of $r \cdot g \cdot q(t)u(t)$ units in I_x. Fourthly, a similar increase in investable X is felt in every succeeding year. The sum of these two indirect effects, when properly discounted, is

$$\sum_{t=y}^{9} \frac{1}{(1 + d)^t} (r \cdot g \cdot q(t)u(t)) .$$

These four direct and indirect effects of the increase in productive capacity--which represents $dW/dY(t)$--produce the shadow prices associated with constraint (4).

It is evident from the foregoing analysis that the works program performs a very specific function, namely that of introducing a feedback from the productive capacity to itself. The extent of this feedback can be quantified in the present case by separating the direct and indirect effects, as is done in Table 5.4. Although the relative share of the indirect effects remains very small, it is definitely growing from year 2 to year 9, because of increases in the coefficient of investable X. This latter aspect is most intriguing.

Table 5.4 - Direct and Indirect Effects of Changes in Productive Capacity: Morocco, 1961-1969

Year	Marginal Value of Productive Capacity (1)	Value of Direct Variation (2)	Value of Indirect Variation (3)	Relative Share of Indirect Variation (4)
1961	5.75679	5.75800	-	-
1962	5.75679	5.73583[a/]	0.02096	0.00364
1963	4.03844	4.02300	0.01544	0.00382
1964	3.28489	3.27200	0.01289	0.00392
1965	2.59946	2.58900	0.01046	0.00402
1966	1.97614	1.96800	0.00814	0.00412
1967	1.40994	1.40400	0.00594	0.00421
1968	0.89485	0.89100	0.00385	0.00430
1969	0.42585	0.42400	0.00185	0.00434

Sources: (1) = shadow prices of the productive capacity constraint.
(2) and (3): see text.
(4) = (3)/(1).

Note: a/ 4.84900 + 0.86683 = 5.73583.

Thus the works program contributes to capital formation in two ways. The first one--the one that is usually discussed, and analyzed briefly below--is through I_x adding directly to I. There exists, however, a second way which has been neglected so far in the literature: it may be called the feedback effect. Through the intermediary of the government budget the works program permits an additional unit of investment--whether originating from the works program or from other sources--to add more to productive capacity than that unit alone. In a manner of speaking, the works program acts as a savings bank which rewards the economy for each unit of investment by paying interest or dividend on it. This feedback effect, though small, constitutes an important aspect of works programs.

As for the direct contribution of the works program to capital formation through I_x, it can also be estimated. In the period 1962-1969, the average yearly contribution amounted to 4.00 per cent if one compares I_x with the model values of I; and 4.62 per cent if one compares it with the actually observed I (see Table 5.2).

III. The Model and Beyond

A. Some Implications of the Model

1. The optimal works program. Trying to judge reality on the basis of any kind of model is an exercise subject to a high probability of error. For one thing, a model cannot include all the constraints that are operative in the real world. For another, the actual welfare function--if there is one, implicit or explicit--is rarely the same as the model's maximand. Thus in comparing actual performance in the period 1961-1969 with the model results for, say, the works program (columns 8 and 9, Table 5.2) it would be foolhardy to state, without adequate qualifications, that the actual X was below the optimal.

Under the present model, the best works program would be one which produced as much investable output as the economy can absorb, i.e. such that both the supply and absorption constraints on investable X (relations 8 and 9)[1] are simultaneously effective. Clearly, producing more than the economy

[1]The model's capabilities are very limited at this stage precisely because relations 8 and 9 represent the crucial elements in determining the works program's contribution to capital formation. The reason is that the coefficient of investability q(t)u(t) and the proportion b of investment which can originate from the works program have been chosen more or less arbitrarily. Only a very detailed study of a large sample of P.N. projects would allow a satisfactorily accurate estimation of q(t)u(t) and b.

can absorb will add nothing to social welfare. And producing less than that amount means that allocating more resources to the works program would not be a bad idea.

In the foregoing application to Morocco only the supply constraint (8) is effective. If the estimate of b = 0.05 is fairly close to the actual value of the absorption coefficient for investable X, then it can be concluded that the investable X actually realized in 1961-1969 have been below the optimal levels. Assuming that the government is not willing to increase the proportion of its resources devoted to the works program, there exist two ways of increasing I_x: they are not mutually exclusive. On the one hand the proportion of the output of the works program that is investable can be raised by increasing the share of useful projects in the program, or by improving the quality of work accomplished, or both. On the other, the government resources can be boosted by raising the "rate of taxation," or by somehow obtaining more non-food aid, or both. Of these two methods, the former--striving to have a more productive program--seems to be the easiest to attain. In addition, any improvements that are achieved under the first scheme are likely to be longer-lasting than the results of an exogenous increase in, say, cash aid which cannot be expected to be more than a one-time injection.

2. Foreign aid. The model reveals an interesting aspect of foreign aid. Although both food aid and cash aid contribute equally to consumption in their direct effects, cash aid also has an indirect effect on the social welfare function through the government budget. The additional productivity of cash aid is indicated by g·qu, i.e. the product of the index of the government's willingness to devote resources to the works program and the proportion of the works program output that is investable. These findings have implications for the desirable size and composition of foreign aid.

First, cash aid and food aid represent scarce resources. They both have positive values or shadow prices. More of one or of both is desirable.

Secondly, since cash aid is more productive (has a higher shadow price) than food aid, the more foreign aid comes in as cash the better. In the ideal, if the recipient country had a choice it should elect to receive all of its foreign aid in cash--as opposed to part in kind. Usually, however, the choice is not between more food aid or more cash aid but between more food aid or less food aid. In such a case, more food aid is obviously to be preferred to less food aid.

B. Alternative Forms of the Model

1. Degree of realism. The model used here, and summarized in Table 5.1, has been reduced to its simplest form. This is done partially for convenience of exposition. The main reason, however, is that this makes it easier to grasp the basic relationships in the model. In fact, as the previous application largely illustrates, the inner workings of the system are brought out quite clearly in this simplified version.

It is possible to make the model depict reality in a more accurate fashion: the cost is increased complexity. First, the foreign trade sector could be brought in. To do so one needs an import function, an export function and the requirement that the trade gap be filled by an inflow of external resources (foreign aid). This means the addition of two new variables and three new constraints. Secondly, the government budget could be introduced specifically by defining a government resource function. The cost is two more variables and one more constraint. Thirdly, the goods and services sector could be divided into n (two or more) sub-sectors. This would immediately require the addition of (n - 1) more productive capacity constraints, (n - 1) more minimum growth of investment constraints, and (n - 1) more absorptive capacity constraints. Depending on how much detail (or realism) is desired, it would then be possible to have either one or n "resources equal uses" constraint(s), and one or n minimum growth of consumption constraint(s). Breaking up the goods and services sector in this fashion would constitute an interesting exercise in the case where, for instance, the works program contributes to capital formation in one of the sub-sectors exclusively. The cost in terms of additional constraints, variables and parameters--as well as computer time--can be quite substantial in this process, however.

It is evident that the appropriate degree of complexity varies with the intended use of the model. It also depends on the amount of information that is available for feeding into the model on the one hand; and, on the other, on the amount of information and degree of realism that one wants to extract from it. Our purpose here is merely to gain an insight into the inner workings of the system, and thereby trace the effects of a works program on a given economy. This aim is duly achieved with a very simple version of the model.[1]

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[1]An earlier version of this model had two goods and services sectors, with foreign trade and the government budget explicited. There were 18 constraints and 14 variables--as opposed to 11 and 9 under the present form. The

2. General applicability. The present model has been developed with the Moroccan experience in the 1960's in mind. That case is characterized by several features. The works program workers are (generally) paid, and they are paid in cash and in kind. The output of the works program can therefore be defined as the sum of expenditures in cash (wages and non-wage costs) and in kind. The "production function" is specified by an upper limit imposed by the availability of cash, and a lower limit determined by the availability of food aid (used for the payment in kind). Though developed in this specific context, however, the model could be used to analyze almost any conceivable type of labor-mobilization works program. To do so in a given case, it is only necessary to devise an appropriate convention for measuring the output of the works program, and to define the relevant "production function."

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gain in realism--if any--was small indeed. But the increase in complexity was then such that some of the relationships and patterns uncovered with the simpler model could not even be perceived.

CHAPTER 6

CONCLUSION

Over its ten-year existence Promotion Nationale has been and remains the object of a heated controversy. Its achievements[1] have been celebrated almost as many times and with as much conviction as its failures[2] have been publicized. The present study does not claim to resolve this controversy. But it sheds some light on the points of contention and on other aspects as well.

The importance of schemes for capital formation through labor mobilization stems from several sources. Foremost among them are the contribution to capital formation and agricultural development, the creation of present and future employment, and the role in spreading the benefits of growth more widely--or, more generally, of imparting to the masses a sense of participation in the national development effort. In the case of Morocco's Promotion Nationale program, the analysis carried out in the previous chapters permits the evaluation of its performance in each of these aspects over its ten-year existence.

Section I reviews the achievements of Promotion Nationale. Section II considers its shortcomings, and some facets of foreign aid. The general conclusions emerging from the study of the Moroccan experience in labor mobilization are briefly restated in Section III.

I. The Achievements of Promotion Nationale

The achievements of Promotion Nationale lie in three different areas. It has helped to spread the benefits of economic growth and to alleviate the immediate employment problem. It has also made a limited contribution to capital formation and agricultural development.

A. Spreading the Benefits of Economic Growth

Promotion Nationale's role in spreading the benefits of economic growth has taken two different forms. First, it has been an effective

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[1]See (Ardant, 1963) and (Arlès, 1966).

[2]See (Belal, 1968), pp. 324-330; (Oualalou, 1969), p. 59, pp. 75-77: and (Tiano, 1963), Part I.

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vehicle of income transfer from the richer provinces to the poorer ones. For the period from 1961 to 1969, on the average it has provided annually 6 days of work to each rural active male inhabitant in the former region, as opposed to 16 days of work in the latter.

Second, within the poorer provinces Promotion Nationale plays an important role for the more destitute segments of the population. The survey of P.N. workers conducted in the region of Goulmima, Province of Ksar Es Souk shows that P.N. workers have families larger than average (5.4 vs. 4.3 persons), and are poorer than average: their average landholdings amount to less than one-fifth of the regional mean holding. P.N. wages constitute a very sizable part of their incomes, perhaps as much as one-half. In addition, over three-fourths of the workers felt that they or their relatives benefited directly--in terms of improved irrigation of land--from the P.N. projects on which they were employed.

This part of our findings contradicts an oft-made criticism of Promotion Nationale. According to some observers[1] the existing system of remuneration is a very bad one. On the one hand, they say, it represents a very low upper limit to any extension of Promotion Nationale as an instrument for solving the employment problem. At the existing wage rate, for instance, it would take more than the government's entire investment budget to employ the available or surplus 300 million man-days. (Let us grant for a moment that this figure is in some sense meaningful.) On the other hand, the DH 4.00 a day is not sufficient to attract workers. The solution offered for these two problems is very simple: Promotion Nationale should be tied to land reform. Workers would not be paid wages; instead they would receive land for the work. As a result, they would have higher productivity since they would be working on their land. And the government would no longer have to spend on P.N. wages: it could limit its contribution to the provision of supplies and small equipment for the various improvements.

The reasoning is not entirely convincing. To begin with, even if the figure on underemployment had been correctly measured, it is inappropriate because it includes both men and women. The more relevant figure for Promotion Nationale would be 140 million man-days.[2] If voluntary

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[1] (Belal, 1968), pp. 324-330; (Oualalou, 1969), p. 77; (Tiano, 1963), Part I.
[2] (P.N. au Maroc, 1964), p. 19.

and/or short seasonal underemployment is taken out, the final figure may be as little as half that amount. It has by now become clear that the first part of the argument lies on very shaky foundations indeed. As for the second aspect, the Goulmima survey findings do not support the contention that P.N. wages are unattractive to the peasants. Thus while land reform may be desirable from many points of view, it is an entirely futile exercise to try to make it into a necessary and sufficient condition for a labor mobilizing works program. And in any case, those who try to relate these two problems do not offer any realistic answer to the question: What shall be done about employment while waiting for land reform? (We realize that the easy, but unrealistic, answer is: Let us have land reform now!)

B. Employment

For those peasants who do work on P.N. projects, Promotion Nationale represents the only alternative to doing nothing or working in the fields at very low productivity. The Goulmima survey revealed that, on the average, the workers interviewed spend three months of full time work on P.N. worksites every year. These results indicate that Promotion Nationale has a favorable effect on the immediate employment problem.

At the national level, it has provided 20 million man-days annually in the period 1966-1969.[1] This is certainly a minute proportion of the underemployed[2] if compared to 300 million. As previously mentioned, however, this figure is rather high for P.N. discussion. If the lower and more relevant figure of 140 million or even less is used--with a lot of reservation--the P.N. performance in this area begins to look respectable. In any case it cannot be termed negligible.

As for the effects of Promotion Nationale in providing future employment, no direct evidence is available. This depends mainly on how much of the work undertaken is of a productive nature.

C. Capital Formation and Agricultural Development

The share of purely "make-work" or equipment projects in the P.N. program has fallen from 17 per cent in 1961 to 7.2 per cent in 1969, that of infrastructure from 52.2 per cent to 35.9 per cent, while mise en valeur

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[1] See Appendix 4, Table A4.7.

[2] (Oualalou, 1969), p. 76.

projects rose from 30.7 per cent to 56.9 per cent over the same period.[1] Clearly the proportion of useful or productive projects--whether defined to include the last two as we have done here, or only the last one--has been increasing, and with it the contribution of Promotion Nationale to capital formation.

At the micro level, an analysis of ten P.N. mise en valeur projects located in the Provinces of Al Hoceima, Ksar Es Souk, and Marrakech yields a mean internal rate of return of 14.0 per cent. This shows that Promotion Nationale does undertake projects which compare favorably with similar projects realized in other parts of the economy. It does not, however, mean that all P.N. projects are equally profitable. Through these projects, Promotion Nationale makes some important contribution to agricultural development. The present finding weakens somewhat the criticism that, due to the passivity and laziness of workers,[2] Promotion Nationale is characterized by extremely low productivity.

At the aggregate level, a linear programming model permits the estimation of the P.N. contribution to capital formation, and hence to agricultural development since the bulk of P.N. projects lie in the agricultural sector. Directly, as much as 4.6 per cent of total net investment in Morocco could have originated from the investable part of P.N. output in the period 1962-1969--if Promotion Nationale had been at the optimal levels prescribed by the model. This estimate is based on reasonable assumptions concerning the quality of work accomplished on Promotion Nationale. More conservative assumptions would lead to figures ranging from a minimum of 2.0 to 4.6 per cent.

Promotion Nationale also contributes to capital formation in a second way, through the government budget. More P.N. output means more investable P.N. output, which means more investment and more output of goods and services. This in turn implies increased government resources, making possible a rise in P.N. output, and so on. This indirect contribution is probably fairly small, but it cannot be ignored.

The proportion of productive projects in the total P.N. program and the quality of work accomplished on P.N. worksites constitute the two crucial elements in determining the magnitude of P.N.'s contribution to

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[1] See Appendix 4, Table 4.7.

[2] (Oualalou, 1969), p. 76.

capital formation. They are the instruments with which P.N. performance in this area can be further improved.

II. Other Aspects of Promotion Nationale

A. The Shortcomings of Promotion Nationale

While Promotion Nationale's performance on the material side has been far from disastrous, it has not been devoid of shortcomings, especially in the human aspects of the undertaking.

The first one arises on the institutional side. Except at the very bottom, the administration of Promotion Nationale occurs mostly as an appendix to the normal activities of all departments involved, or at least as one among many responsibilities of the persons dealing with it. This gives rise to endless confusion and unnecessary duplication of functions which greatly reduce the efficiency of the system and result in some waste. However, its contribution to increasing adoption and acceptance of the "P.N. way" (i.e. labor-intensive methods) by the technical services militates against any radical remodeling of the existing P.N. institutional framework.

Secondly, Promotion Nationale seems to have accomplished very little in the direction of imparting to the masses a sense of active participation in the national development effort. The whole exercise remains a highly centralized program, with very little room for local initiative. This situation may or may not have given rise to corruption in hiring, as some critics contend.[1] The evidence on that aspect is unclear. Although it is rather extreme to hold that Promotion Nationale has become the undertaking par excellence which kills the democratic spirit in the management of the Nation's affairs,[2] it is a fact that the effective (as opposed to formal) participation of the peasants in the decision-making process remains low. This is probably the case in most things and not just with Promotion Nationale, however, so that considering it a failure of Promotion Nationale may not be justified.

Finally, Promotion Nationale has not performed adequately in "promoting" the worker to an improved status--as its name indicates that it should have. Very few workers acquire skills of any kind on P.N. worksites. Out of the 251 P.N. workers interviewed in Goulmima, only 20 reported that they had learned a trade while working on P.N. projects. Thus Promotion

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[1] (Oualalou, 1969), p. 76.

[2] (Oualalou, 1969), pp. 76-77.

Nationale has very little effect on the worker's access to another more remunerative occupation.

B. Some Facets of Foreign Aid

Some characteristics of foreign aid and general features of works programs emerged during this study of Morocco's Promotion Nationale program. They relate to food aid and the role of a works program in expanding the domestic market.

In an economy with a works program, where foreign aid is received as food aid and cash aid, and where a portion of the food aid is used as part of the payments to the works program laborers--in such an economy, foreign aid has the following characteristics. First, in terms of contribution to the social welfare function, food aid is less productive than cash aid. This is because commodity aid represents the extreme form of aid tying, and aid tying always reduces the effective (as opposed to nominal) value of aid to the recipient. Secondly, the difference in productivity of cash aid and food aid stems from the fact that the former, through the government budget, contributes to the output of the works program--as well as directly to consumption. More precisely, food aid has a lower value to the extent that using or purchasing one additional unit of foodstuffs above the available food aid reduces cash aid correspondingly, which in turn occasions a decline in the output of the works program and the investable part of that output. Thirdly, in terms of the linear programming model there may be cases when food aid is counter-productive: it has a negative shadow price. Under such circumstances, the intended recipient country would be willing to pay the donor country--in the form of a reduction in the total volume of aid--in order to reduce food aid, or at least not to force any more of it into the recipient country.

Finally, some of the findings of this study suggest that the works program cannot be expected to provide, indirectly, a stimulus to the development of domestic industries. The laborers are among the poorest of the inhabitants. They spend the overwhelming proportion of their works program wages on agricultural products, mostly foodstuffs. Therefore, the expenditures on the works program will contribute very little to the expansion of the market for domestically manufactured goods.

III. Some Facts on Labor Mobilization

From the economic standpoint, Morocco's Promotion Nationale represents

a moderate success. Although trying to transplant any type of experience into different settings is always an exercise fraught with danger, the general conclusions from the Moroccan experience should prove of great interest to those underdeveloped countries which, like Morocco, are trying to find at least a partial solution to the employment problem.

A labor mobilization works program is an effective vehicle for income transfer. Its impact on immediate employment is favorable--though the longer run effects remain uncertain. It contributes in a limited way to capital formation and agricultural development: this contribution increases with the proportion of productive projects included in the program and the quality of work on those projects.

The effectiveness and usefulness of the entire undertaking may, however, be severely circumscribed unless great care is taken to avoid unnecessary duplication and confusion in establishing the institutional apparatus, and to generate popular participation at all stages.

APPENDIX 1

PROJECT DATA FOR THE BENEFIT-COST ANALYSIS

The material contained in this appendix, together with the various assumptions and data provided in the text itself (Chapter 3), should enable the interested reader to reproduce all the necessary computations and/or alter some or all of the assumptions as he likes. The appendix is arranged according to the three-way classification adopted in the text.

Group I: Small-Scale Irrigation

Table A1.1 shows the areas and yields of various crops without and with the improvements. The benefits from the projects can be derived with the following assumptions:

(1) The savings on repairs start in the year after the project is completed.

(2) The increase in value added on existing crops begins in year 2 and reaches the full amount in five years' time, with a straight-line progression.

(3) Newly planted fruit trees start producing in their seventh year and reach their maturity output in five years' time.

With these elements and the costs appearing in Table 3.1 it is possible to derive total benefits and total costs for each project: see Table A1.2.

Group II: Medium-Scale Irrigation

Table A1.3 shows the costs of the three elements of the projects, from which Table 3.4 of initial costs is derived, with the assumptions stated in the text.

The increases in agricultural output appear on Table A1.4. The assumptions to derive the benefit streams therefrom are:

(1) The increase in yields on the existing palm grove begins after the canal is completed and reaches its full extent in three years.

(2) The extension of the palm grove starts producing after the perimeter equipment is completed and reaches full production in eight years.

(3) The flood water irrigated area starts producing after completion

Table A1.1 - Agricultural Production Without and With Improvements in the Three Small-Scale Irrigation Projects

	Unit	Without the Improvement		With the Improvement	
		Area or Number	Yield (DH/unit)	Area or Number	Yield (DH/unit)
01. Ain M'Kelkem					
Barley	ha	20	120	0	-
Wheat	ha	12	162.5	0	-
Tomato	ha	3.5	1550	0	-
Zucchini	ha	1.5	550	0	-
Apricot	ha	25	320	30	500
Fig	ha	2	Personal	2	-
Grape	ha	30	1500	30	2000
Olive	ha	5	450	5	650
Orange	ha	0.5	4800	2	4800
Reed	ha	2	450	15	450
Fessa and Bersim	ha	0	-	66	-
Cows	head	100	547.5	104	730
Bulls:					
1 year-old	head	49	100	25	200
2 year-old	head	1	750	25	750
02. El Kouhliyne					
Barley	ha	9	90	8	210
Corn	ha	4	200	4	360
Wheat	ha	10	248	12	500
Carrot	ha	4	600	5	880
Turnip	ha	2	550	2	840
Tomato	ha	4	600	6	800
Zucchini	ha	2	400	3	500
Apricot	ha	4	600	5	750
Grape	ha	4	1200	6	1500
Fig	ha	1	Personal	1	-
Olive	ha	8	9000	10	9500
Orange	ha	4	8000	5	8500
Reed	ha	3	450	6	750
Cows	head	90	250	60	500
Sheep	head	200	50	100	75
03. Taddarte					
Barley	ha	450	175	450	187.50
Corn	ha	180	280	180	288
Wheat	ha	300	252	300	294
Zucchini	ha	180	300	180	375
Apple	tree	1650	75	1650	75
Apricot	tree	1000	21	2000	21
Grape	tree	500	240	1000	240
Olive	tree	500	10	1000	10
Orange	tree	0	30	300	30
Pomegranate	tree	1000	20	1000	20

Sources: Bureau P.N. of the O.R.M.V.A.H.; local Centres de Mise en Valeur (C.M.V.); interviews with the local shioukh and the farmers.

Table A1.2 - Total Benefits and Total Costs for the Small-Scale Irrigation Projects (dirhams)

Year	Project 01 Ain M'Kelkem		Project 02 El Kouhliyne		Project 03 Taddarte	
	Benefit	Cost	Benefit	Cost	Benefit	Cost
1968	0	25 118	0	53 626	0	74 160
1969	9 503	97 013	4 304	11 154	5 882	38 526
1970	21 526	12 739	7 408	11 154	15 765	2 189
1971	31 030	12 739	10 512	11 154	22 007	2 189
1972	40 533	12 739	13 616	11 154	27 530	2 189
1973	50 036	12 739	16 720	11 154	33 412	2 189
1974	51 588	12 739	21 720	11 154	57 092	2 189
1975	53 140	12 739	26 720	11 154	80 772	2 189
1976	54 692	12 739	31 720	11 154	104 452	2 189
1977	56 244	12 739	36 720	11 154	128 132	2 189
1978	57 796	12 739	41 720	11 154	151 812	2 189
1979	57 796	12 739	41 720	11 154	151 812	2 189
1980	57 796	12 739	41 720	11 154	151 812	2 189
1981	57 796	12 739	41 720	11 154	151 812	2 189
1982	57 796	12 739	41 720	11 154	151 812	2 189

of the canal and reaches its full output in ten years.

The streams of total benefits and costs appear on Table A1.5.

Group III: Defense and Restoration of Soils (D.R.S.)

Table A1.6 shows the areas treated and the number of trees planted for each of the three D.R.S. projects. For Projects 08 and 10, the benefit streams are derived essentially from the number of trees, with the following assumptions:

(1) The mortality rates for almond trees is one-third[1] during the first four years, and the mortality victims are replaced up to the fifth year. Thus of an original stand of x trees the survivors in year 6 are:

5 year old survivors: (12/27)x
4 year old survivors: (5/27)x
3 year old survivors: (5/27)x
2 year old survivors: (3/27)x
1 year old survivors: (2/27)x

Thereafter the mortality rate is 3 per cent and the mortality victims are not replaced. When the trees all reach 16 years of age, the mortality is assumed to be zero (since, presumably, the trees will by then be strong enough to withstand the elements).

[1]These are based in part on the assumptions of (I.V.S., June 1969).

Table A1.3 - Costs of the Three Elements of the Medium-Scale Irrigation Projects (dirhams)

	Beginning Year (1)	Total Costs (2)	Total Labor Costs (3)	Labor Costs in Kind (4)	Cash Initial Cost (5)
04. Tadiroust					
Dam	1966	816 000	190 144	95 072	720 928
Dead head canal[a/]	1969	267 650	171 296	85 648	182 002
Perimeter equipment[b/]	1970	247 950	184 464	92 232	155 718
TOTAL		1 331 600	545 902	272 952	1 058 648
05. Tazmout					
Dam	1967	405 605	243 345	121 672	283 933
Dead head canal	1968	255 040	153 560	76 780	178 260
Perimeter equipment	1969	614 715	459 780	229 890	384 825
TOTAL		1 275 360	856 685	428 342	847 018
06. Tazourmit					
Dam	1967	465 500	231 300	115 650	349 850
Dead head canal	1968	1 051 475	548 825	274 412	777 063
Perimeter equipment	1969	614 715	459 780	229 890	384 825
TOTAL		2 131 690	1 239 905	619 952	1 511 738
07. Yfegh					
Dam	1966	222 527	91 584	45 792	176 735
Dead head canal	1967	175 000	140 000	70 000	105 000
Perimeter equipment[b/]	1968	113 400	85 050	42 524	70 876
TOTAL		510 927	316 634	158 317	352 611

Sources: Columns 1-3: (S.C.E.T., 1966b).
Column 4 = (Column 3)/2.
Column 5 = (Column 2)-(Column 4).

Notes: a/ Calculated on the basis of the cost of Tazourmit's 11 kilometre canal; Tadiroust's canal is 2.8 kilometre long.

b/ Calculated on the basis of the cost of perimeter equipment for Tazmout and Tazourmit (see perimeter areas below).

(2) The output per almond tree in Al Hoceima is

6 - 10 years old:	DH 1.00
11 - 15 years old:	DH 2.50
16 years old and over:	DH 5.00;

for Sahrij, the corresponding figures are 2, 5, and 10 dirhams. (It must be noted that basing the benefit stream on the number of trees assumes that

Table A1.4 - Increases in Agricultural Output for the Four Medium-Scale Irrigation Projects

	Without the Improvement		With the Improvement		Total Increase in Value Added[a]	Beginning Year	Full Output Year
	Area (ha)	Yield (DH/ha)	Area (ha)	Yield (DH/ha)			
04. Tadiroust							
Existing	240	-	240	-	297 200	1971	1973
Extension	-	-	50	-	105 280	1973	1980
Flood water	-	-	310	-	106 100	1971	1980
05. Tazmout							
Existing	200	120	200	480	57 600	1970	1972
Extension	-	-	-	-	-	-	-
Flood water	-	-	1 300	480	499 200	1972	1981
06. Tazourmit							
Existing	200	120	200	480	57 600	1970	1972
Extension	-	-	-	-	-	-	-
Flood water	-	-	1 300	2 086	1 169 440	1972	1981
07. Yfegh							
Existing	125	3 980	125	5 240	126 000	1969	1971
Extension	-	-	-	-	-	-	-
Flood water	150	2 000	150	3 000	120 000	1971	1980

Sources: Project 04: (S.C.E.T., 1969).
Projects 05-07: (S.C.E.T., 1966b).

Note: a/ In calculating the total increase in value added, the areas have been adjusted by a factor of .8 (except for Tadiroust) to take account of the fact that 20 per cent of the land area in palm groves is taken up by paths and the irrigation network.

the trees will be adequately cared for by their owners. This may not always be the case, and this fact must be kept in mind.)

(3) For Al Hoceima, the forest trees (pine trees) also provide some benefit. The mortality rate is 3 per cent up to their fifteenth year. They are cut in lots of one-tenth of the total stand starting in their fifteenth year, during ten years. They are valued at their gross price of DH 5.00 per round beam each.

For Project 09 (Imintanoute), the value of almond output is based on the actual income received from the trees. This project was started in 1961; the trees begin producing in year 5, so that there have already been four or five years of sale. The output is sold by the Water and Forestry Service "on the trees." On the basis of sales figures for 1965-1969 the

Table A1.5 - Total Benefits and Total Costs for the Medium-Scale Irrigation Projects (dirhams)

Year	Project 04 Tadiroust		Project 05 Tazmout		Project 06 Tazourmit		Project 07 Yfegh	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
1966	0	816 000	-	-	-	-	0	222 527
1967	0	61 812	0	405 604	0	465 500	0	111 662
1968	0	61 812	0	186 229	0	624 458	0	149 463
1969	0	195 637	0	391 134	0	829 361	33 600	61 963
1970	0	278 287	15 360	263 614	15 360	303 624	67 200	61 963
1971	87 741	144 462	30 720	263 614	30 720	303 624	110 400	24 162
1972	175 482	144 462	86 016	58 709	219 635	98 719	120 000	24 162
1973	273 752	61 812	125 952	58 709	393 190	98 719	129 600	24 162
1974	292 768	61 812	165 888	58 709	566 746	98 719	139 200	24 162
1975	311 784	61 812	205 824	58 709	740 301	98 719	148 800	24 162
1976	330 800	61 812	245 760	58 709	913 856	98 719	158 400	24 162
1977	349 816	61 812	285 696	58 709	1 087 411	98 719	168 000	24 162
1978	368 832	61 812	325 632	58 709	1 260 966	98 719	177 600	24 162
1979	387 848	61 812	365 568	58 709	1 434 521	98 719	187 200	24 162
1980	406 864	61 812	405 504	58 709	1 608 076	98 719	196 800	24 162
1981	406 864	61 812	445 440	58 709	1 781 631	98 719	196 800	24 162
1982	406 864	61 812	445 440	58 709	1 781 631	98 719	196 800	24 162
1983	406 864	61 812	445 440	58 709	1 781 631	98 719	196 800	24 162
1984	406 864	61 812	445 440	58 709	1 781 631	98 719	196 800	24 162
1985	406 864	61 812	445 440	58 709	1 781 631	98 719	196 800	24 162
1986	-	-	445 440	58 709	1 781 631	98 719	-	-

output per hectare of young trees is around DH 20.00. The following figures are retained here:

5 - 10 year old trees:	DH 20.00/hectare
11 - 15 year old trees:	DH 40.00/hectare
16 year old trees and over:	DH 60.00/hectare.

There is no mortality factor for the almond trees in this case. For carob trees (whose nuts or seeds are sold in this area for medicinal and other uses), however, the mortality rate is 3 per cent and it drops to zero when all trees reach 16 years of age. The output is

6 - 10 years old:	DH 2.00/tree
11 - 15 years old:	DH 10.00/tree
15 years old and over:	DH 20.00/tree.

The third source of benefit in the Imintanoute project arises from the fact that the areas between the fruit tree banquettes (estimated at 50 per cent of the total area on the average) can now be grown in barley the year after the area has been treated. The yield is DH 120.00 per hectare.

Table A1.6 - Areas Treated and Trees Planted in the Three D.R.S. Projects

	Areas (ha)	TREES				
		Almond	Carob	Pine	Eucalyptus	Other[a]
08. Al Hoceima						
1965	672	39 209	-	135 007	-	-
1966	245	27 500	1 860	25 970	-	-
1967	284	33 937	-	-	-	-
1968	313	26 733	-	-	-	2 000
09. Imintanoute						
1961	56	6 000	-	5 400	-	-
1962	399	37 600	1 760	-	800	-
1963	100	8 400	940	-	1 200	-
1964	200	19 325	3 825	-	500	-
1965	300	23 475	3 110	-	1 500	-
1966	408	26 000	4 565	-	6 000	1 200
1967	149	11 100	1 670	-	2 800	-
1968	209	14 000	5 830	1 000	5 500	2 000
1969	14	1 350	-	-	-	-
10. Sahrij						
1968	500	8 000	-	-	-	-
1969	1 000	50 000	-	-	-	-

Sources: 08: Water and Forestry Service, Al Hoceima.
09: Water and Forestry Service, Imintanoute.
10: Bureau Promotion Nationale, Office Regionale de Mise en Valeur du Haouz (O.R.M.V.A.H.).

Note: [a] Fig in Al Hoceima, cypress in Imintanoute.

To summarize the sources of benefit are almond and forest trees for Project 08 (Al Hoceima), almond, carob and barley for Project 09 (Imintanoute), and almond for Project 10 (Sahrij).

The costs are as specified in the text. Opportunity costs arise for Projects 08 and 10, from the loss of 20 per cent of areas cultivated in wheat and barley, respectively. The yields are, respectively, DH 53.00 and DH 210.00 per hectare.

From these data and the information supplied in the text, especially the initial costs appearing as Table 3.8, the streams of total benefits and costs can be established. They are presented in Table A1.7.

Table A1.7 - Total Benefits and Total Costs for the D.R.S. Projects (dirhams)

Year	Project 08: Al Hoceima		Project 09: Imintanoute		Project 10: Sahrij	
	Benefit	Cost	Benefit	Cost	Benefit	Cost
1961	-	-	0	49 050	-	-
1962	-	-	2 688	277 851	-	-
1963	-	-	21 840	204 154	-	-
1964	-	-	26 640	199 970	-	-
1965	0	474 175	37 136	250 164	-	-
1966	0	227 970	57 709	394 246	-	-
1967	0	250 747	78 598	190 788	-	-
1968	0	258 197	92 046	150 816	0	521 000
1969	0	111 527	106 592	82 663	0	383 225
1970	0	90 065	113 599	26 424	0	175 345
1971	13 941	73 349	120 499	26 424	0	166 455
1972	23 054	58 652	136 551	26 424	0	131 395
1973	35 296	42 333	149 239	26 424	5 690	117 735
1974	47 822	39 590	163 950	26 424	41 890	83 125
1975	66 452	39 590	171 422	26 424	53 647	83 125
1976	87 699	39 590	194 180	26 424	64 343	83 125
1977	100 818	39 590	223 335	26 424	80 338	83 125
1978	116 308	39 590	246 942	26 424	135 932	83 125
1979	130 430	39 590	280 137	26 424	149 098	83 125
1980	187 229	39 590	286 905	26 424	161 202	83 125
1981	210 719	39 590	309 632	26 424	181 413	83 125
1982	230 655	39 590	329 556	26 424	260 326	83 125
1983	252 262	39 590	336 015	26 424	278 422	83 125
1984	271 621	39 590	358 108	26 424	294 431	83 125
1985	301 958	39 590	358 108	26 424	306 225	83 125
1986	313 666	39 590	358 108	26 424	315 984	83 125
1987	313 666	39 590	358 108	26 424	315 984	83 125
1988	313 666	39 590	358 108	26 424	315 984	83 125
1989	313 666	39 590	358 108	26 424	315 984	83 125
1990	278 998	39 590	358 108	26 424	315 984	83 125
1991	278 998	39 590	-	-	315 984	83 125
1992	278 998	39 590	-	-	315 984	83 125
1993	278 998	39 590	-	-	315 984	83 125
1994	278 998	39 590	-	-	315 984	83 125
1995	-	-	-	-	315 984	83 125
1996	-	-	-	-	315 984	83 125
1997	-	-	-	-	315 984	83 125

APPENDIX 2

THE GOULMIMA SURVEY OF P.N. WORKERS

From June 5 to June 8, 1970 a survey of P.N. workers was conducted in the Cercle of Goulmima, Province of Ksar-Es-Souk. A total of 251 workers on five different worksites were interviewed. The worksite names, the types of project, the date of the survey and the number of workers interviewed are as follows:

1. Ouakka: seguia or irrigation canal;
   June 5, 1970; 39 workers.
2. Ait Yahia: seguia or irrigation canal;
   June 5, 1970; 28 workers.
3. Touroug: seguia or irrigation canal;
   June 6, 1970; 78 workers.
4. Mazlaghate: medium-scale dam;
   June 8, 1970; 77 workers.
5. Tiliouine: khettara or underground irrigation canal;
   June 8, 1970; 30 workers.

The workers for the first two projects came to the cercle's administrative building at the end of their workday for the interview. The remainder were interviewed on the worksites themselves.

The interviewing was done through interpreters: five during the first day, and two for the other days. All interpreters spoke both Arabic and Berber, as well as French. Some of the workers spoke (and were interviewed in) Arabic; some spoke (and were interviewed in) Berber. Very few--usually the supervisory workers--knew French: none was interviewed in that language.

The survey questionnaire was discussed with the supercaïd who made helpful suggestions with regard to its content as well as in the phrasing of some questions. The interpreters were also provided through his office. We are grateful for his help and cooperation, without which the survey would not have been possible.

The original questionnaire was formulated in French. An English translation is attached.

QUESTIONNAIRE: PROMOTION NATIONALE LABOR FORCE

Name of the worksite:
Location of the worksite:
Number of workers on the worksite:
Date of the interview:

1) Are you
   a) a worksite leader:
   b) a timekeeper:
   c) a foreman:
   d) a skilled worker:
   e) an unskilled worker?

2) How old are you?

3) Are you married?

4) How many children do you have?

5) A. In which village or ksar do you live?
   B. How far from the worksite is your village? (km)

6) How do you come to the worksite:
   a) on foot:
   b) on bicycle:
   c) other (specify)?

7) How long ago did you work on a Promotion Nationale worksite for the first time? (number of years)

8) How much time per year do you work on Promotion Nationale worksites? (number of two-week periods)

9) Have you looked for work somewhere else before coming to the present worksite?
   a) Yes
   b) No?

10) What would you be doing now if the worksite did not exist?
   a) nothing:
   b) work in the fields:
   c) work at home:
   d) trade:
   e) seasonal emigration:
   f) long-term emigration?

11) Do you have any land: a) Yes
   b) No?

12) If yes, how many mouds?

13) How far from the present worksite is your land? (km)

14) Does your land benefit directly from the work on this worksite:
   a) Yes
   b) No?

15) Do you have any relatives who own land:
   a) Yes
   b) No?

16) If yes, how many mouds?

17) How far from the present worksite is the land of your relatives? (km)

18) Does the land of your relatives benefit directly from the work on this worksite: a) Yes
b) No?

19) How much money per year do you receive on the worksites of Promotion Nationale? (dirhams)

20) What do you buy with the money that you receive from Promotion Nationale?

21) Do you have any other sources of income: a) Yes
b) No?

22) Would you like the payment in wheat to be replaced by cash: a) Yes
b) No?

23) If yes [to 22], instead of the 60 kg sack of wheat, would you accept to receive DH 12.00: a) Yes
b) No?

24) If yes [to 22], instead of the 60 kg sack of wheat, would you accept to receive DH 15.00: a) Yes
b) No?

25) If yes [to 22], instead of the 60 kg sack of wheat, would you accept to receive DH 18.00: a) Yes
b) No?

26) If yes [to 22], instead of the 60 kg sack of wheat, would you accept to receive DH 21.00: a) Yes
b) No?

27) Have you learned a trade on the worksites of Promotion Nationale:
a) Yes
b) No?

28) If yes, what is that trade?

APPENDIX 3

DATA FOR "PROMOTION NATIONALE AND THE PEOPLE"

This appendix contains the data used in the analysis of the regional distribution of Promotion Nationale activity (Chapter 4, Section II.A), and a summary of data on four palm groves situated in the region of Goulmima, Province of Ksar Es Souk.

Table A3.1 - The Regional Distribution of P.N. Mandays

Province or Prefecture	1961[a]	1962[a]	1963[a]	1964	1965	1966	1967	1968	1969
Agadir	406 175	690 302	475 522	621 877	593 551	582 985	692 091	379 069	552 031
Al Hoceima	246 810	531 737	523 452	376 325	520 440	1 067 355	1 054 890	541 642	1 079 728
Beni Mellal	327 068	694 784	484 147	711 320	546 320	833 016	671 705	813 753	467 040
Casablanca[b]	251 388	528 569	670 042	546 343	432 273	780 795	829 518	596 138	644 860
Fes	765 038	1 495 912	1 185 050	1 355 932	1 390 122	2 203 518	1 625 422	2 039 059	1 343 472
Kenitra	496 108	993 014	721 876	721 435	665 026	1 041 916	1 102 602	1 152 310	1 138 572
Ksar-Es-Souk	503 173	847 813	477 012	758 424	1 442 772	3 759 448	2 822 753	3 198 785	2 937 819
Marrakech-Safi[c]	670 988	1 413 234	1 296 776	1 560 321	1 275 929	1 801 795	1 568 963	1 095 858	841 657
Meknes	276 044	739 379	942 577	1 141 524	1 052 377	859 440	1 439 779	1 382 917	1 039 368
Nador	198 047	408 758	457 194	439 147	244 645	567 626	863 629	852 227	1 137 576
Ouarzazate	517 186	850 274	426 538	2 933 913	1 608 924	1 995 005	1 571 075	2 809 786	3 786 357
Oujda	408 863	950 079	951 058	896 221	714 904	900 409	1 138 682	729 194	374 000
Tanger	267 944	381 531	188 527	172 182	78 861	194 760	134 003	265 434	247 764
Tarfaya	0	39 354	60 646	36 000	111 641	215 931	224 172	227 021	154 383
Taza	290 732	697 124	627 144	950 952	1 029 188	1 566 491	1 235 723	809 959	1 162 268
Tetouan	664 407	1 731 388	1 710 204	1 317 534	1 364 111	1 775 259	1 573 481	1 719 943	2 026 839
Casablanca Pre.	534 306	574 881	255 813	315 000	354 159	877 446	612 621	675 705	143 798
Rabat-Salé Pre.	101 000	123 450	152 549	99 681	287 150	359 650	452 627	457 840	283 000
TOTAL	6 934 278	13 691 591	11 606 131	14 954 132	13 812 393	21 392 845	19 613 736	19 746 640	19 360 532

Sources: (P.N. Bilan, 1961 through 1969), (P.N. au Maroc, 1964), (P.N.: Trois Années, 1964).

Notes: a/ Promotion Nationale data for the years 1961 to 1963 are published on an agricultural year basis (July to June). They were adjusted to the calendar year in order to make them comparable to the data for later years. The formula used in the conversion are:

$$1961 = \frac{\text{original } 1961}{2}, \quad 1962 = \frac{\text{original } 1961 + \text{original } 1962}{2}, \quad 1963 = \frac{\text{original } 1962}{2} + \text{original } 1963.$$

b/ In 1966, the province of Casablanca was divided into three separate provinces: El Jadida, Khouribga, and Settat. For the sake of continuity the data for these three provinces starting in 1967 were added up and entered under the single province of Casablanca (which, officially, no longer exists).

c/ In 1965 the province of Marrakech was also split between Marrakech and Safi. Similarly data for these two provinces for the later years have been combined into a single entry.

These notes apply to all Promotion Nationale data cited in the text.

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Table A3.2 - Rural Population and Agricultural Income, By Province

Province	Rural Active Men 1960 (1)	Rural Population 1968 (2)	Density on Arable Land (rural inhab./sq. km.) 1960 (3)	Density on Arable Land (rural inhab./sq. km.) 1968 (4)	Per Capita Agricultural Income (DH) 1960 (5)
Agadir	192 938	890 000	189	212	139
Al Hoceima	40 495	215 000	350	430	114
Beni Mellal	109 354	500 000	105	130	438
Casablanca	292 187	1 415 000	61	87	418
Fes	146 219	690 000	100	123	246
Kenitra	229 528	1 110 000	84	109	448
Ksar Es Souk	90 822	425 000	435	522	165
Marrakech-Safi	426 767	1 970 000	93	114	243
Meknes	87 854	430 000	97	123	307
Nador	67 426	415 000	231	291	91
Ouarzazate	90 324	495 000	526	625	101
Oujda	54 052	320 000	86	110	289
Tanger	6 732	30 000	143	192	159
Tarfaya	5 196	20 000	-	-	-
Taza	110 070	490 000	159	192	184
Tetouan	119 596	555 000	294	366	199

Sources: The following sources are arranged by column:

1. (Recensement 1960, II), Table 31, pp. 447-481.
2. (Plan 1968-1972), Vol. III, p. 8.
3. (Plan 1968-1972), Vol. III, p. 9.
4. (Plan 1968-1972), Vol. III, p. 9.
5. (Plan 1968-1972), Vol. III, p. 20.

Table A3.3 - Land, Labor, and Output in Four Palm Groves of the Goulmima Region

	Goulmima	Tinejdad	Yfegh	Tadiroust	Mean
1. Land per household (ha)	0.80	0.71	0.98	0.99	0.87
2. Area (ha)	2 000.00	1 310.00	155.00	580.00	-
3. Output (DH)	-	1 310 400.00	171 970.00	534 675.00	-
4. Available Labor Force[a/] (man-days)	930 150.00	320 000.00	47 250.00	165 530.00	-
5. Productive Labor Force[b/] (man-days)	502 800.00	232 000.00	30 500.00	102 812.00	-
6. Output/Land (DH/ha)	-	1 000.31	1 109.48	921.85	1 010.55
7. Output/Available Labor (DH/md)	-	4.10	3.64	3.23	3.66
8. Output/Productive Labor (DH/md)	-	5.65	5.64	5.20	5.50
9. Rate of Underemployment[c/] (%)	27.5	35.5	37.9	36.7	34.4

Sources: Lines 1 to 5 are taken from (S.C.E.T., 1968) and (S.C.E.T., 1969). Lines 6 to 9 as well as the means are computed from these data.

Notes: a/ The available labor force is computed in the sources by assuming that on a yearly basis an adult male provides 250 days of work in agriculture, an adult female 60 days and a child between the age of 10 and 20 years also 60 days.

b/ The productive labor force is computed--also in the sources--on the basis of man-days per year required by a unit of the different activities: cereals, fruit trees, animal raising, etc.

c/ It goes without saying that the rates of underemployment derived in this table should only be taken to indicate orders of magnitude.

APPENDIX 4

DATA ON THE MOROCCAN ECONOMY (1951-1969)
AND PROMOTION NATIONALE (1961-1969)

This appendix contains all the data used in the application to Morocco of the linear programming model developed in Chapter 5.

Table A4.1 - G.D.P. and Investment in Morocco, 1951-1954

Year	In billions of current francs					Price Index 100=1939 (6)	Price Index 100=1951 (7)
	G.D.P. (1)	Gross Invest-ment (2)	Depreci-ation (3)	Invest-ment of Bases (4)	Net Invest-ment (5)		
1951	405.0	100.6	21.0	1.9	77.7	2 464	100.0
1952	485.5	131.6	25.0	5.4	101.2	2 767	113.0
1953	530.0	127.0	29.0	10.2	87.8	2 836	115.1
1954	552.4	114.5	33.0	6.9	74.6	2 809	114.0

Sources: (1) to (4): (Zind, 1965), p. 125; p. 125; p. 123; p. 128.
(5) = (2)-(3)-(4)
(6): (Tableaux Economiques 1915-1959), p. 214. (This is the index of retail prices in Casablanca.)
(7): Computed from column (6).

Table A4.2 - G.D.P. and Budget in Morocco, 1957-1960
(in millions of current dirhams)

Year	Gross Domestic Product (1)	Total Government Expenditures (2)	Government's Foreign Borrowings (3)	Domestic Resources (4)
1957	5 849	1 446	70	1 376
1958	6 630	1 767	126	1 641
1959	7 240	1 817	220	1 597
1960	8 200	1 905	202	1 703

Sources: (1) to (3): (Annuaire Statistique, 1957 to 1960).
(4) = (2)-(3).

Note: The "rate of taxation" r is the average value of domestic resources over gross domestic product.

Table A4.3 - The Moroccan National Accounts, 1960-1969
(in millions of dirhams at current prices)

Year	Gross Domestic Product	Imports	Consumption	Gross Investment	Changes in Inventories	Exports
1960	8 200	2 200	7 440	920	40	2 010
1961	8 080	2 370	7 620	1 050	-150	1 930
1962	9 540	2 360	8 770	1 150	100	1 880
1963	10 630	2 490	9 610	1 410	60	2 040
1964	11 150	2 510	9 960	1 370	- 20	2 350
1965	11 800	2 330	10 370	1 440	0	2 320
1966	11 410	2 610	10 800	1 530	-150	2 290
1967	12 100	2 890	11 800	1 890	30	2 270
1968	13 660	3 060	11 610	1 970	720	2 420
1969	14 070	3 120	12 550	2 170	-140	2 610

Sources: 1960-1967: (Annuaire Statistique, 1966-1967), p. 281.
1967-1969: (Plan Exécution 1969), p. 8.

Table A4.4 - Price Index and Depreciation, 1960-1969

Year	Price Index (1960 = 100)	Depreciation[a/] (in millions of dirhams at 1960 prices)
1960	100.0	400
1961	101.8	400
1962	106.9	400
1963	113.1	400
1964	117.7	400
1965	121.7	400
1966	120.5	410
1967	119.5	420
1968	120.4	430
1969	123.6	430

Sources: The price index is computed on the basis of the "index of the cost of living in Casablanca," 100 = October 1958-September 1959: (Situation Economique, 1967 and 1968), (Bulletin de Statistiques, July-August 1969), (Note Rapide sur Prix, November 1969 and January 1970).

Depreciation: (U.N. Yearbook 1968), p. 460 for 1960 to 1967; 1968 and 1969 figures are obtained by extrapolation.

Note: a/ In the application of the linear programming model to Morocco (1961-1969), depreciation has been netted out of investment and included in consumption. Changes in inventories have also been included in consumption.

Table A4.5 - Government Budget and Foreign Aid, 1960-1969
(in millions of dirhams at current prices)

Year	Government Budget			Foreign Aid[c/]		
	Total Expenditures	Foreign Borrowings	Domestic Resources[a/]	Total Aid	Food Aid	Non-Food Aid[b/]
1960	1 905	202	1 703	303	24	279
1961	2 142	232	1 910	562	155	407
1962	2 361	247	2 114	401	159	242
1963	2 789	553	2 236	489	148	341
1964	3 175	260	2 915	524	172	352
1965	2 877	456	2 421	575	73	502
1966	2 994	259	2 735	469	147	322
1967	3 103	189	2 914	301	186	115
1968	3 621	310	3 311	550	162	388
1969	3 926	310	3 616	550	179	371

Sources: Budget: (Annuaire Statistique, 1960 to 1966-1967), (Situation Economique, 1968), (Plan Exécution 1969), (Banque du Maroc, 1964 and 1965).
Total aid: (O.E.C.D., 1966), pp. 43-44; (O.E.C.D., 1969), p. 192.
Food aid: (U.S.A.I.D.-Rabat, 1969).

Notes: a/ (domestic resources)=(total expenditures)-(foreign borrowings)
b/ (non-food aid)=(total aid)-(food aid).
c/ The foreign aid figures are on a calendar year basis.

Table A4.6 - Promotion Nationale Expenditures, 1961-1969
(current dirhams, or equivalent)

Year	Expenditures			Number of Man-days
	In Cash	In Kind	Total	
1961	16 086 995	18 795 150	34 882 145	6 934 278
1962	31 764 437	37 111 800	68 876 237	13 691 591
1963	32 853 518	25 759 800	58 613 318	11 606 131
1964	37 162 337	26 254 800	63 417 137	14 954 132
1965	33 747 671	22 979 550	56 727 221	13 812 393
1966	55 593 965	39 000 000	94 593 965	21 402 972
1967	52 045 158	39 227 500	91 272 658	19 613 726
1968	44 687 843	39 493 280	84 181 123	19 746 640
1969	44 709 116	38 721 000	83 430 116	19 360 552

Sources: Same as Table A3.1.

Table A4.7 - Distribution of Promotion Nationale Man-Days According to Project Types and Categories, 1961-1969

Year	Man-Days					
	"Mise en valeur"	Infra-structure	Equipment	Part I	Part II	Total
1961	2 130 485	3 621 267	1 182 527	-	-	6 934 278
1962	4 705 025	7 208 801	1 777 764	-	-	13 691 591
1963	4 491 733	5 302 608	1 816 090	2 102 854	9 503 275	11 606 131
1964	7 991 654	4 623 455	2 339 023	5 267 993	9 686 139	14 954 132
1965	7 162 031	4 622 491	2 027 871	5 334 399	8 477 994	13 812 393
1966	9 013 473	7 766 846	4 612 525	8 814 821	12 578 024	21 392 845
1967	9 072 865	7 350 440	3 190 431	6 394 642	13 219 094	19 613 736
1968	11 523 794	5 536 708	2 686 138	6 203 093	13 543 547	19 746 640
1969	11 025 373	6 944 721	1 390 438	5 719 767	13 640 765	19 360 532
	Percentage					
1961	30.7	52.2	17.0	-	-	100.0
1962	34.3	52.6	13.0	-	-	100.0
1963	38.7	45.7	15.6	18.1	81.9	100.0
1964	53.4	30.9	15.6	35.2	64.8	100.0
1965	51.9	33.5	14.6	38.6	61.4	100.0
1966	42.1	36.3	21.6	41.2	58.8	100.0
1967	46.2	37.3	16.3	32.6	67.4	100.0
1968	58.4	28.0	13.6	31.4	68.6	100.0
1969	56.9	35.9	7.2	29.5	70.5	100.0

Sources: Same as Table A3.1.

LIST OF REFERENCES

Annuaire Statistique, various issues: Royaume du Maroc. Annuaire Statistique du Maroc. Rabat: Service Central des Statistiques, various years.

Ardant, 1963: Ardant, Gabriel. "A Plan for Full Employment in the Developing Countries," International Labour Review, Vol. 88, No. 1 (July, 1963), pp. 15-51.

Arlès, 1966: Arlès, J. P. "Manpower Mobilization and Economic Growth: An Assessment of Moroccan and Tunisian Experience," International Labour Review, Vol. 94, No. 1 (July, 1966), pp. 1-25.

Banque du Maroc, various years: Royaume du Maroc. Banque du Maroc. Rapport Présenté à Sa Majesté le Roi. Rabat: Banque du Maroc, various years.

Baumol, 1968: Baumol, William J. "On the Social Rate of Discount," The American Economic Review, Vol. LVIII, No. 4 (September, 1968), pp. 788-802.

Belal, 1968: Belal, Abdel Aziz. L'Investissement au Maroc (1912-1964) et Ses Enseignements en Matière de Développement Economique. Paris: Mouton, 1968.

Ben Bachir, 1969: Ben Bachir, Saïd. L'Administration Locale du Maroc. Casablanca: Imprimerie Royale, 1969.

Bulletin de Statistiques, various issues: Royaume du Maroc. Bulletin Mensuel de Statistiques (Nouvelle Série). Rabat: Service Central des Statistiques, various issues (monthly).

Chambergeat, 1965: Chambergeat, P. "L'Administration et le Douar," Revue de Géographie du Maroc, No. 8 (1965), pp. 83-86.

Consommation 1959-60: Royaume du Maroc. Ministère de l'Economie Nationale. La Consommation et les Dépenses des Ménages Marocains Musulmans (Résultats de l'Enquête 1959-60). Rabat: Division de la Coordination Economique et du Plan, Service Central des Statistiques, 1961.

Développement Industriel 1960-1964: Royaume du Maroc. Ministère de l'Economie Nationale et des Finances. Plan Quinquennal 1960-1964: Le Développement Industriel. Rabat: Division de la Coordination Economique et du Plan, 1961.

Eckstein, 1958: Eckstein, Otto. Water-Resource Development: The Economics of Project Evaluation. Cambridge, Mass.: Harvard University Press, 1958.

Haouz, 1968: Royaume du Maroc. Ministère de l'Agriculture et de la Réforme Agraire. "Les Potentialités Naturelles et la Mise en Valeur Actuelle de la Plaine du Haouz." Marrakech: Office du Haouz, 1968.

I.L.O., 1959: International Labour Office. The International Standardisation of Labour Statistics (Studies and Reports, New Series, No. 53). Geneva: I.L.O., 1959.

I.V.S., January 1969: Chitty, John, and Graves, Walter. "I.V.S. Evaluation of Promotion Nationale" (International Voluntary Service Report), January 15, 1969. (Mimeographed.)

I.V.S., April 1969: Graves, Walter. "Economic Analysis of Ouarzazate's Irrigation District (O.R.M.V.A.) Type 'A' Promotion Nationale Irrigation Development Projects" (International Voluntary Service Report), April 1969. (Mimeographed.)

I.V.S., June 1969: Chitty, John. "Cost-Benefit Evaluations of D.E.R.R.O. [Développement Economique et Rural du Rif Occidental] Fruit Tree Plantings in Al Hoceima Province" (International Voluntary Service Report), June 1969. (Mimeographed.)

Lahlimi, 1967: Lahlimi, A. "Les Terres Irriguées et le Monde Rural de la Tessaout Moyenne," Revue de Géographie du Maroc, No. 11 (1967), pp. 3 - 38.

McKean, 1958: McKean, Roland N. Efficiency in Government Through Systems Analysis, With Emphasis on Water Resources Development (A Rand Corporation Research Study, No. 3). New York: John Wiley and Sons, Inc., 1958.

Mennesson, 1965: Mennesson, E. "Ksour du Tafilalt," Revue de Géographie du Maroc, No. 8 (1965), pp. 87-91.

Myrdal, 1968: Myrdal, Gunnar. Asian Drama: An Inquiry Into the Poverty of Nations. 3 vols. (A Twentieth Century Fund Study). New York: Pantheon, 1968.

Note Rapide sur Prix, various issues: Royaume du Maroc. Note Rapide sur les Indices de Prix à Casablanca. Rabat: Service Central des Statistiques, various issues (monthly).

Nurkse, 1953: Nurkse, Ragnar. Problems of Capital Formation in Underdeveloped Countries. New York: Oxford University Press, 1953.

O.E.C.D., 1966: Organization for Economic Cooperation and Development. Geographical Distribution of Financial Flows to Less Developed Countries: Disbursements, 1960-1964. Paris: O.E.C.D., 1966.

O.E.C.D., 1969: Organization for Economic Cooperation and Development. Aide au Développement. Efforts et Politiques Poursuivis par les Membres du Comité d'Aide au Développement: Examen 1969 (Rapport de Edwin M. Martin, Président du Comité d'Aide au Développement). Paris: O.E.C.D., 1969.

Oualalou, 1969: Oualalou, Fathallah. L'Assistance Etrangère Face au Développement Economique du Maroc. Casablanca: Les Editions Maghrébines, 1969.

Pascon, 1966: Pascon, Paul. "La Main d'Oeuvre et l'Emploi dans le Secteur Traditionnel," Part I: Bulletin Economique et Social du Maroc, Vol. XXVIII, No. 100 (January-March, 1966), pp. 99-132; Part II: Bulletin Economique et Social du Maroc, Vol. XXVIII, Nos. 101-102 (April-September, 1966), pp. 123-135.

Plan 1960-1964: Royaume du Maroc. Ministère de l'Economie Nationale. Plan Quinquennal 1960-1964. Rabat: Division de la Coordination Economique et du Plan, 1960.

Plan 1965-1967: Royaume du Maroc. Délégation Générale à la Promotion Nationale et au Plan. Plan Triennal 1965-1967. Rabat: Division de la Coordination Economique et du Plan, 1965.

Plan 1968-1972: Royaume du Maroc. Ministère des Affaires Economiques, du Plan et de la Formation des Cadres. Plan Quinquennal 1968-1972. 4 vols. Rabat: Division de la Coordination Economique et de Plan, 1968.

Plan Exécution 1969: Royaume du Maroc. Secretariat d'Etat Chargé du Plan. Plan Quinquennal 1968-1972: Rapport sur l'Exécution du Plan pour l'Année 1969 et Programme d'Action de l'Année 1970. Rabat: Division du Plan et des Etudes Economiques, 1970.

P.N. au Maroc, 1964: Royaume du Maroc. Délégation Générale à la Promotion Nationale et au Plan. La Promotion Nationale au Maroc. Rabat: Promotion Nationale, 1964.

P.N. Bilan, various years: Royaume du Maroc. Délégation Générale à la Promotion Nationale et au Plan. "Promotion Nationale: Bilan." Rabat: Promotion Nationale, various years (1961 through 1969). (Mimeographed.)

P.N.: Trois Années, 1964: Royaume du Maroc. Délégation Générale à la Promotion Nationale et au Plan. "Trois Années de Promotion Nationale." Rabat: Promotion Nationale, 1964. (Mimeographed.)

P.N. Aide-Mémoire, 1970: Royaume du Maroc. Division de la Promotion Nationale. "Promotion Nationale: Aide-Mémoire." Rabat: Promotion Nationale, 1970. (Mimeographed.)

Prest and Turvey, 1967: Prest, A. R., and Turvey, R. "Cost-Benefit Analysis: A Survey," in Surveys of Economic Theory, Vol. III: Resource Allocation (New York: St. Martin's Press, 1967), pp. 155-207.

Recensement 1960, II: Royaume du Maroc. Délégation Générale à la Promotion Nationale et au Plan. Résultats du Recensement de 1960, Vol. II: Population Active. Rabat: Service Central des Statistiques, 1965.

S.C.E.T., 1966a: Royaume du Maroc. Ministère de l'Intérieur. Province de Ksar Es Souk. "Tadiroust: Barrage Fusible." Rabat: S.C.E.T.-Coopération, 1966.

S.C.E.T., 1966b: Royaume du Maroc. Ministère du Développement. "Trois Années d'Aide Technique à la Promotion Nationale," by Y. Lancelot. Rabat: S.C.E.T.-Coopération, 1966.

S.C.E.T., 1968: République Française. Ministère des Affaires Etrangères. Direction de la Coopération Technique. "Assistance Technique à la Promotion Nationale: Note sur la Mise en Valeur des Palmeraies du Rhéris-Todrha par l'Utilisation des Crues." Rabat: S.C.E.T.-Coopération, 1968.

S.C.E.T., 1969: Royaume du Maroc. Ministère de l'Agriculture et de la Réforme Agraire. "Périmètre d'Irrigation de Tadiroust: Etude Sommaire de Mise en Valeur." Rabat: S.C.E.T.-Coopération, 1969.

Seagraves, 1970: Seagraves, J. A. "More on the Social Rate of Discount," The Quarterly Journal of Economics, Vol. 84, No. 3 (August, 1970), pp. 430-450.

Situation Economique, various issues: Royaume du Maroc. Secretariat Chargé du Plan. La Situation Economique du Maroc. Rabat: Division des Statistiques et des Etudes Economiques, various issues (yearly).

S.R.I., 1967: Brown, Robert C., Altouney, Edward G., Podesta, Edward A., and Thor, Eric. "Analysis of Selected Programs for Moroccan Agricultural Development," prepared for the Agency for International Development, Washington, D.C. Menlo Park, California: Stanford Research Institute, 1967.

Tableaux Economiques 1915-1959: Royaume du Maroc. Ministère de l'Economie Nationale. Tableaux Economiques du Maroc, 1915-1959. Rabat: Division de la Coordination Economique et du Plan, Service Central des Statistiques, 1960.

Tiano, 1963: Tiano, André. La Politique Economique et Financière du Maroc Indépendant (Etudes "Tiers Monde": Problèmes des Pays Sous-Développés). Paris: Presses Universitaires de France, 1963.

Turnham, 1970: Turnham, David. The Employment Problem in Less Developed Countries: A Review of Evidence. Paris: O.E.C.D. Development Centre, 1970.

U.N. Yearbook 1968: United Nations. Yearbook of National Accounts Statistics, 1968. New York: Statistical Office, 1969.

U.S.A.I.D.-Rabat, 1969: United States. Agency for International Development. "Economic Assistance to Morocco from Inception 1957 through June 1969." Rabat: Controller's Office, U.S.A.I.D.-Rabat, 1969.

Zind, 1965: Zind, Richard. "An Estimate of Some Basic Parameters of the Moroccan Economy." Unpublished Ph.D. dissertation, University of Southern California, 1965.

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SCHLAMP, FREDRIC T.; RAYMOND, CHARLES
MEANWHILE, AT HOME. A FOLLOW-UP STUDY OF MENTALLY ILL, VOCATIONAL REHABILITATION CLIENTS. PROJECT REPORT.

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ABSTRACT - OVER 300 MENTALLY ILL CLIENTS REFERRED FOR VOCATIONAL REHABILITATION SERVICES WERE INTERVIEWED 2 YEARS AFTER CASE CLOSURE. ALL CLIENTS HAD BEEN HOSPITALIZED, BUT THOSE FIRST REFERRED WHILE IN THE HOSPITAL MADE A BETTER ADJUSTMENT THAN CLIENTS REFERRED AFTER RELEASE TO THE COMMUNITY. FIFTY-FOUR PERCENT OF THE CLIENTS REHABILITATED WERE STILL EMPLOYED AT FOLLOWUP, WHILE ONLY 26 PERCENT OF THE OTHER CLIENTS WERE THEN EMPLOYED. EMPLOYED CLIENTS HAD RECEIVED MORE SERVICES AND MORE SUPPORT FROM FAMILY AND EMPLOYERS AND HAD BETTER PAST EMPLOYMENT AND HOSPITALIZATION HISTORIES. ALTHOUGH EMPLOYMENT FAVORED THE CLIENT'S MENTAL HEALTH, PREMATURE POST-DISABILITY EMPLOYMENT AT TIMES RESULTED IN REHOSPITALIZATION. HOSPITALIZATION AND UNEMPLOYMENT WERE REGARDED AS EQUIVALENT SYMPTOMS OF DISABILITY; EMPLOYERS, FAMILY, AND FRIENDS WITHDREW THEIR ASSISTANCE AND SUPPORT AFTER REPEATED PERIODS OF HOSPITALIZATION OR UNEMPLOYMENT. PREVIOUS HOSPITALIZATION PREDICTED FUTURE HOSPITALIZATION, WHILE EMPLOYMENT HISTORY PREDICTED FUTURE EMPLOYMENT. THE SEVERE EFFECT OF MENTAL ILLNESS CANCELS MOST PROJECTIONS OF EMPLOYMENT LEVEL MADE PRIOR TO THE DISABILITY. (AUTHOR/AW)

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MEANWHILE...

AT HOME...

A STUDY OF MENTALLY ILL VOCATIONAL REHABILITATION CLIENTS

PROJECT REPORT

Fredric T. Schlamp, Ph.D.
assisted by
Charles Raymond

April 1971

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MEANWHILE, AT HOME

A Follow-up Study of Mentally Ill, Vocational Rehabilitation Clients

PROJECT REPORT

Project No. RD-1555-G-68-C2
Project Title: Psychiatric Follow-up Study
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HIGHLIGHTS OF USABLE FINDINGS

- If a sufficient rapport with the hospital staff exists and if the counselor can participate in decisions concerning the client, then employment of the mentally disabled client is more likely when he is referred and accepted for vocational rehabilitation services while still in the hospital.

- Counselors for the mentally disabled should be aware that the reemployment wage may be low for these clients. The client should be prepared for this eventuality. Clients generally tend to aspire to positions consistent with their previous occupational level or aspirations, and in many cases this is unrealistic.

- Counselors may permit and even encourage a moderate amount of job exploration and experimentation without untoward effects. If the client has held a moderate number of jobs in the post-hospitalization period, this does not lessen his chances of employment after two years.

- Some mentally disabled clients must be prepared to accept lower status jobs, and positions not involving close interpersonal relationships, and pre-adjustment training is needed to prepare these clients for such changes in their occupational status.

- The ex-mental patient tends to avoid service occupations and sales positions, presumably because these jobs require an intimate interpersonal relation with other people. The counselor should be fully aware of the additional effort required before encouraging these occupations.

- Very early release from the hospital without special emotional support, or the provision of a job, is probably less beneficial than a somewhat longer time in the hospital accompanied by more pre-vocational counseling, vocational training and some form of help in day-to-day living.

- Employers are of great help to the returning ex-mental patient, although it is not necessarily wise to publicize the client's previous mental disability. The help available from previous employers, friends and relatives, diminishes with continued unemployment or rehospitalization. Thus, a concerted effort should be made to take advantage of these sources as soon as possible.

- The counselor should be aware that the symptoms of mental disability frequently appear as a disinterest or apathy. Using this as a reason for refusing services is seldom justified.

- The mentally disabled client's decision concerning the living arrangements he wishes to make, and family relations he wishes to establish are frequently intuitively correct. Where possible the counselor should

defer to these wishes. The extensive reeducation and counseling which is required to permit the client to accept different living arrangements is often impractical, while the use of authoritarian fiat is frequently self-defeating. In many circumstances, conditioning, exercises in proper grooming, behavior control, and guidance in appropriate social behavior are more useful to the client than extended periods of counseling or therapy. It is possible for psychotic patients to continue employment even though showing (controlled) psychotic symptoms.

- Counseling, training and service given to individuals who are not later rehabilitated have little beneficial effect. The counselors should extend every effort to maintain contact with the client until he has been employed.

- The effects of long continued unemployment or hospitalization are deleterious. The resiliency of the client allows him to adjust to moderate amounts of unemployment and hospitalization. Counselors should take care to assure themselves that this limit is not reached since unfortunate, and only partly reversible personality changes then take place.

- If not given service immediately following discharge, mentally disabled clients frequently prefer to receive rehabilitation assistance after one to two months. This presumably allows their post-hospital adjustment to become stabilized, prior to attempts to undertake new responsibilities.

- Premature reemployment may result in increased likelihood of rehospitalization, and the counselor for the mentally disabled should be on guard against this.

- The mentally disabled client's attitude toward the services he has received does not necessarily reflect the adequacy nor the beneficial results of the services. Counselors should not necessarily expect such correspondence.

- Demographic factors such as age, education, and social status of the patients failed to predict future employment levels in the face of the withering process of mental disability. Although it is not suggested that only those clients least in need of service be given rehabilitation service, the counselors should be aware of the extensive effort necessary to successfully assist in the rehabilitation of clients with a poor employment record.

- Many clients had lost contact with their counselor soon after discharge, and were unaware of the additional services available to them. It will be beneficial for the counselor to maintain longer periods of post-employment contact with these clients. Similarly, it would appear to be a helpful step for the counselor to specify what the client can expect from the Department of Rehabilitation and what his future relationship will be with the Department.

"you know that the therapeutic efforts we can achieve are very inconsiderable in number. We are but a handful of people and, even by working hard, each one of us can deal in a year with only a small number of persons . . . one may reasonably expect that sometime or other the conscience of the community will awake and admonish it -- that the poor man has just as much right to help for his mind as he now has to the surgeon's means of saving his life; . . . so that men who would otherwise give way to drink; women who have nearly succumbed under their burden of privation; children for whom there is no choice but running wild or neuroses, may be made . . . able to resist and able to do something in the world. This treatment will be free. It may be a long time before the state regards this as an urgent duty . . . sometime or other, however, it must come."

Sigmund Freud
Collected Papers, Vol. II
The Hogarth Press, London 1950
pp. 400, 401

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MEANWHILE, AT HOME

A Follow-up Study of Mentally Ill,
Vocational Rehabilitation Clients

A Project Report

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ABSTRACT

Over three hundred mentally ill clients referred for vocational rehabilitation services were interviewed two years after case closure. All clients had been hospitalized, but those first referred while in the hospital made a better adjustment relative to their expected adjustment than clients referred after release to the community. Fifty-four percent of the clients rehabilitated were still employed at follow-up, while only twenty-six percent of the other clients were employed then. Employed clients had been given more services, had received the greatest amount of support from family and employers, had better past employment and hospitalization histories. Unemployment and hospitalization were seen as equivalent symptoms of disability. Employment favored the client's mental health, but premature post-disability employment at times resulted in rehospitalization. The value of rehabilitation services was unrelated to the client's attitude toward these services. Employers, family and friends withdrew their support and assistance after repeated periods of hospitalization or umemployment. The effects of long-term umemployment or hospitalization were deleterious in themselves. The interrelationships of family stability, aspirations, maturity and demographic data were as expected. Previous hospitalization predicted future hospitalization, while employment history predicted future employment. The effect of mental illness is severe enough to cancel most projections of level of employment, made prior to the disability.

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Project Director: James Walker

I. THE STUDY

Background Information

The pages which follow describe a follow-up study of clients of the California Department of Vocational Rehabilitation whose major disability was mental illness.

In California the programs of the Department of Vocational Rehabilitation for the mentally and emotionally disabled are more recent than programs for the physically disabled, but their objectives and problems are similar. Their goal is to prepare the patient or client to seek, obtain and maintain employment.

As part of an earlier project, mental patients and ex-mental patients were referred to the Department of Vocational Rehabilitation in one of two ways:

1. The Mental Hospital Program (MHP) Group received pre-release service. These clients were referred for services, from rehabilitation counselors, while hospitalized. After return to their own communities throughout the state, they continued to receive vocational rehabilitation services from a Department of Rehabilitation field rehabilitation counselor.

2. The Non-Mental Hospital (Non-MHP) Group were released from the hospital and then referred to the Department of Rehabilitation field offices for vocational rehabilitation services.

The Hospital based vocational rehabilitation counselor receives patients considered ready for rehabilitation by the hospital staff, and he then evaluates and discusses each referral with the ward treatment personnel. In cooperation with the hospital staff and other concerned persons, he develops a vocational rehabilitation plan for the patients whom he has accepted for service. These vocational plans are implemented with the cooperative services of community agencies, Department of Mental Hygiene after-care services, and the Department of Rehabilitation field offices. In short, the hospital staff does the case finding and the pre-referral evaluation. Prospective cases are referred to the rehabilitation counselor. Medical and psychological information on the potential client are provided him to evaluate. The hospital staff then provides work training and work evaluation programs within the hospital for individual patients. Similar procedures are customarily followed by field rehabilitation counselors except that their first contact with the potential client is in the community. As a result he has not been able to contribute to, or paritici-pate in, the client's course of treatment.

Success in a job is not a simple job-finding task for these clients. Community tenure depends not only on the physical, social and emotional environment to which the patient returns, but upon the patient himself, his strengths, his weaknesses and the way in which they match with his skills and opportunities.

Screening of potential clients, on the basis of needs and strengths of the applicants, customary in normal referral procedures, were not followed with the mentally ill clients accepted for vocational rehabilitation services while still in the hospital. Characteristically they had not shown a personal history of stability of behavior or work. The patients frequently participated in the rehabilitation program at the request of hospital personnel rather than upon their own initiative. Such factors are often reasons for considering a client ineligible for normal rehabilitation services. In addition, many of the clients had an anti-social behavior pattern, and work related attitudes, which made self-support difficult. Clients were accepted who had shown an inability to adjust to major areas of living both in and out of the hospital. The severely disabled, including those with marked emotional or personality maladjustments, were given preference when possible.

Types of Case Closures

Clients may have their case "closed" in three different ways.

1. Clients whose cases are closed "rehabilitated" must be employed, and must have participated in a program that provided counseling and one or more services. Services include such items as vocational training, physical restoration, job placement, assistance in obtaining occupational tools, or equipment. The client is considered to be rehabilitated when after a reasonable period of time he is still employed and indicates that he will remain employed. These cases will be called Rehabilitated.

2. Some clients are not employed when their cases are closed, although they received some services. Rehabilitation services to a client are terminated after the counselor feels he has exhausted every reasonable resource that might lead to employment. These cases will be called Closed with Service.

3. Some clients are denied further service after they have been referred to Vocational Rehabilitation, but before an individual rehabilitation plan has been initiated. The client may have refused services or he may have left the hospital and lost contact with the counselor. He may have been employed, unemployed or still hospitalized when his case was closed. These cases will be called Closed without Service.

Selecting the Sample

A list was compiled of all cases closed by the Department of Rehabilitation during the period July 1,1964 through June 30, 1965, who had been in one of the seven participating hospitals.

During the fiscal year July 1, 1964 through June 30, 1965, the California State Department of Rehabilitation closed 8,797 cases, 39 percent of which were closed rehabilitated. Five hundred fifty-one of these ex-clients had been psychiatric patients in State mental hospitals. Three hundred thirty-seven of these patients were selected to be studied two years after case closure. Of these, five refused to participate; twenty-five had died or could not be located. A detailed schedule of past histories and treatment records was completed for each client. Identical information and interview records were kept on all clients.

The State of California Vocational Rehabilitation Offices in Sacramento and Los Angeles were used as a base from which to review hospital and vocational rehabilitation case records, locate former clients, arrange for interviews and organize the data. The participating hospitals (all in California) are shown in Table 1.1.

Table 1.1 - Percent of Clients of the MHP and Non-MHP Groups by Referral Source

Source of Referral	MHP Group (n=150)	Non-MHP Group (n=157)
TOTAL, ALL CLIENTS	100%	100%
Agnews State Hospital	17%	6%
Camarillo State Hospital	22%	2%
Mendocino State Hospital	6%	0%
Metropolitan State Hospital	13%	1%
Napa State Hospital	18%	3%
Patton State Hospital	8%	2%
Stockton State Hospital	8%	2%
Bureau of Social Work (Department of Mental Hygiene) .	2%	42%
Other Source of Referral	6%	42%

The process of locating the clients and arranging for interviews proved to be a slow one. Many clients had left the state or had made frequent changes of employment and residence. In some cases, it was evident that the search had made the client very apprehensive. Some former clients tried to avoid contact because of their misunderstanding of the purpose of the interview, while others feared to have their past history of mental illness revealed.

Table 1.2 presents the population of rehabilitation clients who had been patients in State mental hospitals and the proportions of these clients closed in various ways - for both the MHP and Non-MHP Groups. The closures of the study sample proved to be quite representative of all closures for mentally ill clients during this period of time.

Table 1.2 - Percent of All Clients and Sample Cases Closed During 1964-65 Who Had Been Patients in State Mental Hospitals by Program and Type of Closure

Type of Closure	All Clients		MHP* Portion of All Psychiatric Clients		Non-MHP* Portion of All Psychiatric Clients	
	% in Total Group n=551	% in Sample n=307	% in Total Group n=339	% in Sample n=150	% in Total Group n=212	% in Sample n=157
TOTAL, ALL CLOSURES	100%	100%	100%	100%	100%	100%
Rehabilitated	33%	29%	32%	29%	34%	30%
Closed with Service	28%	30%	35%	39%	17%	20%
Closed without Service . .	39%	41%	33%	32%	49%	50%

* MHP and Non-MHP as defined in the text, page 1.

The Items

Two schedules were prepared: a case record schedule and follow-up interview schedule. Copies of the Interview Schedule and the Case Record Schedule, maintained for each client, can be found in Part II.[1/] The areas of inquiry are presented below:

Areas of Inquiry	Number of Items
Total Items	105
Personal Identification	2
Marital and Family	6
Social Relations	10
Housing and Living Arrangements	5
Education and Training	2
Socio-Legal Problems	2
Financial Resources and Support	2
Occupation and Employment	32
Family Medical History	1
Personal Medical and Hospitalization History	12
Agency Activities	15
Rehabilitation Services Identification	7
Rehabilitation Testing and Ratings	9

Some interview items were selected because they revealed the client's attitude towards himself, his work, his environment or other people, even though they were subject to various interpretations by the clients. One such item asked the respondent to give the number of "close friends" he felt he had. Others required his opinion of how someone else, such as an employer, viewed his work. Thus, all questions contained in the interview schedule do not purport to represent "objective facts". They do, however, represent the view of the world that the client felt was accurate, safe or convenient to communicate.

Twenty randomly selected cases were recoded by different coders and the new coding compared to the previous one. Only five inconsistencies on coding were discovered, a reliability of well over .95.[2/]

The interviews were conducted between April 1966 and July 1967. They were held wherever it was most convenient for the client; in his home, at his place of employment, at a local rehabilitation office, or if he was hospitalized, at the hospital. Several subjects were located in out-of state mental hospitals. These individuals were

1/ Published separately and available from the Vocational Rehabilitation Administration, U.S. Department of Health, Education and Welfare, Washington, D.C. 20425.

2/ Pearson Product Moment Correlation

usually interviewed by a local social worker. Some of the clients could not give accurate information about events that had occurred during the vocational rehabilitation process, while other ex-clients were too ill or depressed to participate fully in the interview. When possible, collateral interviews were conducted with members of the client's family, his employer or other such person and information obtained, used to supplement the information attained from the ex-client.

II. RESULTS

Generally the clients had low incomes before and after their acceptance for vocational rehabilitation services. Forty-nine percent had little or no employment before or after their case was accepted for rehabilitation services; another ten percent had been employed less than one-third of the time before or after acceptance. Only twenty percent of the clients were employed full-time both before and after acceptance.

The clients were of all ages between 20 and 64, with a median age of 32 years. A somewhat larger portion of the clients were in the 20 through 24 age group, and somewhat fewer in the 50 years and over age group. There were more women than men accepted for services while in a hospital, although the total number of men and women clients in the study were approximately equal.

The median IQ of the clients, as tested by vocational psychologists, or established by the Vocational Rehabilitation staff from reading the case record, was slightly above 96. Only 62 percent of the subjects were so evaluated, however. Clients were tested, generally, to establish their intellectual level if they were not considered capable of profiting from vocational rehabilitation or other services. Therefore the IQ figure is probably an underestimation of the intelligence of the total group of clients.

Table 2.1 presents the distribution of clients by race. Few clients were other than Caucasian, and thus no analyses by race are presented.

Table 2.1 - Race of the Study Population

Race	Number
TOTAL, ALL CLIENTS	307
Caucasian	274
Negro	20
Mexican-American	11
Oriental	2

The number of clients by employment status at case closure, and at follow-up, is shown in Table 2.2. For example, eight clients were in the hospital at closure but were employed at follow-up. Similarly, ten clients were employed at closure, but had been returned to the hospital at follow-up.

Table 2.2 - Number of Clients by Status Categories at Closure and at Follow-up

Status at Closure	All Closures	Status at Follow-up		
		Hospitalized	Unemployed	Employed
TOTAL, ALL CLOSURES	307	57	144	106
Hospitalized	52	28	16	8
Unemployed	147	19	88	40
Employed	108	10	40	58

These clients may also be classified by the rehabilitation services they received. Some clients received "no services" beyond diagnosis and evaluation, while some received additional services. Figure 2.1 may be helpful in visualizing the temporal sequence of the changes that took place from acceptance, through termination of the individual vocational rehabilitation services, to follow-up. The clients moved frequently from one hospital-employment status to another, and there is almost no "typical client". In spite of this, some of the groups are more descriptively meaningful as well as larger than the others. For example, 88 clients were unemployed at closure and still unemployed at follow-up; 58 clients had a job at closure and also at follow-up; whereas 28 clients were in the hospital at closure and also at follow-up. Fifty-six percent of the total study were thus represented in clients who were consistently employed, consistently unemployed, or consistently hospitalized at these times. Table 2.3 presents this same material in tabular form with percentage figures.

Figure 2.1

HOSPITALIZATION AND EMPLOYMENT STATUS OF 307 PSYCHIATRIC VOCATIONAL REHABILITATION CLIENTS
AT ACCEPTANCE FOR VOCATIONAL REHABILITATION SERVICE, AT CASE CLOSURE AND AT FOLLOW-UP
307 Clients Consist of 150 in Mental Hospital Program (MHP) and 157 in Non-Mental Hospital Program (NON-MHP)

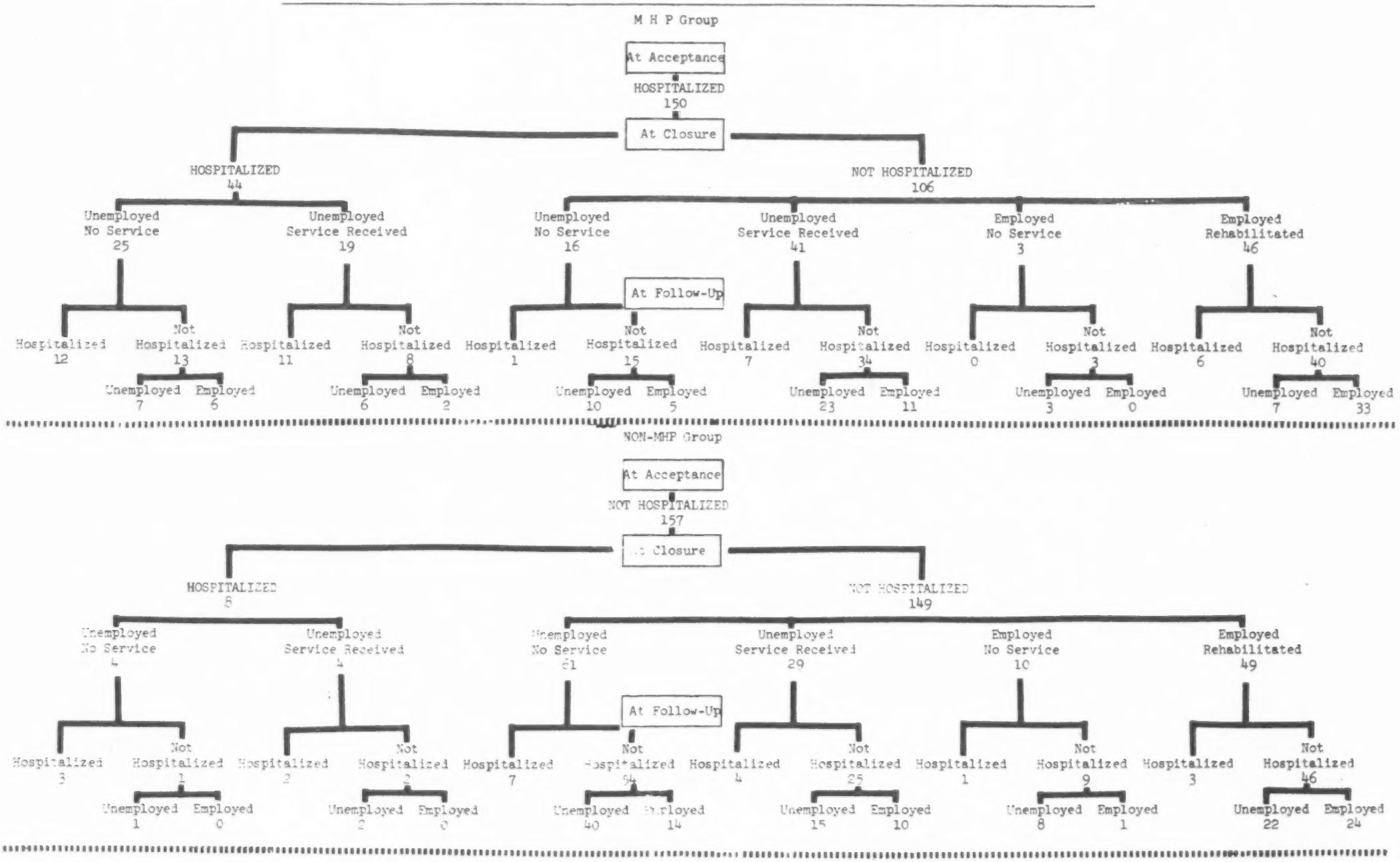

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Table 2.3 - Percentage of Clients in Each of Three Service Categories by Status at Acceptance, at Closure and at Follow-up

Status			Type of Service							
			All Service Types		Referral and Evaluation Only		Additional Services			
							Not Rehabilitated		Rehabilitated	
At Acceptance	At Closure	At Follow-up	No.	%	No.	%	No.	%	No.	%
Hosp. [1]	Hosp.	Hosp.	23	7%	12	10%	11	12%	0	0%
Hosp.	Hosp.	Unempl. [2]	13	4	7	6	6	7	0	0
Hosp.	Hosp.	Empl. [3]	8	3	6	5	2	2	0	0
Hosp.	Unempl.	Hosp.	8	3	1	1	7	8	0	0
Hosp.	Unempl.	Unempl.	33	11	10	8	23	25	0	0
Hosp.	Unempl.	Empl.	16	5	5	4	11	12	0	0
Hosp.	Empl.	Hosp.	6	2	0	0	0	0	6	6
Hosp.	Empl.	Unempl.	10	3	3	3	0	0	7	8
Hosp.	Empl.	Empl.	33	11	0	0	0	0	33	35
Not Hosp.	Hosp.	Hosp.	5	2	3	3	2	2	0	0
Not Hosp.	Hosp.	Unempl.	3	1	1	1	2	2	0	0
Not Hosp.	Hosp.	Empl.	0	0	0	0	0	0	0	0
Not Hosp.	Unempl.	Hosp.	11	4	7	6	4	4	0	0
Not Hosp.	Unempl.	Unempl.	55	17	40	33	15	16	0	0
Not Hosp.	Unempl.	Empl.	24	8	14	12	10	10	0	0
Not Hosp.	Empl.	Hosp.	4	1	1	1	0	0	3	3
Not Hosp.	Empl.	Unempl.	30	10	8	6	0	0	22	23
Not Hosp.	Empl.	Empl.	25	8	1	1	0	0	24	25
TOTAL, ALL CLIENTS			307	100%	119	100%	93	100%	95	100%

1 Hospitalized

2 Unemployed, but not hospitalized

3 Employed, and not hospitalized

In general the services provided were useful. Of clients receiving services (other than evaluation only), slightly more than half were rehabilitated, i.e., employed at closure. Of the clients rehabilitated, 60 percent were still working at the time of the follow-up interview (see Table 2.4). Seventy-two percent of the MHP Group clients closed rehabilitated were still working at follow-up. This finding is particularly striking because 29 percent of the clients who were rehabilitated had been unemployed for a year prior to their acceptance for vocational rehabilitation services, while 58 percent of the rehabilitated

clients had no "usual occupation" or any student status prior to their disability. Of the total 307 persons studied, the median client was working 25% of the day prior to his illness, and only 15% of the day at follow-up. Of the 57 rehabilitated clients who were working at follow-up, the median client had been working 45% of the day prior to his illness, and was working 90% of the day at follow-up.

Table 2.4 - Status of Clients at Follow-up
by Closure Type in Percent

Closure Type	All Clients	At Follow-up		
		Unemployed		Employed
		Hospital	Community	
Rehabilitated (n=95)	100%	9%	31%	60%
Non-Rehabilitated (n=212) . .	100%	23%	54%	23%

The non-rehabilitated client did not fare so well. Only twenty-three percent of these clients were employed at follow-up. While nine percent of the rehabilitated clients were in the hospital at follow-up, twenty-three percent of the non-rehabilitated clients were.

Table 2.5 presents the percent of clients receiving training by status at follow-up. The greater percent of clients employed than not employed who received training is typical of all the various "additional" vocational rehabilitation services, and no striking differences appeared in employment rates among clients who received different types of "additional services". The MHP clients, whether employed or not, were more likely to receive vocational rehabilitation services than were the Non-MHP clients.

Table 2.5 - Percent of Clients Receiving Vocational Training and Education by Employment Status at Follow-up

Employment Status at Follow-up	Percent Receiving Training
Employed	48%
Unemployed	28%
Hospitalized	23%
All Clients	34%

Only nine percent of all clients reported that lack of skill or the unavailability of work was the major reason for their unemployment. Virtually none of the interviewers believed that the ex-client's unemployment was due to inadequate skill or training. These interviewers related unemployment to a combination of factors including physical incapacity, loss of social skills, residual mental illness, and a poor labor market. The interviewers reported that additional follow-up, pre-vocational training, post-hospital support and community liaison would have been required for more clients to have been employed. These facts support two conclusions: (1) the counselors do appear to tailor the services they provide to the client (otherwise more clients who needed training would have reported they needed it) and (2) after rehabilitation the client feels, as do others, that mental disability is the primary factor in their inability to obtain and maintain a job.

The non-rehabilitated clients who received service are not much more likely to be employed at follow-up than the clients who did not receive service. (See Table 2.6.) Almost the same proportion of non-rehabilitated clients were employed whether they received additional services or not.

Table 2.6 - Percent Employment at Follow-up
by Service Received of All Non-Rehabilitated Clients

Follow-up Status	Non-Rehabilitated Clients (n=212)	
	No Service	Some Service
Total	100%	100%
Employed	23%	25%
Unemployed	77%	75%

Twenty-two percent of non-rehabilitated clients closed without services were hospitalized at follow-up, while twenty-six percent of the non-rehabilitated clients who recived services were hospitalized at follow-up. The non-rehabilitated clients who received service are more often unemployed and have a greater chance of being hospitalized. Since it is difficult to see how services could have "hurt" the clients, the non-rehabilitated client receiving services was probably more seriously disturbed. Granting that counselors can judge seriousness of disturbance, it follows that in accepting seriously disturbed cases, the rehabilitation counselors were attempting to give service where it was most needed.

The earnings of ex-clients at follow-up were quite low. Two-thirds of the clients employed were earning less than 80 dollars a week. Rehabilitated clients were earning more, however, since just over one-half of the employed rehabilitants were making less than this amount. Either the rehabilitation effort increased the client's earning capacity or the counselor selected the more skilled client to rehabilitate. Since we have seen that the counselors probably selected the more difficult cases, the former contention of increased earnings due to the rehabilitation services may be regarded as most likely.

The general employment level of clients is here considered to include: 1) amount of time per week employed, 2) earnings and 3) skill level of occupation. The general employment level of all clients was highest at closure. The employment level was higher than it had been prior to hospitalization or would be at follow-up. The time the clients were employed and the proportion of clients employed decreased during the two-year period between the termination of rehabilitation services and the follow-up interview.

Almost 40 percent of the rehabilitated clients were unemployed at follow-up, in spite of the rehabilitation effort. However, over 85 percent of the non-rehabilitated clients (with and without service) who were employed at closure lost their jobs. Of the 13 clients who had received no services but were employed at closure, only one was still employed at follow-up. The greatest decrease in employment from closure to follow-up occurred in the group of clients who had no employment prior to acceptance.

Although the rehabilitated clients are employed more frequently at follow-up, the non-rehabilitated clients did not fail completely or without attempting to work at all. Twenty-three percent of those without service and twenty-five percent of those with some service had a job at follow-up. Fifteen percent of the individuals closed in the hospital were employed at follow-up had had at least one job after their cases had been closed.

A moderate amount of job switching does not seem to be a detriment to continued employment. Forty-one percent of the clients employed at follow-up had more than one job after their case was closed. Twenty-three percent of the employed group held as many as four different jobs between their case closure and follow-up. Only seven percent of the clients not employed at follow-up had held so many jobs after their case was closed.

Virtually no clients remained in service occupations at follow-up. This was in spite of the fact that 15 percent of all of the clients had reported such employment prior to their disability and 20 percent had reported this occupation at case closure. The number of rehabilitated clients reporting service occupations dropped from 28 percent to none.

Table 2.7 indicates the occupations in which the clients worked, or were prepared to work, even though unemployed, prior to and after their disability. The rehabilitated clients are upwardly mobile. They report they possess more preparation for skilled and professional jobs at closure than at hospitalization and even more at follow-up.

Table 2.7 - Percent Distribution of Occupations Reported at Acceptance, at Closure and at Follow-up by Employment and Rehabilitation Status

Occupations	Occupations Reported at Acceptance			Occupations Reported at Closure			Occupations Reported at Follow-up		
	All Clients (n=307)	Rehabilitants (n=95)	Employed at Follow-up (n=106)	All Clients (n=307)	Rehabilitants (n=95)	Employed at Follow-up (n=106)	All Clients (n=307)	Rehabilitants (n=95)	Employed at Follow-up (n=106)
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Professional and Semi-Professional.....	7	11	15	6	13	11	9	16	18
Skilled or Semi-Skilled.....	11	13	15	14	20	18	34	47	43
Clerical or Sales.....	26	35	25	17	25	18	19	23	21
Domestic or Personal Services.....	15	7	8	20	28	20	0	0	0
Unskilled or Agriculture.....	21	14	16	15	14	15	16	8	18
Student.....	13	15	14	0	0	0	4	2	0
None.....	7	5	7	28	0	18	18	4	0

The actual picture of earnings does not reflect this optimism, however. The persons rehabilitated who are working do, indeed earn very nearly what they reported prior to their disability. Many rehabilitants are not earning any money at all, however, and this is reflected in the much lower median income at follow-up than prior to their disability. Those rehabilitated clients who were not earning any money at the follow-up period, are drawn disproportionately from the clients aspiring to higher paying status jobs. For all rehabilitated clients the median income at case closure was higher than it was prior to their disability, yet at follow-up their median income was again lower.

Table 2.8 - Rehabilitated Clients - Median Reported Weekly Income Obtained at Various Times in Their History

Income Clients Included in Group	Client's Status at Time Income Earned			
	Prior to Disability	Prior to Hospitalization	At Case Closure	At Follow-up
All rehabilitated clients	$ 4	$ 1	$ 49	$ 10
All rehabilitated clients earning money in time period reported . .	$ 74	$ 53	$ 54	$ 75

The effect of mental illness appears to be more severe for those persons who are unemployed prior to their illness. Although the effects of rehabilitation services seem to alleviate the effects of mental illness, at follow-up all rehabilitants have again shown a marked decrease in earning capacity. It was not determined if the clients who earned little or no money prior to their disability, are the same clients who were unemployed at other times. The high relationship, within groups, between work experience prior to disability, and at follow-up, leads to the strong suspicion that this is so, however.

One of the major hypothesis of this study was that the MHP clients first accepted in the hospital would have made more vocational gains than clients first seen after their hospital release. Table 2.9 presents evidence that rehabilitated MHP clients were employed more frequently at follow-up.

Table 2.9 - Rehabilitated Clients - Employment Status at Follow-up by Type of Program

Status at Follow-up	Total Program (n=95)	MHP (n=46)	Non-MHP (n=49)
ALL REHABILITATED CLIENTS	100%	100%	100%
Hospitalized	9%	13%	6%
Unemployed	31%	15%	45%
Employed	60%	72%	49%

The study provided a rather stringent test of this hypothesis since the MHP Group was considerably more disturbed than the Non-MHP Group, as is shown in Table 2.10. In all characteristics, the MHP Group of clients appears more disabled and has had fewer advantages.

Table 2.10 - Some Distinguishing Characteristics of the MHP and Non-MHP Groups

Characteristics	MHP Group	Non-MHP Group
Medians		
Median percent of time employed prior to acceptance	16.0%	28.4%
Median total months in state hospital at closure	20.3 mos.	7.7 mos.
Median longest period in state hospital at closure	11.9 mos.	5.3 mos.
Median number of state hospitalizations at closure	1.6 times	1.1 times
Median length of last hospitalization at closure	9.4 mos.	3.8 mos.
Proportions		
Proportion earning over $80.00 a week prior to disability	.15	.27
Proportion working after disability prior to acceptance	.49	.64
Proportion in hospital at closure	.29	.05
Proportion under psychiatric care at follow-up	.57	.53
Proportion having family contacts with parents	.34	.42
Proportion living with spouses at follow-up	.13	.23

The barrier of hospital release had already been crossed successfully by all non-MHP clients, while almost 30 percent of the MHP group had not been released at case closure, and half of this number never were released from the hospital. The individuals accepted while in the hospital (MHP group); spent a longer total time in the hospital; have more frequent and

longer periods in the hospital, were less often earning money prior to their disability; had fewer family contacts; were less frequently living with their spouse at follow-up; and were more likely to be under psychiatric care at follow-up. Thus, the client accepted while in the hospital appears to be more seriously disabled, and drawn from a more disturbed, less easily employed group. In spite of this, compared to the Non-MHP clients, a larger percent of the MHP clients were employed at follow-up, and those not in the hospital were earning more money. As we might anticipate from the description of these clients, however, more of them remained hospitalized. The procedure of accepting clients while in the hospital apparently did improve the employment chances of clients who were released.

Offers of help and assistance to the ex-mental patient by family and friends steadily decrease as time goes on. (Table 2.11)

Table 2.11 - Percent of All Clients Supported by Family and Friends at Acceptance and at Follow-up

Time Period	Percent Supported by Family and Friends
Time of Acceptance . .	32%
Follow-up	9%

The number of people who were self-supporting (i.e., free of any outside support other than their spouse) increased from acceptance to follow-up. At acceptance 11 percent of all clients were self-supporting while this rose to 38 percent at follow-up. Clients first contacted by the rehabilitation counselor after hospital release, might have been expected to be at least partially self-supporting at first contact. However, only 17 percent of the Non-MHP families were self-supporting at acceptance while 36 percent were self-supporting at follow-up.

Clients employed at follow-up were dependent upon family and friends in 13 percent of the cases prior to their disability, while the clients unemployed at follow-up had been dependent in 24 percent of the cases. The unemployed person is thus more likely to have been dependent upon family and friends prior to or just after his disability, and more likely to be living alone two years after hospital discharge. Is this evidence of the rejection of the client by family and friends? It seems likely.

Many of the clients unemployed both at closure and at follow-up said that they had no contact with friends (Table 2.12). It is admittedly true that feelings of loss of friendship may not be the same as actual loss of friends nevertheless, it is clear that living arrangements, the person's position in his family structure, and loss of friends are related to the outcome of the rehabilitation process. These feelings of loss of contact with people, loss of friendship, living alone, and the associated attitudes of despair are indications of a generalized outlook of hopelessness, anomy and disassociation.

Table 2.12 - Clients Who Were in the Same Status at Both Closure and Follow-up by the Percent Who Claimed to Have No Contact with Friends

Friends Claimed	Status at Both Closure and Follow-up		
	Unemployed		Employed
	Hospitalized (n=28)	Community (n=88)	(n=58)
Proportion of clients claiming to not have friends	64%	42%	17%

The more seriously disabled clients were not coping well with problems of employment and social interaction, even though they more frequently received help from the Department of Mental Hygiene's Bureau of Social Work. For example, the people hospitalized at follow-up had contacted, and had been treated by, a representative of the Bureau of Social Work in 81 percent of the cases; of those unemployed at follow-up, 64 percent, and of those employed 52 percent had a record with the Bureau of Social Work. Few clients were assisted by any other public agency.

Sixty percent of the rehabilitated clients employed at closure had located their own job or had attained it through the help of friends and former employers, while seventy-two percent of the group employed at follow-up had done so. The State Department of Rehabilitation placed only twenty percent of those employed at closure, while the Department of Employment placed less than fourteen percent. The MHP and Non-MHP did not differ in the methods by which they obtained jobs. Friends and employers were apparently of great help in assisting the client obtain a job.

Table 2.13 presents data concerning the living arrangements and marital status of clients. The person who is in the hospital when he is accepted for service (MHP Group), is more likely to be employed at follow-up. This has already been discussed. In other respects the living arrangements do not seem to affect the outcome of the rehabilitation process. At follow-up, a larger percent of the unemployed people are living alone and a larger percent of the employed people are living in a house with someone else.

Table 2.13 - Living Arrangements and Marital Status at Acceptance and at Follow-up by Employment Status at Closure and at Follow-up

Living Arrangement and Marital Status	Employment Status					
	At Closure			At Follow-up		
	Hospitalized	Unemployed	Employed	Hospitalized	Unemployed	Employed
Living Arrangements at Acceptance, Percents	100%	100%	100%	100%	100%	100%
Hotel or Alone.....	4	10	11	5	12	8
House or with Relative or Friend.....	4	33	24	16	30	23
Family Care Home.....	6	7	7	3	7	6
Hospital.....	84	39	46	65	39	54
Don't Know.....	2	11	12	5	12	9
Marital Status at Acceptance, Percents	100%	100%	100%	100%	100%	100%
Married, Widowed.....	7	18	24	16	20	19
Never Married.....	58	47	46	54	45	50
Divorced or Separated.....	35	35	30	30	35	31
Living Arrangements at Follow-up, Percents	100%	100%	100%	100%	100%	100%
Hotel or Alone.....	13	23	28	-	22	24
House or with Relative or Friend.....	27	57	56	-	59	66
Family Care Home.....	13	7	6	-	9	10
Hospital.....	54	13	10	100	-	-
Marital Status at Follow-up, Percents	100%	100%	100%	100%	100%	100%
Married, Widowed.....	*	*	*	12	28	31
Nevered Married.....	*	*	*	49	39	42
Divorced or Separated.....	*	*	*	39	33	27

*Data Not Available

Clients who were married at acceptance make up a minority of cases (Table 2.14). Married clients were more likely to be employed at case closure, but are no more likely to be employed at the follow-up interview compared to clients never married. While it is not certain, it is possible that the clients who are married have some family support available upon hospital release, and are therefore able to obtain employment more quickly. Eventually, however, the strain of close interpersonal relations may present difficulties for these patients.

Table 2.14 - Marital Status by Employment Status at Two Time Periods, in Percent of Clients

Time Period	Clients Never Married Acceptance (n=149)				Clients Married at Acceptance (n=57)			
	Total	Hosp.	Unem.	Empl.	Total	Hosp.	Unem.	Empl.
At Case Closure . . .	100%	20%	46%	34%	100%	7%	47%	46%
At Follow-up	100%	21%	43%	36%	100%	16%	49%	35%

The relationship between the client's personality characteristics, living arrangements, and the timing of the rehabilitation process appears to be complicated. The data of this study offers incomplete clues as to the nature of this relationship.

The age of the individual at the onset of his disability did not affect his chance of employment at follow-up. Fewer younger persons from 15 to 24 years of age are employed at closure, possibly because they returned to school. A few more middle-aged clients, 25 through 44 years, are rehospitalized, but these differences are not statistically significant.

Table 2.15 - Age at Onset of Disability by Employment Status at Closure and Follow-up, in Percent

Age at Disability	Total	At Closure			Total	At Follow-up		
		Unemployed		Employed		Unemployed		Employed
		Hospitalized	Community			Hospitalized	Community	
15-24 (n=91) . . .	100%	17%	57%	26%	100%	14%	51%	35%
25-34 (n=78) . . .	100%	17	40	43	100%	22	41	37
35-44 (n=92) . . .	100%	18	46	36	100%	23	44	33
45+ (n=46) . . .	100%	17	46	37	100%	13	52	35

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Almost ninety percent of all clients had at least more than a grade school education. Twenty-five percent of all the clients had had some college. No significant educational differences existed between MHP and Non-MHP referrals. While clients with a high school education, or more, were more likely to be employed at closure, the chances of remaining employed were about the same for all educational groups.

Table 2.16 - Education Prior to Disability by Status at Closure and Follow-up in Percent

Education Prior to Disability in Years	Status at Closure				Status at Follow-up			
	Total	Unemployed		Employed	Total	Unemployed		Employed
		Hospitalized	Community			Hospitalized	Community	
0-8 (n=34) . . .	100%	15%	64%	21%	100%	18%	50%	32%
9-12 (n=193) . .	100%	17%	50%	33%	100%	20%	50%	30%
13+ (n=80) . . .	100%	19%	34%	47%	100%	16%	39%	45%

Although women remain unemployed at follow-up as frequently as men, they are not rehospitalized as frequently (14 percent versus 23 percent, significant at .05 level). These results support the contention that unemployment is less stressful to women because the unemployed woman is better accepted than the unemployed male in this culture.

Intellectual capacity is only slightly related to status at closure or follow-up in this group of clients. The 30 clients with tested IQ's of 120 or better are employed less often at closure (20% versus 35%) but more often at follow-up (39% versus 35%) than the total group of clients. The results must be regarded as suggestive only because of the small number of cases involved.

The client's previous hospitalization and employment history is related to his hospitalization and employment record at closure and follow-up. Table 2.17 presents the outcome of the rehabilitation efforts when categorized by previous hospitalization measures.

A relationship exists between the previous number of hospitalizations and the chance of the client's hospitalization at follow-up. The prior months that the client spent in the hospital is also strongly related to hospitalization at follow-up. For example, while only two percent of the clients who had been hospitalized for three months or less were hospitalized at follow-up, 35 percent of the clients who had been hospitalized for 37 months or more were hospitalized at follow-up. These measures of hospitalization are not as closely related to employment status. The strongest of these "cross-associations" is the

relationship of "total months of hospitalization" with "employment at follow-up"; here, over 40 percent of the individuals with three months or less hospitalization are employed; while only 25 percent of the clients with over 36 months of hospitalization are employed. The relationship is not linear, however, unemployment only increasing approximately as the number of months hospitalized.

Table 2.17 - Hospitalization and Employment at Follow-up by Client's Hospitalization History, in Percent

Employment or Hospitalization History	Total	Status at Follow-up			
		By Employment		By Hospitalization	
		Employed	Un-employed	Hospi-talized	Not Hos-pitalized
Total Cases (n=307)	100%	35%	65%	19%	81%
HOSPITALIZATION RECORD (at closure)					
Number of hospitalizations					
1 (n=127)	100%	48	52	10	90
2 (n=74)	100%	28	72	19	81
3 (n=59)	100%	25	75	25	75
4+ (n=47)	100%	23	77	32	68
Total months of hospitalization					
0-3 (n=46)	100%	41	59	2	98
4-18 (n=138)	100%	38	62	12	88
19-24 (n=22)	100%	41	59	27	73
25-36 (n=36)	100%	28	72	30	70
37+ (n=65)	100%	26	74	35	65

The employment history of the client is clearly related to employment at closure and at follow-up, but not strongly related to hospitalization. For example, employment at follow-up is shown in Table 2.18 to increase with the number of months the client was unemployed immediately prior to his hospitalization. These relationships are typical of many of the measures of prior employment history and employment at follow-up. Hospitalization is practically unrelated to measures of employment history, however. This is not to say that the efforts of the rehabilitation counselor did not improve the employability of the clients with whom he worked, but that over a two year period the effect was roughly proportional to the previous history of employment.

While many items in the employment history show similar relationships with employment at closure and follow-up, certain items of job history are not related to either employment or hospitalization. For example, the amount of the client's earnings prior to hospitalization is unrelated to earnings at follow-up.

Sixty percent of the clients closed unemployed are still unemployed at follow-up. Only three percent of the clients, that were hospitalized at follow-up had, even briefly, been employed full-time since their case closure. Simply discharging these clients from the hospital almost assures their unemployment or hospitalization at follow-up. Rehabilitated clients may not be assured of successful employment at follow-up, but they have a better chance of employment.

Table 2.18 - Client's Employment History
by Employment and Hospitalization Status at Follow-up, in Percent

Employment History	Total	Status at Follow-up			
		By Employment		By Hospitalization	
		Employed	Un-Employed	Hospi-talized	Not Hos-pitalized
Total Cases (n=307)	100%	35%	65%	19%	81%
Months from last employment to hospitalization					
No job (n=46)	100%	33	67	16	84
0 - 6 (n=81)	100%	44	56	13	87
7 - 12 (n=46)	100%	41	59	24	76
13 - 24 (n=45)	100%	33	67	20	80
25 + (n=89)	100%	28	72	21	79
Percent of week worked prior to acceptance					
65% or more (n=85)	100%	45	55	14	86
64% or less (n=222)	100%	32	68	20	80
Length of longest job held prior to hospitalization					
Never employed (n=49) . . .	100%	25	75	18	82
0 - 12 (n=113)	100%	35	65	22	78
13 - 24 (n=45)	100%	38	62	9	91
25 + (n=100)	100%	47	53	18	82
Usual weekly wage prior to disability of those ever employed					
$79 a week or less (n=120).	100%	29	71	17	83
$80 a week or more (n=62) .	100%	50	50	19	81

Table 2.19 - Status of Clients in the Community at Follow-up by Categories of Hospitalization Record, in Percent

Hospitalization Record at Closure	Status at Follow-up						
	All Clients				Clients in the Community At Follow-up		
	Total	Employed	Hospitalized	Other	Total	Employed	Unemployed
Total Cases (n=307)	100%	35%	19%	46%	100%	43%	57%
Number of hospitalizations							
1 (n=127)	100%	48%	10%	42%	100%	46%	54%
2 (n=74)	100%	28	19	53	100%	41	59
3 (n=59)	100%	25	25	50	100%	38	62
4+ (n=47)	100%	23	32	45	100%	33	67
Total months of hospitalization							
0-3 (n=46) . . .	100%	41%	2%	57%	100%	51%	49%
4-18 (n=138) . .	100%	38	12	50	100%	47	53
19-24 (n=22) . .	100%	41	27	32	100%	37	63
25-36 (n=36) . .	100%	28	30	42	100%	32	68
37+ (n=65) . . .	100%	26	35	39	100%	38	62

Table 2.19 presents data from which to draw conclusions concerning the fate of the unemployed ex-mental patient. While the frequency and duration of hospitalizations are clearly and strongly related to hospitalization at follow-up, they are not as strongly related to the likelihood of employment of the community based client. It must be concluded that hospitalization has a cumulative effect resulting not only in rehospitalization, but in reduced likelihood of employment. Unemployment to an ex-mental patient appears to be a symptom equivalent to rehospitalization. Furthermore, unemployment per se does not appear to increase the likelihood of rehospitalization in these cases. Rather the factors responsible for rehospitalization appear to be responsible for unemployment in those clients who accept it as a substitute for rehospitalization.

The 58 clients who were employed at both closure and follow-up had the most favorable background in most aspects of prior employment and hospitalization. These clients also were the ones with the most favorable pre-disability history; medical, employment and hospital; as shown in Table 2.20.

Table 2.20 - Clients Employed at Both Closure and at Follow-up Compared to All Clients on Various Measures of Pre-Morbid Behavior

Prior to Disability or Hospitalization	Clients Employed at Both Closure and at Follow-up (n=58)	All Other Study Clients (n=249)
Median time of longest job held	20.8 mos.	11.6 mos.
Proportion earning $80.00 a week and over	.34	.06
Proportion supported by family, pension, welfare, or public inst. . .	.67	.82
Proportion employed 65% of the time or more	.38	.25
Proportion in a professional or semi-professional occupation prior to disability	.14	.40
Median total months in a state hospital	10.5 mos.	12.6 mos.
Median longest single period in a state hospital	8.3 mos.	9.2 mos.
Median length of last hospitalization	6.1 mos.	6.4 mos.
Proportion having 9-13 years of education	.34	.24

Table 2.21 presents data on items reflecting self-help at three points in time, as related to the outcome of the cases. The client who was self-supporting prior to his disability is much more likely to be employed at closure and at follow-up. Similarly, a prior history of dependency upon public assistance augurs an unfortunate rehabilitation outcome both at case closure and at follow-up.

Table 2.21 - Source of Support at Three Points in Time, by Status at Closure and Follow-up, in Percent

Source of Support	Status at Closure				Status at Follow-up			
	Total	Unemployed		Employed	Total	Unemployed		Employed
		Hospitalized	Community			Hospitalized	Community	
Self or spouse prior to disability (n=33)	100%	6%	42%	52%	100%	9%	33%	58%
Welfare or a public institution at acceptance (n=154)	100%	25%	45%	30%	100%	21%	44%	35%
Public agency, public welfare, or public institution after case closure but prior to follow-up (n=166)	100%	26%	53%	21%	100%	33%	65%	2%

Rehabilitated clients were employed slightly more frequently at follow-up if they had been seen more than two times by their counselor, but the differences are not statistically significant. (See Table 2.22) No other identified factors in the rehabilitation process affected the outcome of the process.

Table 2.22 - Status of Rehabilitated Clients at Follow-up by the Number of Times a Rehabilitation Counselor Contacted Them After Placement on the Job, in Percent

Client Contacts	Total	Status at Follow-up (n=108)		
		Unemployed		Employed
		Hosp.	Community	
Less than 2 (n=52) . . .	100%	7%	43%	50%
2 or more (n=56)	100%	13%	30%	57%

It has also been hypothesized that the shorter time interval between the client's release to the community and counselor contact, the more chance the client would have of being employed at follow-up. This hypothesis was not borne out. Considering only the clients who were seen first in the field, the clients employed showed no differences from the unemployed in the time of the first counselor contact. (Table 2.23)

Table 2.23 - Time of First Field Contact with Non-MHP Clients by Employment at Follow-up, in Percent

Weeks Between Hospital Release and First Counselor Contact	Both Groups	Employment of Non-MHP Group at Follow-up	
		Employed	Unemployed
Less than 3 weeks (n=37) . . .	100%	38%	62%
3 - 6 weeks (n=24)	100%	38%	62%
7 or more weeks (n=32)	100%	38%	62%

The rehabilitation counselor visited the clients who would become rehabilitants an average of 1.4 times after they started working. Thirty-five percent of the rehabilitated clients received three or more visits after they began work. Groups of clients that were accepted while in the hospital, were contacted more frequently after job placement than clients first accepted in the community. The longer the client remained an active case, the better his chances of employment two years later. This weak relationship is shown in Table 2.24.

Table 2.24 - Months Between Acceptance and Closure by Percent of Clients Employed at Follow-up

Months From Acceptance to Closure	Percent Employed
1 year or less	30%
1 - $1\frac{1}{2}$ years	39%
$1\frac{1}{2}$ - 2 years	42%
2 or more years	42%

Few clients were first contacted during the three to six weeks after hospital discharge. When questioned about this the counselors reported that if not contacted by the second week of his release, the clients were so involved in their own post-hospital adjustment that they could not incorporate the rehabilitation counselor into their life. They had, in the first two week period, worked out a relationship to the environment which did not include the counselor. The clients clung to this mode of adjustment until they either felt more comfortable or had failed in their employment attempt. In a sense the clients were saying, "I have enough problems already. Don't bother me now." After some satisfactory relationship with the environment had been worked out, the clients again felt freer to accept the help of the rehabilitation counselor.

An interesting statistic is seen in Table 2.25. Those clients who attempted to work after their mental disability became evident, but prior to their hospitalization were more likely to be hospitalized and less likely to be "unemployed", at follow-up. Premature employment or continued employment in the face of growing decompensation, may have led to more serious illness for some clients.

Table 2.25 - Employment After Disability
but Prior to Hospitalization
by Status at Follow-up, in Percent

Employment After Disability	Total	Status at Follow-up		
		Unemployed		Employed
		Hospitalized	Community	
No employment after disability prior to hospitalization (n=133)	100%	14%	51%	35%
Some employment after disability prior to hospitalization (n=174)	100%	22%	44%	34%

Marriage is positively associated with successful rehabilitation as is the possession of at least two dependents. This is an indication of the nature of the population. The clients are unattached and alone, with only 27 percent of the clients having any dependents. At follow-up 23 percent of the employed but only 13 percent of the unemployed had two or more dependents.

All aspects of the client's diagnosis are clearly related to employment and hospitalization at follow-up. In general, clients with psychoneurotic disorders have the best prognosis and are less frequently hospitalized. Many schizophrenic clients were closed rehabilitated and although this indicates the considerable effort expended by counselors on these clients, their record at follow-up was poor. The unemployed group continued to receive, and presumably need, more medication and psychiatric care at follow-up. In general, all of the indicators of successful outcome at follow-up are correlated with one another. Table 2.26 shows this data.

Table 2.26 - Measures of Medical Severity
by Status at Closure and at Follow-up, in Percent of Clients

Measures of Medical Severity	At Closure			At Follow-up		
	Unemployed			Unemployed		
	Hospitalized (n=52)	Community (n=147)	Employed (n=108)	Hospitalized (n=57)	Community (n=144)	Employed (n=106)
Total Percent	100%	100%	100%	100%	100%	100%
Hospital Diagnosis						
Schizophrenic	69%	63%	68%	81%	63%	62%
Neurotic	21	23	21	9	23	28
Manic Depressive . . .	2	9	5	4	8	6
Chronic Brain Syndrome	8	5	6	6	6	4
Medication at Follow-up						
Clients Receiving . . .	77%	60%	45%	86%	62%	37%
Clients Not Receiving .	23	40	55	14	38	63
Psychiatric Care at Follow-up						
Clients Receiving . . .	79%	53%	43%	100%	56%	28%
Clients Not Receiving .	21	47	57	0	44	72

A study by the Georgia Division of Vocational Rehabilitation (1967) reported that ninety percent of the clients who received training services were satisfied with those services after a period of five years. The clients in this study do not have such a uniformly favorable impression of the services that they received. Sixty percent of those employed at follow-up said that they disliked something about the vocational rehabilitation services. Answering the question "What did you like and what did you dislike about the vocational rehabilitation services?", the "counseling and testing" program elicited the largest response. Perhaps the number of clients liking or disliking this service reflects the fact that counseling and testing were more frequently the nature of service. For those clients who disliked aspects of the rehabilitation process, the most frequent complaint was of the long delay before receipt of any services. Almost twenty-five percent of the total group who had an opinion complained about this.

Twenty-nine percent of all employed clients, but only thirteen percent of rehabilitated clients were dissatisfied with their jobs at follow-up. Although the Department of Rehabilitation had placed approximately twenty percent of all clients, only one of the individuals who was dissatisfied had been placed by the Department of Rehabilitation.

The follow-up interviewers rated over half of the employed clients as "appropriately dressed", and two percent as "bizarre" in grooming or behavior. Only thirty-six percent of the unemployed clients were rated as "appropriately dressed", while fifteen percent were classified as "bizarre".

The clients who were employed at follow-up appeared to have characteristics which would distinguish them from the unemployed or hospitalized client. These favorable signs are:

Client is between the ages of 25 and 40
Client had some college
Caucasian
Neurotic diagnosis
Two or more dependents
Married or widowed
If not married, lives by self
Supported self prior to disability
Some work experience prior to disability
Short periods of previous hospitalization, preferably under three months
Closed rehabilitated
Seen by counselor at least twice
No medication needed at follow-up
Not under psychiatric care at follow-up
"Mature" and well-groomed
Client has a positive outlook

It was thought that some of these social and demographic factors known at acceptance, and certainly some of those known at closure, might predict the successful employment of clients at follow-up. A multiple correlation resulted in a battery of eight factors weighted as shown in Table 2.27.

No item seems important except as obviously and directly related to the prediction attempted.

The intimate relationship of the items are revealed by the following:

1. The best single predictor of employment at follow-up is a rehabilitated closure, and the best single predictor of both of these are measures of previous employment.

2. The best single predictor of being hospitalized at follow-up is hospitalization at closure, and the best predictor of these are, in turn, previous measures of hospitalization.

3. Nevertheless, when a prediction is made of "employment at follow-up", a number of measures including hospitalization, appear in the prediction formula.

Table 2.27 - Background Variables Predicting Employment at Follow-up

Background Variable	Score Derived from Multiple Correlation Solution
1. Only one state hospitalization	+5
2. Longest single period in state hospital three months or less	+4
3. Total time state hospital 19 months or more	-4
4. Six to twelve months from last employment to acceptance	+3
5. Primary diagnosis, psychoneurotic or non-psychotic disorder	+1
6. Thirteen or more years of education . .	+1
7. Length of last state hospitalization 13 months and over	-1
8. Months from last employment to acceptance 25 or more months	-1

Fifty-eight people were employed at both closure and follow-up and 88 people were unemployed at both closure and follow-up, (as usual, unemployed means not hospitalized and not employed). These clients were scored according to the prediction formula. Table 2.28 indicates the percent of these 115 clients employed at follow-up by prediction score.

It was mentioned earlier that the MHP Group appeared to be a more difficult group to rehabilitate. This is borne out using the employment-predictor score. The median employment-predictor score for these mental hospital patients was .14, while non MHP clients the median was 4.11. Only 30 percent of the clients referred while in the hospital would be predicted to be employed; in the Non-MHP Group 77 percent would be so predicted. Viewed in this way the MHP client's greater success at follow-up is even more impressive.

Table 2.28 - Relationship of Predictor Score to Employment at the Follow-up Interview for Clients Employed at Both Closure and Follow-up (n=58) and Unemployed at Both Closure and Follow-up (n=88)

Employment Score	Percent in the Scoring Category Who Were Employed at Closure and Follow-up
-6 to -3	27%
-2 to +2	38%
+3 to +7	69%
+8 to +12	83%
+13 and over	100%

An examination of three selected groups of clients was made. These three groups were:

1. Those clients who were in the hospital at case closure and also at follow-up (n=28). These will be called the "hospitalized" group.
2. The clients who were unemployed at case closure and at follow-up (n=88). These will be called the "unemployed" group.
3. Clients employed at closure and at follow-up (n=58). These will be called the "employed" group.

The clients in the "employed" group possessed a considerably better vocational-educational background as shown in Table 2.29.

The more mature, emotionally stable well-trained individual was more often employed at follow-up, but was also most often selected by the counselor to receive rehabilitation services.

Table 2.29 - Percent of Three Sample Groups*
Possessing Certain Vocational Characteristics

Vocational Characteristics	Sample Group		
	Hospitalized Group (n=28)	Unemployed Group (n=88)	Employed Group (n=58)
Clients who have graduated from high school	25%	15%	33%
Clients with some vocational training	20%	20%	33%
Clients in semi-skilled, skilled or professional occupations	7%	8%	29%

* See Text, Page 34.

III. CONCLUSIONS

1. *Assertive nature of conclusions*

In working with the data made available through this study, the authors have become familiar with the clients and their histories. An attempt will be made in this section to draw conclusions based upon the data reported, the observations of the interviewers, and the client's histories.

Any description of the dynamic relations of all the forces which shape the rehabilitative effort must be over-simplified, and must contain many specific exceptions to generalizations made. The reader will be able to point to exceptions. The author has exercised the discipline of omitting these exceptions in order to delineate what is felt to be the major factors in the process of rehabilitation as it occurred most of the time with most of these clients. Many exceptions could be used to clarify, expand, and test the generalizations made. This is not done. The tone used here is straight-forward, assertive, and often unqualified. If the author is spared the accusation that he believes life is so simple and straight-forward that it can be depicted in a few simple statements of truth, then the reader will not be subjected to an endless string of qualifiers and disclaimers which would undoubtedly obscure the main points and in no way improve the meaning.

2. *Mental illness and role performance differentiated*

Successful community tenure is a two-sided coin. On one side is the successful performance of society's expected role and on the other is the prevention or suppression of symptoms. Central to carrying out society's expected role is the performance of duties of the worker as a contributing member of society. Manifestations of bizarre behavior remain primary reasons for the patient's return to the hospital, but failure in his role performance in society may lead to, or provoke, such behavior.

It is essential that the difference between mental illness and role performance failures be kept clear since difficulties in either area can lead to rehospitalization, especially in the person who has been stigmatized as an ex-mental patient. It is impossible for an individual to be returned to a mental hospital and still maintain his employment. It is quite possible to be out of work without being rehospitalized, however.

3. *Vocational effort contingent upon psychological gains*

Failure to adjust to community living, in most clients, is related to mental factors not directly associated with the adequacy of vocational training. Counselors are in a dilemma; they are likely to spend a considerable amount of time and money for vocational training and education for selected clients, but the adequacy of the client's continued placement depends upon mental factors not directly related to the vocational program.

4. *Symptom control more important than mental normality*

The chronic, discharged, ex-mental patient who is not yet free from all disabling reactions is still able to meet with success in some work programs if his symptomatic behavior is within tolerable limits. The behaviors he displays, and not the severity of his disability, rule out success. Conditioning or a retraining program that could reduce the more bizarre symptoms, even though the underlying personality disorders remained unaffected, would be of considerable help to patients. Personal feelings of helplessness, inadequacy, and incompetency that follow mental illness tend to be either uncritically accepted by the clients or completely denied. In supporting the efforts of the client to cope with his problem the rehabilitation counselors found verbal formulas designed to control behavior, helpful to the client.

5. *Bizarre ideation no threat to employment*

An illustration of the occurrence of symptomatic behavior without rehospitalization is given below. This was told to one of the interviewers for the study by the client's rehabilitation counselor.

> "Craig was overtly psychotic at the time of his placement interview. He was hearing voices and the voices were telling him what to do. When I asked him what he was going to do about employment, he said that he would just get a job since the voices told him to do so. He used me as a reference. I though I was, perhaps, misleading when I said to the employer that he was a good worker. As it turned out he was a good worker and was still employed the last time I checked up some months later. He was still hearing voices and refusing to talk to his aunt and uncle with whom he was staying. Craig didn't need additional vocational rehabilitation, he needed someone to vouch for his ability to perform work in spite of the fact that he was displaying psychotic-like behavior."

6. *Early discharge not panacea*

Superficially the counselor may appear to help the patient avoid chronic hospitalizations through early community placement, but when the mental patients return to their families difficulties arise. Similarly, in clients who live alone, the difficulties of solitary living may prove overwhelming. The very elements which make the mental patient's early return to the community a treatment of choice also makes such return difficult, painful, and perhaps harmful.

7. *Estrangement frequently experienced*

Some patients withdrew from contact with friends because of feelings surrounding their own hospitalization, unemployment, or need for support. Many clients did live alone successfully indicating that not all clients need strong family support. The living patterns and place of residence of the returning mental patient is undoubtedly related to his general life patterns; the client's general life style is probably better left as is. Time and circumstances will alter them when the client is ready.

8. *Hospitalization and unemployment as symptoms*

The clients who decompensate after making continued, sometimes heroic, efforts to remain employed illustrate the principle of the "equivalence of symptoms". Essentially this view is that in mental patients unemployment and hospitalization stem from the same causes, and after a period of time produce much the same effects.

9. *Results of hospitalization and unemployment similar*

Long periods of unemployment appear to induce the same personality decompensation, alienation and anomy as long periods of hospitalization. Without work incentives or participation in a major family role, discharging a client from the hospital does nothing to stem the tide of increasing unemployment or hospitalization.

10. *Employment at times contra-indicated*

For some individuals unemployment is an asylum. If an individual is able to remain unemployed without too much stress, and without feeling a continual pressure or anxiety because he is unemployed, then he may be able to maintain himself without the development of symptoms which could require rehospitalization. A job failure may be brought about by the bizarre or unusual symptoms of the client which, in turn, occur because the client is led prematurely from unemployment to employment.

11. *Early discharge not always beneficial: a self-fulfilling bias*

In the past, clients who were returned to the community immediately were the very individuals who were the most able to handle the stress of community placement. They were returned to the community quickly, and succeeded in the community for the same reason - lack of severe mental disturbance and the ability to establish a positive relationship in their social role. A generalized policy of quick release resulting in the placement of individuals who are more severely disturbed in the community, may result in a more serious mental disability, more rehospitalizations, and more unemployment than would occur if they were allowed to remain in the "asylum" of a mental hospital until better prepared.

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Parson and Moore (1965) found that the longer the individual spends in the hospital upon first admission, the better the chance of later success. Within the general context of the present release pattern of first admissions, and within reasonable limits (less than one year at first admission), our results are similar.

12. *Role performance and status prevent deterioration*

Avocational work, or filling an accepted role in society, may serve as antidotes to the destructive process of continued idleness as adequately as competitive employment. Others (Goodchilds and Smith, 1963; Spahn, 1965) have stated that the performance of a role in the world of work is more important to men than to women in this culture. A man's status in society and his self-confidence is more dependent upon his employment, thus his mental health. The woman's role in our society is not as completely defined in terms of job status. Furthermore, when serving as housekeepers and wives, women are able to escape detection and hospitalization for bizarre, symptomatic behavior. A woman may hallucinate and talk to herself while she is taking care of her children and not become hospitalized. A working man would have a greater chance of becoming hospitalized. Our findings are consistent with this view.

13. *Multiple negative factors in unemployed client's history.*

The people who are employed are managing all aspects of their life better. The employed client is not simply caught at the opportune moment of his employment. For these people having a job does help them stay out of the hospital. Few of the clients who were hospitalized or unemployed at follow-up had had any significant employment after they were released from the hospital. People closed in the hospital had very little chance of success even though almost half of these people were released in 90 days after case closure. For the great majority of the chronic hospitalized cases there is not much hope for adjustment outside the hospital. Years of institutional life has taken from them the desire for independence, and many are old and unemployable. The labor market is not looking for them and it is not likely to do so. Thus, the rehabilitation effort in its present form is unsuited to them.

14. *Demeanor of client prejudices success*

The counselor-client involvement is a two-way street: the client becomes involved with the counselor, who also becomes involved with the client. Those clients who appear to be more alert, cooperative and mature tend to be those to whom the counselor can most easily relate. The lack of motivation, one of the chief characteristics of the mentally ill, seems to be regarded by some counselors as demonstrating a lack of interest. Thus, the client is refused services because of his disability.

15. *Work indicates health: prevents anomy*

Goodchilds and Smith (1963) found that the length of time a person is unemployed affected his personality. The unemployed person showed personality changes in the crucial areas of self-perception, defense of one's ego, social role conformity, and spontaneity. Spahn (1965) found that with mental patients a failure of work adaptability was the best estimate of the patient's readiness for outside life. Similarly McCaffrey (1966), found that the inability to perform adequately on the job is one of the first signs of mental illness. Each of these findings was confirmed in the present study. Job preparation and job placement are thus important and helpful for these clients

16. *Condoning unemployment necessary*

Some clients were able to maintain themselves in the community if they were comfortable remaining unemployed. The clients who are not sick enough to continue hospitalization, but are too ill to work, do not receive support or help they need to allow them to progress to some goal or role.

The public cost of maintaining an unemployed person is less than that of a hospitalized person and in many cases is psychologically more helpful to the patient. Receipt of public assistance may be considered a positive step for these individuals. Many of the clients living outside of the hospital continued to be under psychiatric care and would probably be rehospitalized if such support and care were not available to them in the community. Any move from residing in the hospital to receiving public assistance is a positive step, as is the movement from public assistance to self-support. Each positive step means less outside support is needed, and increases the likelihood that the role the client fills will be rewarding enough to be self-sustaining. Thus, even though the receipt of public assistance did decrease, this decrease is less than the savings resulting from the rehabilitation effort. It is conceivable that even an increase in public assistance may be considered a positive step from this viewpoint. The discharged clients who were unemployed received more services from the Bureau of Social Work as well.

17. *Family role of crucial importance*

The role of the returning family member was stressed because it provides an alternative to work experience. Family and friends are powerful influences in the lives of some of these people. The clients who are returning to a major family role may maintain a positive experience balance sufficient to support their needs without immediate employment.

The client's family is a great help to the client who is able to use it for support or stability. The clients who are able to maintain and relate to their own families are, however, less disabled. The

client returning to a stable family in which he has a major responsibility and from which he can expect considerable support has a greater chance of remaining employed.

Farina (1963) found that shizophrenia was more prevalent for individuals who were not part of a stable family unit. It appears that Strentz (1966) is right in suggesting that the family-role structure is important to the returning ex-mental patient. Many clients are dependent upon their families and have been so for many years, but share no meaningful role within the family structure. Rehabilitation counseling cannot depend upon restructuring the family group as a method of treatment, however, since most of the patients who do not wish to return to family groups are not capable of doing so. Most clients who have a history of alienation, marital strife, and interpersonal difficulties require an extensive program of personality reorientation if they are to live amicably and productively in a family unit.

18. *Self-help a positive indicator*

Scott and Stein (1961) assumed that patients who required help in getting a job were also more difficult to rehabilitate. Longfellow (undated) found a correlation of .44 (rho) between the client's wage at closure and the degree of self-help shown by the client in obtaining his job. The findings of the present study confirm the latter conclusions. Clients who obtained their own jobs, with the help of friends, made up 55 percent of the clients rehabilitated, but 66 percent of the persons employed at follow-up. When a person does obtain a job the status associated with the worker role appeared to be more important than the amount of his earnings - for his mental health and job performance.

19. *Mental breakdown negates earning potential*

The amount of money a client earned prior to his disability was unrelated to either his hospitalization status at follow-up, or the amount he earned at the time of the follow-up interview. Mental illness appears to be such a destructive element that it nullifies previous projections of earnings based upon demographic or socio-economic data.

20. *Work a series of difficult tasks*

Olshansky (1968) feels that the role of the worker should be easy for the ex-mental patient to fill, because it is the most structured; the worker role providing almost all of the necessary clues to guide behavior. Mr. Olshansky asks how one measures the effectiveness of filling any other role, that of friend, father, husband, etc.?

Raimy and Davis (1967) come to a very different conclusion. In an investigation supported by the Rehabilitation Services Administration, a sample of mental patients were asked what activities they felt they could perform and about the activities they had been able to perform before their illness. A number of items directly related to work were included, such as "work at a bench in a factory", "work as a cashier in a dime store", or "put in a good day's work on your regular job". They state, "we expected that a factor relating to work situations would be a salient feature; such has not been the case . . . one might suspect that where mental patients are concerned work situations almost invariably require social skills, speaking skills, and thinking and planning . . ." The implication is clear; taken in this context a work situation is a series of tasks which align themselves differently in the minds of these patients than would be indicated by the simple dimension of "performing a job". Some of the factors which did emerge were: driving a car, aggressive social interaction, performing solitary activities, talking, self-control in social situations, non-aggressive social interaction.

The present results seem to support the view of Raimy and Davis. The existence of a large unemployed but unhospitalized group, the high hospital return rate of employed clients, and the client's personal opinion of their job preparation, lead us to suspect that this view is correct. Even Olshansky admits, "The concepts we are compelled to deal with such as 'work' and 'role' are so vague as to become obstructive to research . . . if one becomes too precise, one's findings tend to become less significant. It is true that work cannot be abstracted from other activities such as traveling, dressing, and talking."* Looked at in this way "holding a job" would not be typical of the way clients think about their problems, nor would the role of the worker be easy for them to fill. The global concept of "role expectation" would simply be too generalized to be applicable to their daily activities and problems.

21. *Satisfaction and service unrelated*

Clients did not have a uniformly favorable impression of the services they had received and the services were unrelated to their perceived value. If anything, the clients who were employed at follow-up were less likely to be completely satisfied with vocational rehabilitation services. If clients fail to maintain employment, they do not blame the rehabilitation process, or the services they received, but blame themselves.

One hypothesis which explains this phenomena makes use of the ego-defense structure of the mental patient. If the client fails to obtain and keep a job his background would indicate he probably expected to fail. Under these circumstances he would hardly blame the Department of Rehabilitation for his failure. The individuals who succeeded, however, probably expected to succeed at an even higher level. In any case, employed clients being the more mature and capable individuals, probably were much more realistic in their appraisal of the Department's shortcomings.

* Personal Communication

Ego defensiveness is certainly involved. Clients who are just beginning to reintegrate their sense of personal worth are likely to try to preserve their integrity by every means available. They need to deny that they required considerable help to recover from their disability or to get a job. This ego defensiveness is characteristic of ex-mentally ill clients. Under these circumstances the more help that the clients receive the less likely it becomes that they will be able to admit this fact. So the patient who receives the most help is most likely to deny it. If the client did not get a job he may feel guilty because he was given help and "let the counselor down". The client does not want to hurt the counselor's feelings, and reject the help that was offered. Therefore, the client is likely to say that he did receive a helpful service. In support of this contention very few of the clients stated a lack of skills or inability to find work was the major reason for their being unemployed.

22. *Clients lack confidence; feel unprepared*

A large proportion of the clients, even those employed, felt that they were inadequately prepared for employment. In no instance, however, did the interviewers feel that the clients were unemployed because they lacked skills or training. In all cases they reported that the ex-clients were not working because: (1) they were too ill to work; (2) they withdrew from the labor force; or (3) other reasons. The rehabilitation counselors feel they consistently provided training where necessary. The clients feel vaguely that the counselors have failed to provide them help in establishing community relations and making an adjustment to life outside of the hospital.

23. *Client aspirations; his benchmark*

The root of the problem for many of these patients is a lack of self-confidence. Frequently they need to know how to work, not additional specific skills. A self-concept that admits of lowered status is important, too. Parson and Moore (1965) reported that patients engaged in higher levels of occupation had a slight tendency to be employed more frequently than the clients employed in the lower levels of occupation. Our results show similar trends. Placing patients in lower-level, lower-paying jobs so that the likelihood of their continued employment may be improved did not always work. The rehabilitation counselor should not always train clients for a job which is simple to perform with the conviction that these individuals will "at least be able to do something." To the ex-mental patient the ego-deflating effect of this action is just another anomy-inducing factor. The clients who do not have a good chance of resuming their previously aspired-to level of employment are less likely to maintain employment at a lower level. A counseling program in which these clients may learn to recognize their limitations, without destroying their self-confidence, is indicated. Continued work with these individuals to solve their problems of status and role expectations may be necessary.

24. *Socially capable client favored*

Brown (1959) found that chronic schizophrenic patients had difficulty forming and maintaining relationships with peers and friends. The clients of this study had similar problems in living. The employed had significantly more friends and relatives to help them secure employment; employed clients had closer, more frequent contacts with their relatives and depended upon them more frequently. They had more contacts with community clubs, service organizations, and civic causes. They also had more dependents than either of the other two groups. In spite of this, a large proportion of the clients in all groups indicated that they had no close friends.

25. *Springs of good will dry quickly*

After more than one hospitalization the available resource of the client's family, his friends, his spouse, and the good will of his employers dwindle rapidly. The mental patient's friends and family typically claim less and less responsibility for him after each rehospitalization. If possible, it is important to help clients become self-supporting before this crucial source of income and support is withdrawn.

26. *No downward spiral for workers*

Miller (1966) studied 792 patients from California hospitals, comparing their occupation before and after hospitalization. She concluded that there is ". . . likelihood that mental patients will have experiences a downward skidding in the occupational ladders, both in degree and kind, perhaps as a result of their mental hospitalization." These results are not directly substantiated. Clients, consciously or otherwise, tended to avoid service occupations and sales; occupations in which they would be required to deal intensively with people. They turned, instead, to skilled and semi-skilled professions, including clerical tasks. Other than this, there was little indication of a downward job spiral for those who continued their employment.

27. *Counseling program crucial*

The counseling program is frequently not geared to the needs of the clients. Potentially a useful service, a quarter of all clients disliked the counseling they received while almost half of those ex-clients employed at follow-up do like this aspect of the rehabilitation services. The large proportion of clients responding positively or negatively to counseling reflects the fact that counseling is the most frequently used treatment. Counseling was liked when it took the form of community surveillance, introduction to agencies designed to aid the client, and support in the client's daily activities.

28. *Lost opportunities; lost clients*

Some of the clients though having received services felt they were inadequately prepared for employment, and were thus disenchanted with the service they did receive. Those that had the greatest need for such assistance were unaware that they could apply for additional service, and were not interested in doing so. It was evident at follow-up that in most cases contact had been lost between the client and the rehabilitation personnel. The client had not received or understood information about his future relationship with the rehabilitation services.

29. *Hospital referrals develop commitment*

It was felt by the counselor that it was more difficult to keep in contact with the clients who were accepted in the field than those who were accepted in the hospital. Counselors felt that they could not entice the Non-MHP clients into participation in the program by promising them discharge, as was apparently done with hospitalized patients.

30. *Rehabilitated clients gain much*

In conclusion we have a reasonable degree of assurance that the Rehabilitation-Mental Hygiene effort did, in fact, increase self-support. This effort was most effective with successfully rehabilitated clients and those clients given continuous service.

IV. SUMMARY

Three hundred seven mentally ill clients referred for vocational rehabilitation were interviewed two years after case closure. All clients had been hospitalized, but those first referred while in the hospital made a better adjustment relative to their expected adjustment than clients referred after release to the community. Other information was collected on these clients and that information has been related to both the course of their treatment, and their life situation two years later. Data was gathered from the files of both the Department of Mental Hygiene and the Department of Rehabilitation.

The clients were primarily of lower soci-economic status, 25% of the group having no identified occupation. The majority of the clients were identified as schizophrenic although considerable numbers of clients were diagnosed as neurotic, manic-depressive psychosis, and "other". The average client was 33 years of age and the clients were relatively evenly distributed between the ages of 15 and 55, with approximately equal numbers of men and women. Job and remission patterns were stabilized at the end of this two year period so that the findings and conclusions are relatively reliable.

In general, the services were useful, but they appeared to be especially useful for the clients who were closed rehabilitated. Seventy percent of the individuals first seen in the mental hospital and "rehabilitated" were still employed two years after their case was closed. The employed group had better vocational preparation, more vocational experience, shorter periods of hospitalization, shorter periods from the onset of disability to acceptance by vocational rehabilitation, more previous employment, and closer family ties. This more mature client, who is more pleasant, more highly motivated, and better prepared, receives more services. Some patients are not helped by the services currently offered by the Rehabilitation Counselor: particularly the clients who, working or not, need additional help in sustaining themselves in the community.

The clients had few financial resources at acceptance other than their own employment potential. After more than one hospitalization the available resources of their family, their friends, and their spouses dwindle rapidly as does the good will of employers. They are forced to turn to the Department of Social Welfare or the Department of Mental Hygiene's Bureau of Social Welfare for support. The returning ex-mental patient had little confidence in his readiness for competitive employment even after rehabilitation services. The clients were unaware that they could apply for additional rehabilitation services and they generally did not consider re-applying. In many cases contact between clients and rehabilitation personnel was lost shortly after placement. The clients did not receive nor understand information about their future relationship with the Department of Rehabilitation.

The client-counselor interaction is especially important in treating the ex-mentally ill client. The more seriously ill individual or one with no vocational skill is at a disadvantage because the nature of his illness gives an illusion of apathy, or disinterest. The counselor then interprets the client's mental condition as lack of motivation.

Clients preferred rehabilitation assistance to be given immediately after hospital discharge or at some considerable time after discharge. The clients must achieve some immediate relationship with the post-hospital environment. If the counselor is available at this time he is made part of that formula, but if he is not the client closes experential ranks, and resists any further change during this crucial period of re-adjustment.

Negative factors in the individual's life are more predictive of failure than positive factors are predictive of employment or "success". Previous hospitalization predicted future hospitalization while past employment predicted future employment. A multiple correlation battery was developed to predict rehabilitation and was only moderately successful (rho = .53).

Factors responsible for the individual remaining out of the hospital immediately after he is discharged are different from those responsible for his rehospitalization after a period of time. An enthusiastic and eager approach to life is frequently instrumental in determining early discharge. A later factor involves maturity and success in performing society's roles. This latter factor depends upon the control of bizarre behavior. Employment has an effect upon rehospitalization but its effects are mediated through the personal view of the individual. The eventual type of adjustment that the client is able to make depends upon circumstances which increase the likelihood of continued resiliency, flexibility, and rewarding life experiences.

For some clients "unemployment" is the equivalent to "symptomatic behavior" in others. Unemployment, lack of ability to fill a self-defined role, and hospitalization all initiate a sense of hopelessness, apathy, and disillusion in some clients. These psychological processes are detrimental to complete rehabilitation and are relatively independent of the occurrence of symptoms of mental illness. The longer that the individual is unemployed or hospitalized, (after a certain minimum period) the greater the negative effect of this anomy. An individual with psychological attributes of anomy is in a vulnerable position and additional stress easily precipitates mental disability.

The discharged client without work is progressively affected with apathy and anomy. Over half of the group living outside of the hospital continued to be under psychiatric care and would be rehospitalized if

such care were not available. The ex-mental patient is often supported by the community if he is not supported by the hospital. Simply discharging mental patients does not eliminate the risk that society will be obligated to support them although this support may be less expensive than hospital care.

Knowing how to work as well as possession of specific skills or a trade - confidence in themselves -- and strong self-concept that admits to lowered vocational status without lowered self-worth is important for most of these patients. The most important item for the ex-mental patient's complete recovery is his desire to work and his desire for help. This desire seems strongest while the client is in the hospital.

For the client who is able to use it, the support of his family is of great help. It is likely that the client who is able to maintain a strong relation to his own family is also less disabled. The client's role in the family is important. The client returning to a stable family, in which he has major responsibilities, and from which he can expect considerable support, has a greater chance of remaining employed. Rehabilitation counseling cannot depend upon restructuring the family group as a method of treatment, however, since most of the patients who do not return to family groups are not capable of doing so. A client who has a long history of alienation, marital strife, and living apart has enough problems in maintaining employment without embarking upon an extensive program of personality re-orientation in order to enable him to live comfortably in a family unit.

Neither the physical isolation of clients, or the character of their neighborhoods were related to rehospitalization. Little can be said of itself about the beneficial quality of living alone, with relatives, in a family, home-care situation, with parents, with a spouse, with children or other arrangements. Furthermore, the living arrangement most suitable for the person who has just been released may not be the same as it will be after two years.

The clients who were working and least disturbed at follow-up were usually given education and training as a service. Fifty percent of the rehabilitated clients received these services.

The disruption of normal life patterns due to mental illness is modified by factors such as age, sex and IQ. The importance of any of these factors, is further modified by the attitude of the individual, the meaning of work to him (or her) in the American culture. Women appear to be more satisfied to be unemployed than are men; clearly reflecting society's attitude. The success rate for clients with more education is not, as some counselors seem to feel, greater than that of clients with less education. Furthermore, the apparent value of the rehabilitation services was unrelated to the client's attitude to these services.

Both mental illness and unemployment are reflections of the whole of the personality. Clients who were poorly adjusted to the work world were poorly adjusted to all areas of living. It may well be that mental illness is more disabling than most people think; however, rehabilitation of the mentally ill client is feasible, and with improved selection procedures or expanded services it may prove even more successful.

References

Bakke, E. Wight. *Citizens Without Work.* New Haven: Yale University Press, 1940

Bellak, L.; Black, B.J.; Lurie, A.; and Miller, J.S.A. "Rehabilitation of the Mentally Ill through Controlled Transitional Employment." *American Journal of Ortho-Psychiatry* 1956, Vol. 26, 285-296.

Beverly, Robert F. "A Method of Determination of Base Expectancies for Use in the Assessment of Correctional Treatment." Sacramento, California: *Research Report #3,* Department of the Youth Authority, Division of Research, 1959.

Black, Bertram J., ed. *Guides to Psychiatric Rehabilitation, A Cooperative Program with a State Mental Hospital.* New York: Altro Health and Rehabilitation Services, Inc., 1963.

Bordow, Allan Matthew. "The Relation of Work Therapy Ratings to the Vocational Rehabilitation of Former Mental Patients." Colorado State University, 1968.

Breithaupt, Gerald O. "Troubled People Working." *California Mental Health Research Digest* 1967, Vol. 5, no. 3, 167-169.

Brown, George W. "Experiences of Discharged Chronic Schizophrenic Patients in Various Types of Living Groups." *The Milbank Memorial Fund Quarterly* April 1969, 105-131.

Cohen, L. "Vocational Planning and Mental Illness." *Personnel and Guidance Journal,* 1955, Vol. 34, 28-32.

Dishart, Martin. "Institutes for Rehabilitation Research: Critical Issues and Recommendations." *Journal of Rehabilitation* January - February 1966, 38.

Distefano, M.K., Jr. and Pryer, Margaret W. "Relationship between Severity of Emotional Impairment and Work-Related Attitudes." *Journal of Clinical Psychology* 1968, Vol. 24, No. 4, 420-422.

Ellis, Helen H. *The Social and Economic Effectiveness of Patients on Convalescent Leave from New Mexico State Hospital, 1958 - 1960.* Helen Ellis, 1116 Stanford N.E., Albuquerque, New Mexico, 1962.

Farina, Amerigo; Garmezy, Norman; and Barry, Herbert III. "Relationship of Marital Status to Incidence and Prognosis of Schizophrenia." *Journal of Abnormal and Social Psychology* 1963, Vol. 67, No. 6, 624-630.

Fore, M.O. "An Experiment in Parole and Hospital Employment for the Mentally Ill in Iowa." *Mental Hygiene* 1945, Vol. 29, 423 - 428.

Freeman, Howard E. and Simmons, Ozzie G. *The Mental Patient Comes Home*. New York: John Wiley and Sons, Inc., 1963.

Gadlin, Walter Isaac. "A Study of the Relationship Between Attitudes to Work and Overt Components of Work Behavior in Emotionally Disordered Vocationally Disabled Persons Involved in a Rehabilitation Program." New York University, 1968.

Goertzel, Victor; Hiroto, D.S.; Grummer, M. and Moes, J.H. *Coordinating Hospital and Community Work Adjustment Service*. Final Report, V.R.A. Project RD-1156, Camarillo State Hospital, Camarillo, California and Jewish Vocational Service, Los Angeles, California, 1967, 43-47.

Goodchilds, J.E. and Smith, E.E. "The Effects of Unemployment as Mediated by Social Status." *Sociometry*, 1963, Vol. 26, No. 3, 287-293.

Gurel, L. and Jacobs, D.F. *A Critical Survey of Vocational Rehabilitation of the Psychiatric Patients*. Washington, D.C.: Veteran's Administration, Psychiatric Evaluation Project, 1961.

Gurel, L. and Jacobs, D.F. *Preliminary Results of PEP II Study of Vocational Restoration*. Washington, D.C.: Veteran's Administration Program Evaluation Staff of the Psychiatry, Neurology and Psychology Service, 1963. (Mimeographed)

Hadley, John M. "The Development of a Factor Analyzed Scale for Rating Psychiatric Patients in Occupational Therapy." Purdue University, 1963.

Hall, Julian C; Smith, K. and Shimkunas, A. "Employment Problems of Schizophrenic Patients." *American Journal of Psychiatry*, Vol. 123, November 1966, 536-640.

Harvie, Barbara. "Employment Status Among Post-Hospital Patients." *California Mental Health Research Digest* Summer 1964, Vol. 2, No. 3, 17-18.

Hoffman, M.U. "An Evaluation of the First Year of a Parole Clinic." *Hospitals* November 1939, Vol. 13, Part 2, 87-92.

Hollingshead, August B. and Redlich, Fredrick C. *Social Class and Mental Illness*. New York: Wiley and Sons, Inc., 1958.

Horst, Paul. "The Prediction of Personal Adjustment." *New York: Social Science Research Bulletin #48*, 1941.

Jarrel, A.P. *Vocational Rehabilitation Services in a Total Psychiatric Care Program*. Final Report, V.R.A. Project RD-778, Division of Vocational Rehabilitation, Atlanta, Georgia, 1964, 53-54.

Jones, Maxwell. *The Therapeutic Community*. New York: Basic Books, 1953.

Levine, Abraham S. "Evaluating Program Effectiveness." *Welfare in Review* Vol. 5, No. 2, p. 4, February 1967.

Lindeman, James E.; Fairweather, George W.; etal. "The Use of Demographic Characteristics in Predicting Length of Neuropsychiatric Hospital Stay." *Studies in Behavior Pathology,* E.D.T.R. New York: Rinehart and Winston, 1962.

Lofquist, L.H.; Siess, R.F.; Davis, R.V.; England, C.W. and Weiss, D.J. "Disability and Work." *Minnesota Studies in Vocational Rehabilitation* October 1964, XVII, p.3.

Longfellow, Richard E. *Placement - A Disservice to the Handicapped.* V.R. Training Program, South State University, Menomonie, Wisconsin.

McCaffrey, Isabel. "Mental Disorders in Socially Defined Populations." *American Journal of Public Health*, Summer 1966, Vol. 2, No.2, 124-128.

Meislin, J. "The Psychiatric Sheltered Workshop in Rehabilitation of of the Mentally Ill." *Archives of Physiological Medicine,* 1954, Vol. 35, 224-227.

Miller, Dorothy. "Worlds That Fail." *Trans-Action* December 1966, Vol. 4, No. 2, 36-41.

Miller, Dorothy. "Worlds That Fail: Part I" California Department of Mental Hygiene, 1965.

Morris, Thais and Stevenson, Ian. "Psychiatry and Social Work in the Vocational Rehabilitation of Psychiatric Patients." Proceedings of the National Conference on Social Work, 1953, 148-158.

Neff, Walter S. "The Success of Rehabilitation Programs." *Monograph,* No. 3, Jewish Vocational Service, Chicago, 2-3, 1966.

Olshansky, Simon. "The Vocational Rehabilitation of the Ex-Mental Patient." *Mental Hygiene* October 1968, Vol. 52, No. 4, 652-664.

Parson, Robert L. and Moore, J.C. *Screening Chronic Patients of a Neuro-Psychiatric Hospital for Vocational Rehabilitation Potential* Final Report, V.R.A. Project RD-784, Arkansas Rehabilitation Service, Little Rock, Arkansas, 1965, 54-55.

Patterson, C.H. "Evaluation of the Rehabilitation Potential of the Mentally Ill Patient." *Rehabilitation Literature,* June 1962, Vol. 23, No. 6, 162-172.

Patterson, C.H. "Rehabilitation Counseling of the Emotionally Disabled." *Journal of Counseling Psychology* 1955, Vol. 2, 264-270.

Rae-Grant; Quentin, A.E.; Gladwin, T. and Bower, E.M. "Mental Health, Social Competence, and the War on Poverty." *American Journal of Orthopsychiatry* Vol. 36, No. 4, July 1966, 652-664.

Raimy, Victor and Davis, Keith G. *Self-Confidence and the Rehabilitation of Mental Patients.* An investigation supported by V.R.A., H.E.W., RD-1399-P, June 1, 1967.

Roehlke, Helen Jean. "Predicting Outcome of Rehabilitation of Psychiatric Patients." University of Missouri, 1965.

Roman, Paul Michael. "Occupational Role Change and Psychiatric Impairment." Cornell University, 1968.

Schwartz, Morris. "Rehabilitation and Psychiatry." Unpublished paper read at a conference sponsored by the American Psychiatric Association, September 1963, at San Francisco.

Scott, Thomas B. and Stein, Carroll I. "An Index of Ease or Difficulty of Rehabilitation." *Personnel and Guidance Journal,* 1961, 352-354.

Spahn, Richard. "The Patient Gets Busy: Change or Progress?" *American Journal of Orthopsychiatry* March 1965, Vol. 35, No. 2, 220-221.

Srole, L. "Social Integration and Certain Correlaries: An Exploratory Study." *American Sociological Review* Vol. 21, 1956, 709-716.

Steckel, H.A. "The Social Service Department and Its Relation to an Expensive Parole System" *Mental Hygiene,* 1922, 798-814.

Stephenson, G.S. "Rehabilitation of the Mentally Handicapped." *American Journal of Psychiatry,* 1943, Vol. 100, 289-290.

Stimpert, Warren; Sinnet, E. Robert; and Wilkins, Donald M. " A Description of Psychiatric Patients Five Years After Treatment." *Social Work,* Vol. 11, No. 3, 78-86, July 1966.

Stone, Robert and Schlamp, Fredric. *Family Life Styles Below the Poverty Line.* State Department of Social Welfare, California 1966. U.S. Department of H.E.W., Project 207.

Stotsky, B.A. "Predicting Success on the Member-Employee Rehabilitation Program." in Peffer, P.A., etal., *Member Employee Program: A New Approach to the Rehabilitation of the Chronic Mental Patient,* Revised Edition, Brockton, Massachusettes, Veterans Administration Hospital, 1957, 38-47.

Stotsky, B.A. and Weinberg, H. "The Prediction of the Psychiatric Patients Work Adjustment" *Journal of Counseling Psychology* , 1956, Vol. 3, 327.

Straight, Elmer M. "Evaluation of Group Psychotherapy by Follow-up Study of Formerly Hospitalized Patients." *Group Psychotherapy,* June 1960, Vol. 8, No. 2, 110-118.

Strentz, Thomas. "Family Role and Treatment Outcome at Atascadero State Hospital." Master's thesis. Fresno State College, June 1966.

Stringham, J.A. "Rehabilitating Chronic Neuro-Psychiatric Patients." *American Journal of Psychiatry* Vol. 108, 1952, 924-928.

Swanson, William Charles. "The Relationship Between the Functional Psychoses and Occupational and Residential Mobility." Tulane University, 1968.

Tiffany, Donald W. "New Information on'Work-Inhibited' Clients." *Research and Demonstrations Brief*, Research Utilization Branch, Department of Health, Education and Welfare, Washington, D.C. 20201, December 1, 1969. (b)

Tiffany, Donald W. *Work Inhibition and Rehabilitation* Vol. I, Institute for Community Studies, Kansas City, Missouri, 1967a.

Tiffany, Donald W. *Work Inhibition and Rehabilitation* Vol. II, Institute for Community Studies, Kansas City, Missouri, 1969a.

Vogelson, Myrtle L. and Board, F.C. *Job Placement of the Emotionally Handicapped.* Just One Break, Inc., New York, 40-42.

Walker, R. and McCourt, J. "Employment Experience Among 200 Schizophrenic Patients in Hospital and After Discharge." *American Journal of Psychiatry* Vol. 122, 1965, 316-319.

Whear, W.E.; Slaughter, R. and Frank, D. *Rehabilitation of Chronically Ill Psychiatric Patients.* Final Report, V.R.A. Project Number 155, John Hopkins University, Baltimore, Maryland, 1961, 5-15.

Weeks, Layle. "Convalescent Leave Outcome Criteria." *California Mental Health Research Digest* Spring 1964, Vol. 2, No. 2, p. 3.

Wilder, J.E. "A Case for a Flexible Long-Term Workshop for Psychiatric Patients." Paper presented at a workshop on "Industry in the Mental Hospital" in New York City, April 22, 1965, Washington, D.C., Veterans Administration.

VT 014 464
EDUCATION FOR THE PUBLIC SERVICES.

CALIFORNIA COMMUNITY COLLEGES, SACRAMENTO.
OFFICE OF THE CHANCELLOR.
CHICO STATE COLL., CALIF.
AMERICAN ASSOCIATION OF JUNIOR COLLEGES,
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*CONFERENCE REPORTS

ABSTRACT - REPRESENTATIVES OF ALL THE
SEGMENTS OF PUBLIC HIGHER EDUCATION, AS WELL
AS PRACTITIONERS IN THE FIELD OF PUBLIC
ADMINISTRATION, MET TO DISCUSS ISSUES
CONCERNING PUBLIC SERVICES. PRESENTATIONS
MADE AT THIS 1-DAY CONFERENCE INCLUDED: (1)
"EDUCATION FOR THE PUBLIC SERVICE" BY HENRY
REINING, JR., (2) "THE COMMUNITY COLLEGE AND
THE PUBLIC SERVICE" BY JOHN MCKINLEY, (3)
"CERTIFICATE PROGRAM IN PUBLIC SERVICE
SUPERVISION" BY DOROTHY BUMILLER, (4)
"MANAGEMENT PROGRAM-GOVERNMENT OPTION" BY
LOUIS QUINT, (5) "PROBLEMS OF PUBLIC SERVICE
EDUCATION IN COMMUNITY COLLEGES" BY ANDREW
KORIM, AND (6) "THE STATUS OF PUBLIC SERVICE
EDUCATION AND TRAINING IN CALIFORNIA" BY
ERNEST A. ENGELBERT. (JS)

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EDUCATION FOR THE PUBLIC SERVICES

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A CONFERENCE
SPONSORED BY THE CALIFORNIA
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CHICO STATE COLLEGE
CHICO, CALIFORNIA
MARCH 19, 1970

5761

EDUCATION FOR THE PUBLIC SERVICES

Northern California In-Service Workshop
Co-sponsored by the
Chancellor's Office of the California Community Colleges
and
Chico State College
in cooperation with
The American Association of Junior Colleges

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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CHICO STATE COLLEGE
Chico, California
March 19, 1970

5762

INTRODUCTION

The decade of the late 1960's and early 1970's will doubtless be marked in the history of this nation as one in which a concern for the quality of public services and for the character of the delivery of public services was a prominent one. Perhaps we will say that the United States, its many institutions, its people, its governments, and its educational leaders "coasted" for a long period of time on an assumption that the delivery of public services was essentially being well and satisfactorily done. We know now that the problems confronting our society are of such a serious order that satisfaction with the delivery of public services is not possible at this time.

Education for the public service is a central concern in our society today. We are coming to have a new appreciation and understanding for the variety and complexity of roles to be formed in the public service and most individuals who are in higher education now perceive a real need to further develop, to strengthen, and to enhance the quality of education for the public service. Moreover, in California within recent years we have come to have a new understanding of the essential and necessary working relationships among the several segments of higher education, the University of California, the private colleges and universities, the state colleges and the community colleges, as we work cooperatively together in a statewide effort to build and strengthen education for the public service at all levels. These are the concerns which led the Office of the Chancellor of the California Community Colleges to identify education for the public service as an area of some considerable interest meriting support, and which led that office, working together with the Department of Political Science at Chico State College, to sponsor a northern California regional conference on education for the public service.

The conference is in some senses a model, for it brought together representatives of all of the segments of public higher education, as well as practitioners in the field of public administration, to discuss for a day issues now confronting educators concerned with the public service. The aftermath of such a conference is hard to evaluate, but we trust that the aftermath includes a heightened sense of awareness of those issues which need to be faced commonly among the segments of higher education and a further developed sense of willingness among all to work together.

We feel privileged to have had the opportunity to serve as the co-chairmen and organizers of this conference. We wish to express our indebtedness to all of those who participated, especially to those who presented the papers which are to be found in this monograph, to Mrs. Helen Phillips in the Office of the Vice President for Academic Affairs at Chico State, who typed this script, and to Mr. Philip McCaleb, a graduate student in Public Administration at the College, who served as conference assistant.

Mrs. Mary E. DeNure
Consultant in Public Service Occupations
California Community Colleges

Dr. Donald R. Gerth
Professor of Political Science
and
Vice President for Academic Affairs
Chico State College

November 1, 1970.

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"Education for the Public Services"
Northern California In-Service Workshop
Co-sponsored by the
Chancellor's Office of the California Community Colleges
and
Chico State College
in cooperation with
The American Association of Junior Colleges

March 19, 1970

Life Science Building, Room 106 -- Chico State College

AGENDA

9:00 a.m.	Registration	
9:30	Chairman:	Mr. David J. Gould Assistant Professor of Political Science Chico State College
	Opening Remarks	Dr. Donald R. Gerth *Associate Vice President for Academic Affairs* Chico State College
		Dr. Robert E. Hill President Chico State College
9:45	Welcome	Mr. Ted Meriam, Chairman California Public Service Training and Education Advisory Committee
10:00	Education for the Public Service-- Current Appraisal	
		Dr. Henry Reining, Dean Von KleinSmid Center University of Southern California
10:45	Break	
11:00	Public Service and the Community Colleges	
		Mr. John R. McKinley Dean of Instruction Chabot College
11:45	Luncheon	
	Master of Ceremonies	Dr. James E. Gregg Professor of Political Science Chico State College

(Continued on next page)

Speaker — Dr. Randy Hamilton
Executive Director
Institute for Local Self Government

1:15 p.m. Successful Programs and Avenues of Articulation and Development of a Career Ladder - Panel Discussion

Moderator — Mrs. Mary E. DeNure
Consultant in Public Service Occupations
California Community Colleges

Mrs. Dorothy Bumiller
Chairman, Business Department
San Bernardino Valley College

Dr. Louis Quint
Assistant Dean of Vocational Education
American River College

Dr. Royce D. Delmatier
Professor of Political Science
Chico State College

Dr. Richard Gable
Professor of Political Science
University of California at Davis

Questions from the Audience

3:00 Public Service as an "Umbrella" Program

Mr. Andrew S. Korim
Public Service Specialist
American Association of Junior Colleges

3:30 Proposal for a Regional Council on Education for the Public Service

Dr. Ernest Engelbert, Professor
Department of Political Science
University of California, Los Angeles

Questions from the Audience

4:00 Adjournment

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---Text of the Remarks by David J. Gould, Chairman of the Morning Session of the Conference, "Education for the Public Services."

Because the participants in this conference on "Education for the Public Services" represent such an interesting and diverse group of people professionally interested in public administration, I cannot help recalling an editorial that a former Californian, Syracuse University Professor Dwight Waldo, wrote upon becoming the editor-in-chief of Public Administration Review in June 1966. The editorial was entitled "On Mutual Toleration--and a Hope for More Than Only That."

Waldo remarked on the split within the American Society for Public Administration membership between practitioners and academic public administrationists. The practitioners, it seems, considered the academicians "too theoretical," while the latter considered the practitioners "too nuts-and-bolts"-oriented. So defensive and so concerned to be even-handed, Waldo went to the extent of making up a score-card of the panels at the previous national meeting of ASPA -- to indicate that there had after all been a pretty fair balance in the speeches, panel discussions and papers presented, between practitioners and academicians. He even commented that there were a few participants in the meeting who were in the "third world" and didn't fit nicely into either category, or perhaps fit into both.

Waldo lamented the hostility and mistrust between these two groups. He said, we must not necessarily try to love each other, but we must take steps towards understanding each other. Because, he said, we are mutually dependent. For academic public administration without practitioners would be absurd; our teaching and research are for something! Likewise, the practice of public administration would be a poor, uninformed occupation without the academics. In our society, the colleges and the universities are the prime institutions where education and research are carried out.

One, or course, wonders why this breach exists between practitioners and academics. The causes may lie in our peculiar national history, economic system, social structures, governmental institutions or educational philosophy. We might profit by examining possibly parallel situations within the professions of law, medicine and engineering. Part of the problem, Waldo suggested, is that we in public administration are not actually comparable to anything else. Who else, for example, would carry on this incessant, hung-up dialogue, as we in public administration do, on whether we are a field, a profession or a discipline.

But there is in fact confronting us today, a question larger than that of the definitional identity crisis of public administration. Let me try to relate the point noted by Dwight Waldo to an important question raised three years ago by Professor John Honey. In the "Honey Report," the ASPA Graduate Educational Council and the Carnegie Foundation tried to chart future directions in higher education for the public service. The Report foresaw the need for ambitious government funding of new scholarships and programs, for institutional growth, and for a closer link between practitioners and academics. This was a very important study which has been commented on critically by many, including Dean Reining. The Report was received particularly critically by a new generation of public administration practitioners and scholars who found the recommendations unduly institutionally oriented and not sufficiently focussed on the substance of public administration, on values

or on the need for decisive social change to be brought about through public administration.

Fortunately, today most of our panelists and discussants and speakers fall into what Dwight Waldo called the "third world" of public administrators, those whose careers unite teaching and practice, research and actual administrative experience.

It will be, I feel, principally on this fact that the utility of today's activity will rest.

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EDUCATION FOR THE PUBLIC SERVICE

---A Paper by Henry Reining, Jr., Dean, Von KleinSmid Center for International and Public Affairs

We are gathered here today to talk about education for the public services. The fact that this topic is put in the plural, "public services," rather than the public service is significant. This title means all of the jobs that are involved in public employment, not only administration, supervision, the technical jobs, and the professional, but also the paraprofessional as well. This spans the gamut to be sure since government employs all of the professions, occupations and vocations that are found in private enterprise plus a number that are unique to itself such as police protection, fire protection, and public health workers.

Just a few weeks ago we met with representatives from all of the community colleges of Southern California and discussed the contributions which they could make to the Federal Service. "We," in that case, was the College Federal Council of Southern California.

Today we have this conference here in Chico drawing on the community colleges of Northern California completing the circuit as far as the State of California is concerned, as an endeavor through several different auspices to bring the community colleges formally into the act of preparation of leadership for the public services.

The impressive thing about the educational task of the community colleges is the span of their endeavors, the fact that they confront the totality of government employment. Those of us in the four-year and graduate institutions are geared to the professions and to those fields of work which require Baccalaureate and Graduate degrees for successful qualification. The task of the community colleges is so much greater than the mission of the four-year and graduate institutions because the community colleges not only have the distinctive task of preparing for the paraprofessional level but they are also partners in the task of preparing for all levels of employment, whether public or private, since they provide the first two years of an educational career which may well go through the doctoral level before completion for the particular individual.

Nationally, also, the scene is moving to include not only the four-year colleges but also the community colleges in the act of preparation of public service personnel. I can tell you this as a bit of inside information because I am heading a national task force which is addressing itself to the revision of the standards for what used to be called the National Council on Graduate Education for Public Administration and which is now proposing to change its name to National Association of Schools of Public Affairs and Public Administration.

The purpose of this association is stated as follows: "To foster in the United States and internationally the establishment and strengthening of the effective conduct, of schools, centers, and programs of public affairs and administration, to provide means of interchange and cooperation among such institutions in their common concern for improving the scope and quality of interdisciplinary education of practitioners and scholars, the conduct of basic and applied research, and the provision of advisory public services."

The subject-matter concerns of the association are spelled out: "The primary concerns of the association and its member institutions are: a) public policy and program formulation, evaluation and implementation; b) planning, organization, and management of public services, particularly multi-functional institutions and programs; c) effective utilization of physical and human resources in the improvement of the quality of man's life; d) rationalizing and raising the public standards of local, regional, state, national and international levels, including the development of effective means of citizen participation, policy and program coordination and integration; e) comparative study of administration in different environments, cultures and fields; f) utilizing the analytical and substantive contributions of the various disciplines and professions in constructing curricula and analyzing public problems; and g) stimulating the recruitment into the public service of the most able, young people from the broadest possible social and economic base. The association (I'm still quoting), and its members will be concerned with the ends of public policies and the norms, explicit and applied, as well as with the effective formulation and implementation of such policies."

The newly proposed by-laws have the following statement: "Membership in the association will be open to a) specifically designated academic units (college, school, division, department, center, program, institute), offering graduate instruction in a degree-granting institution having a substantial commitment to the achievement of the purposes of this association." "b) Academic units offering education at the undergraduate level for careers in one or more fields of the public service." "c) Research, training, and community service units attached to degree-granting institutions committed to the fulfillment of the purposes of this association and meeting criteria established by the Executive Council."

It is the "b" part which reads, "academic units offering education at the undergraduate level," which will be of major interest to most of this audience.

Well, so much for the by-laws. These by-laws and standards and criteria are to be considered at the annual meeting of the Council on Graduate Education for Public Administration which will be held on April 4, 5, 6, at the Princeton Inn, in Princeton, New Jersey.[1]

All right, now what do you have to do to qualify for this Association of Schools of Public Affairs and Public Administration?

The draft of the Standards and Criteria, which has been prepared for discussion at the April meeting, describes the general characteristics which any academic unit must have to meet membership, in four parts: 1) It must be part of an accredited institution of higher education; 2) It must be dedicated to the public sector, as distinguished of course from the private....it must be dedicated to the public sector, education, research, and/or service in public affairs and administration; 3) It must be concerned with administration or with planning, or policy analysis related to administration, either broadly or focused on a specific function or field, and 4) it must be headed by a dean, director, or other appropriately designated head. All four of these general requirements are stated as minima.

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1. Ed. Note: The by-laws were approved at this meeting but less-than-membership was conferred on the A.B. and A.A. programs: A Committee was established to study the participation of the undergraduate programs in membership in the N.A.S.P.A.A.

As to curriculum, the academic programs of the unit under consideration should 1) be determined by that unit itself, subject only to general college or university regulations; 2) be specifically designed, not merely a minor additive to other courses, or a collection of existing courses given a new program label; 3) have a multi-disciplinary content...multi-disciplinary...with an applied operational, implementation focus applied...multi-disciplinary and applied; 4) lead to one or more professional, or graduate degrees; 5) draw upon whatever disciplinary and professional instructional inputs may be needed; and 6) entail a majority of courses taught by faculty members whose primary responsibility is to the unit, that is the public affairs or the public administration unit.

The next set of criteria deals with faculty. It reads as follows: "The unit should - 1) select and maintain a core faculty qualified to give instruction and to engage in research and advisory services of a professional character, etc. There is a standard on students, the essence of which is a separate identification and a decent minimum number.

There is a stipulation as to public service, the minimum qualifying requirements of which refer to encouragement of faculty to engage in voluntary community and public service; 2) to respond to requests for in-service training surveys and technical assistance, and 3) to support participation in professional societies and conferences.

There are other standards and criteria. These deal with educational and administrative support, the budgetary support, and with cooperation with other units. These criteria, it should be repeated, apply, not only to graduate instruction in public affairs and public administration, but to undergraduate instruction, lower division as well as upper division.

There is another feature of the Standards and Criteria, and that is that each of the separately distinguished groups of institutions within the membership of the National Association of Public Affairs and Public Administration, may additionally join the special category of membership within the association. That is, there will be if it works out as projected, several sections in the national association, one of which presumably would be the community colleges.

Let it be summarized, then, that for community colleges, public affairs or public administration curricula or programs would have to have the following qualifications: 1) constitute a clearly identifiable academic unit with a suitable title; 2) have a specifically designed curriculum with a professional component, that is professional as distinguished from liberal arts; 3) a separate faculty of sufficient size to maintain identity; 4) a separate student body, likewise; 5) suitable facilities and equipment, and 6) an assured annual budget. By this, of course, reference is firm funding as compared to project or outside funding.

Now then, having talked about membership and standards and criteria, we had better talk about role. What is it the community colleges can do? The answer is already given in part. Reference has been made to the work which is sometimes misleadingly called terminal education, that is the Associate in Arts Degree, work which can lead to the paraprofessional occupations offered by the government, a most important mission which needs further attention and development. However, my own interest has been different. My career has been spent trying to identify, to secure, and to train, (at least not to mal-condition), leadership for the public

service, that is, leadership at administrative levels. There are at least three kinds of levels that one can identify in talking about administration. There is the technician, the staff worker, the personnel officer, the budget or administrative analyst. There is the supervisor, the man who has charge of a group of workers. Then there is the manager and the administrator, the man who runs the office, establishment or agency right on up through the top, what we call in the federal service the administrative assistant secretary, in the state service various designations to indicate the top career people and at the local level the CAO, the City Manager and the like.

What is the role of the community college in this endeavor? That role should include the duty to identify and indoctrinate and to begin the training of the leaders who are prime candidates for the public service.

Three such activities can be outlined within this role: 1) to identify leadership, that is to spot among student government officers and leaders of other groups on the campus, those people who by reason of personal leadership, personal traits, group skills have already proved that they have this talent for leadership, who in addition have sufficient academic attainment to indicate that they have the intellectual capacity as well to carry the program responsibilities involved in high level governmental administration. The Junior Colleges can perform a very real service, 1) spotting these people and 2) counseling and guiding them into further education, especially those who seem to have the missionary zeal, public spiritness or however you want to describe the kind of dedication that the man requires who chooses public as opposed to private enterprise.

The next step is to orient, to indoctrinate and to condition such people so that they will be ready for public administration instruction when they reach upper division and especially when they reach graduate levels.

And finally as the third activity there is all of that bundle of things that will be necessary to help the student bridge the gap between his lower division work and his further education in a four-year college not to mention the graduate levels. Part of this, of course, will be to assist in financing the student.

We are all very well aware of the fact that many students are in the community colleges because they can't afford to enter directly into the four-year colleges and universities. There are the State scholarships here in California. But a much more lucrative source in terms of total financial resources available will not be scholarships, but internships and work-study programs. It is a pleasure to announce that there is in the legislature, the California State Legislature, at the present time a bill to provide a State system of internships and to provide for State guidance and orientation of such a system even though the internships themselves may be in other governmental jurisdictions. This is Senate Bill #385 introduced by Senator Burgener. This bill would establish a Public Service Internship Program to provide college students with opportunities "to work in and learn the challenges and problems of government at all levels..." "In contrast to a specific job or work task, the internship affords creative opportunities for the intern to participate in various phases of a planned training program developed jointly and implemented cooperatively by governmental agencies and institutions of higher learning." These are quotations from the bill.

The bill places the administrative responsibility for internships with the State Scholarship and Loan Commission. That Commission is to staff and to establish policies and standards for the program.

The bill also calls for close cooperation with federal agencies and quasi-governmental and private organizations in building the program, including acting as the State's agent for accepting federal grants and private funding for such a program.

Finally, the bill specifically names the community colleges and the AA degree as included in this program.

Now all we have to do is to get the two houses of the Legislature to pass and to fund the bill, and persuade the Governor to sign it!

If you get the impression from these remarks that internships and work-study opportunities are the life blood of attracting student leaders into the public service, especially the administrative levels, you have gained the correct impression. In the first place, it provides the financing the student needs to complete his education and secondly, it provides the kind of contact and the kind of practical acquaintance with government work which will either make the student decide not to go into the public service or which will increase his dedication and devotion to the subject, in most cases, it is to be hoped, the result will be affirmative and not negative.

A further word may be in order about the dual nature of the community colleges educational function, namely, 1) education toward the AA and 2) preparation for upper division and graduate study. It is perfectly obvious, in our institution, for example, that students change majors on the average of at least twice within their four-year programs. It is obvious that we have to keep the door open for continuing education. The Associate in Arts degree recipient will likely be back even if he initially decided not to go academic. Job requirements being what they are, he is likely to try and get back after some years of experience. So whatever we do, we must think about continuing education; we must think about part-time education, so as to enable the persons who have changed their minds about further education, to come back into that stream.

We have, of course, a continuing problem in this respect, namely, that two-year degree people like to receive a fair measure of job-related instruction, whereas the studies in the community college which are a preparation for further academic work at higher levels, must be general education in order to enable the student to meet the lower division requirements of the four-year institutions. Here is the conflict. It's all very well to besiege the four-year places to give credit for the job-related instruction, which has been offered at the freshman and sophomore years, but it will take a major change to accomplish this.

Reference has been made to job-related instruction. What are its limits? Ought we to do the government agency's own job of training, whether that be a federal or state agency, a city, a county, or a special district? I, for one, feel strongly that we in Academia should leave in-service training to the government agency. This restraint is difficult. It's an attractive thing to have a pistol range on the campus in order to train the police science students how to handle fire arms. It's attractive to teach the young men who are considering police work as a career how to shake down and stake out and so on and so forth. But, in my opinion, this is the kind of training which should be left to the police agencies

themselves. Furthermore, the agencies are not going to their own, of their own volition. We academics must provide a real incentive for them to pool their resources, for example. Where I live there is absolutely no reason why the Los Angeles City Police Department Academy and the Los Angeles County Sheriff's Academy cannot be expanded so as to take care of all the recruit training of all of the local government jurisdictions of our area of the State. This, of course, would obviate some of the in-service training that the community colleges are engaged in and may be tempted to engage in in the future.

The college's role is a different one. To preserve our role, the colleges and the universities must put pressure upon the public agencies to carry out their part of the job and that is the actual job instruction.

Let's push on. The matter of timing has been noted. The timing is right for the community colleges to come in as full partners. One aspect of this is almost axiomatic. That is the emphasis on making more equitable the representation of the races in the public services, equal opportunity, indeed rectifying the lack of numbers of the minorities and the disadvantaged students are in the community colleges. A lot of the community college leadership among the students is coming from the disadvantaged and minority groups. Therefore, if the community colleges can come into the act more fully, this will almost automatically produce leadership at the top levels, at the administrative levels, from among these groups, who have not had their fair share of this leadership in the past.

The second aspect that makes this timing right is the legal basis and the beginnings of more nearly adequate financial support. There are the State scholarships here in California. There is the State internship bill which is in the legislature. On the national front too there are encouraging signs, with, to be sure, some discouraging aspects. For example, the Education for the Public Service Act was passed in 1968 and Title 9 of the Higher Education Act. It is true that so far funding has been denied for the carrying out of the grants-in-aid which are part of this program, but nevertheless, the law is on the books and hopefully one of these days financing will be available to support not only the government official who wishes to go on with his studies, but also the institution which may provide him with those studies.

The Inter-governmental Manpower Act is now in its third year of consideration in Congress. It has passed the Senate twice, but awaits action in the House. It is currently before the Congresswoman Edith Green's committee in the House of Representatives. This act not only provides grants-in-aid, but provides other facilities for state and local government personnel to interchange with federal, and to have their further education and training supported by federal funds.

The International Education Act, for those of you who are interested in that broader scene, was adopted in 1967, but has never been funded. It is on the statute books and has been renewed once as a statute. Hopefully, one of these days funds will be available for international education as well.

You know about Title 1 of the Higher Education Act and the training and education possibilities under it. Some of you probably have had the privilege of expending such funds; it is a possible resource. Not all grants have been estimated. There are several more --- The Housing and Urban Development Department Fellowship Program under Title 8 of the Housing Act, the NASA Fellowships, the National Defense Education Act Fellowships, are some of this inventory.

Actually, the most lucrative sources of federal support for education and training for public service preparation have not been mentioned; these are in the four specialized fields involving public health, social welfare, transportation, and law enforcement.

Can the community colleges regard all of these as resources? No. The provisions vary. Many of these fellowships are for graduate study only; however, some of them do cover undergraduate education as well, and no doubt just as soon as the community colleges are more actively engaged in this endeavor the legislation will reflect that fact.

The word "appraisal" was used as part of the title of the remarks I was to make today. I suppose appraisal is implicit in what I have said. It is an affirmative and rather optimistic appraisal. The need is great. Not only quantitatively, but qualitatively. Quantitatively, with the vast numbers now in public employment and with the ever increasing importance of government work being done by contract through private firms, there are literally millions of jobs opening up in the public service, and especially at the levels of interest to most of us in this room, namely, in state and local government. This is the largest growing area of employment in the United States today, and has been since the close of World War II. Further, it is predicted that the technical, supervisory, and administrative jobs are also on the increase in proportion to the totality of employment, as more of the work of government is automated, machined, and computerized. And this brings us to the matter of quality.

It is precisely at the top-levels of government that the quality of demand is so great as to revive discussion in many places of Plato's concept of the philosopher king: the man of superlative qualities, personal, political, and intellectual. We even have a few of our pessimistic brethren among us, soothsayers and fortune-predicters, who are saying our civilization will not survive because we will not have an adequate supply of these philosopher kings, at the right levels, in the right jobs, at the right time. It is to be hoped that this endeavor today, with the many other events that are going on in this country, will deny them their dismal conclusion.

THE COMMUNITY COLLEGE AND THE PUBLIC SERVICE

---A Paper by John R. McKinley, Dean of Instruction, Chabot College, Hayward

A. INTRODUCTION - THE COMMUNITY COLLEGE MISSION

It has been said that the junior college has a "service-oriented disposition" and further that it offers more hope than any other educational institution for the discouraged, the dead-ended, the dissatisfied - people who have been left out or who have been pushed out, or who have walked out because of their disillusionment with the unresponsiveness of the educational establishment. In my college days as a public administration major, I was rather thoroughly engrained with the notion that the public service was also a beacon of hope - through the then new service programs at the federal level in such areas as social security benefits and in the new services originating with state and local governments. And I think it is most appropriate and even overdue that the community colleges and the public-serving agencies should be joining forces along with the 4-year institutions to reinforce and strengthen each other's responsibilities in pursuit of the public interest.

What do we mean when we speak of the "public service occupations?" To me, this infers that government agencies are the major EMPLOYERS of the individuals in the occupation, in contrast to business or industry, for example. It then is clear that this kind of education is nothing new to the California community college where there is a long history of providing such curricula as police science and fire science. The emergence of courses in public administration and government management-supervision is more recent.

And so, what is the problem we face at this conference today? First, we need to determine what role the community college should play in education for the public service. In examining the spectrum of occupations in the public service, for which should the community college be the major educator (semi-professional and technical) and for which should it provide the lower division preparation (pre-professional)? What are the unifying concepts that are woven through all courses preparing for the public services? How do the community college curricula fit with the four year and longer curricula to result in an organized and full ranging educational career-preparation program? How can career paths be developed to allow a person to move through the educational system and from semi-professional or technical occupations to professional levels? How can the disadvantaged be offered open doors instead of dead-ends? The answers to these questions come only through clear delineation by employing public agencies of job expectations through position specifications with salary and other rewards going to the individual who has completed such curricula as those leading to the associate in arts degree. Further, the two-year and four-year courses must be articulated to avoid unnecessary repetition of content and allow students to move to advanced degrees with minimum delay. Now, let us examine the potential of the community college as an agent in public service career education.

B. THE POTENTIAL OF THE COMMUNITY COLLEGE IN CALIFORNIA

Today, approximately 85% of all lower division enrollments in public institutions of higher education in California are in the over 90 two-year community colleges. They are often called "the people's college" and the "open door institution."

In general, the community college is designed as a teaching institution, with its services and curriculum designed (1) for students who desire to transfer and complete lower division requirements in pursuit of the Bachelor's degree, (2) those who plan to complete a two-year or less technical-vocational or semi-professional career program designed for immediate employment in business, public services, industry, professions, education, (3) employed students who desire to prepare for new careers, or upgrade or maintain present skills through evening and extension courses, (4) those needing developmental work to become ready for college-level work, and (5) students seeking simply a general education. In addition, professional educational counseling services are available to all. Finally, the community services program offers special workshops, lectures, music-drama-arts programs and other diversified community-related activities. The Associate in Arts or Associate in Sciences degrees can be offered, as well as special certificates.

C. SOME CURRICULUM DEVELOPMENTS IN PUBLIC SERVICE OCCUPATIONS

A growing part of the community college curriculum is in the semi-professional areas generally labeled "the public services." These include courses and Associate in Arts degree or certificate programs in such areas as social services technician, fire science, police science, instructional aide, public works, inspection services, city planning, engineering aide, library technician, recreation and public administration (or government supervision and management). These programs are in addition to lower division preparation for baccalaureate and advanced professional degrees. It is apparent that there must be much more interpretation and clarification of the actual demand for particular occupations and career opportunities before community colleges can commit themselves to full-time day curricula directed by full-time faculty members.

In approaching the development of curricula for the public services, community colleges follow certain important principles:

1. Advisory committees of representatives from the particular occupational area, employing agencies and professional groups are called together to provide advice on courses, content, instructor qualifications, job requirements, and so on.

2. A broad base of core courses is emphasized, with options provided for specific occupations. For example, general categories of curricula include those of the health services, social services and public services. The emphasis is on career preparation as well as job preparation.

3. The semi-professional and technical curricula may lead to a certificate, an Associate in Arts or Associate in Science degree. Specialized courses are combined with general education courses in order that individuals will develop a thinking and understanding base, as well as knowledge and techniques of the occupation.

In developing these occupational curricula, California Community Colleges have been most fortunate in having a number of very helpful resources available. These include the following:

1. Materials have been prepared by the Institute for Local Self-Government in Berkeley.

2. Particular professional groups, such as those in fire science and police science, have developed suggested curricula. There are also

State agencies which support the professional groups, including the Peace Officer Standards and Training Division of the Department of Justice, and the Training Division of the State Personnel Board.

3. Coordinating activities by the Chancellor's Office of the California Community Colleges, have resulted in suggested curricula and various exploratory conferences, such as we attend today. The American Association of Junior Colleges has given national leadership.

In concluding these remarks on curriculum development in the public service arena, those of us who are curriculum-makers realize the critical trusteeship we have for the occupational careers of our students. We must sort out the touchstones very often, from complex and sometimes competing professional groups, interest groups, state agencies, employing agencies and others. To distinguish the conceptual-theoretical core of an occupational area, the emerging and fresh trends in the special stubstance and techniques, and identify the present and future job demands and opportunities takes great care and certain knowledge. Broad social changes and changing institutions must help guide the curricula for the public services. To whose music do we dance? The efforts of the American Society for Public Administration, our four-year college colleagues, occupational professional groups, state agencies, and the employing agency representatives must all combine with local community college administrators and faculty to design a vital and creative system of education for the public services.

D. AND IN CONCLUSION

The time for speech-making is over. We do not need to be convinced of the need for improved employee performance, or the long-range and heavy demands and career opportunities in federal, state and local governments. We do need to set goals for a program of education - short-range and long-range. We do need to identify real and present job opportunities for the community college graduate. We need specific requests from groups who employ and who will back up their requests for curricula with jobs and career advancement - who will help us sort out competing claims and help us develop a freshness and relevance in our course content and instruction. We need faculties in four-year colleges to work out articulation agreements which open professional career paths to the disadvantages.

What is to be taught and why? How are course contents to be differentiated between the two-year and four-year institutions? Planning through voluntary retional groups should come soon. Cooperative funding of cooperative pilot projects is needed through consortia of educational and public organizations. Internships and work experiences can be extended to community college students. The regular college faculty in political science and other social sciences need to be brought into our planning so students see the public services as desirable careers and the government as a locus of people-helping and society-changing activities. We are pledged to solve the social issues which the students protest today. We are at the heart of the action. Here is a challenge worthy of us all. Let us join in this great pursuit of the public interest

CERTIFICATE PROGRAM IN PUBLIC SERVICE SUPERVISION

---Remarks by Mrs. Dorothy Bumiller, Chairman, Business Department, San Bernardino Valley College

NEED FOR THE PROGRAM

Every public service supervisor is involved in some aspect of problem solving and decision making. These employees need to be able to follow clear-cut, step-by-step systematic procedures that will enable them to see the problem, to analyze, and develop alternative courses of action that can be used in the decision-making process.

Thus, the program in Public Service Supervision at San Bernardino Valley College concerns itself with the training of individuals who are currently employed. Prerequisite to enrolling in the program is employment with a governmental agency. The courses are offered primarily by the Evening Division of the College.

A 1964 survey of the San Bernardino-Riverside area disclosed that there were approximately 60,400 civilian employees in the cities, counties, state and federal agencies in the area. Personnel representatives of these agencies indicated that approximately 25% or 15,000 would need to be trained or upgraded to meet the supervisory needs to replace those retiring or leaving the services.

A more recent check of the same area disclosed that the 1969 civilian employment figures in this same category of public service employment indicated 70,600 employees or a 16 2/3% increase in a five-year period.

BACKGROUND

For some ten years or more San Bernardino Valley College has offered a program for Industrial Supervisors which has been very well received. This program is offered not only in the San Bernardino area but throughout the state. There has been excellent cooperation between Industry and the various Community Colleges and actively involved advisory committees function serving as liaison between Industry and the Colleges. The Industrial-Supervision program had been developed on a state-wide basis and one of the advantages of the state-wide program was the ease of transfer from one community college to another. A Kaiser employee in Fontana could start the program at San Bernardino Valley College, be transferred to Oakland and be reasonably certain of being able to continue the program at one of the other community colleges in the state and be assured of completing the program and attaining the certificate attesting to his participation in a planned program for Industrial Supervisors. With the acknowledged mobility of California residents this is a decided advantage.

This background on the Industrial Supervision program is mentioned here so that a frame of reference can be held as to why we constantly urged the development of a similar state-wide program for Public Service Supervisors.

Some Public Service employees were enrolled in the Industrial Supervision courses but they expressed discontent with the program. As they put it, "--the classes are too oriented to the nuts and bolts aspect--our needs are more outward - more people oriented. Our services are oriented and directed to the taxpaying public and we need something to help us." Although public service employees appre-

ciate the need, as do their counterparts in industry, for an efficiently run organization, the point of view and frame of references in the Industrial Supervision program was not meeting their needs. Primary criticism was that the orientation in the Industrial Supervision program did not provide participants with an understanding of the Principles of Public Administration, knowledge of basic governmental services, interrelationship of various governmental agencies, nor an understanding of the growth and development of the merit system or such other knowledges desirable and pertinent for those employed in public service.

PROGRAM DEVELOPMENT

Prodded by Cy Serafine, the then Training Director of San Bernardino County, San Bernardino Valley College assumed the responsibility for initiating such a program.

Governmental agencies at all levels were invited and accepted invitations to send representatives for the formation of an Advisory Committee.

For six months the Advisory Committee met every two weeks hammering out the program, recommending prerequisites, reviewing textbooks, recruiting and recommending instructional personnel.

The final result was a core program of seven courses plus two electives:

Core Program

Elements of Public Service Supervision
Psychology for Public Service Supervisors
Methods and Techniques of Training
Business Communications for Supervisors
Public Speaking for Supervisors
Principles of Public Administration
Counseling and Interviewing

Electives (Select and two)

Office Organization and Management
The American Economy
Elementary Statistics
Systems and Procedures
Public Relations
Speed Reading
Survey of Local Government Supervision

This Certificate Program in Supervision for Public Service Employees is a carefully selected sequence of courses designed to meet the specialized needs of those in public service. The program is of especial value to those who have supervisory responsibilities and to others who wish to prepare for such positions.

In the Fall of 1965 several courses were offered to get the program under way and in subsequent semesters additional courses were added until the entire certificate program was being offered.

The certificate program has been well received. A recent survey disclosed 257 students taking one or more courses in the program representing 169 departments from City, County, State, and Federal agencies.

All members of the instructional staff in the Public Service Supervision program have Masters Degrees in Public Administration and all are employed with one or another of the governmental agencies in the area.

In addition, each member of the Advisory Committee acts as Agency Representative and advises employees regarding course sequence, prerequisites and substitutions.

Because of the interest and involvement of the Agency Representatives, many of the governmental agencies have adopted tuition and textbook reimbursement provisions. Admittedly, this is not a great amount of money since our enrollment fee is only $3 for each class and textbooks cost from $8 to $10, but is an indication of the agency interest in continuing education and for the employees it provides a tremendous boost in morale.

TO DATE

--We have found that participants in the program are delighted with the opportunity to work with employees from a variety of other public agencies and to share their job experiences and/or frustrations. For example, the City Building Inspector is no longer just a name to the man in the County Planning Department but someone with whom he can relate to in terms of their specialty and mutual classroom experiences.

--Students often comment on the relevancy of the education that takes place in these classrooms. As one student told me recently, "I had a problem at work the other day that really gave me a king-size headache and when I got to class that night why a very similar problem was presented as a case study. When I went back to work the next day I wasn't sure I was going to solve the problem but I at least knew how to approach the situation and what alternatives were available."

Like so much of adult education, they go back to work anxious to put into practice whatever new found knowledge and insights they may have acquired in class the previous night.

Instructors have had a challenge in the classroom because of the spread of previous academic training. Participants range from high school graduates to those with Masters Degrees. By use of case studies, related reading assignments and problem-oriented projects, instructors have met the challenge.

--The fact that the program is not generally available at community colleges throughout the state, as is the Industrial Supervision program, has been discouraging, particularly to employees who transfer to other areas.

On the whole, however, we believe that we are now meeting an educational need that had been too long overlooked and we are positive about the future of the program.

AMERICAN RIVER COLLEGE MANAGEMENT PROGRAM

---Remarks by Dr. Louis Quint, Assistant Dean of Vocational Education, American River College

To intelligently discuss the Government Option of the ARC Management Program, I think we must first place the discussion within the context of the Los Rios Junior College District. Suppose you are driving east on Interstate 80 just west of Davis where the 4,000 acre University of California at Davis Campus is located. You would be entering the District. Approximately 15 minutes later you would be entering the City of Sacramento, with a metropolitan population of over 600,000 people. Situated on what was once the southern edge of the city is Sacramento City College with an enrollment day and evening of approximately 13,000 students. On what was once the east edge of the city is Sacramento State College. A few miles north, just off Interstate 80, American River College is located. It, too, has approximately 13,000 students. Crossing over to Highway 50, one would pass through historic Folsom and Placerville and end his journey at Lake Tahoe. As the crow flies the District runs approximately 85 miles in length, east to west, and from 20 to 30 miles in depth, north to south. During this drive, which would take from three to five hours, one would pass through fertile farm land, a deep water port, a government center where three major military installations are situated, and an aerospace complex. In addition to those mentioned are state and national forests and numerous other private recreation facilities.

American River College was founded in 1955 and has grown from 1459 students to the present 13,000 students, day and evening, to a projected enrollment of 14,000 full-time day students by 1975. The curriculum has grown from 8 AA Degree vocational programs enrolling 148 students to the present 39 AA Degree programs enrolling about 5,000 individual students.

All our programs have come about through the identification of needs as felt in the community. These needs are identified in a variety of ways, but the vast majority have been identified by vocational needs surveys, the first of which was conducted in 1955. Subsequent surveys were made in 1960, 1965, and 1967.

The first survey indicated a need for some type of leadership education for the existing, and rapidly growing, industrially oriented aerospace industries. With the advice and consent of a lay advisory committee our first program got off the ground in 1955. Two classes were listed in the catalog. The title of the program was listed as Industrial Supervision.

By the fall semester, 1964, the program was in trouble. Enrollments were down from over 300 in the spring semester to approximately 200. One of the problems was that the competition in the Aerospace Industries was becoming keen. As a result of a study of student characteristics, it was concluded that the curriculum title and content had to be broadened. As a result of the study of student characteristics, contact with business and industry, and with the advice and consent of the Advisory Committee, the title of the program was changed to Supervision and Management Techniques. An additional recommendation was that the College consider both a Certificate and an AA Degree program with a core that comprised those experiences that were considered essential for all supervisors and two options. One option was to be an industrial option, and the other was to be a business option.

Subsequent surveys corroborated the fact that the proportion of industrially oriented students in the program was going down and the proportion of those in business and government was getting greater.

In the fall semester, 1967 several meetings were held with personnel from the California Community Colleges, State Personnel Board, and ARC personnel. The purpose of the meetings was to determine the feasibility of ARC developing a government option in the Supervision and Management Techniques Program. The rational provided follows:

> "In June 1965, the Governor's Advisory Committee on Personnel and Training approved the findings and recommendations of its task force assigned to look at the training and development needs of middle managers in State Government. This task force recommended a "continuous developmental program" of which academic education is an integral part. Their report stated that "an academic program undertaken on the employee's own initiative is essential for providing middle management with the basic concepts of government organization, management, and administration."
>
> The responsibility for the implementation of this continuous development program, and the other recommendations of the report, were assigned to the Training Division of the State Personnel Board.
>
> In the implementation of this program, it was the objective of the Training Division to make courses available on a statewide basis at low cost and with minimum matriculation requirements. This goal was one which the junior college system in California is best able to help the State meet, for the following reasons:
>
> 1. There are some 5,000 managers at the middle management level in State Government throughout the State. Junior colleges are likewise located throughout the State in centers of population.
>
> 2. There is reason to believe that a substantial portion of this group would have difficulty in gaining admission to State colleges and universities. This does not mean that they should be deprived of the opportunity for their own self-development. The junior colleges are designed to fill such a gap."

At the same time a study of the characteristics of students in these ARC Management classes was undertaken. Thirty-eight percent of those enrolled classified themselves as supervisors or managers. The remaining 62% were either aspiring to management or simply wanted information. Thirty-eight percent were employed by the U.S. Government, 22% by State and local governments, 8% in sales, 10% by utility companies, 4% by aerospace industries, 4% by manufacturing, and the remaining 12% in miscellaneous classifications. Obviously the "worm" had turned since 1955.

Twenty-three percent were in their first semester of college attendance while approximately 15% had completed a second, third, fourth, fifth, or sixth semester. Over 50% had completed less than 30 units while 7% had completed the

AA Degree, and 6% the Baccalaureate. Only one had a Master's degree. Thirteen percent were women.

In developing the Government Option of the Management program, the Governor's report was studied in detail and existing course content was examined so that costly duplication of effort would not be made. Working with the instructional staff, State Personnel Board, California Community Colleges, and the Management Advisory Committee, it was concluded that there are certain phases of management that are essential regardless of the type of management, and there are certain courses that are essential for specialized areas in management. The core courses considered necessary to all management programs are listed below:

Introduction to Data Processing
Management Communications
Technical Writing
Techniques of Management
Psychology for Management or Human Relations
Management Economics
Organization & Management

In addition, the following courses were considered essential for the Government Option:

Introduction to Public Administration
Introduction to Public Personnel Administration
Introduction to Public Financial Administration

Elective, but recommended courses were:

Principles of Accounting
Business or Environmental Law
Business Mathematics
Developmental Reading
Conference Techniques
Special Problems in Management
Statistics

Presently we are offering 11 different sections in the management field with 488 students enrolled. Projections for the fall semester call for 21 sections with a projected enrollment of nearly 800 students. A large portion of this growth is due to the fact that we are offering the Government Option to State personnel immediately following work. There are approximately 2,000 management people interested, and with 27,000 government employees in Sacramento, the only ceiling is what budget the Los Rios District can allow.

Since the first survey conducted in 1955, we have felt that management education had top priority in the Sacramento Area, and we are just now ready to culminate a 15-year effort. We feel we have been successful for a variety of reasons:

(1) There has been strong administrative support for the program. Four administrators are directly involved in the program. Because of this strong support, we have been able to employ a highly qualified individual to bring leadership training to the day program starting in the fall semester, 1970.

(2) The junior college does not have the matriculation problem that many institutions have and the cost is low, $5.00 per unit. Thus, potential leaders can sample the program to see if it is what they need.

(3) We advertise the program extensively through our Evening Collegian, and during the last six years have distributed nearly 20,000 brochures. Since 1964 we have had approximately 5,000 different individuals participate in the program.

(4) The success of any program depends largely upon the quality of the instructional staff. We are fortunate in that from the beginning, highly qualified management personnel have supported the program through advisory committee efforts and by serving as instructors. Offering 21 sections will be no problem, in that we have had a rotation policy that instructors have endorsed. They feel that after one or two semesters an instructor should be rotated out of the program and then brought back into the program at a later date. Our instructors normally have a Bachelor's degree and at least 10 years of experience in business, government, or industry. Only two do not have degrees, and virtually all have the Master's degree. But most of all, they are dedicated to community service and recognize the need for the program.

(5) Evaluation is a very difficult thing, at best, particularly when we have no graduates in the government option as yet. Of course, one means of evaluation is the success with which graduates meet. Follow-up studies indicate that graduates of the other two options do progress on the job and earn salaries commensurate with their training. A follow-up of 1968 graduates indicated that they believed the knowledges and skills gained in the program were the primary reasons for their promotions. On the average, the monthly increase in salary from the time they entered until the time they completed the program, was $253.00. We don't wish to take the credit they would give us, but would like to feel that we had a little something to do with it.

(6) Articulation could be a problem. Our program is designed as a one or two-year program and the aim is not at the four-year degree. However, our Deans have been discussing the possibility and my educated guess is that we will come to some kind of agreement in the near future. One breakthrough has occurred. The San Francisco State College Center for Technological Education has indicated that they will take students on an individual basis and that they will accept the program. This day in age we need to keep the career ladder open so that we can have more flexibility in in-service and pre-service education.

PROBLEMS OF PUBLIC SERVICE EDUCATION IN COMMUNITY COLLEGES

---Remarks by Mr. Andrew S. Korim, Public Service Specialist, American Association of Junior Colleges

Community colleges have engaged in a rapid expansion of curricular offerings in various aspects of public service education. The activities of the American Association of Junior Colleges reflect many of these developments. AAJC's activities have ranged from an initial publication entitled Urban Government Manpower and the American Junior Colleges (out of print) to guidelines for programs in law enforcement, traffic, corrections, and fire service. In addition to the publications, a number of workshops have been held throughout the country. Presently, a series of workshops on the subject of implementation of human and social service career programs in community colleges is being conducted.

As we look at public service education in community colleges, we find that it generally takes two forms. Initially, community colleges usually engage in the offering of single courses for the purpose of up-grading present employees of local, state, and federal agencies. Secondly, after initial experience and a determination of interest and need in the community, community colleges enter into offering programs designed to prepare personnel for entry into government employment, usually at the intermediate or semi-professional levels. Simply defined, public service education, then, concerns itself with either up-grading existing employees of government agencies or the preparation of personnel for a career in government employment. AAJC activities have both reflected the developments in the community colleges and served as a catalyst in paving the way for programs in new areas.

Some of the programs offered by community colleges which are identified as having agencies of government as the primary employer are the following:

Air traffic control specialist
Child care aide
Corrections officer
Environmental control technician in air and water pollution
Fire service technician
Highway safety technician
Highway traffic engineering technician
Law enforcement officer
Library assistant
Park management assistant
Recreation leader
Social service technician
Teacher assistant and other auxiliary personnel for education
Urban development technician

Although these programs are usually at the associate degree level, there are many additional offerings which lead to a certificate for programs of less than two years duration. In addition, community colleges prepare personnel in a number of areas for the general labor market from which government agencies employ personnel in competition with the private sector. Some of these occupational categories which are competitive with the private sector include: (next page)

Computer programmer and data processing technician
Engineering technician
Stenographic and secretarial personnel
Electronics technicians
Nursing and allied health personnel

Generally speaking, in the case of the programs concerned with preparation of personnel for the general labor market, there is no identifiable distinction made in terms of special courses for preparation of students for specific entry into government positions.

Although the progress in community junior colleges in the area of public service education has been outstanding, there are some serious hurdles which must be overcome. The following are some of these hurdles:

(1) The employing government agencies often neglect to give visibility to associate degree and other levels of post-secondary education of less than two years duration.

(2) Although civil service officials generally are in the process of changing entry level employment qualifications to give recognition to the associate degree, many of the operating agencies of government demonstrate a lag in the acceptance of associate degree graduates.

(3) Budgeting practices by various agencies do not permit adequate flexibility in hiring personnel below the baccalaureate degree level.

(4) The public administration profession, including the professorial staffs of many universities offering public administration programs, resist the design of new professional levels associated with the intermediate levels of employment.

(5) Statistical data on the actual need of personnel at the associate degree level is generally inadequate. Statistical information which is available is generally too broad to be of value to college planners and to the student seeking guidance on a career in public service.

(6) There is a serious shortage of qualified faculty members who have an understanding of public service careers and who have a commitment to the associate degree level of entrance into employment.

(7) Too often, the job specifications for the associate degree level of employment have yet to be written or are so vaguely written that an individual without an associate degree level of education could qualify.

In addition to these problems, there are a number of specific concerns that deal with matters of curriculum in public service education. The following are some of the major concerns:

(1) As seen by the list of offerings, there is extensive proliferation which dissipates the resources of the community colleges as

well as presents problems for the student who wishes to move from one occupational option of public service to another within the same community college. There is a need for the redesign of the total public service offerings into meaningful career families reflecting the various functional service systems within government.

(2) Generally speaking, community colleges have not identified the basic competencies, the common knowledge, the essential behavior patterns, and the underlying attitudes which are relevant to all government careers at the associate degree level.

(3) Community colleges find it extremely difficult to channel the diversity of opinions which come from the employers in the public sector, the professional groups, and the various leagues and associations representing public service careers. Without a unified interest on the part of these various groups, it becomes difficult to develop a broad-based core of relevant educational experiences to prepare personnel for public service employment.

(4) The educational ladder must reflect in the components of the curriculum the career ladder relevant to public service occupations. This is essential in order that a realistic career advancement route may be established for the students who have desires to enter public careers.

The concern over the redesign of curriculum is essential to constructive growth of public service education in the community colleges. At the base of the various public service options, whether they be in justice, education, the human services, or in community development, are certain common elements which must be properly organized to prepare persons for government employment. These common elements reflect competencies, knowledge, and attitudes relevant to all public service occupations and could serve as the basis for introductory courses in public service education. Some of the details which could be contained in introductory public service courses include:

(1) Orientation to the public environment.

(2) Indoctrination in the goals, spirit, and responsibilities of public agencies in general.

(3) Analysis of the basic bureaucratic process as it pertains to citizen-agency interaction.

(4) Analysis of the distinctions between public employment and employment in the private sector.

(5) Examination of the variables associated with decision-making at the semi-professional level of public employment.

(6) Development of techniques for the delivery of responsive public service.

(7) Establish the concept of public interest and its relationship to a career in public service.

(8) Concentration on the strengthening of the credibility of the semi-professional level of public employment and the overall image of careers in public service.

(9) Review of civil service practices.

Such a basic foundation for all public service curricula is essential to develop in the prospective employee the skill and confidence needed to deal effectively with the public. As it has been said, the public employee needs to be given basic techniques which will permit him to deal effectively with the mad citizen. To insure that the new employee comes to the agency prepared to improve the services rendered by the agency, a basic preparation in overall public service would be extremely valuable. Furthermore, such an introduction could also serve to give the student a fundamental orientation to the various career opportunities, the career ladder, and the qualifications required to perform successfully in positions of public employment.

By restructuring the curricular offerings in community colleges, many of the problems associated with articulation between the community college and the universities, employers, and professional associations could be reduced. Furthermore, as new career opportunities emerge with a public service base, the community college can build the various courses needed to prepare individuals for various government positions regardless of whether they are designed to lead to an associate degree or to the baccalaureate degree.

In summary, the community colleges have made considerable progress in working with the various employment agencies and the relevant associations, but it would appear that it is time for them to re-examine and evaluate their programs. Such an evaluation is essential in order that they may continue to serve the public sector. In many ways, the community colleges are only at the threshold of their growth in providing public service education.

THE STATUS OF PUBLIC SERVICE EDUCATION AND TRAINING IN CALIFORNIA

---Remarks by Dr. Ernest A. Engelbert, Professor of Political Science, University of California , Los Angeles

Public Service Education and training is in serious difficulty within the State of California. Unless we can redirect some of our present training effort to provide more qualified professional manpower to meet the state's and the nation's growing complexity of human, urban and environmental problems, the quality of life will inevitably suffer. What follows is a brief summation of some of the shortcomings and needs of public service education and training within California today with a few proposals for some new courses of remedial action. My remarks should not in any way be considered as reflecting the views of the University of California, the California Advisory Council on Public Service Education and Training, or any other organization or association with which I am affiliated.

PROBLEMS AND NEEDS

1. All recent studies show that there will be a rapid growth in public sector employment during the 1970's. For some public fields such as environmental planning, urban development, transportation systems, the growth will be unprecedented, calling for new forms of public programs, new management systems and technologies, and large increases in expenditures and employment.

2. Critical shortages of professional manpower presently prevail for a number of public functions; there is no substantial evidence to indicate that existing educational and training programs are rapidly closing the gap. Nor do we find many examples of universities and colleges reorganizing their curricula to provide some of the new types of interdisciplinary-trained professionals who are qualified to deal with emerging complex public issues and problems.

3. Education and training for the public service presently holds an ambivalent status at most colleges and universities. For example, few large colleges and universities possess schools of public service and administration in contrast to the number possessing schools of business administration. Education and training for the public service has been conducted largely through specialized fields, such as education, public health and social welfare. Many of the other public functions are covered or lost in diversified college curricula, oriented as they are to many diverse educational objectives.

4. Most of the existing departments and curricula within colleges and universities are disciplinary and process oriented rather than interdisciplinary and problem oriented. Consequently, many public issues and problems are dealt with on a fractionated basis. Moreover, academic departments, by virtue of tenured staff and investments in curricula systems, have a vested interest in maintaining or expanding the thrust of their existing programs, thereby making a reallocation of resources from well entrenched academic programs to new and innovative programs difficult. Nowhere is this better illustrated than in departments which are now turning out a surplus of Ph.D.'s who cannot find jobs in their chosen professions vis-a-vis professionally-oriented departments and schools which are critically short of staff and supporting resources for meeting governmental needs

of professionally-developed manpower.

5. Throughout the nation, no meaningful differentiation of responsibilities for public service education and training exists among the different levels of higher education. Within California, the Community Colleges, the State Colleges and Universities are developing public service plans and programs primarily within their own institutional framework and community needs. Thus we find community colleges developing professional programs for the first two years of college without relationship to the requirements imposed for a four-year program for the continuing student. We find colleges attempting forms of interdisciplinary training without the supporting resources of professional programs in public health, social welfare or other fields. We find universities undertaking various types of training that might more appropriately be done by other segments of higher education. In short, few significant efforts are being made to relate curricula among institutions or make effective use of all too meager resources by developing plans and programs on an inter-institutional and areal basis.

6. The education and training task for the public service is complicated by constraining standards established by professional associations, by poorly defined job specifications and entrance requirements for public service and by outmoded differentiations of professional skills. For example, many professional associations so rigidly control job specifications that it is impossible to train para or associate professionals to fill the manpower gap. When institutions of higher learning establish innovative programs to train a new type of professional, say a regional planner, they find that Civil Service provisions are not designed to accept and appropriately utilize these personnel.

Where public jurisdictions are seeking to fill critical professional needs, they find institutions of higher learning unwilling to reorient their established programs to meet laudable public objectives. All of which results in a balkanization of professional education and training programs, the loss of professional manpower, and the misuse of personnel and facilities of both educational and employing institutions.

SUGGESTED COURSES OF ACTION

It will be readily recognized that the problems which I have listed call for some radical reforms in our educational and public employment systems if they are to be dealt with effectively. However, it is not my intent in this presentation to tell the various segments of higher education in California nor the personnel offices of the respective levels of government how they should reorganize their systems. But I will suggest some courses of action that may result in better communication, coordination and division of responsibilities for public service education and training in California.

1. The Coordinating Council on Higher Education should be encouraged to give high priority to its projected study of public service education and training among the segments of higher education in California. This study (a) should assess the present programs and educational facilities in relation to professional manpower needs; (b) should propose the establishment of new activities at designated educational institutions; and (c) should establish jurisdictional guidelines for programs at the Community Colleges, the State Colleges, and the Universities both

private and public. Such a study by the Coordinating Council would inevitably force each institution and segment of the system of higher education to review its goals and programs, a review which is desperately needed at many centers of learning.

2. The California Council on Public Service Education and Training should continue and update recent State studies of manpower needs in cooperation with the Institute for Local Self Government, the County Supervisors Association, the League of California Cities, the State Personnel Board and the Regional Office of the Federal Civil Service Commission. It should examine the entrance requirements and job specifications for important professional positions in various public jurisdictions. It should assess the nature and extent of in-service training programs of state and local governments for the purpose of ascertaining how well these programs are meeting employment needs, how well they are upgrading manpower potentials, and how closer collaboration between educational institutions and public jurisdictions for the training function can be established.

Assessments should also be made of the expenditures for public service education and training for both educational institutions and public jurisdictions. The Council should institute regularized procedures for the dissemination of this information including regional conferences for education and training personnel.

3. All institutions and organizations represented at the Conference should give immediate support to the passage of the Senate Bill 385 introduced by Senator Claire Burgener to establish a Statewide internship program in which all educational institutions and governmental jurisdictions could participate. This program would be operated under the California State Scholarship and Loan Commission and would foster institutional and governmental cooperation in regional areas. Support should also be given by organizations at this Conference for the Federal Intergovernmental Manpower Training Bill and for funding for the Higher Education for Public Service Act, legislation which will go far toward redirecting public attention and energies to this field of endeavor.

4. The California Council on Public Service Education and Training should sponsor the establishment of regional councils for each major area of the State for the purpose of promoting inter-institutional and intergovernmental cooperation in the establishment and operation of education and training programs. Membership in these Councils should be open to all educational institutions and governmental jurisdictions; they should serve as a clearinghouse for information and as a vehicle for translating State professional manpower trends and needs into regional programs and activities. Through informal arrangements, these Councils could foster better allocations of scarce resources, develop complementary programs and minimize unwarranted duplication within regions. (Might I suggest that the Northeastern California Region might be a good area to establish the first Regional Council which might serve as a prototype for other Regional Councils to follow.)

5. We need to identify professional associations in this State which are broadly concerned with Public Service Education and Training, and bring the officers and representatives of these associations into better communication and cooperation on common objectives. The California Association for Public Administration Education, an association which now has members of the Community Colleges on its Board, might well take the initiative in examining how professional associations might work together to highlight public service education and training

needs and how they might influence new policies and courses of action.

In closing, let me make clear that many of the needed reforms in public service education and training must emanate within academic and governmental institutions, and by changes in the outlooks and attitudes of the educator and the employer--and not by administrative regulations imposed from without. But the proposals which I have made may focus the glaring spotlight of attention upon some of our institutional inadequacies so that these institutions may respond more readily to the critical public service needs of our times.

VT 014 504
EXEMPLARY VOCATIONAL EDUCATION PROGRAM BASED ON ENVIRONMENTAL STUDIES K-14.

MINNESOTA ENVIRONMENTAL SCIENCES FOUNDATION, INC., MINNEAPOLIS.
MINNESOTA INDEPENDENT SCHOOL DISTRICT 281, NEW HOPE.
BUREAU OF ADULT, VOCATIONAL, AND TECHNICAL EDUCATION (DHEW/OE), WASHINGTON, D.C.
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DESCRIPTORS - *CAREER EDUCATION; *CURRICULUM DEVELOPMENT; PROGRAM DEVELOPMENT; *TEACHER WORKSHOPS; INSERVICE TEACHER EDUCATION; PROGRAM PLANNING; LEARNING ACTIVITIES; ACTIVITY LEARNING; ENVIRONMENT; PROGRAM EVALUATION; *DEVELOPMENTAL PROGRAMS
IDENTIFIERS - CAREER AWARENESS; *CAREER ORIENTATION

ABSTRACT - THIS REPORT DESCRIBES THE CONTENT AND ACTIVITIES OF A 1-WEEK, 30-HOUR INSERVICE PROGRAM DESIGNED AND CONDUCTED FOR 19 ELEMENTARY TEACHERS WHO ARE CURRENTLY FIELD TESTING CAREER EDUCATION MATERIALS IN GRADES K-6. SINCE COMPLETING THE WORKSHOP, 15 OF THE 19 TEACHERS HAVE IMPLEMENTED A PORTION OF THE PROGRAM FOR WHICH THEY ARE RESPONSIBLE. THE TEACHERS ARE EVALUATING THE UNITS THEY HAVE TAUGHT WHILE PROJECT STAFF ARE CONDUCTING A CONTINUAL EVALUATION OF THE TOTAL PROJECT. A TEACHER EVALUATION OF THE WORKSHOP ITSELF REVEALED THAT THE KIND OF ACTIVITIES TEACHERS ENJOY MOST AND PERCEIVE TO BE MOST EDUCATIONALLY USEFUL ARE THOSE WHEREIN THERE IS ACTIVITY, INVOLVEMENT, AND OPEN ENDEDNESS. (AUTHOR/JS)

VT 014 504

Careers Project

A COOPERATIVE PROJECT IN CAREER — ENVIRONMENTAL EDUCATION

PRESCHOOL IN-SERVICE INSTITUTE
AUGUST 1971

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Project No. 361171
Contract No. OEG-0-71-2396 (361)

Exemplary Vocational Education Program Based on Environmental Studies K-14

Exemplary Project in Vocational Education
Conducted Under
Part D of Public Law 90-S76

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Barbara B. Clark, Cliff E. Helling
Co-Directors
Minnesota Environmental Sciences Foundation, Inc.
5400 Glenwood Avenue
Minneapolis, Minnesota 55422

December 1971

Foreword

This booklet describes the content and the activities of a one-week, thirty-hour in-service program designed and conducted for elementary teachers who are presently trialing career education materials in grades K-6. In-service participants were volunteers drawn from two elementary schools in a relatively large suburban district.

Since the workshop, fifteen of nineteen teachers have implemented a portion of the program for which they are responsible. Each is evaluating the units they have taught while project staff are in continual communication with them and with their classes.

Teachers evaluated the workshop several weeks after it concluded. The results of that evaluation are found at the end of the booklet.

K-6 IN-SERVICE WORKSHOP

August 23-27

	Grade Level
I. Participants:	
A. Sunny Hollow	
Sandra Thorsen	1
Penelope Daehlin	2
Gita Ross	3
Vicki Tatting	4
Kay Klein	5
Wayne Stahn	6
Ruth Willius	6
Virginia Engen	6
Laura Breitner	4
Russell Conklin	6
Lolly Santoski	1
B. Pilgrim Lane	
Marjorie Fiers	3
Doris Wittler	4
Janet Crawford	5
Wayne Johnson	6
Mary Jo Russ	4
Nancy Moe	K
Dee Bell	1
Virginia Roberts	2

II. Hours:

30 Workshop Hours

III. Cost:

Participants	$2,350.00
Consultants	250.00
Curriculum, materials & supplies	342.00
Staff	660.00
Total	$3,602.79

IV. Program:

A. Objectives

1. Provide teachers with first-hand knowledge through direct experience of materials, tools, equipment, and resources for an actively oriented career development program.

2. Engage teachers in original problem-solving activity making them directly responsible for planning, designing, executing and completing a project of their own creation.

3. Foster needed intergroup relationships which could be transported securely back to the school setting and result in continued horizontal communication which would be supportive of the objectives of the program as well as the individual instructional goals of each participating teacher.

4. Display, through involvement in meaningful activity, the interdisciplinary nature of the curriculum to be introduced in the fall.

5. Demonstrate that an interdisciplinary career development program based on environmental studies is not only a useful and enjoyable alternative for both teachers and youngsters but may be a superior means of achieving many of the professed goals of general education.

6. Express to teachers the importance of incorporating elements of career development philosophy into their own educational philosophy in such a way that it is revealed to youngsters through the instructional program offered them.

7. Acquaint teachers with the goals of the project and their role in it; and acquaint outselves as project staff with the teachers who have the responsibility for implementing the program.

B. Activities:

1. Construction: Many teachers have never used the tools common to an industrial arts program nor have they contemplated industrial arts activities as one inclusion in a total instructional program which could be of value in achieving worthwhile educational ends. Consequently workshop staff felt the need to cause teachers to utilize tools and develop minimum kinds of construction skills so that they would be able to assist children with similar instructional projects. Project staff procured tools, materials, idea resources and gave each teacher the charge of making something which could be of use in his or her classroom. The various types of materials available were:

a. Triwall cardboard

b. Wood scraps

c. Cardboard boxes

d. Assorted plastics including tubing

e. Wire and porcelain based sockets, switches and batteries

f. Sheet metal

(The tool inventory is listed in the appendix.)

Wooden cable spools were used as workbenches and as sturdy mounts for vices. These are obtainable locally from a variety of sources usually for the asking. They are almost indestructible and suffer little from saw cuts or "errant" hammers.

Teachers at first were hesitant to get involved. The reasons might be:

a. They were not comfortable with an unstructured, open-ended "charge." A kind of "lost-at-sea" feeling which resulted from preconceived concepts about typical workshop organization and procedure. Preconception is understandable since most workshops are highly structured, informal sessions. Minimal teacher input is demanded.

b. Most of the teachers were women. Some role conflicts were bound to occur.

c. Familiarity with tools and their use simply overwhelmed several.

d. A lack of initial creativity prolonged some teachers' uncertainty. For the most part this was not a barrier after 30 minutes in the "shop" area.

The constructions were for the most part practical and useful. Included were:

a. Wooden bookcases

b. Cardboard study carels

c. Wooden elementary balances

d. Cardboard box "display center"

e. Game materials

f. Bird house

g. Field equipment for environmental studies aspect of the program.

Below, teachers are shown constructing articles for classroom use.

Teachers spent the better part of 5 hours involved in construction activities. Once started, few needed direction. Much shared learning occurred. Teachers assisted one another solve peculiar design problems or proposed alternative construction methods in instances where materials didn't suit the design specifications.

Teachers got to know one another and, since staff constantly monitored progress, it was an environment which supported the beginnings of what will hopefully be a productive relationship between project staff and teachers.

Staff observed that teachers were both amazed and satisfied that in such a short period of time they accomplished something that they (most) have never before done. Because of their own involvement, they were quick to realize the implications of this kind of activity for children. Discussion following the workshop brought out these observations related to classroom application:

a. Activity oriented learning will be useful in dealing with problem children.

b. Construction activities are concrete and therefore more appropriate for some students who find abstraction difficult to deal with.

c. Success is inherent in concrete activities; children build, create and see through to completion this kind of project.

d. These activities foster respect for the results of work with hands.

e. Construction interrelates many curriculum components in a way which is far more realistic than present course offerings.

f. Cooperation, sharing, and respect for property are better learned through activity than out of a book.

2. Slides Series: Project staff collected slides of workers observed at work in the various municipalities which make up District 281. The slides were shown to workshop participants who were asked to:

a. identify the job

b. estimate whether the performance of the job had a positive or negative effect on the environment.

Forms were completed and turned in for evaluation. While we feel this was not a particularly valuable inclusion in the workshop, we did feel that it would stimulate thought about the relationship between careers and environmental quality. The subject is certainly controversial, real and must be dealt with. It is possible that staff erred in scheduling the slides after a very productive, busy and engaging construction activity.

3. Community Data Gathering: One of the major objectives of exemplary programs and projects is "bridging the gap between the school and the community." Our project staff has interpreted this to mean that more student involvement in the community environment will create new understandings of the dynamics of community organization and function. Too few adults truthfully know how communities operate. This includes teachers. Thus, project staff designed an activity which would place teachers in situations demanding involvement with community people, businesses and the environment. A description of the activity follows:

Objectives:

a. To demonstrate the interconnectedness of three major community elements, namely, economic, social and environmental.

b. To involve teachers in the kinds of community investigations they might in turn do with children.

c. To present teachers a means of displaying data in a way that would evidence community interrelationships.

d. To familiarize teachers with the community immediately surrounding their respective school neighborhoods in order that future trips with children will make the most of available resources.

Procedure:

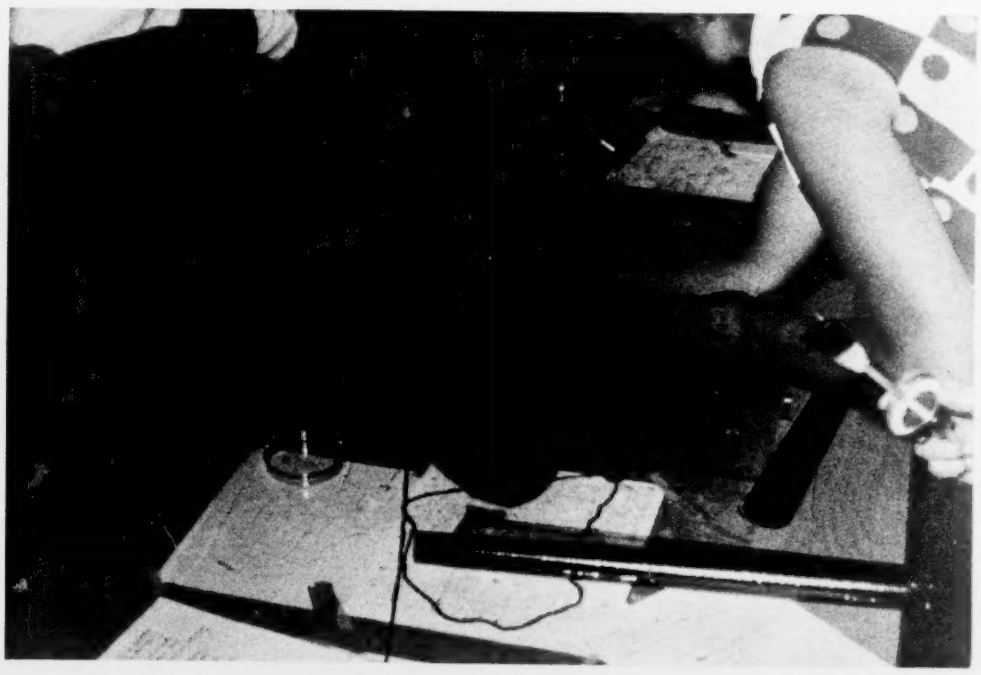
Teachers were given data sheets on which they were to enter information specific to the particular community characteristic to be studied. Some data was gathered by interview, other by way of observation. Small groups were formed from within the structure of the whole group. Each group:

a. Interviewed one knowledgeable representative of a local business establishment. They sought information regarding the residence of the workers. Did they or did they not reside in the locality? What percent did not, and where did they reside? Also, each group obtained information concerning the business's products, the market sold to and the origin of the raw materials.

b. Interviewed residents.

c. Observed location of open space near schools and around the neighborhood.

d. All data were plotted on three separate maps of the school district, each of which had been overlayed with plastic transparencies. To plot results, participants connected an industry to its major national market using colored yarn as a vector. Similar maps were



developed on the basis of information gathered from neighborhood residents and about community open spaces.

e. Maps were superimposed on one another so that interrelationships among the kinds of data collected could be visually sought. This method of data display seems best for use with children since it is not as abstract as tables, charts and graphs.

Results:

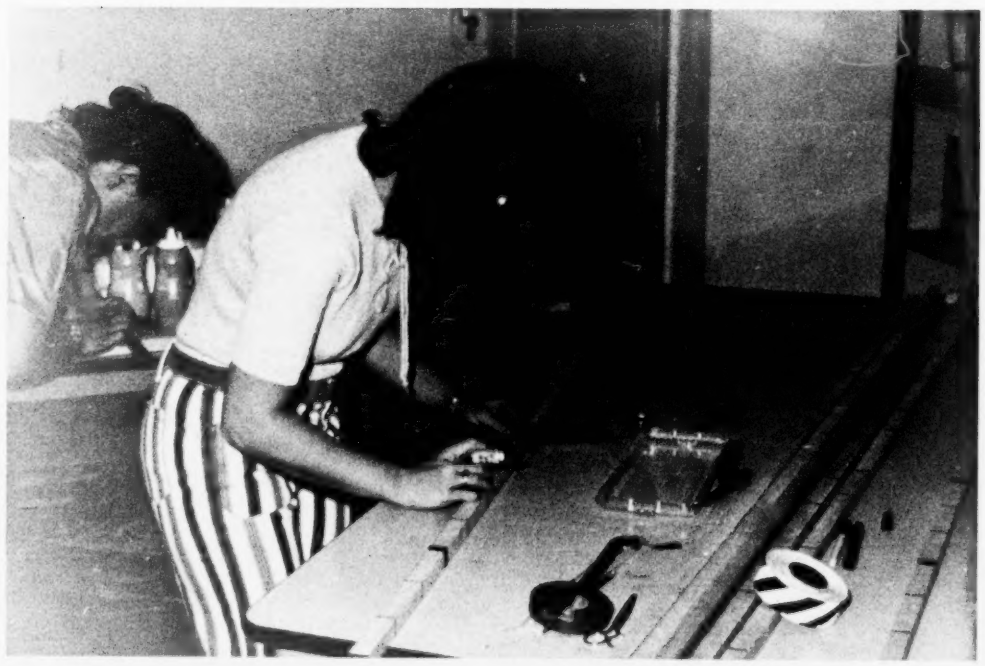
In terms of teacher response to the activity, there was a great deal of enthusiasm expressed over the use of transparencies since relationships could be easily seen. They felt that children would indeed enjoy the interviewing and the map making activities where other observations would need more explanation. The point is that experimentally based activities such as this one, coupled with the rather dramatic visual display of data more probably leads to the development of those constructs we wish children to form about community interrelationships than do the more traditional paper-pencil social studies methods.

4. Slides--Manpower Solutions to Environmental Problems: This slide-tape presentation is available commercially (see Appendix II). It attempts to make the connection between environmental degradation and the present lack of manpower trained to deal with the issues.

   Again, the slides came at the end of the day. Teachers were passive. They watched but without great interest. The evaluation returns suggest that this slide series did little to increase either the participants' knowledge of either career or environmental education. (See Appendix III.)

5. Construction, Cooperation and Field Work: Many of the curriculum activities developed for the program take place in a classroom atmosphere characterized by group work derived from student based decisions and student organization. The model is, of course, the "World of Work." Division of labor, individual responsibility, production levels and schedules, leadership and cooperation typical of the "World of Work" can be duplicated through a class project situtation. In this

instance the group was given responsibility for copying or redesigning equipment used in teaching youngsters something about how contour maps are drawn. They were shown some prototypes and then given the charge of creating two complete classroom sets, one each per school. This meant that they were responsible for every step of the process from materials procurement to completed product. Below one worker measures and marks a range pole made of 1 inch by 1 inch by 8 inch pine.



Product design had to include such considerations as:

a. Size of children

b. Durability of equipment

c. Availability of materials and cost

d. Manipulative skills required to use it

e. Simplicity of organizing a group to do a job

Precision in was not a consideration since the point of the activity was to engage in the process of collecting data, plot it, and discuss its usefulness. In the course of discussion the group realized that this kind of activity brings together in a most realistic fashion the essence of the program. That is, focus first on an activity--the contouring of a hillside--and then logically develop the relationship between career and environmental education as the activity proceeds.

In the case of the contour mapping, we capitalized on the value of involvement. Thus, after constructing the equipment needed, there was interest and enthusiasm for using it. We contoured a hill in a local park but we discussed the importance of open space, reaction areas, park planning, and community involvement as a part of the total experience. This discussion led to careers related to land development, use and management.

We incorporated and related mathematics, science, social studies and art in this project, yet career development was the thread that tied all of its elements together.

It is significant that although this activity is not included in the career curriculum, most of the fifth and sixth grade teachers in the program have used it with their youngsters. It was rated particularly high among all workshop activities and definitely the type of activity to repeat in future workshops.

Contour mapping, like the community data gathering activity, must be done out-of-doors. In this respect it is representative of many activities included in the total program. Therefore, we felt it necessary to take workshop time to help teachers learn to use the outdoor community classroom. It was important for them and to the program to realize the usefulness

and richness of instructional experiences which take place away from the school setting. They had to come to this realization before they worked with their children away from school. To do this effectively they needed to first have an opportunity to achieve success as teachers (and as adults) away from the familiarity of their work setting where authority and control are more easily applied.

6. Group Process and Change Activities: It has been the feeling of those associated with in-service programs produced at the Environmental Science Center that before teachers will adopt new practices they must be predisposed to do so. Predisposition hopefully occurs as a result of good adult experiences with innovation. Thus we've tried to plan and execute in-service activities which intrigue and involve teachers banking on the possibility that their enthusasm will be incorporated into their classroom behavioral patterns.

   As teachers work together in in-service, a mutually supportive working relationship usually evolves if the workshop environment is open and non-threatening. We design our workshop activities to cause teachers to interact. During the interaction process, much is shared including instructional content, workable teaching ideas, patterns for organization, source materials, etc. Rarely, however, do teachers discuss their own styles of classroom interaction with youngsters. Even more rarely will they examine their inter-school relationship with their colleagues. Yet the nature of the relationship which exists among teachers in a given school determines to a great extent the vitality and richness of that school environment. To get teachers thinking about ways of establishing better working relationships with one another, which we hoped would help open the school environment thus preparing it for change, we chose to deliberately examine human behavior, attitudes and values, departing from our usual strategy which was to get at the same thing but more indirectly through curricular activities.

   Through the use of various group process techniques we were able to get teachers to talk more frankly to one another about their working relationships at school. It was clear that generating an atmosphere in which they felt confident to change could result only through strengthening their support for one another. Since the teachers in the program represent only two, and since within each school certain interaction patterns had already been established, we

found that teachers opened up quite readily and began to discuss those school elements which detract from and discourage the formation of a more supportive building climate.

These discussions opened the door to critiques of classroom procedures, of styles of teaching which were teacher rather than student oriented and of the payoffs in terms of student learning from the various contrasting room environments. When applied to the curriculum each was about to adopt in career-environmental education, most all agreed that it would not work unless they freed themselves from many of the instructional patterns they had been using.

How these patterns could be opened without losing security was a major concern of the teachers. At this point teachers felt that security should derive from among themselves not from students or the principal. Whether or not this feeling is maintained once school is under way will be an object of interest and observation.

7. Curriculum Review: Each teacher had been given a three-ring notebook containing the units he/she was to teach; two statements of philosophy, one on environmental education and the other career education; a map of the school district; reprint of a list of do's and don't's when using tools with children; and an overview of the entire K-6 program. Each teacher was instructed to review the units they were to teach and then ask questions about content, procedure, materials, etc. Workshop instructors acted as resources, however grade level discussions with teachers sharing ideas was probably more profitable. For many this was probably the first time they truly shared ideas, particularly with teachers from other buildings.

8. Overview of Career Development: The project career counselor attempted to tie the week's activities together using career education as the theme. This was an information passing session rather than a sharing or action period. Thus after the events of the week in which teachers played active roles, they were not particularly receptive to the style of information delivery. However, the content which focused on teacher/school responsibility for the future of all, not just some, was readily accepted.

It was apparent that teachers were begining to realize or recognize new roles for themselves, develop newer yet more fundamental concerns for the educational processes they directed, especially the affect of their instructional behavior on individual student responsiveness. The teachers seemed to be genuinely introspective. This could easily be a workshop related phenomenon which would therefore not transfer to the classroom. In the future as we examine the implementation and instruction process we shall be able to determine to some extent the degree of change exhibited by each teacher and thus to ascertain the extent to which our workshop goals were achieved.

APPENDIX I

EVALUATION INSTRUMENTS

5811

A. Elements-Objectives Survey

OBJECTIVES

WORKSHOP ELEMENTS	Enjoyed Most	Usefulness with Children	Knowledge of Career Ed.	Knowledge of Env. Ed.	Positive Attitudes	Pursue in Future	Modifying Element
1. Construction	1	1			1	1	2
2. Slides			3	2			
3. Community data gathering		3	1	1		3	
4. Group Decision-making	2	2		2		2	3
5. Discussions			2	3	2		
6. Attitude Workshop	3				3		1
7. Career Orient.							

Table 1 - Rank order of elements measured against fulfillment of workshop objectives. (N= 16)

Discussion of Results:

It seems apparent that the kind of activities teachers enjoy most and perceive to be most educationally useful are those wherein there is activity, involvement and open endedness. Activities which caused participants to design and execute projects with few guidelines from instructors also rated highly. In contract, information passing either verbally or graphically (Elements 7 and 2) rated low.

The two latter elements are both commonly employed with instructional techniques. It is, therefore, of some interest to note the low rating received in teacher appraisal.

B. Opinion Survey.

This survey concerned ten affective elements of the in-service program.

Discussion of Results:

Preliminary analysis of opinion survey results from participants in the workshop indicate very definite consensus concerning most items of the survey. Participants generally agreed that the goals were fairly clear, people felt encouraged to be themselves without putting on false airs, leadership was shared according to abilities, productivity was high, and time was put to good use. At the more extreme level, the participants were emphatically positive about total participation ideas being well presented and understood, people were accepted, a mutual trust was established, and freedom of expression of individuals was accepted.

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OPINION SURVEY

This is a survey of your opinions concerning ten elements of this course. Each element is presented as two alternative statements.

Circle the letter which indicates which statement you agree with and to what extent you agree with it.

A	Strongly Agree With ←	Slightly Agree With ←	No Choice —	Slightly Agree With →	Strongly Agree With →	B
	A	a	X	b	B	
1. GOALS were fuzzy, contradictory, or just plain missing. We weren't sure of where we were going.	A	a	X	b	B	GOALS were clear to all. We had a definite sense of direction.
2. PARTICIPATION was lacking. We served our own needs. We watched from outside the group. We were "grinding our own axes."	A	a	X	b	B	PARTICIPATION was present. We were sensitive to the needs of our group. Everyone was "on the inside" participating.
3. AUTHENTICITY was present. We were revealing our honest selves. We were engaged in authentic self revelation.	A	a	X	b	B	AUTHENTICITY was missing. We were wearing masks. We were being phony and acting parts. We were hiding our real selves.
4. LEADERSHIP was dominated by one or more persons.	A	a	X	b	B	LEADERSHIP was shared among the members according to their abilities and insights.
5. COMMUNICATION OF IDEAS was poor, we did not listen. We did not understand. Ideas were ignored.	A	a	X	b	B	COMMUNICATION OF IDEAS was good. We listened and understood one another's ideas. Ideas were vigorously presented and acknowledged.

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A	Strongly Agree With ← A	Slightly Agree With ← a	No Choice X	Slightly Agree With → b	Strongly Agree With → B	B
6. ACCEPTANCE OF PERSONS was an active part of our give-and-take. We received one another, "recognized and respected" the uniqueness of each person.	A	a	X	b	B	ACCEPTANCE OF PERSONS was missing. Persons were rejected, ignored, or criticized.
7. PRODUCTIVITY was high. We were digging hard and were earnestly at work on a specific task. We created and achieved something.	A	a	X	b	B	PRODUCTIVITY was low. We were proud fat, and happy just coasting along. Our meeting was irrelevant; there was no apparent agreement.
8. CLIMATE OF RELATIONSHIP was one of hostility or suspicion or politeness or anxiety or superficiality.	A	a	X	b	B	CLIMATE OF RELATIONSHIP was one of mutual trust in which evidence of respect for one another was apparent. The atmosphere was friendly and relaxed.
9. FREEDOM OF PERSONS was enhanced and encouraged. The creativity and individuality of persons was accepted.	A	a	X	b	B	FREEDOM OF PERSONS was stifled. Conformity was explicitly or implicetly fostered. Persons were not free to express their individuality. They were manipulated.
10. TIME was used wisely. We used the time to do all that we wanted to do or were scheduled to do.	A	a	X	b	B	TIME was wasted. We used the time to do unimportant things.

Additional Comments: _____

APPENDIX II

TOOL AND MATERIALS LIST

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Material

Nails

Sandpaper

Corrugated fasteners

Eye screws

Duco cement

Paper fasteners 2 inch

Pipe cleaners

Plasticine

Straws

Strings

Masking Tape

Copper wire

Batteries

Dowel sticks

White glue

Fish line

Tempera point

Easel brushes

Tri-wall cardboard

Spray plastic coat

Plexiglass

Equipment

2 vises

1 electric jigsaw and blades

2 coping saws and blades

1 hack saw and blades

1 compass saw

2 cross-cut saw

2 screwdriver sets

1 wood chisel

1 electric drill and bits

1 brace and bits

1 block plane

1 soldering iron and wire

1 awl

2 utility knives and blades

1 pliers

1 tin snips

3 10 oz. hammers

2 rubber mallets

1 ball hammer

1 surform

8 "C" clamps, large

2 squares

6 rulers and yardsticks

1 wire stripper, #14 bulbs, switches, sockets

2 plug adapters for drill and saw

VT 014 505
CAREY, E. NIEL
THE CURRENT STATUS OF VOCATIONAL GUIDANCE AND CAREER DEVELOPMENT IN MARYLAND.

MARYLAND STATE DEPT. OF EDUCATION, BALTIMORE.
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IDENTIFIERS - MARYLAND

ABSTRACT - FINDINGS OF A 1968-69 STUDY OF EXISTING GUIDANCE AND CAREER EXPLORATION ACTIVITIES INCLUDED THESE RESULTS: (1) THROUGHOUT THE STATE, 33 PERCENT OF THE SEVENTH GRADE STUDENTS, 50 PERCENT OF THE EIGHTH GRADE STUDENTS, AND 83 PERCENT OF THE NINTH GRADE STUDENTS WERE PROVIDED WITH CAREER INFORMATION, (2) FOURTEEN OF THE SCHOOL SYSTEMS OFFER PLACEMENT SERVICES BUT IN ONLY FIVE OF THESE IS THE SERVICE SUPERVISED AND ORGANIZED BY THE CENTRAL BOARD OF EDUCATION OFFICE, AND (3) NINE SCHOOL SYSTEMS PROVIDE INFORMATION ABOUT THE WORLD OF WORK ON THE FIRST GRADE LEVEL. A 1967-70 STUDY REVEALS THAT ONLY 110 OF THE NEARLY 1000 COUNSELORS, IN MARYLAND COULD BE IDENTIFIED AS VOCATIONAL COUNSELORS, DESPITE THE FACT THAT APPROXIMATELY 40-60 PERCENT OF THE STUDENTS ARE VOCATIONALLY ORIENTED. PROBLEMS TO BE SOLVED IN DEVELOPING AND IMPROVING THE GUIDANCE PROGRAMS INCLUDE: (1) COUNSELOR EDUCATION PROGRAMS DO NOT RELATE AT ALL TO THE PREPARATION OF VOCATIONAL GUIDANCE SPECIALISTS, (2) CURRENT COUNSELOR CERTIFICATION REQUIREMENTS DO NOT MENTION VOCATIONAL GUIDANCE, AND (3) STATE STANDARDS POLICIES DO NOT ADDRESS THEMSELVES TO THE NEED FOR VOCATIONAL GUIDANCE. (JS)

VT 014 505

The Status of Vocational Guidance and Career Development in Maryland

Presented by

E. Niel Carey
Specialist in Vocational Guidance
Maryland State Education Department

To

The Maryland Advisory Council on Vocational-Technical Education

On

February 17, 1971

VT014505

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OFFICE OF EDUCATION
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The Current Status of Vocational Guidance and
Career Development in Maryland
by
E. Niel Carey

I'm not sure but I suspect that the criticism of guidance counselors has replaced the criticisms of the weatherman as the number one verbal sport in America. I am sure that you are as aware as I am of some of the charges, criticisms, and generalizations that have been made about our existing guidance programs, not only in this State, but throughout the nation. During the next several minutes, I will try to give you as clear and accurate a picture as possible of our guidance programs in Maryland, with special reference to my own area of responsibility in vocational guidance. I will indicate to you, in my judgment, some of the factors or constraints with which we must cope if we are to provide the students of the State of Maryland with appropriate vocational guidance services. Finally, I will give you as accurate a picture as I can of our plans and objectives in this area.

First, let me describe our present status in vocational guidance by briefly mentioning how we got here. The concept of vocational guidance really got its start at about the turn of this century under the leadership of several people, including Frank Parsons of Boston, who were interested in helping young people understand and take advantage of some of the opportunities which were being created as our society moved basically from an agricultural-rural to an industrial-urban societal orientation. Vocational guidance programs received further support as our educational programs became more comprehensive and served more people through the development of vocational-technical education. The work of people like Frank Parsons and the vocational education movement in this country in

effect fathered the guidance movement with its emphasis on programs designed to help individuals function more effectively in a free society by helping them realize the range of opportunities that were available to them and by helping them to make decisions about these opportunities.

Because the aims and objectives of vocational education and guidance have often been similar, vocational education has historically supported guidance programs professionally and financially. Vocational education legislation has traditionally contained provisions for guidance services in various forms including the provision for counselor education programs and the provision for state supervision of guidance services which was provided in the legislation of the 1930's.

This pattern of interest in and support for vocational guidance by vocational educators has continued in recent years. Several of the congressional committees and each of the National Vocational Education Advisory Committee reports have mentioned the need and the importance of effective guidance programs in helping students and parents understand the opportunities represented in vocational-technical education programs. At the same time, several of this committees have pointed to the urgent need for improving guidance programs generally if the vocational guidance needs of all students and the guidance needs of vocational education students are to be met.

It is interesting to note that as NDEA-VA, the mainstay of federal guidance support, was being severely cut in administrative budgets, vocational guidance was elevated, for funding purposes, from one of the ancillary services in the 1963 Act to one of the primary program areas for funding in the Vocational Amendments of 1968.

In my opinion, this action on the part of the Congress was no accident. I believe that the Congress has listened carefully to parents, students, and educators, and I believe that they have studied the research of the past several years which has clearly stated that when people talk of guidance services, they are referring primarily to educational and vocational counseling services, and related services which will help students made the transition to further education or to jobs.

The Maryland State Education Department has traditionally provided effective leadership in developing vocational guidance programs. The first State supervisor of guidance, created with the use of vocational education funds, was established in Maryland. Maryland was also one of the first states to establish the position of vocational guidance supervisor as part of a pupil services organization. By the way, I believe that this type of organization has merit because it provides for the unity of an overall guidance and personnel services programs, but at the same time, it provides for the specialized knowledge and leadership which is so important in vocational guidance programs and staff development. I'll talk more specifically about this organization later, when you can see some of the specific benefits as well as some of the problems that arise from this kind of organization.

Now, let me describe the status of vocational guidance programs as they exist in Maryland today.

First, I'll cite specific facts about the status of guidance programs in terms of the overall State staffing and certification picture. These figures came from a study conducted I believe about a year ago, in cooperation with the Division of Research, Evaluation, and Information Systems.

The overall student-counselor ratio in Maryland for the school year 1969-1970 was approximately 390 to 1.

This varied considerably, but generally speaking, the largest number of students were served by fewer counselors in some of the Eastern Shore, Western Maryland and Southern Maryland counties. In one of the Maryland counties, one counselor will serve as many as 800 students at the high school level. Incidentally, in these three sections of the State, we also find the highest percentages of uncertified counselors. In several of the Eastern Shore counties, more than fifty percent of the counselors are uncertified. Organized courses designed to train counselors are also practically non-existent for at least two of these three areas, the Eastern Shore and Western Maryland. At the other end of the range of services, Baltimore City has provided a career development center in each of the senior high schools. In these centers, a vocational counselor, a placement coordinator and a work-study coordinator work as a team, cooperating with the guidance department, the school faculty, and the community and provide a coordinated program of services to youngsters who are vocationally oriented.

By the way, even with such a sophisticated organization and with the kind of commitment that this program has had from the total community, the director of guidance in Baltimore City has found it extremely difficult to obtain appropriate course work from institutions of higher education in up-grading and maintaining the skills of his professionals who work in the vocational guidance and career development area.

During the school year, 1968-1969, I conducted a study of the then existing guidance and career exploration activities in the State in cooperation with the Division of Research, Evaluation, and Information Services.

Copies of that study are available, but some of the findings may be of interest to you.

Number 1. Throughout the State, 33% of the Seventh grade students, 50% of the eighth grade students, and 83% of the ninth grade students were provided with career information. Two school systems said that they presented no career information at all to secondary students.

Number 2. Fourteen of the school systems offer placement services to students, but in only five of these is the service supervised and organized by the central board of education office.

Number 3. Nine school systems provide information about the world of work in the first grade. However, eight school systems give this topic no special attention in any of the elementary grades.

Number 4. Elementary guidance personnel were infrequently involved in introducing concepts of the world of work to students.

Number 5. At the elementary level, information about careers in the world of work is most often incorporated into reading or social studies units, but only four counties provide written guides for this information and its management. Incidentally, this study will be repeated this June, if present plans materialize.

During the school year, 1969 to 1970, I asked the county directors of guidance to give me a count of the counselors in their local education agency who were primarily identified as vocational counselors or who were specifically named as being responsible for vocational guidance in the county. I also asked them to give me an indication of the supervision efforts that are directed toward vocational guidance. The results of that survey appear below.

	Counselors		Supervisors	
	Part Time	Full Time	Part Time	Full Time
Allegany		1	1	
Anne Arundel		2		
Baltimore City		53*		1
Baltimore County	125	15		1
Calvert				
Caroline				
Carroll				
Cecil		1		
Charles		1		
Dorchester	1			
Frederick		1	1	
Garrett		1		
Harford	22	1		
Howard	4	1	1	
Kent		1	1	
Montgomery		6	1	
Prince George's				
Queen Anne		1		
St. Mary's	6	1	1	
Somerset	1			
Talbot		1		
Washington	15	1		
Wicomico		1		
Worcester	1		1	

* Includes Work-Study and Placement Coordinators

Notice that of the nearly 1,000 counselors in the State of Maryland only about 110 are identified as vocational counselors or have specific responsibilities for providing vocational guidance services, despite the fact that approximately 40 to 60% of our students are vocationally oriented. Their immediate objective after leaving high school is to secure employment. You will also notice I am sure the lack of supervision that we have in the area of vocational guidance.

Finally, I would like to quote from a study of guidance services done in Montgomery County by the county region of students governments and quoted in that county's guidance newsletter recently.

Keep in mind that this county operates with a student counselor ratio of about 350 to 1. Keep in mind also that 83% of the students who were surveyed expected to go to college. The results of this study are as follows:

1. 71% of the students said that they had had from two to more than five conferences with their counselor during the school year.

2. 71% of the students tried to see their counselor.

3. 59% of the students indicated that they had had from two to five meetings with their counselor during the previous year.

4. In answer to the question: For the last conference you requested with your counselor, how long did it take before you got to see him? 40% said within 24 hours, 65% answered in less than a week.

5. When asked, "How helpful do you think your school counselor would be if you went to him with the following problems?"

Planning for future education - 77%

Planning for future vocational training - 66%

Helping getting a job - 51%

6. How would you rate your counselor in the following areas:
Knowledge of aptitude and achievement tests - 70% Good to Excellent.
Knowledge of college admissions requirements - 69% Good to Excellent.
Knowledge of vocational opportunities - 55% Good to Excellent.

I will make no comment on the overall guidance program in Montgomery County based on this student-conducted survey. However, I would draw attention to the fact that 17% of the students whose immediate goal is career-oriented, apparently, in the eyes of the students themselves are receiving second rate services in this county. This is especially discouraging, when we consider the fact that this county probably spends more money per student on overall guidance services than any other county in the state.

I think you have been able to see from the statistics that I have quoted some of the problems with which we must cope if we are to develop programs which include the kinds of vocational guidance services that are in demand by students, parents, and the community. Let me be more specific, though, in enumerating some of the problem areas, as I see them.

Number 1. Most of the counties have not, until this time, followed the lead and the example set by the Maryland State Department of Education in identifying people at both the county and school level who are responsible for the vocational guidance function. Nor in many cases has there been provision for the coordinated planning process between guidance and vocational education which exists at the State level.

Number 2. Counselor education programs do not relate at all to the preparation of all counselors to perform vocational guidance functions, nor do they relate at all to the preparation of vocational guidance specialists. This is especially apparent in a lack of course work, in a lack of qualified personnel, in a lack of organized programs, and in a lack of services to parts of the state where these services are needed. However, this problem is not unique to Maryland. I recently received a copy of a law passed last year by the Florida legislature, which not only condemns the counselor education programs in that state, but makes specific provision for local school systems and the State Education Department to work cooperatively in training up to half the counselors in each of the school districts. I hope Dr. Hoyt will be here this afternoon so that he can talk more specifically about counselor education programs.

Number 3. Despite the fact that approximately half our students are vocationally-oriented, and despite the fact that students and parents have consistently said that vocational guidance services are among the most important of the services that they seek from counselors, the current counselor certification requirements in Maryland do not mention vocational guidance or counseling at all, nor is any mention made or provision made to certify specialists in vocational guidance.

A problem related to this, is the failure of the State to take a stand on the training, preparation, or certification of para-professionals. Our deficiency of vocational guidance services could be alleviated greatly by providing for the certification of vocational guidance specialists and by some kind of provision to provide payment of local education agencies for para-professionals.

Number 4. I believe that our State Standards Policies need to address themselves more specifically to the vocational guidance elements of effective guidance or pupil services programs. These policies will need to be more specific in terms of the services which should be provided, the personnel by whom they shall be provided, and in the manner in which they shall be planned and evaluated.

Problems, though, can often be overcome by resources, commitment, and enthusiasm. I have been increasingly impressed in this State with the enthusiasm that exists for correcting, not only some of the weaknesses that exist in vocational guidance, but in bringing about some of the necessary changes in education by considering the concept of career development and its implications for education. Let me first define the term career development and then talk about some of these things we have been able to achieve and hope to achieve in the future through the implementation of this concept.

In defining career development, we should first consider the term "career" which no longer means the life-long commitment to a single job. "Career" today refers to a life-long series of jobs, coupled with a life-long commitment to education and training which will be necessary in an increasingly complex and technological society. There must also be increased attention to creative leisure as another means of providing some of the human needs which our work may not fulfill.

We also need to consider the second part of the term "development." Through a knowledge of human development, we realize at least three things.

First, that career development is an important part of the overall human development process.

Second, that development occurs in rather distinct stages.

Third, that development can be facilitated through a planned systematic program.

There is general agreement that programs designed to facilitate career development should probably achieve at least four objectives:

1. To help individuals develop a positive self-concept and a greater degree of self-understanding.
2. To help students learn about and understand the range of educational and career opportunities presently available and that are likely to be available in the future.
3. To help students develop and use the decision making process more effectively.
4. To help individuals make smoother transitions at key points during their career-life such as the transition from school to further training or to work.

As you look at these four objectives, I believe you can immediately see the implications for education at all levels and for all people:

First, the kinds of contributions that different people can make to these objectives are obvious:

Teachers, counselors, administrators, community organizations and institutions, and students themselves might make valuable contributions in achieving each of the four objectives.

Second, these objectives have a unifying effect on much of what we do in education. For example, the general educator and the vocational educator can work together very comfortably in establishing these objectives. The school counselor and the subject matter teacher can find many reasons for cooperation. Business and industry can cooperate with educators and community action organizations to accomplish a greater degree of achievement of these objectives.

Third, these objectives have great potential for bringing about the attitudinal changes in students, parents and in our very society regarding the preparation for work, workers, and the very nature of work itself. Several influential groups have pointed to the need for these changes in attitude which must come about before we can support large scale changes in our educational system. The importance of the concept of career development and its implications for education in Maryland were first identified in the 1969 Operational Plan of the Division of Vocational-Technical Education. In the plan, it was suggested that the Division of Vocational-Technical Education should provide the leadership in establishing an Interdivisional Task Force which would study the concept of career development in order to determine if it is applicable to educational programs in the State.

This Interdivisional Task Force was set up with representation that included these major educational divisions: Instruction, Vocational-Technical Education, Library Sciences, Instructional Television, and Compensatory, Urban, and Supplementary Education. After several months of study and work, the Task Force Recommended that the Directors' Council of the Maryland State Department of Education support the concept of career development (K-Adult) by continuing their representation on the Task Force, that they seek ways to implement the concept of career development and its objectives through the work of their own divisions, and that they contribute financial support for the operation of the Interdivisional Task Force on Career Development.

The first major source of funds for the implementation of the concept of career development in Maryland was secured after Mr. James Reid suggested that the Interdivisional Task Force should submit a proposal to the U.S. Commissioner of Education for funding of a state wide career development project under the provisions of the exemplary programs section of the Vocational Education Amendments of 1968. A proposal was drafted, approved by the Maryland State Board of Education, and funded by the U.S. Office of Education. The Chairman of the Interdivisional Task Force on Career Development was named Project Director of the Maryland Career Development Project (K-Adult). This project is included as attachment 1. A list of other vocational guidance or career development activities is included as attachment 2. Incidentally, several of these activities would not have been possible without the whole-hearted cooperation and assistance of many of the members of this Vocational-Technical Advisory Council. For example, Donn Aiken, Director of the State Employment Service, has provided outstanding assistance with our Industry Visitation Workshop,

and he has promised his cooperation in incorporating his job bank data with our computerized information system for students; Sidney Chernak and Larry Miller provided extraordinary leadership in developing our State apprenticeship notebook; John Paul and the Chamber of Commerce helped us develop the Career Opportunities handbook; Jim Nelson, Director of the Wye Institute cooperated with us in funding a regional career development program for the Eastern Shore; and Harts Brown has given a great deal of his time and counsel. Many of you have given your support and attention to these activities.

Finally, there are four major recommendations that I would make which would be extremely helpful in enabling us to move ahead in this critical area of vocational guidance and career development:

First, I would recommend that every student in the State of Maryland have access to the kinds of services that are provided by the Career Development Centers which have been established in Baltimore City. As I mentioned earlier, these centers are staffed with skilled and interested personnel, they conduct a specific program of career development activities, and they provide coordination for the services of educators, students, and community resources. In addition they are backed up by leaders and specialists at the central office. These resource centers could become especially important as we consider the implications of the concept of career development at the elementary, middle-school, and early junior high school years. They should be established with appropriate program guidelines from the Maryland State Education Department. In many instances, they could be housed in existing vocational-technical schools, backed-up with some of the available services such as audio-visual and printed material production facilities. They should be staffed by a team which would include para-professionals, counselors and specialists.

Second, an evaluation needs to be made of the existing counselor certification requirements to see if they are meeting the needs of all students, especially vocationally-oriented students and all students who need vocational guidance services. I hope that this Council could provide valuable assistance in such a study.

Third, the counselor education programs could benefit from an in-depth study from the standpoint of courses and programs available in various parts of the State, the relationship of existing course offerings to real educational and career needs of people in the State, and the process of planning and evaluating this is used in setting up and determining the effectiveness of existing programs.

Fourth, there has been some mention of the possibility of drawing attention to some of the concerns and plans that have been mentioned here today through a State Conference on Vocational Guidance and Career Development. The U.S. Office of Education sponsored a national conference on Vocational Guidance a little over a year ago and suggested follow up State conferences. The Governors of four states have convened such conferences. I would like to suggest a similar conference for this State.

I appreciate your inviting me here today. I hope that what I have said here has added to your understanding of one of the important aspects of our educational programs in Maryland.

Attachment 1

THE MARYLAND CAREER DEVELOPMENT PROJECT (K-Adult)

An Overview

The concept of the Maryland Career Development Project originated with the Maryland State Department of Education's Interdivisional Task Force on Career Development. The formation of this task force was suggested by the Division of Vocational-Technical Education's operational plan and was approved by the Director's Council of the Bureau of Educational Programs in December, 1968.

The Maryland Career Development Project provides for several programs or activities of an exemplary nature which are designed to facilitate the progress of career development. The programs and activities of the project are designed to accomplish or demonstrate one or more of the following objectives:

1. To help individuals develop a positive self-concept and a greater degree of self-understanding.

2. To help students learn about and understand the range of educational and career opportunities now available and that are likely to be available in the future.

3. To help students develop and use the decision-making process more effectively.

4. To help individuals make smoother transitions at key points during their career-life, such as the transition from school to further training or to work.

The Maryland Career Development Project will:

A. Provide a resource person in career development to work with the teachers and counselors in five elementary schools in Baltimore City and devise procedures, programs and materials which will:

   (1) Help youngsters learn more about themselves and see themselves positively.

   (2) Help youngsters learn more about the world of work and to relate this knowledge to their work in school.

B. Develop a workshop for teams of junior high school counselors, industrial arts teachers, and home economics teachers in which they can learn about the concept of career development, and work together in planning career exploration programs for their own school.

C. Develop a comprehensive computerized information system which will include information about employment, further education, and training opportunities. This system should strengthen the existing placement process, thereby enabling students to make a smoother transition from school to the world of work or to further education or training.

D. Develop an evening or summer program which will provide skill training and placement activities for high school students or dropouts who have not had the advantage of participating in vocational education programs.

E. Produce a television series which can be used throughout the State for career exploration purposes.

F. Develop a State career development resource notebook for educators.

G. Conduct a state wide conference devoted to career development, objectives, and programs.

The Maryland Career Development Project was approved by the Maryland State Board of Education in March, 1970 for submission to the U.S. Office of Education. The Project was approved for funding by Contract No. OEC-0-70-5186 (361) under the provisions of Part D (Exemplary Programs) of the Vocational Education Amendments of 1968.

James A. Sensenbaugh, State Superintendent of Schools

James L. Reid, Assistant State Superintendent for Vocational-Technical Education

E. Niel Carey, Project Director
Maryland State Department of Education
301 W. Preston Street
Baltimore, Maryland 21201

December 31, 1970

Attachment 2

CAREER DEVELOPMENT ACTIVITIES IN MARYLAND

(The following list of activities are operating or soon will be operating as of January, 1971).

NOTE:

1. The following Career Development Objectives are referred to by number in the list:

   I. To help individuals develop a positive self-concept and a greater degree of self-understanding.

   II. To help students learn about and understand the range of educational and career opportunities now available and that are likely to be available in the future.

   III. To help students develop and use the decision-making process more effectively.

   IV. To help individuals made smoother transitions at key points during their career-life, such as the transition from school to further training or to work.

2. The funding source key is:

   F - Federal
   S - State
   L - Local
   P - Private

3. An asterisk (*) indicates a component of the Maryland Career Development Project.

CAREER DEVELOPMENT ACTIVITIES IN MARYLAND

ELEMENTARY

FUNDING SOURCE	FOCUSED ON WHICH C.D. OBJECTIVE:	
S	ALL	1. Staff Specialist in pre-vocational education and career development added to Maryland State Education Department staff.
F,S,L	I,II,III	*2. Career Development Resource Teacher - Baltimore City
F,S,P	I,II,III	*3. Educational Television series

CAREER DEVELOPMENT ACTIVITIES IN MARYLAND

SECONDARY LEVEL

Funding Source	Focused On Which C.D. Objectives:	
S	All	1. Staff specialist in career development added to Maryland State Department of Education staff.
L	All	2. Career development center (staffed by vocational counselor, placement coordinator and work-study coordinator) in each high school. Baltimore City.
F.S.L.P.	I,III,IV	3. Computerized information system (Eastern Shore, Western Maryland, Anne Arundel County) Pilot Programs. *Computerized information system incorporating job bank data. Baltimore City.
F.S.L.	All	*4. Career exploration plans workshop (co-sponsored by Industrial Vocational Education Department, University of Maryland).
S.P.	All	5. Industry visitation and career development workshop (co-sponsored by Maryland State Department of Education, Industrial Education Department of the University of Maryland, State Employment Service and Chamber of Commerce).
S.L.P.	II	6. Career opportunities notebook (Baltimore Metropolitan Area),
S.L.P.	II	7. State apprenticeship notebook
S.P.	IV	8. Symposium-workshop "Smoothing the transition from school to work".
F.S.L.P.	All	*9. Skill training and placement program. (Baltimore City).
S.L.P.	II,IV	10. Vocational education-industry exchange program. (Baltimore city).

CAREER DEVELOPMENT ACTIVITIES IN MARYLAND

POST-SECONDARY

FUNDING SOURCE	FOCUSED ON WHICH C.D. OBJECTIVES	
S	II,III,IV	1. Specialty-Oriented Student Research Program
F,S	ALL	2. Comprehensive Career Development Center and Outreach Service (Harford Junior College)
F,S	II	3. 9,000 individualized responses to "25 Careers" campaign

CAREER DEVELOPMENT ACTIVITIES IN MARYLAND

(As of January, 1970)

K-ADULT

Funding Source	Focused On Which C.D. Objectives	
S	All	1. Statewide Conference "Career Development: A Total School Responsibility".
S.L.	All	2. Career Development Plans Completed Or In Planning State - Five Counties.
F.S.L.	All	*3. Maryland Career Development Resource Notebook (In Production).
F.S.P.	All	4. Career Development Coordinator - Eastern Shore
F.S.	All	Career Development Coordinator - Western Maryland
F.S.	All	5. Two Positions, Funded By SDE, Established In CAPS Department Of The University Of Maryland (To Strengthen Vocational Guidance).
S.L.	All	6. Workshops On Career Development And Its Facilitation, One Or More Weeks. (4)
S.L.	All	7. Staff Development Or Inservice Programs Of At Least Three-Half Day Sessions. (4)
F.S.L.	All	8. Staff Development For Occupational Awareness - Year Long Program In Three Appalachian Maryland Counties
S.L.	All	9. Statewide Study of Occupational Information And Career Development Practices.

VT 014 536
APPRENTICE TRAINING METHODS.

AUSTRALIAN DEPT. OF LABOUR AND NATIONAL SERVICE, PERTH.
MF AVAILABLE IN VT-ERIC SET.
DEPARTMENT OF LABOUR AND NATIONAL SERVICE, 125 SWANSTON STREET, MELBOURNE, VICTORIA 3000 ($.25)
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ABSTRACT - APPRENTICES IN AUSTRALIA ACQUIRE THEIR SKILLS THROUGH A COMBINATION OF PRACTICAL SKILL TRAINING IN EMPLOYMENT AND RELATED EDUCATION IN TECHNICAL SCHOOLS OR COLLEGES. WHATEVER THE METHODS OF PRACTICAL TRAINING ADOPTED BY EMPLOYERS, THE APPRENTICE NEEDS TO BECOME PROFICIENT IN THE RANGE OF BASIC SKILLS APPROPRIATE TO HIS TRADE AND SUBSEQUENTLY CONSOLIDATE AND EXTEND THESE SKILLS BY PRACTICE AND EXPERIENCE IN THEIR APPLICATION. THE FIRST ARTICLE IN THIS BOOKLET REVIEWS BRIEFLY SOME OF THE MAIN METHODS OF PROVIDING PRACTICAL SKILL TRAINING IN AUSTRALIA AND OVERSEAS. SUBSEQUENT ARTICLES DESCRIBE HOW TWO MAJOR AUSTRALIAN ORGANIZATIONS HAVE DEVELOPED METHODS OF IN-PLANT TRAINING FOR APPRENTICES. RELATED DOCUMENTS ARE AVAILABLE IN THIS ISSUE AS VT 014 537-VT 014 539. (AUTHOR)

VT 014 536

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APPRENTICE TRAINING METHODS

Department of Labour and National Service

1971

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PREFACE

Apprentices in Australia acquire their skills through a combination of practical skill training in employment and related education in technical schools or colleges. Whatever the methods of practical training adopted by employers, the apprentice needs to become proficient in the range of basic skills appropriate to his trade and subsequently consolidate and extend these skills by practice and experience in their application.

The first article in this booklet reviews briefly some of the main methods of providing practical skill training in Australia and overseas. Subsequent articles describe how two major Australian organisations have developed methods of in-plant training for apprentices.

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Methods of Teaching Trade Skills — A Review of Recent Literature

D. HARDIE

Industrial Services Branch
Department of Labour and National Service

Apprenticeship is as much a social tradition as a means of industrial training. Changes in its structure and in its methods of teaching are therefore not easily achieved. While it has been modified by economic and social pressures in the last hundred years, it remains perhaps the most widely practised method of training for skill.[1] In Australia, as in other countries, most authorities appear to believe that the tradition of trade training by apprenticeship ought to be preserved.[1,2]

The traditional notion of the way in which an apprentice acquires or should acquire his practical skills springs from his historical image as the diligent student, assistant and ward of a master craftsman.[3] Under these conditions the apprentice is seen to learn his skills by observation, careful coaching, guided practice and moral persuasion at a pace which is tempered by the type and variety of contracts gained by his master. This type of training has as its modern counterpart the kind of internship and student teaching practices typical of the medical and similar professions. As one authority puts it: "In these circumstances the master tended to look upon his apprentice as himself when young and this sympathy of purpose strengthened the link between the two. Supervision was close and real and teaching was direct."[3] This concept remains at the heart of most apprenticeship systems notwithstanding the changes in the nature of the relationship between master and pupil which have resulted from changes in the structure and technical processes of industry.

Side by side with the teaching of trade skills on the job, there have developed in the last fifty years, systems of related technical education which aim to provide the apprentice with training and instruction in the theoretical principles allied to his trade.[1]

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These two elements in an apprentice's training, which for convenience may be called "practical training" and "related education" have been defined as follows. Practical training involves:

> "Learning each separate skill found in the occupation and acquiring practice and experience on the job until the skills can be applied efficiently and without constant and close supervision in a wide variety of circumstances."

By contrast, related (or theory) education is:

> "Gaining technical knowledge which is regarded as complementary to those skills and acquiring ability to use this knowledge in conjunction with them."[4]

Although in some countries it is possible for trade status to be achieved by attendance at full-time training institutions in which both aspects of craft training are provided, in most there is a division of responsibilities.[5] Government technical schools usually have the responsibility to provide theoretical instruction. Their methods of teaching are the traditional methods of education. The responsibility for practical training, however, remains with the employer and methods of teaching are left to the individual employer to determine. Technical schools in such systems see their involvement with practical training as a concern with the practical exercises necessary to the understanding of the relevant theory, and with supplementing in industry practical training where it falls short of acceptable standards because of limitations in the employer's scope of work.[6]

BASIC TRADE SKILLS

In nearly all European countries, in all trades[1], there is a pattern of traditional tasks and operations in which a tradesman is expected to be proficient. Metal trades apprentices, for example, have to show they can handle a file, mark pieces precisely for machining and carry out basic machining jobs.

The recognition of such a pattern of basic skills in each trade has led to the development of what has been called a "two-phase concept of training". According to this view the trainee, at the beginning of his apprenticeship, should pass through a phase of training during which he masters the full range of basic skills appropriate to the trade. For the remainder of his apprenticeship he is regarded as undergoing a phase of planned experience or "formative training".[1] The purpose of this phase is stated to be to give him well rounded experience and the opportunity to apply the basic skills he has learned to a whole range of production tasks.[4] He is also expected during this phase to learn to work at optimum speed, develop the stamina to perform a full day's work at production pace and become conversant with the standards of workmanship expected of a qualified craftsman.

PRACTICAL TRAINING ON THE JOB

Although courses in Trade Practice are common in trade schools it is true that the majority of apprentices receive by far the greater part of their practical training on the job[1], learning by experience.

As Grabe[1] puts it, 'much has been said, and much written today to decry such (unorganised) on-the-job training for being amateur (Jane learned from Nellie and Nellie never knew), pedagogically unsound, a means of increasing profits at the expense of youth used as cheap labour, etc. There can be no doubt, however, that some of the finest craftsmen have been trained exclusively on the job."

The views of the critics of such training have been well summed up by Wellens:

> "Not all craftsmen are good teachers; not all have the goodwill to give freely of their knowledge. Within the old system a boy is likely to pick up a man's mistakes and his outdated methods and ideas. The practice is too haphazard: the boy learns the more unusual aspects of the job only if his skilled artisan 'teacher' is called upon to do a job involving that unusual skill . . ."[3]

But, as others have pointed out, the system is not without it merits, because apprentices learn on real work:

> "The fact that the major part of the time used in training an apprentice is devoted to work of a practical nature, mostly on current production, constitutes both an advantage and a disadvantage.
>
> "From an educational point of view learning is often more efficient when the exercises constitute realistic pieces of work . . . Modern production on the other hand is often so organised that there is not room enough for an apprentice. The machines and materials are too expensive to be used by beginners in their first necessarily awkward attempts. Skilled workers and foremen have little time to spare for instructing and guiding an apprentice . . . The splitting of jobs into specialised operations, mechanised on an increasing scale, makes it difficult to assign work of real educational value to apprentices without breaking the organisation and rhythm of production."[7]

Recognising the need to deal with these kinds of deficiencies, both governments and industries have taken action of two major kinds.[1,5] On the one hand there has been a development of systems in which trade skills are taught at technical schools or training centres; on the other, attempts are being made in some countries to improve the quality of training in basic skills on the job by devising uniform methods of instruction and standardised instructional materials which are disseminated within a particular industry.

PRACTICAL TRAINING IN APPRENTICE SCHOOLS

Those advocating removal of skill training from the job claim that skills can be taught more systematically and efficiently, by better teachers, and at a more suitable pace in a training school. As one firm has put it: "The teaching of beginners calls for a degree of planning and attention to detail that is not always possible in a department serving production."[8]

This removal has been achieved by the development of centralised government training institutes, by the introduction of skill training in periods of "block release" in technical schools, or by the development of apprentice schools within the larger industrial undertakings.[1,5]

In Britain the Government Training Centres have instituted special programmes of initial "block release" instruction in the basic elements of various skilled trades.[9] In some other countries, for example France and Czechoslovakia, theory and practical training are given in full-time schools with no supplementary on-the-job training.[1] In the United States, school systems of various kinds exist side by side with on-the-job training systems.[10]

In Australia, in most States, apprentices in some trades* who have advanced educational qualifications, may attend, early in their apprenticeship term, a concentrated training course conducted full-time for a period of twenty weeks at a technical school.[11]

Although, in general, only the larger industrial concerns are able to establish their own schools, some undertakings have grouped together to establish centralised apprentice schools for basic skill training.[12]

Where school-based systems are employed either for training in basic skills or as an alternative to on-the-job training, detailed syllabus planning is possible, and in general, a progression of assignments is planned to develop the basic skills.[13] In the more advanced schools the methods of training are usually similar to those enunciated by Carrard[14,15] in the 1930s. These are characterised by:

- Repeated exercises (graded according to an analysis of the various elements of difficulty) leading to the acquisition of habits or automatisms.
- Auto-verification (checking one's own progress) by means of useful and productive jobs.

In these schools, it is usual for instructors to be chosen for their ability to teach and to undertake a period of training in methods of instruction.[5,16]

The United States appears to have tackled the syllabus problem effectively. The quality of the syllabuses over a wide range of trades is claimed to be very high.[3] According to Williams[11], the best of the schools in that country are set up

* As provided in Federal metal, electrical, vehicle industry, and aircraft industry awards.

on a highly systematic basis, and industry is looking more and more to educational institutions to provide the necessary basic trade skills.

Two trends are clearly evident in recent overseas and Australian developments in school-based training. One is towards provision of initial basic skill training in a technical school (as under the shortened apprenticeship scheme in Australia), or in a training centre in an undertaking, or a centre set up to serve a group of undertakings. The other is towards correction of an earlier tendency to provide complete trade training in a trade school or institute. To quote Grabe[1]: "Experience gained in school-based systems of training has generally tempered the enthusiasm for giving full course training up to journeyman level in vocational schools. Reforms introduced in the past few years have generally been directed towards establishing a proper balance between the need for a systematic build-up of learning on the one hand and, on the other, the necessity for apprentices to learn the standards of work required on the job."

IMPROVING ON-THE-JOB TRAINING IN BASIC SKILLS

Efforts to improve the standard of training in basic skills by means other than training in central schools have also been made in a number of countries. Notable among these are those of the Netherlands Joint Industrial Foundations (of which Bemetel is a good example) and the Swedish Metal Trades Employers' Federation.

In the Netherlands, responsibility for the practical training of tradesmen is vested in the Joint Industrial Foundations. Bemetel (the Joint Foundation for the Metal and Electrical Industries) employs a corps of supervisors or technical inspectors to check and advise on the quality and type of practical training given by employers on the job to ensure that it meets the standards set by the Foundation.[17] A similar approach is taken in other industries in the Netherlands. (The Building Foundation, for example, employs more than 40 inspectors.)[5]

From the point of view of teaching method perhaps the most interesting feature of the Bemetel scheme is the way in which the Carrard method has been adapted to training on the job. Sets of standard graded exercises have been prepared, each with its own set of drawings and detailed instructions. Each series proceeds from exercises of a rudimentary kind to quite complex tests of skill in a particular aspect of the trade, e.g. bench fitting, (See Fig. 1.) The exercises are selected and graded in such a way that, as the series is undertaken, further skills and combinations of skills must be developed. In the U.S.S.R. a similar method is being used to teach plastering.[19]

The Bemetel series of exercises is made available to firms complete with marking sheets which lay down very precise quality standards to be achieved. It is possible for an apprentice, by working through the exercises in his own firm, to master the full range of basic skills of the trade under the supervision of his

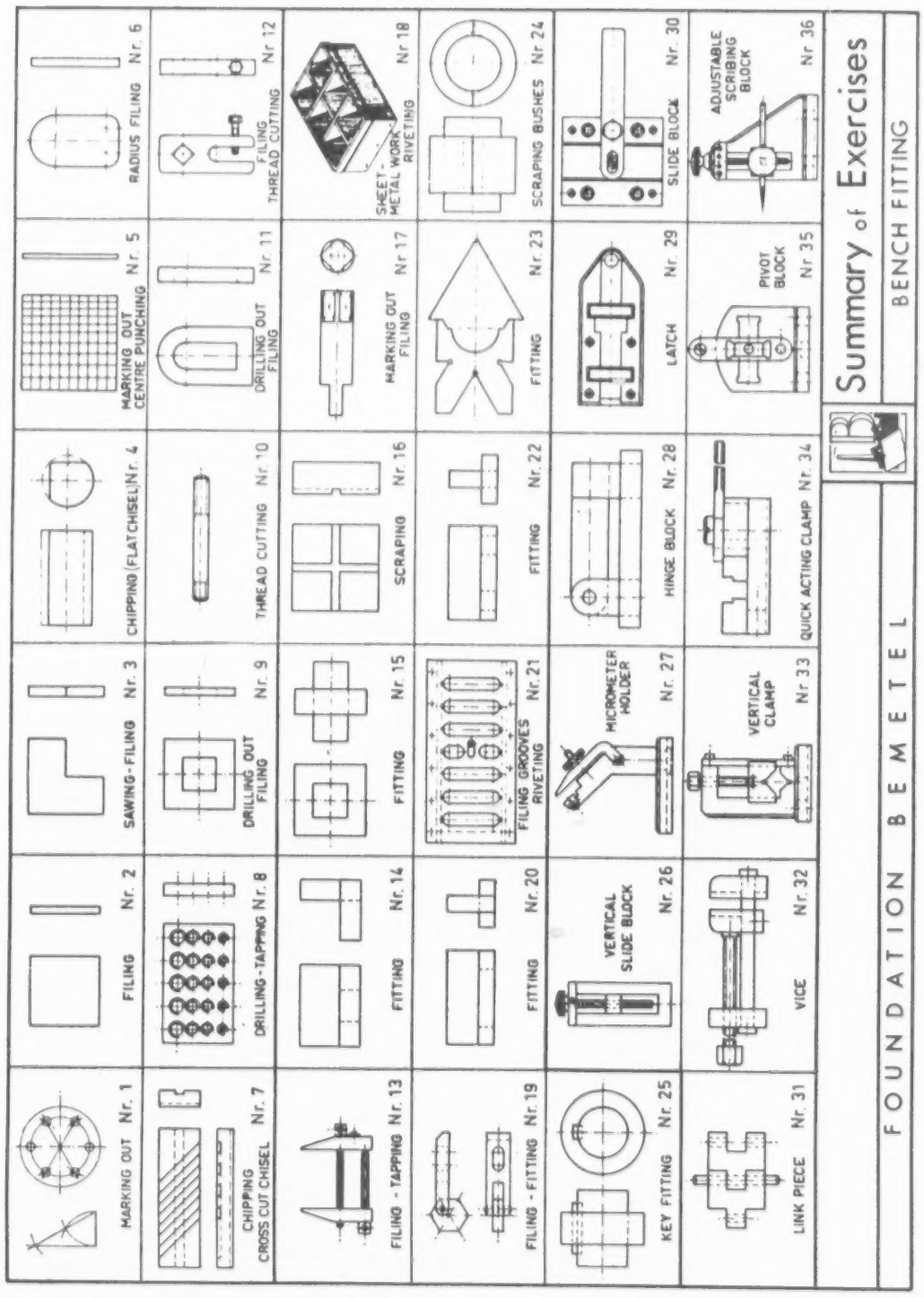

Fig. 1: Example of a series of graded exercises (Bemetel, Holland).

foreman or other skilled workers. He is also required to undertake a final examination and test piece set and marked by the Foundation. The training is not confined to an initial period but extends throughout the whole period of apprenticeship.

The approach of the Swedish Metal Trades Employers' Association has been somewhat different.[19] Recognising, as Seymour has, that job analysis is the basis of efficient skill training, the Federation has set about preparing standard job instruction sheets. (See Fig. 2.)* Sheets are available for benchwork measuring, drilling, shaping, etc., and the list is being extended "daily". The Federation claims that in breaking each job into its basic elements and issuing the sheets it is providing a "simple programmed instruction" service which will enable the teacher of practical skills to build, by suitable selection, a programme for the practical training needed. As in Holland, such training may extend throughout the apprenticeship. The Federation has also recently introduced standard instructions in tape-recorded form which it claims are producing excellent results.

COMPARATIVE STUDIES OF TRAINING METHODS

Studies which compare the relative effectiveness of methods of practical training are rare.[20] In general, published material describing new training methods or advocating particular training arrangements are concerned more often with persuasion by logic than with the demonstration of results. In any case as one writer has said of training in general: "Historically, except for ratings and other gross measures, relatively little attention has been paid to the problem of how well a man can perform the actual task for which he has been trained . . . Put another way the amount of such measurement research to the amount of training is relatively small."[21]

Grabe[1] quotes a study of the results of practical examinations in Austria which showed that apprentices who had their basic training in training schools or centres scored 16 per cent higher than apprentices trained on the job. He cites similar conclusions reached in France and in the Netherlands.

Merenda[22] reports a large-scale study in the U.S. Navy which showed very significant differences between the examination results achieved by apprentices who had the whole of their training in schools and those of job-trained apprentices. Once again the advantage was with the former group. However, the nature of the examinations is not indicated.

It is clearly impossible to draw any firm conclusions from these limited data, particularly as Grabe himself points out that there were probably differences in the abilities of the groups compared in the studies he has mentioned.

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* English translation reproduced by permission of the British Association of Commercial and Industrial Education.

BACIE	OPERATING THE SHAPING MACHINE	Instruction Sheet SHAPING 2	
		Nov. 1964	Issue 1

Order of Instructions

1 Demonstrate the more important parts of the shaper
2 Start and stop the shaper
3 Change speed (number of strokes per minute)
4 Set up stroke length
5 Demonstrate the feed mechanism
6 Demonstrate raising and lowering the table

1 Demonstrate the more important parts of the shaper

Let the pupils learn the names of the following parts and something of the functions of each

a Tool slide
b Frame
c Rocking arm
d Toolbox
e Tool holder
f Clapper box
g The table
h Feed mechanism

2 Start and stop the shaper

Describe and show the effect of the switch and starting lever

— the operator must be able to stop the machine quickly by pressing the "off" button or by placing the starting lever in neutral position

3 Change speed (number of strokes per minute)

Show the different positions of the gear levers

— change gears when the machine is standing still

— move the machine by hand if the levers do not go in position

4 Set up stroke length

Describe and demonstrate setting up stroke length

Describe and demonstrate shifting the tool slide in relation to the work piece

5 Demonstrate the feed mechanism

Describe and demonstrate the feed mechanism of the table and support

Observe that feeding takes place during the return stroke

Show and explain that the tool holder is articulated, which causes the tool to be lifted during the return stroke

Demonstrate how the feed can be reversed

6 Demonstrate raising and lowering the table

Describe and demonstrate how the table is adjusted

Let the pupils practice
Ask questions and let the pupils show that they have correctly understood the instruction

Fig. 2: Example of Job Instruction Sheet (Swedish Metal Trades Employers' Association).

There remains, of course, the question whether acceptable techniques exist for the evaluation of trade skills as a first step in comparing the results of training by different methods. That they do, is suggested by the emergence of the annual International Apprentice Competitions, in which apprentices from many trades (26 in 1966) complete specimen work tasks which are evaluated by an international jury of experts. In 1965, eleven European nations and Japan competed. Gold, silver and bronze medals are awarded to those apprentices judged first, second and third in each trade. The very existence of this event demonstrates, of course, that there are a number of basic trades which have come to be so similar in the various countries that international competition is possible. Evaluating entries is claimed to be a relatively simple task. The specimens produced by the participants "can all be measured exactly; dimensions and fit are non-controversial standards."[23]

It seems highly probable therefore, that the means exist for making valid comparisons between different methods of training apprentices by using test pieces as the criteria, perhaps on a graded scale of the kind developed by Bemetel. It has been claimed that the use of such measures would provide a basis for considerable improvement in training efficiency.[21]

ANALYSIS OF SKILLS AND TRADE TRAINING

In the United States and Britain in recent years there has been a considerable amount of research into the nature of industrial and other complex skills, and of the learning process.

Analytical Training

The work of W. D. Seymour and others has led to the development of new training methods based on the view that more efficient training for skilled performance requires a deeper analysis of the skills to be taught than has hitherto been undertaken.[24,25]

He divides industrial tasks into six classes which, incidentally, include types of work normally performed by various trade workers:

- Handwork without tools, e.g. hand packaging, hand assembly.
- Handwork with tools, e.g. filing, panel beating, hand sawing.
- Single-purpose machine work, e.g. coil winding.
- Multi-purpose machine work, e.g. lathework, sewing machine work.
- Group machine work, e.g. automatic lathework, weaving.
- Non-repetitive work, e.g. machine setting, fault diagnosis.

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The particular skills within each class vary in kind; some, like filing or hand sawing, are primarily manual; others are more intellectual, such as fault diagnosis; still others, like machine setting, make demands on visual and other perceptual abilities. The work of Seymour and a number of other researchers indicates that considerable improvements in training may be expected if each of the skills to be taught is carefully analysed to determine its physical and psychological components and the training approach is based on this analysis.

The method of training derived from this process, commonly known as Analytical Training, has been applied with considerable success in training semi-skilled operators. A number of writers[24,26,27] take the view that it is appropriate to semi-skilled and practical trade training alike. Seymour reports that it is in widespread use in trade training centres in Europe.[24]

Programmed Instruction

Programmed instruction has been used for teaching apprentices to operate a shaping machine.[28] When starting the course the trainees had no prior knowledge of the shaper. They were given instruction entirely from a teaching machine or programme book. The instructor intervened in the process only to check the setting of the shaper before machining commenced. To demonstrate their skills the trainees were called upon to produce at the end of the training a number of workpieces of different kinds.

One of the values of programmed instruction (and analytical training) lies in the increased precision with which the skills to be taught must be analysed. In the past, analysis of the operations to be performed by a trade worker, where it has been done at all, has been of the simple kind used in the Job Instruction programme of the T.W.I. scheme or in the Swedish Job Instruction sheets. Programmed instruction requires much more detailed analysis of the skill to be taught.*

Obviously the degree of complexity of the task determines the degree of difficulty in learning it, which in turn determines whether a detailed analysis for teaching is worthwhile.[30]

SUMMARY

Traditionally trade skills are taught to apprentices on the job by direct instruction and coaching under the guidance of a qualified tradesman or supervisor. This remains the major vehicle of trade training but supplementary technical education is now provided almost universally.

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* Analytical training and programmed instruction have both been described in detail in this Journal.[26,29]

Criticisms of this method have led to the development of schemes which replace instruction on the job with instruction in training schools or centres. Some such schemes aim to train the apprentice completely within the institution. In others, only the basic skills of the trade are so taught, the rest of the training required to produce a well-rounded tradesman being provided by a period of planned experience on the job. There appears to be a growing recognition of the value of the latter approach.

Methods of training in school-based systems are generally derived from the established methods of education, using well developed schedules of trade skills from which detailed syllabuses are prepared. In some schools the training programme incorporates a series of exercises which aim to develop the basic skills of the trade in an ordered sequence.

Attempts have been made, notably in Holland and Sweden, to carry over the benefits of such systematic procedures to training on the job by the preparation and distribution of standard instructional materials and the provision of advisory services within particular industries.

Research into the nature of industrial skills has led to improved training methods. In particular, methods based on the fine analysis of particular skills into their elements have been used successfully in the field of semi-skills. Programmed instruction, also, appears to be finding increasing educational and training application. While there is as yet little evidence of the use of these methods in trade training there are indications that they have potential for this purpose.

While there seems to have been little comparative research on methods of teaching trade skills, there is some evidence that evaluation based on objective performance standards is possible.

REFERENCES

1. Grabe, S. "European Apprenticeship", **CIRF Monographs,** Vol. 1, No. 2, Geneva, 1966.
2. "Observations by a Tripartite Study Group: Apprenticeship and the Training of Tradesmen", **This Journal,** Vol. XVIII, No. 1, March, 1962, pp. 8-15.
3. Wellens, J. **"The Training Revolution"**, Evans Bros., London, 1963.
4. Industrial Training Council. **"Craft Apprenticeship",** London, 1962.
5. Williams, Gertrude. **"Apprenticeship in Europe",** Chapman & Hall, London, 1963.
6. Williams, H. S. **"Technical Education in Australia",** Technical Publications Trust, Perth, 1964.
7. Blanchard, F. "Vocational Training in Europe and the World", **Training for Progress,** Vol. 1, No. 1, 1964, pp. 1-4.
8. Joseph Lucas Ltd. **"Lucas Apprenticeships",** Birmingham, London, 1958.
9. Morgan, A. "Basic Training for Apprentices", **Training for Progress,** Vol. 1, No. 1, 1961, pp. 16-18.
10. Williams, H. S. **"Some Observations on Vocational Education in the United States of America",** Education Department, Perth, 1966.
11. **This Journal,** Vol. XIX, No. 1, March, 1963, pp. 6-7.

12. Ward, K. M. "A Modern Journeyman's Circuit", **Training for Progress,** Vol. 3, No. 1, 1963, pp. 12-17.
13. See for example, Butcher, R. D. "B.H.P. Apprenticeship Training Shop System", **Australian Factory,** Sydney and Melbourne, Vol. 17, No. 2, August, 1962, pp. 16-20.
14. Gilbert, L. F. "Vocational Training Methods", **Review de L'Action Populaire,** Paris, No. 158, May, 1962, pp. 589-603 (CIRF Abstract 00903 epitomizes this article in English).
15. Ministry of Social Affairs and Public Health, State Labour Office, **"Vocational Training for Adults in the Netherlands",** Netherlands, April, 1964.
16. **CIRF Monographs,** Vol. 1, No. 1, Geneva, 1964.
17. "The Bemetel Training Scheme", **The Engineer,** Vol. 216, November, 1963, p. 75.
18. Jakovleva, L. "Experimental Workshop Exercises for Future Plasterers", **Professional no-techniceskoe Obrazovanie,** Moskow, Vol. 19, No. 8, August, 1962, p. 9 (CIRF Abstract 01131 epitomizes this article in English).
19. Larsson, M. B. "An Employer's Approach to Vocational Training", **Training for Progress,** Vol. 3, No. 1, 1963, pp. 17-18 and 31-33.
20. Brandon, G. L. "President Kennedy's Panel on Vocational Education", **Training for Progress,** Vol. 3, No. 1, 1963, pp. 41-44.
21. Wilson, C. "On the Job and Operational Criteria", in **"Training Research and Education",** R. Glaser (Editor), John Wiley Inc., New York, 1965, p. 347.
22. Merenda, P. F. "The Relative Effectiveness of Formal School and On-the-job Methods of Training Apprentices in Naval Occupations", **Personnel Psychology,** Vol. 1, No. 3, Autumn, 1958, pp. 379-382.
23. Ditlman, K. "Olympic Games of the Trades", **Training for Progress,** Vol. 2, No. 2, 1962, pp. 6-9.
24. Seymour, W. D. **"Industrial Skills",** Sir Isaac Pitman and Sons, Melbourne, 1966.
25. Fitts, P. M. "Factors in Complex Skill Training" in **"Training Research and Education",** R. Glaser, (Editor), John Wiley Inc., New York, 1965, p. 177.
26. O'Hara, J. B. "Training for Complex Skills", **This Journal,** Vol. XVIII, No. 1, March, 1962, pp. 30-42.
27. King, D. **"Training Within the Organisation",** Tavistock Publications, London, 1964.
28. Wellens, J. "Programmed Instruction in the Factory", **Technical Education and Industrial Training,** London, Vol. 6, No. 12, December, 1964, pp. 588-590.
29. Taylor, Helen. "Programmed Instruction in Industry — A Review of the Literature", **This Journal,** Vol. XX, No. 4, December, 1964, pp. 14-27.
30. Central Training Council. "The Use of Programmed Instruction in Industrial Training", **Ministry of Labour Gazette,** February, 1966, p. 67.

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Selection and Training of Apprentices at Qantas

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An account of changes in Qantas Airways' apprentice training system influenced by aircraft changeovers and shifting labour market conditions. The development of the company's apprentice selection methods, its 'vestibule' system of training first year apprentices, and the training of overseas apprentices, are discussed.

In the last ten years Qantas has been developing a recruitment and training concept for apprentices which is sensitive to changing needs and which parallels the adult recruitment campaigns undertaken for the 2,000 personnel recruited annually.

Historically, the growth of the Qantas apprenticeship scheme parallels the growth of the company. The first apprentice commenced duty at Longreach Aerodrome in Queensland in 1927 and the scheme remained small and largely informal until after the second World War when the introduction of our own technical school facilities and apprentice attendance at the State technical colleges heralded a more formalised approach. It might be worth mentioning that by 1945, 68 apprentices had been appointed over the period of 18 years, but in the years 1945-1968, 2,038 apprentices have commenced duty. Currently there are 650 apprentices under training.

The focusing of much of the company's attention on this area of youth recruitment was brought about by a significant shift in the labour market. It was realised that the selection of apprentices demanded rethinking of some traditional assumptions; this realisation came shortly before the adult labour market ceased to be favourable. If, however, a year had to be selected to mark the break between the old and the new approach to apprenticeship selection and training, 1959 would appear the most appropriate. This was the year Qantas introduced its first pure jet aircraft, the Boeing 707, and it also marked the most serious shortfall of skilled adult trades labour which the company had till then experienced. It was soon realised that the pool of skilled adult labour on the local labour market showed every sign of drying up, and that the youth apprenticeship scheme, up to that time a useful appendage to supplement this source of labour, would now be called upon to provide the bulk of the future engineering labour force. With this change in approach the source of apprentice supply and the system under which apprentices were trained came under close scrutiny.

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TESTS AS AN AID TO SELECTION

The initial focus was on the attraction of apprentice applicants and the screening of those considered suitable. In 1958 the company experimented with the use of ability and aptitude tests in the selection of its apprentice intake. Testing was carried out for Qantas by an outside consultant but after two years it was decided to use the services of an organisation which had more direct experience in the use of tests in similar apprentice selection programmes. For this reason an agreement was reached with the Australian Institute of Industrial Psychology to implement a new test battery. The main reasons for the company's perseverance with apprentice testing at a time of widespread disenchantment with psychological testing in industry were threefold:

1. The N.S.W. educational system at that time was geared to an internally conducted Intermediate Certificate examination and company interviewers were having extreme difficulty in correlating levels of achievement for school leavers. An objective yardstick had to be obtained to supplement schooling records and interviews, and the tests, particularly in measuring general and numerical ability, showed promise of providing this yardstick.

2. Despite the enthusiasm with which interviewers were approaching the task of apprentice selection, a need became obvious to differentiate more accurately between mechanical interest and mechanical aptitude. The performance of some of the early apprentices indicated that they had been selected on the basis of high motivation towards the aircraft industry rather than any specific aptitude for aviation trades. The aptitude tests included in the battery were designed to help interviewers in highlighting this distinction.

3. Each trade within the aviation industry is quite specialised and calls for different combinations and levels of ability and aptitude. The only way we could successfully differentiate between an applicant suited for say, aircraft sheet metal work and one suited for a career in aircraft maintenance engineering was to hypothesise on the level of ability and spread of aptitudes required for each of the trade categories. Validation of the hypothesis was then attempted through subsequent performance on the job.

The Australian Institute of Industrial Psychology subsequently helped the company develop and revise its test battery and has also assisted Qantas in becoming autonomous in this area by supervising the training of young Psychology graduates. At present, Qantas still retains the services of the Institute in a consultative capacity, although for practical purposes apprentice testing is now carried out independently.

Validation of Selection Tests

The validation studies conducted jointly by the Institute and Qantas have to date been restricted by the fact that insufficient apprentices have yet completed

their time to enable us to draw practical conclusions on the validity of the original hypotheses. It will not be for another two to three years that the size of the ex-apprentice 'population' becomes statistically significant for validation purposes. However, the 1962 intake of 75 apprentices was given a battery of psychological tests after selection. Progress of the apprentices was then carefully monitored and assumptions made from the test results from both the selection and prediction standpoints were carefully checked out to reveal any general correlation in actual performance.

One of the immediate advantages appeared to be that the tests could reduce losses in the first three months of employment. In the experimental group in 1962, out of the 13 apprentices who failed to survive the probationary period ten would have been regarded as unsuitable from test results. Since then wastage during probation which had been running as high as 20 per cent up to 1962, has dropped steadily to the point where over the last three years it has levelled out to approximately 5 per cent.

Present Selection Procedures

In 1963 the tests were introduced as a selection device before final interview and they have occupied this role ever since. However, it has become a cornerstone of apprentice selection policy that tests will be used only as an aid to selection and not dominate the other elements of the selection programme. Consequently, an intensive programme was launched to improve the effectiveness and standardisation of interviews, as test interpretation at interview demanded a sophistication which was not required in the pre-1959 era. In order to acquaint the interviewing staff with the use and limitations of psychological tests and the inferences drawn from test results which could be verified at interview, a comprehensive briefing session for members of interviewing teams was introduced prior to final interview. The implied benefits of testing which are outlined should thus be regarded as largely the outcome of the whole selection process and not just the test battery alone.

From the preliminary validation studies already undertaken the appropriate ranges of ability for the various apprentice trade categories have been determined and held constant throughout the selection programmes. Ability levels of applicants have been closely watched and compared with mean ability levels to avoid 'under-selection' and equally dangerous 'overselection'. The value of the tests was most marked during the transition to the Wyndham System of education in N.S.W. In 1965 when the normal three-year trained school leaver was not available, the tests gave the company its only objective measure of maintaining consistency of selection standards.

During the past six years the mean ability level of the successive apprenticeship intakes has not varied more than the equivalent of 6 IQ points and should technological change require more or less able apprentices in the future, then the

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tests more than any other selection instrument will give an accurate basis for identifying the most suitable applicants for specific trades.

The tests are becoming increasingly useful for counselling purposes particularly where a language comprehension problem exists or where ability is not matched by effort in actual performance. The Personnel Officer (Apprentices), on the advice of the company Psychologist, is making full use of the tests in this respect.

Integrated selection procedures have been developed which depart significantly from the traditional approach of one man selecting large numbers of applicants. The institution of a 'task force' approach to selection involves more front-line supervisors in the selection process and though it brings problems in maintaining consistency of rating between interviewers, the introduction of highly structured pre-interviewing briefings and discussions has largely counteracted this.

NEW APPROACH TO FIRST-YEAR TRAINING

Prior to 1966 the company adopted a traditional approach to training first year apprentices. After a brief induction period the apprentice was placed in the workshop where he acquired the basic skills of his trade through observational techniques, practical instruction by the tradesman or periodical attendance at the company's training school and the State technical college. This approach was suited to intakes of less than 100 apprentices, but in 1966, when it was decided to boost the apprentice intake to over 200, the arrangement was found inadequate.

The large modern workshop of today has quite different learning implications for the apprentice gathering knowledge from the craftsman. Sub-specialisation makes rotational training more difficult and the varying production demands can sometimes receive priority over training considerations. We could not be certain that the same training opportunity could be maintained continuously for each of 200 apprentices and this, more than anything else, necessitated a changed approach.

To achieve better productivity from larger numbers of apprentices (through refined off-job training) and better productivity from tradesmen (through reducing part of their traditional training role) a vestibule system of training was introduced. Land and premises were acquired at Rosebery and fitted out at a total cost of over $650,000. The aim was to provide the capacity for complete theory/practical training of first year apprentices so that they entered the workshops in their second year with a broad range of trades skills which could then be enlarged through on-the-job training.

The Vestibule Training System

During the three months probationary period, broad-based training was given so that all apprentices, irrespective of trade category, were exposed to a general range of craft skills. In this way, sound practical skills were instilled from the

outset and the apprentices' manipulative ability was gauged prior to the completion of probation. For the remainder of first year the training emphasis was placed on the requirements of the particular trade category and examinations both at the end of the probationary period and at the end of the year confirmed the apprentices' suitability for progression to the workshop.

To acknowledge the responsibility of the company to provide more than straight acquisition of craft skills, lectures were organised by the company's training staff to make the apprentices more aware of the social and general business demands of the work environment and to give them an appreciation of the adjustment which would be needed in the transition from the vestibule training school to the workshop.

The school is now in its second year of full operation. The apprentice now entering the workshop is not only better equipped to carry out basic trade skills but more important he has been given a sound basis for the acquisition of different skills which new aircraft types are likely to demand. In fact it has succeeded far beyond expectations.

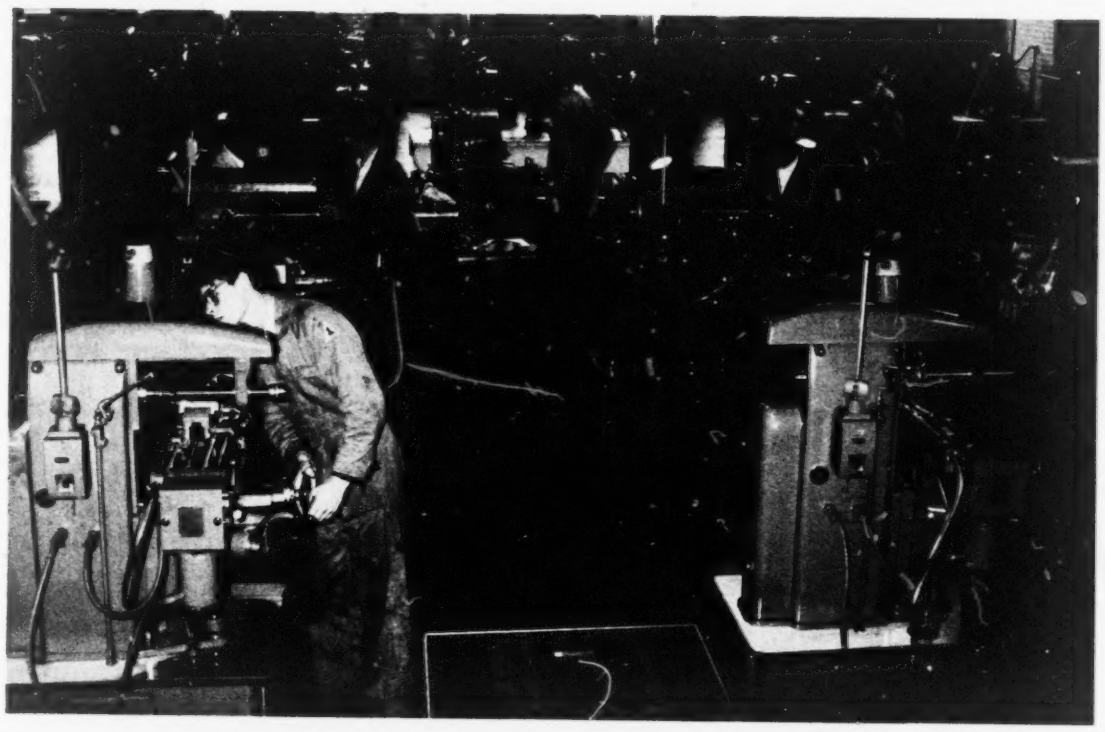

Fig. 1: First-Year Apprentices in Training

The next area of attention will be to extend the vestibule concept of training by the introduction of more 'workshop simulation', possibly in the second year of training. This will give added relief to the production workshop and in particular to tradesmen when they themselves are adjusting to the changed technologies of the Boeing 747 and supersonic jets.

As a natural consequence of this trend, the company will be discussing with the Department of Technical Education the duration and content of the trades course conducted by the Department and attended on a 'day release' basis by Qantas apprentices. Some restructuring of the training given now seems appropriate and exploratory discussions on a new working arrangement have already taken place with the Department.

In summary, the focal point of the Qantas apprenticeship training scheme is now the company's vestibule school where the learning process is more effectively controlled and stimulated and where teaching techniques such as programmed instruction and closed-circuit television are more readily evaluated. Overriding even these considerations has been the need to recreate in the school the workshop environment complete with skills to be learned, duties to be undertaken and adjustments to be made. This involves a radical departure from traditional concepts and is currently involving the company in a 'rethink' of the aims and objectives of apprenticeship training as presently understood.

OVERSEAS APPRENTICES

A little known aspect of the company's apprenticeship programme has been the involvement in the training of apprentices from the Qantas bases in Singapore, Kuala Lumpur, Manila and Fiji. The concept of taking young men from these areas and training them in Australia to become fully licensed ground engineers was developed in the late 1950s and was prompted by the following considerations:

- The need to provide better job opportunities for locally-employed staff arising from the company's own planning and from sensitivity to local economic conditions. Engineering apprenticeship was regarded as a good example of an instance where skill acquisition could be used as the basis of development of local employees for supervisory positions.
- The Governments of the areas mentioned above had become insistent that many positions held by expatriate Australians be ultimately filled by local nationals.
- The company had for some time been considering complementing the activities of government training schemes by providing its own specialist training programmes for South East Asian and Pacific countries.

Greater sophistication of Qantas maintenance and overhaul facilities in Sydney led to a decision to provide the 5-6 year training period in Australia. To date, over 30 apprentices have been selected and trained in aircraft maintenance engineering.

The selection of these apprentices has presented Qantas with some unique difficulties. For example, in Singapore and Malaya in 1962, 1,600 applications were received for six positions and in Manila, in 1966, four positions attracted

1,000 applicants. This task, with its significant public relations implications, led the company to introduce more effective self-culling devices in its advertising (such as essay-writing to gauge standards of written English) and more attention was given to the structuring of the preliminary interview to take into account the different attitudes and motivation which were cultural rather than occupational in origin.

Initially, the use of the psychological tests in a different cultural context presented a problem. At first, our testing personnel made allowance for cultural bias through weighting of test scores, but after relating test scores to subsequent performance it was found that the raw scores of overseas apprentices could be related quite validly to the norms for Australian apprentices. Only in tests of general information was cultural bias a problem and it became apparent that cultural factors predominate more in the mental attitude of the applicant to the test rather than in his competency in handling the test material.

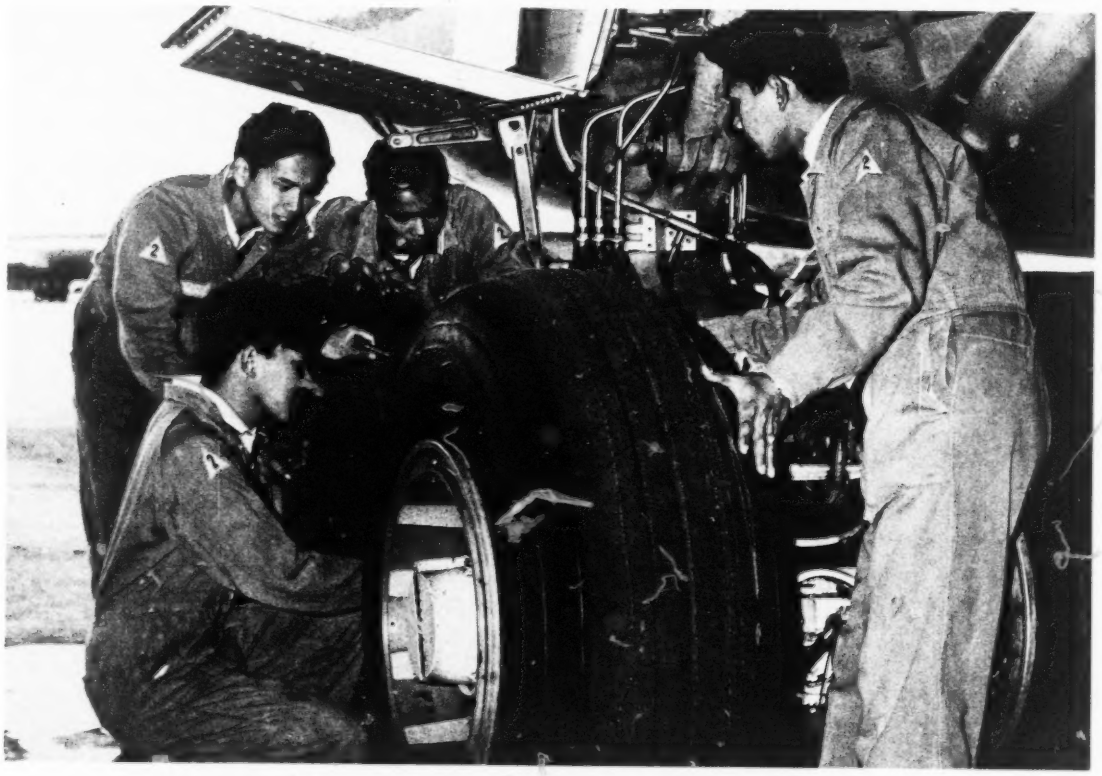

Fig. 2: A Group of Overseas Apprentices

Qantas has also trained apprentices for Malaysia-Singapore Airlines and currently there are 13 trainees at the Rosebery College training under the auspices of the Colombo Plan. These trainees were recruited in Singapore and because of the extensive involvement of the company in overseas apprentice selection, Qantas was asked by the Governments of Australia and Singapore to participate in the initial interviewing as well as in the administration of the Qantas test battery to the original 300 applicants.

LOOKING AHEAD

These remarks have been restricted to a descriptive account of how Qantas' selection and training techniques have been developed to meet changing needs, but these developments cannot be considered in isolation from the industrial environment in which they have occurred. Much has been said about the apprenticeship system in Australia recently, but Qantas' ability to continue restructuring its apprenticeship scheme on a domestic basis now appears to be reaching its limit unless some national restructuring of apprenticeship is undertaken. There will therefore be a number of major issues to be faced within the next few years.

The national structure of apprenticeship must be made more flexible so that change can be effected speedily. In terms of length of apprenticeship, liaison between the statutory and industrial bodies associated with apprenticeship and the image of apprenticeship, a system must be developed which is more adaptable to the manpower requirements of the total community. Internal reappraisal of course content, selection techniques and training methods all play their part, but Qantas is at the moment concerned that its ability to produce a workforce consistent with the demands of the international airline operating industry of the 1970s will be constrained by circumstances which are somewhat beyond our control, and not of modern concept.

Sophistication of, and in some cases, elimination of routine workshop training (in the traditional sense) will be the next area for re-evaluation in the company's domestic apprenticeship plans. Having established a syllabus giving a broad spectrum for all first year apprentices, we are now proposing to develop the concept of 'simulated production' through greater use of vestibule training.

More effective measurement techniques are clearly required and are being progressively developed by Qantas' Technical Training Division. Examination results are to be given relative weighting for practical skills, theoretical attainment and attitude towards apprenticeship. Work has already commenced on challenging traditional assumptions in this area and the hallowed 50 per cent theoretical pass mark has already been eliminated.

I believe that 'education' as well as 'training' is critical in the company's apprenticeship plans for the future. Studies which broaden and deepen the apprentice's awareness of his working environment are being developed.

The most difficult challenge of all is not to be satisfied with what we have. I believe that we must produce a training system which, through proper evaluation of training needs and proper determination of the most appropriate training methods, will produce manpower which occupationally and environmentally will meet the demands of the subsonic and supersonic aircraft of the 1970s, and in the 1970s the demands of the 1980s.

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Apprentice Training at British Tube Mills

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A South Australian company's in-plant training scheme for engineering trades apprentices is described.

British Tube Mills (Australia) Pty. Ltd. is the largest of the four companies comprising the Tubemakers of Australia group in South Australia. The other companies are Stewarts & Lloyds (Aust.) Pty. Ltd. Malleable Foundry Division, Bundy Tubing Company (Aust.) Pty. Ltd., and Mephan Ferguson Pty. Ltd.

The study on which this account of the company's in-plant training scheme for engineering trades apprentices is based was undertaken chiefly because the scheme was designed to meet the tradesman requirements of all companies in the group and because the company is widely regarded as operating one of the most effective apprentice training programmes in South Australia.

GENERAL DESCRIPTION OF THE SCHEME

From modest beginnings in 1940, when the first apprentices were engaged, the scheme has developed into a comprehensive system of training incorporating a carefully planned induction programme, basic training in the Apprentice Training School, and rotational on-the-job experience in the plants of all member companies. The well equipped Apprentice Training School provides 4,800 sq. feet of workshop area, together with 800 sq. feet for administrative offices and lecture room. In addition to a Training Superintendent, two Apprentice Instructors are employed full-time on trade tuition. A Training Advisory Committee, comprising the Personnel Manager, Chief Engineer, Training Superintendent and plant executives meets regularly and reviews apprentices' progress. In the light of these reviews the committee recommends modifications, where necessary, to the training programme.

British Tube Mills recruits, selects and trains all apprentices employed by the group whether they are indentured with British Tube Mills, Stewarts & Lloyds or Mephan Ferguson. Bundy Tubing Company employs no apprentices of its own, but the annual intake at British Tube Mills makes allowances for a number and variety to be drawn off by this company at the end of training to satisfy its tradesman needs.

At the time of the study there were 90 apprentices in training, on terms ranging from three to five years. Trades represented were: Fitting and Turning, First Class Machining, Electrical Fitting, Boiler Making/First Class Welding, and Pattern Making.

From its cost accounting records the company has calculated the average annual net cost of training at approximately $800 per apprentice*.

RECRUITMENT AND SELECTION

In an average year the company seeks to take on 23 or 24 new apprentices to meet the needs of all South Australian companies in the Tubemakers of Australia group. Recruitment activity is confined to advertising in the main daily newspapers and this, together with a large number of employee referrals, provides an ample field of applicants.

After preliminary screening for age and educational qualifications, the Training Superintendent interviews all remaining applicants. Educational qualifications are accorded a good deal of importance; for three-year apprenticeships a good standard of pass at the Leaving Examination is sought (the fourth year of secondary education). Boys selected for four-year apprenticeships, usually need to have completed the Leaving Year. Boys selected for five-year apprenticeships are chosen from those who have completed the third year of secondary education, and whose school reports have been satisfactory.

In making the selection, factors taken into account include the general impression the boy creates at the interview, school reports, references and home background. A good deal of importance is attached to the range of interests which occupy the boy's spare time, for example, sporting and recreational activities. Appointments are made on probation and subject to satisfactory medical examination.

THE TRAINING PROGRAMME

Three fairly distinct stages in the training of apprentices can be distinguished:

- a period of induction and orientation;
- a period in which the basic knowledge and skills of the trade are acquired; and
- a period of consolidation in which skills learned are applied to production operations, and advanced and specialised skills are developed.

Induction Training

Induction and orientation training occupies the first two months of the apprenticeship term and is carried out in the Apprentice Training School. On the first day the new group of boys is split into three teams, and a final year apprentice is assigned to each to serve as a team leader throughout the induction period. The team leaders assist the Apprentice Instructors in the detailed teaching of initial skills and in supervising the boys' initial project work on a much more individual basis than otherwise would be possible. (See Fig. 1.) They attend the school two weeks before the new intake arrives and are given instruction on demonstration and coaching techniques by the Apprentice Instructors.

* Requests for additional information on costs of training may be made to the General Works Manager. The company, however, does not maintain separate costs for each year of apprenticeship.

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Fig. 1: First-Year Apprentice operating 'Mimik' Copy Turning Attachment

Introductions, the issue of a kit of hand-tools and safety equipment, the allocation of benches and lockers, and a series of addresses on the content of the first year of training complete the new intake's first day. On the second day, indentures are signed after an explanatory talk by the Training Superintendent on the form of indenture and the nature of the probationary period. Drawings and material are issued for the first project (chipping block) and the project is commenced following the screening of a film on the use of the chisel.

Throughout the remainder of the first week, work on the initial project continues and a series of talks on employee welfare, medical and first-aid services and company facilities are provided by the Training Superintendent and the Welfare Officer. Demonstrations and practice sessions on the use of the file and micrometer are provided, and on the last day the Training Superintendent gives a talk about apprentice training in general.

All through this first week every effort is made to ensure that the boys' introduction to apprenticeship will be as pleasant as possible. Also to set the stage for work to come, the week's activities are deliberately planned to occupy their time fully.

In the weeks which follow, work on projects continues and further talks and films on a variety of subjects are presented. The apprentices are given a

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comprehensive account of employment prospects for tradesmen in the Tube-makers of Australia group and are told of opportunities for extra study during apprenticeship and of the post-apprenticeship study scheme. A programme of visits to each of the works departments continues throughout the remainder of the induction period and a preliminary visit is made to the Technical College prior to commencing their schooling.

From the fourth to the eighth week the boys work on a mixture of project work and simple jobs brought in from departments and are rostered to work on various machines, such as lathes, shapers and grinding machines. (See Fig. 2.)

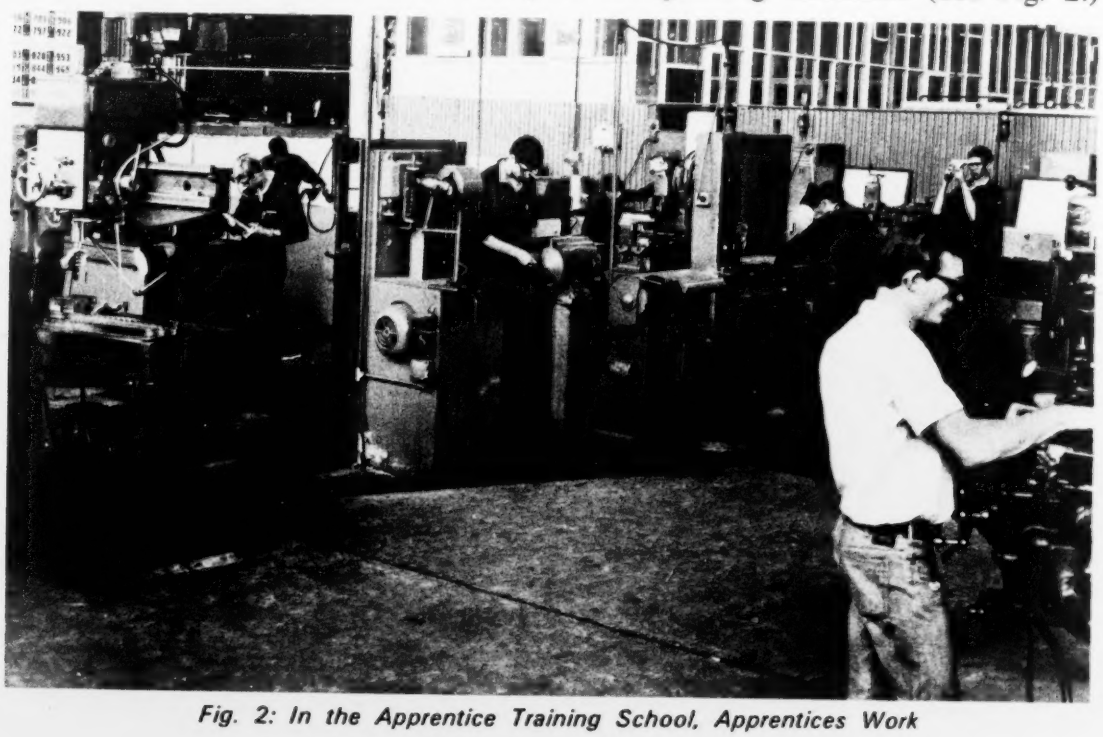

Fig. 2: In the Apprentice Training School, Apprentices Work on Simple Fitting and Machining Tasks

Basic Skill Training

Basic skill training occupies the period from completion of induction to the end of the apprentice's first year. The majority receive this training in the Apprentice Training School.

In this period the boys are put on to a standard workshop roster which provides fortnightly rotational experience on bench work and various machines. The roster has been designed to allow adequate time on each of the machines likely to be encountered in the works, together with the explanation, demonstration and practice of a range of basic machine processes broadly in line with the schedule of skills being worked to at the Technical College. On bench work the training includes metrology, marking out, fits and tolerances, assembly work and some welding, and provides a thorough grounding in the use of each of the basic hand-tools.

A general view of the nature of the training can be gained from Table 1 which sets out the programme for Fitters and Turners and First Class Machinists.

TABLE 1. Basic Skill Programme

Number of weeks of training		*Type of training*
Fitter and Turner	*Machinist*	
20	12	Benchwork
10	16	Lathe
4	6	Shaper
2	2	Milling machine
1	2	Tool and cutter grinder
2	—	Welding

The skills are taught by demonstration and explanation (supported by a variety of visual aids), followed by carefully supervised practice sessions. The teaching is carried out mostly on suitable jobs taken in from the works, and each Department is asked to provide a specific number of hours of work covering each of the skill categories to be taught. This is sufficient to meet about 75 per cent of the apprentices' working time in the school; the remainder is covered by selected projects and exercises.

From about the fourth month onwards apprentices receive instruction in how to calculate machining times and how to cost a job, and each of the boys handles one or two projects on the planning and cost of jobs brought into the school.

In the final three months of the year a number of machine building projects are taken on to give instruction on machine construction and fabrication. Additionally, some basic installation and maintenance work in the plan is carried out by the apprentices, preparatory to their postings to Departments in their second year.

During their first year all apprentices are given a series of aptitude tests, the results of which are taken into account in developing individual career planning guides. Among other things, the tests have revealed that many boys are likely to experience difficulties with higher studies because of limited reading ability. To remedy this a series of graded reading exercises has been introduced, designed to improve comprehension and reading speed.

Opportunity is also being taken to determine the value of some of the tests as predictors of success at trade training and to establish norms which will allow the tests to be introduced with confidence at a later stage as part of the selection procedure.

Consolidation of Basic Skills

At the beginning of the second year, apprentices leave the Apprentice Training School to commence an extended period of training on the shop floor. A training roster is drawn up, based on the recommendations of the Training Advisory

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Committee, which takes into account the minimum time the boys should spend on each of the processes and machining functions considered necessary to equip them to operate effectively as tradesmen. During the second year the boys concentrate on applying the basic skills they have acquired to production tasks, developing and consolidating them through practice on the job, and progressing to the acquisition of more advanced and specialised skills. (See Fig. 3.)

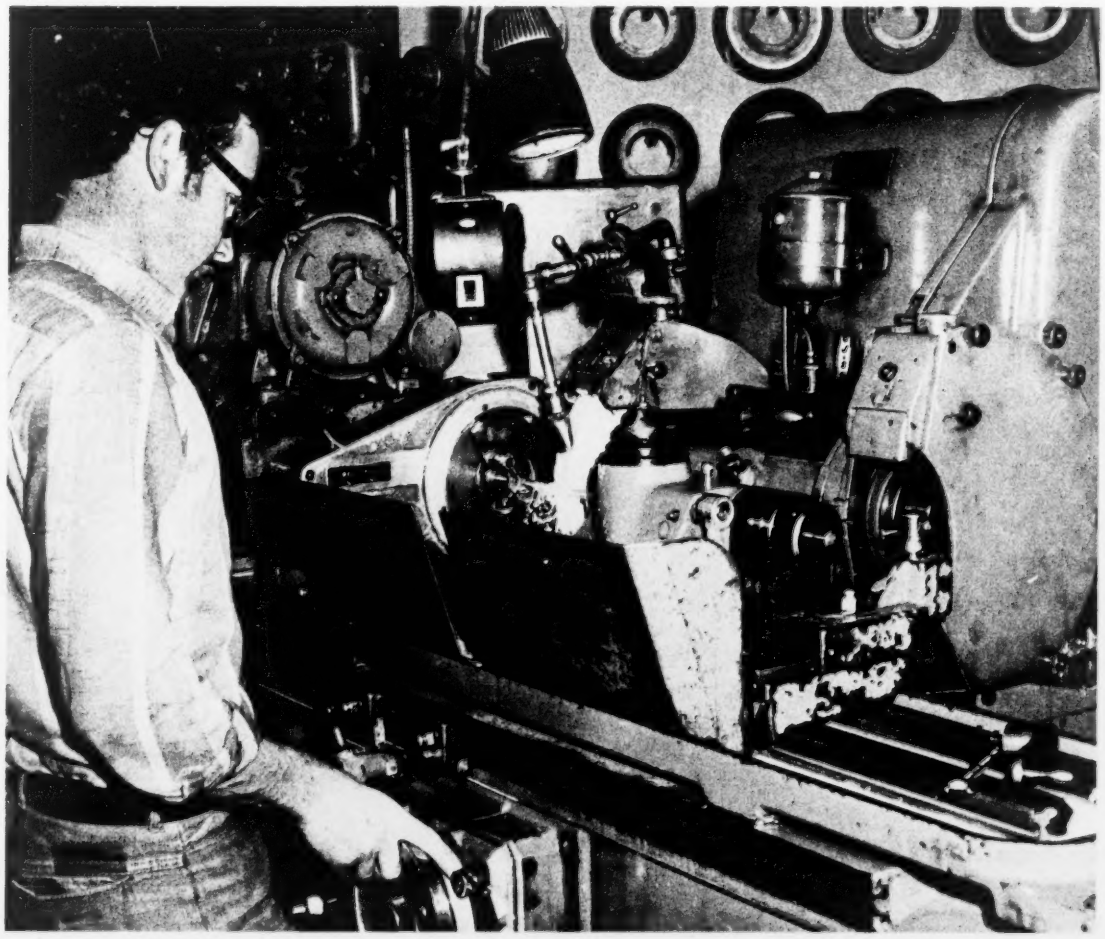

Fig. 3: A Second-Year Apprentice operating a Cylindrical Grinder in the Tool Room

The remaining period of apprenticeship training is devoted to the training and application of advanced skills and techniques and to appropriate specialised training.

Training on the job is carried out under the guidance and oversight of leading hands and tradesmen, many of whom have had the benefit of a standard Training Within Industry Job Instruction course.

Designated Foremen are given the responsibility of looking after the details of apprentice training in sections under their control. They are responsible to the Superintendent of their area of the plant for the exercise of this function, but have

direct contact with the Training Superintendent on all breaches of discipline and significant training problems.

Other Training Activities

These activities are, in the main, related to purposes other than the straight acquisition of craft skills. For example, a standard course of safety training based on the T.W.I. Job Safety programme is provided and, in addition, each boy spends a period of up to three months with the Safety Engineering or Safety Investigation sections assisting in their work. An Apprentice Training School Safety Committee, consisting of six to eight apprentices, concerns itself with the identification and elimination of unsafe acts and conditions in the school. The life of each committee is limited to two months so that all apprentices have an opportunity of serving on it by the end of their first year.

Other activities, thought to be useful to the overall development of the apprentice, include talks and film screenings by representatives of other companies on machines, materials and methods; talks on planning and costing by company executives; sessions on industrial relations; talks on new developments taking place in industry, and visits to other companies and selected organisations. A public speaking group commences in the fourth month of each year and attendance at the first two of its meetings is compulsory for the first year boys.

New Arrangements for Training Technicians

Special arrangements have had to be made to cater for a need within the group for people with technician training to take charge of teams of top grade tradesmen to specialise in particular aspects of the companies' technical operations—hydraulics, for example. It has been found that the technician who receives his training through courses at the Technical Colleges has insufficient background in trade practice to cope with the job and, on the other hand, tradesmen frequently lack the theoretical knowledge required.

By arrangement with the South Australian Director of Technical Education and the Apprenticeship Commission, British Tube Mills this year has taken on a number of boys the Commission refers to as Apprentice/Technicians. Under this arrangement boys are indentured as Fitter and Turner, but are enrolled in the three year Mechanical Technician Certificate course at the S.A. Institute of Technology. To make this possible they have been granted exemption from attendance at all apprenticeship Technical College classes and their instruction in theory and trade practice is being provided entirely within the Apprentice Training School. The boys will sit for the mid-year and end-of-year apprentices' examinations in the normal way and will emerge at the end of their three year indenture period as fully qualified tradesmen. They will also have completed their technician training and be equipped to handle the jobs for which the new arrangements were introduced.

APPRAISING PERFORMANCE

To ensure each apprentice reaches a satisfactory level of performance a variety of procedures have been set up to check on progress. On the basis of these evaluations, areas of difficulty can be uncovered and plans made for corrective measures. For example, special 'tutorial' sessions are arranged towards the end of each school year for boys finding difficulty with their studies. During the first year of apprenticeship there is ample opportunity for direct observation of performance on the job in the Apprentice Training School. Assessments are provided by a monthly rating report made out for each boy by his Apprentice Instructor.

When the boys are training in the plant, checks on work performance are made on the basis of monthly reports completed by the supervisor in closest contact with each boy. The supervisor is required to assess work performance on a standard rating form and to forward this to the Training Superintendent through the Superintendent in charge of the Department in which the apprentice is working. Normally this rating is discussed with the apprentice before it is sent on. To help ensure that the ratings will be as objective and consistent as possible, detailed written instructions are provided, each characteristic to be rated is defined, and each point on the five-point scale provided for each characteristic is defined. In addition, each person involved in making ratings is required to attend two sessions in which the procedure to be followed is carefully explained.

Shortly after the ratings have been received in the Apprentice Training School the Training Superintendent makes a tour of all training areas. In company with the Superintendent in charge of the area he talks to each apprentice about difficulties uncovered and the details of his further training programme.

Checks on school performance are carried out twice a year on receipt of schooling and examination reports. A special effort is made to pass on a word of encouragement to those who have done well, while those whose results are less than satisfactory are interviewed by the Training Superintendent in an attempt to uncover the problems and to agree on measures to meet them. In addition, the special schooling problems of particular boys are discussed with Technical College personnel.

In the final two years of their term apprentices become eligible for various bonus payments. The first, a Works Performance Bonus, provides a scale of weekly payments, to a maximum of $3.50, based on scores derived from the monthly ratings completed by supervisors.

In addition, apprentices become eligible for two separate bonus payments based on their performance and attendance respectively at Technical College or other approved courses. Bonus entitlements are calculated on the basis of average Technical College examination results and number of absences from evening classes. This bonus is paid each six months, following examinations, to a maximum of $200 per annum.

RESULTS TO DATE

From 1940 until January 1969 a total of 246 apprentices had completed their indentures through the British Tube Mills apprentice training scheme. Of this number 137 were still employed by the company or by other companies in the Tubemakers of Australia group, representing a retention rate of about 56 per cent. The various employment levels attained by those who have remained with the group are set out in Table 2.

TABLE 2. Present Level of Employment of Apprentices

Number of ex-apprentices	*Present level of employment*
1	Works Manager
1	Assistant Manager
12	Superintendent
15	Supervisor or Foreman
29	Draftsman, Planner and other staff
6	Leading Hand
24	Technician
49	Tradesman

It seems evident that the apprentice training scheme has made a significant contribution to the management, supervisor and technician staffing of the group.

T. J. HUGHES, Government Printer, Tasmania.

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METHODS OF TRAINING FACTORY AND OFFICE WORKERS.

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ABSTRACT - FACTORY OPERATORS AND CLERICAL AND COMMERCIAL STAFF REPRESENT A SUBSTANTIAL PROPORTION OF THE AUSTRALIAN WORKFORCE. BOTH ARTICLES IN THIS BOOKLET DESCRIBE THE VARIOUS METHODS OF TRAINING SEMI-SKILLED WORKERS IN THE FACTORY AND OFFICE AND SHOWS THE VARIATIONS IN THE TRAINING PATTERNS WHICH HAVE BEEN INVOLVED IN THE FIRMS STUDIED. THEY ALSO INDICATE THAT MOST OPERATORS LEARN THEIR SKILLS ON THE JOB AND THAT THE TASK OF INSTRUCTION IS MOST COMMONLY CARRIED OUT BY EXPERIENCED OPERATORS. THE TWO ARTICLES DESCRIBES TRAINING PRACTICES IN 26 ORGANIZATIONS AND 26 MANUFACTURING FIRMS. RELATED DOCUMENTS ARE AVAILABLE IN THIS ISSUE AS VT 014 536, VT 014 538, AND VT 014 539. (AUTHOR/GEB)

VT 014 537

TRAINING DEVELOPMENT BOOKLET NO. 1

METHODS OF TRAINING FACTORY AND OFFICE WORKERS

VT014537

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METHODS OF TRAINING FACTORY AND OFFICE WORKERS

Department of Labour and National Service

1971

Price 25 cents

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PREFACE

Factory operators and clerical and commercial staff represent a substantial proportion of the Australian workforce, though little published information has been available on how these workers acquire their skills.

Both articles in this booklet describe the various methods of training semi-skilled workers in the factory and office, indicating the variations in the training patterns which have been involved in the firms studied. Both articles indicate that most operators learn their skills on-the-job and that the task of instruction is most commonly carried out by experienced operators.

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Methods of Training Semi-Skilled Workers in 26 Manufacturing Firms

PAMELA HENDY

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Department of Labour and National Service

Arrangement for the training of semi-skilled workers in 26 manufacturing firms are described, together with information concerning the staff engaged in providing instruction.

Semi-skilled workers* carry out a wide variety of tasks ranging from those requiring relatively simple skills which can be learned in a few hours, to those involving a high degree of skill for which several months' training is needed. Although new techniques of operator training such as systematic analytical training have been developed and introduced by a few Australian firms in recent years [1, 2, 3], surveys in 1961 and 1965 showed that only a minority of Australian manufacturing firms were providing systematic in-plant training for operators[4, 5]. For example, the 1965 survey conducted among 500 manufacturing firms employing more than 100 persons found that only about one quarter had systematic in-plant training arrangements for operators[5].

The survey reported here was initiated in 1968 with the purpose of examining methods of training operators in a number of Australian manufacturing firms. Twenty-six firms, located in Victoria, New South Wales, Queensland or South Australia, were studied. The manufacturing industries represented are shown below (with the number of firms in each group in brackets):

- plant and machinery (5 firms)
- chemicals and oils (4)
- clothing and footwear (4)
- electrical equipment (2)
- paper and packaging (2)
- textiles (2)
- vehicles (2)
- cement products (1)
- food (1)
- glass (1)
- tobacco (1)
- rubber (1)

*For the purposes of this study a semi-skilled worker or operator was defined as one who performed a limited number of operations requiring some degree of skill, but who had not the all-round technical skills and knowledge required of a tradesman. For convenience the shorter term—operator—will be used in this article.

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The 26 firms employed a total of 21,600 persons of whom 56 per cent were operators; a quarter of these were women. The firms were selected to provide a range of size categories; 13 employed 101-500 people, seven employed 501-1,000, and six had more than 1,000 employees.

THE NATURE OF OPERATOR TASKS

In each of the 26 firms, operators were found to be engaged in carrying out a wide variety of highly repetitive tasks. Training arrangements for some 200 different jobs were examined. However, despite the diversity of jobs and job titles, quite distinct types of operator tasks were identified. Of the operators covered by the survey, 52 per cent were engaged on essentially manual tasks or those requiring the use of handtools, 46 per cent on essentially machine tasks, and a small number (2 per cent) on process control tasks. Description of these four categories of tasks are presented below.

Manual Tasks

Manual tasks were those of a physical and/or visual nature which did not require the skilled use of handtools. Manual tasks predominated in, for instance, the jobs of packers, sorters, catchers, loaders and inspectors. The combination of physical and visual skills is exemplified by the job of grader (in textiles) where the operator was required to inspect hose for faults, match them into colour categories and pairs, count them, and stack them aside.

Handwork with Tools

A second group of operators were forming manual tasks which required the skilled use of various types of handtools—e.g. hammers, scissors, air screw drivers, and sprayguns. This group of operators included, for instance, those engaged in hand bending, spray painting, welding, chassis assembly and upholstery. Some of the jobs involved delicate handwork, and the task of a wirer (in the telecommunications industry) was typical: using a drawing plan, this operator located the correct wires and soldered them to terminals using a variety of handtools including a fork jack terminator, pliers, soldering iron and side cutter. In such instances where tasks required fine handwork and perceptual skills, women were commonly employed.

Machine Tasks

The most common machine tasks were those where one operator handled one machine, and those where one operator handled the output from several machines. In some instances several operators handled one machine.

Operators handling one machine included, for example, roll off operators, power press operators, and coil winding machine operators. A typical single operator/single machine operation was that carried out by power press machinists in a firm in the automotive industry. Here, the operator's job was to feed metal trims or moulds into a press by hand, place his foot on the power pedal or operate remote control switches by hand, withdraw the trims, and stack them aside.

There were many instances of operators handling the output from a group or bank of machines, particularly in textiles and hosiery but also in engineering and chemical firms. The tasks of ring spinner (in textiles) typified this kind of operation. This involved tending a number of machines: placing in creels, threading up ends on to the spinner, keeping the ends running, and repairing broken threads.

Process Control Tasks

A small proportion of operators were engaged in carrying out process control functions where their major tasks included the recording of dial readings, carrying out set procedures, and making minor adjustments to process control equipment. These tasks were usually found in the chemical firms: in one of these, the operator's job was to check, interpret and record dial readings on panel boards and correct faults by manually adjusting finger-tip panel controls—in accordance with standards set for each stage of the process.

THE SETTING OF PERFORMANCE STANDARDS

In fifteen firms performance standards had been established as a result of work study. In most of these firms the information obtained was used mainly to establish output and quality standards for bonus purposes. Six firms, however, had used this information to develop job descriptions and job breakdowns as a basis for determining skill requirements for training purposes. An example of one of these job breakdowns is provided in the Appendix.

In a further eight firms performance standards were determined largely by the output of automatic machines, and the operator's performance was assessed in terms of his ability to keep pace with the machine and prevent bottlenecks.

In three other firms, each of which employed about 200 operators, job performance standards were determined and assessed informally by foremen and production supervisors.

The time taken by operators to meet required performance standards could not be accurately specified by the firms covered. This was partly because of variations in the tasks and the ability and previous experience of trainees, and partly because the time taken had not been examined in any precise way.

On the whole, firms placed new operators on production tasks immediately. Most firms were unable to state precisely what they regarded as a required standard after a given period of time on the job. However, most trainees were expected to be operating at a reasonably proficient level by the end of the first two or three weeks. There were of course a number of exceptions. For example, those operators engaged in simple assembly or manual tasks were expected to be performing satisfactorily on the first day. On the other hand, those operators performing more complex hand tasks or using more sophisticated machinery (e.g. hand moulders, relay set wirers, spinners, tyre builders and roll mill operators) were not expected to be fully productive for two or three months.

METHODS OF TRAINING OPERATORS

Firms were asked to identify the main ways in which operators had learned to do their current jobs. The training patterns which emerged can be broadly classified into three categories: informal on-the-job training, systematic on-the-job training, and off-the-job training.

Informal On-the-Job Training

This constituted a process of familiarisation by working on the job itself. With relatively simple jobs, for example, the new trainee was shown what to do and how to do it by means of a brief demonstration, and by watching experienced operators at work. He was then put to work on the production line and his progress was checked by his neighbour or by the chargehand or foreman. On more complex machine tasks (e.g. the operation of a roll mill) he often remained beside an experienced operator for about a week, and acted as his assistant.

Most firms indicated that the majority of operators had acquired their skills by informal on-the-job training. The most common reasons given were that the tasks were relatively simple and new employees could be introduced to the line without interruption to production schedules. Where more complex skills were required, some firms said they had often been able to recruit experienced labour.

Example 1 below provides an illustration of the way in which trainees acquired their skills through informal on-the-job training in one firm.

Example 1: A Large Cement Products firm

This firm manufactured asbestos-cement building materials and pipes. Its total employment strength was over 1,000; 600 of whom were operators (90% were male). All tasks in the factory (except for some involving moulding) were machine-paced. The tasks were relatively simple and highly repetitive. For example, stackers in the Sheet Department operated a semi-automatic stacking machine—they placed empty trucks under the machine, waited for it to automatically load the trucks with a specified number of sheets, switched off the machine, and then placed more empty trucks under it. Similarly, five-man machine crews were responsible for the running of an automatic machine, a task which involved checking the buffing of surfaces and the grinding of the sides and ends of sheets.

No formal arrangements were made for the training of operators. In the Pipe Department a new operator worked alongside an experienced operator as part of a two-man team. In the Silica, Cement and Hand Moulding Departments, the foreman or the sub-foreman placed the new operator on the line, explained the job briefly, and checked the operator's progress during the first week or so. The precise amount of time spent by operators and foremen on instruction was not known.

The operator's performance was assessed by his ability to keep pace with the output of automatic machines. The times taken for operators to reach a satisfactory level of performance varied from 10 minutes for a material handler,

three or four days for a pipe lathe operator, and up to three months for an examiner on the finishing crew in the Sheet Department.

One superintendent commented that poor working habits often passed on from one operator to another. However, most superintendents were satisfied with the present method of training, and the firm did not anticipate any changes in present practise.

Systematic On-the-Job Training

This constituted the taking of steps to organise operator training on the job, beyond simply placing new operators beside experienced workers. In general this included some systematic study of operator tasks, and the provision of written material such as job breakdowns, training syllabuses, timetables and manuals. In addition, particular individuals (such as instructors, supervisors or experienced operators) had formal responsibility for operator instruction.

Six firms had made some attempt to systematise on-the-job training. However, the extent to which on-the-job training arrangements had been formalised varied considerably. For example, whilst five firms had prepared job breakdowns for use in instructing all, or selected groups of, operators, only two firms had actually made use of them in training operators. Similarly, there were variations in personnel used to provide instruction. Three firms had appointed part-time or full-time instructors to demonstrate operator tasks and to supervise trainees' progress. In three other firms, however, it was the experienced operators, assisted in one case by leading hands, who provided on-the-job instruction.

Example 2 below provides an illustration of systematic on-the-job training practices.

Example 2: A large Chemical Firm

This firm was engaged in the production of soaps, soap products, glycerine, edible fats and foods. Of a total staff of 1,300, over 800 were operators and one-third of these were women. A large number of operators were employed in highly repetitive, machine-paced operations. These operators worked in small groups on a flow line, and carried out a variety of manual, machine and inspection tasks.

The firm employed 20 full-time instructors who had been trained in all four T.W.I. programmes—Job Instruction, Job Relations, Job Safety and Job Methods. In addition, they had attended a one-week methods of instruction course designed by the Training Manager.

Training needs were determined from fact finding discussions between managers, supervisors and operators. These discussions concerned problems relating to plant, housekeeping, safety, quality and output. The causes and possible remedies of training problems were also discussed with a variety of specialist sections such as Quality Control, Methods, Engineering and Sales.

Once training priorities had been determined and senior management approval obtained, job breakdowns were prepared, a training plan drawn up, and training commenced.

All new operators were given systematic on-the-job training. An instructor remained beside the new trainee throughout the initial learning period—which ranged from one to six weeks. As illustrated in Figure 1, trainees started on simple tasks (such as packing and labelling); later they were trained in more complex machine tasks (such as bottle filling). The instructor demonstrated how each job was done, supervised the trainee in his performance, and corrected faults as they occurred. Machine tasks were demonstrated and practised at slower than normal speed until the trainee reached proficiency. In order to give operators a variety of job experience and to alleviate boredom, they were rotated from task to task at hourly intervals.

Fig. 1. An instructor supervises a new trainee in the performance of a simple packing task.

After one month the trainee's performance was appraised by his departmental supervisor. At this stage the trainee attended an induction session conducted by the Operative Training Manager. This covered company policies, safety regulations, company products, staff benefits, etc. and was intended to supplement information already given on-the-job.

It was considered that one of the most important results of this training scheme was that it provided a nucleus of operators capable of performing several jobs. Through this flexibility, the firm was better able to cope with absence, annual leave and extra production shifts.

Systematic Off-the-Job Training

Seven of the 26 firms had set aside a special area such as a training room or annexe for the training of operators. In all cases, off-the-job training had been set up for one or two types of operator, not for all. Those operators chosen to undertake detailed instruction were engaged in complex tasks which were considered to take too long to learn on the job. Such tasks included die setting, wiring, cable forming, weaving, stitching, beading and machine tasks concerned with glass making. For the most part these were complex manual tasks involving the use of hand tools or precision instruments.

The period of training varied from two days to eight weeks, with an average of two weeks. This was usually followed by factory experience in production work, or by a period of formal on-the-job training. For example, one firm training die setters provided off-the-job instruction in a small training centre followed by a practical demonstration of die setting when presses were not in use. In another firm, trainee press operators were given three days of basic training off the job, followed by four weeks' practical experience in the factory under the supervision of an instructor.

Three firms administered pre-employment tests to potential employees before engaging them for full-time off-the-job training. The tests used included intelligence, manual dexterity, spatial relations and colour discrimination tests.

Training records were kept in four firms, and in three of these each trainee's performance on production tasks was measured and recorded on training charts. Figure 2 provides an illustration of a training record card used by one of the firms.

TRAINEE PROGRESS RECORD

SURNAME		CHRISTIAN NAMES		MARITAL STATUS	
AGE	SEX	TRAINING SCHOOL CLOCK NO.		ADMISSION DATE	
		DEPT. CLOCK NO.		TRANSFER DATE	
PREVIOUS EXPERIENCE				TRAINING TIME	HRS.
TRAINING AS				DEPT.	
		OUTSTANDING	GOOD	SATISFACTORY	FAIR	POOR
MANUAL DEXTERITY sure and easy finger and hand movement						
MECHANICAL COMPREHENSION—ability to understand the working of simple mechanical devices						
ALERTNESS Speed of learning and initiative—Interest						
CO-OPERATION Ability to get along with others, conscientiousness in working well without close supervision						S1

Fig. 2. An Example of a Training Record Card

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The example below illustrates the off-the-job training given in one firm to groups of specialised operators.

Example 3: A Large Telecommunications Firm

This firm employed a staff of 2,400, of whom 1,200 were operators.

Two training centres (the Operator and the Machine Shop Training Centres) had been established to provide instruction in basic skills for those operators engaged on intricate wiring and assembly operations or on power press and machine setting tasks. It had been the firm's experience that, due to time and cost factor, these basic skills could not be learned effectively on the production line.

The Operator Training Centre was staffed by two full-time instructors who were responsible for the training of wirers and assemblers in the basic skills required. Trainees were selected by interview and with the help of aptitude tests. Their training commenced with simple pin-board exercises designed to help them to become familiar with a wiring colour code, followed by instruction and practice in the use of hand tools such as the fork jack terminator (see Figure 3). The trainees then learnt how to terminate and solder wires, interpret drawing plans, and assemble cables. The average length of time spent off the job in the training school was two to three weeks. Follow-up instruction was given on the production line by chargehands or experienced operators.

In the Machine Shop Training Centre two full-time instructors gave trainees basic exercises to develop finger dexterity, followed by practice exercises on the machines. Trainees were then placed on machines in the factory and were closely supervised by the instructors during the first few weeks.

Management considered that the cost of off-the-job training had been more than saved, as the number of leading hands would otherwise have had to be trebled to cope with the essential instruction carried out by the two training centres.

TRAINING STAFF

On the whole, responsibility for operator training lay with middle management (e.g. superintendents, plant controllers, production managers, and factory managers). With regard to off-the-job training, the responsibility for planning, carrying out and following up operator training was delegated to personnel such as training superintendent, employment managers and personnel officers.

The actual instruction of operators was carried out by employees at three levels: operators, first-line supervisors, and specialist instructors.

Operators

Twenty firms indicated that they were using experienced operators to instruct trainee operators. Experienced operators had been chosen because of their technical proficiency and because the tasks involved were relatively simple and could be easily demonstrated. Formal training was not provided for operator instructors.

Fig. 3. An instructor shows a new trainee how to use a fork jack terminator in wiring cables.

First-line Supervisors

Supervisors, leading hands and chargehands were also involved in training new operators in fourteen of the firms studied. However, two other firms indicated that their foremen and supervisors had not worked recently on production tasks and therefore had not retained the necessary manual and perceptual skills required to demonstrate tasks to new operators. For this reason their role in training operators usually did not extend beyond the administration of induction and follow-up procedures. Most first-line supervisors had received no formal training in instruction, but four firms reported that their supervisors had attended T.W.I. courses, usually in Job Instruction and Job Relations.

Specialist Instructors

Nine firms had appointed full-time instructors to provide job instruction for operators. The numbers of full-time instructors employed ranged from one (2 firms), two (4 firms), four (1 firm), five (1 firm) to twenty in one large firm. In the latter firm, instructors gave individual on-the-job coaching to trainee operators. In all nine firms the full-time instructors were engaged in instructing small groups of operators in highly specialised skills such as weaving, tyre building, soldering and wiring. In most cases, instructors had been selected from the operator work force on the basis of their technical competence and good working habits.

Instructors in two firms had undertaken short courses in skills analysis provided by consultants, and in another four firms they had taken part in T.W.I Job Instruction courses led by the Training Officer or undertaken outside the firm

EVALUATING TRAINING

The firms taking part in the survey were asked what steps they had taken to evaluate the effectiveness of their training. Six firms had estimates available on the cost of training, but only three of these had made any attempt to evaluate operator training practices.

In one firm consultants had introduced methods study and a training programme for weavers. They carried out an evaluation which indicated significant savings due to a reduction in training costs and increased operator productivity. Another firm reported improvements in quality standards and a reduction in labour turnover and accidents, which they attributed to the introduction of a training programme. The third firm stated that the introduction of off-the-job training together with an on-the-job instructor had reduced training time for operators by 10-20 per cent.

COMMENT

This survey of the methods of training semi-skilled operators showed that there were considerable variations in the training patterns which had evolved in the firms studied. These differences were of course due to the differing needs of the individual firms, and particularly the level of complexity of the jobs involved.

As would be expected, the more complex a job, the more likely that some off-the-job training had been arranged for the new operator. This was found to be the case in seven of the firms studied. Off-the-job training usually involved an introductory period in which the trainee learnt basic skills before commencing a period of on-the-job training which, in most of the seven firms concerned, had been planned in a systematic way.

Apart from the above, the survey disclosed few examples of systematic on-the-job training. Six firms had made some attempt to make their on-the-job training systematic, but the extent to which arrangements had been formalised varied considerably and, in no case, did these arrangements apply to more than a limited range of jobs.

The rationale behind the limited use by firms of systematic off-the-job or on-the-job training was that management felt it was necessary in only a few cases. Hence, the most common training practice was for operators to be given instruction at the workplace whilst engaged in actual production tasks. The major part of this instruction, and particularly the demonstration of tasks and day-to-day checking of performance, was usually carried out by experienced operators.

Experienced operators had been chosen to act as instructors because they were technically competent and because they were considered to have good working habits; they were felt to be naturally good communicators. They had not been trained to pass on their skills and in most cases carried out their duties as instructors with little or no supervision.

It was of interest that only a minority of the firms had undertaken any systematic assessment of their operator training practices. Six firms had estimates available on the cost of training, but only three of these had made any attempt to measure the effect of training on productivity. This lack of evidence would appear to testify to the difficulties inherent in the evaluation of training effectiveness.

REFERENCES

1. HALLIWELL, V. T. H. 'Training in Short Cycle Repetitive Handwork'. *This journal*, Vol. 19, No. 3, September 1963, pp. 32-39.
2. MACKAY, F. A. M. 'Training of Semi-Skilled Workers at Fibremakers Ltd'. *This Journal*, Vol. 22, No. 2, June 1966, pp. 17-26.
3. SMITH, P. 'Operator Training for Productivity Gains'. *This Journal*, Vol. 24, No. 2, June 1968, pp. 100-109.
4. O'CONNOR, J. P. 'A Survey of Training Within Australian Industry'. *This Journal*, Vol. 18, No. 1, March 1962, pp. 48-53.
5. TAYLOR, H. 'Training in Five Hundred Manufacturing Undertakings'. *This Journal*, Vol. 22, No. 4, December 1968, pp. 27-38.

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APPENDIX

JOB BREAKDOWN

OPERATION: Wrapping and Packeting 2 oz Packets of Tobacco

Important Steps in Operation	*Key Points*
1. Transfer packet piece from scales.	1. Use right hand. 2. Shorts are placed on top of the packet piece. 3. See no shorts are dropped in this operation.
2. Position packet piece in lining.	1. Place in centre of lining with both hands. 2. Ensure same amount of lining protrudes from each end.
3. Fold the wax lining.	1. First fold made with second finger of each hand. 2. Fold completed and smoothed with first fingers of each hand. 3. Fingers remain at each end of packet.
4. End-fold the wax lining.	1. Pressure transferred from first fingers to thumbs. 2. End-fold completed by first fingers. 3. Wrapped packet piece held upright on block with right hand. 4. Crease facing towards scales.
5. Select packet.	1. Left hand used. 2. Held between second finger and thumb. 3. Squeeze packet to open. 4. Bring close to mould.
6. Slide packet piece into packet.	1. Use right hand. 2. Sliding in one movement closer end first.
7. Turn packet.	1. Anti-clockwise. 2. Top of packet facing operator.
8. Fold ends of packet.	1. Ends folded in with thumbs and first fingers of each hand. 2. Turn packet on mould so flap folding will take place towards body.
9. Fold bottom flap of packet.	1. Use both hands between thumbs and first fingers.
10. Fold in top flap of packet.	1. Turn packet with left hand away from operator. Tuck in flap with left thumb and first finger pressing flap in firmly.
11. Simultaneously pick up packet piece and commence second cycle.	

METHODS OF TRAINING OFFICE WORKERS IN 26 ORGANISATIONS

HELEN EASTAUGH

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Describes arrangements — in 26 Australian organisations — for the training and retraining of three groups of office workers — clerks, office machinists, and typists and stenographers.

During the last decade the rate of increase in the size of the clerical workforce in Australia has been estimated at more than twice that of the work force as a whole. The Commonwealth Statistician's labour force returns reveal that 868,300 persons (or 16.4% of the Australian work force) were engaged in clerical work in February, 1970, compared with 548,100 (or 13 per cent) in June 1961.*

This growth reflects the growing demand for clerical skills not only in the service industries but in manufacturing industry as well. However, there remains little published information either about the way clerical skills are acquired in Australia, or about the methods used to retrain persons to meet advances in office technology. This survey was designed to obtain examples of clerical training methods in a small number of Australian organisations.

THE SURVEY

The survey was restricted to training provided for staff below supervisory level in operational and procedural duties. It thus excluded any training of professional persons, of administrators or managers. For convenience, staff were divided into three groups (1) clerks, (2) office machinists, and (3) stenographers and typists.

Personal interviews were conducted between the survey team and managers and supervisors in each of 26 private and semi-government organisations in New

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*(a) Commonwealth Bureau of Census and Statistics. **The Labour Force,** Canberra, February 1970; and

(b) Commonwealth Bureau of Census and Statistics. **Census of the Commonwealth of Australia, 30th June 1961, Volume 8, Canberra, 1965.**

South Wales, Queensland, Victoria, and South Australia to gain the information required.

The selected organisations included eleven manufacturers in five broad groups viz — metals, plant and machinery (4); chemicals, plastics and oils (2); food, drink and tobacco (2); paper (2); textiles (1). Another fifteen were in the services sector of the economy viz — insurance, finance and banking (9); heat, light and power services (2); transport (2); entertainment (1); and building and construction (1). Four of these fifteen were semi-governmental authorities.

Eight of the surveyed organisations employed over 1,000 persons. Eight employed between 501 and 1,000 persons. The remaining ten employed 500 or fewer persons. As shown in Table 1 over 12,000 office workers were employed in the surveyed establishments.

Organisations with an office staff of less than 50 were excluded in the survey. The criterion for setting a minimum of 50 was that this presented more likelihood of obtaining information concerning a variety of skills and of the training methods relating to them.

TABLE 1. Office Staff in 26 Organisations By Occupational Groups

Occupation	Male	Female	Total
Clerks	6,602	3,113	9,715
Office Machinists	—	1,167	1,167
Typists and Stenographers	—	1,643	1,643
TOTAL	6,602	5,923	12,525

ORGANISATION AND ADMINISTRATION OF TRAINING

Broadly speaking, there were distinct differences between the manufacturers and the non-manufacturing organisations insofar as the organisation and administration of office training was concerned, just as there was a predictable tendency for the more thorough office training arrangements to be made more often by organisations with over 1,000 office workers.

Policy and Administration

Basically, office training policy on the levels surveyed was unwritten and seemed to be determined more by custom and past practice than by setting down written objectives.

For example, only six of the organisations had written policies for training office staff. They were all non-manufacturing concerns. Some of these were simple declarations to the effect that all staff would be trained. Others were more detailed and covered staff responsibilities for training, internal training arrangements, and support for external training facilities. In twenty-two of the organisations, the policy was that for on-the-job training, managers and supervisors organised arrangements in their own areas in the interests of overall job efficiency. Section super-

visors planned and administered basic training in office systems and procedures. Office staffs were encouraged by twenty-one of these organisations to attend external courses in the interests of career growth.

Four small manufacturing organisations expressed their policy to be the recruitment of office workers already skilled in the required occupational field so that training would be minimised.

Either the personnel manager or the company training officer was in twenty organisations solely responsible for the overall administration and co-ordination of training.

However, it was clear that, in most cases the extent of this responsibility was limited to training at supervisory and management levels, or to arranging for staff to attend formal courses at external training institutions.

Assessing Needs

Informal rather than formal methods were used to assess the training needed by office staff. Again, the supervisor or section head was regarded by sixteen organisations, including ten of the eleven manufacturers, as being sufficiently familiar with the job skills required to do this best in respect of the staff beneath him.

The more formal methods of assessing training need in the other ten organisations, nine of which were non-manufacturers, ranged from the use by supervisors etc. of simple job descriptions obtained from personnel department for planning on-the-job training to the preparation in four organisations of more complete job breakdowns to develop training programmes. One of the four analysed whole jobs and identified and described individual tasks in some detail. Then job descriptions and job breakdowns were compiled to prepare training plans for the guidance of supervisors.

An example of a job description is shown at Appendix 1 (a). Appendix 1 (b) sets out the job breakdown for one of the duties listed in the job description.

INDUCTION TRAINING

Although every organisation had some kind of induction training, its scope varied greatly, running from half an hour to four hours — usually on the first day. Either the personnel officer or departmental manager would customarily start it off with brief outlines of the organisation's history and development and of relevant policy matters, of the terms and conditions of employment and of the employee amenities and facilities. New employees then met their supervisors and co-workers who began explaining the work involved. This first-day procedure was similar for each of the three categories of office worker.

The induction procedure in one of the organisations provides a typical example. The staff officer, welfare officer and section supervisor saw each new employee individually on the first day. They used the check list shown in Fig. 1 as a guide and initialled the set topics as covered. Induction here occupied three to four hours.

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— FIGURE 1 —
SAMPLE INDUCTION CHECK LIST

MEMORANDUM FOR HEAD OF DEPARTMENT

(To be delivered when new employee is introduced to him)

NEW EMPLOYEE — Mr./Miss .....

1. Tick each Item.
2. Initial and date each paragraph (1 to 5) as completed.

Initial & Date
Tick

1. The following have been dealt with:—
   Brief Statement of Company's History and Activity. ___
   Annual Salary. ___
   Staff Regulations (including Staff Review). ___
   Uniforms. ___

2. Please deal with the following:—
   Significance of work he/she is to do. ___
   Dress. ___
   Time Books. ___
   Use of telephone for private calls. ___
   Lunch hour. ___
   Tea breaks. ___
   Absence from Department. ___
   Sick leave requirements and procedure if taken ill at work. ___
   Hand Roof Pass No. ..... and explain conditions. ___
   Person responsible for training and guidance. ___
   Introduction to other staff in Department. ___
   Nominate escort for first lunch hour and have new officer shown to. ___
   Locker No. .....
   Location .....

3. As soon as paragraph 2 is completed please send this form to Welfare Officer who will arrange to see the new appointee and explain the following:—
   Social and sporting activities. ___
   Canteen. ___
   Medical Benefits and other welfare. ___

4. On pay day please see employee personally and explain the make up of salary. ___

5. After paragraph 4 is completed please return this form to me. I will arrange to see new appointee and explain:—
   Superannuation Fund and/or related schemes. ___
   Examinations. ___

Officer-in-Charge
Date

Ten of the fifteen non-manufacturers, but only one of the manufacturing organisations followed the first day's induction later on with a structured course of lectures and discussion sessions. The initial coverage was then developed more fully as necessary, and topics like the following dealt with — company organisation; administrative arrangements; public relations; efficiency in using office facilities and equipment; the work of the various departments; personnel policies and practices; and career development. Usually training officers ran such courses off-the-job to groups of some 8-10 people at a time, over periods ranging from four hours to 3 weeks. Guest speakers came from various departments within an organisation.

Attendance at these off-the-job induction training courses was usually restricted to clerks — indeed in three organisations to male clerks — for the reason that they were said to need more knowledge of the organisation's operations, objectives, services and communication channels than the others.

Three of the non-manufacturing organisations running longer induction courses, i.e. of five to fifteen days duration, gave about 50% of the time to training in basic skills. In these cases, the courses were usually restricted to clerks and came as soon after employment as practicable to help new employees to carry out their duties satisfactorily.

INTERNAL TRAINING IN BASIC SKILLS

All of the surveyed organisations arranged some form of on-the-job training in the basic skills associated with office systems and procedures for clerks, office machinists and typists.

Informal training On-the-Job

Sixteen organisations, including all the manufacturers relied entirely on an informal on-the-job form of training, while three others regarded this as a main means of equipping office staff with procedural skills etc.

Clerks: Normally clerks began working under the general guidance of an experienced clerk, in some cases the previous accupant of the position.

An initial explanation would be given of the tasks to be done. Then the new clerk applied himself to the job under varying degrees of supervision and sought further guidance as necessary.

The common reason given for training new clerks in this way was that since many of the tasks were routine and repetitive, suitable clerks easily mastered it once shown. One organisation thought this to be the most practical approach since clerks gained skill at their own pace on all tasks associated with the job. The policy in several organisations was to begin this process of learning on the most basic level by appointing clerks to departments with only routine functions. There they grew used to simple office procedures and from there they moved to higher level clerical work.

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Office Machinists: Most organisations tried to recruit machinists already proficient in the basic machining operations. However, supervisors or experienced employees instructed these workers in c fice methods as needed day-to-day. In such cases this usually meant that machinists were expected to ask questions when further information was needed.

Stenographers and Typists: Stenographers and typists were also normally recruited fully trained in basic skills. They gained detailed knowledge of the systems and procedures used through experience on-the-job with appropriate guidance from supervisors, experienced colleagues, or in the case of a stenographer, from the executive to whom she was responsible. Several organisations mentioned that both stenographers and typists tended to gain more speed and accuracy after a period of experience on the job. They therefore considered further in-plant training to upgrade skills unnecessary.

Planned training On-the-Job

Only six organisations provided planned programmes of on-the-job instruction and experience. Five were non-manufacturers, and one a large manufacturer. In these organisations set patterns of training had been established with the aim of providing systematic instruction for the whole range of skills and knowledge required in particular jobs.

Clerks: First-line supervisors normally provided instruction on an individual basis, although two of the six had also appointed experienced clerks as trainers. Standardised instruction was required in all these cases according to a set programme frequently based on job breakdowns or duty statements. Three organisations had prepared procedural manuals detailing the more complex clerical procedures for use as instructional aids.

The common reason given for training in this way was that the complex, non-repetitive clerical procedures involved could not be learned readily without systematic instruction. Clerks were being trained to deal successfully with a variety of interrelated tasks and with potential problems, at times under pressure. Accuracy was vital. Typical procedures here included claims processing, booking and reservations work, costing, pricing, invoicing and checking.

Four non-manufacturers had introduced systems of job rotation, normally running to six months in each of a number of related departments to provide wider clerical training and to help towards caree growth. A typical example was in one firm where the period of induction training was followed by instruction in and practical experience of telephone sales work under the control of a first-line supervisor or training clerk. Basic skills were usually mastered in one week, but a further two weeks' practice was allowed before clerks moved through other areas within the department to gain proficiency in all aspects of the work. The pattern of instruction comprised the four key elements: demonstration, supervised practice, fault

correction and progress appraisal. Training progress records or check lists were maintained for each clerk in some of these organisations. These showed training received, skills mastered and further training required.

Machine Operators: Only four organisations, one manufacturer and three grouped amongst the finance, banking or insurance organisations, provided systematic instruction in machine operation and office procedure for this class of work. Instruction covered machine use with practical exercises ranging from simple calculations to the more complex. It was mentioned that the initial machine operating skills were soon mastered but subsequently a three to six month period was needed for becoming fully acquainted with accounting procedures and gaining the speed and accuracy of the experienced operator. On-the-job instruction was thought the best way of allowing full proficiency to come through constant and practical application.

A large manufacturing company prepared both job breakdowns and training manuals for machining positions. It trained machinists to proficiency in the operation of accounting machines and of electronic calculators and then trained them in accounting procedures (e.g. extracting balances, posting ledgers, etc.). One of the insurance organisations employed three full-time instructors in the training of punched card machine operators. Instructors sat with the trainees in the first week of training constantly checking progress and introducing more difficult operations as they gained proficiency.

Typists and Stenographers: Planned on-the-job training programmes for typists were rare. One organisation had a three phase training programme in which typing routines for its various systems and procedures were covered. Phase 1 concerning mail and distribution procedures lasted between two and five days. In Phase 2, over five to eight days, typists were trained in standard letter procedures using prepared manuals. Phase 3 concerned audio-typing, and lasted three to four weeks. More competent typists might subsequently undertake further training as punched card operators.

Off-the-Job Training

Off-the-job training was not a prevalent feature of training practice either for clerks or others. The ten organisations noted earlier as providing off-the-job training for office staff usually provided instruction to groups of between eight and fifteen people in a training room or annexe away from the normal work situation.

Clerks: The eight non-manufacturers who trained their clerks off-the-job said this was the most economic and effective way of simultaneously training large numbers of clerks doing similar work, and that where the work was complex, it required more systematic instruction than was possible on-the-job. Also where clerks had regular contact with the public they had to be trained to the necessary level of competence needed to provide an adequate standard of service.

Two banks in this group required clerks to attend off-the-job training courses upon their promotion to higher positions. Courses were conducted at central training schools to ensure that all branches followed the same procedures and to leave senior branch officers, without the available time to train effectively, free to concentrate on executive functions.

Training off-the-job was usually concerned with instruction in systems and procedures. For example, one insurance company's off-the-job course covered voucher processing, insurance proposals and policies, maintaining records, and an appreciation of data processing. The training extended over some five weeks and included a high practical component. It was considered that clerks might take six months to attain the same standard on-the-job.

But for some of the other six, off-the-job training was seen more as providing efficiently the elementary grounding, with further on-the-job training and experience provided to meet an adequate level of efficiency.

Clerks in contact with the public frequently receive training in communication skills. Here sales techniques, use of telephone, letter writing, and human relations were covered.

It was evident that organisations which ran standard courses off-the-job for clerks were more ready than others to meet new training needs by developing new training courses, for example in providing special training in spelling, arithmetic, decimalisation or in new procedures.

Office Machinists: Two non-manufacturers provided off-the-job training in machine operation. In one case, the course ran for two days, and brought newly recruited machinists together in the staff training centre. Supervised practice on-the-job followed. In another firm, clerk/machinists attended a special machine school where they received instruction in the functions of the machine and associated procedures. Training included a great deal of practical work on the machines, with emphasis on accuracy rather than speed. Although training was provided on a group basis, individual remedial tuition was given to the trainees.

Typists and Stenographers: In the two organisations providing off-the-job training for typists, the aim was to upgrade existing skills and increase speed and accuracy rather than to provide basic skill training. In both cases, typists attended for training once a week over a period of several weeks, amounting to 15 hours in all. Illustrated in Figure 2 is a programme of such training. Grammar, punctuation and spelling, filing and use of office equipment, audio-typing, office etiquette, and transcriptions were included in the instruction.

FIGURE 2

A PROGRAMME OF TRAINING FOR TYPISTS AND STENOGRAPHERS

	1st Week		2nd Week		3rd Week	
Time	Tuesday	Thursday	Tuesday	Thursday	Tuesday	Thursday
p.m. 1.45 to 2.45	"Introduction" "Organisation of the Company" Film	"Grammar and Punctuation"	"Grammar and Spelling"	"Use and Abuse of Equipment" Film Discussion	"Getting Along with People" Film	"Your Job and Your Voice" Film
3.00 to 4.00	"Types of Letters" and Layout	"Taking Dictation and Translating"	"Filing Procedures"	Typing of Multilith Masters	Appearance — Body care and grooming	Discussion

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RETRAINING AS A RESULT OF TECHNOLOGICAL CHANGE

To meet the effects of technological and procedural changes, twenty-two organisations had found it necessary to provide some retraining. Most innovations had taken the form of increased mechanisation of office systems, affecting clerical and accounting machine work to the greatest extent. Only four organisations mentioned that stenographers and typists had been affected to a point where retraining had become necessary.

Introduction of computers had changed the nature of clerks' duties in fifteen organisations, both manufacturing and non-manufacturing. The clerks needed to learn the procedures associated with coding material and handling input and output data, and with recognising and using new forms and stationery. All fifteen organisations trained clerks on-the-job in the new methods and procedures. In this way the information necessary for a complete changeover to automatic data processing was gradually absorbed. A small number of organisations also conducted short E.D.P. appreciation courses for the clerical staff.

New equipment and streamlined methods and procedures came into operation gradually in most organisations. This itself gave staff in most organisations a period for training and gradual adaption to change.

An exception was a large banking organisation. Here mechanisation of branch procedures had to be completed overnight to avoid interruption to normal business. All personnel in the branches affected were trained beforehand in the functions, use, requirements and control of the new machines and in procedures for correcting faults. They attended courses at a special school where instruction was provided by staff training officers. After the conversion two training officers remained within each branch and instructed staff as required on-the-job.

Office machinists were also affected by the introduction of computers. In some cases accounting machinists were no longer required and had either left the organisation or were retrained to take up clerical duties or operate punch card machines. In the latter case operators had often attended courses conducted by the computer company and acquired skills necessary to operate punched card machines.

Stenographers and typists were least affected by such technological innovations. Indirect effects were apparent, for example changes in stationery. In one organisation, however, the audio-typing equipment had been introduced. Typists were retrained first by the equipment manufacturer and then on-the-job under supervison.

STAFF PROVIDING INSTRUCTION

Supervisors and Experienced Workers

On-the-job instruction in basic skills was provided by first-line supervisors, frequently assisted by experienced workers. Generally less than five per cent of their time was spent in providing instruction, although five organisations reported that certain supervisors and experienced workers spent between one-fifth and one-half of their time in this way.

Common practice was for supervisors to provide some initial instruction and for experienced workers to provide further guidance and tuition as required, but it was uncommon for them to be trained in the instructional role. In twenty organisations, staff with responsibilities for on-the-job instruction had received no specific training in instructional techniques. They were chosen for this training role because of their wide technical experience and knowledge of systems and procedures. They were considered to have the ability to motivate staff and to communicate effectively.

The remaining six, four of which were non-manufacturing organisations, trained those supervisors with responsibilities for on-the-job instruction in instructional techniques. In four of them, this training was based on the Training Within Industry (T.W.I.) Job Instruction Programme, elements of which had been adapted by the organisations to suit local circumstances. In two organisations the basic 10 hour T.W.I. Programme had been incorporated into longer courses in instructional techniques extending over eight and ten days respectively. In addition, refresher courses were sometimes conducted for supervisory staff. Two of the non-manufacturing organisations provided general supervisory training which covered such areas as communication, human relations, and principles of supervision.

Only two organisations reported providing instructional training for experienced workers. In one case all clerks with two years' experience within the organisation attended a job instruction course comprising three 2½ hour sessions and covering methods of instruction, preparation of job breakdowns, and skill demonstration techniques. In the second case all experienced staff with instructional responsibilities undertook a two-week course on instructional techniques.

Training Officers and Instructors

In those ten organisations where off-the-job training was conducted—it will be recalled nine of them were non-manufacturing organisations—training officers or full-time instructors ran the courses, with managers and supervisors frequently conducting individual sessions.

Five of them made it a policy to ensure that training staff had received specific training in instructional methods. In two organisations this was a special internal course, in the other three it was the T.W.I. job instruction programme. Additionally, a few of the training officers in these five organisations had attended additional courses such as the two week Methods of Instruction course conducted by the Department of Labour and National Service, Conference Leadership training conducted by the Australian Institute of Management and one in organisation a special three-day trainer-training course run by a management consultant.

Training staff in the remaining five, had received no special training in instructional techniques. They were chosen as trainers rather for their expert technical knowledge and personal qualities.

USE OF EXTERNAL TRAINING FACILITIES

Twenty-one of the organisations utilized external training facilities. Their policy usually embraced allowing time off during working hours to attend lectures or training activities, and reimbursement of any fees paid following success in the study year.

While in most cases external training was pursued because individual employees sought higher qualifications to improve their career prospects, it was also common for organisations to encourage staff to attend vocationally-relevant external courses.

Those attending such courses for further education were mainly clerical staff seeking higher qualifications in commerce, accountancy, business studies, insurance etc. In terms of basic skill training, a number of organisations also selected clerks to attend such short training courses in, for example, the telex and mail procedure training available from the Postmaster-General's Department, and in addition letter writting and rapid reading courses.

Only six organisations, including two manufacturers, sent office machinists to external training courses, but these were usually skill development or conversion courses provided by business colleges or machine manufacturers when organisations bought new equipment.

Again, six of them, including two manufacturers, sent typists and stenographers to skill development courses conducted by business colleges or equipment suppliers, with one organisation sending each year a few experienced stenographers to a private secretarial course.

EVALUATION OF TRAINING

Only seven organisations—all non-manufacturers—said they employed systematic methods of assessing and evaluating the training provided. These mainly consisted of (1) appraisals by supervisors and training staff combined with (2) the preparation of training progress records for individual trainees. Three organisations had trainees attending off-the-job courses complete written tests and these, together with classroom exercise, were used as a basis for reviewing and modifying the training provided. It was also mentioned that periodic discussions by supervisors, training officers and instructors supplemented written reports and assessments.

The remaining 19 organisations reported no systematic attempt to evaluate training. However, they all used whatever information came to them, e.g. indirectly through exit interviews; from supervisors' impressions and opinions of work standards and quality; and by the amount of remedial instruction necessary to correct poor performance.

Adequacy of Present Training Arrangements

Most organisations considered their present training arrangements to be broadly satisfactory. However, they highlighted some specific shortcomings.

In many organisations, it was considered that supervisors and others with instructional responsibilities had insufficient time to perform their instructional role well. Eleven considered that supervisors should have training in instructional methods. Others also expressed dissatisfaction with the standards of instruction provided by experienced workers. For example, such employees were sometimes thought to lack detailed technical knowledge of a number of operations and the ability to instruct in an organised and systematic manner. However there were often problems in releasing these workers for appropriate training.

A few organisations also commented on the particular advantages of their own training arrangements. One organisation summarised the advantages as enabling instruction to be given systematically, freeing the trainees from the inevitable interruptions of normal business activity reducing the amount of productive time spent by supervisors required to train on the job, and ensuring that uniform standards of training were maintained.

On-the-job training where it prevailed was seen as more economic particularly where recruitment was low. It was also seen as allowing more individual instruction which made on-the-job instruction more practicable and appreciative and it was a more flexible system of training as it facilitated immediate adjustments to changed methods and procedures.

DISCUSSION

From this survey of office training methods the general picture to emerge was that most office workers were trained individually and on-the-job by first-line supervisors and experienced workers. Further, as office machinists and typists were usually proficient in basic machine skills before entering employment, it was in the area of office systems and procedures, particularly for clerks, that the major training needs were located.

Training by exposure to the work was found to be common practice in three-quarters of the organisations studied. Under this system clerks picked up the job as they went along and formal instruction was reduced to a minimum. However, in common with more systematic forms of on-the-job training it was apparent that whilst supervisors were held responsible for providing job training, much of the detailed day-to-day instruction of new employees was being carried out by experienced workers.

Only in those organisations conducting courses of training off-the-job were training officers and full-time instructors involved in providing instruction to any

extent. However, even in these organisations supervisors and experienced workers played a key role in providing further instruction and guided experienced on-the-job.

Although most organisations expressed general satisfaction with their internal training arrangements the point was frequently made that supervisors had insufficient time to provide instruction of an adequate standard and experienced workers frequently lacked the skill and knowledge to do so. In this respect it was of interest to note that training in instructional techniques had only been provided for supervisors in six organisations and for experienced workers in two organisations. However, as mentioned in an earlier survey[1] there were acknowledged to be problems in arranging for suitable training of this kind and in releasing experienced worker trainers from their jobs for any length of time.

As to retraining, it was clear that this was usually achieved through a gradual process of adaption to new procedures and methods of working in which supervisors again played a key role. Only in organisations where major skill adjustments were rapidly needed were special courses of instruction found to be necessary. These were frequently provided externally by equipment manufacturers, but apart from basic skill conversion courses of this kind external training facilities were usually utilised for further educational purposes.

Whilst it was not possible to assess the standards and quality of the training being provided, it is of interest to note as a point of comparison the key features of sound office training schemes enumerated in an earlier British report. These were:

- nomination of a senior member of management to be responsible for training.
- planned programmes based on an analysis of the knowledge, skills and experience required;
- an induction programme;
- instruction and practice in basic skills, office systems and procedures;
- competent supervision;
- further education.

REFERENCES

1. WOOKEY, MARGARET. "The Work and Training of Technical Instructors in 25 undertakings" *This Journal,* Vol. 23, No. 4, December 1967, pp. 293-300.

2. CENTRAL TRAINING COUNCIL, Report by the Commercial and Clerical Training Committee—"Training for Commerce and the Office" H.M.S.O. London, March 1966, 25 pp.

APPENDIX 1(a)

JOB DESCRIPTION — EXAMPLE.

Industry	
Department	
Section	Transport
Position	Transport Clerk
Responsible to	Transport Officer
Location	Transport Depot
Summary of Duties	Perform the clerical functions necessary for the administration of the Transport fleet as directed

List of Duties

1. To ensure that all requirements of the various Government departments are complied with in request to registrations and returns.
2. To adjust records with relevant Government department when engine numbers, addresses or other items are changed.
3. To arrange for replacement of lost or defaced number plates.
4. To arrange for replacement of registration labels.
5. To ensure that all vehicles are adequately insured.
6. To ensure that all accidents are correctly recorded and that all claims are made on insurance.
7. To check all insurance invoices.
8. To control and record vehicle movements.
9. To arrange for road permits.
10. To prepare transport cost sheet monthly. *
11. To record country branch vehicle maintenance time sheets.
12. To maintain fleet lists, vehicle history cards and petrol, oil and tyre records.
13. To check invoices for sundry purchases.
14. To requisition for protective clothing, stationery and other goods as required.
15. To liaise with the stationery clerk on the numbering of printed or roneoed forms.
16. To construct, as required, statistical graphs etc. from information on hand and from run sheets.

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*See Appendix 1(b) for breakdown of this duty.

APPENDIX 1(b)

JOB BREAKDOWN SHEET — EXAMPLE

TRANSPORT CLERK

Subject: Duty No. 10 — Preparation of Monthly Transport Cost Sheet.	
STAGES	KEY POINTS
1. Check colour code.	1. All entries for Branch to be made in red. 2. Entries for Head Office in black.
2. Examine and enter requisitions and invoices onto cost sheet daily.	1. Receive daily. Show Reg. No. or Invoice No. and date. 2. If the amount to be shown exceeds $50, the description of the item is to be added.
3. Examine and enter Time Sheets on to vehicle cost sheets daily.	1. Received daily. 2. Enter as money value.
4. Examine and enter Petrol and Oil Sheets on to vehicle cost sheets weekly.	1. Received from Head Offices and Branch. 2. Enter on to appropriate vehicle cost sheets.
5. Receive and examine monthly branch petrol and oil sheets.	1. Received at end of month or no later than ten days after end of month.
6. Receive and examine monthly branch transport return.	1. As for Stage 5.
7. Receive and examine month end mileage readings:	1. As for Stage 5.

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IDENTIFIERS - AUSTRALIA

ABSTRACT - SURVEYS IN RECENT YEARS HAVE SHOWN A RAPID EXPANSION IN THE EMPLOYMENT OF TECHNICIANS IN A NUMBER OF AUSTRALIAN INDUSTRIES. THIS DOCUMENT CONTAINS TWO REPORTS ON THE WORK OF AND TRAINING AFFORDED TECHNICIANS IN AUSTRALIA AND OVERSEAS, AND A RECENTLY PUBLISHED OUTLINE OF DEVELOPMENTS PROPOSED FOR TECHNICIAN-LEVEL TRAINING IN THE UNITED KINGDOM. TECHNICIANS IN NON-ELECTRICAL PLANTS AND MACHINERY MANUFACTURING INDUSTRIES ARE THE SUBJECTS IN THE FIRST ARTICLE. RELATED DOCUMENTS ARE AVAILABLE IN THIS ISSUE AS VT 014 536, VT 014 537, AND VT 014 539 IN THIS ISSUE. (AUTHOR/GEB)

VT 014 538

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PREFACE

Surveys in recent years by the Department of Labour and National Service have shown up a rapid expansion in the employment of technicians in a number of Australian industries.

This booklet draws together two recently published departmental reports on the work of and training afforded technicians here and overseas, and a recently published outline of developments proposed for technician-level training in the United Kingdom.

To date, the evidence suggests that most of the technicians in the oversea regions surveyed—Western Europe including Britain, Soviet Union, North America—have become skilled on that level through on-the-job training and experience in basic fields of skilled work. Only a minority completed institutional technician courses, but this seems to be changing now with increasing attention being given to formal training for this level of employment in several countries.

In Australia, while formal courses for technicians are available in the institutes of technology and principal technical colleges it is clear that only a minority even today pursue them. Indeed only a minority seem to follow any organized in-plant training.

The technician labour force has grown mainly as a result of new materials, new products and increased complexity in production systems. The technicians' competence necessarily differs from that of the tradesman or the technologist. Typically their work includes production planning and supervision, quality control, testing, inspection and analysis and such work as designing, installing and maintaining new equipment under professional guidance.

Their numbers are naturally expected to grow as increasing use is also made of professional manpower in industry. With effective support from the technicians, technologists' skills can be effectively used on the tasks for which their qualifications suit them.

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EMPLOYMENT AND TRAINING OF TECHNICIANS IN NON-ELECTRICAL PLANT AND MACHINERY MANUFACTURING

This report is extracted and developed from a booklet covering a July 1968 questionnaire-and-interview survey by the Department of Labour and National Service covering technicians in non-electrical plant and machinery manufacture. The main objectives were to obtain information about trends in the employment of technicians; the types of work they do; their qualifications; the various forms of training they receive; and the current and future demand for their skills. The survey also sought information about and reported on aspects of the employment of professionally qualified personnel in the industry.

Similar surveys of technicians and other technical manpower were made by the Department in 1961 in the chemical and allied industries, and in 1964 in the electrical engineering, electronics and telecommunications industries. [1, 2, 3, 4.]

In Australia and overseas, the last 20 years have seen rapid scientific and technical advances. Many have made a noticeable impact on occupational structures in firms. One is the emergence of technician occupations as new areas of skill emerge in industrial applications.

THE TECHNICIAN

The technician was described for the survey in terms of the work he did rather than in terms of educational qualifications which his work might require.

The research team asked firms to identify him as anyone amongst their technical workers who applied technical knowledge and skill to his work of a higher order than that of a tradesmen but below that of a technologist, whether in possession of recognized technician qualifications, such as a technical college certificate or otherwise and whether he was called 'technician' or not. Accordingly, the survey questionnaire indicated that the definition could apply to heat treatment foreman, production supervisor, safety officer, laboratory technician, maintenance supervisor, estimator, quality control inspector, time study officer, and research assistant.

A trainee technician was accordingly an employee not yet engaged in technician work but undergoing appropriate training at a technical institution or off-the-job training, specifically intended to qualify him for a technician position.

The definition of 'technician' used was derived initially from one adopted by the U.K. Ministry of Labour in 1960 for a survey of technical manpower in the chemical and engineering industries.

* The full text of the published research report appears in 'Employment and Technology No. 5: Technicians in Non-Electrical Plant and Machinery Manufacture,' pp. 38, Department of Labour and National Service, Melbourne, 1969.

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A Committee set up by the Royal Australian Chemical Institute to investigate the training of chemical technicians used the definition in its subsequent report.[5] A somewhat similar definition has been used in a published statement[6] approved by the Council of the Institution of Engineers, Australia, regarding engineering technicians.

The occupations of the technologist, trainee technologist and tradesman were identified, viz

Technologist: A professionally qualified scientist or engineer—that is one who has a university degree or technical college diploma or other qualification admitting to membership of the recognized professional association.

Trainee technologist: An employee who is undergoing training designed to lead to technologist status, for example a cadet.

Tradesman: A worker employed as a tradesman, whether or not he served an apprenticeship.

The figures and other details discussed here are therefore based on participating firms' interpretation of the above broad definitions as applying to their own activities. This could have resulted in the inclusion of some categories of employees as technicians who might not necessarily be regarded as such outside the particular firms.

THE INDUSTRY

Non-electrical plant and machinery manufacture comprises a broad field in the metal trades industry. It includes the making of producer machinery and machine tools, engines, foundry equipment, power boilers, structural steel fabrication, conveyors, cranes, hoists, office machines, lubrication equipment, steel furniture, pneumatic tools etc. and consumer products like lawn mowers, air-conditioners, washing machines, refrigerators etc.

Factory census statistics had shown a moderate rate of expansion in the three years prior to the survey (1964-65 to 1967-68) in both output of existing products and the introduction of new product ranges. This continued a trend already evident to most of the firms from the early sixties.

Nearly all of those ultimately interviewed (57 of the 62 firms) reported to this effect, estimates of increases over the five years ranging widely from 10 per cent to 250 per cent and being attributed to healthy home market conditions for the most part. But there were some instances of production being expanded to meet export orders.

A majority of firms interviewed reported the introduction of new technologies, like changes in plant and equipment, materials and production processes. Expansion in the range of products was also reported by well over half of the firms.

These developments over the period 1964-1968 had resulted in an increased demand for technical manpower in the industry.

SURVEY DETAILS

The survey covered 141 selected firms, each of which completed a questionnaire about its technical manpower; 62 of them provided further information about their technicians at interviews. The firms, selected as broadly

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representative of the industry, employed 30,326 persons at the time of the survey, as indicated in Table 1.

TABLE 1—FIRMS PARTICIPATING IN THE SURVEY

State	Firms completing questionnaires	Numbers employed	Firms interviewed
New South Wales	52	7,742	22
Victoria	31	6,613	11
Queensland	26	4,958	12
South Australia	20	9,318	10
Tasmania	6	1,168	2
Western Australia	6	527	5
TOTAL	141	30,326	62

Most attention was given to those firms within the non-electrical plant and machinery manufacturing industry with 100 or more employees, but firms with between 50 and 100 employees and with less than 50 employees were also included to ensure that representation of the industry was complete. It was considered that the larger firms would provide the most relevant experience and information about the employment of technicians. In detail, the 141 firms included 17 with 300 or more employees; 22 with employment ranging between 200-299; 42 employing between 100-199; and 60 with less than 100 employees.

The total employment figure (30,326) amounted to almost 30 per cent of average employment in the industry at the time*, and the firms selected are believed to have been broadly representative of the industry.

The structure of employment in the sample of firms is indicated in Table 2; it is based on the firms' own interpretation of the definitions of employment categories given in the questionnaire.

TABLE 2—EMPLOYMENT IN PARTICIPATING FIRMS

Employment category	Males	Females	Persons	
			Number	%
Management, administration and clerical	3,173	1,685	4,858**	16.0
Technologists	319	..	319	1.1
Trainee technologists	126	1	127	0.4
Technicians	2,484	11	2,495	8.2
Trainee technicians	270	6	276	0.9
Tradesmen	8,380	5	8,385	27.6
Apprentices and other trainee tradesmen	2,325	..	2,325	7.7
Other employees	8,980	2,561	11,541	38.1
TOTAL	26,057	4,269	30,326	100.0

** Including 132 Technologists in managerial or administrative posts.

* Commonwealth Bureau of Census and Statistics: A summary of Principal Statistics of Factories, 1967-68.

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Of the technical personnel employed, tradesmen comprised the largest category. There were 8,385 tradesmen, representing almost 28 per cent of all employees, while apprentices and other trainee tradesmen numbered 2,325.

Eight per cent of the employees (2,495) were classified as technicians and, in addition, there were 276 trainees.

There were 319 technologists employed in work relating to their scientific or engineering qualifications. Adding a further 132 technologists engaged in management and administration, 451 in all (1½ per cent) had professional qualifications.

WORK OF THE TECHNICIANS

Of 30,326 employees in the 141 firms surveyed, 2,495 were classified by the firms as technicians in accordance with the survey definition. There were also 276 trainee technicians. The technicians and trainees were employed in 127 of the firms. Fourteen of the smaller firms did not employ any technicians.

TABLE 3—TECHNICIANS AND TRAINEE TECHNICIANS: FUNCTIONAL AREAS

Functional area	Technicians		Trainee technicians	
Research and development	102	(4%)	10	(4%)
Design and drawing	623	(25%)	115	(42%)
Production—				
planning and estimating	298	(12%)	19	(7%)
organization, methods, and work study	164	(6%)	20	(7%)
supervision	646	(26%)	71	(26%)
plant engineering, operations and maintenance	93	(4%)	11	(4%)
Plant installation and maintenance	63	(3%)	1	*
Quality control, testing, inspection and analysis	183	(7%)	12	(4%)
Sales and service	287	(12%)	11	(4%)
Other	36	(1%)	6	(2%)
TOTAL	2,495	(100%)	276	(100%)

* Less than 0.5 per cent.

Almost half of the technicians (49 per cent) were employed in production departments and 25 per cent were in design and drawing departments. Most trainee technicians were in design and drawing (42 per cent).

Table 3 provides a classification of technicians and trainees according to the functional area in which they were engaged.

The branches of engineering or science with which their work was associated are shown in Table 4.

As to be expected, the great majority (96 per cent) were employed on engineering work, principally mechanical engineering (75 per cent). Seventy-eight were engaged in work associated with one or other of the various branches of science, and most of these were engaged in metallurgy.

Information was also obtained at interviews about the type of work

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TABLE 4—TECHNICIANS: BRANCH OF ENGINEERING OR SCIENCE

Branch	Persons	
	Number	%
Mechanical engineering	1,883	75
Electrical engineering	94	4
Electronics and communications engineering	14	1
Chemical engineering	7	*
Industrial engineering	192	8
Other engineering	227	9
Chemistry	14	1
Metallurgy	49	2
Physics	..	..
Mathematics and statistics	1	*
Other science	14	1
TOTAL	2,495	100†

* Less than 0.5 per cent.
† The percentages do not add exactly to 100 due to rounding.

performed by technicians and the job titles applied to their work. The wide variety of job titles and the varying views about which jobs were of technician level highlighted the difficulties entailed in trying to define technicians in universally acceptable terms, or even of drawing clear-cut lines separating technicians from other technical personnel. Some of these job titles are indicated below, as examples of those in use in some of the firms surveyed.

The largest group of technicians was in production (see Table 3) where they were reponsible, for example, for scheduling production lines, allocating and controlling work flow and estimating costs in response to customers' enquiries or for tenders. In this area of work their firms gave them such titles as schedule superintendent, production controller, methods engineer and estimating engineer.*

Other technicians in this group were engaged in developing production methods—settling standard methods of production and timing manufactured goods through the stages of production. These, for example, were the work study analysts and methods technicians.

Design and drawing functions accounted for the second largest group. Technicians in this field prepared drawings from data supplied by technologists, and in some instances engaged directly in design (e.g., in tool and product design). They were listed by their firms as design engineers, product designers, detail draftsmen and the like.

There were also considerable numbers of technicians engaged in sales and service activities. This was work involving close contact with customers—discussing design requirements and providing after-sales advice on equipment

* In the English speaking world, the term 'engineer' has been used somewhat widely. In recent years the various professional engineering institutions have sought to persuade industry and the public at large to restrict its usage to persons professionally qualified in engineering (technologists in the terminology of this report). Although many employers including virtually all Government agencies and most large private employers have adopted this usage, there are still many employers who use the term 'engineer' in the titles of jobs which do not involve professional training and/or skills.

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installation and maintenance. Technicians in this field were known by such titles as sales engineer, technical sales representative and liaison officer.

A comparatively small group of technicians was employed in quality control. Their duties were to ensure that high standards of production were maintained, both by submitting final products to fault analysis and performance investigation, and by carefully inspecting the quality of raw materials used in manufacture.

Another group, again comparatively small, was engaged in research and development. These technicians had such job titles as product development technician and experimental officer. They were employed almost entirely in laboratory and experimental work, sometimes independently and sometimes assisting technologists to develop, build and test prototypes for new products and to re-design existing products.

Plant intallation and maintenance required fewer technicians than other functions. Those employed in this field were responsible for planning and installing the company's own plant and for its maintenance and repair. They were usually called maintenance engineers or plant maintenance officers.

It was not the purpose of the survey to enquire about technician pay rates, but information supplied by a number of firms indicated a trend for technicians in research, design and sales areas to be paid more than those in production. There was insufficient evidence, however, on which to conclude that this was the general practice. Levels of responsibility, technical skill and training required, and individual performance, varied even within each functional area and firms took all such matters into account in determining individual pay rates.

The highest paid technician in one firm was an estimator and in another a work study technician, while in several firms production spuervisors were amongst the highest paid technicians because of their responsibility for costly production processes.

Very few women were employed as technicians. They represented less than 1 per cent of the total and were engaged in drafting, inspection and laboratory work. In these types of work they were regarded by their employers as efficient workers, but they had not been considered for other technical functions. Other work was thought to be too dirty or too heavy. None of the firms had provided female technicians with training opportunities similar to those provided for men, and their prospects of advancement apparently were limited.

Technological change

Firms interviewed in the survey were asked about major technological changes* in the previous five years and about proposed changes in the next five years. Reasons were sought also for the introduction of such changes, and information about their effects on the composition of the technical personnel employed.

* A broad definition of technological change was chosen in accordance with suggestions of the 1964 International Labour Office Committee of Experts on Automation, namely 'any change in materials, equipment, methods, organization or product which alters the quantity or quality of labour per unit of physical output'.

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Practically all the firms stated that they had made some technical changes in recent years. Most of the changes reported were not major but many had considerable effect on production or personnel.

They included, for example, modification of products, use of newly-developed materials, installation of larger and more efficient automatic or semi-automatic machinery, and product rationalization consisting of discontinuance of some products and expansion of others.

There were instances of the manufacture of components previously obtained from elsewhere, of the establishment of a new factory with automatic machinery to meet expanded operations, of changes in production methods and the introduction of machinery to eliminate various types of manual work.

There had also been changes in production and employment policy on the occasion of a merger, and the introduction of new plant in order to lower costs with a view to establishing export markets.

The main reasons stated for the introduction of technological changes were the need to meet increased production requirements and the desirability of reducing costs. Changes were also introduced in order to effect improvement in products, add to the range of products and overcome a shortage of skilled manpower.

In general, firms found it difficult to separate out changes in employment which were due to technical innovations from those resulting from other causes. In most cases firms were prepared to offer only generalized opinions on the subject. Some felt that technicians were being increasingly used as a result of technological change and several of these expected that this trend might continue with further changes. (As was expected firms associated part of the increased number of technologists involved in the greater volume of research and development work, with technological change.)

Other firms thought that technological change had not increased their use of technicians; others again considered that relatively fewer were employed, since changes had been introduced primarily to reduce the need for technical skills at technician and trade levels.

Nevertheless, despite difficulties in identifying the results of technological change with any degree of confidence, 26 of the firms did provide reasonably precise information about the employment effects of changes introduced in recent years. Most of these reported an increase in the number of technicians, as a consequence, for such functional areas as production planning, estimating, work study, drafting and quality control.

It is not clear whether in the overall situation greater use of technicians is being made as a result of technological change. However, it does appear that at least in the functional areas referred to above, technicians may be used in increasing numbers in the years to come and that, as in the past, technological change will be at least partly responsible for this trend.

TECHNICIAN RECRUITMENT

Firms recruited their technicians in various ways but the majority obtained most of their technicians by upgrading tradesmen after appropriate in-plant training. Some firms, in fact, considered that upgrading was in some

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ways preferable since the nature of the work in particular firms required personnel with considerable experience in those firms. The desirability of being able to offer promotion prospects to their best tradesmen was also a consideration.

Qualifications usually required by firms recruiting technicians from other firms included a trade background and appropriate experience. Otherwise firms tended to require them to have at least partially completed a technician course at a technical institution. Formal technician qualifications were regarded as particularly desirable for appointment to positions as draftsmen, work study officers, estimators, quality controllers, production planners and technical sales representatives.

Of the 62 firms interviewed, 33 referred specifically to difficulties experienced in obtaining qualified technicians especially for work in such areas as drafting, design, research and production planning. Some firms had also had difficulty in recruiting, for example, production planners, cost estimators, and installation and maintenance technicians when introducing new equipment.

Where shortages could not be met by recourse to upgrading and in-plant training, firms had resorted to overtime and sometimes to using technologists on technicians' work.

In seeking to ensure a supply of technicians, 45 of the firms interviewed were encouraging their apprentices and tradesmen to undertake technician courses at technical institutions. To this end, there were firms paying or reimbursing fees and sometimes granting daytime release to employees to attend classes. One firm was also sponsoring selected employees for full-time study; another offered bonuses to employees who had gained high marks during their technician courses. There were also firms offering promotion to apprentices and tradesmen as specific rewards for successful completion of technician courses.

There were, nevertheless, complaints from some firms that too few apprentices and tradesmen were willing to undertake the study required for their advancement.

Technicians with overseas qualifications were found to be employed in most of the firms interviewed. The proportion varied greatly between firms, but was as high as a third of all the technicians in one firm. Those with overseas qualifications were usually highly regarded, especially in drafting and work study positions. Firms as a rule did not express a preference for technicians with Australian qualifications, but some indicated that in interviewing applicants they often had difficulty in assessing the suitablility of overseas qualifications for the particular jobs offering. This was sometimes overcome by testing applicants on the job.

TECHNICIAN TRAINING

Training at educational institutions

Firms were asked to provide details of the number of technicians who had attended various types of training courses at technical colleges and other tertiary educational institutions. For convenience courses were classified as being at one of three main educational levels—below technician level,

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technician level, and above technician level—including both part-time and full-time studies. The results are shown in Table 5.

Table 5 shows that 1,313 technicians (53 per cent) had attended courses classified as being below technician level—that is, trade courses of various kinds; 877 (35 per cent) had attended courses at technician level; 579 of them (23 per cent) had succesfully completed their training, while a further 298 had either failed to complete the course or were still attending classes. One hundred and fifteen (or 5 per cent) had attended above-technician level courses—courses at technical colleges or universities leading to a diploma or degree but had not completed them. The categories of training shown in the table are not mutually exclusive and some technicians are included under more than one type of institutional training.

Over 70 per cent of technicians working in production supervision and a similar proportion of those engaged in quality control activities had attended trade-level courses. In addition, many technicians with trade training were employed in such functional areas as plant installation and maintenance, sales and service, production and organization, methods study, plant engineering, maintenance, planning and estimating. However, a substantial proportion of technicians engaged in these same functional areas were attending certificate-level courses.

Of those who had completed or partly completed technician-level educa-

TABLE 5—TECHNICIANS: TYPE OF COURSE ATTENDED AT EDUCATIONAL INSTITUTIONS* BY FUNCTIONAL AREA

Functional area	Below technician level, e.g., trade courses	Technician level, e.g., certificate course		Above technician level, e.g., partly completed diploma or degree
		Completed	Part-completed	
Research and development	35 (34%)	27 (27%)	18 (18%)	17 (17%)
Design and drawing	149 (24%)	254 (41%)	142 (23%)	48 (8%)
Production—				
planning and estimating	158 (53%)	63 (21%)	50 (17%)	12 (4%)
organization, methods, work study	94 (57%)	40 (24%)	13 (8%)	6 (4%)
supervision	467 (72%)	72 (11%)	19 (3%)	10 (2%)
plant engineering, operation and maintenance	52 (56%)	21 (23%)	9 (10%)	8 (9%)
Plant installation and maintenance	40 (64%)	4 (6%)	8 (13%)	.. ..
Quality control, testing, inspection and analysis ..	130 (71%)	19 (10%)	19 (10%)	6 (3%)
Sales and service	168 (59%)	72 (25%)	19 (7%)	7 (2%)
Other	20 (56%)	7 (19%)	1 (3%)	1 (3%)
TOTAL	1.313 (53%)	579 (23%)	298 (12%)	115 (5%)

* Percentages shown in this table relate to the total number of technicians employed in each functional area. The numbers and percentages in each functional area cannot be added since some technicians in that area attended more than one type of course.

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TABLE 6—TRAINEE TECHNICIANS: LEVEL OF COURSES ATTENDED AT EDUCATIONAL INSTITUTIONS* BY FUNCTIONAL AREA

Functional area	Below technician level, e.g., trade course	Technician level, e.g., certificate course	Above technician level, e.g., part of degree or diploma course
Research and development	3 (30%)	4 (40%)	3 (30%)
Design and drawing	15 (13%)	95 (83%)	2 (2%)
Production—			
Planning and estimating	4 (21%)	12 (63%)	1 (5%)
organization, methods, work study	3 (15%)	16 (80%)	1 (5%)
supervision	21 (30%)	18 (25%)	1 (1%)
plant engineering, .. operation and maintenance	1 (9%)	7 (64%)	.. ..
Plant installation and maintenance	.. ..	1 (100%)	.. ..
Quality control, testing, inspection and analysis	3 (25%)	5 (42%)	.. ..
Sales and service	4 (36%)	6 (55%)	1 (9%)
Other	2 (33%)	3 (50%)	1 (17%)
TOTAL	56 (20%)	167 (61%)	10 (4%)

* Percentages shown in this table relate to the total number of trainee technicians employed in each functional area. The numbers and percentages in each functional area cannot be added since some trainees in that area attended more than one level of course.

tion, just over 50 per cent were found to be working in such functional areas as research and development or design and drawing. The majority (56 per cent) of those who had attended technologist-level courses were also employed in these two functional areas.

Among trainee technicians, a high proportion (61 per cent) were found to be attending technician-level courses. Table 6 shows that, in contrast to the types of educational courses attended by technicians, only 56 trainees (20 per cent) were undertaking courses at below the technician level. With the exception of those engaged in production supervision, the majority in all functional areas were attending technician-level courses. Drawing and design trainee technicians made up almost three-quarters of those undertaking these courses. This represented almost 83 per cent of the total number of trainee technicians engaged in design and drawing.

Trainees attending technical college courses were mainly doing so on a part-time basis. In most cases time-off to attend lectures during the day was granted where suitable courses were available.

The number of trainee technicians taking part of a diploma or degree course was small (less than 4 per cent).

In-plant training

Firms were asked to indicate the types of in-plant training which technicians had received. Table 7 shows that 45 per cent of technicians had re-

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TABLE 7—TECHNICIANS: TYPE OF IN-PLANT TRAINING RECEIVED* BY FUNCTIONAL AREA

Functional area	Off-the-job technician training	On-the-job technician training	Trade training but no additional technician training	Training with previous employers
Research and development	14 (14%)	46 (45%)	22 (22%)	15 (15%)
Design and drawing	74 (12%)	292 (47%)	67 (11%)	140 (23%)
Production—				
planning and estimating	38 (13%)	161 (54%)	51 (17%)	44 (15%)
organization, methods, work study	11 (7%)	87 (53%)	29 (18%)	28 (17%)
supervision	67 (10%)	266 (41%)	208 (32%)	44 (7%)
plant engineering, operation and maintenance	12 (13%)	30 (32%)	23 (25%)	12 (13%)
Plant installation and maintenance	3 (5%)	27 (43%)	12 (19%)	12 (19%)
Quality control, testing, inspection and analysis	6 (3%)	89 (49%)	49 (27%)	28 (15%)
Sales and service	3 (1%)	111 (39%)	89 (31%)	59 (21%)
Other	4 (11%)	8 (22%)	2 (6%)	5 (14%)
TOTAL	232 (9%)	1,117 (45%)	552 (22%)	387 (16%)

* Percentages shown in this table relate to the total number of technicians employed in each functional area. The numbers and percentages in each functional area cannot be added since some technicians in that area received more than one type of training.

TABLE 8—TRAINEE TECHNICIANS: TYPE OF IN-PLANT TRAINING* BY FUNCTIONAL AREA

Functional area	Off-the-job training	On-the-job training
Research and development	4 (40%)	4 (40%)
Design and drawing	25 (22%)	84 (73%)
Production—		
planning and estimating	4 (21%)	14 (74%)
organization, methods, work study	7 (35%)	14 (70%)
supervision	53 (75%)	22 (31%)
plant engineering, operation and maintenance	3 (27%)	6 (55%)
Plant installation and maintenance	1 (100%)	1 (100%)
Quality control, testing, inspection and analysis	4 (33%)	9 (75%)
Sales and service	1 (9%)	8 (82%)
Other	3 (50%)	2 (33%)
TOTAL	105 (38%)	164 (60%)

* Percentages shown in this table relate to the total number of trainee technicians employed in each functional area. The numbers and percentages in each functional area cannot be added since some trainees in that area received more than one type of training.

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ceived some training on the job. This form of training predominated in each of the functional areas covered. Off-the-job technician training (training in a firm's training school or annex) was less common and only 232 (9 per cent) had been trained in this way.

A considerable number of technicians (552) had received no specific technician training but had been upgraded without additional training after having completed an apprenticeship or other trade training.

A further group (387) had received their training with previous employers. Over one-third of them were employed in the design and drawing area, where the recruitment of ready-trained technicians was apparently a common practice.

As shown in Table 8, 38 percent of trainee technicians were receiving in-plant training off the job as compared with 9 per cent of technicians (Table 7). However, on-the-job training was still the more common method.

DISCUSSION

Almost all the technicians in this industry (96%) were employed on work exploiting engineering skills in one form or another. About half of them were engaged in direct and ancillary production functions; one in four in design and drawing work; one in eight in technical sales and service work; and the remaining eighth on tasks like quality control and research and development.

Similarly almost half the trainee technicians were working in or around the production area. However, a significantly higher proportion of the trainees was engaged in design and drawing work (42%) than was the case amongst fully-skilled technicians (25%). In large measure, this may well have reflected the more formalized training arrangements for design and drawing work than other classes of work at this point in time.

Most technicians had enjoyed a mixture of in-plant and technical education elements but there was a substantial reliance in the industry on technicians with either only trade-level technical education and on-the-job training at technician level or trade-level technical education without any additional in-plant training at the technician level. Only 23% had completed technician-level technical college courses successfully, and another 17% partially completed courses on this level or above.

A small minority of technicians had in fact received no technical education at all, but had progressed to technician status by a process of continual upgrading over the course of their working lives. Their technical expertise was therefore likely to be a product of either on-or-off-the-job training in plants in the functional area in which they worked.

By and large, the remaining background of those working in such areas as production planning and estimating, industrial engineering and work study, sales and service and plant engineering and maintenance typified the training pattern for technicians in the industry as a whole, i.e. over half of them had completed trade courses and in the order of one-third of them had completed or else begun technician courses.

The most highly trained groups were those working in design and drawing

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offices and in research and development functions, over half of whom had either completed or partially completed technical education courses at or above technician level. Such qualifications seemed to be required more of technicians working in these fields than elsewhere. Again, those working in these fields were amongst those usually selected to attend the limited off-the-job-in-plant training afforded technicians.

By contrast, the educational background of technicians working in such areas as production supervision, plant installation and quality control was frequently below the standard attained by others. As to in-plant training, technicians in the latter two fields, i.e. plant installation and quality control, tended more often than others to undergo no specific in-plant technician training.

Technicians figured amongst the categories of scarce manpower in the industry, with vacancies for the design and drawing, research and production planning areas particularly high. These areas already accounted for about 40% of the technicians in the industry, and they were amongst those for which training to an advanced level was most often needed. The broad indication given that between 1968 and 1973, the firms surveyed, representing almost one-third of the current employment in the industry, expected their employment of technicians to increase by almost 19%, pointed to a required rate of growth in manpower on this level of skill probably greater than would be shown in overall employment. Growth employment between 1968 and 1973 might be expected to run to about 14%, if broad manufacturing trends obtain.

The problem posed for the industry in seeking to meet this requirement for technicians was that the number of trainee technicians in many functional areas was small. With the exception of trainee draftsmen, where the ratio of trainees to fully-skilled technicians was approximately 1:5, the prevailing ratio was rather nearer one trainee to every nine technicians in the main functional areas of technician employment. The inference to be drawn is that many of the future technicians in all those areas will either continue to assume their responsibilities without specific education or prior training on the technician's level, or will be recruited from amongst a possibly larger drop-out of diploma- or degree-level students. Either way, it seems that little planning for the succession of specifically-trained technicians is being done, and certainly less than for either tradesmen or technologists. This is shown by the ratio of trainees to qualified men on these levels. In the former case, the ratio of apprentices to craftsmen or tradesmen in the industry was of the order of 1:4 and in the latter case, the ratio of trainee technologists to professional manpower working in technical posts was of the order of 1:3.

For certain areas of technician employment, therefore the question may be asked whether given the inevitable lead time in instituting improved practices, the ostensibly informal training arrangements which currently operate are likely to provide the quality of training needed for highly competent performance of duties on this level over the next decade. In the absence of improved training arrangements in the medium-term, the same question might be asked of the next period beyond that.

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THE TRAINING OF TECHNICIANS OVERSEAS— A REVIEW OF THE LITERATURE

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Industrial Services Branch

Department of Labour and National Service

No attempt at a precise and detailed definition for the term 'technician' has succeeded in encompassing the whole range of occupations in industry and commerce broadly regarded as being at technician level. For this reason the 1966 Hudderfield Conference on the Education and Training of Technicians[1] identified technicians as being those people employed in a broad spectrum of occupations lying between the craftsman, on the one hand, and the professional or technologist, on the other.

However, it is often impossible to draw clear-cut lines separating certain highly-skilled craftsman and process workers from technicians; nor can the well-qualified technician always be easily distinguished from some technologists with similar levels of responsibility.[2]

These difficulties have led some writers[3] to advance the view that technician occupations can be subdivided into two main groups, one at the lower level variously termed junior, industrial, or super-trade and one at the higher or sub-profesional level. According to Woolhouse and Haxby[4] the danger of this dichotomy is that it is usually based on educational criteria which, by their very existence, assume an identifiable distinction between practical abilities at the lower end of the scale and intellectual abilities at the other. They argue that the work to be done by the technician rather than the education he has acquired should provide the basis of any attempt at definition.

Understandably, much of the discussion about technicians has tended to centre on the engineering field. However, French[1] points out that the term is now not only widly applied to groups of occupations in the chemical, metallurgical, medical and textile industries, but also includes broadly parallel groups of middle-level occupations in the business and commercial fields.

TECHNICIAN MANPOWER REQUIREMENTS

Attempts to establish industry's present and future demands for technician manpower have been made in recent years in the United Kingdom, France, North America and the Soviet Union.

United Kingdom

In Britain, in 1965, a survey conducted by the Committee on Manpower Resources for Science and Technology[5] found that, in the sectors of employment covered,* the total number of persons performing functions which conformed to the description† of technician was about 622,000, compared with some 211,000 scientists and technologists employed in the same sectors. It also

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obtained employers' estimates of future technician employment amounting to 708,000 technicians in 1968—representing a growth of 4.4 per cent annually on the 1965 figures. By comparison the average annual growth rate in civilian employment during the period from 1963 to 1966 (the latest figures available) was just under 1 per cent.[6]

The Committee noted that technician manpower was being obtained largely by upgrading craftsmen and operatives. However, it expressed the view that this could not continue to be a satisfactory source, mainly because general educational policies had led to increasing numbers of students continuing their education beyond school leaving age, thus reducing the number of able people entering crafts which are the major source of technician recruitment in industry. The point being made was that apprenticeship can no longer be relied on as the main source of technicians. In future, these would be drawn largely from students taking technician courses. The next few years might therefore see the development of an acute shortage unless larger numbers qualified.

France

In France, a Manpower Committee[7] was set up in connection with the Fifth Economic Plan to consider skilled manpower supply and demand and to recommend a co-ordinated training policy. A study was made based on data assembled by the National Institute for Demographic Research of the occupational categories of the entire work force. In broad terms the Committee concluded that, for the period 1962-70, the demand for technician skills would increase by 56 per cent. It was considered unlikely that the school system would be able to meet this demand by 1970.

North America

In the United States the National Science Foundation and the Bureau of Labour Statistics[8] estimated some five years ago that an annual growth rate of 6.7 per cent would be required in order to meet the demand for technicians‡ in the civilian economy by 1970. By comparison the annual growth rate of the civilian labour force during 1965 to 1966, for example, amounted to a little under 1.8 percent.[9] It was also estimated that in order to meet demand requirements an average of 69,700 technicians would need to be trained each year.[8] As against this, it was estimated that only 16,000 technicians were graduating from technical programmes each year.[10]

In Canada, the then Technical and Vocational Training Branch of the Department of Labour[10] estimated in 1966 that the annual national output of

* 'Employers in the public sector, including education, and a stratified random sample of manufacturing industry and construction, as well as in certain other fields'.

† 'Technicians and other technical supporting staff occupying a position between that of the qualified scientist, engineer or technologist on the one hand and the skilled foreman or craftsman or operative on the other'.

‡ Defined for the purposes of statistical analysis as 'all persons engaged in work requiring knowledge of physical, life, engineering and mathematical sciences comparable to knowledge acquired through technical institute, junior college, or other formal post-high school training or through equivalent on-the-job training or experience . . . all employees in positions requiring the indicated level of knowledge and training are included, regardless of job title and company department in which employed. Excludes craftsmen.'.

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formally trained technicians would need to be increased from 4,000 to between 8,000 and 12,000 by 1970.

Soviet Union

In the Soviet Union, Zabelin,[11] Chief Expert on Manpower Resources of the State Economic Council of Ministers of the U.S.S.R. reported in 1962 that the need for technicians was increasing, but that the expanding requirements were being adequately met. The numbers of technicians and supervisors trained had almost doubled during the period 1940-61. Earlier, in 1961, De Witt[12] had reported that many semi-professional technicians in the petroleum and machine building industries had been employed in skilled-worker occupations because of an over-supply of technicians. However, it was reported in 1963[13] that the Central Statistics Office planned to undertake a census of the specialists employed in different sectors of the economy in order to track down those whose actual employment did not correspond to the specialization for which they were trained. This was one of a series of measures aimed at providing a sufficient supply of middle-level technicians so that by 1970 there would be three to four technicians to one engineer.

TECHNICIAN TRAINING ARRANGEMENTS

On-the-job Training

It is a characteristic of the technician manpower estimates obtained above that the demand estimates are based on data obtained from industry, while estimates of likely supply are derived from the expected output of the technical schools. However, it is apparent from some of the manpower surveys that a substantial proportion of technicians is trained entirely on the job. For example, the United Kingdom Committee on Manpower Resources for Science and Technology reported[5] that a large proportion of technicians surveyed in 1960 and in 1965 had been trained entirely within industry. In identifying technicians, the Committee had considered the job being done rather than the qualifications held as the essential criterion. The results showed that only a minority of technical supporting staff possessed formal qualifications. (See Table 1)

Similarly, Rosen[14] and De Witt[12] claim that, although there has been no determination in the United States of the numbers of technicians trained by sources other than formal education institutes, it is probable that the armed forces and industry are the principal trainers of technicians.

Little information appears to be available on the numbers of technicians in Western Europe who obtain their skills by in-industry training and experience only, and about the nature of their training. However, it has been reported[15] that, in Italy, two-thirds of the total number of technicians are obtained by upgrading skilled workers.

Nevertheless accounts in the literature of technician training arrangements overseas generally relate only to formal training in technical institutions, except for a few descriptions of on-the-job training schemes in the larger firms.

In the United States for example, a number of the larger undertakings, among them the General Electric Company, Chrysler Corporation and Radio

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TABLE 1. Qualifications held by Technical Supporting Staff, shown as Percentage of all such Staff

	Degree or equivalent or higher National Certificate or Diploma %	*Ordinary National Certificate or Diploma* %	*Technician's Certificate of the City and Guilds of London Institute, or equivalent* %	*Other qualifications, training within firms and no formal training or qualifications* %
1960 Survey of the Chemical and Engineering Industries	14	13	4	69
1965 Manpower Survey (all sectors covered)	17	14	9	60

Source: Report on the 1965 Triennial Manpower Survey of Engineers, Technologists, Scientists and Technical Supporting Staff. H.M.S.O., London, October 1966, p. 23.

Corporation of America have initiated training programmes as a means of developing their own technicians.[14] De Groat[16] describes a course developed by General Electric for technicians concerned with numerical control systems which, because of their complexity and uniqueness, were not adequately covered by external institutional courses of training.

Similarly, in the United Kingdom, Woolhouse and Haxby[4] describe the Rolls-Royce Company's programme for training technicians which consists of a comprehensive in-plant programme of training, combined with block release institutional training.

Training in Technical Colleges and Institutions

Whilst formal arrangements for training technicians overseas appear to be still in the formative stages, Warren states that a comparative study of existing practices[17] has shown three distinct patterns to be emerging: technical education followed by practical training in employment; some form of practical training in employment, followed by further full-time education; and, thirdly, some form of sandwich training where the two components are combined.

Technical Education preceding Practical Training in Employment: Technical institutions in a number of countries provide full-time courses for students who have completed their secondary education but who have not yet entered employment. In France, for example, the **lycée technique** provides full-time formal training for technicians at three different levels.[17] These levels—the **agent technique,** said to be at the boundary between the craftsman and the technician, the **technicien** and the **technicien supérieur**—comprise the greater part of the technician work force.[18] The **agent technique** and the **technicien** qualifications are not awarded until after a period of practical experience and training in industry. All three courses may be taken on a part-time basis.[17]

Institutional training of lower-level technicians in Italy is provided for in the **instituto professionale,** whilst 'middle-level' technicians attend the **instituto tecnico.** Courses are normally full-time although evening courses are also provided. The first 'higher technician' or **tecnici superiori** group graduated in 1964 although arrangements for training this level of technician had not yet been fully developed.[17] Courses for higher technicians are presently provided by

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the **instituto tecnico** and full-time students spend two months of each year in industrial employment appropriate to their speciality.

In the United States, technical institutes and junior and community colleges provide courses for students who have not yet entered employment.[10] These are usually on a full-time basis. In thirty-seven technical institutions surveyed by the Engineering Manpower Commission[19] during 1965 and 1966, part-time technician enrolments represented only one-fifth of total technician enrolments.

In Canada, too, full-time courses in a wide variety of technician occupations are provided in institutes of technology for students who have not yet entered employment. Since 1960, the Federal Government has encouraged formal training of this type by reimbursing the Provinces for 50 per cent of their expenditure on approved technician training programmes.[10] It has been estimated[20] that, under this legislation, almost 500 million dollars had been spent by 1962 in expanding technical education facilities and programmes across Canada. As a result the number of persons entering formal training courses for technicians has more than doubled.

While the British technical college provides formal courses for technicians predominantly on a part-time basis; full-time Ordinary, and Higher, National Diploma courses are offered for the higher-level technician.[17]

Technical Education following Practical Training in Employment: In the Soviet Union, institutional arrangements for educating technicians are closely integrated with on-the-job training within industry.

Russian writers[21] have emphasized the links that exist between educational and economic development policies. For example, in 1958, a Law on 'Strengthening the Links between School and Life for a Further Development of the System of National Education' laid emphasis on the close integration of school and industry. In practice this has meant priority of admission to the technical schools* to candidates nominated by industry, and preference for those who have had relevant employment experience. Day students are required to gain further industrial experience by spending between a third and a half of their total study period in full-time employment. During such periods of employment trainee technicians continue their studies by attending part-time evening classes. It was anticipated that, as a result of these measures, 50 per cent of trainee technicians attending the technical schools would be enrolled on a part-time basis by 1965.[22]

In the Federal Republic of Germany special technical schools or **Fachschulen** have been developed for training technicians.[23] Entry to the **Fachschulen** usually requires students to have completed a period of full-time training in industry, usually as apprentices. Training may be part-time or full-time. There are also a number of higher-level technical schools, the **Ingenieurschulen** which requires full-time attendance and lead to higher technician levels or beyond.[23] These also require entrants to have completed a period of industrial training, usually in the form of a student apprenticeship.

* The expression 'technical school' has been used here for the institution in the Soviet Union known as the 'technikum'[22]. The main function of the 'technikum' is to provide formal institutional training for technicians.

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Technical Education during Employment: Some other Western European countries also require technicians to undergo periods of full-time study in technical schools, interspersed with or preceded by periods of industrial training and experience. For example, in the Netherlands, higher technicians receive a period of employment experience sandwiched between full-time study periods at technical college. Similarly, lower-level technicians are also required to combine full-time study with periods of employment.[23] In Denmark, too, junior technicians are trained on a 'sandwich' basis involving two periods of six months at a technical school separated by a year's practical experience on the job. These trainees have usually already completed a period of apprentice training.[24]

The training of crafsmen and technicians in the United Kingdom has traditionally depended upon the on-the-job training provided by industry, supplemented by part-time study during the day or evening at technical colleges.[1] The effectiveness of part-time courses in technical colleges has been the subject of much investigation and criticism.[25] In 1961 a White Paper on 'Better Opportunities in Technical Education' proposed the introduction of 'sandwich' and 'block release' courses for technicians which would integrate institutional and job training elements. One outcome of these recommendations was the introduction, for the first time, of new certificate courses specially designed for technician training by the City and Guilds of London Institute.

However, as one writer[17] points out, it still remains an unresolved question whether the education of a technician should precede his practical training in employment (as in a French **lycée technique**), follow some period of apprenticeship (as in the **Ingenieurschule** of the Federal Republic of Germany), or adopt a 'sandwich' form by alternating periods of college with practical experience (as in the United Kingdom). It would seem that in no country does any one pattern of formal training exist to the exclusion of others. In all countries, depending on such factors as finance, potential co-operation from industry and the type of educational establishment available or contemplated, a variety of methods of imparting technician skills are in use.

RECENT TRENDS IN TECHNICIAN TRAINING

The recent trend in a number of countries has been towards developing a planned approach to the training of technicians both on the job and in educational institutions. In Britain, for example, a White Paper published in 1962 adumbrated the Government's proposals for a nation-wide policy for training in which industry, the Government and the technical education authorities would all play a part. According to Sir James Dunnett[26], the resulting legislation* has demanded a much more systematic approach to technician training within individual undertakings.

For example, the Engineering Industry Training Board, established in 1964 under the Industrial Training Act, has closely analysed technician, amongst other skills, as a first step in developing programmes for the industry. The board has since recommended[27] that first-year technician and craft training should follow a broad-based course of skill development, since the basic skills and knowledge required are common to both.

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In the Soviet Union, the Minister of Specialized and Higher Secondary Education announced in 1966 that, as a means of improving the organization of practical training, production training undertakings would in future be permanently attached to the corresponding educational institutions.[28]

In an attempt to match the training provided in the institutions more closely to the skill requirements of industry, the Manpower Training Branch of the Federal Department of Manpower and Immigration in Canada is undertaking an analysis of the occupational fields in which technicians are employed.[10] Similarly, measures introduced in May 1963 in the Soviet Union required estimates to be made of industry's need for middle-level technicians and of training requirements resulting from technical progress.[13]

One significant trend in formal training in technical institutions is towards developing courses specifically for technicians. The 1966 Huddersfield Conference[1] stressed that each course for each kind of technician should have its own integrity; it should not be planned as a continuous progression leading to professional qualifications. The Conference acknowledged, however, that provision should be made for the more able student to progress to more advanced levels.

In the Soviet Union, a gradual move away from narrow specialization in technician training has been reported.[21] It was stated that greater attention would be paid to developing flexibility in technician training which would permit greater adaptability to technological change and place less reliance on a limited range of manipulative skills.

In Canada, technician and technologist training programmes are co-ordinated on a national basis by a National Technical and Vocational Advisory Council, appointed by the Federal Government. An advisory sub-committee of the Council, representative of industries, government, labour and professional societies, in co-operation with the administrators of the schools makes recommendations regarding entry, duration and content of the programmes.[10]

SUMMING UP

All countries covered in this review have been experiencing a rapidly increasing demand for technicians.

Surveys in several countries show that the majority of technicians become qualified through on-the-job training and experience, only a minority having completed institutional courses.

Except as regards the Soviet Union, doubts having been expressed about the capacity of the technical education institutions to meet technician training requirements in the foreseeable future. The implication would seem to be that a substantial proportion of technicians will continue to be trained within industry.

Nevertheless, the literature tends to be mainly preoccupied with institutional arrangements for technician training, except for a few accounts of on-the-job training schemes in the larger firms. With regard to institutional arrangements, it appears that in all countries there exists a variety of methods

* The Industrial Training Act, 1964.

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of training technicians. However, most countries emphasize the value of full-time practical experience in employment in association with institutional training. In countries, such as the United Kingdom, where industrial experience takes up the major part or a substantial proportion of the trainees' time, the trend is towards planning and directing the industrial experience as part of the total training process.

In a number of countries, technician skills are being closely examined with the object of designing courses specifically for technicians, taking account of industry's requirements and the need for adaptability in the light of technological change.

As a final comment, it is apparent that the picture emerging from the available literature on technician training practices in industrialized countries throughout the world is incomplete. Important gaps exist, not only in respect of particular countries (notably Japan), but in relation to the training of technicians within industrial undertakings.

REFERENCES

1. COMMONWEALTH EDUCATION LIAISON COMMITTEE. *Education and Training of Technicians; Report of an Expert Conference held at the College of Education (Technical) Huddersfield, England, October, 1966.* H.M.S.O., London, 1967.
2. HAYES, F. C. *Education and Training for Technicians.* National Productivity Year Conference, British Productivity Council, London, 1963.
3. Glossary. *CIRF Abstracts,* Vol. 6, Geneva, 1967.
4. NESBITT-HAWES, Sir R., (Editor). *The Training of Youth in Industry, Vol. 1, Engineering,* Chap. 3, Pergamon, London, 1966.
5. COMMITTEE ON MANPOWER RESOURCES FOR SCIENCE AND TECHNOLOGY. *Report on the 1965 Triennial Manpower Survey of Engineers, Technologists, Scientists and Technical Supporting Staff,* H.M.S.O., London, 1966.
6. Central Statistics Office. *Monthly digest of Statistics,* No. 260, H.M.S.O., London, 1967.
7. FIFTH ECONOMIC DEVELOPMENT PLAN, 1966-1970. *CIRF Abstracts,* Vol. 5, Geneva, 1966.
8. *Technician Yearbook, 1964-65,* Prakken Publications, Michigan, 1965.
9. U.S. DEPARTMENT OF LABOR. *Employment and Earnings and Monthly Report on the Labor Force,* Vol. 14, No. 5, Washington, 1967.
10. *Technician Yearbook, 1965-66,* Prakken Publications, Michigan, 1966.
11. ZABELIN, N. N. 'Planning Industrial Training in the U.S.S.R.' *Training for Progress,* Vol. 2, No. 4, Geneva, 1962.
12. DE WITT, N. *Education and Professional Employment in the U.S.S.R.* National Science Foundation, Washington, 1961.
13. 'Measures aimed at expanding higher and middle school specialized education, improving the training and employment of specialists'. *CIRF Abstracts,* Vol. 2, Geneva, 1963. (Abstract 01835 epitomises this order in English)
14. ROSEN, H. 'Technicians in the Labour Force of Russia and America'. *Monthly Labour Review,* Vol. 81, January-June 1958.
15. MARTINOLI, G. 'Technical Staff: Causes and Effects of their Shortcomings'. *CIRF Abstracts,* Vol. 4, Geneva, 1965. (Abstract 3402 epitomises this article in English)
16. DE GROAT, G. 'Teaching N.C. Trouble Shooting'. *CIRF Abstracts,* Vol. 4, Geneva, 1965.
17. WARREN, H. Vocational and Technical Education. *UNESCO Monographs on Education*—VI, Paris, 1967.
18. FAHMY, M. S. 'Technical Education in Western Europe'. *Comparative Education Review,* Vol. 9, No. 2, June 1965.
19. METZ, D. C. 'Technician Enrolment and number of graduates, 1965-66'. *Engineering Education,* February 1067.
20. HAYTHORNE, G. V. 'Research—a Basic Need in the Training Field'. *Training for Progress,* Vol. 2, No. 4, Geneva, 1962.
21. VESELOV, A. N. 'Vocational and Technical Education in the U.S.S.R.', ANDREJEV, V. S. and ORLOUSKIJ, Ju. P. 'The Legal Status of Persons Combining Training with Productive Work'. KOMAROV, L. A. 'The Planning of the Education and the Place-

5935

ment in Employment of Specialists in thte U.S.S.R.'. Reviewed in *Training for Progress*, Vol. 2, No. 2, Geneva, 1962.
22. 'Vocational Education and Training in the Soviet Union'. *British Association for Commercial and Industrial Education*, London, 1963.
23. *Training for Progress*, Vol. 4, No. 2, Geneva, 1965.
24. LIE, A. P. 'The Middle Way in Technology'. *CIRF Abstracts*, Vol. 2, Geneva, 1963. (Abstract L.18 epitomises this article in English)
25. YOUNG, J. T. *Technicians Today and Tomorrow*, Pitman, London, 1965.
26. DUNNETT, Sir James. 'The Industrial Training Act in Britain'. *Personnel Practice Bulletin*, Vol. 22, No. 3, September 1966.
27. ENGINEERING INDUSTRY TRAINING BOARD. *The Training of Craftsmen and Technicians*. Information Paper No. 11, May 1967.
28. 'Measures to improve the training of specialized staff and the administration of specialized secondary and higher education'. *CIRF Abstracts*, Vol. 6, Geneva, 1967. (Abstract 01555 epitomises this artice in English)

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DEVELOPMENTS IN TECHNICIAN EDUCATION AND TRAINING IN THE UNITED KINGDOM

An earlier article[1] in this Journal reviewed the literature on the training of technicians overseas. This paper deals briefly with two recent publications which incorporate far-reaching proposals for the future of technician education and training in Britain. The first of these—'The Report of the Committee on Technician Courses and Examinations', commonly known as The Haslegrave Report[2]—is primarily concerned with arrangements for the education of technicians. The second[3]—'The Training of Technician Engineers', prepared by the Engineering Industry Training Board—sets out recommendations for the training of technician engineers in industry.

THE HASLEGRAVE REPORT

At the request of the Secretary of State for Education and Science, a Committee was set up in Britain by the National Advisory Council on Education for Industry and Commerce to review the national pattern and organization of technician courses and examinations. The Committee, comprising thirteen members representative of educational bodies, industry, and trade unions, was appointed in September 1967 under the chairmanship of Dr H. L. Haslegrave. Its terms of reference were:

> 'to review the provision for courses suitable for technicians at all levels (including corresponding grades in non-technical occupations) and to consider what changes are desirable in the present structure of courses and examinations.'

The Committee prefaced its report—which was presented in 1969—with a discussion of the term 'technician'. Acknowledging the absence of a universally applicable definition, it accepted the concept of a broad spectrum of occupations lying between those of the qualified scientist, engineer, or technologist on the one hand, and the skilled foreman, craftsman or operative on the other. The existence of a group of occupations requiring a comparable level and range of skills in the commercial sector was also accepted*.

As to the identification of technician occupations, the Committee concluded that this must rest essentially on an analysis of the job functions performed. It was noted that job analysis was also necessary as a basis for establishing training and educational requirements.

The Committee's terms of reference precluded detailed consideration of the demand for and supply of technicians. However, existing courses and training arrangements were thought to be inadequate for present needs and unlikely to be able to cope with the increasing demand for technician man-

* No clear definition of these occupations was given, other than that they lay between the professional man or director or departmental manager at one end, and the routine clerk or sales assistant at the other.

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power. Additionally, other developments such as the Industrial Training Act of 1964 had stimulated demand for educational courses for technicians.

Suitability of the Present Pattern of Training

The Committee enumerated the following four principles which it believed should be incorporated into any recommended pattern of technician courses and examinations:

1. Technician courses should produce people capable not only of meeting an immediate need for skill and knowledge, but of adapting to the changing requirements of the technician occupation.
2. Courses should themselves be capable of being adapted to the changing needs of technician training as changes in industry makes this necessary.
3. Course provisions should be able to meet all reasonable demand from industry for technician manpower, and be adaptable to regional and local requirements as well as lending themselves to a simplified administrative structure leading to the award of nationally acceptable qualifications.
4. The pattern of courses should be geared to the requirements of students who transfer from school to further education. They should ensure correct course placement, but should allow for horizontal and vertical transfer within the technician training system and to systems for training craftsmen, technologists, etc.

From an examination of the existing pattern of technician courses the Committee concluded that it was unsuitable in a number of respects, not only for meeting present needs, but also for the new and changing needs likely to arise in future. For example, the present administrative machinery was divided between a number of independent bodies with the result that there was no consistent policy for meeting the demand for technician courses. Furthermore, whilst there were a number of courses available for the technical sector of industry, there were very few comparable courses available for the commercial sector.

The evidence submitted to the Committee suggested that the existing course structure was not meeting the purposes for which it was designed. Some courses, for example, were attempting to meet conflicting demands, and the selection of appropriate courses was made more difficult by the range of courses available. Nor was later transfer between courses facilitated.

The Committee, therefore, concluded that there was a need for rationalization and simplification of existing arrangements and for ensuring that a comparable courses and examinations of a national character were introduced.

Future Administrative and Co-ordinating Machinery

The Committee recognized the need for a single co-ordinating body to ensure a proper relationship between the standard, form, length and content of different types of technician courses and examinations, and to provide liaison with educational and other bodies responsible for awards in the profes-

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sional and craft areas. However, having regard to the different educational requirements of technicians in the technical and commercial sectors of industry, the Committee proposed the establishment of two Councils—a Technician Education Council and a Business Education Council.

The Technician Education Council. The functions proposed for the Technician Education Council are to plan, administer and keep under review the development of a unified national pattern of courses of technical education for technicians in industry. It would assume policy and planning responsibility for examinations and qualifications, and eventually be responsible for syllabuses and assessment and the award of educational qualifications. The Council would be a small policy making and co-ordinating body, comprising some 15-20 members drawn from the education service, industry (including the Industrial Training Boards), and the technician and professional associations. It would operate with the assistance of a number of advisory committees set up to do detailed syllabus and assessment planning.

The Business Education Council. Similar functions are proposed for the Business Education Council in the field of business and office studies at levels below that of first degree. However, because the level of support in the community was lower for business studies, and because there was less understanding of the concept of a 'technician' in this area, the Council's first task would be to combat these factors, and considerable initial emphasis would need to be placed on course promotion.

The two Councils would be required to develop strong consultative and operational links and establish a standing consultative committee to keep matters of common interest under consideration. The Councils would be financed from income derived from examination and assessment fees with some initial support from government funds.

Future Pattern of Courses

The Committee advocated a pattern of courses which would:

- produce technicians capable of adapting to changing circumstances;
- provide for regular review;
- reduce the present multiplicity of individual subject courses;
- reflect an adequate balance between the views of industrial and commercial organizations and educationalists.

Courses for the technical sector should be developed first in the field of engineering, but with the eventual aim of establishing broadly equivalent standards across the whole of the industry. Engineering was chosen because the technician function had been more clearly defined than in other industries, and the Engineering Industry Training Board had already developed training recommdations for technicians which required a suitable educational complement. The broad structure of courses recommended by the Committee included:

- A two-year first stage leading to a Technician Certificate and designed to provide a basic educational complement to the Engineering Industry Training Board's training programme. Entry, normally at 16 years of

age, would be flexible and would allow transfer to or from craft level courses if necessary. Alternatively, additional theoretical studies could be undertaken leading to the award of a Technician Diploma.

- A second stage incorporating common core subjects followed by special subject courses of varying length and leading to a Higher Technician Certificate or Higher Technician Diploma. Entry would normally be at 18 years and would also be open to school leavers and others with appropriate educational backgrounds.
- A third stage allowing for further study of special subjects including supervision and management and with provision for special courses designed to provide for up-dating, or retraining for job change.

The proposed course structure would be designed to allow any potential technician to gain entry at an appropriate stage and to progress according to his ability. Allowance would also be made for transfer and progression to degree and professional level courses.

No general change in the existing pattern of courses for the business sector was recommended, although it was acknowledged that new style courses could emerge following a full review by the Business Education Council.

THE TRAINING OF TECHNICIAN ENGINEERS

The Engineering Industry Training Board's recommendations for the training of technician engineers parallel the educational proposals contained in the Haslegrave Report.

Identifying the Technician Engineer

Analysis of the work of technician engineers by the Board revealed six main abilities which were required over the whole range of technician engineer occupations, although varying in degree. They are the ability to:

- use and communicate information
- measure or make use of measurements
- to choose materials and components and understand the processing of materials
- to understand manufacturing activities and the general commercial organization and practice of their firms
- to diagnose
- to organize (but not necessarily supervise) and give direction to the work of others.

The Board beieved that to develop these abilities the average trainee required a broad initial training, followed by training in depth designed to lead to a particular specialization.

The Scheme of Training

The resultant scheme of training recommended by the Board comprised three elements—basic training, general training, and objective training—each with a component of further education.

Basic Training. This would be a period of initial training designed to provide a broad understanding of enginering principles and practice. It was felt that the criteria for basic training of craft and technician trainees required a period of first year off-the-job training provided by trained instructors in special training areas. Training would include elements of induction and safety and should be designed to provide a broadly based programme of practical experience with day or block release for further education.

General Training. Following the period of basic training, a period of general training for all technicians engineer trainees would cover the areas of:

- design appreciation
- manufacturing practice
- control techniques
- commercial maters
- communication.

Training provided in each of these areas would vary in emphasis and depth according to the trainees' selected areas of specialization and the particular positions for which each trainee was being prepared.

Objective Training. A period of objective training designed to develop expertise in a particular function, would be planned to meet the needs of the individual trainee in preparation for a specific job. Training programmes developed for this period of training should be based on detailed job analysis.

* * *

Although the Haslegrave Report was presented to the Secretary of State for Education and Science towards the end of 1969, no steps have been taken to date to implement the recommendations contained in the Report. The recommendations prepared by the Engineering Industry Training Board on the training of technician engineers were scheduled to come into operation from September 1970 in those firms within the Board's scope.

REFERENCES

1. HENDY, PAMELA. 'The Training of Technicians Overseas—A Review of the Literature'. *This Journal,* Vol. 24, No. 1, March 1968, pp. 19-27.
2. Her Majesty's Stationery Office, London. *Report of the Committee on Technician Courses and Examinations,* 1969, pp. ix + Appendices + 127.
3. Engineering Industry Training Board, London, *The Training of Technician Engineers,* Booklet No. 9, September 1969, pp. x + Appendices + 76.

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ABSTRACT - INFORMATION CONCERNING THE TRAINING OF INSTRUCTORS EMPLOYED IN AUSTRALIAN INDUSTRY AND COMMERCE HAS BEEN LACKING. THE TRAINING PROVIDED FOR INSTRUCTORS, WHETHER FULL OR PART-TIME, MUST BE TAILORED TO MEET THE DEMANDS OF THE WORK THEY ACTUALLY PERFORM. ONE ARTICLE IN THIS DOCUMENT SETS FORTH A SPECIFICATION RELATING INSTRUCTOR DUTIES TO SPECIFIC TRAINING REQUIREMENTS. THE REMAINING TWO ARTICLES ARE CONCERNED WITH ASPECTS OF THE DUTIES AND TRAINING ARRANGEMENTS FOR SPECIALIST AND PART-TIME INSTRUCTORS. RELATED DOCUMENTS ARE AVAILABLE IN THIS ISSUE AS VT 014 536-VT 014 538 IN THIS ISSUE. (AUTHOR/GEB)

VT 014 539

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INSTRUCTOR TRAINING PRACTICES

Department of Labour and National Service

1971

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PREFACE

No reliable estimate of the current number of trained instructors employed in Australian industry and commerce has ever been available. The limited survey material indicates that a considerable number of firms, particularly of small and medium size, do not employ trained instructors.

Instructors are involved mainly with the training of operatives, apprentices and technicians. They may be either full-time specialist instructors or, more commonly, experienced workers or supervisors who instruct part-time. One of the most common forms of training for this latter group has been the Training Within Industry (T.W.I.) programmes.

The training provided for instructors, whether full or part time, must be tailored to meet the demands of the work they actually perform. A specification relating instructor duties to specific training requirements is included in this booklet. The remaining articles are concerned with aspects of the duties and training arrangements for specialist and part-time instructors.

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The Work and Training of Technical Instructors in 25 Undertakings

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A survey conducted during 1966[1] disclosed that about one in four of the relatively large* manufacturing undertakings covered employed full-time technical instructors. To obtain a more detailed picture of the work and training of full-time technical instructors† in Australian industry a further survey, by interview with appropriate executives, was made early in 1967 covering twenty-five private and government undertakings.

The undertakings selected, which were located in Sydney, Melbourne and Adelaide, were known to employ full-time instructors and to provide training for them within their own organisations.

Of the 25 undertakings, 22 were private enterprises, two were State Government instrumentalities and one a Commonwealth instrumentality. Six employed over 5,000 people, sixteen between 1,000 and 5,000, two between 500 and 1,000, and one under 500. The industries represented were: air transport, and manufacture of metals, textiles, paper, chemicals and oils, food, plant and machinery, vehicles, and electrical machinery, cables and equipment.

EMPLOYMENT OF TECHNICAL INSTRUCTORS

The 25 undertakings employed, between them, 271 full-time instructors.

On the whole the instructional workforce of these undertakings appeared to be very stable. In most cases the number of instructors remained fairly constant, and vacancies occurred only infrequently. For example, one undertaking with eleven instructors reported that a replacement was rarely necessary. Another with the same number of instructors had replaced one of them about every five years; and another with five instructors had found that one of these had to be replaced, on the average, every two years.

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* i.e. those with more than 1,000 employees.

† For the purposes of the survey a full-time instructor was defined as a person primarily engaged in training others in the knowledge and skills required to carry out technical and/or production operations of some complexity (i.e. operators and process workers, apprentices, tradesmen, and technicians at various levels).

Recruitment

All but one of the undertakings recruited mainly from within the undertaking. Two had also recruited experienced instructors from government departments.

Ten undertakings had experienced difficulties in obtaining technical instructors. In six cases this was stated to be because available personnel did not measure up to selection requirements. Furthermore, many suitable employees were said to be reluctant to apply because incentive payments or overtime work enabled them to earn more on the production line than as technical instructors. In one case it was stated that production departments were reluctant to give up their best workers, from whom technical instructors would usually be chosen.

Selection Criteria

In all cases high technical competence in the appropriate field was an essential prerequisite for selection.

One undertaking specified previous instructional experience as a prerequisite for all instructors. Another required it for apprentice instructors only, whilst four considered previous instructional experience to be desirable but not essential. The remainder did not specify instructional experience as a prerequisite.

Eighteen undertakings took personal characteristics into account. Particular factors mentioned included interest in training, leadership qualities, supervisory ability, verbal fluency, ability to accept and benefit from criticism, acceptability to young people, and maturity. Nine undertakings preferred instructors within a specified age range, the ranges varying from organisation to organisation.

As regards formal qualifications, one organisation stated a preference for tertiary qualifications, either a degree or diploma, for their apprentice instructors. Another required technician-level certificate qualifications.

DUTIES AND RESPONSIBILITIES OF TECHNICAL INSTRUCTORS

In thirteen undertakings instructors were attached to the personnel or training section. In eight undertakings they were responsible to line management, and in four they formed part of a separate Apprentice Training School team.

Employees Trained

In twenty undertakings the employees being trained by technical instructors included apprentices, in thirteen included operatives, in five included qualified tradesmen and in seven included technicians. As would be expected, considerably greater numbers of operatives were in training than technicians, qualified tradesmen or apprentices.

Instructional Duties

For the purposes of classifying instructional duties, a broad division was made between individual instruction and class instruction.

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Individual instruction was defined as explanation and demonstration of work procedures and skills, together with supervised practice and coaching, to one or two trainees at a time. This form of instruction might take place on or off the job.

Class instruction was defined as the teaching of underlying principles, procedures and related information, or the conducting of practical lessons, for groups of trainees. This might take place in a training room or annex or elsewhere off the job.

In eighteen undertakings instructors were required to perform both individual and class instruction. Of the remainder, six required instructors to perform only class instruction and one individual instruction only.

In four undertakings instructors had full responsibility for preparing training syllabuses, and in another seven they assisted with the task. Instructors with responsibility for syllabus preparation were also involved in planning the individual lessons that comprised the syllabus. In another two undertakings, instructors were involved in preparing lesson plans only.

In all undertakings instructors had some responsibility for assessing trainee progress. In all but one, instructors were responsible for preparing progress reports. In nine cases instructors administered tests to trainees. In two undertakings, standard practical exercises were prepared and marked by the apprentice instructors.

Related Duties

In addition to their normal instructional duties, instructors in most undertakings were involved in induction, safety training and general instruction, including explanation of company policies and regulations, and were required in six cases to teach care of equipment, tools and workplace. Other responsibilities in particular organisations were explaining basic principles of leadership, effective speaking, communication, decimal currency, and so on.

TRAINING OF TECHNICAL INSTRUCTORS

All twenty-five undertakings provided some form of internal training for their instructors. Ten of them made use also of facilities for instructor training provided by external bodies. Some had also made use of courses run by other undertakings and one had sent selected instructors overseas for training.

Training within the Undertaking

Fourteen undertakings used the T.W.I.* Job Instruction programme as a means of instructor training, frequently in association with instructor training on the job.

Although the *Job Instruction programme* was developed as a means of training supervisors it is essentially concerned with the instructional skills required for effective individual training including those involved in preparation for instruction,

* Training Within Industry for Supervisors.

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analysis of the work to be taught, and instructing individual trainees by explanation, demonstration and supervised practice. It is usually conducted within the undertaking over a period of ten hours part-time.

Eight undertakings conducted full-time off-the-job courses for instructors. Six of these were called Methods of Instruction Courses and varied in length from three days to one week. Two were courses designed to train instructors in the use of analytical training procedures based on detailed job analysis and a specialised method of instruction.[2]

Topics commonly included in the courses were the preparation and presentation of lectures and skill-teaching lessons, class motivation, the use of questions and audio-visual aids, learning principles, preparation for instruction and the like. Other topics in some courses were: communication, memory, identification of training needs, setting training objectives, establishing the training programme, syndicate and case study teaching techniques, and the use of 'in-basket' exercises.

The emphasis in most of the courses was on the teaching and practice of the basic techniques of class instruction appropriate to teaching industrial activities, over half the course time being devoted to practice. Usually, the course members played the part of the class during such sessions and were also asked to give constructive criticism.

Training on the job was commonly used in conjunction with other forms of instructor training. It usually consisted of observing experienced instructors at work, and practice teaching under their supervision, followed by remedial coaching where necessary.

One undertaking, which selected instructors who had already attended T.W.I. courses as foremen, gave their apprentice training instructors on-the-job training over twelve months, during which periods of observing experienced instructors and conducting lessons were alternated. Trainees were informally supervised and coached by experienced instructors. Further training in new processes was given where necessary.

In another undertaking, on-the-job instructor training was combined with courses in a highly organised pattern. The newly-appointed instructor spent his first six to eight weeks observing an experienced instructor, then was given his first four trainees to teach under supervision. He also attended each of the four T.W.I. programmes* as a trainee. Over the next year or so, with supervisors and others, he attended in-plant courses in both technical and instructional areas. These had so far included courses in instructional method, methods improvement, conference leading, counselling, communication, supervision, leadership, creative problem-solving, programme development, work study, report writing, performance appraisal, data processing, industrial relations, materials handling, job description, public relations and other courses associated with the introduction of new processes.

* Job Instruction, Job Safety, Job Methods, and Job Relations.

Refresher training for instructors was given in only three undertakings. Generally, no further technical training was given to trade instructors during their training as instructors, as technical competence was considered a prerequisite for selection. However, eight undertakings reported that special further training was arranged for trade and other instructors following the introduction of new equipment or processes.

Twenty-two undertakings stated that some form of *assessment of a trainee instructor's progress* was made either during an internal training course or subsequently when the instructor was employed in teaching procedures. Most such assessment procedures did not use formal rating techniques. In a typical case the trainees were required to review one another's performance and give constructive criticism during discussion sessions. The instructor training course leader would also take part in these discussions. In another case, written tests were given daily to trainee instructors during the course and, at its conclusion, an examination was held.

On the whole, when instructors commenced actual instructional duties they were supervised and coached by experienced instructors who formed judgments about their progress. They were then given special coaching, if required. Where an instructor's performance was unsatisfactory he was usually transferred to production activities.

Eighteen undertakings gave new instructors some *training concerning training aids and equipment*. Eight of them taught methods of preparing and using aids; the remainder concentrated on their use. Instruction covered all the commonly used aids, in particular, chalkboards and charts, films and slides, models, and overhead projectors.

External Training

Undertakings were asked also for information on instructor training arranged through outside bodies. Fourteen undertakings had made use of external facilities.

Organisations mentioned most frequently as providing some form of training suitable for instructors were the Australian Institute of Management, Department of Labour and National Service, other undertakings, management consultants and technical colleges. In one instance instructors had participated in courses at a State technical teachers' training college.

Courses provided by the Australian Institute of Management which were generally chosen were segments of courses for training officers which were considered appropriate to the needs of particular instructors, but they also included courses in communication, leadership, and the like.

The Methods of Instruction course provided by the Department of Labour and National Service was frequently mentioned. This is conducted primarily for technical instructors in Government undertakings, but some places are made available to private industry. It consists of two weeks' residential training. Instructors from some undertakings had also attended Conference Leadership courses and T.W.I. trainer-training courses conducted by the Department.

Two undertakings had sent instructors to fill places made available to them on training courses run by other undertakings. In one case selected instructors had also been sent to spend a period in the parent company overseas.

Specially designed instructor training courses had been provided by consultants for some undertakings. In one such case the training was specific to an analytical method of instruction.

Technical college courses were usually designed to provide a general education in management subjects, but were used by some undertakings as a means of providing further training for instructors.

VIEWS ON TRAINING ARRANGEMENTS

The executives interviewed in the various undertakings were asked to comment on the suitability of present arrangements for training technical instructors.

As regards internal training the representatives of all but two undertakings considered that their arrangements were achieving the purposes for which they had been established. The other two made no comment.

Representatives of seven undertakings said, however, that some aspects of their internal training arrangements were not entirely satisfactory. Three representatives believed that the training they were able to give their instructors was not of a high enough standard. Others, however, pointed out that internal training had the advantage over external training that it could be geared more effectively to the specific needs of both the instructor and the undertaking, though two of these preferred internal training to be off the job because it enabled the trainee instructor to learn in an environment free of conflict between the demands of production and training.

Representatives of a number of undertakings offered suggestions for the improvement of arrangements in Australia for training technical instructors in industry. Sixteen of them thought greater provision was needed for instructor training in external institutions. The most common suggestion of this kind was that a central institution should be established (one firm suggested that this should be similar to the Instructor Training College at Letchworth, in Britain) in which experience and knowledge of instructor training might be pooled, and to which industry could send its technical instructors for training.

Representatives of three undertakings suggested there should be more research, and more application of the results of overseas resarch to training in Australian industry. Four said there was a need for more opportunities for instructors to meet, for example at seminars and conferences, to allow an exchange of information on methods of instruction and the like. It was learnt in the course of the survey that instructors from four Sydney undertakings were actually conducting such meetings on a regular basis.

With regard to training in technical education institutions, representatives of three undertakings suggested that greater and more effective provision for instructor training for industry was desirable. One view, expressed by a training officer, was that too many of the courses provided by outside organisations for industry

were oriented towards the needs of managerial and supervisory personnel rather than to the particular needs of instructors. Another view was that some courses were either too long or not sufficiently practical to meet the needs of industry.

Representatives of five undertakings suggested that more places should be made available to industry by the Department of Labour and National Service on its instructor training courses. One of them suggested that more courses of this kind should be conducted in industry, and two that the Department should make such facilities available for smaller undertakings which had only limited resources and facilities and could not afford to train their own instructors.

DISCUSSION

An earlier survey[1] noted the key role played by supervisors, including foremen and leading hands, in organised on-the-job training. For most of these people training was very much a part-time responsibility. In the present survey attention was concentrated on undertakings where full-time instructors were employed to carry out these training duties, usually in an attempt to improve training standards.

Common practice was to seek potential instructors from among existing employees. Almost a third of the undertakings studied were having difficulty in finding enough suitable people for instruction duties. On the one hand, selection criteria for instructors were necessarily exacting; on the other hand, many skilled employees were reluctant to forego the earning opportunities presented by incentive schemes and overtime working.

In the great majority of undertakings instructors were expected to do both individual and class instruction. It is therefore interesting to note that less than half the undertakings provided their instructors with formal training in class instruction techniques. As to the remainder, training by experience was considered sufficient.

The most common method of training instructors to carry out on-the-job and other individual instruction was by means of the T.W.I. Job Instruction programme, modified to meet the undertaking's particular requirements. Methods of Instruction courses were found to be the principal method of preparing instructors for class teaching, although, as mentioned earlier, less than half the undertakings provided specific training in class teaching techniques. The emphasis on providing instructors with frequent on-the-job practice in applying the skills learned was a major characteristic of most of the schemes studied.

About half the undertakings used training courses provided by outside organisations to supplement their internal training of instructors. With the exception of some special courses prepared by consultants and the Methods of Instruction course provided by the Department of Labour and National Service, few of these had been designed for training instructors for industry. Accordingly, undertakings had tended to select only those aspects of external courses that seemed most appropriate to their instructor training requirements.

It was apparent from the survey that a wide diversity of approaches was adopted by undertakings in training their own technical instructors. For example,

training courses varied in length from ten hours, in the case of T.W.I. Job Instruction courses, to over twelve months in the case of one undertaking using sophisticated analytical training techniques. While it was not possible to gauge the standard of the training provided for instructors it is apparent that there must be considerable variation. While most undertakings were generally satisfied with their internal instructor training arrangements a view commonly expressed was that, in general, external facilities available for training instructors were far from adequate.

REFERENCES

1. TAYLOR HELEN. 'Training in Five Hundred Manufacturing Undertakings', *Personnel Practice Bulletin*, Vol. 22, No. 4, December 1966, pp. 27-38.

2. O'HARA, J. B. 'Training for Complex Skills', *Personnel Practice Bulletin*, Vol. 18, No. 1, March 1962, pp. 30-42.

The Training of Instructors for Industry and Commerce—A Specification

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An approach to the development of guidelines for the training of instructors is described, and the resulting specification presented.

The effectiveness of industrial and commercial training activities depends heavily on the training given to those who have to instruct others.

Dissatisfaction with some aspects of instructor training in Australia has been expressed from time to time. For example, in the course of a survey of the work and training of technical instructors carried out in 1967[1], a number of undertakings said they thought their own internal arrangements for training instructors were not entirely satisfactory and it was suggested that more effective provision for the external training of instructors for industry was desirable. One view expressed was that courses available were oriented to the needs of supervisory and managerial personnel rather than to the particular needs of instructors. Another was that some were too long or not sufficiently practical to meet industry's needs.

As a contribution to the development of more effective instructor training arrangements the Department sought the co-operation of senior training personnel from a number of companies and organisations in clarifying the training needs of instructors in the private sector of industry and commerce. Appendix I sets out a specification for the training of instructors which resulted from the work of this group*.

SCOPE OF THE SPECIFICATION

Two main groups of instructors in the workforce of private firms were identified†:

- *Part-time instructors,* that is, those whose jobs are primarily directed towards production or supervision, but who regularly spend part of their time in instructing others. They may be foremen or supervisors, leading hands or section leaders, experienced workers, or specialists such as safety officers.
- *Full time instructors,* who are employed to give instruction within the firm to individuals and/or groups. Some examples of job titles of people in this

* Those who took part are listed in Appendix II.
† See, for example, Reference 1.

group would be technical or apprentice instructor, department trainer, training instructor.

It was recognised that there are also personnel who have wider responsibilities for training than does the full-time instructor. These people may have job titles such as senior instructor, supervising instructor, training assistant, training officer.

While it was not intended to develop a specification for the training needs of training officers, except those fully occupied with instructional duties, it was recognised that instructor training of the kind envisaged in the specification might well form part of the training they required.

The specification is intended to cover the basic job and training requirements of each of the two instructor groups defined above. Differences in emphasis will of course be necessary in training programmes to meet the needs of instructors at various levels, and some selection from and adaptation of the specification will be necessary to meet the needs of particular firms.

It was assumed that the instructor would be technically competent in the area in which he is to instruct, as in most cases this is a pre-requisite for selection[1]. An instructor in basic machine accounting, for instance, is assumed to be knowledgeable and experienced in this area. It was therefore considered necessary for the specification to be concerned only with the instructional, as distinct from the technical, component of the training task.

ANALYSING INSTRUCTOR ACTIVITIES

It is generally accepted that an effective specification for the development of training arrangements must be based on an analysis of the work to be performed[2]. The group's approach to this task was generally in line with a method adopted by a working party of training specialists within the Commonwealth Public Service which had been engaged on a broadly similar project during 1965-66.

Defining Job Demands

The first step of the analysis involved listing the major responsibilities of an instructor. This list appears in the first column of the specification. Each major responsibility was then broken down to describe the detailed activities required of the instructor. What emerged is, in fact, a statement of the tasks the instructor should be able to perform after training.

It will be seen that, because the list seeks to cover the training requirements of a broad range of instructors, not all will have equal responsibility for all activities shown. As regards part-time on-the-job instructors, for instance, much of items 1 and 2 and parts of item 4 might not apply. For staff with extensive responsibilities for the organisation and management of training schemes, a more detailed analysis would be required and some additional responsibilities included.

Defining Training Requirements

Having defined the job demands in some detail it was then possible to proceed to a description of attributes required by the instructor to meet the demands of his job. This required a further analysis of the detailed activities to determine what

skills, knowledge or attitudes* the instructor would require to be able to carry out each of the detailed activities effectively. These appear in column 3 of the specification.

Once these attributes are listed it was considered it would be a relatively simple task to decide which of them are capable of development by training, and in column 4 some items of training content are suggested which might be included in a course of training designed for this purpose.

This form of presentation ensures that any training developed from the specification can be related back to the activities to be performed by the instructor. However, while the aim was to show the relationships between items in the various columns, this proved difficult because of the number of occasions on which items in column 4 were found to relate to more than one item in column 3. The same applies to some extent as between columns 3 and 2. Accordingly, the compromise was adopted that, in relation to each major responsibility, once an item appeared in columns 3 and 4 it was not repeated. This has served on the whole to eliminate repetition within each major responsibility, though some repetition necessarily occurs when the specification is viewed as a whole.

USING THE SPECIFICATION

The specification is intended to apply in a wide range of situations. While it is recognised that a particular organisation's training needs will probably necessitate some degree of adaptation, it should serve as a practical guide to the design of 'tailor-made' instructor training. It would be necessary in each case first to decide which of the detailed activities are actually performed by the instructional personnel to be trained. From this it should become apparent which attributes need to be developed, and therefore what the content of training should be.

In developing the specification care was taken not to pre-judge the period of training required or the organisational details of any course which might be based upon it. It was recognised that there could be considerable variety in approaches to instructor training, and that decisions on the form of the training would be influenced by a variety of local factors, such as staff availability, training facilities, and finance. However, those members of the group who represented private organisations expressed the view that, in establishing external training courses for instructors, particular attention would need to be paid to the difficulties of releasing personnel, especially part-time instructors, for extended periods. It was also stressed that the training needs of instructors from large, medium and small firms may differ to a considerable extent.

* The term attitude is used above in its psychological sense to describe 'an enduring learned predisposition to behave in a consistent way . . .'[3]

REFERENCES

1. WOOKEY, M. 'The Work and Training of Technical Instructors in 25 Undertakings'. *Personnel Practice Bulletin*, Vol. 23, No. 4, December 1967.

2. THOMAS, C. A. 'The Application of Task Analysis in Specifying Training Requirements'. *Industrial Training International*, March 1968.

3. ENGLISH, H. B. and ENGLISH, A. C. *A Comprehensive Dictionary of Psychological and Psychoanalytical Terms—A Guide to Usage*. Longmans Green and Co., November 1958.

APPENDIX I

THE INSTRUCTOR IN INDUSTRY AND COMMERCE TRAINING REQUIREMENTS SPECIFICATION

Job Demands		*Training Requirements*	
Major Responsibilities	Detailed Activities	Instructor Attributes	Suggested Training Content
1. Decides on training requirements	. investigates and collects information about the problem, or training assignment	. skill in identifying problem areas; knowledge of production priorities and organisational objectives	. internal company training in work practices, objectives, etc.
		. skill in applying systematic method of analysing work demands	. instruction and practice in analysing work problems and other training need indicators
2. Establishes learning goals	. formulates objectives in terms of knowledge and/or skills to be learned	. ability to recognise and describe the cognitive and/or motor elements of production tasks	. experience with production operations, and instruction in principles and practice of setting objectives for training
	. sets standards to be achieved	. knowledge of production standards and experienced worker capabilities	
	. checks learner's present standard	. ability to administer and use the results of performance tests	. instruction and practice in performance testing
3. Plans learning schedule	. breaks job down into suitable learning steps	. skill in making teaching breakdowns	. intensive practice in making job breakdowns for manual and clerical tasks
	. selects the most appropriate training method	. knowledge of the application of the major methods of instruction	. instruction in the application of techniques of individual instruction
			. instruction in the nature and use of major group instruction techniques: – lecture method – theory and skill lessons – discussion method

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	. plans presentation sequence motivational elements and timing of learning steps	. an understanding of the learning processes (e.g. perception, reinforcement, etc.)	. instruction concerning how people learn and the effect of individual trainee differences on the learning process
		. ability to judge the rate at which training can be absorbed	. practice in developing session plans and supplementary materials (such as aids)
	. selects and develops aids and equipment	. a knowledge of the uses of training aids and equipment and skill in their preparation	. instruction in the principles underlying the use of aids to assist the learning process
4. Develops effective learning conditions	. creates and maintains communication with trainees	. acceptance that the needs of trainees effect their ability to learn	. supervised experience with real trainees in the classroom setting and on the job
		. an understanding of the communication process, with particular attention to: – ensuring continuous feed-back – overcoming common blockages – using training equipment and aids	. coaching by approved instructors . instruction in the principles of motivation, perception, reinforcement, etc. relating to communication . instruction in the principles and practice of communication techniques: – speaking – listening – questioning
		. ability to speak fluently to groups and individuals	
	. ensures trainee participation in the learning process	. knowledge of activity methods and skill in reinforcement of participative behaviour	. instruction in principles of and practice in activity methods such as projects, short term targets, case studies etc.
	. counsels or disciplines individual trainees where necessary	. ability to apply individual counselling techniques	. instruction in the principles of and practice in individual counselling
	. ensures that physical conditions are suitable for learning	. sensitivity to the effects of the environment on learning	. instruction in the principles of lighting, ventilation, heating, aural conditions in training situations
		. skill in selecting suitable facilities, and arranging them as necessary	

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Job Demands		*Training Requirements*	
Major Responsibilities	Detailed Activities	Instructor Attributes	Suggested Training Content
5. Instructs individuals and/or groups	. uses instructional methods and techniques appropriate to learning goals and needs of trainees	. skill in use of a variety of instructional techniques and methods	. instruction in theory of and practice in lecture discussion techniques, theory and skill lessons, programmed instruction, individual job instruction methods, etc.
		. confidence in conducting classroom lessons, discussions, etc.	. supervised teaching practice with critical review of performance in peer groups
			. supervised teaching practice with real trainee groups
			. instruction and practice in using charts and chalkboards, questioning, demonstrating from job breakdowns, programmed instruction, training aids and equipment etc.
	. ensures application of the basic principles of learning	. an understanding of principles of motivation, perception, reinforcement etc.	. instruction concerning the principles underlying learning and perception
	. checks learning of knowledge and skill by trainee, interprets results of check and takes appropriate action	. ability accurately to sum-up a group training situation, react flexibly and continue to apply learning principles	. instruction in faults analysis techniques
		. skill in the diagnosis of learner's difficulties in comprehension and skill acquisition, and adapting teaching to assist overcome them	. guided practice in individual coaching methods
	. administers, marks and interprets results of exercises, tests and examinations	. a knowledge of the use and interpretation of testing procedures	. instruction and practice in testing and examination procedures

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	. provides opportunities for trainee to know how he is progressing	. a knowledge of and skill in applying trainee counselling procedures	. instruction and practice under guidance of an experienced trainer in trainee counselling procedures
	. gives oral or written reports to management and others on trainee's progress	. skill in appropriate reporting procedures	. practice in report writing
	. prepares trainee to apply new learning in the work situation	. an understanding of and skill in promoting transfer of training	. instruction in principles and practice of reinforcement and follow up on the job
6. Evaluates use of new learning of the job	. checks progress on the job: – directly – with supervisors	. knowledge of on-the-job conditions and skill requirements	. oppcrtunities for frequent contact with production work
	. investigates any difficulties encountered by trainees		. instruction and practice in faults analysis techniques
	. reteaches as necessary	. ability to coach on the job	. practice in coaching techniques
	. reviews training programme and adjusts as necessary	. willingness to make critical evaluation of own performance	. frequent opportunities for self appraisal in peer groups during initial training

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APPENDIX II

TRAINING PERSONNEL WHO TOOK PART IN THE DEVELOPMENT OF THE SPECIFICATION

B. J. Adams—Director of Training, Timber Development Council of Australia.

P. H. Chown*—Manpower Manager, Qantas Airways Ltd.

R. B. Denniston—Director, National Centre, Australian Institute of Management.

W. L. Exton—Manager, Training and Development, General Motors-Holden's Pty Ltd.

D. Hardie (Convenor)—Principal Executive Officer, Industrial Training Section, Department of Labour and National Service.

A. L. McPherson—Training Officer, W. D. & H. O. Wills (Aust.) Ltd.

P. J. Smith—Manager, Staff Training and Development, Arnott-Brockhoff-Guests Pty Ltd.

L. Truex—Training Co-ordinator, Printing and Allied Trades Employers' Association of Victoria.

P. R. M. Williams—Training Superintendent, The British Petroleum Company of Australia Ltd.

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* Mr Chown participated in initial disccussions but subsequently Mr P. Boswell, Manager Training Services, represented the company.

A Look at T.W.I. in Some Australian Firms

D. NEWTON

Industrial Services Branch
Department of Labour and National Service

About 100 companies for which the Department of Labour and National Service had trained T.W.I. trainers supplied information on the extent to which they had since used T.W.I. Senior managements of a number of them expressed views on the value of this form of training.

The T.W.I. approach to supervisor training first gained prominence in the U.S.A. in the early days of World War II when the Government sponsored its introduction into essential industry[1]. It was introduced in Britain in 1944, and was being used in Australia a year or two later. As now commonly applied in this country, it is based on four programmes: Job Instruction (J.I.), Job Relations (J.R.), Job Methods (J.M.), and Job Safety (J.S.). Programmes range in duration from 10-12½ hours for J.I. and J.R. and 12½ hours for J.S. to 21 hours for J.M.

Some years after the war the Department of Labour and National Service began conducting T.W.I. trainers' courses for persons nominated by Commonwealth and State departments and agencies. As from 1954, places on courses were made available also to nominees of private firms.

During 1968 the Department made a survey with the object of gaining a broad picture of the extent to which private firms for which it had trained T.W.I. trainers were using T.W.I. and to obtain managements' views of the value of this form of training.

The survey was conducted by mail questionnaire, which was distributed to the 202 companies for which the Department had trained one or more of their employees as T.W.I. trainers since 1954.

One hundred and thirty-two questionnaires were returned, of which 105 were suitable for analysis. The 105 companies concerned were distributed over all six States, and comprised 43 with less than 500 employees, 19 with between 500 and

1,000 employees, and 43 with over 1,000 employees. They represented a wide range of industries, as follows: oil and chemicals (22 companies), engineering (16), food processing (13), textiles and clothing (8), metal manufacture (10), other manufacturing (4), mining and quarrying (12), insurance and banking (7), retail trades (5), heat, light and power (5), building and construction (2) and transport (1).

OUTLINE OF FINDINGS

Among the main findings were:

- Of 331 T.W.I. trainers trained for the 105 companies during this period, a third were still actively conducting T.W.I. programmes at the time of the survey. Most of the others had retired or resigned or had been promoted or transferred to positions where they were no longer responsible for training.
- Over 3,600 programmes had been conducted within or for the 78 companies able to supply this information. This represented an average of 47 programmes per company during the 14-year period. During 1967 alone, 52 companies reported some 6,000 trainees as having attended T.W.I. programmes.
- In the 78 companies able to supply details of their T.W.I. training, over 35,000 trainees had attended programmes since 1954. Of these, 13,400 (38 per cent) had attended the J.I. programme, 10,650 (29 per cent) had attended J.R., 7,090 (20 per cent) J.S., and 4,560 (13 per cent) J.M.
- Besides using T.W.I. for supervisor training, a majority of companies also reported having used it in training some non-supervisory staff, including managers (41 per cent), operators (33 per cent), clerical staff (14 per cent), technicians and tradesmen (10 per cent) and others (17 per cent).
- Almost half the companies had modified one or more of the four programmes to suit their particular needs. Modification usually involved the use of additional material related to the company's own operations. The J.R. and J.I. programmes were most often those that had been changed in this way. Another common practice among the larger firms was to incorporate elements of the four T.W.I. programmes into longer company-developed training courses.
- Most managements saw the programmes as good first steps to further training which were easy to present and readily accepted by trainees. The value and importance of regular follow-up and refresher training was frequently stressed. However, some managers took the view that T.W.I. was too superficial and over-simplified for the better educated supervisors and was lacking in flexibility.

Details of the results of the survey follow.

EXTENT OF T.W.I. TRAINING

Companies were asked to indicate the types and number of T.W.I. training programmes that had been conducted for their employees since 1954 and the numbers and categories of employees concerned*.

Programmes Conducted and Numbers Trained

A total of 98 companies indicated that they had used at least one of the T.W.I. programmes. Eighty-eight of them had used the J.I. programme, 70 had used J.R., 67 J.S. and 64 J.M.

Only 78 companies had kept records of the numbers of programmes conducted in particular branches of T.W.I. Moreover, few of these companies had kept complete records of the numbers of employees trained in each of the four branches of T.W.I., except for the year 1967. No precise overall figures were therefore available. However, on the basis of figures supplied as to the average size of the employee group attending each of the four types of programme, it was possible to estimate the approximate total numbers attending.

Table 1 shows the numbers of programmes conducted and the estimated numbers attending them in these 78 companies during the period 1954 to 1967 inclusive.

TABLE 1. Programmes Conducted and Estimated Numbers Attending them within 78 Companies (1954–1967)

Branch of T.W.I.	*Number of Companies*	*Programmes Conducted*	*Total Attendance† (Estimated)*
Job Instruction	72	1,336	13,400
Job Relations	64	1,069	10,650
Job Methods	47	611	4,560
Job Safety	57	642	7,090
TOTAL	—	*3,658*	*35,700*

To provide an indication of the extent to which T.W.I. training was being carried out at the time of the survey, companies were asked to state what programmes had actually been conducted during 1967, and how many employees had attended them. Fifty-two companies reported having conducted one or more programmes in that year, the total attendance being 6,104, as follows: J.I. 2,529 (41 per cent); J.R. 1,840 (30 per cent); J.M. 623 (10 per cent); J.S. 1,112 (19 per cent).‡

* The information in this section relates only to training which took the form of T.W.I. programmes, whether of the standard kind or modified to meet particular needs (see later section on Adaptation of the Basic Programmes). It does not cover other training courses in which T.W.I. material was incorporated.

† As a proportion of trainees would no doubt have attended programmes in several different branches of T.W.I. the total numbers of individuals trained would be somewhat less than those shown. However, on the information available it was not possible to estimate these.

‡ See previous footnote.

Types of Employees Trained

Of the 98 companies that had used T.W.I., 86 provided training in one or more of the four T.W.I. programmes for supervisors (including foremen, section leaders and leading hands).

However, although T.W.I. was developed specifically for training supervisors the survey showed that the programmes were also being used to train substantial numbers of non-supervisory personnel. (See Table 2). Fifty-six of the 98 companies that used T.W.I. trained non-supervisory personnel in J.I., 48 trained in J.R., 34 in J.M. and 41 in J.S.

TABLE 2. Number of Companies which Provided T.W.I. Training for Particular Categories of Employees (1954–1967)

	Companies Providing Training in:				
Category of Employees	*J.I.*	*J.R.*	*J.M.*	*J.S.*	*Total*†
Supervisors	78	61	54	61	86
Managers and Executives	29	30	18	23	40
Operators	23	18	14	20	32
Clerical Staff	14	10	5	5	14
Technicians and Tradesmen	7	5	5	7	10
Personnel and Training Officers	2	2	1	2	5
Other (e.g. engineers, sales, etc)	12	8	8	6	17
All Categories	*88*	*70*	*64*	*67*	*98*

As would be expected, a number (40) were using it to train managers and executives. A significant number, however, were also using T.W.I. programmes to train operators (32) and technicians and tradesmen (10).

Companies were asked to indicate the reasons for including non-supervisory staff in the T.W.I. programmes. Regarding experienced workers, the main reasons given were that these employees were potential supervisors, or that they had responsibilities for training others. One company reported training apprentices in J.I. so that they would learn to use job breakdowns in their work.

Managers and executives were usually included in the programmes because they, too, had responsibilities for supervising the work and training of others or, in some cases, so that they would gain an appreciation of the supervisor's functions and problems.

Use of External Training Facilities

Companies were asked to indicate to what extent trainers employed by outside bodies had conducted T.W.I. programmes for them.

Thirty-seven companies reported having made use of such services and some of them had done so on more than one occasion. Twenty-five companies had employed such trainers to conduct J.I. programmes, 24 for J.S., 19 for J.R. and 16 for J.M.

† Numbers of companies which provided training in one or more branches of T.W.I. for the categories shown.

Organisations reported as having provided such training included: other companies; the Australian Institute of Management; State Technical Education Authorities; State Labour Departments and management consultants.

It is notable that other companies were most often reported as having provided external trainers, except in relation to J.S. where State Labour Departments and the National Safety Council made, between them, the major contribution.

Approximately a third of the 98 companies that used T.W.I. themselves reported having conducted programmes for others.

ACTIVITIES OF INDIVIDUAL TRAINERS

A total of 331 T.W.I. trainers had been trained by the Department since 1954 for the 105 participating companies. Of these, 154 had been trained as J.I. trainers, 133 as J.R. trainers, 119 as J.S. trainers and 92 as J.M. trainers. A number of them had been trained in several branches of T.W.I.

However, it was found that 126 of them were no longer employed by the company which had sponsored them. A further 92 had not conducted programmes during the twelve months prior to the survey, and reasons for this were supplied in 65 cases. Forty-two were reported to have been promoted or transferred to positions where they had no training responsibilities. In eight cases, trainers had ceased to conduct particular programmes because initial training needs had been satisfied and programmes had been temporarily discontinued. Eight trainers had never conducted programmes because it had been decided not to introduce the particular branch of T.W.I. concerned. In a further seven cases, the undertaking stated that its purpose in arranging for the employees concerned to attend T.W.I. trainers' courses was to assist their personal development.

In all, therefore, 113 of the original 331 persons trained by the Department as T.W.I. trainers for the participating companies were still conducting T.W.I. programmes at the time the survey was conducted.

Companies were also asked to indicate the number of programmes conducted by these 113 trainers and by any former trainers for whom details were available. Information was supplied by 70 companies about the training activities of 156 trainers and ex-trainers. As indicated in Table 3, the majority had conducted less than 10 programmes in any branch of T.W.I. However, a significant number had conducted more than 10 programmes, while a few had not conducted any.

TABLE 3. Number of Trainers (and ex-Trainers) in 70 Companies who had Conducted Particular Numbers of Programmes (1954–1967)

		Number of Trainers who had Conducted			
Branch of T.W.I.	*Number of Qualified Trainers*	*No Programmes*	*1–10 Programmes*	*11–20 Programmes*	*Over 20 Programmes*
Job Instruction	133	8	93	18	14
Job Relations	105	4	70	16	15
Job Methods	73	5	51	10	7
Job Safety	82	7	61	8	6

REASONS FOR INTRODUCING T.W.I.

Companies were asked to state the reasons why they used particular T.W.I. programmes.

In addition to comments about particular programmes some companies gave one or more general reasons for adopting T.W.I. Forty-eight companies indicated that they had introduced it in order to lay the foundation for a systematic and comprehensive programme of training. Some of these and others, (41 in all) mentioned as a reason for introducing T.W.I. a desire to improve communication and supervisor-worker relations on the shop floor. Twenty-six companies had adopted it as a means of assisting the development of supervisors and potential supervisors.

All of the 98 companies using T.W.I. gave one or more reasons for adopting particular branches of it. A considerable variety of reasons were mentioned other than those of a more general kind that have already been referred to.

One reason given in relation to T.W.I. programmes was the desire to make one or more of them a part of a more comprehensive training programme. Most of the other reasons can be grouped conveniently under broad headings as follows:

Job Instruction:
- Increase knowledge and skill of operators.
- Make more effective use of resources.
- Improve supervisors' standards of instruction.
- Improve communications.

Job Relations:
- Improve employer-employee relations.
- Improve communications.
- Improve overall performance.
- Previous favourable experience with the programme.

Job Methods:
- Make more effective use of resources.
- Improve overall performance.

Job Safety:
- Develop favourable attitudes to accident prevention.

ADAPTATION OF THE BASIC PROGRAMMES

When T.W.I. was first introduced in the U.S.A. it was thought necessary to standardise the programmes in order to achieve close control of the quality of training[1]. Each step in each session was planned in detail, even down to the precise words and phrases to be used. Thus, the length and content of a programme was the same regardless of the trainer's experience or of the purpose for which it was used.

However, many companies have found it useful to modify the basic programmes to make them more directly relevant to their own situation and requirements. In the present survey, companies were asked for information about any modifications they had made to particular programmes to meet their own training needs.

Job Instruction

Changes in the J.I. programme had been made by 41 companies (47 per cent of those using it). In most cases, modification involved replacing the standard case study and job breakdown material with local examples considered more appropriate to the company's operations and methods.

Six companies had modified the programme for clerical workers. Twenty-two had extended it by incorporating additional material. For example, five companies claimed to have made the programme more flexible and sophisticated by adding more complex case study material and role-playing activities. Others had included additional job breakdown material, films, report-writing exercises, practice in drawing up training timetables, and special assignments. In seven cases, companies had incorporated the basic J.I. programme in longer supervisory training and methods of instruction courses of between five and 10 days duration; one such course was residential.

On the other hand, four companies had reduced the length of the programme. In one case, a shorter programme consisting of three sessions of two hours each had been developed for superintendents and senior personnel. Another company had reduced the time involved by concentrating instruction almost entirely on how to prepare job breakdowns and use them in instruction.

Other modifications proposed, but not yet introduced, included greater use of discussion methods and the addition of material based on local practices and procedures.

Job Relations

This programme had been modified by 40 companies (57 per cent). As with J.I. the most usual change was the use of locally-based case study material, often adapted to meet the particular requirements of supervisory, managerial or clerical staff. Five companies also reported the addition of role-playing and problem-solving exercises. Other additions included films and lectures on such topics as communication, the theory of human behaviour and, in one case, an outline of the Australian arbitration system.

Four companies had incorporated elements of the J.R. programme in longer human relations courses. In one such case a four-day course had been developed to include syndicate discussions based on films and case study material produced by the Industrial Society in Britain*.

Three undertakings had condensed the programme by concentrating on what they considered to be its fundamental points.

Job Methods

Of the companies conducting job methods training, 25 (39 per cent) had modified the basic programme. Nine had extended the training period by introducing additional material, including films, practical exercises, discussions and

* Formerly the Industrial Welfare Society.

lectures on productivity, work sampling and multi-column process charting. In five cases, programmes had been extended from the customary 21 hours, part-time, to full-time courses of four or five days involving a fairly thorough introduction to method study techniques. In one such course, trainees were required to spend seven hours on the factory floor undertaking a set project. Most companies reported using locally developed case study material and, in two cases, Methods Improvement course manuals were being used in preference to the standard J.M. manuals because it was thought they contained better case study material*.

Three companies reported having shortened the programme. A further three had incorporated elements of the J.M. programme into general supervisor training courses.

Job Safety

Twenty-two companies (33 per cent) had modified the job safety programme. Most changes were minor, usually involving substitution of case study material based on actual incidents that had occurred within the companies' plants. Five companies had introduced sessions on procedures for accident investigation and report writing. Others used additional hazard-spotting exercises supplemented by films, slides and quizzes.

In four cases, the course had been extended by periods ranging from two hours to three days to include demonstrations of lifting techniques, group discussions, exercises, instruction on how to compile and interpret accident statistics and, in one company, projects involving a critical analysis of job methods. No company had reduced the length of the standard programme below the usual 12½ hours, but three had incorporated elements of it in their own shorter supervisor training courses.

MANAGEMENT VIEWS AND EXPERIENCE

Companies were asked to indicate senior managements' views as to the value of T.W.I. training.

In general, management attitudes to T.W.I. training could be said to be very favourable. In 24 cases it was seen as essential training for all supervisors. Particular comments were that T.W.I. provided a sound approach to teaching the fundamental principles of supervision and that, because of the completeness and simplicity of the programmes, they were easy to apply and readily accepted. One view often expressed was that the programmes were a good first step in training supervisors and provided a sound basis for further training.

However, six companies considered the T.W.I. programmes to be too basic for any but the less sophisticated first-line supervisors. For this reason they were thought to have limited application unless extensively modified to meet the needs

* Methods Improvement courses were developed by the Department of Labour and National Service to provide three-day courses of continuous training as an alternative to the part-time training customarily provided under the T.W.I. Job Methods programme.

of the better-educated recruits entering industry. One company suggested that T.W.I. training was too stereotyped and did not take sufficient account of individual training needs. Others indicated that company courses, frequently developed by combining elements of the four programmes, were now more effective in meeting their particular needs and that individual programmes were more valuable for companies with limited training experience and resources.

Although over half the companies surveyed were providing some form of T.W.I. training for non-supervisory personnel, few commented on the usefulness of the programmes for this group. In three cases the programmes were considered a valuable means of testing the potential of experienced workers for supervisory positions. Two companies believed that managers who had attended them had benefited by gaining a better understanding of the supervisor's job.

REFERENCE

1. DOOLEY, C. R. 'T.W.I. in the United States'. *International Labour Review*, Vol. 54, Nos 3-4, September-October 1946.

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ABSTRACT - THIS SECOND REPORT IN A 3-VOLUME
STUDY OF TECHNOLOGICAL CHANGE IN FRUIT AND
VEGETABLE HARVESTING ASSESSES THE
IMPLICATIONS OF MECHANIZATION FOR MANPOWER,
THE INDUSTRY, CONSUMERS, AND THE PUBLIC. THE
PAPERS IN THIS VOLUME CONSIDER PRESENT AND
FUTURE ASPECTS OF MECHANICAL HARVESTING,
ECONOMICS OF MECHANIZATION, MANPOWER
PROBLEMS, AND SOCIAL AND POLITICAL
CONSIDERATIONS. THE SOCIAL ADJUSTMENTS,
INSTITUTIONAL CHANGES, AND PROGRAMS REQUIRED
TO OFFSET THE EFFECTS OF TECHNOLOGICAL CHANGE
ARE DISCUSSED. THE OTHER REPORTS IN THE 3-
VOLUME STUDY ARE AVAILABLE AS VT 010 157 (MP
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RMC Report No. 17

FRUIT AND VEGETABLE HARVEST MECHANIZATION
Manpower Implications

B. F. CARGILL and G. E. ROSSMILLER, Editors

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FRUIT AND VEGETABLE HARVEST MECHANIZATION
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Additional copies of this report, *Manpower Implications*, Rural Manpower Report No. 17 and *Policy Implications*, Rural Manpower Report No. 18, are available for $2.50 and $2.00 respectively from Bulletin Office, Agriculture Hall, Michigan State University, East Lansing, Michigan 48823. Copies of *Technological Implications*, Rural Manpower Report No. 16, are available for $3.50 from either the American Society of Agricultural Engineers, St. Joseph, Michigan 49085, or Bulletin Office, Agriculture Hall, Michigan State University, East Lansing, Michigan 48823.

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PREFACE

This is the second in a series of three publications emanating from a nationwide project on the Manpower Implications of Mechanization in Fruit and Vegetable Harvesting. The project, designed in three phases, has the following general objectives:

I. To present technological information on all aspects of fruit and vegetable harvesting.

II. To assess the implications fruit and vegetable mechanization will have on manpower, the industry, the consumer, and the public.

III. To assimilate and analyze material presented in fulfillment of the first two objectives and to present conclusions and recommendations dealing with the nature and priority of policies, programs, and research.

Each of the above objectives are dealt with in the respective project phase and culminate with the appropriate publication as follows:

Fruit and Vegetable Harvest Mechanization, Technological Implications. Rural Manpower Center Report No. 16.

Fruit and Vegetable Harvest Mechanization, Manpower Implications. Rural Manpower Center Report No. 17.

Fruit and Vegetable Harvest Mechanization, Policy Implications. Rural Manpower Center Report No. 18.

The editors wish to acknowledge the U.S. Department of Labor for financial support, and the Rural Manpower Center, Departments of Agricultural Engineering and Agricultural Economics, all of Michigan State University, for providing personnel and services for the project. The views expressed by the authors contributing to this publication do not necessarily reflect the viewpoint or policy of the above named institutions.

The editors also wish to express their sincere appreciation to Daniel Sturt, Director, Rural Manpower Center, for his council and guidance.

The basis for this publication was a Colloquium on the Manpower Implications of Mechanization in the Fruit and Vegetable Industry held in July, 1969, at Michigan State University. At this Colloquium a highly interdisciplinary group composed of agricultural economists, rural sociologists, agricultural engineers, horticulturists, manpower specialists, and industry and labor representatives presented the papers contained in this volume.

To provide continuity between Phase I, the technology phase, and Phase II, the manpower phase, a Task Force on Technology was established. This Task Force met and presented papers in Phase I and II. To provide similar continuity between Phase II and III a Task Force on Manpower was established. This Task Force on Manpower met for the first time during the Manpower Colloquium and will be instrumental in assessing the Colloquium and extending the evaluation

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of Phase II into Phase III, the policy phase. The Task Force on Manpower includes Nicolaas Luykx, Robert McElroy, James Nix, Daniel Sturt and Maurice Voland.

To our old friends who worked with us during Phase I and II and our new friends who joined us at Phase II, we wish to express our appreciation. It has been a distinct pleasure and privilege to work with the well-rounded, knowledgeable and interested group of individuals who contributed to the success of this project.

Michigan State University
December, 1969

B. F. Cargill
G. E. Rossmiller

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CHAPTER I

INTRODUCTION

G. E. Rossmiller

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INTRODUCTION

G. E. Rossmiller

The authors of the papers in Volume I, *Fruit and Vegetable Harvest Mechanization, Technological Implications*, leave little doubt that the fruit and vegetable industry will be well on its way toward mechanical harvest of all but a very few specific commodities by 1975. Shortly thereafter, it appears that many of those crops which are not mechanized will no longer be grown commercially in the United States.

This technological revolution in the fruit and vegetable industry is a part of the larger phenomenon pervading all of U.S. agriculture, particularly during the past three decades. The result has yielded an agricultural sector more productive than any other in history with today's farmer producing enough food and fiber for 42.5 persons. It has also contributed to a loss of 1.2 million farms and a decrease of 2.8 million farm workers in U.S. agriculture during the past decade.

Some would contend that if this is true it must be proper and just, because the rules of the economic system will have been followed as they ultimately must be followed. They would contend that technological innovation means progress, and progress is a most important goal to be achieved.

But others hesitate and wonder if the blind pursuit of progress through the most rapid possible technological advance without a sensitivity to its multidimensional consequences is really in the best interest of society. Is it really progress after all?

Changes in the economic organization and structure of American agriculture have resulted in low returns for both human and physical resources and a relatively low level of living for many rural residents. The dwindling rural population, both absolutely and relatively, has left those who remain with a much reduced base of political power. The absolute population decline also has an adverse effect upon the per capita cost of public services, while at the same time it erodes the tax base for providing them. Unless new opportunities are developed the rural communities supporting agriculture stagnate and wither.

Farm workers who attempt to remain in agriculture compete for fewer and fewer jobs. And the jobs which are left on the farms require higher skill levels for operating and maintaining the sophisticated mechanical means of production on today's farms. Skill level requirements in the future will be even higher.

But for those who leave agriculture and the rural areas the road many times is no less rocky. Many of those who migrate to the city find they do not have the training and skills necessary to hold a job in an industrialized economy. Thus, they trade rural unemployment for urban unemployment and lend credence to the oft made charge that rural America is the spawning place for the unrest and violence in urban America.

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It would be naive and irresponsible to advocate a moratorium or a choking off of the tap of technological advance. It is equally as irresponsible to ignore the consequences--including the unfavorable ones--of that technological advance which our research and development institutions both public and private are capable of producing. We are hopefully at an era in our history when social and economic justice and equality, freedom, and stability have become equally as important as efficiency and progress among our societal goals. The problem becomes one of achieving orderly and equitable social and human adjustment to the conditions created by technological advance.

What are the human consequences of technological change in the fruit and vegetable industry? What kinds of social adjustments are needed to counteract these consequences? What actions and what kinds of institutions and programs are necessary to insure that these social adjustments are carried out? In their broadest sense, what are the manpower implications of fruit and vegetable harvest mechanization? This is the subject to which this volume turns its attention.

Chapter II, "Technology in Perspective," summarizes the detailed reporting of the state of the arts and future prospects in mechanical harvesting in the fruit and vegetable industry. The papers in this chapter draw heavily from the material presented by nationally recognized agricultural engineers and horticulturists and reported in Volume I of this series, *Fruit and Vegetable Harvest Mechanization, Technological Implications*. The present state of the arts in horticultural technology is reported separately for vegetable production and fruit production followed by a look toward the horticultural prospects for the future. The same format is followed for the agricultural engineering aspects, the state of the arts, and the future prospects in the latter part of Chapter II.

Chapter III, "The Economics of It All," details the process of industrialization in agriculture with special reference to the fruit and vegetable industry. It goes on to specify the supply, demand, and input level situation in the fruit and vegetable sector. The conditions leading toward substitution of capital for labor are discussed, and the international relationships in both production and consumption are detailed. This chapter closes with a report on research done on a sample of Michigan fruit farms concerning the relationship of costs, returns, size, and the input mix.

Chapter IV, "The Manpower Dimension," describes the manpower related problems created in part by advancing technology and mechanization. It also discusses the structure and operation of the labor market, the factors important in labor mobility, and the changing scene related to labor skills in the agricultural work force.

Chapter V, "Politics, People, and Policy," presents the social and political considerations important in any discussion of problems surrounding

agricultural manpower. It includes manpower situation viewpoints by a union organizer and a food processor. Also included are discussions of the conditions under which the migrant worker toils and a more general discussion of the changing rural scene with respect to the social structure and institutions. The political implications are drawn and present and prospective manpower policies and programs are discussed.

Thus this volume attempts to present interesting observations on acute problems and some new ideas on how to cope with them. Hopefully it will stimulate additional interest, research, and policy development in the important, complex, and problem ladened area of rural manpower.

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C H A P T E R II

TECHNOLOGY IN PERSPECTIVE

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HORTICULTURAL TECHNOLOGY IN VEGETABLE PRODUCTION

William L. Sims

The objective of the following is a "State of the Arts" summary of cultural and breeding practices for fruits and vegetables as they have influenced and are influencing production, including mechanical harvested products intended for the fresh and processed market. The summary is derived from those papers presented at the Technical Seminar on the Implications of Mechanization for Fruit and Vegetable Harvesting [1] held in Chicago, Illinois, December 9-10, 1968. Some 30 different vegetable crops were discussed at the Chicago Seminar in much detail, and the report covers more than 800 pages. A good portion of the report dealt with cultural and breeding practices for mechanization of these crops, including the following classified grouping: (1) below ground vegetables (root, bulb, and tuber); (2) fruit and pod vegetables (tomatoes, peppers, peas, and beans); (3) vine crops (melons, cucumbers); and (4) leafy and stem vegetables (lettuce, celery, broccoli, sweet corn, and asparagus).

Obviously, it would be impossible to summarize on an individual crop basis here. However, there are certain general and common trends of thought that run through most of the discussions on vegetable crops when considering cultural and breeding practices for mechanization.

First of all, it must be recognized that variety breeding and cultural practices are major components in the mechanization of vegetable crops. Other components are machines, handling, and processing. Mechanization would not be possible without the complete involvement of all these components. In fact, they must all function as a system, and each must be associated with any development of the other. Too many times we have seen failures in mechanization of a crop due to one of these components being considered alone without understanding and appreciating the others.

Factors favorable and those unfavorable for mechanization will be brought out in a general discussion of cultural practices and variety breeding.

A systems approach must also be used in developing improvements in cultural practices, such as seedbed preparation, precision seeding, transplanting, fertilization, chemical weed control, scheduling of plantings and harvest, plant populations, and irrigation. This type of an approach on canning tomatoes in California has been brought together in a publication, *Mechanized Growing and Harvesting of Processing Tomatoes*, University of California Agricultural Extension Service AXT-232 [3].

Uniformity is a major key to successful mechanization. All factors affecting uniformity in plant emergence, growth, stand, and maturity must be clearly understood. Fields with uniform soil conditions must be chosen to reduce fertility and irrigation difficulties. Low spots in the field create undesirable ponds of water and drowned plants. Salt and alkali

conditions also interfere with normal plant growth. These problems require special management to minimize harvest difficulties.

Planting Schedule.--One of the most critical factors in the mechanization of any vegetable crop is the scheduling of planting and harvesting. In several states, and on some crops such as peas and sweet corn, degree days have been calculated and used in scheduling. However, in other states and on other crops this system is not applicable. In Illinois, a major processing company was unsuccessful in scheduling tomatoes by degree days. In California, another system is used for scheduling of canning tomatoes. The present tomato variety VF 145 for mechanical harvesting sets fruit over a wide range of temperatures and is adaptable for systematic planting schedules. This is necessary since an entire crop cannot be harvested in just a few days. A series of planting dates has to be planned to ensure continuous delivery of quality fruits to the processor. Some processors stipulate planting dates and acreages in their contracts. Seed germination, emergence, and development of seedlings require much longer time at soil temperatures of 50° F. to 55° F. than at 65° F. to 75° F.

When the soil temperature at the 2-inch depth reaches 57° F. or more for 3 consecutive days, plantings may begin. The difference of only 2 degrees between 55° F. and 57° F. means 9 days difference in time of emergence. In the East and Midwest frost and rains may also interfere with scheduling. Criteria other than the calendar should be used for deciding planting dates in the early planting period. A definite size or morphological age of the tomato seedling has proven satisfactory. Subsequent plantings are made when plants of the previous planting reach the first true leaf. In some states transplants and varieties may be fitted into schedules. In California, approximately 125 days are required from emergence to harvest. Consequently, the schedule may be based on calendar date for mid- and late-season plantings. Irrigation and fertilization may affect rate of growth and therefore affect these schedules, so exacting management must be followed. Scheduling is a major problem in the mechanization program in the East as methods have not been determined for several crops. It is also a critical point in the West, but the weather and longer growing season are a definite advantage. Similar schedules must be established for mechanical harvesting of other vegetable crops as the machines harvest a certain number of acres per day. Crop yields and quality affect machine efficiency.

Seedbed Preparation.--In the East and Midwest, most of the plantings are on the flat and in a number of crops transplants are used. In California, practically all plantings are on beds and most are direct seeded. Shaping the bed is perhaps as critical as any step in cultural operation. The bed must be flat with no depressions at harvest time.

If planting is into moisture a better seedbed is needed than if the plants are irrigated up. Even if planting is into moisture, it is wise to

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have standby irrigation--a wind can dry out the field causing delay and non-uniformity in emergence. The loss of any planting will upset the planting and harvesting schedules.

Plant Populations.--Plant density per acre is important in obtaining maximum yield and uniformity in maturity. Plant populations have increased considerably as vegetable crops have been mechanized. In canning tomatoes, plant populations have increased from 5,000-8,000 to 50,000-80,000 plants per acre. In pickling cucumbers, populations have gone from 9,000-11,000 to 60,000-80,000 plants per acre. In the advent of growing asparagus for machine harvest, crown planting (transplants) populations have gone from 6,000-8,000 to direct seeding at a rate to obtain 50,000-60,000 plants per acre.

Spacing between rows is a major decision the grower must make before the growing season. If the spacing is too wide, space that could be used for production is wasted. Row spacing depends on the size of the vines, type of soil, and method of planting--single or twin rows, on the flat, or on beds. Variety is another consideration for row spacing, as is the width of the harvest machine and other equipment.

In tomatoes and other fruit vegetables, too close spacing may result in poor concentration of fruit set and overcrowded plants that spread apart and expose the fruits. Plants and fruits may thus be run over by the harvester wheels. Plant spacing in the row may have to be adjusted to local conditions and for spacing used.

In the West, twin rows 12 to 14 inches apart on 5 foot centers are used in growing tomatoes for machine harvest and on 40 inch centers for pickling cucumbers. The new asparagus acreage being direct seeded is also twin rows 12 to 14 inches apart on 5-foot centers.

Twin-row production requires more precision and closer management. Since there are more plants per acre, plant competition is greater. Fruits ripen more rapidly and there is a better concentration of fruit maturity. The possibility of skips and blank areas is minimized.

Seeding.--In California, generally all processing tomato fields are direct seeded. This is also the case for most of the other vegetable crops being grown for machine harvest. The cost of transplants for higher plant populations becomes a critical economic factor. Direct seeding of tomatoes only recently has been tried in the East and Midwest. Johnson [2] in New Jersey and Wilcox [4] in Indiana report that research is presently underway on direct seeding, seeder evaluation, and plant population. Generally, the method of planting depends on the grower and his particular field condition, equipment, and experience.

Research in precision seeding is progressing, and new developments should be followed. Several models of precision seeders are now available, and with these planters and good weed control several small seeded vegetables can be planted to a stand.

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Weed Control.--Weed control is a major problem in mechanization of several vegetable crops. However, chemical weed control has become a well established practice in a number of crops. Applied at the proper time with good equipment and used with precision, certain chemicals give good weed control. Poor results are usually due to poor timing in relation to rains, improper use of equipment, or poor follow-up of cultivation and furrowing out.

Chemical weed control recommendations vary from area to area with climatic, soil type, moisture, temperature, and species differences. Good chemical weed control reduces costs of thinning and hoeing, makes thinning easier, and minimizes stunting of plants due to competition.

Thinning.--When direct seeding is done without precision planting in a number of vegetable crops, it is often necessary to thin the plants to a desired spacing. The plants should be thinned when small; i.e., second or third true-leaf stage. This minimizes competition and damage from root pruning. There is less shock, and plants recover more rapidly. In growing plants for a single or once-over harvest it has been found in a number of vegetable crops such as tomatoes and cucumbers unnecessary to thin to single plants; clump thinning, which leaves several plants at one location, may be used. Clumps develop and grow as single plants. This has not been the case with other crops such as lettuce.

In general, clumps should be held to two to four plants--more plants per clump result in overcrowding.

With adequate stands mechanical thinning can be used [4]. Excessively thick or very weak stands make mechanical thinning unsatisfactory. Electronic and selective thinners are presently being developed.

Cultivation.--Cultivation should be for a specific purpose only. Unnecessary trips across the field will compact the soil and add to cost. Root pruning should be kept to a minimum. Cultivation should be for promoting growth, not for interfering with it. Clod breaking equipment--e.g., squirrel cages, rollers, floats--should be used freely. After the clods are in the vines they are difficult to get out, and many find their way into the harvester.

Irrigation.--Once the seeds have germinated the plants should never stop growing--mechanical harvesting is based on uniform maturity. Also, the field should not go dry during early growth.

In the West, all vegetable fields are irrigated; and in the East, more and more irrigation is being used.

Irrigation cut-off cannot be predicted in the East and Midwest, since rain may occur at any time. However, in California and sections of other Western states, time of the last irrigation is carefully selected. In tomatoes the last irrigation is usually 2 to 6 weeks before harvest, depending on soil, harvest season, year, variety, plant condition, and area. However, on a light, sandy soil, one week may be too soon for an August harvest.

Both furrow and sprinkler irrigation may be used on most vegetable crops. Sprinkler irrigation has been satisfactory under conditions of high water table, nonlevel land, and salinity, and in areas where available irrigation water supplies are low. It has also been used in incorporating the herbicide until a stand is established, thus preventing soil crusting.

Fertilizing.--Placement of a starter fertilizer is very important for most vegetable crops. A small band of fertilizer about one-inch below the seed has proven satisfactory, and the first roots go straight down and will miss the fertilizer if it is too far away. It takes time for secondary roots to develop and contact the fertilizer. Additional fertilizer may be applied as a sidedress at thinning time. The kind of fertilizer and rate is adjusted according to the inhererent fertility of the field. Previous crop history also should be considered. In tomatoes and several other vegetable crops, late applications of nitrogen should be avoided. Excessive nitrogen frequently causes secondary growth and nonuniform maturing at harvest time.

Breeding Developments.--The development of vegetable varieties suitable for machine harvest encompasses a multiplicity of considerations and problems for plant breeders. The product in many instances is by nature fragile and subject to damage, damage that often impairs the value from a fresh market or processed standpoint. Attractive appearance and long shelf-life are part of the ground rules for fresh market or for whole packs. Not only must varieties be machine harvestable, they must be what the markets of the future will demand.

The objective of most tomato breeders now is to develop varieties that have concentrated ripening of fruit with uniform maturity and that will produce at least 80% marketable yield with once-over machine harvesting. This is true for both fresh market and processing types. With processing varieties this objective can be partially attained if mature fruit will hold in the field for 2 weeks or longer without substantial loss of quality. To accommodate present mechanical harvesters and experimental harvesters, varieties must have firm and resilient fruits that are resistant to bruising and cracking during harvesting and handling. A high degree of resistance to preharvest fruit cracking and other defects is also essential. This becomes extremely important in the humid conditions of the East where mold organisms are generally abundant. Vines have to be compatible with machine harvesting, yet adequate to provide protection against sunburning of the fruit. The fruit must be relatively easy to remove from the plant and the petioles must remain attached to the vine.

Development of new varieties does not occur over night. The first successful mechanical harvest tomato variety, VF 145, was released by G. C. Hanna of the University of California in 1962. It took 19 years from inception of the idea to completion of the product. Generally, a minimum of 10 years is required to develop a new variety. I'm sure that C. E. Petersen, formerly of Michigan State University, and other breeders spent at least the minimum time

in developing the new gynoecious hybrids of pickling cucumbers, which are now making their way into the mechanization program. Federal, state, and commercial plant breeders are active in developing new varieties adaptable to machine harvest. Varieties with greater determinate maturities and improved resistance to diseases, insects, and bolting have been developed in a number of vegetable crops, but many more are needed. Quality must also be maintained and improved where necessary.

New growth regulators are now aiding the breeder and the grower in controlling plant growth, fruit set, and ripening. For instance, 2-chloroethanephosphonic acid when applied to the cucumber and other vine crops at the right stage of development and at the proper concentration will induce complete femaleness, and when applied to tomato plants at the time of first pink fruit showing will ripen 80 to 90% of the remaining fruits in 12 to 14 days. Again, varietal influence is important in this new chemical regulation of plant growth and development.

REFERENCES CITED

[1] Cargill, B. F.; and Rossmiller, G. E., eds. *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Mich. State Univ. RMC Rpt. No. 16, 1969.

[2] Johnson, W. B. "Direct-Seeding Tomatoes." Vegetable Crops Mimeo. No. 30. Rutgers University, New Brunswick, New Jersey, 1967.

[3] Sims, W. L.; Zobel, M.; and King, R. *Mechanized Growing and Harvesting of Processing Tomatoes*. AXT-232, University of California, AES, 1968.

[4] Wilcox, G. E. "Tomato Plant Density and Fertilization in Mechanized Production." *Proc. Nat. Conf. on Mech. of Tomato Production*. Lafayette, Indiana, p. 30, 1966.

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HORTICULTURAL TECHNOLOGY IN FRUIT PRODUCTION

R. Paul Larsen

There has been more progress in research and development of fruit harvest mechanization during the past decade than in all previous history. This acceleration resulted from many factors but primarily from the increasing costs and decreasing availability of harvest labor.

The practical feasibility of future changes in harvest mechanization will revolve around: (1) the crop and its utilization (i.e., whether marketed fresh or processed); (2) engineering feasibility; (3) horticultural factors, including fruit yields, plant health and longevity, cultural management changes and fruit quality; (4) labor cost and availability; and (5) economic considerations, including harvest-cost to fruit-price ratio, interregional and intercrop competition, etc. All these interrelated factors are of concern to horticulturists.

Progress and problems associated with harvest mechanization of all fruit crops may involve such fundamental biological areas as: genetics and variety development; physical and chemical manipulation of flowering, fruiting, and plant growth; and control of fruit maturation and abscission. But crops also vary greatly in individual growth, fruiting characteristics, production culture, and crop utilization. Thus it seem preferable here to review the present status and future possibilities of harvest mechanization by individual or groups of crops.

Apples

The United States has 22 million bearing apple trees (approximately 500,000 acres) which produce 125 to 130 million bushels (3 million tons) annually. The leading states in apple production are Washington, New York, Michigan, California, Virginia, Pennsylvania, and West Virginia. These states account for 75% of the U.S. apple production [45].

In 1967, 58% of the national crop was sold fresh; however, the percentage of fresh sales has declined from 68% during the 20 years since the late 1940's [45]. It is anticipated that the fresh market will account for less than 50% of the national crop within the next decade. Washington and New England produce primarily for the fresh market. Over 80% of the Washington crop is sold fresh. The major processing areas are the Appalachian states (76% of Pennsylvania apples are processed), New York, California, and Michigan [44].

Mechanical harvesting studies were started about 10 years ago and much progress has been made since then with shake-and-catch systems for processing apples [17,20,28]. About 2% of the New York processing crop was machine harvested in 1968 and several machines were in operation in Eastern and Midwestern states [28].

Bruise damage is the major problem with shake-catch harvesting of apples--caused mainly from apples hitting branches while being shaken off or falling to the catching frame [28]. Ideally, a fruit should be shaken from a tree and fall to the padded surface of a catching unit without touching any other apple, branch, or spur. Unfortunately, most trees in the U.S. are tall and wide with many

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overlapping branches. The amount of pruning required to shape such trees for bruise-free mechanical harvesting would seriously reduce yields. The variety also has an important bearing on bruising. Usually firmer tough-skinned varieties such as York Imperial and Monroe are bruised less than varieties such as Delicious, Golden Delicious, and R. I. Greening [20,33]. But, Delicious and Golden Delicious now account for over 50% of the total U.S. apple trees, and the dominance of these two varieties is increasing rather than decreasing.

The shake-catch systems have not been generally satisfactory for fresh market apples. In Virginia, 1967 studies showed that losses in value of mechanically harvested Golden Delicious would range from $1.47 per 100 lbs. for small trees to $2.44 per 100 lbs. for large trees [33]. It appears doubtful that fresh market apples will be harvested by mass removal systems, at least during the next several years, since quality and freedom from bruising is so important.

Attempts have been made to increase the productivity of individual pickers through the use of power lifts and picking platforms. Time studies have shown that about 1/3 of a picker's time is spent in moving between trees, up and down ladders, etc. [3,7]. But time studies with powered man positioners showed that the expected increase in picker efficiency varied from 0 to 33% [3,7,29]. Mechanical man positioners, platforms, and other mechanical aids vary in their economic efficiency depending on the size and type of tree, uniformity and size of crop, variety, and picker experience. Vertical-type hedgerows that can be "assembly line" picked offer the best possibilities for effective use of mechanical aids.

Dwarf or semi-dwarf trees planted close enough in the row to build a complete fruiting wall have considerable promise both for hand harvesting and future development of mass removal systems [21,44]. Studies have shown that a picker can harvest 20% more fruit when working on the ground as compared to a ladder [44]. In preparing for future mechanization, considerable changes will take place in planting patterns, rootstocks, tree training, cultural management, and environmental control, including irrigation and orchard heating. Growth regulating chemicals may assist growth control, fruit thinning, and fruit abscission [44].

Pears

The U.S. produces about 600,000 tons (31 million bushels) of pears annually, over half of which are grown in California [45]. Most of the remainder are produced in Oregon, Washington, Michigan, and New York. Bartlett is the major variety in all these states. Over 60% of the nation's pears are processed [10].

Pear fruits are easily bruised by impact bruising during harvest, and the bruises penetrate deeply into the fruits [14]. They cannot be effectively removed even from processing fruits. In addition, pears usually require a ripening period after harvest, which may further complicate bruise development and fruit deterioration. Also, most pear trees have an upright structure which cannot be effectively modified so fruits falling from the trees will have a minimum opportunity to strike branches [14].

Thus little progress has been made in harvest mechanization of pears for processing or fresh market [14]. Hedgerow pear plantings have been developed which are well suited for hand harvesting from platforms. Results have been encouraging with increases in picking rates of up to 50% depending on conditions.

A substantial increase in pear production is anticipated in the next few years in several areas of the U.S., particularly in California. Most new plantings will be adapted to hedgerow (tree-wall) hand harvesting; but no significant machine harvest is anticipated in the next 5 to 10 years. Estimates predict that total harvest labor requirements will increase from 103,000 man-weeks in 1968 for pears to 142,000 man-weeks in 1975 [15].

Peaches

The U.S. annually produces about 1-1/2 million tons (70 million bushels) of peaches, 40% of which are clings [10]. Over 60% of the total crop, including most clings, are grown in California [45]. Other major producing states are South Carolina, Georgia, Michigan, Pennsylvania, and New Jersey. Approximately 40% of the total crop is processed--all clings and about 1/3 of the freestones.

Cling peaches have the largest production and greatest dollar value (approximately $60 million) of any deciduous tree fruit grown in California [1]. And they require the greatest peak labor force--30,000 employees [1]. Research on mechanical harvesting of cling peaches was started in California in 1956, primarily using almond shakers and hand carried catching units. The fruit loss, including cull out due to injury, was 30% over that of handpicking [1]. During 1960-63, tests included modified prune harvesting equipment with padded surfaces and decelerator strips. The fruit loss was 10 to 15% over handpicked; much of the problem was associated with uneven ripening and fruit on willowy wood [1].

Studies were initiated in 1966 to eliminate or reduce the fruit loss problem of past tests. A new machine was developed and trees were modified to determine: yields; the ability of modified trees to recover reduced production due to modification; and the degree of fruit loss and injury [1]. Results of these and other studies showed that fruit recovery or loss was a composite of loss of yield associated with tree modification, actual loss of fruits in the orchard, and loss of fruit quality due to injury [1]. Necessary tree modification to reduce fruit bruising included: (1) reduced number of primary branches; (2) elimination of major branches below, or above, other major branches; and (3) elimination of low brush and stubs [1]. This type of renovation in old trees during 1966 required removal of 35 to 40% of the fruiting branches and resulted in a yield reduction of 25% [8]. However, there was a full yield recovery of the modified trees in 1967 [8]. The most desirable shape for a mature cling peach tree would be a weeping, inverted hollow cone with a branch canopy about 2-1/2 feet thick [8].

During 1968, about 40 machines were used to harvest cling peaches in California--approximately 3% of the total crop was machine harvested. Machine costs and the economic practicality of machine harvesting depends on many factors (in addition to harvest labor availability) including individual acreage to be

harvested, yield, and fruit quality [1]. For example, machine harvest would cost more than handpicking in low yielding orchards (below 16 tons/acre) with a 10% fruit loss [1].

Harvest mechanization favors cling peaches though considerable improvement must be made in several cultural practices including: (1) tree modification and training; (2) crop control through improved thinning and pruning; (3) maturity control, perhaps by use of chemicals, new varieties, or cultural improvements; and (4) improved nutrition and irrigation [8]. It is anticipated that 50 to 70% of the cling peach crop might be machine harvested by 1975 [15].

Freestone peaches, including nectarines, have limited potential for harvest mechanization for several reasons: two-thirds of the U.S. freestone crop is sold fresh; most varieties are readily bruised during harvest; most freestone producers have a succession of varieties which ripen over a period of several weeks; and most varieties ripen unevenly which necessitates each tree being picked twice or more. Mechanical harvesting will be very limited until major changes are made in varieties, cultural practices, and marketing methods. Between now and 1975 no significant harvest of freestone peaches by machine is anticipated [15].

Apricots

Most of the nation's apricots (200,000 tons) are grown in California and 94% of these are processed [10,45]. Mechanical harvesting of apricots has progressed to the point where 1 to 2% of the 1968 crop was harvested by the shake-catch method [1]. The most serious problem has been variability of fruit maturity. Fruit damage has not been as critical as with some other crops. With proper tree training and use of well-padded machines the fruit damage was not excessive for processing purposes [1]. It is anticipated that 30 to 50% of the apricot crop will be machine harvested by 1975 [15].

Sour Cherries

The United States produces over 150,000 tons of sour cherries annually, approximately 65% of which are grown in Michigan [45]. Other important producing states are New York, Pennsylvania, Wisconsin, Utah, and Oregon. Mechanizing the harvest of this crop was important due to the large numbers of pickers required--50,000 in Michigan alone [43]--and the high relative cost of picking compared to the fruit value (often 50% or more). In several respects this crop is ideally adapted for mechanical harvesting, including: (1) the variety Montomorency constitutes 99% of the total production; (2) practically all of the commercial crop is processed; (3) the fruit can be bulk handled in cold water; and (4) the fruit can be moved rapidly from the orchards to the processing line. But, sour cherries are also subject to easy bruising, rapid oxidation, and scald, which greatly deteriorate color and firmness.

Early mechanical harvesting studies in Michigan [24] and New York [27] demonstrated that sour cherries could be effectively removed by tree shaking and handled in various types of collecting units without undue fruit injury. With

machine improvements have also come major changes in pruning [6,22] and fruit handling [17,22].

The trees are trained and pruned to permit easy movement of equipment under and around trees and to facilitate easy attachment of limb shakers. The fruits are conveyed directly from the catching units into tanks of cold water (approx. 50° F.). The tanks are filled quickly and then transported to a cooling area near the orchard where cold water is recirculated for about 6 hours to firm the fruits. The tanks can then be transported to the processor where the cherries are pitted and processed without further soak time.

A number of other programs have shown promise for further improvements in sour cherry harvesting. These include preharvest spray cooling [13], volume measurement to eliminate scale weighing [40], and use of abscission chemicals to reduce attached stems on harvested fruit [5]. In 1968, approximately 70% of the U.S. sour cherry crop was harvested mechanically [25]. Some orchards will remain unsuitable for machine harvesting due to steep terrain or other factors; but with continued improvements of the machinery, trees, and handling methods, most of the sour cherry crop should be harvested mechanically within 5 years.

Sweet Cherries

The U.S. produces an annual average crop of slightly over 100,000 tons of sweet cherries [45]. The major producing states are California, Oregon, Washington, Michigan, New York, Utah, and Idaho. Approximately 40% of the production is sold fresh; 45 to 50% is brined, and most of the remainder is canned. Mechanical harvesting has been limited for a number of reasons:

1. Most of the fresh market cherries are picked with attached stems. Mechanical harvesting has resulted in erratic numbers of fruits with attached stems and excessive fruit bruising for the fresh market [32].

2. Cherries for brining are picked prior to full maturity. Early studies with mechanical harvesting were not encouraging due to poor fruit abscission of the immature fruits [17,32].

3. Brine cherries may be harvested with or without stems depending on the area of production, variety, fruit size, and market outlets. High quality cocktail cherries, as grown in Oregon, are picked with attached stems, whereas most of the brined in California, Michigan, and New York are preferred without.

4. There are several important commercial varieties, each with varying characteristics which may affect their suitability for mechanical harvesting.

5. Sweet cherries have not been found to be well adapted for handling in water. Thus, the logistics of handling from the harvesting machines and out of the orchards has been difficult as compared to the handling of sour cherries.

Recent studies have demonstrated that sweet cherries for brining could be successfully harvested by machine if they were allowed to become more mature on the trees and then brined immediately to prevent bruise discoloration [17,23, 38,41]. In 1968, approximately 2,500 tons of sweet cherries were machine harvested in Michigan [25]. However, obvious problems have continued with tree

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structure and pruning, inadequate fruit abscission, fruit with attached stems, and excessive bruising of mechanically harvested fruit [22]. Studies in Oregon concluded that mechanical harvesting of sweet cherries need not result in severe loss of quality provided that the fruit was not too mature, efficient machinery was used, and the trees were well pruned for mechanical harvesting [38].

Inadequate fruit abscission has been the major horticultural problem of mechanically harvested sweet cherries. An abscission chemical, 2-chloroethane-phosphonic acid (Ethrel) showed considerable promise in 1968 [5]. This or similar chemicals might enhance commercial mechanical harvesting for brining or canning.

Plums and Prunes

From the standpoint of production, harvesting, and market utilization, most of the plums grown in the U.S. may be grouped into 3 categories: (1) the French or drying prune; (2) the Italian type prune or purple plum; and (3) the Japanese plum.

The *French prune*, which includes several varieties of the European plum, is the major drying prune of California. (A prune is a plum having a sugar content high enough to permit drying without fermentation at the pit and to provide the dried product with a sweet flavor). California produces 150,000 tons of dried prunes (about 450,000 tons, fresh weight) annually on about 100,000 acres [45].

There are two major prune production areas in California which have different fruit ripening processes due to climatic differences. In the Sacramento Valley the prunes hang onto the trees after maturity until they are picked or shaken off. In 1968, over 95% of the prunes in the Sacramento Valley were mechanically shaken off and about 90% were caught on various types of catching units [1]. In the Coastal Valleys the fruits drop when they are mature, which necessitates 2 or 3 picks, or pickups from the ground, if the fruits are to obtain maximum sugar content. Thus, only 65% of the Coastal Valley prunes were machine shaken and about 30% harvested onto catching units in 1968 [1].

The high degree of prune harvest mechanization, particularly in the Sacramento Valley, has followed 15 years of research with harvesting equipment and methods [1]. Machines which were developed for prune harvesting included the elevated catching units, inertia-type limb shakers and rotating-weight trunk shakers.

During the early stages of prune mechanization tree injury from shaker clamps resulted in serious canker infections by the fungus, *Ceratocystis fimbriata* [1]. Improvements in clamp design, improved tree training and pruning, cutting out and treating of cankers, and more careful shaker operation has greatly reduced this problem.

The problems of uneven maturity and fruit drop of the mature fruits in the Coastal Valleys will continue to impede the full development of machine harvesting of California prunes. Stop-drop chemicals, new varieties or a gradual relocation of the prune industry to the Sacramento Valley may ultimately solve the problem.

Purple plums (Italian type European plum) are grown in Oregon, Idaho, Washington, and Michigan. These states produce about 70,000 tons annually of which 49% are sold fresh, 32% canned, and 19% dried [45].

Some purple plums going into canning have been machine harvested for several years, and by 1967 about half of the Michigan crop was machine picked [17]. A number of cultural management and tree problems remain to be solved before purple plums will be effectively machine harvested for fresh market.

The Japanese plum is grown primarily in California, which produces over 100,000 tons annually on 22,000 acres. About 80% of the production goes to fresh market [14].

Research has been conducted for several years in plum harvest mechanization. However, bruises and skin breaks have been excessive for fresh market shipping of machine harvested plums. It is unlikely that this crop will be harvested by machine in the foreseeable future [14]. However, hedgerow or fruiting-wall types of plantings may be well adapted to platform operations [8]. Such plantings may reduce labor costs of pruning, thinning, and harvesting [8].

Grapes

The United States produces 3-1/2 million tons of grapes annually, over 90% of which are grown in California on almost 1/2 million acres. Practically all the California production is the European type grape, *Vitis vinifera;* 47% of the tonnage is crushed for wine, 35% dried for raisins, and 18% sold fresh [45].

Harvest mechanization in California grapes is difficult due to the great variability in the industry, the vineyard areas, varieties, culture, and utilization [39]. For example, there are 32 wine varieties with 1,000 acres or more; 23 varieties are shipped to fresh market in commercial quantities. Many of these vary greatly in their fruiting behavior, morphology and size of fruit clusters, and cultural management [39]. There are at least 4 major trellising and pruning systems for California grapes. Thus variety management, trellising, and pruning are critical factors in harvest mechanization development.

Harvest mechanization research in machine development and vineyard management in California has been underway since 1952 when an inverted L trellis and cutter-bar harvester were developed [46]. The cutter-bar system had limited adaptability, however, and further development of this machine and the vine management aspects were terminated in 1964 [39].

Since then other principles have been tried including worker aides and various shakers. Work begun in 1961 with the Thompson Seedless variety led to the development of the Duplex system of vine management and impacter harvester [39]. The Duplex system divides the vine into the fruiting area zone and the fruit replacement zone [39]. The zoning is such that at harvest

time a bank of fruit hangs suspended from each side of the trellis away from the center of the vine and with no obstruction below. The replacement shoots for the next year's crop are inside the wires away from the fruit [39]. Experiments have indicated that the Duplex system can be used with most of the California wine varieties. The grapes can be harvested by impacter or slapper-type harvesters [39]. Approximately 500 acres were harvested by an impacter harvester in 1968 [39].

However, no single machine or system will be the final answer, and much must be done in several phases of horticultural management, namely:

1. Trellis conversion of existing vineyards at a cost of up to $250 per acre.
2. New plantings and new trellising systems.
3. New varieties--wine varieties should have large clusters, natural abscission layer in main cluster stem, and fragile side branches.
4. Growth regulator chemicals.
5. Vine spacing and other cultural management [39].

Over 300,000 tons of American type grapes are produced each year in New York, Michigan, Washington, Pennsylvania, Ohio, and Arkansas [45]. The variety, Concord, accounts for most of this tonnage and practically all the production is processed.

Research on pruning and trellising for mechanical harvesting has been conducted in New York for over 10 years. This work has resulted in the development of the Geneva Double Curtain (GDC) system of training, which is a bilateral cordon well suited for mechanical harvesting [35]. The New York Agricultural Experiment Station developed a straddle-row harvester which picks both curtains as it travels the row. Most of the fruits are shaken off as individual berries or cluster fragments. There may be quality deterioration problems, reduced yield and vine injury with improper machine and fruit handling [36]. Other machines have been developed for single curtain or vertical trellises [18].

In 1968, 4 machines in New York harvested an average of 255 acres each, or an average of 939 tons each, at a cost of $20 per ton. This was compared to $35 per ton for hand harvest [36]. Each harvester replaced 95 handpickers. If necessary, up to 50% of New York Concords could be machine harvested in 1969 or 1970 [36].

Strawberries

The United States produced 239,000 tons of strawberries in 1967 on a total of 67,000 acres; 71% of the production was for fresh market. The leading states in production were California, Oregon, Washington, Michigan, and Florida. All the commercial acreage is presently harvested by hand, primarily utilizing local or transient pickers.

Hand harvesting costs for strawberries may account for one-half to three-fourths of the total production costs [11]. Progress has been made in machine development and in initial selection of clonal types suitable for machine harvesting, but considerable further progress must be made in: (a) machine development; (b) variety development through breeding; and (c) cultural improvements [4, 12].

A program was initiated in 1959 by Iowa State University to evaluate the suitability of strawberry varieties for machine harvesting. The test instrument was a stone fork, utilizing the "stripping action" of its tines passed through the plant foliage [12]. Since then several universities, including Iowa State, Illinois, Oregon State, Arkansas, Louisiana State, and Guelph (Ontario) have developed experimental or prototype strawberry harvesters [4]. All of the machines employ a one harvest, stripping or scooping action somewhat similar to the stone fork. The machines remove both mature and immature fruit. As a result, total usable fruit yields have been reduced by about 40% and approximately 30 to 40% of the mature fruit has required immediate processing due to excessive bruising [11].

Selection of parental material and breeding for mechanical harvesting was also started in Iowa over 10 years ago. Selections were made on the basis of: (a) concentrated ripening; (b) high yields; (c) resilient fruit, not necessarily firm but not easily bruised; and (d) ease of capping (removal of the stem and calyx) [11, 12]. Several cultivars have been found useful in providing parent material for mechanical harvest types. Two Iowa selections, 8-6214 and 33-6207, have been high yielding and fairly well adapted for machine harvesting. Effective and efficient machine harvesting will require high yielding, uniform plantings. The major cultural improvements will be close plant spacing (crowded matted rows), level beds, no weeds or debris, and mowing of top leaves prior to harvest [12]. It is unlikely that any substantial volume of fresh market strawberries will be machine harvested during the next decade. This will be particularly true for California where high yields are obtained by multiple pickings spread over several months.

Low and High Bush Fruits

The "bush" fruit crops considered here will include: (a) cranberry (which is a vine rather than a bush); (b) low bush (wild type) blueberry; (c) high bush (cultivated) blueberry; and (d) cane berries (red and black raspberries, various blackberries).

Cranberry

There are approximately 21,000 acres of commercial cranberry bogs in the United States. The major producing states of Massachusetts, Wisconsin, New Jersey, Washington, and Oregon produce about $22 million worth of cranberries each year of which 22% are sold for fresh market.

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There are two basic methods of harvesting: (a) dry-picking; and (b) water-raking or water-picking [31].

Dry-picking was first done by hand, then by scoops with long tines which passed through the vines below the berries stripping the berries from the vines into the scoop. Mechanical harvesters were built in the 1920's; these types of machines were modified in the 1950's and now account for 90% of the dry-picked berries [31].

Dry-picking is preferred for fresh market due to better keeping quality, but approximately 20% of the berries are missed or dropped by the picking machines. An improved machine that hopefully will pick cleaner and cause less injury is being developed by the University of Massachusetts Cranberry Experiment Station [31].

Water-picking is picking in a flooded bog. The two major systems are: (a) a picking machine that removes the berries from the vine and deposits them in a "boat" drawn behind the picking machine; and (b) a "water reel" or "egg beater" that knocks the berries from the vine allowing them to float to the surface. The berries are then drawn to shore by strings of wooden planks. Most water-picked berries are used only for processing [31].

It is estimated that 75% of the cranberry crop will be water harvested in 10 years and the remainder dry-picked by much improved machines [31].

Low Bush Blueberry

The wild low bush blueberry is grown primarily in Maine and Canada's Maritime Provinces. The fruits have been harvested by hand raking for over 80 years. The rakes are made of metal and contain 42 to 48 teeth. The harvested berries are usually carried in 1/2 bushel baskets from the fields. They are then cleaned, sorted, and processed [37].

Mechanical harvesters have been tried but usually without success due to rough terrain of the fields, variability in the blueberry plants, and excessive weed growth. Before mechanical harvesting will be realized major improvements must be made in land preparation, varieties, and cultural practices [37].

There may be sufficient change in the next 25 years in varietal breeding, plant propagation, and cultural improvements that multi-row mechanical harvesters will be harvesting cultivated low bush blueberries which will yield 3 to 5 times the present yields of their wild cousins. At that time the "wild" blueberry industry will have ceased to exist [37].

High Bush Blueberry

There are approximately 20,000 acres of cultivated high bush blueberries in the United States. The major producing states are Michigan, New Jersey, Washington, and North Carolina.

Blueberry harvesting trials were begun in 1957 which established the feasibility of the shake-and-catch method of harvesting this crop [17]. Hand

held vibrators and single bush hand-moved collecting units soon came into widespread use. In 1959, the prototype of a straddle-row continuous harvester was made and tested. Commercially made machines with a capacity of 2,000 to 3,000 pounds per hour became available in 1966.

The harvesting machines have essentially eliminated the picking labor problems in cultivated blueberries, and harvest labor costs have been greatly reduced [17]. However, considerable cane damage occurs, which has necessitated a change in cultural practices, particularly pruning. Also, mechanically harvested berries must receive additional cleaning and hand grading [19].

Cane Berries

Cane berries or brambles may include a number of erect and trailing blackberries, red or black raspberries, currents, gooseberries, etc. There are approximately 60,000 acres of cane berries in the United States. Washington, Oregon, and Michigan are the leading states.

During the past 10 years extensive engineering and horticultural research programs in several states, but particularly in Arkansas, Oregon, Washington, and Michigan, have resulted in significant progress in cane fruit mechanical harvesting. During 1968, over 70 commercial machines were harvesting cane fruits. Most of these were in Washington and Oregon where 25% of the 1968 cane fruit production was harvested by machine [30].

However, there is much need for greatly improved plant training of the different cane crops, some of which are erect while others require trellising [30]. Likewise, many changes are needed in raspberry culture, plant spacing, and variety development in order to adequately utilize machine harvesting. Varieties need to be developed with firmer fruits, concentrated ripening, easy abscission when ripe, and disease resistance [19].

Tree Nuts

Walnuts, almonds, pecans, and filberts account for most of the United States' tree nut production.

Walnut production is concentrated in California, which grows 96% of the U.S. crop. Most of the remainder is in Oregon. California produces approximately 92,000 tons on 136,000 acres [2].

Until 1940, walnuts were shaken or knocked off the trees by hand with long poles. They were picked up by hand. By 1950, mechanical shaking had replaced hand knocking. Today, except for small growers and plantings that will not permit mechanization, essentially all walnuts are shaken, windrowed, and picked up by machine [2].

Mechanical pickup requires a considerable amount of soil preparation including dragging, floating, and packing. These operations are costly, dusty, and soil destructive. Nontillage procedures, using permanent grass cover,

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appears favorable. Also trunk shakers and catching frames may be used on new early bearing, high yielding varieties. An abscission forming chemical to reduce the shaking forces required to permit a one-time shaking operation would be most helpful [2].

Almonds are grown on 105,000 acres in California. Production ranges from 75 to 80,000 tons.

Harvest mechanization of the almond crop has essentially paralleled that of walnuts. At present about 90% of the total production is mechanically shaken and 80 to 90% mechanically picked up. The same costs and problems of soil preparation, etc., are present with almonds as with walnuts. Non-tillage, grass sod, is being practiced by some growers, and an abscission inducing chemical would be helpful in many years [2].

Filberts are grown primarily in Oregon (89% of U.S. crop) and Washington (11%). These states produce about 10,000 tons. The nuts drop to the ground when they are mature. In the past they were picked up by hand, but in recent years mechanical pickup machines have been developed. In 1968, approximately 75% of the Oregon crop was picked up mechanically. Soil preparation, similar to California, is necessary for efficient pickup [2].

Pecans are produced primarily in Georgia, Texas, Oklahoma, Alabama, Louisiana, and Mississippi [10]. The annual U.S. production exceeds 100,000 tons. About half of the production is from cultivated varieties and the other half from seedling orchards (the pecan is native to the U.S.). Most of the trees are presently mechanically shaken. However, rough terrain, trash, and excessive soil moisture have hampered pickup operations. Soil is usually not prepared for pickup as in California. Improved varieties, new cultural practices and land preparation will assist, but mechanization of seedling orchards on hilly terrain will be difficult [2].

Olives

The commercial olive crop of the United States is grown in California where about 55,000 tons are produced annually on 28,000 acres [16]. Most of the crop is canned with 90% as black ripe olives. All canning olives are picked while the fruits are pale green or straw color; the black ripe olive is the result of processing procedure and not the degree of maturity at harvest [16].

Olives are picked by hand at a cost of $70 to $100 per ton. The harvesting costs range from 50 to 70% of the total cost of production and usually amount to 35 to 45% of a grower's gross return [16].

Mechanical harvesting research on olives has been conducted for over 10 years, but little progress has been achieved due to inadequate fruit removal and excessive fruit injury. The major difficulties have been due to a strong attachment of the fruits to the tree and the poor shaking characteristics of the trees. Olive trees characteristically have irregularly

shaped branches, and they bear fruit on a dense willowy growth near the periphery [16]. Injury to the fruits during harvest has been caused by fruits hitting limbs prior to separation and during their fall through the tree and by impacting the catching surface [16]. The injury has been particularly evident on canned green olives.

Efforts to improve olive harvest mechanization have included: (a) the development of shaking equipment specifically designed for olives; (b) modification of tree pruning; and (c) use of chemicals to induce fruit abscission. The machine development and pruning adaptation show good promise. However, chemical induction of abscission has not been too satisfactory, primarily due to excessive leaf injury and leaf abscission [16].

Citrus

Citrus growers spend $100 million each year to harvest their crop of 350 to 400 million boxes (8-1/2 million tons) from approximately 942,000 acres [9, 42]. Florida is the major producing state with over 650,000 acres [9]. Most of Florida's production goes into citrus juices. California has 189,000 acres and 73% of its production is marketed fresh [9]. Arizona and Texas are the other major citrus states. Oranges, grapefruit, and lemons account for most of the citrus tonnage and these three crops account for 47% of the total U.S. fruit tonnage [10]. Over 50% of the grapefruit and lemons are sold fresh compared to 25% fresh market for oranges [10].

Prior to World War II all citrus was clip-picked by hand; citrus is still clip-picked in California but snap-picked in Florida. No appreciable tonnage has been harvested by mass removal systems, primarily due to excessive removal of leaves and immature fruit, and fruit damage [9].

It has been demonstrated that pickers are 25% more efficient when picking ground zone fruit than when doing general picking [9, 34], and that pickers can increase their productivity about 10% by picking fruit and dropping it to the ground [9].

Mechanical harvesting prospects for fresh market citrus do not seem promising because of excessive fruit damage [9]. Some bruising with processing fruit is tolerable [9].

In order for mass removal systems to be effective, modifications in trees are necessary to reduce fruit loss, and abscission inducing chemicals would reduce fruit injury [9]. Additional fundamental information is also needed on fruiting characteristics and tree properties as related to variety, season, tree shape, cultural practices, climatic conditions, method of fruit detachment, and fruit size and shape [9].

Subtropical Fruits

Most of the subtropical fruits produced in the United States are grown in California, Florida, and Hawaii--the major ones being figs, dates, coffee,

avocados, passion fruit, papaya, guava, and mangos. The total annual farm value of these crops is about $50 million [26].

Most of the horticultural problems associated with harvest mechanization of these crops are similar to those of deciduous tree crops, namely: tree size problems, uneven fruit ripening, lack of uniform fruit abscission, poor cultural practices, and fruit injury.

For example, depending on tree age and size the fruiting clusters of a date palm may range from 10 to 60 feet above the ground. In addition, the date fruits ripen unevenly, even on the same cluster [26]. Coffee plantings in Hawaii usually lack uniform cultural practices which contribute to uneven fruit ripening; 15 to 40% of the harvested fruit may be immature [26]. Avocados in California are usually produced on very large trees in small plantings on steep hillsides. Figs ripen unevenly and drop to the ground when they become ripe. They are then picked up by hand or machine, usually 3 pickups per tree are required [26].

The production of these crops may decrease unless their high harvest labor requirements are reduced [26]. Some progress has been made in harvest mechanization research, particularly with coffee, figs, and dates. It is expected that coordinate progress in horticulture and engineering will do much to solve the harvest problems of the subtropical fruits.

Summary of Horticultural Factors

Even though much progress has been made in machine harvesting, only 3 deciduous fruit crops--prunes, sour cherries, and cultivated blueberries--are presently harvested primarily by machine. Less than 5% of the total U.S. fruit tonnage was machine harvested last year (1968). The potential for effective machine harvesting of most fruit crops, particularly for fresh market, appears rather limited under present conditions (Table 1).

Table 1. Estimate of Mechanical Harvesting Potential[a] of Certain Deciduous Tree Fruits [14]

Fruit	Utilization: Fresh	Utilization: Processed
Apple	4	2-3
Apricot	4	1-2
Cherry, sour	-	1
Cherry, sweet	4	1
Peach, cling	-	1
Peach, freestone	4	3-4
Pear	3-4	3-4
Plum	2-4	2-3
Prune	-	1

[a] 1 indicates greatest potential and 4 least potential; 2 and 3 are intermediate and may relate to specific varieties or conditions.

However, the machine harvesting potential of most crops would be greatly enhanced with favorable "break-throughs" or continued advancements in some of the following areas.

Varieties which are heavy producing, uniform in ripening, and "resistant" to mechanical damage are badly needed for all crops. The greatest potential in solving pressing mechanical harvesting difficulties through specific variety development may be with strawberries, cane berries, grapes, peaches, and apricots.

Training, trellising, and pruning, to provide continuous fruiting surfaces in a straight line with the fruits readily accessible to machines or human hands, will materially assist in future machine harvesting and handpicking. Practically all tree fruits will undergo radical changes toward a hedgerow or tree wall concept. In the near future, tree walls of apples, pears, and plums grown for the fresh market will continue to be picked by hand. Sometime in the distant future these same tree walls may be machine harvested.

Unfortunately, most of the mature deciduous fruit trees in the United States are not well suited for either machine harvesting or handpicking. Adaptive pruning will assist in machine harvesting of processing apples, cherries, plums and prunes, cling peaches, olives, and certain subtropical fruits. It is doubtful that pruning alone will improve the possibility of machine harvesting of either pears or freestone peaches (whether for processing or fresh market). Crops grown specifically for processing, including apples, sweet and sour cherries, plums and prunes, and cling peaches may be trained to various types of horizontal or vertical tree walls [21, 44]; or, they may continue to be developed as individual trees, essentially as they are now, but trained for machine harvesting [8].

Fruit maturity (uniform fruit ripening) becomes critical for machine harvesting. Most fruits cannot be selectively machine harvested by degree of maturity. A once-over harvest will include mature and immature fruits. Uneven fruit maturity may result from numerous factors including:

1. Built-in genetic or varietal characteristics--for example, strawberries normally flower and fruit over a period of several weeks or months.
2. Unfavorable environmental conditions--fruit trees in California may bloom over an extended period following warmer than normal winters; and, in other areas, erratic or extended bloom may result from cold injury or other stress conditions. Extended bloom leads to uneven fruit maturity.
3. Cultural management--trees with heavy crops may be delayed in fruit maturation; excessive nitrogen fertilizer delays maturity; "sick" trees may mature their fruits early; and,

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unpruned trees may have a wide range of maturity on the same tree.

Uniformity of fruit maturity may be improved by better culture, improved irrigation and nutrition, and in some instances by growth regulating chemicals [8].

Control of fruit abscission may be the first major "break-through" in horticultural technology for mechanical harvesting. Lack of effective fruit abscission is greatly retarding present machine harvesting of citrus, sweet cherries, and olives. And difficult abscission has led to excessive injury of several other crops including apples, plums, and grapes. Improved abscission, through the use of chemicals, appears promising. The chemical 2-chloroethanephosphonic acid (Ethrel) has been used experimentally with many fruit crops and has shown promise in enhancing abscission of sweet cherries, citrus, apples, plums, and grapes.

Improved culture and environmental control will do much to assist in harvest mechanization. Practices such as improved nutrition and irrigation, and protection of the crops from insects, disease, or freeze damage will improve productivity, fruit uniformity, and quality. Some of the major technological changes and improvements in fruit production will be done primarily for economic reasons. That is, growers are striving to stay in business by increasing production per acre which hopefully will lower their costs per unit of fruit produced. These changes will occur regardless of harvest mechanization, but the symbiosis of improved culture and harvest mechanization will likely accelerate fruit harvest mechanization and at the same time strengthen the fruit industries of the nation.

REFERENCES CITED

[1] Adrian, P. A.; and Fridley, R. B. "Mechanization and Handling of Deciduous Fruits by the Shake-Catch Method." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 717-730.

[2] _____; and Fridley, R. B. "Mechanization and Cultural Practices of Nut Production." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 757-764.

[3] Berlage, Arnold G. "Mechanical Aids for Apple Harvesting." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 627-634.

[4] Booster, Dean E.; Kirk, Dale; and Nelson, Glenn. "State of the Art and Future Outlook for Mechanical Strawberry Harvesting." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 435-468.

6007

[5] Bukovac, M. J.; Zucconi, F.; Larsen, R. P.; and Kesner, C. "Chemical Promotion of Fruit Abscission in Cherries and Plums with Special Reference to 2-chloroethanephosphonic Acid." *Jour. Amer. Soc. Hort. Sci.* 94:(3)226-230, May, 1969.

[6] Cain, John C. "Mechanical Harvesting of Sour Cherries: Effects of Pruning, Fertilizer and Maturity." *Proc. N.Y. State Hort. Soc.* 106:198-205, 1961.

[7] Clark, J. H. "Mechanized Aid for Tree Fruit Harvesting." *Amer. Soc. Agr. Engr. Ann. Mtg.* 68:663, 1968.

[8] Claypool, L. L.; Beutel, J. A.; and Rizzi, A. D. "Cultural Practices with Deciduous Tree Fruits as they Relate to Harvest Mechanization." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 737-750.

[9] Coppock, G. E. "Review of Citrus Harvest Mechanization." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 777-806.

[10] Davis, Velmar W. "Trends in the Production and Utilization of Fruit and Vegetable Crops." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 11-50.

[11] Denisen, E. L.; and Buchele, W. F. "Mechanical Harvesting of Strawberries." *Proc. Amer. Soc. Hort. Sci.* 91:267-273, 1967.

[12] _____; Garren, Ralph; Moore, James; and Strong, Eldon. "Cultural Practices and Plant Breeding Influences for Strawberry Harvest Mechanization." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 469-497.

[13] Diener, R. G.; Whittenberger, R. T.; and Levin, J. H. *Preharvest Spray Cooling for Tart Cherries.* Mich. Agr. Expt. Sta. Res. Rpt. 69, 1969.

[14] Fridley, R. B.; and Adrian, P. A. "Mechanization of Pears, Fresh Market Peaches and Plums by Use of Man Positioning Equipment." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 731-736.

[15] _____; Claypool, L. L.; and Adrian, P. A. "Statistical Summary of Harvest Mechanization Outlook - Apricots, Peaches, Pears, Plums and Prunes." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 717-730.

[16] _____; and Adrian, P. A. "Mechanization and Cultural Practices in Olive Production." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 765-771.

[17] Gaston, H. P.; Levin, J. H.; and Whittenberger, R. T. "Ten Years of Progress in Machine Harvesting Fruit." *Proc. Mich. State Hort. Soc.* 97:54-59, 1967.

[18] Hull, Jerome, Jr. "Small Fruit Cultural Practices and Harvest Mechanization." *Proc. Mich. State Hort. Soc.* 96:85-94, 1966.

6008

[19] _____. "Cultural Practices to Facilitate Harvest Mechanization of Cane Fruits. *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 557-568.

[20] LaBelle, R. L. "Evaluation of Commercial Machine Harvested Apples - 1967." *Proc. N.Y. State Hort. Soc.* 113:86-93, 1968.

[21] Larsen, Paul. "Mechanical Harvesting has Arrived." *American Fruit Grower*. June, 1967, pp. 20-22.

[22] _____. "Cultural Practices for Cherry Mechanization." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 687-698.

[23] Leonard, Sherman. "Quality of Mechanically Harvested Sweet Cherries." *Western Fruit Grower*. March, 1967.

[24] Levin, J. H.; Gaston, H. P.; Hedden, S. L.; and Whittenberger, R. T. "Mechanizing the Harvest of Red Tart Cherries." *Mich. Agr. Expt. Sta. Quar. Bull.* 42:656-685, 1960.

[25] _____; Bruhn, H. D.; and Markwardt, E. D. "Mechanical Harvesting and Handling of Cherries." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 677-686.

[26] _____; Brown, Galen; Monroe, Gordon; and Bilbo, Bill. "Mechanization Practices for Subtropical Fruit." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 807-823.

[27] Markwardt, E. D.; LaBelle, R. L.; and Guest, R. W. "Mechanical Harvesting of Cherries - A Progress Report." *Proc. N.Y. State Hort. Soc.* 105:243-248, 1960.

[28] _____; Levin, Jordan; and Tennes, Bernie. "Mechanical Harvesting and Handling of Apples." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 635-652.

[29] McMechan, A. D. "A Self-propelled Orchard Work Platform for Hedgerow Plantings of Semi-dwarf Apple Trees." *Proc. Wash. State Hort. Assn.*, Dec., 1967, pp. 164-166.

[30] Nelson, Glenn S.; and Booster, Dean. "Mechanical Harvesting of Raspberries and All Cane or Brambles for Fresh or Processed Market." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 543-556.

[31] Norton, John S. "Cultural Practices and Mechanization of Cranberries." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 505-532.

[32] Norton, R. A.; Claypool, L. L.; Leonard, S.; Adrian, P.; Fridley, R.; and Charles. F. "Mechanical Harvest of Sweet Cherries." *Calif. Agr.* 16:(5)8-10, 1962.

[33] Rollins, H. A., Jr.; Barden, J. A.; Hamann, D. D.; Johnson, J. M.; Marshall, M.; Solenberger, C. R.; Williams, G. R.; and Wool, C. B. "Mechanical Harvesting in Virginia During 1967." *Proc. Va. State Hort. Soc.* 1968, pp. 32-47.

6009

[34] Schertz, C. E. "Human Energy Cost of Picking Oranges." *Calif. Agr.* 21:(10)2-4, 1967.

[35] Shaulis, Nelson; Shepardson, E. S.; and Jordan, T. D. "The Geneva Double Curtain for Vigorous Grapevines." *N.Y. Agr. Expt. Sta. Bull.* 811.

[36] Shepardson, E. S.; Shaulis, N. J.; Moyer, J. C.; Bourne, M. C.; Splittstoesser, D. F.; Friedman, I. E.; Jordan, T. D.; Taschenberg, E. F.; and Dominick, B. A., Jr. "Mechanical Harvesting of Grape Varieties Grown in New York State." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 571-610.

[37] Soule, Hayden M., Jr. "Cultural Practices and Mechanization of Wild Blueberries." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 533-542.

[38] Stebbins, R. L.; Cain, R. F.; and Watters, Glenn. "Mechanical Harvesting of Sweet Cherries in Oregon." *The Goodfruit Grower.* 17:(21), December, 1967.

[39] Studer, H. E.; and Olmo, H. P. "Mechanical Harvesting of Grapes in California: Cultural Practices and Machines." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 611-621.

[40] Tennes, B. R.; Anderson, R. L.; and Levin, J. H. *Weight to Volume Relationship of Tart Cherries.* Mich. Agr. Expt. Res. Rpt. 70.

[41] Thienes, John R. "Sweet Cherry Mechanical Harvesting Looks Good in Oregon and Michigan." *Proc. Mich. State Hort. Soc.* 97:59-64, 1967.

[42] Thor, Eric; and Mamer, John W. "Rural Manpower - Overview." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 51-73.

[43] Tompkins, Mrs. Seth. *Report of Governor's Commission on Migrant Labor.* State of Michigan. April, 1965.

[44] Tukey, Loren D. "Cultural Practices of Apples as they Relate to Harvest Mechanization." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 653-674.

[45] U.S. Dept. of Agriculture. Stat. Reporting Serv. *Fruit Statistics by States, 1959-64.* Stat. Bull. 407. Washington, D.C.: Government Printing Office, 1967.

[46] Winkler, A. J.; Lamouria, L. H.; and Abernathy, G. H. "Mechanical Grape Harvest Problems and Progress." *Amer. Jour. Enology.* 8:(4)182-187, 1957.

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POTENTIALS IN HORTICULTURE TECHNOLOGY

John Carew

No man is an island, and no development in fruit and vegetable mechanization is without its influence on the human resources involved. Tomato and cherry harvesters have had highly visible and dramatic effects on labor. When a single blueberry harvester eliminates the need for 200 human pickers, almost everyone in the community is affected.

But chemical weed control, disease resistant varieties, dwarf fruit trees, fruit thinning agents, high density plantings, and other horticultural advances have had equally important influences--usually in less obvious fashion--because their development and adoption occurs over a period of years. Hand hoeing, hand thinning of tree fruit, and hand transplanting of vegetables, for example, are rapidly becoming practices of the past through research in horticulture.

The purpose of my presentation is to show how anticipated progress in horticulture technology might be related to harvest mechanization and, therefore, to manpower needs both quality and quantity.

Any discussion of the future for fruit and vegetable production in the United States and of the prospects for their harvest mechanization must be made from an international point of view. Scientific, technological, economic, and political developments in other countries are beginning to have an appreciable impact on the horticulture industries of this nation. Their influence is likely to increase. The development of IR 8 rice in the Philippines and superior wheat varieties in Mexico will certainly alter the future export and production of these crops in our country. Similar far-reaching advances in fruits and vegetables are always possible with corresponding influences in U.S. production.

Witness the shock waves sent around the world by little Taiwan with her expanded production of pineapple, asparagus, and mushrooms. To illustrate: the increase in Taiwan white asparagus exports from 30,000 cases in 1964 to 2.4 million cases in 1967 was accompanied by a decrease in California exports from 1.6 million cases to 387,000 cases over the same period. Harvested acreage in California during this same period declined approximately 15,000 acres.

In an attempt to duplicate the records of achievement at the rice and the wheat research institutes, similar establishments are now under construction in Colombia, Nigeria, Taiwan, and on a smaller scale in other developing countries. Inevitably, fruits and vegetables will receive the same massive attention as grain crops and we can anticipate similar results.

Assuming that we can agree on the need for an international point of view, I should like to focus on developments in the field of horticulture that I believe will most likely influence the prospects for fruit and vegetable mechanization. I shall place emphasis on the plant science phases of

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horticulture with no implication that they are more important than engineering, insect and disease control, or economics.

The broad goal of horticulture technology and research is to gain greater control over the growth and development of plants and over the maturity, ripening, and senescence of plant products. Horticulturists approach this goal across several distinct but related fields of research:

1. By improving the plant; specifically through plant breeding and rootstock/scion combinations.
2. By controlling the plant environment; primarily light, temperature, nutrient moisture, and the atmosphere of both the growing medium and the air.
3. By controlling plant competitors and predators; with emphasis on weeds, insects, diseases, and other pests.
4. By manipulating plant growth; either by means of cultural practices and/or the use of biologically active chemicals.

A brief description of recent and current developments in each of these fields will serve as a basis for predicting their potential influence on harvest mechanization.

Improved Cultivars and Rootstock/scion Combinations

Without detracting from the recent accomplishments of rice and wheat breeding teams, we must recognize that our breeders of fruits and vegetables have done essentially as well, albeit with less publicity. The common pickle would be far less common without the development of disease resistant and gynoecious cultivars. Peach breeders have not only improved fruit quality but by releasing cultivars of varying maturities have doubled or tripled the length of the peach season in many production areas. Dwarfing rootstocks in combination with apple cultivars have made possible the size control of apple trees. Hundreds of other plant breeding accomplishments could be cited to illustrate the impact of plant improvement on crop characteristics and on the introduction of mechanical harvesting.

Looking to the future, we can anticipate an accelerated development of new cultivars adapted to harvest mechanization; improved biochemical techniques will permit the early identification of genetic traits; seed production will be facilitated by the chemical induction of male sterility; advances in statistics and computer science will streamline evaluation procedures; and, breeders will make use of cooperators in both hemispheres to duplicate selection and evaluation environments.

We can also predict greater attention being paid to breeding for certain biological characteristics which have actually been the basis for most improvements in yield and quality; in other words, breeding for photosynthetic efficiency, amino acid content, fruit abscission, delayed senescence, etc.

Controlling Plant Environment

Many of the major problems of horticulture relate to our inability to regulate certain environmental factors that influence the growth and development of plants and the pests that affect them. Unlike many "manufacturing" processes we have been unable to economically control temperature, light, and atmospheric conditions which frequently cause wide fluctuations in yield and quality of our major fruits and vegetables.

Some progress has been made. We have learned to apply supplemental light at certain growth stages in tomato seedlings; synthetic soil mixes have improved the production of vegetable transplants; carbon dioxide is used commercially to prolong the storage life of apples and to increase the growth of glasshouse tomatoes and lettuce; ethylene stimulates the ripening of pears and bananas; mist irrigation will "air-condition" strawberry fields; plastic mulches not only control weeds and decrease moisture loss but also increase soil temperature; developments in plant nutrition have made nutrient deficiencies no longer a major cause for low yields and quality.

Nevertheless, a major portion of our fruit and vegetable production is still subject to injury from extremes of temperature. As we plan for the future, we can expect increasing interest in system of protected cultivation, under structures of glass or plastic, where temperature, humidity, light, nutrients, and pests will be controlled; we can look for the development of improved air temperature modification techniques using electricity, fuels, or water; and we can anticipate interesting atmosphere modifications for the transporting and holding of plant products.

Controlling Plant Competitors and Predators

The current controversy over pesticide residues does not detract from the excellent progress made by entomologists and plant pathologists in controlling insects and diseases. The abundance of blemish-free fruits and vegetables in the marketplace is a tribute to their achievements. In like manner, horticulture weed control specialists have developed a wide array of chemicals that permit virtually cultivation free production and that have eliminated the need for wide row spacing--for example, asparagus, carrots, sweet corn, apples, and cherries. We can assuredly look forward to the day when selective, nontoxic herbicides will be available for every fruit and vegetable and when unwanted plant competitors will no longer inhibit crop growth nor interfere with harvest mechanization.

Manipulating Plant Growth and Development

The recorded history of horticulture documents the ingenuity of fruit and vegetable growers in developing cultural practices to direct the growth of plants. Skill in grafting, pruning, and training were the major arts of horticulture and formed the basis for our modern technology. More recently,

under the dual influences of labor unavailability and technological advances, these and other cultural practices have been modified or discontinued. The pruning saw is fast being replaced by set-level "mowing" of apples, pears, cherries, and blueberries. The staking or trellising of tomatoes and snap beans is dying out at the same time that fruit tree walls are coming in; both trends are aimed at facilitating harvest mechanization. A new look is being taken at the optimum plant population and spacing for each crop as we become freed of the constraints imposed by cultivation, pest control, or hand harvesting. Wide row spacings are giving way to markedly higher plant populations per unit area. Single harvests of dense plantings of tomatoes and pickles can achieve a concentration of maturity not possible with multiple harvests of more widely spaced plants. Cabbage, cauliflower, and tomatoes are being direct seeded in the field eliminating the plant growing and transplanting operations. Still in the exploratory stage is the practice of harvesting immature or unripe fruits and vegetables and completing their maturation or ripening under controlled conditions; we do it with pears, bananas, and tomatoes--why not for strawberries and other fruits?

Manipulating plant growth and development through biologically active chemicals is a relatively modern approach. The effects of growth regulators on plants have excited the imagination of scientists and growers alike. Literally thousands of chemicals have been evaluated on a wide range of crop species and weeds. To paraphrase a biblical quotation, "many are tested but few are chosen." For a high percentage of materials desirable effects are outweighed by problems of phytotoxicity, residues, unwanted growth influences, or cost.

Nevertheless, from this intensive research on growth regulators we have chemicals that will accelerate seed germination and the rooting of cuttings, control the shape of apple trees, induce or break dormancy in onions and potatoes, induce flower formation in young apple trees, promote the fruit set of grapes and figs, chemically thin apples, peaches, and pears, inhibit abscission in apples or induce it in cherries, retard the maturity of apples or hasten it for cherries, delay the ripening of pears and tomatoes and retard the senescence of broccoli, and increase the protein content in beans.

Most of the chemicals in use today will fade from our memory like this year's football stars; they will soon be replaced by more selective, less toxic materials still in the laboratory. But as fleeting as their glory may be, Alar, TIBA, Ethrel, simazine, maleic hydrazide, and their chemical companions foretell a bright future for the use of biologically active materials in the control of plant growth and the adapting of crop production to harvest mechanization.

Conclusion

Many major changes in agricultural technology are more a result of

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external pressures than internal desires for change. To illustrate: numerous developments in fruit and vegetable marketing, packaging, and transportation are the result of dynamic changes in mass merchandising, specifically, the demands of chain stores rather than a natural desire by growers to sell large volumes of uniformly graded and packaged products. Similarly, changes in food processing technology have dictated the adoption of many adjustments on those farms raising fruits and vegetables for canning and freezing. In my opinion, the *rapidity* of adoption of harvest mechanization is most closely tied to the availability of labor--either because labor prefers alternative employment (or unemployment) or because our government restricts its use.

In other words, I believe we horticulturists will really have less of an influence on the prospects for fruit and vegetable mechanization than will certain external, social, and economic forces over which few of us have control. And, may I repeat that many of these forces will originate outside the country. Look at the record: giving a major share of credit to the engineers, we now have extensive mechanical harvesting of cherries, plums, blueberries, cranberries, cling peaches, nut crops, sweet corn, pickling cucumbers, onions, peas, spinach, and tomatoes. We have made substantial progress in the development of mechanical harvesters for apples, grapes, strawberries, brambles, citrus, broccoli, Brussels sprouts, cabbage, cauliflower, cucumbers, melons, lettuce, and peppers.

If the supply of labor to harvest this last list of crops were to be drastically reduced in the next few years, we could be mechanically harvesting them almost immediately. To do this, however, there would have to be a willingness by buyers and consumers to alter their standards of quality and modify their handling and processing procedures and--if they wish to continue purchasing fresh fruits and vegetables--to pay a price commensurate with the increased costs of production.

No one needs mystic powers to predict that: (1) a larger proportion of our fruits and vegetables will be harvested mechanically; (2) growers will increasingly substitute chemical, genetic, and equipment inputs for human labor; (3) a smaller proportion of fruits and vegetables will be consumed in the fresh or unprocessed state; (4) areas of crop production in the United States will be determined more by climatic conditions than by nearness to market or availability of labor; and (5) buyers and/or processors as well as the consumers of fruits and vegetables will adjust to the influence of mechanization.

Advances in the science and technology of horticulture clearly have played a significant role in the development of harvest mechanization procedures. They will play an ever greater role if the development of both biological systems and engineering systems are closely coordinated. The importance of fruits and vegetables in our diets from both a nutritional and an enjoyment point of view dictates a continued strong research effort on the interrelated

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problems of production, harvesting, handling and distribution. Our record of achievement in harvest mechanization is great and our potential for contribution is just as bright.

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ENGINEERING TECHNOLOGY IN VEGETABLE PRODUCTION

B. A. Stout

A vast amount of research has been directed toward mechanization of the harvest and subsequent handling of fruit and vegetable crops. As a result, many vegetable crops are now harvested and handled by machine.

Potatoes [8]

Harvesting Machines and Systems

Prior to 1950 the use of mechanical harvesters for potatoes was still in the experimental stage. Most of the early machines were built by individual farmers. In the past 25 years or so harvesters have continued to be refined and improved with regard to speed of operation, capacity, and reliability. Four general types of machines are used:

Pull type--a farm tractor is used to pull the harvester. It may be operated by power take-off or by a separate engine.

Semi-mounted--the front portion of the harvester is mounted on the tractor while the rest of the weight is carried on the harvester wheels. Normally the tractor power operates the harvester.

Tractor-mounted--a tractor with wheels removed is placed on a special harvester frame and provides all the power.

Self-propelled--an integral harvester and power unit designed specifically for harvesting potatoes.

Three harvest systems are currently in use:

Direct--the harvester digs the potatoes and immediately passes them through a soil and stone separator on the machine.

Indirect--a digger-windrower lifts the potatoes and deposits them on the ground for subsequent pickup.

Direct-Indirect--a digger-windrower lifts potatoes and places them between two unharvested rows. The harvester then takes the two rows plus the potatoes between the rows.

Bruising--A Serious Problem

It has been estimated that one-quarter of the potential value of the potato crop is lost as a result of potato bruises. Additional indirect losses resulting from the depressing effect of poor quality potatoes in the market place are immeasurable.

Indications are that black spot, soft rot, and other tuber diseases get their start as a direct result of mechanical bruises.

Investigations have shown the source of potato bruise damage to be largely attributable to the harvesting operation. Excessive harvest speeds, excessive drops, and inadequate padding contribute to the problem.

Developments in recent years are bringing about an increased awareness of the bruise problem. Potato processing companies are insisting on bruise-free

potatoes. A bruise detection kit for a rapid field evaluation of damage is now available. A 2% catechol solution stains the bruised area a dark red color.

Research is continuing to pinpoint damage and to develop new mechanisms to avoid it.

Onions [8]

Harvesting of onions consists of four separate phases: (1) undercutting and pretop curing; (2) topping; (3) field curing; and (4) field loading.

Onions are undercut and allowed to dry for a period of 5 to 10 days prior to topping. After the onions have cured sufficiently they are loaded onto trucks and transported to storage.

Topper

A topper was built at the University of Idaho consisting of a tined-wheel pickup unit. It was ground driven and used two tined wheels per row to pick up the tops so they could be removed by a horizontal blade. The tined wheels were mounted so that they would ride on the ground with provisions for lifting the wheels when turning, backing, or for road travel. Losses with this machine are due to: (1) direct mechanical damage in the field at the time of harvest; and (2) mechanical damage that is manifest only in storage losses. The direct field loss was about 2%, and the average storage loss about 10%.

In Michigan, mechanical harvesting and bulk curing of onions are established practices and were used on approximately 70% of the onion acreage in 1967. Three types of harvesters are used: (1) a regular potato harvester; (2) a combination harvester that incorporates pinch-roll mechanisms to remove tops; and (3) a combination harvester that uses an air blast to raise the tops with knives to cut them off.

Loader

In Idaho, potato loaders have been used successfully for loading onions from the field into bulk trucks or bins. The chief problems with potato loaders are: (1) generally the row spacing will not accommodate the tractor wheels satisfactorily; (2) use of potato loaders does not eliminate the topping problem; and (3) onions that are topped before they are elevated tend to roll down the pickup, thus decreasing the capacity and causing some mechanical damage. Research is underway to eliminate these problems.

Storage

Bulk storage of onions goes hand-in-hand with mechanical harvesting and mechanical handling. A slatted floor system is sometimes used in which onions may be piled to a depth of 7 feet. Ventilating air is forced upward through the pile. The floor may slope from the sides to the center where a conveyor may be installed for unloading the storage.

Ventilation Requirements

Adequate forced ventilation with proper control is required to insure satisfactory storage. The storage season consists of three definite periods: (1) curing; (2) cooling; and (3) holding. Specific ventilation requirements for each period have been developed.

Storage and ventilation requirements in Michigan are very similar to those in Idaho. The principal differences are that during inclement weather in Michigan heated air is sometimes used for drying and curing. Because Michigan onions are more firm than those in Idaho, the depth of bulk storage is less critical.

Tomatoes [4]

Tomatoes are a commercial crop in 31 states and are economically important in 17 of them. They represent over 16% of the total vegetable production of the country, second in importance only to potatoes. The great bulk of this crop presently is in those varieties developed for processing. It is estimated that something in excess of 370,000 acres were planted for processing tomatoes in 1968. Some 6-1/4 million tons were produced.

California accounts for 77% of the nation's total production. Over 1,400 mechanical harvesters were in operation in 1968. Fewer than 100 tomato harvesters were operated outside the state of California. While the present tomato harvester is very effective, there are at least two major problem areas that should receive further attention. These are: (1) the inclusion of excessive dirt and other foreign material in the harvested product; and (2) the damage to fruit in the harvesting and handling operations. Both of these areas are associated with product quality and case yield--important factors in processing tomatoes.

It is desirable to reduce the amount of dirt and clods taken into the machine and to devise more effective means of eliminating dirt or foreign material if it is collected. The presence of dirt in the machine not only increases mechanical damage but it also enters the fruit if there are any breaks in the skin. Minor cuts or breaks in the tomato peel do not alone reduce fruit quality, but if dirt or other foreign material enters the openings mold and rot may result. Intensive washing is necessary for dirt removal, and this operation carries away some of the usable fruit material.

Damage due to impact may bruise and soften that area of fruit which comes in contact with hard surfaces or other areas which produce stress concentration. One such impact or bruise reduces quality very little. Prolonged rolling of fruit results in softening of the flesh with accompanying accelerated chemical breakdown of cell walls and reduction in product quality. Machines should be improved by reducing the number and severity of impacts.

Sorting of tomatoes to separate green and ripe fruit and clods and foreign material is a difficult problem. Generally, sorting is accomplished

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manually by people riding on the harvesters. Research is underway to develop electronic sorting devices.

The concept of infield or central sorting of tomatoes has been considered since mechanical harvesting became a commercial reality. Full scale, central sorting units have been in operation during the past three or four years in California with some 15 installations. With this system, the machines place fruit without sorting into containers. The product is then transported by truck or tractor-trailer to a central sorting area. There it is washed, sorted, and repacked into containers for transport to the processing plant.

Advantages of the central sorting system include simpler and faster harvester operations, more convenient environment for sorting personnel, and cleaner fruit delivered to the cannery. Disadvantages include delay in sorting, transportation, and disposal of rejected material and additional fruit handling.

While the canning tomato industry has moved relatively rapidly toward mechanization, the fresh tomato market is not being neglected. Improved machines and better varieties are being developed for fresh market tomato harvesting.

Peppers [4]

The sweet pepper is a commercial crop in the South and parts of the East, Midwest, and West. The total United States acreage devoted to this crop is about 50,000. Florida accounts for the major share (18,000 acres) followed by New Jersey, North Carolina, California, and Texas.

Harvesting and handling are principally by hand, although during the past several years mechanical labor aids have been employed. These include collecting belts straddling 6 or 8 rows and mobile platforms on which grading and packing operations are carried out.

Recently efforts have been directed toward mechanical harvesting of sweet peppers. Machine developments are being pursued in the Southeast and in the West. Because of the nature of the plant and development pattern of the fruit, both selective and once-over harvest systems have been investigated.

Experimental methods of machine harvest have included severing the root system and taking the vine into the machine as well as removing pods from the vine in the growing position. Shaking, stripping, and raking actions have been employed in the fruit separation process. It is expected that economically practicable equipment will be available within the next two years.

Snap Beans [2]

In the 20 years since the first mechanical method of harvesting bush snap beans was introduced, only relatively minor modifications have been made to refine the original principal. Competing manufacturers are introducing a variety of machines all using the same method of removing the pods from the plants with slender metal rotary fingers, or tines, attached to a reel or a chain arrangement. The fingers work downward through the plant from top to

bottom as the machine progresses and the pods are thrown onto a conveyor. The plant is momentarily flattened and confined against a backing plate so that the rotary fingers remove all the beans and most of the leaves from the plants.

In addition to pods and leaves the harvesters also pick stems, clusters of pods, other debris and stones, some of which are removed mechanically and pneumatically as the beans are conveyed into bulk boxes or hydraulic dump loaders.

Most mechanical bean harvesters are self-propelled, although a few are tractor-drawn.

Nearly a dozen companies in the United States and abroad have developed mechanical bean harvesters. Improved cultural practices and higher plant densities are being developed to further increase yield and make mechanical harvesting of snap beans even more attractive.

Peas [2]

A hand operated pea harvester was developed in 1883 in France. The first United States' machines appeared shortly thereafter. Pea vining technology has remained virtually unchanged since the early 1900's. The method has undergone slow evolution but at no time a revolution. Minor modifications have combined some of the components; the introduction of more durable structural materials has reduced maintenance problems, and greater power has increased the speed and versatility of the machines.

Cutting and Loading

Only in the last 25 years have machines been developed specifically for cutting peas. Before that time modified mowers with a variety of windrowing attachments were used with varying success. Now, self-propelled cutter-swathers cut the vines and deposit them centrally between the wheels by means of belts or augers. After peas are cut they are loaded and hauled to stationary viners or are left in windrows to be picked up directly by mobile viners. The forward speed of mobile viners and the speed of the pickup reel are such that an undisturbed continuous swath or windrow is picked up and fed into the throat of the screen drum.

Vining

Pea viners, whether stationary or mobile, consist of an oblong frame in which revolves a hexagonal, open-ended drum. The sides of the drum are formed by perforated mats or woven screens. The drum is supported by rollers at each end and is revolved by a chain and a pulley. Arranged obliquely along a hexagonal wooden axle through the center of the screen drum are short metal beaters which pass close to the bars which support the screens on the drum. The cylinder with the beaters attached revolves in the same direction as the drum but at a much greater speed. As the drum turns slowly, pea vines are picked up by the bars and carried upward to be dropped again and again through the rapidly revolving beaters.

Beneath the drum is an inclined apron or draper made of rubberized canvas or vinyl-coated nylon. One of the latest innovations is the replacement of the draper by an air-blast separator.

When the peas enter the drum the beaters strike the pods causing them to open. The peas and small waste fall through the screens onto the inclined apron beneath. The slight angle of the beaters gradually propels the vines to the discharge end of the drum. The angle of each beater is fixed but decreases toward the rear of the cylinder. The shelled peas and some waste fall through the screens on the drum and roll down the inclined apron beneath. Most of the small waste clings to the draper and is elevated and discharged as the draper turns over at the top of the incline.

At least four manufacturers now make pea harvesters. While the details of design vary somewhat, the basic principle is very similar. Improved cultural practices along with improved machines promise a more efficient production system for the future.

Cucumbers [7]

The first known attempt to replace the manual cucumber picker with a mechanical harvester was made by the H. J. Heinz Company in 1945. In the early 1950's a number of innovators devised components and machines to harvest cucumbers. These were multiple harvesters designed to go through the field many times during the season lifting the free ends of the vine and removing the marketable fruit.

There are a number of inherent problems with a multiple harvester such as:

1. Accumulative damage to plants during the season with a resultant decrease in yield.
2. Inadequate mechanisms for removing all the fruit set near the base of the plant.
3. Inability to remove and retrieve an acceptable percentage of the marketable fruit.
4. Lower yields because of wide row spacing required by the machine.
5. Pulling of plants from the soil.
6. Limited seasonal acreage capacity because of the necessity of repeatedly harvesting the same plants.

Recognition of the above problems resulted in re-evaluation of mechanical harvesting techniques about 1960 and consideration of a once-over harvest timed to provide optimum yield.

A successful once-over harvester must perform at least five functions:

1. Pick up the cucumber plants for fruit detachment.
2. Detach the fruit.
3. Separate the fruit from vines and foreign material.

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4. Transport the fruit to a storage bin.

5. Discharge the vines.

A preliminary economic analysis revealed that once-over harvesting of pickling cucumbers was feasible if new varieties could be developed that would provide concentrated fruit set or a higher yield in a single harvest. Much progress has been made on developing improved varieties and cultural practices as well as more suitable once-over harvesters in the past 5 years. In 1968, five companies had experimental or production once-over cucumber harvesters. In addition, two companies continued work with experimental multiple harvesters.

Performance of once-over cucumber harvesters has been adequately demonstrated. As might be expected, the early models were plagued with mechanical problems. All manufacturers have made substantial improvements with resulting increases in reliability and effectiveness.

The future success of once-over cucumber harvesters hinges on economics. The marketable yield must be sufficient to provide a profit to the grower and harvester owner. The key to increased profits lies in higher yielding varieties with growth characteristics suitable for a single harvest.

Cabbage [6]

Approximately 110,000 acres of cabbage are grown in the United States with an annual production of over a million tons. Almost 50% of the labor required for cabbage production is associated with the harvesting operation, and harvesting accounts for almost 25% of the total production costs.

Experimental machines for harvesting cabbage have been developed by a number of manufacturers and universities. To date, however, commercial use of these machines has been extremely limited. Some problems are:

1. Low capacity.
2. Many heads are cut at an incorrect height.
3. Some heads pass through with roots still attached.
4. Heads are partially shattered.

One of the more successful machines travel between 1/2 and 3/4 mph and harvests 4 to 5 tons per hour in a 20-ton per acre crop. Cost estimates indicate that mechanical harvesting is well under the cost of hand harvesting. The demand for a satisfactory harvester is great. If the presently available harvesters can be improved to produce a better quality product, they will be accepted.

Lettuce [3]

Although several types of lettuce are raised for United States markets, the vast majority of commercially produced lettuce in the United States is of the crisphead type and the following comments are limited to that type.

Over 200,000 acres of lettuce are harvested each year in the United States. The annual value of production exceeds $200 million. This represents

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an increase of over 100% in production value during the past 20 years. Nearly 85% of the United States lettuce crop is produced in the Southwest.

Although single harvests are feasible for lettuce in the eastern part of the United States, selective harvesting is presently necessary in the Southwest. Workers walk along the lettuce rows, grasp each head to determine if it is sufficiently large and firm for harvest and then hand cut and trim those heads judged ready for market. After trimming the lettuce head, the worker places the head back on the bed for hand packers if a regular field packing method is used or into a conveyor if a shed pack or field wrapping operation is used.

Selective harvesting is required because of the lack of plant uniformity at harvest time. This nonuniformity is caused by one or more of the following factors:

1. Inability to plant lettuce seed to a uniform spacing depth because of the size and shape of the seed.
2. Lack of uniform seedbed.
3. Differences in size and density of seeds causing differences in germination and seedling vigor.
4. Variations in seedbed temperature.
5. Plant competition prior to thinning.
6. Plant injuries that occur during thinning.

Harvesting

There have been some mechanisms for use in lettuce harvesting that can be classified as harvest aids. These devices have been mainly in the form of riding platforms for people performing the hand labor or conveyors to transport the lettuce heads at various stages of the harvest operation. Although the difficulty of the harvesting task may be reduced, labor productivity is not increased materially.

Mechanical harvesters have been developed in California and Arizona. Both machines select lettuce heads mechanically on the basis of size and firmness and remove only the lettuce judged ready for harvest. The Arizona machine applies a selection force on the sides of the heads while the California unit applies a selection force on the top of the lettuce head. Although the mechanics of the machines vary considerably, both harvesters perform the same task.

Commercial versions of these machines have not been completely developed, and growers have been reluctant to adapt to a selective mechanical harvesting system. This is partly due to the fact that the supply of farm labor has been adequate for them to remain with a hand harvest system and partly because mechanical harvesters are best suited for a bulk handling, shed pack operation.

Precision planting techniques, mechanical thinning, and other improved cultural practices all point to a once-over harvesting mechanism for lettuce.

This is now feasible in the Eastern United States and a single pass harvester has been developed at Cornell.

Another once-over lettuce harvester has been developed in Colorado. This harvester cuts four rows of lettuce at speeds up to 2 mph and elevates them to a packing station or to a conveyor for transporting to a trailer in the case of shed pack operations.

In the next 10 years all of the field operations must be almost totally mechanized if lettuce is to remain a part of the American diet. Such things as sorting and grading lettuce heads may require substantial amounts of hand labor. These operations will probably be moved to the shed.

Celery [1]

Most celery grown in the United States is produced for fresh market. In 1967 production reached 34,000 acres with a farm value of $64 million. The major producing states were California, Florida, New York, and Michigan. A limited acreage is produced for processing purposes with surpluses from the fresh market industry.

Various types of harvesting aids have long been used to partially mechanize the harvesting packing operation. Most harvesting aids utilize long, horizontal, waist-high conveyors which are perpendicular to the row. Workers cut the celery at ground level, remove outside petioles until the desired compact stalk remains, and place the stalk on the conveyor. Often a T-shaped arrangement of three conveyors is attached to the front of a mobile packing house. This type of harvesting aid is called a "mule train". Other harvesting aids convey the hand cut celery and elevate it into trailers or bulk containers on a separate vehicle. Although these systems mechanize the handling of cut celery, they still require excessive hand labor for cutting and stripping.

Celery has several advantages which contribute to its mechanical harvest potential. They are:

1. Markets exist for a range of sizes, thereby precluding the necessity of selective cutting.
2. All stalks are cut at ground level, thereby easing the problem of positioning the stem cutting mechanism.
3. Celery grows to a fairly uniform height and the top is mechanically removed at uniform height, hence offering opportunity for grasping above the marketable portion.
4. Since outer petioles are to be removed, they offer protection during mechanical loading and hauling.

Contrary to the theory that celery must be handled very carefully to prevent serious damage, recent evidence indicates that jumble packed stalks can be transported in bulk containers with very little damage. Hence, in most areas no major changes in cultural practices or variety are necessary to begin mechanical harvest development.

Celery can be satisfactorily cut, topped, and loaded by mechanical harvesters and transported in bulk to central packing facilities. The next step in preparing celery for market, removal of outer petioles, is mostly a hand operation that presently limits the daily output of mechanical harvesters. One-half the total stalk weight is often stripped off in order to remove the thin, short, diseased, discolored, and otherwise defective part of the petioles and produce a compact, cylindrically shaped stalk.

Several successful commercial harvesters are in operation in Flordia and California. It is anticipated that in 10 years essentially all celery will be harvested mechanically. The rate of mechanization increase will depend largely upon handling and packing developments, the supply of suitable labor, and the cost of this labor. Major emphasis will be on new developments for the packing operations. There will be increased use of automatic sizers, unit loading, automatic crate assembling and closing, and prepackaging.

Sweet Corn [1]

Sweet corn production in the United States reached 658,000 acres in 1967 with a farm value of $115 million. Although most sweet corn was grown for processing, over half the cash value came from the 29% of the acreage that was raised for fresh market.

Mechanical harvesting of sweet corn for processing was started in the late 1940's and has long been a standard practice. The harvesters are usually two-row, tractor-mounted units which replace 10 to 15 handpickers.

Mechanical harvesting of fresh market sweet corn did not gain widespread acceptance until the mid 1960's. Maintaining quality had always been a problem, and there was hesitance to use a system that might compound this problem by introducing mechanical injury. A declining supply of suitable labor combined with other rising costs has forced mechanical harvesting of fresh market sweet corn.

Various types and sizes of harvesting aids have long been used to mechanize the handling of manually pulled sweet corn. A simple aid is the tractor-drawn wagon into which the sweet corn is tossed for transport to a packing house or temporary packing area. A more sophisticated aid is the self-propelled, mobile packing house with conveyors or packing platforms extending from both sides to receive the manually pulled corn. In these packing houses the sweet corn is inspected, trimmed if necessary, and packed into crates. The packed crates are conveyed from the rear onto a towed truck which transports them to a precooler.

Several commercial companies manufacture sweet corn harvesters. Performance results are varied and somewhat sketchy. There have been only a limited number of technical studies on the complete harvesting and packing system. There have been many encouraging reports from growers using the new sweet corn harvesters. Some have reported negligible ear damage and total labor reductions as high as

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45%. Recent reports from Florida and California showed that harvesting machines were more efficient in use of labor than hand pulling and left fewer ears in the field.

By 1975 most acreage of fresh market sweet corn will be harvested mechanically. Although two-row harvesters will be most prevalent, there will be considerable use of single-row harvesters. There will probably be a gradual shift toward the central packing house because of the possibilities existing there for increased mechanization and improved worker conditions.

Asparagus [5]

Development of mechanical harvesters and the associated handling equipment for asparagus presents many unique problems because of the nature of the crop. Asparagus spears are produced as buds that develop and grow from short rhizomes of the crown. To have economic value these spears must be removed from the plant before they start to "blow" or develop into brush. New buds constantly develop and grow during the harvest season which lasts from 6 to 12 weeks.

Asparagus can be white or green depending on whether the spear develops in the presence of light or not. The greater portion of asparagus grown in the United States is green, although some white asparagus is harvested in California. It may be cut at or below the ground surface, or it may be snapped as is the practice in Michigan.

A mechanical harvester for asparagus can be selective or nonselective. A nonselective harvester cuts all spears that have developed above the cutting level of the harvester. By contrast, a selective harvester has provision for sensing the height of a spear so that it cuts only those spears that are tall enough to be detected by the sensing device.

State of the Art

A considerable number of asparagus harvesters have been developed over the last 40 years. Recently, several commercial companies have made experimental and production models available. Both selective and nonselective principles have been used. In spite of the efforts of many people almost all the asparagus acreage in the United States is still harvested by hand.

The technical problems of sensing spears, cutting, and collecting them offer a tremendous challenge to engineers. To date no machine has had sufficient reliability and capacity to be commercially acceptable. On the other hand, nonselective harvesters are much simpler and have much greater capacities. The fact that yields are reduced drastically by nonselective harvesting has caused only limited adoption of this practice.

In the future it is anticipated that many of the present problems will be overcome, and a significant portion of the asparagus acreage will be harvested mechanically. The mechanical performance of harvesters must be improved, and the yield of the crop must be increased. Perhaps the nature of the plant

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will need to be changed more drastically than just the development of disease resistant, higher yielding varieties. There may be a place for both selective and nonselective harvesters. The choice may depend upon the product utilization. Where a whole spear product is desired and short spears are considered to be only a salvage operation, the selective machine may be used. If a variety of products is desired, so that some short spears are used to advantage, the nonselective harvester may be practical.

REFERENCES CITED

[1] Deen, W. W., Jr.; and Showalter, R. K. "Celery and Sweet Corn Harvest Mechanization and Post Harvest Handling." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 369-387.

[2] Duncan, Andrew A. "Developments and Future Trends in Machinery and Cultural Practices for All Pod Vegetables." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 269-290.

[3] Harriott, B. L.; Shepardson, E. S.; and Garrett, R. E. "Lettuce Mechanization." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 357-367.

[4] Lorenzen, Coby. "Developments in Machinery for Processed and Fresh Market Tomatoes and Sweet Peppers." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 215-223.

[5] Moore, Milo J. "Mechanical Equipment for Harvesting and Handling Asparagus." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 389-405.

[6] Shepardson, E. S.; Rehkugler, G. E.; and Pollock, J. G. "Cabbage Harvesting Mechanization." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 341-355.

[7] Stout, B. A. "Mechanical Harvesting of Cucumbers." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 295-305.

[8] Wilson, Eric B.; Sparks, Walter C.; Peterson, Charles L.; and Orr, Paul H. "Developments in Mechanization, Post Harvest Handling, and Preservation for Potatoes and Onions." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 175-201.

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ENGINEERING TECHNOLOGY IN FRUIT PRODUCTION

E. S. Shepardson

Traditionally fruit has been harvested by picking by hand. Large crews of laborers, often imported, have been commonly used on specialized fruit farms.

The handpicked fruit is placed in relatively small containers, often to be marketed or stored in the same container but sometimes to be transferred to other containers. The containers vary from one quart baskets for berries and small fruits, approximately 30 pound capacity wood or plastic lug boxes for fruits such as grapes, to one bushel crates, baskets, or boxes for apples and some other tree fruits. Some use has been made of bulk pallet boxes for transfer in an attempt to reduce harvesting and handling costs.

Harvesting costs are high, 30 to 60%, in relation to the total production costs. Labor presents many problems known to those involved. It is unlikely that field labor will increase in availability or decrease in cost. It is generally conceded that mechanization is needed to reduce the cost of production and to improve the competitive position of the industry. For these reasons considerable effort has been expended in recent years to mechanize the harvest. Some progress has been made, notably for tart cherries, grapes, blueberries, processing varieties of apples, and cranberries. Other fruits may be on the threshhold of succumbing to mechanical harvest. In general there has been little success with mechanized harvesting of the fresh market use fruits save cane and bush berries.

The state of the art and projections for mechanical harvesting as presented in RMC Report No. 16, *Fruit and Vegetable Harvest Mechanization, Technological Implications*, for fruit crops is summarized here.

Strawberries

The United States produces approximately 240,000 tons of strawberries annually on 67,000 acres. About 58% is used in the fresh market. Over one-half of the crop is grown in California with Oregon, Washington, Michigan, and Florida being other leading states.

Presently all commercially grown strawberries are hand harvested. Over 50% of the cost of production is for harvesting--perhaps as high as 75% if berries are for the fresh market. The competitive position of the grower has been weakened by recent imports from Mexico (over 40,000 tons in 1968). A number of different picking containers, aids, and machine units have been used in attempts to reduce labor and picking costs but with little success.

Research on strawberry varieties for mechanical harvesting was started by Dennison of Iowa in 1969. He envisioned the berries being stripped from the plant and used a stone fork to strip the berries as one criterion to determine suitability of the variety. Many other researchers since have used this principle in the development of mechanical harvesters. Pneumatic assist

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devices have been added to some. Harvester development has been done at Iowa, Illinois, Oregon, Arkansas, Louisiana, and the Ontario Agricultural College (Guelph, Ontario). At least one prototype has been made by a manufacturer.

Presently experimental harvesters are once-over types removing essentially all fruit. Total usable yields have been reduced about 40%. Bruising of 30 to 40% of the mature berries requires immediate processing. Improvements are being made in all phases.

Large volume machine harvesting is perhaps 5 to 10 years away depending on coordinate development of harvesters, varieties, economical methods of capping and sorting, and the economic climate of labor, machines, and prices received. High yields from multiple pickings spread over a long period improves profits, decreases labor demand peaks, and complicates machine developments.

Low and High Bush Fruits

In the United States, 70,000 tons of cranberries are produced annually on 21,000 acres of bogs. About 22% are for fresh market. Massachusetts and Wisconsin produce most of the crop with New Jersey, Washington, and Oregon in the top five.

Most cranberries are harvested mechanically or by the help of picking aids. About one-third of the production cost is for harvesting of which 85% is for labor.

Water-picking is done mechanically, and it is predicted that about 75% of the crop will be harvested in this manner by 1975. (Berries are beat off the vine in a flooded bog or boat and floated to a central loading point.) Research is underway on the dry-picking machine to improve the recovery and reduce the damage for berries for fresh market use.

Further developments in mechanization probably will have little impact on the labor situation since only 6,000 workers total are now required.

Blueberries

Wild, low bush berries are grown primarily in Maine and the Maritime Provinces. Maine has done considerable research on mechanical harvesting and it is predicted that 75% of the acreage will be mechanically harvested in 10 years--perhaps requiring few, if any, migrant workers. Within 25 years it is predicted that the wild blueberry will cease to exist as a commercial crop--it will be domesticated.

High bush, cultivated blueberries are obtained from 20,000 acres in Michigan, New Jersey, Washington, and North Carolina.

Harvesting machines, from hand held vibrators and collection frames to large straddle type harvesters, have essentially eliminated hand harvesting problems. Improvements still need to be made in the commercial machines and cultural practices to prevent excessive damage to bushes and fruit.

Cane Berries

Approximately 60,000 acres of cane berries are grown in the United States. Washington, Oregon, and Michigan are leading states. In recent years extensive research programs in Oregon, Arkansas, Washington, and Michigan have made mechanical harvesting of these fruits a reality. Over 25% of the crop in Washington and Oregon was mechanically harvested by some 70 commercial machines in 1968.

It is predicted that essentially all commercially grown berries will be mechanically harvested in the foreseeable future because of the lack of and high cost of labor, better quality with machines, and significantly lower costs.

Grapes

The United States annually produces some 3,700,000 tons of grapes of which California produces about 90%. New York is second with about 130,000 tons. Other leading states are Washington, Michigan, and Pennsylvania.

Most of the California crop is of European or Vinifera varieties, while most of the rest of the crop is American hybrid of which Concord is the predominant variety.

Almost one-half of the California crop is crushed for wine, about one-third dried for raisins, and about 16% for table use. Most of the rest of the grapes in the country are crushed for juice and/or wine. Grapes are hand harvested, but 1968 saw the use of some 30 mechanical harvesters mostly in the Great Lakes area. About one-half of the harvesting cost is for harvesting, 80% of which is labor. Little, if any, help has been obtained from picking aids, although bulk handling has increased the efficiency of handling.

Mechanical harvesting research began in California in 1952. Research started in New York in 1957 and led to the first commercially available grape harvester now being built by the Chisholm-Ryder Company. The first commercial harvesting was done in 1967.

Teamwork in New York (Agricultural Engineering, Horticulture, and Food Science) dictated a cultural and trellis system to maximize yield (40 to 90% increase) and quality to which the harvester was adapted. The concept makes use of a double offset trellis system (called Geneva Double Curtain [GDC] in New York and Duplex in California) and a vertical stroke mechanism to shake grapes from the vine. However, the presently popular machine is a horizontal stroke machine (also made by Chisholm-Ryder Company) which can operate only on the limited yield conventional trellis system. Both are straddle type machines.

Other manufacturers have machines available, one of which is based on the California "impacter" development, not unlike the vertical stroke principle in effect. Both types are used for grapes to be processed. The technique of severing the cane (California) allows the harvest of raisin grapes mechanically also.

While the harvesters travel at about 1.4 mph, the GDC machine harvests more grapes, so its machine-to-man ratio is about 1 to 30-35 and the other is about 1 to 15-18.

In 1968, 15,000 to 20,000 tons of grapes were harvested mechanically in the Great Lakes area, mostly New York State. It is predicted that nearly one-half of the Great Lakes crop will be mechanically harvested in 1969. On this basis, considerable labor will be replaced by machines, both in the vineyard and at the processing plant. It would appear that in the span of a few years the grape crop consisting of American hybrids will be almost entirely mechanically harvested with a resultant decrease in labor requirements. It is difficult to say how rapidly mechanical harvesting will be adopted for the wine, raisin, and table grapes of California; but some gain in mechanical harvesting is likely to be seen yearly as improvements are made and acceptance is a reality.

Apples

A 130 million bushel apple crop is annually produced in the Northeast and Northwest United States with Washington and New York the leading states. Over one-half the crop is for the fresh market.

Traditionally the crop has been hand harvested. Harvest cost is about 40% of production cost and 80% of this is for hand labor. The industry has long recognized the need for increasing the efficiency of labor and of finding a substitute for labor.

Picking aids have received a great deal of attention for many years and have ranged up to self-propelled machines that can be made to position pickers anywhere in and around a fruiting surface and conveyors to take apples from picker to bulk box. Since a picker uses two-thirds of his time in "picking", by the ladder method it is impossible to increase his efficiency more than 50% by mechanical or cultural methods and techniques, although much effort is being directed toward this potential gain by ARS personnel and by Pennsylvania, Massachusetts, and perhaps others.

Mechanical harvesting research has ranged far and wide with many state experiment stations, ARS, and manufacturers active. To date the shake-and-catch method has been used to some extent for the processing type apple. No fresh market apple has been mechanically harvested on a commercial scale. A low profile collection unit (padded wings, deceleration strips and conveyors, or roll out devices) together with limb or trunk shakers has been the acceptable harvester units.

About 2% of the processing apples in New York were mechanically harvested in 1968. Indications are that several more harvesters will be in use in 1969. Cost is still somewhat higher and bruising somewhat greater than a good hand operation. The machine-to-man ratio is about 1 to 8 for harvesters in use.

There is little solid information on the form that orchards and trees

will take for the future. This handicaps mechanization approaches; thus, it becomes a seesaw advancement.

It is difficult to say how rapidly mechanical harvesting will be adapted for the processing apple. Perhaps the cost is too high for the man-to-machine ratio yet. Manpower needs for the apple harvest will be about the same for many years to come--at least to 1975--in spite of the aids and harvesters that will no doubt be in use. Perhaps 10 to 12% of the processing crop will be mechanically harvested by 1975. Because of the demand for a high quality tender fruit at an economical price for the fresh market, probably none will be mechanically harvested by 1975.

Cherries

A record crop in 1964 of 119,000 tons of sweet cherries and 273,000 tons of sour cherries was harvested. The Great Lakes and Pacific Coast states are the principal producers. All cherries are processed.

In 1968, 70% of the tart cherries and 4% of the sweet cherries were mechanically harvested.

The systems being used shake the fruit from the trees, catch it on self-propelled frames, convey it into pallet tanks of cooling water (or brine for sweets) for transport to the processing plant with no reduction in quality.

Reduction in harvest cost from 4 cents per pound to 1.5 cents per pound has been realized. One man with mechanization now does the work of 35. In addition, further economies have been realized in the processing plants through use of newly developed destemmers, sorters, and pitters. Reduction of labor in the plants is about 35% since 1960.

It is estimated that the tart cherry crop will be 100% mechanically harvested by 1972. Sweet cherries will have to wait for changes in cultural practices and other technical progress before complete mechanical harvesting can be accomplished.

Apparently the displacement of laborers by machines has been no problem in the area. Those remaining are of a higher level of attitude for living and possess higher skills. Those leaving are apparently absorbed elsewhere.

Deciduous Tree Fruits

A high proportion of the deciduous fruits are grown in California--over 50% of the pears, 95% of the plums, most of the apricots and prunes, and most of the cling peaches. Prunes are the only one of these crops that is almost completely mechanically harvested. Nonuniform maturity in coastal areas apparently is the only deterrent to complete mechanical harvesting. The shake-and-catch system predominates with a man-to-machine ratio varying from 5 to 1 to as high as 10 to 1 for the most efficiently mechanized. The 5 to 1 ratio is in coastal areas where nonuniform maturity, smaller farms, and lower yields are problems. The roll-out type catching frame is predominant in this area.

Cling peaches are the highest value crop in California and have a high harvesting labor requirement. Mechanical harvesting is increasing rapidly as cultural and bruising problems are solved and to combat the labor problem. Man-to-machine ratio can probably be 9 to 1.

Mechanical harvesting of apricots, because of their variable maturity, has been limited to less than 2% of the crop. As maturity problems are solved it is anticipated that mechanical harvesting will increase rapidly, perhaps on a selective tree-to-tree basis at the start.

In general, the tree grown processing fruits can be mechanically harvested. Pears, over one-half of the production grown in California and mostly used for processing, cannot be mechanically harvested with present systems because the bruises do not cook out in processing.

Most of the plums are grown in California and most are for the fresh market. They are not mechanically harvested because of the bruising problem.

Man positioners may offer a practical solution, perhaps temporary, for harvest of the fresh market fruits, bruise susceptible processing fruits, and nonuniform maturity fruits. This would be particularly so when and if cultural practices can change tree shapes to adapt fruiting surfaces to mechanization and when and if uniformity in maturity can be brought about. They save little labor.

Complete mechanical harvest for the bruise susceptible fruits will have to wait for new ideas in equipment and cultural practices.

Citrus Fruits

Citrus ranks as the major tree fruit in the United States with approximately 942,000 acres. Florida with some 650,000 acres and California with about 190,000 acres are the major producers. Arizona and California are the major fresh market producers. Florida production is mostly processed and Texas produces both.

Citrus is hand harvested with a variety of harvesting aids having been tried. Over $100 million per year is spent for harvesting. The potential saving is the highest for any fruit or vegetable crop.

Public and privately sponsored research on harvesters (and aids) is being conducted on a large scale in the leading states, primarily concentrated on oranges.

The harvesting period is long, but labor problems are a concern to growers; and they are anxiously awaiting (so they say) the advent of mechanical harvesters.

Many problems must be solved--equipment, chemical, cultural practices, tree and fruit damage--before mechanical harvesting will be feasible. Best estimates are that fruit to be processed may be mechanically harvested by 1975. This seems optimistic to the writer. Mechanical harvesting for fresh market consumption fruits will no doubt take longer.

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Remarks

Growers say they need mechanical harvesters. They are very slow, or do not accept harvesters when they have been experimentally developed except in a few cases. Perhaps manufacturers do not correctly assess the potential. Perhaps processors' and/or buyers' reluctance to change is a deterrent to acceptance.

In any event there seems to be a stronger force in play than the simple availability of a successful experimental harvester. There is some tendency for growers to use labor as long as it is available and to mechanize as a last resort. Perhaps this is because they know the traditional system and do not know, or are afraid of, the new mechanical systems. There are also the questions of investment, obsolescence, operation and maintenance costs, and the lack of enthusiasm on the part of the product buyer.

Perhaps the whole thing is bogged down with obsolete rules, regulations, opinions, and prejudices of grades and standards of USDA, FDA, plus state, association, industry, and processor regulations that the "new product" of mechanical harvesting is just not acceptable under the old system. Perhaps an evaluation assessment should be made as to where we stand on the need for mechanization based on what is or will be acceptable to the consumer, buyer, processor, and grower. This in turn will help determine how rapidly mechanization might substitute for labor.

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HANDLING AND CONTAINERIZATION TECHNOLOGY

Michael O'Brien

From the mid 1950's until the present time much research has been done on developing bulk containers and handling systems for post harvest handling of fruits and vegetables. Until that time nearly all such handling was done in hampers, baskets, or lug boxes of approximately 40 lb. capacity. Practically all of these were handled by hand during filling, stacking, loading, unloading, dumping, and return to the fields. With some crops, such as pears, the boxes were handled by hand as many as 12 times during a round trip.

It was found that produce could be handled in large containers at far greater depths than previously believed. In some instances cling peaches, for example, could be transported in containers at a single depth equal to the permissible load limit of highway trucks. The optimum depths for handling fruits and vegetables varied somewhat depending on the physical properties of the fruit, the road condition, the truck suspension system, and the hauling distance.

Most fruits and vegetables for processing proved adaptable to handling in pallet bins 47 inches square outside and 24 inches deep inside. This container has 1,000 lb. capacity--equal to 25 field lug boxes. Some pallet containers of different sizes are used for various reasons in some areas. In Michigan, for example, cherries are handled in liquid and are purchased by volume. Size standardization of the container facilitates measuring of the volume by means of a calibrated probe. This system requires a minimum amount of handling, weighing equipment, and labor.

The mechanization of harvest of most fruits and vegetables has been facilitated by having the bulk containers suitable for handling perishables in huge volumes. Even if labor were plentiful it would not be possible to have enough people around a harvester to handle the high volumes of produce at a continuous rate. Handling small containers is onerous work and the high percent of produce striking the container sides results in lower quality.

Moving the crops from the field to processing plants with a minimum reduction of quality by an efficient handling system compliments the benefits of machine harvesting. There are 40 million tons of produce and handling it in 40 lb. containers (2 billion of them--some as many as 12 times) would be an insurmountable task for the available labor supply.

There are four primary advantages of changing to pallet bin handling: (1) *Reduction in initial cost of containers.* Presently, the cost of one-ton capacity of lug boxes on pallets is $68 compared to $34 for two 1,000 lb. capacity pallet bins; (2) *Less transportation cost.* With a $6 per ton hauling charge the cost of hauling one ton of fruit in lug boxes on pallets would be $7.75 compared to $6.75 for one ton of fruit in two pallet bins. The difference being the cost of hauling additional weight of wood; (3) *Saving of*

cold storage space. A ton of fruit in pallet bins occupies 33% less storage space than an equal amount in lug boxes on pallets; and (4) *Reduces onerous labor.* Exclusive machine handling of pallet bins reduces hand labor to a minimum; however, it results in upgrading of labor required for equipment construction, operation, and service.

The development of companion equipment has paralleled the adoption and standardization of all pallet bin handling systems. This equipment includes field handling, loading, sampling, unloading, and dumpers for pallet bins. Having bins of uniform size is desirable for convenience in movement with automatic fillers, destackers, dumpers, stockers, etc. A standardized size is also an asset when individual processors have an excess or deficit of fruit and must transfer either to or from other processors who also have automated equipment adopted for standard size containers.

Presently, there are two competing container systems being considered: (1) the complete bulk load; and (2) the unit container load. Combinations of the two are also under trial during the 1969 season. The complete bulk load is shown in Figure 1 where grapes being delivered from the field to the processing plant in a 5 ton capacity gondola are being sampled. A unit container load is shown in Figure 3 where tomatoes are being harvested into 1,000 lb. capacity pallet bins on roller bed trailers. The pallet bins are transferred at an in-field marshalling area to a 24 ton highway truck and trailer which delivers them to processing plants.

A combination of these two systems that has worked well for several seasons is where gondolas were pulled through the orchard and pickers who picked for color only and were paid by piecework dumped their picking bag directly into the gondola. This eliminated the need for a forklift and an operator to handle pallet bins into and out of the orchard. The gondolas then delivered the unsorted peaches to a central sorting station similar to the one shown in Figure 4 where green and defective fruit were removed. This procedure removed the sorting decisions from many pickers and put it in the hands of a few well trained people.

With either system there must be a provision for surge capacity at the processing plant because there is need to have sufficient supply of produce to operate the plant while no harvesting is being done. This requirement favors the container system which involves units which may be set off and permit trucks to return for subsequent loads.

As mechanical harvesting develops more completely in the tree fruits, there will be need for trained sorters on the harvest machines or at central sorting stations. This situation will also be true for many of the vegetables which will come into the mechanically harvested sphere. There will be an increased need for more highly skilled people to do sorting or grading or operate machines that will sort and grade both fruits and vegetables as they come from harvest machines.

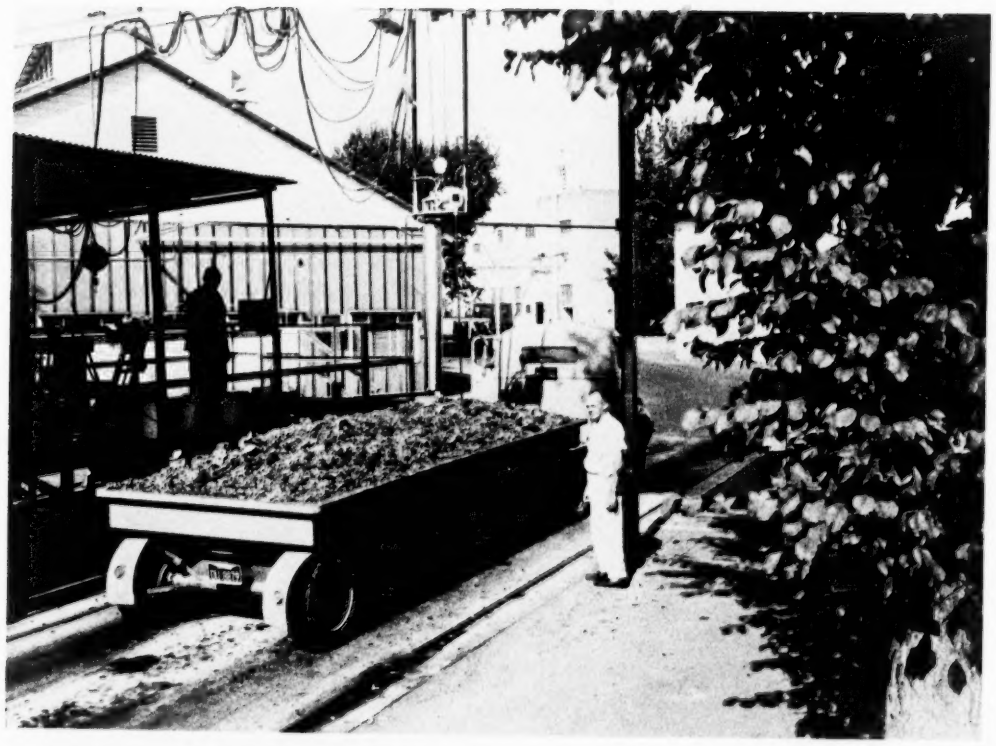

Figure 1. This gondola of grapes direct from the field is under the sampling tube and will be unloaded at the winery within minutes.

Figure 2. Prunes are harvested by shaking with a mechanical shaker, collected on a low profile catching frame and deposited into bulk bins for further handling.

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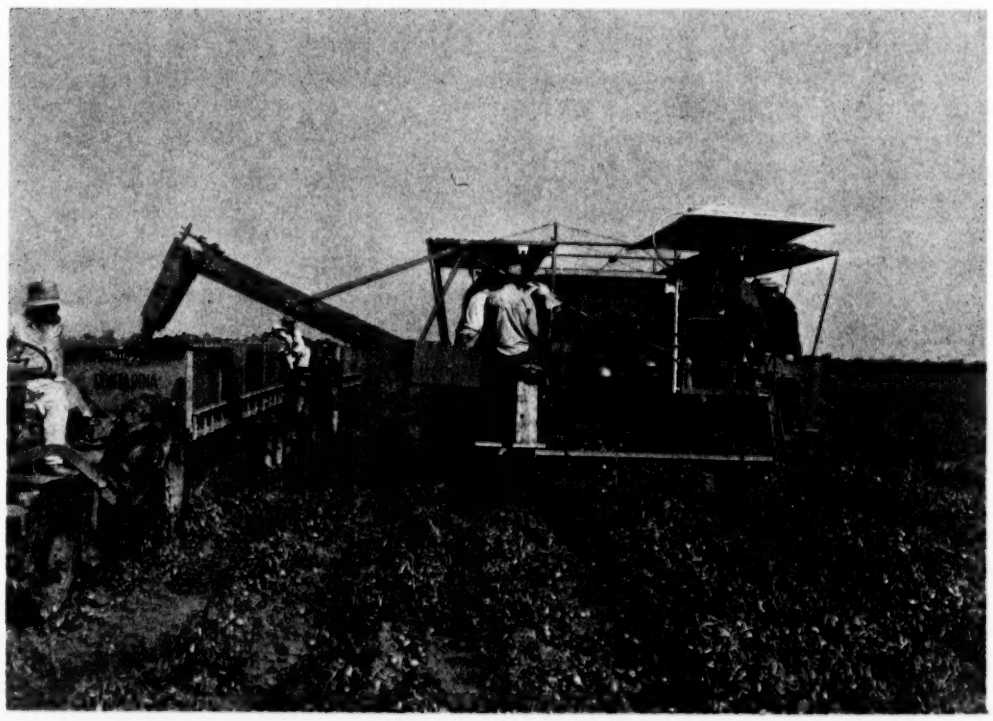

Figure 3. Tomatoes are being mechanically harvested into 24-inch (61 cm.) deep bulk bins which will be transferred to transport trucks and hauled to the cannery.

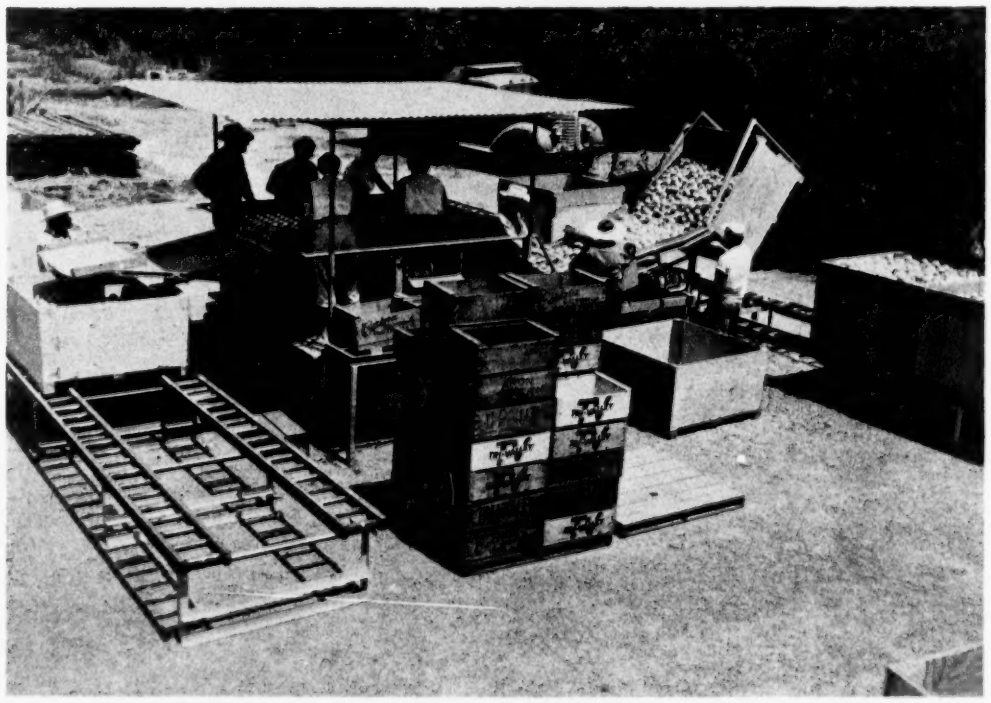

Figure 4. Fruits which were picked with only color as a criteria for selection are being dumped, sorted, and sized at a central sorting station before going to the cannery.

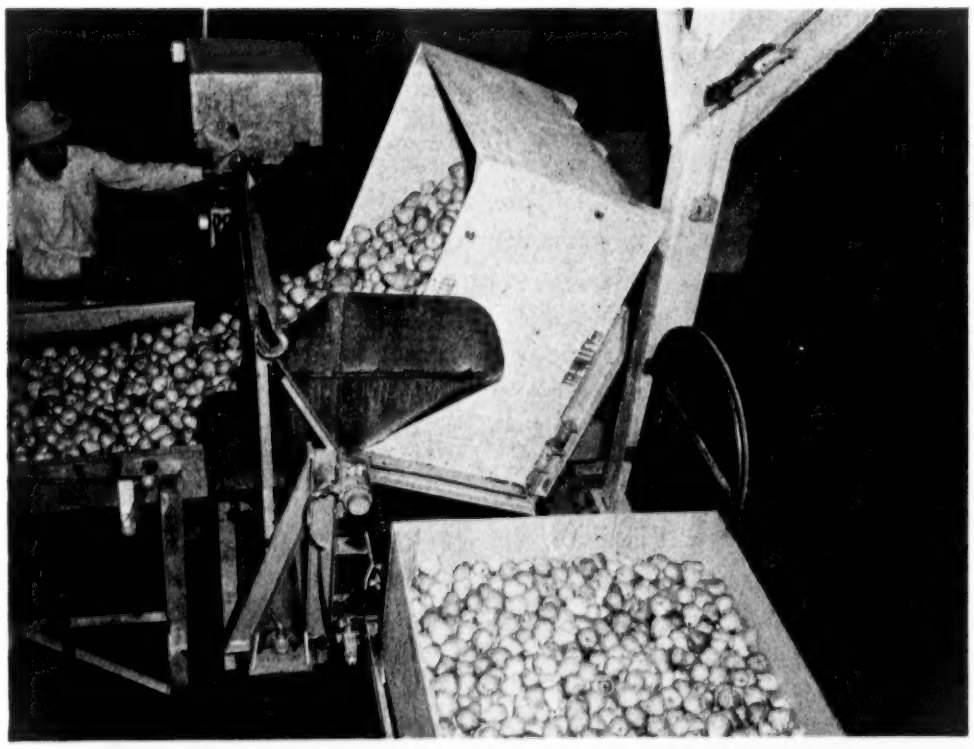

Figure 5. A dry dump for pears at a cannery.

Figure 6. Cherries being dumped from a field bin containing a brine solution into a storage bin at a processing plant.

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With increased attention to product quality, containers must be compatible with procedures and treatments that maintain high quality. As is the case with cherries, bruise scald control requires cooling to 55° F. within 30 minutes after harvest. This necessitates a container that is leak proof and strong enough to hold water during initial cooling at the orchard and during transport to the processing plant. An important advantage to this arrangement is that the fruit remains in one container from the tree until it is processed.

For cling peaches, pears, apricots, prunes, apples, and tomatoes, containers need openings in the bottom to facilitate washing and also for draining of water during hydrocooling and movement of air during room cooling and ripening in controlled atmosphere. The requirements for microbial control on containers are primarily that they withstand noncorrosive spray treatment.

Future trends will be toward fixed path automated handling systems for containers which will reduce the amount of labor required but will increase the demand for a higher degree of skill from the labor that is needed. Containers will remain captive in handling systems equipment and will be capable of very rapid movement at processing plants and at the field. This will reduce the number of containers required and also the time between harvest and processing, thus maintaining a higher degree of quality.

The fresh fruit and vegetable containerization and handling is being mechanized less rapidly than the processed because of the longer required shelf life appearance factor; however, analysis of one crop (cantaloupes) reveals the economic pressures that are forcing mechanization. The 1967 harvesting cost for the California-Arizona crop exceeded $5 million with an additional $5.8 million for packing shed labor payroll. These are recurring costs which show excellent opportunity for reduction through mechanizing both the harvest and packing shed operations.

Conclusions that are appropriate for the effect of the rapid movement toward automated mechanization of fruit and vegetable handling and containerization on labor are that there will be a significant reduction in the need for unskilled labor and an increase in the need for skilled labor at the rate of 3 to 4 to 1. The skilled labor can command more stable working conditions but will be required to make seasonal moves to maintain employment. Accommodations for mobile homes need be provided in fruit industry areas for these mobile home workers. An honest opinion regarding the unskilled workers is to provide a training program which will upgrade and qualify them for productive jobs. For those who for various reasons are untrainable, an updated WPA type program need be developed.

REFERENCES

[1] Gilman, R. H. "Cargo Handling." *Scientific American*. 219:(4)80-88, 1968.

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[2] Kasmire, R. F. "Post Harvest Handling of Mechanically Harvested Cantaloupes." Amer. Soc. Agr. Engr. Paper No. PCR 69-124, Phoenix, Arizona, March, 1969.

[3] Levin, J. H.; Gaston, H. P.; Hedden, S. L.; and Whittenberger, R. T. "Mechanizing the Harvest of Red Tart Cherries." *Mich. Agr. Expt. Sta. Quar. Bull.* 42:656-88, 1960.

[4] Maley, W. A. "Bulk System for Handling Fruits and Vegetables." Amer. Soc. Agr. Engr. Paper No. 67-429, 1967.

[5] O'Brien, M. "Automatic Fillers for Citrus Deciduous Fruit and Vegetable Bins." Amer. Soc. Agr. Engr. Paper No. 68-664, December, 1968.

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POTENTIALS IN ENGINEERING TECHNOLOGY

Carl W. Hall

There are many indicators, trends, and yardsticks which can be used to make projections into the future. Simple projection based trends seldom go far enough in representing future changes because breakthroughs in science and technology are not considered. The following is based upon anticipated engineering developments in the foreseeable future without designating a specific time scale.

Inasmuch as this report emphasizes manpower aspects, I'll attempt to relate my remarks where possible to labor implications.

The total labor required to produce food on farms has decreased markedly--to about one-third previous inputs--over the past 25 years. The labor required for producing fruits and vegetables, however, are major exceptions (Table 1).

Table 1. Labor Required on Farms - Million Man-hours

Year	All Farm Work	Livestock	Crops	Vegetables	Fruits
1920	23,083	5,244	12,471	751	748
1940	20,312	6,371	10,016	823	720
1950	15,137	5,548	6,922	640	619
1960	9,795	3,826	4,590	438	531
1967	7,269	2,720	3,522	429	453

Source: USDA Statistical Bulletin No. 233, 1969.

In the last 25 years the total acres in vegetables have remained nearly constant but other changes have occurred, principally a shift in acreage from production for fresh vegetable marketing to processing as follows:

A decrease in acres for fresh market vegetables of 10%.

With 40% increase in production for fresh vegetables marketed.

With 70% increase in production for commercial (fresh and processing) vegetables.

Total value of commercial production increased fivefold.

Shifts in fruit production are summarized as follows:

Apricot, cherry, apple, grape, grapefruit, lemon, plum, and orange production increased slightly.

Peach, pear, prune, strawberry production decreased slightly.

Decrease in percent of citrus for fresh market.

Decrease in percent of most fruits for fresh market.

Decrease in acreage of citrus fruits and major fruits.

Slight increase in production of 20 fruits (10%) on less acreage (10%).

In the future there will be a closer linkage between production and processing with the major effects as follows:

Concentration of purchasing by supermarkets and restaurants into fewer people.

Guaranteed supply.

Through year.

Uniform grade.

High quality.

Meet legal needs: FDA, USDA, HEW, USDL, etc.

The consuming public has drastically changed its habits and demands since 1950 with changes in per capita consumption as follows: [7]

Total fresh fruits	-24.6%	(80.9 lb.)
Canned fruits	+ 7.6%	(23.7 lb.)
Frozen fruits	+95.0%	(8.5 lb.)
Canned fruits	- 4.5%	(12.8 lb.)

There has been a large increase in consumption of frozen fruits, a whole new frozen food industry has developed in the past 25 years (Table 2), and a consumer who wants convenience foods can pay for them.

Table 2. Frozen Foods Commercial Packed - U.S.A.

1947	359,032,000 lb.
1950	776,972,000 lb.
1960	1,614,454,000 lb.
1965	1,538,462,000 lb.
1967	2,012,473,000 lb.

Source: USDA, *Agricultural Statistics*.

The trends and developments are as follows:

Housewife wants convenience.

People have money to spend for services.

People have more leisure.

More women are working.

Shift away from formal meals.

Population is more educated.

More young people in society.

People live longer.

Population is moving into service economy.

One of the first questions we should raise is whether or not fruit and vegetables will remain in the diets of the future generation. Will we be changing our source of protein from animals to plants? We have been changing our sources of vitamins from particular crops and products to manufactured materials; we add mineral elements such as iodine; we incapsule many of the body's needs. In addition, we combine several products to give what we call a complete meal, such as breakfast. The trends show an increase in per capita

consumption of low calorie food. This trend will continue. The combination of nutrition and palatability will keep fruits and vegetables before us. The next generation, however, may not be so attached to the land for food as this generation and may well go to the way of the pill for more than population control. The next generation might well see the use of land for food as a threat to their other personal interests. Formulated foods will definitely add an impact on future food demands.

We will not quickly, automatically, in one step eliminate land as a means of food production. However, there will be pressures on land use which will force us to intensify the use of land for production. Fruit and vegetable crops have been considered intensive land users for some time, so the people in the industry are accustomed to this approach. However, intensification in the years ahead will be much greater than at present or in the past. Research will be continued to provide an economical and healthful diet including fruits and vegetables.

Greater efforts will be made by researchers and procedures will be developed to maximize production--reaching toward the biological limits of production. So far little information has been published on the biological limits of production of fruits and vegetables. The predicted biological limit of production of cereal grains is about 10 times the production now obtained. Engineers will be involved in eliminating or reducing the effect of limitations on yield to maximize production by modifying or controlling or providing:

Efficiency of plant in utilizing solar energy in photosynthesis.
Genetic aspects.
Structure of seedbed and rootbed.
Shape and design of plant.
Plant population, spacing, etc.
Nutrients--soil, fertilizer, minor elements.
Water.
Time from planting until leaf canopy covers ground area.
Nutrients--atmosphere.
Temperature, humidity, etc.
Weed free environments.
Disease control.

The capital investment per acre and per man increases as we step up the technological ladder. There is no reason to believe or project that this trend will not continue. The intensity of production will continue to increase. By intensity is meant plants per acre and the related variety, selection, precision placement of nutrients, and control of the environment. As more is learned about the nutrition of fruits and vegetables, we will mechanize to optimize the returns.

For vegetables the move is from less than one plant per square foot to

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4 to 6 plants per square foot. The plants will be placed so as to have a uniform volume in the root zone around each plant (Table 3).

Table 3. Intensity of Commercial Cropping - Tomatoes

Year	Plants per Acre	
	Determinate	Indeterminate
1900	1800	1800
1925	1800	1800
1950	2000	2000
1968	6500	2000

Source: Personal correspondence from C. Nicklow and J. Downes, Dept. of Horticulture, Michigan State University, 1969.

We will not crowd vegetables in a row with each plant competing with the next plant while not maximizing use of the land between the rows. Thus, we will move away from wide-row spacing and have uniform spacing of the plant. Each root zone will have available without undue competition from the next plant the water and nutrients required to produce the plant. We might think of this as no-row cultivation. In fact, plants might be in rows 4 inches apart with the plant spaced 4 inches in the row. Regardless, a different type of mechanization and power will be needed than that which is presently available. Whether wheels can be developed to work over these narrow spaced rows is doubtful. I would suggest that the rootbed would be prepared in the fall. The seed might even be placed in appropriate locations covered with material that will protect the seed through the winter and then trigger the seed to begin growing at the appropriate time in the spring without reworking the soil. It is generally agreed that working the soil in the spring to form the rootbed is not desirable from the standpoint of soil structure and moisture conservation. If it is necessary to plant the seed in the spring, the seed will be planted with the least disturbance of the soil under the seed. Rather than digging a furrow in which only 1/100 of the distance is used for placing of the seed, the seed will be spotted as required. To avoid soil compaction, damage to the root zone of the plant, and damage to the plant itself,power and working tools will not be placed over the crop after it has been planted. Weed control will be by chemicals or mechanical means. Chemicals may be spread from air-supported machines such as a helicopter or airplane so as to avoid working on the soil. Close spacing of vegetable crops will help reduce the weed problem if these crops are cultivated in such a manner, and they will emerge making the competition too difficult for weeds to grow.

Another approach of working over the land is to provide paved roadways 100 to 200 feet apart. Working on these roadways would be mobile machines

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used for the tillage, seeding, cultivating, and harvesting operations. Tool bars on wheels supported by the paved roads would carry the appropriate equipment. Compaction would be reduced. Plant injury would be reduced and the use of the land would be optimized.

The cultural practices just mentioned for vegetable production requires nearly a new approach other than only development of mechanization. Precision planters which will handle various sizes and types of seeds must be developed. Precision planters which can be set by a dial to provide the row spacing and plant spacing in the row are required if, in fact, a row is used for the vegetable seeds. Fertilizer placement must be adjustable for the particular seed required. The equipment must have the facility for handling gaseous, liquid, or solid fertilizer for a wide range of applications. More concentrated applications of fertilizer will be used requiring more accuracy in metering than in the past. Harvesting equipment, although as now used may be acceptable for some crops, many crops will require a no-row harvester. Like the combine for cereal grain, combines for harvesting vegetables that can handle a wide variety of vegetables will be developed. These machines will incorporate methods of separating trash, dirt, and undesirable products from that produced. Quality factors will be identified to a greater extent both as the products are harvested and as they are sold from the farm. These quality factors will be a basis for separating the products at the machine and a basis for selling the product whether for the fresh market or the processing industry.

By moving tillage and seeding operations to the fall rather than late spring or early summer, the peak demands for labor will be smoothed out. There will then be greater opportunity for year-round employment at a higher wage than at present for workers in the vegetable industry.

Labor productivity in industry and agriculture has increased markedly. The increase in labor productivity for corn production in the U.S. provides a pattern of change which will surely occur in the fruit and vegetable industry if it is to survive. We have changed from one man-hour per bushel of corn to 1/30 man-hour per bushel. Fruit and vegetable mechanization will follow this trend. As the trend continues you may well ask if man will be needed. Yes, but a different type of person will be needed. As new technologies are developed and applied, workers need to be trained.

One measure of the labor productivity in the fruit industry is in the harvesting. Twenty-five years ago one man with manual methods picked 8.5 bushels of apples per hour; today, with mechanical aids he picks 11 bushels per hour and with harvesters 120 bushels per hour (Table 4).

We predict that by 1980 one man will harvest 200 bushels per hour. There is plenty of opportunity for improvement. Successful mechanical harvesters increase the labor productivity 20 to 50 times over manual harvesting (Table 5). The order of productivity of manual labor from high to low bushels or cwt. per man-hour is as follows: potatoes; peaches; apples; tomatoes; grapes;

cucumbers; strawberries; blueberries. The order is considerably different with machine harvesting (Table 5).

Table 4. Productivity of Harvesting Apples and Cherries

	Apples bu./hr.	Cherries lb./hr.
Manual	8.5	40
Manual with mechanical aids	11	--
Mechanical Harvesters	120	1,000
Potential (1980)	200	1,600

Source: Personal correspondence from B. R. Tennes, USDA-Agricultural Engineering, Michigan State University, 1969.

Table 5. Harvest Productivity, Pounds per Man-hour

	Handpicked	Machine	Ratio Machine/Manual
Potatoes	900	10,800	12
Peaches	425	1,000	2.3
Apples	340	1,320	3.8
Tomatoes	270	2,000	7.4
Grapes	162	2,000	12.3
Cucumbers	100	5,000	50
Plums	62	670	11
Strawberries	20	--	--
Blueberries	9	500	55

Source: [1] and personal correspondence with B.R. Tennes, USDA-Agricultural Engineering, Michigan State University, 1969.

There will be many changes in the fruit industry. We must devote our attention to development of variety and cultural practices in the fruit industry to reduce the cost of production, particularly harvesting. Much effort must be directed toward the harvesting whether this be in selection of variety or cultural practice. The major labor requirement and cost of production (from 30 to 50%) is in harvesting. Machine harvesting will predominate over manual methods by 1975 (Table 6).

As in the vegetable industry we must intensify production of fruit trees (Table 7). This means growing the crops for high production for a short time and removing the tree when its production begins to drop. Production will be intensified with the use of fertilizers and chemicals as is economical. Placement must be so as to make mechanization of harvest easy and economical. This means row placement of trees using dwarf varieties so that machines can move over these trees in a manner very similar to harvesting equipment for vegetables.

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Perhaps the blueberry culture will be a model in this respect. Trimming of the trees, pruning of the trees, forming of hedges, walls, etc., provide possibilities for growing rows of trees which can be easily handled by machine.

Table 6. Acres Machine Harvested, Vegetables, Percent[a]

	1968	1975
Potatoes	85	97
Tomatoes, Fresh	0	30
Processed	65	90
Corn, Sweet, Fresh	30	75
Processed	100	100
Lettuce	0	50
Onions	35	70
Cabbage	1	50
Carrots	95	100
Cucumbers	8	55
Beans, Snap, Fresh	30	100
Processed	100	100
Sweetpotatoes	70	90
Green Peas	99	100
All other vegetables	5	15
Average for all vegetables	58	73

[a]For projected manpower needs see articles in this volume by Velmar Davis and Earle E. Gavett.

Table 7. Intensity of Commercial Cropping - Apples

Year	Plants per Acre
1900	28
1925	35
1950	50
1968	110

Source: A. Mitchell, personal correspondence, Dept. of Horticulture, Michigan State University, 1969.

The extent of machine harvesting for fruits will not develop as rapidly as for vegetables (Table 8). Therein lies a tremendous challenge to researchers. Once developed, a successful commercial harvester is rapidly adopted.

Physical and biological properties of the harvested products will be used as a basis of sorting and selection. Devices on the machine will do some pre-checking, pretesting, pre-evaluation, and a product not passing the test will remain in the field. Cleaning devices using liquid or air will be on the machine. These combines will be adjustable so as to work with a wide variety of fruits. In some cases the fruit may be removed by nonmechanical means so

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as to reduce damage to the plant and to the fruit. Uniform ripening--in the orchard or in storage--will be a must for the fruit industry of tomorrow.

Table 8. Acres Machine Harvested, Fruit, Percent

	1968	1975
Oranges	0	10
Grapes, Wine	5	50
Apples, Processing	1	10
Grapefruit	--	10
Peaches, Cling	3	60
Pears	0	7
Cherries, Tart	50	95
Strawberries	0	10
Pecans	5	20
All other fruits	5	10
Average for all fruits	1	17

Source: [1]. For projected manpower needs see articles in this volume by Velmar Davis and Earle E. Gavett.

Only four to five years exists between commercial introduction and nearly complete adoption (Table 9).

Table 9. Adoption of Mechanical Harvesting, Percent of Acreage

Year	Blueberries Michigan	Cherries Michigan	Cucumbers Michigan	Tomatoes California
1964	5			
1965		5	1	10
1966		30		50
1967	70	50	15	85
1968		70		
1969	90	80	25	95

Source: Most of the data were assembled from estimates prepared by participants in the Technical Seminar on Implications of Mechanization for Fruit and Vegetable Harvesting, Chicago, Illinois, December 8-10, 1968.

Also, characteristic of an advancing agriculture is that considerable energy, external to agricultural production, is used as input (Table 10).

Table 10. Energy Use External to Agricultural Production

	Gallons of fuel per crop acre
1920	0.8
1940	4.0
1960	11.0
1968	18.0 (Michigan)

Source: 1960 USDA Yearbook of Agriculture. *Power to Produce.*

In many farm operations, such as tillage, the energy input is decreased as a result of research. Minimum tillage offers considerable merit and economical returns in some vegetable production. The horsepower available to each farm worker has raised dramatically--greater than the horsepower available to each industry man, although not used as many hours per year; the amount and value of fuels and lubricants used by farmers has increased significantly, and electricity for power, light, and control is a necessity. External energy input will continue to increase. The possibility of using agricultural production as a source of energy must not be overlooked even though it does not seem feasible or economical within the next decade. Potatoes offer the possibility of an economical energy source for agriculture.

Chemicals, although not usually considered as energy, nevertheless represents energy (perhaps energy saved). Unless regulations limit chemical use this trend will continue. Not only does this represent energy input from external sources but economical input for increasing production.

The various energy sources--solar, nuclear, electrical, chemical, thermal, mechanical, and manual--will not change greatly at the farm and orchard level. The quantity of energy involved in mechanical and manual power may change, particularly with a move to using more electricity. Nuclear energy may provide for lower costs of electricity so that electricity will continue at the same or lower cost, which has been the trend in the last two decades, while chemical energy (fuels) will continue to increase in cost.

The materials available to the engineer will continue to increase. High temperature, lightweight, corrosion resistant materials will continue to become available as a spinoff of the space efforts and other research programs. Instruments, controls, and data processing equipment will be produced which will be of use in the fruit and vegetable industry. Miniaturized controls and computers for special use, such as evaluating the quality of products with preprogrammed direction, will be a part of each machine. Plastics will play an ever increasing role from planting to packaging.

Tillage operations will be changed so as to reduce peak work demands (making year-round employment more feasible), and will consider to a greater extent minimizing the compaction of the soil such as follows:

<u>Reduce Peak Work Demands</u>

Move to fall.

Staggered harvest season.

<u>Minimize Compaction of Soil</u>

Large area traction devices.

Tillage device for power transmission.

Widely spaced pavement to support power and equipment.

Hovercraft.

Helicopter, airplane.

Reduce number of operations.

With more intensive production of fruits and vegetables the physical environment around the plants will come under control. Our work in the past has dealt primarily with the chemical environment--that is, providing the proper nutrients to feed the plants. There will be considerable more work done on identifying micronutrients, but the major contribution in the next two decades will be in controlling the environment surrounding both the root zone and the plant above the ground.

Although we know that excessive moisture in the root deprives the plant of oxygen, we have done little to control the atmosphere in the root zone. We will find the effects of various gasses upon the growth and production of plants and then use whatever means is economical and feasible to optimize production. This may mean providing by "aerogation" systems air containing oxygen into the root zone. It might mean that there are microelements which are needed or not needed or which hinder the growth of the plant that will be controlled externally; much as we now irrigate with water, we might irrigate with gasses.

A major part of the physical environment is the thermal environment in both the seedbed, root zone, or plant above the ground. Thermal environment control for trees and low plants include:

<u>Trees</u>

- Electric heating of trees.
- Convection heating.
- Heaters and fans.
- Radiation (surface coatings).
- Shell or tent.
- Spray mist.

<u>Low Plants</u>

- Foam insulation.
- Plastic tunnels or caps.
- Air supported tunnel.
- Heaters (fuel--electricity).
- Radiation.
- Spray mist.

Considerable work is being done now to determine optimum temperatures for certain plant responses. The results of this work will be applied to a greater extent in the future as we intensify crop production. Such techniques as covering vegetables and bush growing fruit with rows of plastic will be used. Rows of trees will be covered with plastic. A large air-inflated plastic tent covering 5 to 10 acres will be used to absorb solar energy to extend the growing season earlier in the spring and later in the fall. The possibility of adding heat by electricity, fuel, etc. for elevating the temperature will be done more than at present.

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Humidity control to control the moisture in the air and at the same time cool the air on hot summer days to reduce respiration losses can be done by misting large areas. Humidity control has been shown to be economical in a few cases for fruits and/or vegetables. More uniform ripening of the crop would be obtained--helpful to mechanical harvesting.

Some plants respond to setting by the length of the day and/or night. The use of lights to influence or control the response of plants, already done widely with flowers, may find use for fruits and vegetables.

Throughout the production cycle we will depend on sophisticated instruments, sensors, automatic controls, remote sensing, and computers to guide us in decision making. These devices will be used to measure environmental stresses on the plants--when to irrigate, infestation by disease and insects, maturity of fruits, adequacy of chemical coverage, etc.

Measurement, evaluation, and control will be carried out with: radiation devices; thermocouples; humidity devices; gas concentration; air movement; sound sensors; spectral analysis; thermal mapping; computers.

The development of the fruit and vegetable industry and trends in the future will be affected more by the desires and demands of society than in the past. These include such forces as:

1. Thou shalt not use pesticides.
2. Thou shalt not put chemicals in soil.
3. Thou shalt not use water of drinking quality to wash fruits and vegetables or to irrigate because of the value of fresh water and shortage possible in the future.
4. Thou shalt not have a monoculture in our ecological system.
5. Thou shalt not do manual work.
6. Thou shalt not eat fat.
7. Thou shalt not transfer land use from recreation to food production.

The evolution of industrialization, including agriculture, is characterized by the following:

1. Greater capital investment.
2. Higher labor productivity.
3. More worker specialization.
4. Increased producer specialization and intensification.
5. Increased dependence on service people and service industries.
6. More people in the society are participants in the economical and social benefits.

The crystal ball shows the following trends:

1. Intensification of production.
2. Specialization of production.
3. Efficiency in use of labor.
4. Utilization of additional external energy input.

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5. Increase in harvest productivity, which includes:
   - Trees in continuous rows.
   - Product on tree on exposed edge.
   - Keep in cultivation during maximum productivity.
   - Remove only quality product.
   - Automate undesirable, degrading tasks.
   - Combine-type units--one man.

Hopefully, these projections are obvious to all of you. The part of engineering in each of these projections may not be so obvious. But engineering is not a separate entity--it is a part of the whole and must relate to the other inputs, particularly the horticultural expertise in fruit and vegetable mechanization and the manpower relationship.

REFERENCES CITED

[1] Cargill, B. F.; and Rossmiller, G. E., eds. *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Mich. State Univ. RMC Rpt. No. 16, 1969.

[2] Davis, Velmar W. "Labor or Capital--The Road Ahead." (See Chapter 3 of this publication.)

[3] Gavett, Earle E. "The Numbers Game." (See Chapter 3 of this publication.)

[4] Mitchell, A. Personal correspondence. Horticulture Department, Michigan State University.

[5] Nicklow, Clark; and Downes, John. Personal correspondence. Horticulture Department, Michigan State University.

[6] Tennes, B. R. Personal correspondence. Agricultural Engineering Department, Michigan State University.

[7] U.S. Dept. of Agriculture. *Agricultural Statistics*. 1968.

[8] _____. "Changes in Farm Production and Efficiency--A Summary." Stat. Bull. No. 233.

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CHAPTER III

THE ECONOMICS OF IT ALL

The Industrialization Process.....J. N. Uhl

The Numbers Game.....Earle E. Gavett

Labor or Capital - The Road Ahead.....Velmar W. Davis

The International Angle.....Kenneth R. Farrell

The Resource Mix - A Michigan Case Study.....A. Frank Bordeaux, Jr.

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THE INDUSTRIALIZATION PROCESS

J. N. Uhl

That the agricultural production and marketing sectors are undergoing fundamental, rapid, and far-reaching changes has been underscored by recent inquiries into the implications of these changes for the structure of farm production [5], the effects of these changes on the food marketing sector [7], their contribution to rural people problems [6], and now in this colloquium the impact of harvest mechanization on farm labor, the fruit and vegetable industry, and the public. The manifestations of these changes in the produce industry are clear. The number of producers continues to decline while their size increases. The marketing sector continues to gain in importance and experience structural change. The supply of farm labor continues to decline as wages rise and newly developed machines for mechanizing production and marketing appear almost daily. Fruit and vegetable producers appear to have mounted the familiar agricultural treadmill and are eager to adopt the next piece of expensive, output-increasing and labor-reducing equipment. At the same time we are witnessing the evolution of new economic relationships in the industry in the form of integration, contracting, and financing. Often these new relationships are fostered by credit requirements or custom arrangements resulting in large part from the new technologies.

The future fruit and vegetable industry will be a product of the technological revolution which is forcing change in the industry all the way from producers to retailers. Moreover, the pace of change promises to accelerate. No better evidence of the inevitability of this process has been presented than the sister seminar of this one conducted last December at Chicago [1]. Even discounting the professional optimism expected from the participants at such a seminar, the papers left little doubt the fruit and vegetable harvest will be mechanized and probably soon. Disagreement seemed limited to the precise mechanics and timing of the process.

I take my task today to describe and evaluate the economic implications of these very probable technological changes in fruit and vegetable harvesting. I wish to make this evaluation, however, in a larger context than harvest mechanization alone. I will discuss harvest technology in the general context of the industrialization of all sectors of the produce industry and of the technological revolution in agriculture in general. I take a systems approach to the industrialization process, recognizing the interdependence of fruit and vegetable production and marketing and the pervasiveness of technological impacts throughout the system. And I suggest that the present and anticipated new technologies will have profound implications for the future economic organization of the entire produce industry. The argument approaches at times what might be termed technological determinism. I am aware of the many factors and forces impinging on economic organization in the fruit and vegetable

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industry, especially the importance of social-political constraints and incentives on economic organization, but I wish to give major weight to technological change in this paper.

My thesis is that harvest mechanization will raise a number of economic issues and problems beyond its immediate impacts on labor requirements and production costs. Further, these second order effects could prove substantial in time. As technological nudges and genuine shocks reverberate throughout the production and marketing sectors of the industry, important changes in economic organization will result. Potentially, these could alter numerous economic relations obtaining in the industry. Without doubt there will be a need for reappraisal of present production and marketing coordinating mechanisms as a result of harvest mechanization. More, the expected technological changes in harvest mechanization raise questions concerning the appropriate goals and values to guide industrialization in the fruit and vegetable industry.

I have organized my paper as follows. First a conceptual basis and my view of the process of agricultural industrialization is presented. This is followed with a description of how this industrialization model relates to the fruit and vegetable industry and an evaluation of the impacts of harvest mechanization for economic organization and coordination in this industry. The final section of the paper presents some policy issues and problems and alternatives arising from the industrialization of the produce industry.

An Overview of the Agricultural Industrialization Process

My view of the industrialization process in agriculture is given in Figure 1. For expository purposes I assume an agricultural industry has inputs in the form of existing firms, productive capacity, personnel, and technologies and skills. Also, we can postulate a social preference function reflecting the industry performance expected or desired by the public and those in the industry such as managers, owners, laborers, farmers, and the like. The central problem of economic organization concerns the coordination and management of these inputs for attaining the desired outputs. Technological change affects this problem primarily through its impact on the kinds of firms and functional configurations which are possible and profitable and the managerial problems these cause.

The economic organization of an agricultural industry refers to the numbers, sizes, and kinds of firms, the distribution of production and marketing functions between these firms, and the coordinating institutions relating these firms and functions to one another. These organizational dimensions of the present fruit and vegetable industry are adequately described elsewhere [8]. As shown in Figure 1, I have borrowed the structuralist notion that economic performance flows directly from these organizational characteristics.

The model postulates two primary determinants of economic organization in agriculture. The first, political-social constraints and incentives involves

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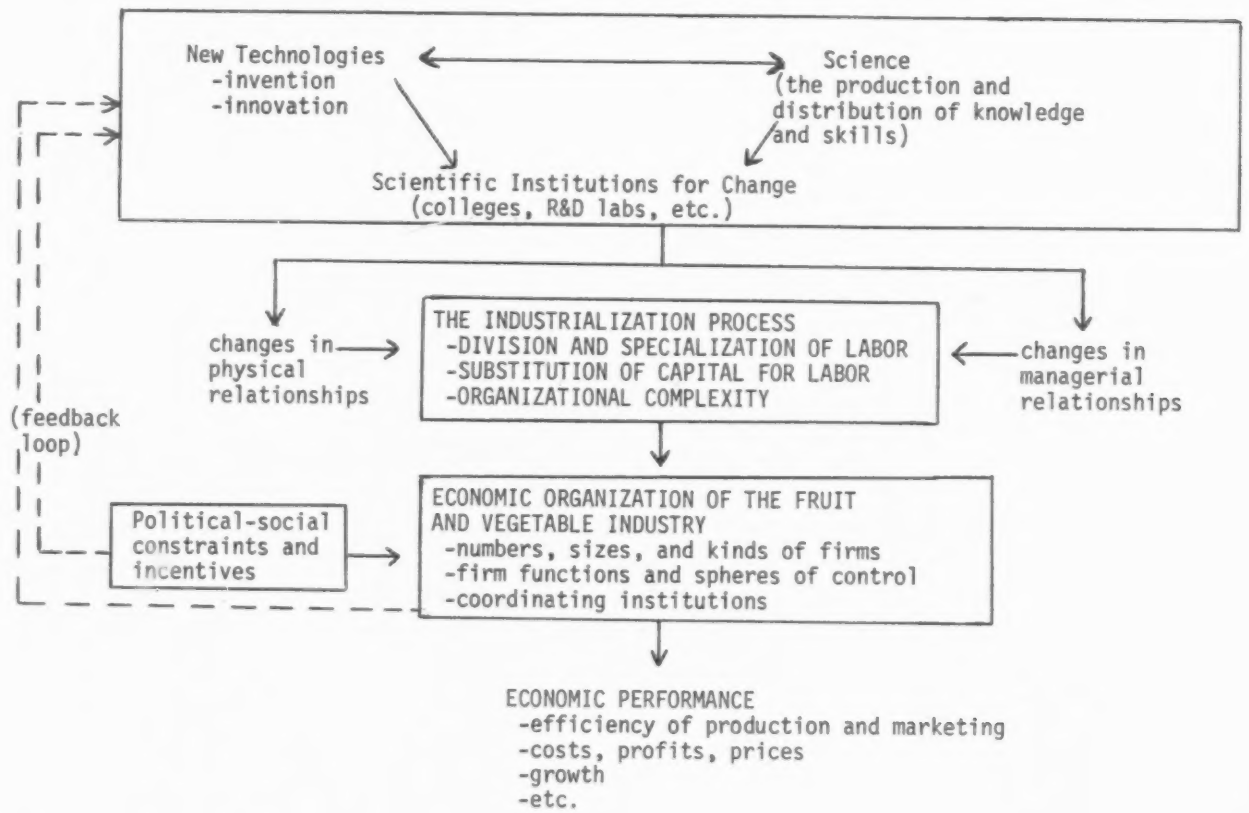
Figure 1. Relationships of Technological Change, Science, and Industrialization To Economic Organization of the Fruit and Vegetable Industry



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the rules, laws, and motivating factors influencing the organizational configurations possible and attempted in an industry. Examples would be the prohibition against retailer integration into meat packing and or anti-trust laws preventing further mergers in the grape processing sector. Tax incentives are also an excellent example of these. These constraints and incentives are very important and occupy much of the time of agricultural economists and lawyers who are concerned with economic organization in agriculture. These laws and rules are primary determinants of economic organization and in addition can exert substantial influence on the development and adoption of new technologies as shown by the feedback loop in Figure 1. Without in the least depreciating their importance, I wish to focus my attention here on the industrialization process as a determinant of economic organization in agriculture.

I take industrialization as synonymous with the division and specialization of labor, the substitution of capital for labor and increasing organizational complexity. The first two of these are familiar economic concepts of classical economics; the third dimension of industrialization is somewhat more recent, having its roots in managerial economics and cybernetics.

The total interaction between the industrialization process as defined here and the economic organization of agriculture deserves more attention than can be given it in this paper. I will simply state, without elaboration but with a few examples, that the organization of production and marketing functions into economic units or firms and the development of coordinating institutions where these functions are not amalgamated into a single firm depends to a large extent on the opportunities for and costs/profits of the division and specialization of labor, the substitution of capital for labor, and the managerial expertise available to the industry. That is to say, the three dimensions of the industrialization process have a major influence on such important economic questions as: how many firms are enough?; how large should these firms be?; what functions should each firm perform?; and how will the behavior and relations of independent firms be coordinated?

A number of examples of these relationships in the fruit and vegetable industry can be cited. A recombination of marketing functions has given a competitive advantage to the fresh produce service wholesaler over the receiver-jobber and independent jobbers in the wholesale terminal markets. In like manner the tomato repacker is a product of division and specialization of labor functions. The present trend toward shifting the produce prepackaging function back to terminal and shipping point markets probably represents a retreat from a suboptimal functional configuration combining the packaging and retailing operations. There have been fewer organizational changes and experiments in the fruit and vegetable processing industry than in the fresh industry in recent years. Moreover, changes in the processing industry appear to have resulted more from capital-labor substitutions and increases in

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managerial expertise than from division and specialization of labor. Many production decisions and even more of the harvesting functions have gravitated from producers to processors of fruits and vegetables in part due to the possibilities for capital intensification and the managerial and product control requirements of the modern processing industry.

As Figure 1 is drawn there are two inputs into the industrialization process: technology and science. Not only is industrialization a product of science and technology, but Shaffer has also pointed out there is an industrialization process underway in science [9]. From these and their interaction in our institutions designed for change flow new capabilities for division and specialization of labor, the substitution of capital for labor, and managerial organization. To complete the chain of events in the model, industrialization in combination with political-social constraints determines the economic organization and performance of the fruit and vegetable industry.

The dual and sometimes conflicting impacts of technological change on industrialization and economic organization should be mentioned. The industrialization process has no conscience and may permit or even force organizational configurations in violation of the political-social constraints or in opposition to the social goals and expected performance of the industry. The report of the National Advisory Commission on Rural Poverty, *The People Left Behind*, is stark evidence of the effect of rapid, unplanned--and perhaps undesirable--industrialization in agriculture [6]. The lesson of postwar agricultural industrialization is that the second order effects of technology on industry and people cannot be ignored.

A number of themes pervade the literature of industrialization. Galbraith has summarized most of these in his new book [2]. Among them is the premise that a modern industrialized economy cannot afford to rely on unexpected technological breakthroughs, which may or may not be forthcoming, and which might disrupt production and marketing plans backed by millions of dollars of investment in machines and demand. The elaborate planning and decision making apparatus, complex technologies and long-term capital commitments of modern industry require that technological development and adoption be institutionalized in a technostructure for the control of technological inputs and management of demand. The upper portion of Figure 1 portrays the strategic position of this technostructure in agricultural organization and performance.

The goals and values of this technostructure in the fruit and vegetable industry will have a substantial effect on the pace, directions, and magnitude of impacts of future technological change in the industry. Both the implicit and explicit values guiding industrialization in the industry will be introduced through the scientific-technological institutions feeding the industrialization process. Considering the importance of this process for economic organization and performance, we have a right and a responsibility to inquire into the values of this technostructure. It is becoming increasingly clear we must add a social

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dimension to the decisions of agricultural policy makers, researchers, and extension workers determining the allocation of funds between machine and people problems, the kinds of machines developed and the extent and magnitude of labor displacement and the dissemination of new technologies. Unfortunately, we are lacking in mechanisms for introducing social values into these decisions. As a result, I judge the present value system of the agricultural techno-structure, emphasizing the two blades of grass philosophy and technical efficiency, as shallow and inappropriate for a modern, industrialized economy. I have also drawn a feedback loop from economic organization and the political-social environment to the technological-scientific establishment. This is to indicate that many of our laws and institutions and the present economic organization of agriculture will affect investments in future products of technology. There is a correlation between economic concentration in U.S. industry and national R & D expenditures. While this relationship is apparent, we do not know the precise qualitative effects of industrial organization on technological investment yet. I merely point out that the distribution and organization of the economic pie today will influence the ingredients and size of tomorrow's pie.

The Evidence for Agricultural Industrialization

The description of the industrialization process in Figure 1 provides the criteria for measuring the process. Productivity advances with consequent increases in earnings, transfer of resources to other employment and an up-grading of the human condition can be the only justification for industrialization. However, there is no guarantee that productivity gains will be satisfactorily translated into a higher quality of life as the recent *Social Report* makes clear [12].

The outward manifestations of the agricultural industrialization process are given in Table 1. In 1967 the index of farm employment stood at 36% of its 1910-14 base, compared to 52% just 7 years earlier in 1960. At these rates the release of labor resources and increases in productivity have been substantial. Accompanying the decline in manpower, the index of farm labor man-hours used in 1967 stood at 70% of the 1957-59 base. During these 10 years the index of farm mechanical power and machinery use increased 12%. This measure of mechanization does not suffice to fully explain the 30% decrease in labor man-hours because of changes in the quality and productivity of newly developed machines.

With these technological injections the index of farm output rose 18% between 1957-59 and 1967 while the index of farm productivity (total output divided by total input) rose 8%. But the impact of industrialization on labor use and release is reflected in a 69% increase in farm output per man-hour over this period. These changes for farm output use and productivity were stimulated by and caused by changes in the relative prices of farm inputs.

According to Table 1, the index of hired farm wage rates rose 34% between 1960 and 1967 compared to a 21% gain in the index of prices paid for farm machinery and a 14% increase in the index of farm prices paid for all items. In 1968 hired farm labor accounted for 8.3 cents of the farm expense-production dollar in contrast to 14.5 cents in 1950 [10].

These brief statistics are sufficient evidence of the implications of new technology and industrialization for agriculture. They indicate first of all an extremely rapid substitution of capital for labor in farming. Concurrent measures of the division and specialization of labor and organizational complexity with these factor substitutions are not available, but it is evident the full triad of industrialization dimensions has been operating in agriculture.

Figure 2 shows that industrialization, as reflected in productivity trends, has not proceeded equally in all farm enterprises. Although total farm labor man-hours were more than halved between 1950 and 1967, productivity gains were rather small in fruit and nut farming for this period and not impressive for vegetable production in recent years. The preceding technical seminar indicated there are numerous innovations and inventions on the horizon which might produce more satisfactory productivity gains for these crops in the near future. In the long run these gains might be linked to new cultural practices fostered by harvest mechanization. There may well by a synergistic effect to harvest and production mechanization. Nevertheless, productivity in fruit and vegetable production will continue to rise slower than the rest of agriculture. Table 2 indicates the index of farm labor man-hours used in fruit, nut, and vegetable farming has not followed the labor-use trends in other agricultural sectors.

On the face of it these figures indicate the fruit and vegetable industry has been somewhat of an island against industrialization in the postwar period. In large measure this reflects the difficulty of substituting capital for labor in the production and harvesting of the crops. On the other hand, the industrialization process has proceeded in the industry when viewed in terms of the other dimensions of industrialization division and specialization of labor and organizational complexity. However, in light of rising wage rates and reductions in labor supply, economies from these aspects of industrialization have not compensated the industry for the costs of failing to increase this capital/labor ratio materially.

Implications of Fruit and Vegetable Harvest Mechanization for Economic Organization and Performance

If Figure 1 is an accurate portrayal of the links between technological change, industrialization, economic organization, and industry performance, it ought to be useful in predicting the impacts of harvest mechanization on the organization of the fruit and vegetable industry. And more, it should provide some insights into the implications of this mechanization for farmers, marketing firms, agricultural resource adjustment, economic relationships

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Table 1. Measures of the Industrialization Process in U.S. Agriculture, 1910-67

Year	Index of farm Employment[a]		Index of Farm Input Use[b]			Index of Farm Prices Paid[c]			Index of Farm Output		Index of Farm Productivity[b]
	Total	Hired	Total Inputs	Labor Man-hours	Mechanical Power, Machinery	All Items[d]	Hired Wage Rate	Farm Machinery	Total Output[b]	Output per Man-hour[c]	
	1910-14=100		1957-59=100			1910-14=100			1957-59=100		
1910	100	100	--	--	--	97	96	100	--	--	--
1920	99	100	--	--	--	214	241	166	--	--	--
1930	92	94	--	--	--	151	177	152	--	--	--
1940	81	79	87	192	42	124	129	153	70	36	72
1950	73	69	101	142	86	256	425	275	86	61	85
1955	--	--	102	120	99	--	--	--	96	80	94
1960	52	55	101	92	104	300	631	382	106	115	105
1965	41	44	104	74	105	321	728	426	114	154	110
1967	36	37	109	70	112	342	848	462	118	169	108
1968[e]	--	--	--	--	--	--	--	--	120	179	--

[a] *Agricultural Statistics*, USDA, SRS, 1962, p. 526, 1968, p. 446.
[b] *Changes in Farm Production and Efficiency*, USDA, Stat. Bull. 233, June, 1968.
[c] *The Farm Cost Situation*, USDA, ERS, February 24, 1969.
[d] Includes commodities bought, interest, taxes, and wages.
[e] Preliminary.

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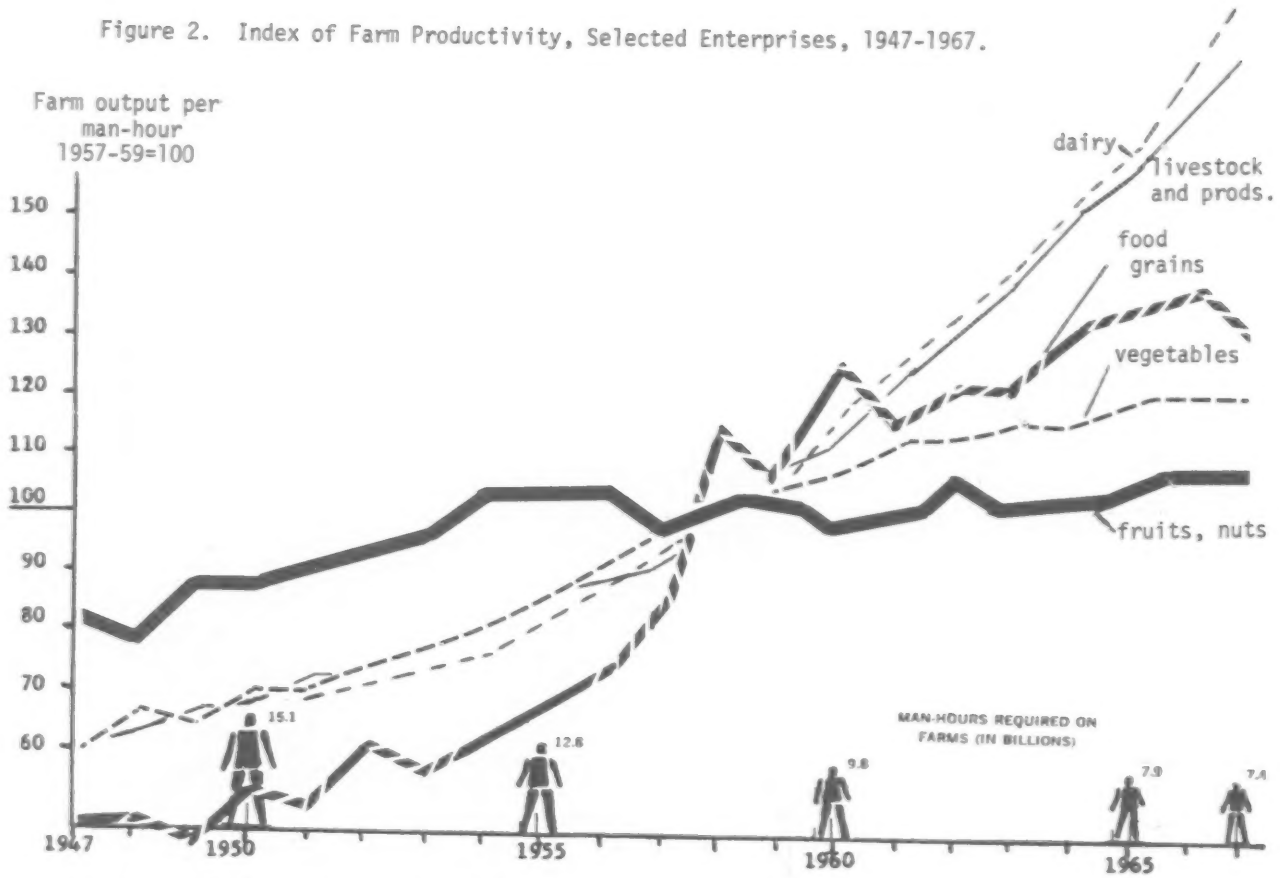
Figure 2. Index of Farm Productivity, Selected Enterprises, 1947-1967.



Source: U.S. Department of Agriculture

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between the production and marketing sectors, and vertical coordination in the fruit and vegetable industry.

Harvest mechanization can be expected to alter both the structure of fruit and vegetable production and marketing. Through economies gained by mechanization and by freeing producers from the allied, human related costs of hand labor in the harvest process, the optimum sized producing and harvesting unit may increase substantially. Assuming for the moment the machines will be owned by farmers and nontransferable between producing units, the lumpiness of these large machines may dictate such large acreages as to require marked changes in the size-distribution of fruit and vegetable farms. Experiences in farm mechanization suggest that new technology probably will be output increasing and encourage larger producing units. This process can set up rather serious and irreversible disparities in the sizes and costs of fruit and vegetable producing units.

Table 2. Labor Use in Farming and In Fruit and Vegetable Production, 1910-67

Year	Index of Farm Labor Man-hours Used				
	All Farm Work	Livestock, & Livestock Products	Crops	Vegetables	Fruits & Nuts
			1957-59=100		
1910	213	144	259	144	139
1920	226	153	275	164	135
1930	216	157	252	184	137
1940	193	154	213	175	132
1950	142	130	142	140	111
1960	92	90	94	95	95
1965	73	70	76	90	81
1967	68	64	72	93	81

Source: U.S. Dept. of Agriculture. *Changes in Farm Production and Efficiency*, ERS, Stat. Bull. 233, June, 1969, p. 13.

Among marketing firms-processors, shipping point firms, and wholesalers--the immediate effect of harvest mechanization on the numbers and sizes of firms will depend on their participation in the development of the new technologies and their prior relationships to the production process. In the event marketers are very active in the industrialization of harvesting, as has been the case for some processing crops, those firms large enough to be in on the ground floor of the new technology might gain some short-run advantage over less research-oriented and well-financed competition. However, I believe confidence

can be placed in our agricultural machinery industry to rapidly disseminate new technologies and dissipate these short-run advantages.

For those marketing firms partially integrated with producing units at present, either by contract or in other ways, harvest mechanization may be the spark to complete the marriage. Some marketing firms have not integrated into production because of the costs of transferring a unionized labor force into agriculture and other problems of farm labor management. These barriers to integration will in all likelihood fall with harvest mechanization. There is precedent in the broiler industry for hypothesizing a relationship between farm mechanization-industrialization and both horizontal and vertical integration as well as merger activity. The industries are by no means totally comparable but there is definitely an interaction between industrialization of a key technological bottleneck such as produce harvesting and an aggressive marketing sector. I have the impression that pent-up structural changes in the production and marketing sectors of a number of enterprises, including hogs and fruits and vegetables, will be suddenly released with presently anticipated technologies. For fruits and vegetables, harvest mechanization could be a trigger for large-scale structural change.

New technologies fostering greater specialization and division of labor and improved managerial processes will likely also affect the kinds of firms and firm-configurations found in the fruit and vegetable industry. Barring changes in the financial structure of fruit and vegetable producers, the large capital investments required by harvest mechanization will almost certainly increase the financial dependence of producers on the marketing sector. Also, ownership of the new machines could serve as a vehicle for transferring more of the production functions and decisions to the marketing sector. If present firms are unwilling or unable to assume these functions and financial obligations, new firms will evolve and do so with a competitive advantage and displace the old. If producers wish to maintain control of the new technologies they may seek new organizational forms. Cooperative ownership of the machines is a possibility, but other organizational means are also conceivable. Or, a new firm-configuration may evolve specializing in the harvest process. To the extent these new firm types and configurations represent more efficient organizational forms, of course, they affect resource allocation to and within the fruit and vegetable industry.

The anticipated new technologies may also change the balance of economic power between the fruit and vegetable production and marketing sectors. The National Commission on Food Marketing stated that producers of both fresh and processed fruits and vegetables were in a weak bargaining position in their relations with shipping point firms and processors. And further, producers in both cases were residual income recipients largely due to the monopsonistic marketing channel to which they sell and their lack of flexibility in selling a product not subject to storage and deteriorating in quality with time [7,p.50,54].

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Ownership and control of the new harvesting technologies would probably provide shippers and processors with another unit of power in their relationships with growers. However, control of the technologies by producers may not provide symmetrical power. For mechanization to alter the balance of economic power between the production and marketing sectors, it alone or in system-combination with other technologies elsewhere in the production process would need to give producers greater control over flow-to-market of their products. An example would be a combination of the harvest mechanization technology with a storage technology to alter the producer's reservation demand or timing of harvest or release of raw product.

Related to both the optimum structure of fruit and vegetable production and marketing and efficient firm configurations is the issue of coordination in the industry. There is a crucial interdependence between the fruit and vegetable production and marketing sectors which requires close coordination of nonintegrated activities in both sectors. In the fresh industry this derives from the urgency of marketing a highly perishable crop for which product quality and time in the marketing process are inversely related. For processing crops, coordination of raw product harvest and delivery with processing operations requires elaborate scheduling; the biological timing of flow of raw products and high fixed costs of the processing plants provide incentives for this coordination.

As a result of these product and marketing characteristics, there are a number of marketing institutions in both the fresh and processed sectors facilitating coordination of the production, harvest, and marketing processes. In both sectors harvest mechanization may have substantial impacts on these coordinating mechanisms. For example, production-to-specification is becoming more common for fresh produce as retailers and wholesalers attempting to schedule special sales increase the quality of products sold or engage in forward contracting reach back to control the production processes. To the extent harvest mechanization releases producers from the uncertainties of hand labor and permits more accurate scheduling of production, harvest, and delivery, it will encourage production to specification. With full control of the production processes and complete mechanization of harvest, we may include quality, timing, and prices as additional specifications in the fruit and vegetable blueprints prophesized by C. W. Hall in the technical seminar on harvest mechanization [3, pp. 825-26]. As a vehicle for more explicitly transmitting consumer and retailer demands to producers, product specification buying will likely have a major impact on whether or not the product quality of mechanical harvesting is acceptable and the rate of adoption of the technologies. Particularly in the fresh sector, decreases in product quality as a result of mechanization will be a serious barrier to dissemination of the new technologies. Considering the importance of fresh product quality, a two-price system could develop during the transition period of mechanization,

a premium price for hand harvested crops and a discounted price for machine harvested crops. Such a pricing scheme may attract local labor into farm employment.

For processing crops, harvest mechanization will at the same time increase the potentialities for scheduling of production and delivery to plants and probably also make it necessary to develop more stringent coordinating institutions to prevent the harvest and delivery gluts made possible by mechanization. Most certainly plant delivery schedules in contracts will become more common and more frequently enforced. In addition, the effects of mechanization on quality will require more control over the production and harvesting process on the part of processors, facilitating integration and further strengthening the bonds between growers and processors.

Not infrequently a technological change at one point in a system puts strains on the system elsewhere and seriously taxes coordination throughout the whole channel [4]. We ought to consider what technologies in fruit and vegetable processing will be complementary to harvest mechanization. Receiving and handling systems would appear likely candidates as succeeding technological bottlenecks in the fruit and vegetable marketing channel. At its 1969 meeting, the Horticultural Crop Research Advisory Committee noted that mechanical harvesting of fruits and vegetables has developed to the point where product damage, nonuniformity, and contamination are increasing processing costs and research is needed to assist processors in reducing these costs and make better use of mechanically harvested crops [11, p. 19].

Conclusions and Policy Implications

If the industrialization process in the agricultural industries is as pervasive as I have suggested and rebounds throughout the economy--from the organization of scientific and business resources for stimulating technological change to the economic organization and performance of agriculture--as my model postulates, then a number of policy issues and alternatives become evident. The most significant of these concerns the control of and planning for new technologies. In order that technological change will serve rather than dictate, we need to better understand its impacts on the industry, resource use, and the public in general. Such understanding will provide a basis for planning and control of technological shocks.

Related to the issue of control, whose goals and values will direct technological change in agriculture? Should agricultural engineers be concerned with the people problems resulting from rapid labor displacement? Should the processor and grower attitudes toward mechanization be the guiding force? What should be the ratio of public dollars spent for developing agricultural machinery and assisting people to adjust to technological change? Where in the agricultural technostructure does the responsibility rest for considering the total economic and social ramifications of research accelerating the industrialization process in the fruit and vegetable industry?

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The magnitude of changes to be expected from the industrialization process in agriculture suggests a need for a technological policy. Such a policy would involve the setting of goals, priorities, and timetables to program the rate of development and dissemination of new technologies. Social preference functions could and must be built into such a policy. We may want to structure a program of technological change for maximum displacement of agricultural labor in the shortest time, assuming appropriate human and non-human resource adjustment policies also were instituted. Or, our institutions for change could be organized differently for other purposes; for example, the goal may be to simply alter seasonal labor patterns. Another alternative would be a policy to design machines around the people we want to stay in agriculture. These alternative policies and technological programs may differ substantially in the kinds of machines developed, the rate of development, and the accompanying incentive for adoption of technology. I can envision a need for new institutions such as technological orders, analogous to fruit and vegetable market orders, to regulate the development and dissemination of new technologies and assist in resource adjustments resulting from consequent structural changes. It is not necessary to reiterate that changes in social-political constraints and incentives would be an integral part of such a technological policy.

Beyond the issues concerning the institutions for technological change, the industrialization process challenges the foundations of some of our agricultural production and marketing institutions. The family farm in its present form may not be a viable economic unit in a fully mechanized economy. Whether cooperatives and corporate forms and the agricultural supply industries are appropriate to agricultural industrialization is another issue. And in the event fruit and vegetable producers wish to finance and control mechanization in their industry, the agricultural credit and financing institutions will face a stern test.

The social costs of mechanization and labor displacement in the fruit and vegetable industry may be substantial. Industrialization poses a policy dilemma in that the costs of industry and resource adjustments, as well as upgrading of labor skills resulting from labor displacement, must be balanced against the increased productivity and wages of workers remaining in agriculture. The National Commission on Food Marketing studied the economic impacts of the termination of the Bracero program in 1964 and reported that while there were consequent product and quality losses affecting shipper and processor operations, employment and earnings of domestic harvest workers rose [7, p. 100]. The latest figures indicate that pay for regular hired farm workers has continued to increase at a faster rate than wages for seasonal workers in recent years [10]. For the future we will need clearly enunciated policies concerning who and how many will stay in agriculture and detailed programs for reaching these goals.

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In summary, I have suggested there are some interrelations between the pace of technological change, the extent of industrialization and economic organization, and performance in the fruit and vegetable industry. All the evidence points to an unwillingness to await accidental invention and technological change today and to a need to adjust the entire industry to and formulate policies in anticipation of technological changes. Viewed in this way, technology could prove to be a formidable policy tool affecting the manner in which industry resources are organized and the performance of the fruit and vegetable industry. Concentrated efforts to better understand and plan for the economic implications of technology, as represented by this colloquium, should move us further along in our goal of industrialization in agriculture.

REFERENCES CITED

[1] Cargill, B. F.; and Rossmiller, G. E., eds. *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Mich. State Univ. RMC Rpt. No. 16, 1969.

[2] Galbraith, J.K. *The New Industrial State*. Boston: Houghton Mifflin Co., 1967.

[3] Hall, C. W. "The Future World of Fruit and Vegetable Mechanization." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 825-832.

[4] Mighell, R. L. "Research on Coordination in Agricultural Production and Marketing." Paper presented to North Central Regional Committee-20, Chicago, Illinois, Oct. 29, 30.

[5] National Advisory Commission on Food and Fiber. *Food and Fiber for the Future*. Wash., D.C.: Government Printing Office, July, 1967.

[6] National Advisory Commission on Rural Poverty. *The People Left Behind*. Wash., D.C.: Government Printing Office, September, 1967.

[7] National Commission on Food Marketing. *Food from Farmer to Consumer*. Wash., D.C.: Government Printing Office, June, 1966.

[8] _____. *Organization and Competition in the Fruit and Vegetable Industry*. Tech. Study No. 4, Wash., D.C.: Government Printing Office, June, 1966.

[9] Shaffer, J. D. "The Scientific Industrialization of the U.S. Food and Fiber Sector: Background for Market Policy." *Agricultural Organization in the Modern Industrial Economy*. Ohio State University, Dept. of Agricultural Economics and Rural Sociology, NCR-20, 1968, 1-14.

[10] U.S. Dept. of Agriculture. *The Farm Cost Situation*. ERS, Feb. 24, 1969.

[11] _____ *Report and Recommendations of the Horticultural Crops Research Advisory Committee*. April 21-25, 1969.

[12] U.S. Dept. of Health, Education, and Welfare. *Toward a Social Report*. Wash., D.C.: Government Printing Office, 1969.

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THE NUMBERS GAME

Earle. E. Gavett

Acreages of fruits and vegetables has declined since 1944-48, while value of production as a proportion of total crop value has held quite steady. In 1964-68, fruits, nuts, and vegetables represented about 2% of the cropland and 24% of the value of all crops (Tables 1 and 2). In comparison, corn was grown on 19% of the cropland and contributed 27% of the value of all crops. Fruits, nuts, and vegetables contributed about 11% of the value of total farm output in 1964-68. It is readily apparent that we are concerned with high value crops.

Fruit and vegetable production is largely on specialized farms. In 1964, Census reported fewer than 80,000 commercial fruit, nut, and vegetable farms--57,000 fruit and nut, and 23,000 vegetable. These farms sold $2.2 billion, or 80% of the $2.7 billion fruits and vegetables sold.

Table 1. Acreage of Fruits and Vegetables Compared with Corn and All Crops, United States, Selected Periods, 1944-68[a]

Selected Periods	Acreage of Cropland				Percentage of Total Cropland		
	Fruit and Tree Nuts	Vegetables[b]	Corn	Total Crops	Fruit and Tree Nuts	Vegetables[b]	Corn
	Mil. Acres	Mil. Acres	Mil. Acres	Mil. Acres	Percent	Percent	Percent
1944-48	3.8	4.1	78	366	1	1	22
1949-53	3.6	3.8	73	349	1	1	21
1954-58	3.0	3.7	66	332	1	1	20
1959-63	2.9	3.3	63	308	1	1	20
1964-68	3.0	3.4	57	301	1	1	19

[a]Farm Income Situation, USDA-ERS, FIS-211, July 1968.
[b]Includes potatoes.

Of these fruit and vegetable farms about 34,000 were located in the Pacific Region, and they produced half of the commercial farm output. The Southeast had over 11,000 commercial farms and one-fourth the output. The Northeast and Lake States were the remaining important regions.

In 1964-68, fruits, nuts, and vegetables used an annual average of 866 million man-hours of labor. This was 12% of all farm labor used and 24% of that used on crops. Because of the seasonality of production and the high peak seasonal labor demand, fruit and vegetable production relies heavily upon hired labor--particularly seasonal hired [2].

Table 2. Farm Value of Fruits and Vegetables Compared with Corn and All Crops, United States, Selected Periods, 1944-68[a]

Selected Periods	Value of Production				Percentage of Value of All Crops		
	Fruit and Tree Nuts	Vegetables[b]	Corn	Total Crops	Fruit and Tree Nuts	Vegetables[b]	Corn
	Mil. Dols.	Mil. Dols.	Mil. Dols.	Mil. Dols.	Percent	Percent	Percent
1944-48	1.4	1.6	--	11.2	12	14	--
1949-53	1.1	1.7	4.2	13.3	8	13	32
1954-58	1.3	1.7	3.7	13.5	10	13	28
1959-63	1.6	1.9	4.1	15.8	10	12	26
1964-68	1.8	2.6	4.7	18.1	10	14	27

[a]Farm Income Situation, USDA-ERS, FIS-211, July 1969.
[b]Includes potatoes.

In the 1966 ERS Pesticide and General Farm Survey, 55% of the labor input on fruit and nut farms was hired. One-third of the total labor input was by seasonal hired workers. On vegetable farms, the proportions were 54% hired and 42% by seasonal hired. In contrast, cash grain farms had a labor input composed of 18% hired, but only 6% was by seasonal workers. With over half of the labor input on all fruit and vegetable farms being hired, increases in wage rates and changes in labor sources and availability have important consequences for these industries.

We do not have complete aggregate input data to show the importance of hired labor on fruits and vegetables. But the 1964 Census of Agriculture did obtain data on certain specified expenditures: (1) fertilizer and fertilizing materials; (2) gasoline, oil, and other fuel; (3) seeds, bulbs, plants, and trees; (4) hired labor; and (5) machine hire, custom and contract work. This is by no means a complete list of inputs. Excluded are such major charges as pesticide materials, land rent, depreciation on equipment, interest on capital investment, repairs and maintenance, licenses and insurance, interest on production capital, and taxes and miscellaneous charges. These specified expenditures are important on fruit and vegetable farms.

Commercial fruit and nut farms spent for hired labor in 1964 an average of $119 per acre of land in fruits. In addition, $41 was spent on machine hire, custom and contract work.

These two categories accounted for 32 of the 41% that the specified expenditures were of the gross value of fruits and nuts per acre (Table 3).

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On Class I farms, $200 per acre was spent on hired labor, machine hire, and contract work--one-third of the gross sales.

Table 3. Commercial Fruit and Nut Farms, Value of Output and Specified Expenditures per Acre, 1964

Region	Fruit and Nut Sales	Specified Expenditures					
		Fertilizer and Materials	Gasoline and Other Fuel	Trees and Seed	Hired Labor	Machine Hire, Custom & Contract	Total
	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.
			All Farms				
Northeast	501	20	19	7	160	16	222
Lake States	401	18	17	7	120	16	178
Corn Belt	391	14	16	7	114	8	159
No. Plains	346	9	11	4	92	2	118
Appalachian	376	19	16	5	113	10	163
Southeast	510	47	11	4	62	52	176
Delta States	144	17	8	3	34	9	71
So. Plains	141	20	11	6	51	11	99
Mountain	478	25	19	6	139	23	212
Pacific	562	20	17	6	150	49	242
U.S.	506	27	15	6	119	41	208
% of Total	100	5	3	1	24	8	41
			Class I Farms				
Northeast	570	22	19	8	201	17	267
Lake States	503	19	18	8	171	19	235
Corn Belt	495	17	17	12	192	8	246
No. Plains	--	--	--	--	--	--	--
Appalachian	415	19	17	4	143	10	193
Southeast	602	49	11	4	71	60	195
Delta States	99	13	5	1	26	4	49
So. Plains	141	24	10	3	52	9	98
Mountain	--	--	--	--	--	--	--
Pacific	655	22	17	7	192	62	300
U.S.	609	31	14	6	146	54	251
% of Total	100	5	2	1	24	9	41

Source: U.S. Census of Agriculture.

On vegetable farms, $124 per acre of vegetables was spent for hired labor with $25 more for machine hire, custom and contract work. These items accounted for 38% of the specified expenditures. At $216 per acre, these expenditures amounted to 55% of the gross value of vegetables sold per acre. On Class I vegetable farms, hired labor amounted to 33% of sales and machine hire and contract work 7% (Table 4).

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Table 4. Commercial Vegetable Farms, Value of Output and Specified Expenditures per Acre, 1964

Region	Vegetable Sales	Specified Expenditures					
		Fertilizer and Materials	Gasoline and Other Fuel	Seed, Bulbs etc.	Hired Labor	Machine Hire, Custom & Contract	Total
	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.
			All Farms				
Northeast	288	36	17	18	92	7	170
Lake States	171	18	11	11	41	5	86
Corn Belt	290	22	17	15	90	16	160
No. Plains	250	14	15	13	41	6	89
Appalachian	252	33	17	16	70	17	153
Southeast	500	61	17	10	125	32	245
Delta States	204	23	17	10	42	6	98
So. Plains	201	19	16	11	62	13	121
Mountain	649	46	23	14	197	39	319
Pacific	506	37	16	15	181	41	290
U.S.	396	37	16	14	124	25	216
% of Total	100	9	4	4	31	6	55
			Class I Farms				
Northeast	319	37	15	22	115	8	197
Lake States	209	18	10	12	66	5	111
Corn Belt	547	37	24	22	181	26	290
No. Plains	--	--	--	--	--	--	--
Appalachian	--	--	--	--	--	--	--
Southeast	600	69	17	10	150	39	285
Delta States	516	19	15	7	242	--	283
So. Plains	290	26	19	14	96	22	177
Mountain	--	--	--	--	--	--	--
Pacific	525	37	16	15	193	44	305
U.S.	479	42	16	15	159	34	266
% of Total	100	9	3	3	33	7	56

Source: U.S. Census of Agriculture.

On fruit and vegetable farms labor is the largest single input, and most of it is hired. How does the output of this labor compare with that used on other crops? Man-hours per $100 of production for vegetables is the same as for all crops at 17 hours (Figure 1). Fruit requires more labor per $100 than all other major crops except tobacco. Yet, on an hours per ton basis, both cotton and tobacco used more labor than fruits and vegetables (Figure 2).

Labor productivity varies immensely among major fruit and vegetable crops. Man-hours per ton on fruits range from 6 for oranges to 221 on strawberries. For vegetables, man-hours ranged from 6 on potatoes to 24 on snap beans.

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Figure 1

SELECTED CROPS:
MAN-HOURS PER $100 PRODUCTION,
1964-68

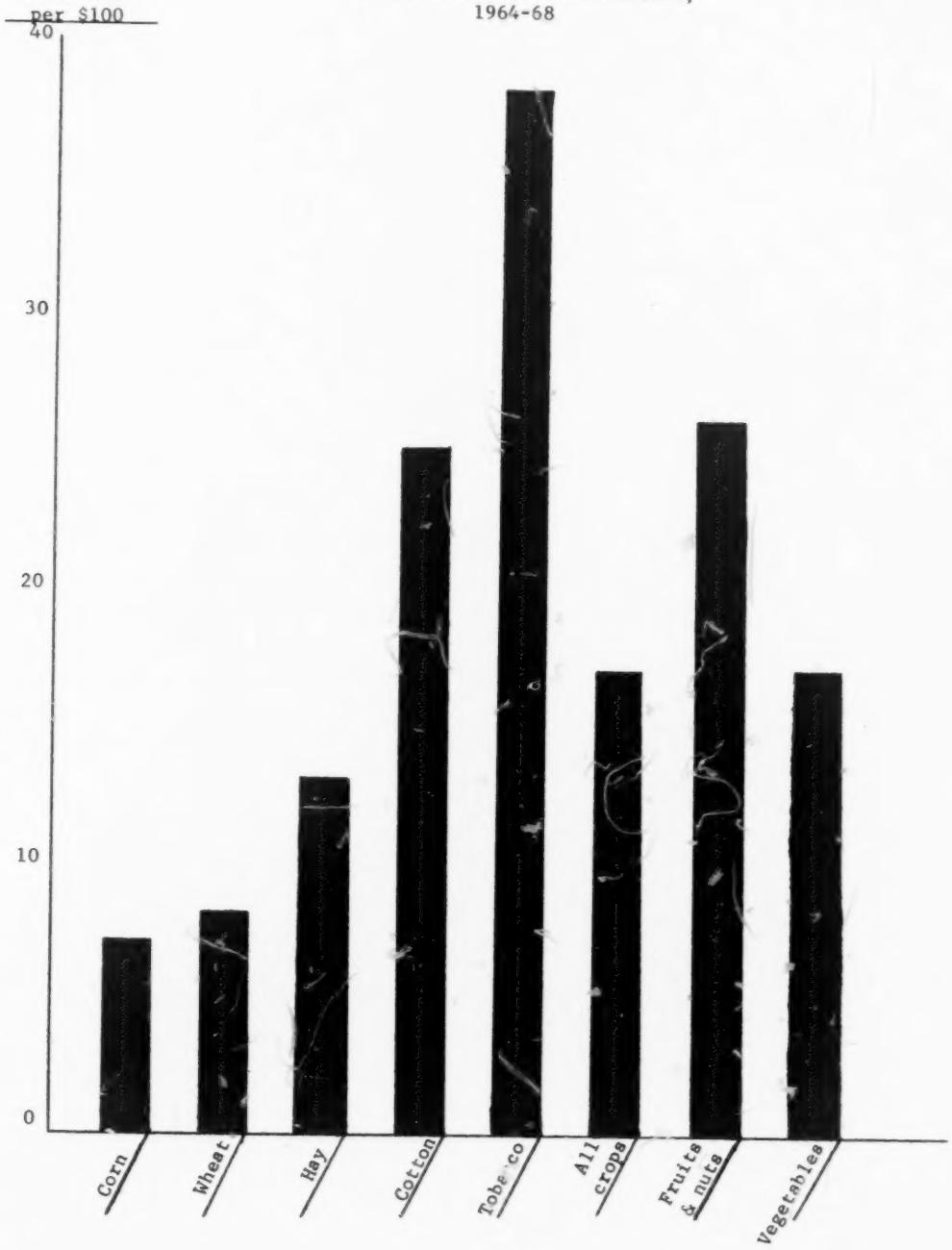

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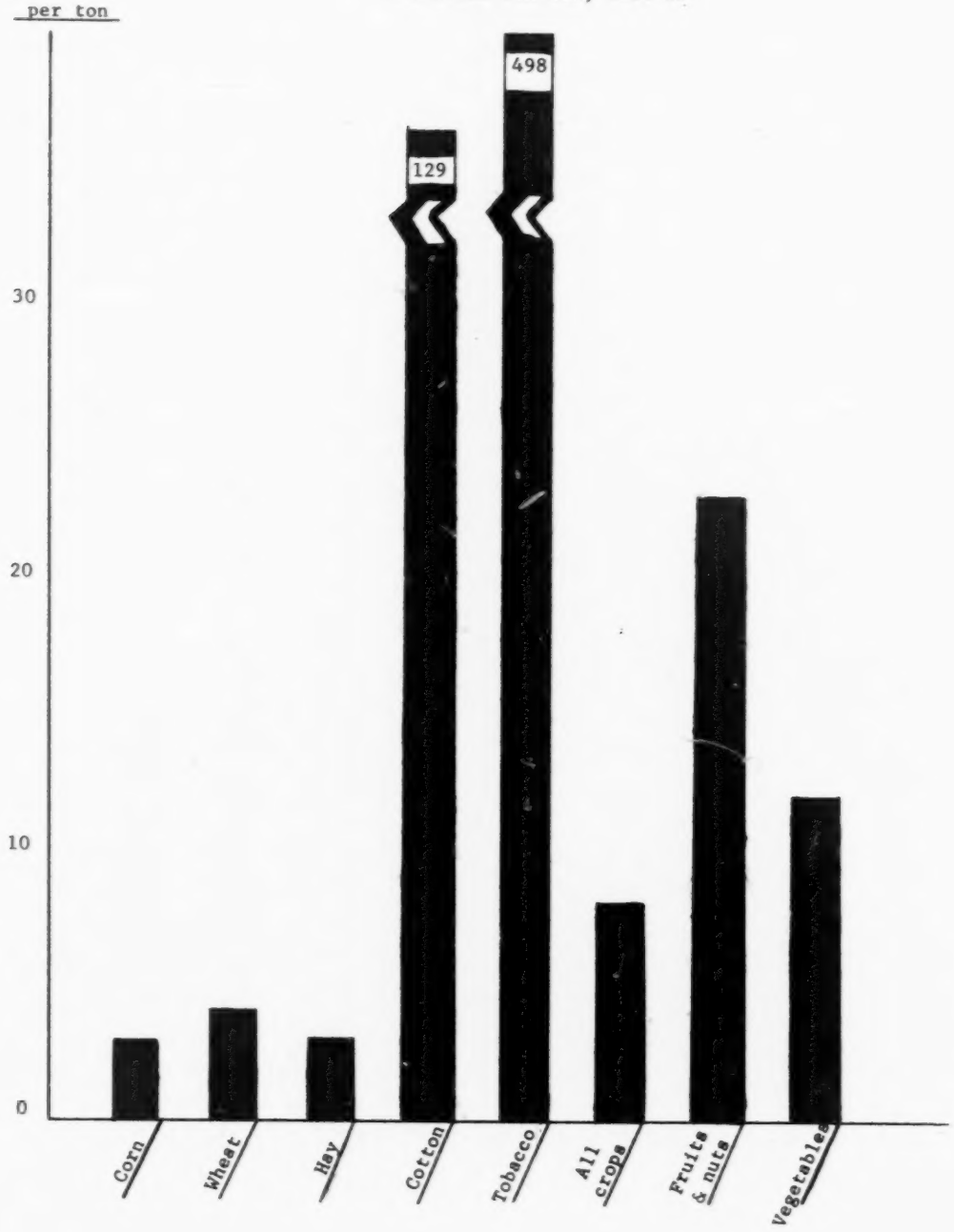
Figure 2

SELECTED CROPS:
MAN-HOURS PER TON, 1964-68



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For some crops mechanical harvesting still hasn't been perfected that will permit reduction in labor use. Yet, there is hope for producers. Substantial preharvest labor can be eliminated by a better mix of inputs. Consider fertilizer, for example. The largest single input other than hired labor and machine and contract work on fruit farms is fertilizer. (Pesticides expense may be more important on fruit farms, but was not obtained in the 1964 Census.) On vegetable farms only hired labor expenditures exceeded that for fertilizer. On a per acre basis vegetables took $37 of fertilizer; fruits, $27.

Not all of this fertilizer was used to advantage. Fruit farmers often apply too much of the wrong elements. Ibach found that in 1964 the same per acre fruit and nut production in Southern California could be achieved with 18 pounds more nitrogen and 100 pounds less P_2O_5 and 86 pounds less K_2O [3]. Imputing 1964 fertilizer prices to these elements indicates that these producers were spending $11 per acre unnecessarily. With price reductions occurring in nitrogenous fertilizer the same output could be achieved in 1969 for less than $15 per acre or $4 below the 1964 input (Table 5).

In contrast, vegetable producers in San Joaquin Valley, California were materially under fertilizing in 1964. They achieved average yields of 8.4 tons worth $735 per acre using $15.55 of fertilizer. Yet, for $12 more they could have attained yields of 10.5 tons worth about $920 (Table 6). This is a 25% yield increase or $15 for each additional dollar invested in fertilizer. Translated in another manner, producers could have achieved the same production on one-fifth fewer acres thus saving the cost of land rent and preharvest inputs such as land preparation, water, seed, and weeding on these unneeded acres. In addition, increased output per hour in both hand and machine harvest is associated with higher yields.

Soil tests or foliar analyses are important management tools in the production of these crops. As labor costs rise relative to other inputs, producers need constantly to reappraise their input mix.

Another major input on fruits and vegetables is pesticides. They are essential to the production of high quality products. Pesticide usage on fruits, nuts, and vegetables exceeded $123 million in 1964 and was greater than for any other crop or group of crops [4]. From 1964 to 1966, value of pesticides used on fruits, nuts, and vegetables rose nearly 6% to almost $131 million. Again, fruits and vegetables used more chemicals than any other crop or group of crops. Expenditures per acre treated in 1964 averaged $13.42 for vegetables and $53.40 for apples. Similar expenditures per acre for 1966 show $10.94 for vegetables and $54.80 for apples. Examining the major components of pesticicides reveals that insecticides constituted more than half the 1966 expenditures on vegetables and 62% of that on fruits (Tables 7-9). Herbicide use, while small compared with insecticides, was important and increasing--nearly doubling on vegetables and almost tripling on fruits from 1964 to 1966. On potatoes, in addition to killing weeds, herbicides are utilized in large amounts in the form of vine

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Table 5. Fruits and Nuts: Response to Fertilizer, Southern California (ASR-96)[a]

Level of Use	Fertilizer Inputs per Acre, 1964[b]							Production Per Acre	
	N		P_2O_5		K_2O		Total Cost		
	Lbs.	Dols.	Lbs.	Dols.	Lbs.	Dols.	Dols.	Tons	Value[c]
0	--	--	--	--	--	--	--	7.2	455
1	40	4.76	--	--	--	--	4.76	7.8	493
2	80	9.52	--	--	--	--	9.52	8.2	519
3	120	14.28	--	--	--	--	14.28	8.5	538
4	160	19.04	--	--	--	--	19.04	8.6	544
Avg.	142	16.90	100	8.99	85	4.33	30.32	8.6	544
	Fertilizer Inputs Per Acre, 1969[d]							Tons	Value[e]
0	--	--	--	--	--	--	--	7.2	450
1	40	3.70	--	--	--	--	3.70	7.8	488
2	80	7.39	--	--	--	--	7.39	8.2	514
3	120	11.09	--	--	--	--	11.09	8.5	533
4	160	14.78	--	--	--	--	14.78	8.6	539
Avg.	142	13.12	100	8.04	85	3.38	24.56	8.6	539

[a]Fertilizer input and response data from USDA Stat. Bull. 341, *Crop Yield Response to Fertilizer in the United States*. ASR-96, refers to agricultural sub-region 96.

[b]Costs are based upon U.S. average prices on April 15, 1964 with lowest cost input available; i.e., anhydrous ammonia (82% N), superphosphate (46% P_2O_5) and potash (60% K_2O).

[c]From 1964 Census of Agriculture value of fruits and nuts sold per acre of fruits and nuts.

[d]Costs are based upon U.S. average prices on April 15, 1969 with lowest cost input available. See footnote b for inputs used.

[e]Value as computed in footnote c adjusted for change in the U.S. index of prices received by farmers for fruits from 1964 to 1968.

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Table 6. Vegetables: Response to Fertilizer, San Joaquin Valley, California (ASR-97)[a]

Level of Use	Fertilizer Inputs per Acre, 1964[b]							Production Per Acre	
	N		P_2O_5		K_2O		Total Cost		
	Lbs.	Dols.	Lbs.	Dols.	Lbs.	Dols.	Dols.	Tons	Value[c]
0	--	--	--	--	--	--	--	4.7	411
1	60	4.61	22.5	2.02	15	0.75	7.38	7.4	648
2	120	9.22	45.0	4.05	30	1.49	14.76	9.3	814
3	180	13.82	67.5	6.07	45	2.24	22.13	10.3	901
4	240	18.43	75.0	6.74	50	2.49	27.66	10.5	919
Avg.	99	7.60	51.3	4.61	67	3.34	15.55	8.4	735
	Fertilizer Inputs per Acre, 1969[d]							Tons	Value[e]
0	--	--	--	--	--	--	--	4.7	517
1	60	2.77	22.5	1.81	15	0.60	5.18	7.4	814
2	120	5.53	45.0	3.62	30	1.19	10.34	9.3	1,023
3	180	8.30	67.5	5.43	45	1.79	15.52	10.3	1,133
4	240	11.60	75.0	6.03	50	1.99	19.8	10.5	1,155
Avg.	99	4.56	51.3	4.12	67	2.67	11.35	8.4	925

[a]Fertilizer input and response data from USDA Stat. Bull. 341, *Crop Yield Response to Fertilizer in the United States*. ASR-97, refers to agricultural sub-region 97.

[b]Costs are based upon U.S. average prices on April 15, 1964 with lowest cost input available; i.e., anhydrous ammonia (82% N), superphosphate (46% P_2O_5) and potash (60% K_2O).

[c]From SRS, Vegetables - Fresh Market and Vegetables - Processing, 1964 Annual Summary.

[d]Costs are based upon U.S. average prices on April 15, 1969 with lowest cost input available. See footnote b for inputs used.

[e]From SRS, Vegetables - Fresh Market and Vegetables - Processing, 1968 Annual Summary.

killers. Fruit growers on the other hand used herbicides to control ground cover under trees. Table 10 shows the percentage of acres of fruits and vegetables treated with pesticides in 1966 [5]. Data are lacking to show correlation between pesticide use and labor use. But the addition of $1 of pesticides generally return a considerably greater yield than the addition of $1 hired labor. Thus, where substitutable, pesticides, particularly herbicides, should be used rather than labor.

In conclusion, production of fruits and vegetables has been increasing. It is projected to increase along with population. As labor costs rise relative to other inputs, producers will need to constantly reassess their input mix if they are to maintain a viable competitive position. Mechanization isn't in sight for all crops, but producers can still cut costs by optimum use of available technology.

Table 7. Cost of all Pesticides Used on Vegetables, Fruits, and Nuts, by Regions, United States, 1964 and 1966[a]

Region	Potatoes and Other Vegetables		Fruits and Nuts	
	1964	1966[b]	1964	1966[b]
	$1,000	$1,000	$1,000	$1,000
Northeast	9,242	9,608	11,451	11,856
Lake States	3,763	5,152	6,669	9,029
Corn Belt	2,647	3,037	4,816	3,338
Northern Plains	297	1,822	--	7
Appalachian	630	669	7,959	5,482
Southeast	6,848	2,539	13,790	20,069
Delta States	254	505	425	1,016
Southern Plains	1,798	2,346	809	380
Mountain	2,400	2,272	1,471	2,263
Pacific	16,180	18,793	32,070	30,617
United States	44,059	46,743	79,460	84,057

[a]Does not include Alaska or Hawaii.

[b]Based on unpublished data from the ERS Pesticide and General Farm Survey, 1966.

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Table 8. Cost of Insecticides Used on Vegetables, Fruits, and Nuts, by Regions, United States, 1964 and 1966[a]

Region	Potatoes and Other Vegetables		Fruits and Nuts	
	1964	1966	1964	1966
	$1,000	$1,000	$1,000	$1,000
Northeast	3,781	2,639	7.585	5.947
Lake States	1,206	2,687	4,742	3,857
Corn Belt	1,027	923	2,647	1,613
Northern Plains	223	454	--	1
Appalachian	565	552	5,659	2,366
Southeast	5,310	1,577	12,356	17,100
Delta States	246	230	296	403
Southern Plains	832	1,327	649	324
Mountain	1,570	1,166	1,366	1,588
Pacific	12,578	13,235	16,758	18,595
United States	27,338	24,790	52,058	51,794

[a]Does not include Alaska or Hawaii. Estimates for both years based on unpublished data from the ERS Pesticide Uses Survey in 1964 and the Pesticide and General Farm Survey, 1966.

Table 9. Cost of Herbicides Used on Vegetables, Fruits, and Nuts, by Regions, United States, 1964 and 1966[a]

Region	Potatoes and Other Vegetables		Fruits and Nuts	
	1964	1966	1964	1966
	$1,000	$1,000	$1,000	$1,000
Northeast	2,764	4,259	451	913
Lake States	1,071	1,506	83	417
Corn Belt	288	384	13	230
Northern Plains	74	--	--	--
Appalachian	3	102	1	38
Southeast	287	229	--	398
Delta States	--	275	17	178
Southern Plains	965	845	39	1
Mountain	444	856	--	30
Pacific	2,090	3,232	1,660	3,744
United States	7,986	11,688	2,264	5,949

[a]Does not include Alaska or Hawaii. Estimates for both years based on unpublished data from the ERS Pesticide Uses Survey in 1964 and the Pesticide and General Farm Survey, 1966.

Table 10. Acres of Crops Grown and Percentage Treated with Pesticides, by Type of Pest Control and Crop, 48 Contiguous States, 1966[a]

Crop	Total Acres Grown in 1966[b]	Percentage of Acres on which Pesticides were used for the Control of:			
		Weeds	Insects and Soil Organisms	Diseases	Other[c]
	1,000	Percent	Percent	Percent	Percent
Cotton	10,349	52	54	2	26
Corn	66,255	57	33	d	--
Wheat	54,513	28	2	d	--
Sorghum	16,439	30	2	--	--
Rice	1,980	52	10	--	--
Other grain	35,635	29	1	--	--
Soybeans	37,388	27	4	d	--
Tobacco	973	2	81	7	69
Peanuts	1,490	63	70	35	d
Sugarbeets	1,223	33	12	10	--
Other field crops	8,607	37	10	1	d
Alfalfa	29,008	d	7	--	--
Other hay	35,796	1	d	--	--
Pasture	544,512[e]	1	d	--	--
Irish potatoes	1,497	59	89	24	9
Other vegetables	3,690	28	56	20	d
Citrus	1,179[e]	29	97	73	38
Apples	675[e]	16	92	72	28
Other deciduous fruits	800[e]	13	72	58	5
Other fruits and nuts	1,807[e]	18	59	39	1
Summer fallow	36,984	2	--	--	--
All crops (including pasture)	890,800	12	5	0.5	0.5

Source: USDA-ERS, AER No. 147.
[a]Excludes pesticides used for seed treatment, for stored crops, and in farmyards and gardens.
[b]Crop Production, 1967, U.S. Dept. Agr. Cr Pr 2-2 (7-67).
[c]Other pesticides include defoliants, desiccants, growth regulators, miticides, and rodenticides.
[d]Less than 0.5%.
[e]Estimates based on 1964 *Census of Agriculture*.

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REFERENCES CITED

[1] Davis, Velmar W. "Trends in the Production and Utilization of Fruit and Vegetable Crops." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 11-50.

[2] U.S. Department of Agriculture. *Changes in Farm Production and Efficiency*. Stat. Bull. 233. Washington, D.C.: Government Printing Office, June 1969.

[3] _____. *Crop Yield Response to Fertilizer in the United States*, by D. B. Ibach and J. R. Adams. Stat. Bull. 431, Economic Research Service and Statistical Reporting Service, Washington, D.C.: Government Printing Office, August, 1968.

[4] _____. *Extent of Farm Pesticide Use on Crops in 1966*, by A. Fox, T. Eichers, P. Andrilenas, R. Jenkins, and H. Blake. Economic Research Service, Agr. Econ. Rpt. 147, Washington, D.C.: Government Printing Office, October, 1968.

[5] _____. *Farmers' Pesticide Expenditures for Crops, Livestock, and Other Selected Uses in 1964*, by J. Gale, P. Andrilenas, and A. Fox. Economic Research Service, Agr. Econ. Rpt. 145, Washington, D.C.: Government Printing Office, October, 1968.

6083

LABOR OR CAPITAL - THE ROAD AHEAD

Velmar W. Davis

The future technologies in the production of fruits and vegetables described by Hall and Carew may seem unattainable. But, when we consider the accomplishments in space and medicine, future farm possibilities seem well within reach and merely a matter of time, effort, and economics. There is the desire of farmers to maximize profits. There is also a profit motive on the part of the industries that develop, manufacture, and distribute the inputs associated with these technologies. The desires of farm workers will also influence the development and adoption of technology to the extent that they may choose between working on the farm, for nonfarm industries, or not to work at all. I would be remiss if I did not recognize the significant contribution of Federal and State research and extension services.

My purpose is to present the economic implications of future horticultural and engineering technology in the production of fruits and vegetables with emphasis on mechanization. These implications and relationships for manpower, the grower, and the consumer are discussed in a framework of economic principles or concepts. Static economic theory provides a simplified view of a complex set of relationships. By looking at the real world through the selective lenses of theory, we are often able to recognize relationships that are obscured by the flow of unsorted details.

The discussion that follows relies mainly on the concepts of capital-labor substitution and supply and demand. Finally, the demand for labor in the production of fruits and vegetables is projected for 1975.

Capital-Labor Substitution

Under the concept of capital-labor substitution, I will discuss three related topics: (1) potential for capital-labor substitution; (2) trends in prices and consumption of inputs; and (3) capital-labor substitution in the production of fruits and vegetables as viewed by the farmer.

Potential for Capital-Labor Substitution

We are primarily concerned with fruits and vegetables, but it is useful to examine the capital-labor substitution potential of these two major crop categories along with that of other major crops and livestock. By looking back for a moment at the characteristics and progress in mechanization of other commodities, I believe that we can gain some perspective of what the future may hold for fruits and vegetables.

In examining the potential for capital-labor substitution, it is helpful to divide farm production into two broad categories: (1) those crops for which there is substitution of machines for machines, and (2) those crops for which there is substitution of machines for hand labor.

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For the first category of products, technology is now available which permits nearly all functions to be done by machine. Labor productivity is already high. Future labor substitution possibilities and improvements in labor productivity will consist of substituting larger machines for smaller ones or for substituting chemical or biological forms of inputs for mechanical forms. Included here are the grains, hay, soybeans, cotton, and potatoes. Peas, snap beans, corn, and tomatoes for processing also come under this category. Livestock production is rapidly coming under the same heading. Technology in the form of materials-handling equipment and housing is available, or is becoming available, to permit substitution of capital for labor.

The second type of production includes fruits, fresh vegetables, nuts, and many specialty crops. At present levels of technology, machine methods are substituting for hand methods rather than larger, more efficient machines for smaller machines. For some jobs mechanization possibilities are currently limited. Further mechanization depends upon development of machines that are both technically and economically feasible along with the development of varieties and cultural practices better adapted to machine operations.

Trends in Prices and Consumption of Inputs

Technology changes the productivity of farm inputs and coupled with changes in their prices cause the economic relationships to change. The aggregate substitution of capital for labor--machinery for labor--can be illustrated by examining the trends in prices and consumption of these two inputs.

First, let us examine prices of labor and machinery (Fig. 1 and Appendix Table 1). The indexes of prices of the two inputs are moving in the same direction, but the rate of price increase for labor is about 50% faster than that for farm machinery. This price relationship has provided the economic environment to substitute machinery as well as other inputs for labor.

The effect of substitution is clearly shown by the trend in quantities of labor, machinery, and other inputs used (Fig. 2 and Appendix Table 2). Since 1950 labor has declined more than one-half while inputs of power and machinery have increased more than one-third. With a declining labor base and roughly a constant land base, we have substituted farm machinery, fertilizer, pesticides, and many off-farm services to obtain an increasing total farm production. Since 1950 total production has increased 42% while total inputs have increased only 11% (Fig. 3 and Appendix Table 3).

We have looked at some indicators of capital-labor substitution in the production of all farm products as a group. However, I am certain that if the data were available for fruits and vegetables over this period of time we would find that the capital-labor substitution has lagged. This is particularly true for fresh vegetables and fruits and nuts. This lag has been caused by a number of factors including: (1) the natural characteristics of the crops--a number of which are not amenable to mechanization; and (2) the availability of

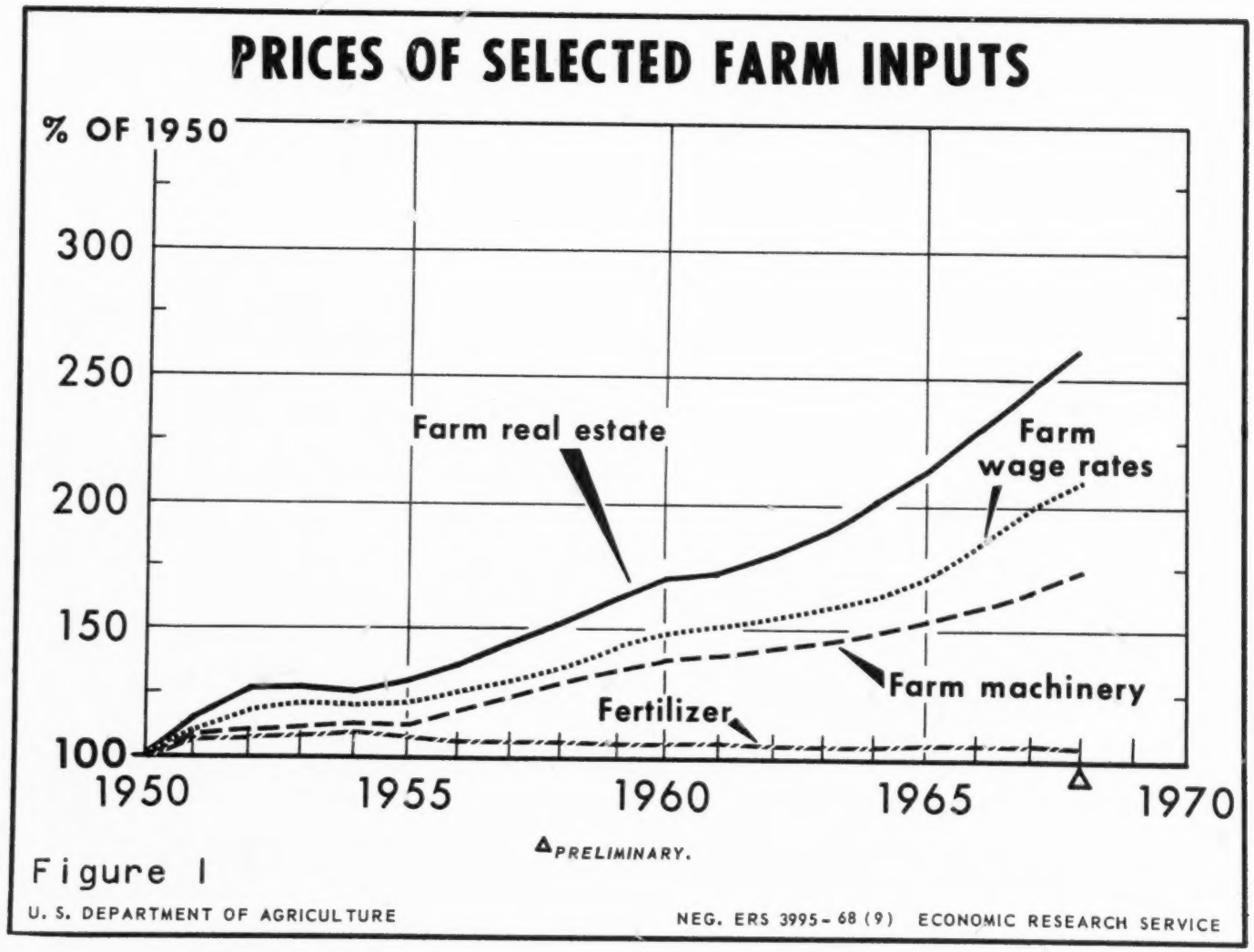

Figure 1

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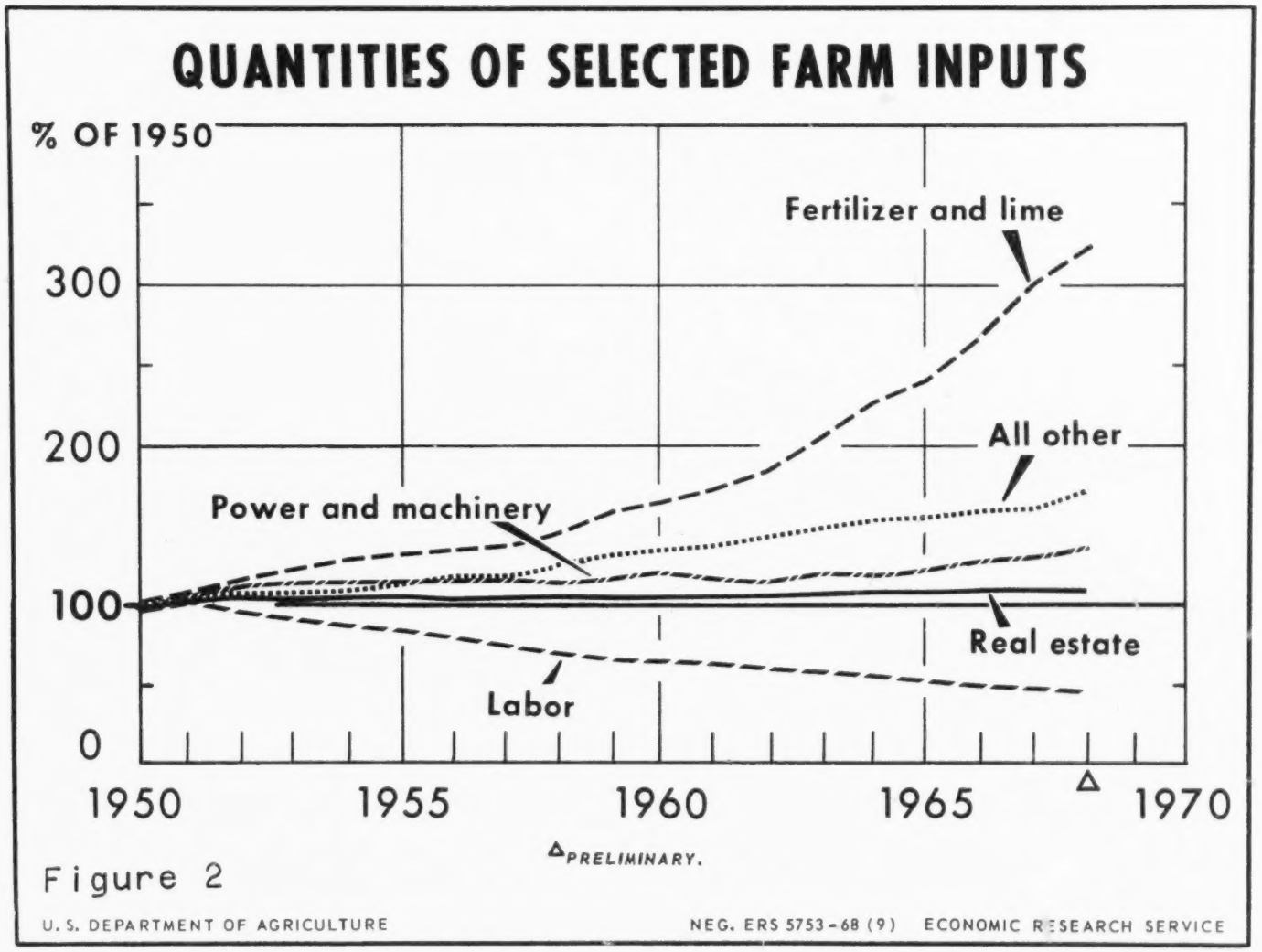

Figure 2

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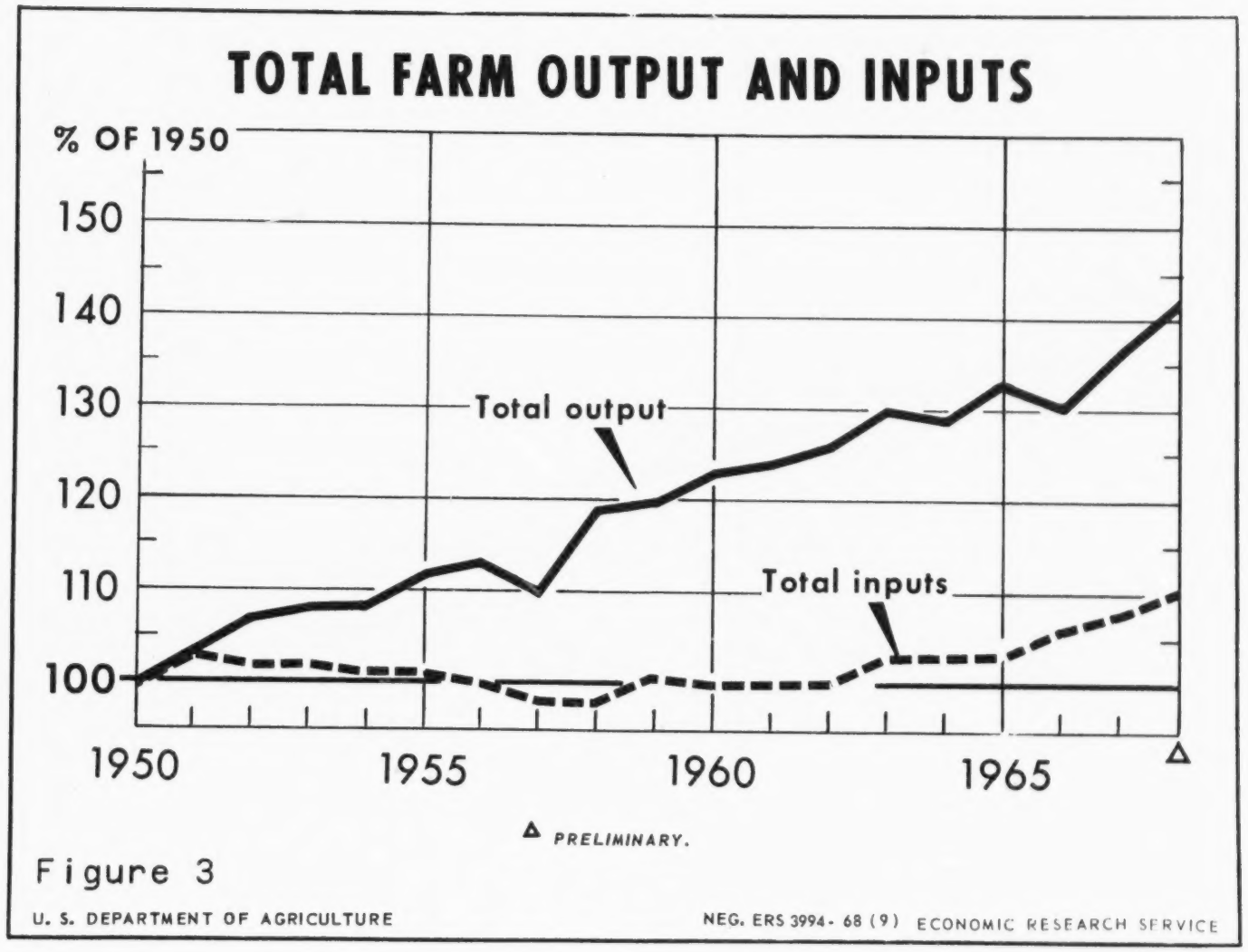

Figure 3

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an adequate supply of labor at a price that encouraged the use of substantial quantities of hand and stoop labor. *The machine-labor cost relationships have not provided the incentive to mechanize many of these crops.*

Capital-Labor Substitution as Viewed by the Farmer [3]

It is technically feasible to produce a commodity with a variety of combinations of inputs. However, the lowest cost combinations depend upon the relative prices of the inputs and the rates at which they can be substituted for one another in the production process. The price relationships may vary considerably depending on the size and type of farm. For example, labor costs and machine costs are quite different per unit of production on a small vegetable farm where all labor is furnished by the family versus one which relies fully on regular and seasonal hired labor. Larger farm units usually have an advantage in more efficient use of inputs and lower costs per unit purchased.

The substitution of capital for labor is, or should be, an economic decision by the farmer. For illustration, let us examine the alternatives faced by a potato farmer under different levels of production and capital-labor ratios. Here we are using capital as a summary category for all types of harvesting equipment. Several techniques exist on a potato farm to harvest a specified acreage or volume of potatoes. Each technique is represented by a distinct combination of machine capital and labor. For example, potatoes may be harvested by: (1) a 2-row harvester with X number of workers; (2) a 1-row harvester with Y number of workers; and (3) a 2-row digger with potatoes picked up by hand and Z number of workers.

Within the limits of potato acreage and output on a single farm, machine capital and labor can be substituted for one another largely in discrete jumps. Such inflexibility means that possible resource combinations are not numerous enough to form a smooth continuous isoproduct curve but consist of a few points as represented by the contour GHI (Figure 4). The existence of such relationships facilitates farmers' decisions because the number of alternative possibilities tends to be limited.

According to the principle of resource substitution, optimum combination for given conditions can only be obtained by equating the marginal rate of substitution to the inverse ratio of the input prices. The change in capital divided by the change in labor inputs should equal the price of labor inputs divided by the price of capital ($\Delta C/\Delta L = P_L/P_C$) (Figure 4). Thus, maximizing net farm returns includes as a basic step the accomplishment of the least cost combination of resources.

The slope of an isoproduct curve at any point represents the marginal rate of substitution between the two inputs. Under price ratios indicated by lines AD, BE, and CF, minimum costs are indicated by tangency of the isoproduct and isocost lines at points I, H_1, I_1, and G_2. Points at H_1 and I_1 are equally acceptable as minimum cost techniques for the 125 acres of potatoes.

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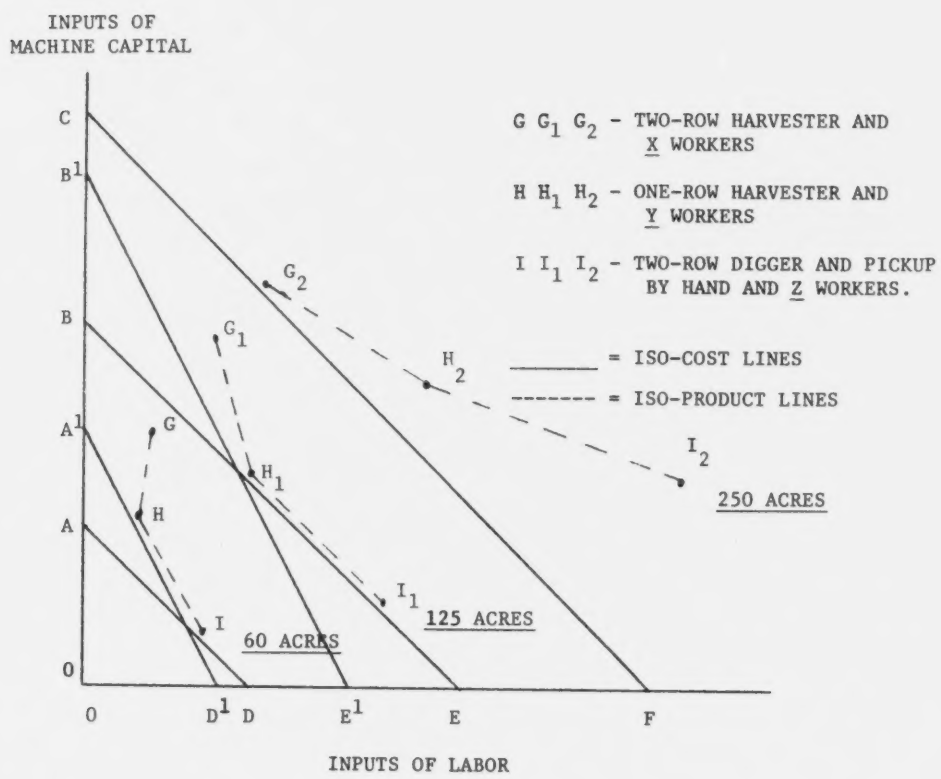

FIG. 4.--HYPOTHETICAL LINEAR ISO-PRODUCT AND ISO-COST CONTOURS ILLUSTRATING MACHINE CAPITAL AND LABOR SUBSTITUTION FOR POTATO HARVESTING

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The choice of the least-cost alternative is directly related to the size of enterprise. This is because machines have high overhead cost while labor-using techniques do not. Under price ratios indicated by lines AD, BE, and CF, the 2-row harvester is the most economical method of harvesting at the 250 acre level while a 2-row digger with potatoes picked up by hand is the least-cost practice for the small farm at 60 acres (Figure 4).

A nonproportional change in the input prices will change the slope or actual cost line and thus change the choice of least-cost technique. If we assume that wages increase and that machinery costs do not increase proportionately, new isocost lines might be indicated by A' D' and B' E'. Such a condition would cause a shift in the least-cost position and change the choice of techniques. When such a change occurs in the cost of inputs, the optimum combination for various levels of output will rotate toward the input that has become least expensive and in this case toward capital. The change in location is the combined influence of both substitution and scale factors.

It should be noted that the input-input relationship illustrated applies to the initial choice of the production or harvesting technique (Figure 4). At this point the farmer is concerned with both fixed and operating costs. However, after he has adopted a particular production technique, he is concerned in the short run only with operating costs, and thus wage rates would have to increase considerably to force him to shift to a more capital-intensive technique. This has the same effect as rotating the isocost line toward labor and accounts for some of the lag in adoption of mechanized practices. It may not be economical to make the change until the older model equipment becomes obsolete or has been substantially depreciated.

Supply and Demand

No one concept is adequate to insure complete understanding of the economic relationships involved in farm production. The substitution of capital for labor is probably the most commonly used concept when discussing new technologies and in particular, mechanization technology. However, the concepts of supply and demand as applied to both farm inputs and output can also be useful in explaining some of the past and in depicting some of the future relationships in the production of fruits and vegetables.

First, I will discuss some of the relevant propositions concerned with the supply and demand of farm inputs with emphasis on labor and machinery. Second, I will try to show the implications of higher labor costs and subsequent mechanization on the supply (farmers' cost of production) and the demand for fruits and vegetables.

Supply of Farm Inputs [2]

The supply of farm inputs such as labor and machinery refers to the relationship between the prices of these inputs and the *quantities* offered

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for sale at each *hypothetical price*. For most farm inputs the supply-price-quantity relationship is usually a direct relationship in which a greater quantity of a particular kind of input is called forth at a high price than at a low price. The quantity of inputs that will be supplied at various increments of price is a function of the elasticity of supply.* If we are concerned with an elastic supply curve such as S^1S^1 (Figure 5), an increase in price from OA to OB will bring forth a more than proportionate increase in quantity, from OC to OD. In contrast, if the supply of an input is represented by an inelastic supply curve, S^2S^2, then an increase in price will bring forth a relatively small increase in quantity.

A phenomenon which is common to all supply curves is that the longer the period which the curve represents the more elastic it will be. A temporary rise in wages, for example, may attract few workers; but a rise in wages over a number of years may attract considerably larger numbers. This is particularly true of jobs which require higher skills and longer training. This concept is also important for specialized harvesting machines which require a number of years to develop, test, and manufacture. In the short run, the supply will be inelastic. However, once the prototype is designed and tested, the number that are built are probably subject to decreasing costs and therefore possible lower prices per unit. The supply of the same kind of machine should then be elastic.

Another way of looking at the elasticity of supply for labor is in terms of the mobility and skill level of labor. The elasticity of supply of farm labor depends almost entirely on its mobility. If the work is one which is easy to enter and which does not require much skill or unusual ability, then its supply will tend to be more elastic. For example, much of the hand and stoop labor in agriculture could be described as of this type. This could be represented by the supply curve S^1S^1 (Figure 5). A small rise in wages will normally attract large numbers of workers while a small decline will drive large numbers of workers away.

If, on the other hand, the work requires a great deal of skill which is not easily acquired or abandoned, then the supply of labor will be inelastic. Such a supply curve could be represented by S^2S^2 (Figure 5). The higher wage will not tempt many newcomers in.

Thus, with the development and adoption of new, sophisticated technology with the accompanying increased skill requirements and reduced mobility of

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*All references to elasticity in this discussion imply the coefficients of price elasticity of supply or demand. The coefficient of elasticity is defined as the percentage change in the dependent variable divided by the percentage change in the independent variable. Thus, the coefficient of price elasticity of supply is defined as the percentage change in quantity supplied divided by the percentage change in price where quantity supplied is the dependent variable, or $e = \frac{\Delta q/q}{\Delta P/P} = \frac{P}{q} \cdot \frac{\Delta q}{\Delta P}$. The definition of coefficient of price elasticity of demand is the same as supply except the word "demanded" must be substituted for the word "supplied".

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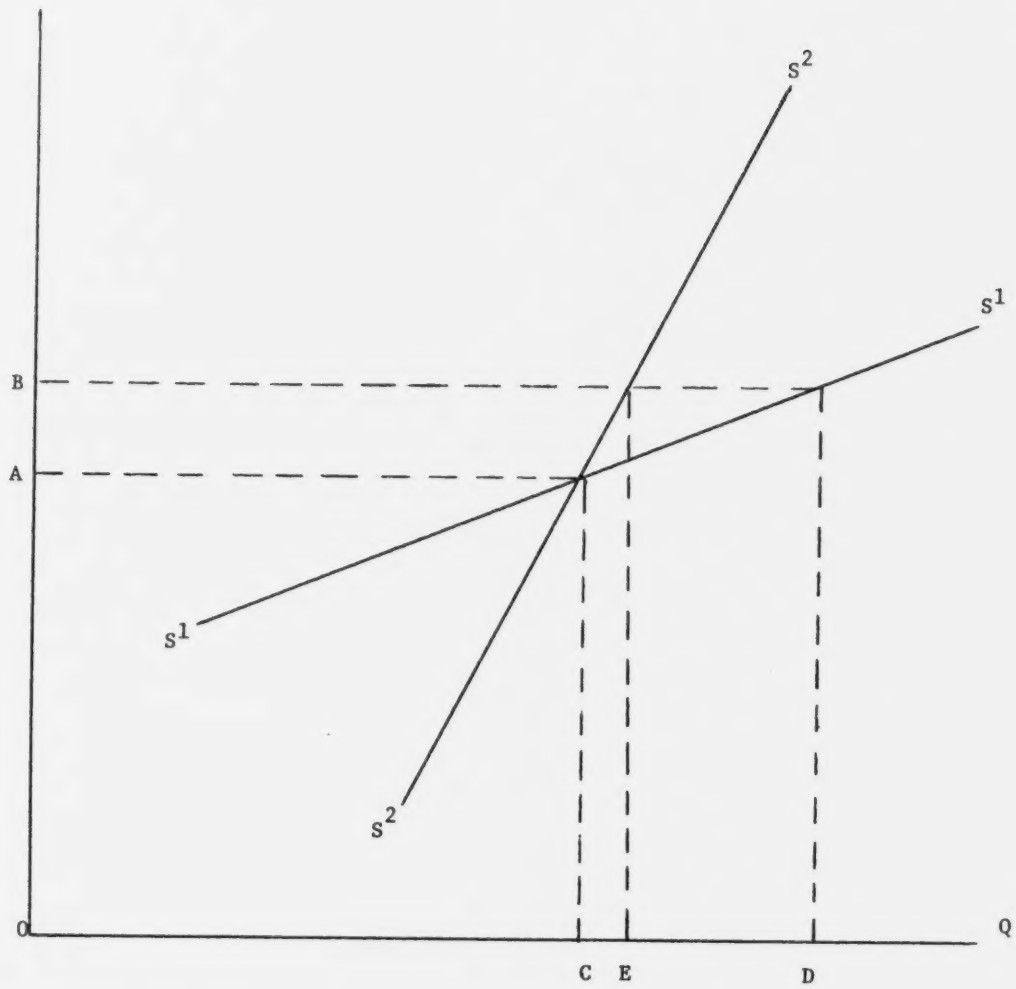

FIG. 5.--HYPOTHETICAL SUPPLY FOR FARM INPUTS (LABOR AND FARM MACHINERY)

	S^1S^1	S^2S^2
1. ELASTICITY	ELASTIC	INELASTIC
2. TIME PERIOD	LONG-RUN	SHORT-RUN
3. SKILL OF LABOR	UNSKILLED	SKILLED
4. MOBILITY	MOBILE	IMMOBILE
5. MACHINE TECHNOLOGY	SIMPLE, LOW COST TOOLS AND HARVEST AIDS	SOPHISTICATED, REQUIRES SHIFT IN ENTIRE SYSTEM

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farm workers, we are probably facing an inelastic supply schedule for both labor and machinery. Over time, this suggests a more stable farm work force and a slowing down in the rate of decline in number of farm workers. It also suggests an increasing cost for both technology and the remaining labor.

Demand for Farm Inputs [2]

In considering the causes affecting the *demand* for any production input, we need to recognize that it is a derived demand. For example, a farmer buys a machine or hires labor to produce tomatoes because there is a demand for the product. There are at least four important propositions concerned with the demand for farm inputs, and in discussing these propositions we will be primarily concerned with labor and machinery in the production of vegetables.

First Proposition.--Using labor as an example, the first proposition follows from the fact that the demand for labor is derived. It is that *an expected rise in the demand for a product will cause a rise in demand for the type of labor which produces the product.* If it is expected, for instance, that at each price of a vegetable more will be demanded than before, then at each wage level of farm workers, more hours of work can be sold or needed than before. This proposition represents a shift in the demand and is illustrated by the shift from D^1D^1 to D^2D^2 (Figure 6). Unless the supply of the vegetable is perfectly inelastic, its production will also increase. An increased production of the vegetable will necessitate an increase in employment of workers even at the old rates. The demand for farm work will have increased as illustrated by an increase from OE to OF at wage OA (Figure 6).

Uncertainty of Future Demand.--It should be observed that it is the expected demand for vegetables, for example, that helps to determine the demand for inputs producing them. When labor is employed and machinery is purchased, the product which justifies the employment is not yet produced. The farmer may be right or wrong, but it is his opinion and not the accuracy of that opinion that determines the demand for farm workers and machinery in the production of vegetables.

Second Proposition.--The next three propositions concern the elasticity of demand for farm labor. The second proposition is as follows: *The larger the part played by any input in the production of a commodity, the more elastic is the demand for it likely to be.* This proposition is particularly important in the production of fruits and vegetables where labor normally represents a significant part of the cost of production. An increase in the price of labor will cause a significant change in the cost or output of the final production and, therefore, a significant reduction in the quantity of labor hired. With an elastic demand such as D^1D^1, an increase in price from OA to OB reduces labor demand from OE to OC (Figure 6). However, as fruits and vegetables become more mechanized and labor represents a smaller proportion of total costs, the demand for labor will become more inelastic.

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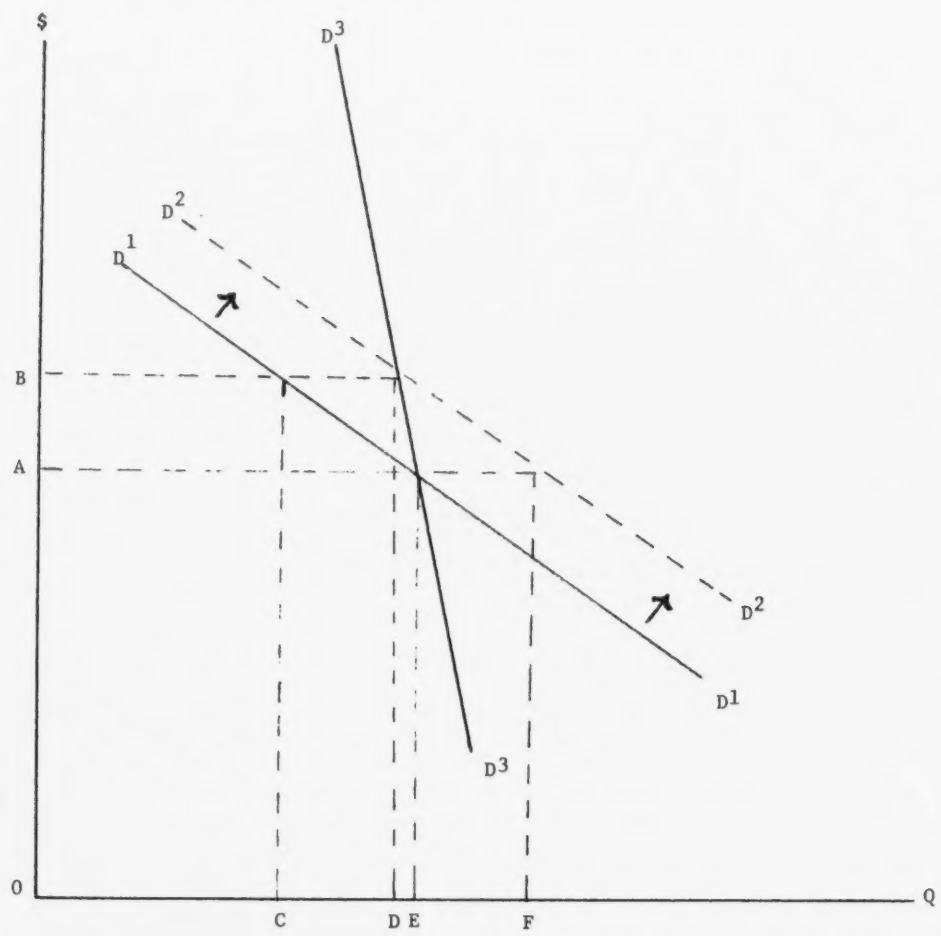

FIG. 6.--HYPOTHETICAL DEMAND FOR FARM INPUTS (LABOR AND FARM MACHINERY)

	D^1D^1	D^3D^3
1. ELASTICITY	ELASTIC	INELASTIC
2. EFFECT OF PRICE CHANGE ON QUANTITY	LARGE	SMALL
3. DEGREE OF MECHANIZATION	LOW	HIGH
4. SKILL LEVEL OF WORKERS	LOW	HIGH

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Third Proposition.--*The more inelastic the demand for a product, the more inelastic is likely to be the demand for the type of labor that goes to make the product.* For example, if the demand for a vegetable is inelastic, the decrease in quantity demanded caused by the increase in wages will have little effect on the output and on the amount of employment. This can be illustrated by demand curve D^3D^3 where an increase in wages from OA to OB reduces the demand for labor relatively little, from OE to OD (Figure 6).

Fourth Proposition.--*The more expensive the substitutes for an input, the more likely it is to have an inelastic demand.* A raising of the wage will result in a relatively small decrease in employment, for the high priced labor will be facing high priced machines and fewer are likely to be replaced. In this case the *demand* for labor is inelastic as shown by D^3D^3 (Figure 6).

In the near term, demand for labor will probably be more elastic in vegetable production than for fruit production because of the greater potential with vegetables for substituting machines for labor. As we approach complete mechanization of a crop or the industry, or where mechanization is not feasible, demand for both labor and machinery will become more inelastic. Changes in price will have relatively little effect on demand because the degree of substitutability will have declined.

Supply and Demand for Farm Products [1]

The demand for most farm products is inelastic as illustrated by the demand function D^1D^1 (Figure 7). This means that as the total supply or quantity of a farm product increases, prices will decline and total consumer expenditures and farmers' income will also decline. The demand function shows the quantities of farm products that will be purchased at alternative prices. The aggregate demand for farm products, in the near term, remains relatively constant even though quantities and prices may change. In the long run, the demand schedule will shift to the left or right depending on changes in population, income, tastes, and preferences. With population the major factor, the demand schedule for most farm products will shift to the right. Products will be affected differently by changes in income, tastes, and preferences.

To illustrate the effect of increased mechanization on production, let us assume that demand is given. We also assume that adoption of mechanization and other labor reducing technologies is stimulated by the necessary cost of labor and farmers' desire to minimize costs. For the individual farmer, demand is usually independent of his cost of production. However, supply is directly related to producer costs, perhaps with some lags. The industry will be willing to produce smaller quantities at low prices and larger amounts at higher prices as shown by lines S^1S^1, S^2S^2, and S^3S^3 (Figure 7).

The intersection of the supply and demand functions is the equilibrium point. For example, at equilibrium point G, producers are willing to furnish quantity B at price A and at this price consumers will clear the market. A

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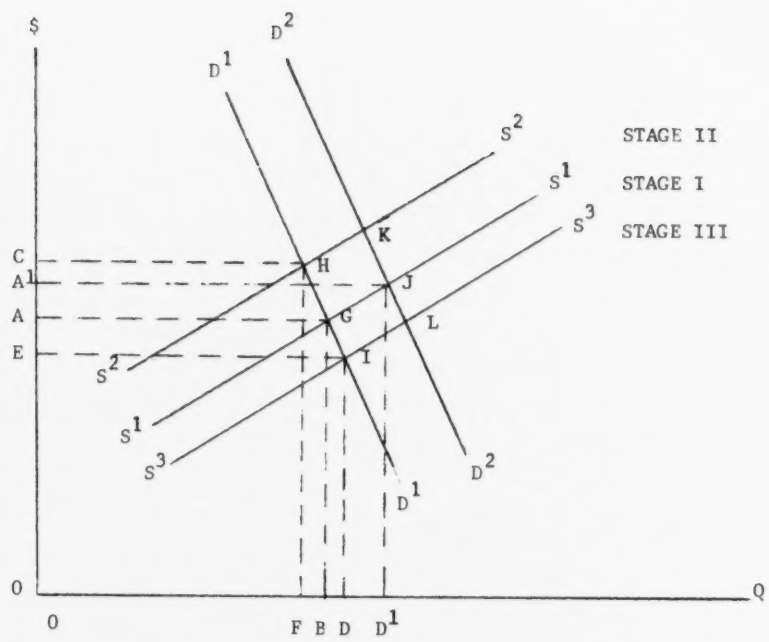

FIG. 7.--HYPOTHETICAL SUPPLY AND DEMAND FOR FARM PRODUCTS

STAGES OF MECHANIZATION

I. BEFORE INCREASE IN WAGES.

II. ADOPTION OF NEW TECHNOLOGY--MECHANIZATION WITH REDUCED LABOR INPUTS, HIGHER COST PER UNIT OF LABOR. TOTAL LABOR COSTS MAY BE LOWER BUT NOT NECESSARILY.

LABOR REDUCING TECHNOLOGY NOT AVAILABLE; TOTAL AND UNIT LABOR COSTS INCREASED.

III. FINAL STAGE OF MECHANIZATION AFTER INDUSTRY ADJUSTMENT TO WAVE EFFECT OF NEW MECHANIZED TECHNOLOGY--INCREASED SPECIALIZATION OF PRODUCTION, FEWER PRODUCERS, LARGER PRODUCTION PER PRODUCER, CHANGE IN ENTIRE SYSTEM OF PRODUCTION DUE TO ADOPTION OF OTHER LABOR REDUCING AND OUTPUT INCREASING TECHNOLOGIES--IRRIGATION, PESTICIDES, ADAPTED VARIETIES, ETC.

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higher price would call forth a greater supply but induce consumers to purchase less. The surplus would tend to drive the price down to equilibrium point G. A lower price would make consumers wish to purchase more while producers furnished less. Competition for the available produce would tend to drive the price back up to equilibrium point G.

As the price of labor rises each farmer's cost function per unit of output will rise and the industry supply function will shift upward and to the left. The new supply function is shown as S^2S^2 (Figure 7). Costs will rise even though farmers shift to a new method of production by substituting machinery for labor. If this were not so, they might have shifted to the new method before the increase in wages. This supply function could represent the second stage of mechanization--the adoption of a capital-intensive technology. It also may represent the relatively fixed equilibrium situation for crops such as fresh peaches or strawberries that cannot be mechanized in the near future. However, higher labor costs will stimulate the search for new labor-reducing technology. With an inelastic demand, the new equilibrium point H will represent a higher price, smaller quantity sold, and larger gross incomes to farmers. Consumers will be less well off. There will be fewer farm jobs and for those commodities that can be effectively mechanized, the total wages will likely be less. For those crops that cannot be mechanized, the number of jobs will decline slightly because of reduced production, but total wages will increase. If producers do not have alternative labor-saving methods of production available, labor may push for higher wages without sacrificing a great number of jobs.

The effect of continuing increases in farm labor costs will vary considerably by commodities depending on the potential for complete or partial mechanization. From past experience we can expect the adoption of other labor-reducing and output-increasing technologies. In the early stages of change, producers frequently adopt technologies that are not economical. However, over time these producers increase the size of their production units, engage in cost sharing arrangements or custom work to the extent that the new technology is economical. Within a few years after the adoption of a new technology, unit costs are lowered and the cost function may drop to or below the original level. This is illustrated by Stage III, S^3S^3 (Figure 7). The mechanization of processing tomatoes is an example where the time span for the various stages of mechanization has been unusually short. The current supply function for producers of processing tomatoes could be represented by S^3S^3. For producers of fresh tomatoes, Stage II, S^2S^2 is more appropriate. The time span to complete the adjustment and the level of the supply function after the adjustment will vary considerably by commodities.

In the preceding discussion we have assumed that the demand was constant. But for the industry over time, as pointed out earlier, the demand function will change. The major factors that influence demand are changes in population,

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income, tastes, and preference. In the near future the major change will result from population increases. The population of the United States is projected to reach 219 million in 1975. This implies an average annual growth rate of 1.3%. The effect of changes in real income on per capita consumption of food is relatively small. For every 1% increase in money income, per capita purchases of food for use at home increases at only 1/3 this rate.

If we follow mechanization through to some new adjustment or equilibrium point, we cannot assume that demand will remain constant. Rather, we can more realistically assume that the demand schedule for farm products will shift to the right as shown by D^2D^2 (Figure 7).

At any one time, we will likely find specific farm products at each of the equilibrium points shown along D^2D^2. For example, by 1975 point K might represent fresh tomatoes and peaches since it is probable that mechanization of these commodities for the fresh market will be relatively slow. Cling peaches, wine grapes, lettuce, and cabbage, for example, could be depicted by point J where mechanization will be well underway and the industries are adjusting toward lower supply costs. Potatoes, peas, snap beans, and processing tomatoes are probably at point I today and could be expected to shift to point L by 1975. Thus, the 1975 supply and demand equilibrium point for total fruits and vegetables may be more nearly represented by point J. This suggests that total production, unit prices, and total farm income from fruits and vegetables will increase. The effect on workers will be a reduced total number of farm jobs but an increased number of higher skilled and higher paid jobs. The status of the remaining workers should be substantially improved through better working conditions, continuous employment, and health and unemployment benefits. Unfortunately, those workers who are displaced will tend to be the poorer quality, unskilled who are least able to make the adjustment to alternative employment. Over a longer period our experience suggests that the dynamics of mechanization and associated changes in varieties and cultural practices will increase output and lower costs as illustrated by equilibrium point L at the intersection of D^2D^2 and S^3S^3 (Figure 7).

Unfortunately for labor, alternative labor-reducing technologies are being developed rapidly. Some have already been developed and will become economical as the cost of labor increases. While rising wage rates will not cause large production cutbacks, they will result in large cuts in the amount of labor required. Labor's power to raise wages without losing jobs will return only after mechanization is complete and the industry has adjusted as shown by S^3S^3 (Figure 7). At that time, the few unskilled and semiskilled workers will find union help in raising wages and improving working conditions beneficial to their cause. For example, unionization of semiskilled workers hired to sort tomatoes mechanically harvested for processing would probably be a net gain to the workers. However, if we assume that this crop is not approaching the final stage of mechanization, then additional improvements in

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the machine, with increased investment, could further reduce the number of jobs. The present practice of sorting tomatoes on the machine might shift to central sorting sheds. The number of jobs would decline but the wages and working conditions of the new jobs at the central station would be improved.

Demand for Labor in the Production of Fruits and Vegetables, 1975

Once we move from the static economic to the real world concepts of the supply and demand for fruits and vegetables, we are faced with the need to quantify our inputs and outputs. Our major concern at this colloquium is the effect of continued mechanization of the production of fruits and vegetables on manpower. And, here we are particularly concerned about the demand for labor.

The demand for farm labor in 1975 in the production of fruits and vegetables is primarily a function of the demand for and supply of the products as modified by changing technology. As indicated earlier, the industry supply schedule is essentially a summation of producers' cost of production. Thus, the degree of mechanization and the associated labor requirements are key factors in the production and supply of fruits and vegetables.

To show the effect of increased mechanization on labor requirements for fruit and vegetables for 1975, the extent of harvest mechanization for 1968 and 1975 were estimated. These estimates were used to update labor coefficients for individual crops for 1964-68 and to project labor coefficients for 1975. A 5-year average of current production was used to avoid the problem of abnormal production by an individual crop in any specific year. Then, the production of individual fruit and vegetable commodities was estimated for 1975 through a series of projection approximations. Lastly, using man-hours per acre and production for individual fruits and nuts, total man-hours were determined for 1964-68 and 1975.

First, we will examine the extent of harvest mechanization in the production of fruits and vegetables. Then, we will evaluate the effect of projected production and increased productivity on the total labor requirements for each of the two major categories of fruits and vegetables. And lastly, we will show the effect of increased productivity through mechanization and the changes in production on labor requirements for the total fruit and vegetable industries.

Extent of Mechanization

The mechanization of fruits and nuts is currently at a relatively low level compared with vegetables, and the outlook for 1975 is not nearly as optimistic as that for vegetables. When we look at the total U.S. production of fruits and nuts, we find only 2% harvested mechanically in 1968, and we expect it to increase to only 17% by 1975 (Figure 8 and Appendix Table 4). For example, in 1968 the harvest of only one crop--tart cherries--was as high as 50% mechanized. No other major fruit or nut showed more than 5% of the crop mechanically harvested. Most of the gain in mechanization by 1975 will come

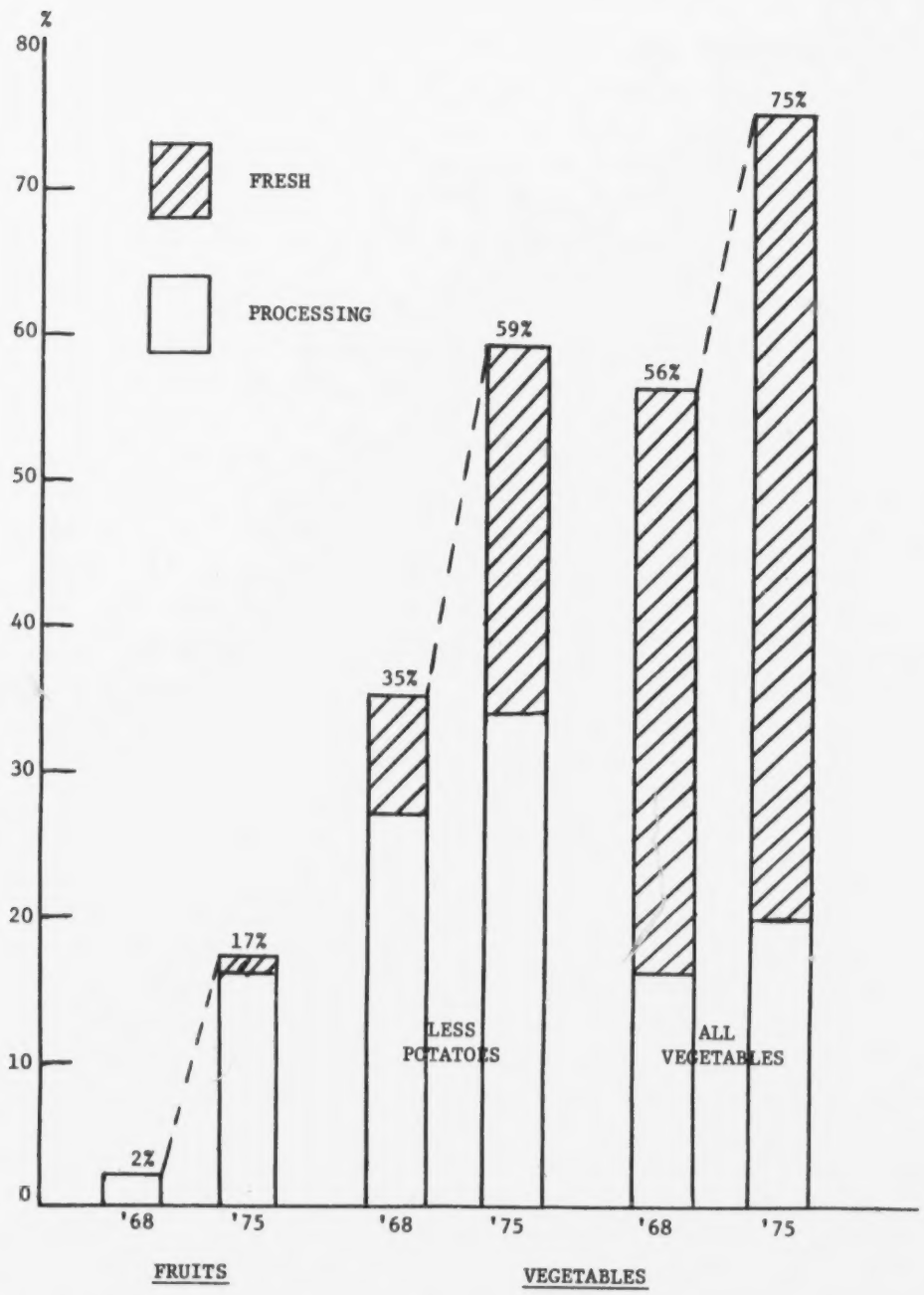

Fig. 8.--PERCENTAGE OF FRUITS AND VEGETABLES MACHINE HARVESTED, 1968 AND 1975

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from substantial improvement in the mechanization of wine grapes, cling peaches, and both tart and sweet cherries.

In contrast, mechanization has proceeded more rapidly in the production of vegetables. Mechanization of the total U.S. vegetable harvest is currently 56% complete with the expectation that it will increase to 75% by 1975 (Figure 8 and Appendix Table 5). The processing portions of most of the major vegetables are already approaching complete mechanization of the harvest. We expect only the harvest of fresh tomatoes and a category of all other vegetables to be less than 50% mechanized in 1975. Some of the vegetables such as potatoes, carrots, snap beans, and peas are approaching that stage of mechanization where improvements in labor productivity can be obtained only through more efficient and possibly larger machines.

Fruits and Nuts

As we view the prospects of mechanization of fruits and nuts along with a substantial increase in production, we realize that we are facing a situation where total labor requirements for these crops will decline relatively little. By 1975, total acreage of fruits and nuts is expected to increase 19% while total production will increase even more, to the extent of 27% (Figure 9 and Appendix Table 6).

Even though the outlook for mechanization of fruits and nuts is not as optimistic as that for vegetables, we do find a projected decline in the harvest labor per acre of 23% (Figure 10 and Appendix Table 7). Preharvest labor productivity is not expected to improve as much as harvest technology; and, thus, the total labor used per acre of fruits and nuts is expected to decline only 19%.

What will the substantial increases in production of fruits and nuts and only moderate improvement in productivity mean in terms of total man-hours? Total man-hours for harvest are projected to decline only 8%, from 249 million hours to 229 million hours (Figure 11 and Appendix Table 8). Total man-hours for all production of fruits and nuts are expected to decline only 3% from 418 million hours to 404 million hours.

When the projections for individual fruit and nut crops are examined, it is clear that the citrus crops will be facing supply and demand problems in the near future. Production of oranges is projected to increase 41%, but only a moderate improvement is expected in labor efficiency. Thus, labor requirements are expected to increase 24% (Appendix Tables 6, 7, and 8). Total labor requirements are expected to increase substantially for all other citrus crops with moderate increases for apples and pears. We find major reductions in labor requirements only for cherries and grapes, but small reductions are projected for strawberries and pecans.

Vegetables

We projected an aggregate increase of 80 million cwt. of vegetables

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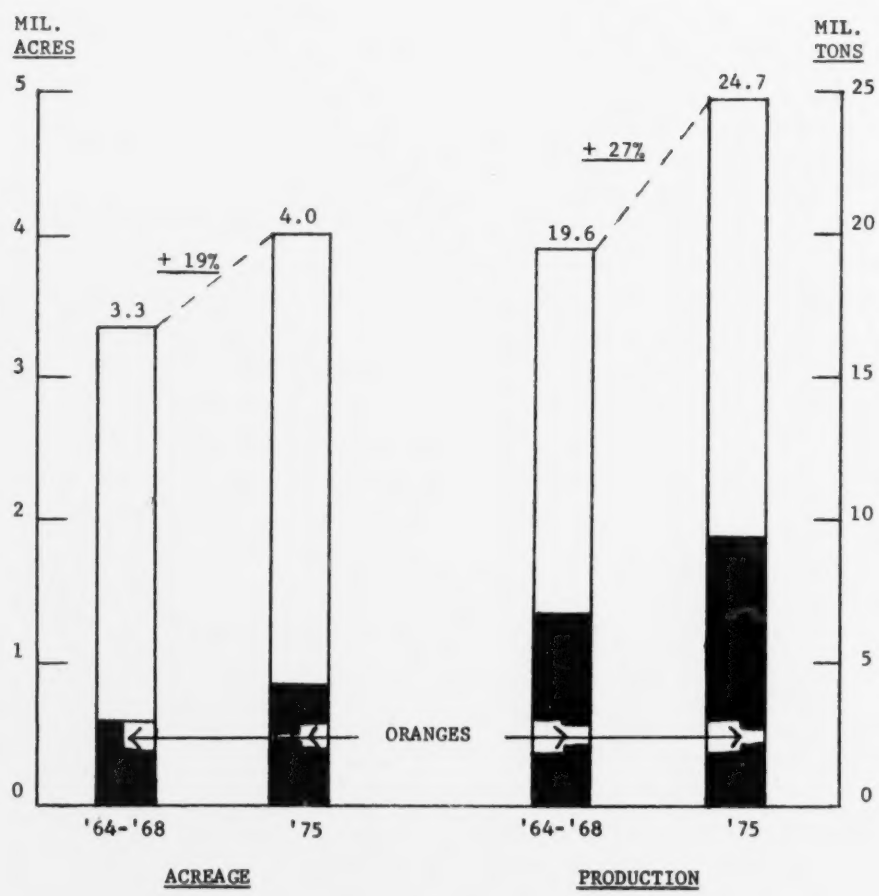

FIG. 9.--ACREAGE AND PRODUCTION OF FRUITS AND NUTS, UNITED STATES 1964-68 AND 1975

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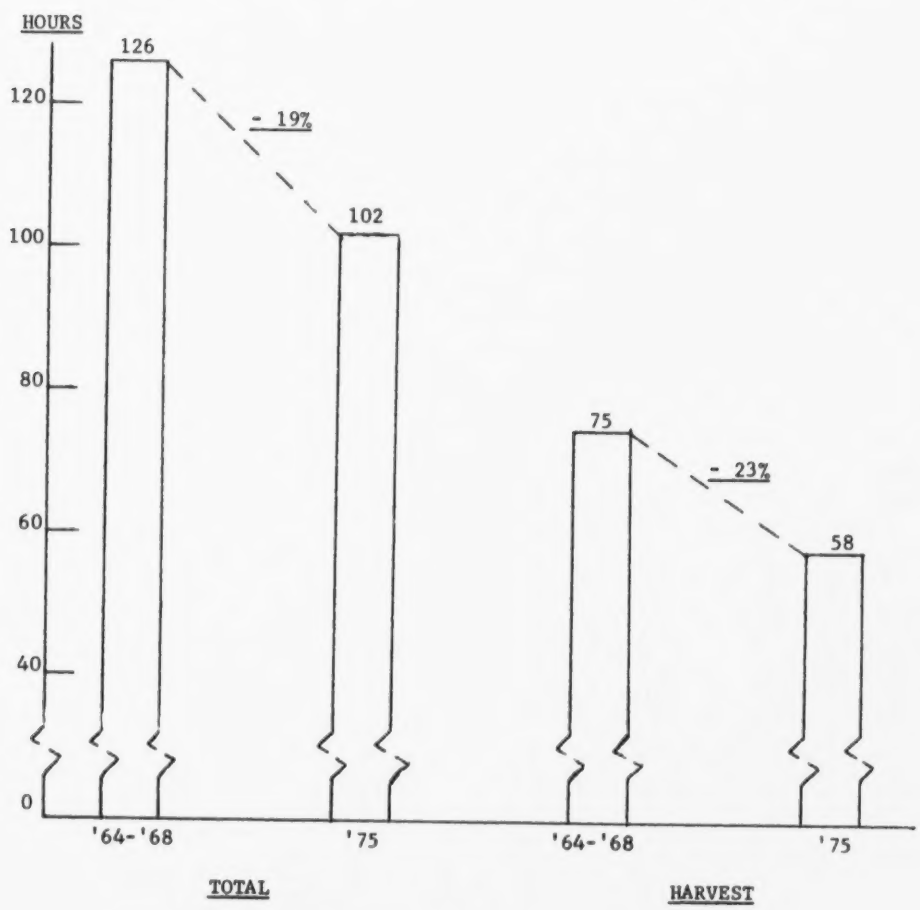

FIG. 10.--MAN-HOURS PER ACRE TO PRODUCE FRUITS AND NUTS, UNITED STATES, 1964-68 AND 1975

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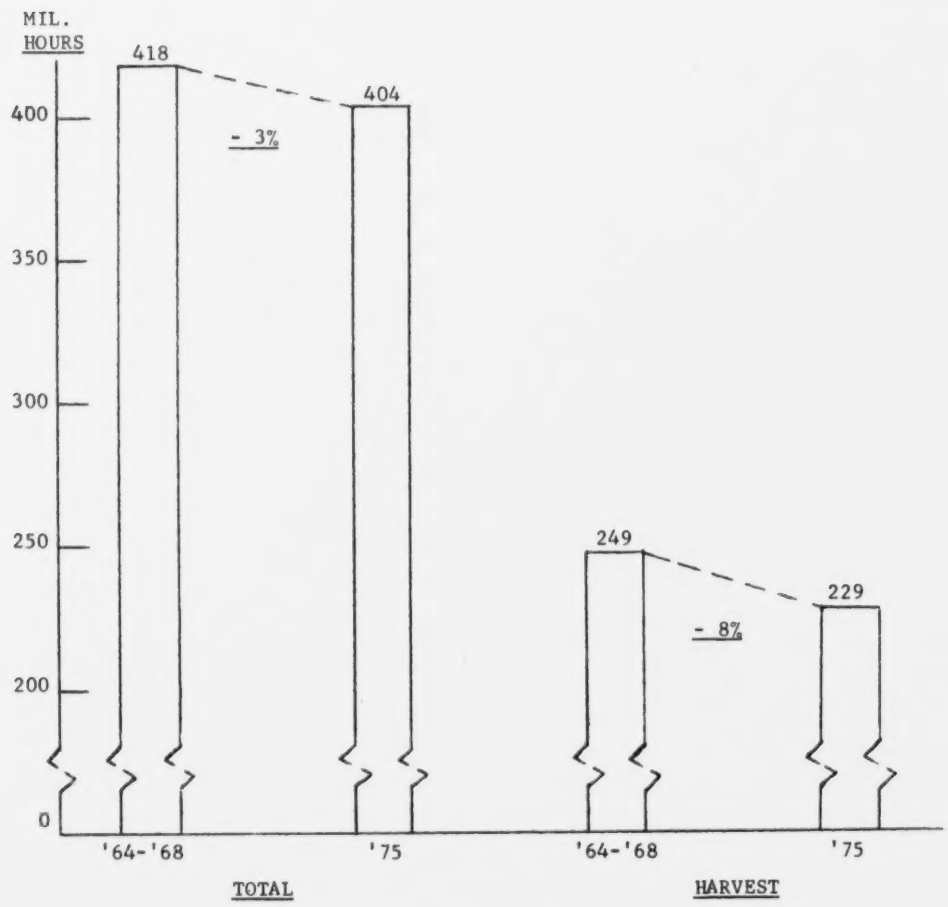

FIG. 11.--TOTAL MAN-HOURS TO PRODUCE FRUITS AND NUTS, UNITED STATES, 1964-68 AND 1975

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including potatoes from 1964-68 to 1975 (Figure 12 and Appendix Table 9). When we apply our projected technology to projected production of vegetables for 1975, we find a substantial improvement in the productivity of labor. By 1975 the average man-hours per acre for harvesting vegetables will drop almost half from 38 to 21 hours (Figure 13 and Appendix Table 10). The increase in the productivity of the preharvest labor is not as great; and, thus, the average total hours per acre for the production of vegetables will decline about one-third from 62 to 42 hours.

With an expected 11% increase in the production of vegetables from 1964-68 to 1975, man-hours for harvest will decline 40% from 163 million hours to 98 million hours (Figure 14 and Appendix Table 11). Substantial decreases in labor used for the harvest are projected for potatoes, tomatoes, lettuce, cucumbers, onions, and snap beans. Total labor will decline from 265 million hours to 194 million hours or about 27%. These are substantial decreases in the labor used in the production of vegetables and will affect, primarily, the migrant and unskilled categories of farm labor.

Effect on Total Fruits and Vegetables

As we examine the aggregate effect of mechanization on the future demand for labor in the fruit and vegetable industries, we note unequal changes in productivity as well as production. Thus, we will find surplus labor in some areas for some crops and at the same time shortages for others. For example, by individual crops we are projecting a decline of 67% in total labor requirements for the production of snap beans but an increase of 24% in labor requirements for oranges (Appendix Tables 8 and 11). Overall, for both fruits and vegetables we are expecting only a moderate decline in total labor requirements of 85 million hours or a decline of about 12% (Figure 15).

Summary and Conclusions

As we look to the future, the farmer, or more appropriately the farm business manager, will be challenged to keep pace with technology. To expand or even to stay in business he must have the courage to change. With new technology the organization of farming will change, worker opportunities will change, and products will change.

Within a framework of static economic concepts I have drawn some inferences concerning the implications of future technology in the production of fruits and vegetables. Mainly, I have been concerned about the effect of rising costs of farm labor and resulting mechanization.

The rather simplified examination of the capital-labor substitution concept suggests that: (1) throughout agriculture in recent decades the substitution of machinery, chemicals, and other farm inputs for labor and land has been a dominant force in substantially increasing total production with a relatively small increase in total inputs; (2) when we consider the potential for future harvest mechanization, we find that fruits and nuts and fresh

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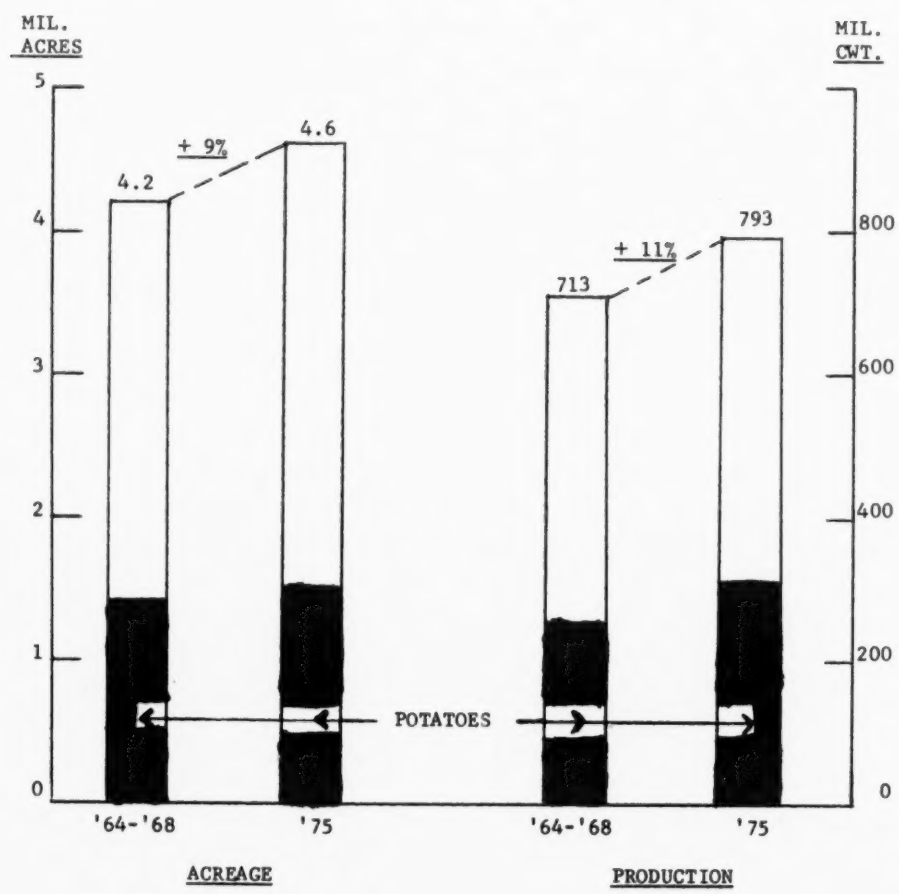

FIG. 12.--ACREAGE AND PRODUCTION OF VEGETABLES, UNITED STATES, 1964-68 AND 1975

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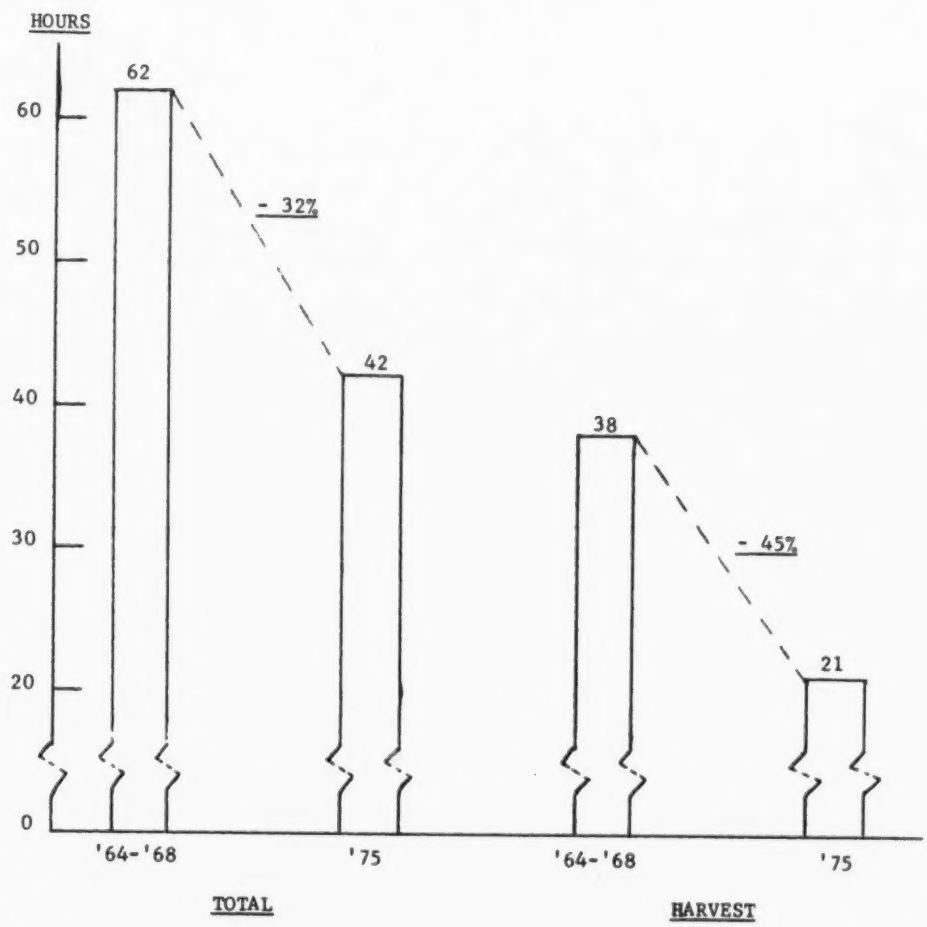

FIG. 13.--MAN-HOURS PER ACRE TO PRODUCE VEGETABLES, UNITED STATES, 1964-68 AND 1975

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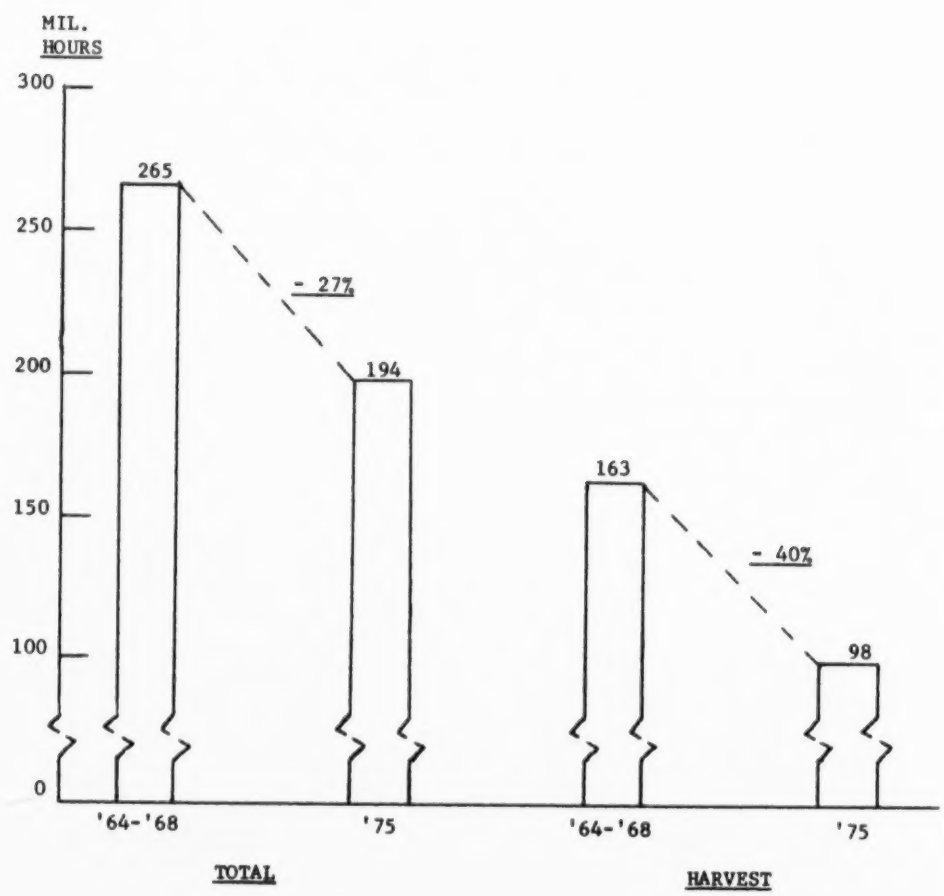

FIG. 14.--TOTAL MAN-HOURS TO PRODUCE VEGETABLES, UNITED STATES, 1964-68 AND 1975

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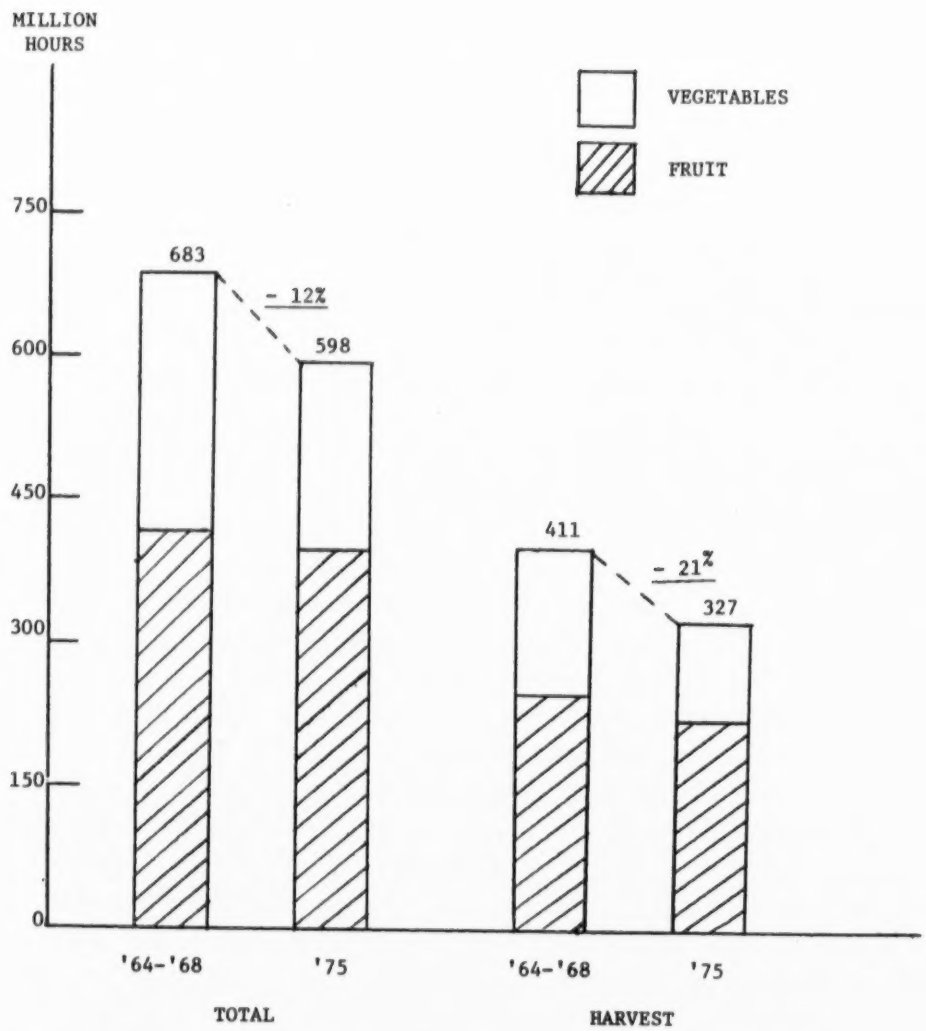

FIG. 15.--TOTAL MAN-HOURS TO PRODUCE FRUITS AND VEGETABLES, UNITED STATES, 1964-68 AND 1975

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vegetables will benefit from technology in which machines are substituted for hand labor. In contrast, future improvements in labor productivity in the harvesting of processing vegetables will come mainly from substituting larger for smaller machines and biological or chemical means for mechanical forms of capital; and (3) either an increase in the size of enterprise or a nonproportional change in the price of inputs, such as higher wage rates, will cause farmers to examine their mix of inputs. Once they adopt a particular mechanized technology, they are concerned in the short run only with operating costs; and labor costs must increase considerably to force them to shift to a more capital-intensive technique. This accounts for some of the lag in the adoption of new mechanized practices.

We also looked at the implications of technology on the production of fruits and vegetables through the lens of supply and demand. In the future, we should be facing a more inelastic supply schedule for both labor and machinery. The more completely crops are mechanized, with the accompanying higher skill requirements and reduced mobility of farm workers, the more inelastic the labor supply schedule should become. This means that wage rates can increase in the future with relatively smaller increases in workers available.

Demand for an input is affected by demand for the final product, the proportion which a particular input represents of total inputs, and the degree of substitutability for other inputs. In the near term, demand for labor and machinery will be more elastic in vegetable production than for fruit production because of the greater potential for substituting machinery for labor. In the longer run, as we approach complete mechanization of a crop or an industry, demand for both labor and machinery will become more inelastic. Then, changes in prices of inputs will have relatively little effect on demand because the degree of substitutability will have declined.

As we look at the supply and demand relationship in the production of fruits and vegetables, we find the growing population is the major factor that will increase demand. The immediate effect of rising labor costs and the adoption of new machine technology is to increase farmers' cost per unit of output and shift the industry supply function upward and to the left. The situation represents the interim stage for a mechanized crop or the equilibrium situation for a crop which cannot be greatly mechanized. With an inelastic demand for the commodity, the new equilibrium point of supply and demand will result in a higher price and smaller quantity of the product sold and larger gross income to the farmer. Consumers will be less well off. Farm jobs will be fewer, and for those jobs that can be mechanized total wages will be less. For those jobs that cannot be mechanized the number of jobs will decline slightly because of reduced production, but total wages will increase. In the final stage of mechanization producers' cost function and the industry supply curve may shift to the right or below the original level.

The supply and demand situation for fruits and vegetables through 1975 suggests that production, total farm income, and unit prices will increase. Total number of jobs will decrease but the number of higher skilled and higher paid jobs will increase. Unfortunately, those workers who are displaced will tend to be the unskilled who are least able to make the adjustment. The power of labor to raise wages without losing jobs will return only after the potential mechanization is completed.

Future labor inputs for 1975 differ considerably between vegetables and fruits. The differences are caused primarily by larger expected increases in production and lower potential, at least in the near future, for mechanization of fruits than for vegetables. The production of fruits and nuts is expected to increase 27% from 1968 to 1975. During the same period, the extent of harvest mechanization is expected to increase from 2% to 17%. As a result, total man-hours are expected to decrease only 3%. In contrast, vegetables are already more completely mechanized and harvest mechanization is expected to increase further from 56% in 1968 to 75% by 1975. With an 11% increase in production by 1975 total man-hours are expected to decline 27%. The total effect of projected mechanization and changes in production of fruits and vegetables is only a moderate decline in total man-hours of 85 million hours or 12% by 1975.

REFERENCES CITED

[1] Boulding, Kenneth E. 3rd ed. *Economic Analysis*. New York: Harpers and Brothers, 1955.

[2] Padfield, Harland; and Martin, William E. *Farmers, Workers and Machines--Technological and Social Changes in Farm Industries of Arizona*. Tucson: The University of Arizona Press, 1965.

[3] U.S. Department of Agriculture. *Agricultural Charts, 1968*. A. H. No. 359. Washington, D.C.: Government Printing Office, November, 1968.

[4] _____. *Agricultural Statistics, 1968*. Washington, D.C.: Government Printing Office.

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Appendix

Table 1. Prices of Selected Farm Inputs, 1950-68

(1950=100)

Year	Farm Wage Rates	Farm Machinery	Fertilizer	Farm Real Estate
1950	100	100	100	100
1951	111	108	106	115
1952	118	111	108	126
1953	121	112	109	128
1954	120	113	110	126
1955	121	113	108	131
1956	126	118	106	137
1957	131	123	106	146
1958	135	129	106	152
1959	144	134	106	163
1960	148	138	106	171
1961	151	141	107	172
1962	155	144	106	182
1963	159	146	106	189
1964	163	149	105	202
1965	171	154	106	214
1966	185	160	106	231
1967	200	167	106	246
1968[a]	208	173	105	262

Source: [3].

[a]Preliminary.

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Appendix

Table 2. Quantities of Selected Farm Inputs, 1950-68

(1950=100)

Year	Labor	Farm Real Estate	Mechanical Power and Machinery	Fertilizer and Liming Materials	All Other Inputs
1950	100	100	100	100	100
1951	101	101	107	107	106
1952	96	102	112	118	106
1953	92	102	113	122	107
1954	88	103	114	129	109
1955	85	103	115	132	113
1956	80	102	115	134	119
1957	73	103	116	138	118
1958	70	103	115	143	125
1959	68	103	117	160	131
1960	65	104	121	163	134
1961	63	104	117	172	138
1962	60	106	116	184	143
1963	58	107	121	207	148
1964	55	109	119	228	152
1965	52	109	122	238	153
1966	50	110	128	268	160
1967	49	109	130	301	160
1968[a]	48	109	135	325	171

Source [3].

[a]Preliminary.

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Appendix

Table 3. Total Farm Output and Inputs, 1950-68
(1950=100)

Year	Total Output	Total Inputs	Productivity[a]
1950	100	100	100
1951	103	103	100
1952	107	102	105
1953	108	102	106
1954	108	101	107
1955	112	101	111
1956	113	100	113
1957	110	98	112
1958	119	98	121
1959	120	101	119
1960	123	100	123
1961	124	100	124
1962	126	100	126
1963	130	103	126
1964	129	103	125
1965	133	103	129
1966	131	106	124
1967	137	108	127
1968[b]	142	111	128

Source: [3].

[a]Output per unit of input.

[b]Preliminary.

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Table 4. Percentage of Fruits and Nuts Machine Harvested and Man-machine Ratios, United States, 1968 and 1975[a]

Fruits and Nuts	Percentage Machine Harvested		Man-Machine Ratio	
	1968	1975	1968	1975
	Percent	Percent		
Oranges	0	10	--	8:1
Navel	--	--	--	--
Valencias and others	--	--	--	--
Grapes	5	42	15:1	--
Table	--	0	--	--
Wine	--	50	--	15:1
Apples	0	5	--	--
Fresh	0	0	--	--
Processing	1	10	7:1	9:1
Grapefruit	--	10	--	8:1
Peaches	3	41	4:1	--
Cling	--	60	--	5:1
Others	--	5	--	5:1
Lemons	0	0	--	--
Pears	0	7	--	4:3
Cherries	28	75	--	--
Tart	50	95	33:1	35:1
Sweet	2	50	30:1	35:1
Strawberries	0	10	--	20:1
Pecans	5	20	7:1	7:1
All other Fruits and Nuts	5	10	--	--
Noncitrus	--	10	--	--
Citrus	--	15	--	--
Total	2[b]	17[b]	--	--

[a]Most of the data for 1968 and 1975 were assembled from estimates prepared by participants in the Technical Seminar on Implications of Mechanization for Fruit and Vegetable Harvesting, Chicago, Illinois, December 8-10, 1968.

[b]Less than 0.5% of the total fruits and vegetables was mechanically harvested as fresh.

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Table 5. Percentage of Vegetables Machine Harvested and Man-machine Ratios, United States, 1968 and 1975[a]

Vegetables	Percentage Machine Harvested		Man-machine Ratio	
	1968	1975	1968	1975
	Percent	Percent		
Potatoes	85	97	12:1	15:1
Tomatoes - Total	44	70	--	--
Fresh	0	30	--	3:1
Processing	65	90	--	3:1
Corn, Sweet	78	93	--	--
Fresh	30	75	--	--
Processing	100	100	--	--
Lettuce	0	50	--	--
Onions	35	70	6:1	8:1
Cabbage	1	50	9:1	9:1
Carrots	95	100	4:1	6:1
Cucumbers	8	55	--	30:1
Beans, Snap	79	100	250:1	300:1
Fresh	30	100	--	--
Processing	100	100	250:1	--
Sweet Potatoes	70	90	--	--
Peas, Green	99	100	--	--
All other Vegetables	5	15	10:1	10:1
Total all Vegetables	56	75	--	--
Fresh	52	70	--	--
Processing	73	93	--	--
Total, Less Potatoes	35	59	--	--
Fresh	13	40	--	--
Processing	73	93	--	--

[a]Most of the data for 1968 and 1975 were assembled from estimates prepared by participants in the Technical Seminar on Implications of Mechanization for Fruit and Vegetable Harvesting, Chicago, Illinois, December 8-10, 1968.

Table 6. Acreage and Production of Fruits and Nuts, United States, 1964-68 and 1975

Fruits and Nuts	Acreage		Production		Percentage Change 1964-68 to 1975	
	1964-68	1975	1964-68	1975	Acreage	Production
	1,000 Acres	1,000 Acres	1,000 Tons	1,000 Tons	Percent	Percent
Oranges	600	850	6,667	9,400	+42	+ 41
Navel	64	--	--	--	--	--
Valencias and Others	536	--	--	--	--	--
Grapes	529	480	3,637	4,200	- 9	+ 15
Table	--	240	--	2,100	--	--
Wine	--	240	--	2,100	--	--
Apples	436	530	2,871	3,500	+22	+ 22
Fresh	--	212	1,636	1,820	--	--
Processing	--	318	1,235	1,680	--	--
Grapefruit	123	145	1,939	2,300	+18	+ 19
Peaches	281	345	1,618	2,000	+23	+ 24
Cling	--	179	--	1,040	--	--
Others	--	166	--	960	--	--
Lemons	54	58	637	680	+ 7	+ 7
Pears	80	90	605	700	+12	+ 16
Cherries	99	122	243	300	+23	+ 23
Tart	60	80	143	200	+33	+ 40
Sweet	39	42	100	100	+ 8	0
Strawberries	75	82	248	270	+ 9	+ 9
Pecans	473	500	82	90	+ 6	+ 10
All other Fruits and Nuts	580	750	1,008	1,320	+29	+ 31
Noncitrus	--	400	--	700	--	--
Citrus	--	350	--	620	--	--
Total	3,330[a]	3,952[b]	19,555[a]	24,760[b]	+19	+ 27

[a]U.S. Department of Agriculture, Agricultural Statistics, 1968.

[b]The total acreage and production for 1975 are unpublished projections prepared by Economic and Statistical Analysis Division. The individual commodities were estimated by the author through a series of projection approximations keeping within the established estimates of total acreage and production.

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Table 7. Man-hours per Acre of Fruits and Nuts, United States, 1964-68 and 1975

Fruits and Nuts	Man-hours per Acre[a]				Percentage Change 1964-68 to 1975	
	Harvest		Total			
	1964-68	1975	1964-68	1975	Harvest	Total
	Hours	Hours	Hours	Hours	Percent	Percent
Oranges	32	29	68	59	- 9	-13
Navel	--	--	--	--	--	--
Valencia and Other	--	--	--	--	--	--
Grapes	50	38	95	76	-24	-20
Table	--	49	--	87	--	--
Wine	--	27	--	65	--	--
Apples	68	64	126	112	- 6	-11
Fresh	--	67	--	115	--	--
Processing	--	62	--	110	--	--
Grapefruit	41	37	120	107	-10	-11
Peaches	67	49	166	134	-27	-19
Cling	--	35	--	120	--	--
Others	--	65	--	150	--	--
Lemons	127	125	178	173	- 2	- 3
Pears	70	69	198	189	- 1	- 5
Cherries	260	54	283	77	-79	-73
Tart	--	12	--	35	--	--
Sweet	--	135	--	158	--	--
Strawberries	598	486	729	606	-19	-17
Pecans	72	58	79	64	-19	-19
All other Fruits and Nuts	56	54	112	104	- 4	- 7
Noncitrus	--	--	--	--	--	--
Citrus	--	--	--	--	--	--
Total	75	58	126	102	-23	-19

[a]Published and unpublished USDA-ERS estimates of 1964-68 man-hours used per acre of commercial production. Estimates for 1975 are based upon the degree of mechanization and man-machine ratios prepared by participants in the Technical Seminar on Implications of Mechanization for Fruit and Vegetable Harvesting, Chicago, Illinois, December 8-10, 1968.

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Table 8. Total Man-hours for the Production of Fruits and Nuts, United States, 1964-68 and 1975

Fruits and Nuts	Total Man-hours[a]				Percentage Change 1964-68 to 1975	
	Harvest		Total			
	1964-68	1975	1964-68	1975	Harvest	Total
	Mil. Hours	Mil. Hours	Mil. Hours	Mil. Hours	Percent	Percent
Oranges	19.0	24.6	40.4	50.1	+29	+24
Navel	--	--	--	--	--	--
Valencia and others	--	--	--	--	--	--
Grapes	26.3	18.3	50.0	36.5	-30	-27
Table	--	11.8	--	20.9	--	--
Wine	--	6.5	--	15.6	--	--
Apples	29.6	33.9	55.0	59.4	+15	+ 8
Fresh	--	14.2	--	24.4	--	--
Processing	--	19.7	--	35.0	--	--
Grapefruit	5.1	5.4	14.9	15.6	+ 6	+ 5
Peaches	18.9	17.1	46.8	46.4	-10	- 1
Cling	--	6.3	--	21.5	--	--
Others	--	10.8	--	24.9	--	--
Lemons	6.9	7.2	9.6	10.0	+ 4	+ 4
Pears	5.6	6.2	15.8	17.0	+11	+ 8
Cherries	25.8	6.6	28.1	9.4	-74	-67
Tart	--	1.0	--	2.8	--	--
Sweet	--	5.6	--	6.6	--	--
Strawberries	44.9	39.9	54.7	49.7	-11	- 9
Pecans	34.0	29.0	37.2	32.0	-15	-14
All other Fruits and Nuts	32.7	40.5	65.3	78.0	+24	+19
Noncitrus	--	--	--	--	--	--
Citrus	--	--	--	--	--	--
Total	248.8	228.7	417.8	404.1	- 8	- 3

[a]Published and unpublished USDA-ERS estimates of 1964-68 man-hours required for commercial production. Estimates for 1975 are based upon acreage and production estimates from Appendix Table 6 and man-hours per acre from Appendix Table 7.

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Appendix

Table 9. Acreage and Production of Vegetables, United States, 1964-68 and 1975

Vegetables	Acreage		Production		Percentage Change 1964-68 to 1975	
	1964-68	1975	1964-68	1975	Acreage	Production
	1,000 Acres	1,000 Acres	Mil. Cwt.	Mil. Cwt.	Percent	Percent
Potatoes	1,391	1,459	288	313	+ 5	+ 9
Tomatoes, Total	456	500	124	136	+10	+10
Fresh	150	170	--	--	+13	--
Processing	306	330	--	--	+ 8	--
Corn, Sweet	626	700	49	54	+12	+10
Fresh	194	220	--	--	+13	--
Processing	432	480	--	--	+11	--
Lettuce	218	230	42	46	+ 6	+10
Onions	100	105	27	30	+ 5	+11
Cabbage	113	124	23	24	+10	+ 4
Carrots	79	84	17	19	+ 6	+12
Cucumbers	181	210	15	18	+16	+20
Beans, Snap	336	370	14	16	+10	+14
Fresh	84	--	--	--	--	--
Processing	252	--	--	--	--	--
Sweet Potatoes	154	154	14	14	0	0
Peas, Green	444	490	11	13	+10	+18
All other Vegetables	148	183	89	110	+24	+24
Total	4,246[a]	4,609[b]	713[a]	793[b]	+ 9	+11

[a]U.S. Department of Agriculture, Agricultural Statistics, 1968.

[b]The total acreage and production for 1975 are unpublished projections prepared by Economic and Statistical Analysis Division. The individual commodities were estimated by the author through a series of projection approximations keeping within the established estimates of total acreage and production.

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Table 10. Man-hours per Acre of Vegetables, United States, 1964-68 and 1975

Vegetables	Man-hours per Acre[a]				Percentage Change 1964-68 to 1975	
	Harvest		Total			
	1964-68	1975	1964-68	1975	Harvest	Total
	Hours	Hours	Hours	Hours	Percent	Percent
Potatoes	26	11	45	26	-58	-42
Tomatoes, Total	78	51	118	86	-35	-27
Fresh	103	79	155	--	-23	--
Processing	65	37	100	--	-43	--
Corn, Sweet	12	7	22	15	-42	-32
Fresh	30	13	45	--	-57	--
Processing	4	4	11	--	0	--
Lettuce	60	38	105	78	-37	-26
Onions	70	41	120	86	-41	-28
Cabbage	52	28	90	63	-46	-30
Carrots	70	50	100	77	-29	-23
Cucumbers	70	37	110	73	-47	-34
Beans, Snap	36	5	50	15	-86	-70
Fresh	120	--	132	--	--	--
Processing	8	--	23	--	--	--
Sweet Potatoes	41	15	87	55	-63	-37
Peas, Green	6	5	10	9	-17	-10
All Other Vegetables	120	90	185	150	-25	-19
Total	38	21	62	42	-45	-32

[a]Published and unpublished USDA-ERS estimates of 1964-68 man-hours required per acre of commercial production. Estimates for 1975 are based upon the degree of mechanization and man-machine ratios prepared by participants in the Technical Seminar on Implications of Mechanization for Fruit and Vegetable Harvesting, Chicago, Illinois, December 8-10,1968.

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Table 11. Total Man-hours for the Production of Vegetables, United States, 1964-68 and 1975

Vegetables	Total Man-hours[a]				Percentage Change 1964-68 to 1975	
	Harvest		Total			
	1964-68	1975	1964-68	1975	Harvest	Total
	Mil. Hours	Mil. Hours	Mil. Hours	Mil. Hours	Percent	Percent
Potatoes	36.6	16.0	63.0	37.9	-56	-40
Tomatoes, Total	35.3	25.6	53.8	43.1	-27	-20
Fresh	15.4	13.4	23.2	--	-13	--
Processing	19.9	12.2	30.6	--	-39	--
Corn, Sweet	7.5	4.8	13.4	10.4	-36	-22
Fresh	5.8	2.9	8.7	--	-50	--
Processing	1.7	1.9	4.7	--	+12	--
Lettuce	13.1	8.7	22.9	17.9	-34	-22
Onions	7.0	4.3	12.0	9.0	-39	-25
Cabbage	5.9	3.5	10.2	7.8	-41	-24
Carrots	5.5	4.2	7.9	6.5	-24	-18
Cucumbers	12.7	7.8	19.9	15.3	-39	-23
Beans, Snap	12.1	1.9	16.9	5.6	-84	-67
Fresh	10.1	--	11.1	--	--	--
Processing	2.0	--	5.8	--	--	--
Sweet Potatoes	6.3	2.3	13.5	8.5	-63	-37
Peas, Green	2.7	2.4	4.5	4.4	-11	- 2
All Other Vegetables	17.8	16.5	27.4	27.5	- 7	b
Total	162.5	98.0	265.4	193.9	-40	-27

[a]Published and unpublished USDA-ERS estimates of 1964-68 man-hours required for commercial production. Estimates for 1975 are based upon acreage and production estimates from Appendix Table 9 and man-hours per acre from Appendix Table 10.

[b]Less than 0.5%.

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THE INTERNATIONAL ANGLE

Kenneth R. Farrell

The spreading wave of economic development and associated rise in world affluence since World War II have been a boon to the international fruit and vegetable trade. Expanding opportunities have generated significant changes and growth in industry activity. New markets have been tapped and traditional ones expanded. Potential production areas have been actively prospected resulting in some instances in unreckoned additions to traditional sources of supply.

A summary impression of what has been happening in the world trade sector for fruits and vegetables during the past two decades can be gotten from Figure 1 [1]. The growth in aggregate trade since 1951 has progressed briskly with practically no interruptions, increasing from 9.2 million metric tons in that year to 26.1 tons in 1965. Fresh vegetables have registered more of a relative gain in recent years than fresh fruits. For 1965, trade in vegetables was 52% above the 1959-61 level compared to a 32% advance for fresh fruit.

Four major markets, the United States, EEC, EFTA, and Eastern Europe dominate the import side of the trade relationship for fruits and vegetables. These markets accounted for 74% of world imports of vegetables in 1964 with Western Europe (EEC and EFTA combined) responsible for most of this share. Fifty-seven percent of the world fruit and 57% of world vegetable imports in 1964 moved into West European markets.

The important exporters of fresh fruits and nuts are Latin America, EEC, OWE (other Western Europe), United States, and West Asia. Seventy-two percent of world exports of fresh fruits and nuts were furnished by these five suppliers in 1964.

Although exports of vegetables are shared more equally than fruits among exporting regions, three regions (EEC, Western Europe, and OWE) shared in exporting more than half of world vegetable exports in 1964.

The International Role of U.S. Fruits and Vegetables

To any researcher close to the produce industry the frustrations associated with arranging, just for the U.S. domestic sector alone, an analyzable perspective for the fruit and vegetable industry are well known.

Data problems not unrelated to industry hyperactivity and heterogeniety are legion. Certain specialty commodities of lesser individual economic significance, but collectively important, may scarcely receive official statistical mention. Those deemed to be more economically important often are statistically catalogued, thoroughly in some production areas and seasons of the year but are given much less attention for other seasons and localities.

The first signals that important production area shifts are underway frequently come from reports of receipts of fresh produce in terminal markets.

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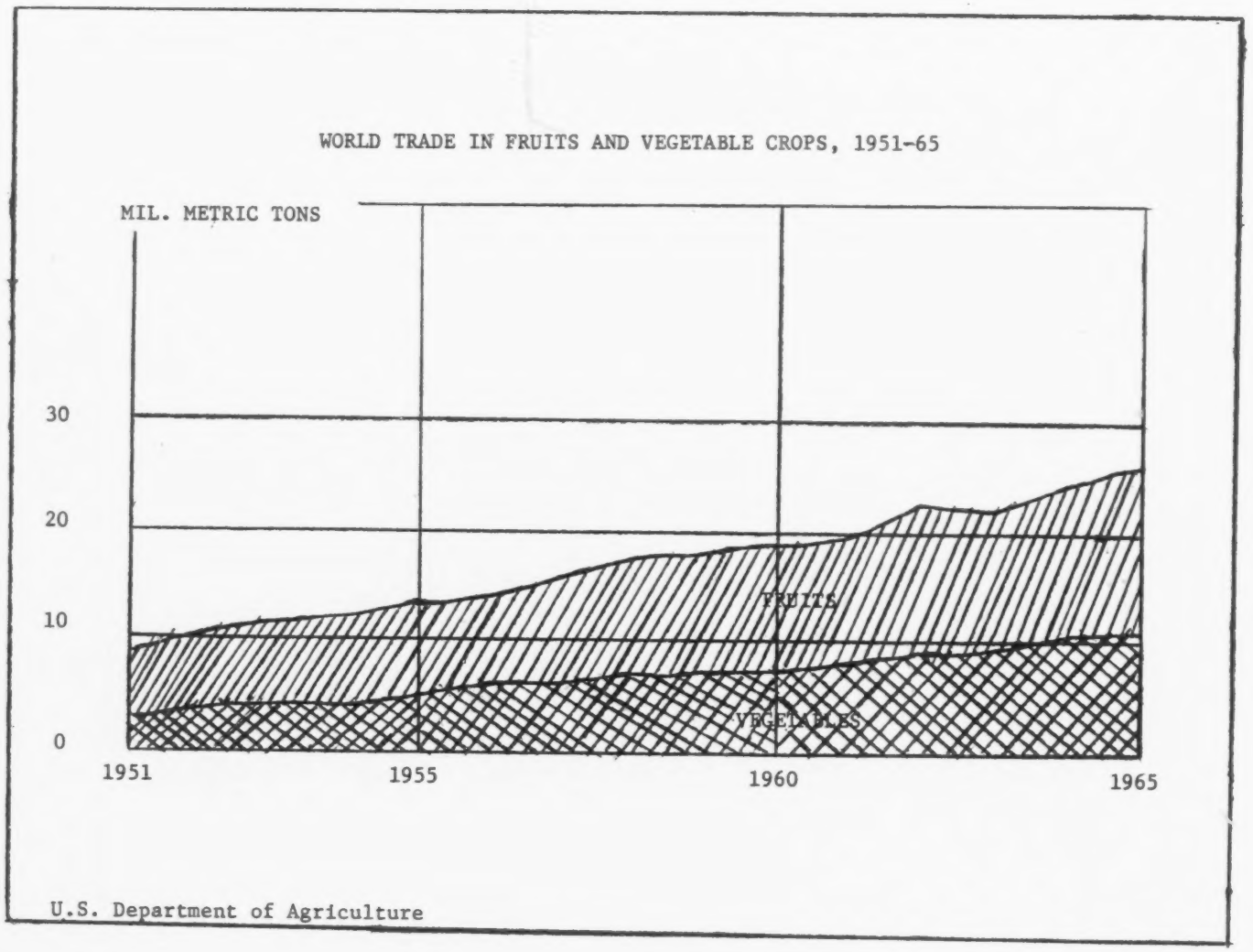
WORLD TRADE IN FRUITS AND VEGETABLE CROPS, 1951-65
MIL. METRIC TONS
30
20
10
0
1951
1955
1960
1965
FRUITS
VEGETABLES
U.S. Department of Agriculture

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It happens similarly for processed products. New products with far reaching industry implications have a way of becoming accomplished market facts before there is a general awareness among industry students, except perhaps those technically identified with the innovative introductions, that significant industry changes have been set in motion.

Indeed, because of difficulties of keeping tab on industry behavior, the domestic sector is an elusive target for the economic analyst. But helpful evaluative glimpses of it are possible. When the U.S. fruit and vegetable industry is allowed to merge with the international scene, analytical insights are much more thoroughly camouflaged.

Most of the long list of fruits and vegetables produced in the U.S. are also produced elsewhere in the world. Yet, the list common to the U.S. and other parts of the world for which *total world estimates* are provided for vegetables in the *FAO Production Yearbook* is disappointingly brief. In relation to crop numbers fruits receive far better coverage.

According to *1967 FAO Trade Yearbook*, U.S. imports of fruits and vegetables have been increasing much more rapidly than exports in recent years. In 1962, exports were valued at $436.2 million and imports at $294.7 million. By 1966, the value of imports had risen to $534.5 million overshadowing the $509.2 million value of exports. The change in the import-export position in favor of imports results basically from: (1) substitution of imports for domestically produced products; (2) substitution of exports from other producing areas for U.S. products in traditional U.S. export markets; and (3) increased importation into the U.S. of products not available domestically. The first two reasons for changes in trade flows for fruits and vegetables are the sources of direct concern to the domestic industry. In the case of imports, tomatoes from Mexico are currently generating considerable excitement and reaction in the domestic winter and spring tomato industry. Florida has traditionally been the dominant supplier of fresh tomatoes for the winter and early spring market. Five seasons ago shipments from Mexico were about one-half the volume from Florida. This past season shipments from Mexico to U.S. and Canadian markets about matched those from Florida. Moreover, while Florida shipments have gradually vacillated downward, Mexican shipments have continued on a practically unbroken upward trend.

Although the export market issue is less sensitive to domestic growers than the large scale intrusion of Mexican tomatoes into "home" markets, Mexican tomato exports to Canada, the major U.S. export market for fresh vegetables, are exerting additional pressures on the domestic industry through the reduction of export opportunities. The story, except for degrees of intensity, is much the same for cucumbers, green peppers, eggplant, squash, some other vegetables, and melons and strawberries. Mexican supplies are taking the place of domestic products in U.S. markets, as well as in the principal U.S. export market for these commodities.

Celery, lettuce, and cabbage are about the only large volume commodities that encounter only negligible import competition and are enjoying export markets that seem to be becoming increasingly significant, especially for celery and lettuce. Export trials for radishes to European markets are meeting with success but the volume is relatively small.

The increasing supply potential for Mexican citrus is another source of concern in the U.S. In the face of expected sharp increases in domestic supplies from increases in plantings in Florida, Texas, and California, additional supplies from Mexico could apply substantial competitive pressure on the domestic sector. European export outlets will afford little opportunity for relief for oranges because these are captive winter markets of the expanding Mediterranean citrus industry. During the summer U.S. exports will have to contend with rising exports from South Africa to Europe.

The domestic apple industry seems to be already well into the phase of competitive adjustment that may be in store for the citrus industry. Important European export markets are being lost because of increasing supplies from France and other continental producing areas. In the Latin American and other export markets the U.S. apple industry is losing ground or is barely staying even.

While export opportunities for domestic apples have been decreasing, imports have been increasing briskly. Not all of this reflects direct displacement of domestic apples, however, because importations from the Southern Hemisphere take place primarily when domestic supplies are light.

U.S. cherries, peaches, pears, and plums face much the same type of export situation as apples. The extensive network of supply areas, some of which are expanding production aggressively relative to the U.S., is blocking export market expansion for U.S. output. Grapes are in a somewhat better position.

Strawberries presently hold the spotlight as an export growth item. Increasing quantities of fresh California strawberries are being air freighted to European markets. Mexican berries are also getting a piece of this action in the early part of the season. France, however, may be in a position to counter this development soon. Recently, French production has been increasing rapidly.

The fruit and vegetable processing sector is experiencing as much, if not more, stress than the fresh sector. The trade situation for canned tomato products, a big pack item for the U.S. running 35 to 40 million cases (24/303), is undergoing a rather substantial rearrangement. Accelerating output in the Mediterranean area has not only pushed U.S. supplies out of the European market but is also finding increasing entry into the U.S. and Canadian markets.

Mexico, likewise, is showing increasing capability for putting out processed tomato products. Mexico has long since assumed an important role in the frozen strawberry activity.

But asparagus, perhaps, furnishes one of the best examples of contemporary abrupt upheavals in the trade situation for processed vegetable products. The U.S. asparagus pack has diminished significantly since the beginning of the tightening California labor situation in the early 60's. The 9 million case pack (24/303 equivalent) of that period has decreased to a current output of less than 7 million cases. Taiwan moved in to fill the gap. In 1963, a pack of only 3,000 cases was reported for Taiwan. Presently the pack is better than 3.5 million cases. Correspondingly, Taiwan exports have moved aggressively into such choice U.S. export markets as West Germany.

Taiwan is also moving ahead rapidly in the production of canned mushrooms and is second only to France, the recorded world's leading producer of this product. The U.S. market is the favorite target for Taiwan mushroom exports of which the domestic industry is painfully aware. Imports from Taiwan are equivalent to about 30% of U.S. production of canned mushrooms.

Pineapple is another crop in which Taiwan is showing an aggressive interest. Exports from Taiwan have been largely instrumental in changing the U.S. from a net exporter to a net importer of pineapples. Nearly half of these exports move into U.S. markets. Because of preferential treatment, pineapples from the Ivory coast and other African countries are taking over much of the European market.

Although the canned peach pack in the U.S. continues on a healthy trend, exports have suffered a setback. Exports that earlier amounted to about 5 million cases are now running at about 2.5 million. The 80% share of the West German market once claimed by U.S. peaches has decreased to about 13%. An important part of the continental market has been attained by European, Australian, and South African processors.

International Adjustments and Relocations

While the trade data for fruits and vegetables may be casually interpreted as a manifestation of the working of comparative economic advantage among autonomous producing and consuming countries reacting independently, the underlying explanation for trade changes is not that simple. True, the level of consumption of fruits and vegetables entering the commercial sector tends to be positively correlated with the level of income among the various national markets. And, production is more or less situated in accordance with the compatibility of the natural environment as parceled out by the dictates of national boundaries. But, beyond the matter of generalizing about points of origin and destination for product flows, a national reference is not overly enlightening to an understanding of what is happening in the world fruit and vegetable industry.

Not unlike other large international business organizations certain firms in the fruit and vegetable industry, notably those engaged in processing, participate in activities that transcend national boundaries. Firms furnishing

some of the most familiar U.S. brands have established processing operations at strategic points throughout the free world. This application of factor and product logistics on an international scale clouds the issue of intercountry competition. To cope with trade barriers of the EEC certain U.S. firms have merely established processing operations in favored locations and proceeded to acquire a share of the market. The recent reversed trade flows for certain commodities from the continent to the U.S. may well be an indication of the economic success of these operations.

Even the fresh product sector is not immune to these international arrangements. The rising outflow of fresh produce from Mexico to U.S. markets is largely the result of production activities initiated, funded, and supervised by prominent firms in the U.S. produce industry. Before Castro, Cuba was a popular production base. The Bahamas and other Caribbean and South American locations continue to be used as supply outposts by the winter produce trade. In this context it is firms in the fruit and vegetable industry that compete--not countries.

Certainly, changing national import and export policies are always affecting outcomes, but ordinarily results amount to an accommodation of industry economic rationality to policies sponsored by industry economic nationality. For example, wages and prices for products in certain locations indicates that changing trade patterns do not altogether involve economic contradiction. Farm wage rates for the U.S. are considerably higher than for the Mediterranean area of Mexico (Table 1). These differences are not always merely a matter of offsetting differences in physical productivity. The use of capital and technology in many Mexican commercial produce operations is as modernly organized as in the States.

The raw product prices for, say, tomatoes and oranges shed further light on why certain industry adjustments have occurred. Producer prices for processing tomatoes in Italy, for example, are typically as low or lower than in the States (Table 2). A recent study showed that the cost of growing fresh market vine ripe tomatoes in Mexico was something like one-third of the cost of production in Florida [2].

With such a history of differentials between prices for oranges in the U.S. and the Mediterranean area, it is understandable why the Mediterranean area dominates the winter market for fresh oranges on the continent leaving only a limited potential for juices and other processed orange products for which Florida varieties are better suited (Table 3).

Reference to varietal suitability prompts mentioning another important factor affecting international adjustments in the fruit and vegetable industry. Product differentiation plays an important role in industry affairs. Heterogenous consumption attitudes, production possibilities, and political improvisations complicate matters relating to product identities with some peculiar effects upon industry response.

Table 1. Farm Wage Rates in U.S. Dollars in Specified Countries

Year	Dollars						
	USA[a]	Mexico[b]	British Honduras[c]	France[b]	Israel[d]	Morocco[e]	Portugal[d]
		Per Day		Per Month		Per Day	
1958	6.00	.55	1.23	39.8	--	--	.77
1959	6.40	.67	1.40	38.1	--	.727	.81
1960	6.60	.75	1.40	39.9	--	.727	.89
1961	6.60	.75	1.40	41.7	115.0	.727	.93
1962	6.90	.87	1.75	45.6	81.2	.769	1.09
1963	7.10	.87	1.75	50.6	86.3	.769	1.15
1964	7.30	1.08	1.75	55.9	100.0	.769	1.30
1965	7.60	1.08	1.75	59.8	114.0[f]	.769	--
1966	8.20	1.26	1.75	62.4	135.0	--	--

Source: Food and Agriculture Organization of the United Nations, *Production Yearbook 1967*.

[a]Day laborers, male and female.

[b]General farm hands, male, payment may include value of board and value of lodging.

[c]Casual day laborers, male, citrus plantations minimum rates.

[d]Complete wage (worker remunerated wholly in cash).

[e]Adult workers, permanent and seasonal, male minimum rates.

[f]From 1965 sampling design revised.

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Table 2. Producer Prices for Tomatoes in Specified Countries, 1958-66

Year	Italy		Spain	United States	
	1 cent per kg.	11 cents per kg.	cents per kg.	1 cent per kg.	11 cents per kg.
1958	4.6	1.5	--	14.0	2.8
1959	6.5	2.7	4.4	16.2	2.7
1960	5.6	2.8	4.1	17.4	2.9
1961	5.1	2.3	5.6	16.5	3.3
1962	7.2	2.7	6.3	16.4	3.1
1963	11.4	4.0	6.3	16.7	2.9
1964	7.6	4.6	7.9	19.3	3.4
1965	6.9	4.0	8.2	20.7	4.1
1966	7.2	3.3	9.7	20.5	3.9

Source: Food and Agriculture Organization of the United Nations, *Production Yearbook 1967.*

Producer prices:

Italy: Average producer price:
1 - for fresh market.
11 - for industrial use.

Spain: Average producer price.

United States: Through 1960, average producer price; from 1961, average price, f.o.b. shipping point:
1 - for fresh market.
11 - for processing.

Table 3. Producer and Wholesale Prices for Oranges and Lemons in Specified Countries

Year	Oranges					Lemons
	Italy[a]	Spain[b]	United States[c]			Italy[d]
			1	2	3	
	U.S. cents per kilogram					
1958	6.7	--	20.7	25.1	16.8	7.9
1959	15.4	--	23.0	19.3	14.7	9.9
1960	13.5	10.7	27.5	24.6	17.0	10.0
1961	14.7	10.9	30.4	22.2	13.4	7.7
1962	16.7	7.5	27.9	23.8	22.2	17.5
1963	13.9	7.4	23.5	22.6	20.2	7.8
1964	11.6	6.4	21.2	28.6	15.6	8.6
1965	14.8	10.7	20.4	19.8	14.7	9.1
1966	14.1	12.9	20.3	22.6	12.3	11.0

Source: Food and Agricultural Organization of the United Nations, *Production Yearbook, 1967.*

[a]Average producer price, container, 1950 through 1958, "Bionda," from 1959 "tarocco."
[b]"Blanca" common quality, average wholesale price.
[c]United States prices, wholesale.
1. California navel auction price, N.Y.
2. California valencia auction price, N.Y.
3. Florida auction price, N.Y.
[d]Common quality, producer price Catania.

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Much of Brazil's orange concentrate exports go to other processors. U.S. processors are said to import Brazilian concentrate for blending with domestic juice, which presumably complements attributes of juices from some domestic varieties. If the product is exported U.S. processors are entitled to a rebate on import duties for the Brazilian concentrate. Such an arrangement allows the use of economical Brazilian juice to help meet competition in the export market.

A more unique situation than this exists. As a result of some of the biological tricks that nature is fond of playing, the distribution of Mexican tomatoes runs much heavier to smaller sizes than Florida tomatoes. Armed with the legal provisions of the Agricultural Marketing Agreement Act of 1937 (amended), the tomato industry of Florida countered the import threat by establishing a minimum size for tomatoes that could enter the domestic market.

Although usually less dramatic than in the foregoing example, imposed changes with economic overtones continuously enter into the matter of arranging for what can be made physically available in relation to what is wanted in the commercial fruit and vegetable sector. The role of plant breeding is never independent of economic pressures. Some of the hitherto most desirable varieties of fruits and vegetables have all but disappeared because of commercial requirements for varieties that were capable of resisting diseases, producing in volume, and withstanding the hazards of transportation and storage. A fairly recently added condition, especially particular to the U.S., requires that the commodities be amenable to mechanical harvesting.

Breakthroughs in transportation are certain, however, to lessen some of the pressure for product modification and improvisation. Large air freighters and fast specialized ocean vessels are just around the corner from making tremendous contributions to logistical flexibility. Possibilities will be reopened and expanded for making truly "fresh" favorite produce varieties available to consumers situated away from naturally endowed producing areas.

Manpower Implications for the Domestic Industry

Signs abound that the fruit and vegetable sector in the U.S. is entering a new era. As assuringly comfortable as it may have been to do so in the past, fruit and vegetable production can no longer be abstracted from the corporate world of business organization. The presence of a small number of large organizations strictly identified with the industry has been recognized for a long while. Within the past few years, however, the industry has undergone some striking changes in membership. It, too, has not been overlooked in the sweeping corporate search for mergers and acquisitions. Only several years ago entry of firms with at least some product connected interest attracted attention. But now, announcements of acquisitions in the fruit and vegetable sector by corporations with no previous association with the industry are no longer particularly met with surprise.

This carries with it the strong implication that, in the corporate view, production activities have achieved such a state of technical control that the process of growing produce can be annexed as a part of the "total" approach to marketing. If this vogue becomes locked in, it will accelerate changes in labor utilizational practices in the fruit and vegetable industry. For the corporate world outside of agriculture has long since been accustomed to compromising the labor issue.

On the domestic scene the focus on commodities most amenable to mechanization will become increasingly intensified, at least until such gains are erased by the new logistics that emerging transportation technology will afford. Firms will concentrate more on seasonal coordination of production activities for particular crops and diversify crop production to be in a position to offer a continuous, broad selection of produce. To achieve such operational coordination will require the abandonment of past labor policies. Reliance on casual labor will become less and less appropriate.

As the pressure for adjustment becomes more inexorable, larger firms will see fit to organize teams of skilled production and harvesting technicians with full-time employee status. This accomplishment will help spell the end for a large number of seasonal and part-time jobs which for so long have been identified with the fruit and vegetable industry.

REFERENCES CITED

[1] U.S. Dept. of Agriculture. *Foreign Agricultural Economic Report No. 44.* Economic Research Service. Wash.,D.C.: Government Printing Office, June, 1968.

[2] _____. *Agricultural Economic Report No. 154.* Economic Research Service. Wash., D.C.: Government Printing Office, March, 1969.

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THE RESOURCE MIX - A MICHIGAN CASE STUDY

A. Frank Bordeaux, Jr.

Fruit producers have not shared in the general technological advancement in production of farm products to the same extent that producers of other crops have. The index of farm production per man-hour for fruits and nuts has shown the smallest increase in the last 10 years of any category of crops, with an increase to an index of 109 in 1967 from an index of 100 in 1957-59. In contrast, the most dramatic change was in feed grains where the index moved from 100 in 1957-59 to 218 in 1967 [7]. This obvious lag in productivity advancement in fruit production was one of the stimuli for the research project from which this paper is derived.

The research project was designed to accomplish the following objectives: (1) to obtain bench-mark data on labor and machinery use on Michigan fruit farms; (2) to evaluate the productivity of resources used on Michigan fruit farms; and (3) to evaluate the impact of adopting newer technologies on the use of capital and labor in fruit enterprises. Some highlights of findings relative to the first two objectives will be mentioned, but findings relative to the third objective constitute the main thrust of the paper.*

A field questionnaire was used in 20 western Michigan counties to obtain data from 258 fruit growers concerning their 1966 production practices. This constituted the basic source of data for the completion of objectives (1) and (2) above. Additional data from other sources was used to achieve the third objective [1].

Discussion will be confined to the research on apples and tart cherries which are important fruit crops in Michigan. In terms of importance in total United States production, Michigan farmers had the following rankings in 1966 when the study was initiated: apples, third with $25 million production; tart cherries, first with $15 million production [5, p. 8, 16].

Observed Labor Use Patterns

In order to determine the labor use pattern of apple and tart cherry producers, data on the production of these fruits were recorded for blocks of apple and cherry orchards on the survey farms. The data obtained for apples and tart cherries consisted of inputs of labor and machinery used in the operations incurred in production of the respective fruit. The data were limited to reasonably homogeneous blocks of bearing apple or tart cherry orchards.

Seventy-seven usable apple schedules were obtained in the combined Area Farm and Large Farm samples. Sixty-eight usable tart cherry schedules were also obtained. The operations performed in the production of the fruits

*This paper draws on research conducted at Michigan State University in cooperation with the Farm Production Economics Division, USDA.

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were divided into 5 major categories for purposes of analysis. The 5 categories were: pruning; tillage; spraying; harvesting; and miscellaneous.

The most labor-intensive operations in apple production were the pruning and harvesting operations. The pruning operation accounted for 13% of the hired labor expenditures and 37% of family labor use (Table 1). The most concentrated use of labor occurred in the harvest operation which accounted for 82% of the total labor expenditures in apple production. The labor expenditure of $117.74 per acre was over four times as large as the combined labor expenditures of all other operations. Labor use of this magnitude indicated a potential source of savings through reduced labor use.

Similar analysis was performed on the tart cherry production data (Table 2). There, again, the pruning and harvesting operations accounted for most of the hired labor used. The harvest operation accounted for 93% of the total hired labor expenditures and 36% of all family labor use. This amounted to $124 hired labor expenditures per acre of fruit and 4.46 hours of family labor use. The pruning operation required 5% of the hired labor expenditures and 36% of all family labor use.

The survey data established the relatively large magnitude of the expenditures for hired labor in the harvest operation in producing these two fruits. The survey data established the relatively large magnitude of the expenditures for hired labor in the harvest operation in producing these two fruits. The importance of adopting labor-saving technologies in the pruning and harvest operations to reduce production costs is quite evident.

Table 1. Quantities of Labor and Machinery Inputs Used per Acre in Major Operations Performed in Apple Production on 77 Farms in 1966[a]

Operation	Input Category		
	Machinery Costs[b]	Hired Labor Expenditures	Family Labor
	(dollars)	(dollars)	(hours)
Pruning	10.76	17.83	5.44
Tillage	6.20	1.69	0.80
Spraying	28.88	3.01	2.26
Harvest	30.88	117.74	5.15
Miscellaneous	1.98	3.36	0.64

[a]Average production of 372 bushels per acre on average acreage of 64.5 acres.

[b]Machinery cost estimate obtained by valuing one hour's use of $1,000 value of machinery at $2 [1, p. 36].

Resource Productivity

Production function analysis was used in order to determine the productivity of resources used in apple and tart cherry production [1]. Extremes of

production techniques which ranged from very labor-intensive, nonmechanized techniques to highly mechanized techniques requiring low labor inputs were observed in the sample. This range or production techniques appeared to give the variability necessary for the fitting of production functions.

Table 2. Quantities of Labor and Machinery Inputs used per Acre in Major Operations Performed in Cherry Production on 68 Farms in 1966[a]

Operation	Input Category		
	Machinery Costs[b]	Hired Labor Expenditures	Family Labor
	(dollars)	(dollars)	(hours)
Pruning	7.64	7.04	4.65
Tillage	13.32	2.19	1.77
Spraying	15.24	0.99	1.25
Harvest	50.30	124.00	4.46
Miscellaneous	1.34	0.52	0.35

[a]Average production of 1.90 tons per acre on average acreage of 35.18 acres.

[b]Machinery cost estimate obtained by valuing one hour's use of $1,000 value of machinery at $2.

Equations were successfully fitted at the enterprise level and for two major operations within the enterprise; i.e., pruning and harvesting. Cobb-Douglass production functions were used for the regression fittings. There were 77 observations for the apple functions and 68 observations for the cherry functions. Satisfactory production functions could not be developed for the tillage and spraying operations from the survey data. The high correlations between the categories of inputs indicated that the inputs were basically complements or substitutes in the production process. It was also difficult to specify an appropriate independent variable (output) for the production fitting. For these reasons no production functions were reported for the tillage and spraying operations.

Independent variables included in the equations were machinery use, hired labor, family labor, expenditures for custom work, and numbers of trees. Attention will be focused on machinery use and hired labor as the capital and labor inputs with the greatest potential for substitution in the production process.

The independent variables, machinery use and hired labor, were found to have the greatest explanatory power and were significant in every apple production function in which they were used. Isoquants were derived from the production functions. For apple production, isoquant relationships between hired labor and machinery use indicated substantial increases in machinery

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use accompanied by decrease in hired labor use in order to reach the least cost combination of the two resources in the enterprise, harvest, and pruning operation production functions.

Similarily, machinery use and hired labor also had the greatest explanatory power in the tart cherry production functions. These two variables were significant in every tart cherry production function in which they were used.

Examination of isoquant relationships between hired labor and machinery use indicated substantial increases in machinery use accompanied by decreases in hired labor use in order to reach the least cost combination of the two sources for the tart cherry enterprise and harvest operation functions. In the pruning operation there was no change indicated from the observed mean combinations of machinery use and hired labor.

On the basis of this analysis for a cross section of Michigan fruit farms, it appeared that there were potential profitable labor-saving adjustments which could be made. These adjustments would involve the substitution of machinery capital for hired labor in the production process.

Potential Adjustments in Enterprise Organization

As discussed earlier, the data obtained in the survey of Michigan fruit producers indicated that large quantities of hired labor were used in the production of apples and tart cherries on Michigan farms. More specifically, the combined harvest and pruning operations accounted for 95 and 98% of the total hired labor expenditure in apple and tart cherry production respectively. Obviously the potential for reducing production costs through labor replacement was greatest in these two operations.

Production function analysis for the sample also indicated that increased machinery use could be substituted for hired labor in the production process to reach a least cost combination of inputs. The problem still remained of determining what form of machinery could be adopted on the individual farm. This involved taking the technical productivity coefficients of the individual machines and integrating them into the total enterprise production process. Partial budgeting techniques were employed on representative apple and tart cherry enterprises to evaluate the potential labor adjustments. Data obtained in the survey were combined with data from other sources to develop the budgets for each fruit.

Apple Enterprise Adjustment Possibilities

The apple production function analysis previously described indicated there was substantial potential for substituting machinery use for hired labor in the production process. In the enterprise, pruning, and harvesting functions the least cost combination of machinery use and hired labor for producing apples indicated movement along the isoquant from the observed mean combination of machinery use and hired labor to a combination of more machinery use and less hired labor to perform the operations in apple production.

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In order to evaluate the potential for reduction of labor use in apple production, four basic budgets for apple production were constructed [1, ch. V]. The impact on production costs of increasing labor costs in each budget was examined.

Production techniques that are approximately the same as those currently used in apple production on the majority of fruit farms in Michigan were assumed for the standard apple enterprise budgets (Budgets I-A, II-A, V-A, and VI-A). Budgets I-A and V-A assumed no mechanical pruning and Budgets II-A and VII-A assumed mechanical pruning. The advanced enterprise budgets (Budgets III-A, IV-A, VII-A, and VIII-A) assume the use of some labor-saving production techniques that are available at the current time and a mechanical apple harvester of the type developed at Cornell University which may be available in 1969 or 1970 on a commercial basis. In Budgets III-A and VII-A the total depreciation and interest cost of the mechanical harvester is allocated to the apple enterprise. In Budgets IV-A and VIII-A the harvester is assumed to be adopted to multicrop harvesting and only one-half of the interest and depreciation costs are borne by the apple enterprise.

The mechanical harvester was included because it has the greatest potential for reducing labor inputs in apple production. Examination of these budgets gives an indication of the potential for adjustments in apple enterprises in 1969-1970. The budgets compare the relative profitability of continuing essentially the present technologies and adopting the newest techniques of production.

Production costs were determined for two basic farm situations of 25 acres and 70 acres of apple orchard. These appeared to be representative of small and large apple farms in light of previous research [4, p. 11]. Two basic wage levels of $1.50 and $2 per hour were assumed to evaluate the impact of higher wage levels in the relative profitability of the budgets.

With the 25 acre apple orchard, standard production techniques plus mechanical pruning (Budget II-A) gave the highest net return per acre at both the $1.50 and $2 wage levels (Table 3). Although labor costs with advanced techniques (Budgets III-A and IV-A) increase relatively less than labor costs with standard techniques, they were not small enough to totally offset the larger fixed costs associated with the advanced techniques--and the lower price assumed for mechanically harvested apples (87% of hand harvested apple prices).

It was concluded that a farmer with 25 acres of apple orchard and a total of 60 acres of bearing fruit could not profitably adopt the advanced production techniques including the mechanical harvester if he operated the harvester only on his own acreage.

Budgeting results for 70 acres of apple orchard (Budgets V-A, VI-A, VII-A, and VIII-A) gave results similar to those obtained with 25 acres of apples (Table 4). Net revenue was lower at both $1.50 and $2 wage levels with the

Table 3. Costs and Returns per Acre From Apple Production on 25 Acres of Orchard with Standard and Advanced Practices for Two Alternative Wage Levels[a]

Item	Standard Production Techniques Budget I-A	Standard Production Techniques Plus Mechanical Pruning Budget II-A	Advanced Production Techniques Budget III-A	Advanced Production Techniques Budget IV-A
	Dollars			
$1.50 Wage Level[b]				
Variable expenses				
Labor	201.81	185.51	79.65	79.65
Nonlabor	117.54	124.79	125.68	125.68
Total	319.35	310.30	205.33	205.33
Fixes expenses (Depreciation and interest)	51.92	56.10	328.63	190.63
Total expenses	371.27	366.40	533.96	395.96
Total revenue	628.00	628.00	548.00	548.00
Net returns to management, land, and nonequipment overhead	256.73	261.60	14.04	152.04
$2.00 Wage Level[c]				
Variable expenses				
Labor	245.63	223.83	100.11	100.11
Nonlabor	117.54	124.79	125.68	125.68
Total	363.17	348.62	225.79	225.79
Fixed expenses (Depreciation and Interest)	51.92	56.10	328.63	190.63
Total expenses	415.09	404.72	554.42	416.42
Total Revenue	628.00	628.00	548.00	548.00
Net returns to management, land, and nonequipment overhead	212.91	223.28	- 6.42	131.58

[a]Twenty-five acres of apple orchard with 400 bushel yield. [b]Wage of $2.50 assumed for harvesting operation.
[c]Wage of $3.00 assumed for harvesting operation.

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Table 4. Costs and Returns per Acre from Apple Production on 70 Acres of Orchard with Standard and Advanced Practices for Two Alternative Wage Levels[a]

Item	Standard Production Techniques Budget V-A	Standard Production Techniques Plus Mechanical Pruning Budget VI-A	Advanced Production Techniques Budget VII-A	Advanced Production Techniques Budget VIII-A
	Dollars			
$1.50 Wage Level[b]				
Variable expenses				
Labor	201.81	185.51	79.65	79.65
Nonlabor	117.54	124.79	125.68	125.68
Total	319.35	310.30	205.33	205.33
Fixed expenses (Depreciation and interest)	38.32	40.11	136.40	87.11
Total expenses	357.67	350.41	341.73	292.44
Total revenue	628.00	628.00	548.00	548.00
Net returns to management, land, and nonequipment overhead	270.33	277.59	206.27	255.56
$2.00 Wage Level[c]				
Variable expenses				
Labor	245.63	223.82	100.11	100.11
Nonlabor	117.54	124.80	125.68	125.68
Total	363.17	348.62	225.79	225.79
Fixed expenses (Depreciation and interest)	38.32	40.11	136.40	87.11
Total expenses	401.49	388.73	362.19	312.90
Total revenue	628.00	628.00	548.00	548.00
Net returns to management, land, and nonequipment overhead	226.51	239.27	185.81	235.10

[a]Seventy acres of apple orchard with 400 bushel yield.
[b]Wage of $1.50 assumed for harvesting operation.
[c]Wage of $3.00 assumed for harvesting operation.

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package of advanced techniques which included mechanical harvesting. At the $1.50 basic wage level, the difference in net revenue was $24.03 per acre less for advanced techniques which included mechanical harvesting (Budget VIII-A) than for hand harvesting (Budget VI-A). Increasing the regular wage to $2 per hour decreased the difference in net return to $4.17 per acre less for advanced techniques. Even though the advanced production techniques had much lower labor costs, they were slightly less profitable than standard production techniques after allocating one-half of the depreciation and interest cost of the mechanical harvester to other fruits on the farm. Given this narrow difference in net revenue, and the relative ease of managing a crew of 4 workers with the mechanical harvester in contrast to obtaining and managing a crew of 30 harvest workers, many farmers would find the mechanical harvester an acceptable alternative.

To be profitable, advanced production techniques which include the mechanical harvester must have lower fixed costs per acre. Fixed cost allocated per acre of apples can be reduced in one or more of the following ways: (1) expansion of the apple acreage on the farm; (2) performing custom harvesting for other apple growers; and (3) using the mechanical harvester for other crops such as tart cherries, sweet cherries, and plums.

Of the three alternatives, the adaptation to other crops on the same farm appears to be the most promising. Tart cherries and plums are already being mechanically harvested with machines that cost approximately one-half the price of the apple harvester. While the apple harvester may be "over engineered" for the requirement of cherry harvesting, it has been used successfully for harvesting cherries on a limited basis.

Expanding apple acreage on the farm would require several years before the trees were of bearing age. This would also require additional capital investment which might limit the ability of the grower to invest in a mechanical harvester. Custom harvesting apples for other growers in the immediate area presents the problem of harvest timing. The simultaneous ripening of the owner's crop and that of surrounding growers would limit the time available to the grower for custom harvesting after harvesting his own crop. It appears that many farmers would find some combination of ways to reduce these fixed costs in order to take advantage of the reduced labor requirements.

Tart Cherry Enterprise Adjustment Possibilities

Tart cherry production function analysis, as previously described, indicated there was substantial potential for substituting machinery use for hired labor in the production process. This was true in the enterprise function and harvesting function. In each of these functions the least cost combination of machinery use and hired labor for producing tart cherries indicated movement along the isoquant from the observed mean combinations of machinery use and hired labor to a combination of more machinery use and less hired labor to perform the operations in tart cherry production.

In order to evaluate the potential for adjustment in tart cherry production, two basic partial budgets for tart cherry production were constructed [1, ch. VI]. Production techniques that are approximately the same as those used in tart cherry production on the majority of fruit farms in Michigan were assumed for the standard enterprise budget (Budget I-C). The advanced enterprise budget (Budget II-C) assumes the use of labor-saving production techniques which are available to a limited extent to cherry farmers at the present time. All of these labor-saving techniques are not usually found in combination on the same farm at the present time, however [1, p. 129]. The mechanical cherry harvester represents the largest capital expenditure item among the labor-replacing machinery.

These two budgets illustrate the range of adjustment possibilities that growers will face by 1969-70. The impact of increasing labor costs on production costs in each budget is examined.

The basic farm situation assumed for the two budgets is the same. The farm had 60 acres of bearing fruit, 35 of which are tart cherries. This was thought to be a representative farm for study, based on previous research [4, p.11].

The 25 acres of fruit remaining on the farm is assumed to be composed primarily of apples and one or more other fruits. All machinery which is not specialized to cherry production is budgeted to reflect use in the other fruit enterprises by allocation of fixed costs according to the proportion of the total fruit acreage (58%) which is cherry orchard.

In Budget II-C, (Table 5) the cash wage level is assumed to be $1.50 per hour for hired labor, with the exception of the supervisor of the mechanical harvesting crew who receives $2.50 per hour. The reduction in expenditures on labor in harvesting and pruning operations from those in Budget I-C is rather large (Table 5). Harvesting and pruning operations require $70.65 labor expenditures as contrasted with $321.82 for Budget I-C. The $54.35 spent on harvest labor in Budget II-C is approximately one-fifth as large as the $294.11 spent in Budget II-C. Part of the large savings in labor expenditure is offset by increased machinery depreciation and interest costs. Fixed costs are $128.41 per acre in Budget II-C and $38.06 per acre in Budget I-C. This increase in fixed costs is not enough to offset the large decrease in labor expenditures, however. Total production costs are $311.46 in Budget II-C. Assuming a 5% loss in total revenue due to field loss of the harvester and possible reduction in grade, we have total revenue of $661.20 with mechanical harvesting. This leaves a net return of $349.74 for Budget II-C.

With the assumption of $1.50 wage levels in 1970 for labor used in tart cherry production, the net revenue for the advanced production practices (Budget II-C) is $103.72 per acre greater than net revenue from Budget I-C for the same production per acre (Table 5).

A $2 per hour wage would result in an even greater difference in net revenue for the two budgets under consideration. Labor costs would increase

by $115.07 per acre with standard production techniques (Table 5). With advanced production techniques labor costs increase by $26.91. This gives a net revenue difference of $191.28 per acre in favor of the advanced production techniques of Budget II-C.

It becomes apparent that as the wage level increases the difference in net income from the two basic budgets increases for a given level of production. This is due to the large use of labor in pruning and harvesting operations in Budget I-C relative to Budget II-C.

Table 5. Costs and Returns per Acre from Tart Cherry Production with Standard and Advanced Practices for Two Alternative Wage Levels[a]

Item	$1.50 Wage Level		$2.00 Wage Level	
	Standard Production Techniques Budget I-C	Advanced Production Techniques Budget II-C	Standard Production Techniques Budget I-C	Advanced Production Techniques Budget II-C
	(Dollars)	(Dollars)	(Dollars)	(Dollars)
Variable expenses				
Labor	344.23	85.31	459.30	112.22
Nonlabor	67.69	97.74	67.69	97.74
Total	411.92	183.05	526.99	209.96
Fixed expenses				
Depreciation and interest	38.06	128.41	38.06	128.41
Total expenses	449.98	311.46	565.05	338.37
Total revenue	696.00	661.20	696.00	661.20
Net revenue	246.02	349.74	130.95	322.83

[a]Yield of 4 tons per acre assumed on 35 acre orchard.

In light of the recent experience with rising wage levels for workers on Michigan farms, it appears that the incentive for adoption of the advanced production techniques in the form of mechanical pruners and mechanical cherry harvesters will be even greater in the near future. Other factors such as the relative ease of acquiring and managing a crew of five workers to operate a cherry harvester as opposed to a crew of thirty workers for hand harvest have not been taken into account in the discussion. These considerations make the advanced techniques of Budget II-C appealing as an aid in labor management in addition to lowering production costs.

Potential Labor Adjustments

Both production function analysis and partial budgeting indicated adjustments in the proportion of hired labor and machinery use on farms producing apples and tart cherries. What would be the magnitude of the adjustments on an individual farm basis? Also, what would be the implications for future labor demand in the fruit producing areas of Michigan? Since the largest potential

for labor reduction comes in the harvesting operation, this will be the focal point of the discussion.

Apples

The budget analysis indicated that use of production techniques which included the mechanical harvester was nearly as profitable (2% smaller net returns per acre) under the specified conditions as standard techniques plus mechanical pruning. Small changes in costs or revenue could make it more profitable to use those techniques which include the mechanical harvester. It appears that the purchase of an apple harvester with a multicrop harvest capacity would be a sound investment for many farmers. The adoption of these techniques at the individual farm level will have an effect on labor use at the industry (apple farms collectively) level.

The reduction in workers required to harvest apples is substantial. Although harvest rates of 200 bushels per hour have been observed under experimental conditions, a sustained rate of 135 bushels per hour for a crew of four was assumed to be the rate attained by the average farmer for budgeting purposes. A crew of approximately 17 pickers would be required to pick the same quantity per hour by hand if an average productivity of 8.6 bushels per hour, as observed in 1966 labor productivity studies, was assumed [3, p. 14]. The labor requirements are approximately one-fourth as large with mechanical harvesting to obtain the same picking rate per hour. Obviously, any farmer who could achieve a sustained rate of 200 bushels per hour would reduce his labor cost per acre below those included in the budgets.

The direct impact of mechanization on the apple grower is the substantial reduction in the number of workers he has to recruit and supervise during the harvesting operation. The hired labor expenditures of $117.74 per acre were 82% of the total hired labor bill of farmers interviewed (Table 1). Much less of the grower's total yearly input would be concentrated in the harvesting operation with mechanical harvesting. This would reduce the grower's dependence on seasonal labor and give a more stable labor use pattern. He could better utilize a small crew of full-time hired employees to perform most of the operations in apple production with minimal seasonal labor supplementation.

Total labor utilization in apple harvesting in Michigan is illustrated by labor statistics of the Michigan Employment Security Commission. For the years 1964-1967 there were an average of 11,829 workers employed in apple harvesting at the peak harvest period (October 15), with sizable numbers employed from August 15 to November 15. Workers classified as "interstate" workers by the Michigan Employment Security Commission accounted for more than one-half (6,949) of the workers employed in the peak period [1, p. 121]. Adoption of mechanical harvesting would reduce dependence upon this large quantity of seasonal migratory labor for apple harvesting. If we assume the ratio of one-fourth as many harvest workers as previously needed on each farm which adopts

mechanical harvesting, the potential reduction in labor demand for the industry is quite large. This reduction would result in much less dependence on large numbers of migrant workers.

Cherries

Budget analysis indicated that using a mechanical cherry harvester increased net revenue per acre from tart cherry production for the representative farm firm. A comparison of the labor requirements to achieve the same harvest rate with hand and mechanical harvesting is made with a view toward the potential labor adjustments that could result from adoption of mechanical harvesting.

Timeliness of harvest is very important in tart cherry production. Since cherries reach maturity in hot summer months, it is essential to harvest them before the quality deteriorates or some are lost due to a windstorm. In the budget analysis, it was assumed that the mechanical harvester would harvest 1,600 pounds of tart cherries per hour (approximately one-fifth acre per hour) with a crew of five workers in an orchard with a four ton per acre yield. It would require 35 to 40 workers to achieve the same harvest rate per hour with hand harvesting. This assumes an average picker productivity of 1.65 lugs per hour, which was observed in picker productivity studies in 1966 [2, p. 21]. The labor management problem is reduced significantly with one-seventh as large work crew to recruit and supervise with mechanical harvesting. Adoption of the mechanical harvester reduces the dependency of the farmer upon large amounts of seasonal labor for short periods and makes it easier to perform most of the operations in cherry production with a crew of regular hired workers.

Statistics on labor use in cherry harvesting (combined tart and sweet cherries) of the Michigan Employment Security Commission indicate an average of 36,390 workers were employed at the peak cherry harvesting period (July 31) during the years from 1964-1967. Tart cherries average approximately four-fifths of total cherry production. "Interstate" workers constitute 69% of the seasonal work force employed in cherry harvesting [1, p. 146]. With the large reduction in labor requirements accompanying mechanical harvesting, adoption of mechanical harvesting by large numbers of growers would reduce the demand for seasonal labor in cherry harvesting. Each grower who changes uses approximately one-seventh as many workers as previously needed. This reduction in seasonal labor requirements would undoubtedly reduce the demand for "interstate" workers since local laborers could be used to supplement the regular hired workers.

Implications

The harvest of Michigan fruit has historically created large seasonal demands for labor. The employment pattern is typically: increasing numbers of seasonal workers starting with strawberry harvesting in June; seasonal employment reaching a peak in late July (70,439 workers July 31, 1967); declining employment with apple harvest in October and November as the last major employment for seasonal labor [6]. Approximately two-thirds of this peak seasonal

labor force has been migrant workers in recent years. These workers typically depend upon the successive maturation dates of the different fruits for employment for most of the period from June to October. This interdependence upon several fruit harvests for employment is a critical factor for consideration.

Large scale reduction in labor needs for the harvest of one major fruit would result in disruption of the normal pattern of employment for these seasonal workers. The harvest of cherries in July has historically required the largest labor force of Michigan fruit crops. This employment, along with strawberry harvesting in June, has attracted migrant workers to the area who would subsequently harvest other fruits.

The conclusion reached after using production function and budgeting techniques was that many farmers can profitably employ further mechanization in their production activities. Mechanical harvesters account for the most dramatic change in labor use among the mechanical aids. It appears that there will be further adoption of mechanical harvesters in the near future. Adoption of mechanical harvesters with subsequent reduction in seasonal labor needs in apple and cherry harvesting will also affect the growers of other fruits. The reduction of labor requirements in the harvest of an important fruit such as cherries in July and apples in October decreases the continuous employment available for migrants in the area. This affects the availability of labor for harvesting other fruits. This, in turn, intensifies the pressure on growers to find labor-replacing technologies to use in production of fruits other than cherries and apples.

It appears that continued reductions in labor demand in apple and tart cherry production are highly probable in light of the research reported here. The rate of adoption cannot be accurately predicted, however. The rapidity with which farmers change will obviously be influenced by changes in farm size, ownership patterns, fruit prices, and labor prices to mention a few of the more important variables.

Although the profitability of these changes has only been investigated for the individual farmer, persons other than the farmer will be affected. The migrant worker will find his traditional work pattern disrupted. The local merchant who has somewhat apprehensively looked forward to the influx of migrants with cash on every payday will find a source of revenue dwindling. Groups providing social services will find the need for their services varying from previous patterns. Those groups at the national level who are concerned with the welfare of migrant workers may find that measures such as minimum wage legislation are very ineffective as welfare protection measures with rapid transition in labor use patterns and possible subsequent unemployment of migrants.

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REFERENCES CITED

[1] Bordeaux, A. Frank, Jr. "Resource Productivity and Returns in Apple and Tart Cherry Production on Michigan Fruit Farms." Unpublished Ph.D. dissertation, Michigan State University, 1969.

[2] Hervey, Jack L.; Cuskaden, Charles M.; and Sturt, Daniel W. *Productivity in Sweet and Tart Cherry Harvesting*. Mich. State Univ. RMC Rpt. No. 5, February, 1967.

[3] _____; Cuskaden, Charles M.; and Sturt, Daniel W. *Worker Productivity in Selected Tree Fruit Harvesting*. Mich. State Univ. RMC Rpt. No. 11, September, 1967.

[4] Hill, Roger P. "Resource Use and Returns on Michigan Fruit Farms." Unpublished Ph.D. dissertation, Michigan State University, 1968.

[5] Michigan Department of Agriculture. *Michigan Agricul[illegible] Statistics*. 1967.

[6] Michigan Employment Security Commission. *Michigan Farm Labor Report--Post Season, 1967*. 1968.

[7] U.S. Dept. of Agriculture. *Changes in Farm Production and Efficiency--A Summary Report 1968*. Stat. Bull. No. 233, Wash., D.C.: Government Printing Office, 1968.

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CHAPTER IV

THE MANPOWER DIMENSION

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People and Machines - Labor Implications of Developing Technology.....
.....John R. Wildermuth and William E. Martin

Labor Market Behavior.....James S. Holt

The Agricultural Labor Market in Arizona.....Alan F. Vincent

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THE RURAL MANPOWER SCENE

D. W. Sturt

Introduction

The rapid growth of the U.S. economy, the increasing disparities between the income level of living of the majority and that of the disadvantaged, and the rising public concern for the disadvantaged bring more clearly into focus the problems of rural poverty and rural manpower in general, and more specifically, the problems of farm labor. Although rural poverty has not shared in the limelight afforded riot prone urban poverty areas, the emerging awareness of the significant relationship between rural poverty and rural manpower problems and urban social and economic ills is causing some rethinking as to the necessity for tackling the causes of poverty as manifested in rural areas rather than the symptoms of poverty as manifested after rural people migrate to and congregate in urban ghetto complexes.

At the outset a comment is in order relative to the U.S. agricultural policy as developed and implemented by the agricultural establishment over the past century and centered around the USDA and its land grant affiliates. Programs and policies have been predicated upon the family farm myth with production efficiency and cheap food being its prime objective. The success of agricultural technology in providing better and cheaper food and fiber is difficult to challenge in and of itself. Agriculture has been a major innovator in economic growth and a major creator of the social pathology associated with that growth. Much of the human factor in rural areas, the masses of people released from agriculture, and the plight of many in agriculture who did not fit the family farm prototype and were unpropertied have been ignored. Indeed, programs and policies with a product rather than people orientation have served to generate rural poverty at levels higher than those in urban areas.

Further, nonagricultural establishment agencies and organizations have, out of deference to the agricultural establishment, avoided entering the service fray on grounds of preemption. Farm labor and rural manpower in general are the categories that have suffered. Unpropertied and unorganized, their political voice and their ability to attract services has been minimal.

Fortunately, there are signs of change. The nonagricultural agencies and organizations are moving in to fill the void. One such move is the recent establishment of a rural manpower service within the U.S. Department of Labor The conscience of the agricultural establishment has been disturbed to the extent that somewhat more concern for rural people is in evidence, including the farm worker, the low income farmer, and the minority group farmer. The real pressure for these changes have come from society at large--in step with the poverty syndrome--that questions the validity of macro decisions made on the basis of micro analysis, that questions policy decisions with large-scale human consequences that are made in ignorance of those consequences.

Certain basic underlying assumptions have been made relative to farm labor in the U.S. in the preparation of this paper. They include the following:

1. The human factor in agricultural production and marketing is critical to the future growth and development of the agricultural industry.
2. Agriculture has lost much of its distinctiveness relative to nonagriculture, both economically, socially, and politically.
3. The hired farm labor component is a separate factor of production, responsive to a different set of forces, and should be viewed apart from operator and family farm labor.

The Structure of the Farm Labor Force

The size and structure of the farm labor force is complicated, among other things, by the differences between numbers of workers and man-hours of input, the quality differentiation among workers, and the wide seasonal variation in employment.

In addition, there are statistical disparities apparent in the various farm labor data series; i.e., the data from the Statistical Reporting Service of the USDA, the Farm Labor Service of the U.S. Department of Labor, the U.S. Census, the Bureau of Labor Statistics, and the Economic Research Service of the USDA. In the interest of consistency, I have elected to use the data supplied by the Statistical Reporting Service and the Economic Research Service of the USDA coupled with selected data from the U.S. Department of Labor.

The farm labor force is composed of farm operators and their families and hired farm workers, both year-round and seasonal. The average monthly employment on U.S. farms in 1968 was 4,749,000 of which 3,550,000 were operator and family workers and 1,199,000 were hired workers [6]. Based on the monthly averages for 1968, hired labor made up 25% of the total workers on farms. The decline in total farm employment from 1965 to 1968 was 15%, the decline in operator and family workers being 14%, and the decline in hired workers being 19%. The decline in labor input on U.S. farms has been continuous as capital substitution for labor and further mechanization has stepped up the output per worker. According to USDA preliminary estimates, the farm output index (1957-59=100) indicates that per man-hour output increased from 169 in 1967 to 176 in 1968, furthering a continuous trend in this direction.

While the total labor inputs in farming have been declining, the relative importance of the hired component has remained relatively unchanged. Approximately one-fourth of the labor employed on farms is hired. The decline in the relative importance of the seasonal hired component has been offset by an increase in the relative importance of the year-round hired component, maintaining the position of all hired workers in total farm employment. For example, comparing yearly averages from 1963-65 with 1966-68, the data indicates that the average number of farm workers who worked 250 days or more declined only

2%. The number of workers working 75 to 249 days declined 19% and those working less than 75 days declined 13% [5].

Monthly averages tend to be misleading in discussing farm labor numbers. Actually, about 2.9 million different people did some work on farms as hired workers in 1968 (Table 1). Of these 1.3 million or 44% were casual workers working less than 25 days in farm wage work, and 1.0 million or 36% worked from 25 to 150 days in farm wage work with only 0.6 million or 20% engaged in farm wage work for 150 days or more. The number of year-round hired workers, those working more than 250 days per year in farm wage work, was 324,000 in 1968.

The large numbers of casual and seasonal workers in agriculture is, of course, associated with the biological nature of agriculture and the seasonality in its labor requirements. In addition to the highly seasonal demand for farm workers there are supply considerations as well that contribute to the large numbers of short-time workers. The poor image of farm work, the low skill requirements, and the comparatively low wages are conducive to high labor turnover for some. For others, farm work is a temporary activity and not their major source of income. In 1968, only 27% of the hired farm work force listed farm work as their chief activity. Some 59% of the work force, composed mostly of housewives and students, were not in the work force most of the year.

Farm work is a young white man's game and increasingly involves those with nonfarm residences [5]. The median age of farm workers in 1968 was 24 years. Three-fourths of these workers were white and male, with 32% of the workers between 14 and 17 years old, mostly male, and mostly living in nonfarm residences. A comparison of residence among hired farm workers shows 65% of farm workers in 1948-49 living on farms and only 27% of farm workers in 1967-68 living on farms.

Apart from the numbers of workers, man-hour requirements are worthy of some consideration. The number of hours worked has little relationship to the number of workers due to the variation in length of employment. Also, the man-hours needed and the man-hours involved are quite different. The underemployment of workers, in part due to the necessity of holding workers to assure availability when they are needed, tends to distort the actual manpower requirements as calculated on a per farm unit basis. As such, the demand for labor calculated to fit actual hours of work needed understates the man-hours actually necessary. Again, this is associated with the nature of farm work and, in part, associated with farm labor supply considerations.

Seasonal Workers

Seasonal farm workers consist of unpaid family workers who enter the work force when they are needed as well as hired farm workers. Hired seasonal workers consist of migratory workers and nonmigratory workers, and the distinction between these two categories is not always as clear cut as it may at first appear. Generally, workers that do not work in the same areas where they

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usually reside are considered migrants. The degree of migrancy varies from the worker who moves into another county temporarily to harvest a particular crop to the worker who moves from state to state engaging in a variety of farm jobs and working in a variety of crops. Many migrant farm labor oriented groups have become frustrated in the semantics hasseling often associated with the determination of migrancy. Although some migrant workers are year-round hired farm workers, most of them work for less than 150 days per year in farm work and, as such, are classified as seasonal workers.

The numbers of migrant workers are declining. For many years some 400,000 migrant workers were included in the farm work force. In 1966 the USDA reported 351,000 migrant workers, and in 1968 they reported 279,000 migrant workers or 10% of the farm wage workers; and no doubt the numbers are less than that at the present time (Table 1).

Three migrant streams have been identified in studies of farm migrants, although there is considerable movement outside the traditional pattern as workers search for jobs. The east coast stream starts in Florida and flows up the coast line to New England (Figure 1). The west coast stream emanates in California and flows northward to Washington and Idaho. The midwest stream begins in Texas and fans out over the midwest with Michigan being the major receiving state. The most heavily traveled route would appear to be Texas through Arkansas, Missouri, and Illinois and into Indiana, Michigan, and Ohio. There is a seemingly infinite variety in movement as the smaller streams shift from year to year. While half the migrants travel less than 75 miles from home, 20% travel a thousand miles or more [4].

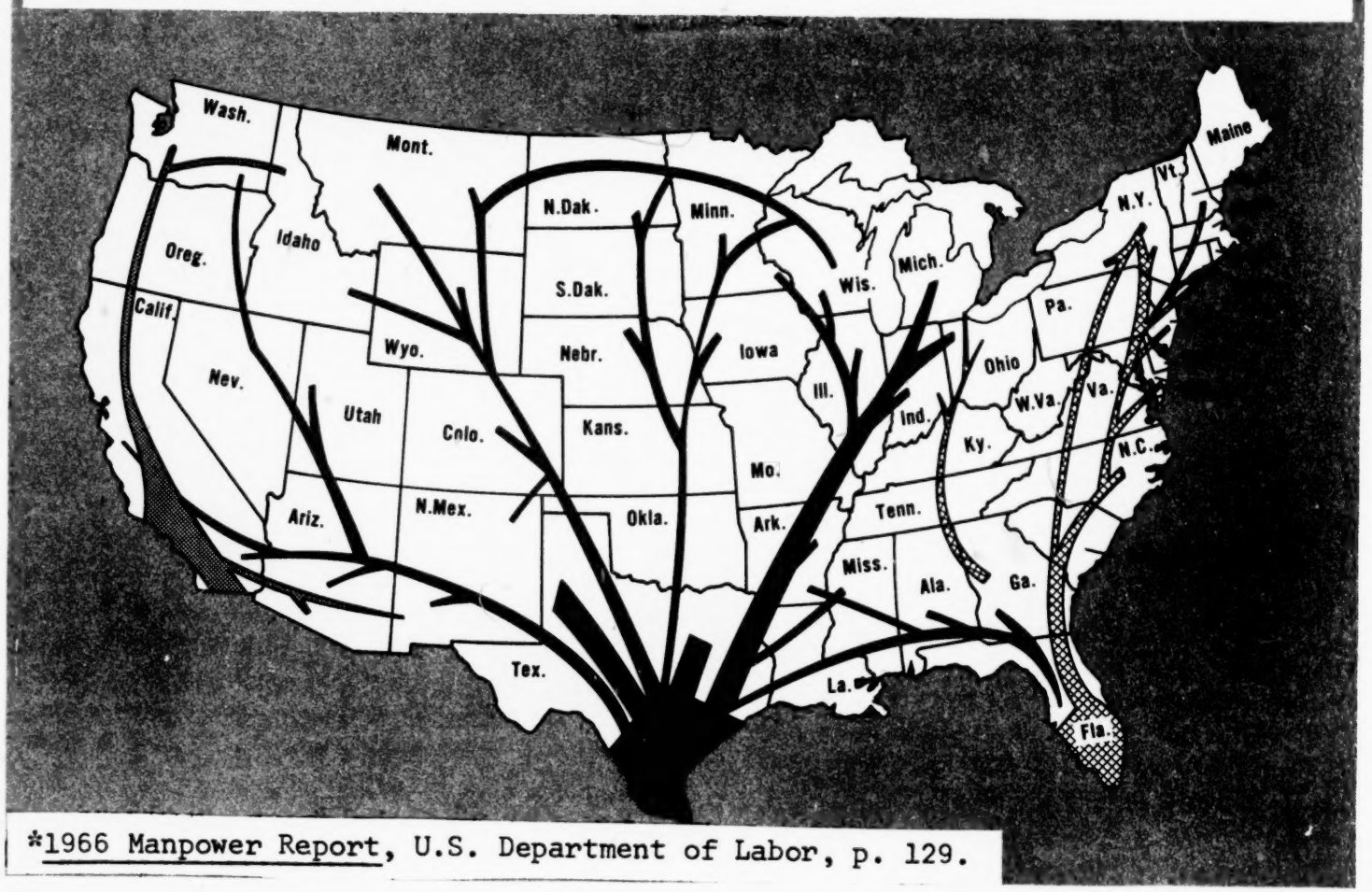
Migrant workers are predominantly male and young, mostly 24 years old or less with an 8.5 median years of schooling [4]. The migrant streams consist of blacks, whites, and a heavy contingent of Spanish Americans.

The education, health, housing, welfare, and other problems associated with farm migrants is well known. Most of these problems stem from the fact that our society, in spite of its mobility prone characteristic, is not geared to accommodate people on the move in the migrant worker "sense". Although migrancy in and of itself is not the only problem--other problems being those associated with disadvantaged minorities--it is the chief problem. The proliferation of programs designed to help migrant workers and their families are a well-meaning social response to help migrant farm workers and their families. The effectiveness of these programs appears to be limited, due largely to the recurring movement of these people. Solutions should be much more easily accomplished when migrant workers have established geographical community roots and become socially integrated into the ongoing pattern of American community life.

Wages and Days Worked

In general, hired farm workers worked 79 days in 1968 and earned $10.55 per day or $834 (Table 1). The 1.6 million noncasual workers worked an average

Figure 1. -- **Major routes followed by migratory farmworkers** *



*1966 Manpower Report, U.S. Department of Labor, p. 129.

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of 135 days and earned $1,434 or $10.60 per day doing farm work. When combined with nonfarm wage work, yearly earnings increased to $1,346 for all workers and $1,793 for all noncasual workers. Average daily earnings for farm work increased progressively with the number of days worked, with casual workers--those working less than 25 days--earning $8.50 per day and workers working 250 days or more earning $11.60 per day. With nonfarm wages for farm workers, the pattern was not so distinct; however, daily earnings in nonfarm work ranged from $12.85 per day for those workers working from 25 to 74 days in nonfarm work to $15.90 per day for those workers working from 75 to 149 days in nonfarm work. The spread in daily earnings for farm work was $3.10, and the spread in daily earnings from nonfarm work was about the same.

Daily farm earnings were $1.75 higher for white farm workers than for nonwhite workers and $2.70 higher for male workers than female workers, the differential between white male workers and nonwhite female workers being $3.65 per day. Those workers who listed farm work as their chief activity showed daily average earnings of $11.60 compared to $15.65 for those who listed nonfarm work as their chief activity. Farm workers whose chief activity was keeping house or attending school showed daily average earnings of $7.90 and $7.20 per day, respectively. Migratory workers earned $1 more per day than nonmigratory workers from farm wage work and $1.10 more per day from both farm and nonfarm wage work combined.

Farm vs. Nonfarm Wage Work

Of the 2,919,000 workers who did farm wage work in 1968, 37% also did some nonfarm wage work. For those who did farm wage work only, the average daily pay was $10.65, and the average yearly pay was $1,025 for the 96 days worked [5].

The 1,060,000 workers who did some nonfarm wage work worked 50 days at farm work for which they received an average daily pay of $10.05 or $503 per year not including perquisites provided. These workers received $14 per day or $1,400 per year for their nonfarm work and worked 100 days. The total days worked was 150.

When one considers perquisites, which are often provided in farm employment and usually not provided in nonfarm employment, the relatively small differential between earnings in farm and nonfarm work is worthy of special note. The same workers with the same skills working in both farm and nonfarm work have apparently been unable to command the higher wages usually associated with nonfarm employment. It suggests the low earnings of these workers may well be determined by some factor not associated with the farm labor market alone.

Unemployment rates for farm labor tend to run considerably higher than those for all workers. In 1968, for example, the unemployment rate for farm workers as shown by the U.S. Department of Labor was 6.3%, while the unemployment

rate for all workers was 3.6% [6]. Unemployment is closely associated with the seasonal nature of many agricultural jobs, of course. An unemployed worker becomes an unemployed farm worker if his last job was in farm work.

Some Supply Considerations

Supply or demand analysis relative to the farm work force, if it is to be meaningful, must consider: (1) the spectrum of skills required and available; (2) the seasonality of requirements and the availability of workers at specific times; and (3) the geographical location of workers and job opportunities.

Perhaps one of the strangest paradoxes in agriculture today is the shortage of farm labor amidst the surpluses of people in agriculture and in rural areas. It is misleading to look at the farm labor supply (or demand) in the aggregate only. Most of the problems associated with farm labor supply today become apparent only when we disaggregate the farm labor supply. Disaggregation leads us to analyze what workers are available, at what time and for how long, what skills and attitudes they possess, as well as the complex of considerations which deter or encourage a worker or group of workers to reject or accept employment.

Certainly farm labor supply is a function of wages (or the wage package) as well as nonfarm employment opportunities and unemployment levels in the nonfarm sector; however, this is not the whole story. Supply is also a function of employer recruitment practices, labor management, and the work environment coupled with the societal image of farm work; and farm employers would do well to recognize these factors in approaching the solution of farm labor supply problems.

Recruitment and Planning

Recruitment and planning are essential ingredients in obtaining an adequate labor force. Many farmers have not recognized the need for doing their own recruitment. Led by the hand for years by the Farm Labor Service and basking in the abundance of a seemingly unlimited supply of workers, including foreign workers, farm employers have felt little need for aggressive recruitment or recruitment at all.

Planning is also a basic essential to obtaining an adequate supply of farm labor. An accurate assessment of needs with due recognition to the all important seasonality factor have proved most useful to farmers in general, particularly those who work in conjunction with various agencies to obtain their labor supplies. A farm labor profile specifying needs by skills and days has proven a most useful approach for us in Michigan. Similarly, more effective planning at the community, county, and regional levels should result in fuller employment for the farm work force through a better distribution of workers.

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Table 1. Average Number of Days Worked and Wages Earned at Farm and Nonfarm Wage Work, For All Farm Wage Workers, by Selected Characteristics, 1968[a]

Selected Characteristics	Number of Workers	Farm and Nonfarm			Farm			Nonfarm		
		Days Worked	Wages Earned Per Year	Wages Earned Per Day[b]	Days Worked	Wages Earned Per Year	Wages Earned Per Day[b]	Days Worked	Wages Earned Per Year	Wages Earned Per Day[b]
	Thous.	No.	Dol.	Dol.	No.	Dol.	Dol.	No.	Dol.	Dol.
ALL WORKERS, 1968	2,919	116	1,346	11.60	79	834	10.55	36	512	14.20
COLOR AND SEX										
White	2,225	121	1,481	12.25	81	883	10.90	40	598	14.95
Nonwhite	693	99	913	9.20	74	677	9.15	24	235	9.80
Male	2,111	137	1,675	12.20	94	1,027	10.90	43	648	15.05
White	1,700	140	1,780	12.70	93	1,050	11.30	46	729	15.85
Nonwhite	411	125	1,245	9.95	98	931	9.50	27	313	11.60
Female	808	60	485	8.10	40	329	8.20	20	155	7.75
White	526	60	515	8.60	40	341	8.50	20	173	8.65
Nonwhite	282	61	430	7.05	40	307	7.65	20	122	6.10
CHIEF ACTIVITY										
Farm work	784	211	2,448	11.60	199	2,274	11.40	12	174	14.50
Farm wage work	649	239	2,745	11.50	228	2,598	11.40	10	147	14.70
Without nonfarm work	525	240	2,755	11.45	240	2,755	11.45	--	--	--
With nonfarm work	124	231	2,701	11.70	176	1,931	10.95	55	769	14.00
Other farm work[c]	134	78	1,011	12.95	58	708	12.20	20	303	15.15
Nonfarm work	373	224	3,511	15.65	39	456	11.70	185	3,055	16.50
Unemployed[d]	37	--	--	--	--	--	--	--	--	--
Not in labor force	1,725	50	388	7.75	34	271	7.95	15	117	7.80
Keeping house	449	43	339	7.90	33	269	8.15	10	70	7.00
Attending school	1,107	53	383	7.20	35	263	7.50	18	120	6.65
Other	170	50	545	10.90	35	326	9.30	15	219	14.60

(continued)

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Table 1. (continued) Average Number of Days Worked and Wages Earned at Farm and Nonfarm Wage Work, For All Farm Wage Workers, by Selected Characteristics, 1968[a]

Selected Characteristics	Number of Workers	Farm and Nonfarm			Farm			Nonfarm		
		Days Worked	Wages Earned Per Year	Wages Earned Per Day[b]	Days Worked	Wages Earned Per Year	Wages Earned Per Day[b]	Days Worked	Wages Earned Per Year	Wages Earned Per Day[b]
	Thous.	No.	Dol.	Dol.	No.	Dol.	Dol.	No.	Dol.	Dol.
DURATION OF FARM WAGE WORK										
All workers										
Less than 25 days	1,299	59	789	13.35	10	85	8.50	48	703	14.65
25-74	731	78	823	10.55	45	398	8.85	33	424	12.85
75-149	308	154	1,687	10.95	108	1,089	10.10	45	598	13.30
150-249	256	214	2,268	10.60	200	2,044	10.20	14	223	15.90
250 and over	324	318	3,705	11.65	312	3,616	11.60	6	89	14.85
All workers who did 25 days or more	1,620	162	1,793	11.05	135	1,434	10.60	27	358	13.25
Migratory	279	124	1,562	12.60	80	917	11.45	43	644	14.95
Nonmigratory	2,640	115	1,323	11.50	79	825	10.45	36	497	13.80

Numbers of workers are rounded to the nearest thousand without being adjusted to group totals.

[a]Does not include the value of perquisites.

[b]Rounded to the nearest 5 cents.

[c]Includes operating a farm and unpaid family labor.

[d]Averages not shown where base is less than 50,000 persons.

Source: *The Hired Farm Working Force of 1968.* USDA, Agr. Econ. Rpt. No. 164, pp. 15, 16, and 18.

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Better Use of Existing Farm Labor Supply

Employers need to explore new avenues for making better use of the existing supply of farm workers--both year-round and seasonal workers. Young people, available during the summer, and women provide employment possibilities that have not been fully utilized. Further, a breakdown of jobs by specific tasks could lead to better labor use and broaden the employment horizons of some employers. It may mean that a worker formerly believed to be unemployable could be incorporated in the farm work force. A task breakdown also lends itself to more accurately matching the skills required for the time required with available workers. For example, a task analysis may lead to employing a highly skilled mechanic on vacation from his nonfarm job for 10 days during the harvesting season.

Discrimination

Our society assigns a low status to hired farm employment. Accordingly, reverse discrimination, or employer discrimination, influences the availability of labor to farm employers and is a vital supply consideration. Farmers from small or inefficient units, many of whom would earn more income by working for another farmer, seldom are willing to do so. In general, our land grant institutions and the agricultural establishment have tended to encourage young people to place a high value on farm ownership and operation--farm ownership representing the pinnacle of the tenure ladder. A forfeiture of the owner-operator role in favor of the employee role generally does not carry societal condonment.

The image of the farm worker is often something less than desirable, and it is not entirely because of the arduous nature of the work or the long hours and low pay usually associated with such farm employment. Accordingly, employment services often find it difficult to place a worker in a farm position although he may have had farm experience. A study of hired workers on Michigan dairy farms by Charles Given and James Hundley of the Rural Manpower Center points to the low status of the dairy farm employee and to the lack of community acceptance of these hired farm workers [2].

Although all farm employment tends to rank low on the status scale, the apparent hierarchy places farm employment by public institutions above farm employment on large private farms, which in turn is above employment on small private units.

In an effort to change the image of farm work some employers refuse to use the term hired hand or even hired farm worker. Instead they use more socially acceptable terms like production associate or assistant manager. In spite of the best efforts to counteract this image reverse discrimination will, no doubt, plague agricultural employers long after other labor problems have been solved.

Demand for Farm Workers

The substitution of capital for labor and the mechanization associated with this substitution has resulted in drastic reductions in total farm labor inputs. The reduction in the number of farm operators, family farm workers, and hired workers is well established.

The impact of mechanization has been uneven with some activities being rapidly mechanized and others showing little progress in this direction. In fruit and vegetable harvesting the degree of mechanization is determined by a variety of factors, availability of workers, engineering and horticultural technology, various cost relationships, and the like. As mechanization has expanded the patterns of employment have been disrupted, particularly for seasonal workers who move from area to area and crop to crop.

Present Demand for Seasonal Workers

The harvesting of fruits and vegetables is the primary farm activity requiring large numbers of seasonal workers. The numbers of workers and the month of peak seasonal employment in 1968 is given in Table 2. Strawberry

Table 2. Estimated Peak Seasonal Employment by Major Crop, United States, 1968[a]

Crop	Peak Seasonal Employment, 1968	
	Number of Workers[b]	Date
Strawberries	119,000	June
Tomatoes	84,900	September
Beans	77,900	August
Bushberries	57,500	July
Apples	57,300	October
Grapes	53,000	September
Potatoes	52,600	October
Cucumbers	46,900	August
Citrus fruits	42,100	December
Peaches	37,400	July
Cherries	31,700	July

[a]Crops listed are those in which 30,000 or more seasonal hired workers were employed at midmonthly peak.

[b]Employment in all activities including planting, cultivating, and harvesting.

Source: Bureau of Employment Security, In-Season Farm Labor Reports for the 15th of each month.

harvesters lead the group with 119,000 workers employed in the peak month of June. Tomatoes, beans, bushberries, apples, grapes, potatoes, cucumbers, citrus fruits, peaches, and cherries all required more than 30,000 workers during the month of peak employment.

Migrant workers, both intrastate and interstate, provide much of the harvest labor. The 10 states employing move than 10,000 migrants during the

month of peak employment are shown in Table 3, along with the periods of employment and the month of peak employment. California leads with 62,000 workers employed in September of 1968, and Michigan was second with 40,000 workers employed in August of 1968.

Table 3. States Employing More than 10,000 Domestic Migratory Workers at Peak Employment and Number of Workers Employed, Periods of Employment, and Month of Peak Employment, 1968[a]

State	Peak Number Migrants Employed	Periods of Employment	Peak Employment
California	62,500	Jan.-Dec.	September
Michigan	40,000	Apr.-Nov.	August
Florida	21,500	Jan.-Dec.	February
Texas	19,800	Jan.-Dec.	July
Ohio	18,500	May -Oct.	September
New York	14,800	May -Nov.	September
Oregon	13,300	Jan.-Dec.	August
Oklahoma	13,000	Jan.-Dec.	June
Washington	12,500	Jan.-Dec.	June
New Jersey	12,100	Apr.-Nov.	August

[a]Migrants include intrastate and interstate workers.

Source: Bureau of Employment Security, U.S. Dept. of Labor.

Future Demand for Seasonal Workers

Worker requirements are rapidly changing under the impetus of mechanization. Beans, potatoes, processing tomatoes, pickling cucumbers, and many other vegetables are destined to be harvested almost entirely by machines within the next few years. Most of the cherries and bushberries will also be harvested mechanically by the early 1970's. Peaches, apples, and grapes show less likelihood of extensive machine harvesting, and strawberries and citrus fruits are the two crops showing the least promise in the application of machine harvesting.

The replacement of workers by machines involves the creation of new jobs as it abolishes old ones. Let us not be misled by the mechanization myth. There will still be a need for seasonal workers; the human factor will still be important in agricultural harvesting. There will be changes in the demand requirements both in quantity as well as the skill requirements.

The ratio of workers required with machine harvesting compared to workers required without machine harvesting varies. The cherry shaker involves the employment of approximately 5 workers where 150 were hired previously, a ratio of 1 to 33. It would appear that the pickling cucumber harvester involves a worker ratio of, perhaps, 1 to 70. When the various ratios are considered, the number of workers employed in the harvesting of various crops and other factors, a 50% decline in the man-hours required in harvesting fruits and vegetables does not appear to be unlikely during the next five years. However, this is somewhat misleading.

The effective demand for workers will remain relatively unchanged for some crops; i.e., strawberries. There will be far less complementarity of employment in agricultural harvesting activities from state to state and crop to crop, and the demand for workers will involve fewer days of work. In short, the total seasonality of work will be accentuated. For example, most of the workers who were traditionally needed in Michigan to work in strawberries, and subsequently cherries and cucumbers, will with mechanization only be needed for work in strawberries.

New jobs will be created which require some degree of mechanical skill. For a small percentage of seasonal workers who possess these skills there will be work opportunities.

In addition to reducing the number of workers required mechanization, through its disruption of employment patterns, will increase the demand for seasonal workers residing in local areas as these jobs become less attractive to migrant workers. School youth and housewives who reside in the communities where they are employed have traditionally provided a large part--perhaps half--of the work force. The demand for these local workers will increase.

For some migrant workers, where complementary work opportunities can be devised or where special skills are required, limited job opportunities will remain. The changes in the demand pattern for all seasonal workers, both in terms of numbers and skill requirements, suggest the need for further exploration of farm and nonfarm work combinations to overcome the serious agricultural employment problem due to seasonality.

Mechanization will also increase the demand for more highly skilled year-round workers on all farms. The hired hand of the past will find fewer job opportunities unless he is capable of coping with the more sophisticated machines and methods employed on all modern and increasingly industrialized farms.

In short, the demand for workers in fruit and vegetable harvesting appears to be strong for skilled year-round hired workers, local seasonal workers both skilled and unskilled, and semi-skilled migrant workers, recognizing that the overall demand for all workers in agriculture other than year-round hired workers will decline significantly.

Skills and Training

Many different skills are required in farm work; yet the generic term "farm work" is applied to most workers. The *Dictionary of Occupational Titles* has classified agricultural jobs, but this has not proven very helpful where less specificity is needed. The lack of any meaningful and useful classification of farm jobs has inhibited the development of training programs designed to teach appropriate skills. As mechanization increases the need for workers with these skills will increase. Recruitment has also been hampered by the lack of adequate job descriptions.

A classification should be developed that includes the basic job requirements without losing its meaning in detail. Training programs could be developed around this classification. Three basic points around which a classification might be developed are: (1) the worker in relation to machines; (2) the worker in relation to animals; and (3) the worker in relation to people. Using this simple framework job descriptions and titles within each category might be developed, and training courses of varying intensity might be devised.

New jobs for farm workers will emerge as mechanization is increased, not only in machinery operation but also in machinery maintenance and repair. There will be additional jobs in sorting, culling, and various packing operations that will be required as a result of using machines for harvesting in lieu of human hands.

Training, both on the job and off the job, is essential for most farm workers. While some workers will continue in farm work and perform better because of the training, others will use these newly acquired skills in nonfarm jobs. Accordingly, the transferability of skills is an important consideration in farm worker training programs.

A basic problem in training is the low level of education among farm workers. In 1967 farm workers had a median of 9 years of schooling compared to 12.3 years of schooling for all workers. Further, it would appear that there has been little change in the level of education of farm workers over the years, a fact which is attributed in part to the shift of those workers with higher levels of education out of farm work. Basic education becomes a parallel challenge to those who would develop programs to upgrade worker skills.

The Farm Labor Market

In general, wage rates in the farm sector have been less than half those in the nonfarm sector. The average factory production worker wage in the U.S. in 1968 was $3.01 per hour compared to the average farm wage of $1.43 per hour [6].

The relatively lower wages in the farm sector of the economy as compared to wages in the industrial sector is attributed by many agricultural economists to the dynamic disequilibrium in the farm labor market. If this were the case, as workers leave the farm sector and the labor force is reduced, the returns to those workers should increase relative to the returns of workers in the nonfarm sector. However, large movements of workers out of the farm sector have not increased the relative wage position of farm and nonfarm workers. Indeed, the gap between the returns to the workers in these two groups continues to widen, both absolutely and relatively.

Galloway suggests that there is a permanent relative income disparity between farm and nonfarm workers; and as such, there is dynamic equilibrium in the farm labor market [1]. He suggests that there is a two-sector labor market with essentially an inelastic supply.

It would appear that there is, in effect, a split labor market to the extent that there are barriers that tend to separate the two. The economic costs involved in moving as well as the many social and psychological barriers to shifting into the industrial labor market are major considerations for the would-be migrator. The shadow price of industrial wages, when discounted for these costs involved in moving, makes industrial wages far less attractive.

More significantly, the quality of the farm work force is such that it cannot command higher wages. Actually, the wage worker in farm work possesses a different skill level than the wage worker in nonfarm work, and it is increasingly evident that the skill level is an important ingredient in determining wages. Unskilled workers command less--in both farm and nonfarm work--than do those workers who have more to offer. The skill dimension is, in part, the answer to the wage differential between farm and nonfarm work. It is supported by the fact that farm wage workers doing both farm and nonfarm work earned relatively less in nonfarm work than might have been anticipated from sectorial wage comparisons. Further evidence, among others, is provided in Hathaway's study of mobility where it was indicated that unskilled workers who migrated to nonfarm work earned less than they had earned before migration [3].

Farm Workers and Rural to Urban Migration

Any consideration of the manpower implications of agricultural technology must take into account the impact of this technology upon rural to urban migration. From 1960-66 the average annual net outmigration of the farm population in the U.S. was 804,000. Many of these were farm laborers.

The hidden element in migration is the back-movement of people who, for a variety of reasons, find adjustment difficult. The large back-movement of rural people suggests a high expenditure of economic and emotional energies as those who migrate continue to search for a way of life that is acceptable.

Mobility is highest among the young, the healthy, the better educated and skilled, and the unencumbered, without families or vested interests. These workers are most likely to be able to afford the risk of failure--economically, socially, or psychologically.

Rural-urban migration has two forces operating simultaneously, the *pull* of nonfarm opportunities and industrial employment with its ancillary changes in mode of living, the attraction of the cities, and higher wages, either real or imaginary. It is this seemingly positive force, voluntary migration, that has received most attention in the past from students of migration. More recently it has been recognized that much of the migration is indeed involuntary and that many workers have been dispossessed; they have been pushed out of agricultural employment. This force is recognized as the *push* in migration, and it appears to be most forceful in highly developed economies where large numbers of workers are displaced as a result of rapid agricultural mechanization. This is the case in the U.S. today; many workers migrate to the cities

not because it is an attractive alternative but merely because it is the only alternative for employment. It is hypothesized that the *push* force becomes increasingly greater as societies become more highly industrialized and more highly developed.

Farm Labor Management

It would appear that considerable progress has been made during recent years in sensitizing farm employers to the needs of workers and the importance of a positive work environment in recruiting and maintaining a productive farm work force; however, a comparative look at employee-employer relations in the nonfarm sector indicates the massive effort needed in order to upgrade the quality of farm labor management on many farms. The industrialization of agriculture may well bring greater managerial expertise in this area and create a labor management environment more nearly alike and more competitive with the nonfarm sector.

The importance of good employee-employer relations on fruit and vegetable farms is well documented by the study *Human Relations on Michigan Fruit and Vegetable Farms* by Maurice Voland, Charles Given, and William Vredevoogd, in which the authors point out that the quality of human relations is oftentimes more important to workers than wages or fringe benefits [7].

The productivity of labor is partially a function of the existing work environment as perceived by the laborer. A successful working arrangement between management and labor takes cognizance of certain needs which must be fulfilled if labor is to be highly motivated and productive.

1. Every worker wants to be respected as a human being and someone with dignity.
2. Most workers want to accept responsibility. It builds their confidence and enhances their self-esteem. While the situation may vary from worker to worker, the lack of willingness to assign greater responsibility to workers is a problem in obtaining and keeping high quality labor in agriculture. Every worker has capacity for accepting responsibility for certain tasks and assignments. It is management's job to seek out those areas where responsibility might be appropriately assigned.
3. Many workers want an opportunity to grow. This is particularly true of the more highly motivated individual. If farm employers expect workers with growth potential to remain in their employment, they must provide opportunities for learning and growth. Growth has many dimensions; among them are job title, community acceptance, and wages. The means and measure of growth are manifold.
4. Workers need to feel that they belong. Psychologists tell us that everyone has a basic desire to be accepted as a member of

a group. Translated in the agricultural worker-management relationship, this means creating the kind of social atmosphere in which the worker does feel that he is a member of the team, an important member of the team, and an important member of the community where he lives.

Management Sharing.--As agricultural operators seek new arrangements in order to interest and hold higher quality workers, meaningful arrangements to involve workers and help them grow and develop, some type of management-sharing may well be considered. In the continuum of decisions made by the farm operator there is considerable variation in the consequences which each decision sets in motion. By careful analysis of the worker and his ability to contribute, workers could be effectively linked into the decision-making processes. Such involvement would, obviously, vary greatly with the worker and the farm situation; but such an approach is a step in the direction of satisfying some of the basic needs of labor.

Conclusion

Increasingly the sanctity of resource ownership and absolute authority in employment is being questioned by those who would contend that ownership is, in fact, a trusteeship and that employment includes certain rights and privileges for employees as well as employers. In line with this employers, both public and private, no longer operate in a vacuum. Indeed, they operate in a glass house with public forces dramatically influencing the decisions which are made.

The application of the industrial rules to agriculture is increasing in momentum. Legislative exemptions for farm employers are fewer than a decade ago with minimum wages and workmen's compensation applying in many employment situations. The social pressure for removal of special exemptions for agricultural operators is apparent. Along with extended legislative coverage for farm workers both at the state and federal levels, union participation is becoming a reality. The impact of these developments in terms of public welfare, equity, and social justice needs further analysis.

The close interrelationship between farm workers and rural manpower and rural poverty provides a complicated backdrop against which new legislation and farm labor developments must be analyzed. While most farm workers earn less than $3,000 per year, so do many small operators. Further, as the skill requirements and the wage requirements rule out the employment of the residual element in the farm work force, extensive welfare problems will be created.

This colloquium is singly significant in that it brings a human resource dimension to agricultural technology, a dimension heretofore absent. The marvels of technology open the door to a host of human problems. Inadequate planning and a lack of coordination at all levels of government have left serious human adjustment problems in their wake. It is these human adjustment

problems, the manpower implications of mechanization in the harvesting of fruit and vegetables, that command our attention at this colloquium.

REFERENCES CITED

[1] Galloway, Lowell E. "Mobility of Hired Agricultural Labor: 1957-60." *Jour. Farm Econ.*, 49:32-52, February, 1967.

[2] Given, C. W.; and Hundley, James R., Jr. *Human Relations on Dairy Farms.* Mich. State Univ. RMC Rpt. No. 2, November, 1966.

[3] Hathaway, Dale E. "Occupational Mobility from the Farm Labor Force." *Farm Labor in the United States.* Edited by C. E. Bishop. New York: Columbia University Press, 1967.

[4] U.S. Dept. of Agriculture. *Domestic and Migratory Farm Workers: Personal and Economic Characteristics*, and *The Hired Farm Working Force of 1966: A Statistical Report.* Economic Research Service, Wash., D.C.: Government Printing Office, 1967.

[5] _____. *The Hired Farm Working Force of 1968.* Agr. Econ. Rpt. No. 164, Wash., D.C.: Government Printing Office, 1969.

[6] U.S. Dept. of Labor. *Farm Labor Developments.* Wash., D.C.: Government Printing Office, March, 1969.

[7] Voland, Maurice; Given, Charles; and Vredevoogd, William. *Human Relations on Michigan Fruit and Vegetable Farms.* Mich. State Univ. RMC Special Paper No. 7, October, 1968.

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PEOPLE AND MACHINES - LABOR IMPLICATIONS OF DEVELOPING TECHNOLOGY*

John R. Wildermuth and William E. Martin

Can it be that labor, like potatoes, has become an inferior good?
--Anonymous

The objectives of this paper--to indicate the process by which labor is displaced by machines and to highlight the important features of the resultant operator-worker-machine continuum--open the doors for a good deal of discretion in subject matter development.

It would be possible, for example, to "rally round the flag" and play the emotional themes of the importance of a healthy atomistic agriculture, of the necessity of an abundant supply of fruits and vegetables, and of the impending doom to be brought about by an underfed overpopulation. The following statements, extracted from the report on Phase I of this project, are offered as witness to the popularity of such appeals:

> Increased costs and lack of availability of harvesting labor will restrict expansion of production of some fruit or vegetable crops if mechanical harvesting techniques are not available. In some cases, the restrictions will be so severe as to reduce the acreage or even eliminate the crop. [2, p. 5].

> High costs of handpicking, difficulties in labor procurement, minimum wage and minimum age legislation, social and medical benefit programs, housing--all of these add to the cost-price squeeze which has forced fruit growers to grasp every opportunity to reduce growing, harvesting, and handling costs. [4, p. 687].

> If the grower makes a profit, it means that the system is efficient--and we must be efficient. The problem of feeding over 200 million Americans and the billions of people in the world is of utmost importance. [5, p. 85].

These are only a few of the statements and but from one source which could have been selected as representing one chain of thought relating to mechanization in the fruit and vegetable industry.

Alternatively, this paper could converge on the even more emotional but less popular theme (at least among the technologically oriented) inherent in the following statement:

> . . . the mechanization of agriculture can bring tears and heartache to thousands of unskilled workers and their families who cannot by themselves solve their economic problem. [11, p. 69].

We (the authors) have a great deal more sympathy for the second line of reasoning. Certainly the consequences of the worker's plight are currently far more important and perplexing than the consequences of relative changes in the availability and cost of selected fruits and vegetables. For those who question the validity of this assertion, we ask that you recall Watts, Detroit,

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the Poor People's March on Washington, and the many other recent indications that, notwithstanding aggregate welfare increases, the greatest labor implication of all is the problem of the widening gap between "those that have" and the "have nots."

In the past the institutions fostering agricultural research, extension, and education have always sought to answer agricultural problems with the "two blades of grass" philosophy--increases in technology and economic efficiencies of production. To us it is painfully obvious that the old "two blades of grass" philosophy provides an insufficient if not totally outmoded basis for preparing for the future. "Agricultural research and education including agricultural economists must recognize that galloping knowledge and technology of production efficiency aided and abetted by them are no longer sufficient solutions--may, in fact, be exacerbating the problems of agricultural and rural life." [3, pp. 8-9].

Our discussion will show why that statement by Kelso and Hillman is particularly relevant to the theme of this conference. A theoretical treatment of the character of capital intensive technological change will bring out the major reasons for and consequences of labor's inevitable displacement by machinery. We will point out that by the very nature of the mechanization process traditional approaches to the improvement of "labor's lot" are doomed to fail. Finally we will close with a plea for policies and institutions designed to combat social problems not just in the light of yesterday's innovations but simultaneously with tomorrow's inventions.

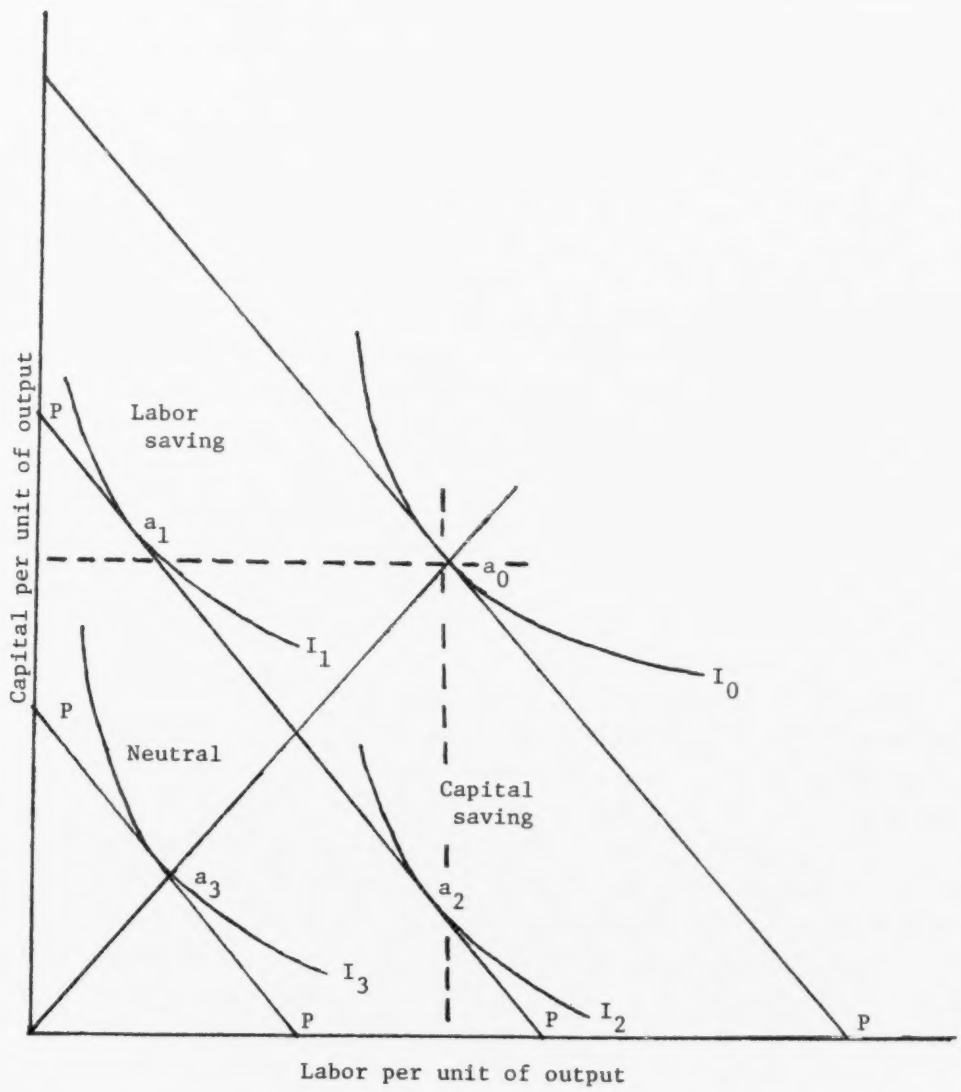
The Nature and Significance of Labor-Saving Technologies

Salter [8] distinguishes between inventions and innovations as follows. Inventions alter the state of our technical knowledge; but it is only when they become a "best-practice technique," (i.e., the technique which with regard to both economic and technical conditions yields minimum costs in terms of the production function and relative-factor prices at each date) and are put into use that they should be referred to as an innovation. Innovations, then, are the vehicles of technical progress.

Innovations may be classified as labor-saving, capital-saving, or neutral, depending upon whether they raise, lower, or leave unchanged the capital-labor ratio. These three classifications can best be conceptualized in terms of the familiar two factor unit isoquant diagram (Figure 1). Assuming constant relative prices, the most efficient combination of capital and labor is at point a_0 for the old technology (I_0) and at point a_1, a_2, and a_3 respectively, after the introduction of a labor-saving (I_1), capital-saving (I_2), and neutral (I_3) innovation.

We will concentrate on innovations which involve the direct substitution of capital for labor and not discuss in detail the implications of type I_2 (capital-saving) or type I_3 (neutral) innovations. However, it should be noted

Figure 1: An Illustration of the Various Types of Technological Change



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that these two types of technological change can also lead to reductions in labor use. For example, since neutral innovation leads to unit savings in both factors, the induced output response, especially in the face of a relatively inelastic demand, could hardly be expected to result in the level of labor use associated with operation at a_0 on I_0.

In reality, of course, prices do not remain constant as we have assumed in Figure 1. As in the case of the fruit and vegetable industry, the advent of labor-saving innovations is induced not only by inventions which lower the price of capital goods relative to labor but also by absolute increases in the wage rate which increase the price of labor relative to existing mechanical devices.

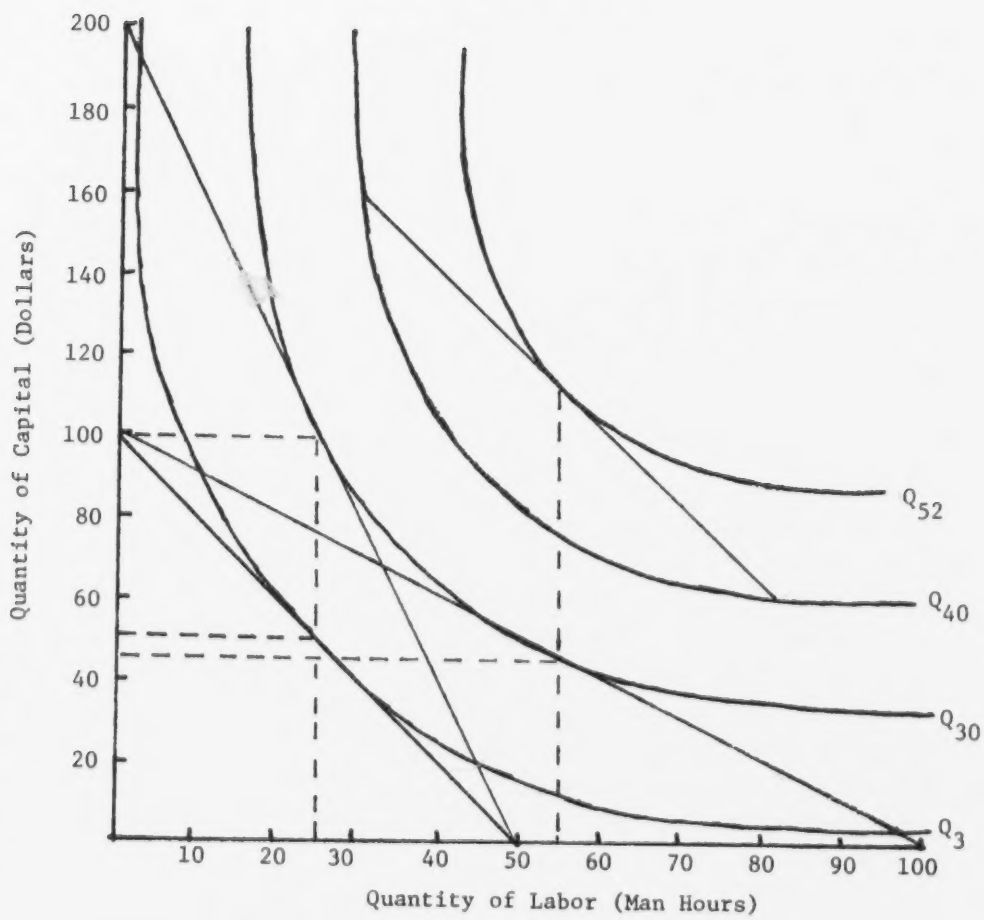
We present Figure 2 to illustrate capital-labor substitution induced by rising wage rates. The curves Q_3 through Q_{52} show alternative ways of producing given quantities of a hypothetical fruit from a given acreage. Assume that the going wage for labor is $1 per hour. Thus, the line between 100 and 100 in Figure 2 represents the various combinations of machinery and man-hours which could be employed by an operator who had $100 to spend on production. The operator bent on profit maximization would select in this case to employ 55 man-hours of labor and $45 of capital machinery. No other capital-labor combination totaling $100 will yield as high an output level as Q_{30}.

The line connecting 100 (capital) and 50 (labor) is drawn to illustrate the reaction of the profit maximizing entrepreneur, still with only $100 to spend on production, as the price of labor rises to $2 an hour. The maximum profit position now involves $50 of capital, 25 man-hours of labor and output level Q_3. Note that output and labor use have decreased while investment in machinery has increased.

In fact there is no reason for the total production expenditure to remain constant (e.g., at $100) in the face of rising wages. As depicted, higher production costs will cause operators to reduce production. But, as total production falls the product price will tend to rise and induce some re-expansion in output. It is highly unlikely, however, that the wage increase could be absorbed by the industry without a reduction in the original labor force of 55 man-hours. For the wage increase to be absorbed at the 55 man-hour labor force, product demand would have to increase enough to require a maximum profit output of Q_{52}. This implies that consumers would be willing to buy larger quantities of the product at a much higher price--an obvious contradiction.

Consumer demand will increase slowly over time for most fruits and vegetables due to population increases, rising standards of living, etc. Eventually the higher wages for an equal size work force would be possible--but not for some time after the wage hike [7, p. 110]. A more likely eventuality is that production will rebound but labor use will not. A rise in wage rates not only causes a shift towards existing capital intensive technologies but also hastens the search for new labor reducing technologies.

Figure 2: An Illustration of Capital-Labor Substitution Induced by Rising Wage Rates



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Returning again to Figure 2, assume that the demands of farmers and legislators for relief from the infamous "cost-price squeeze" leads agricultural experiment station researchers to develop a more efficient form of capital. The price of labor remains at $2 per man-hour but $1 of the "new capital" is equivalent to $2 of the old capital. For his same $100 the farmer is now able to buy 200 units of the old capital, or any equivalent combination of the new machinery and man-hours (i.e., the line connecting 50 (labor) and 200 (capital) is now appropriate). Our profit-minded man now expands his production back to the original Q_{30} level and employs 25 man-hours of labor and the equivalent of 100 units of the old capital. Surely 30 man-hours of on-farm employment are now gone forever. There is no reason not to expect this process to be repeated over and over again.

How are the Costs and Benefits Divided?

> This tendency to use more capital and less labor in agricultural production will not be reversed as long as agricultural businessmen tend to attempt to maximize profits--the social results of this tendency are both good and bad. A cost-efficient agriculture produces inexpensive abundant food. A labor-efficient agriculture frees our labor force to produce the many other nonfood items that we desire. [7, p. 111].

Virtually everyone would acknowledge that the general consuming public is the prime beneficiary of increased food and fiber production efficiencies. But, how about effects on particular sectors of society? What does mechanization mean to the farmer and his relationship to labor?

The impact on the farm operator is dependent upon his ability to make economic adjustments which in turn is increasingly associated with access to capital. Under the best of circumstances mechanization results in opportunities for higher per unit profits (at least in the short run), expansion of farm size, less drudgery, and, perhaps most noteworthy here, *less dependency on labor*. But whereas on the one hand mechanization enables the operator to avoid raising the wages of his unskilled workers, at the same time mechanization dictates a more highly skilled work force that can commandeer a higher wage.

For the operator who is unable or unwilling to make the necessary adjustments there has been and can be only one outcome--his inevitable demise. We may hypothesize that the individual either: (1) retires on his realized capital gains; (2) uses his managerial knowledge and skills to find gainful employment elsewhere, which combined with his realized capital gains yields a satisfactory if not a high level of income; or (3) becomes a member of the disadvantaged working classes to which we now turn.

> But certain unsophisticated segments of our population need opportunities for simple, often seasonal, labor that agriculture has provided in the past. The only other alternative for many of these people in our modern, complicated society is a subsistence on welfare. [7, p. 111].

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While the aggregate impact of mechanization on the demand for hired labor is undeniable, the effect on the individual worker is dependent upon his occupational class. For those possessing technical or supervisory skills, mechanization can mean opportunities for advancement in the form of higher pay or improved working conditions. At the same time it will undoubtedly lead to increased responsibilities and more complex work roles. But, even at best, it also means increased competition for a smaller number of available jobs as laborers whose work roles have been rendered obsolete try to sustain themselves within their environment. Technical or supervisory personnel may also find their work roles eliminated as the result of mechanization (e.g., labor contractors are a vanishing breed).

What about the unskilled marginal or obsolete worker? Their situation may be improved substantially (i.e., they move up into the higher occupational classes mentioned above or more likely they are forced out; they go on welfare or find unskilled jobs elsewhere).

If this all seems to present a pessimistic outlook it is because there is good reason for pessimism; and as we will now point out, improving on these prospects is not easy.

The Ineffectiveness of Traditional Approaches to Improve the Farm Workers' Lot

Three general approaches have traditionally been advocated by those interested in improving the lot of the farm worker. They are: (1) to eliminate foreign worker competition; (2) to provide bargaining power for domestic workers through some sort of union arrangement; and (3) to prosecute a vigorous federal manpower policy. Given the structure of our current social attitudes and institutions, each is doomed to ineffectiveness if not to failure. We will explain why.

First, there is foreign worker competition. Before the termination of the Bracero Program (Public Law 78) in 1964, those people with the welfare of the farm worker at heart apparently believed that if only the foreign worker were eliminated jobs for domestics would be available in something close to a one-to-one substitution ratio. On the other hand, those people who were opposed to termination of the program talked as if crops would rot in the field no matter what wage rate was paid and that our consumers would be virtually without fruits and vegetables.

The proponents of both views were obviously either extremely naive or they were using emotional appeals to further their own personal interests. We suspect that the former reason applied to the termination advocates, the latter reason to most of the opposition.

The actual results should have been predictable--capital was substituted for labor on the farm and increased effort was exerted by the agricultural engineers in providing the farmers these capital alternatives. At the end of

the year following termination of the program, one of the present authors noted that "by the most liberal estimates, it took a reduction of 43,700 foreign workers to increase our domestic labor use by 11,800--without significant reduction in production of most crops" [6, p. 1144]. We note that in the next year (1966) employment of domestic migratory workers had fallen to the lowest level since 1949 [11, p. 58]. All of the political effort expended merely caused farmers some confusion for a year or so, hastened the trend toward mechanization and an all domestic farm labor force that was already under way, and provided further incentive for foreign producers to compete in United States markets.

The second approach advocated is to increase the farm worker's bargaining power. Cesar Chavez and his United Farm Workers Organizing Committee are currently creating considerable confusion with this approach. It is obvious that unionization can bring advantages to certain people and particular groups of people. Yet this approach, too, has its inherent weaknesses.

An intriguing example of the unexpected effects of an earlier experiment in farm worker unionization was described by Padfield and Martin [7]. The needed control over the harvesting process of the Western lettuce industry was achieved in the late 1940's and early 1950's through working agreements between management and organized labor. However, unsophisticated groups of workers such as Mexican-American migrant families, Filipinos, rural Negroes, and Indians did not (and probably still do not) revolve around institutions compatible with union institutions. Therefore the union movement tended to be ethnically selective. The more sophisticated classes of Anglos and Mexican-Americans built a labor monopoly out of their technological role. These developments created further effects on both labor and management.

> While an exclusive and tightly knit labor organization was of enormous benefit to certain groups of lettuce workers, it also served to keep rights to production, shipment, and marketing in the hands of certain ice companies and certain lumber and labeling companies. The shed technology became a monopoly of congeries of organized, cooperative interest groups. Thus the incentive for a technological breakthrough that would allow outsiders to side step the tremendous investments and costs of the shed complex became stronger and stronger. Simple labor-saving machinery was not the answer. It has to be something which would throw production completely outside the tightly integrated network of control of the shed system. [7, p. 284].

In this case the technological breakthrough of portable vacuum cooling against a background of a high labor cost shed packing operation broke the whole system apart. The packing operation went to the fields using huge, cheap supplies of well controlled foreign labor.

> Social and economic ramifications unfolded in inseparable order. The Mexicanization of a predominately Anglo occupation, a rapid acceleration of importation of Mexican workers (both bracero and green carders), a boost to the bracero economy of Mexico, the rise of border commuter communities, the rapid

> decline of Anglo communities centered around the shed economies, such as El Centro and Yuma, are some of these ramifications. Moreover, the industry was opened to unlimited acreages and production. Vast areas of desert and range land, previously locked out by a shed-centered technology, were opened up for lettuce cultivation. And finally, unforeseen by the innovators themselves, was the inevitable rise of government as a first party representative in labor grievances and negotiations.
>
> Especially important from a sociological standpoint is the fact that, on the whole, the shed workers, a technical elite class in the old technology, did not step down in the occupational status system of the new technology. They were *displaced*. A completely new occupational status system grew up in which their institutions had no place. [7, p. 285].

It is unlikely that we will again see the rise of a labor intensive technology in the face of growing unionism and rising labor costs--the elimination of our foreign labor program has seen to that--our point is that the effects of increased bargaining power are many and diverse. The group that initiated bargaining is by no means the necessary recipient of income gains.

Finally, there has been much recent interest in government manpower policy--that is, retraining and general education activities. It is easy to recommend this policy because "the pursuit of knowledge is a noble activity in its own right" [10, p. 272]. It is still worthwhile even if it does not get the recipient a job. However, Sultan and Prasow have shown that "the value of labor is not simply determined by the position and elasticity of the labor supply schedule; and the individual's employability is not simply a function of the quality of service he offers potential employers" [10, p. 273]. It is true that only marginal workers are unemployed, but it does not necessarily follow that because some workers are marginal they are unemployed. Of great importance is the level of labor demand and it *is not* necessary that technological change raises this level in our developed economy [10].

What do you train people to do? Perhaps it need not be always true, but Brill [1, p. 30] alleges "that large numbers of technological left-behinds are often instructed in occupations which existed long before they did, require little if any training, and perhaps more to the point are not going begging for applicants."

Where to Now?

We hope that we have been successful in leading you to the same conclusion that we and many others before us have reached: the problems created by mechanization may in fact be more complex than those it solves. Certainly they are more side sweeping than has traditionally been acknowledged in public supported teaching, research, and extension programs.

Kelso and Hillman make their plea through reference to the cotton industry:

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> When the cotton picker was developed, agricultural intellectuals including agricultural economists should have studied the problems of adjustment forced on cotton field hands, should have assessed the social costs, should have devised institutional reforms to cushion the shock and the cost--*a cost which should have in some way been shared by cotton producers, the cotton processing and merchandising industries and, of course, by the cotton consumers.* Had we done so who can now say how much less frightening would be our civil rights, urban ghetto, and urban living problems? And partly because we failed to learn from that experience, we go blindly forward developing tomato harvesters, field lettuce cutters and field lettuce packing technologies, milk production factories, and the thousand and one other forms of technological efficiency. [3, p. 9].

Or in the words of Shaffer:

> A system for anticipating the negative effects of a new technology is sorely needed. We cannot afford to wait for the problem before solving it. *The institutional innovations will have to be developed as joint products with the technology.* [9, p. 265].

Such conclusions are sobering. They basically amount to an attack on our nation's entire value and rewards structure. They dictate that this nation publicly acknowledge the existence of those that lose as a result of advances in the general welfare. They imply that completely new institutions must be developed to attack the unsettled problems created by yesterday's and today's technological advances and that these institutions must in turn evolve into an appropriate form for combating the externalities of tomorrow's technological advances.

We are not sure of the exact form that these institutional innovations should or will take. However, in developing them, it must be recognized that any solutions that attempt to solve the problems while accepting without question the objectives and methods of either management or labor can only be stop-gap measures shifting the burdens and costs of automation from one individual or group of individuals to another and from one area of a country to another. We assert that the implied final plea is self-evident: Whatever form they take, the needed institutional innovations must be adapted not just to the progress of "economic men" in the competitive market but to the progress of "real men" in their social environment.

REFERENCES CITED

[1] Brill, Harry. "Can we Train Away the Unemployed?" *Labor Today.* October-November, 1964.

[2] Cargill, B. F. "Introduction." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Mich. State Univ. RMC Rpt. No. 16, 1969, 3-6.

[3] Kelso, M. M.; and Hillman, J. S. "Social and Political Dilemma of the Agricultural Industry and Agricultural Institutions." Paper presented at the WAEA annual meeting, Corvallis, Oregon, July, 1969.

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[4] Larsen, R. P. "Cultural Practices for Cherry Mechanization." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 687-697.

[5] Levin, J. H. "The Prospects for Fruit and Vegetable Mechanization: Engineering Outlook." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 85-87.

[6] Martin, William E. "Alien Workers in United States Agriculture: Impacts on Production." *Journal of Farm Economics*. Vol. 48, No. 5, December, 1966.

[7] Padfield, Harland; and Martin, William E. *Farmers, Workers and Machines: Technological and Social Change in Farm Industries of Arizona*. Tuscon: The University of Arizona Press, 1965.

[8] Salter, W. E. G. *Productivity and Technical Change*. Cambridge: The University Press, 1966.

[9] Shaffer, James Duncan. "On Institutional Obsolescence and Innovation - Background for Professional Dialogue on Public Policy." *American Journal of Agricultural Economics*. Vol. 51, No. 2, May, 1969.

[10] Sultan, Paul; and Prasow, Paul. "Technology and Talent." *Western Economic Journal*. Vol. 3, No. 3, 1965.

[11] Thor, Eric; and Mamer, John W. "Rural Manpower - Overview." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 51-71.

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LABOR MARKET BEHAVIOR

James S. Holt

The nature of agricultural production gives rise to seasonal fluctuations in labor requirements and labor demand. In the past decade the seasonality of hired farm labor demand has increased [5]. Periods of peak and slack labor demand have been one of the principal farm labor problems for farm operators and workers alike for many years. Seasonality is a problem for workers because it reduces employment and earnings and creates uncertainty. It is a problem for employers because it creates the need for annual recruitment and training and is an additional source of uncertainty in production planning.

For many workers the need for income and the desire for employment are continuous. In order to prolong their period of employment, some workers have sought to combine a succession of short-term seasonal farm jobs into a continuous period of employment. One of the outgrowths of such efforts is our migratory farm work force. Farm manpower policy has encouraged and facilitated this combining or packaging of seasonal farm jobs, most notably, through the Annual Worker Plan.

Combinations of farm jobs and of farm and nonfarm jobs have been advocated as a means of ameliorating the unemployment and earnings problems of hired farm workers. Combinations of farm and nonfarm work in the same locale have been advocated as an alternative to migrancy. The purpose of this paper is to examine the component groups of the hired farm work force from the standpoint of their labor market behavior; to assess the likely impact of mechanization on these component groups, with special emphasis on multiple jobholders; and to offer some suggestions for dealing with manpower problems arising from the mechanization of agricultural jobs.

Labor Force Behavior of the Hired Farm Work Force

The annual *Hired Farm Working Force Reports* [3] provide the only source of national data on the labor market behavior of the hired farm work force. Data relating to chief activity for the entire hired farm work force are available only since 1962, so a rigorous analysis of trends is not possible.

From the standpoint of labor market behavior, the farm work force can usefully be subdivided into three groups: persons more or less permanently in the labor force who work at hired farm work only; persons permanently in the labor force who are multiple jobholders, that is, who combine farm wage work with other labor force activities during the year; and persons not usually in the labor force who work on a temporary basis to supplement their incomes.*

Workers who perform farm work only constitute about 17 to 20% of all persons doing farm work for pay during the year (Table 1). Their number has

*I am using the term "multiple jobholder" in a different sense from that in which it is frequently employed. In this paper, multiple jobholding is not equivalent to "moonlighting", that is, the holding of two jobs simultaneously.

Table 1. Hired Farm Work Force by Chief Activity, 1962 through 1967[a]

Chief Activity	1962 No. 1,000	1962 %	1963 No. 1,000	1963 %	1964 No. 1,000	1964 %	1965 No. 1,000	1965 %	1966 No. 1,000	1966 %	1967 No. 1,000	1967 %
Hired Farm Work Only	616	17.0	685	19.0	629	18.7	631	20.2	460	16.6	582	18.9
Multiple Jobholders	1212	33.5	1047	29.0	916	27.2	797	25.5	746	27.0	726	23.6
Primarily Farm Wage Workers	171	4.9	139	3.9	190	5.6	177	5.7	139	5.0	156	5.1
Primarily Work on Own Farm[b]	359	9.9	327	9.1	218	6.5	143	4.6	158	5.7	166	5.4
Primarily Nonfarm Workers	411	11.3	379	10.5	412	12.2	390	12.5	403	14.6	378	17.3
Primarily Unemployed	271	7.5	202	5.6	96	2.8	87	2.9	46	1.7	26	0.8
Temporary Workers	1794	49.5	1866	51.9	1826	54.2	1699	54.3	1557	56.4	1769	57.5
Homemakers	635	17.5	571	15.9	548	16.3	473	15.1	320	11.6	442	14.4
Students	961	26.5	1099	30.6	1122	33.3	1074	34.3	1034	37.4	1155	37.5
Others	197	5.4	195	5.4	155	4.6	153	4.9	204	7.4	172	5.6
Total Hired Farm Work Force[c]	3622	100.	3597	100.	3370	100.	3128	100.	2763	100.	3078	100.
Annual Average Unemployment Rate[d]	5.5		5.7		5.2		4.5		3.8		3.8	
Index of Total Farm Output[e] (1957-59=100)	108		112		111		114		113		118	

[a]Percentages may not add to totals due to rounding.

[b]Workers who are primarily engaged in operating their own farm or as an unpaid family worker.

[c]Source: [3].

[d]Source: [4].

[e]Source: [2].

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fluctuated considerably in the six-year period, 1962 through 1967, declining during periods of declining farm output and increasing in years of increasing farm output. On balance, the declines have outweighed the advances, and thus, the overall pattern has been one of declining employment with rising output. These workers are relatively fully employed, averaging about 250 days of work a year (Table 2). They have consistently averaged more days of employment than any other component of the hired farm work force (Table 3). They are the backbone of the hired farm work force, contributing more than half of the man-days of hired labor used on farms (Table 4).

Multiple jobholders in the farm work force have declined steadily in numbers and relative importance from 1.2 million workers, one-third of the total in 1962 to 726,000 workers, less than a quarter of the total in 1967. Almost all of this decline has been accounted for by a decline in farm operators and unpaid family workers who also do work on other farms for pay and in workers who are primarily unemployed but do some farm work for wages.* The decline in primarily unemployed workers doing farm work accompanied a substantial improvement in the national unemployment rate and underscores the effect of general economic conditions on the supply of farm workers. The decline in farm operators and unpaid family workers doing hired farm work may also be a response to more nonfarm employment opportunities as well as reflecting a decline in the number of marginal farm units.

By contrast, the number of multiple jobholders principally engaged in farm and nonfarm wage work has declined only slightly since 1962. In general, the decline in these two categories has paralleled the decline in numbers of workers doing only hired farm work, and suggest that these groups are not too responsive to changes in general economic conditions. One can hypothesize that the employment patterns of these workers are relatively stable and well adapted to the skill levels of the workers.

Multiple jobholders who are primarily farm wage workers constitute about 5% of the hired farm work force and perform about 10% of the man-days of hired farm work. They are employed about 175 days at farm work and about 220 days at all jobs. Although their daily earnings in nonfarm jobs are higher than in their farm jobs, there has been little change in the proportion of their work year devoted to farm and nonfarm work since 1962.

Persons who are engaged primarily in nonfarm jobs constitute about 12% of the hired farm work force and perform about 6% of the man-days of hired farm work. They work about 35 days at farm work and about 225 days in total. They also have substantially higher earnings at nonfarm jobs than farm jobs, but there is no noticeable tendency toward a declining participation in hired farm work.

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*I have included workers whose chief activity was looking for work among the multiple jobholders rather than the temporary workers because these primarily unemployed workers were in the labor force most of the time while the temporary workers were not.

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Table 2. Days of Farm Work of the Hired Farm Work Force by Chief Activity, 1962 Through 1967[a]

Chief Activity	Days of Farm Work 1962	1963	1964	1965	1966	1967
Hired Farm Work Only	248	232	238	247	269	248
Multiple Jobholders						
Primarily Farm Wage Work	167	178	158	165	174	175
Primarily Work on Own Farm[b]	50	45	43	43	79	69
Primarily Nonfarm Work	38	25	34	31	41	41
Primarily Unemployed	66	50	38	40	--	--
Temporary Workers						
Homemakers	32	28	38	35	34	35
Students	32	27	35	35	35	33
Others	46	45	35	40	42	38
Average, All Workers	81	76	80	85	85	84

[a][3].

[b]See footnote b, Table 1.

Table 3. Total Days Worked at all Work for Pay by Chief Activity of Worker 1962 Through 1967[a]

Chief Activity	Days Worked at all Work for Pay 1962	1963	1964	1965	1966	1967
Hired Farm Work Only	248	232	238	247	269	248
Multiple Jobholders						
Primarily Farm Wage Workers	215	228	209	219	233	229
Primarily Work on Own Farms[b]	65	59	57	46	92	83
Primarily Nonfarm Workers	236	217	223	225	236	221
Primarily Unemployed	85	75	73	65	--	--
Temporary Workers						
Homemakers	40	36	52	49	50	48
Students	48	41	54	53	54	51
Others	60	60	51	62	55	64

[a][3].

[b]See footnote b, Table 1.

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Table 4. Percent of Man-days of Hired Farm Work by Chief Activity of Worker, 1962 Through 1967[a]

Chief Activity	1962	1963	1964	1965	1966	1967
	Percent of Man-days[b]					
Hired Farm Work Only	52.1	58.1	55.5	58.6	52.7	55.8
Multiple Activity Workers	27.2	21.6	21.2	19.1	23.7	21.0
Primarily Farm Wage Workers	9.7	9.0	11.1	11.0	10.3	10.6
Primarily Work on Own Farms[c]	6.1	5.4	3.5	2.3	5.3	4.4
Primarily Nonfarm Workers	5.3	3.5	5.2	4.5	7.0	6.0
Primarily Unemployed	6.1	3.7	1.4	1.3	1.1	--
Temporary Workers	20.5	19.8	24.3	22.6	23.6	23.2
Homemakers	6.9	5.8	7.7	6.2	4.6	6.0
Students	10.5	10.8	14.6	14.1	15.4	14.7
Others	3.1	3.2	2.0	2.3	3.6	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

[a]Computed from data in [3].

[b]Detail may not add to total due to rounding.

[c]See footnote b, Table 1.

Temporary workers, that is, those not in the labor force most of the time have filled the gap created by the decline in primarily unemployed workers and farm operators and unpaid family workers who do farm wage work. The number of temporary workers has remained relatively stable and their proportion of all workers has increased steadily since 1962. Well over half of these workers are students and most of the rest are homemakers. The number and proportion of students in the hired farm work force has increased considerably in this six-year period.

These temporary workers contribute about one-fifth of the man-days of hired labor. They work about 35 days a year at farm work and about 50 days a year at all activities. A trend toward an increase in the average number of days of nonfarm work performed by temporary farm workers seems to prevail in the data of Table 5. This suggests that a declining proportion of temporary workers employed days are devoted to farm work.

"Package Demand" and the Impact of Mechanization

In total, about 17% of those persons more or less permanently attached to the labor force depend on some combination of farm and nonfarm employment to provide their annual income. These workers perform about 16% of the man-days of hired farm work. Some of these are, of course, workers who are making a more or less permanent change of status during the year from farm to nonfarm work or vice versa. But the relative stability in the number of such persons, and in their degree of commitment to farm and nonfarm work, suggests that in

Table 5. Percentage of Hired Farm Workers Also Doing Nonfarm Work and Number of Days of Nonfarm Work by Chief Activity, 1963 Through 1967[a]

Chief Activity	1963 %	1963 Days of Nonfarm	1964 %	1964 Days of Nonfarm	1965 %	1965 Days of Nonfarm	1966 %	1966 Days of Nonfarm	1967 %	1967 Days of Nonfarm
Multiple Job Holders										
Primarily Farm Wage Work	100	49	100	51	100	51	100	59	100	54
Primarily Work on Own Farm[b]	21	67	26	54	15	54	22	--	26	--
Primarily Nonfarm Work	96	199	98	194	100	193	99	197	93	193
Primarily Unemployed	50	50	66	53	63	40	59	--	--	--
Temporary Workers										
Homemakers	19	41	26	43	27	49	31	52	20	64
Students	29	47	33	60	31	57	32	58	31	61
Others	24	--	36	42	24	--	25	52	33	99
All Workers	32	97	38	98	37	102	39	109	34	105

[a]Source [3].

[b]See footnote b, Table 1.

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many cases this is a fairly permanent arrangement. The comparative daily earnings at farm and nonfarm work also suggests that the proportion of the worker's time between farm and nonfarm work is dictated by the duration of the jobs rather than the decision of the worker (Table 6).

Those workers who are engaged primarily in nonfarm work spend relatively few days at farm work. Most of these workers are probably attracted into the farm work force for a specific crop activity and are doing so to fill in a brief period of unemployment or layoff or are working an additional job to supplement household income. Their daily earnings at nonfarm work are the highest of any group; thus, their opportunity cost at farm work is high. Furthermore, their primary involvement in nonfarm work means that they are strongly oriented to nonfarm working conditions. It seems reasonable to assume that these workers are only marginal farm labor force members and that an opportunity to increase nonfarm work would lead to a reduction in farm work.

Workers who are primarily engaged in farm wage employment but also do nonfarm work spend the equivalent of about two months at nonfarm work. Their daily earnings at nonfarm work are lower than those who are primarily engaged in nonfarm work, and their daily farm earnings are higher.* Thus, their opportunity cost at farm work is lower than the primarily nonfarm workers. Workers working primarily at farm work are certainly marginal to the nonfarm work force. It is likely that their educational and skill levels would lead to little security in a nonfarm job. Thus, it can be hypothesized that the commitment of these workers to farm work is relatively strong. Nevertheless, these workers have had firsthand experience in nonfarm work and in many cases have such contact on a recurring basis. They are likely to judge farm employment opportunities to some extent from a nonfarm point of view.

An unknown but significant number of the persons whose chief activity is farm wage work, work at a sequence of farm jobs. This is particularly the case among migratory farm workers. In some cases this is a sequence of jobs at the same activity for different employers, such as with workers who follow the apple harvest. In other cases it is a sequence of different activities for the same or different employers, such as the asparagus, tomato, and potato harvest in New Jersey.

Less than one-third of temporary farm workers work at farm and nonfarm jobs (Table 5). Their period of farm employment suggests that many of them are attracted into the farm work force for a specific activity. Well over half of these workers are students seeking summer and part-time employment. As many of these persons have little long-term vocational interest in their temporary employment, the more immediate considerations of availability and comparative earnings probably exert strong influence on labor market decisions

*This could reflect higher basic pay rates for activities which workers doing primarily farm wage work engage in, higher productivity, or simply more hours worked per day.

Table 6. Average Daily Earnings at Farm and Nonfarm Work of the Hired Farm Work Force by Chief Activity, 1962 Through 1967

Chief Activity	Average Daily Earnings (dollars)											
	1962		1963		1964		1965		1966		1967	
	Farm	Nonfarm	Farm	Nonfarm	Farm	Nonfarm	Farm	Nonfarm	Farm	Nonfarm	Farm	Nonfarm
Hired Farm Work Only	7.65	--	6.90	--	7.65	--	8.45	--	8.90	--	10.60	--
Multiple Jobholders												
Primarily Farm Wage Work	6.95	8.75	7.25	8.75	8.45	10.30	7.55	10.25	9.30	10.15	10.35	12.40
Primarily Work on Own Farm	9.10	9.90	6.30	12.45	6.70	6.25	8.00	--	11.35	--	9.95	9.00
Primarily Nonfarm Work	7.40	12.05	7.30	12.55	7.95	12.20	8.05	13.30	8.35	14.95	9.05	16.35
Primarily Unemployed	5.60	8.70	5.75	8.50	6.95	8.55	8.30	12.05	--	--	--	--
Temporary Worker												
Homemakers	4.05	5.25	4.35	4.95	5.15	5.10	5.55	5.80	7.75	5.30	7.70	7.40
Students	3.75	3.75	4.00	5.30	5.10	5.25	4.80	4.45	6.20	6.50	6.85	5.85
Others	5.20	8.60	4.95	9.45	7.35	7.70	6.30	--	8.95	12.65	8.40	15.00
Average All Workers	6.80	10.15	6.35	10.75	7.15	10.10	7.55	10.55	8.55	12.85	9.70	13.25

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of these workers. It is significant in this regard that there is little difference in the average daily earnings at farm and nonfarm work for temporary workers. Farm earnings in some cases exceed nonfarm earnings.

Mechanization of a high labor using crop would be expected to have differential effects on different classes of workers and on producers of such crops. In crop activities utilizing primarily temporary workers the effect of mechanization undoubtedly would be to reduce temporary work opportunities, thus augmenting the supply of workers available for the remaining temporary jobs. For workers who are primarily unemployed or at work on nonfarm jobs the effect would probably be much the same, that is, reduced temporary job opportunities and an augmented supply of workers for the remaining jobs.

For workers who are primarily single job, full-time workers the impact of mechanizing activities would likely be slight. In the long run mechanization has, of course, contributed to the reduced demand for year-round workers. However, as farm consolidation continues, also fostered in part by mechanization, we may anticipate a stabilizing and perhaps eventually increasing demand for permanent workers.

For workers who are primarily or exclusively hired farm workers working at a sequence of farm jobs, the ramifications of mechanizing important labor using activities are difficult to assess. Mechanization of a key activity can create gaps in the sequence or package of employment either leaving workers idle during this period or leading them to seek alternative employment. This period of adjustment can create severe hardships for workers. In an economy in which demand for farm and unskilled labor is declining, alternative employment is likely to be difficult to find and less renumerative. If the gap occurs for migratory workers away from home the problems are compounded. The mechanization of the snap bean harvest provides one recent example of such a disruption in the Northeast.

In addition to the hardships created for workers the disruption of the employment sequence and the eventual re-establishment of a new sequence can lead to a shortage of workers for other activities in the original sequence. In many areas there is a dominate seasonal labor using crop and many subordinate crops which draw on the seasonal labor force before or after the dominate activity. Mechanization of the dominate activity may lead to severe labor shortages in subsidiary activities, at least temporarily. When such a breakdown in the job sequence occurs the employer's alternative is to substitute regular or temporary workers. The need to hold labor for use in other crops may slow the mechanization process as employers seek alternative sources of labor. Instances of this were reported in the cherry and pickle harvest in Michigan [1].

Mechanization also affects the type of labor required. The data in Table 1 indicate that temporary workers, mostly housewives and youth, are the expanding sector of the farm labor force. Mechanization, which makes

seasonal jobs suitable for such workers, will greatly expand the potential supply of farm labor. In addition, mechanization in general makes farm work less strenuous and improves its desirability to an industrially oriented labor force. It also tends to establish a routine and pace of work which, if the machinery is reliable, enhances worker productivity and further reduces labor requirements.

Implications for Manpower Policy

As a society we do not have a very enviable record of anticipating manpower problems arising out of the technological, social, and economic changes that have taken place in rural society. We have generally waited to respond to the dramatic and visible crises which these changes have created. One need only mention the aftermath of the mechanization of the cotton harvest and the tremendous sweep of rural low income people to the cities to suggest the consequences of such a course of action. We must develop better means of anticipating manpower problems, large and small, and plan a course of action to cope with them before they become crises.

One of the principal immediate labor force problems created by mechanization of seasonal farm jobs is the disruption of employment pattern for workers and the labor supply pattern for other farm commodities. Developments in the mechanization of farm jobs must continually be assessed, not only as an aid to planning of future farm labor recruitment programs, but in order to plan for solutions to the underemployment and unemployment problems created among the workers displaced. Conferences such as this to review the overall state of the arts in farm mechanization and special studies of emerging problems will be needed on a continuing basis.

The development of alternative employment opportunities for displaced farm workers will not be easy. Retraining of these workers for steady permanent nonfarm jobs would, in many cases, be ideal. However, this is not a realistic alternative for many of the workers involved. The development of alternative agricultural jobs, even a sequence of seasonal jobs, appropriate to their level of skill and experience may prove more fruitful and should not be disregarded in programming.

A special problem which needs to be understood and planned for is that arising from the mechanization of a particular task in a package of farm or farm and nonfarm jobs. We must develop and keep up to date our knowledge of the multiple job holding patterns of farm workers. In particular, we need to know more about the nature of farm-nonfarm employment patterns. Mechanization of a key crop will require the development of alternative employment opportunities which may reduce the supply of workers for other activities and require the development of alternative sources of labor supply as well. This alternative source of supply will probably be temporary local workers to replace nonlocal workers.

Certainly prompt consideration should be given to the feasibility and impact of the extension of Unemployment Insurance protection to farm workers. The Unemployment Insurance system was designed to alleviate many of the problems we are discussing. Such a plan will have to take cognizance of the large number of interstate farm workers and the large number of temporary farm workers not ordinarily in the labor force. However, it is unreasonable to assume that alternative jobs can be quickly found for displaced workers already among the most marginally productive to society.

While the search for combinations of jobs to increase the employment of seasonal workers must be counted, it seems unlikely that this will provide anything more than a temporary expedient in solving the employment and earnings problems of farm workers. The history of our technological development both in industry and agriculture has been one of increasing job specialization. Workers permanently attached to the labor force also prefer the security of steady employment. Multiple job holders lack security and cannot accumulate job rights. Not only migratory farm workers but nonmigratory workers who combine farm jobs or farm and nonfarm jobs are subject to these problems. What appears to be the impending organization of hired farm workers may provide an institutional framework for eliminating these problems among multiple farm jobholders. However, it seems unlikely that farm-nonfarm employment packages will be desirable alternatives for workers in the long run.

REFERENCES CITED

[1] Stanley, Harold F. "Mechanization and the Recruitment of Farm Workers." *Farm Labor Development*. Manpower Administration, U.S.D.L, August, 1968.

[2] U.S. Dept. of Agriculture. *Changes in Farm Production and Efficiency, A Summary Report, 1968*. Economic Research Service. Wash., D.C.: Government Printing Office, 1969.

[3] _____. *The Hired Farm Working Force Report*. (1962 through 1969.) Economic Research Service. Wash., D.C.: Government Printing Office.

[4] U.S. Dept of Labor. Bureau of Labor Statistics. *Handbook of Labor Statistics, 1967*. Wash., D.C.: Government Printing Office, 1968.

[5] U.S. Senate. *Hearings Before the Subcommittee of the Committee on Appropriations*. 90th Cong., 1st Sess. Part IV. *Farm Labor in a Changing Agriculture*. Wash., D.C.: Government Printing Office, 1967.

ADDENDUM

The Hired Farm Working Force Report for 1968 was published shortly after this paper was presented at the colloquium. The estimated size of the hired farm working force in 1968 showed a modest decline to 2,919 thousand persons while the index of total farm output showed a modest increase to 120 (Addendum Table 1). In general, the composition of the hired farm work force

Addendum

Table 1. Hired Farm Working Force Data by Chief Activity for 1968[a]

Chief Activity	Workers		Days of Work		Daily Earnings (dollars)		Percent Doing Nonfarm Work	Days of Nonfarm Work
	Number	Percent	Farm	Total	Farm	Nonfarm		
Hired Farm Work Only	525	18.0	240	240	11.45	--	--	--
Multiple Jobholders	668	22.9	--	--	--	--	--	--
Primarily Farm Wage Workers	124	4.2	176	231	10.95	14.00	100	55
Primarily Work on Own Farm	134	4.6	58	78	12.20	15.15	30	--
Primarily Nonfarm Workers	373	12.8	39	224	11.70	16.50	91	204
Primarily Unemployed	37	1.3	b	b	b	b	b	b
Temporary Workers	1725	59.0	--	--	--	--	--	--
Homemakers	449	15.4	33	43	8.15	7.00	24	44
Students	1107	37.9	35	53	7.50	6.65	34	53
Others	170	5.8	35	50	9.30	14.60	32	46
Total or Average[c]	2919	100	79	116	10.55	14.20	37	100

[a]Source [3].

[b]Average not published where base is less than 50,000 persons.

[c]Percentages may not add to totals due to rounding.

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by chief activity was consistent with trends established in prior years, with temporary workers increasing to 59% of the total.

There was a sizable decline in the number of days of nonfarm work by temporary farm workers in 1968, although the proportion of workers doing nonfarm work remained about the same as in previous years. Daily farm earnings of homemakers and students were well above their daily earnings from nonfarm work. Average daily earnings at nonfarm work of those persons who were primarily farm wage workers increased considerably while their farm earnings showed little change.

It should be noted that estimates published in *The Hired Farm Working Force Reports* are based on a small sample of households and estimating errors can be substantial, especially on estimates with a small base. Thus, year-to-year differences can result from errors in estimation as well as actual changes in the variables estimated.

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THE AGRICULTURAL LABOR MARKET IN ARIZONA

Alan F. Vincent

Arizona's Agricultural Work Force Yesterday and Today

"In order to understand the present and to intelligently hypothesize about the future, it is necessary to critically examine the past," a Michigan State College history teacher once said. Although at the time most of his students felt he was just building up the importance of history, particularly the course he taught, some maturing, aging, and experience has forcibly brought us around to acceptance of those words of wisdom.

With that justification for a review of the past in mind, let's look at the history of Arizona's agricultural labor force, at least from 1950 on. After World War II, agricultural irrigated land increased primarily because there were no acreage restrictions on cotton. Cotton was a high return per acre crop and was easily financed through the gins. During the decade of the fifties, new lands were developed, water wells were drilled, masses of unskilled, seasonal migrant workers were hired. The mechanical cotton picker use increased from 10% in 1950 to 70% in 1960. The numbers of seasonal farm workers, particularly migrants, declined as the mechanical cotton picker continued to be used on more and more acres each year.

A discussion of past trends in the agricultural labor force [1] must deal with each of the component parts in order to be meaningful. Merely stating that there is a declining trend in the Arizona agricultural labor force does not give a clear picture of the changes that are occurring. The number of total seasonal workers, migrants, and self-employed and family workers has decreased. In addition, the Mexican National Program PL-78 ended on December 31, 1964, eliminating the importation of Mexican workers entirely. On the other hand, the total number of Regular Hired workers has increased steadily since 1961. Between 1950 and 1961 the Regular Hired number varied but by no more than 800 average per year. Since 1961 the Regular Hired number has increased by 3,200 or about 27%; the Seasonal worker numbers have decreased by 7,800 or 32.5%; the self-employed and family worker numbers have decreased by 2,300 or 27.1%. Nonetheless, total agricultural employment decreased by 2,800 or only 6.9%. The migrant total has remained relatively constant since 1961 except that interstate migrants now constitute only about 50%, whereas in the 1950's the interstate migrants were in the majority by far.

Supply and Demand

What were the underlying causes for these changes? Certainly the mechanical cotton picker was the vehicle causing the decline in the number of workers. Mechanization in general was the cause because added to the effect of the cotton picker was the effect of larger equipment with larger power units. Mechanization was employed because the farmers were caught in a period

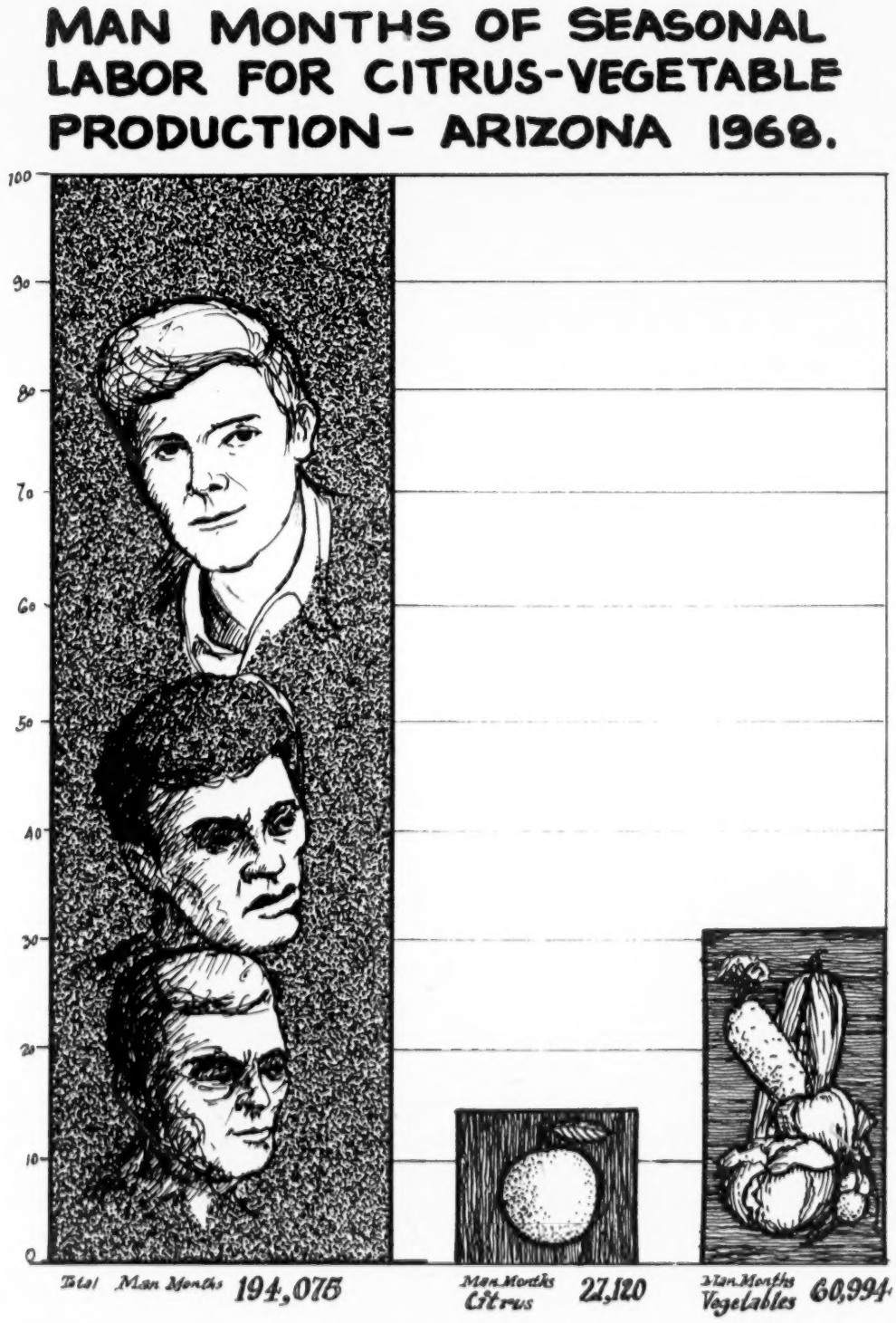
MAN MONTHS OF SEASONAL LABOR FOR CITRUS-VEGETABLE PRODUCTION- ARIZONA 1968.
100
90
80
70
60
50
40
30
20
10
0
Total Man Months 194,075
Man Months Citrus 27,120
Man Months Vegetables 60,994

Figure 1

of increasing production costs and declining prices [4]. The popular solution was to increase the size of operation and to mechanize. Obviously, from the decline in number of self-employed, this solution wasn't the entire answer. The ones that survived had to improve their management and their control of their farming operation.

When cotton prices were high, high costs of production were merely irritations. If a farmer needed a task done quickly he simply added more workers. When the economic cost-price squeeze hurt, the efficient farmer looked at his help in a different light. Production costs were then a burden and he kept only the reliable worker who did a good job. This type of selection actually led to many seasonal and migratory workers becoming Regular Hired workers. The workers picked up skills that made them more valuable employees. Farmers attitudes to and treatment of farm employees changed for the better. With less workers the employee became an individual and gradually his treatment, living, and working conditions were improved. Some of the top employees actually have become foremen and managers. Some are now self-employed. In this regard the cost-price squeeze was beneficial.

Seasonality of Employment

Along with the decline in the number of Seasonal workers and the increase in Regular Hired workers has come a decrease in the fluctuation in the number of Seasonal workers throughout the year. The table "Index of Seasonality of Agricultural Employment in Arizona" (see Statistical Appendix) shows the tendency for the number of workers each month to level out. The high index month and the low index month are coming closer to 1.0. One of the reasons for this leveling out of employment is the increase in kinds and amounts of crops in order to utilize the labor force efficiently during more months.

Despite a much larger labor force during the 1950's, the demand for workers was even greater than the domestic supply. The Mexican National Program PL-78 supplemented the supply until 1965. Since 1964 the domestic labor supply of skilled workers has essentially met the demand. There have been isolated cases of shortages of skilled labor; there will continue to be shortages. As other industries compete with agriculture the supply side of the equation will become shorter. Yet, increased output per worker has risen about 60% since 1960 [3, p. 28]. Further increases tend to shorten the demand side.

Occupations in Agriculture Today

Regular Hired Occupations

There were over 160 different occupations found in the agricultural industry in Arizona according to the 1968 survey [3, p. 5]. Ten percent or 16 occupations accounted for over 70% of the Regular Hired employees. The greatest amount of diversification occurs in the Regular Hired classification of workers, although all categories except bench work were found in the Seasonal

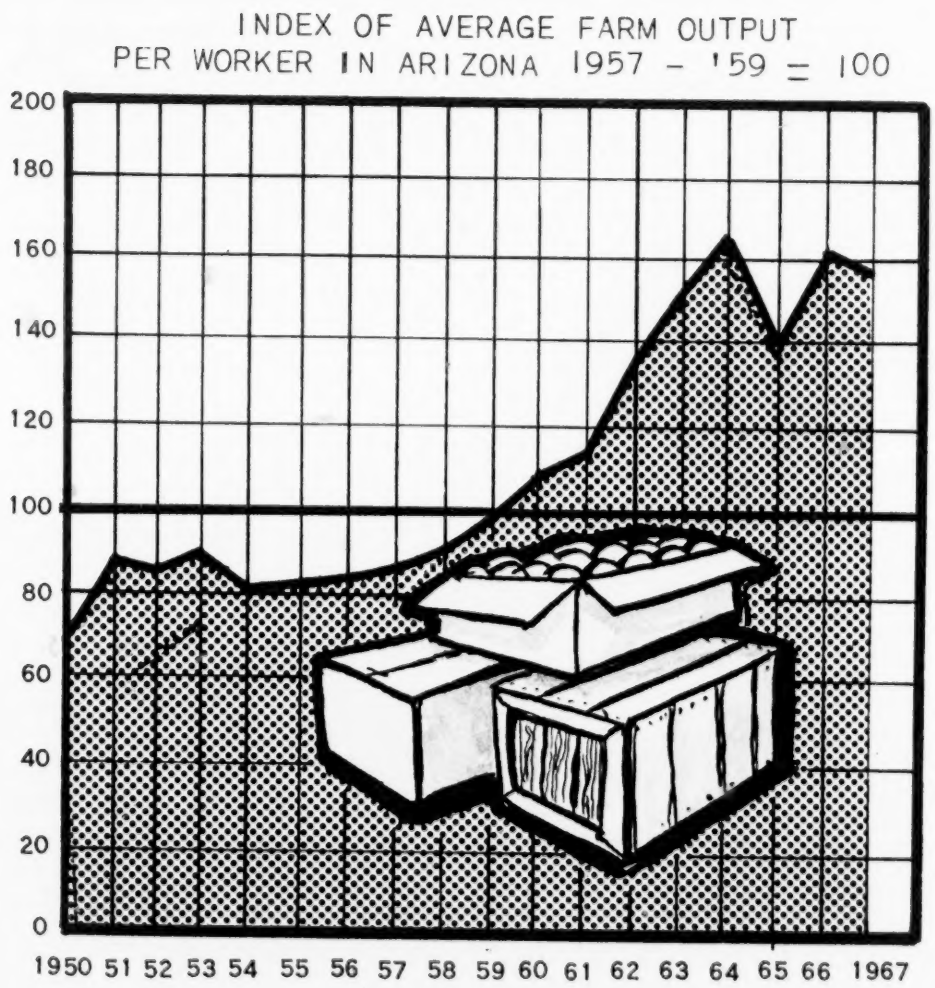

Figure 2

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occupations. The farming category predominated but was supplemented significantly (about 20%) by occupations in the other industrial categories. A large number of these occupations have appeared during the last two decades [3, p. 6]. Essentially, all managerial and foreman occupations are filled by Regular Hired workers. There are more occupations requiring higher skills in the Regular Hired work force. Regular Hired workers are more versatile, having more skills, for more varied tasks. The majority of the higher skills and trades are found in the Regular Hired work force.

Crop farmers employ more than one-third of the Regular Hired workers. Fruit and vegetable farmers, livestock and general farmers each employ about one-sixth of the Regular Hired employees. Agricultural services employ about 11.5% of the Regular Hired labor force.

Table 1. Principal Occupations in the Agricultural Industry Arizona, 1968

Title	Regular Hired	Seasonal
Farm Equipment Operator	16.8%	6.4%
Farm Hand General II	14.8	2.3
Farm Hand General I	3.1	3.1
Irrigator	12.3	4.2
Farm Foreman	5.9	--
Managerial	2.1	.4
Milking Machine Operator	2.3	--
Farm Hand Citrus I	1.8	--
Farm Hand Citrus II	1.9	21.7
Farm Hand Vegetable II	3.9	38.2
Farm Equipment Mechanic	1.8	--
Animal Caretaker	1.8	--
Packer, Agr. Produce	1.1	5.1
Agr. Products Grader	1.1	1.3
Ginner	1.0	.6
Secretary	1.0	--
	70.9%	83.3%

Table 2. Distribution of Occupational Categories Found in Arizona Agriculture, January 1968

Occupational Categories	Regular Hired % of Total	Seasonal % of Total
Prof., Tech., & Mgr.	3.10%	.24%
Clerical	4.10	.93
Service	2.30	.36
Farming	80.00	84.14
Processing	2.90	1.43
Machine Trades	2.80	.05
Bench Work	--	--
Structural	.40	.23
Miscellaneous	4.10	12.60

Seasonal Occupations [3, p. 7]

Nearly 60% of the Seasonal agricultural occupations are in vegetable and citrus production. An additional 5.8% are occupations in agricultural produce packing. Ten leading occupations account for 83.3% of the total Seasonal employees. Employers in agricultural services, including contracting (a large percentage of fruit and vegetable production and harvesting is contracted) employ over 50% of the Seasonal workers.

Seasonal workers are predominately found in lower skill level occupations [3, p. 9]. Four low-skilled occupations account for about two-thirds of the Seasonal occupations. The Farm Hand Vegetable II classification, accounting for 38.2% of the Seasonal workers and Farm Hand Citrus II for 21.7% for a total of nearly 60% of the Seasonal work force, are low-skilled fruit and vegetable farm workers. If one adds the 5.1% in the agricultural produce packer category, which is also fruit and vegetable production related, the total impact of the fruit and vegetable industry on Arizona's farm labor force can be put in perspective. In a word, it's *important*!

The number of total Seasonal man-months of labor for all citrus production was 27,120; vegetable 60,994. Together they utilize 45.4% of the total and there is an additional percentage of Seasonal labor employed in ground preparation and irrigation that should be allotted to fruits and vegetables.

Arizona Outlook '80

Because of higher prices of land, urban development, shortages of water, and governmental programs it can be expected that total cropped acreage will decrease by 1980. A reasonable estimate of cropped land will be between 1,000,000 and 1,100,000 acres. Accompanying the decline in total acreage will be a geographical shift in agricultural activity. It is expected that total agricultural acreage will decrease in Maricopa County, increase in Yuma, Mohave, and Cochise counties, and show a small gain in Pinal County.

The quantity of labor expected to be demanded in 1980 is in itself not too significant except to note that it is declining. When one asks what the composition of the labor force will be, however, a more meaningful picture comes into focus. The 1980 agricultural labor force, for instance, will have less Seasonal workers than at present, less self-employed and unpaid family workers, and about the same number of Regular Hired. What are the implications behind this changing infrastructure of agricultural employment?

Basically, the implications for change will be found in the nature of Seasonal and Regular Hired employment. Concurrent with further mechanization will be a reduction in the Seasonal work force. This will be intensified according to the degree that the production and harvest processes of labor intensive crops yield to the advances of mechanical harvesting methods. In any event, the Seasonal labor force of 1980 will be smaller and will perform fewer tasks.

Although the Seasonal work force will not increase in size, its structure will change. As some of the production and harvest processes become mechanized and less men are utilized, the proportion of females in the Seasonal agricultural work force will rise. This is especially true because most of the packing operations will be handled by women, and a significant decline in demand in these occupations is not foreseen in the near future.

The proportion of migrants in the Seasonal labor force will also change. For some time now there has been a decline in the numbers of interstate migrants. This trend is expected to continue in the future and will also be seen in intrastate migration. In relative terms, the proportion of intrastate migrants will increase with respect to interstate Seasonal workers.

Significant changes are also expected in the structure of the agricultural markets. To further enhance the bargaining position and income of the farmer, more cooperative associations will be formed. These organizations will attempt to control the supply of agricultural commodities, to develop new markets, and to present a unified agency with which buyers of agricultural produce will have to bargain.

On the resource side of the market, some degree of unionization of agricultural workers can be expected by 1980. Steps have already been taken in this direction in Arizona, and some success has been achieved in California. It is possible, however, that unionization will only enhance the decline of the Seasonal work force. If any significant success is met by the union forces, it will probably be in the organization of Regular Hired employees.

Total Arizona population in 1980 is projected to be 2,600,000. Of this, approximately 22,000 will be farm population, representing a decline of 40% since 1968. This reflects the long-run downward trend in Arizona farm population that has been in evidence since 1940.

The number of farms in Arizona in 1980 will show a significant decline from 1968. As emphasized before, the advances in technology, higher prices, specialization in crops, and trends toward larger, corporate operations have tended to decrease the total number of farms. The number of Arizona farms in 1968 is estimated to be 5,500 and the projected total for 1980 is 3,200.

Regular Hired Work Force

The processes of change in the agricultural labor force show the waning influence of the past as exhibited by the vanishing Seasonal worker. Also present is the Regular Hired employee embodying the tide of the future. Though the Regular Hired or Seasonal work force is not expected to grow by 1980, the former will come to carry even more of the burden in Arizona agriculture.

In 1967, Regular Hired workers comprised about 38% of the agricultural work force. In 1980, the Regular Hired work force should comprise approximately 57% of the total. The forces behind this change are, in the main, the same as those causing the decline in Seasonal employment. Technological change,

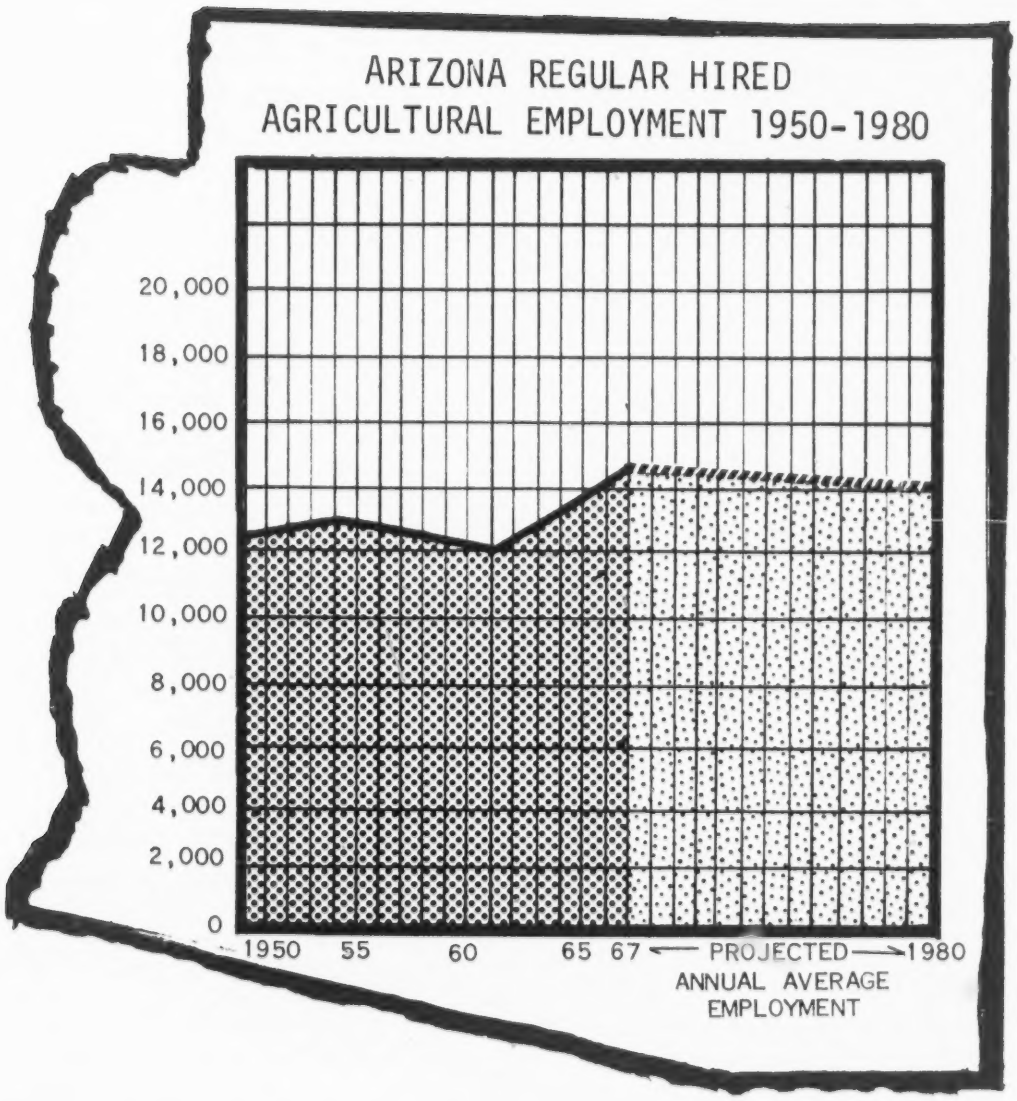

Figure 3

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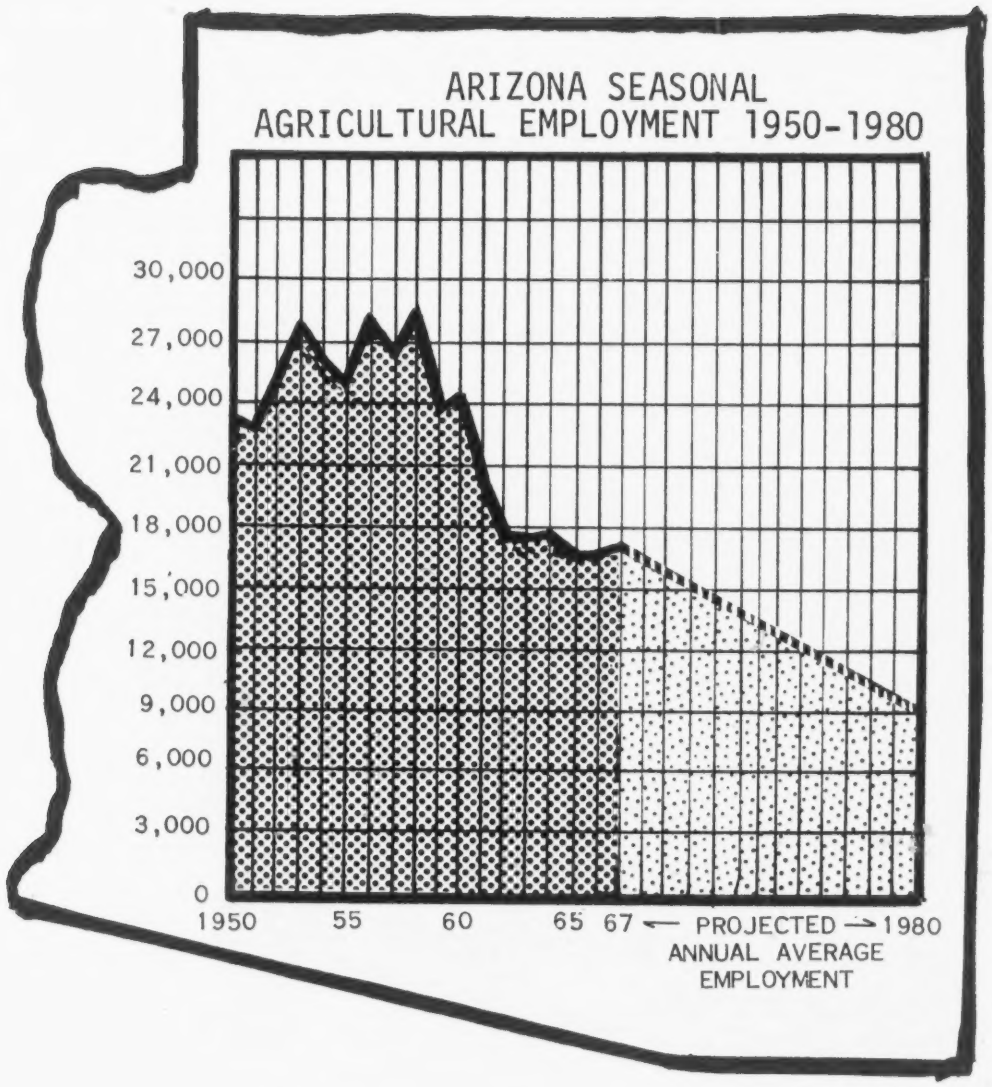

Figure 4

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Table 3. Number of Farms in Arizona
1940-1980

	1940	1945	1950	1954	1959	1964	1968	1980
The State	18,468	13,142	10,412	9,321	7,233	6,477	5,500	3,200
Apache	3,120	286	350	233	210	209		
Cochise	1,076	1,013	849	904	817	791		
Coconino	1,509	286	222	216	174	131		
Gila	595	371	274	251	153	124		
Graham	676	592	421	417	389	381		
Greenlee	239	208	178	158	140	164		
Maricopa	4,632	6,479	4,268	3,402	2,502	2,154		
Mohave	383	290	171	145	130	146		
Navajo	2,448	430	423	456	241	231		
Pima	932	460	778	641	421	398		
Pinal	1,309	1,093	1,168	1,047	700	601		
Santa Cruz	174	195	189	173	132	119		
Yavapai	715	793	547	609	453	460		
Yuma	670	646	619	569	771	568		

Table 4. Regular Hired Employment by Major Occupation[a]

	1968[b]	1980 (Projected)	Percent Change
Personnel Manager	70	70	0
Farm Manager	190	210	+16
Secretary	150	200	+33
Accounting Clerk	120	240	+100
Accountant	80	150	+88
General Clerk	90	300	+233
Salesman	70	140	+100
Animal Caretaker	220	400	+82
Farm Hand, Vegetable	640	500	-22
Farm Hand, Citrus	760	500	-34
Nursery Worker	50	200	+300
Landscape Laborer	110	200	+82
Farm Equipment Operator	2,700	900	-67
Milk Machine Operator	480	450	-6
Farm Hand, Poultry	80	80	0
Farm Hand, Livestock	1,450	1,750	+21
Farm Hand, General	2,700	3,000	+11
Irrigator	1,950	1,000	-49
Farm Foreman	720	1,000	+39
Ginner	150	150	0
Feeder Operator (Mixer)	130	130	0
Poultry Operator	70	70	0
Fruit Inspector	200	200	0
Farm Equipment Mechanic	340	500	+47
Maintenance Mechanic	50	150	+200
Heavy Truck Driver	200	150	-25
Material Handler	130	130	0

[a]Major occupations are here classified as those employing more than 50 workers in 1968.

[b]All of these employment figures are rounded.

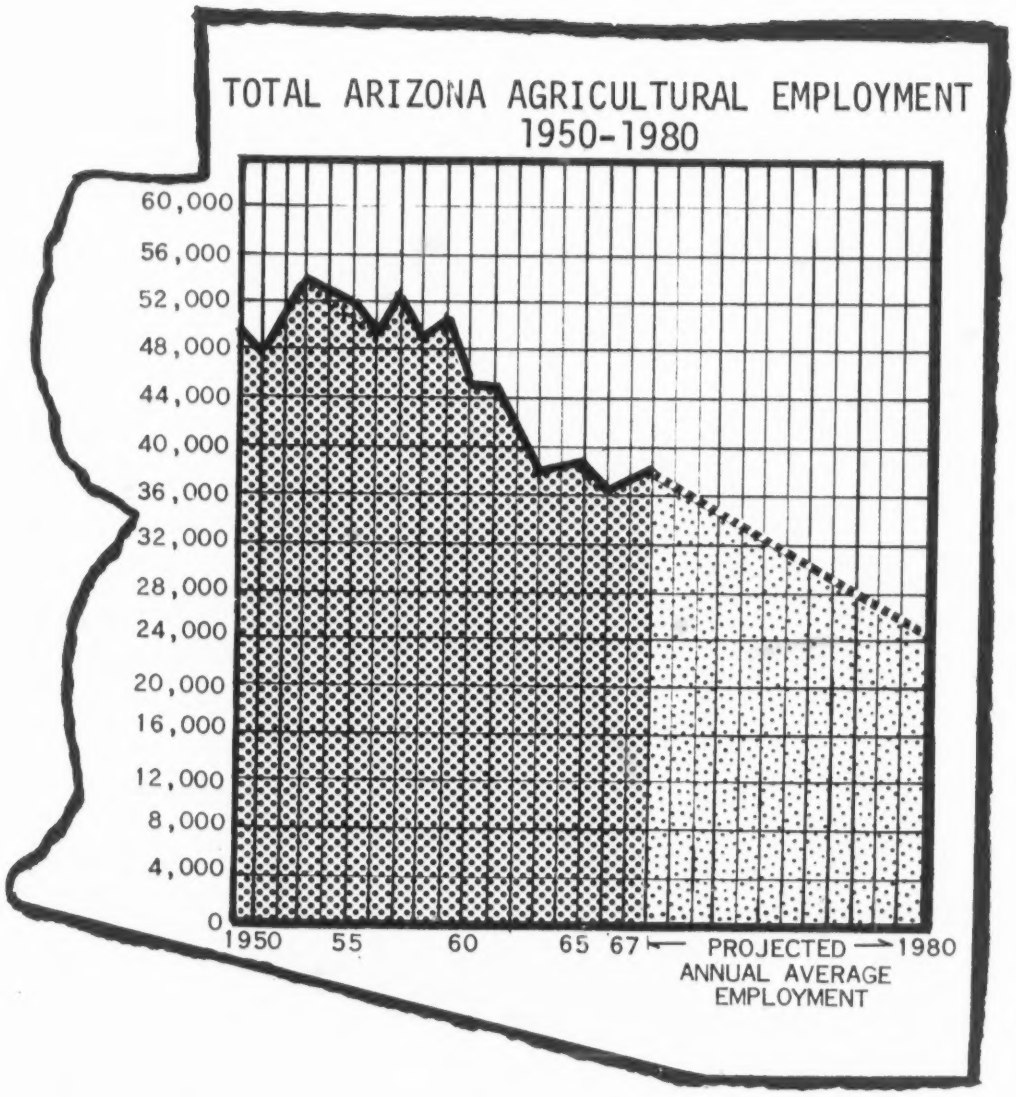
TOTAL ARIZONA AGRICULTURAL EMPLOYMENT
1950-1980
60,000
56,000
52,000
48,000
44,000
40,000
36,000
32,000
28,000
24,000
20,000
16,000
12,000
8,000
4,000
0
1950
55
60
65
67
PROJECTED
1980
ANNUAL AVERAGE
EMPLOYMENT

Figure 5

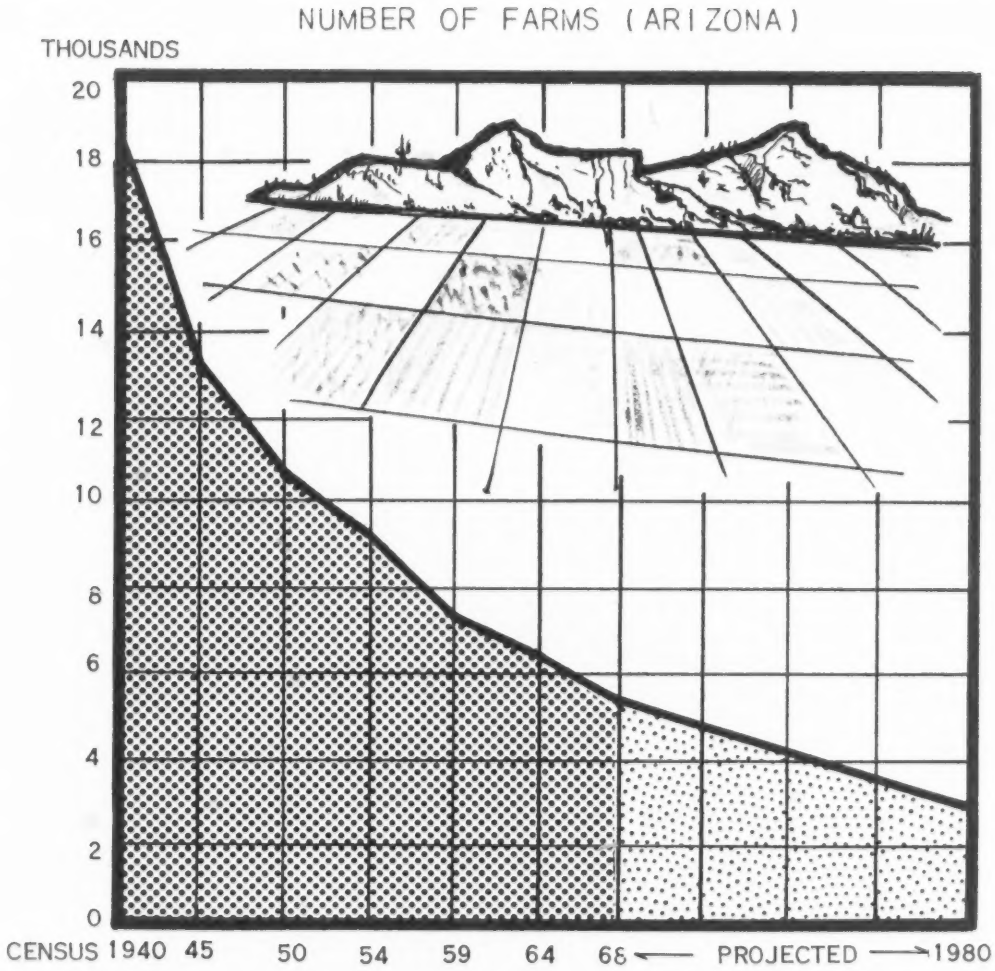

Figure 6

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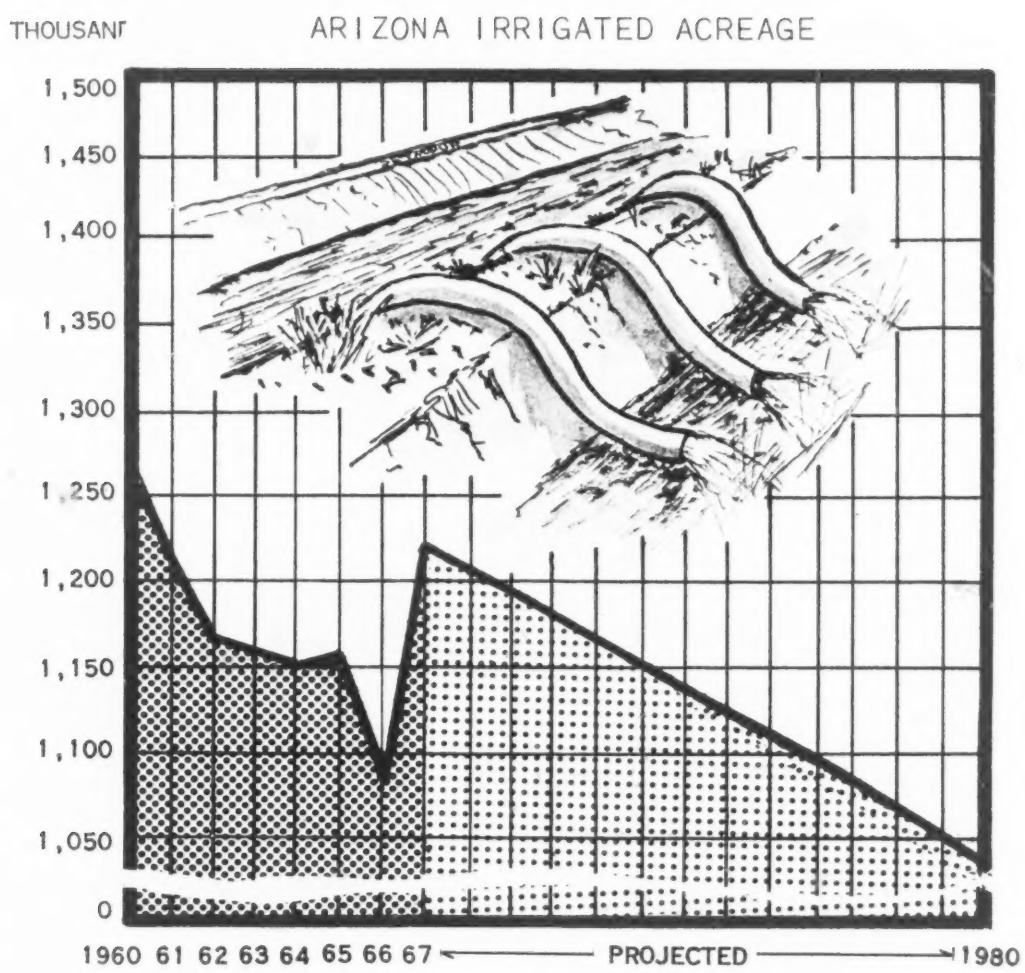

Figure 7

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while displacing the Seasonal worker, is maintaining the numbers of the Regular Hired.

As agriculture becomes more mechanized and sophisticated, so must the worker. As more processes of production become automated, a Regular Hired employee can replace several Seasonal workers. But the forces of change that cause this drift also dictate that the Regular Hired employee be a higher skilled individual, adaptable to many processes and able to carry out varied tasks which enable him to be employed throughout the year.

Labor changes may well mirror changes occurring in many other fields--at least other changes will be crucial to developments in labor. The declining number of employers is now leading to large nonfarm corporations--conglomerates--whose attitudes towards labor have been formed in other industries. Fewer, but larger farming enterprises will speed up new approaches to marketing and transportation. This will also lead to more sophisticated once-over equipment approaching some of the projections of *Agriculture 2000*.

Transportation via air, the 747 jumbo jet cargo ships for fresh produce, may well change present packaging concepts. Utilization of modular packages for fork lifts and air transport may come soon.

Computer programming of crops, selection of new crops in an area, and other things not yet conceived will provide an expanded, more flexible management tool than that for which automatic data processing has presently been used. Some highly specialized crops such as avocados and figs will become luxury items. Other nonmechanized crops will become import specialty items.

REFERENCES CITED

[1] Arizona State Employment Service. Employment Security Commission of Arizona. *Agricultural Employment in Arizona Since 1950*. March, 1968, and Supplement, 1969.

[2] _____. Employment Security Commission of Arizona. "ES 225 Annual Farm Labor Reports."

[3] _____. Employment Security Commission of Arizona. *Manpower Outlook '80: Arizona Agriculture*. January, 1968.

[4] *Manpower Report to the President*. Wash., D.C.: Government Printing Office, April, 1968.

[5] *1969 Arizona Agricultural Statistics*. University of Arizona. Crop and Livestock Reporting Service, March, 1969.

[6] "Seasonality of Agricultural Workers." Internal report of Employment Security Commission of Arizona. Unemployment Compensation Division, Reports and Analysis Section, 1969.

[7] U.S. Dept. of Agriculture. Economic Research Service. *Farm Income - State Estimates, 1949-1967*. FIS 211 Supplement. Wash., D.C.: Government Printing Office.

[8] _____. Economic Research Service. *The Hired Farm Working Force of 1967 - A Statistical Report*. Agr. Econ. Rpt. No. 148. Wash., D.C.: Government Printing Office, 1968.

Table 5. Number of Persons who did any Farm Wage Work in Arizona During the Year by Sex, 1945-67[a] (in thousands)

Year	All Farm Wage Workers			Workers who did 25 Days or More of Farm Wage Work During the Year (Noncasual workers)			Workers who did Less than 25 Days of Farm Wage Work During the Year (casual workers)		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
1945	3,212	2,375	837	1,965	1,576	389	1,247	799	448
1946	2,770	2,120	650	1,953	1,584	369	817	536	281
1947	3,394	2,587	807	2,215	1,864	351	1,179	723	456
1948	3,752	2,820	932	2,502	2,036	466	1,250	784	466
1949	4,140	3,021	1,119	2,510	2,001	509	1,630	1,020	610
1950	4,342	3,221	1,121	--	--	--	--	--	--
1951	3,274	2,392	882	2,156	1,718	438	1,118	674	444
1952	2,980	2,218	762	1,972	1,558	414	1,008	660	348
1954	3,009	2,237	772	1,908	1,544	364	1,101	693	408
1956	3,575	2,525	1,050	2,078	1,553	525	1,497	972	525
1957	3,962	2,765	1,197	2,200	1,673	527	1,762	1,092	670
1958	4,212	2,987	1,225	2,319	1,788	531	1,893	1,199	694
1959	3,577	2,570	1,007	2,166	1,690	476	1,412	880	531
1960	3,693	2,664	1,029	2,162	1,698	463	1,531	966	566
1961	3,488	2,445	1,043	1,889	1,468	421	1,600	978	622
1962	3,622	2,551	1,071	2,067	1,576	492	1,555	976	579
1963	3,579	2,615	983	1,862	1,480	382	1,735	1,135	601
1964	3,370	2,398	972	2,001	1,487	514	1,369	911	458
1965	3,128	2,205	923	1,864	1,407	457	1,264	797	466
1966	2,763	2,051	712	1,634	1,295	339	1,130	756	374
1967	3,078	2,261	817	1,740	1,358	381	1,338	903	435

[a]No survey conducted in 1953 and 1955.

Note: Numbers of workers for 1959 and succeeding years are rounded to the nearest thousand without being adjusted to group totals.

Source: *The Hired Farm Working Force of 1967--A Statistical Report*, USDA, Econ. Res. Serv., Agr. Econ. Rpt No. 148, Wash., D.C.: Government Printing Office, 1968, p. 8.

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Table 6. Agricultural Employment in Arizona 1950-1968
Annual Average
(in thousands)

Year	Total All Agr. Workers	YEAR-ROUND		Total Seas.	SEASONAL					
		Self-Empl. and Unpaid Family	Reg. Hired		Total Dom.	Domestic				Mex. Nat.
						Local	Mig. Tot.	Migrant		
								Inter-state	Intra-state	
1950	48.9	13.8	12.2	22.9	21.8	9.1	12.7	INA	INA	1.2
1951	48.0	13.8	12.4	21.8	17.6	10.9	6.8	INA	INA	4.2
1952	51.4	13.7	12.6	25.1	18.4	10.4	8.0	INA	INA	6.7
1953	54.4	13.7	12.7	28.0	22.0	13.4	8.5	INA	INA	6.0
1954	52.6	13.5	12.9	26.2	19.6	11.5	8.1	6.4	1.65	6.6
1955	50.6	12.7	12.8	25.1	18.2	11.2	7.1	5.6	1.47	6.8
1956	52.9	11.9	12.6	28.4	19.8	11.8	8.0	6.5	1.58	8.5
1957	49.3	11.2	12.5	25.6	17.3	12.0	5.3	3.9	1.34	6.8
1958	50.9	10.4	12.3	28.2	18.0	12.7	5.3	3.9	1.47	10.2
1959	45.4	9.5	12.2	23.7	14.5	11.2	3.3	2.2	1.05	9.2
1960	45.1	8.9	12.1	24.0	15.5	12.2	3.4	2.4	0.96	8.6
1961	40.5	8.5	12.0	20.0	13.3	10.7	2.6	1.7	0.88	7.2
1962	38.1	8.1	12.3	17.7	12.5	10.6	1.9	1.2	0.71	4.7
1963	38.4	7.9	12.8	17.7	12.5	10.6	1.9	1.2	0.71	4.3
1964	38.7	7.7	13.2	17.8	14.1	12.2	2.0	1.2	0.81	3.7
1965	37.2	7.3	13.6	16.3	--	13.5	2.8	1.5	1.35	--
1966	37.3	7.0	14.0	16.3	--	13.6	2.7	1.21	1.38	--
1967	37.9	6.8	14.5	16.8	--	13.8	2.8	1.4	1.35	--
1968	37.7	6.5	15.0	16.2	--	13.4	2.7	1.35	1.35	--

Note: Figures have been rounded to nearest hundred without being adjusted to group totals.

Source: *Agricultural Employment in Arizona Since 1950*, Arizona State Employment Service, March, 1968.

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Table 7. Expenditures for Hired Labor and Net Farm Income in Arizona 1950-1967 (in millions of dollars)

Year	Net Farm Income Arizona	Expenditures for Hired Labor	Net Farm Income As a Percent of Cash Receipts from Farm Sales
1950	$130.9	$37.2	$46.2
1951	219.1	41.5	60.6
1952	203.8	51.1	53.5
1953	172.8	53.4	41.0
1954	158.5	55.8	44.0
1955	120.5	57.9	34.6
1956	126.0	62.6	34.0
1957	120.9	62.2	32.9
1958	123.9	68.3	28.8
1959	117.6	61.9	27.7
1960	124.9	62.7	28.4
1961	137.8	56.8	29.3
1962	160.6	51.4	31.6
1963	158.4	51.5	29.5
1964	136.7	55.7	29.7
1965	162.9	55.4	31.7
1966	131.2	58.8	26.1
1967	155.5	64.0	29.5

Source: *Farm Income - State Estimates, 1949-1967*, USDA, Econ. Res. Serv., FIS 211 Supplement.

Statistical Summary

Table 8. Index of Seasonality of Agricultural Employment in Arizona

Year	No. of Months Less than .9	No. of Months Over 1.0	Range			
			Low Month	Index	High Month	Index
1958	4	5	August	.816	November	1.270
1959	4	7	August	.821	November	1.186
1960	4	6	August	.825	November	1.180
1961	4	6	August	.832	November	1.169
1962	4	6	August	.840	November	1.157
1963	1	6	August	.848	November	1.146
1964	1	6	August	.851	November	1.135
1965	1	6	August	.851	November	1.123
1966	1	6	August	.850	November	1.109
1967	1	5	August	.851	November	1.098
1968	1	5	August	.852	June	1.094

Source: Internal Report of Arizona Employment Security Commission, Unemployment Compensation Division, Reports and Analysis Section, 1969, *Seasonality of Agricultural Workers*.

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Table 9. 1968 Commercial Vegetable Production[a] in Arizona

Crop	Acres	Cut Production	Value
Broccoli	650	39,000	$ 468,000
Cabbage	1,900	276,000	1,035,000
Spring Cantaloupe	11,600	1,392,000	11,275,000
Early Summer Cantaloupe	1,000	120,000	840,000
Early Fall Cantaloupe	500	60,000	432,000
Carrots	3,700	610,000	3,965,000
Cauliflower	650	36,000	500,000
Honeydew Melons	750	79,000	624,000
Winter Lettuce	14,000	2,660,000	14,364,000
Early Spring Lettuce	17,800	3,115,000	15,419,000
Fall Lettuce	13,600	2,176,000	12,838,000
Onions, Dry	3,100	992,000	3,338,000
Green Onions	2,494	551,304 crates[b]	4,134,780
Potatoes	10,100	2,323,000	7,317,000
Watermelons	4,000	680,000	2,074,000
Total			$78,623,000

[a]Arizona ranks fourth in harvested acres, production, and value of fresh market vegetables in the United States.

[b]Crate=15 dozen bunches.

Source: *1969 Arizona Agricultural Statistics*, University of Arizona Crop and Livestock Reporting Service.

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Statistical Summary

Table 10. Citrus Fruit and Grape Production in Arizona

Crop	Acres	Seasonal Man Mos.[a]	Cartons	Value
Exotics	5,700	100	540,000	633,000
Grapefruit	8,000	3,784	7,480,000	6,844,000
Lemons	15,000	8,940	6,500,000	11,018,000
All Oranges	30,000	5,250	6,240,000	14,695,000
Total Citrus[b]	58,700	27,124	--	38,508,000
Grapes[c]	4,500	4,105	13,600[d]	5,318,000

[a]Lemons are harvested only seven months of the year; grapefruit, ten months; oranges, eight months; exotics, three months; grape harvest, two months.

[b]Citrus total includes only preharvest labor.

[c]Grape preharvest activities occur the first five months of the year, and utilize 500 man-months labor during that period.

[d]In tons.

Note: The income from principal fruits and vegetables equals $119,131,000, 20% of Arizona's agricultural income. Fruit and vegetable farmers hire about 17% of the Regular Hired workers and 30% of the Seasonal workers. Agricultural service, custom care, and harvesting of fruits and vegetables, another 20%.

Source: Arizona State Employment Service data on Seasonal labor (ES 223 reports). Arizona Crop Reporting Service provided data on acres, production and value for the 1967-68 citrus season, and the 1968 season, grapes.

Statistical Summary

Table 11. Principal Arizona Crops 1968

Crop	Acreage	Activity	Seasonal Man Mos.	Value	Production	Units
Grapefruit	6,430	Harvest	3,784	$ 6,844	7,480,000	cartons
Lemons	6,872	Harvest	8,940	11,018	6,240,000	cartons
Limes	23	--	--	--	2,000	cartons
Oranges	17,801	Harvest	5,250	14,695	6,500,000	cartons
Tangerines	1,918	Harvest	280	633	405,000	cartons
Citrus Total	49,545	All	27,124	38,508	--	--
Grapes	4,522	All	4,105	5,318	13,600	tons
Cantaloupe	13,100	All	5,553	5,237	1,572,000	cwt.
Honeydew	907	Harvest	75	624	79,000	cwt.
Watermelon	3,683	Harvest	615	2,074	680,000	cwt.
Cabbage	2,050	Harvest	653	1,035	276,000	cwt.
Carrots	3,602	Harvest	1,850	3,965	610,000	cwt.
Dry Onions	3,038	All	4,410	3,338	992,000	cwt.
Green Onions	2,494	Harvest	12,438	4,135	--	--
Potatoes	10,180	Harvest	412	7,317	2,323,000	cwt.
Lettuce	45,991	All	22,841	42,621	7,942,000	cwt.
Chili Peppers	800	Harvest	415	--	96,000	cwt.
Vegetable Total	91,280	--	--	78,623	--	--
Alfalfa	202,000	Harvest	5,320	26,034	1,091,000	tons
Cotton	297,000	All	14,023	101,803	733,000	500# Bales
Barley	176,000	Harvest	750	14,004	308,350	tons
Sorghum	231,000	Harvest	1,674	20,621	510,970	tons
Wheat	52,000	Harvest	300	3,569	81,120	tons
Safflower	9,000	Harvest	50	928	11,900	tons
Sugar Beets	11,600	Harvest	2,443	--	188,000	tons

Source: Data on citrus crops are from U.S. Department of Agriculture, along with all vegetables except chili peppers, data for which was prepared by the Employment Service. The citrus total was provided by the University of Arizona. The remaining data came from the Crop Reporting Service.

Statistical Summary

Table 12. Arizona Cotton Crop

Year	Pct. Machine Harvested	Total Crop (No. Bales)
1950	10	474,000
1951	33	803,000
1952	40	948,000
1953	47	1,070,000
1954	40	911,000
1955	38	728,000
1956	37	829,000
1957	45	763,000
1958	46	734,000
1959	60	715,000
1960	70	852,000
1961	83	836,000
1962	92	935,000
1963	95	845,000
1964	96	799,000
1965	97	787,000
1966	97	517,000
1967	98	439,000
1968	99	715,000

Note: All numbers rounded to nearest thousand.

Source: Arizona State Employment Service "ES 225 Annual Farm Labor Reports."

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AGRICULTURAL LABOR MOBILITY

Paul B. Miller

Labor mobility is a many faceted subject and one which has increased in importance as the age of automation has progressed. In general, mobility exists when an individual has the ability to change the life or work pattern which he occupies currently. There are several dimensions or directions to the potential movement of people within the economic system as well as a multitude of factors influencing the decision to move. Most common types of mobility are social, labor force status, occupational, industrial, and geographic. The purpose of this paper is to explore each dimension of mobility briefly, consider some of the implications of recent research affecting each type and then discuss the significance of mobility in a dynamic agricultural labor market. Although each labor market is unique, I will rely heavily upon the experience gathered in studying the Lower Rio Grande Valley of Texas and Mexican-American farm workers.

Economic Importance of Mobility

The ability of a given labor market to expand and contract is vital to the economic health of a region. Unless movement is sufficient to compensate for changes in labor demand, both quantity and quality, bottlenecks occur causing structural unemployment in one area or occupation while an actual labor shortage might exist nearby. It is possible for a surplus of labor to exist amidst an extreme shortage if the skill requirements of the new job openings do not match the educational attainment of the available displaced workers. The result is an underutilization of human resources creating inefficiency and a decrease in potential productivity.

Capital is considerably more mobile than labor. Recent experience has demonstrated how agricultural investment can be transferred from the United States to Mexico or any other desired location with little economic difficulty. Also capital resources can shift easily and swiftly into or out of a specific industry or process and drastically change the capital to labor ratio. Costs and availability of mechanical equipment relative to the supply and prevailing wage determine the rate of application of capital to agricultural production.

Types of Mobility

Social Mobility

As a general rule, social mobility would not be treated in the context with the more conventional types of labor mobility. However, in the case of Mexican-Americans, it is highly relevant to the future supply of agricultural

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manpower. Even among Mexican-Americans, farm occupations do not enjoy a very high status. Most parents want their children to go into some higher skilled nonagricultural career once he is old enough to leave home. The youth are better educated and receive much higher incomes than parents did at that same age. Skrabanek and Rapton found a significant trading up of occupations from farm to nonfarm intergenerationally [5]. Wright and Juvlesky found that 48% of Mexican-American male high school students wanted to become professionals and only 5% mentioned unskilled occupations [7]. Indications are then that rural youth are interested in leaving agriculture if the proper opportunity can be created for them.

Labor Force Status Mobility

The labor force attachment of agricultural workers is often rather tenuous. Some of the reasons for this stem from the nature of the demand for their services. Due to conditions of temperature, moisture, etc., it is not uncommon to work only part of the day or not at all. There are frequent losses of work time due to the necessity of travel between jobs. Within each family the number of people employed over the year may fluctuate from zero to ten or more, depending on the specific month. Consequently, this shifting of individuals in and out of the labor force creates a fluid situation. While the long-run participation rate for the civilian labor force is stable at about 60%, the rate for a rural family may vary widely [6].

The average size of the household in our sample was seven persons. Of this household group, 23% had a maximum of only one worker employed at any time during the year, 29% had two, 12% had three, 14% had four, 14% had five, while 7% had over five working at the same time. Almost every household had experienced at least some unemployment or dropped out of the labor force. In addition, 30% of the families had two or more people unemployed or out of the labor force.

The major determinants of the size of the family work force besides rate of childbirth are the level of family income and the age of the workers. Among farm families, most of the school age people drop out in September (or November for migrants) and go back in April, May, or June. If migrant family income is sufficiently high during the period spent out of Texas, the household members frequently will not work while they winter in South Texas. That is to say, they are readily willing to substitute leisure for additional real income. However, there is a tendency for the younger workers to be more economically motivated than their parents in this respect.

Occupational Mobility

With a declining demand for agricultural manpower in most areas, it is essential for individuals to be able to move to another occupation. Major obstacles to the farm worker group's mobility include a paucity of education,

inconvertibility of skills, and lack of work experience. Average educational levels of farm workers are the lowest of any occupational group. In our study specifically, 51 of the household heads had less than one year of formal education while 77% had not completed the fifth grade.

Although the problem of occupational mobility among agricultural laborers is worsened by a lack of potential skill convertibility, there is substantial lateral movement or shifting from the harvesting of one commodity to another. In our group it was found that on the average each worker spent time in the production of three different commodities in 1968. The products on which most of our group worked consisted of tomatoes, beets, cucumbers, onions, citrus, and carrots respectively.

Although skilled at farm tasks, this group of workers does not meet the skill requirements of most jobs in the labor market as a whole. The entry level is low in most cases and, therefore, they face a surplus situation. Rural manpower often has difficulty adapting to the regimented, rapid pace urban work environment. Ruesink and Batson followed the adjustment process of a large group of Mexican-Americans who under a mobility project sponsored by the U.S. Department of Labor, moved from rural South Texas to urban Fort Worth-Dallas [4]. Only about 10% of their group had agricultural employment as their last job but the experience of the group is worth noting. A majority of the group went to work at Ling-Tempco-Vought (LTV) where they were subjected to rigorous screening, pretraining, and close scrutiny by counselors. The results are phenomenal, indicating that if subjected to an environment of the nature generated at LTV, low skilled, high ability people can adapt to new job situations. The retention rate was 93% after two months and 68% after one year. In comparison, another project can be cited where a group of workers from South Texas went to a new job in the same labor market without prior training and without prior knowledge of what they were supposed to be doing on the job. It is not surprising that over 50% of the new employees did not stay with the same employer over two months.

Industrial Mobility

Moving from one occupation to another quite often is combined with an interindustry transfer. Frequently a complex move is necessary as opposed to a simple shift along one dimension. Perkins and Hathaway found that movement to nonfarm jobs would most likely occur among young non-Negroes having fairly high earnings in agriculture, previous nonfarm work experience, coming from a high income county, and being located within 50 miles of a Standard Metropolitan Statistical Area [3]. Unfortunately, few of these factors are present in South Texas. However, experience with the LTV mobility project seems to indicate that some of the obstacles to mobility can be overcome. Choldin and Trout found that most Mexican-Americans who have dropped out of the migratory stream in a Michigan sample have been able to change

both occupation and industry without insurmountable difficulties [1]. Some 57% of their sample had shifted from farm work to operative and kindred occupations, while 68% had moved to manufacturing jobs rather than agriculture.

Within our group about one-third of the household heads had held a nonfarm job in the last five years. Among this subgroup holding nonfarm jobs, approximately one-fourth did some type of construction work, 15% automotive related work and about the same number worked at agriculturally oriented jobs. Only two household heads did anything which might be classified as semi-skilled.

Geographic Mobility

Texas has provided an important source of seasonal farm labor for many years. While most of the hired labor force consists of local workers, migrant workers form the element on the supply side which serves to counterbalance pressures on the market stemming from the demand side during peak periods. This annual trek following the sun provides a ready source of trained farm labor for more urbanized states in which migration to the cities has pulled most of the people out of agriculture. Growers like this manpower source because they do not have to worry about creating jobs for the people in off seasons. Traditionally migrants did not stay; and, therefore, the towns did not have to worry about cultural friction and supplying housing or public facilities.

Following the migratory path rather than staying in South Texas gives an individual or group the opportunity to work longer hours and make more money. In general, the Lower Rio Grande Valley has a surplus of unskilled human resources willing to work. The workers enjoy spending the colder months in the Valley where the temperature is more to their liking, and they are able to be near relatives and friends. While there, they are willing to work for much lower wage rates on winter vegetables and citrus.

Tables 3 and 4 indicate the most important receiving states of migratory labor from the state of Texas. Migrants learn of jobs through the Texas Employment Commission, private labor recruiters, letters from employers, friends, and going out on their own from place to place. Michigan, Ohio, and Minnesota benefit most from the inflow of farm workers from Texas. Our research in Hidalgo County indicates that most of the families who left Texas went to the Middle West with Michigan being the most popular. Although a large number did not leave the state, the average for the group was two states during the course of last year.

Table 5 shows the relative importance of the Lower Rio Grande Valley to the exportation of labor. Hidalgo County (McAllen Labor Market) is the largest single contributor of migrant labor. Its share of the total supplied by the Valley has increased from 52% in 1965 to 61% of the number exported by private labor recruiters from Texas in 1968. For the country as a whole agricultural employment continues to decline as well as the share of migrants, which has fallen to 11% of total hired farm labor.

Table 1. Labor Force Estimate by Labor Market Area: January 1964 Through May 1969
(Thousands)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Brownsville												
1964 Farm Employment	8.9	8.8	8.8	9.2	10.5	10.9	10.6	10.4	7.5	8.5	9.0	9.2
Nonfarm Employment	34.3	34.8	34.8	34.9	35.2	35.2	36.0	35.6	34.6	34.5	34.8	35.1
Total Rate of Unemployment	8.9	8.4	9.3	8.7	8.6	9.5	8.0	7.9	7.9	7.6	8.0	8.4
1965 Farm Employment	9.0	8.8	9.0	9.2	10.2	10.5	10.0	10.0	7.8	8.7	9.4	9.7
Nonfarm Employment	35.2	35.1	35.8	35.8	35.7	35.1	35.7	36.2	35.4	35.2	35.6	36.7
Total Rate of Unemployment	7.6	8.4	7.6	8.5	8.3	9.0	8.0	7.0	6.9	6.2	6.7	6.1
1966 Farm Employment	9.0	9.0	9.3	10.0	10.0	11.5	8.5	8.0	7.8	7.8	8.7	8.1
Nonfarm Employment	36.6	36.8	37.4	37.3	36.8	37.0	37.2	38.4	37.0	36.9	37.0	37.6
Total Rate of Unemployment	6.2	6.3	6.2	6.8	7.3	8.1	6.2	5.8	6.5	6.8	6.4	5.3
1967 Farm Employment	7.8	7.7	8.8	9.0	10.0	9.6	7.0	8.8	5.8	1.3	2.3	2.9
Nonfarm Employment	37.0	37.8	38.0	37.9	37.7	37.6	38.1	38.8	37.6	37.7	37.8	38.4
Total Rate of Unemployment	5.9	5.8	6.1	6.3	6.2	7.3	5.1	6.5	8.4	8.3	5.6	4.5
1968 Farm Employment	3.9	4.8	6.1	9.3	7.0	7.8	4.7	6.4	6.2	6.2	6.9	7.0
Nonfarm Employment	37.6	37.7	38.1	38.9	38.6	38.2	38.2	38.6	38.3	37.1	37.9	39.0
Total Rate of Unemployment	5.4	4.9	4.9	5.6	6.2	7.1	5.6	6.0	6.0	6.0	6.4	5.7
1969 Farm Employment	6.7	7.1	7.7	7.9	7.8	--	--	--	--	--	--	--
Nonfarm Employment	38.9	38.6	39.4	39.7	38.8	--	--	--	--	--	--	--
Total Rate of Unemployment	5.6	6.1	5.5	6.2	6.9	--	--	--	--	--	--	--
Change in percentage between 1964 and 1968-69 in Farm Employment												
1964 to 1968	-56.0	-45.0	-31.0	1.1	-33.3	-28.4	-57.5	-38.5	-17.3	-27.1	-23.3	-23.9
1964 to 1969	-24.7	-19.3	-12.5	-18.5	-25.7	--	--	--	--	--	--	--

Source: Texas Employment Commission

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Table 2. Labor Force Estimate by Labor Market Area: January 1964 Through May 1969
(Thousands)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
McAllen												
1964 Farm Employment	11.0	11.8	11.9	12.4	13.8	14.7	13.9	13.7	10.9	11.0	10.9	11.3
Nonfarm Employment	36.6	36.4	37.6	37.6	37.9	37.2	35.3	35.0	34.9	35.5	37.7	38.0
Total Rate of Unemployment	8.3	8.2	7.3	7.3	6.9	8.1	7.0	6.9	6.4	6.9	7.3	6.8
1965 Farm Employment	11.3	11.4	11.8	12.3	13.2	14.0	13.5	13.5	11.2	11.2	11.3	12.0
Nonfarm Employment	38.2	38.3	38.6	38.6	37.9	37.2	37.0	36.3	36.3	37.1	38.2	40.3
Total Rate of Unemployment	6.7	6.8	6.5	5.6	6.5	7.2	6.2	6.1	5.8	6.1	6.8	5.8
1966 Farm Employment	12.5	12.7	12.1	14.5	12.0	13.2	10.0	10.9	10.9	12.6	16.6	15.0
Nonfarm Employment	40.0	40.2	40.1	40.3	39.1	40.0	39.7	40.3	40.4	40.1	41.7	43.0
Total Rate of Unemployment	5.9	5.7	5.2	4.8	4.8	5.7	6.0	5.3	5.5	5.3	6.1	5.8
1967 Farm Employment	15.8	16.2	16.0	18.2	17.5	14.9	12.8	11.5	11.2	5.7	7.0	8.2
Nonfarm Employment	42.7	42.5	42.7	43.2	42.5	42.0	41.8	41.2	41.5	42.4	44.2	45.2
Total Rate of Unemployment	5.8	5.6	5.3	5.3	5.5	6.7	6.4	5.8	6.5	5.5	6.6	6.0
1968 Farm Employment	6.5	9.5	11.9	16.3	15.3	14.2	10.3	11.0	11.9	12.1	15.5	15.9
Nonfarm Employment	43.9	44.2	44.5	45.7	44.3	43.1	40.5	40.1	42.1	44.0	46.0	48.2
Total Rate of Unemployment	5.9	5.9	5.4	5.5	5.1	6.5	6.5	5.4	5.1	5.6	7.0	5.4
1969 Farm Employment	16.0	15.3	14.7	17.5	16.0	--	--	--	--	--	--	--
Nonfarm Employment	49.0	48.7	48.8	49.0	47.0	--	--	--	--	--	--	--
Total Rate of Unemployment	5.2	6.3	4.8	4.8	5.4	--	--	--	--	--	--	--
Change in percentage between 1964 and 1968-69 in Farm Employment												
1964 to 1968	-40.9	-22.9	0	31.5	-10.9	- 3.4	-25.9	-19.7	9.2	10.0	42.2	40.7
1964 to 1969	45.5	29.7	23.5	41.1	15.9	--	--	--	--	--	--	--

Source: Texas Employment Commission
Total Farm Employment may remain the same but people are different.

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Table 3. Distribution of Agricultural Labor Sent Out of Texas Through Licensed Agents by State of Destination: 1965-68

State	1965		1966		1967		1968	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
California	6,020	15.0	5,907	16.2	679	2.0	1,016	2.8
Colorado	6,523	16.2	5,438	14.9	649	1.9	5,880	16.4
Idaho	1,871	4.6	1,660	4.6	1,988	5.8	1,782	5.0
Illinois	428	1.1	108	.3	436	1.3	318	.9
Iowa	33	.1	497	1.4	465	1.4	825	2.3
Kansas	1,159	2.9	931	2.6	1,287	3.8	2,198	6.1
Michigan	5,631	14.0	4,000	11.0	3,732	10.9	4,242	11.8
Minnesota	5,518	13.7	4,959	13.6	6,131	17.9	5,983	16.7
Montana	1,900	4.7	784	2.2	1,335	3.9	1,365	3.8
Nebraska	3,532	8.8	4,478	12.3	3,778	11.1	3,793	10.6
North Dakota	2,654	6.6	2,376	6.5	1,899	5.6	2,702	7.5
Ohio	2,750	6.8	1,906	5.2	1,591	4.7	2,012	5.6
Oregon	334	.8	467	1.3	974	2.9	215	.6
Utah	1,201	3.0	1,007	2.8	968	2.8	456	1.3
Washington			236	.6	303	.9	261	.7
Wisconsin	7	.01	71	.2	364	1.1	392	1.1
Wyoming	630	1.6	930	2.6	1,107	3.2	1,308	3.6
Total No. of Workers	40,251		36,463		34,158		35,846	

Source: Texas Bureau of Labor Statistics.

Table 4. Distribution of Agricultural Labor Sent Out of Texas Through Texas Employment Commission by State of Destination: 1965-68

State	1965		1966		1967		1968	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Colorado	2,606	3.9	2,346	3.0	3,368	3.9	987	1.3
Idaho	4,592	7.5	4,618	6.0	4,515	5.3	5,461	7.4
Illinois	5,143	7.8	6,440	8.3	6,017	7.0	4,984	6.8
Indiana	5,678	9.6	7,657	9.9	8,561	10.0	6,011	8.2
Iowa	371	.6	1,140	1.5	1,196	1.4	307	.4
Michigan	15,303	23.1	23,545	30.4	26,199	30.6	27,896	37.9
Minnesota	819	1.2	728	.9	1,170	1.3	1,294	1.8
Montana	3,021	4.6	2,537	3.3	2,963	3.5	2,446	3.3
Ohio	9,734	14.7	9,957	12.9	10,700	12.5	8,963	12.2
Oregon	1,686	2.6	2,043	2.6	2,520	2.9	1,660	2.3
Washington	1,916	2.9	2,282	2.9	2,210	2.6	1,285	1.8
Wisconsin	7,294	11.0	7,361	9.5	8,837	10.3	6,577	9.0
Wyoming	2,520	3.8	1,959	2.5	2,144	2.5	2,177	3.3
Total	66,185		77,498		85,574		73,460	

Source: Texas Employment Commission.

Table 5. Distribution of Agricultural Labor Sent Out of State by Licensed Labor Agents From the Lower Rio Grand Valley by County: 1965-68

Year	Total Number of Workers		Percent of Workers from Valley	Number and Percent of Workers from Counties in Valley							
				Cameron		Hidalgo		Starr		Willacy	
	From Texas	From Valley		No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
1965	40,251	14,669	36	5,762	39	7,622	52	309	2	742	5
1966	36,463	14,948	41	5,060	34	8,881	59	170	1	826	6
1967	34,158	14,406	42	4,984	35	8,321	58	258	2	843	6
1968	35,846	14,958	42	4,906	33	9,166	61	170	1	743	5

Source: Texas Bureau of Labor Statistics.

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To summarize the subject of mobility, there are several paths an individual might take to adjust to rapid changes in the agricultural labor market. An individual who is unable to adapt to the dynamics of the market will sacrifice both personal income, prestige, and job security. Consequently, the economy will suffer a loss of potential productivity resulting from underutilization of the human resources which such an individual represents. Frustrated by failure to synchronize his personal attributes to the needs of the changing work environment, the farm worker could be alienated toward society. This in turn could result in his withdrawal both from society and the labor force.

Mobility and Rural Manpower Problems

There is general agreement on the desirability of achieving and maintaining a highly mobile agricultural labor force because such a force is able to fluctuate as manpower requirements change. Most people recognize the existence of barriers that impede the transition of farm workers from one job to another. Deficiencies in education, skill, and work experience coupled with strong sociological ties to specific regions create serious adaptional problems. The burden of hardships caused by mobility now rests primarily upon the individual. In most cases there are no provisions for income maintenance (unemployment compensation, supplementary unemployment benefits, etc.) comparable to nonfarm employment. Furthermore, there is a definite lack of general agreement on how the burden might be shifted from the farm worker and, indeed, on whether or not it should be shifted.

On one hand there exists a substantial number of people who believe that the public should not tamper with the market mechanism. This opinion is based on the desire to maintain a large surplus of cheap captive labor. In addition, this view obtains additional support through associations of citizens which are located in areas that receive manpower but do not want certain ethnic groups settling in their areas permanently. These two sources of opposition to public participation represent a highly organized, politically influential force which resists virtually any piece of social legislation designed to assist mobility. However, on the other hand, most people believe public institutions have both an obligation and a major role in increasing labor mobility.

There are numerous alternative public programs available under present laws which are designed to help ease some of the most severe hardships caused by labor market shifts. For example, the Annual Worker Plan has been effective in extending the work year and providing a rough estimate of migrant labor demand. At present the Farm Labor Service has at its disposal a wide range of programs oriented toward assisting people in transition by upgrading their skills and providing information concerning alternative employment opportunities. Through provisions of the Manpower Development and Training Act (MDTA) of 1962,

as amended, and the Economic Opportunity Act of 1964, a number of innovative programs have been implemented. There remains the urgent need to improve the image of the Farm Labor Service so that more people will rely on its facilities. However, at current levels of appropriations the service cannot meet the needs of rural people. More funds are needed for Headstart and Adult Migrant Education courses of OED, MDTA sponsored research and training classes, as well as E + D and outreach programs of the Farm Labor Service and U.S. Employment Service.

Aside from the lack of funds, the direction of agricultural manpower programs might be altered to consider a middle ground for the individual. While mechanization is lowering the demand for unskilled workers, it also is creating openings for higher skilled persons to operate equipment and provide agriculture related services such as pesticide and herbicide distribution and application. It is possible to train displaced farm workers for jobs which are similar to what they have been doing. There are several types of nursery and lawn service openings that would require little training. Of more universal appeal are auto mechanics and welders who can either serve the agricultural or non-agricultural labor market. A highly successful MDTA class was held in farm management tailored to small farm operators in East Texas. Because of the lower benefit-cost ratio for longer vocational classes it is more practical to implement manpower programs for older workers that are more of an intermediate step rather than a drastic change from the individuals previous work patterns.

South Texas will continue to serve as the resevoir for much of the migratory farm labor in the United States. Even though the birth rate is approximately 50% higher than the national average, the total population of the Lower Rio Grande Valley has increased very little during the last decade. Job opportunities are very limited in the Valley so many job seekers leave permanently each year. This is not an inexhaustible supply of agricultural workers, but they also present serious problems when making the transition out of the area and industry. There appears to be little potential for the location of industry in the region. The nonagricultural industries which might locate there are building facilities on the Mexican side of the border. Moving the surplus workers out of agriculture presents a national challenge. States have done little to help relieve the burden and uncertainty of the transition. Therefore, the leadership for financial support of ameliorative manpower programs falls on the federal government.

REFERENCES CITED

[1] Choldin, Harvey M.; and Trout, Grafton D., Jr. *Mexican-Americans in Michigan: From Field to Factory.* Interim report to U.S. Dept. of Labor, pp. 39-40.

[2] McElroy, Robert C. *The Hired Farm Work Force of 1967.* USDA, ERS, Agr. Econ. Rpt. No. 148, Wash., D.C.: Government Printing Office, p. 11.

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[3] Perkins, Brian; and Hathaway, Dale. *Movement of Labor Between Farm and Nonfarm Jobs*. Mich. State Univ. Agr. Expt. Sta. Bull. No. 13, 1966.

[4] Ruesink, David C.; and Batson, T. Brice. "Success Factors in Retraining-Relocation Program Involving Mexican-Americans." Paper presented to the Association of Southern Agricultural Workers Meetings, Mobile, Alabama, February 3, 1969.

[5] Skrabanek, R. L.; and Rapton, Avra. *Occupational Change Among Spanish-Americans*. B-1061, Texas Agricultural Experiment Station, 15-19.

[6] U.S. Dept. of Labor. Bureau of Labor Statistics. *Monthly Labor Review*. June, 1968.

[7] Wright, Dwight E., Jr.; and Kuvlesky, William P. "Occupational Status Projections of Mexican-American Youth Residing in the Rio Grande Valley of Texas." Paper presented at annual meeting of Southwestern Social Science Association, Dallas, Texas, April, 1968.

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AGRICULTURAL LABOR SKILLS - PAST, PRESENT, FUTURE

James W. Becket

Introduction

The title given this paper requires little discussion. One could easily make the trite statement that the agricultural laborer of the future will be more highly educated, more specialized, more efficient and productive, and better supervised. This implies what the situation has been in the past, a period of transition could be assumed for the present, and the future is described. However, the objectives are not dismissed so easily. The objectives, according to the colloquium planners, are: "a conceptual model for a meaningful classification of farm workers in order to facilitate recruitment, training, placement, and evaluation of farm workers. The development of skill common denominators based upon the farm worker's relationship to machines, animals, and people."

In order to help build a foundation for such a model and to give some indication of the need for one, it seems appropriate to begin by quoting from a previous publication: "To obtain farm labor for the coming season every effort should first be made to utilize to the best advantage all available home supplies. This may mean more attention on the part of farmers to the essentials of wages, housing, food, hours, and supervision" [1]. A similar quote could have been taken from many recent publications. It came, however, from *A Study of Farm Labor in California* by R. L. Adams and T. R. Kelly, publication date March, 1918. This report also suggests that even if the farmer made some changes he would need "additional help of a kind able and willing to do the work required," another statement similar to many made in recent years. The report then recommends the importation of foreign workers to solve the problem. As we all know, and as Thor and Mamer review in their background paper for the technical report for this colloquium [4], the importation of foreign workers has been our traditional "solution" to farm labor problems in the 50 years since the statement quoted above was made originally.

The solution is no longer available, however, so agriculture has been forced to look for an alternative. The alternative chosen for the all out effort has been total mechanization. I have no basic quarrel with this choice, but I cannot help but wonder if the almost frantic emphasis on mechanization would be necessary today if agriculture had taken a long hard look at wages, housing, food, hours (and other working conditions), and supervision at some point during those 50 years. I cannot help but wonder, even today, if total mechanization is absolutely essential. I believe that we could alleviate some of our problems without the ultimate machine if we devoted as much time, effort, and money to the modification of the crops and the cultural practices of those crops to make them adaptable to the human as we do to make them adaptable to the machine. For example, workers have had to fight limbs for years, but there has been little,

if any, effort to modify the structure of the tree to benefit the handpicker. In order to accommodate the machine, however, extensive tree structure modification is anticipated. In the same vein, water grass in a tomato field has always been a serious problem to the handpicker, but it has usually remained his problem. The machine, however, will not tolerate it, so growers are told that fields must be weed free. All I am suggesting is that there might be more people able and willing to do the work required if the work required was modified somewhat to accommodate the worker. However, we are told that mechanization is an economic necessity, and there is no doubt that a consensus decision has been reached that total mechanization of every crop is the goal. While I do not dispute the economic advantages of mechanization, I believe that more must be done than just mechanizing the production of fruits and vegetables. Mechanization may solve the short-run economic problem of the farmer who can afford the machines and adapt his operation to them, but it does not solve anything for the farm worker or the small farmer, both of whom are part of the farm labor problem. Something must be done for those displaced as well.

I believe that we in agriculture must look at the reality of today in our society. Other segments of society are in the process of creating jobs for which unskilled people can be trained with the hope of removing people from the unemployment roles, the welfare roles, and the ghetto roles. Our major emphasis in agriculture is on programs which may, as a by-product, produce more of the same type of people others are trying to rehabilitate. My hope is that we can develop, concurrently with the development of the machines, alternatives for those farm workers and farmers being displaced by progress so that at least some of them will escape unemployment, welfare, or the ghetto. Doing so would be much more efficient than to come back and develop these alternatives later, as is happening in our urban areas today.

I am convinced that this means the development of new employment situations outside of farming but possibly within the broad spectrum of agriculture. Such things as campsite development, roadway beautification, and reforestation projects are examples of possibilities which would require a minimum of retraining and a minimum of environmental adjustment for farm workers and farmers. In addition to new employment situations, however, I believe it is possible that some of the people who will be displaced by the machines can be retrained to benefit from the advantages of the machine. To do so, however, requires a classification and structure in farm employment which is not present today. It is impossible to climb the ladder of success if the ladder does not exist. It is our charge in this paper to develop a conceptual model for this classification and structure.

The Foundation of the Structure

Before we really get started on the discussion of such a conceptual model, however, I believe we have to add a minimum of two words to the objectives.

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These words are *development* and *advancement*. The terms recruitment, training, placement, and evaluation are basically employer-oriented words, and it is essential that we seriously consider the situation of the employee as well if we are to accomplish the goals which the objectives suggest. We in agriculture have been reluctant to consider this dimension. We have left this discussion to others and have tended to label all those who have stepped into the void as "do-gooders" and have attempted to ignore them, too. The differences in these two dimensions is deep and obvious, and representatives of one group seldom consider the views of the other. For example, many of the authors of technical papers for the first meeting of this series [2] make statements implying that mechanization is a necessity due to the shortage and high cost of labor. Yet John Dunn [3], when gathering data for his book, *Delano, the Story of the California Grape Strike*, asked me the question of what effect mechanization will have on the unionization effort, a complete reversal of the cause and effect relationship between unionization and mechanization.

The point in the context of this discussion is not whether one of these two divergent views is correct and the other wrong, but that both be considered if recruitment, training, placement, and evaluation are to be, in fact, facilitated. The necessity for taking into account both the farm workers' perspective and the farmers' perspective must become the foundation upon which any conceptual model for the classification and structure of farm manpower might be built if it has *any* chance for success in the real world.

The use of the term structure suggests another foundation point. This is really what we are discussing--the development of a structure for farm manpower. This foundation building block is also somewhat of a revolutionary point as "unstructured" is the most descriptive phrase which can be applied to the farm labor scene. As long as there was a great mass of people available to do the jobs by hand, a lack of formal structure could be tolerated. However, the introduction of machines to reduce this mass of people makes a structure almost essential, as machines are even less tolerant of casual human relationships than humans.

The structure will come. It will either be brought about through the efforts of agricultural employers out of the necessity for sophisticated, trained people to work in conjunction with sophisticated machinery, or it will be forced through the efforts of employee groups as has been done in other industries. Until the agricultural industry makes the decision that it really wants a highly trained, highly skilled work force and sets about to develop the structure to attain it, or until unionization advances to the point of forcing its own version of the structure onto the agricultural employer, then any structure we might talk about will remain a conceptual model.

We are currently engaged, in California, in a research effort to identify and describe the jobs which exist across the board in agriculture, from farming to agribusiness. Our primary goal is to develop guidelines for education and

training programs so that these programs may be more closely coordinated with reality. We are still engaged in the data gathering process, so I cannot, unfortunately, quote figures and statistics from that study in this discussion. Since we have, however, completed, checked, and coded over 3,000 interviews with employees from approximately 800 employing businesses, and since the project director has held panel discussions with several different groups of key employers throughout the state, my thoughts on a conceptual model are influenced by the data.

The Structure

Figure 1 represents the proposed structural model in diagrammatic form. Both the diagram and the discussion which follows are in the context of the fruit and vegetable segments of the farming industry, but the structure could be broadened to include other segments as well. Only the basic structure is presented, and the skill factors and areas of knowledge which would be common in jobs across a step are only implied, not detailed.

Even though conceptual, our classification and structure must still begin with a job title which might simply be called Casual Labor. The technical reports make it clear that the industry will still have a need for this type of work for some time to come, as some crops are still resisting the efforts towards complete mechanization. In addition, we know that there are people who, if they are going to work at all, will work for a few days when and if they feel like it. No matter how much structure might be built in, no matter how many incentives might be developed, this type of worker will remain as a casual member of the work force by choice. Seasonal farm work has been one of his last remaining chances for employment, and the job title should remain. Since there are also employers who will resist a structure as long as possible, the two will probably be able to get together for some time to come.

It is wrong, however, to assume, as we do all too often, that all those who currently perform seasonal farm labor jobs are in this category by choice. Many would move into another classification if one was available and if there was some incentive for them to do so. The development of a second step in the stoop labor category has been the most obvious need for some time.

Some title such as Field Hand, which subtitles for fruit and vegetables, might be used for this classification. Since this is the second step, there would logically be an hourly wage differential of perhaps 10% between the Casual Laborer and the Field Hand, even though the job being performed at any given point in time would be essentially the same. What would be different would be the range of skills of the Field Hand and his willingness to remain on the job through a variety of tasks. The structural change which would need to be implemented would be one which would enhance this proposed continuity of employment. This is certainly not a new concept, and reality is not being left to mention it.

STRUCTURAL MODEL

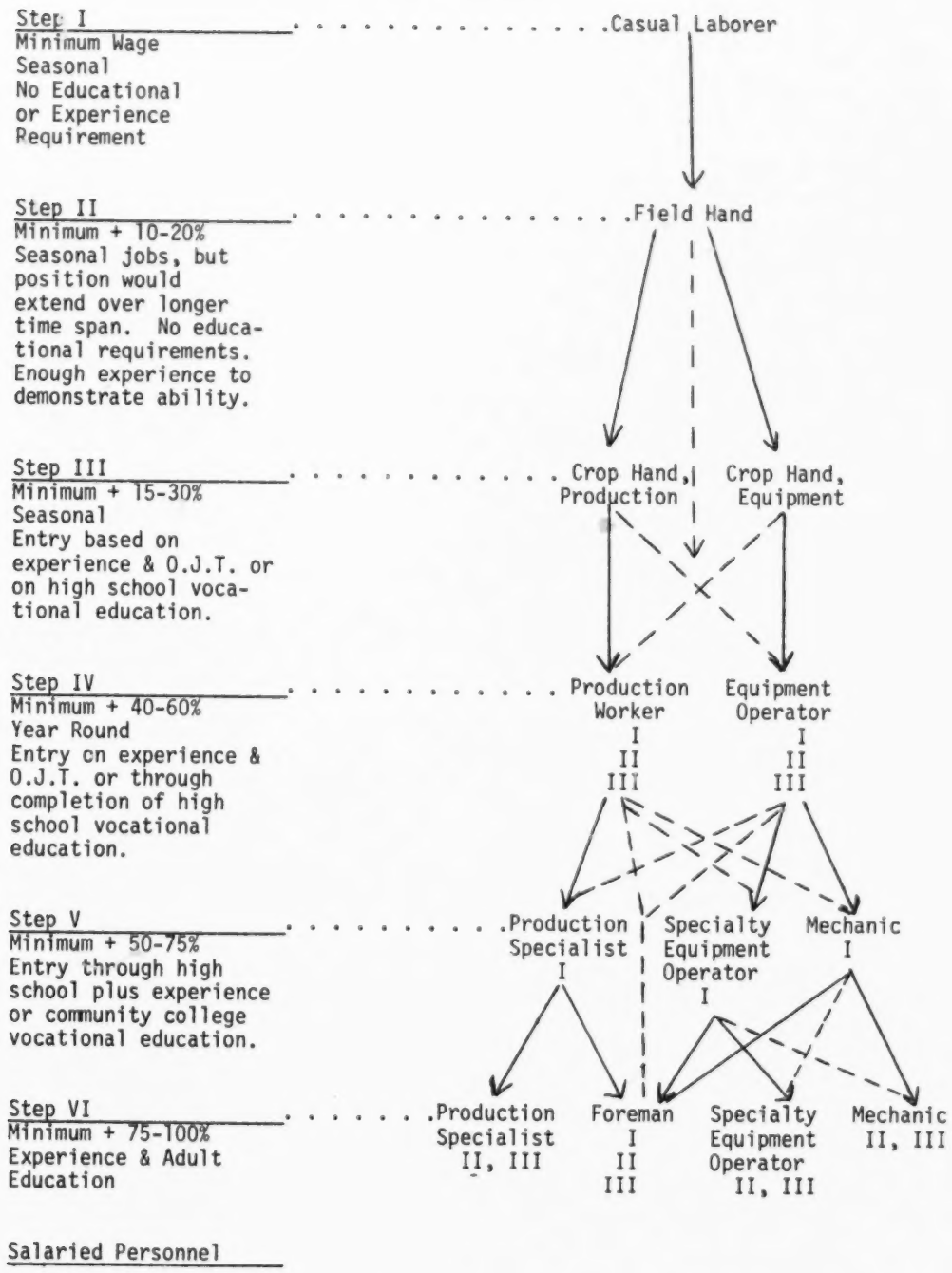

FIGURE 1

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In several instances individual growers, and in a few instances groups of growers, have made a careful analysis of their seasonal labor requirements and from this analysis have developed changes in their cropping patterns to spread out the time over which they need seasonal employees. Although there are limitations on how extensively this can be done, the most striking limitation is the desire, or lack of it, on the part of the grower. What is generally involved is diversification, either through additional crops or additional varieties. While large, individual growers have been most successful in this effort, cooperative efforts of several smaller growers have also worked, especially if those involved are growers of more than one commodity. Unfortunately, two attitudes are essential. One is the desire to cooperate, in the true sense of the word, with neighbors; and the other is the willingness to change a few things. Again, if we can change our operations to accommodate machines, we can change them to accommodate people, too, if we want. The most common doubt expressed when this kind of a structure is suggested is that it would not work because the usual casual laborer would not stay on the job long enough or be willing to do more than one type of job. However, this complaint is based on experience with an unstructured system where there is no reason for the worker to stay on one job over an extended period of time. (There may be more reason for him to quit periodically--it may be the only way he can get a rest.) Limited experience with systems in agriculture which do reward dependability indicate that the majority of workers do respond to incentives which they can identify as being incentives. There is no real reward for dependability, nor any penalty for the lack of it, in the casual farm labor picture. If the structure rewards it, dependability will be developed.

At this point, another structural model for seasonal employment might be outlined which is strictly conceptual, as opposed to the one just mentioned which has some basis in reality. This model utilizes three steps which might classify with such terms as "Inexperienced," "Experienced," and "Exceptional." A different rate of pay would be associated with each step. In California, at least, the piece-rate method of payment is so popular that it would have to be included in the system. A more desirable method, however, when used in conjunction with this structure would be the combination of an hourly rate and the reduced piece rate. The hourly rate would be the one which would vary with the rating scale, with the piece rate being the same for all. In other words, the inexperienced worker would get an hourly rate plus a piece rate which would add up to the minimum wage. The experienced worker would receive something like 10% more on his hourly rate plus an identical piece rate, while the exceptional worker would again receive the same piece rate, but his hourly rate might exceed the beginning worker by 20%. Such factors as quality of work, dependability, and seniority would have to be considered in placing workers on each step. Identification cards could be devised which would allow the worker to start on a job at the same classification he had on his previous

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one. It is a complicated system and might not be worth the effort. I believe, however, that it not only would be workable, but that it would alleviate most of the problems which currently plague seasonal farm employment. A similar system will probably come under pressure from employee groups; in this event the only criterion used to distinguish the levels would be seniority.

Returning to the original model, another level of seasonal jobs must be considered in addition to the two steps previously discussed. These jobs approximate year-round production jobs in terms of the type of knowledge and skill required but are still seasonal. The overall title for this level of job might be Farm Hand, but it appears that two categories need to be established within this classification. One would have an emphasis on production knowledge and skill, although the ability to drive a light wheel tractor would be required in most instances. This category would be called something like Farm Hand, Production. The other would have an emphasis on equipment knowledge and skill and be identified as Farm Hand, Equipment. In most instances, basic production knowledge would be required. This is level number III in terms of wages and could be entered from Step II through experience and on-the-job training as there would be no educational requirements. Vocational training could, however, substitute for experience so that the seasonal jobs of Step III would serve as entry level jobs for the young.

Step IV is the first level composed of year-round jobs. At least two categories must be utilized in Step IV which correspond to those in Step III. The separation is not complete, but the emphasis of one category is on production knowledge, the other on mechanical knowledge. It should be noted, however, that the equipment operator who knows nothing about the production of the crop in which he is working is not only of little use but probably dangerous as well. At the same time, few year-round jobs are going to exist in the future in fruit and vegetable production which do not require the knowledge and skill to at least operate equipment. One category in Step IV might be called Production Worker, the other Equipment Operator. The Production Worker should understand the production elements of soils, fertilizers, insecticides; he should be able to recognize problems, and perform accordingly. He would not, however, be much involved in operational decisions. The Equipment Operator would be able to operate a variety of equipment, understand and take care of the maintenance of equipment, and perform minor repair. He would not, however, be a mechanic. Entry to this step would be through experience or through the completion of a secondary vocational education program which hopefully would have included job experience. Pay might again be 10% higher than Step III.

The fifth step involves another split in the categories. Advancement from Equipment Operator would be either to Specialty Equipment Operator or to Mechanic. The Specialty Equipment Operator needs to be able to operate, trouble shoot, maintain, and do minor repair on a variety of specialty equipment, although the individual might become highly specialized in one type of machinery.

The mechanical knowledge required is more technical than that required for Equipment Operator, and broadened to include such areas as hydraulics. In the Mechanic category, the emphasis is on the knowledge and skill required to repair equipment rather than to operate it, and most of the time would be spent in the shop. Advancement from Production Worker of Step IV is to Production Specialist in Step V. The major change in knowledge is an increased understanding of cultural practices allowing the Production Specialist to become involved in the day-to-day decisions regarding the growing of the crop. Step V may be reached by experience supplemented by training or by the completion of community college vocational education programs supplemented by experience.

Advancement to Step VI would be possible in all three categories outlined for the fifth step. In addition, however, a category for supervisory personnel should be included in Step VI. This category might be entered from any of the other three after additional experience and training. It is essential that the training include the development of the skills of supervising people in addition to increasing technical knowledge. One of the current aspects of the farm labor problem is the lack of trained supervisory personnel, and supervision must be improved. Far too many foremen are in this position today because of their production knowledge and skill rather than their knowledge and skill in working with people. However the category is placed in Step VI, parallel to advanced Production Specialists, Specialty Equipment Operators, and Mechanics, because the person involved as a Foreman will be performing many of the same tasks as the other three in addition to his supervisory function.

The salaried positions which follow Step VI will not be discussed in detail. Increasingly, the route to these positions will be through a college education rather than up through the ranks. However, the positions remain as part of the progression because it should always be possible to advance to them by means of extensive adult education programs as an alternative to a college degree.

Summary

In summary, what has been attempted is the development of a structural model for the classification of employees in agriculture. Such a classification has been lacking in the past, and advancement potential for employees has been limited. Workers have advanced by moving out of farm labor when more attractive jobs have been available to them in other industries. Since agriculture has not been able to compete with industry in the attractiveness of jobs, a source of replacement workers has been sought periodically. This avenue is no longer open, so an intensive effort to mechanize high labor crops is underway to overcome the scarcity and high cost of labor. While a more definitive structure may have been desirable in the past when the majority of jobs required little training and skill, it becomes almost essential as mechanization brings with it the need for more knowledgeable and skilled personnel who are much more expensive

to replace. It is intended that the development of the structure would make it possible for those at the bottom of the skill ladder to enjoy some of the benefits of mechanization as well as those higher up.

The structural model outlined is not the final answer beyond a doubt. Much development would have to take place before any model would ever become a reality. Whatever structure is developed, however, must have certain features which have been embodied here:

1. A progression exists from bottom to top, with each step building on the knowledge and skill required for the step below. Training programs can then be developed which prepare workers to move up from one step to the next.
2. Points of entry are available so that workers can be trained to fit into the structure at various levels without starting at the bottom.
3. Alternative categories are available on most steps requiring different knowledge and skills. In the fruit and vegetable industry at least two categories seem obvious, one based on production, the other on mechanical abilities. Another category based on livestock production knowledge and skill could of course be added to the model in those situations where it is necessary.
4. A category is developed which is based on supervisory functions and activities, but including functions and activities being performed in parallel categories.
5. Pay differentials between steps are indicated and a range exists within each step.

The most critical features of any structure must be that it defines the progression from bottom to top and that individual job titles are defined in terms of the functions and activities performed. If these two things are accomplished, then it becomes possible to develop both pre-employment and on-the-job training programs which have some chance of success from both the employer and the employee point of view. Both placement and evaluation of workers can be done in terms of what they are required to know and do. It then becomes possible for workers to develop and advance, and if this happens then recruitment is, in fact, facilitated.

REFERENCES CITED

[1] Adams, R. L.; and Kelly, T. R. *A Study of Farm Labor in California.* Univ. of Cal. Agr. Expt. Sta. Circ. No. 193, March, 1918.

[2] Cargill, B. F.; and Rossmiller, G. E., eds. *Fruit and Vegetable Harvest Mechanization, Technical Implications.* Mich. State Univ. RMC Rpt. No. 16, 1969.

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[3] Dunn, J. G. *Delano, The Story of the California Grape Strike.* New York: Farrar, Straus, and Giroux, 1967.

[4] Thor, E.; and Mamer, J. W. "Rural Manpower - Overview." *Fruit and Vegetable Harvest Mechanization, Technological Implications.* Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 51-71.

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SOCIOLOGY OF RURAL DEPRIVATION

Myrtle R. Reul

Introduction

Charles Dickens, writing in the middle of the last century in England, could well have been prophesying the future instead of describing the events of his country in his own day. He could have been describing 1969 and the current problems facing rural America when he wrote in *A Tale of Two Cities*: "It was the best of times; it was the worst of times. It was the age of wisdom; it was the age of foolishness." If I could paraphrase his writings for a moment, I would add it is an age of compassion for others; it is an age of apathy and indifference.

It is the best of times. Never in the history of the world has a nation had such wealth, knowledge, fertile soil, crop yield, educational and employment opportunities, natural resources and ease of transportation as that presently found in the United States; never have conditions here been as conducive for abundant rural living.

It is the worst of times. Automation and mechanical harvesters have reduced the need for agricultural workers at the same time that farmers and growers are having difficulty obtaining dependable employees to manage farms, to work the fields, to operate or repair equipment, or to pick the crops. In the face of surplus or even wasted and unharvested fruits and vegetables, the continued rising cost of food coupled with inadequate income causes many rural Americans to be malnourished and others to be hungry.

America has recently discovered its rural poor, the majority of whom have known the condition of poverty for a long time. While there is sincere compassion for the problems of poverty, there often is a lack of understanding as to the real causative factors. This results in an effort to try to devise some sort of an instant remedy. This instant remedy approach is a widespread phenomenon in America. When applied to rural poverty, however, it does not work; there is no instant solution. The poverty problems of rural America were a long time in the making. They may be a long time in the solving unless as much concerted effort is directed toward the problems of rural America as is presently being directed to the problems of the urban ghettos. The poverty problems of rural America are related to a series of historical events and man-made forces. They are covered with a thick veneer of apathy and indifference, both on the part of the poverty stricken and those who represent the more affluent parts of our society.

Challenge of the Space Age

Today was a momentous one for the United States. An American was the first human being to step on the moon. Future generations will identify this as the beginning of the colonization of outer space, even as our generation

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and prior generations have identified the year 1492 as the beginning of colonization of the New World.

If, on this momentous day, we really are to plan for the future, then we must recognize and profit from the mistakes of the past. If we could control the destiny of the future, what would we want for a rural moon or even an urban moon? What did those early explorers who came to America in the fifteenth and sixteenth centuries want for this continent? What did those who first saw the beauty of the wilderness, the untouched forests, the clear fresh mountain streams expect would be the future for this abundant land? What did those early explorers, settlers, and those who were native to these shores long before the birth of Columbus have as a dream for the future as they struggled to survive the severity of winters, the drought of summers, the mosquitoes, and the snake infested swamps? What would have been the dream of those men and women if in 1669 they could have controlled the destiny of America in 1969? Would their dream have been that of a country whose cities are known as urban sprawls, torn by riots and crime? Would their dream for the future have included a country whose air, rivers, lakes, rural coves, and mountain sides are fast becoming polluted with smoke, fumes, gases, refuse, garbage, and just plain junk? Was this the dream that our forefathers had for America? These are things which are fast happening to America the country; but what of the American people, especially what of the rural American people?

What man-made forces have shaped their lives? What man-made forces helped to develop their personalities? What man-made forces created many of their problems? Which of these man-made forces in the history of our country should we keep and pass on as a heritage for future generations? What should we keep for a heritage to be carried even to other planets? What of these man-made forces which have had such a deep influence on rural America should we stamp out forever, never to repeat again?

Rural Americans

Before we begin to examine the man-made forces which have affected the lives and have shaped the personalities for large numbers of our rural population, we need to identify what we mean by that nonhomogeneous segment of Americans referred to as rural residents. About 30% of the population of the United States live in rural areas.* Only about one-fourth of this number actually live on farms or ranches; the remainder live in small towns, villages, hamlets, in residential suburban settlements, mining or lumbering camps, company housing complexes, strip settlements along highways, or in isolated dwellings scattered over the countryside. The lack of homogeneity of this rural population is further illustrated by the type of housing in which they live. It may be a white columned ante-bellum plantation manor, a tar paper

*United States Bureau of the Census (14).

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shack, a rambling two-story wood structure with "gingerbread" facade, a yankee frame construction whose weathered siding has never known a coat of paint, a brick ranch or a tri-level modern, a cape cod, a log cabin whose cracks between the logs are chinked with concrete "mud", a trailer, a corrugated metal shed, a palm thatched chickee, a tent, a flat-roofed concrete "Spanish hacienda", or even the body of a junked car.

The house of the rural American may have been designed and constructed by a nationally known architect or it could have been built by the owner himself from cement blocks, used lumber, or salvaged brick. The rural resident may live in a remote section of the Bad Lands, on an Indian reservation, in the cutover wooded area of the upper Midwest, along the ridge of a mountain, in a hidden cover, in the alkali flats, on the back water of a river, in a swamp bog, along a red clay road or within sight of a large city.

The house in which he lives may be attached to a barn or other outbuilding. It may be surrounded by a fence with an ornate wrought iron gate. The rural home may be in excellent repair or collapsing from neglect and the on-slaught of the elements: the wind, rain, show, termites, and oxidation.

While the rural population is predominantly white, something over 6 million are nonwhite. More than 5 million of this number are Negro. The remaining less than 1 million are made up of several races. Approximately 387,000 Indians live in the rural areas of the continental United States plus another 43,000 in Alaska. Eighty-three thousand rural residents are Japanese, 11,000 are Chinese, 47,000 are Filipinos, and 68,000 are classified by the United States Bureau of Census as "other races."

The population of rural America also includes all nationalities and religions as well as ethnic groups, such as the Spanish speaking people of the Southwest and the Amish of Pennsylvania and the Midwest.

Although only 30% of Americans live in rural America, 70% of the poverty of this country is found among the whites of Appalachia, the whites of the Deep South, and the whites of the cutover lands of the north Midwest; among the blacks of the rural South, the Spanish-Americans of the Southwest, and the Indians on every Indian reservation in the country.

Incomes for rural people are disproportionately low. Rural individuals, by and large, receive less formal education and often of an inferior quality than do urban persons. There are large numbers of functionally illiterates living in rural sections who cannot follow written instructions or who may not be able to read or write their own names. The displaced worker, the school dropout, the unemployed and the underemployed are more prevalent outside of urban areas.

Farm, rural, nonfarm, and small town persons make up the bulk of the stable poor. They are the majority of the American poor [5]. They are the low skilled workers who, even when regularly employed, do not have a sufficient income to care for large families.

Herman P. Miller, Special Assistant, Office of the Director, U.S. Bureau of the Census, writing on "Who Are the Poor," states that an examination of the 1963 census figures showed:

> About 2 million families (one-fourth of all the poor) were headed by a person who worked full time throughout the year. This figure dramatizes the fact that low wages are still a major cause of poverty in the United States.
>
> Increases in aggregate demand and a full employment economy probably would not benefit these families, except perhaps by providing work for wives, many of whom are already overburdened with large families.
>
> About 1-1/2 million family heads worked at full-time jobs, but did not work throughout the year. The poverty of these families is attributable to a combination of low wage rates and periods of idleness occasioned largely by unemployment or illness. Although today's poor are frequently presented as psychologically or spiritually handicapped, the fact is that about 50 percent of them are headed by a full-time worker whose wages are simply too low to support a family.

Miller goes on to point out:

> The closer we get to the very bottom of the income distribution, the more we encounter the hard core poor whose incomes largely come from outside the labor market and are not necessarily responsive to the national economic growth. While although economic growth tends to reduce poverty by pushing families along the poverty line, it also tends to increase it in a statistical sense by making it possible for the young and the old to maintain their own homes, thereby creating low income families by fission.

The roots of today's urban crisis are in rural America. They are part of the migration from the country to the city. While the roots of the urban crisis originate in all rural sections, the greatest number are from the rural South [1].

In the past 10 years over 1-1/4 million blacks have left the deep South and have taken the trail north to cities like New York, Detroit, and Philadelphia in the greatest single country migration the world has ever seen. Since 1940, this Negro migration has amounted to 3-1/2 million individuals. Added to this black movement have been thousands of whites. They, too, have left the rural deep South where the grass grows with a lush greeness, where honeysuckle fills the air with a perfume which is overpowering. They have left the mountain valleys of Appalachia. They have left the Delta flats along the Mississippi. They have poured into the cities, but psychologically they have remained in the Southland. Thirty-eight thousand highlanders from the mountains of Kentucky, Tennessee, northern Georgia, and West Virginia presently living in Chicago consider themselves to be temporary residents, although many have been in Chicago for more than 10 years.

Those who have migrated out of the rural areas are usually the younger and the more educated. They leave behind the old, the ill, and those who are

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afraid of change. Among many of the rural poor there is an attitude of apathy, of hopelessness. They may say, "So be it. This is the will of God. I've worked hard all my life, ain't ever had nothin' and don't 'spect nothin' 'till I die." They may still relate to a white man as a paternalistic provider.

In order to understand the magnitude and the complexity of present rural poverty, it must be seen in its historical perspective. The majority of rural Americans have always been poor, but the poor of 150 years ago were vastly different from those living in poverty today or even the poor of 25 years ago. The imprint of slavery and the aftermath of the Civil War are still evident in rural America. The yolk of the tenant farmer, the sharecropper, peonage of the soil is seen in the southern rural Negro who is afraid to take even a part-time available job for fear he will be asked to move, his rent will be raised, or he will displease the white man who is looking after him.

Deprivation Among Rural Negroes

Most rural Negroes come from a background of work in cotton which required the labor of the entire family to earn a living. In the Negro culture there was always pride in large families. For the man the size of a family was a test of virility, and for the woman the number of children carried proof of her value as a mate. In the culture where the individual often feels inadequate, producing children may be his or her main purpose in life.

It is not unusual to find Negro families raising children of friends, neighbors, or other relatives. One woman whose own family was practically grown had undertaken the rearing of several grandchildren and 3 babies who belonged to a neighbor. She said, "I've got these little motherless chillun' here and got nothin' much to give 'em to eat, but we'se managin'."

The main diet of the rural Negro is still that of his forefathers: salt pork, rice, grits, cornmeal, collard greens, and syrup or sorghum. On trips to town they indulge their children and themselves with peanuts, candy, and soda pop if they have the money.

In many rural counties in the Deep South, the normal earnings of a man and wive, if they both work as tenant farmers, is less than $1,500 per year. They will pay at least a third of this amount in rent. If the woman does not assist on the farm, she usually works as a maid. For this she may receive anywhere from $3 to $8 per day.

The houses in which the great majority of these Negroes live in the rural South are constructed of rough lumber. A large number of them are not equipped with glass windows, but have crude wooden shutters which serve as coverings for window openings. They have no inside water, nor plumbing, nor central heat. Unpainted and weathered a drab gray, these one to four room structures offer little more than shelter.

In the lower socio-economic groups a family is more often dominated by the woman than by the man. The "independence" of the Negro woman is complicated

by "irresponsibility in the man." The man knows his family will get along without him. When deserted, the woman makes little or no attempt to force the man to support her or her children. Legal recourse is expensive and violates community morals; the social stigma upon the man and neglected family is not pronounced.

Desertion in many instances is an extremely casual process. "I don't know what happened to my husband. He just went off. One day he comes in an' said he was goin' to town. We ain't he'rd a word from him since. I keep lookin' and lookin' for him, but that was goin' on over a year ago an' he ain't turned up yet."

Adult rural Negroes are not only poor but have limited education or training. In 1960 about 80% of these adults in the South had completed less than 8 years of schooling. Many also went to schools where the teachers themselves had achieved no more than a fourth grade education [7]. Youth who want to get out of and away from school find it easy to do so, even in 1969, in rural areas where there is little, if any, enforcement of school attendance.

Deprivation Among the Whites of Appalachia

The largest number of those who live in rural poverty are the whites of the Appalachian mountains. Approximately 7 million people live in the 8 states that make up this section of the country.

It is necessary to keep in mind that the region called Appalachia designates a geographical, not a homogeneous area from the standpoint of the people who live there. The culture of Appalachia is southern and is found outside of the mountains in the rural area of the Carolinas, Georgia, Alabama, Mississippi, and Louisiana. It is closely related to the Ozark culture of southern Illinois, Indiana, and Ohio.

The walls of majestic mountains, the rocky soil, the inaccessibility of isolated valleys all have influenced the personality development of the people who live in Appalachia. These geographical factors influenced the original settlements, even the reasons why certain of the early settlers came to the mountains. The geography of the area affected how they lived, how they viewed themselves in relationship to their neighbors, and how they viewed themselves in relationship to the world outside the mountains. There were social classes in Appalachia even in the earliest settlements. The degree of social prestige a family held was in direct proportion to the occupation of the ancestral kin and where the first family homeplace was located. The further up the hollow the family lived, the lower its social prestige. So called "poor white trash" lived on the ridge of the mountains.

These early social divisions are the reason why two neighbor families, both presently on welfare, can be viewed as representing different social classes depending upon the prominence of their ancestors. This is how they see themselves and each other, although should they move from Appalachia to

an urban area and work on the same factory assembly line, they would both be viewed as "hillbillies."

Early Settlement of Appalachia

The original settlers were the descendants of early Anglo-Saxons who had left England and Scotland because of religious persecution. They were predominantly Protestant. Many wanted no part of slavery and they showed their contempt by breaking with family members who were slave owners. A few were small slave holders themselves who started westward, but came to love the misty blue of mountains and decided to remain in the highlands. Still others came to the New World as indentured servants themselves or were the children of indentured servants. They were "bound out" to pay their debts in Europe and their passage to the New World. When they had served their period of bondage they were freed. Many moved into the wilds of the mountains where they carried a hatred for their former masters and a strong desire to be "beholding" to no man.

The isolation of Appalachia solidified the tendency toward localization in government and suspicion of centralized authority. While many of the early settlers were thrifty and often built up considerable wealth, they tended to be suspicious of those in position of authority or wealth. They were passionately eager for freedom, were willing to work hard, and they asked only to be left alone by those outside the mountains.

Coal mining became an important industry in the area following the Civil War. With the opening of the mines, workmen in large numbers were brought from Scotland, Wales, and Italy by the absentee mine owners. These new workers . . . "were looked upon as outsiders and foreigners. They were not accepted by the miners who were the descendants of the early families." [15]. These newcomers were experienced miners, and they were mostly Catholic. They were different, and they were a threat. They were not socially accepted when they first arrived, and most of them are not accepted today although they have lived in the area for 40 years or more.

Psychological Tie to the Mountains

I have found in my many years of direct contact with the people of Appalachia that they have deep psychological ties to the geography of the area which defies distance or time. Regardless of where they may live, outside the rim of their mountains they feel like strangers in a temporary abode.

It is this feeling of being an outsider which often makes it difficult for the Appalachian Highlander to put down permanent roots in a new community. Accustomed to a person-to-person culture which invites a stranger to sit a spell and to relate family history, the new community may seem cold and indifferent. The psychological tie to the mountains is further enhanced by the "home place." This is the ancestral home where the grandparents lived. It

actually may never have been owned by the grandparents but merely viewed as their home. In one situation I know, the widowed mother lived for 39 years with a son and daughter-in-law. She managed the household, disciplined their children, and worked their garden. Their property was referred to as "grandmother's home place." It still is 35 years after her death and is often visited by her descendants.

Early Work History of Appalachia and Its Effects on Present Workers

The work pattern in Appalachia has always been seasonal. Even in the early days of farming and hunting there were long periods of leisure after the crops were harvested. Between chores a man could idly sit on his front porch without feeling compelled to be busy. He worked when he felt like it; he completed a task or left it without completion. Life was never so involved but what there was time to visit friends, talk with relatives, or go hunting.

Sawmills and lumbering operations fitted this self determined work pattern. If a man were absent from the job, it was assumed he had a good reason; no one asked questions. Under these circumstances there was no need for an employee to justify absenteeism.

Life in the coal mines again fostered this irregular work pattern. Most of the mines closed in May and did not reopen until late August or September. During the long days of summer the idle miners played cards or discussed politics, religion, or the weather. Besides weeks of annual summer "shut-down" there were other layoffs as a result of strikes, broken machinery, or cave-ins. "In 1932 the bituminous mines in West Virginia and Virginia averaged 145 days of operation and 165 days of idleness." [17].

An article in the *West Virginia Review* describes the working philosophy of the early coal miner:

> He works when he wishes and stops when he wishes. He toils as strenuously or as lightly as he wishes. He leaves the working place when he chooses. In a mining community the mine whistle is only an alarm for the town. It is never a signal for the men to cease work. [18].

Generations of seasonal work or employment with long layoffs has conditioned workers to accept and even to expect periods of unemployment. The fact that the company store or the employer extended credit during times when the employee needed extra money prevented his learning to plan for himself, to control his impulses to buy, or even to live within his income. Dependent conditions of being cared for with credit plans or welfare encouraged an apathy about the future, a hopelessness which today for thousands of the poor of Appalachia borders on lethargy.

Person to Person Culture

The Highlander's culture is person-to-person centered. Each situation applies to an individual in a very personal sense. He views his community in

relation to himself, not himself in relationship to the community. Such an individual has difficulty accepting criticism of his work. The employer who finds fault with a worker from this culture, in the thinking of that worker, is not criticizing the workmanship, he instead is criticizing the worth of an individual.

It is very difficult for such a person to view an experience in the framework of another. He sees things only in relationship to self. He is opinionated and bases his concept of what is right or wrong on his own experiences. His total concept of the world is in relationship to self. As he depends upon his five senses for much of his perception, it is difficult for him to understand something he has not seen. He views life in concrete terms and has difficulty with abstractions.

On the job such a worker often misleads by his silence or virtual silence. The supervisor asks, "Do you understand?" The mountaineer may nod, or say "yeah" and then fall silent. What do the nod, the "yeah" or the silence mean? They could mean a variety of things. That he does not want to understand. That he does not understand but does not want to show his ignorance. That he was not listening and does not want to admit it. That he understands but does not agree. There is no way of telling from his "yeah" or shoulder shrug what he understands, and he is not going to volunteer this information.

There is a tendency for these adults to think of themselves as surrounded by situations which are detrimental to their personal progress. They feel surrounded by others who are envious, jealous, or hostile. It is very difficult for such individuals to take responsibility for their own position in life. Their culture has provided few opportunities for their self choice. They have been forced into situations because of others. It is the hand of fate. It is easy under these circumstances to think of themselves without fault, surrounded by those who continuously place obstacles in their way. These "blocks in their pathway" are referred to as "they." When defined "they" become neighbors, employers, anyone in a position of authority or the government. Many living in Appalachia blame their present financial situation on the farming methods of their neighbors, the Tennessee Valley Authority or the Federal Government for taking the best land for parks and projects or on the supernatural. God is punishing the world for being wicked and they "just as well as sinners must suffer." "They" may also be members of another religion (Jews, Catholics) or of a different political part or "foreigners" (Wops, Hunkies, Poles) or a family of "inferior or superior" ancestral blood lines or "newcomers."

It may be very difficult to help such individuals take some responsibility for their own action. Usually they will hint they may have played a role in creating their own situation. It is, however, little more than a hint of insight which usually is immediately contradicted by a lengthy explanation or a description of themselves as victims who have been manipulated by others.

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There is a good deal of jealousy and rivalry between neighbors or even relatives with much envy being expressed in acts of spite or through gossip. Lawsuits are common and often are over disputed property lines or damage reportedly done by a dog. In these cases the person being sued, informed on, or gossiped about is usually thought to be better off in some way and this is an attempt to even the score.

Gossip has always been a strong factor in this culture. It has been a method of punishment and also one of control. For these on welfare there is considerable discussion about the agency and their workers and expressed jealousy if one family gets a larger AFDC allotment check than another. If an allotment check is cut, it is usually felt the welfare was influenced by an informer.

While the people of Appalachia are not all alike in their attitudes and their approach to personal crises, there is much that all mountain people have in common with each other which needs to be understood. Loyalty to the family is one of these.

While loyalty to family is growing weaker in recent years with outmigration, nevertheless, many of these who geographically leave Appalachia never feel psychologically separated from their kin. "Moving means establishing a home like the original one and carrying on the activities that preserve a sense of family and cultural continuity." [11].

Loyalty to family is more than affection for family members. It is a deep obligation to help each other and to share together, to provide care for the sick and a home for the aging. If a kin is in need there is an automatic impulse to help even if one is in debt, has no job, or is living on welfare. This is frequently seen in industrial centers of the North where various members of a family may move in with each other.

When Jim's brother-in-law was out of work in Canton last winter, he and his family moved in with Jim. There were four adults and seven children living in a three room apartment. Later, a cousin arrived from Tennessee with her newborn illegitimate child. She and the baby slept on a cot in the kitchen. As Jim explained to me, they would all do as much for him, therefore, they were welcome to stay as long as he had anything to eat and a roof over his head.

The extended family provides a cloak of protection. They help each other become established in the new community by sharing housing, providing food, or finding work. Likewise, those who remain in the mountains provide a haven of security for those who leave. It is not unusual for the Appalachian Highlander to take his children out of school and travel half way across the country because a fourth cousin is being married. He may have learned not to tell his employer that he "felt like going home." Instead he claims there was no work, that he could not make enough money, that he had "back trouble," is sick or had a death in the family. He is really saying he is homesick for

the mountains and for those who understand him--his kinfolk. Frequently visits to Appalachia are related to times when there is a lack of recognition in the new community, when there are problems to be faced, or when there is a felt need to be surrounded by family and friends who have the same values. Unfortunately, these frequent returns to the mountains do not fit the pattern of the new life. Schools object to absences of students while they visit a grandparent, uncle, or cousin in Tennessee, West Virginia, or North Carolina. Employers are alarmed by the high rate of absenteeism or the impulsive quitting of an assignment or even a job to go back to Kentucky or north Georgia for a few weeks.

Migrants from the south Appalachia region who have made an adequate adjustment to other communities are those who think of themselves as residents in the new community rather than visitors or employees away from home.

Deprivation Among American Indians

The bench mark of events which influenced and molded the lives of those who make up the poverty pockets of rural America in addition to slavery include the separation of the Indian from the main stream of life onto reservations. This was not only isolation but was also an attempt to stamp out the culture of a people, even as slavery was an attempt to stamp out the heritage of the Negro.

Indian Removal

On January 27, 1825, President Monroe recommended to Congress implementation of a proposal made by his Secretary of War, John C. Calhoun of South Carolina, that "all Indians be required to move west, beyond what was thereafter known as the Indian Line and that as an indispensable component of this new national policy, white settlement be forever prohibited west of that line." [16]. This Indian Line started at the Canadian border at a point north of the Mississippi River which it followed to southern Illinois; there it jogged westward around Missouri, Arkansas, and Louisiana. Four thousand Cherokee died on the 800 mile journey westward when they were forced out of Georgia into this area which was known as Indian Territory.

> . . . aside from a few scattered remnants, such as the Seminole fugitives in the Florida swamps, the few mountain Cherokee in North Carolina, the Choctaw residue in Mississippi, and an occasional tiny enclave in the North; every Indian nation which had originally occupied the immense expanse of woodland extending across the eastern part of the United States had been compelled to seek new homes on the plains beyond that woodland's western margin. It had required a persisting effort over a period of fifteen years, distinguished not only by the suffering inflicted upon Indians, but by the virtual disagreements excited among white Americans to give effect to the outwardly plausible policy announced by Monroe and Calhoun in 1825. Removal had been a contemporary success in the sense that the National Government had proved able to impose its will and the states concerned had been rid of the unwanted Indian inhabitants. But, for the Indians and for the larger

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> interest of the United States, it had been a deplorable failure. The opportunity for Indians to become useful and valued members of American society, an achievement many had seemed on the verge of attaining in 1825, had been heedlessly postponed for more than a century. [16].

Repeatedly in the years preceding and following the Civil War, whites pushed into the territory set aside for Indians, taking more and more of the land. When gold was discovered by Custer and his soldiers in the Black Hills, whites cast envious eyes on this area owned by the Sioux and the Government made efforts to negotiate for ownership [8].

The Indians were pushed onto the least desirable lands. As they were pushed back they were told if they gave up their hunting lands and cooperated they would be taken care of by governmental rations. In order to protect the whites who came West for gold, land, and wealth, the Government set aside Indian reservations and forced the Indians inside their boundaries. Little concern was shown for the Indian national or tribal cultures, so entities who previously had been arch enemies were sometimes placed on the same reservation. All Indians, regardless of their nation, were stripped of the life they knew previously. If they were hunters and warriors, such as the Sioux, they were forced to give up their guns and knives. They were ordered to farm the 140 acres alloted to each Indian. The Sioux culture was not a farming culture. The women of the tribes harvested the wild berries and grains; such work was not worthy of men. Not only did the Indians not know how to farm, but most of the reservation land was the poorest, the least fertile, the most in need of irrigation of any land in the state where the reservation was located.

Part of the promises spelled out in the treaties between the various Indian nations and the United States Government at the time the reservations were created implied that the United States Government would feed, clothe, and educate the Indians in return for their peaceful withdrawal from the land they and their ancestors had owned by virtue of their having lived on it. While the intention was to support the Indians until they could be trained to help themselves, this in most cases never materialized. Indians died of starvation; they were victimized by Indian agents and exploited on all hands by non-Indians. They were kept separate from the main stream of American life, having to obtain permission to leave the reservations; yet even on the reservations they were not allowed freedom to handle their own affairs or to develop their culture or even to practice their own religions. They were wards of the Federal Government and yet victimized by that Government. At the same time they were looked upon by the general public as something less than human. They were said to be dishonest, dirty, lazy, and not worthy of what they were costing the American taxpayers, although they themselves were required to pay taxes.

The result, for nearly 100 years, has been a passive resistance with the Federal Government on one side and the American Indians on the other. If Indians on their own initiative have tried to better their situation, the red

tape of bureaucracy which was set up to protect Indians created such innumerable hurdles that by the time permission had been granted from Washington, D.C. it was often too late to implement plans. In turn, because the Bureau of Indian Affairs has always assumed it knew more about what was good for Indians than Indians themselves, there have been countless projects imposed upon Indians. The Indians in turn may go through the motions of implementation of a project in such a way that the whole thing is doomed to failure. These experiences have left the Indians feeling frustrated and angry and uncertain of their own identity. Unable to express their anger toward the white man openly, they have turned their feelings back toward their own race. They are jealous and suspicious of others, especially of other Indian tribes or other reservations. Results of such jealousy, suspicion, and distrust are illustrated in the school performance of many Indians who are reluctant to do better than their classmates; in the reluctance of Indians to assume leadership, fearing to set themselves off as better than friends; and in hostility and conflict between Indian youths and elders, and between Indians living on and off the reservations. In all cases, jealousy, fear, mistrust, and suspicion all too often prevent Indians from effectively working together.

Rural Poverty at Its Worst

Statistics on present life expectancy, infant death rate, yearly income, disease afflictions, housing, education, and water supply for the rural American Indian reads like statistics from the most backward country in the world.

The American Indian is an example of great extremes of deprivation.

> The combination of his present situation and the historical exploitation of his race causes many of the current problems. The effects of poverty long experienced by the Indian are compounded by the indifference and the apathy of the general public and by his own inability to articulate his needs through the press or the ballot box.
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> Of all racial and ethnic groups in the rural United States, the most disadvantaged are the American Indians. Their housing is the poorest. Many live in earthen hogans, floorless log cabins, or even year round in tents in the Dakotas. Many have never known the luxury of electricity. They carry their water from a river or a stock watering pond. Contaminated water is hauled, stored in open barrels and then used for drinking without any kind of purification. Indians are the least educated of any group in America today and have the highest rate of unemployment. In Alaska it is 80 percent. Their health need is also the greatest and their death rate is the highest.
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> Indians are caught between the culture of their people and the culture of the dominant society. Shortly after the establishment of the Bureau of Indian Affairs, the Federal Government came into Indian communities and carried children off by force to be educated in distant boarding schools. The result was confusion, ambivalence, and immobilization for the individuals who are now the parents of today's school children. Many of these adults

> have a deep hatred for the dominant white society and contempt for themselves. . . . [13].

The Indian culture was a shame culture; a child was never physically punished, but was shamed into obedience, usually by his peers instead of his parents. He was taught by example. Members of a Sioux tribe are credited with the observation: "We love our children and whip our horses; it seems to us as though the paleface loves his horses and whips his children." [8].

The Indian child of today is surrounded on all sides with stigma, which gives doubt to his own identity. From his grandfather he has heard stories of the greatness of his people when they were free. In history books he has read: "In that part of America which is now the United States, the Indians had nowhere advanced beyond the stage of barbarism. . . ." [10]. He is confused and may feel that success for an Indian is futile.

Unfortunately, the administration of Indian education is equally as inadequate for the needs of American Indians today as it was at the time Indians were first placed on reservations.

David Henninger and Nancy Espesite, writing for the *New Republic*, describe the present day education of Indian children.

> The Bureau of Indian Affairs spent 86 million of its 241 million dollars in 1968 on the education of 55,000 Indian children and there is little to show for it. Nearly 60 percent of these youngsters must attend Bureau of Indian Affairs' boarding school either because there is no public or federal day school near their home or because they are 'social referrals'. . . . The schools have a 60 percent dropout rate, compared to a national average of 23 percent.
>
> Often the government places children in federal boarding schools at the age of 6 or 7; over 9,000 under the age of 9 are so placed. That quite a few parents resist having their young taken from home for a year is indicated by a 1966 Health, Education, Welfare survey: 16,000 Indian children between the ages of 8 and 16 were not in school. . . . At present, only 16 percent of the Bureau's teachers are Indian. . . . The turnover rate among teachers is double the national average. . . .
>
> The Indian school curriculum is standard . . . knowledge of and therefore, pride in their historic and cultural heritage is almost nonexistent. . . . Most Indian children speak English poorly or not at all. . . . Yet Bureau schools conduct all classes in English. . . . Most of the boarding school teachers are unable to speak or understand the native language of their students.
>
> Estranged from his family, confronted with an alien culture and unable to talk to his teachers, the Indian's academic performance is predictably poor. . . . For the first few years of school, Indian achievement parallels that of white children and then slowly but persistently regresses. An Indian starts to fall behind between the sixth and eighth grades, and if he does not drop out, finishes high school with a 9.5 grade education. . . . [6].
>
> The preadolescent Indian child comprises the highest percentage of school dropout of any race because he has two choices: (1) to identify with the dominant society and make a

> complete cleavage with his own heritage, or (2) to return to that heritage. Most young people unconsciously select the latter. Two of the chief problems facing these Indian youth are: (1) acquiring an education and (2) developing a sense of cultural identity. They return to the reservation, to the hogan as did their grandfathers. There are many fatal accidents involving Indian youths. It is almost as if unconsciously they choose death as the solution to being trapped between the Indian culture of the past and the dominant culture of the present. [13].

"No other group in the United States lives under comparable conditions," the Public Health Service informed the United States Congress in 1962. "The Indian is half a century behind the rest of the nation when judged in terms of health." [12].

What does it mean in human terms to be half a century behind? The average Indian dies at the age of 37--25 years before the average American. Fewer than half of the Indians born reach the age of twenty; one-third of them die before the age of five. Indians are afflicted by tuberculosis at 9 times the rate of the general population; pneumonia at more than 100 times; dysentary at 40 times. Of every 1,000 Indian babies born, 76 will not live to be one year old, 3 times the infant death rate for other Americans.

Deprivation Among Spanish Americans

There are 3-1/2 million persons of Spanish or Mexican descent living in five Southwestern states: California, Texas, New Mexico, Arizona, and Colorado. Twenty years ago most Spanish-Americans in this area lived in rural sections, but a very rapid recent urban movement has resulted in something under 14% now living outside of cities.

> The personal and social adjustment of the Spanish-American has been greatly complicated because of his culture. Value orientations of the Spanish speaking, for instance, typically reflect traditionalism, familism, paternalism, and resignation regarding conditions of life. Also, the low value placed on self-sufficiency rather than riches, and an oral rather than a written tradition. These values stand in sharp contrast with the dominant values of American society. . . . [2].

A very considerable portion of the population of New Mexico and southern Colorado is Spanish-American, the descendents of settlers who came across the Rio Grande into hostile Indian country long before this territory was detached from Old Mexico. They left Mexico to be free from the oppression of the great landowners. They preferred the struggle with Apaches and Navajos for land and a home to the conditions, practically peonage, which they would have needed to accept had they stayed in their own villages. Gradually, even in this country, these Spanish-Americans were forced off the richest valley lands into the mountains where they maintained a simple village life, poor but independent [4].

The unwillingness of these people to give up their Spanish traditions and ways of living, their slowness in learning English and becoming assimilated to American ideals have been the contributing reasons for prejudice. According

to Gamio their "dark skin has had a great deal to do with the development of prejudice, especially among the Anglo-Americans who come from Texas and other Southern states." [4]. He goes on to say, "Southern prejudice against Negroes has been transferred to any group whose color approaches the Negro, although the historic and economic relations of that group with whites has been entirely different." [4].

The historic basis for racial feelings between Spanish-Americans and Anglo-Americans is somewhat different from that of other groups. There is no reason to suppose that Spanish-Americans resent the taking of the Southwest from Mexico, but they did object to the taking of their land when the Anglo-American traders and settlers began to push into the "land of poco tiempo" which they wished to preserve in its primitive state. Anglo-Americans have been brought up to believe, through historians, novels, and movies, that the Spanish speaking people are all cruel and treacherous bandits. Spanish-American people of the Southwest have had to bear this traditional reputation. Nearly a hundred years of Anglo-American aggression, influenced by this assumption of the Spanish-American, has tended to produce a certain amount of chronic distrust and bitterness which is seen today [4].

Family Culture

> The largest number of migrant farm workers in the United States today are Spanish-Americans, mainly from this Mexican heritage. Many of these families are more traditional than those usually found in urban centers. In the Spanish culture the strongest feeling of belonging is within the family. This is not the nuclear family--it is the kinship or extended family. When the Spanish-American speaks of his family, he means his spouse, his children, his parents, his in-laws, aunts, uncles, cousins and godparents. [14].

In the traditional Spanish-American home, whether Meixcan, Puerto Rican, or Cuban, the man is the head of the household. He is the one who makes most of the family decisions.

> In the Spanish culture the older members of the family hold a revered position. They gain wisdom with age. For a Spanish-American to institutionalize such a relative is very difficult because it is not part of his culture. There is a strong need to keep the family together, physically as well as emotionally. At an early age a child learns respect for his elders. Above all else, he is taught to honor and defend his family. . . . [13].

Concern for Migrant Education

Since the early 1960's, one community after another has become concerned enough about the educational needs of children of migrant farm workers to provide summer schools, extended classes, or enrichment programs for them. There is almost an ironical aspect to this because such educational programs are occurring at a time when migrant farm labor is decreasing rapidly.

The history of migratory farm workers involving total families dates back to the early years of the 19th century when thousands of workers crossed the

Rio Grande into the area which later became Texas. In the late 19th century Negro migrants and their children were imported by steamers from the southern tier of states to harvest the fruit and vegetables of Connecticut, Rhode Island, and New Jersey. This was the beginning of the Eastern Stream, predominantly Negro, which developed a southern terminal base in the 1920's when the Florida Everglades around Lake Okeecheebee were drained and planted to vegetables. Another large source of migrant labor dating back into the 19th century was the white worker from the mountains and highlands of Kentucky, Tennessee, Missouri, Arkansas, north Georgia, Alabama, and the Carolinas.

The local community's indifference toward the education of migrant children was coupled with the feeling on the part of local school districts that they had responsibility only for the education of permanent residents. This attitude has played into the historical perspective of education held by the poor of rural America.

Historical Perspective on the Importance of Education

The early views toward education among the poor whites in the mountains of Kentucky and Tennessee were that only the bare rudiments of reading and writing were necessary. School teachers, especially males, were looked upon with contempt, and an education beyond the third McGuffey Reader was felt to deteriorate rather than add to the assets of an individual. How could a formal education be beneficial for a farmer, miner, sawmill worker, or a hunter?

Early education provided in Texas and the Southwest for Mexican-Americans and Indians was meager and often nonexistent.

> The first schools in the Southwest were dominated in administration and personnel by Anglo-Americans who knew little or no Spanish . . . to a generation of American teachers trained in the normal schools of 1890-1910, it seemed disloyal and un-American to tolerate any form of bilingualism. . . .
>
> The natural consequence of this official attitude was to foster generations illiterate in both languages, for the teaching of Spanish was as systematically neglected as instruction in English was systematically stressed. [9].

Literacy was not an asset in the plantation economy. For the slave it was not only discouraged but usually forbidden. The belief that education spoiled the slaves carried over with little modification into the belief that education spoiled a field hand. Reading and figuring carried elements of danger to established relationships of owner and worker. Since the detailed direction of planting and the handling of accounts was the sphere of the planter, theoretically it was he who could profit most from the techniques of literacy. Too much attention to reading about the outside, and particularly figuring on the part of Negro tenants, would surely make them less satisfied with their status and would bring them into harsh conflict with the share-crop system. The need for enough education to read and figure arose largely among

those families desirous of escaping from the dependent relationship under the plantation system. "After 1876 at the end of the Congressional Reconstruction, many of the laws of public education were either revoked or disregarded. The easiest way to fight education of the Negro was simply not to vote adequate funds for Negro schools." [3].

For generations the environment of the Spanish-Americans, southern whites, and rural Negroes, as well as the American Indians was less hostile to those who had little or no education than to those who could read and write and might grow dissatisfied with their lot in life and try to better it or question the credibility or honesty of the landowner for whom they worked. This is the educational heritage of the farm migrant worker of today. Regardless of race or ethnic group, few of the parents or grandparents of present farm migrants could either read or write.

The limited availability of schooling, the tenant or share-crop system, and seasonal work which required the labor of the entire family to earn a living were deterrents to education. A child of eight, whether white, Mexican-American, or black was big enough to work in the fields.

Migrants have also known situations where members of their race could not use their education in a satisfactory way. They have seen individuals with high school diplomas or even college degrees working at menial tasks.

In one section of eastern Arkansas, where my husband and I spent time with migrant workers in the mid 1960's, the majority of the young Negro cotton pickers were high school graduates who were unable to find any other type of employment.

Summary

Included among the man-made forces which have affected the life and culture of rural America are: prejudice, persecution, slavery, exploitation, the isolation of a race, seasonal work, paternalism, limited education and job training as well as the Depression. All of these forces have had a damaging effect on self concept and the work motivation of individuals. Living under such conditions, individuals come to feel that the destiny of their lives is outside of their control and therefore outside of their sphere of responsibility.

The cultures of the rural disadvantaged are varied. The people speak with many languages, both verbal and nonverbal. Their skin color is white and nonwhite. They are infants; they are aged; they are middle-aged. They are physically strong; they are sick. They have worked all of their lives; they have never been employed. They are fairly well educated; they are illiterate. They have traveled from one corner of the nation to another; they have never been out of the county in which they were born. They are disadvantaged in different ways: culturally, educationally, socially, physically, spiritually, or emotionally with varying degrees, but the subculture they have in common

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is the culture of poverty. This is a poverty that is more prevalent than that found in the cities. It is a poverty that affects more individuals and yet may be more difficult to detect because it is hidden away in the tiny coves or along the ridges of the mountains, at the end of a country lane, among a cluster of Negro cabins, in the back woods, or inside the boundaries of Indian reservations.

These are the disadvantaged citizens of rural America today. They see themselves on the small end of the horn of plenty, and they feel a sense of helplessness. They wonder if a move to the city would be the answer, but they suspect it would not and they are afraid. They see an affluent, dominant society passing them by as they sit waiting and hoping for a better day. They see a continued focus on the problems of the city and they wonder if they are always to be the forgotten ones.

REFERENCES CITED

[1] Beardwood, Roger. "The Southern Roots of Urban Crisis." *Fortune*, August, 1968.

[2] Burchinal, Lee G., ed. *Rural Youth in Crisis*. U.S. Dept. of Health, Education and Welfare. Wash., D.C.: Government Printing Office, 1965, 393.

[3] Butts, R.; and Freeman, A. *Cultural History of Education*. New York: McGraw-Hill, Inc., 1947, 484-485.

[4] Gamio, Manuel. *Mexican Immigration to the United States*. New York: Arno Press, 1969, 208-211.

[5] Glazer, Nona Y.; and Creedon, Carol J. *Children and Poverty*. Chicago: Rand McNally and Co., 1968, 32.

[6] Henniger, Daniel; and Espesite, Nancy. "Regimented Noneducation Indian School." *The New Republic*. February 15, 1969, pp. 18-21.

[7] Lord, Walter. *The Past That Would Not Die*. New York: Simon and Shuster, Inc., 1965, 22.

[8] McGregor, James H. *The Wounded Knee Massacre*. Baltimore: Wirth Brothers, 1940, 11, 12-26.

[9] McWilliams, Carey. *North from Mexico*. New York: J. B. Lippincott Co., 1949, 298-299.

[10] Muzzey, David. *A History of Our Country*. New York: Ginn and Co., 1944, 25.

[11] Pearsall, Marion. *Little Smokey Ridge*. University of Alabama Press, 1959, 169-170.

[12] Public Health Report to Congress, 1962.

[13] Reul, Myrtle R. "Deprivation Amid Abundance." *Changing Services for Changing Clients*. New York: Columbia University Press, 1969, 65, 66, 72.

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[14] _____. *Sociocultural Patterns Among Michigan Migrant Farm Workers.* Rural Manpower Center, Michigan State University, 1967, 5.

[15] _____. *Where Hannibal Led Us.* New York: Vintage Press, Inc., 1967, 30-32.

[16] Van Every, Dale. *Disinherited.* New York: Avon Library Books, 1967, 106, 274.

[17] Van Kluck, May. *Mines and Management.* 1934, 85.

[18] *West Virginia Review.* September, 1930, p. 387.

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SOCIAL AND STRUCTURAL CHANGE IN RURAL AMERICA

J. Allan Beegle

Introduction

This paper seeks to portray some of the consequences of change, including changing manpower requirements, for the social structure of rural areas. The sociological research base is inadequate to focus this paper specifically on the fruit and vegetable industry. While certain differences are known to exist among different agricultural industries, I will generally refer to the rural community undifferentiated as to agricultural specialization. I hope that what I have to say will be applicable to the fruit and vegetable industry.

It is scarcely necessary to assert that American society, and indeed most societies around the world, have been and are still undergoing rapid social change. Changes are so pervasive, so visible, and so much a part of personal experience they they are often taken for granted. They may, of course, bring about disruption and personal disorganization of which the affected groups are keenly aware. At the same time, changes may be invisible, as for instance in organizational coalitions or in shifts of power. Furthermore, changes in one segment permeates other portions of the society and generate additional changes. Because of the complexity of this topic, I wish to confine myself to four major themes: first, a generalized theoretical explanation of patterns of change in rural areas; second, a typology of rural area situations with respect to forms of adaptation to change; third, a brief description of the demographic character of the rural population; and fourth, the nature of some of the important social changes affecting rural people and institutions.

Explanation of Rural Area Change

The contemporary social scene in America cannot be understood without recognizing at least two essential elements in the demographic history of the nation. First, the United States grew with extraordinary rapidity. In less than 200 years the population increased from approximately 4 million in 1790, the date of the first census, to more than 200 million today. Until 1910, intercensal growth in the United States was never below 20% and in numerous decades of this period it was well above 30%. Even after 1910 the average intercensal growth rate has been in excess of 14%.

Second, the United States has been a rural nation until relatively recently, but urbanization has proceeded very rapidly. Less than 50 years ago the United States was more rural than urban. Today, approximately 70% of the population resides in 212 Standard Metropolitan Statistical Areas (one or more county units having at least one city of 50,000 or more population).

As shown in Table 1, the farm population has diminished markedly since 1960 and now numbers less than 11 million or less than 6% of the total. In

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1967, 4,144,000 rural persons 14 years old and over were employed in agriculture. This figure represents a decline of about 23% since 1960. This dramatic change in rural-urban distribution has been brought about through high rates of out-migration from nonmetropolitan areas. As shown in the following summary from the Economic Research Service, USDA, average annual out-migration rates from the farm population have been substantial since 1920:

Years	Average Annual Net Out-migration from the Farm Population (in thousands)
1920-24	666
1925-29	593
1930-34	58
1935-39	708
1940-44	1602
1945-49	677
1950-54	1115
1955-59	910
1960-64	794

The high rate persisting into the 1960's is now showing distinct signs of tapering off. The consequences of these manpower changes for rural areas is the main theme of this paper. We must, however, at least allude here to the linkage between rural-urban migration and the so-called "urban crisis." The relationship is well stated in the *American Federationist*:

> Under the impact of the technological revolution in agriculture, employment in farming has dropped--it fell 3.2 million between 1950 and 1966. Hundreds of thousands of farmers, farm workers and their families--seven million people--have been leaving the rural areas in search of jobs and homes in the cities. Many of those who seek their future in the cities are Negroes. Between 1940 and 1967, probably about 4 million Negroes moved from the South--primarily rural areas--to the cities of the North and West. . . . All of the new migrants to America's cities of the past quarter of a century--whites and Negroes, Puerto Ricans, and Mexican-Americans--have faced the difficulties of adjusting to a new and strange environment. But these difficulties have been especially harsh for Negroes. [19].

From the perspective of the mid-20th Century, the two most salient social and economic changes affecting rural America have been: (1) the dramatic decline in manpower performing agricultural and extractive functions; and (2) the disruption and consequent disorganization and expansion of the small, locality-based rural community [6, 8, 15, 16, 17, 23]. Both trends have been fully documented and the nature of these changes require little elaboration. It may be enough to say that food, fiber, and raw materials are being supplied abundantly by an increasingly minute proportion of the American population. Interrelated with this change has been the disintegration of literally thousands of small, self-sufficient rural communities in which the requirements of life were once provided.

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Table 1. Population of the United States, Total and Farm, April 1960 to 1967 (Numbers in Thousands)

Year	Total Population	Farm Population	
		Number of Persons[a]	Percent of Total Population
1967	197,430	10,875	5.5
1966	195,391	11,595	5.9
1965	193,261	12,363	6.4
1964	190,724	12,954	6.8
1963	187,998	13,367	7.1
1962	185,208	14,313	7.7
1961	182,350	14,803	8.1
1960	179,323[b]	15,635	8.7

[a]April - centered annual averages.

[b]Census count.

Source: Current population Reports, *Farm Population*, Series Census - ERS, No. 39, May 23, 1969, p. 27.

These two changes have come about as a result of the process of adaptation occasioned by technological innovation, urbanization, and functional differentiation. As viewed by the human ecologist, a population aggregate of a given size and composition utilizes an environment, level of technology, and a system of organization in achieving a particular role in the ecosystem [8, 14]. In this on-going process of adaptation, rural population aggregates have come to occupy a specialized role (or niche) in large trade-center or metropolitan systems. While the rural and urban sectors of the system are interrelated and interdependent, the urban sector plays a dominant role in ordering and regulating the activities in the rural sector. As a consequence of metropolitan dominance, rural population characteristics and functions tend to vary in an orderly way with increasing distance. At the same time, primary and extractive functions, if they are to survive, tend to become specialized and differentiated. Therefore, the small, homogeneous, locality-based rural communities of the past have disappeared, and specialized interest groups attuned to more heterogeneous populations have assumed major importance. The emergent community, then, is a large-scale community of interrelated and interdependent urban and hinterland populations performing specialized functions.

It is essential, it seems to me, to view rural populations as engaged in an *on-going* process of adaptation to environmental, technological, and organizational changes. A change in technology--or in any of the elements--brings about disequilibrium and consequently requires new forms of adjustment. The introduction of new technology in processing and packing of foods, for instance, creates a chain of circumstances giving one set of farmers advantages over another. The shift of orange production from California to Florida with the advent of frozen concentrated juice is one of many possible examples [13].

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It is possible to characterize rural areas in America today in regard to some of the major forms of adaptation. By "rural areas" I refer to those parts of the nation populated by those residing outside urban areas, including farmers as well as nonfarm people. I will emphasize those populations living on farms and exclude the surburban populations residing in close proximity to large urban centers. By form of adaptation, I refer to the mode of establishing a functional role on the part of a given population aggregate in the larger interdependent system.* [17].

Forms of Adaptation in Rural Areas

Before turning to the characteristic forms of adaptation by rural population aggregates, let us consider the history of the farm boy's decision options regarding occupation and migration. The logical theoretical options open to the farm boy entering the labor market have always been to choose farming or to choose a nonfarm job, to stay in the local area or to migrate. Since the two decisions ordinarily are linked, the options become:

1. To choose farming and to stay in the local community.
2. To choose farming and to migrate to another community.
3. To choose a nonfarm job and to stay in the local community.
4. To choose a nonfarm job and to migrate to another community.

Historically, the predominant option over many decades has been No. 4, that is, the decision to leave agriculture and to migrate, typically to the city. It is important to note in this pattern that the locus of individual and community adaptation occurs outside rural areas. The option of taking a nonfarm job and remaining in the local community (No. 3) is exercised with increasing frequency in recent years. In 1960, for example, approximately 32% of all employed rural farm males had nonagricultural occupations; and about 91% of all rural nonfarm males had nonagricultural occupations.** Options 1 and 2--that is, to choose farming and to either stay or leave the

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*A related assessment may be found in *Rural People in the American Economy*, pp. 5-6. This report identifies basic factors "that determine the extent to which job opportunities and incomes grow in a multi-county area." First, there are factors affecting the profitability of locating industry there; second, nodal growth resulting from the advantages of locating several activities together; and third, attitudinal and institutional considerations.

**Rural farm and rural nonfarm are census terms denoting "residence," or where people live. Without specifying all nuances of definition, these two terms designate nonurban residence. The *rural farm* population consists of people living in rural territory on places of 10 or more acres from which sales of farm products amounted to $50 or more in 1959 or on places of less than 10 acres from which the sale of farm products amounted to $250 or more in 1959. The *rural nonfarm* population is a residual after the urban and rural farm population has been identified. The rural nonfarm population includes residents of villages and small towns under 2,500 population as well as open-country residents who do not qualify as farmers.

rural community--were once prevalent patterns in America, but they are now relatively infrequently used options. Each assumes a special set of conditions including availability of farms and access to substantial amounts of capital. While the options are logically complete as postulated, mention must be made of the part-time and multiple job holder often moving in and out of agriculture [5]. This "mixed type" is encountered with great frequency in rural areas today. In May, 1964, 8.1% of all persons employed in agriculture held two or more jobs, two-thirds of which were in nonagricultural industries. At the same time, approximately 36% of farm operator families, as of 1959, had income other than that from farm sales.

With this nexus of occupational and migration decision making as background, we turn to the characteristic forms of adaptation by rural populations in the United States. The types of adaptation suggested are based primarily on the nature of the resource base, the degree to which diversified employment is available locally, and location in relation to large metropolitan areas.* [2]. The types are:

1. *Adaptation through a specialized agricultural or extractive resource base.* Rural population aggregates of this type are the more or less exclusively open-country farming communities of the nation. In the process of adaptation to change, these communities have remained predominantly agricultural. They have adopted technological innovations, have become specialized, and have organized relations to the market. More than a modest expansion of manufacturing, trades, and services in this type is rarely possible, and net out-migration is a dominant pattern even in the more prosperous rural areas. The degree to which this type of rural area makes a satisfactory adjustment depends

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*In part, the types mentioned have been suggested by work on migration in the North Central Region. In this work a preliminary typology of areas was constructed using three dimensions, namely, direction of net migration, the proportion of a county's population employed in manufacturing, and farm operator level of living index. Out-migration, of course, was associated with low employment in manufacturing combined with low farm operator level of living. High farm operator level of living failed to stem out-migration unless combined with high employment in manufacturing. In the analysis of characteristics of nonadjacent county populations--that is, all counties except the SMSA's and counties adjacent to SMSA's--as related to level of net migration, the following conclusions were reached: (1) net out-migration has been the characteristic pattern over two decades; (2) out-migration rates are tempered by level of schooling, proportion in manufacturing, urbanity, and percent of females in the labor force.

In another study, occupational status level of white rural farm males and family income level of the white rural farm population in the North Central States were significantly and negatively correlated with two measures of distance. That is, occupational and income level of the farm population of counties decline with increased distance from an SMSA. The same relationship was maintained when size of center was included in the measure of distance.

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particularly upon its location, technological level, organized relations with the market, and availability and quality of specialized services.

2. *Adaptation through urban expansion and/or "journey-to-work."* Rural population aggregates of this type are predominantly those located near the expanding borders of cities. Adaptation by rural people takes the form of nonagricultural employment. Residence in rural areas is maintained and commuting to and from work is characteristic. In this type, nonagricultural employment becomes available in lieu of or as a supplement to agricultural employment. Urban and industrial expansion can occur only in particular locations. The rural population ordinarily has little or no role in decisions involving such expansion; and in many instances such development sustains otherwise uneconomic activity in agriculture and related pursuits. The separation of home and work made possible by the automobile and elaborate highway networks in the United States is increasing rapidly. The choice of rural residence by urban workers helps to account for the growing occupational heterogeneity of many rural areas of the nation.* [7].

3. *Adaptation through development of nonagricultural functions by local initiative or government.* Rural populations of this type are found throughout the nation. Schemes to promote expanded employment opportunities in manufacturing, trade, and service industries assume many forms, some realistic but others often ill advised and doomed to failure. A recurrent pattern in such schemes appears to be a propensity for local leaders to plan under the assumption that the local area is a discrete unit unrelated to the region and nation of which it is a part.

4. *Adaptation (nonadaptation) through inaction.* Rural population aggregates of this type represent failure to find a satisfactory niche in the interdependent metropolitan system. Such areas may be found throughout the nation but the incidence is higher in the more remote, inaccessible portions. Such dying areas have had long histories of selective out-migration, and they often contain large proportions of aged, unskilled, uneducated, and poverty stricken.

These four types of adaptation are intended to condense into a meaningful way a diverse range of individual situations found in the rural areas of the

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*In October, 1963, 50 million workers commuted to work a distance of 1/4 mile or more. Approximately 48% had residences located 6 or more miles from place of work. Approximately 82% used the automobile as means of transportation; 56% drove alone. Travel time from home to work was 36 minutes or more for 18% of all commuters.

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United States. It is hoped that major characteristic forms of adaptation have been described. No attempt has been made to cover the entire range of possible circumstances nor to be completely mutually exclusive in the types mentioned. We now turn to a brief description of the demographic character of the rural population.

Selected Demographic Characteristics of the Rural Population

While agricultural employment in most rural areas has declined over a long period of time, some rural areas, especially those near large cities, have grown. This growth, however, is not due to manpower utilization in agricultural and related industries but to manufacturing and commuting to work in urban areas. Increasingly, the rural areas are becoming heterogeneous from an occupational point of view.

The distribution of the rural population of the United States in 1960 is summarized in Tables 2 and 3. These tables show that a large fraction of the nation's rural population is located in relatively close proximity to a metropolitan area. Approximately 36% of the rural farm and 52% of the rural nonfarm population is located inside or within 50 miles of an SMSA (Standard Metropolitan Statistical Area). Generally, the rural populations are more remote in the South and West than in the Northeast and North Central States. When the nation is divided into a series of concentric circles of 50 miles outward from a SMSA, an interesting rural-urban residence pattern emerges. Except for the highly urban pattern within SMSA counties, the remainder of the distance bands are heavily rural, ranging from 58 to 63%. At the same time, the rural farm population accounts for only 16 to 21% at any distance (Table 3).

The institutional dilemma of rural areas is inextricably intertwined with the demographic characteristics of these populations [12]. The rural farm population is characterized by large proportions of young and old persons and by large proportions of males. Selective migration had drawn away many young, economically active adults and women. Hence, these areas are characterized by high dependency ratios and high sex ratios. With some exceptions these ratios tend to rise with increasing distance from an SMSA in both rural farm and rural nonfarm populations and for whites and nonwhites (Tables 4 and 5).

Contrary to popular impression, a higher incidence of poverty characterizes the rural rather than the urban areas of the nation. As estimated in March, 1965, while rural areas contained 29% of the population, they accounted for 41% of the poor. In contrast, urban areas had 71% of the population but only 59% of those in poverty [20].

In view of the unfavorable demographic character of most rural areas, the institutional services have deteriorated over time. The Advisory Commission on Intergovernmental Relations in 1968 stated flatly: "Urban-rural comparisons

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of population growth, educational and health facilities, housing, and income levels suggest major disparities for every index with rural America consistently in the disadvantaged position." [24].

Changes in Social Organizations and Institutions

As previously inferred, the relatively complete and self-contained locality-based rural communities in America have virtually disappeared. The emergent metropolitan community in which the rural or hinterland population occupies a special role is still in the process of taking shape. As we have already pointed out, services of all types in the rural areas--schools, churches, health and welfare, to name a few--are of a quality inferior to those provided outside rural areas. To the degree that rural populations are a functional part of the web of interrelationships of the metropolitan community, the greater is the probability that rural populations will possess institutional services approximating the quality of those in urban areas.

Table 2. Percent of Rural Farm and of Rural Nonfarm Population of Conterminous U.S. Within and Beyond 50 Miles of Nearest SMSA, by Color and Region, 1960

Distance from nearest SMSA by region	Rural farm population			Rural nonfarm population		
	Both	White	Nonwhite	Both	White	Nonwhite
Conterminous U.S.						
Within 50 miles	35.7	36.9	27.0	52.0	53.1	41.7
Beyond 50 miles	64.3	63.1	73.0	48.0	46.9	58.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Northeast						
Within 50 miles	64.7	64.5	81.9	73.5	73.4	79.6
Beyond 50 miles	35.3	35.5	18.1	26.5	26.6	20.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
North Central						
Within 50 miles	38.0	38.0	22.2	55.2	55.4	44.0
Beyond 50 miles	62.0	62.0	77.8	44.8	44.6	56.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
South						
Within 50 miles	31.5	33.1	27.0	43.7	44.3	40.8
Beyond 50 miles	68.5	66.9	73.0	56.3	55.7	59.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
West						
Within 50 miles	24.4	24.4	26.3	38.3	38.7	30.7
Beyond 50 miles	75.6	75.6	73.7	61.7	61.3	69.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

The President's National Advisory Commission on Rural Poverty states the nature of changes affecting rural areas as follows:

> The early rural community was largely self-sufficient. It performed the services needed by farmers and other rural

Table 3. Distribution of White and Nonwhite Population at Each Distance From Nearest SMSA, by Residence, Conterminous U.S., 1960

Residence and Color	Total	Distance from Nearest SMSA					
		Inside SMSA Counties	Under 50 Miles	50-59 Miles	100-149 Miles	150-199 Miles	200 Miles or More
Conterminous U.S.	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Rural Farm Total	7.5	1.5	16.0	18.9	20.8	16.8	20.4
White	6.6	1.4	14.4	15.9	18.9	16.4	19.3
Nonwhite	0.9	0.1	1.6	3.0	1.9	0.4	1.1
Rural Nonfarm Total	22.6	10.7	44.5	43.9	40.0	41.0	40.0
White	20.4	10.1	39.8	38.2	36.5	39.4	35.5
Nonwhite	2.2	0.6	4.7	5.7	3.5	1.6	4.5
Urban total	69.9	87.8	39.5	37.2	39.2	42.2	39.6
White	61.8	77.2	35.9	32.6	36.9	41.4	38.8
Nonwhite	8.1	10.6	3.6	4.6	2.3	0.8	0.8

Table 4. Dependency Ratios (Persons Under 20 Plus Persons 65 and Over Divided by Persons 20 to 65) for Rural Farm and Rural Nonfarm Population by Distance from the Nearest SMSA, Conterminous U.S., 1960

Residence and Color	Total	Distance from Nearest SMSA				
		In SMSA Counties	Less than 50 Miles	50-99 Miles	100-149 Miles	150 Miles and Over
Conterminous U.S.						
Both	90.7	85.0	99.2	102.4	103.4	102.4
White	88.9	84.1	96.4	97.8	100.9	101.0
Nonwhite	106.4	92.9	129.6	138.7	139.1	138.2
Rural Farm						
Both	105.4	100.2	104.6	107.0	106.5	105.1
White	99.4	97.9	99.8	98.4	101.6	103.5
Nonwhite	165.2	141.4	159.4	169.4	171.6	154.7
Rural Nonfarm						
Both	102.6	95.3	103.3	107.2	107.9	106.2
White	99.6	94.5	100.0	102.6	105.1	103.6
Nonwhite	135.1	110.1	136.1	143.9	142.3	148.6

people. But now most of these services are performed in small- to medium-sized cities to which rural areas are linked by an increasing number of channels. Today the area of an effective community is approximately 100 times that of the effective community of the early 1900's. Many small communities have been unable to adjust and keep pace with the changing economic and social fabric of the more prosperous ones. Accordingly, many rural communities formerly providing service functions for rural families now find their economic base eroded away. They, and the people within them, are trapped in poverty. [20].

Table 5. Sex Ratios of Rural Farm and Rural Nonfarm Whites and Nonwhites by Distance from the Nearest SMSA, Conterminous U.S., 1960

Residence and Color	Total	Distance from Nearest SMSA				
		In SMSA Counties	Less than 50 Miles	50-59 Miles	100-149 Miles	150 Miles and Over
			SEX RATIO			
Conterminous U.S.						
Both	96.9	95.6	98.3	98.8	101.1	104.2
White	97.3	95.9	98.5	99.3	101.4	104.1
Nonwhite	94.2	93.0	96.5	95.5	98.1	106.4
Rural Farm						
Both	107.2	107.2	106.1	106.5	109.5	112.3
White	108.0	107.5	106.5	107.5	110.4	112.8
Nonwhite	101.6	103.0	102.9	101.2	100.7	101.3
Rural Nonfarm						
Both	103.1	106.0	100.6	101.4	104.2	106.8
White	103.1	105.4	100.7	101.8	104.5	107.0
Nonwhite	102.3	115.5	99.5	99.0	100.6	104.5

Stated somewhat abstractly, the changes in social organization affecting rural as well as urban areas have been in the direction of greater interdependence, increasing centralization, growing formality, and greater impersonality, [22, 23]. Increasingly in American society, rural-urban distinctions are difficult to make. A high degree of interaction and interdependence exists between functional parts. The functions once performed at the local level have become centralized, professionalized, and rationalized. Universalistic criteria tend to displace those of former times, especially those based upon kinship and friendship.

At a somewhat more explicit level the following trends in social organization are affecting rural areas in the United States in important ways: [22, 23].

1. Decline in the cohesion and autonomy of small locality groups. As suggested earlier, the small homogeneous rural groups of the past have disintegrated. Such rural groups are no longer of any great significance in determining policies affecting local people.
2. Increase in the number, importance, and formality of special interest groups and associations. A great number of organizations to which rural people owe allegiance increasingly supersede any interest based upon locality. Specialized commodity groups and associations command loyalty, no longer derived from the mere sharing of farming as an occupation.
3. Reduction of isolation through mass media and the disappearance

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of differences in values and behavior based upon rural and urban residence. The values, aspirations, and behavior of rural people in the United States today differ but little and in unimportant ways from those of urban people.

4. Growth in number and importance of large formal organizations particularly in the economic and political fields. With this trend is a growing centralization of control within large-scale organizations.
5. Penetration of local communities by centralized agencies of control and communication. Agencies of government and education, radio, television, and other mass media are felt in all local areas of the nation. To speak of a truly isolated sector in American society today would be without foundation.

Most, if not all, of these changes in social organization are mirrored by congruent changes in each of the institutional systems [1, 3, 4, 9, 10, 11, 21, 23]. The rural resident today finds life infinitely more complex than his counterpart of 50 years ago. No longer can he be a rugged individualist immune to the dictates of consumers or political decisions. No longer are traditional ways of any particular use. He is forced to become more rational, more calculating, more adaptive, and responsive.

The farm family today bears only a remote kinship to its predecessor of 50 years ago. The present day farm family is smaller, more equalitarian, less rigid in definition of sex roles, and relinquishes children more freely and at an earlier age to other systems for education and socialization. Such changes in family structure are probably necessary prerequisites to satisfactory adjustment to urban life and work.

The old one room school in which training rarely went beyond the 3-R's (Reading, Writing, and Arithmetic) was in keeping with the expectation that children would remain in the local community surrounded by friends and relatives. Such schools were controlled by local people, and teachers were usually recruited from the immediate area. Such a condition contrasts sharply with increased consolidation, enriched curricula, standards imposed from outside the local area, and professionalization of personnel at all levels. The evidence is clear that the farm population is now viewing education as a means of adapting to a predominantly urban, industrialized economy. The proportion of rural farm youth aged 7 to 13 enrolled in school, for instance, rose from 94.7% in 1950 to 97.2% in 1960. The 1960 proportion for farm youth of 97.2% compares favorably with 97.8% of corresponding urban youth. Further evidence that children are no longer considered economic assets is found in reduced fertility levels of farm families and in the decreasing differential between rural and urban fertility rates.

In few areas of the world has social change been as effective as in the United States in erasing rural-urban distinctiveness. The speed of the process

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has produced serious problems in many sectors of American society. On one hand, the rapid influx of rural migrants to metropolitan areas has contributed to what has been referred to as "the urban crisis." On the other hand, many rural areas have suffered such heavy losses through migration that the institutional structure does not adequately meet the needs of "the people left behind."

REFERENCES CITED

[1] Bauder, Ward. *The Impact of Population Change on Rural Community Life.* Ames: Iowa State University, 1963.

[2] Beegle, J. Allan. "Net Migration in the North Central Region." (Unpublished.)

[3] Belcher, John C. "The Nonresident Farmer in the New Rural Society." *Rural Sociology.* June, 1954.

[4] Burchinal, Lee G. "The Rural Family of the Future." *Our Changing Rural Society.* Edited by James Copp. Ames: Iowa State University Press, 1964, 159-197.

[5] Bureau of Labor Statistics. Department of Labor. *Special Labor Force Report.* No. 51.

[6] Copp, James, ed. *Our Changing Rural Society.* Ames: Iowa State University Press, 1964.

[7] Department of Commerce. 1963 Census of Transportation. *Passenger Transportation Survey, Home-to-Work Travel.* TC 63(A), p. 5.

[8] Duncan, O.D.; et al. *Metropolis and Region.* Baltimore: The John Hopkins Press, 1960.

[9] Ford, Thomas R.; and Sutton, Willis A. "The Impact of Change on Rural Communities and Fringe Areas: A Review of a Decade's Research." *Our Changing Rural Society.* Edited by James Copp. Ames: Iowa State University Press, 1964, 198-229.

[10] Fugitt, Glenn V. "The City and Countryside." *Rural Sociology.* September, 1963.

[11] Hassinger, Edward. "The Relationship of Retail-Service Patterns to Trade-Center Population Change." *Rural Sociology.* September, 1957.

[12] Hathaway, Dale E.; Beegle, J. A.; and Bryant, Keith. *The People of Rural America.* A Census Monograph. Wash., D.C.: Government Printing Office, 1968.

[13] House, Alvin E.; and Grieg, W. Smith. "Trends in Food Processing Give New Look to Agriculture. *Michigan Farm Economics.* No. 290, March, 1967.

[14] Karp, Herbert. "The Ecological Frame of Reference and the Urban Community." Mich. State Univ., 1967. (Mimeographed.)

[15] Larson, Olaf; and Rogers, Everett. "Rural Society in Transition: The American Setting." *Our Changing Rural Society.* Edited by James Copp. Ames: Iowa State University Press, 1964, 39-67.

[16] Raup, Philip M. "Economic Aspects of Population Decline in Rural Communities." *Labor Mobility and Population in Agriculture.* Ames: Iowa State University Press, 1961, 95-106.

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[17] *Rural People in the American Economy.* Economic Research Service. Agric. Econ. Rpt. No. 101, 1966.

[18] *Rural Sociology in a Changing Urbanized Society.* Univ. of Ill. Special Publication, No. 11, 1966.

[19] "The Urban Crisis: An Analysis, An Answer." *The American Federationist.* October, 1967.

[20] *The People Left Behind.* A Report by the President's National Advisory Commission on Rural Poverty. Washington, 1967.

[21] Vidich, Arthur J.; and Bensman, Joseph. *Small Town in Mass Society.* New York: Doubleday and Co., Inc., 1960.

[22] Williams, Robin M. *American Society Second Edition.* New York: Knopf, 1960.

[23] _____. "American Society in Transition: Trends and Emerging Developments in Social and Cultural Systems." *Our Changing Rural Society.* Edited by James Copp. Ames: Iowa State University Press, 1964, 3-38.

[24] *Urban and Rural America: Policies for Future Growth.* Advisory Commission on Intergovernmental Relations. Washington, 1968.

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THE PRODUCERS' LABOR: A PROCESSOR'S VIEW

G. C. Henry

Many complex factors influence the pace and effectiveness of the substitution of machines for seasonal farm labor. I would agree with the statements of Michigan State University Professor John Carew when he stated in a recent paper:

> No one needs mystic powers to predict that:
>
> 1. A larger proportion of our fruits and vegetables will be harvested mechanically.
> 2. Growers will increasingly substitute chemical, genetic, and equipment inputs for human labor.
> 3. A smaller proportion of fruits and vegetables will be consumed in the fresh or unprocessed state.
> 4. Areas of crop production in the United States will be determined more by climatic conditions than by nearness to market or availability of labor.
> 5. Buyers and/or processors as well as consumers of fruits and vegetables will adjust to the influence of mechanization.

As I mentioned above, I agree with these conclusions but they leave unmentioned several other factors which bear upon the subject of agricultural manpower implications in a changing fruit and vegetable industry. For example, it means little if we develop an asparagus harvester if U.S. farmers decide that even mechanically harvested asparagus is not a good crop for them because of Taiwan competition; or because the necessary smaller labor force is not available to operate the new mechanical harvesters; or because the risks of losing the crop are too great by reason of unrestricted labor union power; or because the level of taxes is such that their land is no longer profitable as a farm; or because of a host of other reasons.

We need, therefore, to look beyond our industry to see what influences may be bearing down on us while we are busy mechanizing. It is obviously impossible to comment on every possible influence on our changing manpower-mechanization balance, so I have chosen to concentrate on three elements of the manpower emphasis given this symposium as follows:

1. Unions and agriculture.
2. Future manpower supply for farming.
3. Processor assistance.

Unions and Agriculture

We should remind ourselves that what farmers choose to grow on their land is often a matter of selection among several alternatives. Whether a farmer decides to grow cucumbers on that lower forty or decides in favor of tomatoes or one of several feed grain or fiber crops for any given year may be a very close decision. One element of such future consideration might well be the risks involved in a union instigated strike for organizing or other purposes.

The usual response would be that mechanizing reduces this risk, but industrial experience teaches that a strike's effectiveness is not necessarily related to how many people are involved. Our farmer not only has to get his crop harvested, it must be hauled, processed, and marketed free from interruption.

If you were considering a new farming venture today, would you in 1969 be encouraged or discouraged from a consideration of farming table grapes--even if a satisfactory mechanical harvester were available?

This brings us to the hub of the problem. A balance of bargaining power between union and employer is practically never possible on a farm. In the off-season for practically all fruit and vegetable crops, farmers have undisputed control over any bargaining situation; in the growing harvesting season, the unions have the upper hand. In season, farmers of most fruit and vegetable crops cannot stand against a strike or the threat of strike.

If we are to see a future in which a farmer grows items desired by consumers and not just those crops with the least exposure to labor strife, then we must help our farmers achieve some method of farm dispute settlement that does away with the threat of economic warfare in terms of strikes, slowdowns, or boycotts.

U.S. industrial experience in labor dispute settlement is based on the National Labor Relations Act. This industrial act requires that the employer and the union bargain to a settlement or an impasse. And it provides practically no limits on the extent to which economic warfare may be used to achieve a settlement. While industrial management and labor may be on the friendliest terms, each knows that they settle their differences under the threat of strike or lockout.

As we, the general public, are beginning to understand, the industrial formula for collective bargaining which provides for settlement based on strikes, lockouts, and boycotts is an unsatisfactory way of handling a number of nonindustrial labor relations situations, such as those involving hospitals, police, firemen, and even garbage collectors. It is an inappropriate form of dispute settlement procedure for some public utilities. It has also been widely suggested that strikes, lockouts, and boycotts are not appropriate methods for resolving farm labor disputes, both because a balance of power is not possible and because of the perishable nature of the foodstuffs involved.

This line of reasoning leads us to a conclusion that many of us have been attempting to avoid for a good many years. If strikes as a final step in collective bargaining are not to be tolerated, then some other method of final dispute settlement must be devised. Just passing a law prohibiting strikes is demonstrably not enough. The only alternative so far apparent is some form of third party determination, such as compulsory arbitration. When one considers that such politically powerful organizations as the National Chamber of Commerce and the American Farm Bureau have policies against compulsory arbitration as a form of labor dispute settlement procedure, it is obvious

that we in this nation have some rethinking to do regarding an acceptable alternative to strikes or boycotts as the means of settling farm labor disputes.

Policies for the settling of farm labor disputes will someday find their way into legislative expression. While the unionization of agriculture appears to be a long way into the future, our legislators seem disposed to consider the matter at an early date. It behooves us then to consider now, and carefully, whether or not strikes and lockouts are the appropriate means for settling farm labor disputes; and if they are intolerable in the fruit and vegetable industry, then we must help farmers find some version of compulsory arbitration or of a labor court that we can substitute for economic warfare on the farm. Our choice may not alter significantly present plans to mechanize certain seasonal farm labor activities, but it will seriously affect farmers' plans to grow certain crops now being considered for such mechanization. All consumers have a stake in this problem, but the processor (because of his employees, suppliers, and associates) has a particular interest.

Future Manpower Supply for Farming

I would like to invite your consideration of the fairly common assumption that if we improve the housing, improve wages, invite in the unions, and mechanize that somehow this combination will solve the problems of farm labor supply.

I would like to suggest for your consideration that insofar as the manpower problem that confronts us is concerned, the flow of workers from rural areas to the cities is a centuries old phenomenon not likely to change; and that although mechanization will help while the supply of manpower diminishes, ultimately mechanization must encounter a very limited labor supply indeed. The fact is that there is not one of us anywhere who is raising his child to be a seasonal farm laborer. Even farm owners and year-round farm workers are not educating their sons and daughters to remain on the farm. You do not want your son or daughter to choose for his or her lifework the occupation of seasonal melon picker, lettuce harvester, or even to be the operator of a mechanical device to do these seasonal things. The basic reason for this, I believe, is not wages, working conditions, unions or the lack thereof but that the life of a seasonal farm laborer is migratory in a sense which our society finds unpalatable.

I do not mean to imply that you and I are not willing or perhaps even eager to have our children spend a summer vacation or two gaining some work experience. The seasonal farm labor tasks can be quite pleasant; the money earned can be quite substantial; and except for a few bad examples, the living conditions for seasonal farm labor tasks are no deterrent for your son or daughter to accept such a summer vacation job. The reason why seasonal farm laborers ultimately leave agriculture is that the job is seasonal, and to make a living as a farm laborer they must migrate often and far. Sooner or later

our seasonal farm laborer wants to settle down and finds himself in some off-season period out of work and out of money. He will and does turn to the cities where at least there is an appearance that year-round jobs are available. Traditionally his disappearance from the farms has meant replacement by alien immigration. This cycle is now rapidly coming to an end.

I think it would be wise to recall that a few colonists who came to America in the early 1600's touched off an immigration which became the greatest mass movement of people in history. From the small beginnings of the colonial population we grew to have 52,000 by the year 1650. One hundred years later, in 1750, the white population reached one million. When the first census was taken in 1790 the population had swelled to 3,227,000 persons.

During these early days immigration was encouraged. Communities welcomed newcomers who would help in an expanding new country. Holders of large land grants wanted their tracts occupied. Immigration records were first kept in 1820 following an act passed in 1819 requiring submission of ship passenger lists to the government. Between 1820 and 1880, 10 million immigrants came to the United States. During the period 1881 and 1920, 23 million aliens were admitted for permanent residence.

However, we haven't been very comfortable about this flood of immigrants, and even today we apparently feel threatened by it. From early Congressional and related records George Washington viewed unrestricted immigration with caution. Thomas Jefferson thought that certain immigration was unwise. Benjamin Franklin commented unfavorably on certain aspects of our lack of control of immigration. Nevertheless, there were no Federal laws on the admission of aliens into this country for about 100 years after the Declaration of Independence in 1776, except that the importation of slaves was prohibited in 1808.

In 1882, after a 30 year importation of some 200,000 Chinese, Congress passed the Chinese Exclusion Act. In 1921, Congress placed the first numerical list on the number of immigrants coming into the United States.

In 1924, Congress adopted a so-called permanent quota system, and in 1924-29 the quota was set at 2% of the foreign born residents of the United States in 1890. This reduced the yearly quota of immigrants to 164,000 persons. The 1924 act provided, however, for certain "nonquota" immigrants. Persons admitted as "nonquota" under this act included those born in Western Hemisphere countries together with their wives and children. Western Hemisphere countries included such nations as Canada, Mexico, and nations in Central and South America.

While the earlier immigration from all sources once provided recruits for our farms, since 1924 only the unrestricted immigration from the Western Hemisphere has been the major source of replacements for the drift of our farm labor to the cities.

Temporary importation of foreign farm labor to meet bona fide emergency situations is still possible, of course, but is subject to a fairly arbitrary control by our Federal Department of Labor and does not provide an assured base for planning long-term future farm manpower needs.

There is no obvious reason to believe that the two trends--tighter immigration limits and movement of people from farms to cities--will stop or reverse themselves. These conclusions suggest that mechanization of seasonal agricultural tasks is running a race with a declining labor force. It behooves all of us concerned with the development of these new agricultural labor-saving devices to be very careful with our optimism lest we lead our nation's policy makers into the conclusion that immigration is no longer needed and farm manpower needs will be taken care of by our machines.

I suggest that because of this responsibility those persons assembled in this symposium must be the first to advocate continued temporary importation of seasonal farm labor from Mexico, Jamaica, Philippines, and similar places until it is proven that our mechanization efforts are not only experimentally successful but widely available.

Processor Assistance

In considering this subtopic I would ask you to again look backward in time. As we do, I am sure you will recall that farmers have turned over many parts of their total farming job to specialists. Many years ago large numbers of farmers ceased baling their own hay and turned over the problem to migrant hay-baling crews. Custom grain harvest contractors came into the picture as the giant combine became too expensive for many farmers to use economically on their limited acreage. Today we have airplane spray contractors and aqua-ammonia fertilizer contract applicators. Also there are independent contractors who specialize in the harvesting of citrus and beans. With the recent development of the tomato harvester we now have independent contractors who own these huge machines and who with their own crews harvest tomatoes grown by different farmers.

Like these hay-baling crews, spray applicators and other contractors, canners, and freezers have also been engaged in the harvesting of peas, corn, green beans, lima beans, spinach, and other annual row crops for those farmers associated with them. Processors have been so engaged because it is cheaper and more efficient for processors to own the harvest equipment and move it as needed from one farm to another rather than for each farmer to maintain an investment in expensive equipment required just for a short harvest in a crop that may not be grown each year. The processor's role with these annual row crop farmers with whom he has contracts is the same as the independent contractor who applies a spray or bales the hay or harvests the grain and for the same reason.

For tree crops or for any crop in which the farmer makes a long-term commitment, there is no traditional or economic reason why the processor is or should become involved with the new technology. A farmer with a long-term commitment to a particular crop ordinarily has a long crop life over which to amortize his investments in labor housing or harvest equipment. The processor's interest generally ends with the quality of the final product and he does not normally become involved in the method or equipment involved.

As new equipment and methods are devised for the harvesting of fruits and vegetables, it is logical to assume that many farmers will continue the trend of contracting out the performance of specialized tasks for the following reasons:

This projected trend appears to have much to recommend it from a manpower standpoint. A contractor who owns specialized equipment and moves from farm to farm performing farm tasks on a contract basis is in a position to offer continuous seasonal work. Workers are spared much of the need to move between brief periods of work for numerous employers in order to achieve any significant total employment. The opportunities for lower costs through more efficient use of manpower as well as equipment are obvious enough that it is a certainty that they will be pursued.

The increasing costs of erecting and maintaining farm labor housing are also influences in favor of the specialist contractor system--on the assumption, of course, that the contractor will be responsible for his own employees. Finally, we cannot overlook the tendency of farm owners to leave their land and live in or close to town for the social benefits involved. This increasing sophistication of farm families re-enforces the growth potential of the performance of special farm tasks by specialists.

Whether these specialized tasks will be performed by independent contractors, processors, or by large farmers for themselves hardly warrants comment. They will sort themselves out in response to the economics of the situation. It is sufficient to say that the processor normally will not become involved in the new technology as applied to crops with a long life span, and processors will be more than willing to turn over most of his involvement in the annual row crop picture to the independent contractor or the individual farmer at any time.

Summary

Unions and Agriculture.--Each of you must search your minds for an acceptable procedure for resolving farm labor disputes that does not depend on strikes and other economic warfare for its base. This suggests that we must seriously consider some limited form of arbitration as the base for agricultural collective bargaining instead of the industrial formula that strikes and lockouts are the way to end issues unresolved by bargaining.

Technological improvements or not, failure to find a substitute for strikes means that farmers will eventually grow crops least exposed to labor strife and not necessarily those wanted by consumers.

Future Farm Manpower.--The movement of farm manpower from farm to city is continuous and irreversible in any future which we can now contemplate. Present and future immigration policies assure that the sources of the traditional replacements are shut off. Efforts to substitute chemical, genetic, and equipment inputs for human labor do take this manpower projection into account. However, all of us professionally involved with agriculture must support the temporary importation of seasonal farm labor now and in the future until our new methods and machines are successful and are widely available.

Processor Assistance.--Just as the grain harvest contractor or the airplane spray contractor now performs his specialized parts of the total farming job, so will future specialized contractors perform certain parts of the total farming job with new technology. For annual crops, the processor is and probably will continue to be like the specialized contractor performing specialized farm tasks and/or owning specialized planting, cultivating, or harvesting equipment. Both the independent contractor and the processor will do these things for annual row crops because it is cheaper and more efficient for one agency to do so than for each farmer, individually, to handle such investment for a crop he may not grow each year. For crops having a long life, such as asparagus and fruits, the processor isn't likely to become involved; and except for the largest farming enterprises, the trend logically will be in favor of the independent contractor.

The independent contractor trend shows considerable promise not only for greater efficiency, but also in the possibilities for improvement of employment conditions for the seasonal laborer.

Let me conclude with one final admonition: processors are aware of the need for changes and support them--but our enthusiasm for the new technology is tempered by caution. We know that many farm products will be altered in some degree by the new technology. We are prepared to accept what must be and to capitalize on the "new look" where we can. But we are also aware that drastic changes are judged by housewives by different standards than those of us who are producers and processors and that we must wait for her final judgment--and hope that she doesn't find us lacking.

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AGRICULTURAL LABOR UNIONIZATION: AN ORGANIZER'S VIEW

William L. Kircher

The greatest emphasis in this paper will be upon labor and not industry. It will be well to understand in the outset that this means where there is a conflict between what might be good for the crop as against what might be good for the labor involved in producing that crop the human factor will get first consideration.

This paper is neither prepared nor presented as a judicious document which carefully weighs and balances conflicting factors in order to reach a Solomon-like decision. Admittedly, it is prepared by a person who is a partisan, who feels that the human factor has been downgraded for so long in agriculture in this country that it deserves even better than the benefit of the doubt today whenever there is a conflict.

There is much talk today about mechanization in agriculture. If that is progress in the true technological and social sense, fine! When the planting, cultivating, and harvesting is done by machines then those processes should be talked about in pure technological and mechanical terms. Until that time comes it would be well to talk of those who *are* performing those tasks as *humans*, not machines. And it ill behooves intelligent people to consider mechanization as a bogey man to wave before the farm workers in order to frighten them into continued subsidization of the agricultural industry through inadequate economic returns.

Nature and Size of Farm Work Force

There are probably a little over 3 million persons who do farm work for wages in this country. About a half million of these leave their home county to do such work and can therefore be referred to as "migrants". Five states--California, Michigan, Florida, Texas, and Washington--annually account for about half of the migratory farm work. Nearly all of them are engaged in fruits and vegetables, and most of the work they do is in those crops. They averaged about 117 days of work in 1967 and earned an average of $10.80 a day, or $1,266 a year.

The remaining 2-1/2 million plus is a hard to define work force. They range from the hired man to the multi-employee, year-round corporate farm operation. The figures include housewives who go into the fields at harvest peak; they include many students who work on farms and ranches during vacation.

Obviously there is no anticipation of even a majority of this statistical number ever holding union membership as farm workers. However, all of these factors make clear how very difficult the structuring and operation of a union can be. It is equally obvious that these are the very factors which have contributed greatly to the lateness of the farm workers arrival in the arena of union organization.

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It is reliably estimated that there are a little less than 1-3/4 million noncasual workers. They averaged 142 days of work in 1967 and earned an average of $1,389. It is within this number that the bulk of union responsiveness is occurring and will occur. As is the case throughout the rest of the national work force, the remainder of the farm work force which might not be as responsive or which is less accessible to unionism will benefit directly from the collective bargaining efforts of those farm workers who unionize themselves.

Almost half of all hired farm workers are employed less than 25 days on any one job and about one-fifth work over 150 days on a single farm. The more seasonal the work the greater the tendency for women and teenagers to make up the work force. Conversely, males 18 and over make up about 90% of the regular farm work force. These figures are fairly consistent as between the migrant and nonmigrant elements of the farm work force.

About 20% of the farm wage force combines farm work with off-farm employment. As many as a million are teenagers.

The location and mobile characteristics of the farm work force plus the composition in terms of its sex, age, part-time and seasonal nature makes extremely evident the difficult and unusual challenge to organizing.

Economic Characteristics

Farm workers still rank lowest in annual income of all our nation's occupational groups. In all sectors of the nonfarm economy and in every state the average hourly earnings of production workers are above farm wage rates. In the context of this paper it is more significant than the fact that they are the lowest paid to note that the gap between agricultural and nonagricultural earnings has continually widened since World War II, a period of time when the impact of free collective bargaining on wage levels in those unionized segments of the work force has been the greatest. The extent of unemployment and underemployment for the farm worker is higher than in general industry. Figures from the U.S. Department of Agriculture as late as January, 1969 show rates in late 1968 from a low of $1 per hour average in South Carolina to a little over $1.70 hourly average in Connecticut, California, and Washington. The national average in late 1968 was $1.43 per hour. However, the significant economic factor for farm workers is the matter of yearly earnings.

A section of study by the Economic Research Service of the U.S. Department of Agriculture, "A Socio-Economic Profile of the 1965 Farm Wage Force," deals with the question of annual earnings.

> Because of the low wage rates and short work year characteristic of agricultural employment, the average hired farm worker in 1965 earned farm wages of only $650 for 85 days of farm work. This wage figure does not represent total earnings, nor does it include any income from self-employment.
>
> Even when wage from all sources are totaled for the year, the average hired farm worker was still a low wage earner.

Persons employed in both the farm and nonfarm economy averaged $1,486 at all jobs in 1965 or nearly twice the earnings of those doing farm work only ($805) (Table 30). Not only were daily nonfarm wages higher than daily farm wages, but the average worker with some nonfarm experience was employed for a longer period at all jobs than the person who did farm work only. In addition, the nonfarm work during the year was of longer duration than the farm work and consequently produced the larger share of the year's total wages.

The study comments on its family income of farm workers.

> Farm workers are poor, not only because their wages are low compared with wages of other Americans, but because the total amount of money available to them and to members of their families also falls far below the national average. In 1965, the 3.1 million persons who did hired farm work lived in families whose total income for the year, from all sources, averaged $2,900. In the same year, the family income of all Americans averaged $6,000.
>
> Some farm workers do fare better financially than the average, however. About one-tenth of all farm workers in 1965 had family incomes of $7,500 and above. This was in sharp contrast to the one-tenth whose family incomes fell below $1,000 for the year.

The manner in which farm wages have lagged cannot be unrelated to the fact that it has been the only segment of predominately unskilled and semi-skilled labor in the national work force which has not had the benefit of collective bargaining.

Foreign Labor and Immigration Policies

Work force statistics for farm labor do not reflect the presence of foreign contract labor or nonresident visa holders or, of course, illegals.

While the use of illegal aliens might not appear to be a numerical factor, in the year ending June 30, 1968, 41,425 Mexicans working in agriculture were apprehended for illegal entry and returned voluntarily to Mexico by the Immigration Service Border Patrol. Adding to that number those who were not caught and recognizing the fact that the nature in which their illegal status makes them easy prey for unscrupulous labor "contractors" and employers, their impact on the farm labor picture becomes pronounced, indeed. There were less than 5,000 illegals apprehended in 1960.

In 1968, less than 15,000 foreign-workers, all from the British West Indies and Canada, were admitted to the United States for seasonal work in agriculture. This is in contrast to the figure of 200,000 foreign workers admitted in 1964, the last year of the Bracero program.

It is apparent that the "need" for foreign workers through an official program is lessened because of the radical increase in "illegals" and the present day phenomena of the nonresident green card holder who gains a visa under the promise to become a U.S. resident and then never does. Instead he commutes from Mexico to the U.S., sometimes daily, sometimes weekly, sometimes

at longer intervals. Strictly speaking he is an *illegal*, but this practice has gone on for so long and has been "honored in the breach" for so long that certain international equities have developed, and U.S. officials and politicians are loath to make changes.

It is estimated that as high as 150,000 of these nonresident green carders work in California and Washington during harvest periods. For jobs closer to the border, labor contractors with trucks pick them up, haul them as high as 100 miles, and haul them back after an 8-hour day in the fields.

What happens is that they reside in Mexico where economic standards are tremendously below U.S. standards. Thus the substandard U.S. wage becomes a middle-class stipend in their country.

The Immigration Service and the Border Patrol has for many years identified with the power structure of the agricultural community and thus feel no real compulsion to consider the rights of working people as they set their levels of policing and surveillance. A Mexican running dope can get in real trouble. A Mexican running illegal human cargo is virtually safe.

Alien residents and foreign born American citizens from Mexico, the Phillipines, etc. are victimized by unrealistic immigration laws, poor border policing, and terrible practices by unscrupulous labor contractors and employers. Self-organization is their only direction for defense against and correction of these practices.

Existing Laws Protecting Farm Workers

The 1962 Migrant Health Act had a good name, but it had a $3 million ceiling for three years. Now it is up to $9 million for 1969 and $15 million for 1970. It is woefully inadequate and much below the standards of assistance the government offers to the big owners in subsidies, etc.

In 1966 a major breakthrough was scored when Congress extended the minimum wage provisions of the Fair Labor Standards Act to the agriculture industry but then limited its applications so that only 2% of the nation's farms were affected. Only 9 out of the 50 states provide state minimum wage legislation.

There are 47 states with wage payment laws to aid workers in complaints and collections for wages due and unpaid. Only 10 of those states, however, make any provision to extend this protection to farm workers.

It wasn't until 1964 that a Farm Labor Contractors Registration Act was passed and even then so poorly funded that as late as 1968 its national field staff was limited to five professional employees. At least 40 states have no state laws in this area of crucial need.

Of all the 50 states only Hawaii has made its unemployment compensation program applicable to farm workers. Every major job classification in private industry is covered by unemployment insurance except farm work.

In the critical area of workmen's compensation, 22 states have taken steps toward inclusion of agriculture under workmen's compensation. In only

14 instances, however, do these laws cover agriculture workers in approximately the same way as other workers. When one considers the extreme usage of pesticides and chemicals, the need for workmen's compensation may be even greater in farm labor today than in other segments of the work force.

Old age, survivors, and disability insurance is one of the few major areas of federal employee benefit programs from which agricultural workers may receive benefits, but even then there is inadequate and unequal coverage.

Virtually no state does any tailor-making of its residency requirement for public assistance to meet the unique needs of farm labor, particularly of the migrant.

Agricultural workers are excluded from the coverage of the National Labor Relations Act, which means that their right to self-organization is not protected, and there are no established procedures to determine the question of representation, as is the case with virtually all other workers in the nation.

Such a pattern of treatment makes very clear to the farm worker that the brightness of his future does not rest with external help but must come from his own internal strength and that can only be developed through organization.

The Unionization Picture Today

The union in farm labor in this country is the United Farm Workers Organizing Committee, AFL-CIO. It was formed August 23, 1966 through the merger of the AFL-CIO's Agricultural Workers Organizing Committee, (AWOC), and the National Farm Workers Association, (NFWA).

The first contract was won with the Schenley Corporation covering all of its field and related employees in its vast vineyards near Delano, California. Today the union has 10 major contracts. They contain all standard union contract provisions at respectable levels. The lowest hourly wage that can be paid is $1.90. That figure will automatically go to $2 by the end of the year. It is already that in some cases-- a *minimum* that is almost 60 cents above the national *average*!

According to Dolores Huerta, Vice-President of the UFWOC, the union now has 20,000 dues-paying members. Of this number, 3,500 are under contracts which the union now has.

Virtually all of the union's membership is in California. All of its contracts are with employers whose major enterprise involves the growing and harvesting of grapes, so that the contract covered membership is virtually all grape workers. However, while nearly all of the *total* membership is in California much of it is in other crops such as citrus, vegetables, pears, peaches, tomatoes, etc.

While there have been previous organizing attempts in agriculture, this is the first to have any measure of success. While the success is dramatic

and substantial from the perspective of past history, it is meager when viewed from the perspective of what needs to be done.

While the collective bargaining breakthroughs have occurred since the spring of 1966, the current organizational effort actually goes back to 1959 with the establishment of AWOC. While this operation did not structure in any union membership or attempt to build up any self-sustaining dues-paying local unions in the traditional sense, its efforts had two extremely important effects:

1. Wage levels in farm labor in California increased at a much more rapid rate after AWOC commenced its work than in any similar period in previous history.
2. It exposed farm workers, principally Filipino and Mexican-American, to the idea, form, and procedures of unionism and collective bargaining and laid a base for developing of leadership that has contributed greatly to recent attainments.

The NFWA, which started in 1962, was not oriented toward unionism at first. Its contribution, however, was of great importance in that it brought farm workers together on a family basis, taught them the importance of unity and action for common causes.

The organizational method altered greatly in September, 1965 when it had become apparent that employers under pressure of strike, who might be willing to toss a few nickels toward workers during the harvest period, would never agree to any continuing recognition of their workers in an organized form unless they were forced to. With no legal protection or procedures available to them to accomplish this in an orderly fashion, the workers struck in the grape vineyards around Delano, California. The workers were principally Filipinos and Mexican-American. The first group dominated the fresh grape culture and harvest. The second group was more dominant in the wine grapes. The strike unified them. It also unified the growers and the growers turned to and got support from the power structure of the community--police, judges, businessmen, newspaper editors, and politicians. The workers needing and seeking added strength reached for friends outside their community. They found them in union leaders, clergymen, students, and liberal elements of the state. Countering this the grower-power structure complex reached out for friends and found them among the more conservatives and radical right-wing elements. Thus the battle escalated in this seesaw manner.

To many it appeared that the battle was developing outside the actual work force and the area of relations between employee-employer. That is not true. It appeared that way because harvesting went on in the fields that were struck, but it was done by strikebreakers recruited at the Mexican border from among nonresident green card holders and slipped in busses and trucks to the strike.

The facts are that as soon as the new arrivals of scabs would get into

the fields the strikers, with pickets patrolling the fields from the roadside, would call into the fields from bull horns. The strikebreakers, ignorant of their usage, upon learning the facts very often left the fields and joined the pickets. The next day new truck loads of fresh border imports would appear.

This process was escalating the cost of the strike to the union, because each "scab turned striker" had to be provided for. Moreover, the supply of scabs was endless. It became apparent to the union that under such circumstances the chances of success in the strike were limited. The union therefore introduced the boycott wherein it took its case to the American consumer for help. Since that time the boycott has been the principal organizational weapon. Today virtually every major city in the nation has a boycott team of indigenous farm workers from California coordinating the efforts to reduce the consumption of fresh grapes and thus to force employers to the bargaining table for negotiations with the union.

What is Ahead

The UFWOC, while enjoying only modest success in terms of contracts is established as a great force and beyond any doubt will withstand any efforts to destroy it. The dogged determination of the involved workers to unionize is so pronounced and the natural tendency of all farm workers to embrace unionism is so natural that the coming of collective bargaining to agriculture is no longer in question. The matter of degree is related only to the question of time. The attitude of these workers is similar to those that prevailed in industrial employment 35 years ago. They have nothing to lose. They can hardly be worse off than they are. The processes that occur and the kind of dislocation which takes place in the work force, the industry, and the national community will depend upon the intelligence that all elements of leadership on all sides exercise.

If there are those who think that what has characterized the grape struggle will wear out the workers, tire out their friends, and/or exhaust their financial support, it would be well to correct that immediately. Any course of action that is based upon the hope or belief that the farm worker union movement will vanish or even weaken is going to be a course of action that leads to the kind of strife that intelligent people should be able to foresee and avoid.

The American Federation of Labor and Congress of Industrial Organizations is willing and anxious to put forward its most responsible foot and to take every step to develop order and tranquility in this matter, but those steps will never be taken in a direction which would in any way forsake the farm workers and their cause for their cause is Labor's cause, and to those who look deeply into it, it is America's cause as well.

SOCIAL CONSIDERATIONS

Calvin L. Beale

In commenting on implications of fruit and vegetable mechanization, I want to make it clear that I neither have nor make any claim to expertise in studies of this type of farming or in the subject of farm labor analysis. Rather, from the vantage point of a job that is largely demographic, I should like to offer a few considerations that occur to me for this particular industry drawn from a more general consideration of the agricultural situation and rural-urban relationships. I should like to begin with a quotation:

> There is a general . . . complaint of scarcity of farm labor. So long as the United States continues to be a true democracy, it will have a serious labor problem. The laborer, if he has the ambition to be an efficient agent in the development of the country, will be anxious to advance from the lower to the higher forms of effort. . . . Therefore there is a constant decrease of efficient farm labor by upward movements.
>
> The farm labor problem is complicated by several special conditions, such as the fact that the need for labor is not continuous, the lack of conveniences of living for the laborer, long hours, . . . and in some places the apparently low wages. Because of these conditions, the necessary drift of workmen is from the open country to the town. On the part of the employer, the problem is complicated by the difficulty of securing labor, even at the relatively high prices now prevailing, that is competent to handle modern farm machinery. . . . It is further complicated in all parts of the country by the competition of factories, which by reason of shorter hours, apparently higher pay, and the opportunities for social diversion . . . attract the native farm hand to the towns and cities. The difficulty of securing good labor is so great in many parts of the country that farmers are driven to dispose of their farms. . . . There is not sufficient good labor available . . . to enable us to farm our lands under present systems of agriculture. . . . The country must meet the essential conditions offered by the town; or change the kind of farming.*

Do these statements ring true? Are they generally valid? I think so. Could they have been written just yesterday? Yes, but an antique quality to some of the language tells us they were not. The material quoted is from the report of President Theodore Roosevelt's Commission on Country Life, and was submitted 60 years ago in 1909.

None of us would argue that agriculture or the conditions of rural life are unchanged over this period. It is precisely the speed and extent of current and imminent changes that has prompted this conference. But the quotation from the Commission on Country Life reminds us that the perception of farm labor problems is a relative matter, and although absolute conditions have been radically altered, our view of the existence of a farm labor problem, and even of its characteristics, is not at all unique to our time.

**Report of the Commission on Country Life*, University of North Carolina Press, Reprinted May, 1944, pp. 91-94.

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In evaluating the social implications of fruit and vegetable harvest mechanization, there are several points that impress me as being of principal significance. One is the number of persons involved. Presumably public concern relates to the seasonal workers now employed by the industry. Both the number of regular hired workers on fruit, nut, and vegetable farms, and the number of such farms hiring regular workers increased substantially from 1959 to 1964, as shown by the Censuses of Agriculture. With the increased average size of operation fostered by mechanization, there seems little reason to think that these regular year-round jobs will diminish. Seasonal hired workers in fruits and vegetables were estimated at nearly 450,000 in August, 1968, the peak month of that year. This was actually an increase over the monthly maximum of the previous year, despite the progress of mechanization during the year. Four hundred fifty thousand is a substantial number of people, but it is important to put the number in context, in terms of the characteristics of the workers.

Although we do not have, to my knowledge, summary data on the characteristics of fruit and vegetable workers alone, we do have such data for all farm workers, from which some reasonable inferences can be drawn. In 1968, there were about 52,000 migrant workers who did 150 days or more of farm wage work, and who thus had a substantial dependence on farm work of a seasonal nature. Not all of them necessarily worked in fruits or vegetables, however. I would suggest that about two-thirds of them at most did so or about 35,000. In August, 1965, of the persons doing any farm wage work nationally who were not regular farm workers, 80% were persons who are usually not in the labor force. (About two-thirds of *this* group were students, and the rest were either housewives or retired people.) Of the 20% whose principal activity was employment, three-fourths were normally engaged in nonfarm work or in operating or working on their own family farms. Such people had established access to sources of employment other than farm wage work, although the adequacy of such employment could be at question.

If these 1965 distributions can be reasonably applied to 1968 data--and I think they can be--then it may be that of the 450,000 workers doing seasonal fruit and vegetable work in 1968, about 35,000 were essentially full-time workers of migrant character, about 21,000 were persons whose main single activity during the year was farm work but who had less than 150 days of such work, about 60,000 were persons who are usually employed as farm operators or in nonfarm work, and about 335,000 or four-fifths of the total were persons whose usual activity during the year was neither working nor seeking work. Of this group about 230,000 were students, and the rest were housewives and retired persons seeking supplemental income from part-time work.

I should think it would only be the first two groups mentioned--the full-time migrant workers and the workers for whom farm work was the principal annual activity even though it lasted less than 150 days--whose welfare would

be critically affected by the elimination of hand harvest operations. Their combined numbers were about 56,000 last year. There are probably not this many family units involved, however, for some families have more than one worker of these classes. It is difficult for me to think of the loss of short-term seasonal work for the students, housewives, nonfarm workers, farm operators or retired people as creating conditions severe enough to precipitate migration, welfare dependency or other substantial mass problems.

Thus we are not dealing with huge numbers of potentially affected people in the national context--certainly not with the numbers who were affected by the mechanization and reduction of acreage of cotton, and less, I should say, than the number now being affected by changes in cigarette tobacco harvesting, curing, and marketing.

A further consideration is the degree of transient attachment that is normal for most persons who ever engage in hired farm work. We know, for example, from a national survey conducted in 1957 that of all persons alive at that time who had ever worked for wages on farms at any time in the previous 10 years, 30% had done so only in one year and an additional 27% had done so for no more than 2 or 3 years. Thus, exceptionally high rates of entry into and departure from farm work are normal.

The principal difficulty from fruit and vegetable mechanization will probably occur among middle-aged people and nonwhites. These are the groups whose commitment to hired farm work has been greatest, and who because of stage of life, lack of education, or other factors associated with their age and background have the least likelihood of obtaining other suitable employment. Persons of middle age (40 to 64 years of age) comprise only one-fourth of all migrant workers, but among them a majority have been in farm work every year for at least 10 years, indicating a heavy dependence on such work. Nonwhite workers of given age show a higher proportion with many years of farm work than do whites.

Because of the wide geographic distribution of fruits and vegetables, the workers affected by mechanization are not concentrated in any one region of the country, so such problems as occur will also be widely distributed. Some are likely to occur in home base areas, but if past experience is any model many workers who find themselves displaced will elect to drop out in an area with job potential with which they have become familiar in the course of their work. Saginaw is a prominent example of such a place in Michigan where much of the now well-established Mexican-American population came to the area as farm workers.

An interesting example of this phenomenon is the settling down of Negro migrant workers from the Sanford, Florida area in Rochester, New York, apparently as a product of the loss of work through mechanization of certain lines of harvest work in New York State. The situation was dismaying enough to New York officials that discussions took place between the governors of two

states about the matter, and efforts are underway--so I understand--to develop training, education, and job programs in Florida to stem or reverse some of the movement. The irony in the Sanford-Rochester situation is the fact that Seminole County, Florida, where Sanford is located, is one of the most rapidly growing counties in the United States and has been so all through the 1950's and 1960's. It is a part of the Orlando metropolitan area, with rapid growth in a variety of occupations and industries, and furthermore is adjacent to Brevard County on the east with the Kennedy Space Center. There has been a heavy demand for workers of all skill levels in these communities, with high rates of immigration of white people from other parts of the country. The problem in this instance has not been the lack of local jobs other than farm work, but rather the lack of entry by the Negro farm workers into other forms of employment. And this in turn has surely stemmed from a complex of factors.

With the notable exception of areas such as the Lower Rio Grande Valley, I think that most of the fruit and vegetable harvest areas and the home base areas are sections of sizable industrialization, urbanization, and good economic health. They are capable of using former farm workers in some useful capacity if timely organized efforts of assistance become available to supplement the extensive personal network of information and contacts that exists with relatives and former farm workers.

I guess it is fair to say that the tone of my comments regarding worker displacement is essentially optimistic or at least not highly alarmist. I do not wish to give the impression of discounting the very real problems and dislocations that some families may encounter. But despite occasional spectacular examples of instant mechanization, such as the California processed tomato crop, and the constant efforts of recent years to reduce hand labor, there is little indication in estimates of man-hours of work used in fruit, nut, and vegetable production of any rapid overall drop in national manpower requirements. From 1960 to 1968 the man-hours of labor used in vegetable production declined only 3% and that in fruit and nut production only 8% according to the Economic Research Service. Granted the approximate nature of man-hour estimates by commodity, it is difficult to think that any substantial overall decreases could have occurred if the best estimates yield such low decade rates of decrease as 3% and 8%.

In sum, I do not see any massive stranding of people or influx of displaced persons into urban areas as the result of mechanization. Conditions of local significance and concern apparently have occurred and presumably will occur with their location and timing depending on the type of crops involved. It is to be hoped that institutions such as the Rural Manpower Center can continue to act as sources of intelligence and early warning of the nature, location, and implications of such events.

One major factor that cannot be overlooked in discussions of future farm labor supply is the low social status of the work. And within the range of hired farm work situations, certainly no job is more of a barrier to the achievement of either social respect or self-esteem than dependency on migratory seasonal work. Not only is hired farm work of low traditional merit in our society, it has been further effectively stigmatized by the systematic exclusion and partial exclusion of farm wage workers from the conventional social protections--such as minimum wages, unemployment compensation, workmen's compensation, and collective bargaining--or only belated inclusion therein.

In an age of aspiration, more than temporary involvement in seasonal farm labor connotes either an inability to rise from the lowest level of occupational status; or for many farm workers whose fathers did some other type of work, there is an actual downward social mobility incurred. Data on education of hired farm workers show them to be the only major occupational group in which there has been practically no rise in median years of schooling in the last generation. The educational gap between this group and the rest of the population has thus increased. The group seems to be an increasingly selected segment of people burdened with one or more forms of social pathology who form an ever smaller proportion of the total national population.

Daily our society undertakes to eliminate through social reform, education, manpower training, and other programs the very conditions that perpetuate a class of people for whom seasonal farm work is the major perceived opportunity for survival. Given the difficulty of dignifying, rewarding, and giving a career aspect to such farm work, it may be most practical in the long run to make as much use of part-time workers as possible for part-time seasonal activity on farms by students, housewives, farm operators, or retired people does not jeopardize social status or the attainment of a satisfactory mode of life as does year-round itinerancy from one job to another by family heads.

To the extent that mechanization and part-time labor are insufficient to perform all the tasks at hand, it is conceivable to me that we may elect at some time in the future either to depend more on imported products and give up the large-scale production of certain crops or else once again come to the acceptance of the importation of temporary foreign workers for certain jobs. Given the multiplicity of crops and producing areas involved--with their different potentials for manpower reduction--and the variance of views between farmers, processors, workers, labor unionists, agricultural engineers, social scientists, and government officials as to what manpower policies are desirable, it would seem unrealistic to expect more than partial designed solutions of labor problems that would be satisfactory to all elements of the fruit and vegetable industry.

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THE POLITICAL IMPLICATIONS

Richard E. Lyng

You may have noted that my topic title contains the word "political." I hope you do not expect me to give a political commentary. I am neither Evans nor Novak and certainly not Art Buckwald.

So, as we discuss the political implications of harvest mechanization in fruit and vegetable production, we'll stay far away from politics in the partisan sense. Rather, I'd like to talk about some of the impact this mechanization has had and is likely to have in the future upon our political institutions, our governments.

All of agriculture, of course, continues to become more and more mechanized. In my home state of California we have some farms growing crops such as rice where, it is said, the soil has not felt the touch of a human foot for many years.

The trend toward agricultural mechanization is not new. It's been going on since the very beginnings of planting and harvesting crops. But during recent decades the pace has been so rapid we call it a "technical revolution." Plowing, planting, pest control, harvesting, and materials handling of the crop have all been affected. Productivity per man and per acre have leaped far beyond anyone's expectations.

These are all well known, particularly to those gathered here. While the "technical revolution" had great impact upon the field crop farms of the United States, there remained one area of farm production which required large numbers of farm workers, particularly at harvest time, the production of fruit and vegetables.

Fruit and vegetable crops even today are the major agricultural production area which requires a human hand, a human eye, the judgment of a human mind to determine ripeness, color, size, or other characteristics of maturity or quality.

As we have seen in your studies, this has been changing rapidly in recent years. Crop after crop is yielding to the pressures of research into mechanical harvesting.

Canning tomatoes may be the most spectacular achievement to date. The significant change in that crop has been startling. And we see such crops as wine grapes, peaches, apples, almonds, walnuts, and prunes now being handled by complicated, sophisticated, but successful harvesting machines. Not far behind are such crops as asparagus, strawberries, and Brussels sprouts.

After all of us watched the Apollo 11 moon landing with almost unbelieving awe, we must acknowledge that, mechanically, anything is possible. Economic feasibility may be an obstacle, but if enough money is available it can probably be done.

We can assume that further mechanization of fruit and vegetable production is not only likely but inevitable.

So what are some of the political implications involved? Perhaps we can discuss a few of them in terms of effects upon our economic well-being, governmental institutions, social structure, and international trade.

As the great advances in agricultural mechanization have been made, particularly during the years following World War II, agriculture has been able to make a contribution to society, to the economic welfare of our country, which is not always recognized. Millions of people were shifted from activities which were low in productivity to industrial jobs of high productivity. Industrial growth in the U.S. would not have been possible without the reservoir of able, willing workers from the nation's farms. By 1950 only a little over 4 million people were left as farm workers. By 1968 this had dropped to less than 3 million. Today it is even less.

Although some of those who have left the farm have not been able to find a place in the productive services and industries of this nation, most of them have; and this in itself has greatly added to the productive capacity of this country.

As we continue this relentless pressure for greater productivity through the use of harvesting machinery on fruit and vegetable crops, we will continue to use fewer and fewer people on our farms. But the outward migration in the future cannot equal that of the past because there simply are not that many left. Of those who will be replaced by machines, many will find improved job opportunities in new and expanding professions and industries, possibly in industries related directly to the fruit and vegetables being produced with fewer farm hands. Some farm workers unfortunately will, because they find themselves unable to meet the requirements of industrial production, be virtually consigned to economic oblivion. This is a political and social consequence of harvest mechanization with which we are all familiar but to which we have not found solutions. I'll come back to this later.

Left on our fruit and vegetable farms will be workers who will be highly skilled, fully as much so as workers in industry. As such, the farm worker will expect and be entitled to all of the same rewards, same rates of pay, the same kinds of pension, health plans, insurance coverage, unemployment protection, and year-round employment. In fact, mechanization is probably essential if the farm worker is going to be able to fully achieve these goals.

As all of this takes place our political institutions are faced with new problems. We are all familiar with the urban problems of the unskilled, untrained, and unemployed, many of whom have been unable to move into the mainstream of urban life after generations on the farm.

We are seeing the political influence of agriculture grow weaker and weaker as fewer people live on farms. Today only 31 of the 435 members of Congress come from districts where 25% or more of the people are farm

residents. Legislation of special interest to farmers is growing more and more difficult to enact.

Rural governmental agencies cannot escape being affected by harvest mechanization of fruits and vegetables. The very character of the agriculture supporting some communities is destined to change. As more and more elaborate, sophisticated, and expensive harvesting equipment comes along, economies of scale will dictate that fruit and vegetable farming must be more specialized. Larger units will be necessary. Fresh markets will continue to become less important. The large volume per farm will mean increased nearby processing capacity. Perhaps most important of all will be the already apparent trend toward ever more geographically concentrated areas of production.

All of this will have an effect on rural population, causing declines in some areas, perhaps modest increases in others. This will affect local needs for all facilities including schools and hospitals. Processing plants can create needs for improved industrial water and sewer facilities. It is a factor which must be considered by local and regional planners, by local government.

Mechanization can have an important beneficial effect upon international trade. It may halt the rapid shift of production of fruits and vegetables outside of our national borders. The United States has traditionally been a nation which has been able to export sizable tonnages of fresh and processed fruits and vegetables throughout the world. As our own labor costs have risen we have found it increasingly difficult to compete in the world market. We have now reached the place where imports of fruits and vegetables into the U.S. exceed our exports.

It is not in our national interest and it is surely not in the interest of our agricultural economy to delegate the production of all fruits and vegetables to other countries. Yet our choices are limited; we must produce competitively or establish generally unwanted trade barriers.

Earlier I mentioned the social problems which are to some undefined extent a result of mechanization of agriculture. The one which comes first to mind is that of poverty. All poor people are not, of course, refugees from agriculture. But I think it can be fairly said that the elimination of much of the labor in producing and harvesting crops has left a residue of unemployed, many of whom have migrated to the cities in search of a better life. It has in some rural communities caused a heavy increase in those receiving public assistance. We have in this country both urban and rural poverty. Agricultural mechanization has played a part in displacing these people. Not that they would have been better off without mechanization for their jobs would probably have been lost in any event as it became more and more difficult for the farmer with high labor costs to compete against production elsewhere throughout the world.

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The problem of poverty presents a real challenge to our political institutions, a challenge we have not yet met. Great efforts are currently underway to do some of the many things needed. The Nixon Administration has already come forth with some bold new proposals. More are coming in the next few days, weeks, and months.

Proposals have been or will be made for an expanded food and nutrition program, a new concept in social welfare, a reorganized job placement program, a strong position on population control, modifications in health programs, changes in low-cost housing, to mention only a few.

In addition to the problems of poverty that are at least partially caused by harvest mechanization, there are important environmental questions that have been raised by the march of agricultural technology. Among these are the problems of air and water polution, and disposal of waste.

In solving all of these problems legislators who are concerned about agriculture must combine with their colleagues from the cities and the suburbs to enact programs that are in the national interest.

This means that those of us who are vitally concerned with agriculture have an important selling job. We must show the rest of the nation that it is vital for our farmers to share in the strength and prosperity of the American economy.

These are some of the many challenges to our society and, therefore, to government that are brought about by the agricultural changes which have taken place. The mechanization of the harvest of fruits and vegetables is really not a different thing. It's more of the same. It has been going on for a long time.

Government institutions should not do anything to delay or impair such changes. On the contrary, for the benefit of all, government should assist in speeding up the rate of change.

At the same time government has an important role in assisting those who are adversely affected; the unskilled, untrained worker who has been depending upon harvest work. Massive retraining and job placement programs are a must.

Further, it is important that the need for government policies of this type be clearly understood by everyone--taxpayer and recipient alike. The taxpayer must realize that it is in his interest to support programs assisting farm workers who have become obsolete. Equally important is that the worker himself realize that government stands ready to help him in adjusting to the changing need for his services.

My conclusion then is that, although the political implications of mechanization of the harvesting of fruits and vegetables are many, they are not new. The impact on our political institutions is going to be strengthening of the pressures which have come from the continuous reduction in manpower needs on the farm. Although the demands these changes make upon government

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are many and varied, the greatest challenge is in the need to adopt a clear public policy at all levels which assists those who are displaced by technological achievement.

Farmers and agriculturists must share in this effort but cannot be expected to solve the problem alone. The public as a whole benefits greatly from such technical advancement. The entire public must further marshall its resources to solve the problems mechanization creates for an important few.

But let us not become totally preoccupied with the problem side of this matter. As we concentrate our governmental energies toward the development of public policies to solve the problems created by mechanization, let us be ever mindful of the important benefits which have accrued and which will accrue in the future.

In his recent book, *The Age of Discontinuity*, the wise and thoughtful economist Peter Drucker points out that:

> Agriculture has been the most spectacular performer in the growth parade. In the United States, ten out of every twenty members of the labor force were still working on the land in 1900. At the end of World War II, in 1945, the United States still had almost one-third of the population on the farm. Now, fewer than one-tenth of the labor force work as farmers. They produce, however, many times more food and farm crops than the much larger number produced sixty years ago. The indirect contribution of agriculture to the national product, to incomes, and to the standard of living may be greater still. The people who are no longer needed to work on the land have provided a labor force for an expanding manufacturing industry, for the services, and for the rapidly growing information and knowledge employments. The transfer of marginal farmers and farm workers to urban employment has by itself probably been the largest single factor in the rise of national productivity.
>
> . . . it seems probable that one-half or more of the total increase in productivity [in the U.S.] . . . can be attributed to this shift in the population.

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MECHANIZATION AND FARM LABOR:

INEQUITIES AND SOCIAL CONSEQUENCES

Isao Fujimoto

"Cornucopia or Pandora's Box" is the subtitle of an article discussing the impact of science and technology in bringing about the "green revolution" in the developing countries [46]. This contrast applies equally well to the concerns of this colloquium--in examining not only the effects of mechanization on certain segments of the agriculture industry, but also in examining the broader implications of technological advancements on the quality of life. Agricultural mechanization has an influence on the quality of both urban and rural life, on displacing workers as well as creating new work demands beyond the farm labor market. The body of this paper will be directed to commentaries on the inequities and limitation in the farm labor market and the added consequences that need to be considered as technology accelerates.

Broad changes have been brought about by the technological revolution in agriculture. Illuminating overviews of contributions made by agricultural engineers have been given by Clarence Kelly [26] and Roy Bainer [3], who recount the pioneering efforts and the vast changes in agricultural production brought about by the inventions of their colleagues. The impact of technology on production can be measured in a variety of ways. Stockdale suggests three: increases in investment assets per worker, the amount of capital substituted for labor, and the number of persons supplied with farm products by a single farm worker [40]. Between 1940 and 1968, assets per farm worker have increased from $3,000 to $46,000. In contrast, the current *Fortune* magazine listings for the 500 largest industrial corporations show their median assets per worker to be approximately $21,000. Another indicator of technological growth is shown by the capital involved: in 1967, the nation's 1,600 farm machinery manufacturers grossed $3.8 billion in sales [42].

A popular measure of agricultural efficiency is the number of people supported through the labors of one worker on the farm. In 1900, one person on a farm produced enough food for seven people. The latest efficiency estimates show that one worker now supports 42.5 persons [44].

Other claims can be made for keeping food prices reasonable, making available new and fresh products, exporting know-how to developing countries, alleviating problems of starvation and hunger, and releasing more people from agricultural work. Our technological accomplishments, epitomized in the moon landing, are celebrated with pride. However, technological progress does not exist in a vacuum, nor are all results cornucopian. With each technological innovation there are attendant social consequences and implications, as well as oversights. Going back to the moon shot and Cape Kennedy, recent reports reveal an alarming number of hungry and impoverished people eeking out a living in Brevard County, Florida, right in the astronauts' back yard.

Just as Pandora's box portends of something close, yet hidden, the impact of mechanization on farm labor share a similar portentious analogy. The scenario involving agriculture, rural society, and the attendant labor force lend themselves to a certain dramaturgical perspective. We have on stage a picture of productivity, technological advancement, efficiency, and growth. But included in the production, though hidden backstage, are such realities as rural poverty, ethnic isolation, and a plantation/corporation system of agriculture.

Numerous studies, reports, and hearings have directed our attention to the farm worker [16]. The proposals for amelioration often assume that if the farm worker were to change--via education, fair housing and health, or retraining--the situation will right itself. But there are variables, such as the impact of mechanization, institutional rigidity, and the sociology of agriculture, that override the farm worker as a factor in affecting the nature of the farm labor market. The question then is: how does the farm labor system operate and what are some of its inequities and limitations, especially as experienced by the worker. Some answers to the latter question were obtained by participant observation research conducted in California's Central Valley in the summer of 1967. Two researcher-farm workers worked with crews in three dozen separate locales, principally out of day haul operations.

In terms of the overall seasonal farm worker population of California, the number of men working on day haul is comparatively small but fairly sizable compared to the number of farm workers in other states. In 1967, there were 87 community pickup points in which 12,000 men reported during the peak season [6]. The daily starting point for observation was generally a day haul area. The field situation, however, usually involved being in contact with farm laborers of all types including the local, interstate, and green carder workers. The patterns of the inequities and limitations of the labor market observed can be summarized around worker wastage, vulnerability to exploitation, and the realtive inadequacy of the existing institutions and laws to respond to the needs of the workers in the field.

The wastage of work time became apparent from the time day haul operations began. At urban centers such as Sacramento, Stockton, and Fresno, busses begin bidding for day haulers around 4 o'clock in the morning. The time expended waiting for work, traveling to the fields, and waiting for the pay at the end of the day could easily come to 2 to 3 hours of dead time. Time loss depended on such variables as the condition of the bus, the driver's sense of direction, and the number of men paid off at the end of the day.

There was no guarantee that work would begin upon arrival once out in the fields. Sometimes the field might be too wet, the equipment missing, or a decision made to move the crew to another distant area. Time is also lost to slow checking, the lack of containers, or waiting in line to unload picked fruit. This can considerably diminish incentive, output, and pay for piece

workers. Unlike industrial situations where the risk of time loss due to delays or equipment breakdown is assumed by the employer, there is no comparable risk sharing in the field, especially under piece-work conditions. The farm worker pays for his "lost time" by earning less. Much of this wastage problem could be alleviated by proper supervision, which would also benefit both the grower and consumer in the form of unbroken plants and unbruised products. Similar reports of worker wastage have been documented by Jones and Friedland [25, 14]. The latter has offered a hypothesis that much of what is declared to be work shortage might be made up by alleviating work wastage.

The report of an occasionally enterprising journalist may suggest to the public that their accounts of exploitation, though sensational, are infrequent. But the vulnerability of workers to exploitation is an everyday experience, and workers are taken advantage of in a variety of ways. They can be recruited for work under pretenses--being promised certain work or wages only to learn differently once they arrive at the field or at the time they get paid at the end of the day. Items sold in the field are usually double what they cost in town. Should drinking water be lukewarm, unpalatable, or not available workers have no choice but to pay the prices asked for by vendors who follow the workers out into the field with beer and soda pop. Though deductions for Social Security and Workmen's Compensation are generally fixed by law, inconsistencies were noted from place to place. Workers without their own means of transportation are particularly vulnerable to decisions of the day haul contractor. When a worker is left overnight in a labor camp he has the added expenses of room and board. If he did not work a full day, which is likely, his net return for the day after deductions and purchases of high-priced items at the camp's commissary may be to break even.

Another area in which inequities exist is the orientation and the limitations of various agencies charged with responsibility in relation to the farm laborers and their families. These include the Farm Labor Office, the local police, the immigration authorities, the schools, and the welfare departments. Various studies show that the degree to which they can respond on behalf of the field workers leave much to be desired. An investigation of the farm labor office by the Legislative Analyst's Office of California showed a relatively inefficient and expensive operation [7]. For example, it cost $2.90 to place one farm worker in a farm job during 1963-64 and $5.22 in 1964-65. Furthermore, the Farm Labor Office accounts for only 10% of all farm job placements, and these generally involve the poorest quality workers [33].

States vary considerably in the number of laws they have for the welfare of seasonal farm workers. But having laws on the books is quite different from having them enforced. A study by the California Rural Legal Assistance concerning health, safety and labor codes, and the provision of toilet facilities and drinking water showed that only a very small proportion of growers complied with the laws [36]. The failure to enforce public health regulations creates

public health problems for the worker and his family. It goes without saying that the lack of sanitary facilities for the workers in the fields can extend the public health hazards to the consumer.

An example of the impact of technological advancements on the quality of life is the pollution of drinking water with commercial fertilizer residues. Drinking water in California's Tulare County was declared too toxic to be ingested by infants younger than six months because of the high concentration of nitrates [32]. For violating the rights of farm workers, schools and welfare agencies have been plaintiffs in suits filed against them by the CRLA. Other examples of the shortcomings of institutions, such as offices of the immigration, police, and Social Security, are discussed in the more detailed field report from which these observations were selected [17]. From the vantage point of farm workers, these public agencies appear to be more concerned with controlling the situation rather than serving the people.

Understanding these institutional barriers as well as the social structure of agriculture is integral to our understanding the problems of farm labor. Writers in the past have directed attention to this broader context in which to examine agricultural manpower. Paul Taylor [41], Varden Fuller [20], Carey McWilliams [27], and Lloyd Fisher [13] stressed the nature of agriculture rather than the attributes of migratory laborers as a prerequisite to resolving the farm labor problems.

California's diversified agriculture developed to take advantage of surplus labor rather than the reverse. The costs of maintaining such a relationship is reported by the California State Relief Administration:

> Surplus agricultural labor is kept in motion as a result of the underregulated, unrationalized, and anarchic character of agriculture. Small owners who have always been considered mainstays of the social base of an economic system such as ours are almost absent in California. We see the second largest industry not only subsidized by relief funds, but responsible for untold human misery and human wastage [8].

This observation was made over 30 years ago. Coupled with previous comments concerning labor wastage and inequities, discussion limited to the psychology and sociology of agricultural workers will not explain away the inconsistencies in the farm labor market.

Both Fisher and Schmidt have elaborated on the lack of structure and rationality and the archaic nature of the farm labor market. Among the factors attributed by Fisher and Schmidt as contributing to the outmoded nature of the farm labor market include: a lack of unions; absence of employer-employee relations; the lack of hierarchy based on skills; archaic hiring procedure; exemptions from labor legislation coverage; and lag in wages in relation to the economy as a whole [38].

The impact of mechanization on agriculture and the farm labor market must take into account more than labor economics. It also involves the politics

of labor [22], population migration across borders [39], the exodus from rural slums to urban ghettos, and new forms of social organization. Mechanization also affects the capacity of farm workers to unionize as discussed in a recent paper by Friedland [15].

Despite claims that mechanization is geared to help the farm worker by relieving him of drudgery, the politics of agriculture show that a large impetus for mechanization came out of fear of the workers rather than out of concern for him--fears that a malleable labor supply or a comparable cheap foreign labor force would diminish, or that the domestic labor force would unionize. For example, Rasmussen in discussing the growth and development of the tomato harvester mentions that, "the fear of a lack of labor to handle the tomato crop, whether justified or not, and the fear of organized labor from the late 1950's on, were major influences in encouraging the invention of a satisfactory picker, research on breeding and crop management, and the purchase of machines by growers. Local newspapers, growers, and scientists are virtually unanimous on this point" [34].

Alvin Bertrand, in an article entitled "The Social Processes of Mechanization of Southern Agricultural Systems" cites similar social causes for the advent of mechanization in the cotton industry [4]. Planters in the South ignored agricultural machinery for years. However, two social processes set in motion the landed aristocracy's acceptance of technological advancements. One was the unionization of agricultural workers and the other was the strengthening of the landlords' position through subsidies sponsored by the Agricultural Adjustment Act. Conrad tells how the AAA solidified the landlords' position at a great social and economic cost to 2 million tenant farmers [9]. Technology definitely had not been neutral nor value free in its response to the general welfare of everyone concerned with agriculture. Technological advancements including agricultural research, mechanical inventions, and extension service have had a management bias. Trends in mechanization in the grape industry seems also to be affected by similar social and political concerns in behalf of management.

The consequence of technological advancements have had numerous social implications whether made under political aegis or not. One of the most dramatic relationships is that hypothesized between agricultural mechanization and ghetto riots. The explosions in Watts, Detroit, Newark, and Chicago in recent years is traced to roots in rural poverty and displacement. Such conclusions are reached in the Presidential Advisory Commissions on Technology, Automation and Manpower, Watts, Civil Disorders, Rural Poverty [31] and the recent hearings of the U.S. Commission on Civil Rights [43]. Dillingham and Sly's analysis of the mechanization of cotton in the South concludes that "it was precisely technological innovations in agriculture which are the major source of the Negro's poor economic condition" [10]. They document the relationship between the adoption of tractors and mechanical cotton pickers in

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the Southern farms with the consequent out-migration of Negro tenant farmers. Similar results showing the dramatic displacement of laborers in California with the advent of mechanization of the cotton industry has been reported by Metzler [28]. Thirty years previous to Dillingham and Sly's study, B. O. Williams predicted that the then slow process of mechanization would increase to the extent that it would have a profound effect on reshaping the character of the South as a whole. William's 1939 article entitled "The Impact of the Mechanization of Agriculture on the Farm Population of the South" predicted the lowering of material living standards and the migration of surplus laborers to other areas [47].

The social dynamics put into motion by technological change in agriculture is discussed in articles such as "The Black Immigrants" [2], "The Great Migration: A Crisis for Both the City and Rural America" [37], and a *New York Times* story which begins with the lead line, "Farming is gradually becoming an all-white occupation in the South" [29]. At a recent address given at Columbia University's School of Engineering, Dean Wesley Hennessey remarked on the engineer's responsibility in bringing about "The Hidden Migration" [23].

Not surprisingly, the current rural-urban crisis has its historical antecedents. In Rome, new technology in the form of *latifundia* and slave labor altered the means of production and drove the small farmers to the cities which were not prepared to handle the great influx. Historians record that this happened not just once but several times--the Third Century, B.C., the Third Century, A.D., and the Ninth Century, A.D. [5, 11].

In addition to the social implications involving displaced farm workers and attendant problems in the rural slums and urban ghettos, there are even broader consequences of technological advances in agriculture. It involves the relationship between technology, the concentration of power, and the viability of democracy [18]. One of the major beneficiaries of technology has been the corporation farm. The large scale farm's impact on local communities raises questions concerning the future of the small town and small business [12, 30].

In its report, *Corporation Farming*, the Senate Subcommittee on Small Business has recently republished Walter Goldschmidt's classic studies of Dinuba and Arvin, California [45]. The hypothesis of the anthropological study was this: the family farm community shows a quality of community life not found in a community dominated by large-scale farms [21]. Dinuba's residents had a stake in their town, and this showed in the business and commercial life, social interaction, churches, education, and public services. Arvin depended on a large transitory labor force in turn dependent on the large-scale farms. This meant fewer residents with less to spend and with a lesser stake in the town's development. Dinuba, a town populated by small landholders, had characteristics associated with the small, dynamic town patterened after the ideals of Jeffersonian democracy. Victor K. Ray

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visited the two towns in 1968 and found that Goldschmidt's distinctions between the two towns still held [35].

As for the solutions to the inequities accelerated by the technological revolution, recommendations include retraining programs, development of rural industries, and coordination services with urban employment markets [19]. But do these take into account some basic changes in values brought about by technological advancements? Basically we have gone from a production to a consumption society. The shift from a scarcity to an abundance economy has had consequent effects on our attitudes to jobs, leisure, and education, not to mention our decreasing commitment to the Protestant ethic of thrift, hard work, and delaying gratification.

Consider, for example, the change in the relationship between personal character and financial credit. We used to say, "Save your money, delay your present wants, sacrifice now." Emphasis was placed on hard work and the virtue of not wasting time or money. But the big shift towards the credit society refutes these values. Contrary to the ethic of delaying our wants, credit encourages enjoyment now. Rewards and punishments have changed accordingly. Before, if an account was overdrawn the culprit got tagged with a bad check charge. Today, banks encourage overdrawing of accounts, and with a smile. Previously, stores introduced credit as a way to get people to buy merchandise; today merchandise is used to sell credit. All this is but one small example of the changes that have come about as a technological revolution ushers in a consumption oriented society. The gap between beliefs inherited from the past and actions based on contrary guidelines reveals itself in the clashes over the redefinition of education, leisure, civic participation, and work.

The inability to resolve the inequities exemplified in farm labor while technological frontiers move ahead and its attendant problems go unsolved forces us to ask some very basic questions. Stanley Andrews in writing *The Farmer's Dilemma* tried to answer this question: "Can the problems created by revolution in the technology of production be solved without a corresponding revolution in the society in which it has occurred?" [1]. Whether it's a matter of technology running ahead of itself or institutions falling way behind, we cannot help but acknowledge the glaring gap that challenges all of us.

When J. Herbert Holloman spoke at the dedication of the engineering building at the University of California at Davis, he reminded his audience of Galileo's definition of the scientist: "I maintain that the only purpose of science is to ease the hardships of human experience." [24]. It is not enough for scientists to create solutions which will merely result in transferring hardships or whose implications are not considered. Holloman warns:

> If scientists intimidated by self-seeking people in power, are content to amass knowledge for the sake of knowledge, then science can become crippled and your new machines will

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represent nothing but new means of oppression. With time you may discover all that is to be discovered and your progress will only be a progression away from mankind. The gulf between you and them can one day become so great that your cry of jubiliation over some new achievement may be answered by the universal cry of horror. [24].

Accelerating and accepting the technical advances in agriculture without giving the needed attention to the social consequences reinforces what Holloman warns against. Without the bridging of these concerns his concluding remarks remain ominous.

REFERENCES CITED

[1] Andrews, Stanley. *The Farmer's Dilemma.* Washington, D.C.: Public Affairs Press, 1961. Reviewed in *Technology and Culture.* Vol. 3, 1962, 353-355.

[2] Bagdikian, Ben H. "The Black Immigrants." *Saturday Evening Post.* July 15, 1967.

[3] Bainer, Roy. "Pioneering Research in Mechanization." Paper presented at AAAS Annual Meeting, Symposium on Pioneering in Research, Dallas, Texas, December 28-31, 1968.

[4] Bertrand, Alvin L. "The Social Processes and Mechanization of Southern Agricultural Systems." *Rural Sociology.* Vol. 13, 1948, pp. 31-39.

[5] Boak, Arthur E. R. *Manpower Shortage and the Fall of the Roman Empire in the West.* Ann Arbor: University of Michigan Press, 1955.

[6] California Dept. of Employment. *California Annual Farm Labor Report.* 1967. No. ES225. p. 14.

[7] California. Office of Legislative Analyst. "Farm Labor Placement Falsification of Records in 1964." September, 1965. (Mimeographed.)

[8] _____. State Relief Commission. *Migratory Labor in California.* 1936.

[9] Conrad, David Eugene. *The Forgotten Farmers: The Story of Sharecroppers in the New Deal.* Urbana: University of Illinois Press, 1965.

[10] Dillingham, Harry C.; and Sly, David F. "The Mechanical Cotton Picker, Negro Migration and the Integration Movement." *Human Organization.* Vol. 25, No. 4, Winter 1966, pp. 344-351.

[11] Durant, William. "The Agrarian Revolt." Chapter 6: *Caesar and Christ,* New York: Simon and Schuster, 1944. [Vol. 3: *The Story of Civilization.*]

[12] Evans, Bert. "Agribusiness and the Rural Community of the Future." Paper presented at the National Rural Life Convention, St. Cloud, Minnesota, August 11, 1968.

[13] Fisher, Lloyd. *Harvest Labor Market in California.* Cambridge: Harvard Press, 1953.

[14] Friedland, William H. "Labor Waste in New York: Rural Exploitation and Migrant Workers." *Transaction.* 6:(4)48-53, February, 1969.

6298

[15] _____. "Social Organization, Agricultural Technology, and the Organizability of Agricultural Workers." Paper presented at the 1969 Meeting of the Rural Sociological Society, San Francisco, California, August 31, 1969.

[16] Fujimoto, Isao; and Schieffer, Jo Clare. *Guide to Sources on Agricultural Labor*. Dept. of Applied Behavioral Sciences, Univ. of Cal. at Davis, 1969.

[17] _____. "Is This the Dream?" Dept. of Applied Behavioral Sciences, Univ. of Cal. (Mimeographed.) This report is summarized in Isao Fujimoto, "Seasonal Farm Labor: Long Range Dilemma or Challenge?" Forthcoming in *Davis Law Review*, Univ. of Cal. at Davis.

[18] _____. "The Drag in the Rural-Urban Shift." *The Disadvantaged: Issues and Innovations*. 2nd ed. Edited by Joel Frost and Glenn Hawkes. Boston: Houghton Mifflin Co., 1970.

[19] Fuller, Varden; Bride, Thomas H.; and Sturt, Daniel W. "Report of the Rural Manpower Services Task Force." January, 1968. (Mimeographed.)

[20] _____. "The Supply of Agricultural Labor as a Factor in the Evolution of Farm Organizations in California." Unpublished Ph.D. dissertation, Univ. of California at Berkeley, 1939.

[21] Goldschmidt, Walter. *As You Sow*. New York: Harcourt, Brace, 1947.

[22] Hawley, Ellis W. "Politics of the Mexican Labor Issue, 1950-1965." *Agricultural History*. 40:(3)157-176, July, 1966.

[23] Hennessy, Wesley J. "The Hidden Migration." Address delivered on Dean's Day, School of Engineering and Applied Science, Columbia University, March 22, 1969.

[24] Hollomon, Herbert. Dedication Address for Engineering Building I, Univ. of Cal. at Davis, February 19, 1968.

[25] Jones, Lamar B. "Farm Labor: Shortage or Surplus?" *Southwestern Social Science Quarterly*. 47:(4) 401-412, March, 1967.

[26] Kelly, Clarence F. "Mechanical Harvesting." *Scientific American*. August, 1967, pp. 50-59.

[27] McWilliams, Carey. *California, The Great Exception*. New York: A. A. Wyn, 1949.

[28] Metzler, William H. "The Farm Worker in Changing Agriculture." Davis: Giannini Foundation of Agricultural Economics, Research Report No. 277, September, 1964.

[29] "Negroes Leaving Farms in the South." *New York Times*. November 27, 1966.

[30] Nesius, Ernest J. "The Rural Communities: Their Problems and Their Future." Paper presented at the National Rural Life Convention, St. Cloud, Minnesota, August 10, 1968.

[31] *People Left Behind*. Report of the President's National Advisory Commission on Rural Poverty. Wash., D.C.: Government Printing Office, 1967.

[32] "Pesticides: Slow or Sudden Death for California Farm Workers." *Mayday*. No. 5, November 8-15, 1968. For a more complete commentary on the impact of commercial fertilizers see Kenneth M. Mackenthun's *Nitrogen and Phosphorus in Water: An Annotated Selected Bibliography of Their Biological Effects*. U.S. Dept. of Health, Education, and Welfare, 1965.

6299

[33] Peterson, Cheryl. "California Farm Labor Survey." Progress Report for California Assembly Committee on Agriculture. Report 621#1, 1968. (Mimeographed.)

[34] Rasmussen, Wayne D. "Advances in American Agriculture: The Mechanical Tomato Harvester as a Case Study." *Technology and Culture*. 9:531-543, 1966.

[35] Ray, Victor K. *The Corporate Invasion of American Agriculture*. Denver: National Farmers Union, 1968.

[36] Razee, Don. "Agricultural Work is Unfit, CRLA Maintains." *California Farmer*. May 18, 1968.

[37] Santora, Phil. "The Great Migration: A Crisis for Both the City and Rural America." *The News*. November 20-21-22, 1967.

[38] Schmidt, Fred H. "Rationalizing the Farm Labor Market: The Case for Supplemental Wage Payments." *Southwestern Social Science Quarterly*. 4:(1)12-21, June, 1966.

[39] Select Commission on Western Hemisphere Immigration. *The 'Commuter Problem' and Low Wages and Unemployment in American Cities on the Mexican Border*. Wash., D.C.: Government Printing Office, January, 1968.

[40] Stockdale, Jerry D. "Social Implications of Technological Change in Agriculture." Paper prepared for the Annual Meeting of the Rural Sociological Society, San Francisco, California, August 29, 1969.

[41] Taylor, Paul S.; and Vasey, Tom. "Historical Background of California Farm Labor." *Rural Sociology*. 1:281-295, September, 1936.

[42] "Toward the Square Tomato." *Time Magazine*. August 18, 1967, pp. 78-83.

[43] U.S. Commission on Civil Rights. Hearings Held in Montgomery, Alabama, April 27-May 2, 1968. Wash., D.C.: Government Printing Office, 1968.

[44] U.S. Dept. of Agriculture. "Changes in Farm Productivity and Efficiency." Stat. Bull. No. 233, Summer 1968.

[45] U.S. Senate. Select Committee on Small Business. Subcommittee on Monopoly. *Corporation Farming*. 1968.

[46] Wharton, Clifford. "The Green Revolution: Cornucopia or Pandora's Box?" *Foreign Affairs*. April, 1969, pp. 464-476.

[47] Williams, B. O. "The Impact of Mechanization of Agriculture on the Farm Population of the South." *Rural Sociology*. 4:(3)300-314, September, 1939.

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MANPOWER POLICIES AND PROGRAMS

John W. Mamer

Introduction

If one makes any global comparisons of fruit and vegetable production and of prices paid by consumers, he cannot fail to be impressed with the achievement of the fruit and vegetable industry in the United States. Production has been more than ample to meet domestic needs. Prices have been sufficiently low for a substantial volume to move into international trade.

Yet the economic, social, and political framework of production is changing. Some of that change has its origin within the industry--in changing technology, methods of financing, marketing, etc. Some of the change to which adjustment will be made has its origin outside of agriculture in the economic, political, and social framework of the nation.

Probably the most important element of change lies in government policies and programs. A decade or so ago the main thrust of government policies and programs relevant to farm labor was in the direction of providing a labor supply for the fruit and vegetable industry. In the past five years emphasis has shifted toward concern for the welfare of the seasonal farm worker.

This shift is perhaps not emphatic. Yet it appears clear that currently, and more so in the future, progress is not to be measured exclusively in terms of volume of output and consumer prices. In part, this colloquium is a response to the questions of adjustments being generated by public policies as well as to changes in the labor supply-demand situation in the fruit and vegetable industry.

This paper will concentrate largely on problems evolving with respect to hired seasonal labor employed in fruit and vegetable production. Although family members and year-round workers are also frequently employed in the production of fruit and vegetables, the major problems arise with respect to hired seasonal workers. From the growers' point of view there is the problem of obtaining the quantity and quality of labor desired, and from the point of view of society there are the social and economic problems associated with seasonal labor.

To focus sharply on the critical issues, it is convenient at the outset to set down a series of brief statements that describe the current labor demand-supply situation in fruit and vegetable production.

Current Situation

The major elements of the present situation fall into two groups: (1) those that relate to seasonal farm labor requirements; and (2) those that relate to the supply of seasonal farm labor. The term "labor requirements" does not correspond to the economist's concept of demand but it is a useful and generally understood term.

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Labor Requirements

Despite the decline in seasonal labor requirements in fruit and vegetable production, there remains currently and in the foreseeable future the need to mobilize relatively large numbers of workers to perform the seasonal tasks if current levels of production are to be maintained or expanded.

Assuming that employment approximates labor requirements, we can say that during the peak month, August, approximately a million seasonal farm workers are required in U.S. agriculture, given current volumes of output (Table 1). About 40% of these are employed in fruit and vegetable harvest. About a quarter of a million seasonal workers are migrants (Table 2). About four times as many seasonal workers are employed during the peak month as during the month of lowest employment, January.

These are relatively large seasonal labor requirements. The number of workers is large relative to the number of individuals employed on a year-round basis, family or hired. The number is large relative to the number of workers that usually can be recruited locally--hence, the need for migratory workers. State, county, and local data indicate to an even greater extent than national data the relative size of the annual mobilization of manpower among jobs and regions. In some counties or production areas the number of persons employed for a few weeks at seasonal farm work is from two to six times the annual average employment of all types of farm workers.

Even if one assumed that the decline in seasonal labor requirements is in the neighborhood of 6% annually, that would leave by 1979 a relatively large number of individuals to recruit and employ at seasonal farm work. Further, even if one assumes that the substantial effort directed toward the mechanization of production and harvest of fruits and vegetables will be more elaborate and more successful in the near future, it would probably be safe to say that seasonal labor will be an important component of the labor input in fruit and vegetable production for the next two decades.

The rate at which new technology is generated and proliferated through the industry is a variable subject to industry influence. Industry need not take the technology as given. The beet sugar industry and canning tomato industry in California are two obvious illustrations of industries that influenced substantially the rate of development of new technology. The new technology was the result of an organized comprehensive program in each case.

A high probability of success of a comprehensive effort to develop and proliferate new technology is contingent upon bringing to bear the widest possible range of scientific disciplines and securing the cooperation of all of the sectors of industry, from the grower to the supermarket.

Although the work of the ingenious inventor and the inventive farmer is still important, the problem of developing new technology is now largely beyond the resources of these two sources of new technology. The probability of

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Table 1. Estimated Employment of Seasonal Hired Agricultural Workers by Activity of Worker, United States, January-December 1968

(Thousands of workers)

Crop Activity	Employment											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[a]
All activities	256.6	271.8	288.4	374.1	611.2	930.5	976.8	1,007.9	814.4	696,6	391.9	295.9
General	42.8	52.9	64.9	127.1	158.3	74.7	72.0	52.4	83.5	64.7	47.7	38.1
Cultivating	67.3	65.8	69.1	71.5	174.3	271.2	255.3	125.2	53.3	50.5	41.4	45.5
Cotton	3.4	6.4	10.3	10.3	45.9	87.1	66.8	29.3	7.8	.9	.2	.7
Fruits	49.9	43.9	29.2	33.8	57.9	39.0	26.1	19.1	15.2	12.9	19.9	34.8
Other crops	14.0	15.5	29.6	27.4	70.5	145.1	162.4	76.8	30.3	36.7	21.3	10.0
Harvesting	111.7	110.2	105.2	116.4	206.6	498.1	584.1	731.0	586.7	494.0	244.5	171.4
Cotton	4.7	.5				.5	.3	18.8	35.2	74.7	64.8	42.9
Vegetables	49.2	53.2	56.6	68.7	97.2	154.2	145.1	276.5	221.7	156.9	76.3	53.6
Beans	3.1	3.3	3.7	4.3	4.0	25.9	12.4	75.9	16.9	9.5	4.1	4.1
Tomatoes	11.3	11.2	11.1	8.6	9.1	17.2	19.0	66.3	83.6	24.1	6.6	12.7
Potatoes	.8	1.9	1.3	1.1	3.5	10.8	10.5	12.6	31.4	52.5	10.5	.4
Other vegetables	34.0	36.8	40.5	54.7	80.6	100.3	103.2	121.7	89.8	70.8	55.1	36.4
Fruits	33.6	33.0	25.9	29.8	80.6	220.3	183.3	137.0	131.8	118.5	31.2	23.5
Citrus	31.1	31.2	23.4	19.2	23.0	16.7	10.6	4.8	4.2	5.3	18.1	21.4
Strawberries	1.6	1.0	1.6	9.1	47.8	117.6	13.4	2.5	1.6	.5	1.3	.3
Other fruits	.9	.8	.9	1.5	9.8	85.0	159.3	129.7	126.0	112.7	11.8	1.8
Tobacco	1.9	3.2	1.0	.4	5.1	21.1	130.9	195.3	100.8	47.2	12.6	3.9
Hay and grain	.3	.6	.3	2.8	11.6	83.1	77.8	77.5	68.7	52.3	23.4	7.3
Other crops	22.0	19.7	21.4	14.7	12.1	18.9	26.7	25.9	28.5	44.4	36.2	40.2
Activity unspecified	34.3	42.9	49.2	59.1	72.0	86.5	85.4	99.3	90.9	87.4	58.3	40.5

[a]Preliminary Data.

Note: Due to rounding, figures may not add to totals.

Source: U.S. Congress. Senate. Committee on Labor and Public Welfare. *The Migratory Farm Labor Problem in the United States.* S. Rpt. No. 91-83, 91st Congress, 1st Session, 1969, p. 10.

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Table 2. Estimated Employment of Migratory Agricultural Workers, By State and Month, 48 States, January-December 1968

(Thousands of Workers)

State	Migrant-Worker Employment											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[a]
U.S. Total	35.3	38.5	40.7	59.8	115.2	203.9	208.3	235.6	202.3	134.9	48.1	44.9
Alabama	0	0	0	0	0.4	1.7	1.2	0.8	0.2	0.1	0.3	0.1
Arkansas	0	0	0	0	1.5	0	.1	0	.3	0	0	0
Arizona	3.1	3.0	3.5	4.2	2.5	2.7	1.5	.9	1.2	2.4	3.6	4.2
California	11.2	12.2	14.0	20.2	37.9	38.3	35.5	51.5	62.5	38.7	14.6	12.7
Colorado	0	0	0	.6	2.2	7.8	6.9	5.8	4.7	3.1	.3	0
Connecticut	.2	.2	.1	1.1	1.7	1.7	5.7	5.1	2.0	1.4	.6	.2
Delaware	0	0	0	0	1.8	1.9	1.6	2.0	1.1	.5	0	0
Florida	20.2	21.5	19.2	19.0	18.7	7.3	1.8	.5	.9	5.0	12.0	18.6
Georgia	0	0	0	0	.5	0	.1	0	0	0	0	0
Idaho	0	0	.2	1.0	3.7	6.4	5.5	3.9	3.6	3.0	1.0	0
Illinois	0	0	0	0	2.0	3.9	2.1	3.4	4.0	.7	0	0
Indiana	0	0	0	0	1.7	2.4	2.9	5.0	9.0	.6	0	0
Iowa	0	0	0	0	0	.4	.4	.6	.5	.3	.1	0
Kansas	0	0	0	.6	2.0	3.3	2.7	1.3	1.7	1.7	.7	0
Kentucky	0	0	0	0	.6	.2	.2	.2	0	.1	0	0
Louisiana	0	0	0	.8	.7	0	0	0	.4	.4	.4	.2
Maine	0	0	0	0	0	0	0	0	.4	.1	0	0
Maryland	0	0	0	.4	.7	.8	2.3	2.6	1.5	.8	0	0
Massachusetts	0	0	0	0	.8	1.0	2.2	2.9	1.8	.8	.2	b
Michigan	0	0	0	.7	3.7	23.2	27.3	40.0	13.6	10.3	.6	0
Minnesota	0	0	0	0	.3	6.3	6.1	.2	.2	.4	b	0
Mississippi	0	0	0	0	0	0	0	0	0	0	0	0
Missouri	0	0	0	0	0	0	.1	0	.2	.1	0	0
Montana	.1	.3	.7	1.4	1.5	5.4	5.9	6.4	4.0	2.2	1.1	.4
Nebraska	0	0	0	0	0	3.5	3.8	.4	.1	.1	0	0
Nevada	0	0	0	0	0	0	0	0	0	0	0	0
New Hampshire	0	0	0	0	0	0	.1	.1	.2	.2	0	0
New Jersey	0	0	0	1.3	6.5	9.8	10.6	12.1	9.6	5.5	.2	.1
New Mexico	0	0	0	0	.5	1.1	.8	.7	.9	.5	.4	.1
New York	0	0	0	0	2.1	4.0	7.0	9.3	14.8	13.1	0	0
North Carolina	0	.2	.1	.1	.3	2.3	3.7	8.3	4.7	3.4	1.8	0
North Dakota	0	0	0	1.4	2.2	4.1	4.6	5.6	5.0	5.1	0	0
Ohio	0	0	0	0	2.6	5.1	7.5	13.6	18.5	2.5	0	0
Oklahoma	.1	.1	.1	.3	1.0	13.0	2.3	1.7	2.4	1.4	1.2	.7
Oregon	.1	.4	.6	1.3	3.3	12.1	7.9	13.3	5.9	3.7	.1	.1
Pennsylvania	0	0	0	0	.5	.8	1.7	3.6	5.9	4.9	1.4	0
Rhode Island	0	0	0	0	0	0	0	.1	.1	0	0	0
South Carolina	0	0	0	0	0	4.1	1.9	2.0	.4	0	.1	0
Tennessee	0	0	0	0	.4	.1	b	b	b	.1	0	0
Texas	.1	b	.2	1.3	2.2	10.0	19.8	14.7	6.4	6.2	6.1	7.5
Utah	0	0	0	0	.3	1.5	2.7	.8	1.5	1.2	0	0
Vermont	0	0	0	0	0	0	0	b	.1	.1	0	0
Virginia	0	0	0	0	.8	1.1	4.4	3.3	2.8	3.2	.5	0
Washington	.2	.8	1.9	4.0	6.6	12.5	7.8	5.8	7.9	9.8	.7	0
West Virginia	0	0	0	0	0	0	.1	.3	.5	.7	.3	0
Wisconsin	0	0	0	0	.6	.8	2.4	6.9	1.1	.6	0	0
Wyoming	0	0	0	0	.5	2.9	2.3	.1	0	0	0	0

[a] Preliminary data.
[b] Less than 50 workers.
Source: U.S. Congress. Senate. Committee on Labor and Public Welfare. *The Migratory Farm Labor Problem in the United States*. S. Rpt. No. 91-L3, 91st Congress, 1st Session, 1969, p. 9.

success is greater and more predictable if the many scientific disciplines are brought to bear on the problem in an organized manner and if industry cooperation and support is thoroughgoing.

A program of research in the development of new technology that calls for the mobilization of the wide range of scientific disciplines included in the land grant universities places such an effort beyond the scope of any but the very largest private research institutions. On the other hand, much of the technology that is evolved for fruit and vegetable production and harvest has such a limited market that profit incentives are not likely to provide an adequate stimulus to the farm equipment companies to bring about the development and marketing of appropriate technology.

A comprehensive program of research and industry-wide cooperation assumes everything from the seed to the form of the final product can be modified. Such an approach is the critical element in enabling industry to convert technology into a variable subject to industry control.

Labor Supply

The situation under which seasonal labor is recruited for employment in the fruit and vegetable industry is changing. The following statements are a broad description of what appear to me to be the major elements of change with respect to the supply of seasonal labor:

Increasingly, the hired labor supply in agriculture is made up of individuals who do not seek full-year employment. This group, primarily housewives and students, are an increasing proportion of the total number of individuals who do hired farm work, increasing from about 20% in 1947-49 to about 58% in 1967 [14].

It is not possible to specify the extent to which those individuals who do not seek full-year employment are available and participate in the seasonal labor supplies for the fruit and vegetable industry. Nevertheless, this trend is an important factor in the labor supply situation. It indicates a possible source of manpower for seasonal tasks. Employment of manpower from this source would result in substantially smaller social and economic problems than is the case when persons seeking and needing full-year employment are so employed.

Current social, political, and cultural forces are exerting pressure to eliminate the migratory farm work occupation. The pressure is not necessarily against seasonal farm tasks. Rather it is against the institution of migratory farm work as a way of life. To over simplify, the culture is telling the seasonal farm worker that he cannot follow the life style of moving about the country with his family performing such seasonal farm work as he can obtain.

The 1969 Report of the Senate Committee on Labor and Public Welfare makes quite explicit the conviction that migrancy should be terminated. The report states in part:

> A comprehensive evaluation of the causes and possible remedies of unemployment and underemployment of migrant farm workers should be undertaken with a view toward ending the migrant way of life. [13].

Relatively high and persistent unemployment rates prevail in many of the rural communities that serve as the trade centers of the areas of fruit and vegetable production. In the San Joaquin and Sacramento and some other valleys of California, unemployment rates are relatively high for most of the year. The unemployment rates for the civilian labor force are shown in Table 3 for a number of counties and labor market areas in California. My impression from personal observation is that in the larger rural geographical divisions there are many pockets where the unemployment problem is more serious than indicated by the rate for the region as a whole. In a recent paper on farm labor, Dale Hathaway and B. E. Perkins conclude that the need for expanded employment opportunities in the smaller urban centers is essential if the incomes of farm workers are to be improved [7].

The current political, cultural, and social climate is generally favorable to the public policies aimed at eliminating poverty and handicaps associated with racial origins.

There is broad public support for special programs such as migrant housing and migrant health programs. Such special programs are more efficient than general programs in speeding aid to disadvantaged groups, but public support for special programs cannot be interpreted as favoring the operation of these programs in a way that shelters any industry or sector of any industry from the general economic forces generated by the rising standards of living and the rising standards of employment in the economy at large. Varden Fuller and Calvin Beale describe the evolving situation as follows:

> Contemporary society is coming to have a more explicit concern for its people, whether viewed as productive human capital or as disadvantaged and poor. The components of a deliberate national manpower policy are emerging, reflecting both the resource and the human interest. Right now, that concern is being diverted and attenuated by Vietnam and other foreign involvements, but we assume that domestic needs and goals will eventually reclaim their proportion of political attention and support. Assuming so, two prospective impacts follow: (1) departure from agriculture of the remaining surplus farmers will be made easier; (2) the supply price of labor to farming will rise. Or, to put the latter more pointedly, the gap between the terms of farm and nonfarm employment will disappear. [5].

Without passing judgment on the merits of the strategy of the efforts to organize the grape workers and on the responses of the grape growers, the widespread sympathy for efforts to organize the grape workers can be interpreted, I believe, as broad public support for efforts to raise the standards of employment among farm workers, particularly seasonal farm workers.

The individuals who make up the hired farm labor force in the United States tend increasingly to reside off the farm. In 1948-49, 65% of all farm

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wage workers resided on farms. In 1966-67, 73% of hired farm workers reported their residence as nonfarm. Increasingly the hired labor force is recruited from among individuals who are increasingly aware of and subject to influences of the nonfarm economy.

The militancy of disadvantaged minority groups in our society is not likely to subside. The fact that many seasonal farm workers are members of racial minority groups underscores the importance of this factor.

Table 3. Civilian Labor Force Unemployment

County or Labor Market Area	1967 Percent	Jan.-June Percent 1967	Jan.-June Percent 1968
Fresno	7.1	8.6	7.7
Bakersfield	5.5	5.9	5.9
Stockton	6.8	8.9	8.1
Salinas-Monterey	6.2	7.6	--
Lake	10.9	12.5	9.5
Merced	8.5	10.8	9.9
San Benito	12.2	17.1	--
Stanislaus	10.6	13.5	12.6
Yuba-Sutter	9.2	12.0	10.3

Source: State of California. *California Statistical Abstract*, 1968, p.32.

The gap between nonfarm and farm standards of employment remains substantial. A number of fruit and vegetable producers, individually, and through associations, have so improved the standards of employment that one can say that the employment standards of their workers are substantially comparable to those prevailing in nonfarm employment. However, there are rather important gaps between the standards generally prevailing in agriculture and those in nonagriculture. Considering only wage rates per hour, the position of farm workers as compared to workers in manufacturing is about the same now as 10 years ago [3].

If one examines the other terms of employment, retirement benefits, health and welfare, collective bargaining protections, etc., one would conclude that the gap has both increased and decreased. In absolute terms, farm workers have probably improved their position, but relatively they have lost ground.

The seasonal farm worker realizes a low annual income. The 1967 statistical report on the hired farm working force indicates that those migratory farm workers who had the highest average number of days employment, 240 days, realized an average annual income of $2,824, [14] which places them in or on the margin of poverty unless this income is supplemented by the earnings of other members of the family.

Implications and Priorities of the Present Situation

In this discussion the present situation is considered to be 5 to 7 years ahead, while the future includes a time horizon of 15 to 20 years. The order

in which the implications are discussed is suggested as a possible set of priorities. No optimum properties are attributed to this ordering of considerations.

Industry

The fruit and vegetable industry is well aware of its needs for seasonal labor. Rapid technological progress has not induced the producers to disband labor recruitment organizations. The producers recognize that substantial numbers of seasonal workers will have to be recruited and employed if the present volume of fruit and vegetable production is to be maintained, even though each year additional fruit crops are being added to the list of fruits that can be harvested mechanically.

Previous reports in this series indicate that the development of trees or plants with characteristics suitable for mechanical harvesting is frequently a time consuming process. If the final product is to be modified, time will be required to determine market acceptability. Thus, for the present the problem of first priority is that of obtaining adequate supplies of seasonal labor to perform the many hand labor tasks involved in fruit and vegetable production and harvest.

But this is only part of the first implication; the recruitment of seasonal labor must be carried out in a context that is changing. The circumstances and conditions with which present patterns of meeting seasonal labor needs are in accord cannot be relied upon to prevail in the future [9]. As indicated previously, many fruit and vegetable producers have changed their labor recruitment and labor management procedures to bring them into accord with the evolving labor supply situation.

Recognition that technology is a variable subject to the control of the industry is essential if control is to be exercised. But that ability to generate and proliferate technology that will enable the industry to meet the changing situation is contingent upon the development of the appropriate mix of public and private efforts and the appropriate interest of all sectors of the industry--producers, marketing firms, processors, and farm equipment manufacturers. Recognition of this interrelationship of interests was clearly expressed by Mr. Crosby of the National Canners Association in the previous meeting of this group [2].

The implications of supply control--that is, supply of new technology--are very interesting. If the supply of new technology is a variable that is substantially under industry control, this raises the question of structuring the pattern of new technology forthcoming so as to minimize regional peak seasonal labor requirements. It raises the possibility of surveying the demand for seasonal labor for appropriately defined labor market areas with the view of identifying those crops and operations that contribute most to the seasonality of labor requirements. Efforts could then be directed toward the

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production of that technology which would contribute most to the stability of labor requirements in the region.

Following this approach would require the balancing of interests of producers among crops and among regions. It would also require the balancing of present needs with future needs. It would be appropriate to evaluate the expected long-run impact of progress in the development of new technology on production.

Wage rates in fruit and vegetable production are likely to move upward as fast currently and in the years immediately ahead as in the past. Hourly wage rates in agriculture have increased substantially in the past decade and the standards of employment have also improved; yet, the gap between farm and nonfarm terms of employment has not been substantially reduced. The pressure to raise farm wage rates that originates in farm-nonfarm comparisons does not appear to be declining currently. Further, the public interest in the welfare of seasonal farm workers is increasingly focusing attention on annual incomes. As noted above, data with respect to annual incomes realized indicate that the average professional migratory farm worker is in or on the margin of poverty.

I have the impression that implications with respect to annual earnings is not completely recognized by the fruit and vegetable industry. In discussing earnings of fruit and vegetable harvest workers, it is common for spokesmen for the industry to cite the hourly earnings of such workers as evidence that a relatively high wage is paid. It is sometimes argued that other industries are not held accountable for the level of living achieved by their workers during the off season. They cite nonfarm industries with irregular employment patterns and the relatively good public image that they retain.

On the other hand, as I have noted previously, fruit and vegetable producers in a number of states have recognized that the supply situation with respect to seasonal labor has changed substantially. Such employers have recognized that high wage rates per hour are only one of several items necessary to attract workers. They have developed pay schedules that permit the seasonal worker to earn relatively high hourly earnings (averaging over $2 per hour in 1967) and have combined this with efforts to expand annual employment. Some of these growers voluntarily cover their workers under unemployment insurance.

Grower members of such associations have also supported the development and application of modern labor management procedures to seasonal farm employment. Their employment policies are a movement away from a casual employer-employee relationship toward a more continuing and structured relationship [3].

I have mentioned producers associations with reference to decasualization of farm work, but I would not argue that this type of organization is the optimum means of facing the issue of decasualization. In fact, it is not even certain that the issue of decasualization needs to be faced immediately. It

would be quite possible for the fruit and vegetable industry to ignore most of the implications of the present set of trends as here described. It might use such influence as it can generate to secure government assistance in retaining a special labor supply for seasonal work in fruits and vegetables. The industry could acknowledge that a production cut back is necessary to get higher product prices that would enable it to compete for labor. The industry could recruit more seasonal workers from among those individuals who do not want full year employment. No doubt a residual of individuals who presently perform seasonal farm work would be available for some years. As the casual labor supply dwindles, the production could be cut back in those crops that do not yield to mechanization. The acreage of those that are mechanized would expand.

The problem that is implied in the present situation is that of discovering those organizational structures that will enable the fruit and vegetable industry to compete for workers within the constraints of the labor market, recognizing at the same time that the labor requirements of the industry are changing in quantity and quality. Likewise the terms of employment that must be offered to attract workers are changing--becoming more expensive and complex each year. The appropriate organizational structures are those that will encourage fruit and vegetable producers to organize and operate efficient producing units and will provide an opportunity for the workers to realize their goals.

Finding the suitable structure is complicated by difference among producers in terms of size, financing, crop potentials, etc. Difference among producers is matched by difference among the individuals that make up the seasonal farm labor supply, ranging from the professional migratory worker who actively follows the occupation to the student and housewife who want only part of the year employment, to the marginal worker who takes seasonal farm work for the lack of any other alternative to the newly arrived immigrant who is doing seasonal farm work until he learns the language and gets acquainted with the country sufficiently well to look for a nonfarm job. Recruiting from this diverse group is further complicated by such factors as the increased militancy of the poor and the minority groups, and the relatively high levels of unemployment in the rural areas.

On the other hand, a part of the several hundred thousand Mexicans admitted as immigrants to the United States are currently in the seasonal farm labor force [10]. Some of these migrate to the U.S. seasonally to work on farms. Others live near the border and commute daily [8]; others have chosen to reside here permanently. Probably a major proportion of these immigrants are leaving agriculture for nonfarm occupations. The fruit and vegetable industry has an important interest in encouraging these immigrants to continue in agricultural work. No doubt the rate at which these workers will leave seasonal farm work and other agricultural work for nonfarm jobs will depend,

in part, upon the standards of employment in agriculture as compared to nonagriculture.

Government

It would seem that in the present situation first priority in government policies and programs is to give conscientious attention to the manpower needs of the fruit and vegetable industry in a manner consistent with the proposition that the manpower policy appropriate for agriculture should not in objective be different from national manpower policy. If this proposition is accepted then it is appropriate: (1) for farm labor to be included under social legislation such as unemployment insurance and labor relations legislation; (2) for manpower training and development programs to apply fully to farm labor; and (3) to provide expanded employment opportunities in rural areas [6].

Robert Goodwin, Bureau of Employment Security Administrator, in commenting on the 1969 National Rural Manpower Conference gave expression to this orientation of manpower policy. He said:

> This conference offers a turning point in the employment service operation. The agenda for this meeting differs in several respects from those of past years. I believe that it truly reflects the aim which we have had for the past several years to expand our programs from their agricultural orientation to a broader approach which includes agriculture and its workers but also includes all other industries and workers . . . . [16].

It is obvious that the welfare of the seasonal farm worker as well as the nonfarm residents of the rural community is enhanced by increases in employment opportunities in rural areas. To the extent that seasonal farm workers face increased nonfarm employment opportunities, it is going to be more difficult to recruit them for farm work whether for local or distant farms. This is likely to be the case if employment standards in seasonal farm work tend to continue to fall behind in the upward movement that characterizes nonfarm employment.

The somewhat conflicting interests of the seasonal farm worker and the fruit and vegetable industry present the relevant government agencies with an interesting challenge. On one hand, the enhancement of the welfare of the workers calls for manpower training opportunities and expansion of job opportunities. On the other hand, the price and marketing situation faced by the bulk of the fruit and vegetable industry does not suggest that the costs of increased standards of employment in the fruit and vegetable industry could be easily passed along to the consumer, and at the same time retain our position in international markets.

One broad approach to this situation that might be considered currently is that of concentrating on programs to utilize the available labor force more efficiently. While pressure to increase wage rates will continue, it is questionable whether concessions in this area are likely to be sufficient to

retain seasonal labor supplies of adequate quantity and quality. It is probably that more attention and imagination will be necessary in the area of increasing the amount of farm and nonfarm employment realized annually by the workers. Equally important is a more extensive application of modern labor management to the recruitment and supervision of the seasonal worker.

To encourage cooperative efforts among fruit and vegetable producers the government might provide an incentive for those growers and groups of growers who undertake programs to enhance the annual employment of their work force. For example, let us assume for a moment that all farm workers were covered under unemployment insurance. Contributions to unemployment insurance fund could be on a sliding scale related to the success of cooperative efforts to expand annual employment realized by the workers. Alternatively, cooperative efforts to use the available labor more efficiently might be encouraged by a government subsidy. No doubt one could construct a variety of possible approaches, but it might be more useful to attempt some experimentation.

An additional comment might be made with respect to present government programs. Special programs for migratory workers such as housing, health and education, annual worker plans, etc., must have a short life or fade into more general programs of housing, health, manpower training, etc., if seasonal farm labor is not to be sheltered from the generally rising standards of employment in the economy.

Future

One of the most perceptive statements about the future that applies quite appropriately to our present look at the future was made a little more than a half-century ago in discussing the problem of seasonal hand labor in sugar beet production. A writer in the 1904 report on progress in the sugar beet industry observed:

> In this country we are devoted to the production and use of labor-saving machinery. Our tendency has been away from rather than toward hand labor. In those old countries the farmer and every member of his family were workers in the beet field. Here the farmer and the hired men do the work; the children attend public schools and colleges. Our farmers and hired hands not only do the work on the farm, but as a rule they do it with labor-saving implements, the main point being to eliminate every form of drudgery . . . . [15].

Of course, we resolved this problem in the past by importing, so to speak, our labor supply to perform the seasonal hand labor tasks. It came to be widely believed that only foreigners would do the arduous handwork of labor-intensive crops.

It is fair to say that presently we are at the stage of rejecting the notion that we should import our seasonal labor supply. It is being suggested that the fruit and vegetable industry compete with other industries in the open market for labor. At the same time, the reservoirs of seasonal labor

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are the subject of manpower development programs that will ultimately result in part of that labor supply moving out of the seasonal farm labor work. In looking to the future it is probably safe to assume that we have permanently turned away from programs of importing foreign labor to work in fruit and vegetable production [14]. It is also safe to assume that in the future as in the past there will be a genuine interest in minimizing drudgery.

With regard to government manpower policies and programs, it is expected that the human resource development orientation will continue [1]. Given the potential for developing new technology that exists and the international trade implications of differences in costs of production in the various countries, a variety of alternatives are possible. In considering future implications for industry and government, one can be only somewhat suggestive.

Industry

The fruit and vegetable industry has been substituting capital for labor at a relatively rapid rate. This substitution has occurred because it has been profitable. In part, it has also been an effort to reduce uncertainty with regard to labor supply, which is one aspect of labor cost. The substitution has occurred essentially because the cost of labor has risen more than the cost of substitutable capital.

If supply-price of labor continues to increase faster than that of capital, the substitution of capital for labor will continue unabated. But in the long run, being considered here, the decision with respect to substituting capital for labor is not merely one of comparing price-cost ratios for alternative methods of production. The industry, if it acts rationally, will consider the cost of developing new technology and the probable impact of new technology on profits in the industry. That is a complex process. Yet even with less than perfect information about the future values of such variables as wage rates, fringe benefits, probability of successful research, etc., it is likely that an intensive program to develop and to utilize new technology would be warranted. It is probably safe to assume that socio-economic forces will make labor-saving technology even more economic in the two decades ahead than currently.

If the direction and intensity of the socio-economic forces continue, it would seem to place a premium on efforts to decasualize the employment of seasonal labor in fruit and vegetable production and harvest. I suggested previously that decasualization might not be crucial in the immediate present or near future. But it seems reasonable to me that some form of decasualization will have widespread support in perhaps 15 years.

We can highlight the difference between a systematic decasualized labor recruitment and the casual methods that currently exist by reference to an analogy with irrigation. When water is very cheap and can be wasted without cost, it can be applied crudely, flooding the field with enough to cover even

the highest points. When water is expensive and excessive applications reduce yields, it becomes economic to apply it precisely with respect to location and quantity. In the operation of the casual labor market, labor tends to flow into the area of employment without any precise relationship to actual labor requirements. Time lost by workers because of inefficiently matching workers with jobs does not receive much attention. If lost time becomes a part of the labor cost, it will become more economical to match worker and job more precisely. I am expecting that in the future much more attention will be given to the annual income realized by farm workers, which will focus more attention to time lost in seeking work. On the other hand, matching workers and jobs more precisely will also require of the worker a more than casual attitude toward the job.

Even under the most efficient methods of matching workers and jobs and the most efficient methods of shifting workers from region to region with a minimum loss of time, it will not be possible to provide full year employment for all workers employed at the peak of the season. This is the case for the country as a whole and it is also true for most states and smaller areas. Unless the number of workers that are needed at the peak of the season can be reduced dramatically there are likely to be many seasonal workers who do not realize the amount of employment desired and needed. On the other hand, as noted previously, each year an increasing proportion of those who do farm work for hire are not seeking full year employment. There may be opportunities for recruiting more seasonal farm workers from among this group--particularly among the youth.

Thus, the long term implications of the manpower situation facing the fruit and vegetable industry are complex. The socio-economic forces are discouraging the continuation of migratory labor. Manpower development programs are seeking to increase nonfarm employment opportunities for the seasonal farm worker. The hired farm labor supply is increasingly made up of persons who do not seek full year employment. There is substantial rural unemployment, but pressures to increase farm wages are brisk. Finally, product prices and international competition do not offer easy avenues of adjustment.

It is quite obvious that the implications of this set of circumstances lie in: (1) areas of labor recruitment and management; and (2) the intensive development of technology that will reduce costs and seasonality of employment in the industry.

Government

In looking to the future it seems reasonable to expect a continuation of public support for efforts to improve the welfare of the seasonal farm worker. It is probable that the seasonal farm worker will be brought under unemployment insurance programs and that collective bargaining legislation of some type will be adapted to agriculture. Beyond these expected developments, there are a wide range of implications for government policies and programs.

Rational development of public policies and programs will require some kind of agreement on goals with respect to the fruit and vegetable industry. It will also require consideration of the interrelationships of goals and means of achieving these goals.

If one of the goals of public policy with respect to the fruit and vegetable industry is the continued expansion of the industry and improvement of its competitive position in the international market, programs that result in price increases will be of limited attractiveness.

If the goal of public policy were exclusively that of raising the standards of employment in fruit and vegetable production, then efforts to increase minimum wages, provide unemployment insurance coverage, etc., would receive first attention. The impact of higher cost on output and prices could be ignored. The declines in exports could be ignored, as could be increased imports into U.S. markets in response to higher prices.

If the public goals include the improvement in the welfare of seasonal farm workers in the fruit and vegetable industry, maintaining our position in international markets and reducing rural poverty, then a more complex set of programs is likely to be appropriate. Such a set of goals would suggest a comprehensive long-term program. Such a program would include efforts to increase the efficiency with which workers and jobs are matched. Industry would be encouraged to develop labor recruitment and management procedures that improve its ability to compete for labor. The employment of students, housewives, and others who do not want full year employment for seasonal farm work would be encouraged.

However, if the fruit and vegetable industry is to continue to supply domestic markets and maintain its position in international markets, and provide for a rising standard of employment for the labor force employed, then the factor of most fundamental importance in the long-run future is a brisk flow of new technology. New technology will permit lower cost of production with higher wage levels and reduced seasonality of employment. At the same time real enhancement in the welfare of the seasonal farm worker who is displaced by new technology calls for a new and better job--that is, expanded employment opportunities.

Finally, it might be noted that a genuine concern for the welfare of farm workers as well as an awareness of the political and social climate suggests that efforts to develop new technology for the fruit and vegetable industry must be accompanied by equally serious efforts to meet the social and economic problems that accompany technological progress if public agencies such as the Agricultural Experiment Stations and the U.S. Department of Agriculture are to cooperate in such efforts.

REFERENCES CITED

[1] Aller, Curtis C. "Manpower Development Programs for Farm People." *Farm Labor in the United States*. Edited by C. E. Bishop. New York: Columbia University Press, 1967, 115-135.

[2] Cargill, B. F.; and Rossmiller, G. E., eds. *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Mich. State Univ. RMC Rpt. No. 16, 1969.

[3] Dolp, Franz. *Decasualization of Seasonal Farm Labor*. Information Series in Agr. Econ, No. 68-1, January, 1968.

[4] Fuller, Varden. "A New Era for Farm Labor?" *Industrial Relations*. 6:(3)285-302, May, 1967.

[5] _____; and Beale, C. L. "Impact of Socio-economic Factors on Farm Labor Supply." *Journal of Farm Economics*. 49:(5)1237-1243, December, 1967.

[6] _____. "Farm Manpower Policy." *Farm Labor in the United States*. Edited by C. E. Bishop. New York: Columbia University Press, 1967, 97-114.

[7] Hathaway, D. E.; and Perkins, B. E. "Farm Labor Mobility, Migration, and Income Distribution." *American Journal of Agricultural Economics*. Vol. 50, May, 1968, 342-353.

[8] Knebel, Stanley M. "Restrictive Admission Standards: Probable Impact on Mexican Alien Commuters." *Farm Labor Developments*. U.S. Dept. of Labor, Bureau of Employment Security, November, 1968, 8-20.

[9] Mamer, J. W.; and Fuller, V. "Labor and the Economic Factors in Fruit and Vegetable Harvest Mechanization." *Agricultural Science Review*. 3:4, Fourth Quarter 1965.

[10] Nix, James C. "Characteristics of Mexican Immigrants Working on Farms." *Farm Labor Developments*. U.S. Dept. of Labor, Bureau of Employment Security, September-October, 1967, 36-41.

[11] U.S. Congress. House of Representatives. *Congressional Record*. 55th Cong., 1st Sess., 30:(1)140.

[12] _____. Senate. Committee on Labor and Public Welfare. *The Migratory Farm Labor Problem in the United States*. S. Rpt. No. 1006, 90th Cong., 2nd Sess., 1968.

[13] _____. Senate. *The Migratory Farm Labor Problem in the United States*. S. Rpt. No. 91-83, 91st Cong., 1st Sess., 1969.

[14] U.S. Dept. of Agriculture. ERS. *The Hired Farm Working Force of 1967*. Agr. Econ. Rpt. No. 148, Wash., D.C.: Government Printing Office, 1948.

[15] _____. *Progress of the Beet-sugar Industry in the United States in 1904*. Rpt. No. 80, Wash., D.C.: Government Printing Office, 1905.

[16] U.S. Dept. of Labor. Bureau of Employment Security. *Farm Labor Developments*. National Rural Manpower Conference. June, 1969, 1-4.

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ABSTRACT - THIS FINAL VOLUME IN A 3-VOLUME
STUDY OF THE MECHANIZATION OF FRUIT AND
VEGETABLE HARVESTING ANALYZES THE DATA
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REGARDING THE NATURE AND PRIORITIES OF
POLICIES, RELATED PROGRAMS, AND RESEARCH. THE
RECOMMENDATIONS DEAL WITH SPECIFIC ISSUES
CONCERNING THE EMPLOYMENT OF FARM WORKERS IN
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AREAS OF AGRICULTURE, AS WELL AS GENERAL
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FRUIT AND VEGETABLE HARVEST MECHANIZATION

Policy Implications

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Additional copies of this report, *Policy Implications*, Rural Manpower Report No. 18 and *Manpower Implications*, Rural Manpower Report No. 17, are available for $2.00 and $2.50 respectively from the Bulletin Office, Agriculture Hall, Michigan State University, East Lansing, Michigan 48823. Copies of *Technological Implications*, Rural Manpower Report No. 16, are available for $3.50 from either the American Society of Agricultural Engineers, St. Joseph, Michigan 49085, or Bulletin Office, Agriculture Hall, Michigan State University, East Lansing, Michigan 48823.

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PREFACE

This is the third in a series of three publications emanating from a nationwide project on the Manpower Implications of Mechanization in Fruit and Vegetable Harvesting. The project, designed in three phases, has the following general objectives:

I. To present technological information on all aspects of fruit and vegetable harvesting.

II. To assess the implications fruit and vegetable mechanization will have on manpower, the industry, the consumer, and the public.

III. To assimilate and analyze material presented in fulfillment of the first two objectives and to present conclusions and recommendations dealing with the nature and priority of policies, programs, and research.

Each of the above objectives are dealt with in the respective project phase and culminate with the appropriate publication as follows:

Fruit and Vegetable Harvest Mechanization, Technological Implications. Rural Manpower Center Report No. 16.

Fruit and Vegetable Harvest Mechanization, Manpower Implications. Rural Manpower Center Report No. 17.

Fruit and Vegetable Harvest Mechanization, Policy Implications. Rural Manpower Center Report No. 18.

To provide continuity between Phase I, the technology phase, and Phase II, the manpower phase, a Task Force on Technology was established. This Task Force met and presented papers in Phases I and II. To provide similar continuity between Phase II and III, a Task Force on Manpower was established. This Task Force on Manpower was charged with the task of assessing and extending the evaluation of Phase II, the manpower phase into Phase III, the policy phase. The Task Force on Manpower includes Nicolaas G. M. Luykx, Robert C. McElroy, James C. Nix, Daniel W. Sturt, and Maurice E. Voland.

The Task Force members responsible for this report drew heavily upon the previous publications but also drew upon their own unique backgrounds and experiences in compiling the recommendations.

The Task Force wishes to acknowledge the contributions made by the special consultants they called upon to assist in this task, Stanley M. Knebel of the Farm Labor and Rural Manpower Service of the United States Department of Labor, and Frank Bobbitt of the Department of Vocational Education, Michigan State University.

The editors wish to acknowledge the U. S. Department of Labor for financial support and the Rural Manpower Center, Departments of Agricultural Engineering and Agricultural Economics, all of Michigan State University for providing personnel and services for the project.

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While the work of this volume reflects the thinking of the entire Task Force, the final decision on form and content have been made by the Task Force Chairman, Maurice E. Voland, and the editors for this series. The viewpoints and recommendations found in this report are those of the Task Force members and do not necessarily represent the official positions of their respective agencies or institutions.

Michigan State University
December, 1970

B. F. Cargill
G. E. Rossmiller

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CHAPTER I

PERSPECTIVE

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PERSPECTIVE

The Fruit and Vegetable Industries

The purpose of this third volume in the fruit and vegetable harvest mechanization series is to present the conclusions and recommendations dealing with the nature and priority of policies, and related programs and research with respect to manpower problems associated with the continuing mechanization of fruit and vegetable harvest.

In order to place the fruit and vegetable industry and its manpower and economic problems in perspective, we shall review some of the relevant statistics and their implications. Specific recommendations emanating from this project are presented in Chapter II and Chapter III contains recommendations of a broader scope relative to the environment in which the fruit and vegetable industry functions. Fruit and vegetable production in 1964 was largely concentrated on fewer than 80,000 highly specialized farms producing $2.2 billion worth or 80% of the total $2.7 billion fruit and vegetable crop. Production is concentrated in the Pacific, the Southeast, the Northeast, and the Lake States regions. In 1964-68 fruits and vegetables used about 2% of the total U. S. crop land but accounted for about 24% of the value of all crops and 11% of the value of total farm output [8].

Recent trends in fruit and vegetable production are similar to those found throughout U. S. agriculture and include a decline in the number of farms, an increase in farm size, and increases in total and per farm output. In addition, acreage declined 22% for fruits and 14% for vegetables between the end of World War II until 1964. Since 1964 acreage of both has been increasing [6]. Further, advances in transportation, marketing, and processing technology coupled with a changing price and cost structure have caused geographic specialization to occur, promoted the growth of large-scale production units, and increased the processing utilization proportion of the output.

In 1964-68 an annual average of 866,000,000 man-hours of labor was used in fruit and vegetable production. This labor use accounted for 24% of all labor used in crop production and 12% of total farm labor. Due to the relatively small number of farm units, the seasonal nature of production, and the high labor requirements, particularly during harvest, the fruit and vegetable labor force is largely composed of seasonal hired labor. Gavett indicates:

> In the 1966 ERS Pesticide and General Farm Survey, 55% of the labor input on fruit and nut farms was hired. One-third of the total labor input was by seasonal hired workers. On vegetable farms, the proportions were 54% hired and 42% by seasonal hired. With over half of the labor input on all fruit and vegetable farms being hired increases in wage rates and changes in labor sources and availability have important consequences for these industries [8].

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And, as Davis points out, one of the major consequences of a relatively rapid wage increase is a substitution of capital for labor. Between 1950 and 1968 the price indices of both labor and machinery have increased, but the rate of price increase for labor is approximately 50% faster than that for farm machinery. This change in the price relationships between these 2 inputs provides an economic incentive to substitute machinery capital and other inputs for labor. That this type of substitution has been taking place is indicated by the fact that since 1950 the input of labor in agriculture has declined by more than 50% while the input of power and machinery has increased more than 1/3. In net since 1950, total inputs have increased by 11% while total production has increased by 42%. The above figures are for agricultural production in total. Davis goes on to state:

> However, I am certain that if the data were available for fruits and vegetables over this period of time, we would find that the capital-labor substitution has lagged. This is particularly true for fresh vegetables and fruits and nuts. This lag has been caused by a number of factors including: (1) the natural characteristics of the crops--a number of which are not amenable to mechanization; and (2) the availability of an adequate supply of labor at a price that encouraged the use of substantial quantities of hand and stoop labor. The machine-labor cost relationships have not provided the incentive to mechanize many of these crops [6].

With increased labor union activities and with the increased emphasis on labor legislation at the national and state levels, including such items as minimum wage, workmen's compensation, migrant housing quality standards, and the like, the agricultural labor cost package will inevitably increase. Some promising results from the stepped-up research and development activities in the fruit and vegetable mechanization area coupled with the increasing labor costs provides the basis for potentially profitable substitution of machinery for labor.

A technology map in the form of Table 1 has been prepared from the estimates presented by contributors to the first volume and from unpublished projections by the Economic and Statistical Analysis Division, ERS, USDA [6]. Columns 1 and 2 present production in million hundredweights of selected vegetables and fruits during the 1964-68 base period and production projections for 1975. Columns 3 and 4 indicate base period and 1975 projected acres; columns 5 and 6 indicate the percentage of the 1968 crop sold as fresh and processed. Columns 7 and 8 represent the best estimates by scientists working on each of the listed crops of the percent of the crop machine harvested in 1968 and their projections to 1975. Columns 9 and 10 are estimates by these same scientists of the hand labor to machine labor ratio in 1968 and projections for 1975. For example in 1968 one man with mechanical harvesting equipment could harvest the same output of beans as could 250 men harvesting by hand. In 1975 one man and his machines are expected to substitute for 300 men using hand methods in harvesting beans.

Table 1. Stage and Level of Production, Acreage, Harvest Mechanization, and Hand Labor to Machine Labor Ratios for Selected Fruit and Vegetable Crops, 1964-68 Averages and 1975 Estimates

Crop	Production Mil. Cwt. 1964-68	Production Mil. Cwt. 1975 Est.	Acres (1000) 1964-68	Acres (1000) 1975 Est.	Proportion of 1968 Crop Sold Fresh	Proportion of 1968 Crop Sold Processed	Percent Machine Harvested 1968	Percent Machine Harvested 1975 Est.	Hand Labor to Machine Labor Ratio 1968	Hand Labor to Machine Labor Ratio 1975 Est.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Beans	14	16	336	370	22	78	79	100	250:1	300:1
Carrots	17	19	79	84			95	100	4:1	6:1
Sweet Corn	49	54	626	700	20	80	78	93		
Fresh							30	75		
Processed							100	100		
Cucumbers	15	18	181	210	31	69	80	100		30:1
Lettuce	42	46	218	230			0	50		12:1
Onions	27	30	100	105			35	70		8:1
Peas	11	13	444	490	1	99	99	100		
Potatoes	288	313	1391	1459			85	97	12:1	15:1
Tomatoes	124	136	456	500	12	88	44	70		3:1
Fresh							0	30		3:1
Processed							65	90	3:1	3:1
All Other Vegetables	89	110	148	183			5	15	10:1	10:1
Total	713	793	4246	4609						
Apples	2871	3500	436	530	58	42	0	5	7:1	9:1
Fresh	1636	1820		212			0	0		
Processed	1235	1680		318			1	10	7:1	9:1
Cherries	243	300	99	122			28	75		
Tart	143	200	60	80	0	100	50	95	33:1	35:1
Sweet	100	100	39	42	39	61	2	50	30:1	35:1
Grapefruit	1939	2300	123	145	49	51	0	10		8:1
Grapes	3637	4200	529	480	16	84	5	42	15:1	15:1
Lemons	637	680	54	58	56	44	0	0		
Oranges	6667	9400	600	850	25	75	0	10		8:1
Peaches	1618	2000	281	345	39	61	3	41	4:1	5:1
Pears	605	700	80	90	34	66	0	7		4:1
Strawberries	248	270	75	82	64	36	0	10		20:1
All Other Fruits & Nuts	1008	1320	580	750			5	10	10:1	15:1
Total	19555	24760	3330	3952			2	17		

Source: Data from Davis, Velmar W., op cit. Supplemented by data compiled and estimated by the Task Force.

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These predictions indicate that with some exceptions mechanization will be technically possible for almost every crop listed, and that substantial mechanization will have been innovated in the production of most fruits and vegetables by 1975. Some are expected to be 100% machine harvested.

As can be seen by referring to Table 1 the net result of 2 opposing forces will determine the labor requirements in the fruit and vegetable industry in 1975. The first is a projected increase in acreage and yield signaling a greater total production thus requiring a larger amount of labor in the industry assuming no change in labor requirements per unit of production. The second is the projected innovation of mechanical technology reducing labor requirements per unit of production. By taking into account the increase in projected production, the projected increase in percent of crop machine harvested and the hand labor to machine ratio changes, Table 2 indicates estimates of the percent of the 1968 jobs required to harvest selected fruits and vegetables in 1975.*

Using the figures thus obtained and applying them to job data by state and by crop from the reports of the U. S. Training and Employment Service, projections of changes in the number of jobs available by state in 1975 are shown in Table 3.**

As can be seen from the results in Table 3 a reduction of approximately 200,000 jobs is projected from the 1968 level of 1,135,000 jobs in 1968 by 1975. Some analysts have projected even greater displacement. In any event, the lost jobs represent people with very low employability in other occupations. If present trends continue the 5 states in which 10,000 or more harvest jobs will be lost are California (16,619), Oregon (47,742), North Carolina (34,939), Michigan (25,468), and Texas (9,996). According to these projections the 3 crops contributing most significantly to harvest labor displacement by 1975 will be grapes, beans, and cucumbers.

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*The calculation procedure is as follows: the data by crop from Table 1 was used in the formula

$$\frac{\text{1975 Est. Prodn.}}{\text{1964-68 Prodn.}} \left[\frac{\text{Proportion of Crop Mach. Harvest 1975}}{\text{Proportion of Crop Mach. Harvest 1968}} \; \frac{\text{1975 Ratio of Mach. Labor/Hand Labor}}{\text{1968 Ratio of Mach. Labor/Hand Labor}} \right] + \frac{\text{Proportion of Crop Hand Harvested 1975}}{\text{Proportion of Crop Hand Harvested 1968}} \times 100$$

**The procedure for calculation of data shown in Table 3 is as follows: the percentages in Table 2 were applied to peak harvest employment of seasonal hired workers by state and by crop and the data then aggregated by state as estimates of jobs available in each state in 1975.

Table 2. Estimated Percent of 1968 Jobs Required to Harvest Selected Fruits and Vegetables in 1975

Crop	Percent of 1968 Jobs Required to Harvest 1975 Crop
Beans	18
Carrots	65
Corn	100
Cucumbers	18
Lettuce	59
Onions	62
Peas	100
Potatoes	55
Tomatoes	83
All Other Vegetables	112
Apples	116
Cherries	
Tart	21
Sweet	52
Grapefruit	108
Grapes	74
Lemons	106
Oranges	129
Peaches	85
Pears	110
Strawberries	98
All Other Fruits and Nuts	124

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Table 3. Jobs by States in the Fruit and Vegetable Harvest, 1968 and 1975 With Changes in Actual Numbers

State	1968 (actual)	1975 (projected)	CHANGE 1975, + or -
TOTAL	1,135,155	940,876	-194,279
Alabama	10,055	7,565	- 2,490
Arizona	15,343	10,936	- 4,407
Arkansas	7,975	7,100	- 875
California	190,850	174,231	- 16,619
Colorado	10,796	5,999	- 4,797
Connecticut	970	1,053	+ 83
Delaware	5,777	4,828	- 949
Florida	64,710	67,990	+ 3,280
Georgia	8,033	7,120	- 913
Idaho	5,770	4,138	- 1,632
Illinois	8,968	8,558	- 410
Indiana	12,242	9,582	- 2,660
Iowa	1,115	886	- 229
Kansas	300	336	+ 36
Kentucky	10,696	10,130	- 566
Louisiana	5,625	4,638	- 987
Maine	20,105	13,287	- 6,818
Maryland	11,696	8,639	- 3,057
Massachusetts	5,219	6,107	+ 888
Michigan	95,166	69,698	- 25,468
Minnesota	2,122	2,104	- 18
Missouri	1,155	1,201	+ 46
Montana	1,925	1,188	- 737
Nebraska	385	226	- 159
New Hampshire	1,550	1,776	- 226
New Jersey	32,995	31,698	- 1,297
New Mexico	2,250	1,555	- 695
New York	34,841	27,883	- 6,958
North Carolina	123,824	88,885	- 34,939
North Dakota	2,350	1,293	- 1,057
Ohio	32,945	26,010	- 6,935
Oklahoma	7,175	10,200	+ 3,025
Oregon	140,307	92,565	- 47,742
Pennsylvania	19,645	16,486	- 3,159
Rhode Island	85	78	- 7
South Carolina	30,130	24,314	- 5,816
Tennessee	24,733	18,805	- 5,928
Texas	53,920	43,924	- 9,996
Utah	5,131	3,598	- 1,533
Vermont	460	533	+ 73
Virginia	26,499	24,448	- 2,051
Washington	91,780	89,906	- 1,874
West Virginia	3,203	3,461	+ 258
Wisconsin	13,487	5,918	- 7,569

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Fruit and Vegetable Harvest Mechanization, Technological and Manpower Implications Review

The contributors to the first 2 volumes--*Fruit and Vegetable Harvest Mechanization, Technological Implications* and *Fruit and Vegetable Harvest Mechanization, Manpower Implications*--have provided the Task Force with a wealth of data, information, and ideas upon which to base the recommendations that follow. To provide the reader of this volume with a sense of the material presented in the first 2 volumes a quick review of the essence of that material is in order.

The first volume--*Technological Implications*--is a categorical examination of the state of engineering and horticulture in fruit and vegetable harvesting and related production and processing activities. In addition, predictions are made as to the extent and sophistication of mechanical harvest of each crop by 1975. The total thrust toward mechanization includes both coordinated and individual efforts in engineering, plant breeding, cultural practices, chemicals, handling, and environmental control.

The inescapable conclusion is that of a broad-gaged effort toward mechanization in the fruit and vegetable industry. This technological revolution is precipitated by a host of economic, social, and structural forces including increased sophistication in the engineering and biological sciences, increased numbers of fruit and vegetable farm units of a size capable of innovating the new technology, increasing labor costs, social pressure against migrancy as a condition of livelihood, and a continuing national goal of efficiency in food production resulting in low food costs to consumers.

But rapid mechanization in the fruit and vegetable industry turns out to be a mixed bag of rewards and penalties and creates the need for adjustment by all concerned--farmers, suppliers, processors, laborers, and even consumers. Producers must make economic decisions on whether, when, and how to mechanize. Geographic distribution, enterprise mix, and size of firm will be affected by these decisions. Processors must adjust to new varieties, different scheduling, and new handling techniques associated with the new harvest technology. The work force will be drastically reduced with affected workers forced to seek alternate employment. Skill levels required for those remaining will be sharply increased. And the consumer will be forced to adapt to new shapes and sizes, textures, and tastes. If the consumer really wants the kind of product he remembers from the premechanization era, he will probably have to grow his own or buy from limited supplies at extremely high prices [5].

The complexity of the situation and the scope of the variables associated with adjustment to this new technology is pointed out by Carl W. Hall as follows:

> It is a necessary but not sufficient condition to build or have basic information to build harvesters for mechanization of many fruit, vegetable, and nut products. The knowledge and information must be available when the need is present and the industry demands mechanical harvesters. The major part of the production of fruit and vegetables which is not mechanized is that of harvesting and handling. Other aspects of production--varieties, chemicals, cultural practices, environmental conditions, manpower, cost, skill, and economics are all very important. But it must be emphasized that we look at the whole system from production to consumption considering not only those factors internal to the industry but external as well. The international situation plays a major role in considering future developments. In fact, the external factors over which we have little control may have greater influence on the future developments in the fruit and vegetable industry, particularly mechanization, than the internal factors over which we have some control [9].

The second volume--*Manpower Implications*--presents papers authored by professionals representing a variety of disciplines including the physical, biological, and social sciences as well as industry, union, and government representatives. While manpower was the focus, exploration of its characteristics carried far beyond its significance merely as a factor of production. The problems associated with the technological situation, the economic situation, and the manpower situation, and the various public and private policy aspects in the fruit and vegetable industry were considered in this series of papers.

Two central themes, approached from different angles, appeared as focal issues in several of the papers. The first of these has to do with the concept that technological invention and innovation in the fruit and vegetable industry is in an era of rapid and profound progress. Technological change is occurring so fast, in fact, that the direction and severity of the economic and social consequences of its innovation have not been fully anticipated. Thus, society has lagged in developing policy and programs to provide a smooth and harmonious economic and social adjustment to the wave of technological change. Therefore, many of the participants in the industry, including growers and laborers, consumers, and the public itself have been caught up in situations over which they have little or no control. Some find themselves suddenly in more advantageous positions, but the greater majority, especially laborers and growers who for various reasons are unable to adjust, find themselves in a much worsened and continually deteriorating situation. Thus, a central issue for the fruit and vegetable industry in its broadest context including all participants, is how to adjust, with a minimum deterioration in the welfare position of those participants, to the technological changes which are occurring so rapidly.

The second dominant theme permeating these papers observes that while the focus is on the fruit and vegetable industry, the problems and in particular that of the lagging social adjustment to technological change are found

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throughout the various sectors of the economy and the society. The fruit and vegetable industry is symptomatic of many of the problems facing all of agriculture and provides a useful analytical arena in what might be construed as a case study of problems having a much wider scope. And in dealing with the fruit and vegetable case study, the analysis must, of necessity, because of factual interrelationships and linkages with other sectors, deal, at least to some extent, in this broader context. Thus, the implications derived from the analysis definitely have a broader application.

For example, the technological revolution occurring presently in the fruit and vegetable industry is a part of the larger set of technological changes pervading all of U. S. agriculture during the past 3 decades. It is a contributor to the larger picture which has provided a loss of 1.2 million farms and a decrease of 2.8 million farm workers in U. S. agriculture during the past decade. Adjustments occurring in the economic organization and structure of American agriculture precipitated in part by technological change have resulted in low returns for both human and physical resources and a relatively low level of living for many rural residents. Declining populations in rural areas have had an adverse effect upon the per capita cost and quality of rural public services. Fewer and fewer jobs are available in agriculture, and the farm workers who attempt to remain are required to have higher skill levels for operating and maintaining the sophisticated mechanical technology in today's modern agriculture. Agricultural laborers leaving the agricultural work force and migrating to the city many times find they do not have the training and skills necessary to hold industrial jobs nor the psychological set to live happily in the urban environment. The situation thus created provides sustenance to the argument that rural America is the spawning place for the unrest and violence in urban America [17].

Interrelationships Between the Fruit and Vegetable Hired Work Force and Rural Manpower

The fact that technological change is proceeding relatively rapidly in the fruit and vegetable industry draws our attention strongly to the manpower problems thus created. These manpower problems, although found in greater concentration and intensity now in the fruit and vegetable sector, are present in varying degrees throughout agriculture.

And the fate of rural manpower in the U. S. is inextricably interwoven with the fate of rural areas and agriculture in general as the rural sector has been influenced and shaped by forces predominately beyond its control. Production agriculture has been enormously efficient in the micro-economic sense. Each year fewer people and resources are required to produce the food and fiber required by the U. S. economy.

In 1900 one agricultural worker produced enough food and fiber for 7 persons. Latest estimates by the USDA indicate that today 1 worker produces food and fiber for about 45 persons. During the period 1950-69, farm output

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in the U. S. increased by 41% while farm employment decreased by 53%. These trends are expected to continue.

Production efficiency in the agricultural sector has exceeded that of the industrial sector. The application of science and technology has created the illusion of the great American success story. Massive injections of public supported research combined with an extensive public information program have paved the way for growers to adapt the latest techniques in improving agricultural efficiency. Competition among the 3 million individual growers has forced early and rapid adoption of new technology. This system has resulted in cheap food, the ultimate rationale for the public investment, the ultimate rationale for whatever problems may have occurred along the way. In fact, food is cheap in that the American consumer eats more in higher quality food for a smaller percentage of his take home pay than do people in any other country of the world.

But the hand that rewards also penalizes. Cheap food in the U. S. is more expensive than the average consumer realizes. The price is far greater than that which is indicated at the check-out counter. The cost of cheap food must be measured in terms of the social and economic costs associated with the production of that food.

The structure and institutional framework of commercial farming is tending toward increasing scale and modern management methods generally characteristic of the nonagricultural sectors of society. Inefficient producers go out of business, and obsolete forms of labor are displaced. Rural communities decay as populations decline and/or have less to spend for goods and services as a result of low returns to all resources in agriculture, particularly the human resources. Still other costs of cheap food are the increasing welfare loads and the urban chaos resulting from frustrated rural migrants seeking to find their place in life.

The application of agricultural technology to the harvesting of fruits and vegetables is an outstanding example of the changes which are occurring--the governmental preoccupation and the institutional fabric providing an overbalanced emphasis on technology-oriented research; productive efficiency-oriented education programs with little concern for the quality of existence or welfare of the human input; the farm operators striving for productive efficiency in each individual unit and some failing; each member of society enjoying the cheap food payoff but at the same time burdened by the social and economic costs associated with the human exploitation inherent in the system. It is a typical example of the unbalanced application of technology in agriculture. Through ignoring the human fallout of agricultural technology, through the single-minded objective of cheap food by economically and socially unenlightened citizenry the need for specific policy changes are brought into focus.

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It is against this background that the public policy aspects of the dilemma in the fruit and vegetable industry's manpower resources are explored. In light of the scope of the problems facing the fruit and vegetable industry and the close interaction of the fruit and vegetable industry's problems with those in other sectors of the society, the Manpower Task Force presumes as part of its responsibility the making of some recommendations having much wider ranging effect than solely upon the fruit and vegetable industry.

The following Task Force recommendations are divided into 2 groups. The first group discusses specific issues and makes recommendations concerning the employment of hired farm workers in fruit and vegetable production and the employment of hired farm workers generally throughout agriculture. The second group of issues and recommendations relate to the larger topic of rural manpower in general and are focused on research and policy development in their broadest sense.

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CHAPTER II

RECOMMENDATIONS

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RECOMMENDATIONS

The Task Force finds that the manpower problems in the fruit and vegetable industry are in many ways synonymous with the manpower problems of agriculture in general. The fact that the fruit and vegetable industry uses a large portion of agriculture's highly seasonal labor force and is presently undergoing rapid mechanization draws attention to the intensified manpower problems in this industry and makes it a good case study from which inferences can be drawn to the broader manpower aspects throughout agriculture and the rural sector.

Thus, the recommendations of this Task Force are listed without priority in Chapters II and III. The recommendations in this chapter pertain to issues surrounding the employment of hired farm workers in the fruit and vegetable industry and in the agricultural sector. These recommendations focus on such problems as the seasonality of labor demand, low incomes, migration, the work environment, the loss of jobs in agriculture, the need for vocational training both for future jobs in agriculture and for nonfarm jobs, and the need for social legislation extending protective coverage to farm labor. Recommendations pertaining to the broader area of rural manpower are presented in Chapter III.

It is recommended that: *FARM EMPLOYERS IN COOPERATION WITH THE PUBLIC EMPLOYMENT SERVICE SHOULD TAKE ACTIONS NECESSARY TO RECRUIT, RETAIN, AND EFFECTIVELY UTILIZE THE SEASONAL LABOR SUPPLY THAT WILL STILL BE NECESSARY DESPITE MECHANIZATION IN THE FRUIT AND VEGETABLE INDUSTRY.*

The need for workers can never be eliminated entirely by machines. The replacement of workers by machines involves the creation of new jobs as it abolishes old ones even though the number of new jobs may be smaller. Further, there are few examples of instant mechanization. Even after completion of the harvesting machinery, the development of plants or trees suitable for mechanical harvest is frequently a time-consuming process. If cultural practices must be changed to accommodate mechanization, that too requires time. Finally, the technical problems of mechanically harvesting some easily damaged fruits and vegetables for the fresh market are so formidable that their solution is many years away, and there is no certain guarantee that they will ever be solved.

For these reasons there will continue to be a need for seasonal workers in the foreseeable future, although the number needed will continue to decline. Despite an overall surplus of farm labor, finding workers to meet the seasonal shortages associated with peak harvest demands presents difficult problems of recruiting workers, retaining them, and using them with economy and efficiency.

Employers have an obligation to use workers efficiently. Studies have shown that some fruit and vegetable pickers average far fewer hours of work per day or week than would be expected. Although it is often difficult to

isolate the reason, faulty production planning, weather, and market demand seem to be at least partially responsible. Deficiencies include unreasonable delays in assigning work, shuttling workers back and forth among fields, and failure to provide transportation and equipment when and where needed. In situations where some farms have underemployed workers while others nearby are short of labor, worksharing agreements should be made by the growers and/or the public employment service [7].

If present trends continue the farm labor force of the future will consist of a core of skilled and semi-skilled men operating farm machinery supplemented seasonally by unskilled manual laborers, mostly local housewives and school-age youths with a small component of interstate migrant laborers [1]. The present government policies severely restricting importation of foreign workers is likely to continue with admissions limited to a few thousand annually.

The number of individuals who do migratory farm work is now at an all time low of 257,000 and can be expected to decline still further [13]. The mechanization that has already occurred or will occur in the next few years makes it increasingly difficult for the migrant to piece together enough jobs to provide annual earnings even at their present meager level. Some will escape the migratory way of life through their own efforts or through the assistance of the various public and private agencies concerned about their welfare. Others may have no choice but to remain migrants. For their benefit and that of employers dependent on migratory labor the public employment service should continue to operate the annual worker plan and improve its efficiency. Under this plan efforts are made to arrange successive job referrals for the migrants to minimize periods of joblessness. As the season progresses, changes in schedules are arranged where needed because of unforeseen changes in the timing of crop activities, the weather, the size of the crew, etc.

Housewives and students already outnumber adult males in the hired farm working force. Of the 2,571,000 individuals who did farm work in 1969, 325,000 were housewives and 1,086,000 were students [13]. Increasing reliance on these kinds of local workers is almost inevitable for several reasons. They live within commuting distance of farms, and therefore, their employment does not entail the undesirable social and economic features of the migrant way of life. Further, most of them do not want or cannot accept year-around employment which dovetails nicely with the brevity of periods of high seasonal activity in agriculture.

If progress is to be made in reducing the dependency on migrant labor, new sources of local labor supplies must be developed. With appropriate health and safety standards farm work provides youth an opportunity to earn more than they could at most other jobs in rural areas. It also provides job

training at the occupational entry level for young people who have never before had a job.

The use of migratory workers will probably continue--although at reduced levels if economic progress and employment growth are sufficient to maintain the continued adoption and use of technology--unless there is a sincere national commitment and a coordinated effort to discontinue our migratory labor system through the development of a localized seasonal labor supply based on housewives, students, and other young adults whose husbands and fathers are employed in nearby industries.

It is recommended that: ADDITIONAL STEPS BE TAKEN BY FARM EMPLOYERS TO CREATE A MORE POSITIVE WORK ENVIRONMENT FOR AGRICULTURAL WORKERS.

It is generally recognized that the environment in which people perform their work has a great deal to do with their satisfaction and productivity. The work environment deals with the physical, the economic, as well as the emotional conditions in which work is performed. Industrial employers have long recognized the relationship between a positive work environment and worker productivity and satisfaction. However, farmers who employ labor have been slow relative to other industry in recognizing environmental, emotional, and economic needs of workers.

Farm employers should be sensitive to the working and living conditions of their employees. These include such items as adequate housing, timely and adequate transportation, field sanitation facilities, equipment, and mechanical aids to reduce the physical strain, etc. In addition, the employer should be encouraged to learn and practice sound labor management principles. The farmer employer is too often not conscious of the impact that he and his supervisory personnel have on the well-being of the farm employee. It is imperative that the farmer employer and his supervisory personnel treat the employees as "people" rather than as "objects". If this consideration is given, most of the human relations problems in employer-employee relations will disappear [7, 16, 19].

As women and youth continue to be included in the farm labor force, it is imperative that work assists be developed and implemented as rapidly as possible for them to perform the required tasks without physical strain. It must also be recognized that it will be important to remove excess physical effort on the part of the employee if the farmer is to obtain harvest labor, primarily women and youth, in a relatively affluent society.

It will be important to adopt work assist mechanization that will allow the worker to ride rather than walk during the field work phase of fruit and vegetable harvest. Further, whether in the field or in the headquarter sorting and packing operation, it will be imperative that proper and adequate sanitary facilities are present and available, that the work place is clean and free of dust and offensive odors and insects, that it be well ventilated, temperature controlled and adequately lighted for the job at hand.

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In addition to these requirements, adequate work breaks should be programmed into the work day to allow for continued high levels of performance on the part of workers. The length and timing of the work day must also be adjusted to the particular needs of housewives and students. If the potential work force is women there may need to be some provisions for child day care facilities, either sponsored by the employer or by the community.

It is recommended that: THE AGRICULTURAL INDUSTRY, FEDERAL, STATE, AND LOCAL GOVERNMENTS, AND LAND-GRANT UNIVERSITIES MAKE A SINCERE COMMITMENT AND A COORDINATED EFFORT TO TERMINATE THE PRESENT TYPE OF MIGRATORY FARM LABOR SYSTEM AND THE GROWER AND OTHER RELATED ASSOCIATIONS IN THE INDUSTRY TAKE THE LEAD IN THIS EFFORT.

Despite an overall surplus of unskilled farm labor now and in the future, continued localized short-term shortages of seasonal farm workers are anticipated associated mostly with peak harvest demands of fruit and vegetable crops. Some shortages of higher skill year-around farm workers will also continue to occur as new and complex technology is adopted.

The local shortages which occur within the context of an overall redundancy of farm labor are due partly to the reluctance of many people to accept farm jobs because of low wages, lack of advancement opportunities, lack of many standard social protections and benefits, and the low social status of much of this work.

Another basic problem is the seasonality of agricultural labor requirements. About 4/5 of all hired farm workers are employed on less than a regular basis, many of them for very short periods of time. In fact, the average hired farm worker had only 78 days of farm wage work in 1969, and 1.1 million of the total of 2.6 million worked less than 25 days. These casual and seasonal workers are, however, vitally important to farmers since they work during crucial periods of short duration at harvest and other times of peak labor demand which can mean success or failure for the farm operation [13].

Sixty percent of these workers in 1969 were local housewives and school youth whose voluntary entry into and exit from the farm labor force closely parallels agriculture's peak seasonal labor requirements [13]. This is the most hopeful source for meeting future seasonal peak farm needs.

Migratory workers, those who travel to at least the next county and remain away at least overnight, are a relatively small segment (257,000 or about 10%) of the hired farm work force. On those crops and farms where they are concentrated, however, migrants contribute a much more significant proportion of the work force and under the current organization of such farms, migrants perform perhaps the most crucial role in the production process by moving as they do to fill critical and fluctuating seasonal labor demands. Despite their present critical role, their continuation perpetuates a class of worker whose social and economic conditions are among the lowest in the American labor force.

It is recommended that: METHODS BE DEVISED AND IMPLEMENTED BY THE RELEVANT FEDERAL AGENCIES (I.E. AGRICULTURE, LABOR, HEW) THAT WILL ASSURE AN ADEQUATE AND STABLE INCOME FOR HIRED FARM WORKERS IN THE U. S.

Farm income has traditionally been unstable due, in part, to price fluctuations for farm products and fluctuations in production, both in the aggregate and on individual farm units. Returns to operators and their families for their labor and investment varies widely from year to year.

The seasonal nature of demand for many farm workers has resulted in serious income instability for farm workers as well. Sixty percent of the 2.6 million farm workers in the U. S. are not in the labor force during much of the time when they are not engaged in farm work [13]. For these workers whose chief activity is keeping house or attending school seasonality of farm employment fits their life style and does not create any serious hardship.

Such is not the case for the 871,000 farm workers whose chief activity is farm wage work or nonfarm work [13]. They need to arrange a work sequence that provides full employment, and they are seldom able to do so. Work sequences may consist of a series of farm jobs or farm and nonfarm jobs. Many migratory farm workers are a part of this group.

For the 637,000 farm workers whose chief activity was farm work the average number of days of employment in 1968 was 220. For the 342,000 farm workers whose chief activity was nonfarm employment the average number of days worked was 228--a slight improvement in employment stability. Averages, however, tend to be misleading. While some laborers worked nearly full time, others worked little more than half time. And, migratory farm laborers worked an average of 78 days at farm work and 50 days at nonfarm work for average annual earnings of $1,732 in 1969 [13].

The seasonality and intermittancy of employment when coupled with erratic wages and piece rates results in a degree of income instability for farm workers that is far greater than that of other wage groups in the economy. Federal agencies may help insure adequate and stable incomes for hired farm workers through policies designed to: (1) increase the number of complementary nonfarm jobs for farm workers, and (2) create and administer a national welfare system including income maintenance policies such as the Family Assistance Program in such a way so as to provide equitable access by needy farm laborers [19].

It is recommended that: FARM EMPLOYERS, AGRI-BUSINESS, NONFARM RURAL ENTERPRISES, AND RELEVANT FEDERAL AGENCIES EXPLORE METHODS OF INCREASING ANNUAL INCOME OF FARM WORKERS BY COMBINING COMPLEMENTARY FARM AND NONFARM JOBS.

Thirty-seven percent of all workers who did farm wage work in 1969 also did some nonfarm wage work [13]. Unfortunately, little is known about the kinds of industries and occupations where farm workers find supplementary employment or the extent of migration necessary to obtain both farm and nonfarm jobs. It may be speculated that some find work in agri-business.

Others might be unskilled or semi-skilled job holders in almost any industry with concentrations likely to be found in the public sector--construction and maintenance of parks, highways, and other public facilities.

Research is needed to determine precisely the location and kinds of occupations in industries now furnishing employment complementary to farm work and to develop information about other potential complementary work situations. Average annual earnings of workers with both farm and nonfarm employment were nearly twice that of those who did only farm wage work in 1969. Finding additional complementary farm and nonfarm jobs would be desirable both to increase the annual income of the workers and to have them available for seasonal farm work. However, there are definite limitations on complementary farm and nonfarm work. The seasonal peaks for most agri-business industries and many others are in the summer and fall, exactly at the time when seasonal workers are most needed in agriculture. There are other problems as well, such as long distances between the sites of some complementary farm and nonfarm work opportunities and most farm workers' lack of industrial skills [10].

It is recommended that: PROGRAMS OF ADULT EDUCATION BE ESTABLISHED TO ASSIST FARM WORKERS TO PREPARE THEMSELVES FOR THE MORE DEMANDING SKILLS REQUIRED OF THE AGRICULTURAL LABOR FORCE OR TO ASSIST THEM IN MAKING THE ADJUSTMENT TO NONFARM EMPLOYMENT.

Increasingly the unskilled worker requirements on all farms are diminishing; however, a larger cadre of skilled workers, both seasonal and year-around will be necessary to fill the available jobs due to increased mechanization. The door to employment is rapidly closing for those persons whose only qualifications for employment are a will to work and enough muscle to compete. In general, training has been a foreign concept for farm employers until just recently. Both training and retraining are necessary as well as supportive basic education to develop the manpower resources needed for modern agriculture. Also, training opportunities will be necessary to prepare those who will not be employed in agriculture. Inasmuch as many workers will be moving from farm to nonfarm work, it is important that skill training programs emphasize the transferrable skill--that which is useful in either type of work. The magnitude of training and retraining requirements are such that available resources should be rallied and programs integrated at the federal, state, and local levels.

In addition to educational programs with a vocational focus, a broadly based human resources development program should be established wherein rural workers and rural people in general are assisted in understanding and improving themselves and their communities, in allocating their resources most productively, and in engaging in personal enrichment activities.

It is recommended that: BASIC EDUCATION, TRAINING AND RETRAINING PROGRAMS FOR DISPLACED ADULT FARM WORKERS BE OFFERED IN COMMUNITY COLLEGES,

AREA VOCATIONAL SCHOOLS, AND OTHER ADULT-ORIENTED INSTITUTIONS AND THAT FEDERAL FUNDING BE MADE AVAILABLE FOR LIVING STIPENDS WHERE NECESSARY FOR PROGRAM PARTICIPANTS AND THAT 100% OF THE COSTS OF THESE PROGRAMS TO THE RELEVANT INSTITUTIONS BE COVERED.

One of the primary problems confronting unskilled farm labor is their lack of basic education skills that will allow them to accept training for new occupations. Without the ability to adequately read and write English and do fundamental mathematical calculations, the door to upward mobility will remain closed. In the past sufficient unskilled jobs were available to provide employment for the functionally illiterate of which a large number were employed in farming. However, mechanization is rapidly replacing these jobs.

Opportunities must be developed to provide adults with basic educational skills, and this basic education must be goal oriented. Adults may see little reason for learning to read and write if they cannot concurrently use the new knowledge to develop improved skills that will lead to job placement or advancement in their present positions. Basic adult education could provide basic literacy skills that could be applied to skill training through vocational and technical education. Although the displaced farm worker lacks basic educational skills he does not lack in pride. Fathers and mothers are the heads of family and must maintain the respect of their children and neighbors. Thus, the basic education programs must be equated in their minds to an activity expected of adults.

Community colleges and area vocational schools are excellent facilities for providing the basic education training and retraining needed by displaced farm workers. In these 2 types of schools individuals could move through basic education to skill training and on-the-job experience to graduation and employment in an adult atmosphere in which they could maintain their self-esteem.

Identification and recruitment of those in need of these kinds of educational programs as well as job placement and followup services upon completion of the educational program should be an integral part of the total effort and will require coordination with various agencies of the U. S. Departments of Labor and Health, Education and Welfare. Incentives also need to be developed so that governmental agencies and educational institutions will feel the need to serve the displaced farm workers. Institutions could be required to accept displaced farm workers as a part of their program as a condition of obtaining federal funds. Classes and educational activities provided should be carried out with the specific problems of this group in mind.

The burden for the education of displaced farm workers must be borne by the nation and not by the local communities. Local communities in which concentrations of displaced farm workers reside are likely to have the poorest resources available for educational programs. Therefore, cost of living

stipends should be provided to displaced farm workers who are participants in basic education training or retraining programs, and the overhead cost of these programs should be federally subsidized, not borne by the local institutions.

It is recommended that: ADVANTAGE BE TAKEN OF THE SEASONALITY OF PRESENT FARM WORK TO TRAIN SEASONAL WORKERS FOR YEAR-AROUND EMPLOYMENT EITHER ON THE FARM OR IN NONFARM OCCUPATIONS BY ADULT EDUCATION INSTITUTIONS.

At present many seasonal farm workers migrate from one area to another to find work. The constant migration of this group of individuals does not permit an opportunity for the children and/or adults to obtain an adequate education. It would seem, however, that this group would be more available for educational programs if the programs were provided in the area of residence during the agricultural off-season.

If subsidized educational programs were offered during the winter months adults could attend basic education and skill training courses that would enable them to accept year-around employment in skill level jobs either on the farm or in a nonfarm occupation. Children could stay in one school and could become more involved and interested in the educational process. Complementary and educational work opportunities with an adequate stipend for individuals who participated in educational programs during the off-season would allow migrants to settle in one area [14].

It is recommended that: EMPHASIS IN TRAINING AND RETRAINING PROGRAMS FOR DISPLACED ADULT FARM WORKERS BE PLACED ON DEVELOPING SKILLS WITH TRANSFERABILITY.

Attention must be given to developing skills that have transferability from an immediate job placement situation to a future job either on the farm or in a nonfarm occupation. Educational programs should avoid training individuals to perform a single job. Rather the focus should be upon developing an individual that can move from one job to another with the smallest amount of retraining possible. Training programs should provide the necessary skills and understandings for an individual to move into a nonfarm occupation if he is displaced from the farm.

The occupations relating to farm machinery maintenance and repair would be an example of an area that has many skills that could be transferred to a variety of jobs within farming as well as in the nonfarm sector. Emphasis in skill training should be placed on developing the ability to adapt to a variety of situations instead of narrow and prescribed activities.

It is recommended that: THE COOPERATIVE EXTENSION SERVICE, VOCATIONAL AGRICULTURE, AND OTHER EDUCATIONAL AND TRAINING AGENCIES BE DIRECTED TO DEVELOP EDUCATIONAL PROGRAMS SPECIFICALLY DESIGNED FOR AND FOCUSED TOWARD FARM LABOR.

The Cooperative Extension Service, vocational agriculture, and other educational and training agencies have been effective in providing educational programs for owners and managers of farms. However, these agencies have had limited involvement with specific education activities directed toward farm laborers. A reorientation of emphasis is required by agricultural agencies to include educational programs for farm labor.

The problems and concerns of farm labor should be identified and programs developed by agricultural education agencies to meet these needs. To be most effective the educational programs should be taught to farm laborers--not a combination of owners, managers, and laborers. Research and experience has shown that different socio-economic groups do not mix on a voluntary basis. Retraining and enrichment programs planned and conducted exclusively for farm labor are essential to insure that laborers will attend.

It is recommended that: LAND-GRANT UNIVERSITIES DEVOTE MORE RESEARCH, TEACHER EDUCATION, AND EXTENSION EDUCATION RESOURCES TO PROBLEMS OF FARM LABOR IN ADJUSTING TO THE CHANGES BROUGHT ABOUT BY MECHANIZATION AND THE RESULTANT DISPLACEMENT OF WORKERS.

Land-grant universities must accept as one of their responsibilities the improvement of the economic and social position of farm laborers. Programs have been product oriented rather than people oriented and agricultural colleges have attempted to reach their goals by training individuals to increase the productivity of the land. Their students and research have been geared for work with owner-operators. They have failed to sensitize their students or direct their research toward the problems of farm laborers. Courses in research need to be developed to assist graduates in solving the educational, economic, and social problems of farm labor. Programs for future extension agents and vocational agriculture teachers must include courses on farm labor management and other specific courses geared to understanding and alleviating the problems of farm labor [19].

It is recommended that: A MODERN HIERARCHICAL JOB STRUCTURE BE DEVELOPED FOR FARM OCCUPATIONS; THAT THIS NEW SYSTEM FORM THE BASIS FROM WHICH THE FARM LABOR AND RURAL MANPOWER SERVICE OF THE USDL OPERATES IN ACCEPTING ORDERS FROM EMPLOYERS AND APPLICATIONS FOR FARM WORKERS; AND THAT VOCATIONAL AND SKILL TRAINING PROGRAMS BE DESIGNED AROUND THIS NEW STRUCTURE FOR FARM LABOR.

Mechanization has created a whole new hierarchy of jobs. However, at present there has been little effort to structure, define, and classify jobs of farm laborers. As a result, rather than developing a concept of farm labor as an occupation with a wide array of skills and employment opportunities farm labor is still considered as unskilled labor. The lack of a workable widely accepted job classification hierarchy prevents the normal incentive arrangement that other industries have for promotion within the system. The tenure ladder

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in which the individual advances from laborer to owner of the farm has been a favorite teaching concept of agricultural educators. With the expanded need for large amounts of capital to become established in farming, this avenue of advancement has been closed for all practical purposes to ambitious members of the farm labor work force. Thus, in order to retain a viable farm labor force an alternative to the agricultural ladder must be developed.

Studies should continue to be undertaken to define agricultural job specialities and to determine new job titles that can be used in farming operations. An effort should be made to determine the existing job hierarchies. A continuing update of emerging job titles and descriptions should be carried out and published as a supplement to the Dictionary of Occupational Titles (DOT).

This classification system should be developed in such a way so as to define the various skills and responsibilities required of hired farm labor. The new job classification structure should suggest a hierarchy of jobs that will provide for advancement within hired farm occupations. If adequate job classifications for farm jobs were developed a prospective employee could see the opportunities to progress upward through employment in farming. Adequate job classifications could help the employer more specifically identify the type of employee he needs and, in addition, would guarantee some minimum levels of skill and educational attainment. Such a hierarchy would also allow educators to identify the type and amount of training required at each level within the job hierarchy.

Three basic points around which a classification might be developed are: (1) the worker in relation to machines; (2) the worker in relation to crops or livestock; and (3) the worker in relation to people. Using this simple framework, job descriptions and titles within each category might be developed, and training courses of varying intensity might be devised [19].

With full cooperation of employees, employers, and the public labor service agencies, educational programs could provide the agricultural sector a viable farm work force into the future. It could provide the recruitment, training, placement, and evaluation the employer deems necessary and the development and advancement of interest to the employee.*

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*For a more detailed explanation of these concepts see Becket [2].

CHAPTER III

FURTHER RECOMMENDATIONS

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FURTHER RECOMMENDATIONS

Recommendations in this chapter focus on the issues surrounding the problems of rural manpower and the adjustment of rural people to change such as that brought about by mechanization in the fruit and vegetable industry. These are broad recommendations calling for research and formulation of broad policy guidelines at the national level.

It is recommended that: AGRICULTURAL MANPOWER POLICY BE INTEGRATED WITH NATIONAL MANPOWER POLICY.

The interrelationship between rural and nonrural manpower problems, the special employment needs of the rural poor and of rural people in general, suggests the necessity for a more comprehensive national manpower policy with a rural dimension. National policies and programs related to the employment occupational adjustment, stabilization of employment conditions, and social and economic benefits should provide protection for rural manpower of an equitable degree to that for urban and nonrural manpower.

National manpower policies must be assessed in terms of their impact on rural areas and farm labor policies must be assessed in terms of their impact on nonfarm areas. An integrated manpower policy encompassing the rural areas but one that recognizes the distinct differences between rural and urban employment conditions should be developed [12].

It is recommended that: ACTION BE TAKEN BY THE UNITED STATES DEPARTMENT OF LABOR AND THE PRIVATE SECTOR TO RATIONALIZE THE FLOW OF PEOPLE FROM RURAL TO URBAN AREAS AND TO ASSIST THE MIGRANTS IN ADJUSTING TO URBAN LIVING.

Migration to the city is not a recent phenomena nor is the large-scale movement of people from rural to urban areas unique to the United States. Throughout the world on both sides of the "Iron" and "Bamboo" curtains economic development and industrialization have been accompanied by a declining farm labor force and the building of urban centers.

The American experience has been characterized by young adults responding to the lure of opportunity. Between 1950 and 1960 the net migration off the farms approximated 10 million persons. During the '60s we have experienced an easing off, and net migration is down to an annual rate of about 750,000. But there is good reason to believe that many of the people who are leaving rural areas now do so not because they are attracted by urban life, but because of economic circumstances which force them to make new lives for themselves elsewhere. This is particularly true in the agricultural sector. Small farmers are being squeezed out by larger, more efficient operators. Mechanization and other technological innovations continue to reduce the number of man-hours of work required to perform farm activities. The elimination of job opportunities and consequent outflow of population are not limited to the farms. Transportation improvements have led to consolidation of rural businesses. Also, changes in the processing and distribution of farm

products to affect economies of scale have resulted in reduced nonfarm rural job opportunities.

Most of the people who migrate to urban centers probably adjust reasonably well to city life. On the average, however, rural migrants have less income, lower skilled jobs, and less involvement in the community than the urban reared. This is not surprising considering the high proportion of disadvantaged persons who are actual and potential migrants. Hired farm workers leave school more than 3 years earlier than do those in all occupations--8.7 years compared to 12.2 years of schooling according to a 1966 BLS report on educational attainment. Given his inadequate education, lack of relevant vocational training, and general ignorance of city ways the rural migrant is not resolving his problem; he is transferring it to another setting.

The Department of Labor should establish a network of manpower information centers in sending and receiving areas. The rural centers should provide information on jobs, housing, schools, and available supportive services in the areas to which the rural residents propose to migrate. The urban centers through utilization of a rapid communications system should have advanced information on the in-migrants to their areas and make the necessary arrangements for provision of services. Current information about job opportunities and supportive services would be communicated back to the rural centers from their urban counterparts.

In both sending and receiving centers heavy reliance would be placed on rural and formerly rural people to work with and assist the would-be and actual migrants. Sending centers would function somewhat like the pilot mobility projects of the U. S. Department of Labor. Its activities would include: (1) counseling the prospective migrant and assessing his likelihood of making a successful migration; (2) if necessary, assisting the client in obtaining additional education and training in preparation for his move; (3) providing employment, housing, and social service assistance and information about the prospective migration cities; (4) discussing wage rates, living expenses, and the kinds of problems likely to be encountered in central cities; (5) advising on travel routes, buses and train schedules and fares; and (6) telling migrants about the services and operation of the receiving center at his destination city.

At the receiving centers the basic function should be to ease the settling-in process. Activities of these centers would include: (1) advice on housing and perhaps providing temporary quarters; (2) counseling on job opportunities including suggestions on how to seek employment; (3) advice on what it costs to live in the city--rent, food, clothing, and other costs; (4) warning of the pitfalls of loan offices and installment buying; (5) providing information on the kinds of health, education training and social services available; and (6) assisting in finding relatives and friends living in the city. In this connection it is important to underscore the role of friends and relatives in the cultural and social support of the migrant.

Governmental intervention efforts must recognize and build upon this informal but strong institution [16].

Under the manpower development and training act mobility projects have been funded in different parts of the country. They have demonstrated the effectiveness of aiding jobless workers by a range of services and financial assistance to move to areas of employment. What the Task Force recommends is that the Department of Labor advance beyond isolated pilot projects and set up the kind of network described above in appropriate sending and receiving areas.

It is recommended that: FEDERAL AGENCIES (USDA AND USDL) IMPROVE THE QUANTITY AND QUALITY OF RURAL EMPLOYMENT INFORMATION AVAILABLE TO THEIR CLIENTS.

Research and statistical programs of the Departments of Agriculture and Labor should be expended to provide additional information and analysis on area and crop employment, unemployment, labor demand, job opportunities, and other information that can facilitate the operation of the job market, and the adjustment of displaced fruit and vegetable farm workers, as well as other hired farm workers. Among the subjects on which more and better information is needed are the labor demand and supply situation for specific crops, especially those on the threshold of mechanization. Information should also be developed on identification of geographic areas, occupations, and industries which have potential for placement of displaced farm workers, the training and needs to qualify them to meet skill requirements of potential jobs, possibilities for integration of farm and nonfarm labor markets, motivation of workers to accept farm employment or training for other employment, and patterns of migration including the specific areas of employment and residence [19].

It is recommended that: THE UNITED STATES DEPARTMENT OF LABOR AND ITS STATE AFFILIATES EXPAND EMPLOYMENT AND OTHER MANPOWER SERVICES IN RURAL AREAS TO A LEVEL PROPORTIONATE WITH THE POPULATION AND IMPROVE THE METHODS OF DELIVERING SERVICES IN THESE AREAS.

Farm and other rural employers looking for qualified employees, migrant and other farm laborers looking for employment either on farms or in other jobs complementary or in lieu of farm jobs can benefit from the expansion of a variety of manpower services presently being provided on a limited scale by the U. S. Department of Labor. These additional manpower services are urgently needed particularly in small communities and rural areas.

To bring to rural residents a broader range of manpower services, the farm labor service of the Department of Labor was reorganized as the Farm Labor and Rural Manpower Service. Organizational objectives include recruiting, counseling, testing, training and placement of workers, providing manpower information, and developing employment opportunities in rural communities.

The Concentrated Employment Program, one of the new programs initiated by the USDL is aimed at providing an effective system for delivering manpower services to the disadvantaged and the number of CEP's in rural areas should be expanded from the present 13 to fully realize the potential. Principal features of these area programs include: (1) enlisting the active support and cooperation of business and labor organizations in local communities; (2) providing a wide range of counseling, health, education, and training services on an individual basis; (3) developing employment opportunities suited to each individual in the program; and (4) providing the followup assistance necessary to assure that a job once obtained will not quickly be lost.

State employment service agencies should continue their experiments and pilot programs to determine the most effective approaches for delivery of manpower services to rural areas. One of the more promising approaches being tested is mobile home offices staffed by specialists and generalists who travel to remote areas to provide needed services. Another is the system including a central office offering a full range of services with a network of feeder offices in remote parts of the multi-county area served. Such a system enables the outlying offices to provide outreach to persons needing services and the central office to serve as a clearinghouse for applications, job orders, and requests for service received in all offices. Telephone tie lines or other direct communications between these offices need to be established to make this arrangement effective.

It is recommended that: INNOVATIVE LEGISLATION AND ADMINISTRATIVE INSTITUTIONS BE CREATED BY GOVERNMENT TO EXTEND TO HIRED FARM WORKERS THE PROTECTIONS AND BENEFITS NOW PROVIDED FOR OTHER SEGMENTS OF THE WORK FORCE WITH SOME ADAPTATION BECAUSE OF THE UNIQUE SITUATIONS FOUND IN AGRICULTURAL EMPLOYMENT.

A new set of institutions must be devised to achieve equity for farm labor in terms of protection and coverage but employing more appropriate avenues to fit the rural sector and the farm work situation. Traditionally, farm workers have been left out of the mainstream of social legislation. Until recently they were not covered by the Fair Labor Standards Act which includes the minimum wage coverage. Even now large numbers of farm workers are not covered inasmuch as only employers of large numbers of workers are included. Workmen's compensation coverage for farm workers is limited to less than half the states and protective unionization legislation is provided in only a few jurisdictions. The application of old age and survivor's insurance to agriculture went into effect long after it was made available to those in the industrial sector. And, agricultural labor has no unemployment insurance protection except in Hawaii.

The omission of farm workers and agriculture in general from social legislation in part has been grounded in the political resistance from rural

areas. But neither have these industrially oriented and designed institutions fit the agricultural situation. There appears to be increasing public sentiment to include farm workers under existing protective legislation.

Agricultural workers need the protection of minimum wage coverage. However, in many farm work environments the difficulties in supervision and in accounting for hours of work make implementation very difficult. The work environment for the nonfarm worker is usually controlled and employment is concentrated. This is often not the case in agriculture, particularly in such employment situations as fruit and vegetable harvesting. Enforcement patterned along the traditional lines and at present funding levels is virtually impossible due to the large number of farm firms. New approaches are necessary, new rules and legislation to achieve the same ends and the same protection via more appropriate means.

Legislation protecting the right to organize and join unions and bargain collectively with employers is another example. Farm workers have not shared in the advantages afforded industrial workers who have unionized protection. One of the reasons that farm workers have not been included in the National Labor Relations Act is that the rules developed to implement industrial unions do not appear to fit the agricultural situation. Migrant workers, for example, who remain with one employer for only a week would have difficulty participating in a unionized election as stipulated by the industrial rules. New rules, new institutions, and new legislation may be necessary to achieve the same benefits for farm workers but recognizing that the agricultural work environment is different.

Workmen's compensation coverage is still another example where agricultural workers are excluded in most states. The free flow of people in and out of agricultural employment creates a difficult situation for farm employers who are required to provide workmen's compensation coverage. The cost of insurance is oftentimes greater than the wages paid due to the brief period of hiring and the high susceptibility of many farm workers to injuries before and after they are employed. The goal of providing workmen's compensation is desirable, however, a better means must be devised through a new working relationship between government, farm employers, and insurance companies. That which works well for the nonfarm sector does not necessarily work well for the farm sector due to the size and volume of business and number of farm firms involved.

A final example is unemployment insurance. The purpose of unemployment insurance is to provide an orderly method of offsetting the loss of income caused by temporary and involuntary unemployment to the individual involved while at the same time it serves as an economic stabilizer by maintaining purchasing power. With the recent passage of the Unemployment Insurance Amendments of 1970, farm workers are now one of the largest groups of wage

and salary workers not protected by this legislation, except in Hawaii where a state law provides for mandatory coverage of large farm employers and in Puerto Rico where it applies to the sugar cane industry only. Employers in a number of other states may cover farm workers under a voluntary system.

The traditional argument for exclusion of the agricultural industry from the unemployment insurance system is the belief that agriculture presents unique and difficult administrative problems because of instability of employment; the program was designed for industries in which workers have a more continuous attachment to the labor force and to the employing establishment. An additional argument for exclusion is the belief that the cost of coverage would be prohibitive. The changing structure of the agricultural industry has made the continued exclusion of farm workers anachronistic. Extension of unemployment insurance particularly for large farms should not present insurmountable difficulties. Experience under old-age and survivor's insurance and other laws indicates that administrative problems can be overcome. Available data indicate that the benefit costs and types of administrative problems encountered are not greater than those of other highly seasonal industries covered (food packing, processing and handling, construction, etc.).

Besides providing income maintenance for workers who suffer from a greater degree of involuntary unemployment than most groups of workers who are now covered, extension of coverage would help to stabilize the labor supply, thereby benefiting farm employers who must compete with nonfarm employers for skilled workers and who rely on the availability of supplemental workers to meet seasonal agricultural needs.

It is recommended that: ORGANIZATIONS AND AGENCIES PROVIDING SERVICES TO THE RESIDENTS OF RURAL AMERICA CONTINUALLY EVALUATE THE APPROPRIATENESS OF THEIR SERVICES TO THE NEEDS AND DEMANDS OF THE AREAS THEY SERVE AND SENSITIZE THEIR PERSONNEL TO THE NEED FOR EQUITY OF ACCESS FOR ALL RURAL RESIDENTS TO THEIR SERVICES.

The various governing organizational and operating policies of public institutions and programs serving rural areas were generally formulated at an earlier point in time, and they simply do not meet the needs of all of the potential clients. Therefore, it is especially important at this point that various federal level agencies (USDL, USDA, HEW) initiate a continuing and vigorous review of the programs and operating policies of their local units to provide the basis for progressive and innovative adjustment to meet the needs of a changing rural clientele.

Monetary and tangible items of income are only part of the ingredients that determine the quality of living in rural areas. Equally important are the services provided such as education, health, police protection, welfare, and a host of others. The disparity between the quality of these services

available to people in rural areas as opposed to the quality of services available to nonrural people is a significant consideration in the differential in the quality of living.

Some rural residents face a host of barriers in achieving equity of access to those public services that are available. Language barriers, inadequate transportation, inability to communicate, lack of knowledge of services, psychological difficulties in requesting services, and other factors all combine to reduce the effective availability of these services enjoyed by many rural residents.

The purveyors of services in rural areas are not geared psychologically or socially to accommodate the special needs of people with whom they do not easily communicate. The result is a lack of equity in providing rural services which should be rectified through establishing avenues for sensitizing rural service workers and creating a new awareness of the problems as they exist.

Special projects by service agencies are necessary to create a public awareness of the equity aspect of rural poverty in order to encourage a better understanding of the rural poor. Special projects are necessary to change the attitudes of the rural poor relative to the communities of which they are a part. Advisory groups involving the rural poor should assist in each agency and new methodological approaches should be used along with special in-service training sessions to enhance the capability of the traditional agencies to reach out, overcome the traditional barriers, and more nearly achieve equity in the services which they provide [19].

It is recommended that: USEFUL WORK BE PROVIDED THROUGH FEDERAL AND LOCAL PROGRAMS FOR THE NEEDY, AGED, UNEDUCATED, AND IMMOBILE RURAL PEOPLE BY CONDUCTING CONSERVATION PROGRAMS AND ESTABLISHING AND MAINTAINING PUBLIC RECREATION FACILITIES.

An especially difficult problem in rural America which will become progressively worse in the future--by the addition of displaced marginal workers from the fruit and vegetable industries--involves the so-called boxed-in families who are trapped in their present circumstances with little prospect for escaping. The majority of these are nonfarm families. Since these "boxed-in" families are generally headed by older persons who are poorly educated and have limited, if any, potential for retraining and for migration to other communities, the jobs they need are of a special nature and may require public sponsorship.

The best employment possibilities for many of this group appear to be in the areas of the things they know best, such as land and stream clearing, reforestation, conservation of land and game, and provision and maintenance of a variety of outdoor recreation areas and facilities. If such employment opportunities cannot be developed comprehensive income maintenance may be required to cope with increasing poverty among rural people. Such income

maintenance programs would, of course, have beneficial community income multiplier effects and help support adequate community services and facilities including service jobs.

It is recommended that: DEVELOPMENT OF THE TOTAL RESOURCE BASE OF RURAL AREAS WITHIN THE SCOPE OF ECONOMIC VIABILITY BE SUPPORTED AS A MEANS OF STABILIZING EMPLOYMENT, PROVIDING THE BASE FOR AN EXPANDING RURAL ECONOMY, AND PROVIDING THE MEANS FOR AN IMPROVED QUALITY OF LIVING.

The outlook for rural areas appears to be a continuing decline in the number of farms and farm families, a continuing decline in employment opportunities in agriculture, and a chronic underemployment of rural citizens resulting in relatively high poverty levels and low levels of living. For the well-being of the residents of rural America as well as for the country itself, it is imperative that the rural population be stabilized and that adequate means of employment be generated for this population. Since it is unrealistic to expect that this stabilized or expanded rural population will be able to derive all of its employment within the agricultural sector, the major alternative should be to create industrial employment.

The movement of more industry to the rural areas will accelerate the development of the infrastructure that is required to improve the quality of life for all residents of those areas [3]. Since a sustaining and viable rural sector is crucial to the quality of life for both rural and urban residents, this is a problem which should be considered at the highest levels of government. Thus, the President's Council on Domestic Affairs should consider this a priority issue.

It is recommended that: THE U. S. DEPARTMENT OF COMMERCE ALONG WITH THE USDA AND USDL DEVELOP A MORE COMPREHENSIVE AND COORDINATED SYSTEM OF SUPPLYING INFORMATION TO POTENTIAL INVESTORS ON ADVANTAGES OF LOCATING MANUFACTURING FACILITIES IN RURAL AREAS.

Employment growth in rural America is dependent on the vigorous exploitation of the many favorable characteristics which exist outside urban centers for nonfarm activities. Since it is confidently expected that farm employment will continue to decline through 1980, the only feasible way of slowing or stopping out-migration or more importantly of providing some choice of environment in which to live and rear a family is through more intensive development of rural areas for many activities previously located in cities. This expansion in nonfarm activities has already been evident for some time--with manufacturing (followed by service and trade) leading as a source of employment--but will have to be accelerated to accommodate a growing rural nonfarm labor force as well as displacees from agriculture.

To provide the basis of a sound and viable rural economy most of the new jobs must be created by private industry. The investors must, of course, have some sound economic reasons for choosing rural locations. Fortunately

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there are many including available land at modern costs, clean air, abundant space and water for both recreation and industrialization, uncongested commuting and available labor. In most rural areas transportation and communication facilities are adequate or are being improved. Developing and publicizing the advantages of specific localities for specific kinds of private business operations may stimulate investment and provide needed jobs for the rural labor force.

The need for industry to move promptly and positively is already clear to many practical minded growers. As mechanization of a particular crop now occurs, employment is reduced in that crop causing a gap in the migrant's itinerary so that it becomes less rewarding to come to an area where the crop is grown. Growers of other crops worked by migrant labor in the area then will have even fewer workers available during times of peak labor needs. As this pattern becomes more frequent growers will have to make special recruiting efforts and provide additional work incentives, mechanize, develop a local labor force, or shift to less labor-intensive crops.*

In spite of increasing mechanization of some crops, those crops that do resist mechanization will continue to require large numbers of workers for short periods especially at harvest time. To obtain an adequate work force the development of a satisfactory local seasonal labor force of women and students appears to have the greatest potential for many areas and also to be the most practical. The development of such a local labor force would be compatible and complementary with further industrialization of rural America.

Local students, housewives, and persons normally in the nonfarm work force already constitute a substantial part of the seasonal work force on farms. The movement of nonfarm industry into rural areas could attract and hold families which would not only contribute to the needed rural urban balance but also add a source of seasonal farm workers. While the chief wage worker in such families would not normally be available for farm work, the wives and children of these new job holders would be potential candidates as they would add to the population base from which such seasonal farm workers are currently being drawn.

It is recommended that: THE FEDERAL GOVERNMENT DEVELOP NEW TYPES OF FINANCIAL INCENTIVES TO INDUCE MORE INTENSIVE ECONOMIC DEVELOPMENT IN RURAL AMERICA, DEVELOP A MORE DELIBERATE POLICY OF LOCATING GOVERNMENT ESTABLISHMENTS AWAY FROM CONGESTED URBAN CENTERS, AND REVISE CONTRACT AND PROCUREMENT POLICIES AND PROCEDURES TO ACCELERATE AND INTENSIFY THE ECONOMIC DEVELOPMENT OF RURAL AREAS.

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*For additional exposition of the interrelated demand for seasonal and migrant labor see [10] and [4].

The success of rural industrialization would be greatly enhanced by firm commitments on the part of government at all levels--federal, state, and local--to create jobs in rural areas. Any reasonable assessment of current problems considering the source as well as the end of the migration stream will clearly indicate that positive action must be taken. These assessments point to the obvious need for a policy of selectively locating government establishments in areas sufficiently distant from urban complexes to prevent applying pressure on congested areas and at the same time expanding jobs and the related economic growth in appropriate rural areas. Moreover, a hard and thorough reevaluation of government contracts is in order as is the policy of developing financial and other incentives to induce more intensive economic development of rural America.

It is recommended that: POLICY GUIDELINES BE DEVELOPED TO INFLUENCE THE RATE AND DIRECTION OF RESEARCH DEVELOPMENT AND INNOVATION AFFECTING U. S. AGRICULTURE IN ORDER TO ACHIEVE A SOCIALLY DESIRABLE BALANCE BETWEEN TECHNOLOGICAL INNOVATION AND THE SOCIAL AND ECONOMIC ADJUSTMENT REQUIRED IN THE AMERICAN AGRICULTURAL SYSTEM IN THE FUTURE.

It is also recommended that: STUDIES BE UNDERTAKEN TO DEVELOP APPROPRIATE POLICIES WHEREBY THE LOSERS WHO ARE REQUIRED TO MAKE SUBSTANTIAL SOCIAL AND ECONOMIC ADJUSTMENTS DUE TO TECHNOLOGICAL CHANGE CAN BE COMPENSATED OUT OF THE REWARDS FLOWING TO THE GAINERS FROM THOSE CHANGES.

It is further recommended that: APPROPRIATE GOVERNMENT AGENCIES PLACE TOP PRIORITY UPON RESEARCH TO FURTHER DEVELOP THE SYSTEM OF ECONOMIC ACCOUNTS SUCH AS THE NATIONAL INCOME ACCOUNTING SYSTEM AND TO DEVELOP A PARALLEL SYSTEM OF SOCIAL ACCOUNTS IN WHICH MEASUREMENTS OF THE NONMARKET COSTS AND BENEFITS OF ALTERNATIVE PROGRAMS AND POLICIES MAY BE ASSESSED.

The direction and scope of the broad thrust of the agricultural scientific effort has largely been determined by "external" pressures. The growing awareness of the underdeveloped lands in the settled areas and in our vast western territories led to the initiation of American science policy in the latter half of the 19th century with the establishment of our land-grant colleges, the development of an agricultural research system, and an agricultural extension service. The philosophy and ethic represented in these accomplishments have contributed to a heady self-confidence in the agricultural scientific community that the pace of human fulfillment is linked to the rate of technological change. In a recent statement, Don Paarlberg has argued that:

> The relationship between the rate of technological change in a society and the general good that accrues to the society is in the form of a curve with a low reading for a semi-stagnant economy reaching a maximum at some intermediate rate of technological change and taking on a negative slope when the rate of change exceeds optimum point. This is contrary to the

conventional view held by almost all physical scientists that the relationship of rate of technical change in a society and the general good resulting therefrom is positive linear and steep [15].

Examples of our inadequate approach to the problem of coping with technological change are evident. Kelso and Hillman point out:

> When the cotton picker was developed, agricultural intellectuals, including agricultural economists, should have studied the problems of adjustment forced on cotton field hands, should have assessed the social costs, should have devised institutional reforms to cushion the shock and the costs--a cost which should have, in some way, been shared by cotton producers, the cotton processing and merchandising industry, and of course, by the cotton consumers. Had we done so who can now say how much less frightening would be our civil rights, urban ghetto, and urban living problems? And, partly because we failed to learn from that experience we go blindly forward developing tomato harvesters, field lettuce cutters, and field lettuce packing technologies, milk production factories, and the thousand and one other forms of technological efficiency [11].

Or more specifically, we have seen a tremendous growth in the development and application of chemical pesticides such as DDT of which the fruit and vegetable industry is a very heavy user. Many of these chemicals we are now finding have had unforeseen ecological effects and may even now be contributing to a number of health problems of which we are not fully aware.

Throughout history new technology and, in particular, the introduction of mechanization of tasks formally done by hand or with a less sophisticated form of machinery has caused a major share of the human displacement and disruption which our social engineering has not been sophisticated enough to handle. This implies as Wildermuth and Martin indicate, "That completely new institutions must be developed to attack the unsettled problems created by yesterday's and today's technological advances, and that these institutions must in turn evolve into an appropriate form for combating the externalities of tomorrow's technological advances" [21].

Presently the agricultural research budget at the USDA and its land-grant affiliates is predominately concerned with the physical and biological problems. Social science research is negligible and limited to areas of research most typified by production economics projects. The accompanying table illustrates this point. In 1965 a total of $1218.4 million was spent on agricultural research and development by the USDA, state agricultural experiment stations, industry, and other universities and federal agencies. Of this total only $64.3 million or slightly over 5% was social as opposed to biological and physical science, research and development.

Taking only the USDA and the state agricultural experiment stations in the land-grant system, the picture changes only slightly. Of the $393.4 million total, only $34.2 million or about 9% is allocated to social science, research and development. In terms of personnel in 1965, 8% of the SAES and

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Agricultural Research and Development by Field of Science in FY 1965										
Field of Science	$ Million	%	$ Million	%	$ Million	%	$ Million	%	Relevant to Agr. OUFA $ Million	%
Biological	91.6	55	176.3	78	142.6	31	410.5	48	309.5	85
Physical	59.1	35	32.2	14	308.2	67	399.5	47	34.6	9
Social	16.1	10	18.1	8	9.2	2	43.4	5	20.9	6
Total program	166.8		226.6		460.0		853.4		365.0	

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A National Program of Research for Agriculture

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October 1966

12% of the USDA scientists were social scientists. Further, a projection of earned doctorates to 1975 for students at state agricultural experiment stations indicates 3,500 of a total of 18,600 to be social science doctorates. Thus, the correction of this situation must begin at a fundamental level within the land-grant system and will take time which we can ill-afford.

In a recent speech, Ned D. Bayley, Director of Science and Education, USDA, indicated that:

> Only 1-1/2% of our effort goes into research on human resources and community developments, farm income research gets 1-1/2%, about 3% of the research attacks the pollution aspects of agriculture. About 2% of expenditures for state and federal research goes to studies on diet and nutrition.

A technical policy unit should be created at the federal level, possibly as a subsection in the President's Domestic Affairs Council. It should function to redress the imbalance in the priorities of research and development projects and funding. Similar units should be established at state levels where allocative decisions are made. One of the stipulations for allocating research funds should be that consideration will be given to the impact upon society of the outcome of the research that is financed. The broad spectrum of problems associated with the successful application of the results of the research must be considered in advance of undertaking the project. As Shaffer points out:

> A system for anticipating the negative effects of new technology is sorely needed. We cannot afford to wait for the problem before solving it. The institutional innovations will have to be developed as joint products with the technology [18].

Such units would influence the distribution of research funds, including the timing of various research projects, the type of technical research and research on the social implications of the potential technology. Research must be done and policy formulated to establish the guidelines for carrying out this charge. According to Uhl:

> In order that technological change will serve rather than dictate, we need to better understand its impacts on the industry, resource use, and the public in general. Such understanding will provide a basis for planning and control of technological shocks [20].

With the innovation of any new technology is created a complex series of adjustments as society and the economy adapts to the changes which occur. And, as individuals and groups adjust, some become gainers and others become losers. A major question which arises in this type of situation is whether or not the loser should somehow be compensated for his loss. If so, then how, to what extent, and by whom? Additional research is needed to determine the extent of the gains and losses by various groups and the implications for resource

allocation, policy, and methodology needs to be developed to collect and analyze this kind of data on a continuing basis; and new institutional forms need to be devised to adequately handle the social and economic adjustment to technological change.

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REFERENCES CITED

[1] Beale, Calvin L. "Social Considerations." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 319-324.

[2] Becket, James W. "Agricultural Labor Skills--Past, Present, Future." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 257-268.

[3] Beegle, J. Allan. "Social and Cultural Change in Rural America." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 289-302.

[4] Bordeaux, A. Frank Jr. "The Resource Mix--A Michigan Case Study." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 163-178.

[5] Carew, John. "Potentials in Horticulture Technology." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 35-40.

[6] Davis, Velmar W. "Labor or Capital--The Road Ahead." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 113-152.

[7] Fujimoto, Isao. "Mechanization and Farm Labor: Inequities and Social Consequences." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 331-340.

[8] Gavett, Earle E. "The Numbers Game." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 99-112.

[9] Hall, Carl W. "The Future World of Fruit and Vegetable Mechanization." *Fruit and Vegetable Harvest Mechanization, Technological Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 16, 1969, 825-832.

[10] Holt, James S. "Labor Market Behavior." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 209-222.

[11] Kelso, M. M.; and Hillman, J. S. "Social and Political Dilemma of the Agricultural Industry and Agricultural Institutions." Paper presented at the WAEA Annual Meeting, Corvallis, Oregon, July 1969.

[12] Mamer, John W. "Manpower Policies and Programs." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 341-358.

[13] McElroy, Robert C. "The Hired Farm Working Force of 1969." *Agricultural Economics Report No. 180, ERS, USDA*. April 1970.

[14] Miller, Paul B. "Agricultural Labor Mobility." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 245-256.

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[15] Paarlberg, Donald. *NCR-20-68*. "Agricultural Organization in the Modern Industrial Economy." Department of Agricultural Economics, Ohio State Univ., 1968.

[16] Reul, Myrtle R. "Sociology of Rural Deprivation." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 269-288.

[17] Rossmiller, G. E. "Introduction." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 3-8.

[18] Shaffer, James D. "On Institutional Obsolescence and Innovation--Background for Professional Dialogue on Public Policy." *Amer. Jour. Agr. Econ.* Vol. 51, No. 2, May 1969.

[19] Sturt, D. W. "The Rural Manpower Scene." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 179-196.

[20] Uhl, J. N. "The Industrialization Process." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 83-98.

[21] Wildermuth, John R.; and Martin, William E. "People and Machines--Labor Implications of Developing Technology." *Fruit and Vegetable Harvest Mechanization, Manpower Implications*. Edited by B. F. Cargill and G. E. Rossmiller. Mich. State Univ. RMC Rpt. No. 17, 1969, 197-208.

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VT 014 568
VOCATIONAL CAMPUS MULTIMEDIA LEARNING
LABORATORY PROGRAM. FINAL REPORT.

STATE UNIV. OF NEW YORK, ALFRED. AGRICULTURAL
AND TECHNICAL COLL.
NEW YORK STATE EDUCATION DEPT., ALBANY.
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DESCRIPTORS - *VOCATIONAL EDUCATION;
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*LEARNING LABORATORIES; POST SECONDARY
EDUCATION; *REMEDIAL INSTRUCTION;
INDIVIDUALIZED INSTRUCTION; MULTIMEDIA
INSTRUCTION; *EDUCATIONAL INNOVATION; STUDY
HABITS; READING; MATHEMATICS; STUDENT
DEVELOPED MATERIALS

ABSTRACT - THE MULTIMEDIA LEARNING LABORATORY
WAS EQUIPPED, STAFFED, AND MADE OPERATIONAL
IN ORDER TO: (1) PROVIDE POST SECONDARY
STUDENTS WITH REMEDIAL ASSISTANCE IN READING,
MATH, AND STUDY SKILLS, (2) PROVIDE A MEANS
BY WHICH STUDENTS MAY ENTER A PROGRAM AT
TIMES OTHER THAN THE START OF THE YEAR, (3)
FACILITATE ARTICULATION OF STUDENTS FROM
SECONDARY VOCATIONAL TECHNICAL PROGRAMS, AND
(4) PROVIDE FOR STUDENT SELF-DEVELOPMENT.
SPECIAL FEATURES OF THIS EFFORT INCLUDED
EMPHASIS ON INDIVIDUAL SELF-IMPROVEMENT AND
THE DEVELOPMENT OF CURRICULUM-RELATED
MATERIALS. AN EVALUATION OF THE PROGRAM
REVEALED THAT 82 PERCENT OF THE STUDENTS
SERVED BELIEVED THAT THEIR WORK IN READING
AND/OR MATH WILL BE HELPFUL IN FUTURE
OCCUPATIONS, THAT THEIR WORK IN THE LAB WAS
ENJOYABLE, AND THAT THE TIME WAS WELL SPENT.
ALSO, FACULTY EVALUATION, IN THE FORM OF
VERBAL REPORTS, INDICATES THEIR ACCEPTANCE OF
THE LAB AS A MEANS OF IMPROVING STUDENT
PERFORMANCE. IN SUMMARY, THE REPORT NOTES
THAT THE ADMINISTRATION HAS AGREED TO DOUBLE
THE SIZE OF THE PRESENT FACILITY AND TO
SUPPORT THE PROGRAM WITHIN THEIR BUDGET
LIMITATIONS. (JS)

VT 014 568

FINAL REPORT

V E A PROJECT NO. 71-2-134

VOCATIONAL CAMPUS MULTIMEDIA LEARNING LABORATORY PROGRAM

STATE UNIVERSITY OF NEW YORK
AGRICULTURAL AND TECHNICAL COLLEGE AT ALFRED
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August 1971

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ABSTRACT

Vocational Campus Multimedia Learning Laboratory Program
Final Report VEA Project No. 71 2 134

The Multimedia Learning Laboratory Program was developed at a post-secondary vocational campus to: 1) provide students with inadequate educational background with help in the areas of reading, math and study skills, 2) provide a means by which students may enter a program at times other than the start of the school year, 3) facilitate articulation of students from secondary vocational technical programs and 4) provide for student self-development.

Four areas of development were undertaken to reach the above objectives: 1) development of the Learning Laboratory facility 2)staffing 3) program development and 4) development of curriculum oriented materials.

An evaluation of the program was undertaken using a variety of measures including: number of students served, student survey, matched group comparison and faculty evaluation. In general the evaluation was quite positive.

The conclusion states the degree to which each objective was met. It also indicates the acceptance of the program by students, faculty and administration and a commitment by the administration to continue the program.

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Alfred Agricultural and Technical College received a grant to establish a Multimedia Learning Laboratory Program on its Vocational Campus in Wellsville, New York, for the 1970-71 academic year. This grant was awarded by the University of the State of New York, the State Education Department, from Federal funds available under the Vocational Education Act of 1963. The purpose of this report is to summarize and evaluate the progress of this program for the academic year 1970-71.

INTRODUCTION

The Vocational Campus of Alfred State College has as its primary objective, the development of skills in its students pertinent to a specific field, especially those where due to the advancement in technology, the demand for highly skilled craftsmen is great. To meet this objective two year programs have been established in Automotive Specialist, Building Construction, Drafting, Electrical Services, Food Service and Machine Clerical.

Admission to these programs has been open to any high school graduate, regardless of high school academic record. As a result, a very heterogenous student population developed with a diverse set of needs which could not always be met within the regular class and lab situations. To help meet some of these needs, the Counseling Center--with support from the administration and faculty--was able to receive funding for a Multimedia Learning Center.

OBJECTIVES

The objectives of this Multimedia Learning Center Program as stated in the original proposal are:

1. Provide students with inadequate educational background with help in the areas of reading, math and study skills.
2. Provide a means by which a student may enter a program at times other than the start of Fall Quarter.
3. Facilitate articulation of students from secondary Vocational Technical (B.O.C.E.S.) programs.
4. Provide for student development.

DEVELOPMENT

Fulfillment of the above objectives necessitated four distinct areas of development: (1) the development of the learning laboratory facility, including building, furnishings and equipment; (2) staffing; (3) program development; and (4) development of curriculum oriented materials.

Development of the Learning Laboratory Facility

BUILDING: The students in the Building Construction and Electrical Services Departments built the entire facility. The 12' x 48' wooden structure had been under construction for use as a classroom in the spring of 1970. Upon notification of approval of our project in late August 1970, plans were made to convert this classroom structure into a learning laboratory. This modification began in September, as a class project for the Construction Department and consisted of relocating the doors and windows and partitioning off the interior into four areas. As soon as the interior was ready for finishing, about mid-October, the building was moved to its present site.

The Electrical Department took over with the students installing the electrical, lighting and heating systems. Electric baseboard heat was used with separate temperature controls for each area. An adequate number of three phase outlets were installed so that no area of the lab where equipment would be used was more than four feet from an outlet. The Construction students finished off the interior with floor and ceiling tile and wall paneling.

This, plus the construction and installation of the 16 carrols, was completed just prior to Christmas recess. Total cost of building, including electrical, lighting and heating systems was $1,940.

FURNISHINGS: The facility consists of four rooms, two offices for the counselor and stenographer, an independent study area and a combination reading and math lab area. Office furniture, three tables and 32 chairs, a closed metal storage cabinet and a section of steel shelving, besides the student constructed carrols, completed the basic furnishings. The cost of this facility and furnishings was covered by the college. (Appendix A shows the layout of our Multimedia Learning Laboratory)

EQUIPMENT: During the completion of our facility, the equipment began arriving, so that by January 4, 1971, the major portion of the equipment and supplies was available for student use. The delay in arrival of much of the equipment was attributable to the necessity of following standard purchasing procedures of the State of New York. As the bulk of the equipment was not on state contract, we had to follow a bidding process. Equipment such as slide and movie projectors, Language Masters and sound loop film projectors arrived during fall quarter, while the Didactors, SONY ½" video outfit and controlled readers arrived after the first of the year. A list of equipment and materials used in the laboratory can be found in Appendix B and C.

STAFFING: The Multimedia Learning Laboratory staff, under the supervision of the Director of Counseling, consisted of the Developmental Counselor, Technical Assistant and a stenographer supported by the grant. The college provided the services of a reading instructor from the Main Campus at Alfred, two days each week.

The Developmental Counselor had a strong background in math, as a result of an undergraduate major in math education. His master's degree was in counseling and guidance. This combination enabled him to work effectively with students both from an academic and a counseling orientation.

The Technical Assistant had experience in working in a vocational education program, but most importantly, had many years experience as a commercial photographer. He was the photographer for a large local industry, as well as owner of his own photography business prior to coming with us. The stenographer was a very personable young lady who combined efficient stenographic skills with a pleasant personality. This enabled her to work effectively with both students and staff.

Even though our facility was not ready for student use until after Christmas recess, the Developmental Counselor and the reading instructor had started working with students in reading and math in October, using class or conference rooms where available. While little equipment was on hand, they made use of their personal expertise in assisting about 50 students.

PROGRAM DEVELOPMENT

Continual consultation with faculty was an integral part of the program. MATHEMATICS: The mathematics program had been developed on a revolving door basis. As a student encountered difficulties in his regular math class, he would either be referred by his instructor or take the initiative himself to use the learning laboratory.

In some cases, this resulted in long term work (15-20 weeks). Three students were so deficient in arithmetic that they had to begin learning the multiplication tables. Use was made of a variety of media such as

flash cards, Language Master Cards, and Didactor films. As a result, they eventually mastered their tables.

Most cases, however, needed short term work in a specific area. About 35 students from the drafting and electrical departments who needed help on the slide rule, used the slide rule program on the Didactor machine. This was supplemented by small group work with the counselor. A math program for Building Construction students was instituted, using the Delmar Mathematics for Carpenters workbook. Other groups used material developed by the counselor.

The emphasis in general was on the four basic operations: addition, subtraction, multiplication, and division of integers, fractions, and decimals. These operations were then utilized in finding board feet, amount of resistance in a circuit, reading a rule, or estimating number of servings in a given quantity of food.

A special program was developed with the Drafting Department, whereby students who successfully challenged their regular math course could use the learning laboratory to work on advanced material.

INDIVIDUAL SELF-IMPROVEMENT: Another need that the program began to meet, and this primarily through the use of the Didactor system, was for individual self-improvement, i.e. chemistry, management, guidance programs, etc.

READING & STUDY SKILLS: The basic orientation of this portion of the program was to develop better reading and study skills, including a more positive attitude towards reading, which would facilitate the students academic adjustment and expose him to a variety of reading materials related to his personal and vocational interests. This orientation seemed to be in harmony with both student and faculty expectations; it approached both short-and long-run needs of the student.

The program incorporated the following materials: programmed reading units, curriculum-related materials, personal interest readings. Each type of material served a purpose in the course format.

The programmed reading units (SRA Reading Laboratory IV[a]; SRA Reading for Understanding; EDL Controlled Reader Junior with workbooks; Bell & Howell Language Master Vocabulary Set; Didactor reading films), some of which use mechanical support, were introduced to instill motivation during the initial sessions. It was felt that these programmed materials would also facilitate the examination of basic reading techniques. The SRA units generated only minimal student interest. The controlled readers provided students with an opportunity to increase reading speed. The Language Master was used in conjunction with curriculum terminology as well as with basic vocabulary. The Didactor films showed tremendous potential for stimulating reading interest in both curriculum-related and personal interest readings.

Almost all curriculum-related materials were self-produced. The reading selections were taken from magazine articles, newspapers, or textbooks that pertain to the various curriculums on campus. Questions were made up to check comprehension and/or vocabulary. These materials were the mainstay of the program; they created much interest and encouraged much discussion. The time spent in their development was a worthwhile expenditure.

Personal-interest readings were available in the form of a paperback gallery. Students had free access to the books under a "no fine" policy and the response was excellent. Students admitted reading books through for the first time, or for the first time in a long time.

Also, quite a number of books turned up missing, which seemed indicative of their being used.

SCHEDULING: The students usually were in the lab for about an hour period at a time. Whether this was during their regular shop time or outside of it depended entirely upon the faculty involved. More students were allowed to use shop time for work in math than for reading. Although the lab was open until 4:30 p.m. daily, very little use was made of it after the bulk of the students left campus at 3:00.

Development of Curriculum Oriented Materials

The technical assistant had been working with each department on campus. There were two rather extensive projects; one on electrical wiring involving several hundred slides and another on the "Building of Hip Rafters," near completion. Super 8 motion pictures were taken of the operation of the off-set printing press, these will be ready for the lab as soon as the faculty involved complete the narration. In addition to these, many small projects were completed.

The work of the technical assistant was to be facilitated in the Spring Quarter, by the availability of darkroom facilities on the Wellsville Campus. These facilities were in the process of being built and equipped through efforts of the various departments, including the Division Chairman, but were not completed in time to be utilized. The Instructional Resource Center and staff on the Main Campus provided a back-up service.

EVALUATION

Students Served: Approximately 30% of the student body was involved in the Learning Laboratory during the academic year. Their involvement included a variety of learning experiences, ranging from reading groups

felt that it probably had. The most varied response came in answer to the questions as to positive changes in your attitude toward your vocational interests: 24% definitely yes, 30% probably yes, 17% undecided, 12% probably no, and 17% definitely no. "Do you recognize any improvement in your reading and/or math skills because of your work in the Learning Lab?" was answered definitely yes by 64% and probably yes by 35%.

Eighty-two per cent of the students responded definitely yes to: "Do you feel that your work in reading and/or math will be helpful in your future occupation?" "Did you enjoy working in the Learning Lab?" and, "Do you consider your experiences in the Learning Lab as time well spent?" Sixty-four per cent of the students felt that they might continue work in the lab next quarter or next year.

A selection of the statements written in response to the following questions would best summarize this portion of the survey.

Why did you come to the Learning Lab?

> To find out how I rated in reading skills and find new ways to improve interest in reading.
>
> To do better math work and also, I haven't had much math.
>
> Because I'm not the greatest reader or math student, and I wanted to improve.
>
> To improve reading and math and get out of the shop.

What did you accomplish at the Learning Lab?

> I learned how to understand what I am reading.
>
> Read more because I never read much.
>
> Some of the math which I forgot came back, my reading has improved and the tapes have also helped in learning.
>
> Brushed up and learned new stuff.

to individual study of chemistry and advanced math.

The following table gives a breakdown by departments and major areas of study.

	Reading	Study Skills	Math	Other
AUTOMOTIVE	21	0	6	0
BUILDING CONSTRUCTION	16	0	31	1
DRAFTING	12	2	37	2
ELECTRICAL	1	1	25	0
FOOD SERVICE	4	14	1	1
Total	54	17	100	4

It should be noted that only a very small number of students were involved in more than one area.

Research

SURVEY: A survey of students working in the lab during the last week in the Winter Quarter was taken to ascertain their feelings about the Learning Lab. This resulted in 17 completed questionnaires, the total number of students who could be reached.

The students were asked to respond to eight questions using a five point scale from 1 indicating "definitely yes" to 5 "definitely no." The remaining four questions required written statements. The questionnaire and the tabulated responses can be found in Appendix D.

In summarizing the results, fifty-eight per cent felt their experience in the Learning Lab made them more self confident. Thirty per cent felt that it had definitely improved their academic standing, while fifty-eight per cent

What do you feel is the purpose of the Learning Lab?

To help an individual at his pace.

To enable students to improve their present skills, in their own rate, so they may do better after school is completed and they are on their own to read the things necessary for success in their vocation.

Better marks on math questions on our tests.

For anyone who wanted to come and improve themselves, coming by their own will.

What are your suggestions for improving the Lab?

Expand as far as it can.

Have it at a time that would work better for an automotive student. We have to stop in the middle of a job to come.

Have more Didactor tapes in the automotive field and variety of visual aids.

So far, I think it is going real good.

While the responses of the surveyed students were highly favorable, one should keep in mind that there were only 17 students involved. The representativeness of this sample cannot be ascertained at this time, but from previous favorable verbal comments of other students, the sample may not be too biased.

Another indication of how students react to the Learning Lab is illustrated by its effect on the two editors of our local student newspaper. After a tour of the facilities, they devoted a portion of the next issue to describing it, and became one of the best sources of referals.

MATCHED PAIRS: The reading program evaluates its effectiveness through the administration of a pre & post test measuring reading efficiency. The gain or lack of gain in "reading efficiency", which is a composite score of rate (wpm) x comprehension (%), is one indicator of the degree of success of the program.

The tests entitled Maintaining Reading Efficiency Test: History of Brazil (pre-test) and History of Japan (post-test) were published by Developmental Reading Distributors.

Because of the small number of test scores available at the onset of our program, a matched pairs study was undertaken as the appropriate statistical appraoch. Two groups (N=15pr.) were matched by student curriculum and pre-test reading efficiency scores. Each pair of students were from the same department and had similar pre-test efficiency scores. The variant was that one student had taken reading improvement course work, the other had not. Group A included all students who had taken reading course work; Group B included all the students who did not. After Group A completed its course work, both groups were given the post-test.

The tested hypothesis was that Group A would obtain significantly higher test scores on the post-test for reading efficiency than Group B would. The chart below indicates the observable data.

	Mean Scores	
Test	Group A	Group B
Pre-test	109.6	110.1
Post-test	123.3	114.4

The "t" test, "f" test, and the analysis of variance were computed. None of the resultants proved to be significant. Although the observable changes in mean scores appeared to be significant, the sample size and the degree of variance over compensate for the changes within the context of statistical analysis.

Faculty Evaluation

Most of the direct evaluation of the Multimedia Learning Lab by the faculty came from their verbal reports as to the improvement observed in the work of students involved in the Lab. In particular, faculty pointed out the improvement in use of the slide rule by the students who only spent one or two hours going through the Didactor slide rule program.

A group of Building Construction students worked on carpentry related math in the Learning Lab during the Winter Quarter. The Building Construction instructors in comparing the improvement shown between 1st and 2nd quarters, found that 78% of the students who worked in the Lab raised their math mark, while only 61% of the other students did so.

Two individual cases involving the reading and study skills programs were noted by their instructors. One student in Food Service was evaluated by his instructor as showing definite improvement in his class work, but most obvious was his gain in confidence in reading. A Drafting instructor described another student's progress as very encouraging. His class and lab work had improved greatly. His status in his peer group had changed radically for the better. It appeared that his self-confidence had been renewed and the student was beginning to find his true potential.

Another type of faculty evaluation of the Multimedia Learning Laboratory was the keen interest a number exhibited in trying to prepare materials for use in the Lab. Several submitted proposals which will enable them to produce, during summer vacation, curriculum materials suitable for use in the Learning Laboratory.

Feedback between the reading instructor and the faculty was carried out through a Reading Advisory Committee comprised of faculty from each department and the reading instructor.

DIFFICULTIES ENCOUNTERED

The time lapse from notification of grant approval (the first week of September) to the availability of the equipment for use in the Lab (January) was the major difficulty encountered. This caused delay in the operation of the Learning Laboratory Facility although the staff was functioning to assist students in Math and reading since October.

A second area of concern involved student scheduling. All students were in class and shop a straight six hours a day with only a 30 minute lunch break. With this situation, two alternatives are open for the Learning Lab staff, either work with students prior to 10:00 a.m. (this with second shift students) and after 3:00 p.m. (first shift students) or have faculty release students during shop time. Also involved in this situation was whether work in the Lab should be voluntary or required by the instructors.

Instructors varied in their opinions as to which alternatives were best, but the Learning Lab Staff noted best results from students who were released during shop time and voluntarily sought help. This problem may be alleviated as more experience is gained using the various alternatives.

A third concern which existed was the time available for Multimedia Lab staff to develop relevant materials. This was especially true of our reading instructor who was on campus only two days a week. Most of this time was spent in direct contact with students.

Increased staffing is the only solution to this problem.

A final concern was one of effective evaluation. As most of the work students did in the lab was of an individual nature, even when in a group, pre and post testing of groups may not have lead to valid results. Another difficulty was the variation in time students spent in lab. Some used it for several one hour periods while others came in every day during most of the year. The idea of flexibility which is built into the lab program and is essential, works against usual evaluation measures.

A possible solution to be tried next year will be to help each student define specific objectives he expects to achieve in the lab and then measure his progress towards these goals.

CONCLUSIONS

The development of the Multimedia Learning Laboratory started in September of 1970. Requisition of equipment and completion of the facility extended into late December, but the staff of the Laboratory were able to carry out part of their functions in existing classrooms and using a minimal amount of audio-visual aids from October.

The first area of the program development, that of building and equipping the Multimedia Learning Laboratory, has been completed for all practical purposes. The second, that of staff and program development, is well underway and meeting the objectives of:

1. Providing the students with inadequate educational background with help in the areas of reading, math and study skills.

2. Providing for student development.

The least visible progress has been made in the third area, that of development of curriculum oriented material. Many projects are underway and several are ready for use in the Laboratory. More will be ready for next year.

With the completion of these and other projects, the Laboratory will be able to meet the other two objectives of the Lab:

1. Provide a means by which a student may enter a program at times other than the start of Fall Quarter.

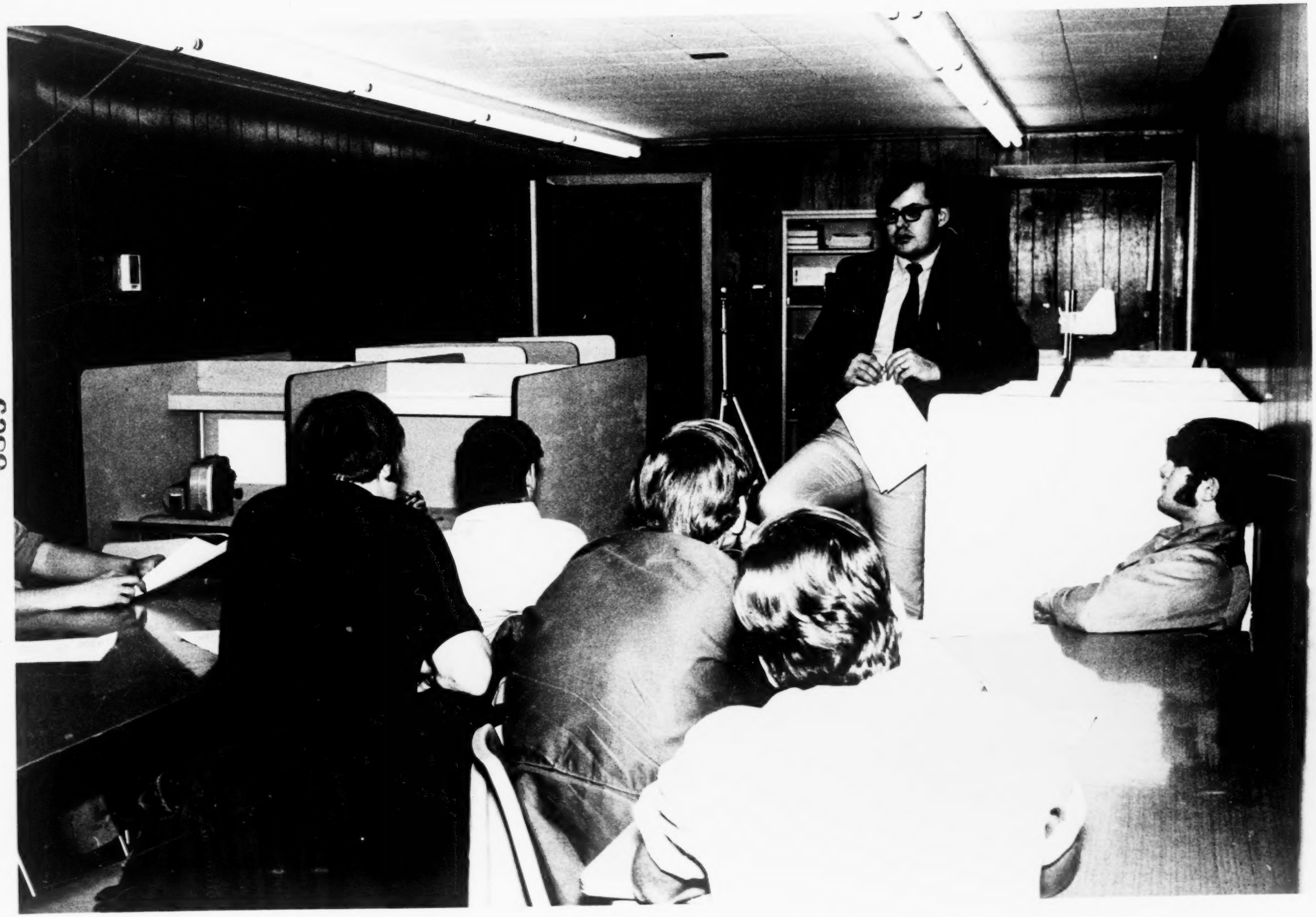
2. Facilitate articulation of students from secondary Vocational-Technical (B.O.C.E.S.) programs.

While the Multimedia Learning Laboratory Program was fully operational for less than two quarters, the benefits derived by the students, and the interest and cooperation shown by students and faculty have generated a commitment from the administration to double the size of the present facility and to support the program within their budget limitations.

APPENDIX A

6386

6388



6389

6390

APPENDIX B

6331

LABORATORY EQUIPMENT

4 Language Masters

1 Technicolor 810 Loop Projector

8 Head Phones

1 Honeywell Dual Elmo 8 Projector*

2 Model AF Projector*

2 Wollensak Cassette Recorders

2 Technicolor 1000 Sound Loop Projectors*

1 Portable Tape Recorder (10 watts)

10 Rateometers

1 Video Recorder*

1 Transistor Video Monitor*

1 Video Camera*

6 Didactors

1 Sound Mate w/Microphones (Didactor)*
Earphones

4 Reading Accelerators

1 Graflex School Master*

16 Graflex Junior Reader*

* Indicates purchased under federal grant funds

6392

APPENDIX C

6393

MATERIALS AVAILABLE IN LABORATORY

Super 8mm Loop:
Replacing Ignition Points*

Auto Safety Inspection*

The Jointer: Basic Use

Installing a Convenience Outlet

Rebuilding the Master Cylinder*

Language Master Cards (2 bx.) (voc.)
2 bx (vocab)

1 bx Multiplication

2 bx Construction Terms

3 8mm Movie tapes
House Wiring (2) Offset Printing Press

EDL - Film Strips for Controlled Reader CR-AD, LK

EDL Controlled Reading Study Guide LK

EDL Reading Efficiency Checks KL, LK

Record: "How to Improve Your Reading Skills"

Books: How to Prepare for the High School Equivalency Examination: Reading Interpretation Tests

Useful English: Sentences & Paragraphs Part 4

" " Spelling Part 3

American History Review Book

Adventures in Appreciation Book 1,2,3

Tape-Centered Instructional Programs '71-72

Reading for Meaning Teacher's Manual
Grades 9,10,11,12 - Guiler & Coleman

" " " " " " "

Grades 4,5,6 - Coleman & Jungeblat

" " " " "

Grades 7,8,9 " "

Reading for Meaning (Students) 4-12

158 Paperbacks

Equivalency Examination--Reading Interpretation tests*

6391

MATERIALS AVAILABLE IN LABORATORY (Continued)

How to Prepare for the High School Equivalency Examination

Study Guide for TV High School-Manpower Education Institute

Good Reading For Poor Readers-Spache and Garrard

High School Equivalency-Mathematics Curriculum Resource Handbook

2 " " " Science

" " " Testing Program of NYS Information Handbook

" " " Information Handbook

" " " Part 1: Theory & Design of the Program

Barron's How to Prepare for the High School Equivalency Examination

SRA Equations Game

SRA General RFU Reading for Understanding

SRA Reading Laboratory IVa

" " " IIIb

Delmar Automotive Trade answer book

Delmar Electrical Trade Answer book

Delmar Carpentry Trade answer book

Delmar Carpentry Trade (B.C.)

Review Digest of Mathematics - Republic

" " " - Cambridge

Basic Electricity Vol. 1 - XII

Read Your Way by Melvin Howards

Communications Skills - Buck & Gordon

Maintaining Reading Efficiency - Burgess

Occupational Outlook Handbook by Bureau of Labor Statistics

Increasing Reading Efficiency - Miller

College Reading Skills by Alfred A. Knopf

Developing Reading Efficiency - Miller

Reading for the Main Idea - Raygor

Learning to Read Through Experience - Lee & Allen

*Indicates Purchased under Federal Grand Funds

DIDACTOR TAPES:

2 blank didactor tapes

Safety and Electrical Maintenance

Using Electricity Safely & Efficiently

Using the Oscilloscope

Measuring Electrical Quantities - a Maintenance Essential

Semiconductors and Solid State Electronics

DC Motors in Moder Industry

Algebraic Expressions Part II

Algebraic Fractions

Exponential Numbers

Introduction to Algebra

Beginning Work with Equations and Formulas

Slide Rule Multiplication and Division

Common Fractions: Multiplication and Division

Multiplication Drill 1

Ratio, Proportion, Per Cent, Percentage

Division Drill II

Basic Hand Tools Part I

Pert Fundamentals - Network Logic

Pert Fundamentals - Critical Path

Pert Fundamentals - Replanning & Simulation

Pert Fundamentals - Probability

Vocabulary, Part III

Vocabulary, Part IV

Vocabulary - Alert to Subsequent

How to Read Scales

DIDACTOR TAPES (Continued):

How to Read Scales

Introduction to Trigonometry

Principles of Torch Cutting (2)

Control Terminology and Methods of Automatic Control

Mechanical Principles of Governor Operation

Maintaining the Fuel System

Understanding the Diesel Air System

Operation of the Cummins PT Fuel System Components

Understanding Hydraulic Cylinders

Understanding the Functions of Pressure Control Valves

Understanding the Caterpiller Fuel System

Chemistry, Part I

Part I: Basics T Account

The Lie

The How of the Planning Process

Using Three Phase Power In Industry

Developing a Master Job Plan

Pert Fundamentals Introduction

Reading Improvement for Professional People Part I

" " " " " Part II

" " " " " Part III

Chemistry, Part II

Chemistry, Part III

Chemistry, Part IV

Common Fractions: Addition and Subtraction

Fractions: Drill II

How to Read and Write Decimals

DIDACTOR TAPES (Continued):

Work with Decimals

Using Addition, Subtraction, and Learning Percentages through Auto Repair Pbs.

Introducing Perimeter and Area Pbs.

Algebraic Expressions, Part I

Factoring

Exponents and Radicals

Imaginary and Complex Numbers

Quadratic Equations

Facts about Syphilis and Gonorrhea

" " " Part I

" " " Part II

Teamwork

Confidence

Nobody Understands Me

Hello Trouble

Popularity?

The Dilemma

6308

APPENDIX D

6399

QUESTIONNAIRE

Directions Circle if your answer is:	1 definitely yes	2 probably yes	3 undecided	4 probably no	5 definitely no

Questions 1-8

1. 1 2 3 4 5 Do you feel that your experiences in the learning lab have made you more self confident?

2. 1 2 3 4 5 Do you feel that your experience in the learning lab has improved your academic standing?

3. 1 2 3 4 5 Do you notice any positive changes in your attitude toward your vocational interest because of your experience in the learning lab?

4. 1 2 3 4 5 Do you recognize any improvement in your reading and/or math skills because of your work in the learning lab?

5. 1 2 3 4 5 Do you feel that your work in reading and/or math will be helpful in your future occupation?

6. 1 2 3 4 5 Did you enjoy working in the learning lab?

7. 1 2 3 4 5 Do you consider your experiences in the learning lab as time well spent?

8. 1 2 3 4 5 Do you feel that you might continue working in the learning lab next quarter, or next year?

9. Why did you come to the learning lab? _____

10. What did you accomplish at the learning lab? _____

11. What do you feel is the purpose of the learning lab? _____

12. What are your suggestions for improving the lab? _____

Tabulated Results
Survey of Student Reaction to Learning Lab
N= 17

Scale of Responses	1 definitely yes	2 probably yes	3 undecided	4 probably no	5 definitely no

1. Do you feel that your experiences in the learning lab have made you more self confident?
   (1) 10 - 58% (2) 5 - 30% (3) 1 - 6% (5) 1 - 6%

2. Do you feel that your experience in the learning lab has improved your academic standing?
   (1) 5 - 35.2% (2) 10 - 58% (3) 1 - 6% (4) 1 - 6%

3. Do you notice any positive changes in your attitude toward your vocational interest because of your experiences in the learning lab?
   (1) 4 - 23.5% (2) 5 - 30% (3) 3 - 17.6% (4) 2 - 11.7% (5) 3 - 17.6%

4. Do you recognize any improvement in your reading and/or math skills because of your work in the learning lab?
   (1) 11 - 64% (2) 6 - 35.2%

5. Do you feel that your work in reading and/or math will be helpful in your future occupation?
   (1) 14 - 82% (2) 3 - 17.6%

6. Did you enjoy working in the learning lab?
   (1) 14 - 82% (2) 3 - 17.6%

7. Do you consider your experiences in the learning lab as time well spent?
   (1) 14 - 82% (2) 2 - 11.7% (3) 1 - 6%

8. Do you feel that you might continue working in the learning lab next quarter, next year?
   (1) 11 - 64% (2) 6 - 35.2%

9. Why did you come to the learning lab?

   a. To learn math which I will need on a job.
   b. Because I wanted to improve my reading comprehension.
   c. Because I generally don't have anything else to do and in math I'm relearning the things that I have forgot in high school.
   d. To find out how I rated in reading skills and find new ways to improve interest in reading.
   e. To review math for when I go on to another college and to help my reading comprehension.
   f. I am interested in improving both my math and reading abilities.
   g. To improve my reading.
   h. To do better math work and also I haven't had much math.
   i. To better my math ability.
   j. To improve on my math.
   k. To increase my knowledge.

l. To improve in math, reading, and the automotive field by the tapes.
m. Because I'm not the greatest reader or math student, and I wanted to improve.
n. To help improve my math.
o. To brush up and learn new things.
p. It has been a long time since high school and the math and reading helped me.
q. To improve reading and math and get out of the shop.

10. What did you accomplish at the learning lab?

a. Learned math.
b. I learned how to understand what I am reading.
c. I am relearning many things that I have forgotten in math and I feel my reading comprehension has improved.
d. Found out my reading ability and did improve in understanding.
e. Better reading skills and a bringing back of math.
f. I brushed up on my past exercises in both math and reading.
g. Read more because I never read much.
h. Do better math problems.
i. I understand some parts of math better.
j. How to reduce fractions to decimals and decimals to fractions.
k. To increase my reading, and learned more math.
l. Some of the math which I forgot came back, my reading has improved and the tapes have also helped in learning.
m. no answer
n. I learned a lot I had forgot.
o. Brushed up and learned new stuff.
p. I accomplished reading skills and the math builds my mind.
q. So far it has been time out of the shop.

11. What do you feel is the purpose of the learning lab?

a. To help an individual at his pace.
b. To offer a place to improve or promote new skills.
c. To help the ones who realize they need help in an area or to review old skills.
d. To enable students to improve their present skills, in their own rate, so they may do better after school is completed and they are on their own to read the things necessary for success in their vocation.
e. To help students realize their faults in the course given and improve them.
f. To improve both math and reading skills.
g. To improve your skills in certain areas.
h. Better marks on math questions on our test.
i. To help a person to become more confident in the course.
j. To help students improve on math and reading.
k. To learn.
l. For anyone who wanted to come and improve themselves, coming by their own will.
m. To help students how they need it.
n. To help us remember what we were taught before.
o. To teach and refresh.
p. In this school the purpose is to learn and break up the monotony of the school.
q. To improve or brush up on reading and math.

12. What are your suggestions for improving the lab?

a. Good the way it is now.
b. Expand as far as it can.
c. It seems to be coming along real well as it is.
d. Have it at a time that would work better for automotive students. We have to stop in the middle of a job to come.
e. None
f. It is a thorough program, all interests have been brought up and talked about or will be talked about.
g. I don't have any right now.
h. Just continue with new math.
i. I think the lab is working well the way it is now.
j. No suggestions at the moment.
k. More courses.
l. Having more Didactor tapes on the automotive field and variety of visual aids.
m. None.
n. No answer.
o. Learn things that are going to be used in the future.
p. I am very satisfied with this lab.
q. So far I think it is going real good.

VT 014 580
TURNING ON THE TURNED-OFF. VOCATIONAL PROGRAMS FOR THE DISADVANTAGED IN MAINE.

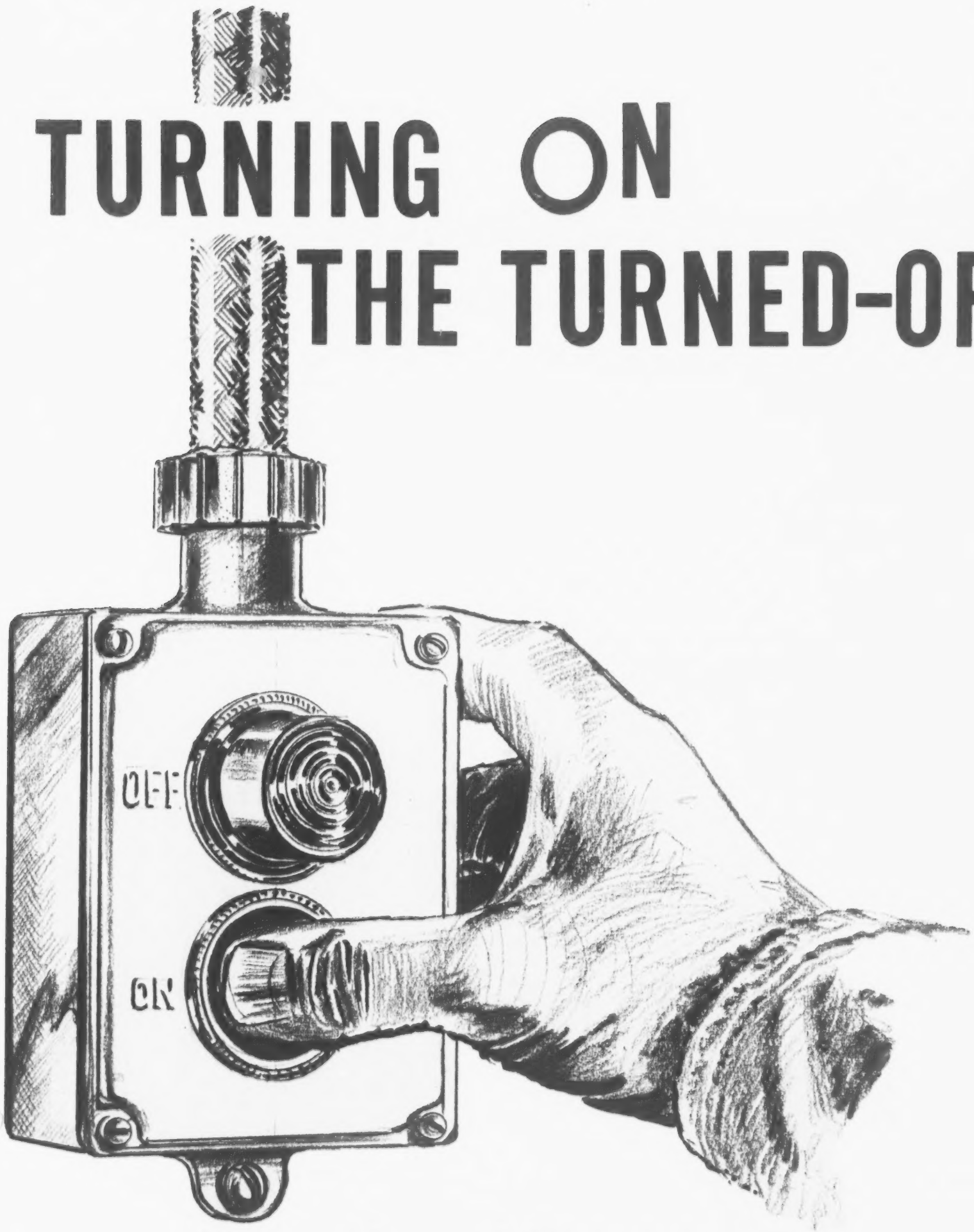
MAINE STATE DEPT. OF EDUCATION, AUGUSTA. BUREAU OF VOCATIONAL EDUCATION.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
DOCUMENT NOT AVAILABLE FROM EDRS.
STATE DEPARTMENT OF EDUCATION, BUREAU OF VOCATIONAL AND ADULT EDUCATION, EDUCATION BUILDING, AUGUSTA, MAINE 04330
PUB DATE - ND 39P.

DESCRIPTORS - *VOCATIONAL EDUCATION; *CULTURALLY DISADVANTAGED; *RELEVANCE (EDUCATION); *EDUCATIONAL NEEDS; EDUCATIONAL INNOVATION; EDUCATIONAL PROGRAMS; PROGRAM DESCRIPTIONS
IDENTIFIERS - *MAINE

ABSTRACT - THROUGH THE DEVELOPMENT OF INDIVIDUALIZED INSTRUCTION, THE EMPLOYMENT OF PARAPROFESSIONALS, AND OTHER NEW WAYS OF MEETING STUDENTS' NEEDS AND MAKING EDUCATION RELEVANT, MAINE SCHOOLS ARE BEGINNING TO EMPHASIZE THE NEEDS OF THE DISADVANTAGED. THIS DOCUMENT DESCRIBES PROGRAMS IN 26 MAINE SCHOOLS AND INSTITUTIONS. QUESTIONS ARE ANSWERED REGARDING HOW PROGRAMS WERE INITIATED, THEIR NATURE, AND THE NEED FOR THEM. (AUTHOR/BH)

VT 014 580

TURNING ON THE TURNED-OFF



Vocational Programs for the Disadvantaged IN Maine

VT014500

Carroll R. McGary

INTRODUCTION

Few programs in vocational education today command more interest than those providing occupational training for youngsters turned off by an education which fails to meet their needs. The Federal government, recognizing the problem, enacted legislation which gives high priority to special vocational programs for persons who have academic, socioeconomic, cultural, or other handicaps which prevent them from succeeding in regular vocational training.

The overriding objective is to involve the youngster in activities of interest to him so that he may eventually be motivated to return to the mainstream of his school's educational program.

The Vocational Education Amendments Act of 1968 (P.L. 90-576) gives Maine schools and correctional institutions opportunities to provide vocational services that make education relevant. For many isolated communities, the funds that became available through the 1968 amendments provide citizens their first opportunity for vocational training.

Many educators in Maine are accepting this challenge and have begun exciting training programs. Through the development of individualized instruction, through employment of para-professionals, and through other new ways of meeting students' total needs, Maine schools are beginning to turn on the turned-off.

This document describes programs in 26 Maine schools and institutions. It answers questions as to how the programs were initiated, their nature, and the need for them. Educators and others are encouraged to contact the directors of these projects for further information. It is my hope that persons reviewing this document will be stimulated to consider developing similar programs, and will thus help to meet occupational needs in their own localities.

Carroll R. McGary
Commissioner of Education

FOREWORD

Maine's established policies and procedures which govern the development of programs for the disadvantaged are set forth in the Maine State Plan for Vocational Education. This publication describes some of the actual programs--programs sponsored by the Bureau of Vocational Education and developed and implemented in cooperation with local school systems and other organizations concerned with job-preparation for the disadvantaged.

Local educational agencies may find "Turning on the Turned-off" helpful in preparing programs for their localities. It may also be used at area sponsored meetings and workshops in which services and programs for the disadvantaged are to be discussed. Institutions which train vocational education teachers might wish to consider some of the approaches illustrated herein as they put increasing emphasis on staff development for training the disadvantaged.

No new program was ever begun without difficulty, and few new programs could succeed without the dedication and support of persons involved. This booklet is testimony to the courage and vision of those educators and school board members who recognized that certain of their students needed further services, and who moved to meet those needs.

Much credit is due Carl Butler, who coordinates these programs statewide, and to Clyde Hichborn, former superintendent of schools in School Administrative District No. 31, who conducted the preliminary evaluations of the programs. The efforts of those who conduct special workshops, and the faithfulness of project directors in attending them, are also to be commended.

Elwood A. Padham, *Director*
Bureau of Vocational Education

Elwood A. Padham

VOCATIONAL EDUCATION ENROLLMENT

Level of Program	Enrollment for 1971	Projected Enrollment for 1975
Secondary (Grades 9-12)	25,432	31,925
Post-Secondary	2,206	2,500
Adult	3,842	5,225
TOTAL	31,480	39,650
Programs for the Disadvantaged*		
Secondary (Grades 9-12)	1,623	2,000
Post-Secondary	15	100
Adult	145	225
TOTAL	1,783	2,325

*Numbers include duplication of some persons counted above.

EMPLOYMENT OPPORTUNITIES RELATED TO VOCATIONAL EDUCATION PROGRAMS IN MAINE
LABOR DEMAND AND SUPPLY SUMMARY*

Instructional Program	Current Employment	Projected Employment Fiscal Year 1975	Anticipated Output of All Training Agencies in Maine, Fiscal Year 1975	
			Voc. Ed. Output	Other Output
Agriculture	32,600	32,600	1,075	125
Distribution and Marketing	83,300	89,800	400	95
Health Occupations	12,700	14,200	400	126
Home Economics, Gainful Employment	7,800	8,090	400	28
Office Occupations	55,900	61,900	3,950	2,045
Technical Occupations	74,500	80,000	200	----
Trades (craftsmen) and Industrial Occupations and All Others	84,100	88,600	6,425	363
TOTAL	350,900	375,190	12,850	2,782
Selected Sub-Categories Included Above				
Auto Body and Auto Mechanics	3,400	4,900	320	91
Building, Construction, and Carpentry	5,000	5,500	350	10
Masonry	1,000	1,085	20	6
Electrical Occupations	3,500	4,500	143	61
Graphic Arts	700	1,200	90	35
Machine Tool	1,700	2,200	50	28
Metal Trades and Sheet Metal	7,800	8,300	21	10
Cabinet Making	500	500	20	10

*Data supplied by the Maine Employment Security Commission

TURNING ON THE "TURNED-OFF"

Every school has them: disinterested students; students who just don't care. They are leaving our schools--turning off, dropping out--because they feel our schools have left them. Far behind. Out of the mainstream.

"So who needs school?" they ask.

We have tried to tell them, "You do."

But we have labelled them, like a disease, "terminal students," and relegated them to the "lower track." Too often, they have been offered diluted upper-track courses which still lack relevance--which offer no particular preparation for finding or holding a job.

Far from being "terminal," many are simply non-motivated and non-college-bound.

These turned-off students--these potential dropouts--cannot afford the luxury of thinking in the abstract. Their needs are real, here and now. They have found little relevance in classes dealing with the past or future, nor in classes dealing with events outside their limited world. Turned off early to courses unrelated to their immediate needs, they miss the training in abstract thinking that their classmates absorb.

Not surprisingly, they often do poorly on "IQ" tests. They often have shorter attention spans than their peers. They often have poor attendance records. They are conditioned to accept failure and defeat.

But turned-off students--those who feel school is not preparing them to earn a living--share another characteristic, a driving ambition to be "good at something," to be qualified for a job, to find self-fulfillment.

Perhaps it's being able to operate a gasoline pump. Or work on an assembly line. Or wash trucks. Whatever it is one *has* to be "good" at it. One *has* to be able to earn money. One *has* to be self-reliant.

Practical training, at 15 degrees above zero, as Waldoboro students learn all-season construction techniques.

Schools *can* reach these students, but not by traditional means. In dealing with turned-off students, schools must deal with the total needs. Courses must relate to the student's own world; counselling must explore and seek solutions to individual problems and fears; ways must be found to make the student feel that, by staying in school, he can become "good" at something faster than by going it on his own. The turned-off student must feel that the school is helping him develop entry-level skills in a vocation that interests him.

BUILDING CONSTRUCTION

Hodgdon students apply finishing touches to their construction project.

Cat 10d 6411

FOOD

Presque ie student learns while she earns, assisting in high school cafeteria.

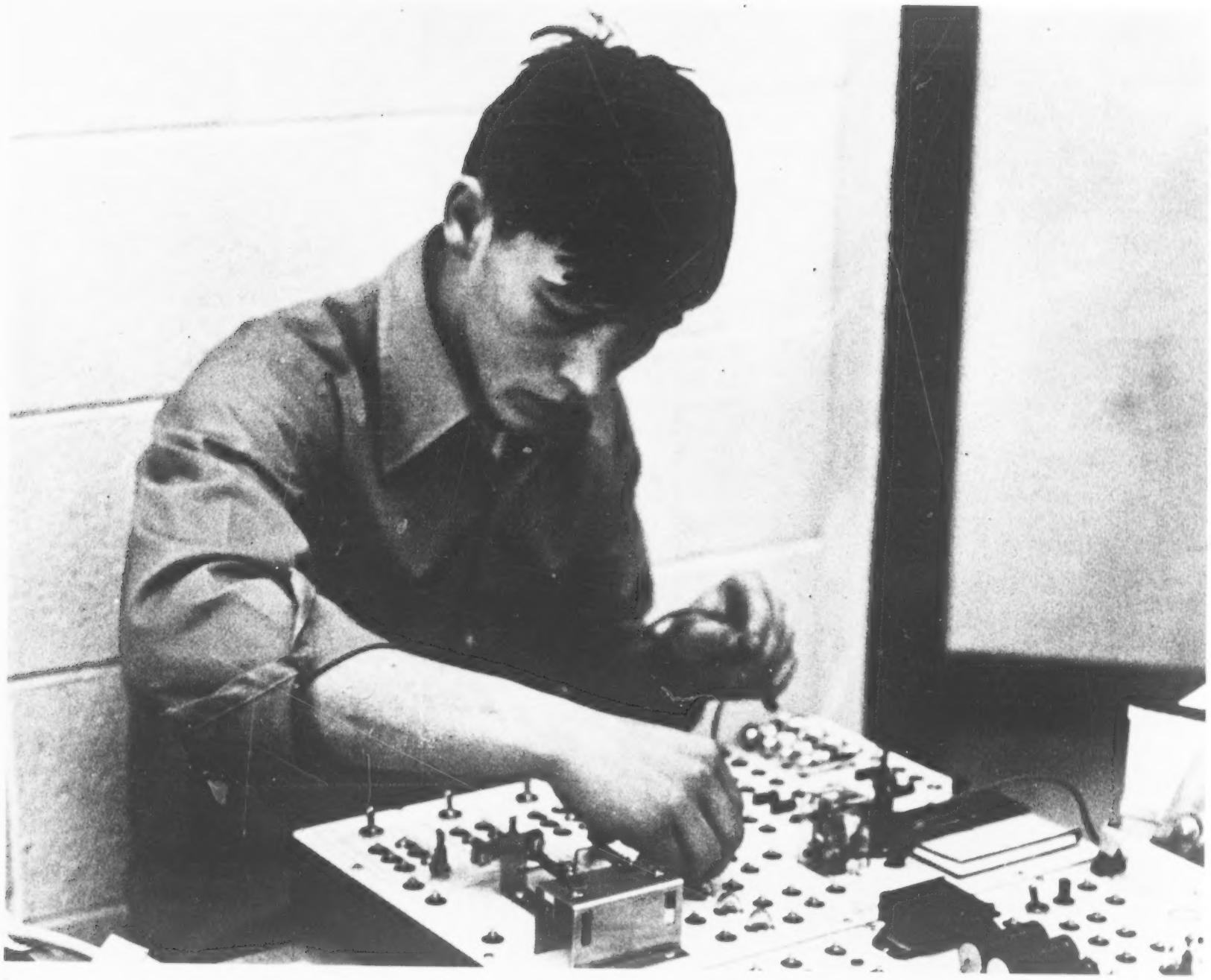
Frequently, ways must be found to help these students earn money while they stay in school: by helping them find interim jobs, by adjusting their school schedules and workloads to accommodate such jobs, and by maintaining contact with their employers.

6412

SERVICES

Cooking for many or just a few, both are studied at Fort Kent.

6413



Learning by observation with an experimental electronics kit. Harrington.

ELECTRONICS and ELECTRONICS REPAIR

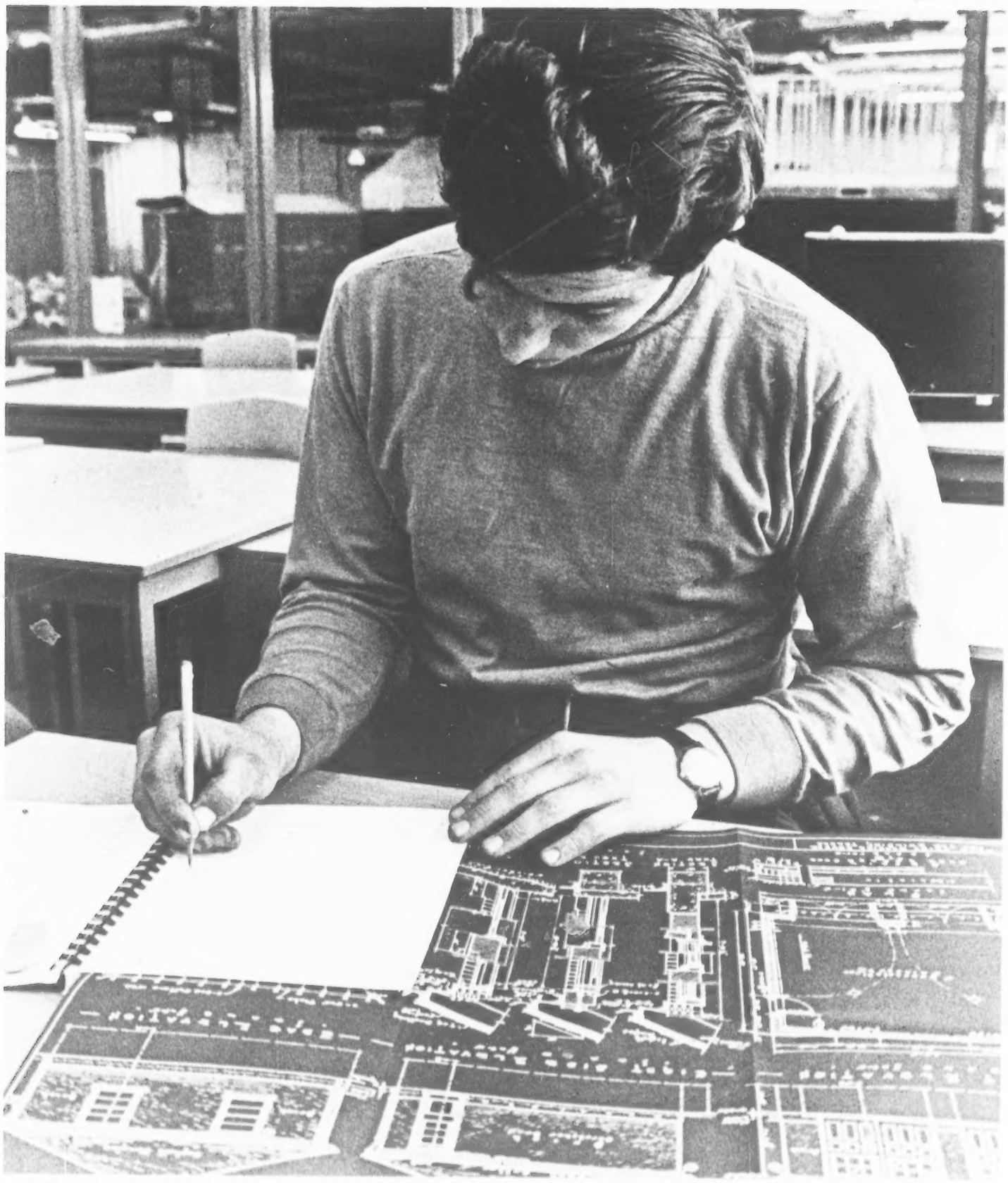
8

6414

Having helped relieve their immediate job needs, and having made their courses relevant, the school is more likely to convince the turned-off that better and higher paying jobs can be theirs, if they'll stay in school--and graduate.

On-the-job training in a repair shop near Presque Isle. Students often are asked to work full time for businessmen with whom they have trained, provided they first earn their high school diplomas.

6415



When the school day ends at Washburn High School, several students choose to remain. With the help of teachers who are experienced in construction trades, they study blueprint reading, residential wiring, and building construction. Blueprint reading is offered as a guided self-study course; students advance at their own rate.

BLUEPRINT READING

6416

TYPICAL MAINE PROGRAMS

(For more information about a particular program, write to the project director)

Allagash

Project Director
Garfield King
Supt. of Schools
SAD No. 10
Box 146
St. Francis 04774
Tel. 398-2883

Vocationally disadvantaged students of Allagash High School gain small-business-firm experience in a class divided between group learning activities and student projects. Meeting after school hours, students in this voluntary class learn various office practices and procedures, and practice use of standard office equipment. The possibility of extending this program into the summer is being investigated.

Bangor

Charlene L. Popham
Project Director
Bangor Senior High School
Bangor 04401
Tel. 942-7334

The Vocational Work Experience Program at Bangor High School trains 70 students in a 3-year program. Training includes a minimum of required academic courses; plus additional courses in job orientation and opportunity, rights and responsibilities, and driver education; and at least two occupational courses, such as basic electricity, wood and plastics, metals, auto body and fender, food services and graphic arts. During the first two years, the students are assigned work stations in the school. In their senior year, they work in the community fo part of the school day.

Caribou

Co-directors
Gary R. Johnston
Asst. Supt.
Mrs. Lorraine Cox
Caribou High School
Caribou 04736
Tel. 493-3384

Twenty-six students are participating in a 3-year, sequential program for the educationally deprived at Caribou High School. Students attend specially-designed courses in the first two years; as seniors, they attend classes half a day and devote the rest of the day to a cooperative work program. Classes in language arts, science, and social studies are keyed to this group's needs and interests.

East Corinth

William J. Baker
Project Director
Central High School
SAD No. 64
East Corinth 04427
Tel. 285-3326

Twenty-four students at Central High School attend morning classes relating to job attitude, consumer economics, safety, and specialized study in their interest areas. In the afternoon, they receive on-the-job training in fields as varied as meat cutting, horse training, poultry production, telephone line repair, and assisting veterinarians.

6417

Fairfield

Robert S. Fairweather
Project Director
Lawrence High School
SAD No. 49
Fairfield 04937
Tel. 453-7374

Operated as a supplement to existing vocational education, Fairfield's program serves 30 to 40 non-academic students. In an adaptation of the cooperative education method, students are placed in area jobs according to their interests and needs. In some cases, the youngster's needs for development of personality, for attitudinal change, or for improved work habits determine the work station selected. Typical jobs include interior decorating, merchandizing, printing, meat cutting, upholstery, carpentry, and flooring installation.

Fort Fairfield

Co-directors
Lawrence Gardner, Principal
Melvin Kelly, Instructor
Fort Fairfield High School
SAD No. 20
Fort Fairfield 04742
Tel. 472-3281

The Automotive Mechanics Program at Fort Fairfield High School involves 23 young men. Individual programs are tailored to meet student needs. In addition to automotives, the school offers courses in customer relations and in getting along with associates.

Fort Kent

Paul J. Bouchard
Project Director
Community High School
SAD No. 27
Fort Kent 04743
Tel. 994-5540

Thirty-nine students--including some young adults not in school--from the two participating high schools at Fort Kent and Allagash attend pre-vocational and vocational training and receive occupational experience on Saturday mornings. Courses offered are welding, small engine repair, carpentry, clothing construction, food preparation, meal planning and consumer education.

Harrington

David C. Ayers
Project Director
Narraguagus High School
SAD No. 37
Harrington 04643
Tel. 483-2747

At Narraguagus High School in Harrington, 27 students participate in a program designed to meet their specific needs. Operated in conjunction with the regular industrial arts program and in additional periods after school, classes and projects include radio communication, machine tools, power mechanics, and construction of a weather station. Classes in welding and boat construction employ special instructors.

Hermon

Richard Trask
Project Director
Hermon High School
School Union No. 34
RFD 2
Hermon 04401
Tel. 848-3365

After a survey of student interest and local manpower needs, Hermon High School began a program to train senior boys in the appliance repair field. Students are chosen by application, personal interview and according to disadvantaged criteria. Some assistance is received from local appliance dealers who supply teaching aids.

Hodgdon

Director
Earle Cooper
Supt. of Schools
SAD No. 70
Hodgdon 04730
Tel. 532-3015

Two specialized courses were offered to students at Hodgdon High School after a survey indicated their need. In "Home Construction and Residential Wiring," a complete camp was built, wired and paneled during 130 evening and Saturday hours. Work was scheduled for those times of day that would accommodate students who work on farms. In the course "Small Engine Repair and Gas Station Attendant," students have used audio-visual aids, and have gained actual experience repairing small engines.

Machias

Robert Lombard
Project Director
Machias Memorial High School
School Union No. 102
Machias 04654
Tel. 255-3812

Twenty students are enrolled in a program which offers pre-vocational orientation and development, job placement and follow-up. As an initial project, students conducted a survey of job opportunities in the Machias area. This survey was then organized into a job opportunity list, now used and updated periodically by participants. The Machias program, called "Charting Your Future," organizes tours of places of employment. Tours include interviewing employers and workers, and observing workers on-the-job. In addition, local employers and businessmen take part in group discussions and mock job interviews with the students.

Mt. Desert Island

Eric A. Lanpher
Project Director
Mrs. Jean Fernald
Instructor
Mt. Desert Regional High School
School Union No. 98
Mt. Desert 04660
Tel. 288-5011

Mt. Desert's "Wage Earning Program in Child Care Services" offers 12 girls two classes per week, providing both knowledge and orientation necessary for working with youngsters. In addition, participants spend three mornings each week working with pre-school children in the laboratory environment of the program's nursery school. Operation of the nursery school, with its arts and crafts, outside play, music, and lunch period, is solely the responsibility of the students. The girls learn to create new crafts, carry out projects with the children, and prepare lunch. After training in the nursery school, the girls serve as teacher aides in one of the four island grade schools. Following this, each student begins working in a home or a local nursery school while receiving class work in handling personal finances.

Orland

Sister Lucy Poulin
Project Director
Monastery Hermitage
Orland 04472
Tel. 469-3456

"Homemakers Organized for More Employment" (HOME) is a non-profit handcraft cooperative established to supplement the low or fixed incomes of more than 300 rural people. Through competitive retailing, HOME markets members' handcrafts, returning 75-percent of the sale price to the craftsman. Funding under programs for the disadvantaged has enabled HOME to employ some members as instructors, teaching others to turn their handcraft skills to profit. Classes have been held in sewing, leather work, and making pine-cone wreaths. Future classes are planned in chair caning, ceramics, candle making, reading and oral and written communication.

Portland

Co-directors
Raymond Fisher
Ralph Hawkes
Room 319
289 Congress St.
Portland 04111
Tel. 775-5631

Operating on the philosophy that the learning process is different for each individual, Portland High School is using a multi-media approach to reach its turned-off students. In English and mathematics classrooms, video-tape systems, slide and film projectors, tape and record players, and other equipment are used to raise student achievement. The equipment is also available to students who wish to do projects. Portland's "Multi-Media Pilot Program" attempts to individualize teaching by allowing each student to use those methods of learning most effective for his development.

6419

Rockland

Robert Conrad
Project Director
Rockland District High School
SAD No. 5
Rockland 04841
Tel. 596-6411

Rockland District High School's "Work Experience Program" was developed for slow learners who are also disadvantaged. During the first two years, students learn basic skills commensurate with their abilities through a team-teaching technique involving four teachers. During their junior and senior years, approximately 30 students gain work experience integrated with their studies to help them establish future job goals. Work experience is a coordinated effort between the school and local businessmen, who pay the student learners' wages, supervise them in general work experience, and provide guidance and direction.

Searsport

Project Director
Gordon Peaco, Principal
Searsport District High School
SAD No. 56
Searsport 04974
Tel. 548-2523

A co-educational program operated after school hours for pupils with special needs, the Searsport project provides training for boys in the areas of building construction and residential wiring. Girls in the program make use of the school's home economic facilities to learn clothing construction and other wage-earning skills.

South Paris

Linwood Allen
Vocational Director
Oxford Hills High School
SAD No. 17
South Paris 04281
Tel. 743-2305

"Technology and a New Vocational Education," a project of Oxford Hills High School, coordinates the efforts of guidance personnel, administrators, teachers, parents, students, and the community in a total curriculum program. Emphasis is on vocational development, career exploration, occupational choice, and on-the-job training. The program is inter-disciplinary and has been integrated into the present high school curriculum. Techniques used to accomplish the program's goals include role playing and dramatizations, simulation games, films, displays, field trips, occupational role models from the community, and simulated and direct work experience. Eventually this program will be incorporated into all classes and programs of the Oxford Hills School District from kindergarten through high school.

Van Buren

Orrison Moody
Vocational Director
Supt. of Schools Office
SAD No. 24
Van Buren 04785
Tel. 868-5274

"Relevant Education: A Developmental Year," a program for the disadvantaged at Van Buren District High School, attempts to upgrade and increase the number of employees in the local labor pool. On-the-job training in building construction, basic electricity, printing, small gas engines, and for waitress training reinforces and relates to classroom and laboratory work. Thirty-two boys and 10 girls train in each of three cycles, exposing more than 120 students to training each year.

Waldoboro

David Yates
Project Director
Medomak Valley High School
SAD No. 40
Waldoboro 04572
Tel. 832-5389

A four-fold vocational program for students who will enter the labor field directly after high school, Project Awake offers training in building construction, graphic arts, fiberglass construction and repair, and arc and gas welding. In conjunction with the Knox County Community Action Council, which furnished materials,

building construction students built a complete 20x30-foot, low-cost home.

Washburn

Camille Albert
Project Director
Washburn District High School
SAD No. 45
Washburn 04786
Tel. 455-4812

This program is for slow learners and students who do not plan to continue their education beyond high school. It includes instruction in drafting, residential wiring, repair of small engines, service station operation, basics of home construction, and consumer education as it relates to homemaking and business. A survey showed these areas to be most meaningful to students.

Waterville

Gregory Ouellette
Project Director
Waterville High School
Waterville 04901
Tel. 873-0185

Waterville High School provides a meaningful curriculum for those whose interests lie outside the regular academic program. Students select an occupational area and are trained in the attitudes and skills required for the type of work selected. Actual work experience and field trips give the student a realistic picture of his career choice. The school offers former participants post-school follow-up to assure adjustment. Home visitation and parent-student-coordinator conferences are employed.

Automotive Program, Fort Fairfield.

6421

MUSEUM APPRENTICE PROGRAM

The Museum Apprentice Program (M.A.P.) of the Maine State Museum trains high school students in museum technical skills during two 8-week summer sessions leading toward potential employment in a museum.

Participants are trained by the staff of the Maine State Museum in exhibit preparation, taxidermy, natural science field work, archaeology, registration of exhibit items, collections, historic building preservation, and audio-visual and graphic arts work.

Each apprentice is assigned a special project to be completed the first summer. These projects incorporate skills emphasized during the first part of the program and include such activities as building trail-side exhibits, developing displays, planning and designing brochures, writing full-scale reports on the natural settings of Maine, mounting large mammals through use of the new museum taxidermy method, preparing slide-tape demonstrations, and cataloging complete collections.

Because most apprentices have no previous museum experience, trips are scheduled during the first summer to widen their understanding of museums. In addition, a camping trip is scheduled to make use of skills acquired during the summer.

During the first M.A.P. summer experience, the group took a week-long trip to the upper Kennebec River – including an archaeological "dig" at an Indian campsite, collection of artifacts, installation of an exhibit panel to display and interpret these artifacts, designing of artwork for the exhibit, and photographing of the dig for documentation.

Federal funds for the apprentice program come through the Bureau of Vocational Education. The Neighborhood Youth Corps paid Museum Apprentice Program participants for up to 26 hours per week of non-classroom time.

Originally, the number of participants was to be limited to six taking the initial course during the first summer session and six taking the advanced course during the second summer session. However, because of interest shown, nine were admitted to the first session in the summer of 1969.

M.A.P. participants are selected from among Maine high school juniors who have shown interest in the program and demonstrated their ability and seriousness of purpose. Because those selected for the program receive almost complete financial subsidy, evidence of financial disadvantage is required.

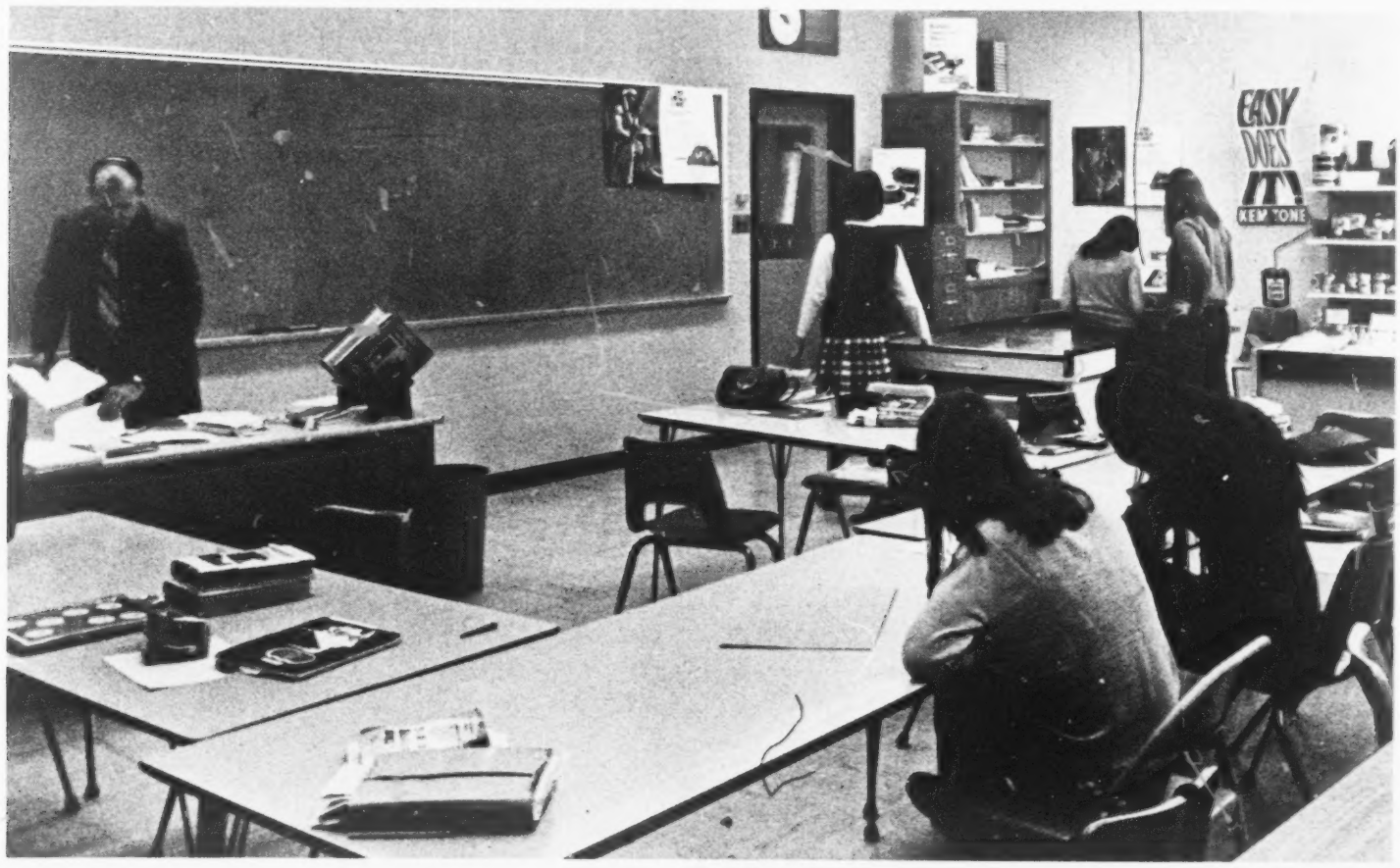
M.A.P. summer sessions are coordinated with vocational programs of secondary schools attended by the trainees during the regular school year.

Museum students gather terrain and geographical data in preparation for an archaeological dig.

6422

Assistance is available to Maine communities to establish and begin operating new programs to meet the needs of turned-off students and adults. Funds for these programs are provided by the federal government under the 1968 amendments to the Vocational Education Act of 1963, and are administered by the Bureau of Vocational Education, Maine Department of Education.

DISTRIBUTION and MARKETING



Versatile Dexter classroom contains conventional tables and chairs, TV camera and videotape equipment, and grocery store mockup--complete with stocked shelves and functioning checkout counter.

6423

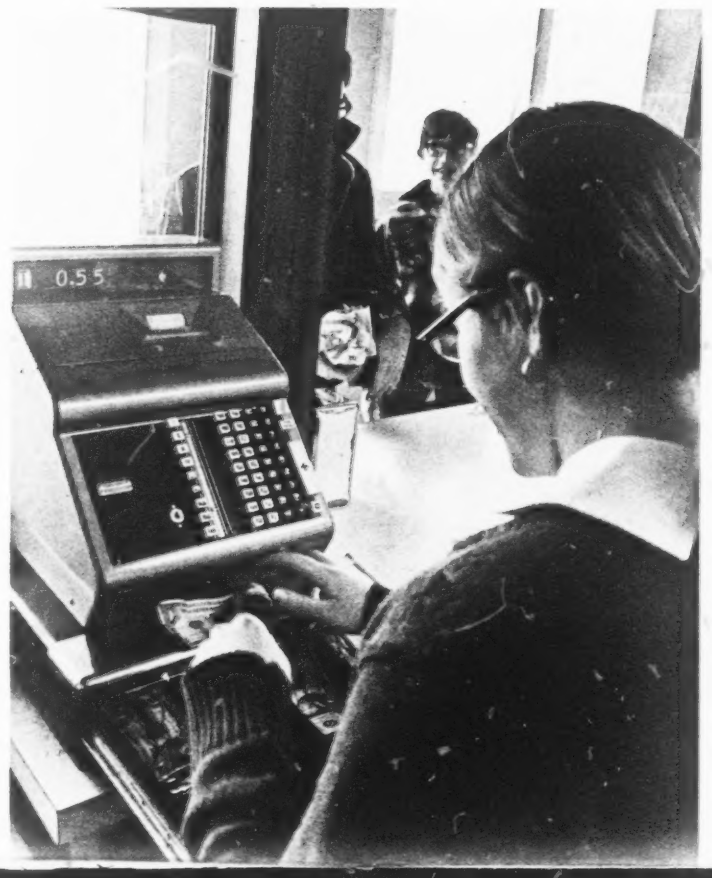
A Caribou teenager operates price-tag printing machine in discount department store.

Dexter student gains inventory experience under supervision of local store manager.

Federal funding of this type is authorized under the general title, "Vocational Education for the Disadvantaged." The term, "disadvantaged," according to the Federal Register, "...includes persons whose needs for such programs or services result from poverty, neglect, delinquency, or cultural or linguistic isolation from the community at large, but does not include physically or mentally handicapped persons, unless such persons also suffer from the handicaps described in this paragraph."

6424

Pricing stock in a Caribou supermarket.



School girl working at Caribou drive-in restaurant learns on-the-job mathematics.

6425

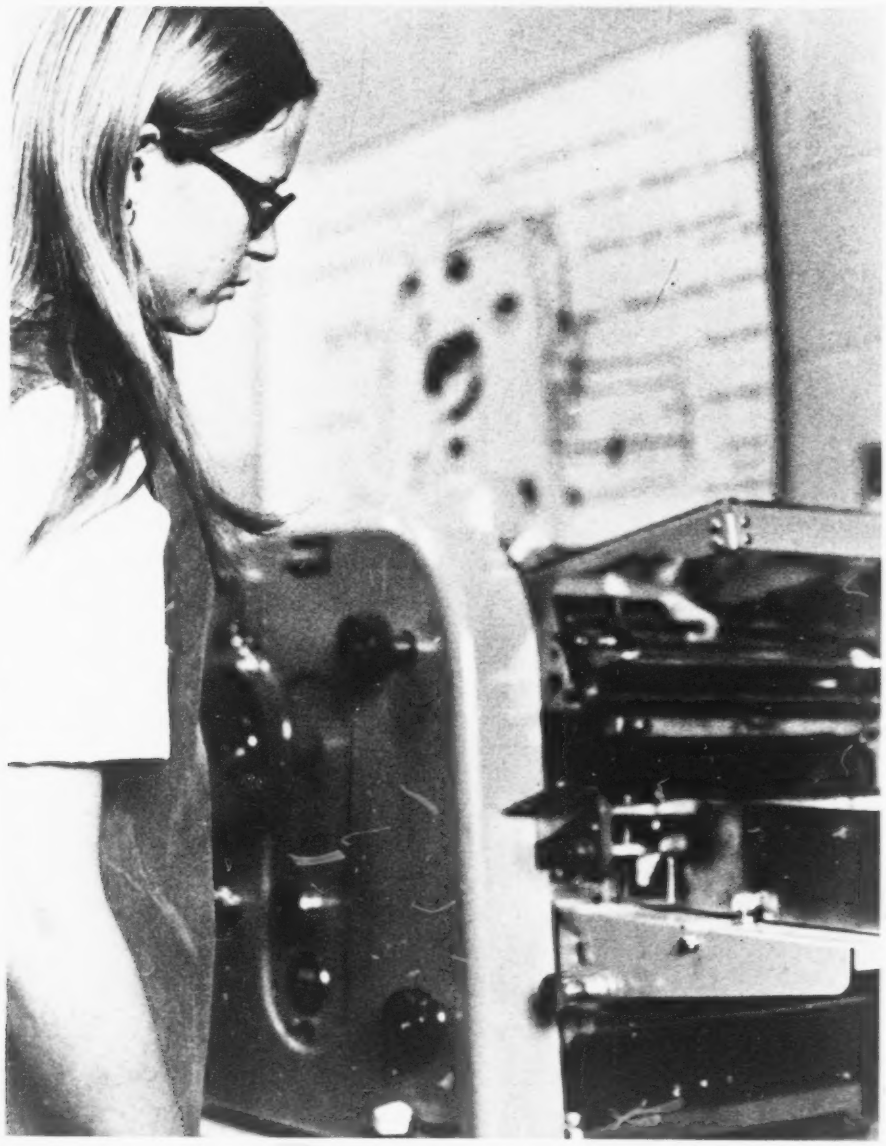
Assistance can be provided to: persons with deficient educational background; semi-skilled or unskilled workers receiving less than poverty-level incomes; persons from areas characterized by excessive unemployment; persons from areas characterized by excessive low-income rates; members of ethnic minority groups which have been discriminated against; persons who have been isolated from cultural, educational, and/or employment opportunities; persons who, due to a combination of environmental, cultural and historical factors, lack motivation for obtaining an education or a job skill; and persons who depend upon social services to meet their basic needs.

Typical Saturday morning training for this young adult at Community High School, Fort Kent.

WELDING

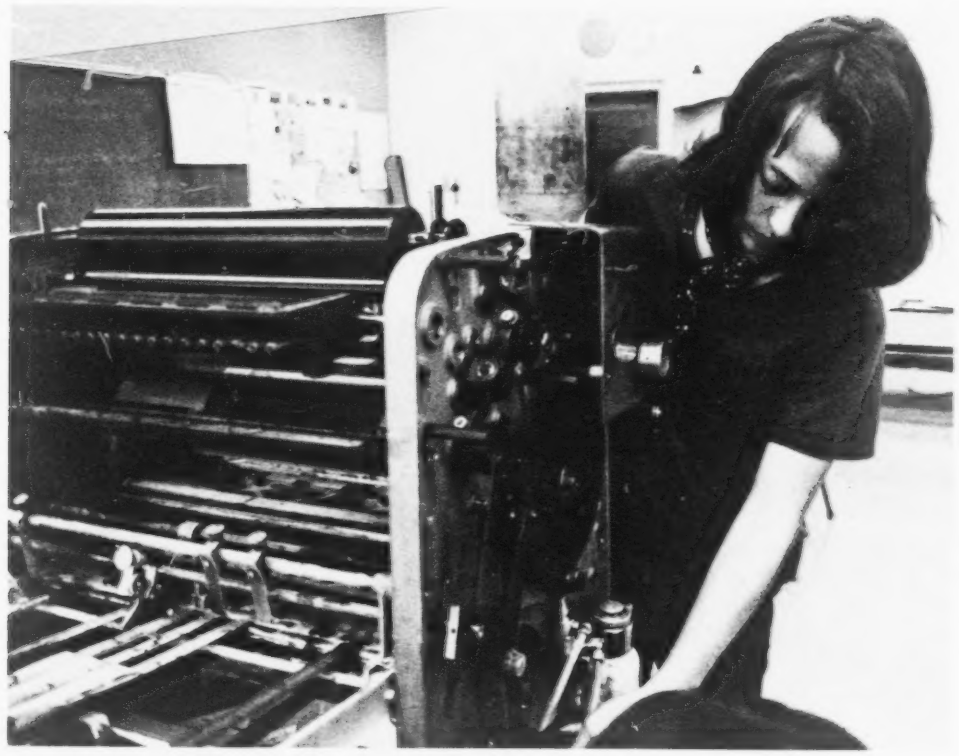
Participant in "Project Salvo," Washington County Vocational Technical Institute, learns welding procedures.

6426



GRAPHIC ARTS

Operating a small offset press at Oxford Hills High School, South Paris.



Student pressman at Presque Isle adjusts his machine for the next operation.

6427

Priority of funding for programs in Maine goes to public and non-profit private schools and agencies located in areas of the state having: (1) high concentration of youth unemployment or school dropouts; (2) geographic isolation; or (3) economic depression. Rulings on qualification under these categories are based on provisions of the Maine State Plan for Vocational Education. Recent statistics indicate that more Maine schools fall within one or more of the above categories than do not.

Searsport youngsters add finishing touches to cabinet in which they will store equipment purchased for their program.

FINISH CARPENTRY and CABINET MAKING

Fort Kent youngsters finish framing room-divider for local non-profit co-op ski lodge.

Dismantling an outboard motor for repair at Community High School, Fort Kent.

Fine-tuning a carburetor that was rebuilt by students at Narraguagus High School, Harrington.

SMALL ENGINE REPAIR

Because funds are limited and because treatment of the whole person overlaps many spheres of responsibility, close coordination with helping agencies and organizations--statewide and local--is required of Maine programs. Such agencies and organizations include those dealing with employment, health, welfare, and rehabilitation, and others working to meet needs of the turned off.

6429

VOCATIONAL TECHNICAL INSTITUTES and REGIONAL TECHNICAL-VOCATIONAL CENTERS

Although regionalized vocational programs offer more vocational training to more Maine youngsters than ever before, communities with access to the new regional schools still need programs for students who have been "turned off." Many youngsters, because they "turned off" to school long ago, are no more prepared to succeed in the mainstream of a vocational school than in a traditional high-school setting. Recognizing that these students are yet to be served, administrators in some school systems having access to regional vocational technical centers have sought and received funds under programs for the disadvantaged.

Project MORE (More Opportunity for Rural Employment) for students in grades 10-12 began at Dexter Regional High School in April 1970. Supplementing programs of the Dexter Regional Technical-Vocational Center, MORE emphasizes individual instruction.

Students take part in Project MORE in conjunction with their regular high school programs. In-school sessions are held in a special room housing videotape equipment, a simulated grocery store, and a modified classroom area. Students train at their own rates in retail machine operation, orientation to work, safety, and behavior on the job.

Field trips to local businesses help students select areas of vocational interest in which they would like entry-level-skills. Those who are old enough, and who have advanced sufficiently gain job experience in local businesses while continuing their high school education.

Operation LEARN at Presque Isle is a non-graded, individualized, work-study program involving about 20 high school sophomores, juniors and seniors.

During the morning, students learn English, history, social studies, mathematics and science. In the afternoon, they work at on-the-job training in the community or learn trade skills at the Regional Technical-Vocational Center.

Participants receive equal credits for academic study and for work. They must work a minimum of 10 hours per week to meet program qualifications.

Occupations studied are selected on the basis of local job opportunities. Employers agree to provide on-the-job experience and hire the graduated students for at least a trial period. All who successfully complete this program are assured of job placement.

Project SALVO (Students Actively Learning Vocational Occupations)—Eighteen students from Calais and surrounding high schools are enrolled in Project SALVO at Washington County Vocational Technical Institute.

A 2-year program for high school juniors and seniors, Project SALVO consists of three parts: basic courses, such as drafting, hand tools and safety, and welding; two semesters of specific skill training, such as automobile service, boat repair, and oil burner service; and on-the-job experience in vocations.

SALVO program students acquire marketable skills and two credits per year toward completing requirements for high school graduation.

Occupations for which training is offered are selected on the basis of local job opportunities and the agreement by an employer to provide on-the-job experience and to hire the SALVO graduate for a trial period.

CORRECTIONAL INSTITUTIONS

There is probably no greater concentration of disadvantaged persons in Maine than that found among the inmates of state correctional institutions. Often, frustration with the very conditions that make them disadvantaged has caused them to violate society's laws. For this reason, some state institutions have qualified for, and received, funding under the programs for the disadvantaged. Two programs are described below.

Men's Correctional Center, South Windham

A new wing which was designed specifically for rehabilitation through vocational training was opened at the Men's Correctional Center in September 1970. The institution was granted funds to buy tools and equipment under the 1968 amendment to the Vocational Education Act. Initially, some funding for new staff was also made available.

Prisoners at the institution are teenagers and young adults, ranging in age from 16 to 26. The missions of the vocational program are to: train them in vocations in which opportunities for work will be available; develop in each student a desire to seek legitimate employment; and return to society persons whose skills can contribute to the progress of their communities.

By providing these young men with skills needed for available jobs, the center hopes to curb recidivism. If a man has skills and self-respect, it is reasoned, he is more likely to seek honest employment and less apt to become a repeat offender.

Vocational training is provided in the following areas:

Automotive
- Front end alignment, brake service
- Minor and major tuneup

Welding
- Arc welding
- Heliarc welding
- Burning

Building Trades
- Actual construction of small buildings
- Blueprint reading

Graphic Arts
- Press work
- Camera work
- Layout (art work)
- Plate work
- Negative stripping
- Varitype
- Letterpress
- Linotype
- Binding methods

Electric Wiring
- Residential
- Industrial

In conjunction with its vocational training, the Men's Correctional Center offers inmates a high school equivalency program. It is now possible for a young man to leave the center having earned his high school equivalency certificate and possessing skills to seek and hold a legitimate job – a combination calculated to make a former burden one of society's essential assets.

6431

Wood turning training made possible at South Windham as a result of federal grant under programs for the disadvantaged.

New facilities and equipment help develop entry-level skills for jobs that will be available on the outside.

6432

Stevens School girl completed nurses aide training at Augusta General Hospital, is now released from Stevens on Saturdays to work at the hospital as an employee.

Stevens School

Stevens School for girls in Hallowell, recognizing that many of its wards were destined to become high school dropouts, had an established vocational training program, but funding was limited. Beginning in 1970, funding under programs for the disadvantaged became available to supplement existing training and to help expand Stevens School's offerings in vocational education.

Funds for the disadvantaged have helped pay for additional personnel, equipment, textbooks and supplies. As a result, Stevens girls have been able to gain entry-level skills in a greater variety of vocations. Programs have included training as nurses aides, shoe stitchers, waitresses, chambermaids, keypunch operators, laundry workers, food service workers, and child care aides.

Community involvement has been a keystone of the Stevens School program, and coordination between this correctional institution, the community, and state and federal agencies has been exemplary. Stevens girls are tested for general aptitude and vocational interest by agents of the Maine Employment Security Commission; they receive classroom training at the school from staff and community professionals; many are sponsored for on-the-job training by community agencies and private businesses; and, upon leaving the institution, girls receive help in funding and work placement from the Maine Bureau of Vocational Rehabilitation.

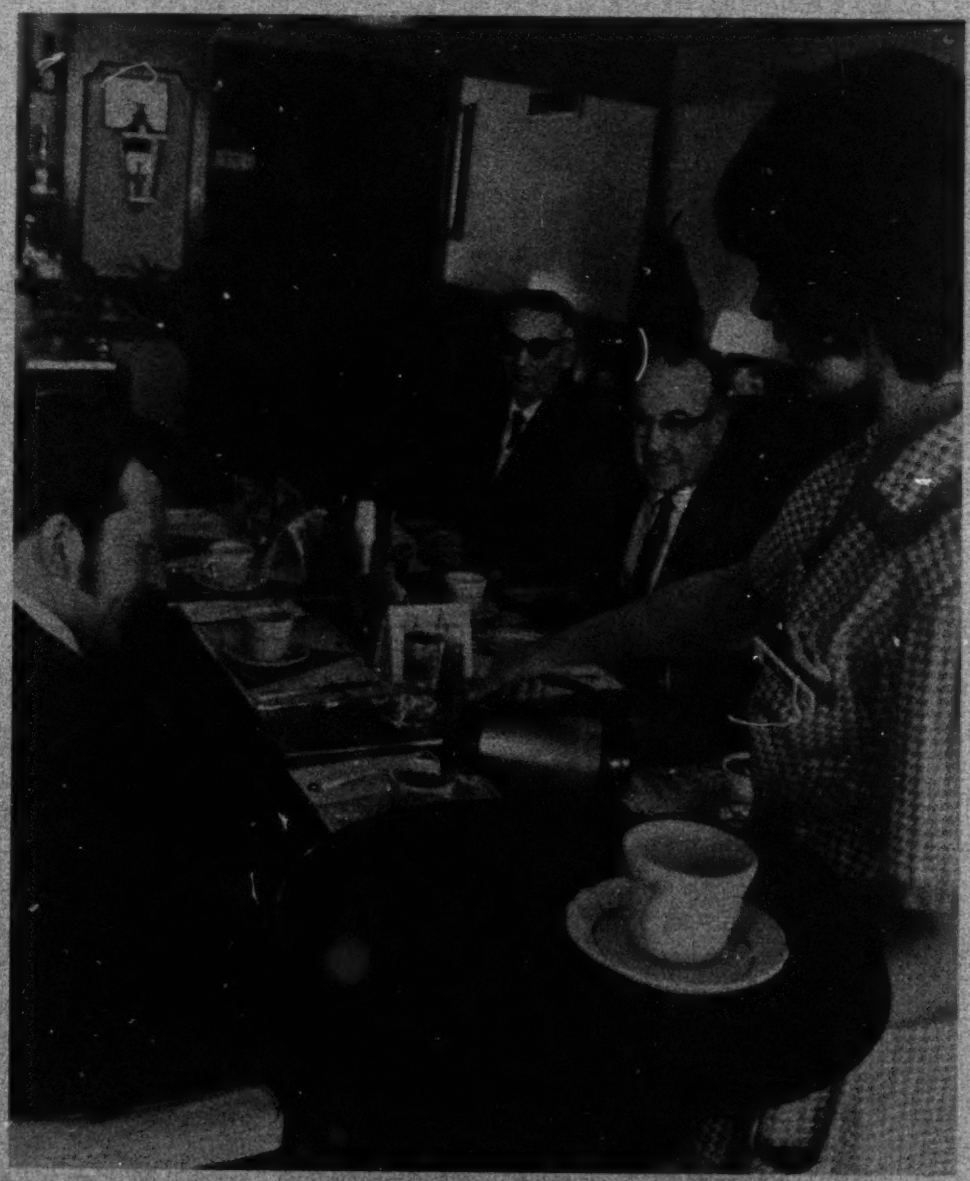
6433

A 250-hour course in shoe stitching need not be boring...

...when the same machines and materials can be used for creative needlework. Girls released from Stevens are in demand from shoe firms throughout the state.

6434

Wearing traditional Howard Johnson's uniform, waitress trainee from Stevens School gains on-job experience.



For Further Information

about programs at the Maine State Museum, at vocational technical institutes, at regional technical-vocational centers, or at state correctional institutions, write to:

John Daniels
Project Director
Maine State Museum
Augusta 04330
Tel. 289-2301

Ronald Clukey
Project Director
Dexter Regional High School
Dexter 04930
Tel. 924-6471

James Rowe
Project Director
Washington County
Vocational-Technical
Institute
P.O. Box 341
Calais 04619
Tel. 454-2144

Nanabelle Carter
Project Director
Presque Isle High School
Presque Isle 04769
Tel. 768-5711

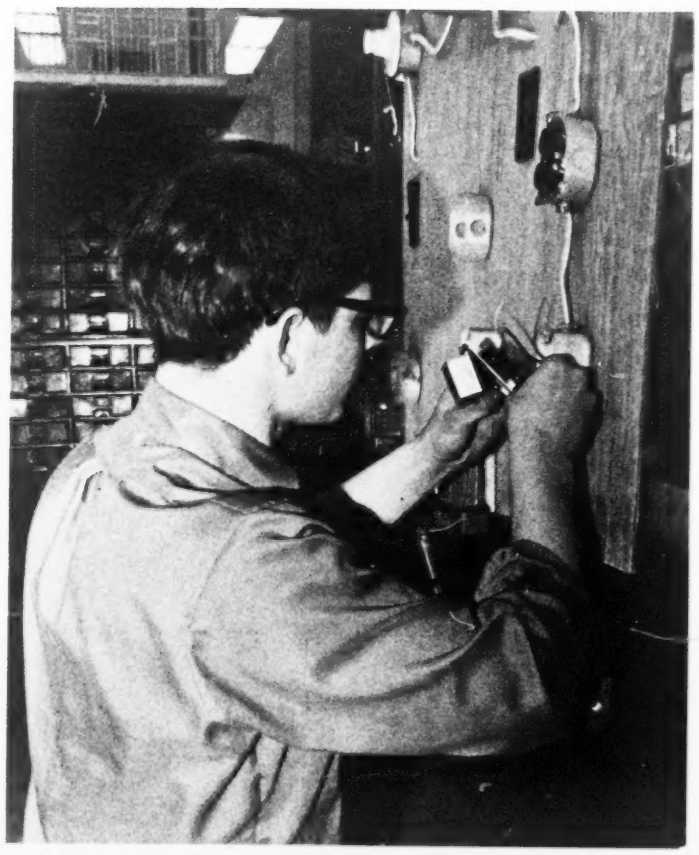
Hamilton Grant
Asst. Superintendent
Kenneth Gardner
Teacher-Coordinator
Men's Correctional Center
119 Mallison Street
South Windham 04082
Tel. 892-6716

Robert Spears
Principal
Nona Libby
Project Director
Stevens School
Hallowell 04347
Tel. 623-3801

6435

The objective of Maine's program is to turn *on* the turned-off through relevant educational opportunities. By appealing to students' individual interests, entry-level skills can be explored and developed. Local educators are encouraged to try new methods of teaching and "seed" money is provided to help schools initiate programs for turned-off students and adults. Assistance may last for up to three years, depending on need and availability of funds. Funds can be used to defray salaries of staff and consultants, and for initial purchase of essential equipment and supplies.

RESIDENTIAL WIRING



Completing a student-made circuit board, Washburn Regional High School.

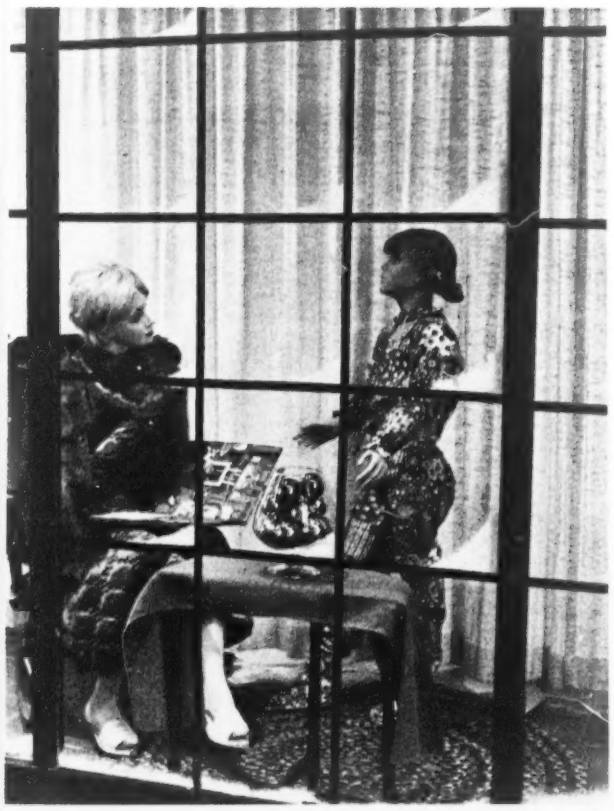
Wiring a residential service entrance, Searsport Regional High School.

6436

SHOE STITCHING

Presque Isle teenager stitches brand-name footwear at Converse plant.

WINDOW DRESSING

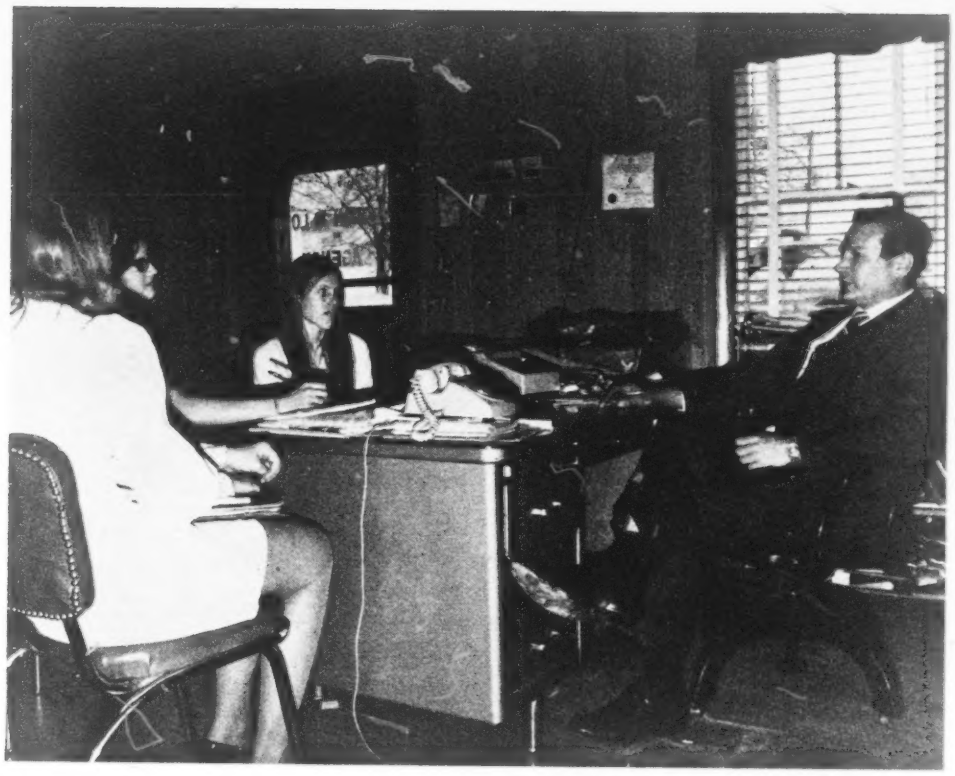


A window of Bangor Senior High School, dressed for winter by Bangor students.

A typical project to assist turned-off students and/or adults develop "entry level skills" begins with a long-range needs survey of the local area to determine the kinds of jobs most likely to be available to graduates during the next five years or more and, conversely, to determine job fields that are dwindling and for which people ought not to be trained.

6437

JOB SURVEY

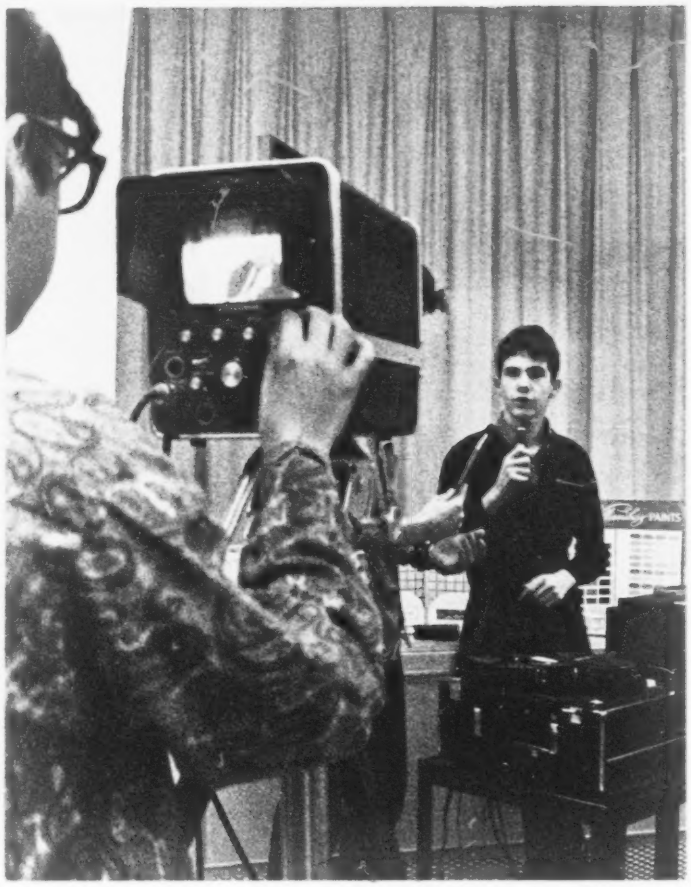


Students at Machias Memorial High School conducted their own survey of manpower needs in that community. Program participants compare their own interests against survey results in selecting possible vocations.

Hermon students prepare to remove pilot bearing from domestic clothes dryer. Members of class take turns spending three days a week answering service calls with local repairmen.

APPLIANCE REPAIR

6438



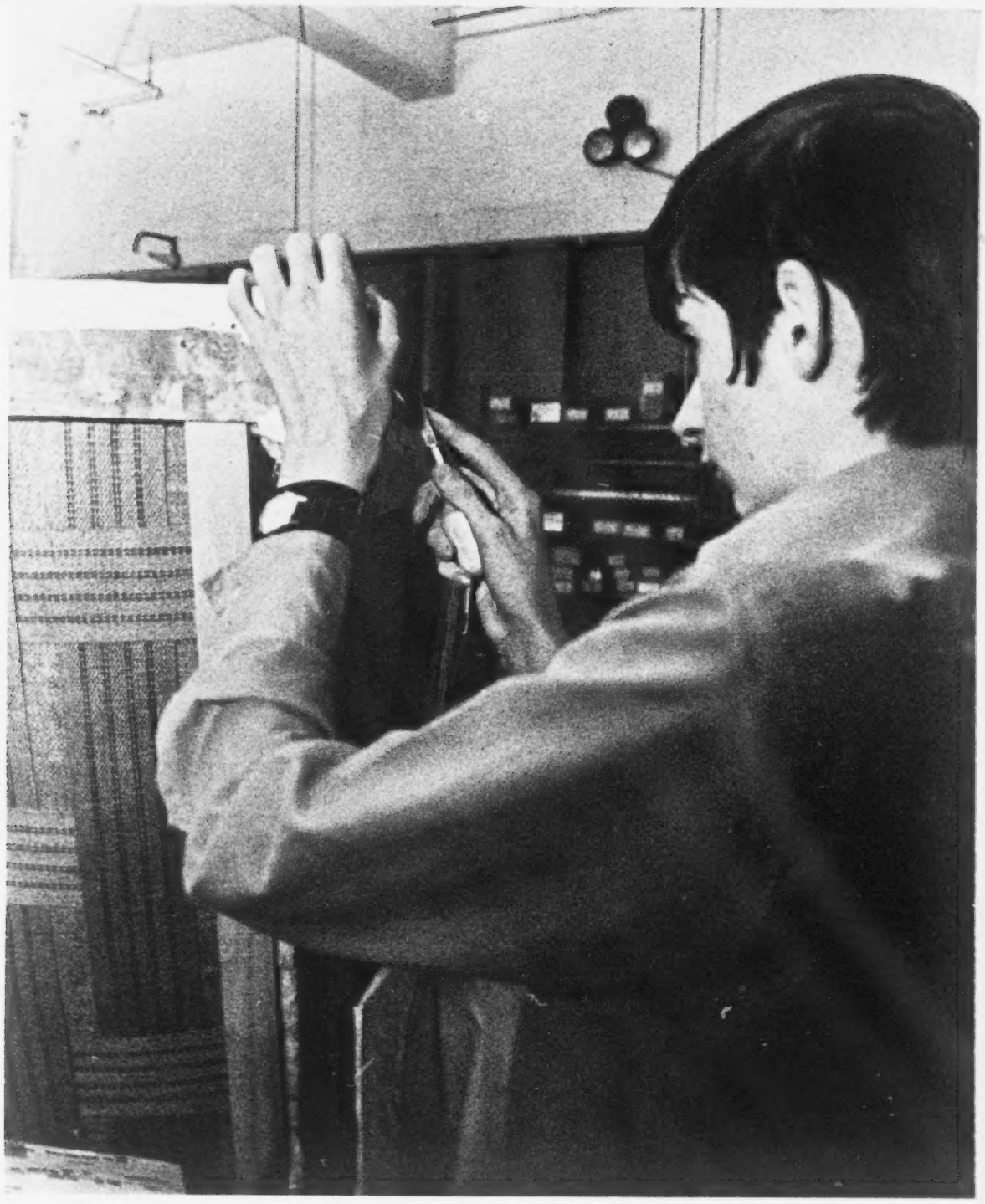
Videotape unit in Dexter classroom helps develop self-confidence and speaking ability, two important assets in distribution and marketing vocations.

COMMUNICATION SKILLS

CHILD CARE SERVICES

Mount Desert teenagers make ready for area pre-schoolers in their laboratory nursery school. Students are responsible for planning and supervising all activities.

6439

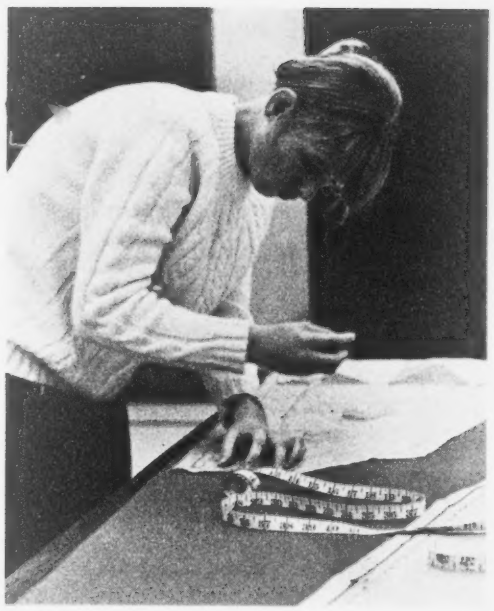


A Fairfield student prepares a wing-back chair for its new covering.

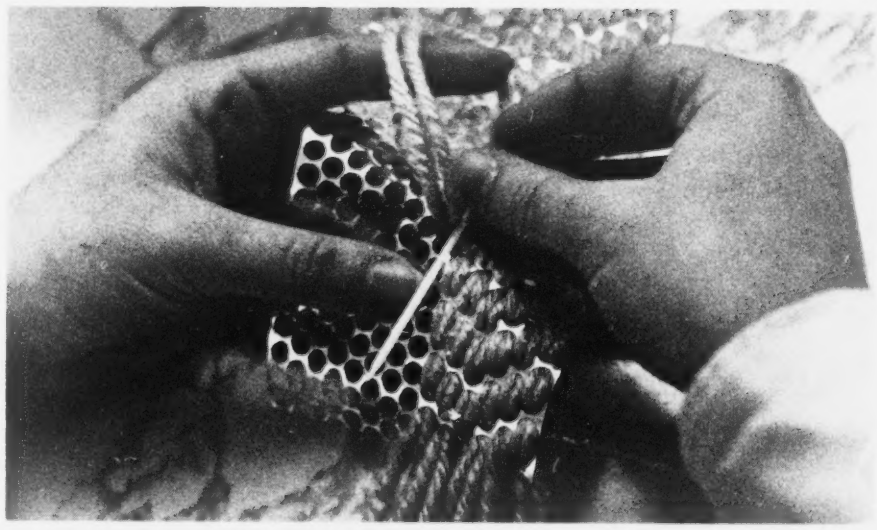
UPHOLSTERY

After students' vocational interests are determined and future manpower needs considered, a three-fold plan is drafted. The plan describes: (1) characteristics and needs of students to be served; (2) types of vocations for which entry-level-skill training will be offered; and (3) methods by which students' total needs will be served. Such methods include finding interim jobs for students, relating curriculum to their interests, and coordination with other agencies.

6440



Clothing construction, a Saturday program at Community High School, Fort Kent.



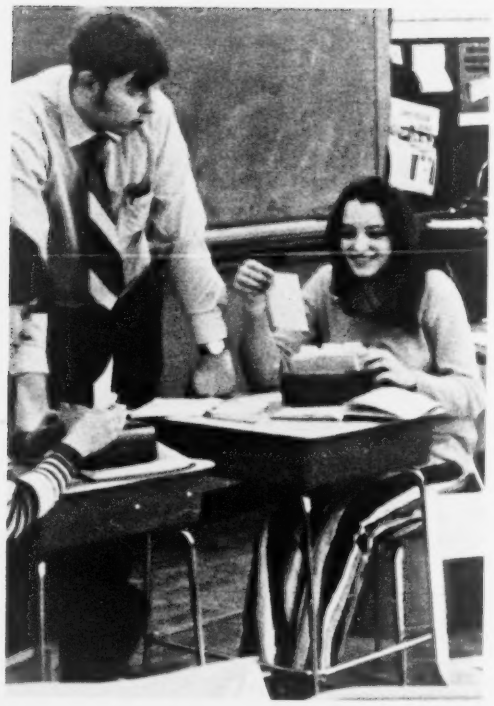
A Van Buren youngster develops handwork dexterity by weaving a placemat.

WAGE EARNING

HOME ECONOMICS

Project HOME (Homeworkers Organized for More Employment), a non-profit co-op at Orland, provides training and markets products for more than 300 rural people.

6441



BUSINESS EDUCATION, OFFICE PRACTICES

Students (left and above) at Allagash High School learn office machine and filing procedures.

AUTOMOTIVES

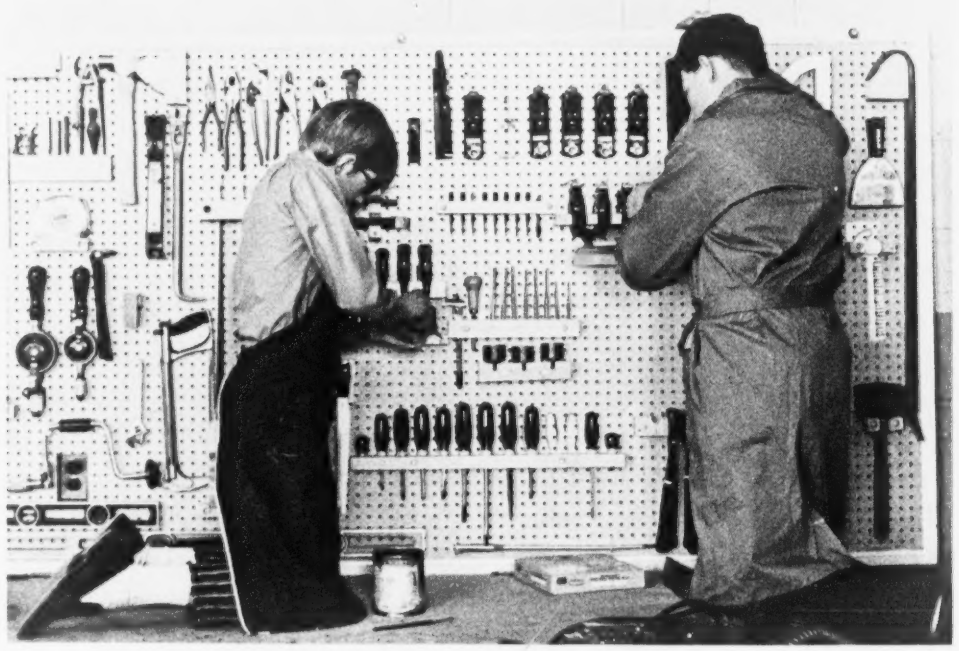
Preparing to grind engine valves at Fort Fairfield. Participants disassemble old cars, repair and rebuild them.

6442

FENCE MANUFACTURE

An East Corinth student loads shipment of snow fence slats produced in local mill.

TOOL MAINTENANCE



Searsport youngsters adjust storage board for tools purchased with federal funding. Proper care of these tools encourages respect for equipment.

6443

APPLICATION PROCEDURE

Application for funding under this section of the 1968 Vocational Education Amendments Act should be made to the Director of Vocational Education, Maine Department of Education, Augusta, Maine 04330. No special application form is required, but all applications must contain the following information.

Program. A statement of the nature, need, purpose and objectives of the program for disadvantaged persons in relation to vocational education.

Procedure. Program applications should provide the following specific information:

1. Nature of the program, including objectives stated in terms of behavioral changes and expected outcomes;
2. Population group to be served;
3. Nature and extent of coordination with other local, state and federal programs and agencies in developing the program;
4. Duration of the program;
5. Time schedule and how the program will be implemented;
6. The manner and extent to which information about the program will be disseminated;
7. Facilities to be used (if applicable);
8. Evaluation to be made;
9. Assurance of maintenance of effort; and
10. Fiscal breakdown of program.

Application may be made at any time. However, availability of funds at the time of application will determine whether approval is for the current or upcoming fiscal year.

Vocational mathematics, employing electronic office calculators, makes math meaningful to Portland students.

PERSONNEL

Carroll R. McGary
Commissioner of Education

Kermit S. Nickerson
Deputy Commissioner of Education

Elwood A. Padham
Director, Bureau of Vocational Education

Carl W. Butler
Consultant, Education for the Disadvantaged

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Cover artwork by Bob Cardin, Bangor

Designed by
Communication Concepts of Augusta

Our goal is to provide each individual with the opportunities for experiencing a sense of dignity, of pride, of self-respect, of being "his own man."

—Project H.O.M.E.
Orland, Maine

6446

VT 014 587
HENNING, ROBERT J.
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ABSTRACT - THIS PILOT PROJECT WAS UNDERTAKEN TO TEST THE VALUE OF PROGRAMED INSTRUCTION FOR APPRENTICESHIP-RELATED MATHEMATICS. A PACKAGE WAS DEVELOPED AND APPLIED TO A DIVERSE GROUP OF SEVERAL TYPES OF APPRENTICES WHO WERE PRE- AND POSTTESTED TO DETERMINE THE EFFECT OF THE PACKAGE ON THEIR PERFORMANCE. ALTHOUGH THE PACKAGE HAD STATISTICALLY SIGNIFICANT EFFECTS FOR THE GROUP AS A WHOLE, THE RESULTS BY TYPE OF APPRENTICESHIP PROGRAM WERE MIXED. THESE RESULTS ARE OF LIMITED SIGNIFICANCE, BECAUSE OF THE SMALL NUMBER OF STUDENTS. (BH)

VT 014 587

RESEARCH REPORT No. 102-71

A PILOT STUDY ON THE USE OF PACKAGED INSTRUCTION AS A METHOD OF TEACHING APPRENTICESHIP-RELATED MATHEMATICS

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A PILOT STUDY ON THE USE OF PACKAGED INSTRUCTION AS A METHOD OF TEACHING APPRENTICESHIP-RELATED MATHEMATICS

by

Robert J. Henning

A Research Paper

Submitted to Complete the

Plan B Requirements in

469-536

Problems in Vocational, Technical and Adult Education

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January, 1971

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In Memory of

my beloved brother

Bill

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CHAPTER I: INTRODUCTION

Background of Study

In the spring of 1969 the investigator was approached by Mr. Charles Pinkepank, Coordinator of Apprenticeship Training, at the North Central Technical Institute (NCTI), Wausau, Wisconsin, about the possibility of reorganizing the present apprenticeship mathematics classes taught at NCTI. At that time the mathematics being taught was related directly to the trade in which the apprentice was being trained. For example: Sheetmetal mathematics for the sheetmetal apprentice; carpentry mathematics for the carpentry apprentice; and so forth. Mr. Pinkepank's plan was to unify the apprenticeship mathematics classes to give the apprentice a solid foundation in basic mathematical principles. Mr. Pinkepank and the investigator decided that an analysis of the mathematics taught to the apprentices should be conducted.

The investigator conducted the analysis of the textbooks used by the apprentices, the course outlines of the various apprenticeship training programs taught at NCTI, and course materials used by the circuit instructors for the various apprenticeship training programs. From this analysis a new course outline was constructed using the areas

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of mathematics required most frequently by all the various programs. The new course outline and analysis were given to Mr. Pinkepank to present to the Joint Apprenticeship Committees (JAC) for their approval and recommendations. The course outline and analysis were accepted by the JAC, and work was begun to find a method of teaching the new course. The structure of the apprenticeship training program in the state of Wisconsin made it almost impossible to teach six different units of mathematics by one instructor during one two-hour block using the lecture approach.

In the summer of 1969 the investigator participated in a new course at Stout State University. It was, as stated by Sedgwick and Courtney (1969), "a course utilizing instructional packages to implement individualized continual progress instruction based upon mastery learning [p. 1]." It was this course that gave the investigator a model to try. Bloom (1968) states,

> "Most students (perhaps over 90 percent) can master what we have to teach them, and it is the task of instruction to find the means which will enable our students to master the subject under consideration [p. 2]."

This method of instruction would enable the apprentice to receive the basic mathematics he needs, using a combination of individualized study and tutorial assistance.

The packaging of instructional materials is a fairly new concept and not much research has been done to prove the usefulness of this method of presenting instructional material. As stated by Walbesser and Carter (1968), "the behavioral objectives and learning hierarchies strategy for curriculum research merits some consideration [p. 64]." The investigator believes that by using the packaged method of presentation in this mathematics program, he will collect more data as to the value of the packaged method for future use, either pro or con.

The investigator accepted the responsibility of reorganizing the apprenticeship-related mathematics course for the following reasons:

1. He has taught apprentices related mathematics for seven semesters.

2. Working with the apprentices has given him an appreciation for the apprenticeship training program and a sincere interest in the apprentice and the quality of instruction given the apprentice.

3. He holds a B.S. Degree in Industrial Arts Education with a minor in Mathematics from Stout State University.

4. He has been teaching Mathematics at North Central Technical Institute for the past five years.

5. He has satisfactorily completed required statistics and research courses for a MS Degree in Vocational Education at Stout State University.

Importance of the Study

The importance of the study is stated in the following:

1. There is a need for change in the method of instruction for apprenticeship-related mathematics.
2. The packaging of instructional materials is a fairly new concept, and not much research has been done to prove the usefulness of this method of presenting instructional materials.
3. The value of packaged instruction needs to be tested for future use in the apprenticeship training program.
4. There is a need to find out how apprentices react to this method of instruction.
5. The State Board of Vocational, Technical, and Adult Education is interested in this type of research and would like to know the results of this study.
6. It is hoped that this study will lead to more studies of this type in the state vocational system.

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Statement of Problems

The investigator, after going through the background of the study and the importance of the study, identified the following questions and attempted to answer them through this study.

1. Is independent study using packaged instruction combined with partial tutorial assistance an effective method for teaching apprentices the basic mathematics required of them?
2. What is the feeling of the apprentices toward this method of instruction?
3. Does this study indicate that this method of instruction is feasible for teaching the same mathematics to apprentices in the different areas of apprenticeship training?

Statement of Hypotheses

The following hypotheses are to be tested using data collected from the pretest and posttest of this study.

Number one

H_o: There is no significant difference in the mean scores of the pretest and posttest for each of the apprenticeship groups after working on the package constructed for this study.

H_a: There is a significant difference in the mean scores of the pretest and posttest for each of the apprenticeship groups after working on the package constructed for this study.

Number two

H_o: There is no significant difference in the mean scores of the pretest and posttest for all of the apprenticeship groups after working on the package constructed for this study.

H_a: There is a significant difference in the mean scores of the pretest and posttest for all of the apprenticeship groups after working on the package constructed for this study.

Definition of Terms

1. Mathematics; the mathematics of this study consists of applied, basic examples and problems which the apprentice is expected to learn to solve. The topics covered in the apprenticeship-related mathematics course are presented in Appendix A.
2. Apprentice; a student under a legal agreement to work a specified length of time for a contractor in a trade or craft area in return for instruction received. The apprenticeship training programs participating in this study are presented in Appendix B.

3. Package instruction; a highly organized, self-contained method of presenting a single topic to an individual for his independent study with possible tutorial assistance.
4. Tutorial assistance; aid given by an instructor when the student cannot resolve a problem independently.
5. Illustration; a step-by-step presentation of a complete solution to an example or problem, showing the student how to work the problems and examples he will be expected to solve in the package.
6. Example; a mathematical statement in which the operation to be performed is shown symbolically.
7. Problem; a verbal statement from which the student must derive a mathematical statement and calculate the solution.
8. Mastery learning; a 90% level of achievement on the post-test of any given package.
9. Quest; this (Kapfer, 1968) "includes problem confrontation, delimitation, research, and resolution. Quest is a pupil-initiated and self-directed learning activity."

References

Bloom, B. S. Learning for mastery. UCLA evaluation comment. Los Angeles, California: Center for the Study of Evaluation of Instructional Programs, May, 1968. Vol. 1, No. 2.

Kapfer, P. G. An Instructional management strategy for individualized learning. Phi Delta Kappan, Volume XLIX (January, 1968), 260-263.

Sedgwick, L. K. & Courtney, E. W. Elements of research foundations. Menomonie, Wisconsin: The University Book Store, Stout State University, 1969.

Walbesser, H. H. & Carter, K. Some methodological considerations of curriculum evaluation research. Educational leadership. October, 1968, pp. 53-64.

CHAPTER II: PLAN FOR MAKING THE INVESTIGATION

Design of the Investigation

Construction of the package

The package's main function is to develop a major concept or skill in such a way that when the student completes the package and takes the posttest, he can demonstrate how well he has mastered the concept or skill.

Generally a package has the following characteristics: a) it deals with a major concept or skill, b) explains what the student is expected to be able to do upon completion of the package in terms of stated behavioral objectives, c) uses more than one style or method of learning materials and activities, d) uses three types of evaluation; pretest, self-test, and posttest, and e) gives the student a chance to quest an interest he might have developed while working on the package.

Evaluation under the traditional system was a one step process - a posttest which checked to see how much the student remembered. As stated in the above paragraph, under the package system there are three steps in the evaluation process, the prettest, the self-test, and the posttest.

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The pretest, which is generally located at the beginning of the package, is used to check the student's entering behavior. The pretest helps the instructor, in consultation with the student, determine the strengths and weaknesses of the student so that the student does not waste time studying material he already knows.

The self-test, which is generally located at the end of the package, is used by the student to check to see if he has successfully met the objectives of the package. After successfully completing the self-test, the student is then ready to take the posttest.

The posttest is used by the instructor to determine how well the student has mastered the objectives of the package. The level of mastery is determined by the instructor and stated in the package.

The package developed for this study has the following characteristics: a) it covers the major concept of simple fractions with four minor concepts involving the addition, subtraction, multiplication, and division of the various types of simple fractions, b) states expected performance in terms of behavioral objectives, c) is a self-contained package - the student does not have to go any further than the package to get the information needed to meet the

objectives of the package, d) a general pretest was selected for this package and for future packages to be constructed for this course, e) has a self-test, f) has a posttest, and g) does not give the student a chance to quest.

In the future, upon the completion of a package, the student will move on to the next higher package. It is hoped that when and if a student completes all the packages for the course before he completes his apprenticeship training, there will be a chance for him to quest any area of mathematics with which he wishes to become more acquainted. The package developed for this study is presented in Appendix C.

Pretest

The pretest used in this study was developed by Miss Gladys Tate for use in the preparatory arithmetic class that she taught at NCTI. Miss Tate holds a MS in mathematics and has earned over 30 credits beyond the MS. Miss Tate has taught mathematics for over 30 years, ranging from elementary to postsecondary education. The investigator chose the test because it fit his needs. A copy of the test is presented in Appendix D.

The pretest in this investigation was given to all 100 of the apprentices enrolled in apprenticeship-related mathematics at NCTI in January of 1970. From this 100

apprentices 55 were selected to participate in the study. The selection was based on the number of correct answers given by the students on the 19 problems in the pretest which pertained to simple fractions.

Treatment material

The students were given an orientation on how to study under this new program and the package on which to work. After the student had successfully completed the self-test, at the end of the package, he came tothe instructor to get the test for mastery. There was no time limit on the test. After completing the test, the student returned it to the instructor to be graded. If the student failed to obtain the 90% or better mastery level on the test, he was asked to correct the mistakes he had made. After he had corrected his mistakes, he returned the test to the instructor to be regraded. If, at this point, the student had still not achieved the 90% mastery level, the instructor had a personal conference with him to determine where he was having difficulty and to develop a new plan for him to complete the package. Any student who had achieved the 90% mastery level on the test was presumed ready for the posttest.

Posttest

After all 55 students had completed the packaged instruction, they were given the posttest, which was the same as the pretest in this study.

Questionnaire

A research questionnaire was administered to the students before taking the posttest. A copy of the questionnaire is presented in Appendix E. The results of the questionnaire will be presented in Chapter III. The questionnaire was primarily concerned with the way in which students reacted to individualized packaged instruction with regard to their apprenticeship education.

Limitations of Investigation

The investigation was limited to the apprentices who attended NCTI during the second semester of the 1969-70 school year. The apprenticeship programs participating in the study are presented in Appendix B. The final data was limited to 55 apprentices who completed the package designed for the study. It was also limited by the fact that only one investigator conducted the investigation. It was suggested in most of the research papers the investigator read that two or more people work on the development of packaged instruction.

The data used in this study is accurate as far as the investigator can tell, but only a small population was involved.

Statistics

The statistics used in this study were as follows:

1. The test of reliability used on the pretest and the posttest was the Kuder-Richardson formula, No. 20 (Downie and Heath, 1965, p. 220).
2. The test of differences between means was determined by using the student's "t" formula for correlated data (Downie and Heath, 1965, p. 133-141).
3. The results of the questionnaire will be in terms of percents.
4. The .05 level of significance, better known as a type I error (Downie and Heath, 1965, p. 129), was used on the student's "t".
5. The statistics were calculated on the IBM 1130 computer at Stout State University, Menomonie, Wisconsin and on the IBM 360 computer at the North Central Technical Institute, Wausau, Wisconsin.

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Review of Literature

The investigator, in looking through the materials he had read and studied before and after beginning the study, can only point to Bloom's report (1968) on "Learning for Mastery" as his basic guide. Bloom (1968) summarizes the investigator's feeling about learning in the following statement:

> "there seems to be little reason to make learning so difficult that only a small proportion of the students can persevere to mastery. Endurance and unusual perseverance may be appropriate for long distance running -- they are not great virtues in their own right. The emphasis should be on learning, not on vague ideas of discipline and endurance. [p. 10]."

In the report Bloom (1968) covers the background for mastery learning, the normal curve, and the variables for mastery learning. Bloom (1968) ended the report by stating "Mastery learning can give zest to school learning and can develop a lifelong interest in learning. It is this continual learning which should be the major goal of the educational system [p. 17]."

After reading Bloom's (1968) report the investigator read an article by Walbesser and Carter (1968) which tested the 90% mastery level by 90% of the students theory for an

elementary science curriculum. They found that in their study the 90/90 success level was not attained and suggested that more research needed to be done in this area.

At this point, the investigator set out to learn as much as possible about the apprenticeship training programs. He also set out to get a better understanding of learning, developmental psychology, and the taxonomy of educational objectives. The books and articles read and studied are presented in Appendix F. The investigator found the research to be interesting, enlightening, and rewarding.

Most of the books and articles supported the need for a study of this type.

> ...Both current apprentices and drop-outs expressed their dissatisfaction with the related instruction offered to them...These complaints indicate a need for an examination of the content and methods of providing apprentices with related instruction, with a view to determining whether or not related instruction helps to develop those skills required by employers... [Rajan, 1966, pp. 227-228]

Rajan (1966) also expresses an interest in the use of more individualized instruction.

A survey by Dr. Alfred S. Drew from Purdue University came out in November of 1969 and part of it was given to me by Mr. Clarence Reinholtz, District Supervisor, Division of Apprenticeship and Training, State of Wisconsin. The survey contained these recommendations.

> ...3. Modern instructional technology (i.e., single concept film, programmed learning, computer assisted instruction, video tape recorder, TV and others) should be utilized.
>
> ...6. Tests and other instruments and procedures for measurements at presented achievement levels should be developed and utilized. [Drew, 1969, p. 5-9]
>
> ...1. Individual instruction or correspondence courses are especially recommended where formal classes may not be feasible or economical. These techniques and materials may also be used to augment class instruction. Correspondence courses and other home study techniques should be improved and expanded. [Drew, 1969, p. 5-15]

It is the investigator's hope that through this report some light will be shed on the improvement of related instruction for apprentices as well as other areas of instruction.

References

Bloom, B. S. Learning for mastery. UCLA evaluation comment. Los Angeles, California: Center for the study of evaluation of instructional programs, May, 1968. Vol. 1 No. 2

Downie, N. M. & Heath, R. W. Basic statistical methods (2nd ed.) New York: Harper & Row, 1965.

Drew, A. S. Educational and training adjustment in selected apprenticeable trades. A final report submitted to Manpower Administration, Office of Manpower Research, U. S. Department of Labor, Washington, D. C. November, 1969. Survey was done at Purdue University, Lafayette, Indiana.

Rajan, G. S. A Study of the Registered Apprenticeship Program in Wisconsin. Center for Studies in Vocational and Technical Education, Industrial Relations Institute, The University of Wisconsin, 1966.

Walbesser, H. H. & Carter, K. Some methodological considerations of curriculum evaluation research. Educational leadership. October, 1968, pp. 53-64.

CHAPTER III: RESULTS OF THE INVESTIGATION

Reliability of Pretest and Posttest

The reliability of the pretest was calculated using the results of two different groups of apprentices. The first group consisted of the 100 apprentices who took the test. The second group consisted of the 55 apprentices who were selected to participate in the study. The reliability of the posttest was calculated using the results of the 55 apprentices who participated in the study. The pretest and posttest were the same tests. The reader should notice, when looking at the pretest-posttest presented in Appendix D, that it had two parts. Part I contained 42 items and dealt with mathematical examples. Part II contained 36 items and dealt with mathematical problems. The reliability was calculated separately for each part. There was no combined calculation of both parts. The results were as follows:

1. For the 100 apprentices who took the pretest, the Kuder-Richardson No. 20 for Part I was 0.879 and for Part II was 0.843.
2. For the 55 apprentices who took the pretest, the Kuder-Richardson No. 20 for Part I was 0.888 and for Part II was 0.856.

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3. For the 55 apprentices who took the posttest, the Kuder-Richardson No. 20 for Part I was 0.875 and for Part II was 0.882.

Calculated Student's "t"

The calculated student's "t" along with the data used to calculate it are presented in Table 1 through Table 9.

TABLE 1

Pretest and Posttest Raw Scores for Carpentry Apprentices

Student Number	Total Raw Score Pretest (X)	Total Raw Score Posttest (Y)
101	18	18
102	19	19
103	14	13
104	14	12
105	13	15
106	11	8
109	18	18

Mean $\overline{X}$ = 15.285 Mean $\overline{Y}$ = 14.714

s_x = 2.813 s_y = 3.692

Student's "t"= -0.934

TABLE 2

Pretest and Posttest Raw Scores
for Sheetmetal Apprentices

Student Number	Total Raw Score Pretest (X)	Total Raw Score Posttest (Y)
202	18	19
203	14	14
204	10	16
205	10	9
207	8	15
208	10	15
210	10	12
211	18	19

Mean $\overline{X}$ = 12.250 Mean $\overline{Y}$ = 14.875

s_x = 3.665 s_y = 3.139

Student's "t" = +2.497

TABLE 3

Pretest and Posttest Raw Scores
for Ironworker Apprentices

Student Number	Total Raw Score Pretest (X)	Total Raw Score Posttest (Y)
301	13	14
303	13	14

Mean $\overline{X}$ = 13.000 Mean $\overline{Y}$ = 14.000

s_x = 0.000 s_y = 0.000

Student's "t" = +1.000

TABLE 4

Pretest and Posttest Raw Scores
for Masonary Apprentices

Student Number	Total Raw Score Pretest (X)	Total Raw Score Posttest (Y)
404	14	17
408	10	12
411	14	15
413	3	6

Mean $\overline{X}$ = 10.250 Mean $\overline{Y}$ = 12.500

s_x = 4.493 s_y = 4.153

Student's "t" = +4.700

TABLE 5

Pretest and Posttest Raw Scores
for Millwright Apprentices

Student Number	Total Raw Score Pretest (X)	Total Raw Score Posttest (Y)
501	15	15
502	5	6
503	17	17
504	17	19
505	16	17
506	4	9
507	10	9
508	11	12
509	11	13
510	15	18

Mean $\overline{X}$ = 12.100 Mean $\overline{Y}$ = 13.500

s_x = 4.504 s_y = 4.201

Student's "t" = +2.584

TABLE 6

Pretest and Posttest Raw Scores
for Electrical Apprentices

Student Number	Total Raw Score Pretest (X)	Total Raw Score Posttest (Y)
620	17	18
621	12	15
622	12	10
623	12	11
624	12	11
625	6	4
626	12	9
627	14	11
628	10	14
629	10	11

Mean $\overline{X}$ = 11.700 Mean $\overline{Y}$ = 11.400

s_x = 2.685 s_y = 3.555

Student's "t" = -0.386

TABLE 7

Pretest and Posttest Raw Scores
for Plumbing Apprentices

Student Number	Total Raw Score Pretest (X)	Total Raw Score Posttest (Y)
702	6	10
706	19	19
707	8	11
710	8	16

Mean $\overline{X}$ = 10.250 Mean $\overline{Y}$ = 14.000

s_x = 5.117 s_y = 3.674

Student's "t" = +2.269

TABLE 8

Pretest and Posttest Raw Scores for Steamfitter Apprentices

Student Number	Total Raw Score Pretest (X)	Total Raw Score Posttest (Y)
802	12	14
803	16	15
804	19	17
805	7	17
807	15	15
808	14	16
809	14	17
810	16	17
811	14	14
812	9	14

Mean $\overline{X}$ = 13.600

s_x = 3.322

Student's "t" = +1.825

Mean $\overline{Y}$ = 15.600

s_y = 1.280

TABLE 9

Pretest and Posttest Raw Scores for All Apprentices

Student Number	Total Raw Score Pretest (X)	Total Raw Score Posttest (Y)
101	18	18
102	19	19
103	14	13
104	14	12
105	13	15
106	11	8
109	18	18

TABLE 9 (continued)

Pretest and Posttest Raw Scores
for All Apprentices

Student Number	Total Raw Score Pretest (X)	Total Raw Score Posttest (Y)
202	18	19
203	14	14
204	10	16
205	10	9
207	8	15
208	10	15
210	10	12
211	18	19
301	13	14
303	13	14
404	14	17
408	10	12
411	14	15
413	3	6
501	15	15
502	5	6
503	17	17
504	17	19
505	16	17
506	4	9
507	10	9
508	11	12
509	11	13
510	15	18
620	17	18
621	12	15
622	12	10
623	12	11
624	12	11
625	6	4
626	12	9
627	14	11
628	10	14
629	10	11
702	6	10

TABLE 9 (continued)

Pretest and Posttest Raw Scores
for All Apprentices

Student Number	Total Raw Score Pretest (X)	Total Raw Score Posttest (Y)
706	19	19
707	8	11
710	8	16
802	12	14
803	16	15
804	19	17
805	7	17
807	15	15
808	14	16
809	14	17
810	16	17
811	14	14
812	9	14

Mean $\overline{X}$ = 12.490 Mean $\overline{Y}$ = 13.836

s_x = 3.930 s_y = 3.641

Student's "t" = +3.673

Questionnaire

The data presented here was based upon all the apprenticeship training programs participating in the study. The percent in parentheses is based upon the number of apprentices responsing to the item out of the 55 who completed the questionnaire.

Part I

1. Age groups: 18-21 (22.92%); 22-25 (25.00%); 26-29 (25.00%); 30-33 (6.25%); 34 and above (18.75%); No answer, (2.08%).
2. Semesters as an apprentice. 1 (12.50%); 2 (33.33%); 3 (6.25); 4 (31.25%); 6 (12.50%). No answer, (4.17%).
3. Apprenticeship group. Carpentry (12.50%); Sheetmetal (16.67%); Iron Worker (4.17%); Masonary (12.50%); Millwright (12.50%); Electrical (12.50%); Plumbing (8.33%); and Steamfitter (20.83%).

Part II

1. Marital status. single (25.00%); married (72.92%); divorced (2.08%); and widowed (0.00%).
2. Previous experience with individualized packaged instruction.

   yes (45.83%) no (54.17%)
3. Individual conferences should be used specifically for handling problems which confront the student as he works the packages.

   yes (79.17%) no (20.83%)

4. Lectures should be included in this course.

   yes (68.75%) no (31.25%)

5. Individual attention which was provided was adequate.

   yes (89.58%) no (10.42%)

6. Small group discussion periods would have been helpful.

   yes (66.67%) no (33.33%)

7. Personally feel good about this type of instruction.

   yes (87.50%) no (12.50%)

8. This type of instruction should be recommended for other courses.

   yes (81.25%) no (14.58%) No answer (4.17%)

9. The use of behavioral objectives is desirable and necessary in "Mastery" learning.

   yes (83.33%) no (12.50%) No answer (4.17%)

10. Self-tests included in the package were too easy.

    yes (18.75%) no (79.17%) No answer (2.08%)

11. The competencies learned in this course are important and useful.

    yes (97.92%) no (2.08%)

12. The retention levels under the package approach will be greater than under the traditional approach.

    yes (75.00%) no (20.83%) No answer (2.08%)

13. The teaching technique used in this course was desirable.

    yes (91.67%) no (8.33%)

14. Course content was appropriate for meeting on-the-job needs.

    yes (75.00%) no (22.92%) No answer (2.08%)

15. Large group presentation topics would be appropriate to the content of the course.

    yes (45.83%) no (52.08%) No answer (2.08%)

16. Physical facilities provided for testing were adequate.

    yes (95.83%) no (2.08%) No answer (2.08%)

17. Individual conferences have been influential in motivation toward the instruction.

    yes (70.83%) no (27.08%) No answer (2.08%)

18. Instructor generally available when needed.

    yes (97.92%) no (2.08%)

CHAPTER IV: CONCLUSIONS AND SUGGESTIONS FOR FURTHER STUDY

Restatement of Hypotheses

Number one

H_o: There is no significant difference in the mean scores of the pretest and posttest for each of the apprenticeship groups after working on the package constructed for this study.

H_a: There is a significant difference in the mean scores of the pretest and posttest for each of the apprenticeship groups after working on the package constructed for this study.

Number two

H_o: There is no significant difference in the mean scores of the pretest and posttest for all of the apprenticeship groups after working on the package constructed for this study.

H_a: There is a significant difference in the mean scores of the pretest and posttest for all of the apprenticeship groups after working on the package constructed for this study.

Conclusions of Hypotheses

The decision as to acceptance or rejection of the null hypotheses is presented in Table 10.

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TABLE 10

Acceptance or Rejection of Null Hypotheses Based Upon the Comparison of the Calculated "t" and the Tabular "t" of Pretest and Posttest Results for each Apprenticeship Program and for all Apprenticeship Programs.

Apprenticeship Program	Calculated "t"	df	Tabular "t"*	Decision
Carpentry	-0.934	6	2.447	Accept
Sheetmetal	+2.497	7	2.365	Reject
Ironworker	+1.000	1	12.706	Accept
Masonary	+4.700	3	3.182	Reject
Millwright	+2.584	9	2.262	Reject
Electrical	-0.386	9	2.262	Accept
Plumbing	+2.269	3	3.182	Accept
Steamfitter	+1.825	9	2.262	Accept
All Programs	+3.673	54	2.006	Reject

*$p<.05$

The investigator feels that the decisions shown in Table 10 are not realistic because of the small number of students involved in the study. But the decisions do show a need for more study and also that this study should be continued. The decisions do not take into consideration that the student may have learned in spite of the package or the class size. Therefore, the conclusions and suggestions of further study are very general in nature.

Conclusions of Questionnaire

The results of the questionnaire showed that the students favored this type of instruction. Most of the apprentices felt that packaged instruction could be used in other courses.

Suggestions for Further Study

As a result of this study the investigator makes the following suggestions:

1. This study should be continued to gather more facts as to the usefulness of the packaged approach in apprenticeship training.
2. Two people should work on the project.
3. Time should be given to the investigator to develop a new course outline based on the data gathered in this study.
4. Time should be given to the investigator to develop all the units of instruction for the apprenticeship mathematics course.
5. The investigator, in the development of more packages, must keep in mind the length of time it will take the apprentice to complete the packages and mastery tests.

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Appendix A

Title: Apprenticeship-related Mathematics Topics.

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Appendix A

The following topics are covered in the proposed reorganization of the apprenticeship-related mathematics course.

1. Simple fractions
2. Decimals
3. Percent
4. Exponents and radicals
5. Graphs
6. Solution of equations
7. Areas
8. Volumes
9. Weights and measures
10. Geometric relationships
11. Geometric constructions
12. Ratio and proportion
13. Trigonometry

Appendix B

Title: List of Apprenticeship Training Courses

Appendix B

According to the Wisconsin Apprenticeship Manual, an apprenticeship training program must meet the following three basic requirements;

1. ...in order to become a skilled journeyman mechanic, a full term apprenticeship must be served.
2. ...the work assigned to the apprentice must be such as will enable him to learn the whole trade.
3. ..., there must be a written agreement. It must specify plainly the term of training, an outline of the divisions of the trade to be learned and a wage schedule for the entire period of apprenticeship. Under this signed agreement, which is an apprenticeship indenture, all parties know exactly what are their responsibilities. [1964, p. 2].

The apprenticeship training programs listed below, which are recognized by the State of Wisconsin as having met the above stated requirements, were the ones included in the study.

1. Carpentry
2. Sheetmetal
3. Iron Workers
4. Masonary
5. Millwrights
6. Electricians
7. Plumbers
8. Steamfitters

Appendix C

Title: Package Used for Study

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APPRENTICESHIP MATHEMATICS

Course Number 894-501

Package No. U1

Topic: Simple Fractions

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District Number Fifteen
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January, 1970

UNIT 1 - SIMPLE FRACTIONS

UPON COMPLETION OF THIS UNIT THE STUDENT WILL BE ABLE TO DO THE FOLLOWING:

1. Explain, fully and in writing, the procedure for adding, subtracting, multiplying, and dividing the various types of fractional expressions.

2. Given ten addition examples and problems involving the various types of fractional expressions (those with like and unlike denominators, mixed numbers, and a combination of mixed numbers and fractions), on a test; you will compute the correct answers.

3. Given ten subtraction examples and problems involving the various types of fractional expressions on a test; you will compute the correct answers.

4. Given ten multiplication examples and problems, involving the various types of fractional expressions, on a test; you will compute the correct answers.

5. Given ten division examples and problems, involving the various types of fractional expressions, on a test; you will compute the correct answers.

Now that you have read the objectives of this unit do the following:

1. If you feel you can meet the objectives stated above you may take the self-test at the end of this package.

2. If you feel you need more instruction before taking the final test, do the assignments given in this package.

ASSIGNMENT NUMBER 1: Read the information for this package beginning on the next page and do the examples and problems after each section. If you need more information check your reference sheet for book and page numbers.

ASSIGNMENT NUMBER 2: Take self-test and check your answers. If you need help see your instructor.

ASSIGNMENT NUMBER 3: After completing the self-test to your satisfaction, get the test for mastery from your instructor.

INTRODUCTION

When working with fractions it is important to know some of the basic terms. The terms and definitions are as follows:

1. Common Fractions: Indicates a part or parts of the whole.
   Illustration: 1/8, 3/8, and 3/4.

2. Numerator: The number above the line, stating the number of parts of the whole that are taken.

3. Denominator: The number below the line, stating the number of equal parts into which the whole is divided.

4. Mixed Number: A number which consists of a whole number and a fraction.
   Illustration: 33 1/8, 2 3/8, and 1 3/4.

5. Proper Fraction: When the numerator of a fraction is smaller than the denominator.

6. Improper Fraction: When the numerator of a fraction is equal to or larger than the denominator.

7. Common Denominator: When two or more fractions have the same denominators.

8. A Factor: Any one of the numbers used in multiplication to form a product.
   Illustration: 2 x 3 = 6; therefore, 2 is a factor of 6 and 3 is a factor of 6.

SECTION 1 - ADDITION AND SUBTRACTION OF FRACTIONS WITH LIKE DENOMINATORS

To add or subtract fractions with like denominators

1. Add or subtract the numerators
2. Write the sum or difference over the denominator
3. Simplify if possible

<u>ILLUSTRATION</u>: ADD: $\frac{1}{5} + \frac{3}{5} = \boxed{\frac{4}{5}}$

SUBTRACT: $\frac{3}{5} - \frac{1}{5} = \boxed{\frac{2}{5}}$

If the fraction in the answer is an improper fraction change it to a mixed number or whole number, by dividing the numerator by the denominator and placing the remainder over the original denominator.

ILLUSTRATION: ADD: $\frac{2}{3} + \frac{2}{3} = \boxed{\frac{4}{3}} = 1\ \frac{1}{3}$

improper fraction

When the numerator and the denominator of the fraction in the answer are <u>divisible</u> by the same number, the fraction may be simplified to lowest terms.

ILLUSTRATION: $\frac{7}{16} + \frac{3}{16} = \frac{10}{16} = \frac{10 \div 2}{16 \div 2} = \boxed{\frac{5}{8}}$

$\frac{7}{16} - \frac{3}{16} = \frac{4}{16} = \frac{4 \div 2}{16 \div 2} = \frac{2}{8} = \frac{2 \div 2}{8 \div 2} = \boxed{\frac{1}{4}}$

EXAMPLE AND PROBLEM SHEET 1

Add or subtract the following fractions as indicated and reduce the answer to lowest terms when possible.

ADD:

1. $\frac{3}{5} + \frac{1}{5}$ = _____

2. $\frac{1}{7} + \frac{2}{7}$ = _____

3. $\frac{1}{3} + \frac{2}{3}$ = _____

4. $\frac{11}{16} + \frac{5}{16}$ = _____

5. $\frac{3}{8} + \frac{1}{8}$ = _____

6. $\frac{5}{8} + \frac{5}{8}$ = _____

7. $\frac{3}{32} + \frac{5}{32}$ = _____

8. $\frac{1}{4} + \frac{3}{4}$ = _____

9. $\frac{1}{8} + \frac{5}{8}$ = _____

10. $\frac{3}{4} + \frac{3}{4}$ = _____

SUBTRACT:

1. $\frac{3}{5} - \frac{1}{5}$ = _____

2. $\frac{4}{7} - \frac{1}{7}$ = _____

3. $\frac{2}{3} - \frac{1}{3}$ = _____

4. $\frac{11}{16} - \frac{5}{16}$ = _____

5. $\frac{5}{8} - \frac{3}{8}$ = _____

6. $\frac{5}{8} - \frac{5}{8}$ = _____

7. $\frac{11}{32} - \frac{5}{32}$ = _____

8. $\frac{3}{4} - \frac{1}{4}$ = _____

9. $\frac{5}{8} - \frac{1}{8}$ = _____

10. $\frac{15}{16} - \frac{5}{16}$ = _____

PROBLEMS

1. You are looking for a bolt that will hold two 3/4 inch boards together. 1/4 inch must be allowed for the nut. How long must the bolt be to do the job? Ans._____

2. A metal rod has to be cut into four pieces: 5/8, 7/8, 3/8, and 1/8. How long was the rod if 1/8 was wasted in each cut? Ans._____

SECTION II -- ADDITION AND SUBTRACTION OF FRACTIONS WITH UNLIKE DENOMINATORS

To add or subtract fractions with unlike denominators, two things must be remembered:

1. Find the common denominator of all fractions involved
2. Express all fractions in terms of the common denominator

1. The following is a method used to determine the <u>least common denominator</u> (L.C.D.).

<u>ILLUSTRATION</u>: Find the L.C.D. of 3/4, 5/6, and 3/8.

STEPS TO REMEMBER	ILLUSTRATION
1. Place all denominators, unless some are alike; then place only one of the like, in a division box.	1.) 4, 6, 8
2. Cross out all numbers which are factors of any of the others (4 which is a factor of 8).	2.) ~~4~~, 6, 8
3. Divide by 2 which is a factor of the remaining two.	3. 2) ~~4~~, 6, 8) 3, 4
4. There is no number which is a factor of the remaining two numbers (3, 4), then divide by 2 which is a factor of 4 and bring down the 3 which is not divisible by 2.	4. 2) ~~4~~, 6, 8 2) 3, 4 3, 2
5. The L.C.D. is the product of 2, 2, 3, and 2.	5. L.C.D. = 2 x 2 x 3 x 2 = 24

2. The following is the method used to express all the fractions in terms of the L.C.D.

STEPS TO REMEMBER	ILLUSTRATION
1. Divide the L.C.D. by the denominator of the fraction and multiply both numerator and denominator of the fraction by the answer.	Express the following fractions in terms of the L.C.D.; 3/4, 5/6, and 3/8 1. $\frac{3}{4} = \frac{3 \times 6}{4 \times 6} = \frac{18}{24}$ $\quad 4\overline{)24}$ = 6 $\frac{5}{6} = \frac{5 \times 4}{6 \times 4} = \frac{20}{24}$ $\quad 6\overline{)24}$ = 4 $\frac{3}{8} = \frac{3 \times 3}{8 \times 3} = \frac{9}{24}$ $\quad 8\overline{)24}$ = 3 2. New fractions are: $\frac{18}{24}$ $\quad \frac{20}{24}$ $\quad \frac{9}{24}$

Once all the fractions are in terms of the L.C.D., add or subtract the fractions using the rule for like denominators.

EXAMPLE AND PROBLEM SHEET II

Add or subtract the following fractions as indicated and reduce the answer to lowest terms when possible.

ADD:

1. $\frac{1}{8}$	2. $\frac{3}{8}$	3. $\frac{1}{16}$	4. $\frac{5}{8}$	5. $\frac{3}{16}$	6. $\frac{3}{32}$
$+\frac{1}{16}$	$+\frac{1}{4}$	$+\frac{3}{4}$	$+\frac{3}{4}$	$+\frac{5}{8}$	$+\frac{1}{8}$
7. $\frac{7}{8}$	8. $\frac{1}{6}$	9. $\frac{1}{5}$	10. $\frac{5}{6}$	11. $\frac{1}{3}$	12. $\frac{2}{3}$
$+\frac{3}{4}$	$+\frac{3}{8}$	$+\frac{1}{2}$	$+\frac{5}{12}$	$+\frac{3}{4}$	$+\frac{3}{8}$
13. $\frac{1}{2}$	14. $\frac{1}{2}$	15. $\frac{3}{8}$	16. $\frac{7}{8}$	17. $\frac{3}{32}$	18. $\frac{5}{12}$
$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{1}{6}$
$+\frac{1}{8}$	$+\frac{1}{6}$	$+\frac{1}{12}$	$+\frac{1}{16}$	$+\frac{5}{12}$	$+\frac{2}{3}$

SUBTRACT:

1. $\frac{3}{4}$	2. $\frac{3}{32}$	3. $\frac{1}{2}$	4. $\frac{5}{16}$	5. $\frac{5}{8}$	6. $\frac{2}{3}$
$-\frac{1}{8}$	$-\frac{1}{16}$	$-\frac{1}{5}$	$-\frac{1}{6}$	$-\frac{3}{16}$	$-\frac{3}{8}$
7. $\frac{2}{3}$	8. $\frac{5}{8}$	9. $\frac{3}{4}$	10. $\frac{5}{6}$	11. $\frac{5}{8}$	12. $\frac{2}{3}$
$-\frac{1}{8}$	$-\frac{5}{16}$	$-\frac{5}{32}$	$-\frac{5}{12}$	$-\frac{5}{12}$	$-\frac{7}{12}$

PROBLEMS

1. You are looking for a bolt that will hold a 5/8 inch board and an 11/16 inch board together. 1/8 inch must be allowed for 2 flat washers and 11/32 inch for a nut. How long must the bolt be to do this job?

Ans._____

2. A metal rod is cut into four pieces; 7/16 in., 5/8 in., 3/4 in., and 1/2 inch. How long was the rod if 1/16 inch was wasted in each cut?

Ans._____

3. A metal rod measures 7/8 inch long. If you cut a 1/4 inch piece off and allow 3/32 of an inch for cutting waste. How long is the piece that is left?

Ans._____

4. Find the difference between the sum of 1/3 and 3/4 and the sum of 1/8 and 13/16.

Ans._____

5. Find the difference between the sum of 1/8, 1/3, and 3/4, and the sum of 3/32, 1/6, and 3/8.

Ans._____

SECTION III - ADDITION AND SUBTRACTION OF MIXED NUMBERS

1. The following illustrations show the methods used to add mixed numbers.

ILLUSTRATION No.1-1: 3 1/2 + 4 1/4 + 2 1/6

STEPS TO REMEMBER	ILLUSTRATION
1. Place mixed numbers in column putting whole number above whole number and fraction above fraction	1. $3\frac{1}{2}$ $4\frac{1}{4}$ $2\frac{1}{6}$
2. Find the L.C.D. of the fractions.	2. 2) 2, 4, 6 2) 2, 3 L.C.D. = 2 x 2 x 3 = 12
3. Rewrite column and express fractions in terms of L.C.D.	3. $3\frac{1}{2} = 3\frac{6}{12}$ $4\frac{1}{4} = 4\frac{3}{12}$ $2\frac{1}{6} = 2\frac{2}{12}$
4, 5. Add fractions, then add whole numbers.	4, 5. $9\frac{11}{12}$
6. Simplify to lowest term	6. Answer is in simplest form.

ILLUSTRATION No. 1-2: $2\ 3/4 + 1\ 5/8 + 3\ 5/12$

STEPS TO REMEMBER	ILLUSTRATION
1. Follow steps given in Illustration No. 1-1.	1. $2\ \frac{3}{4}$ $1\ \frac{5}{8}$ $3\ \frac{5}{12}$ 2) ~~4~~, 8, 12 2) 4, 6 2, 3 L.C.D. = 2 x 2 x 2 x 3 = 24 $2\ \frac{3}{4} = 2\ \frac{18}{24}$ $1\ \frac{5}{8} = 1\ \frac{15}{24}$ $3\ \frac{5}{12} = 3\ \frac{10}{24}$ $6\ \frac{43}{24} = 6 + \boxed{1\ \frac{19}{24}} = 7\ \frac{19}{24}$
2. Change improper fraction to mixed number and add to whole number.	2. $\boxed{\frac{43}{24}} = 1\ \frac{19}{24}$ reduced

2. The following illustrations show the methods used to subtract mixed numbers.

ILLUSTRATION No. 2-1: $3\ 1/2 - 1\ 1/4$

STEPS TO REMEMBER	ILLUSTRATION
1. Place mixed numbers in columns as in Illustrations (1-1)(1-2).	1. $\begin{array}{r} 3\ \frac{1}{2} \\ -\ 1\ \frac{1}{4} \\ \hline \end{array}$
2. Find L.C.D.	2. $\begin{array}{r\|l} 2 & 2,\ 4 \\ \hline 2 & 2 \\ \hline \end{array}$ L.C.D. = 2 x 2 = 4
3. Rewrite columns and express in terms of L.C.D.	3. $\begin{array}{rcl} 3\ \frac{1}{2} & = & 3\ \frac{2}{4} \\ -\ 1\ \frac{1}{4} & = & 1\ \frac{1}{4} \\ \hline \end{array}$
	4. $2\ \frac{1}{4}$
5. Simplify to lowest terms.	5. This answer is in simplest form.

ILLUSTRATION No. 2-2: 4 1/4 - 2 5/8

STEPS TO REMEMBER	ILLUSTRATION
1. Follow steps as shown in Illustration No. 2-1.	1. $4\frac{1}{4}$ $-\ 2\frac{5}{8}$ 2) 4, 8 2) 4 2 L.C.D. = 2 x 2 x 2 = 8
2. At this point you will notice that the top fraction is smaller than the lower fraction.	2,3. $4\frac{1}{4} = 4\frac{2}{8} = 3\frac{8}{8} + \frac{2}{8} = 3\frac{10}{8}$ $-\ 2\frac{5}{8} = 2\frac{5}{8} = 2\frac{5}{8} = 2\frac{5}{8}$
3. Borrow 1 from the whole number and change to a fraction with L.C.D. needed and add to fraction of mixed number.	
4. Subtract.	4. $1\frac{5}{8}$
5. Simplify to lowest terms.	5. Answer is in simplest form.

EXAMPLE AND PROBLEM SHEET III

ADD:

1. $2\frac{1}{4} + 3\frac{1}{2}$

2. $1\frac{1}{8} + 2\frac{3}{4}$

3. $2\frac{3}{16} + 1\frac{3}{8}$ = $3\frac{5}{8}$

4. $8\frac{5}{16} + 1\frac{1}{4}$ = $1\frac{1}{3}$

5. $7\frac{3}{4} + 2\frac{5}{8}$ = $3\frac{9}{16}$

6. $2\frac{3}{4} + 5\frac{1}{3}$

7. $6\frac{1}{2} + \frac{9}{10}$

8. $8\frac{9}{17} + 2\frac{1}{2}$ = $3\frac{1}{3}$

9. $10\frac{1}{4} + 6\frac{5}{16}$ = $2\frac{2}{3}$

10. $12\frac{3}{8} + 2\frac{1}{4}$ = $6\frac{1}{12}$

SUBTRACT:

1. $3\frac{1}{2} - 2\frac{1}{4}$

2. $3\frac{3}{4} - 2\frac{3}{8}$

3. $4\frac{5}{8} - 2\frac{3}{16}$

4. $8\frac{7}{16} - 1\frac{1}{3}$

5. $9\frac{9}{16} - 7\frac{1}{12}$

6. $1\frac{3}{8} - \frac{3}{4}$

7. $8\frac{1}{4} - 6\frac{7}{8}$

8. $5\frac{9}{16} - 3\frac{2}{3}$

9. $7\frac{5}{12} - 2\frac{7}{8}$

10. $14\frac{3}{16} - 2\frac{11}{12}$

PROBLEMS:

1. A board was cut into the following lengths: 3 1/8 in., 10 1/4 in., 16 3/16 in., 5 3/8 in., 6 2/3 in. What was the original length of the board if 1/8 inch is allowed for each cut made?

Ans._____

2. Some 1/4 inch copper tubing was cut into the following lengths: 6 1/2 ft., 5 3/8 ft., 8 1/4 ft., and 10 3/16 ft. What was the total length of the copper tubing before it was cut?

Ans._____

3. A piece of copper tubing 25 feet long has the following lengths cut from it, 6 1/4 ft., 2 1/2 ft., 4 3/4 ft., and 7 1/16 ft. How many feet of tubing remain?

Ans._____

4. Find the difference between the sum of 130 2/3 and 57 13/16 and the sum of 80 1/16 and 94 1/8.

Ans._____

5. Find the difference between the sum of 125 1/3 and 48 11/16 and the sum of 30 11/16 and 60 1/8 and 27 3/4.

Ans._____

SECTION IV - MULTIPLICATION OF FRACTIONS

When multiplying two or more of the various fractional expressions together, do the following:

1. Change all mixed numbers to improper fractions.
2. Cancel if possible.
3. Multiply numerators together.
4. Multiply denominators together.
5. Simplify answer.

The following illustrations show the methods used to multiply fractions:

Illustration 1-1: $\frac{3}{4} \times \frac{1}{2} = ?$

$$\frac{3}{4} \times \frac{1}{2} = \frac{3 \times 1}{4 \times 2} = \boxed{\frac{3}{8}}$$

Illustration 1-2: $\frac{3}{8} \times \frac{1}{6} = ?$

$$\frac{\overset{1}{\cancel{3}}}{\underset{8}{\cancel{8}}} \times \frac{1}{\underset{2}{\cancel{6}}} = \frac{1 \times 1}{8 \times 2} = \boxed{\frac{1}{16}}$$

Illustration 1-3: $2\frac{9}{16} \times \frac{5}{8} = ?$

$$2\frac{9}{16} \times \frac{5}{8} = \frac{41}{16} \times \frac{5}{8} = \frac{41 \times 5}{16 \times 8} = \frac{205}{128} = \boxed{1\frac{77}{128}}$$

Illustration 1-4: $3\frac{3}{8} \times 1\frac{1}{3} = ?$

$$3\frac{3}{8} \times 1\frac{1}{3} = \frac{\overset{9}{\cancel{27}}}{\underset{2}{\cancel{8}}} \times \frac{\overset{1}{\cancel{4}}}{\underset{1}{\cancel{3}}} = \frac{9 \times 1}{2 \times 1} = \frac{9}{2} = \boxed{4\frac{1}{2}}$$

Illustration 1-5: $10 \times 2\frac{11}{16} \times 3\frac{1}{5} = ?$

$$10 \times 2\frac{11}{16} \times 3\frac{1}{5} = \frac{\overset{2}{\cancel{10}}}{1} \times \frac{43}{\underset{1}{\cancel{10}}} \times \frac{\overset{1}{\cancel{10}}}{\underset{1}{\cancel{5}}} = \boxed{86}$$

EXAMPLE AND PROBLEM SHEET IV

Multiply the following fractions:

1. 1/2 x 5/8 =

2. 3/4 x 2/3 =

3. 3/16 x 1/3 =

4. 3/8 x 1 3/5 =

5. 2 3/8 x 5 1/3 =

6. 3 5/16 x 4 4/7 =

7. 1 3/4 x 3 1/7 x 5 1/11 =

8. 3/4 x 2 1/2 x 4 7/10 =

9. 1 5/6 x 3 5/11 x 2 3/19 x 5 1/3 =

10. 2 5/16 x 3 1/4 x 5 1/8 x 6 2/13 =

PROBLEMS

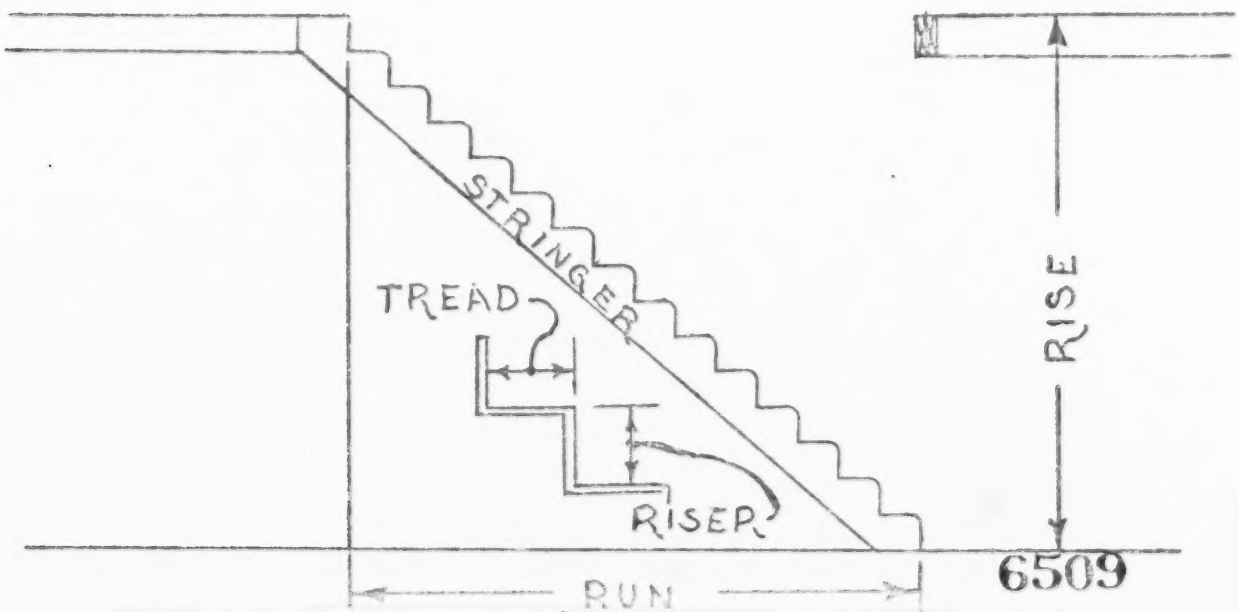
1. If I have 20 sheets of 3/4 inch plywood on a pile. How high is it if the sheets are laying flat?

2. A piece of copper tubing was cut into 7 equal parts, each measuring 6 5/8 inch long. What was the original length of the piece?

3. If you have 40 sheets of 1/8 inch sheet steel on a pile. How high would the pile be?

4. A board 20 feet long had the following pieces cut from it; 5 pieces 1 1/4 feet long, 6 pieces 7/8 feet long and 2 pieces 2 3/8 feet long. If 1/8 inch is allowed for each cut; how much of the board is left?

5. The riser of the stairway shown below measures 7 1/8 inches. What is the total rise if the stairway has 15 risers?



SECTION V - DIVISION OF FRACTIONS

When dividing various fractional expressions, do the following:

1. Change all mixed numbers to improper fractions.
2. Change the division sign to a multiplication sign.
3. Invert (turn upside down) the number following the multiplication sign.
4. Multiply as shown in Section IV.

The following illustrations show the methods used in dividing fractions:

Illustration 1-1: $\frac{3}{5} \div \frac{1}{3} = \frac{3}{5} \times \frac{3}{1} = \frac{9}{5} = \boxed{1\frac{4}{5}}$

Illustration 1-2: $\frac{5}{8} \div 10 = \frac{5}{8} \times \frac{1}{10} = \boxed{\frac{1}{16}}$

Illustration 1-3: $\frac{9}{16} \div 2\frac{3}{4} = \frac{9}{16} \div \frac{11}{4} = \frac{9}{\cancel{16}_{4}} \times \frac{\cancel{4}^{1}}{11} = \boxed{\frac{9}{44}}$

Illustration 1-4: $2\frac{3}{4} \div 1\frac{3}{8} = \frac{11}{4} \div \frac{11}{8} = \frac{\cancel{11}^{1}}{\cancel{4}_{1}} \times \frac{\cancel{8}^{2}}{\cancel{11}_{1}} = \boxed{2}$

Illustration 1-5:

$$6\frac{3}{8} \div 2\frac{1}{3} \div 4\frac{1}{2} = \frac{51}{8} \div \frac{7}{3} \div \frac{9}{2} = \frac{\cancel{51}^{17}}{\cancel{8}_{4}} \times \frac{\cancel{3}^{1}}{7} \times \frac{\cancel{2}^{1}}{\cancel{9}_{\cancel{3}_{1}}} = \boxed{\frac{17}{28}}$$

EXAMPLE AND PROBLEM SHEET V

1. $\frac{9}{10} \div \frac{3}{4} =$

2. $\frac{2}{5} \div 2\frac{1}{4} =$

3. $6\frac{3}{4} \div 1\frac{5}{8} =$

4. $\frac{7}{12} \div 4\frac{3}{8} =$

5. $2\frac{5}{8} \div 4\frac{5}{6} \div 1\frac{3}{16} =$

6. $3\frac{1}{2} \div 2\frac{5}{8} \div 6\frac{5}{6} =$

7. $15\frac{3}{4} \div 4\frac{1}{2} =$

8. $2\frac{1}{12} \div 1\frac{7}{8} =$

9. $3\frac{9}{17} \div 7\frac{1}{2} =$

10. $8\frac{1}{3} \div 6\frac{3}{4} =$

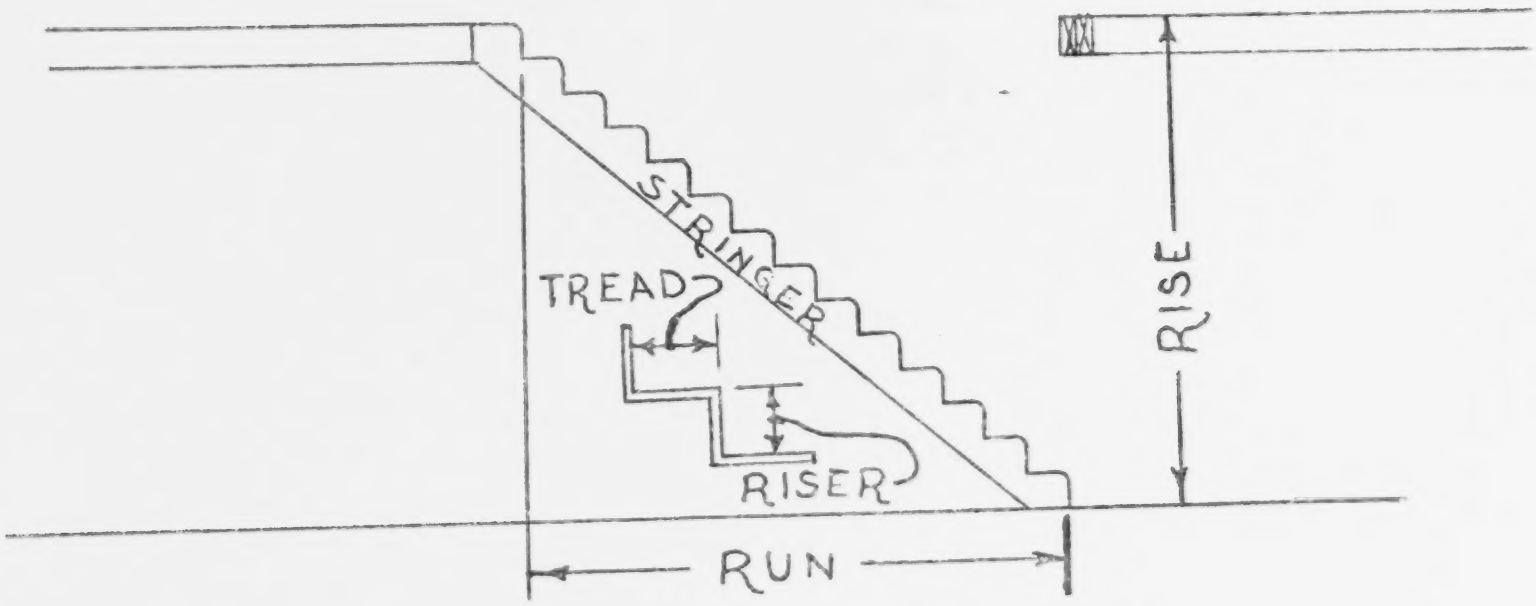
11. A car traveled 365 miles in 6 3/4 hours. What was the average speed in miles per hour?

12. A piece of electrical wire measures 28 1/2 feet long. How many 6 1/4 feet pieces can be cut from it?

13. A board measures 18 feet. It is cut into 11 equal lengths. How long is each piece?

14. How many sheets of 3/8 inch plywood are there in a pile which measures 33 inches in height?

15. The total rise of the stairway shown below is 108 1/2 inches. If there are 14 risers, what is the height of each riser?



SELF-TEST FOR PACKAGE NUMBER U-1

1. Write the steps to remember when adding the various fractional expressions.

2. Write the steps to remember when subtracting the various fractional expressions.

3. Write the steps to remember when multiplying the various fractional expressions.

4. Write the steps to remember when dividing the various fractional expressions.

ADD THE FOLLOWING:

5. a) $\begin{array}{r} \frac{1}{4} \\ +\ \frac{3}{4} \\ \hline \end{array}$ b) $\begin{array}{r} \frac{3}{8} \\ +\ \frac{1}{8} \\ \hline \end{array}$ c) $\begin{array}{r} \frac{3}{16} \\ +\ \frac{5}{16} \\ \hline \end{array}$ d) $\begin{array}{r} \frac{1}{4} \\ +\ \frac{5}{16} \\ \hline \end{array}$ e) $\begin{array}{r} 1\ \frac{1}{2} \\ +\ 2\ \frac{7}{16} \\ \hline \end{array}$

f) $\begin{array}{r} 8\ \frac{13}{16} \\ +\ 7\ \frac{3}{4} \\ 9\ \frac{1}{3} \\ \hline \end{array}$ g) $\begin{array}{r} 10\ \frac{2}{3} \\ +\ 8\ \frac{3}{17} \\ 12\ \frac{5}{6} \\ \hline \end{array}$

h) You are looking for a bolt that will hold a 1 1/2 inch board and a 5/8 inch board together. One-fourth inch must be allowed for the nut and 3/16 inch for the two flat washers. How long must the bolt be?

Ans._____

i) A piece of wire was cut into the following lengths; 10 1/2 in., 13 3/4 in., 11 3/8 in., 5 1/16 in., and 20 5/6 inch. How long was the wire before it was cut?

Ans._____

j) A board was cut into the following lengths; 12 3/8 in., 15 1/3 in., 9 3/8 in., and 6 1/2 inch. How long was the piece if 3/32 inch is allowed as waste for each cut?

Ans._____

6. SUBTRACT THE FOLLOWING:

a) $\begin{array}{r} \frac{13}{16} \\ -\ \frac{7}{16} \\ \hline \end{array}$ b) $\begin{array}{r} \frac{23}{32} \\ -\ \frac{5}{32} \\ \hline \end{array}$ c) $\begin{array}{r} \frac{1}{2} \\ -\ \frac{3}{16} \\ \hline \end{array}$ d) $\begin{array}{r} \frac{25}{32} \\ -\ \frac{5}{16} \\ \hline \end{array}$ e) $\begin{array}{r} \frac{5}{6} \\ -\ \frac{3}{8} \\ \hline \end{array}$

f) $\begin{array}{r} 4\ \frac{3}{8} \\ -\ 2\ \frac{3}{16} \\ \hline \end{array}$ g) $\begin{array}{r} 5\ \frac{1}{16} \\ -\ 2\ \frac{2}{3} \\ \hline \end{array}$ h) $\begin{array}{r} 8\ \frac{3}{4} \\ -\ 4\ \frac{7}{8} \\ \hline \end{array}$

i. A piece of wire is 32 feet long. If a piece 16 3/4 feet long is cut from it, how much is left?

Ans._____

j. A metal rod is 12 9/16 inches long. If a piece 9 25/32 inches is cut from it, how much is left over?

Ans._____

7. MULTIPLY THE FOLLOWING:

a) $\frac{2}{3} \times \frac{5}{8} =$ b) $2\frac{1}{3} \times 3\frac{3}{4} =$ c) $6 \times 2\frac{2}{3} =$

d) $2\frac{3}{4} \times 9 =$ e) $5\frac{1}{3} \times 3\frac{1}{2} =$ f) $9\frac{1}{3} \times \frac{5}{6} =$

g) $3\frac{3}{4} \times 8 \times 5\frac{1}{4} =$ h) $\frac{3}{5} \times \frac{2}{3} \times \frac{5}{8} =$

i) A board is divided into 7 equal pieces each 4 1/2 inches long. If 1/8 inch is allowed for each cut that was made, how long was the original board?

Ans._____

j) A gang of workers can mix and place an average of 36 5/27 cubic yards of concrete an hour. How many cubic yards of concrete can they place in 7 7/8 hours?

Ans._____

8. DIVISION OF FRACTIONS:

a) $\frac{7}{10} \div \frac{3}{4} =$ b) $\frac{3}{5} \div 2\frac{1}{4} =$ c) $\frac{1}{4} \div 9 =$

d) $8 \div 1\frac{1}{3} =$ e) $5\frac{5}{6} \div 2\frac{1}{12} =$ f) $\frac{3}{8} \div 3\frac{3}{4} =$

g) $2\frac{5}{8} \div 5\frac{5}{6} =$ h) $3\frac{1}{4} \div 5\frac{4}{7} =$

i) A piece of electrical wire measures 200 feet long. How many 12 3/4 feet pieces can be cut from it?

Ans._____

j) How many sheet of 5/8 inch plywood are there in a pile which measures 45 inches high?

Ans._____

Appendix D

Title: Pretest-Posttest Used for Study

Note: Circled items on the test are those items which were used to select the 55 students for the study.

Part I

Mathematical Computation

1. 576
   439
   682
   718
   389
   875

   a. 3649 b. 3679 c. 3379 d. 3349
   e. not given

2. 4008
   -929

   f. 3079 g. 4921 h. 3189 i. 3089
   j. not given

3. 719
   x670

   a. 9347 b. 48173 c. 4817.3 d. 48244.9
   e. not given

4. 78.2
   x60.7

   f. 4823.84 g. 523.94 h. 4711.74 i. 4746.74
   j. not given

5. 5427 ÷ 9 = a. 63 b. 503 c. 630 d. 603
   e. not given

6. 26,892 ÷ 83 = f. 8964 g. $3361\frac{1}{2}$ h. $327\frac{51}{83}$
   i. 336 j. not given

7. 498 ÷ 18 = a. $27\frac{2}{3}$ b. $22\frac{1}{9}$ c. $33\frac{2}{9}$ d. $28\frac{1}{2}$
   e. not given

8. 258 ÷ 24 = f. $10\frac{3}{4}$ g. $1\frac{3}{4}$ h. 1075 i. $10\frac{2}{3}$
   j. not given

9. $1\frac{2}{3}$
   $\frac{5}{6}$
   $2\frac{7}{8}$

   a. $3\frac{14}{17}$ b. $4\frac{3}{17}$ c. $5\frac{3}{8}$ d. $3\frac{4}{7}$
   e. not given

10. $20\frac{5}{12} - 9 =$ f. $10\frac{7}{12}$ g. $12\frac{1}{4}$ h. $11\frac{7}{12}$ i. $11\frac{5}{12}$
    j. not given

11. $7 - 4\frac{5}{9} =$ a. $3\frac{5}{9}$ b. $2\frac{4}{9}$ c. $2\frac{5}{9}$ d. $3\frac{4}{9}$
    e. not given

12. $\frac{11}{12} - \frac{1}{4} =$ f. $1\frac{1}{4}$ g. $1\frac{1}{6}$ h. $\frac{7}{12}$ i. $\frac{2}{5}$
    j. not given

13. $9\frac{5}{12} - 3\frac{5}{6} =$ a. $6\frac{2}{3}$ b. $5\frac{1}{4}$ c. $5\frac{1}{12}$ d. $6\frac{1}{12}$
e. not given

14. $5 \times \frac{3}{7} =$ f. $2\frac{1}{7}$ g. $11\frac{2}{3}$ h. $1\frac{1}{7}$ i. $\frac{5}{7}$
j. not given

15. $2\frac{1}{8} \times 12 =$ a. $24\frac{1}{8}$ b. $16\frac{1}{2}$ c. $25\frac{1}{2}$ d. $2\frac{1}{8}$
e. not given

16. $1\frac{1}{5} \div 2 =$ f. $\frac{7}{10}$ g. $1\frac{2}{3}$ h. $2\frac{2}{5}$ i. $\frac{3}{5}$
j. not given

17. $\frac{5}{8} \div 4\frac{1}{6} =$ a. $\frac{48}{125}$ b. $2\frac{29}{48}$ c. $\frac{3}{20}$ d. $6\frac{2}{3}$
e. not given

18. $2\frac{1}{7} \times 2\frac{1}{3} =$ f. 5 g. $2\frac{6}{7}$ h. $\frac{45}{49}$ i. $4\frac{1}{5}$
j. not given

19. $1\frac{2}{3} \div \frac{2}{5} =$ a. 5 b. $4\frac{1}{6}$ c. $\frac{6}{25}$ d. $1\frac{1}{2}$
e. not given

20. 3.7 + 6 + 49.8 + .4 = f. 59.9 g. 54.5
h. .545 i. 58.19 j. not given

21. \$7. - \$2.38 = a. \$2.31 b. \$5.38 c. \$4.38
d. \$4.62 e. not given

22. 27) 2.43 f. 9 g. 1.09 h. .39 i. .09
j. not given

23. 5 yd. 1 ft. 2 in.
9 yd. 2 ft. 7 in.
5 yd. 2 ft. 4 in.
a. 21 yd. 3 in. b. 22 yd. 1 in.
c. 21 yd. 1 in. d. 19 yd. 9 ft. 1 in.
e. not given

24. 8 yr. 7 mo.
-5 yr. 9 mo.
f. 2 yr. 8 mo. g. 2 yr. 10 mo.
h. 3 yr. 2 mo. i. 14 yr. 4 mo.
j. not given

25. 8) 27 lb. 2 oz.
a. 3 lb. $6\frac{1}{4}$ oz. b. 3 lb. $4\frac{3}{4}$ oz.
c. 3 lb. 4 oz. d. 3 lb. $\frac{1}{4}$ oz. e. not given

26. 4 gal. 3 qt.
x 7
f. 33 gal. 1 qt. g. 30 gal. 1 qt.
h. 38 gal. 1 qt. i. 30 gal. 5 qt.
j. not given

27. \$ .08 + \$6.27 + \$8.69 = a. \$69.04 b. \$14.04 c. \$15.84 d. \$15.04 e. not given

28. \$3.07 - 29¢ = f. \$2.78 g. \$3.22 h. \$25.93 i. \$2.22

29. 9.572 - 6.008 = a. 3.576 b. 3.564 c. 2.464 d. 3.464 e. not given

30. .08) 7.2 = f. .9 g. 90 h. 9 i. 900 j. not given

31. .05) 85 = a. 17 b. 116 c. 1700 d. 170 e. not given

32. .7) .0721 = f. .13 g. .0103 h. .013 i. 1.03 j. not given

33. .06) .42 = a. .007 b. .07 c. .7 d. 7 e. not given

34. .86) 8.23 = f. 9.570 g. 9.512 h. 9.569 i. 9.56 j. not given

35. .3 x .2 = a. .6 b. .06 c. 6 d. 1.5 e. not given

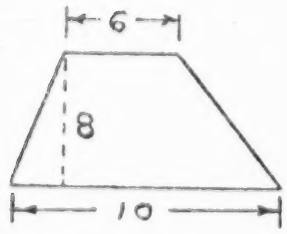
36. 36 = f. 6 g. 18 h. 36 i. 1296 j. not given

37. 150% of 30 = a. .45 b. 50 c. 4500 d. 45 e. not given

38. 26.5% is equal to the decimal f. .265 g. 2.65 h. 26.05 i. 26.5 j. not given

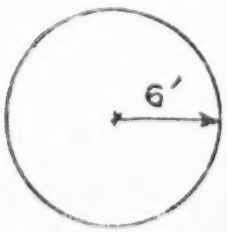
39. 8% of \$400. = a. \$32. b. \$50. c. \$408. d. \$3200 e. not given

40. If, a + 7 = 28, a = f. 4 g. 21 h. 35 i. 196 j. not given

41. 

What is the area of the figure shown at the left?

a. 24 b. 64 c. 128 d. 480 e. not given

42. 

What is the area of the circle shown at the left?

f. 18.84 g. 37.68 h. 113.04 i. 28.26 j. Not given

Part II

1. Write the numeral naming the following number: one hundred and one hundred ten-thousandths.

a. 100.110 b. 100.0100 c. 101.010
d. 100.01 e. not given

2. Bill received the following pay checks during the past five weeks: $153.46, $136.45, $145.63, $164.53, and $134.56. The largest check Bill received was how much more than the smallest one he received?

f. $30.03 g. $18.90 h. $28.08
i. $29.97 j. not given

3. A radio which originally sold for $79.95 is reduced $15. What is the new price of the radio?

a. $64.95 b. $79.80 c. $94.95
d. $80.10 e. not given

4. Last year Larry weighed 12.6 lb. less than he does now. If his present weight is 187.3 lb., what was his weight last year?

f. 175.3 lb. g. 199.9 lb. h. 174.7 lb.
i. 175.7 lb. j. not given

5. How many degrees above normal is a temperature of 102.1 degrees if the normal body temperature is 98.6 degrees?

a. 13.5 degrees b. 16.5 degrees c. 14.5 degrees
d. 3.5 degrees e. not given

6. What is the difference between -7 degrees and 19 degrees?

f. 12 degrees g. 26 degrees h. 16 degrees
i. 58 degrees j. not given

7. How many pieces of wire $2\frac{3}{4}$ inches long can be cut from a $16\frac{1}{2}$-inch piece?

a. 45 b. 6 c. 8
d. 13 e. not given

8. Find John's weekly salary if his monthly salary is $390.

f. $90. g. $97.50 h. $32.50
i. $91. j. not given

9. What is the cost of a 6' x 9' rug at $10.50 per sq. yd.

a. $63. b. $189. c. $315.
d. $567 e. not given

10. A scale drawing reads "1 inch = 9 miles". A line $2\frac{1}{4}$ inches long on this drawing represents how many miles?

f. $20\frac{1}{2}$ mi. g. $18\frac{1}{2}$ mi. h. $11\frac{1}{2}$ mi.
i. 4 mi. j. not given

11. Jim left his home at 6:50 A.M. and arrived at his destination at 4:15 P.M. that same day. How long did it take him to make this trip?

a. 11 hr. 5 min. b. 2 hr. 35 min. c. 9 hr. 25 min.
d. 10 hr. 15 min. j. not given

12. If Joe received $40 for selling $500 worth of goods, what was his rate of commission?

f. $12\frac{1}{2}$ % g. 125 % h. 80 %
i. 8 % j. not given

13. What is the area of a room which is 14 feet long and 9 feet wide?

a. 46 ft. b. 63 sq. ft. c. 126 sq. ft.
d. 23 ft. e. not given

14. A radio is offered for sale at a reduction of 30%. If the regular price was $60, what is the sale price?

f. $24 g. $42 h. $18
i. $78 j. not given

15. What is the altitude of a triangular piece of metal with a base of 15 inches and an area of 60 sq. in.?

a. 8 in. b. 4 in. c. 30 in.
d. 45 in. e. not given

16. Mr. Johnson borrowed $1200 from a bank for 4 months. If the bank charged 6% interest, how much interest did Mr. Johnson pay?

f. $18 g. $28.80 h. $24
i. $288 j. not given

17. Last year Ken was paid $2. per hour. Now he is paid $2.50 an hour. What is the per cent of increase in his wages?

a. 20% b. 25% c. 10%
d. 50% e. not given

18. If a pole which is 30 ft. high casts a shadow of 15 ft., how tall is a building which casts a shadow of 90 ft. at the same time?

f. 120 ft. g. 180 ft. h. 135 ft.
i. 45 ft. j. not given

19. Find the altitude of a right triangle if the other two sides are 6 and 10.

a. 4 b. 8 c. 16
d. 30 e. not given

20. What are the prime factors of 20?

f. 1,20 g. 2,10 h. 4,5
i. 2,2,5 j. not given

21. What is the interest for a year on $500 at $4\frac{1}{2}$%?

a. $2250 b. $2000.50 c. $22.50
d. $30 e. not given

22. What is the average of the set of numbers 8, -3, -6, 7, and 4?

f. 5.6 g. 2 h. 14
i. 28 j. not given

23. What is the net amount of an invoice of $200 with discounts of 20% and 5%?

a. $2 b. $38 c. $150
d. $152 e. not given

24. What is the perimeter of a square which has an area of 4225 square yards?

f. 65 yd. g. 130 yd. h. $1056\frac{1}{4}$ yd.
i. $2112\frac{1}{2}$ yd. j. not given

25. If $5y + 3 = 48$, y=

a. 7 b. 9 c. 40
d. 45 e. not given

26. If a board 5 ft. 4 in. long is cut into 3 equal pieces, and no allowance is made for waste in cutting, how long will each piece be?

f. 1 ft. $3\frac{1}{3}$ in. g. 1 ft. 8 in. h. 1 ft. 9 in.
i. $1\frac{2}{3}$ ft. 4 in. j. not given

27. What is the surface area of a cube which has a volume of 27 cubic inches?

a. 18 sq. in. b. 36 sq. in. c. 54 sq. in.
d. 72 sq. in. e. not given

28. A set of tools is selling at 20% above cost. Find the cost if the selling price is $18.

f. $14.40 g. $15 h. $21.60
i. $22.50 j. not given

29. What is the circumference of a wheel which has a radius of 2.5 feet?

a. 7.85 ft. b. 15.7 ft. c. 19.625 ft.
d. 78.5 ft. e. not given

30. The product of two numbers is 12. If one of the numbers is 3 3/4, what is the other number?

f. $3\frac{1}{5}$ g. $4\frac{4}{5}$ h. $8\frac{1}{4}$
i. 45 j. not given

31. A piece of metal trim is $14\frac{5}{16}$ inches long. A second piece is 5 3/4 inches shorter. Find the length of the second piece.

a. $8\frac{3}{16}$ in. b. $8\frac{1}{2}$ in. c. $8\frac{9}{16}$ in.
d. $9\frac{1}{6}$ in. e. not given

32. Henry sold his radio for $45, which was $\frac{3}{5}$ of what he paid for it. What did Henry pay for the radio?

f. $18 g. $27 h. $72
i. $75 j. not given

33. At what price must a chair costing $46.80 be sold so that the profit may be 33 1/3% of the selling price?

a. $15.60 b. $33.20 c. $62.40
d. $70.20 e. not given

34. What amount of merchandise must an agent sell to make a commission of $210 if he paid a 7% commission?

f. $14.70 g. $30 h. $240
i. $3000 j. not given

35. CDLXIV is equivalent to what number in the decimal number system?

a. 446 b. 464 c. 664
d. 666 e. not given

36. What single discount rate is equivalent to a discount series of 20% and 5%?

f. 15% g. 24% h. 25%
i. 75% j. not given

MATHEMATICS PROGNOSTIC TEST

NORTH CENTRAL TECHNICAL INSTITUTE

Name Answer KEY (Pre & Post Test) Date _____ (Mo.) (Day) (Yr.)

Examiner _____

	Raw Score	Percentile	T-Score	Rank
Part I				
Part II				
Total				

Part I

1. b	19. b	37. d
2. f	20. f	38. f
3. e	21. d	39. a
4. i	22. i	40. g
5. d	23. c	41. b
6. j	24. g	42. h
7. a	25. a	
8. f	26. f	
9. c	27. d	
10. i	28. f	
11. b	29. b	
12. j	30. g	
13. e	31. c	
14. f	32. j	
15. c	33. d	
16. i	34. f	
17. c	35. b	
18. f	36. f	

Part II

1. b	19. b
2. i	20. i
3. a	21. c
4. h	22. g
5. d	23. d
6. g	24. j
7. b	25. b
8. f	26. j
9. a	27. c
10. f	28. g
11. c	29. b
12. i	30. f
13. c	31. c
14. g	32. i
15. a	33. d
16. h	34. i
17. b	35. b
18. g	36. g

Appendix E

Title: Questionnaire Used in Study

6526

North Central Technical Institute
Apprenticeship Mathematics 804-501
Mr. Henning, Instructor

RESEARCH QUESTIONNAIRE

This study is being conducted in order to gain some insights into the reactions of students to the course 804-501 (Apprenticeship Mathematics), a class in which you are currently enrolled. The study is primarily concerned with the motivational patterns, work load, and the way in which students react to individualized packaged instruction with regard to their apprenticeship education.

In order to properly evaluate the course activities, we are asking that you complete the attached questionnaire, responding to the items by marking the appropriate response following the statement.

PART I

1. Check the box indicating your age group.

   ☐ 1. 18 - 21 ☐ 4. 30 - 33

   ☐ 2. 22 - 25 ☐ 5. 34 and above

   ☐ 3. 26 - 29

2. In terms of semesters, how long have you been an apprentice?

   _____Sem.

3. Check the box indicating the apprentice course in which you are enrolled.

   ☐ 1. Carpentry ☐ 5. Millwright

   ☐ 2. Sheetmetal ☐ 6. Electrical 1st. & 2nd. yr.

   ☐ 3. Iron Worker ☐ 7. Plumbing

   ☐ 4. Masonary ☐ 8. Steamfitter

PART II

Check the box indicating your response to the statement.

1. Marital status

   ☐ single
   ☐ married
   ☐ divorced
   ☐ widowed

2. Have you had previous experience with individualized packaged instruction?

☐ yes
☐ no

3. Do you feel that individual conferences should be used specifically for handling problems which confront the student as he works the packages?

☐ yes
☐ no

4. Do you feel that lectures should be included in this course?

☐ yes
☐ no

5. Do you feel that the individual attention which was provided you was adequate?

☐ yes
☐ no

6. Do you feel that small group discussion periods would have been helpful to you?

☐ yes
☐ no

7. I personally feel good about this type of instruction.

☐ yes
☐ no

8. This type of instruction should be recommended for other courses.

☐ yes
☐ no

9. The use of behavioral objectives is desirable and necessary in "Mastery" learning.

☐ yes
☐ no

10. Self-tests which were included in the package were too easy.

☐ yes
☐ no

11. The competencies learned in this course are important and useful.

☐ yes
☐ no

12. Do you feel that the retention levels under the package approach will be greater than under the traditional approach?

☐ yes
☐ no

13. Do you feel that the teaching technique used in this course was desirable?

☐ yes
☐ no

14. Do you feel that the course content was appropriate for meeting your on the job needs?

☐ yes
☐ no

15. Do you feel that large group presentation topics would be appropriate to the content of the course?

☐ yes
☐ no

16. Were adequate physical facilities provided for testing?

☐ yes
☐ no

17. Do you feel that individual conferences with the instructor have been influential in your motivation toward the instruction?

☐ yes
☐ no

18. Was your instructor generally available when you needed to see him?

☐ yes
☐ no

THANK YOU FOR YOUR COOPERATION

Appendix F

Title: General References

General References

1. Arco Editorial Board, The. Apprentice Mechanical Trades. New York: Arco Publishing Company, Inc., 1963.

2. Bergerin, P. Industrial Apprenticeship. New York: McGraw-Hill Book Company, Inc., 1947.

3. Bloom, B. S. (Ed.) Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook I: Cognitive Domain. New York: David McKay Company, Inc., 1956.

4. Bloom, B. S. Learning for mastery. UCLA Evaluation Comment. Los Angeles: Center for the Study of Evaluation of Instructional Programs, May, 1968. Vol. 1, No. 2.

5. Center for Studies in Vocational and Technical Education, The. Research in Apprenticeship Training. The University of Wisconsin, 1967.

6. Courtney, E. W. Applied Research in Education. Totowa, New Jersey: Littlefield, Adams & Co., 1965.

7. Drew, A. S. Educational and training adjustment in selected apprenticeable trades. A final report submitted to Manpower Administration, Office of Manpower Research, U. S. Department of Labor, Washington, D. C. November, 1969. Survey was done at Purdue University, Lafayette, Indiana.

8. Dufty, N. F. (Ed.) Essays on Apprenticeship. Center for Studies in Vocational and Technical Education, The University of Wisconsin, 1967.

9. Flavell, J. H. The Developmental Psychology of Jean Piaget. Princeton: D. Van Nostrand Company, Inc., 1963.

10. Furth, H. G. Piaget and Knowledge - Theoretical Foundations. Englewood Cliffs: Prentice-Hall, Inc., 1969.

11. Kapfer, P. G. An instructional management strategy for individualized learning. Phi Delta Kappan, Volume XLIX (January, 1968), 260-263.

12. Krathwokl, D. R., Bloom, B. S., & Masia, B. R. Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook II: Affective Domain. New York: David McKay Company, Inc., 1964.

13. Kursh, K. Apprenticeships in America. New York: W. W. Norton and Company, Inc., 1965, (Re. Ed.).

14. Mager, R. F. Preparing Instructional Objectives. Palo Alto: Fearon Publishers, Inc., 1962.

15. Mager, R. F. & Beach, K. M. Jr. Developing Vocational Instruction. Palo Alto: Fearon Publishers, 1967.

16. Neisser, U. Cognitive Psychology. New York: Appleton-Century-Crofts, Division of Meredith Corporation, 1967.

17. Phillips, J. L. Jr. The Origins of Intellect: Piaget's Theory. San Francisco: W. H. Freeman and Company, 1969.

18. Rahmlow, H. F. and Winchell, L. Mathematics Clusters in Selected Areas of Vocational Education, Report No. 8 Pullman: Washington State University: November 30, 1966. (ERIC NO: ED-010-659) Related Volumes (ERIC Numbers ED-010-652 to ED-010-664).

19. Rajan, G. S. A Study of the Registered Apprenticeship Program in Wisconsin. Center for Studies in Vocational and Technical Education, Industrial Relations Institute, The University of Wisconsin, 1966.

20. Sedgwick, L. K. and Courtney, E. W. Elements of Research Foundations. Menomonie, Wisconsin: The University Book Store, Stout State University, 1969.

21. State of New Jersey, Department of Education, Vocational Division. Major Apprenticeable Trades in New Jersey, Outlines of Related Subjects, Volume 5. New Brunswich: Vocational Division, Curriculum Laboratory.

22. Vocational Education Curriculum Development Institute. Guide for Vocational Education Curriculum Development Project No. 7-0497. Office of Education, U. S. Department of Health, Education, and Welfare. Corvallis, Oregon: Oregon State University, July, 1967.

23. Walbesser, H. H. and Carter, K. Some methodological considerations of curriculum evaluation research. Educational Leadership. October, 1968.

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SMITH, H. GENE, AND OTHERS
CYCLE THREE REPORT. OCCUPATIONAL TRAINING INFORMATION SYSTEM. SUPPLEMENT VI: VOCATIONAL AND TECHNICAL SKILLS UPGRADING REQUIREMENTS FOR SELECTED OCCUPATIONS.

OKLAHOMA STATE DEPT. OF VOCATIONAL AND TECHNICAL EDUCATION, STILLWATER. DIV. OF RESEARCH, PLANNING, AND EVALUATION.
OKLAHOMA STATE DEPT. OF INDUSTRIAL DEVELOPMENT AND PARKS, OKLAHOMA CITY.
GOVERNOR'S COMPREHENSIVE MANPOWER PLANNING STAFF, OKLA.
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DESCRIPTORS - TRAINING OBJECTIVES; *JOB TRAINING; *OCCUPATIONAL CLUSTERS; OCCUPATIONAL INFORMATION; ADMINISTRATIVE AGENCIES; *INFORMATION NEEDS; *MANPOWER NEEDS; QUESTIONNAIRES; *STATE SURVEYS; PROGRAM DESCRIPTIONS; SKILL DEVELOPMENT
IDENTIFIERS - OKLAHOMA; OCCUPATIONAL TRAINING INFORMATION SYSTEM; OTIS

ABSTRACT - A COMPILATION OF EMPLOYMENT FORECASTS FROM THE OKLAHOMA EMPLOYMENT SECURITY COMMISSION AND RESULTS OF A QUESTIONNAIRE SENT TO REPRESENTATIVE FIRMS WERE USED TO: (1) DETERMINE FREQUENCY OF UPGRADING TRAINING NEEDS, (2) DETERMINE WHAT AGENCIES SHOULD BE RESPONSIBLE FOR TRAINING, AND (3) COMPARE ESTIMATED TRAINING NEEDS WITH ACTUAL TRAINING COMPLETED IN SELECTED OCCUPATIONAL CLUSTERS. THE STUDY WAS RESTRICTED TO AN EVALUATION OF UPGRADING TRAINING NEEDS OF INDIVIDUALS CURRENTLY EMPLOYED IN THOSE OCCUPATIONAL CLUSTERS REFLECTED IN THE CYCLE III OCCUPATIONAL TRAINING INFORMATION SYSTEM REPORT. IT WAS FOUND THAT A DEFINITE NEED FOR EXPANDED EFFORTS IN THE AREA OF SKILLS UPGRADING TRAINING EXISTS, AND THAT ONLY EIGHT PERCENT OF THOSE NEEDING THE TRAINING BY THE STATE DEPARTMENT ACTUALLY RECEIVED IT DURING 1970-71. THE STUDY RECOMMENDS ADDITIONAL RESEARCH BE COMPLETED TO DETERMINE THE OPTIMUM FORMAT FOR ADDITIONAL TRAINING PROGRAMS TO MEET EXPANDED REQUIREMENTS. RELATED DOCUMENTS ARE AVAILABLE AS VT 012 820 (ARM FALL 1971), VT 012 928, VT 013 050, AND VT 013 856 (ALL IN ARM VOL. 5, NO. 1), VT 013 995 (ARM VOL. 5, NO. 2), AND VT 014 778 (IN THIS ISSUE). (AUTHOR/GEB)

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VT 014 595

CYCLE THREE REPORT

OCCUPATIONAL TRAINING INFORMATION SYSTEM December 1, 1971

Supplement VI

Vocational and technical skills upgrading requirements for selected occupations

SPONSORING AGENCIES:

Oklahoma State Department of Vocational and Technical Education, Oklahoma Industrial Development and Parks Department, Ozarks Regional Commission, Governors Comprehensive Manpower Planning Staff.

COOPERATING AGENCIES:

Oklahoma Employment Security Commission, Manpower Research and Training Center of Oklahoma State University, Oklahoma Association of Private Schools, School of Occupational and Adult Education of Oklahoma State University, Research Foundation of Oklahoma State University.

Division of Research, Planning, and Evaluation ■ Oklahoma State Department of Vocational and Technical Education

VT 014 595

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VOCATIONAL AND TECHNICAL SKILLS UPGRADING REQUIREMENTS FOR SELECTED OCCUPATIONS

By

H. Gene Smith

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Division of Research, Planning, and Evaluation
State Department of Vocational and Technical Education
Stillwater, Oklahoma
December 1, 1971

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EDUCATION & WELFARE
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ABSTRACT OF STUDY

Title of Study: VOCATIONAL AND TECHNICAL SKILLS UPGRADING REQUIREMENTS FOR SELECTED OCCUPATIONS

Scope of the Study: The study was restricted to an evaluation of upgrading training needs of individuals currently employed in those occupational clusters reflected in the Cycle III OTIS Report. The firms submitting data for the OTIS Report were used as the primary source of upgrading training estimates.

Methodology of the Study: The study included compilation of employment forecasts from the Oklahoma Employment Security Commission and administration of a sample survey to representative firms utilizing mailed questionnaires to collect data concerning (1) frequency of upgrading training needs and (2) what agencies should be responsible for training. Results of the sample were expanded to reflect the total population of the occupational clusters included in the OTIS Report. Comparisons between estimated training needs and actual training completed during the 1970/71 period were computed for each occupational cluster to determine the level at which current skills upgrading training efforts are being met by the State Department of Vocational and Technical Education.

Findings and Recommendations of the Study: The study indicates a definite need for expanded efforts in the area of skills upgrading training. The study indicates only eight percent of the individuals needing skills upgrading training by the State Department actually received this type of training during the 1970/71 school period. An estimated additional 138,000 individuals should have received some form of skills upgrading by the State Department of Vocational and Technical Education based on survey responses of employers. The study recommends additional research be completed to determine the optimum format for additional training programs to meet the expanded requirements.

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VOCATIONAL AND TECHNICAL SKILLS UPGRADING REQUIREMENTS FOR SELECTED OCCUPATIONS

Background

Initiation of this survey by the Research, Planning, and Evaluation Division was based on interest expressed by participants of the January, 1971, OTIS Advisory Council Meeting and by multiple requests for skills upgrading training information from various levels of State Department management. Only minor emphasis has been placed on this area of training to date. The primary concern of most vocational and technical education programs has been the preparation of individuals for entry level employment skills.

Purpose

This report was prepared to answer the following questions concerning skills upgrading training for individuals employed full time:

1. What percentage of those individuals employed full time should receive some type of upgrading training each year?
2. What percentage of those individuals requiring upgrading training each year would utilize the State Department of Vocational and Technical Education as the primary source for instruction?
3. To what extent are current programs fulfilling estimated upgrading training needs of individuals employed full time?

Assumptions

This report is based on the following assumptions:

1. The employment forecasts developed by the Oklahoma Employment Security Commission are reasonably accurate.
2. The employer's evaluation of the training needs of employees is reasonably accurate.

3. The employer's evaluation of who should provide the training for upgrading is reasonably accurate.
4. Employers involved in the Occupational Training Information System are representative of all employers in Oklahoma.
5. "The Adult Follow-Up Report - 1971"[1] reflecting percentages of training involved currently in skills upgrading is reasonable.

Delimitations of the Study

Investigation of all occupations and all firms would have been infeasible within reasonable economic constraints; therefore, a sample using OTIS information was made to assist in obtaining the results of this report. The sample was derived by:

1. Sampling firms which have submitted demand data for the Occupational Training Information System (OTIS). There were 1,405 firms included in the survey with only one occupation surveyed from each firm (i.e., if a firm employed several occupational skills included in the survey, that specific firm was requested to supply data for only one occupational skill).
2. Utilizing only those occupations included in the Cycle III OTIS Report (129 total).
3. Utilizing total employment figures for comparative purposes derived from the "Manpower in Oklahoma Industrial and Occupational Analysis"[2] 1972 forecast from the 1969 report. These employment forecasts were the most complete statistics available for comparison purposes.

Data Collection

The employer response data for preparation of this report were derived from questionnaire forms (See Appendix A) mailed to 1,405 firms in the State. The 129 occupations included in the OTIS Report were surveyed with a 30 percent response realized on the first mailing. A follow-up mailing resulted in an additional 30 percent response. Each occupation was surveyed until a minimum of five firms or a 50 percent response was achieved. The follow-up request was supplemented in some cases by telephone calls to firms during the completion phase of the survey.

Survey instruments were prepunched before mailing to indicate both D.O.T. code and a unique code for each employer. As replies were received, they were recorded by occupation and employer. The survey instruments were then punched with the indicated survey response data and filed for final tabulation.

Letters of appreciation (See Appendix B) were mailed to all respondents. This action should establish a rapport which should facilitate expanding the data base if necessary.

Calculations

The contents of Table I were calculated as follows:

1. Data for the column headed "Total Employment" were derived from the "Manpower in Oklahoma Industrial and Occupational Analysis" forecast for 1972 included in the 1969 report. Employment by occupations was entered and accumulated for each occupational cluster and also summarized into a grand total for all occupations included in the survey. An exception exists for the farm hand and farm manager cluster which was projected from the 1970 "Oklahoma Employment Security Commission Labor Market Report."[3]
2. Data for the column headed "Percent Needing Skills Upgrading Annually" were computed from survey returns (See Appendix A). Each occupational group reflected a minimum of five responses. The time intervals were weighted by multiplying the number of responses to each interval by the number of the (year) interval. The results of these multiplications for all occupations in the cluster were then divided by the total number of responses for the cluster to yield a weighted average year interval number for the cluster. Interpolation of the weighted average interval number yields the average number of months in which all occupations within the occupational cluster should be upgraded. The number of months were then converted to an annual rate (i.e., if the interpolated months for an occupational cluster were 10, the annual rate would be 12/10 or 120 percent.)
3. Data for the column headed "Individuals Needing Skills Upgrading Annually" are indicated for each occupational cluster and are calculated by multiplying the "Total Employment" by the "Percent Needing Skills Upgrading Annually."

4. Data for the column headed "Percentage of Training Assistance Requested from State Department" was calculated for each occupational cluster utilizing the training responsibility responses indicated by the survey instrument (See Appendix A). The percentage was derived for each occupational cluster by:

$$\frac{H + 1/2J}{K}$$

where H = number of responses to item one of the responsibility for training question

J = number of responses indicating both items one and two or neither item of the responsibility for training question

K = total responses

5. Data for the column headed "Individuals Requiring Skills Upgrading by the State Department" were calculated by multiplying the "Percentage of Training Assistance Requested from State Department" times the "Individuals Needing Skills Upgrading Annually."

6. Data for the column headed "Individuals Involved in Skills Upgrading Programs" were derived from the 1970-71 Office of Education Report, Form 3138, Enrollments in Vocational Education Programs. The adult totals for preparatory, supplemental, and apprenticeship were summarized from the report by correlating program codes and occupational clusters. A percentage was then applied to each group for allocating that portion applicable to skills upgrading only. The percentages used for allocating the skills upgrading portion were derived from a special study, "The Adult Follow-Up Report - 1971."[4] Skills upgrading percentages used by division were:

Agriculture	46.2
Business and Office	40.0
Health Occupations	75.0
Home Economics	86.2
Distributive Education	52.8
Technical Education	25.0
Trade and Industrial	49.0

Occupational clusters requiring a more detailed allocation than program code summaries in the OE 3138 Report were obtained by utilizing the support papers used to generate the 3138 Report plus consultation with State Department Supervisory Personnel (e.g., Program 172801, Fireman Training was reduced by

3,600 volunteer firemen trained which were not included in employment figures). If a program was applicable to multiple clusters (e.g., Program 010300, Agriculture Mechanics, applicable to both agriculture and trade and industrial occupations), the total employment for the affected clusters was used to allocate the percentage of individuals involved in skills upgrading training for each cluster. It should be noted the percentage used for each division was a division average and in some cases may result in minor biases.

7. Data for the column headed "Estimated Individual Upgrading Needs Not Being Met By Current Programs" were calculated for each occupational cluster by subtracting the "Individuals Involved in Skills Upgrading Programs 1970-71" from the "Individuals Requiring Skills Upgrading by the State Department." As noted in Item 6, a few isolated calculations may result in negative values for this calculation due to averages used for each division and not totally applicable to a specific occupational cluster.

Findings and Recommendations

This survey was intended to provide preliminary data concerning the potential for expanded efforts in the area of skills upgrading. The tabulated results are presented in Table I. The survey results indicate a need for expanded training activities. The annualized rate of upgrading considered advisable by the industries sampled ranged from 15 to 200 percent. An average 68 percent (approximately 333,000) of the individuals represented by the survey need some type skills upgrading training each year. The industries surveyed indicated the State Department of Vocational and Technical Education should be responsible for 16 to 100 percent of the total upgrading training depending on the specific occupational cluster involved. The average rate for which the State Department should be responsible for upgrading training is 45 percent of all individuals needing upgrading training each year or approximately 150,000 individuals. Actual training by the State Department for purposes of upgrading the skills of surveyed occupations during the 1970-71 period was approximately 12,000 or only 8 percent of the estimated requirements.

Assuming the survey results contain bias errors of fairly high magnitude, the indications are still valid for needed expansion in the area of skills upgrading training.

Additional studies should be completed to assure a well-developed and effective implementation plan for skills upgrading training. Additional areas of investigation should include:

1. What timing and duration factors should be considered for new training courses and workshops?
2. What types of training should be provided if expansions or condensations of existing programs are not adequate?

The respondents to the original survey can provide a valuable source for gathering needed additional data. The use of the appreciation letters has hopefully established a rapport which will facilitate use of this source in any subsequent survey.

TABLE I

VOCATIONAL AND TECHNICAL SKILLS UPGRADING REQUIREMENTS - COMPARATIVE STATISTICS

Occupational Cluster	Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
407.884 Groundskeeper	3,506						
TOTAL	3,506	48	1,683	60	1,010	30	980
421.883 Farm Hand, General							
440.000 Farm Manager							
TOTAL	115,500	100	115,500	40	46,200	1,704	44,496
624.281 Farm Equipment Mechanic	295						
TOTAL	295	85	251	58	145	28	117
250.258 Salesman, Insurance	2,286						
Sub-total	2,286	92	2,103	25	525	18	507
250.358 Salesman, Real Estate	424						
Sub-total	424	92	390	25	97	341	(244)
260.000 thru 289.000 Salesman (Commodities	22,968						
290.000 Sales Clerk	29,053						
292.000 Routeman	5,614						
Sub-total	57,635	75	43,266	40	17,290	384	16,906

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TABLE I (Continued)

Occupational Cluster	Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
250.000 thru 259.000 Sales Occupations (Services)	2,596						
Sub-Total	2,596	120	3,115	20	623	44	579
242.368 Room Clerk	860						
Sub-total	860	15	129	60	77	117	(40)
310.868 Hostess	949						
311.878 Waitress	14,133						
319.138 Food Service Supervisor	323						
Sub-total	15,405	133	20,488	46	9,424	624	8,800
TOTAL	79,206	88	69,451	40	28,036	1,528	26,508
079.378 Dental Assistant	783						
TOTAL	783	80	626	20	125	None	125
078.381 Medical Laboratory Technician	826						
078.381 Medical Laboratory Assistant	545						
TOTAL	1,371	52	712	35	249	None	249
075.378 Registered Nurse	7,893						
TOTAL	7,893	80	6,314	20	1,262	None	1,262

TABLE I (Continued)

Occupational Cluster	Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
079.378 Vocational Nurse	4,920						
TOTAL	4,920	50	2,460	83	2,041	4	2,037
355.878 Nurse Aide	20,393						
TOTAL	20,393	120	24,471	40	9,788	839	8,949
079.378 Surgical Technician	610						
TOTAL	610	40	244	57	139	4	135
078.368 Dental Hygienist	110						
TOTAL	110	40	44	40	17	None	17
079.368 Inhalation Therapy Technician	46						
TOTAL	46	120	55	64	35	None	35
079.368 Medical Assistant	357						
TOTAL	357	120	428	90	385	None	385
249.388 Medical Record Clerk	661						
TOTAL	661	200	1,322	58	766	None	766

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TABLE I (Continued)

Occupational Cluster	Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
219.388 Ward Clerk	994						
TOTAL	994	220	2,186	60	1,312	None	1,312
100.388 Medical Record Technician	83						
TOTAL	83	42	34	58	19	33	(14)
201.368 Medical Secretary	1,188						
TOTAL	1,188	63	748	100	748	37	711
781.884 Cutter, Hand or Machine	405						
785.381 Seamstress	605						
786.000 Sewing Machine Operator	9,338						
TOTAL	10,348	28	2,897	68	1,970	315	1,655
209.388 Statement Clerk	404						
210.388 Bookkeeper, Hand	7,848						
211.368 Cashier	4,649						
212.368 Teller	2,447						
215.388 Bookkeeper, Machine Operator	4,488						
215.488 Payroll Clerk	1,846						
217.388 Transit Clerk	305						
219.388 Interest Clerk	183						
219.488 Accounting Clerk	6,536						
219.488 Insurance Checker	108						
249.268 Claims Clerk	342						
249.368 New Account Clerk	813						
249.368 Credit Clerk	167						
Sub-total	30,136	25	7,534	58	4,370	260	4,110

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TABLE I (Continued)

Occupational Cluster	Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
209.388 Clerk Typist	13,268						
219.388 General Office Clerk	27,048						
219.388 Sorting Clerk	609						
Sub-total	40,925	28	11,459	66	7,562	549	7,013
205.368 Personnel Clerk	1,189						
Sub-total	1,189	28	332	66	219	None	219
201.368 Secretary	15,390						
202.388 Stenographer	11,104						
Sub-total	26,494	63	16,691	40	6,676	321	6,355
TOTAL	98,744	36	36,016	52	18,827	1,130	17,697
213.382 Card Tape Converter Operator	217						
213.582 Keypunch Operator	3,261						
213.782 Tab Machine Operator	1,153						
TOTAL	4,631	33	1,528	37	565	188	377
001.281 Draftsman, Architectural	449						
003.281 Draftsman, Electrical	157						
003.281 Draftsman, Electronics	143						
005.281 Draftsman, Civil	710						
007.281 Draftsman, Mechanical	1,604						
010.281 Draftsman, Geological	431						
017.281 Draftsman, Map	156						
TOTAL	3,650	26	949	90	854	204	650

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TABLE I (Continued)

Occupational Cluster	Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
029.281 Technician Laboratory	1,178						
TOTAL	1,178	25	294	83	244	15	229
005.181 Technician, Civil	2,063						
018.188 Surveyor	604						
TOTAL	2,667	40	1,066	79	842	31	811
003.181 Technician, Electrical	528						
003.181 Technician, Electronics	1,571						
TOTAL	2,099	30	629	60	377	162	215
012.288 Technician, Industrial	202						
019.281 Technician, Quality Control	1,372						
TOTAL	1,574	42	661	62	409	6	403
003.281 Technician, Instrumentation	222						
600.280 Instrument Maker	93						
710.281 Instrument Man	1,027						
TOTAL	1,342	42	563	66	372	4	368
007.181 Technician, Mechanical	462						
TOTAL	462	33	152	93	141	41	100
020.188 Programmer, Scientific	660						
TOTAL	660	70	462	57	263	10	253
139.288 Writer, Technical	294						
TOTAL	294	75	220	80	176	54	122

TABLE I (Continued)

Occupational Cluster	Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
020.188 Programmer, Business	1,163						
213.382 Digital Computer Operator	778						
219.388 Programmer, Detail	347						
TOTAL	2,288	109	2,493	30	748	251	497
196.283 Commercial Pilot	350						
TOTAL	350	40	140	16	22	4	18
168.168 Safety Man	226						
168.168 Building Inspector	78						
373.000 Fireman	1,726						
TOTAL	2,030	70	1,421	58	824	1,687	(863)
375.000 Policeman or Detective	2,435						
377.000 Sheriff or Bailiff	531						
TOTAL	2,966	109	3,232	35	1,131	82	1,049
637.281 Mechanic, Air Conditioning	1,505						
TOTAL	1,505	100	1,505	60	903	235	668
862.381 Plumber	2,454						
TOTAL	2,454	30	736	50	368	160	208

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TABLE I (Continued)

Occupational Cluster	Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
827.281 Appliance Repairman	718						
TOTAL	718	120	861	20	172	None	172
807.381 Auto Body Repairman	1,807						
845.781 Auto Painter	576						
TOTAL	2,383	70	1,668	65	1,084	87	997
223.387 Auto Partsman	1,382						
620.281 Auto Mechanic	7,202						
TOTAL	8,584	37	3,176	55	1,746	613	1,133
621.281 Jet Engine Mechanic	1,431						
621.281 Aircraft Engine Mechanic	1,692						
621.781 Aircraft Accessories Mechanic	3,365						
TOTAL	6,488	40	2,595	73	1,894	15	1,879
633.281 Office Machines Repairman	1,357						
TOTAL	1,357	75	1,017	20	203	None	203
141.081 Illustrator	156						
141.081 Layout Man (Publishing and Printing)	358						
TOTAL	514	46	236	50	118	42	76
143.000 Photographer	213						
972.382 Photolithographer	98						
TOTAL	311	60	186	46	85	20	65

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TABLE I (Continued)

Occupational Cluster		Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
741.887	Spray Painter	1,246						
840.781	Painter	985						
842.884	Dry Wall Applicator	126						
860.381	Carpenter	6,444						
861.781	Tile Setter	489						
864.781	Floor Layer	350						
866.381	Roofer	522						
TOTAL		10,162	44	4,471	62	2,772	185	2,587
721.281	Electric Motor Repairman	145						
726.281	Electronics Assembler	2,620						
821.381	Lineman	3,951						
824.281	Electrician	4,574						
828.281	Electronics Mechanic	1,515						
TOTAL		12,805	60	7,683	56	4,302	223	4,079
899.281	Maintenance Man	1,216						
899.381	Maintenance Man, Building	5,378						
TOTAL		6,594	200	13,188	20	2,637	23	2,614
625.281	Diesel Mechanic	1,526						
TOTAL		1,526	46	701	70	491	4	487
720.281	Radio and TV Repairman	446						
TOTAL		446	126	561	50	280	33	247

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TABLE I (Continued)

Occupational Cluster	Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
650.582 Linotype Operator	558						
651.782 Cylinder Press Operator	525						
651.782 Offset Press Man	928						
TOTAL	2,011	33	664	82	544	94	450
600.280 Machinist (All Round)	3,689						
600.381 Layout Man	425						
603.000 thru 609.000 Machine Set Up Operator	1,549						
603.280 Precision Grinder	797						
609.885 Production Machine Tool Operator	5,156						
705.884 Bench Grinder	436						
TOTAL	12,052	31	3,736	66	2,465	100	2,365
615.782 Shear Press Operator	414						
615.782 Punch Press Operator	1,401						
617.280 Press Operator (Heavy)	171						
617.380 Brake Operator	195						
619.380 Metal Fabricator	1,308						
804.281 Sheet Metal Worker	1,329						
809.381 Layout Man	835						
TOTAL	5,653	22	1,243	70	870	95	775
810.782 Welding Machine Operator	728						
810.884 thru 812.884 Welder	6,722						
816.782 Flame Cutter Machine Operator	266						

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TABLE I (Continued)

Occupational Cluster	Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
816.884 Hand Flame Cutter	268						
TOTAL	7,984	25	1,996	71	1,417	1,279	138
526.781 Baker	1,073						
TOTAL	1,073	54	579	70	405	None	405
313.131 Chef	398						
313.381 Cook	13,496						
TOTAL	13,894	27	3,751	90	3,376	None	3,376
950.782 Stationary Engineer	381						
952.782 Power Plant Operator	1,463						
TOTAL	1,844	18	331	63	209	41	168
316.781 Butcher	1,218						
316.884 Meat Cutter	2,573						
525.884 Boner or Skinner	428						
TOTAL	4,219	22	928	60	556	None	556
780.381 Furniture Upholsterer	366						
TOTAL	366	20	73	66	48	42	6
660.280 Cabinet Maker	415						
669.380 Millman	671						
TOTAL	1,086	16	173	69	119	99	20

TABLE I (Continued)

Occupational Cluster	Total Employment	Percent Needing Skills Upgrading Annually	Individuals Needing Skills Upgrading Annually	Percentage of Training Assistance Requested from State Department	Individuals Requiring Skills Upgrading by the State Department	Individuals Involved In Skills Upgrading Programs 1970-1971	Estimated Individual Upgrading Needs Not Being Met By Current Programs
844.884 Cement Mason	1,397						
861.381 Brick Layer	1,701						
TOTAL	3,098	28	867	50	433	33	400
859.883 Heavy Equipment Operator	5,346						
TOTAL	5,346	30	1,603	50	801	None	801
GRAND TOTAL	487,672	68	333,820	44	148,340	11,814	136,526

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FOOTNOTES

[1]"The Adult Follow-Up Report - 1971," Unpublished Materials of the State Department of Vocational and Technical Education, Stillwater, Oklahoma, (Publication Pending).

[2]Oklahoma Employment Security Commission, "Manpower in Oklahoma Industrial and Occupational Analysis," Oklahoma City, Oklahoma, April, 1969.

[3]Oklahoma Employment Security Commission, "Oklahoma Labor Market," Oklahoma City, Oklahoma, 1970.

[4]"The Adult Follow-Up Report - 1971."

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APPENDIX A

Sample Survey Form

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OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION

Survey of Recommended Time Periods for Skills Upgrading

The information on this card will be used by the Oklahoma State Department of Vocational and Technical Education to plan for training to upgrade the skills of workers presently employed. Assuming that technology advances at approximately the same rate as it has in the past ten years, _____ should upgrade their skills in a formal class (including night classes and short courses).

Check One :

1. ____ More than Once a Year
2. ____ Every Year
3. ____ Every Two to Three Years
4. ____ Every Four to Five Years
5. ____ Every Six to Seven Years
6. ____ Every Eight to Ten Years
7. ____ Don't Need Upgrading

Who should be responsible for this training:

Check One:

1. ____ Department of Vocational and Technical Education
2. ____ Other (Please specify) _____

APPENDIX B

Survey Request and Follow-Up Correspondence

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OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
FRANCIS TUTTLE, DIRECTOR • 1515 WEST SIXTH AVE., • STILLWATER, OKLAHOMA 74074 • A.C. (405) 377-2000

June 8, 1971

MEMORANDUM

TO: Selected Firms

FROM: Bill Stevenson, Assistant State Director, Head, Division of Research, Planning, and Evaluation

SUBJECT: Survey of Recommended Time Periods for Skills Upgrading

The Oklahoma State Department of Vocational and Technical Education is concerned with providing two types of training: (1) preparation for job entry employment, and (2) training to upgrade the skills of those already employed.

Some skills utilized by firms similar to your own require upgrading periodically. We are requesting your assistance in determining when and if certain skills should be upgraded.

Completion of the enclosed survey form requires only your selection of the appropriate time period for skill upgrading and your opinion concerning which group should be responsible for providing the training.

Your assistance in completing and returning the survey form is appreciated. This information will greatly benefit the planning for future training programs.

Enclosure

GS/XDE-01/11

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OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
FRANCIS TUTTLE, DIRECTOR • 1515 WEST SIXTH AVE., • STILLWATER, OKLAHOMA 74074 • A.C. (405) 377-2000

July 13, 1971

MEMORANDUM

TO: Selected Firms

FROM: Bill Stevenson, Assistant State Director, Head, Division of Research, Planning, and Evaluation

SUBJECT: Follow-Up Skills Upgrading Survey

Your firm was recently included in a survey request for information concerning skills upgrading. As of this date we have not received a response from your firm and would like to again request your assistance in this very important survey.

One of the most valuable sources of information for determining employee training needs in Oklahoma is the individual firm. Your opinion can have a major effect on the establishment of improved training programs.

Enclosed is a second self-addressed, stamped survey card which requests your opinion concerning two important items in a skills upgrading program. If you have additional comments which would be helpful, please include these in the blank space on the card. If this request is not sent to the correct person, would you please route it to the correct person for completion.

Your efforts in completing this survey are sincerely appreciated.

Enclosure

GS/XCP-01/13

OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
FRANCIS TUTTLE, DIRECTOR • 1515 WEST SIXTH AVE., • STILLWATER, OKLAHOMA 74074 • A.C. (405) 377-2000

July 12, 1971

MEMORANDUM

TO: Selected Firms

FROM: Bill Stevenson, Assistant State Director, Head, Division of Research, Planning and Evaluation

SUBJECT: Letter of Appreciation - Skills Upgrading Survey

Your cooperation during the recent Skills Upgrading Survey conducted by the Oklahoma State Department of Vocational and Technical Education is sincerely appreciated. Cooperation by your firm and firms similar to your own makes it possible for training programs to better meet the needs of the employers and employees of Oklahoma.

The information furnished by your firm will be an important element in planning future training programs.

Thanks again for your contribution to this survey.

GS/XGS-01/14

SEE OKLAHOMA FIRST

VT 014 611
MAZYCK, AURELIA
ORIENTATION AND PLANNED EXPERIENCES FOR DAY-HOME MOTHERS IN TRAINING.

NORTH CAROLINA UNIV., GREENSBORO. INST. FOR CHILD AND FAMILY DEVELOPMENT.
CHILDREN'S BUREAU (DHEW), WASHINGTON, D.C.
APPALACHIAN REGIONAL COMMISSION, WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
THE INSTITUTE FOR CHILD AND FAMILY DEVELOPMENT, THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO, GREENSBORO, NORTH CAROLINA 27412 ($.50)
PUB DATE - 71 46P.

DESCRIPTORS - *DAY CARE SERVICES; RESIDENTIAL CARE; *INFANTS; *HOME PROGRAMS; *CHILD CARE WORKERS; *MOTHERS; JOB TRAINING; BIBLIOGRAPHIES

ABSTRACT - A 2-WEEK TRAINING PROGRAM WAS HELD BY THE STAFF OF THE INFANT CARE PROJECT AT THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO AS A BASE FOR PART OF THE TRAINING OFFERED TO MOTHERS PLANNING TO OPEN THEIR HOMES FOR FAMILY DAY CARE. FOLLOWING A DAY OF ORIENTATION IN WHICH TRAINEES WERE INTRODUCED TO THE NURSERY CENTER, THE TRAINEES SPENT THE REMAINDER OF THE TWO WEEKS READING AND STUDYING MATERIALS, PROVIDING CARE FOR CHILDREN RANGING IN AGE FROM 2 MONTHS THROUGH 3 YEARS, HAVING CONFERENCES WITH CENTER AND RESEARCH STAFF, AND OBSERVING THE NURSERY ASSISTANTS, COOK, AND CHILDREN. IN ADDITION TO PROVIDING A GENERAL OUTLINE OF THE TRAINING PROGRAM, THIS PUBLICATION PROVIDES A LISTING OF THE MOST HELPFUL MATERIALS USED IN THE COURSE OF TRAINING. A RELATED DOCUMENT IS AVAILABLE AS VT 014 610 IN THIS ISSUE. (SB)

VT 014 611

ORIENTATION

AND PLANNED EXPERIENCES

FOR

DAY-HOME MOTHERS IN TRAINING

Prepared by

Aurelia Mazyck, M. A.
Director, Demonstration Nursery Center
University of North Carolina at Greensboro
27412

The Demonstration Project is supported by Grant No. D-256
Child Welfare Research and Demonstration Grants Program
Children's Bureau, Department of Health, Education and Welfare and
The Appalachian Regional Commission

YT014611

1971

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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INTRODUCTION

In July 1970, the Infant Care Project at the University of North Carolina at Greensboro began a cooperative program with United Day Care Services of Greensboro. The plan was to use the Demonstration Nursery Center at UNC-Greensboro as a base for a part of the training offered to mothers ready to open their homes for family day care. Family Day Care was the newest of the UDCS programs, the course this agency had chosen for meeting the growing demand for daytime care for children younger than two. UNC-G's Infant Care Project has provided some materials for the training of these mothers, and UDCS has given these women the option of spending two weeks in the Demonstration Nursery Center to "understudy" that program of caregiving for infants and toddlers.

The women who elected to participate in the two-week training at the University's Nursery Center were paid a small stipend from Infant Care Project funds. The stipend was to reimburse the mother for income she would be losing by postponing the opening of her Day Care Home for two weeks, plus any expense incurred for child care for her own children during those two weeks, plus unusual travel expense.

Occasionally, two mothers have entered the training period on the same date; however, efforts have been made to have only one mother at a time in training at the Nursery.

It should be noted that the time spent at the Demonstration Nursery Center does not constitute the total preparation these mothers have before they open their homes for day care. The professional staff of UDCS have earlier spent at least two weeks with each mother helping her prepare for this undertaking. The day-home mother herself has taken responsibility for all procedures involved in the licensing of her home by the North Carolina Department of Social Services. There is, further, continuing supervision of the Day Care Homes by UDCS staff after children are placed for day care.

It is the purpose of this document to share the general outline of the mothers' two-week experience at the Nursery Center and to give a listing of the most helpful materials that are shared with the mothers in the course of training.

Aurelia Mazyck, Director

Demonstration Nursery Center
University of North Carolina-Greensboro

March 1, 1971

N O T E

A detailed description of the Infant Care Project (program and evaluation) is available in a separate publication:

"The Good Life" for Infants and Toddlers by Mary Elizabeth Keister. $1.50 from National Association for the Education of Young Children, 1834 Connecticut Avenue, N. W., Washington, D. C. 20009.

The program for infants and toddlers at the Demonstration Nursery Center is set out in a series of color slides (with script) entitled: "Curriculum for Infants and Toddlers"

For information about the above and other documents available, write to:

Infant Care Project
Institute for Child and Family Development
University of North Carolina
Greensboro, North Carolina 27412

ORIENTATION *FIRST DAY*

1. *The trainee meets the Director of the Nursery Center and has a brief conference with her about plans for the two weeks to be spent in the Nursery Center. The purpose and program of the Center is described.*

2. *The Director makes suggestions about materials that will be helpful to read --- certain ones to be read earlier (and some later) in the week --- and introduces the trainee to the staff library: "THE GOODY BOX." Materials she recommends to be read first follow on pp. 4-30.*

3. *The Director takes the trainee on a tour of the Nursery Center and introduces her to each member of the staff.*

4. *The trainee spends several hours reading and several hours observing one or two of the caregivers, throughout the first day getting the "feel" of the program.*

SOME ORIENTATION NOTES FOR NEW ASSISTANTS IN THE DEMONSTRATION NURSERY CENTER

Welcome to the Demonstration Nursery Center. We are pleased to have you with us; we hope your experiences are challenging and rewarding.

The following suggestions are intended to give some initial understandings and (hopefully) to offer a measure of security for your beginning days. You will have questions, nevertheless, and we urge you to make these known as they occur to you.

THE WORK TO BE DONE. This listing represents examples of the variety of work which is done daily in the Center:

1. Greetings, goodbyes, and conversations with parents and/or staff
2. Feedings -- formulas, lunches, snacks, sometimes breakfast
3. Diapering and toileting (including individualized toilet training)
4. Talking and playing with crib infants
5. Arranging play areas for infants, toddlers, twos and threes
6. Keeping alert to safety in all situations
7. Dressing and undressing children
8. Arranging for interesting outdoor play
9. Keeping rooms and beds clean and toys washed
10. Replenishing and marking items in caddy boxes
11. Staff reading and conferences

HEALTH, SAFETY AND SANITATION. These areas of concern are described in detail on accompanying sheets and should be studied and made a matter of consistent practice.

HOUSEKEEPING. All persons in the Center are expected to help keep the rooms, halls, toilets, and rest rooms in good condition for the health and comfort of all persons. Areas to watch: water, paper, or food kept off the floors; beds cleaned and changed; unused food disposed of properly; sinks, chrome, and counter tops wiped; tables and chairs free from stickiness; draperies pulled carefully. On Fridays, extra and particular attention must be given to leaving the rooms in readiness for Sunday.

ESTABLISHING RELATIONSHIPS

1. Look to the permanent staff member in a group for direction about work to be done and the order of priorities.
2. Be constantly alert to children's physical safety (even when they are sleeping). Whenever a fall, a bite or any injury occurs, report this fact to our nurse.
3. Help children when they need help, but give them every opportunity to develop initiative and independence.
4. Comfort a child when he is hurt or unhappy, but avoid overprotection and extremism in voice tone or body contact.
5. Use positive, rather than negative directions when a child's behavior is harmful or inappropriate: "Play here", instead of "Don't play there"; "Ride the trike on the walk", rather than "Don't ride on the grass".
6. Show a child what words mean: Take his hand when you say "time to go," or give any direction. Do not call to a child across a distance unless an emergency so demands. Do not talk to a child unless you have his attention.
7. Watch for signs of toileting needs. Learn the words each child uses for toileting.
8. Be alert to extend the courtesies of greeting, regrets, and other social amenities to children as well as to adults, but do not expect "manners" from the children.
9. Have some consistent answers for expressed questions or needs --- the same answers, over and over: "Mommy's gone to work; she will come back."
10. Guard the safety of toddlers as they explore their responses to one another. Pushing down, pulling hair, and biting are usual social approaches among inexperierced toddlers. Helping persons must be close by, attentive, gentle, and positive: "Touch him easy"; "Pat him."
11. Give choices only when choices can be honored. "Do you want to go home now?" is not a decision for a child to make, but to have a choice of toys is appropriate.
12. Become familiar with the limits which the leaders in each group feel are necessary. Follow through on these consistently.
13. Try to keep rooms and equipment usuable and inviting: Books and toys off the floor; dolls in the beds; puzzles intact. Make special efforts to leave a room orderly before going outdoors.

INTERACTION TO AVOID

1. Interceding with a child when another adult is relating to him unless you are aware of something which the helping adult does not know. In such an instance, speak to the adult and not to the child.
2. Initiating social interaction with children who are passing through the halls with their teachers. These interruptions are distracting.
3. Teasing, "spelling out" or talking about a child in his presence.
4. Hasty or "jerky" movements or loud voices except as emergencies demand.
5. Making false promises as means of satisfying need or threatening children to change behavior.
6. Giving food(or substitutes) other than that which is sent from the kitchen.

DRESS AND PERSONAL BELONGINGS

1. Outer wraps and books may be left at the entrance, but purses should be taken to the rooms where assistants are working.
2. Two or three uniforms are provided for each assistant who is expected to keep her own uniforms fresh; assistants are also reminded to be meticulous about personal cleanliness and use of a reliable deodorant.
3. Temporary or part-time assistants should leave pinafores or lab coats on hangers or place them in laundry hamper.

FOR PERSONAL COMFORT

1. Rest rooms for adults are accessible downstairs and upstairs. Do not use toilets adjoining children's rooms.
2. The telephone may be used for brief personal local calls.
3. Beverages and snacks are available in the upstairs lounge.
4. Friends and family are welcome to visit the Center and to observe the children from the hall or on the playground.

SCHEDULES AND ABSENCES

1. Every effort is made to arrange an assistant's hours for the maximum benefit of herself and the Center. The staff member will be responsible for notifying the Center when illness or emergency prevents attendance or punctuality.
2. Time sheets should be marked daily and signed weekly.

1969

*A DEMONSTRATION PROJECT: GROUP CARE OF INFANTS AND TODDLERS**

ASSURING SAFETY
AND
PROTECTING HEALTH

* *The Demonstration Project is supported by Grant No. D-256, Children's Bureau, U.S. Department of Health, Education, & Welfare Child Welfare Research and Demonstration Grants Program and by The University of North Carolina at Greensboro*

ASSURING SAFETY AND PROTECTING HEALTH

SOME DO'S AND DON'TS FOR NURSERY STAFF:

1. DO practice careful, thorough HANDWASHING:

   before feeding each baby
   after diapering any child
   after helping a child on the potty
   before serving food to the children

2. DO help children wash their hands well:

   before eating
   after toileting
   if they are dirty after outdoor play

3. DO cover mouth and nose for coughs and sneezes, and encourage children to follow this health precaution

4. DO insist that children sit while eating

5. DON'T allow children to pick berries or leaves from shrubbery, nor to put berries, nuts or leaves in their mouths

6. DON'T permit children to climb or sit on tables or shelves in the playrooms

7. DO insist that children hold an adult's hand when near the street and when crossing the street, or in any area where there may be danger

8. DO place babies on their tummies if they are put to sleep immediately after feeding (to eliminate danger of aspiration should vomiting occur)

9. DON'T ever leave side rails down on any crib. DO be certain rails are securely locked

10. DO stay constantly alert to the whereabouts and actions of each child -- whether asleep or awake, whether quiet or active

11. DO remember that infants and toddlers need full-time protection and a constant bodyguard

12. DO keep in mind that accidents most often occur when adults are tired, daydreaming, busy talking to one another, or underestimating a child's ability. Accidents are less apt to occur when adults are rested, watchful, alert, concerned for safety and well-being

SOME ACCIDENT HAZARDS AND MEASURES FOR PREVENTION

Accidents to children in group settings most often occur in this order:

from falls and bumps
from pushing and fighting
from foreign bodies
from suffocation
from motor vehicles
from burns
from poisons
from miscellaneous auses
(choking, ingestion of medicines, etc.)

FALLS AND BUMPS

Accidents may occur outdoors when children run into or jump out of swings, climb or jump over the sides of the slide, or when climbing on ladders and bars.

Consider the ages and abilities of the children. Generally, the older the child, the better he can control his body. Younger children need warnings to "hold on TIGHT," "SIT to slide," "Come down the ladder BACKWARDS." They may need to be shown where to put their feet when climbing. Show a child how to climb down from a height rather than lifting him or "jumping" him down.

Indoors, accidents may occur from stumbling over toys, or from climbing on furniture or onto the commode, from falling down stairs, and from falling out of a crib or from a dressing table.

The fact that infants and toddlers have large heads in proportion to their bodies means they are "topheavy." For this reason, they easily overbalance themselves in cribs and highchairs. Watch a baby closely when he is leaning far over -- and be ready to prevent a fall. If a child has had a fall from some height, give him a moment to catch his breath and wait to see if he will pick himself up. Don't rush to pick up a child quickly after a fall but move near and observe him closely.

PUSHING AND FIGHTING

In the case of very young children, pushing, biting, and hitting are a part of learning to play together. However, little ones this age have poor judgement about how hard or where they are hitting, and no realization of the dangers of heights and bites.

It takes a watchful adult to anticipate danger when children engage in rough play. Be ready to move in quickly to stop it if you see a bite coming or if a push or a punch will endanger one of the children.

FOREIGN BODIES

Small objects -- buttons, pins, coins, beads, berries, bits from broken toys, chewing gum -- may lodge in throats, ears, or noses. Sand is dangerous if it gets into eyes, ears, or mouth.

Adults must watch for small objects and take them out of reach of crawlers and toddlers. Toys with small parts that may be pulled or chewed off should not be given to babies. Say, "You must not throw the sand on anybody. Pile it here . . . Pour it like this . . . Let's put it in this can . . . "Place safety pins out of reach when diapering a baby.

SUFFOCATION

Plastic bags, soft deep pillows, loose materials in or near a baby's crib can cause suffocation.

Be alert to anything in the baby's surroundings that could cause difficulty in his breathing freely -- and remove it at once.

MOTOR VEHICLES

Streets, driveways, and parking lots are sources of danger to toddlers and young children. Even sidewalks may be a hazard if used as a thoroughfare for bicycles, tricycles, scooters and skates.

Keep children away from streets and driveways with a strong fence, a locked gate, and firm teaching. "Hold my hand when we go here . . . " "Cars can hurt . . . motorcycles , too -- you must not run there . . . " Insist on instant obedience where traffic is concerned.

BURNS

Electrical outlets, electric appliances, stoves, radiators and registers, matches, cigarette lighters, hot beverages and sun are all potential agents of burning for babies, toddlers, and preschoolers.

Cover wall outlets with safety plugs. Keep hot liquids, hot foods, electric cords out of reach. Remember that children's skin is sensitive and that extended exposure to sun may result in a painful burn.

POISONS

Almost all household cleaning agents are poisonous, as are many gardening preparations. Medicines, drugs, and many cosmetics are potentially dangerous, sometimes poisonous. Gasoline and kerosene when in children's hands are extremely dangerous.

Store medicines, household and garden products, paint, and any potentially poisonous materials out of reach of children, preferably in locked cabinets or closets. Kerosene and gasoline should be in metal containers and never left where children can reach them.

MISCELLANEOUS

Painful (and occasionally fatal) accidents are also caused by ingestion of medications children may have got hold of without their parents' knowledge; experimentation with house and garden tools; doors and drawers closing on fingers; choking on food.

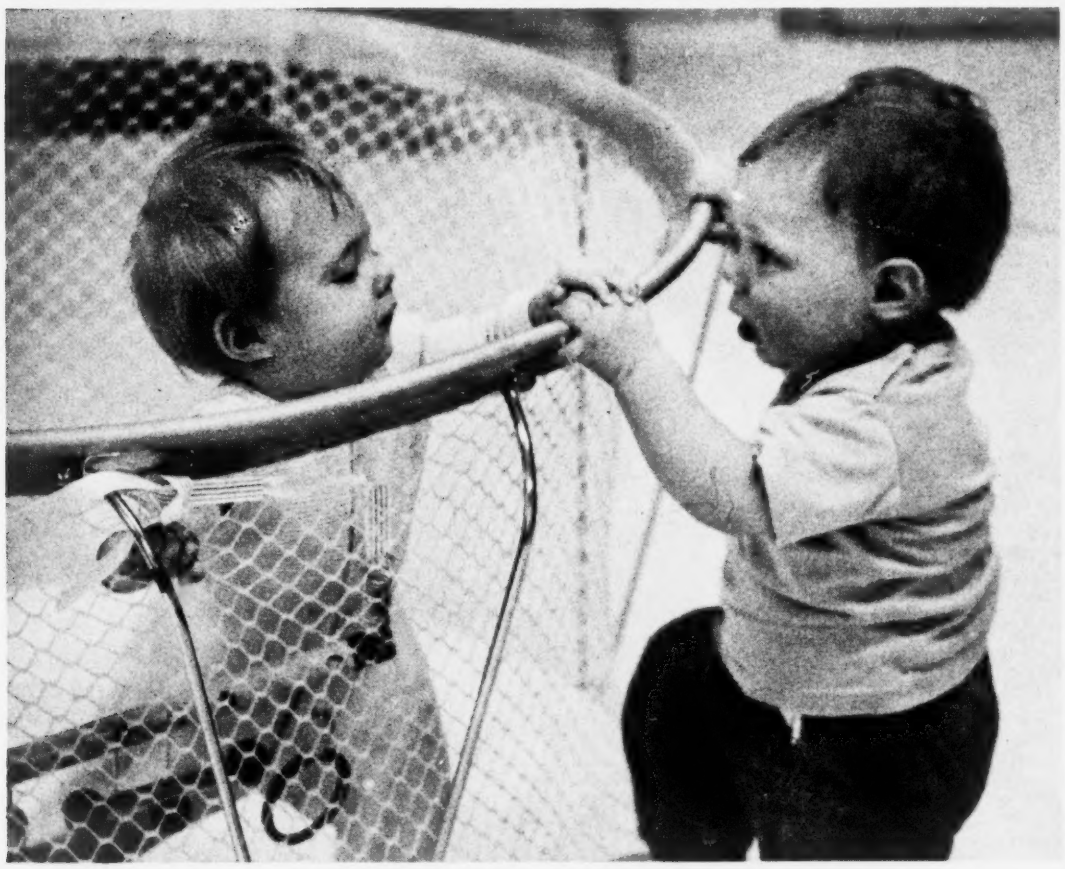
Keep dangerous tools and appliances out of reach until children are old enough to be taught safe ways of handling tools and kitchen and garden equipment. Adults must watch for children's fingers when closing doors and drawers and can teach children to keep fingers away from places where they may be pinched accidentally. Have children SIT for meals and snacks to avoid the risk of aspirating food which may occur if they eat while running and playing.

CHARACTERISTICS

of

BABIES AND TODDLERS

To help you know what to expect
from two months to four years



PREPARED BY

Aurelia C. Mazyck

from

sources that include:

Ilg and Ames : Child Behavior
Jersild : Child Psychology
Mussen : Child Development and Personality
Stone and Church : Childhood and Adolescence

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SECOND MONTH

Baby is awake for longer periods than in first month

Looks at objects

May raise head slightly to look at things

Stops crying when mother comes near or caresses him

Will respond with a smile to a moving human face

May shed tears when crying

Largely immobile

Legs more active than before, but generally held in flexed position

Eats at frequent intervals, and takes two or more night feedings

THIRD MONTH

Can follow objects by moving head, but does not look around edges or corners

Eyes are better coordinated and will converge on an object as it approaches his nose

More sociable and enjoys mild roughhousing

Vocalizations are becoming gurgles and coos

FOURTH MONTH

Enjoys playing "Boo!" or being tickled by parents

Often laughs or chuckles when people play with him

Takes active pleasure in his bath

Distinguishes mother from other people

Can be propped to sit for a few minutes

Begins to eat "solid" food of the mushy type with spluttering, coughing, and dribbling

FIFTH MONTH

Consumes quantities of milk and solids and eats meals 4-5 hours apart

May sleep the night through or wake up to be fed only once

Takes a couple of well-defined naps during the day

Can entertain himself on waking

Plays with and studies his fingers, and whatever they hold goes into his mouth

During day, can play contentedly for longer periods of time than previously

To sit up, must be braced against pillows, but can stay in this position for longer periods of time without fatigue

His ankles begin to straighten out

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SIXTH MONTH

Is able to grasp, hold on, and let go.

Can use both hands to handle things

Transfers things from one hand to another

Puts things in mouth; chews on toys

Teeth are beginning to push through gums

Likes to pull feet up to eyes for inspection

Can often roll completely over and when on stomach will push himself up by his hands until his chest is clear

A growing fear of strangers occurs

Likes to play peek-a-boo

EIGHTH MONTH

Is learning to pull self to sitting position

Begins to crawl

Some interest in trying to feed self

One or two more teeth appear

Becomes interested in own image in the mirror

NINTH MONTH

Grasps with accuracy using thum and first finger

Will show resentment if something he likes is taken away

Will enjoy and laugh over give and take games

Enjoys game of hiding and finding a toy

Can raise himself on hands and knees and creep

Becomes frustrated if left too long in play pen

TENTH MONTH

Extremely sociable with adults, likes to play pat-a-cake

May be able to say "mama" and "dada"

ELEVEN TO TWELVE MONTHS

Can stand with support and may even take a few steps with help

Can "cruise" by sidestepping and supporting himslef on furniture or playpen railing

May play with genitals

Can pile one block on another

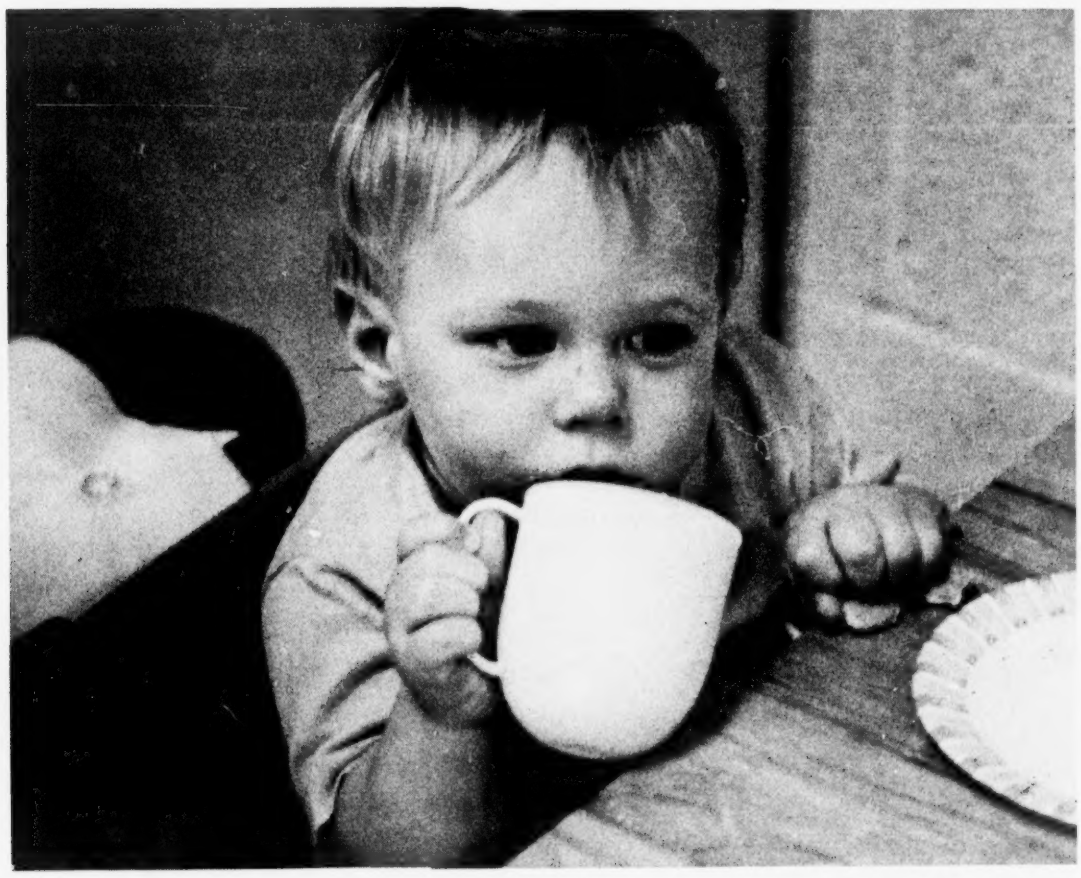
Can wave bye-bye

Throws things out of play pen, crib, and stroller

Holds cup

Takes off socks and shoes

Likes bath and water play

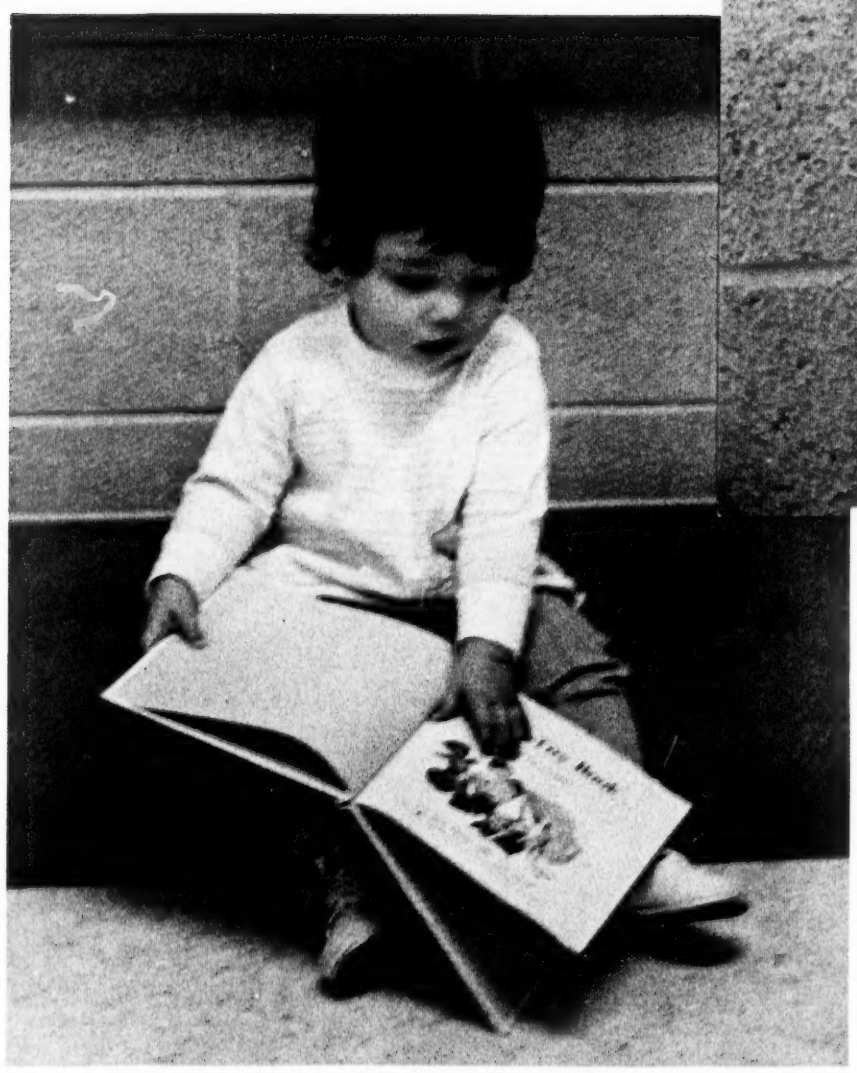


THIRTEEN TO SIXTEEN MONTHS

Can drink from a cup or a glass

Can feed self with considerable success

Perfects and combines manipulatory skills



Enjoys walking, climbing steps, and lugging, shoving, and hauling out-sized objects

Little emerges in the way of new, separate skills, but a great deal of practice is going on

SEVENTEEN TO EIGHTEEN MONTHS

"No" is the chief word

Can remove mittens

Vocabulary---10 to 20 words

Cooperates in dressing

Needs physical barriers

Treats other children like objects

Does not respond readily to verbal commands

Cannot wait, wants immediate action

Interpersonal relations almost completely dominated by ideas of taking---not giving

Exhibits a number of emotions---affection and delight, anger and jealousy

NINETEEN TO TWENTY-FOUR MONTHS

Balks

Runs away

Demanding

May be restless in sleep

Can run and climb

"No" is favorite word

May smear stools

Needs physical barriers

Wants to do things now

Likes to take rather than give

May "step on" other children

Builds tower of three cubes

Stands on one foot with help

Varying degrees of food "finickiness"

Does opposite from what is requested

Looks at pictures in a book

Can pull a toy while walking backwards

Vocabulary---approximately 270 words

Distraction is best way to turn him to new activity

Enjoys brothers and sisters and playmates

Learns to ride kiddie kar or small tricycle

Reports accidents by pointing at puddles or wet pants

Can seat self in a small chair or climb into an adult chair

TWENTY-FIVE TO THIRTY MONTHS

Crying spells may be brought about by a wrong bib or wrong spoon

Does not share well but will find substitute toys for other children

Can get simple ideas across with language

A period of being easy to live with

Surer of himself in verbal expression

Willing to do what he can do

Likes to please others

Loving and affectionate

THIRTY TO THIRTY-SIX MONTHS

Sticks to what he is doing with dogged determination

Often does what is contrary to parents' wishes

Rigid and inflexible, cannot seem to adapt

Domineering and demanding

Has violent emotions, shows temper

This is an age of opposite extremes --- difficult to make a clear-cut choice

Wants things to continue to go on just the same from day to day

Not an easy age to have around the house

THIRTY-SIX TO FORTY-TWO MONTHS

Loves to conform to what is expected or asked

Uses "Yes" quite as easily as he formerly used "No"

Likes to give and take

Likes to share objects and experiences

Uses "we" frequently

Tends to be "easy" in relations with people and things

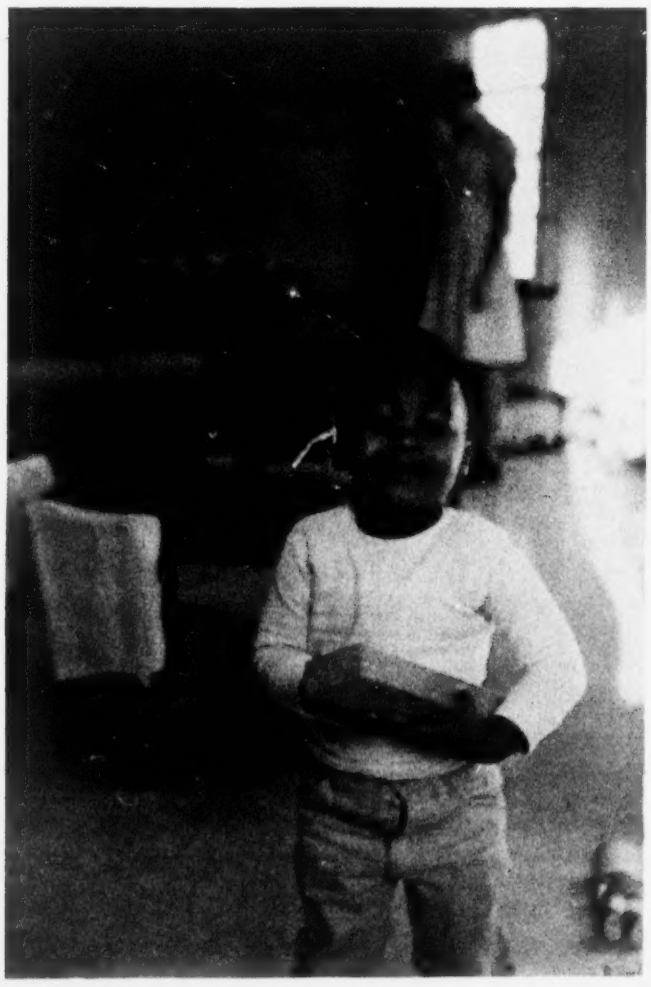
Likes to make friends

Increased motor ability allows him to perform physical tasks easily

Can entertain others with language

Sometimes resists as a matter of principle

Seems well pleased with himself and with those about him



FORTY-TWO TO FORTY-EIGHT MONTHS

A period of some insecurity and uncertainty

Lack of physical coordination is expressed in stumbling, falling, fear of heights

Stuttering may appear at this period in children who have not previously stuttered

Frequent crying, whining and questioning

Becomes jealous of attention paid by members of the family to each other

Shows considerable insecurity in demanding exclusive attention of family members

Is an uncertain contributor to any social situation

A suggested "first" for all trainees.

BABY LEARNING THROUGH BABY PLAY

A Parent's Guide for the First Two Years

A relaxed guide to babies' games that bring pleasure, security, self-esteem and intellectual growth.

Games for the EARLY MONTHS

Games for the SITTING and "LAP" BABY

Games for the CREEPER-CRAWLER

Activities for the STANDER and TODDLER

Activities for the OLDER TODDLER

Ira J. Gordon

Director, Institute for the Development of Human Resources, University of Florida (Gainesville)

Play Games With Baby

A Guide for Parents

Talk With Baby

A Guide for Parents

Two attractively simple booklets much used by our staff

DIVISION OF HOME ECONOMICS FEDERAL EXTENSION SERVICE
U. S. DEPARTMENT OF AGRICULTURE

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price 10 for 20 cents; $1.75 per 100

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DIVISION OF HOME ECONOMICS FEDERAL EXTENSION SERVICE
U. S. DEPARTMENT OF AGRICULTURE

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price 10 for 20 cents; $1.75 per 100

Babies Touch, Taste, and Learn

Two attractively
simple booklets
much used
by our staff

A Guide for Parents

6598

"The Goody Box"

[Materials Available to be Studied over the Two-Week Period.]

"The Goody Box" is a cut-out carton covered attractively in contact-paper; christened "Goody Box" by more than one visitor to our Nursery Center.

THE GOODY BOX . . .

FOR THOSE WHO LIKE CHILDREN

1. "Babies are Human Beings"
   by C. A. Aldrich and M. M. Aldrich
   (Paperback) Collier Books, New York. 1954.

2. "Child Care and the Growth of Love"
   by J. Bowlby (Paperback) Penguin Books, Baltimore. 1965.

3. "Guide for the Care of Infants in Groups"
   by S. Provence. Child Welfare League of America, Inc.
   New York. 1967.

4. "The Magic Years"
   by S. H. Fraiberg (Paperback)
   Charles Scribner's Sons, New York. 1959.

5. "What We Can Learn From Infants"
   by L. Dittmann, Editor.
   National Association for the Education of Young Children
   Washington, D. C. 1970.

6. "Your Child Makes Sense"
   by E. Buxbaum
   International Universities Press, Inc.,
   New York. 1949.

THE GOODY BOX . . .

YOUNG CHILDREN'S DEVELOPMENT

1. "A Baby's First Year"
   by B. Spock, J. Reinhart, and W. Miller
   Pocket Books, Inc. 1964.
   (Paperback)

2. "Your Baby's First Year" (no. 400)

   "Your Child From One to Three" (no. 413)

   "Your Child From Three to Four" (no. 446)

   [Short picture leaflets for parents]
   Children's Bureau Publications
   U. S. Government Printing Office
   Washington, D. C.

3. "Infant Care" (no. 8)
   "Your Child From One to Six (no. 30)

   Children's Bureau Publications
   U. S. Government Printing Office
   Washington, D. C.

4. "Enjoy your Child --- Ages 1, 2, and 3"
   by J. L. Hymes, Jr.
   Public Affairs Pamphlet No. 141
   Public Affairs Committee, Inc.
   New York.

THE GOODY BOX...

PARENTS

1. "A Creative Life for Your Children"
by M. Mead
Children's Bureau Headliner Series No. 1
U. S. Government Printing Office
Washington, D. C. 1968.

2. "Day Care for Other People's Children in Your Home"
Children's Bureau Publication No. 411
U. S. Government Printing Office,
Washington, D. C.

3. "Day Care for Your Child in a Family Home"
Children's Bureau Publication No. 412
U. S. Government Printing Office
Washington, D. C.

4. "Parent Guidance in the Nursery School"
by M. Ruben.
International Universities Press, Inc.
New York. 1969.

5. "Parents and the Day Care Center"
by T. Adair and E. Eckstein-
Federation of Protestant Welfare Agencies, Inc.
New York. 1969.

6. "Talk with Baby" (PA-716)
"Play Games with Baby" (PA-710)
"Babies Touch, Taste, and Learn" (PA-711)
"Babies Look and Learn" (PA-714)

[A Guide for Parents (4 small booklets)]
Division of Home Economics, Federal Extension Service,
U. S. Department of Agriculture
U. S. Government Printing Office
Washington, D. C. 1966.

THE GOODY BOX...

HEALTH AND SAFETY

1. "Accidents and Children
   Children's Bureau Folder No. 48 (rev. 1963)
   U. S. Government Printing Office
   Washington, D. C.

2. "Children in Day Care with Focus on Health"
   by L. Dittmann, Children's Bureau
   Children's Bureau Publication No. 444
   U. S. Government Printing Office
   Washington, D. C. 1967.

3. "The Child's Meals are Family Meals"
   by M. E. Sweeny and M. Eichelberger
   The Merrill-Palmer School
   Detroit, Michigan. 1959.

4. "Feeding Little Folks"
   by E. T. McEnery and M. J. Suydam
   National Dairy Council, Chicago. 1962.

5. "Feeding Your Baby and Child"
   by B. Spock and M. Lowenberg
   Pocket Books, Inc. 1967. (paperback)

6. "Have Fun ... Get Well!"
   American Heart Association, New York. 1953

7. "How to Feed Children in Nursery School"
   by M. E. Sweeny and M. E. Breckenridge
   The Merrill-Palmer School
   Detroit, Michigan. 1951.

8. "Your Child's Safety"
   Public Affairs Pamphlet No. 225
   Public Affairs Committee, Inc.,
   New York.

THE GOODY BOX...

PROGRAM ACTIVITIES --- PLAY

1. "Baby Learning Through Baby Play"
   by I. Gordon.
   St. Martin's Press, New York. 1970.

2. "Caring for Children"
   by L. B. Murphy and E. M. Leeper

   No. 1 "The Ways Children Learn"
   No. 2 "More Than a Teacher"
   No. 3 "Preparing for Change"
   No. 4 "Away from Bedlam"
   No. 5 "The Vulnerable Child"

3. "Creating with Materials for Work and Play"
   S. Sunderlin, Editor.
   Association for Childhood Education International
   Washington, D. C. 1969.

4. "Day Care Aides: A Guide for In-Service Training"
   by M. W. Palmer, Editor.
   National Federation of Settlements and Neighborhood Centers
   New York. 1968.

5. "Home Play and Play Equipment"
   by A. Franklin (rev. 1959)
   Children's Bureau Publication No. 238
   U. S. Government Printing Office
   Washington, D. C.

6. "Let's Play Outdoors"
   by K. R. Baker
   National Association for the Education of Young Children
   Washington, D. C. 1966.

7. "A Nursery School Handbook for Teachers and Parents"
   by M. M. Green and E. L. Woods
   Sierra Madre Community Nursery School Association
   Sierra Madre, California. 1967.

. . . continued

THE GOODY BOX...

PROGRAM ACTIVITIES --- PLAY (continued)

8. "Nursery School Portfolio"
Association for Childhood Education International
Washington, D. C. 1968-69.

9. "Play --- Children's Business"
by M. Rusmussen, Editor
Association for Childhood Education International
Washington, D. C. 1962-63.

10. "Play is Valid"
by L. K. Frank
Association for Childhood Education International
Washington, D. C. 1968.

11. "Playgrounds for City Children"
by M. P. Friedberg
Association for Childhood Education International
Washington, D. C. 1969.

12. "Selected Readings for Trainees for Day Care Aides:
A Guide for In-Service Training"
by M. W. Palmer, Editor
National Federation of Settlements
and Neighborhood Centers. 1968.

13. "Space for Play"
by L. A. Hurtwood, M. S. Flekkoy,
J. Sigsgaard, and A. G. Skard, Editors
World Organisation for Early Childhood Education (OMEP)
Copenhagen. 1964.

THE GOODY BOX...

DISCIPLINE

1. "Discipline"
   by M. Rasmussen
   Association for Childhood Education International
   Washington, D. C. 1957.

2. "A Guide to Discipline"
   by J. Galambos
   National Association for the Education of Young Children
   Washington, D. C. 1969.

3. "Understanding Children's Behavior"
   by F. Redl
   Bureau of Publications, Teachers College
   Columbia University, New York. 1961

REPORTS

1. "A Demonstration Project: The Good Life for Infants and Toddlers."
   by M. E. Keister, National Association for the Education of
   Young Children, Washington, D. C. 1970.

2. "Patterns of Daytime Care of Infants Under Three Years of Age"
   Preliminary report of a survey in Guilford County, N. C. 1965.
   University of North Carolina, Greensboro, North Carolina.

3. "Position Paper: Child Care in North Carolina"
   by J. Foster for North Carolina Family Life Council, Inc.
   N. C. Agricultural Extension Service, Raleigh, N. C. 1969.

STANDARDS

1. "Standards and Requirements for License"

   Family Day Care Home
   Small Group Home
   Day Care Center

   North Carolina Department of Social Services
   Raleigh, North Carolina. 1970.

THE GOODY BOX...

PROGRAM DESCRIPTIONS

1. "Education and the City Child --- Some New Approaches"
   The Day Care Council of New York City, Inc.
   New York. 1969.

2. "If a Child Feels Good About Himself ..."
   Children's Center, Learning Institute of North Carolina
   Greensboro, North Carolina

3. "Model Programs --- Childhood Education:
   Demonstration Nursery Center for Infants and Toddlers"
   OE-20138 U. S. Government Printing Office
   Washington, D. C. 1970.

4. "Programs for Infants and Young Children"

   Part I Education and Day Care
   Part II Nutrition
   Part III Health
   Part IV. Equipment and Facilities

   The Appalachian Regional Commission, Washington, D. C. 1970.

CATALOGS, LISTS, BIBLIOGRAPHIES

1. "Best Records, Books, Rhythm Instruments for Early Childhood"
   Children's Music Center, Inc., Los Angeles, California.

2. "Bibliography on Early Childhood"
   Project Head Start, Office of Child Development
   Washington, D. C. 1969.

3. "Books in Preschool"
   ERIC - NAEYC Publication in Early Childhood Education
   National Association for the Education of Young Children
   Washington, D. C.

4. "A Child's Way of Learning
   Creative Playthings School Catalog
   Princeton, New Jersey 1969-70.

5. "Directory of Community Agencies and Services"
   Greensboro, North Carolina (undated)

6. "Multi-Ethnic Books for Young Children"
   ERIC - NAEYC Publication in Early Childhood
   National Association for the Education of Young Children
   Washington, D. C.

THE GOODY BOX...

MISCELLANEOUS

1. "Children Tell Stories"
by E. G. Pitcher and E. Prelinger
International Universities Press, Inc.
New York. 1963

2. "Day Care Services --- Why? What? Where? When? How?"
Children's Bureau Publication No. 420
U. S. Government Printing Office,
Washington, D. C.

3. "Housing for Early Childhood Education"
by S. Sunderlin
Association for Childhood Education International
Washington, D. C. 1968.

4. "The Me Nobody Knows"
by S. M. Joseph, Editor (paperback)
Avon Books, New York. 1969.

5. "What are Nursery Schools For?"
by N. Law, ACEI and NAEYC
Washington, D. C. 1963-64.

6. "What Does the Nursery School Teacher Teach?"
by E. D. Tarnay
National Association for the Education of Young Children
Washington, D. C. 1966.

7. "Where Education Begins"
by P. Pine [in] American Education
U. S. Office of Education
Washington, D. C. 1968.

TRAINING EXPERIENCES *FIRST WEEK*

[Eight hours spent in the Nursery Center each day for four days, following day of orientation]

1. *First hour of each day is for reading and study of any materials in "THE GOODY BOX" that look intriguing. (See pp. 31-40 for listing of materials in the box).*
2. *Remainder of day is spent in one room, with one age-group, "understudying" one Nursery Assistant. The trainee follows that Nursery Assistant's schedule for breaks and lunch.*
3. *One day is spent with each age-group during the week. Age groups include: infants under one year; one-year-olds; toddlers approximately 16 - 22 months; and two-year-olds.*
4. *On Friday, a conference is scheduled with the Nurse-Teacher on the Nursery Center staff at which time such topics as the following are discussed:*

   daily health records
   daily health check of children
   sick children and sick bay
   cleaning
   importance of handwashing
   health of adults who give care

5. *"Quickie" conferring between the trainee and the nurse or director may go on at any time during any day when questions or matters of interest or "puzzlement" arise.*

TRAINING EXPERIENCES *SECOND WEEK*

[Eight hours spent in the Nursery Center each day for five days]

1. *One hour each day (usually the first hour) is spent in reading and study of materials in the staff library ("THE GOODY BOX").*
2. *If a regular staff member is absent, the trainee may be assigned to supervise one or two children during the first hour of the morning.*
3. *During this second week, the trainee spends one full day as "understudy" to the cook.*
4. *During one hour, early in the week, the trainee is shown the slide series developed by the Infant Care project staff: "Curriculum for the Infant and Toddler."*
5. *The trainee has a conference with a member of the research staff of the Infant Care Project and is given an opportunity to watch a testing session with an infant; her later responsibilities for certain research aspects of the project are discussed.*
6. *All possible opportunities are provided for the trainee to spend time in one or more groups as the only caregiving person for the group.*

SECOND WEEK *(continued)*

7. *"Quickie" exchanges continue between trainee and nurse or director or regular caregiving staff.*
8. *Trainees are encouraged to discuss children and problems of management with other permanent staff at lunch and break-times.*

VT 014 624
RECRUITING, TRAINING, AND DEVELOPING WORKERS
FOR FARMER COOPERATIVES.

DEPARTMENT OF AGRICULTURE, WASHINGTON D.C.
FARMER COOPERATIVE SERVICE.
MF AVAILABLE IN VT-ERIC SET.
FARMER COOPERATIVE SERVICE, U.S. DEPARTMENT
OF AGRICULTURE, WASHINGTON, D.C. 20250
PUB DATE - OCT71 47P.

DESCRIPTORS - *COOPERATIVES; *MANPOWER
DEVELOPMENT; RECRUITMENT; *PERSONNEL
SELECTION; FARMERS; PERSONNEL POLICY;
PERSONNEL EVALUATION; *JOB TRAINING; JOB
ANALYSIS; *PERSONNEL MANAGEMENT

ABSTRACT - INTENDED FOR MANAGERS AND
PROFESSIONAL PERSONNEL ON COOPERATIVE STAFFS
OR FOR DIRECTORS AND OTHERS INTERESTED IN
COOPERATIVES, THIS PUBLICATION CONTAINS
PRINCIPLES, IDEAS, AND EXPERIENCES IN
PERSONNEL ADMINISTRATION SUITABLE FOR
COOPERATIVE BUSINESS FIRMS OF ANY KIND OR
SIZE. TOPICS COVER: (1) WAYS TO IMPROVE
MEMBER AND PUBLIC UNDERSTANDING OF
COOPERATIVES, (2) STEPS TO OVERCOME SHORTAGE
OF QUALIFIED WORKERS, (3) JOB REQUIREMENTS,
INCLUDING KINDS OF JOBS, JOB ANALYSIS, JOB
DESCRIPTION, WAGE AND FRINGE BENEFITS, LABOR
RELATED FACTORS, AND LEGISLATION, (4)
PRINCIPLES OF SUCCESSFUL RECRUITING,
INCLUDING LOCATING, INTERVIEWING, AND HIRING
APPLICANTS, (5) FORMAL AND INFORMAL EMPLOYEE
TRAINING PROCEDURES, AND (6) EVALUATION. A
SELECTED BIBLIOGRAPHY AND SAMPLE FORMS ARE
APPENDED. (SB)

VT 014 624

RECRUITING, TRAINING, AND DEVELOPING WORKERS FOR FARMER COOPERATIVES

4 - NOV 3
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Information 77/Farmer Cooperative Service/U.S. Department of Agriculture

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This publication was planned and coordinated, and portions written by Irwin W. Rust, Farmer Cooperative Service, U.S. Department of Agriculture.

FARMER COOPERATIVE SERVICE
U.S. DEPARTMENT OF AGRICULTURE

Farmer Cooperative Service provides research, management, and educational assistance to cooperatives to strengthen the economic position of farmers and other rural residents. It works directly with cooperative leaders and Federal and State agencies to improve organization, leadership, and operation of cooperatives and to give guidance to further development.

The Service (1) helps farmers and other rural residents obtain supplies and services at lower cost and to get better prices for products they sell; (2) advises rural residents on developing existing resources through cooperative action to enhance rural living; (3) helps cooperatives improve services and operating efficiency; (4) informs members, directors, employees, and the public on how cooperatives work and benefit their members and their communities; and (5) encourages international cooperative programs.

The Service publishes research and educational materials and issues *News for Farmer Cooperatives*. All programs and activities are conducted on a nondiscriminatory basis.

FCS Information 77 ..... October 1971

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RECRUITING, TRAINING, AND DEVELOPING WORKERS FOR FARMER COOPERATIVES

Personnel administration is an essential responsibility of management in a cooperative just as it is in any other business firm. Dealing constructively with personnel problems reflects good management and contributes to the success of the whole enterprise.

Attaining the objectives of a cooperative business firm depends in part upon capabilities, attitudes, and actions of its employees.

How cooperative employees feel about their jobs affects their work performance and their attitudes toward the cooperative. Their attitudes and actions can influence the opinion and patronage of members and the public.

Good personnel administration involves the entire management team—board of directors, general manager, and supervisors.

The well-managed cooperative establishes effective policies and programs for recruiting, placing, training, supervising, and evaluating employees.

While this is not an easy task for small cooperatives, new and inexperienced ones, or those isolated in rural locations, help is available. A considerable body of information exists on personnel administration for business enterprises. This may be obtained from such sources as colleges and universities, local libraries, trade associations, professional societies, State Employment Services, and the Small Business Administration.

Another source of information and assistance can be found among larger cooperatives with well-developed personnel procedures and experienced personnel staffs. Very little of this personnel know-how, some of it developed through years of trial and error, has been put into a form readily available to other cooperatives. Almost no literature exists for the personnel problems of cooperatives as such.

Many cooperatives have been forced by circumstances to hire and develop employees through informal methods, depending upon whatever experience and good judgment the manager or other staff members happen to have brought to the job. This has been particularly true of cooperatives whose plants and offices are outside the major labor pools.

With this situation in mind, Farmer Cooperative Service prepared this publication. It brings together principles, ideas, and experiences in personnel administration suitable for cooperative business firms of any kind or size.

It has been reviewed by personnel and training supervisors of several major farmer cooperatives. Their comments and suggestions are incorporated at appropriate points in the text. A typical comment: "—this will be an excellent tool, especially for those cooperatives that do not have—training and recruiting departments—".

Although this publication may find its greatest usefulness in the hands of managers and professional personnel people on cooperative staffs, information here is also useful for directors and others interested in cooperatives and in better personnel programs for hiring and developing cooperative employees.

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Jobs and People

A cooperative is a business firm—a special kind of business firm. The successful cooperative, like any successful firm, counts on its employees for a large measure of its success.

The accompanying table lists the number of cooperatives serving rural America by major function performed, and gives an estimate of the number of persons employed by these cooperatives.

In some cases the number of employees shown is based on an actual head count. In other cases the number of employees shown is an estimate, based on conversations with informed officials of leading cooperatives.

There is a continuing need for people who can fill jobs in cooperatives, large and small, all over the United States, in such different fields of endeavor as fertilizer production, marketing farm products, electronic data processing, transportation, and accounting.

Table 1.—Employment Opportunities in Rural Cooperatives

Kind of Cooperative	Number	Number of Employees[1]
Marketing	5,100	110,000
Purchasing	2,900	65,000
Related Services	250	5,000
Dairy Herd Improvement	1,425	2,500
Artificial Breeding	20	200
Electric	924	35,000
Telephone	232	3,400
Production Credit Associations	459	4,250
Federal Land Bank Associations	686	1,700
Farm Credit District Banks	37	1,100
Credit Unions	23,207[2]	33,000[3]
Mutual Irrigation Associations	7,500	16,500
Mutual Insurance Companies	1,200	5,000
	43,940	282,650

[1] Estimated.
[2] About 40 percent are located in suburban or rural areas.
[3] 17,000 full time employees; 16,000 part time employees.

A survey by the Cooperative League of the USA, Chicago, Ill. showed that rural cooperatives needed an additional 5,000 persons at the job-entry level during 1969 alone.

Farmland Industries, Inc. with close to 4,000 employees is one of the largest employers in Kansas City, Mo. By contrast, some local associations get along with one part-time employee.

As for locale of the co-op jobs, they vary, for example, from the headquarters building of Sunkist Growers, Inc., Sherman Oaks, Calif., in busy San Fernando Valley, to the manager and employees of many cooperatives in isolated rural communities that over the years have gradually become so small they boast only a combination store—lunch counter—gas pump and a post office in addition to the cooperative headquarters.

Salaries of people working in cooperatives range widely. At least one general manager receives in excess of $100,000 annually. At the other end of the scale are part-time untrained employees earning the minimum hourly wage.

In terms of training and education, some staff members of cooperatives have graduate university degrees and regularly attend special training seminars provided by such organizations as the American Management Association, while others have never finished grade school nor received a single hour of on-the-job training.

Some cooperatives maintain strong personnel departments and provide a wide range of

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programs for recruiting and training, while at the other extreme, many cooperatives have no formal personnel program at all.

In many cooperatives, like many other types of business firm, the largest operating expense is for personnel. In addition to the salaries and wages paid, these expenditures must include the cost of interviewing, hiring, and training personnel.

No one has determined the total payroll of cooperatives in the United States. Estimates based on projections furnished by some of the well-known cooperatives suggest an annual amount in excess of $2 billion. The combined payroll total for about 1,000 rural electric cooperatives alone amounts to some $200 million a year.

Improving Understanding

Aside from the north central States and a few other places in the United States, young people come out of school and seek their first job with little or no information about cooperatives.

Rural people may have some familiarity with one particular cooperative that the family or a neighbor patronizes but still be unaware of the wide variety of cooperatives that offer services—and employment.

The great majority of people learn in school about the types of business firms they commonly see around them and accept as the existing system. It can help enlarge the potential supply of cooperative employees for cooperatives to do three things to improve member and public knowledge about cooperatives. These are:

1. Maintain Strong Member Relations Program

See that members are well-informed. They can then better understand the cooperative's employee relations. Members' support of their cooperative can be contagious for employees and build loyalty to help management and overall operations.

If adult members understand their cooperative, their children will pick up understanding and interest in cooperative enterprise. Such young people become one source of new employees.

2. Build Sound Public Relations Program

Provide information about the special features of the cooperative way of doing business. This requires access to local newspapers, radio, and TV stations.

It requires workable relations with community leaders and organizations of all kinds.

It requires developing a youth program and providing published information about cooperatives for schools and libraries.

This sort of ongoing program helps give employees a feeling of security and pride in their jobs. It helps bring the best job applicants to the cooperative.

3. Stress Employee Orientation

Teach employees what cooperatives are and how they compare with other methods of doing business. Cooperative objectives and information about the cooperative's operations and place in the community are proper topics for staff meetings and employee news media.

It is especially important that employees know the basic facts about the cooperative since they are frequently called upon to answer questions about it and about cooperatives in general. Employees can help improve the cooperative image if they have access to the right answers.

Competing for Employees

When the overall unemployment rate remains at a low level, some occupations in some locations show an acute shortage of qualified workers. This poses severe hardships for those cooperatives not suitably situated to compete in the labor market.

Cooperatives can overcome this handicap, in part, by taking a new look at their personnel policies and practices. Here are some steps to use:

1. Re-examine Labor Needs

Labor needs should be re-examined with an eye to raising productivity with fewer employees, considering such questions as—

Can some jobs be combined?

Can some functions be abolished?

Are there physical changes in the plant or office to reduce the work load?

Are all employees producing at a reasonable level of productivity?

Are some skilled or experienced employees performing tasks that recruits with less skill or experience could do?

Would specialized training courses be worth their cost to enable employees to work more efficiently?

Can some tasks be automated, substituting machines for scarce employee talent?

2. Update Wage and Salary Scales

If the cooperative is not fully competitive in employee pay scales, these should be updated. Other questions in this area are:

What additional fringe benefits can be offered with the least cost?

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Does the cooperative have a retirement, insurance, or bonus plan to help attract and hold key employees?

3. Examine Turnover Rate

Cooperatives should compare their rate of employee turnover with the experience of other business firms in the area and with national averages in similar types of firms.

If the cooperative's turnover is high, what are the reasons? Perhaps exit interviews can help solve this problem.

4. Improve Recruiting Practices

Try new sources or additional techniques for reaching potential applicants. Some of those listed in the section on successful recruiting may help.

5. Guard Against Outgrown Personnel Practices

In the early days some business firms, including cooperatives, carried on personnel practices that now seem completely antiquated. Because such poor practices tend to give a firm a bad image, boards of directors, managers, and personnel supervisors need to guard against continuing them.

These practices included low wages, overtime work without adequate compensation, nepotism, inadequate recruiting techniques, poor retirement benefits, dependence on employee devotion to the cooperative idea rather than emphasis on accepted employment practices, and reluctance to accept collective bargaining.

Job Requirements

Personnel management starts with the work to be performed, places the work into a written job description, determines the requirements for filling the job, and then finds the person who most nearly meets the job requirements.

Much more comes later—training and developing the employee; evaluating his performance; and administering wages and job benefits, health and safety, records, and separations.

But it is the definition of the job that determines the recruiting and training that have to be done.

In cooperatives, as in other business firms, production, distribution, or services are built around the notion of dividing up the operations into separate functions. These can, in turn, be broken into jobs that require specific skills.

Kinds of Jobs

The larger the cooperative, the more nearly will most of its jobs resemble those typical of other large enterprises in the same line of business.

Most employees below the policy-making level could be switched between a cooperative and other types of business without appreciable difference in the technical performance of the job. The techniques for operating a fork loader, a billing machine, or a gasoline pump are the same for the XYZ Cooperative as they are for any other warehouse, office, or service station.

It is important, however, that the characteristics of a member-owned cooperative business firm be understood by all employees of a cooperative.

Cooperatives have found that familiarity with the cooperative idea and acceptance of the cooperative way of doing business is a desirable job requirement for employees who come into contact with members and with the public.

In small cooperatives with only a few em-

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ployees or in cooperatives located in small towns, people readily identify each employee with the cooperative. Here the knowledge and acceptance of cooperative principles and practices may share equal importance with job skills.

A publication of The Cooperative Foundation, 59 East Van Buren Street, Chicago, Ill. 60605, entitled Careers in Cooperatives, lists nearly 100 of the career occupations cooperatives offer. This is a generalized listing, limited in its coverage, but useful in suggesting the scope of jobs various kinds of cooperatives have to fill.

The publication was prepared for young people readying themselves for the labor market and career opportunities. It can be used by cooperatives as a tool for recruiting new employees from high schools, colleges, and employment offices.

Recruiting is made easier and training more effective by standardizing job descriptions. In very small business firms, however, the division of work functions are usually less clear and job requirements are likely to be shifted around to fit the personnel available.

Job Analysis

A program for selecting, training, and using personnel effectively must be based on an analysis of the job to be performed.

Job analysis is the process of determining the tools, equipment, and materials used; the special training, skills, aptitudes, judgments and decisions required; the speeds and hazards involved; the conditions under which the work is performed; and the supervision required.

Job analysis breaks down the actions involved in the performance of a task. Job analysis identifies the job and states the work to be performed. Identification items include the name or title of the job, the name of the department or other designation that locates the job, and the relation of this particular job to others associated with it. The end product of a job analysis is a job description.

Saying it another way: There are six categories of information to be obtained and reported for a complete job analysis:

—Supervision received.
—Supervision given.
—What the worker does.
—How he does it.
—Why he does it.
—Skill involved in doing it.

Job Description

Ideally, preparation of a job description based on the job analysis is the first step in filling a vacancy. The job description spells out what the worker does, how he does it, the precise limits within which he operates, and decisions permitted on his own. It defines the level of difficulty of the tasks.

It describes in terms of personal characteristics, training, and the like, the kind of person required to perform the job successfully.

The job description is sometimes referred to as the minimum hiring requirements. It can be referred to when advertising for applicants, reviewing applications, and interviewing applicants.

Need For Flexibility

Personnel management is not an exact science and no single pattern can be expected to fit all situations without modification. Personnel procedures must be flexible rather than rigid.

Cooperatives, like other business firms and organizations, tend to grow around the abilities and personalities of the people in them. Job requirements, recruiting, training programs, and effective use of employees may require some accommodation to the unique qualifications of persons on the staff.

Good personnel management also calls for flexibility to cope with situations involving groups of employees—union grievances, for instance, changes in the labor market, or changes in the volume of business handled by the cooperative.

Technological developments, for instance, can require a shift in work patterns, new job analysis, and a radically different approach to hiring. Bookkeepers and typists hired locally may give way to computer technicians trained at special institutes hundreds of miles away from the cooperative.

Managers and personnel directors—and the elected board members, also—must be alert to changes in technology or marketing. Rigidity against change and inadequate employee training can make the existing labor force obsolete. It can leave a cooperative behind the times and unable to keep up with its members' needs.

Wages and Fringe Benefits

It is as important for cooperatives to be competitive in employee compensation as in

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business operations. These reasons come to mind:

—Inflation combined with a tight labor market brought rapid changes in compensation that cooperatives and other business firms found difficult to meet. In each of the last several years, increases in the cost of living brought raises in salaries and wages that were not necessarily related to improved efficiencies or production by employees.

—As a business firm grows in size and volume, responsibilities that go with jobs also grow and demand better compensation. One cooperative, for instance, paid its general manager $4,500 in his first year for a total sales volume of under $1 million at one location. By the time sales increased to $40 million at 24 locations the same co-op was paying its manager $43,000.

Cooperatives, like other business firms, must pay both competitive salaries and competitive employee benefits if they expect to recruit and hold qualified employees.

An effective employee benefit plan will give the employee and the employee's family some protection against these financial hazards:

—Loss of future earnings due to premature death.

—Loss of current earnings due to disability.

—Heavy medical expenses due to illness or accident.

—Need for income after retirement.

Coverage provided under employee benefit plans is customarily designed to supplement such government programs as workmen's compensation, social security, and medicare.

It is the responsibility of the manager, with the assistance of any staff people who work on personnel matters, to help the board of directors review regularly the cooperative's schedule of salaries, wages, and fringe benefits. And action by the board to authorize necessary changes should have the highest priority.

Organized Labor and Cooperatives

Boards, managers, and personnel people in all cooperatives need to be knowledgeable about such labor related factors as union practices, collective bargaining, current labor legislation, and court decisions.

Information is available from the National Labor Relations Board, 1717 Pennsylvania Avenue, N.W., Washington, D.C. 20570, as well as from 42 regional and resident offices.

Civil Rights Legislation

Cooperative boards, managers, and personnel staff also need to be familiar with provisions of Civil Rights Legislation. Information can be obtained from the Equal Employment Opportunity Commission, 1800 G Street, N.W., Washington, D.C. 20506, or the nearest of 12 field offices of the Commission.

Other Legislation

A number of Federal and State laws relate to pay scales, hours of employment, working conditions, and other matters affecting the safety, comfort, and welfare of employees. This publication will not go into detail on such legislation, but cooperative management needs to be aware that it exists.

Subjects covered include wages and hours, labor practices, union recognition, unemployment compensation, employment of minors, hazardous occupations. The wise employer, cooperative or otherwise, will make a point of being acquainted with all such legislation that can in any way affect business operations.

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Successful Recruiting

Effective personnel recuiting is finding the best person for the job. A simple objective, surely, but one involving all sorts of complications. Complicating factors over which cooperatives have little control include:

—The plant or office may be in a rural area at some distance from a labor market.

—The general economic situation may create a tight labor market so that hiring new employees is especially difficult. A similar tight labor market may result from military demands when international relations are criticial.

—Legal restraints on hours and types of work for women and children, fair employment, and civil rights laws and practices must be observed.

—Cultural patterns, usually of a local nature, may make it difficult to recruit for certain types of jobs.

Principles of Recruiting

Regardless of the problems that may exist in a particular situation, a few basic principles, if followed, will enhance recruiting effectiveness. Here are the four most important.

The first principle in recruiting employees is to be thoroughly aware of any of the complicating factors listed in order to find exceptions to what seem to be prevailing situations or to devise offsetting compensations for them. The cooperative may have more options than the manager or the board realize at first glance.

The geographical handicap, for instance, might be overcome by developing and upgrading existing employees for hard-to-fill positions and making replacements in the lower grades from local hiring.

In some instances it may be worthwhile to arrange transportation for recruits living some distance from the cooperative or provide local housing or other inducements for a move into the local area.

Recruiting in a distant labor market might be undertaken by contacting a cooperative manager or other qualified agents in that location.

If jobs are going begging for lack of qualified employees, the manager may have to intensify the cooperative's on-the-job training program and do more hiring at the lower or entrance levels.

Other possibilities are:

—Realigning work and responsibilities within the staff to produce more efficient use of existing employees.

—Hiring more part-time employees from the ranks of older persons who may have retired and homemakers with spare time.

—Recruiting handicapped persons and those heretofore considered unemployable.

Cooperatives should observe Federal, State, and local legal requirements for safe and good working conditions. These requirements are mentioned here to encourage more familiarity with these laws and practices by managers, personnel directors, and supervisors.

Those cooperatives that have found it necessary to go against a local cultural pattern should consult their public relations director in order to educate people in the community to accept desirable change.

The second principle in recruiting employees is to improve the internal factors over which the cooperative does have control. Such factors may include:

—How well the cooperative is known in the area.

—What kind of a reputation the cooperative has as an employer.

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—Extent to which wages and working conditions are really competitive.

—Whether or not the cooperative is large enough to have a personnel officer or staff.

—Existence and effectiveness of an employee training and development program.

—Board-established policies encouraging the manager to maintain contacts with other cooperatives, professional, business, farm, labor, and civic organizations, schools and colleges, and other institutions that could supply new employees.

The third principle in recruiting employees is to make sure that hiring practices are firmly based on employment policies the board and manager understand and support.

In many cooperatives the board determines personnel policy in consultation with the manager or on the recommendation of the manager. Policy is then recorded in the cooperative's manual of written policies. There any member or employee can refer to it. This avoids misunderstanding and assures that a policy does, in fact, exist.

When personnel policy is treated in this way, there is more likelihood it will be updated from time to time to fit changing circumstances.

The ideal policy statement includes guidelines or refers to procedures on such recruiting matters as:

—Promotion from within.

—Whether or not relatives of present employees are eligible for employment.

—The cooperative's position on hiring the handicapped, minors, the elderly, women, and persons of various racial or ethnic groups.

—Relations with organized labor.

—Whether employees must or can become members of the cooperative.

—Provision for part-time employees.

—Whether applicants for key positions require board approval before being hired.

The fourth principle of recruiting is Plan Ahead. An experienced manager does not wait until a vacancy occurs before recruiting for the position.

In most instances, such events as the retirement of a supervisor or the resignation of a secretary are usually known in advance. This provides opportunity to search for the best possible replacement.

The alert manager will also consider well in advance possible replacements for the unplanned resignation or untimely death of a key member of the staff so that most or all of the recruitment efforts are confined to entry level positions.

In larger cooperative enterprises, an analysis of personnel records yields a pattern of job separations, permitting manpower requirements to be forecast.

This kind of advance planning ties in to a continuing program of recruiting. Better employees can be obtained when replacements are anticipated six months or more in advance. The cooperative is then under no pressure to hire the first applicant and can find the best person for the opening.

Locating Applicants

Hanging out a Help Wanted sign is the easiest and most obvious way to recruit new employees. It also is least satisfactory. Other methods and sources include:

—Hiring from within—employees already on the cooperative's payroll.

—Suggestions of applicants by those who are already employees of the cooperative.

—Advertising in local newspapers.

—Public employment offices.

—Private employment agencies.

—Local school sources.

—Colleges and universities.

—Other cooperatives.

—A regional cooperative with which the association is affiliated.

—Other similar types of business firms.

—Professional societies, trade associations, civic, farm, labor, and other organizations.

—Special sources of employees such as minors, the elderly, handicapped persons, women, those of minority groups, and "unemployables."

Hiring from Within

Filling vacancies from within the cooperative by promoting qualified employees and then turning to outside recruiting for the lower grade or entrance level jobs has many advantages. It is the least expensive method. It is fast. It represents a lesser risk than bringing in an outside recruit at higher than entry level pay. It offers encouragement for present employees, improves staff morale, and reduces turnover.

The method also can be used successfully for lateral transfers. It does, however, have some disadvantages. Too strict adherence to promotion from within can produce an ingrown staff lacking youth and new ideas. Firms under such conditions deprive themselves of cross-fertilization of ideas from outside and may not keep pace with their competitors.

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For a successful promotion-from-within policy, management must maintain a file of employee skills and must advertise upcoming vacancies within the cooperative. This assures each employee the opportunity to apply for the vacancy on the basis of his qualifications.

The file of employee skills, education, and work experience must be current if it is to be a useful tool for filling vacancies from within the staff.

Suggestions from Present Employees

For many years, small enterprises recruited for vacancies by using names suggested by current employees. During the tight labor market before and during World War II, this practice became common in larger firms.

By 1941, about half of all the nation's business and industrial firms used nominations by their employees as an important source of new applicants. Some companies report that from 50 to 90 percent of their hiring came from such internal suggestions.

Savings and other advantages of encouraging existing employees to suggest names for recruiting are obvious. There is a danger, of course, that this procedure produces inbreeding and the formation of cliques within the staff. This can be especially risky in a cooperative where such hiring will be done from people in the community who may already be members.

Advertising in Newspapers

Even if hiring from within is successfully practiced, some jobs cannot be filled by such methods. This is especially true for low-paid, entry-level jobs and, at the other extreme, specialized positions requiring a college level education and professional training.

The most commonly used technique for outside recruiting is advertising in local newspapers.

Classified help wanted ads are generally used for lower paying jobs and display advertisements for more important and specialized positions. A small cooperative with an occasional vacancy places a job-opening advertisement only when a vacancy occurs. A larger cooperative with a continuing recruiting program probably advertises in the newspapers on a regular schedule, with display advertising.

Advertising can be "open," giving the name and address of the cooperative, or "blind" with a box number. The open ad yields more applicants and at the same time advertises the cooperative's existence in the community. All applicants should be acknowledged.

If the cooperative has an advertising specialist on its staff, or has access to one, it will be useful to seek his advice on the wording and placement of "help wanted" advertising. Even in today's labor market, getting new workers can be looked upon as a sales problem. Often a prospective employer has to sell itself to job applicants who can pick and choose from a number of job offers.

One large regional cooperative regularly advertises for new employees in its newsletter to members, directors, and employees. The cooperative reports that this kind of recruiting strengthens the cooperative image and promotes employee stability. Many of their best employees are those recruited from their farmer members.

On the other hand, if too many responses to such ads come from employees of local affiliates, the result can be to shuffle several men, create several openings, and cause more advertising—all to fill the original vacancy.

Public Employment Offices

For many jobs, particularly at semi-skilled levels, employers turn to State employment services. These have offices in all the larger cities and branches in many smaller communities. They can be an especially productive source of candidates for jobs, since all workers drawing unemployment compensation must register as seeking employment.

Prospective employers can keep unsuitable applicants to a minimum by being specific in listing job requirements. Registering with the local employment office usually will give the cooperative access to applicants in nearby communities. This is particularly useful if the job opening proves hard to fill.

A network of some 90 offices across the nation specializes in recruiting managerial, professional, and technical personnel.

Private Employment Agencies

Private employment agencies are operated for profit and charge a fee—often amounting to the first month's pay. Sometimes the employer pays the fee, more often the employee.

A reliable firm locates applicants and does the initial screening if the cooperative supplies sufficient details about the vacancy it wants to fill.

A considerable proportion of the people

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using the commerical job agencies are already employed and use the agency to seek out a better job. The chances are, then, that the cooperative may be able to get a better grade employee or one more highly skilled by registering its vacancy with a private agency.

In the past, some abuses have been associated with some private agencies, but these have largely been corrected. Most commercial-type agencies operate only in the local community and may not be able to cover as wide a geographical area as the cooperative may wish.

A relatively new development is mutual, non-profit hiring agencies subsidized by a group of business enterprises. A cooperative with extensive needs for new employees over a continuing period should consider this possibility.

Local School Sources

It is a common failing for business firms to look for college graduates, when many jobs they offer could be filled as well or better by recruits from high schools, trade schools, or private business schools.

Managers and personnel directors of cooperatives will find it helpful to get acquainted with local school officials and let them know of the cooperative's personnel needs.

This is, by the way, an excellent method for obtaining part-time help and giving young people an early taste of employment with a cooperative. It is useful, moreover, to recognize that other than honor roll students also make good workers.

Another excellent source of part-time and emergency help is the distributive education programs under way in many high schools and vocational schools. Often young men in these programs need part-time employment or school release-time employment. Or those on a two-year training program for skilled jobs, with a part of this program consisting of two or three months of summertime work, may be available.

These programs are excellent sources of part-time assistants during the potential employee's training period. They give management a good opportunity to observe the employee's ability. When his formal training is completed he is already well oriented and ready to go to work at full production.

Colleges and Universities

Personnel recruiting from the nation's colleges and universities has become a competitive, highly sophisticated, and somewhat expensive activity.

Many larger corporations seeking trained young people for engineering, scientific, and administrative careers maintain special college-recruiting departments to enlist the most promising graduates. Often this type of recruiting is not to fill a specific job but to assure companies of a continuing inflow of future technicians, managers, and executives.

On-campus interviews, accompanied by high starting salaries, a wide variety of fringe benefits, and the promise of management development programs, place this type of employee recruiting beyond the reach of many cooperatives.

Some cooperatives go to smaller, less prominent colleges—perhaps one in the same part of the State where the cooperative is located.

It could be a school that the manager or a director of the cooperative or some knowledgeable member has attended or is connected with. It may be a college that takes pride in a viewpoint encouraging understanding of cooperative endeavor.

Some cooperatives work through a friendly faculty member aware of what qualifications in a young person are important to the cooperative and what employment opportunities the cooperative has to offer.

In this connection, many smaller colleges and universities have summer work programs in agribusiness for potential college graduates. These programs usually begin in the junior year and end in the senior year. If the student follows the college course recommendation on work experience he can earn college credits. It is an opportunity for pre-interviews before actual full-time employment.

Other Cooperatives

The manpower of other cooperatives is a potential source of experienced applicants for vacancies. This is not to suggest personnel raiding, but to point out that changes in services offered by a particular cooperative or a shift in its internal organization may result in some employees becoming surplus or preferring a new start in some other enterprise.

It is natural, also, to expect that employees who demonstrate outstanding ability should be interested in joining an enterprise where their skills have the greatest room to develop. There are instances, too, of employees who did not work out well in one job situation, but respond favorably to a different environment.

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Regional Cooperative

Many regional cooperatives have established employee recruitment and screening programs to assist their local cooperatives. These organizations have better access to the larger labor markets and sources of employees. They are acquainted with employees in their local cooperatives who are being released from one cooperative to move to a higher paid position in another.

A major midwest regional, for example, provides a complete recruitment, screening, and placement program for employees of its local affiliates.

Jobs covered range from maintenance and janitorial services to journeymen level, middle management, and management positions. The regional is in contact with all of the major sources of job seekers such as schools, employment services, and large communities. Training and orientation are included in the program.

The same regional maintains complete personnel records for the entire organization, including the local affiliates. The records are used to locate employees with advancement potential who can be transferred from one location to another to make the best use of their capabilities.

Other Business Firms

A manager or personnel director who is an active member of one or more civic clubs or of farm or professional organizations has opportunities to learn of employment changes in various business firms in the community. Sometimes these offer recruiting opportunities for the cooperative.

Also, if a cooperative has a favorable community image, it may receive a good many inquiries from employees of competing firms who are interested in making a change.

Professional Societies and Trade Associations

Accountants, engineers, librarians, public relations specialists, and other professionals often belong to national associations. These frequently have local chapters in the larger cities. Some of these societies publish for their members periodicals containing a section of position wanted and help wanted ads.

Many professional societies also maintain regular placement services for their members. The maintenance of professional standards by these organizations insures the qualifications of referrals obtained from them. In a few of the larger cities, the staffs of professional societies help locate candidates for vacancies. Their offices are listed in the telephone directory.

Similiarly, there are trade associations for livestock producers, supermarkets, rural electric systems, and a wide variety of other agricultural, commercial, and industrial interests, including cooperatives. These generally provide some personnel assistance, including, in a few cases, recruiting and placement.

Labor Unions

Collective bargaining agreements in some lines of work and in some areas constitute an important source of workers. The ability of unions and their members to locate and recruit employees has been well demonstrated. This may be especially helpful in small towns and rural areas.

Organized labor is increasingly involved with recruiting and hiring, as well as with other aspects of employment. Managers and personnel directors of cooperatives need to be informed about aspects of labor law and the practical advantages as well as the problems involved in collective bargaining and management-union relations.

Hiring Those With Special Difficulties

There are identifiable categories of individuals within the population who face special difficulties in obtaining employment.

Minors.—Child labor laws and minimum wage laws, devised to protect the very young against exploitation, tend to discourage the hiring of minors under any circumstances. Employers who become familiar with protective labor laws and any local measures find many opportunities for placing young people. This is especially important for cooperatives with a special stake in attracting the interest of a new generation in the advantages of cooperative enterprise.

The Elderly.—Older people are often steadier and more reliable than younger workers and have acquired many years of valuable experience.

In periods when labor is in short supply and when inflation works special hardship on people depending on retirement income, it makes sense to hire senior citizens.

Part-time employment and positions calling for mature judgment rather than physical exertion are important considerations in recruiting older people.

Handicapped Persons.—Studies of produc-

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tivity consistently report that absenteeism, accident rates, and job turnover are lower for handicapped workers than for the average.

Placed in suitable jobs, persons who are crippled, blind, deaf, mentally retarded, or otherwise handicapped demonstrate a level of productivity equal to or above that of average workers.

The Veterans Administration (VA), Washington, D.C. 20420, can provide information on handicapped employables who have received preliminary skills training under VA programs. Employment counselors and placement officials of the VA can help develop a constant source of stable potential employees.

Non-veteran handicapped persons can be recruited best through the State-Federal Vocational Rehabilitation Program offices in various State or district offices located in larger cities or through the State Industrial Commission in the State capital.

Women.—Today, it should not be necessary to consider women as a special source for labor recruiting. Nevertheless, many cooperatives are located in rural communities where hiring practices lag behind the actual availability and competence of women to hold almost any kind of job.

More and more women are finding opportunities in supervisory positions and in staff departments.

Many women who held jobs before marriage have now raised their children and are again looking for employment outside the home.

Minorities.—Persons who belong to certain minority segments of the population in terms of religion, race, or national origin face employment handicaps in some localities, despite laws designed to establish equal opportunity.

Cooperatives have a special advantage here, for they often emphasize in their basic principles and bylaws a person's worth without regard to these prejudices.

Even so, many minority individuals are fearful of unfair treatment and are unaware of the opportunities offered by cooperatives. Cooperatives willing to make the effort may be able to fill some of their job vacancies from a special recruiting effort among minority groups.

"Unemployables".—Until recently, many persons who dropped out of school or who were physically or mentally handicapped were regarded as unemployable.

In recent years a national conscience, evidenced in both government and private efforts to eradicate poverty, has been searching out these "unemployables" and training them for jobs. Some city-based cooperatives and a few in rural areas are participating in this program.

One example of the stepped-up concern for the unemployables took place in 1969 when the Cooperative League of the USA signed a contract with the U.S. Department of Labor to train 378 disadvantaged persons for jobs with various cooperatives over a two-year period.

Some of the occupations that trainees received on-the-job instructions in were: Feed-mill employee; feed-truck operator; mill hand, fertilizer, and blender; propane and refined fuels salesmen; service station employee and farm-equipment mechanic; tires, battery, and accessories sales and serviceman; farm-supply sales and service technician; farm retail fieldman; farm chemical sales and serviceman; farm-appliance sales and serviceman; and bookkeeper and clerical employee. This program has since been extended.

Interested managers or personnel directors should inquire at the office of the Cooperative League of the USA, 59 East Van Buren St., Chicago, Ill. 60605.

Application Form

A carefully designed application form helps identify qualified applicants and weed out unqualified applicants. It saves time and expense in interviewing or investigating such applicants. (A number of sample forms useful as guidelines are included in Appendix B.)

The application form should, when filled out, furnish enough information to reveal an applicant's ability to do a particular job with a minumum of training as well as to adapt to the working situation and become part of the cooperative's team. Information unrelated to preliminary selection can be obtained at the time of interview or later.

The information on a completed application form should include at least the following: Name, address, telephone number, age, sex, education, marital status, military status, previous employment or experience, any physical impairment or health problem, social security number, and references. Union membership, for jobs requiring such membership, also should be mentioned in the form.

The form should be brief, easy to read and understand, and provide ample space for writing in the data requested.

The applicant, himself, should fill in the form. The importance of filling out the application completely should be emphasized. This

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is imperative to permit and insure adequate follow-up in checking out the applicants record. Neatness, handwriting, clarity, and conciseness may indicate fitness for certain types of work, especially office jobs. (See Appendix B for several sample forms useful as guidelines.)

Distortions, falsification, and errors can be reduced if the applicant knows that the information he puts on the card will be checked.

Checking Past Employment and References

The applicant's work record and personal references indicated on the card should be checked by telephone or letter of inquiry. Telephoning is acceptable and speedier than a letter. In hiring supervisory personnel it may be worthwhile to check one or more references in person to gain opinions not likely to be expressed by telephone or mail.

(Form 6 in Appendix B lists useful questions for a personal or telephone check. Form 14 is a mail form used by a number of cooperatives in checking applicant references. These forms can be used as guidelines in designing forms to fit your specific needs.)

Former employers should be asked specifically about the applicant's length of employment, work performance, attitude, safety record, absenteeism, ability to work harmoniously with others, reasons for separation, and any other information that would help in determining qualifications for the specific vacancy.

A former employer usually does not wish to spoil an ex-employee's chances for another job and therefore may avoid mentioning unfavorable aspects of the work record.

Usually references are personal friends of the applicant. An inquiry merely asking for an opinion as to the applicant's ability to perform the job or about his character brings an uninformative reply. However, if specific questions are asked, the reference, even though a personal friend, usually hesitates to give an answer contrary to fact. If references include community residents who are known to be responsible, this gives a measure of assurance in hiring.

The person doing the hiring should pay attention to what is not said by former employers and references as well as to what is said. Checking the applicant's school record can sometimes be useful.

Interviewing

Interviewing is one of the most important phases of the selection process—but can be mishandled. The interview generates information not available from such other sources as the application form, replies from reference inquiries, and tests.

Interviews will have greatest value if they are standardized, conducted by a trained interviewer, objective, and planned in advance, and if the results are evaluated before hiring.

Sample interview records are included in Appendix B. They can serve as guidelines in conducting the interview, in recording the results, answers and evaluation of the answers, interviewer impressions, judgment, and evaluation of the applicant.

Planning the Interview

The interview should have a purpose, and cover points of information determined well in advance. This enables the interviewer to consider the applicant's answers, rather than being diverted by formulating questions.

General areas to be covered may be provided by an interview rating form setting forth the main points for consideration and providing space for evaluating findings.

In addition, the well-planned interview will include advance determination of specific leads to be explored with each applicant. Leads may be based on the information contained in the application form, scores from any tests given prior to the interview, and responses to reference inquiries.

The following paragraphs list some of the characteristics and items of information which may be developed in the personal interview, depending on the nature of the position being filled.

It is helpful to group the items of information desired under three headings (insofar as applicable):

1. Technical qualifications.
2. Managerial qualifications.
3. Personal characteristics.

1. *Technical Qualifications*
   - —Verify the experience shown on the candidate's application is actually germane to the target job.
   - —Measure the extent of candidate's knowledge and sophistication in related fields.
   - —Judge whether he's primarily a technical expert or a manager.

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—Ascertain extent to which his background and experience are actually pertinent to target job.
—Evaluate his relative strength and expertise in relation to target job criteria.
—Review the quality of his performance.

2. *Managerial qualifications*
—Does he have basic management skills—can he supervise a group, delegate, review, and the like?
—Can he effectively supervise a large group?
—How effective is he under deadline pressures?
—What kind of "volume" producer is he?
—How cognizant and capable is he in "administrative" matters—budget, personnel, planning, and the like?
—How would he do in managing a new organization; or a dispersed organization?
—Could he "shake up" an organization; get a program moving, and the like?
—How well does he plan for the future?

3. *Personal Characteristics*
Interpersonal liaison
—How effective would he be in contacts with Congress, industry, academic groups, professional societies, top-level management, and the like?
—How effective is he in advancing his views (selling a program)—hard sell or soft sell, as required.
—How well can he hold up under pressure in controversial setting?
—How well does he think on his feet?
—Can he advance his position tactfully (without offending)?
—How well does he speak (large group or conference table, as required)?
—How well does he write?

Personal and Professional Stature
—How well respected is he technically, or personally?
—Is he internationally (or nationally) known?
—Is he considered authoritative by peers?
—Does he have the status symbols (publications, patents, memberships, awards, special licenses, and the like) that are important?

Personality Traits
—How well does he get along with peers, supervisors, subordinates?
—How innovative and creative is he?
—How about energy, vitality, and drive?
—Is he basically an introvert or extrovert?

Work Habits
—Is he neat, orderly, able to organize his work?
—Is his personal grooming acceptable in the job for which interviewed?
—Is he dependable—does he get to work on time?

Conducting the Interview

The suggestions below are offered for consideration when conducting an interview.

1. The room used for the interview should provide privacy and convenience. Consider such arrangements as the following:

—Place a comfortable chair for applicant next to the interviewer's desk.

—Provide good lighting. Avoid having bright lighting behind the interviewer as this makes it difficult for the applicant to look at him.

—Have an uncluttered desk. The desk top should be clean and free of distracting papers or books.

—Place an ash tray within reach.

2. Set a definite time for the interview. Keep that appointed time without requiring the applicant to wait.

Both the interviewer's time and the applicant's times are valuable. Plan the interview so as not to waste it. Use adequate time to gain a good impression of the applicant's ability—perhaps 15 minutes to an hour, depending upon the importance of the job to be filled—but do not prolong the interview needlessly.

Some screening of applicants before the interview also can save time. High school counsellors in small communities are usually willing, for a small fee, to provide appropriate vocational or aptitude tests to assist in proper job placement. Local employment agencies will also provide this service. A number of regional cooperatives provide this service in the field.

3. A courteous and friendly attitude by the interviewer gives the applicant a good first impression of the cooperative.

—Put the applicant at ease—he is nervous enough already.

—Avoid trying to impress the applicant by talking down to him.

—Use vocabulary to fit the job under discussion.

—Treat the applicant with respect and courtesy—he has something to sell and the cooperative is in the market to buy.

—Keep the interview friendly. Make the applicant feel he has been treated fairly.

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4. Keep the conversation informal.

—Find a topic (sports, personal, civic activities, and the like) in which the applicant is interested.

—Appear unhurried even though others are waiting. Remember, the applicant is there by invitation.

—Lead into specific questions designed to determine the applicant's qualifications as he becomes less tense. Methods and questions will vary according to the type of job under consideration, but they should be well planned prior to the interview.

—Let the applicant talk. Don't hurry him, interrupt him, or put words in his mouth.

—Avoid cross-examining the applicant.

—Be sensitive to his attitudes.

—Express interest in, but not approval or disapproval of, applicant's ideas.

—Explain the cooperative's objectives, employee policies, and advantages of working for the organization but don't oversell the job.

—Base your opinion of the applicant's qualifications, characteristics, and personality traits on what the interview reveals. How will the applicant affect employee morale and fit into the cooperative?

Ending the Interview

Normally, employers find it is not wise to make a commitment on hiring the first applicant; others to be interviewed may be better. After all points are covered, thank the applicant for coming in, and advise him he will be informed after all interviews have been completed.

Interviewer's Appraisal

Before the next applicant comes in, immediately make notes on the applicant just interviewed. Notes ought to be sufficiently comprehensive to give a full picture of the applicant. Don't trust to memory.

It is good policy in filling the most important positions to have at least one other person interview the applicant. This could well be the immediate supervisor for the employee who will fill the vacancy.

Information obtained during interview should be kept confidential.

Using Tests

After checking past employment and references, and either before or after interviewing the applicant, it may be wise to have him tested for aptitudes and learning ability.

Aptitudes indicate the types of work to which a person is temperamentally fitted, as well as his preference and interest. An applicant may have had training in bookkeeping or billing machine operation, but if tests reveal little aptitude for this type of work, the chances are remote that the person will be a good bookkeeper, even with additional training.

Learning ability is an indication of how far a person can go before the job becomes too difficult. It is also an indication of a person's ability to learn work other than that for which the application is made.

In most instances applicants with a high degree of aptitude and learning ability make more satisfactory employees and require much less training in their jobs.

Tests are more effective in predicting failures than in predicting success. They should be used as an additional tool for selection and not as a substitute.

Testing is a highly technical process. Few cooperative managers are adequately trained or equipped to administer or evaluate tests properly. The firm should use a professional counselor to administer and interpret the desired tests. A danger of tests in the wrong hands lies in using them as the sole criterion, misinterpreting them and thereby destroying the image the applicant has of the firm, or misdirecting or misguiding him.

In the use of tests the following principles should be adhered to:

—The test used should be specifically designed to reflect the characteristic to be explored.

—The test should be recognized as valid only for the purpose intended.

—A reliable test is one that shows consistency in its results, but perfect reliability should not be expected.

—Applicants will respond better to testing if they see some relevance to the job.

—The test should be of reasonable difficulty in relation to the candidates who will be tested, to avoid bunching at the top or bottom of the scale.

—The test should be easy to administer and objective so as not to depend on the opinions of the person administering the test.

—The test should carry a weight of 40 to 50 percent in making a selection, leaving the rest to past experience and education of the applicant and to the judgment of the interviewer.

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The following are frequently used tests considered suitable for various types of cooperatives:

—Learning ability or mental alertness tests—used to determine applicants' ability to develop and progress in the organization.

—Manual dexterity tests—used to determine applicants' aptitude for operations where the use of hands is of prime importance.

—Clerical tests—used to determine applicants' aptitude for clerical or office work.

—Trade tests—used to determine applicants' knowledge of a particular trade.

Testing job applicants is complicated and can be expensive. Managers of smaller cooperatives may find it helpful to consult with personnel people in large enterprises or with someone in a nearby college who teaches business administration before undertaking a testing program for the first time.

Information about the purchase of tests for personnel hiring and placement can be obtained from advertisements in management and personnel publications or from the following sources:

—American Management Association, 1515 Broadway, New York, N. Y. 10036.

—American Personnel and Guidance Association, 1605 New Hampshire Avenue, N.W., Washington, D. C. 20009.

—American Society for Personnel Administration, Kellogg Center, East Lansing, Mich. 48823.

—Society for Personnel Administration, 5506 Connecticut Avenue, N.W., Washington, D. C. 20015.

Selecting and Hiring

After all interviews for a vacancy have been completed, the information obtained on each applicant must be interpreted, evaluated, and weighed.

Better selection may be obtained by having the department head or key personnel review the findings of the interviewer and offer opinions as to the best qualified applicant, rather than basing the final selection on the judgment of the interviewer alone.

The applicant finally selected should be informed promptly. Some enterprises require the successful applicant to take a physical examination before hiring him. In some instances hiring is contingent upon the applicant passing a physical examination.

After the new employee has reported for duty, a letter should be sent to other applicants, notifying them that the job has been filled, expressing appreciation for their interest, and telling them they will be considered for future job openings.

Training and Developing

Training and developing employees involves both formal and informal processes. To be effective, both must be the result of planned conscious effort. Both must be continuing processes. Usually both go on simultaneously.

Ideally, a formal training program contains most or all of the following elements: Orientation, on-the-job training, group training, and often outside training. Informal training includes providing information on co-ops, the day-to-day supervision provided, and the periodic performance evaluation.

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Orientation

As soon as the new employee has been accepted, he must be introduced to his job, working environment, and fellow employees. This introduction or orientation process affects how well the new employee adjusts to the job and ultimately how successful his tenure with the cooperative will be.

Purpose

From the standpoint of the cooperative, the orientation should:

—Provide information the employee must have to perform his job well.

—Answer questions to save time and trouble for the supervisor and fellow employees later on.

—Prevent or reduce the chance of grievances.

—Reduce turnover of employees.

From the employee's standpoint, the orientation should:

—Create a favorable but realistic impression of the cooperative and of the job.

—Establish a sense of belonging.

—Give the employee the sense of assurance he can cope with the work and move ahead as he gains experience and develops skills.

Content

The new employee generally wants to learn and is pleased with obtaining the job, but on the first day he may be filled with fears and misgivings. The person with the responsibility for the orientation should do it in a friendly and welcoming manner.

This orientation includes:

—Introducing the new employee to other employees and, where circumstances warrant, to directors of the cooperative.

—Reviewing the program and objectives of the cooperative, its reason for being in business, its special nature as an economic institution, and the importance of each employee in developing and maintaining good member and public relations.

—Describing the organizational structure—how and where the new employee fits into the pattern.

—Explaining lines of supervision and communication—up, down, and across.

—Reviewing policies of the organization, with particular reference to hours of work, regular and overtime pay, vacation and sick leave, and employee welfare benefits. Also, during the orientation period the new employee may be given a set of selected written policies of the cooperative to acquaint himself with approved practices.

Procedure

In enterprises where the staff is limited to a dozen or so people, the manager often conducts the orientation himself. In larger organizations, the induction process may more reasonably be handled by the personnel director or the new employee's supervisor.

A large midwestern federated cooperative, with close to 500 member cooperatives, has a manual outlining the orientation process for managers and personnel people to use. The book, titled—Growth Depends upon People—includes tips on recruiting and interviewing as well as training guidelines.

Orientation is divided into two parts in many cooperatives. A first-day period is set aside for explanations of organization, procedures, and employee benefits by the personnel director or some other designated staff person especially trained for such induction sessions. Then the employee's supervisor takes over for introduction to the work situation and to fellow employees.

A follow-up interview should be held several weeks later to take care of unanswered questions, evaluate the effectiveness of the first-day orientation, and determine if the employee has been properly placed. A recent study of employee turnover found that 21 percent of those recently resigned persons interviewed said they felt they had not been properly placed.

Many cooperatives give new employees a handbook, or leaflets, to explain the nature of the cooperative firm, the cooperative's objectives and structure, and such job-related information as pay scale, employee benefits, grievance procedure, and training programs.

The personnel director of one large cooperative that gives each new employee a handbook makes this comment about their use:

"The value of such a handbook to an employee lies in its use as a reference on company policies, objectives, or structure. Its issuance should be accompanied by a complete discussion of everything it contains, allowing the employee opportunity to ask questions about matters that are not clear on reading the publication."

Avoid burdening the new employee with more printed material than he will read. It is better to issue additional information a little at a time at subsequent staff meetings, in an

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employee newsletter, or as special office or plant memoranda.

On-the-job Training

In small business enterprises, initial training for new employees may vary from a few hours to several days, depending upon the experience of the employee and the complexity of the work. The manager himself may supervise the on-the-job training period.

This starts with what the new employee already knows and ends with the new employee mastering the job requirements.

The supervisor, or a senior employee who has learned teaching techniques, usually conducts the on-the-job training in larger cooperatives.

These are the advantages of on-the-job training over formal training school techniques:

—It is more economical.

—It permits production to go on during the learning period.

—It is more realistic because the new employee is adapting himself to the actual work situation and will not have to make the transfer from classroom to job.

To prepare induction training, supervisors have found it helpful first to break the job down into its various steps. They do this in writing after actually performing each task.

On-the-job training can be broken down into these steps:

—Trainer shows, explains, and does the task while employee watches.

—Employee tries under guidance of trainer and explains performance of each step.

—Employee repeats until able to perform the work without error.

—Employee is put on his own with gradual reduction in supervision.

The trainer should not only explain how a task is accomplished, he should also explain why the task must be performed in a certain way. If this is not done the employee may be tempted to take short cuts or otherwise change procedure in a way that will be detrimental to the job, the product, or the employee's progress.

Another point to stress, particularly with trainees who will be meeting patrons and the public, is that cooperatives exist to serve the patron. Adequate performance of the mechanical details of the job is necessary, but not sufficient in a cooperative.

This form of training places the worker directly on the job and, by instruction and the supervised use of tools, equipment, and materials, the employee is trained for his specific job assignment.

Too often, after going through the orientation process, the new employee is given a work assignment with little instruction and supervision. He is put on his own to see what he can do. As many workers fail in their jobs because of improper training methods as because of an inability to learn.

A supervisor should have the ability to do the job himself before he undertakes the training of new employees. He must know the methods and procedures and how they are used.

The training process should be conducted in a friendly and congenial manner. When a worker faces an unfamiliar task for the first time, he is likely to be worried. To erase these fears the supervisor should put the worker at ease. The job is easy for the trainer because he knows how to do it, but he should make the worker feel that in a short time he can do the job as well as the trainer.

On-the-job training also can be used for new tasks, new techniques, or new equipment to be introduced for existing employees.

Group Training

Individual on-the-job training can be supplemented to advantage with group training presented in the form of films, talks by specialists, discussions, conferences, or role playing.

Group sessions are especially applicable for job relations training when the purpose is to promote better relationships among employees, between the employee and his supervisor, between the employee and the cooperative, and particularly between the employee and the cooperative patron.

Group training also can be used to teach new methods to several employees at a time, or give employees additional knowledge that helps prepare them for promotions and transfers to other types of work.

Development of staff members can be encouraged by carefully prepared presentations on supervisory techniques, public relations, information about cooperatives, effective communication, safety practices, practical economics, and many other subjects.

Literally hundreds of films for training purposes are available for loan, rental, or purchase. A catalog of U.S. Government training films is available from United World Films, Inc., 1445 Park Avenue, New York,

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N.Y. 10029. Large corporations make their own training films and usually lend them without charge.

Factory representatives generally are available to present information on products handled by the cooperative. Manufacturers often provide instructors to demonstrate how to use and maintain their office equipment and plant machinery.

Many land grant universities supply instructors to visit nearby cooperatives to give talks or demonstrations on subjects useful in employee training and development.

Many large regional cooperatives have a complete training library and listing of training aids. These are available for use by local managers and supervisors in employee on-the-job training programs.

To assure attendance and hold employee goodwill, training sessions can be held during work hours. If training is given outside of work hours, compensation may be required.

Programmed Instruction

Programmed instruction has been defined as a technique for which a program (usually written) takes the place of a tutor for the student. The program leads the student through a set of statements and questions (specified behaviors) designed and ordered to make it more probable that he will behave (respond) in a given desired way in the future.

Programmed instruction is an example of what is called the systems approach to training. This is because it requires the writer (of the program) to go through the steps of a system to develop the program. A program is characterized by thorough planning and structuring of material, as follows:

1. An ordered sequence of stimulus items, or statements
2. to each of which a student responds in some specified way—
3. his responses being reinforced by immediate knowledge of results
4. so that he moves by small steps
5. from what he knows, by a process of successively closer approximation, toward what he is supposed to learn from the program.

Programmed instruction is used in a wide variety of subject matter fields, from technical to liberal arts. It is often used in correspondence study courses. It has a special advantage in that the student may take the training without needing to be in a classroom or working situation. The student need not turn in or mail in his work for review and grading. The feedback supplied by the program gives the student knowledge of his progress and does it instantly.

Programmed instruction may be carried on with the aid of a teaching machine or other training aid. However, often the program is printed in book or pamphlet form, giving great flexibility in its use.

At least 100 of the largest American corporations use programmed instructions. These companies maintain staffs ranging in size from 2 to 50 persons working specifically on programmed instruction. Subject matter covered includes such occupations as plant operations and maintenance, selling, engineering, computer programming, and communication skills.

The Federal government uses programmed instruction widely in its training programs.

Cooperatives interested in using programmed instruction may find suitable programs available from correspondence schools or bookstores. If suitable programs are not available from those sources it may be necessary for the cooperative to develop its own. One source of assistance would be the State university. Another source would be a private educational consultant.

Outside Training

Many firms supplement their own training efforts with conferences, seminars, or classroom instruction at public schools, business college, university, or industry institute.

Some cooperatives pay for such correspondence courses as accounting and business English. Cooperatives may find the expense a good investment in grooming employees with the potential to move into higher positions on the staff.

Many cooperative employees gain outside training at professional institutes, technical training conferences, and meetings of cooperative leaders. A variety of organizations offer such training opportunities including the following:

—American Institute of Cooperation, 1129—20th Street, N.W., Washington, D.C. 20036.

—The Cooperative League of the USA, 59 East Van Buren Street, Chicago, Ill. 60605.

—National Rural Electric Cooperative Association, 2000 Florida Avenue, N.W., Washington, D.C. 20009.

—National Telephone Cooperative Association, 1000 Connecticut Avenue, N.W., Washington, D.C. 20036.

—Farmland Industries, 3315 North Oak Trafficway, Kansas City, Mo. 64116.

—Agway Inc., Box 1333, Syracuse, N. Y. 13201.

—Midland Cooperatives, 739 Johnson Street, N.E., Minneapolis, Minn. 55413.

—Nationwide Mutual Insurance Co., 246 North High Street, Columbus, Ohio 43216.

—Cooperative Institute Association, c/o Greenbelt Consumer Services, 8547 Piney Branch Road, Silver Spring, Md. 20901.

—Farmers Union Central Exchange, Box "G", St. Paul, Minn. 55101.

Learning about Co-ops

Not only do cooperatives need to train their employees in developing skills and good relations with those around them, they must train them in cooperative principles and practices.

"Every employee a cooperative ambassador" would be a good motto for every cooperative to adopt. As cooperatives grow in size and expand in the territory they serve, the member-owners become farther removed from the business institution that they own and that serves them. They have less chance to see and talk with the manager and directors. Communication becomes more difficult.

The cooperative business activities take on complexities often beyond the members' understanding. Few members today have an opportunity to become personally involved in cooperative affairs the way earlier generations of members did.

For most members of a large cooperative, the only contact is with the clerk at the counter, the truck driver, the cashier, or the switchboard operator. To the average member these are the voices of the cooperative. If these employees do not understand the organization's objectives, structure, background, and operations, how can they possibly answer members' questions or contribute to members' appreciation of their cooperative?

Each employee needs to feel that projecting a favorable cooperative image is his personal responsibility. He needs to be imbued with the idea that the more successful his cooperative is, the better chance he has for a promotion within his own cooperative or for a better job in some other cooperative.

The average employee wants information about the firm he works for. To be able to brag about his job and the firm he works for, to be able to answer questions about the cooperative, strengthens his self-esteem and makes him feel a part of the team.

Most cooperatives include some institutional material in the orientation process for new employees. Excellent examples of handbooks, slides, movies, leaflets, posters, and talks can be obtained from such sources as the following:

—A number of cooperatives publish a fact book about the cooperative as a training manual for employees.

—National associations of cooperatives (the Cooperative League of the USA, for example, has issued a film, What is a Co-op).

—U.S. Government agencies (Extension Service in the U.S. Department of Agriculture, for example, has a County Agent's Manual on Cooperatives, listing teaching aids).

For assistance in locating appropriate training materials about farmer cooperatives for new employees or old ones, write to the Farmer Cooperative Service, U.S. Department of Agriculture, Washington, D. C. 20250.

Maintaining High Morale

Establishing and maintaining high morale among employees at all levels is an important element in getting the best use of employees' skills and potential. High morale contributes to loyalty and favorable attitudes toward the cooperative. Low employee morale has the opposite effect.

By and large, people everywhere react pretty much alike. They are irked by rudeness, indifference, unfairness, and shoddy promises. They respond favorably to courtesy, recognition, fair treatment, and neat and clean surroundings.

Placing the proper emphasis on human relations—and thereby promoting good morale—is one of the most important aids in creating conditions that:

—Encourage employees to work well and respond readily to on-the-job challenges.

—Win loyalty and inspire good employee attitudes.

—Reduce turnover.

—Inspire ambitions or aspirations that arouse people to act in a positive way from their own volition.

Human Relations

Considerable research by social scientists and efficiency experts shows that unsatisfactory human relations and unfavorable attitudes hamper production. When hostilities, resent-

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ments, suspicions, and fears of workers are replaced by favorable attitudes, production increases.

Practice of good human relations in business does not mean establishing a country club atmosphere catering to every employee whim or desire. It does mean establishing principles and practices that motivate employees to perform their duties to the highest degree of their ability.

Every normal person desires to be somebody, to be trusted, and to feel worthwhile in the eyes of his supervisor and his subordinates.

Here are some practices that establish good human relations and create good morale:

—Well-planned and easily understood work assignments.

—Fair distribution of workload among employees.

—A minimum of below-grade work that could and should be delegated to lower-paid or less-skilled personnel.

—Work assignments of a higher level whenever possible after the employee has demonstrated competency.

—Satisfactory communication—up, down, and across organizational levels.

—Assurance to employees that their constructive suggestions for improving operations will be considered.

—Recognition of work well done—commendation and praise for accomplishments.

—Avoidance of public criticism for mistakes—private discussion, instead, with constructive suggestions for handling the situation better.

—Prompt and fair hearing to employee's complaints—in the knowledge that complaints not quickly and fairly adjudicated become grievances, and grievances not handled properly and fully become grudges.

Leadership

Leadership is the ability to handle people in a manner that commands confidence, respect, and loyal cooperation, and gets people to want to do things the leader wants done.

The good supervisor infuses his subordinates with the desire to support the policies of the cooperative whether or not the supervisor is present.

The supervisor's ability to use the talents of his subordinates efficiently is one measure of his leadership.

The successful leader learns as much as possible about human nature. He respects the dignity of the individual and understands that each person is important to himself. He learns everything he can about his employees. He knows that people are more important than any machine. He gains the confidence and respect of employees by looking out for their interests and giving them credit when due.

Supervisory Methods

Some supervisors practice a man-to-man approach in getting work done; others use a group method, supervising workers as a team to accomplish the functions of the unit. The group method yields higher productivity and greater job satisfaction in those situations that call for everyone to work together.

If employees are informed about their work and how it should be performed, the actions they take are more apt to be those management wants.

To secure effective and efficient performance, the manager, and in turn, the supervisors, must delegate some authority to act and make decisions in particular types of situations. Many managers and supervisors hesitate to delegate the authority. On the other hand, some delegate more than they should.

In delegating authority, the astute supervisor also provides for its corollary, accountability. An employee given authority to perform a task needs an opportunity to report on his performance, perhaps periodically, to his supervisor. In the process of reporting, the employee learns whether or not he is doing the job the way management wants it done.

Reporting performs two functions: (1) It makes the employee conscious of the importance of the job he is performing; and (2) it helps management assess any need for additional training, or for redefinition of procedures or organizational responsibilities.

There are occasions when authority for even the most important decisions has to be delegated. These occur in emergencies, during absences of the manager for trips or leave, or when the amount of work becomes excessive. However, final responsibility for acts or decisions of subordinates can never be passed on. One former President of the United States displayed a sign on his desk which read: The buck stops here. That pretty well sums it up.

Evaluating Performance

To obtain the best use of personnel requires a continuing program for appraising each job and evaluating the performance of the person

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filling it. There are many different appraisal systems, some formal and some informal. Any system must be used with care so that the evaluation is as objective as possible.

An evaluation program has these purposes:

—To determine how well the employee performs the various aspects of his job.

—To encourage the employee to develop his skills and abilities.

—To insure proper placement; that is, the right man in the right job.

Additionally, the performance evaluation can be both an opportunity for the employee to be assured of a periodic review of his performance and as a basis for a promotion.

One cooperative uses what it calls a merit rating system tied to its compensation program. Job performance measurements are converted into rating scores of eight salary ranges within the job. Salary increases are based on the scores attained. The cooperative reports the process is an excellent employee incentive program and assures employees they will be reviewed periodically.

Performance evaluation assumes that employees can adjust themselves to job requirements and that most people have a capacity for improving themselves. An evaluation program recognizes that respect, understanding, and encouragement help employees in developing within the organization.

Development is a joint undertaking of the supervisor and the employee, but provision for evaluation must be made by management.

It is important, as well as convenient, to start with a review of what the employee is expected to do as outlined in his job description. This provides the employee with an opportunity to make suggestions about his work and its relation to overall operations. It offers a means for periodically establishing performance goals—goals the employee helps set. People will almost always work harder toward goals they participate in setting.

One way to help the new employee—or the employee in a new position—understand what is expected of him is to discuss it with him at the beginning of his employment. Jointly develop a set of objectives and goals, together with the factors that will measure the degree to which objectives and goals have been achieved.

Looking at Work Habits

A discussion of the job duties leads naturally into evaluation of the employee's performance. Are the most efficient work methods used? What are the employee's characteristic ways of tackling problems, dealing with people, and handling tools and knowledge?

Evaluating employee work habits is useful for predicting areas of future success. For the less than satisfactory employee, evaluation of work habits may uncover the source of difficulty.

Personality Factors

In judging an employee's personality in relation to his work, the manager or supervisor has to ask himself whether he has the required skill and experience in human relations to evaluate personality factors in the employee.

Certainly supervisors need to be aware of the employee's personal traits. Such characteristics as honesty, promptness, industry, and attitudes toward fellow workers are important and frequently critical factors in the job situation.

The full skill of the supervisor is called upon in seeking to correct deficiencies in behavior on the job without causing the employee to suffer a loss of self-esteem or arousing antagonism.

Here again the easiest path is through a discussion of the job requirements and how they fit into the total needs of the organization. If possible, the employee should be led to recognize his own responsibility for certain performance factors.

Evaluation Problems

Besides the pitfalls in evaluating personality traits, other difficulties in performance evaluation include these points:

—Most people dislike being judged or rated according to a form containing standards they have had no part in determining and with which they may even disagree.

—The mechanics of the rating classification are easily overemphasized and can crowd out the human relationship. To counter this, the employee should be made to feel that the supervisor has a genuine interest in him as a person and concern for his welfare on the job. Helpful and frank discussion between supervisor and employee can take place more easily on a basis of mutual esteem, individual interest, and sincerity.

—The coaching role of the supervisor in developing the abilities of his employees must, in the long run, be based not so much upon periodic reviews as upon daily two-way communication and exchange of ideas.

So far as possible, the supervisor's role in appraisals is to suggest possibilities and to

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stimulate the employee to look ahead at his own personal role in relation to the objectives of the cooperative. The supervisor should be both willing and able to talk freely with the employee about methods of achieving these goals.

Planning for the Future

Many cooperatives help their employees plan for the future by adopting a policy of promotion from within and letting employees know it is adhered to wherever possible. Posting job vacancies encourages employees to prepare themselves for promotion by learning additional skills.

A program for the employee's development depends in part upon his performance in present work assignments and indicated ability for more important assignments. The program might include job assignments to:

—Broaden the employee's experience with the cooperative's operations.

—Provide increasing complexities.

—Include delegation of greater authority.

A responsibility frequently overlooked in cooperatives is the need to train and develop replacements at the supervisory level. It must be made clear repeatedly that as existing supervisors move on to new and larger responsibilities or leave the organization trained replacements should be readily available to fill vacancies.

A further need for this type of employee development comes from the expanding nature of cooperatives, with consequent increased demand for supervisors. Many emergency situations could be avoided if existing supervisors were generally alert to the advantages of having a replacement already trained in advance and capable of assuming supervisory responsibilities.

Developing Executives

Executive development is a planned procedure to train personnel with executive caliber. It increases ability to perform the basic functions of management (planning, organizing, directing, coordinating, and controlling) and thereby helps provide executive manpower as required. Such training is usually designed to give a broad perspective of the purposes and functions of the organization.

Lectures, conferences, formal study courses, job rotation, understudy experience, and individual development are usually integrated in an overall program.

The need for well trained, experienced personnel to fill management jobs is a serious problem in many cooperatives.

Boards of directors can help remedy this situation. They can specify in their written policy statement about manager responsibilities or in their contract with the manager that he report his plans and progress for executive development to the board.

Managers of cooperatives can improve their own capacity for larger operations and increased responsibilities. They can also see that qualified personnel participate in training activities and gain experience in all phases of the cooperative's activities. Such participation is valuable to the manager by making it possible for the cooperative to function properly during his absence.

Here are some things that can be done to develop management potential:

—Have key personnel obtain membership in management organizations and attend meetings.

—When practical, have personnel attend short courses in business management at colleges and universities.

—Through weekly staff conferences with all key employees, discuss management matters and problems confronted during the past week. Solicit suggestions for handling and then acquaint conferees with how they were handled. During these same conferences, pose pending management matters and solicit suggestions.

—Periodically, arrange for one key person to work jointly with another key person to learn routine activities in each other's section.

—Periodically, have key personnel with the manager during consultations, considerations, decisions, board meetings, or other activities.

—Encourage key personnel to attend conferences and management institutes conducted by appropriate trade associations and regional or national cooperative organizations.

—Some managers use committee assignments as an employee development tool. Assignments directed toward leadership and development of company functions or objectives are given to selected staff members. Observation of the skill with which assignments are handled reveals the employee's capacity to operate in a constructive leadership role.

—When the manager feels that key personnel have gained sufficient knowledge to be entrusted with managerial affairs of the organization, he may appoint such key personnel by rotation to serve as acting manager during his absence. Naturally, the manager would not appoint anyone as acting manager until the

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board of directors has been fully acquainted with the training program for key personnel and has authorized the manager to make such appointments.

Retaining Good Employees

Programs for recruiting and training good employees must be accompanied by a conscious effort to keep those employees on the payroll. Following are a number of suggestions.

Human Values

To retain the cooperative's good employees, treat them as people.

Donald B. Roark, Director, Cooperative Bank Service, and Deputy Governor, Farm Credit Administration, speaking at a conference sponsored by the American Institute of Cooperation and Farmer Cooperative Service made the point this way:

"Here's what an employee wants and what you must provide:

"1. Recognition as a person. He wants to be treated as an individual, not as a number or a unit in a mass.

"2. Fair treatment. Everybody wants a square deal. The worst management sin is to be unjust.

"3. The sense of belonging. An employee wants to feel the people around him accept his presence as a good thing."

These conditions do not lessen the importance of adequate wages and salaries, attractive employee benefits, and good working conditions.

Incentive Programs

Several years ago Farmer Cooperative Service conducted a survey with farmer cooperatives to determine types of employee incentive programs used. From some 5,000 replies they found that about two-thirds of the cooperatives used some type of incentive program. More farm supply cooperatives had incentive programs for employees than marketing cooperatives. Information on consumer cooperatives indicates no uniform policies or practice on incentive programs.

Key employee benefit packages providing special insurance and retirement annuities for selected employees who continue their service on the cooperative's staff are being more widely used. The cooperative bears the cost of such plans.

Evaluating and Reviewing

No matter how good policies and procedures are they must be adhered to if they are to be of any value—and they must be kept up to date.

Cooperatives of all sorts have found that as business grows, volume of work increases and established methods and procedures may become inadequate or obsolete. Without a periodic review, performance may become lax. Confusion in direction may develop. Workload piles up. Accomplishment bogs down. Employee morale suffers, and the business suffers.

As times change and management techniques change, policies, methods and procedures need updating to conform to changing conditions so the cooperative will advance with the times.

The cooperative's manpower needs should be re-evaluated by the board and manager regularly. This should be part of a long-range projection in the cooperative's overall planning. Many cooperative boards require the manager to submit each year a five-year program. This is revised and updated as needed, with the upcoming year presented in more detail than the ensuing four years.

Such a review and projection examines manpower requirements, staff turnover, recruiting techniques, the training program, salary scale (by category only), and the whole range of employee benefits and incentives.

Cooperatives that do this on a regularly scheduled plan report that they get better results in employee relations than they did when they handled staffing without scheduled evaluation and review.

At one in a series of conferences sponsored jointly by the American Institute of Cooperation and Farmer Cooperative Service, Joseph C. Schabacker, Chairman of Commerce Extension at the University of Wisconsin, cited planning and staffing as two of the five functions of management—in a cooperative or in any kind of business endeavor.

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"Staffing," he said, "is made up of two elements. One has to do with recruiting, selection, and placement of appropriately trained and qualified people in an organization. The other has to do with continuous training.

"Perhaps the most valuable asset of an organization is the people who work for it," Mr. Schabacker pointed out, as have so many other consultants in personnel planning. "Since this is true, we ought to nourish that particular asset, just as we care for the cooperative's machines or other physical assets."

Appendix A. Selected Bibliography

(1) Abshier, George S. and Dahle, Robert D.
1960. Management for Agricultural Marketing Firms. North Carolina State University, Cooperative Extension Service. Raleigh, N.C. 27607

(2) American Management Association
1962. The Personnel Man and His Job. 1515 Broadway, New York, N.Y. 11106

(3) Anderson, Glenn M. and Slettom, Edward E.
1965. Careers in Cooperatives. The Cooperative Foundation, 59 East Van Buren St., Chicago, Ill. 60605

(4) Heneman, Jr., H. G.; Stone, C. Harold; Turnbull, John G.; and Yoder, Dale
1958. Handbook of Personnel Management and Labor Relations. McGraw-Hill Book Co., 330 West 42nd St., New York, N.Y. 10036

(5) Heyel, Carl
1965. The Supervisor's Basic Management Guide. McGraw-Hill Book Co., 330 West 42nd St., New York, N.Y. 10036

(6) Jucius, Michael J.
1955. Personnel Management. Richard D. Irwin, Homewood, Ill. 60430

(7) Kelley, Pearce C. and Lawyer, Kenneth
1961. How To Organize and Operate A Small Business. Prentice-Hall, Inc., Englewood, N.J. 07632

(8) Leon, Ernest L.
1961. Personnel Management Guides for Small Business. Small Business Management Series No. 26, Small Business Administration, for sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

(9) Lumsden, George J.
1968. What a Supervisor Should Know about Developing Capable Employees. The Dartnell Corp., 4660 Ravenswood Ave., Chicago, Ill. 60640

(10) Mandell, Milton M.
1961. The Employment Interview. American Management Assn., 1515 Broadway, New York, N.Y. 11106

(11) Maxwell, Joe E.
1962. Successful Small Business Management. University of Kentucky, Cooperative Extension Service, Lexington, Ky. 40506

(12) National Industrial Conference Board
Forms and Records in Personnel Administration (Sub-title: Studies in Personnel Policy no. 175). 460 Park Avenue, New York, N.Y. 10022

(13) North Carolina State University, Agricultural Extension Service
1969. Proceedings. Twelfth Annual Institute for Cooperative Managers and Directors. Raleigh, N.C. 27607

(14) Phillips, Richard
1957. Managing for Greater Returns. Farmers Grain Dealers Association of Iowa (Cooperative). Des Moines, Ia. 50315

(15) Sayles, Leonard R. and Strauss, George
1960. Personnel. Prentice-Hall, Inc., Englewood Cliffs, N.J. 07632

(16) Stone, Archie A.
1970. Careers in Agribusiness. The Interstate Printers and Publishers, Inc., Danville, Ill.

(17) U.S. Dept. Agr., Office of Personnel
1963. Guides for Supervisors. Washington, D.C. 20250

(18) U.S. Dept. Agr., Rural Electrification Administration
1958. Personnel Practices for Business Security. Washington, D.C. 20250

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Appendix B. Sample Forms

Form 1.

APPLICATION FOR EMPLOYMENT

Date _____

Position Desired _____

Earnings Expected _____

Date Available _____

Print Name _____

Address _____

City-State _____ Phone No. _____

In case of injury notify: Name _____

Address _____

Soc. Sec. No. | | |

Height _____ Weight _____

Sex _____ Birth Date _____

Citizen of U.S.: Yes _____ No _____

Marital Status _____ No. of Dependent Children _____ Other Dependents _____

Physical Defects (explain) _____

Have You Ever Been Discharged from a Position? _____

EDUCATION

School	Name and location	Dates		Years Completed	Dipl./Degree		Major course (subj./Degree)
		From	To		Yes	No	
Grade							
High School							
College							
Graduate School							
Business or Trade							
Other							

Extracurricular School Activities _____

Current Hobbies _____

ARMED SERVICES RECORD: Have you served in the U.S. Armed Forces? Yes _____ No _____

Dates: From _____ To _____ Branch _____ Final Rank _____

Type of Discharge _____ Current Draft Status _____

PERSONAL REFERENCES

Name	Address	Occupation

EXPERIENCE (in chronological order)

Present Employer	Address	Kind of Business
Starting Date	Salaries: Starting / Present	Reason for leaving
Job Title	Supervisor's Name	May we contact?

Description of Work _____

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Form 1.—Continued

EXPERIENCE (continued in chronological order)

Next to last Employer		Address		Kind of Business
Starting Date	Leaving Date	Salaries Starting	Leaving	Reason for Leaving
Job Title		Supervisor's Name		May We Contact?

Description of Work _____

Employer		Address		Kind of Business
Starting Date	Leaving Date	Salaries Starting	Leaving	Reason for Leaving
Job Title		Supervisor's Name		May We Contact?

Description of Work _____

Employer		Address		Kind of Business
Starting Date	Leaving Date	Salaries Starting	Leaving	Reason for Leaving
Job Title		Supervisor's Name		May We Contact?

Description of Work _____

Employer		Address		Kind of Business
Starting Date	Leaving Date	Salaries Starting	Leaving	Reason for Leaving
Job Title		Supervisor's Name		May We Contact?

Description of Work _____

ADDITIONAL EXPERIENCE AND INFORMATION (licenses, special machines, etc.) _____

INTERVIEWER'S COMMENTS _____

Date of Interview _____ Interviewed by _____

Form 2.—Application Form

Name _____ Phone _____ Date _____

Address _____ Referred by _____

Age _____ Birth date _____ Marital status _____ No. children _____ Ages _____

Education: High School _____ College _____

1 2 3 4 yrs. Dates _____ 1 2 3 4 yrs. Dates _____

Present or last position _____ From _____ To _____

Company _____ City _____ Last Salary _____

Supervisor's Name _____ Title _____ Phone _____

Kind of job: (First and later assignments, noting duties and promotions.)

_____

_____

_____

_____

_____

How was your supervisor to work with? _____

What did you like about the job? _____

Reasons for leaving _____

Whom do you know here? _____

Other jobs:

	Company	City	Supervisor	Kind of job	Date From	Date To	Why Left
1							
2							
3							
4							

References: (not former employers)

Name	Address	Occupation

6642

Form 3.—Application Card

A B C D E F G H I J 1 2 3 4 5 6 7 8 9

1. PRINT LAST NAME FIRST MIDDLE

5. SOCIAL SEC. NO.

2. NUMBER AND STREET ADDRESS, R.D. OR P.O. BOX NO.

4. TELEPHONE NO.

3. CITY STATE ZIP CODE

6. DATE OF BIRTH (MO.) (DAY) (YEAR)

7. ☐ MARRIED ☐ DIVORCED ☐ SINGLE ☐ SEPARATED ☐ WIDOWED

8. HEIGHT (FT.) (IN)

9. WEIGHT (POUNDS)

11. IF VETERAN, ENTER YOUR LAST MILITARY SERVICE

ENTRY ON ACTIVE SERVICE (MO.) (DAY) (YEAR)

RELEASE FROM ACTIVE SERVICE (MO.) (DAY) (YEAR)

SERIAL NO.

12. IF NEEDED FOR WORK, DO YOU HAVE

TOOLS ☐ YES ☐ NO

AUTOMOBILE ☐ YES ☐ NO

LICENSE ☐ YES ☐ NO

TRUCK ☐ YES ☐ NO

13 IF UNION MEMBER, GIVE NUMBER, NAME AND AFFILIATION OF LOCAL

14. CIRCLE HIGHEST YEAR OF EDUCATION COMPLETED AND GIVE DEGREES RECEIVED

GRADE SCHOOL 1 2 3 4 5 6 7 8 | HIGH SCHOOL 1 2 3 4 | COLLEGE 1 2 3 4 5 6 7 | DEGREES

NAME SCHOOL AND LIST COURSES OR TRAINING (INCLUDING MILITARY) WHICH PREPARED YOUR FOR WORK. GIVE LENGTH AND DATES ENDED.

TURN TO INSIDE OF CARD

DO NOT WRITE IN THIS SPACE

TITLES	CODES

SKILLS, KNOWLEDGE, ABILITIES — DATES

TEST RESULTS

WILLING TO LEAVE CITY ☐ YES ☐ NO

WILLING TO LIVE AT WORK ☐ YES ☐ NO

APPLICATION CARD

IMPORTANT CIVILIAN AND MILITARY EXPERIENCE

DESCRIBE YOUR LONGEST AND MOST IMPORTANT JOBS. BEGIN WITH YOUR MOST RECENT JOB

15. NAME EMPLOYER OR BRANCH OF MILITARY SERVICE
16. ADDRESS
17. EMPLOYER'S BUSINESS
18. LENGTH OF JOB | DATE ENDED | PAY
19. NAME JOB AND DESCRIBE EXACTLY WHAT YOU DID AND HOW YOU DID IT

20. NAME EMPLOYER OR BRANCH OF MILITARY SERVICE
21. ADDRESS
22. EMPLOYER'S BUSINESS
23. LENGTH OF JOB | DATE ENDED | PAY
24. NAME JOB AND DESCRIBE EXACTLY WHAT YOU DID AND HOW YOU DID IT

25. NAME EMPLOYER OR BRANCH OF MILITARY SERVICE
26. ADDRESS
27. EMPLOYER'S BUSINESS
28. LENGTH OF JOB | DATE ENDED | PAY
29. NAME JOB AND DESCRIBE EXACTLY WHAT YOU DID AND HOW YOU DID IT

30. NAME EMPLOYER OR BRANCH OF MILITARY SERVICE
31. ADDRESS
32. EMPLOYER'S BUSINESS
33. LENGTH OF JOB | DATE ENDED | PAY
34. NAME JOB AND DESCRIBE EXACTLY WHAT YOU DID AND HOW YOU DID IT

35. NAME EMPLOYER OR BRANCH OF MILITARY SERVICE
36. ADDRESS
37. EMPLOYER'S BUSINESS
38. LENGTH OF JOB | DATE ENDED | PAY
39. NAME JOB AND DESCRIBE EXACTLY WHAT YOU DID AND HOW YOU DID IT

6643

Form 4.—Application for Employment

READ CAREFULLY, WRITE CLEARLY, ANSWER ALL QUESTIONS APPLICABLE TO YOU. AN INCOMPLETE APPLICATION WILL NOT BE CONSIDERED.
(All information treated confidentially)

Date _____

Name _____ Home telephone number _____
(Please print plainly)

Present address _____ _____ How long have you lived there? _____
No. Street City State

Previous address _____ How long did you live there? _____
No. Street City State

Business address _____ Business telephone number _____
No. Street City State

Sex: ☐ M, ☐ F; Date of birth ____ 19____ Height _____ft. _____ in. Weight _____ lbs. Are you a citizen of the U.S.? ☐ Yes, ☐ No.	☐ Married; Date _____ 19____ ☐ Single, ☐ Engaged, ☐ Separated, ☐ Widowed ☐ Divorced; Date _____ 19____	Their No. children ___ ages _____ No. other dependents ___ Ages _____ Soc. Sec. No. _____

Position applied for _____ Earnings expected $ _____
Who referred you to this Company? _____
Have you ever applied to, or been employed by, this Company? _____ If so, when? _____ Where? _____
Names of relatives employed by this Company _____ How related? _____

EDUCATION

Type of School	Name and Address of School	Course Majored in	Check Last Year Completed				Graduate? Degrees Received	Last Year Attended
Elementary			5	6	7	8	☐ Yes, ☐ No.	19
High School			1	2	3	4	☐ Yes, ☐ No.	19
College			1	2	3	4		19
College			1	2	3	4		19
Graduate School			1	2	3	4		19
Business or Trade School			1	2	3	4		19
Correspondence or Night School			1	2	3	4		19

If you did not graduate from high school, what was the reason? _____
Who paid for your education? _____

PHYSICAL STATUS

List physical handicaps, major illnesses or operations _____

Give name and address of your doctor _____
Did you ever have to give up your work due to ill health? _____
Have you ever received Workmen's Compensation (Not unemployment) benefits due to injury? _____
If so, state briefly the reason _____

If accepted for employment, will you take a physical examination? _____
Give date of your last physical examination _____
Would you be willing to accept temporary or part-time work? _____
On what date can you start if hired? _____ 19___. How much notice do you require? _____
What languages other than English do you speak? _____

6644

Form 4.—Continued

WORK HISTORY

Beginning with the most recent, list below the names and addresses of all your employers: (Include military service) a. Company name b. Address and telephone number	Kind of Business	Time Employed From Mo.	Time Employed From Yr.	Time Employed To Mo.	Time Employed To Yr.	Nature of Work at Start
1. a. _____ b. _____						
2. a. _____ b. _____						
3. a. _____ b. _____						
4. a. _____ b. _____						
5. a. _____ b. _____						
6. a. _____ b. _____						
7 a. _____ b. _____						
8. a. _____ b.						

Indicate by number_____any of the above employers whom you **DO NOT** wish us to contact.

Were you ever bonded? ☐ No, ☐ Yes, On which jobs?_____

References (Not former employers or relatives)	Address	Phone Number
1._____		
2._____		
3._____		

MISCELLANEOUS INFORMATION which may be of further help in considering your application.

What Cooperative Association Do You (or Your Family) Patronize at Present?_____

What Cooperative Publications Do You Subscribe For?_____

_____

Official Positions, If Any, You Have Held in Organizations You Have Belonged To?_____

_____

List Organizations You Belong to, excluding those the name or character of which reveal the race, creed, color, national origin or ancestry of its members._____

_____

Office Machines You Can Operate: _____

_____

Words Per Minute Speed: Typing: _____ Shorthand: _____

Would you be willing to leave your present home community for a satisfactory employment opportunity? ☐ Yes ☐ No

(Continued)

6645

Form 4.—Continued

WORK HISTORY

Earnings Per Month at Start	Nature of Work at Leaving	Earnings Per Month at Leaving	No. of People Supervised by you	Reasons for Leaving If resigned or discharged, please state reason.	Name of Immediate Supervisor
					Name Title
					Name Title
					Name Title
					Name Title
					Name Title
					Name Title
					Name Title
					Name Title

PERSONAL

Do you have income outside employment? ☐ Yes ☐ No. If yes, amount and source? _____

Do you: ☐ Own your home? ☐ Rent? ☐ Board? ☐ Stay with friends? Other? _____

(If you rent) What monthly rent do you pay? $ _____ Do you own your furniture? ☐ Yes, ☐ No

Is your spouse employed? ☐ No, ☐ Yes, part time, ☐ Yes, full time; Kind of work _____ Spouse's earnings

$ _____ per _____. Full name of spouse _____ Spouse employed by _____

_____

Do you carry life insurance outside your present employment? ☐ No, ☐ Yes; Amount $ _____ Do you own an automobile?

Make _____ Year Model _____

Name, address, telephone number, relationship of person

to be notified in case of emergency _____

Are there any other experiences, skills, or qualifications which you feel would especially fit you for work with this Company? _____

_____

_____

_____

NOTE: If your name has been changed by marriage, please print your original family name.

I hereby authorize this company to investigate all statements contained in this application. I understand that misrepresentation or omission of material facts will be cause for dismissal.

Here _____

Your Signature _____

6646

Form 4.—Continued

Have you ever been in business for yourself? _____

Where? _____ Nature of business? _____

Why did you discontinue? _____

If business was sold, why? _____

_____

Have you ever been discharged or requested to resign from any position? _____

If so, give particulars _____

_____

_____

Have you ever been arrested? _____ Give date, place and offense. (Do not mention traffic violations) _____

_____ _____

Have any suits been instituted or judgment obtained against you for indebtedness _____ By Whom? Give Name and address _____

DO NOT WRITE BELOW THIS LINE

Tiffin-Lawshe score: _____ Minnesota Clerical: _____

AGCT: _____ Practical Judgment: _____

Watson Glaser: _____

Others: _____

Comment: _____

_____

_____

_____

_____

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Interviewer

6647

Form 5.—Standard Position Description

_____ Date _____
(Name)

POSITION: _____

Department: _____

Reports To: _____

Position Objective: _____

Duties and Responsibilities: _____

6648

Form 6.—Phone Reference Check

(Contact two or more former employers if possible)

My name is _____ My company, the XYZ Cooperative, has been reviewing the application of Mr. _____ for a position in our company. He has indicated he was once employed by you. We believe Mr. _____ has the qualifications we are seeking, but before we make a final decision we need to know a few details of his work with you.

Name of person giving information _____. His title _____. His phone _____. His firm name _____.

1. Did you employ Mr. _____? Yes ____ No ____
2. For how long? _____
3. What was his assignment? _____
4. Was his work satisfactory? Yes No If "No," wherein was he deficient? _____
5. Did he get along well with his co-workers? Yes__ No__
6. Why did he leave your employ? _____
7. Would you rehire him? Yes__ No__ If "No," why not? _____
8. Was he ever absent, except for illness or vacation? Often__ Seldom__ Never__
9. Did he have any administrative or supervisory responsibilities? Yes__ No__
10. Did his assignment involve any responsibility for company funds? Yes__ No__ If "Yes," did he ever have any shortages? Yes__ No__
11. Did he have any personal problems that might affect his work? Financial__? Domestic__? Excessive drinking or gambling__?
12. He reports earning $_____ per_____ when he left your firm. Is that the correct amount? Yes___ No___
13. What, in your judgment, were his strongest characteristics? _____

His weakest? _____

Interviewer _____

Division _____ Date _____

6649

Form 7.—Skill Questionnaire

SKILL QUESTIONNAIRE

(Name of Plant)

Employee's Name _____ Payroll or Badge No. _____
(Write last name first)

Sex ____ Date of Birth _____ Assigned Dept. _____
(Mo.-Day-Year)

Present Payroll or Plant Title _____ Length of Serv. on Present Job _____
(Years)

You are being asked to fill out this form in order to determine the skills you possess. Do not hesitate to ask questions of those who have been appointed to assist you. Read the directions carefully and make sure that you understand what information is wanted.

What is the nature of your training or experience with the following:

Skills	Amount of work experience in years	No work experience but training in years	Where and When	Your hobbies which you believe will be helpful
I Plant jobs:*				
II Plant machines:*				
III Plant instruments:*				
IV Other				

NOTE*—To be filled in to cover plant needs.
Section IV is left blank so as to provide for any other skills worker might wish to record.

Education (*Circle highest grade completed*): Grade School 1 2 3 4 5 6 7 8 High School: 1 2 3 4 College: 1 2 3 4

Major Subjects _____

Are you (*in your opinion*) using your highest skill in your present job? Yes___ or No___ If not, what plant jobs would use your higher skills? _____
(Give specific plant titles)

Do you think you would like any work other than your present job?___ If so, what work, and why? _____

Would you accept training?____ What would you like to learn? _____

6650

Form 8.—Sample Score Sheet For Employment Interview Questionnaire

Name of Applicant: _____

Address: _____ Phone No.: _____

Age: _____ Married: _____ Children: _____

How Was Applicant Obtained? Referred by _____

Answered Ad _____

Patron Referral _____

Through School _____

Through Employment or Counseling Service _____

Other _____

References:

1. _____

2. _____

3. _____

QUALITY	DESIRABLE ANSWERS	UNDESIRABLE ANSWERS
Customer Needs		
Ability to Size-up		
Ambition		
Curiosity		
Friendliness		
Honesty		
Initiative		
Mechanical Aptitude		
Orderliness		
Originality		
Self Control		
Versatility		
Interest in the Field		

Total Desirable Answers _____

Total Undesirable Answers _____

Your own evaluation of applicant _____

Disposition:

Hired: _____

Would have hired, but applicant decided against: _____

Will hire as soon as have opening: _____

Applicant does not meet standards for the job: _____

6651

Form 9.—Standard Job Specification

POSITION:

MIXER AND MILL OPERATOR

DEPARTMENT: Feed

POSITION OBJECTIVE: To operate all milling equipment.

DUTIES AND RESPONSIBILITIES:

1. Operate controls to draw ingredients from bins to bulk cart in strict accordance with formulas.
2. Obtain and dump bagged ingredients in mixers.
3. Meter and dump liquids in mixer.
4. Dispense drugs as required and maintain inventory controls.
5. Change grinder screens as required.
6. Start, stop, and check operation of hammer mill.
7. Line up grinding.
8. Maintain all operating records necessary.
9. Balance and adjust all scales at least once a week.
10. Sweep and clean up mixer area once a day.
11. Dust off equipment once a week.
12. Make out all tickets.

MAN REQUIREMENTS:

1. Must have mechanical aptitude.
2. Must have a high school education or equivalent.
3. Must understand all mill policies and operating procedures.
4. Must understand CO-OP Feeds and CO-OP Feed programs.
5. Must be knowledgeable of drugs and their uses.

6652

Form 10.—Merit Rating

Name of employee	Period covered	Date rated	Rated by
Position	Department	Date reviewed with employee	

Major results expected

1	2	3	4
Gets increased sales of: Lubrication jobs by_____ % Brake jobs by_____ % Tuneup by _____ % Wheel alignment by_____ % Tires and tubes by_____ % Exhaust systems by_____ % Batteries by_____ % Auto accessories by_____ %	Instructs shop employees on how to carry out assignments, thereby improving efficiency, production and performance	Maintains customer acceptance of products and services	Carries out other duties as directed by manager

Indications of Performance

Percent of sales increase in assigned commodities Number of potential studies completed Number of service and sales expansion programs instituted	Amount of time spent in on-the-job training Length of time taken to get employees up to standard performance	Number of complaints resulting from inadequate product knowledge Number of product or work complaints or questions answered satisfactorily Number of problems caused by not keeping abreast or reporting	Number of times studies are completed Number of problems resulting from inadequate control

Actual Performance
(use back of sheet for additional comments)

Rating (See Below)

Weight 40	Weight 30	Weight 20	Weight 10
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5

1 Has not turned out the amount of good work expected—performance would be considered ***unsatisfactory***.
2 Has not reached the standard of work expected on all phases of the job—performance ***progressing*** but would be considered only ***fair***.
3 Has consistently attained the standard of work expected on all phases of the job—performance would be considered ***very satisfactory***.
4 Has consistently exceeded the standard of good work expected by maintaining high outputs over the period—performance would be considered definitely ***superior***.
5 Has exceeded the standard of work expected by sustaining over the entire period unusually high output—performance would be considered ***outstanding***.

6653

Form 11.—Recommendation For Salary Increase

XYZ COOPERATIVE Date

Department Head or Supervisor whose signature appears below hereby submits this recommendation for approval of the General Manager.

Name of Employee	Department		Date Employed
Present Position	Present Salary	Date of Last Raise	Proposed Salary
Raise Recommended By	Effective Date	Signature of Department Head	

Reasons for Recommending Increase in Salary (Explain in Detail)

The above request for salary adjustment is approved rejected

Signed _____
General Manager

Recorded:

Comptroller	Pension Plan	Group Insurance	Payroll Records

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Form 12.—Appraisal For Promotion

(Submit in duplicate)

PART 1—GENERAL *(To be filled out by Employee)* *(If previous information attached, update only)* Date:

NAME	AGENCY	DIVISION	DATE OF BIRTH

TITLE	GRADE AND SERIES	HEADQUARTERS

EDUCATION (*Schools*)	DEGREES	DATES	MAJORS	SPECIAL QUALIFYING COURSES

SPECIAL TRAINING (*Give dates*)

EXPERIENCE (*Give dates*). USE ADDITIONAL SHEET IF NECESSARY

SPECIAL RECOGNITION, AWARDS, ETC. (*Give dates*)

PART 2—APPRAISAL *(To be filled out by Supervisor)* EMPLOYEE NAME:

NOTE: Items 1 through 11 apply to all employees. Items 12 through 14 for supervisory employees only.

EVALUATION FACTORS	OUTSTANDING	STRONG	AVERAGE	WEAK
1. Technical Competence				
2. Quantity of Work Produced				
3. Quality of Work Produced				
4. Ability to Adjust to Work Situations				
5. Ability to Work Harmoniously with Others				
6. Dependability				
7. Initiative				
8. Judgment				
9. Ability to Communicate Orally and/or in Writing				
10. Ability to Accept Responsibility				
11. Physical Fitness				
12. Ability to Make Decisions				
13. Ability to Plan Work and Analyze Results				
14. Supervisory Ability				

TITLE OF IMMEDIATE SUPERVISOR	SIGNATURE OF IMMEDIATE SUPERVISOR	DATE
TITLE OF REVIEWING OFFICIAL	SIGNATURE OF REVIEWING OFFICIAL	DATE

(Continued)

PART 3—NARRATIVE STATEMENT *(To be filled out by Supervisor)*

1. Present performance:

2. Strong and/or weak points, including training needed to develop potential:

3. Potential for specific job other than the one now in, including potential for position(s) outside normal promotion ladder:

4. Other pertinent information, such as career objective; willingness to transfer, including transfer to broaden experience; outside activities; special training received; awards; etc.:

Form 13.—XYZ Cooperative Personnel Department

Rating Scale For Fieldmen Applicants

_____ 19
Date

Name of Applicant _____

	Rating (*Circle words that apply*)		
	GOOD	FAIR	POOR
AGE	Within age range of best men in our organization	Not at best age, but should do	Too young or too old
AGGRESSIVENESS	Tactful in leading conversation	Fairly aggressive	Just sits and listens
APPEARANCE	Makes a really fine impression	Good enough—he'll get by	Makes a poor impression
ATTITUDE	Shows an ambitious interest in future	Just an average person, but interested in our program	Merely wants a job
CHARACTER	A confidence-inspiring person	Seems all right	Definitely doubtful
EDUCATION	Just right for promoting our line	Adequate	Too much or too little for our work
ENTHUSIASM	Forceful and eager	Average	Doesn't seem to care
EXPRESSION	Direct, clear, and fluent	Average voice and fluency	Poor expression; (or) poor voice
FINANCES	Has done very well for age	Average	Seems a poor manager of money
HEALTH AND ENERGY	Gives appearance of abundant energy	Should be able to keep up	Not much vitality (or) poor health
HOME AND SOCIAL LIFE	Seems happy and well Adjusted	Average	Reports domestic trouble (or) unsocial
KNOWLEDGE OF OUR BUSINESS	Better than average	Average	Little or none
LEADERSHIP	Appears to have executive qualities	May or may not develop	None apparent
MANNERS	Pleasing and appropriate	Passable	Lacks social sense
MATURITY	Serious and thoughtful	Average	Seems immature for age
MENTAL ALERTNESS	Reacts promptly and intelligently	Average	Not impressive
PERSONALITY	Just the type of man we want	Should fit in	Definitely unfavorable
POISE	Pleasant and self-assured	Average	Fidgety and ill at ease
SALES EXPERIENCE	Excellent for our work	Adequate	Inadequate
STABILITY	Looks as though he'll wear well	Should be about average	Seems to be a "floater"

Comments: _____

_____

☐ Recommended for Employment
☐ Not Recommended for Employment

_____
Signed

Form 14.—Employee Reference Check
XYZ Cooperative

To _____ _____ 19_____

_____

The person named below has applied to us for a position as _____. This individual has named you as a reference and has authorized us to address this inquiry to you regarding his character and qualifications. We shall appreciate it if you will kindly insert check marks in the spaces provided below and submit any comments you may wish to make concerning this applicant.

Signed _____

Title _____

Name of applicant _____

Address _____

QUALIFICATIONS	GOOD	FAIR	POOR	REMARKS
1. Diligence				
2. Honesty				
3. Enthusiasm				
4. Truthfulness				
5. Courtesy				
6. Health				
7. Ambition				
8. Memory				
9. Dependability				
10. Habits				
11. Are services satisfactory?				
12. Consistent temperament				
13. Cooperation				
14. Attitude toward customers				

15. How long was he in your employ _____

16. Why did he leave your employ _____

17. Other information _____

Use back of form for any further comments you may wish to make.

Signed _____

Firm _____

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OTHER PUBLICATIONS AVAILABLE

Farmer Co-ops—What Are They? Information 59

Improving Management of Farmer Cooperatives. General Report 120

Employee Incentive Plans of Farmer Cooperatives. General Report 104

What Directors Expect of Managers. Reprint 337

Employee Relations Need Careful Tilling. Reprint 364

Farmer Cooperatives—Farm Business Tools. Agricultural Information Bulletin 275

A copy of each of these publications may be obtained from

FARMER COOPERATIVE SERVICE
U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C. 20250

.6659

VT 014 630
DUNNETTE, MARVIN D.; CAMPBELL, JOHN P.
A RESEARCH CENTER FOR THE STUDY OF ORGANIZATIONAL PERFORMANCE AND HUMAN EFFECTIVENESS: ANNUAL PROGRESS REPORT (JULY 1, 1970-JUNE 30, 1971).

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ABSTRACT - PRESENTED IN THIS DOCUMENT IS A SUMMARY OF RESEARCH ACTIVITIES AND RESULTS CARRIED OUT UNDER THE CENTER FOR THE STUDY OF ORGANIZATIONAL PERFORMANCE AND EFFECTIVENESS. SUMMARIES ARE PROVIDED THROUGH JUNE 30, 1971 FOR THE FOLLOWING AREAS: (1) MOTIVATIONAL AND BEHAVIORAL CONSEQUENCES OF ORGANIZATIONAL INCENTIVE SYSTEMS, (2) SOURCES OF VARIATION IN IMPRESSION FORMATION IN INTERPERSONAL PERCEPTION, (3) DEVELOPMENT OF AN INTEGRATED SYSTEM FOR AUDITING-EVALUATING THE PERSONNEL FUNCTION, (4) ABILITY-APTITUDE TESTING, (5) MODELS OF MANPOWER ALLOCATION AND PERSONNEL UTILIZATION, (6) ORGANIZATIONAL STUDIES, (7) PERSONAL VALUE SYSTEMS OF NAVAL OFFICERS, (8) OPTIMAL STRATEGIES FOR MULTIVARIATE PREDICTION AND VARIABLE SUBGROUPING, (9) VOCATIONAL INTEREST MEASUREMENT, (10) PERCEPTUAL-MOTOR LEARNING AND SKILLED BEHAVIOR, AND (11) VOCATIONAL AND EDUCATIONAL SIGNIFICANCE OF GUIDANCE TESTS. (AUTHOR/JS)

VT 014 630

THE CENTER FOR THE STUDY OF ORGANIZATIONAL PERFORMANCE AND HUMAN EFFECTIVENESS

University of Minnesota
Minneapolis, Minnesota

Office of Naval Research Contract
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A RESEARCH CENTER FOR THE STUDY OF ORGANIZATIONAL PERFORMANCE AND HUMAN EFFECTIVENESS: ANNUAL PROGRESS REPORT, 1 JULY 1970 - 30 JUNE 1971

Marvin D. Dunnette and John P. Campbell

Technical Report No. 4007

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A RESEARCH CENTER FOR THE STUDY OF ORGANIZATIONAL PERFORMANCE AND HUMAN EFFECTIVENESS

ANNUAL PROGRESS REPORT, 1 JULY 1970 - 30 JUNE 1971

By

Marvin D. Dunnette and John P. Campbell

October, 1971

ONR Contract
No. N00014-68-A-0141-0003
Project No. NR 152-293

Center for the Study of Organizational
Performance and Human Effectiveness
307 Elliott Hall
University of Minnesota
Minneapolis, Minnesota
55455

UNCLASSIFIED

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FOREWORD

This report was prepared by Drs. Marvin D. Dunnette (Professor of Psychology and Program Manager), and John P. Campbell (Associate Professor of Psychology and Industrial Relations and Associate Program Manager), Center for the Study of Organizational Performance and Human Effectiveness, 307 Elliott Hall, University of Minnesota, Minneapolis, Minnesota 55455.

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The authors wish to acknowledge the assistance of all the personnel who have contributed to the conduct of the research reported in this progress statement. A complete listing of these persons will be found in the section on personnel. Also, the authors gratefully, acknowledge the financial and liaison assistance provided by the personnel of the Office of Naval Research, especially Dr. Victor Fields, the contract technical monitor.

* * *

SUMMARY

This is a progress report summarizing research activities and results carried out under the Center for the Study of Organizational Performance and Human Effectiveness through 30 June, 1971. We present brief summaries of research activities under eleven major areas:

1. Motivational and Behavioral Consequences of Organizational Incentive Systems
2. Sources of Variation in Impression Formation in Interpersonal Perception
3. Development of an Integrated System for Auditing - Evaluating the Personnel Function
4. Ability-Aptitude Testing
5. Models of Manpower Allocation and Personnel Utilization
6. Organization Studies
7. Personal Value Systems of Naval Officers
8. Optimal Strategies for Multivariate Prediction and Variable Subgrouping
9. Vocational Interest Measurement
10. Perceptual - Motor Learning and Skilled Behavior
11. Vocational and Educational Significance of Guidance Tests

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A RESEARCH CENTER FOR THE STUDY OF ORGANIZATIONAL PERFORMANCE AND HUMAN EFFECTIVENESS

The Center for the Study of Organizational Performance and Human Effectiveness (CSOPHE) was officially established as an interdisciplinary research unit of the University of Minnesota on July 1, 1969. Its establishment was made possible by support received under ONR Contract No. N00014-68-A-0141-0003, Project No. NR 152-293. This was a significant step in the direction of creating a center of excellence for the conduct of applied manpower research. CSOPHE is a loosely coordinated yet cohesive program of research organized for the purpose of discovering and implementing good strategies for the wise utilization of human resources in the world of work. Center staff members view human effectiveness in work as a function of intricate interactions between persons, jobs, and organizations. Thus, various aspects of CSOPHE's research program are devoted to studies of individual (personal) characteristics, organizational characteristics, and job characteristics. In addition to these more or less "static" entities of individuals, organizations, and jobs, studies also are underway of the processes involved in implementing appropriate person-job-organization mixes and of procedures for auditing the relative effectiveness of different man-job-organization interactions.

The research program of the Center represents an extension and expansion of programs of applied manpower research which have been conducted with other sources of support over several decades within the Psychology and Industrial Relations Departments at the University of Minnesota. Previous research is discussed in this report only occasionally when necessary to lend continuity to the exposition. Only research directly supported by the present contract is discussed in detail on the pages that follow.

1. MOTIVATIONAL AND BEHAVIORAL CONSEQUENCES OF ORGANIZATIONAL INCENTIVE SYSTEMS

Several studies of contrasting motivational theories of work performance have been carried out. The theories examined include, in particular, Locke's goal-setting formulation, Vroom's valence-expectancy-instrumentality model, Adam's equity concepts, and Porter and Lawler's reward-expectancy-effort model.

In addition to testing the above theories directly, a first step has been taken toward examining the relative contribution of ability and motivational variables in work performance.

1.1 Expectancy Theories of Work and Task Performance

Several studies have been completed which were designed to test various versions of expectancy models in relation to such work and task variables as turnover, productivity, and satisfaction. Research methods have employed field investigations, realistic experimental settings, and laboratory procedures.

1.1.1 Relevant studies undertaken prior to establishing CSOPHE (Graen, Arvey, Dunnette).

All college graduates who left a large midwestern manufacturing company during 1967-68 before they had a tenure of four years were surveyed. Completed questionnaires were received from 495 of the 799 persons originally contacted. A matched group of college graduates with the same job tenure still with the company was selected. Completed questionnaires were received from 525 of 1,080 contacted. Results confirmed that terminees' perceptions of outcomes from their jobs (e.g. recognition, pay, opportunity for accomplishment, etc.) were less congruent with what they had expected than those for respondents still with the company. The point biserial correlation coefficient between tenure and a crude "motivation index"(summated across valence, expectancy, and instrumentality) was .44.

In an experimental study employing high school girls as subjects assigned a tedious clerical task, Graen was able to demonstrate that the instrumentality of effective job performance for obtaining different job outcomes (feeling of achievement or pay) could be successfully manipulated experimentally. Moreover, he demonstrated significant relationships between subjects' levels of job satisfaction and job performance and perceived instrumentalities of their jobs for the achievement outcome.

1.1.2 Expectancy effects on job performance and job satisfaction (Jorgenson, Pritchard, Dunnette).

Male college students were hired at six locations throughout Minnesota. They worked four and one-half hours per day for seven days on a menial, but realistic computer printout search task. They were not informed that they were taking part in an experiment. Some groups of subjects were paid in such a way that they perceived no contingency between their performance and pay. Others were paid in such a way as to perceive a direct relationship between their performance and pay. As would be expected according to simple expectancy-instrumentality theory, subjects paid under conditions of high performance-pay contingency produced more units per hour (about 20% more) than subjects paid under conditions of low performance-pay contingency. However, no systematic differences in either overall job satisfaction or in various facets of job satisfaction (e.g., satisfaction with pay) were shown between the two pay conditions. Analyses designed to test the somewhat more sophisticated predictions of the Porter-Lawler model failed to confirm deductions from it. (Results are to be reported in Technical Report No. 4009.)

1.2 Tests of Equity Theory

1.2.1 Equity effects on job performance and job satisfaction(Pritchard,Dunnette, Jorgeson).

Deductions from Adams' equity formulations were tested utilizing the same groups of subjects described in 1.1.2. Some groups were made to feel underpaid, others equitably paid, and others overpaid. The overpaid manipulation was carried out by carefully avoiding the common error in equity experiments of causing subjects to feel underqualified. Regardless of the expectancy condition (i.e., high performance-pay contingency or low performance-pay contingency), subjects paid equitably produced about 10% more units per hour than subjects made to feel underpaid. Subjects made to feel overpaid

produced only slightly more (about 2-3%) units per hour than equitably paid subjects. Modest evidence also was available suggesting that both "overpaid" and "underpaid" subjects tended to employ cognitive means of inequity reduction by altering their perceptions of the job. For example, equitably paid subjects showed higher overall job satisfaction than either "overpaid" or "underpaid" subjects. Even more interesting, "overpaid" subjects felt less satisfied than either of the other two groups (equitably paid were most satisfied; "underpaid," intermediate) with how their abilities were being utilized in the job. These findings are compatible with an explanation suggesting that "underpaid" subjects reduced their feelings of inequity behaviorally (reduced performance) and "overpaid" subjects reduced their feelings of inequity cognitively (reduced satisfaction with use of abilities). (Results are reported in Technical Report No. 4002).

1.2.2 Differential effects of equity according to subjects' tendencies to perceive job elements as "inputs" or as "outcomes" (Tornow, Dunnette).

Many aspects of a job situation cannot clearly be classified according to "inputs" (things a person puts into a job) or "outcomes" (things a person gets from a job). Time spent at work is obviously an Input, and pay is obviously an Outcome. But job variety or lack of routine may be seen as taxing (an Input) by some, and as interesting (an Outcome) by others. An Input-Outcome Checklist made up of such ambiguous job elements was developed and shown to be highly reliable in sorting persons according to their tendencies to see things as Inputs or as Outcomes. We reasoned that subjects seeing many Inputs among job elements should be more prone to feelings of inequity during "underpayment" than subjects who see relatively more Outcomes among job elements. In like manner, subjects seeing many Outcomes among job elements should be more prone to feelings of inequity during "overpayment" than subjects who see relatively more Inputs among job elements. To test this notion, subjects who had taken part in the experiments described in 1.1.2 and 1.2.1 were contacted one year after the study had been carried out and asked to complete the Input-Outcome Checklist. After identifying subjects as "Input-Types" and "Outcome-Types", they were subgrouped according to their relative degree of "proneness" toward feelings of over-reward or under-reward. Our expectations were confirmed on three dependent measures: (1) In responding to questions bearing on fairness of pay, Input-Types felt relatively more underpaid, and Outcome-Types relatively more overpaid in the underpayment and overpayment conditions, respectively, than other subjects who experienced those same conditions. (2) When paid hourly, Input-Types produced fewer units per hour than other subjects in the "underpaid" condition, and Outcome-Types produced considerably more units per hour than other subjects in the "overpaid" conditions. (3) Finally, Input-Types and Outcome-Types both showed lower overall satisfaction in their respective "underpayment" and "overpayment" groups than other subjects in the same groups. Thus, these results show that persons may be identified and classified according to the likelihood of their experiencing feelings of inequity and according to the probable magnitudes of their behavioral and cognitive attempts to reduce those feelings of inequity. (Results are reported in detail in Technical Report No. 4004).

1.3 <u>Tests of Goal Setting, Expectancy, and Task Specificity</u>

1.3.1 Task performance as a function of perceived effort-performance and performance-reward contingencies (Arvey, Loehr, Dunnette).

Subjects worked for a short time on a simple but tedious addition task. Subjects were given money prizes for various levels of performance. Prior to beginning the task, different groups were led to believe that different proportions of persons would be allowed, on the basis of their performance, to draw for a prize. Moreover, the chance of drawing a winning number also differed from group to group. We reasoned, according to Vroom's model, that the two likelihoods would affect task performance multiplicatively. As it turned out, only the first likelihood (the odds of performing well enough to draw for the prize) was directly related to task performance. The second likelihood (odds of drawing a winning number) was not related to performance, and the interaction effect, although positive, was non-significant, statistically. (Results are reported in detail in Technical Report No. 4003.)

1.3.2 The effect of goal specificity upon the relationship between expectancy and performance (Loehr, Motowidlo, Dunnette).

A series of experiments has been completed to study what the effect may be of knowing or not knowing the specific goal (e.g., number of units produced, number of problems solved, etc.) toward which one is working. The conceptual meaning of one's expectation of attaining a goal successfully differs according to how exactly he knows what he's shooting for. If one knows only that he is working on a task that is completed successfully by only 25% of persons similar to him, his knowledge is considerably less and different in kind than if he also knows that in order to be numbered among that select subset of persons, he must complete some specific number of units, problems, or whatever. Our findings suggest that highest performance in the former situation is attained when subjects perceive their probability of successful goal attainment to be about .50 (neither too hard nor too easy). In contrast, highest performance toward specific goals occurs when subjects perceive their probability of successful goal attainment to be high. The relationship between performance and expectancy appears curvilinear when the goal is poorly or ambiguously specified. It appears linear and positive (i.e., high expectancy, high performance) when the goal is a specific one. (Details of this study are to be reported in Technical Report No. 4008, now in preparation.)

1.3.3 Relative contributions of motivation and ability to performance variance (Dunnette, Pritchard).

It is widely stated that ability and motivation interact in a multiplicative way to yield task performance. The men who took part in the experiment described above in 1.1.2 and 1.2 took three brief ability(vocabulary, arithmetic, clerical aptitude) tests and also were pre-tested with the actual task they would be working on during the ensuing six days. The tests were combined in a regression equation to reflect pre-test performance. The regression equation was used to predict the mean hourly performance to be expected during the experimental days, and these predictions were correlated with actual average hourly performance on each day. In addition, pre-test performance was correlated with the average hourly performance for each day. Examination of the correlations separately for subjects under different conditions of equity and expectancy is revealing. The results show that task performance, whether predicted by pre-test or with aptitude tests, is most closely related to ability under conditions which may be said to be "most uniformly motivating" - conditions of perceived equity and conditions

where pay is definitely seen as contingent upon performance. The amounts of variance in performance related to pre-test performance and tested aptitudes under the various conditions is shown below:

	Median Proportion Variance in Performance Related to:	
	Pre-Test	Aptitude Tests (Regression)
1. Low Performance-Pay Contingency	41%	28%
* 2. High Performance-Pay Contingency	53%	45%
3. Made to feel "underpaid"	35%	21%
* 4. Equitably paid	54%	41%
5. Made to feel "overpaid"	41%	37%

* Conditions presumed to be "most uniformly motivating"

2. SOURCES OF VARIATION IN IMPRESSION FORMATION IN INTERPERSONAL PERCEPTION

The objective of this research has been to learn about the relative effects of different variables on the nature of impressions formed in employment interviews. Research has been directed toward investigating variables related to the form of interpersonal interaction (e.g. assessment-evaluation, counseling, competition, etc.), variation among persons perceived (individual differences variables), differences in "styles" or strategies used by perceivers, and toward the development of new methods for estimating the degree of difference/similarity between pairs of descriptive protocols (e.g. two perceivers describing the same person or pairs of persons described by the same perceiver).

2.1 Studies Using Group Process and Team Development Interaction

A decision was made to limit the major part of our investigations to perceiver-perceivee interactions of an evaluation/assessment type - specifically, the employment interview setting. Prior to that decision, however, two studies were completed, and one initiated which utilized group process or T-group type of interactions.

2.1.1 Increase in perceiver accuracy as a function of T-group training (Dunnette).

Twelve five-person, like sex groups met weekly for six weeks. Before the meetings began, each group member tried to estimate the responses of each other member to a number of adjectives, preference options, and descriptive phrases. The interaction during ensuing meetings was tape recorded (audio). The members again attempted to estimate the nature of each other's responses to inventories at the last meetings of the groups. Content analyses of the audio recordings were done as a means of estimating the extent of personal and member-centered interaction within the various groups. Increase in accuracy of estimating others' responses between first and final meetings correlated +.57 with amount of personal interaction and +.79 with amount of member-centered interaction.

2.1.2 Predicting individual's verbal behavior in counseling group interaction (Gibson and Dunnette).

A set of audio-taped vignettes was developed to serve as standardized interpersonal stimuli for subjects to respond to. Responses by subjects to these vignettes were scored according to amount of personal and member-centered interaction and compared with each subject's verbal interaction pattern when taking part in an actual T-group. Although differences among subjects in predictability were great, the overall prediction based on the subjects' responses to the standardized vignettes was of moderate to high accuracy (r's in the .50's to .60's). (This study reported in detail in ONR Technical Report No. 4006.)

2.1.3 Team development and task proficiency in a learning situation (Hill, Dunnette).

Members of a general psychology class were divided into groups of six - eight persons each. Each group met weekly to discuss course readings as a supplement to the course lectures. Half the groups, however, were led by an experienced laboratory trainer to emphasize organizational and team development procedures in addition to the usual course-oriented discussions. Measures of course proficiency

(test scores) and patterns of course-oriented behavior(time spent studying, extra reading undertaken, etc., etc.) were gathered throughout the semester. These data are now being analyzed and will be the subject of Mrs. Hill's doctoral dissertation. (We anticipate releasing the results in the form of a technical report during mid 1972.)

2.2 Studies of Interviewer - Interviewee Differences

2.2.1 Instrumentation (Groner, Hopp, Dunnette).

A statistical procedure was developed to be used in summarizing the degree of overlap between descriptive protocols made by pairs of interviewers of the same interviewee and pairs of protocols made by one interviewer of two interviewees. Computation of the overlap statistic, Omicron, is still in the process of being "computerized." (The nature of this statistic and examples of its use are described in a technical report now in preparation.)

Critical incidents (both effective and ineffective) of interviewer behavior were gathered from graduating business school seniors during 1970-71 employment interviews. The incidents were categorized according to nine major dimensions of interviewer behavior and used to form interviewer behavior observation description scales. (This study is being summarized for release as a technical report.)

Five standard video tapes of 30 minute employment interviews were produced. The interview content was designed to equate length of interview time and the amount of information transmitted. The interviews include three interviews with black applicants and two with white applicants. The applicants role played their responses so as to convey generally favorable and unfavorable impressions. These standard interview tapes are now available for use in studying such variables as race and interviewee"quality" as they affect interviewer impressions during employment interviews.

2.2.2 A pilot investigation of encoding reliability and interviewer-interviewee effects of descriptive content.

Seven students viewed video tapes of interviews with the highly qualified white(HW), the highly qualified black(HB), and the poorly qualified black(LB). Each subject wrote free response descriptions for each of the applicants portrayed. The descriptions were encoded by two content scorers using the encoding and scoring procedures developed in earlier analyses. Each scorer encoded the descriptions once and scored them twice, thereby yielding information relevant to both inter-scorer and intra-scorer (test- re-test)reliability.

Results of this pilot investigation show the following:

Each scorer encoded the same number of meaning units for each applicant. However, although the total number of meaning units encoded by each scorer was the same, the actual construction of the encoded meaning units differed. Scorer #1 had high intra-scorer reliability; i.e. he scored the same meaning units in the same subcategories the second time as he had done the first time. There were only two meaning units out of a total possible of approximately 350 that were not scored in the same subcategory the

second time as they had been the first time. (See the table below).

	Descriptive Films:			Inferential Films:			
	Low-Black	High-White	High-Black	Low-Black	High-White	High Black	Total
Scorer #1, Intra-Scorer (Test-Retest)	* 16, 0	25, 0	12, 2	88, 0	91, 0	108, 0	350, 2
Scorer #2, Intra-Scorer (Test-Retest)	16, 1	25, 2	14, 2	83, 9	86, 7	104, 4	328, 25
Inter-Scorer Time 1	16, 1	24, 4	11, 2	81, 13	81, 18	91, 12	304, 50
Inter-Scorer Time 2	16, 0	24, 2	13, 2	86, 4	82, 18	102, 10	323, 36

* The first entry in each cell is the number of meaning units scored in the same subcategory across the two scoring times or across the two different scorers, depending on the cell.
The second entry is the number of meaning units scored in different subcategories across the two scoring times or across the two different scorers, depending on the cell.

Note: the number of meaning units scored in different subcategories may be an inflated figure, since, in many cases, simply placing one meaning unit in a different subcategory resulted in two meaning units differing between the two scorings.

The second was also highly reliable across the two scoring times with only 25 meaning units out of a total possible of over 300 that were not scored in the same subcategory the second time as they had been the first time. (See above table).
There appears to be little difference in intra-scorer reliability between descriptive and inferential meaning units with reliability in both instances being high.
The inter-scorer reliabilities were also high although not as high as the intra-scorer reliabilities. It should also be noted from Table 1 that the inter-scorer reliabilities were higher for the second scoring than for the first.
Results also show that individuals differ consistently in the number of total meaning units they use to describe the same applicant. In other words, some subjects use more meaning units (write more) than other subjects. (See the table below).
Individuals differ consistently in the proportion of descriptive and inferential meaning units they use. There are always more inferential meaning units used than descriptive meaning units, even for the subjects who write less.

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	Descriptive Films:			Inferential Films:			Total:			
S	Low-Black	High-White	High-Black	Low-Black	High-White	High-Black	Low-Black	High-White	High-Black	Total
1	3	2	0	16	18	21	19	20	21	60
2	2	4	2	9	7	12	11	11	14	36
3	0	2	0	17	15	21	17	17	21	55
4	0	8	3	15	14	15	15	22	18	55
5	2	3	4	7	9	8	9	12	12	33
6	7	5	3	10	14	17	17	19	20	56
7	2	1	1	14	14	14	16	15	15	46
Tot.	16	25	13	88	91	108	104	116	121	341

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3. DEVELOPMENT OF AN INTEGRATED SYSTEM FOR AUDITING - EVALUATING THE PERSONNEL FUNCTION

3.1 Instrumentation and Procedures

The survey procedure used for all studies reported consists of three phases. In the initial phase a representative sample of employees is interviewed with respect to their satisfaction with areas of staffing, training, and motivation relevant to the particular organization. From these interviews, four items are written for each scale included in the survey.[1] The appropriate scales for the organization are combined in a questionnaire which is administered and analyzed. The analysis contains comparisons of percentages of satisfied and important responses on the various scales, for the total groups as well as relevant subgroupings of employees by age, sex, job level, etc. Phase III consists of a readministration of the same questionnaire after an interval of approximately one year, in order to detect changes resulting from any management action programs. A more detailed description of the Triple Audit technique can be found in Technical Report No. 3001. (Dawis and Weitzel)

3.2 Survey Administration

In the fall of 1970, phases I and II were carried out for the managerial (exempt) employees of six operating companies of a midwestern retailing corporation and for the non-exempt level of one company. Thus, the survey involved seven separate instruments consisting of approximately 40 satisfaction and importance scales each, with 28 of the scales being common to each. The demographic characteristics of the six exempt studies are described in Technical Report No. 9001 (Jury, Weitzel, Dawis and Pinto). In all more than 1200 employees of the corporation were surveyed.

In the spring of 1971, phase III follow-up surveys were carried out for two companies surveyed early in 1970. The total sample included 180 blue-collar workers. The results were analyzed in terms of differences in percentages of "satisfied" and "important" responses between phase II and III.

Future planning for additional administrations include the phase III follow-up surveys of the six exempt studies carried out in the fall of 1970. It is anticipated that additional follow-ups will be carried out with this corporation so as to provide longitudinal data on the nature of attitudes. At the same time, different types of organizations will be surveyed, so as to increase the heterogeneity of the data base.

One spin-off expected soon is the development of a computer program to write a narrative report to organizations which have been audited. The computer will make decisions regarding critical areas to be highlighted from the survey findings, and will present supporting data abstracted from the results.

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[1] A total of 58 scales have been constructed to date, with median scale reliabilities in the .80 to .85 range. Approximately only 10% of the scale reliabilities fell below .70.

3.3 Theoretical Approaches to Job Satisfaction

3.3.1 Four-factor model.

One of the important results of the studies completed thus far using data from the managerial sample is the development of a four-factor model of job satisfaction. Derived from a series of factor-analytic investigations, the model proposes two independent factors that are oriented to the individual, and two independent factors that get their meaning from the organization. The factor "Compensation" is the most invariant and most interpretable. It includes scales dealing with amount of pay, compensation practices, and comparative level of pay. "Personal Progress and Development" deals with work challenge, utilization of abilities, advancement opportunities, and career choice. The most general scale, overall satisfaction, almost always is found in this cluster, lending some support to the notion that general satisfaction is tied to feelings of individual growth.

The two other factors were less invariant with changes in the organizational situation. One factor "Supervisory-Subordinate Interaction" includes feedback and recognition from superiors, performance evaluation, and credibility and confidence in management. The other, "Job Context" includes promotion practices (not rate of promotion), other company policies and practices) and clarity of company philosophy.

This model will be developed in further research, and exceptions will be noted especially the invariance across types of organizations and kind of worker.

3.3.2 Determination of Organizational Reinforcer Patterns and Their Implications for Organizational Studies.

Two studies are planned which require the measurement and specification of reinforcer patterns for large numbers of organizations of varying types. An Organizational Reinforcer Pattern (ORP) describes the stimulus conditions present in the organizational situation or environment which fulfill or satisfy the work-relevant needs of organizational members. The instruments for measuring ORP's have been developed and ORP data collected from nine organizations. A data analysis which allows for the specification of the ORP's is to be undertaken soon.

One study is planned which proposes a classification system for organizations and uses ORP's as the basis for classification. Organizations having similar reinforcement patterns are classified together to form homogeneous ORP subgroups. When the taxonomy is developed it is possible to classify any organization by assigning it to that subgroup whose ORP is most similar to its own.

This taxonomy will be a valuable tool for Vocational Counselors by enabling an individual to select that set of organizations having reinforcer patterns which are predicted to best correspond to his need pattern.

3.4 Empirical Approaches to Job Satisfaction

3.4.1 The influence of organizational variables on patterns of employee job satisfaction responses.

In this study job satisfaction data for managerial employees from five companies are analyzed. The patterns of satisfaction were expected to vary from one organization to another due to variations in size, structure, nature of business, etc., but were expected also to have some common factors because of exempt employee similarities. The results indicated two factors, Compensation and Personal Progress and Development, as common for all companies. Two other factors (Supervisor-Subordinate Interaction, Job Context) varied from company to company. The report of this analysis has been prepared for possible publication. For further descriptions, see Technical Report No. 9002 (Jury, Weitzel, Dawis, and Pinto).

3.4.2 The relation of demographic characteristics to job satisfaction.

Job satisfaction data of exempt employees in six companies were factor analyzed for each of the following demographic grouping: sex, age, education, management level, occupational experience, company tenure, and job tenure. The factors common across organizations (reported in the previous analysis) were common to all groupings of employees. In addition, the factors which varied from company to company, also were perceived differently among the demographic groupings. For more detail, see Technical Report No. 9001 (Jury, Weitzel, Dawis, Pinto).

3.4.3 Organizational difference in the determinants of overall job satisfaction among managerial personnel.

To identify the determinants of satisfaction for managers, a Decremental Stepwise Multiple Regression Analysis was done using the job satisfaction data of the exempt employees of five of the companies. Even though the companies were members of the same corporation, it was expected that determinants would vary from company to company. The analysis revealed interorganizational differences. These results suggest a way of defining job satisfaction in terms of its specific determinants as well as a way of differentiating among organizations. Similar analyses are planned on these same employees when future follow-up job satisfaction data collections are completed. For more information see Technical Report No. 3002 (Nezzer, Dawis, Weitzel, and Pinto). The report has been submitted for publication.

3.4.4 Clustering Individuals into homogeneous need-type subgroups.

A study designed for determining a number of distinctive subgroups of managers in terms of their need patterns has been completed. To identify homogeneous (need type) subgroups, a hierarchical clustering procedure was used to subgroup 548 managers on 27 work-relevant needs. This procedure generated 12 unique need-type subgroups with each subgroup differing from all other subgroups in terms of its own distinctive need pattern and the way its needs are interrelated. The results of this study supported prior findings which report the existence of different need types among managerial personnel.

3.4.5 Moderating effects of need-type in the prediction of job satisfaction

The purpose of this study was to examine the effects of need-type on the relationship between 27 specific work-relevant aspects of employee satisfaction and overall job satisfaction. The proposition investigated was that the pattern of needs of an individual has substantial moderating effects on the prediction of job satisfaction. A decremental stepwise multiple repression procedure was used to predict overall job satisfaction from the 27 specific components of satisfaction for a total sample of 548 managers. The prediction of overall satisfaction from the specific aspects of satisfaction was then carried out for each of the 12 need-type subgroups cited in section 3.4.4. The level of prediction of overall satisfaction for each need-type subgroup was compared with the prediction level of overall satisfaction for the total combined sample. The results showed a substantial improvement in the accuracy of predicting job satisfaction within each of the subgroups as compared to the prediction level for all 548 managers combined into a single group. Thus, the correlations within each of the need subgroups. The results of the study indicate that need type moderates the prediction of job satisfaction.

Further studies are planned to determine the generality of the findings reported here that need type operates as a moderator of the relationship between the specific components of job satisfaction and overall job satisfaction.

4. ABILITY-APTITUDE TESTING

The basic objective of this study is to develop a measure of aptitude which is conceptually independent of measured ability. Analogical reasoning, being the main constituent of g, was chosen as the ability for study. To lend a measure of generality to the study, analogical reasoning items were written in four modes: verbal, pictorial, symbolic and numerical.

4.1 Data on Analogical Reasoning

During the report year, data were collected on 100 word-, 100 picture-, 100 symbol-, and 180 number-analogy items. Each subject answered a small subset of the total item pool, e.g., 60 word and 40 symbol items, 30 word and 30 picture items. Subjects included over 2,000 college students(mainly sophomores), 400 inner-city high school students, 300 suburban high school students, 350 civil service clerical employees, and 90 clients of the Division of Vocational Rehabilitation. (Results of Technical Report No. 3000 indicate effects of item structure on item difficulty in verbal analogies.)

4.2 Rasch Technique for Equivalent Test Forms

According to the study design, one immediate objective is the development of equivalent test forms for pre- and post-testing. The Rasch technique of test scaling is being utilized for this purpose. Two attributes of Rasch scales are particularly suited to the purpose of the study: (1)the invariance of scale values (item, test parameters) regardless of the population on which they were developed, and (2) the invariance of person measurements, regardless of the set of items being used for measurement.

4.3 Cross-Population and Cross-Test Equivalence

Several studies were conducted to examine cross-population and cross-test equivalence. Cross-modality equivalence was examined as well. ("Cross-population equivalence" refers to the equivalence [invariance] of item and test parameters, e.g., log easiness, when obtained or developed on different populations. "Cross-test equivalence" refers to the invariance of ability estimates for the same person when such estimates are obtained through different tests. "Cross-modality equivalence" refers to the equivalence of ability measurements obtained through different test modes, e.g., verbal, pictorial.)

4.4 Analysis to Date

Analysis to date of the data yielded the following results: (1) Estimates of item easiness obtained from samples presumed to differ in ability(e.g., college sophomores vs. high school students; college sophomores vs. civil service employees) were found to correlate highly, often better than .90. However, correlating ordinary item difficulty indices yielded similarly high values. When more stringent item selection criteria were applied,the between-sample correlations for the Rasch values generally increased, often to .99, with the exception of picture analogies values, which showed an erratic pattern. On the other hand, application of more stringent item selection criteria resulted in decreased correlations for the ordinary item difficulty indices; (2) Ability values computed by the Rasch technique

from total test score were found to be nearly identical, regardless of sample used for the computation. The between-sample correlations were .999 in every instance. Ordinary item difficulty indices , of course, varied with the sample used; (3) Person ability estimates computed from different tests by the Rasch technique were found to correlate only moderately high (around .50) and were not superior to raw score or percentile rank correlations; (4) In terms of absolute differences between person ability estimates, the Rasch values were found to be superior to raw scores (lower absolute differences) but not to percentile rank scores. Further studies on the invariance of person ability estimates are being conducted.

5. MODELS OF MANPOWER ALLOCATION AND PERSONNEL UTILIZATION

This project comprises a series of studies designed to develop the application of mathematical models and simulation to effective manpower resource conservation and utilization within organizations.

5.1 Stochastic Process Models

Investigations into the applicability of Markovian Renewal models in manpower analysis. The descriptive and predictive usefulness of the models has been empirically investigated by applying the models in three distinct organizations. One application covered ten years of managerial and professional manpower allocation within an expanding organization. Another covered seven periods of blue collar manpower in a very stable organization. The third application was in an organization that experienced rapid growth and decline.

The usefulness of the models was assessed against two general criteria: the analytical insights provided in the description and understanding of the manpower allocation processes and the accuracy of the forecasts generated by the model.

We have found the models have considerable relevance as analytical and descriptive techniques. The models' predictive accuracy varies greatly depending on such factors as the organization's structural stability, the stated descriptions, and product and labor market factors.

One technical report has been written describing early work in one of these organizations(See No. 7002). Some of the work is also a chapter in a forthcoming book, Manpower and Management Science.

5.2 Analysis of Internal Labor Markets

We have combined our work on the stochastic processes with an emerging set of concepts called the Internal Labor Markets(ILM). The theory of the ILM has emerged in manpower economics as a set of constructs to explain and integrate the allocation, pricing, and training processes that occur within large organizations. The development of the ILM had been at the theoretical level since techniques to operationalize the concepts had not been developed.

Our work has found that the stochastic process models are an excellent method of operationalizing the ILM concepts. The application of the stochastic process models has been applied to the analysis of the ILM's of the three organizations discussed above. A technical report has been written dealing with some of the earlier analysis in one organization. (See No. 7001).

5.3 Integrating Manpower Demand and Supply Forecasts

A project is now underway combining our work on manpower demand and supply projections in one organization. We have also applied the delphi technique to generate manpower forecasts in one organization. The results of the delphi application were presented at the 12th American Meeting of the Institute of Management Services.

5.4 Simulation - Gaming Model

Our development of the manpower management simulation-gaming model for education and research purposes continues to progress. We anticipate it will be operational in early 1972.

5.5 Computer Systems Development

All the projects in this series necessitated the development of new computer programs capable of transforming data in diverse formats into the pre model(s) formats, generating origins and destination matrices, manpower inventories and simulations.

6. ORGANIZATION STUDIES

The research reported here is part of a continuing series of studies concerning organization structure, behavior, performance, and effectiveness. These studies have developed out of earlier studies of criteria of organizational effectiveness. These earlier studies generated factorial dimensions of organization characteristics, and identified various models of organizational effectiveness appropriate to different settings, e.g. research and development, first-line supervision, and general management. The studies conducted during the past year involved continuing analysis of data collected in the earlier studies as well as other projects related to organizational analysis.

6.1 Cluster Analysis of Organization Units

Many organization researchers have noted the need for a typology of organizations. We discuss hypotheses concerning relationships among organizational variables and yet have neither a conceptual nor an empirical typology of organizations. Data descriptive of 18 organizational dimensions of 227 organizational units within larger organizations were collected in earlier studies. These data were submitted to a cluster analysis which produced eight relatively homogeneous clusters of organization units. Each such cluster was relatively homogeneous in terms of the 18 organizational dimensions of organization behavior and performance. Clusters then were compared in terms of other measures such as rated effectiveness, size, and other structural variables. The findings suggest that organization units which differ on variables such as technology and structure achieve equal effectiveness through different patterns of behavior and performance. A first draft of a report of this study has been

prepared and a final report will be ready for release soon (A Cluster Analytic Approach to the Study of Organizations in preparation).

6.2 Effects of Size Variation in Organizations

Organization size is a frequently mentioned determinant and/or modifier of organization behavior and performance. Rarely, however, have size of organization unit and size of parent organization been studied for joint effects on organization behavior and performance. Data descriptive of 18 dimensions of organizational characteristics and rated effectiveness of 386 organization units were analyzed to identify relationships with size of unit and size of parent organization. A fixed effects analysis of variance design was applied in the analysis of size effects. Size effects were identified for only three variables, all related to "supervisory style," e.g. delegation, staffing, and emphasis upon results. None of these variables had appeared relevant in earlier analyses to identify organizational effectiveness models. Further analysis suggests that these variables modify what would otherwise be size relationships with effectiveness; variation in these variables permits organization units of different size to achieve equal effectiveness. Results of this project have been reported to a meeting of the Institute of Management Science and are being prepared for publication.

6.3 Technological Influences upon Organization Characteristics

Technology has long been suspected of influencing organization behavior and performance. Unfortunately, we have lacked any general method for classification of technology. Such a classification technique has been developed from ideas of James D. Thompson (Organizations in Action) and applied in the classification of technology of organization units studied earlier. The basic technological classifications are long-linked, mediating and custom. An analysis of variance design has been applied to identify variation in eighteen organizational dimensions associated with technology. Preliminary results indicate that variance in these dimensions is related to technology. This analysis is not complete, but will be completed and reported in the coming year.

6.4 Inventory of Propositions about Organizational Effectiveness

Organization theory has developed out of independent work in various disciplines. The propisitions generated from these disciplines have not been collected and forced to confront each other. Library research to collect organization propositions from various theorists and researchers from different disciplines has been initiated. This work will be continued with the intended result of an integration, or at least confrontation, of organizational propositions relating to organizational effectiveness.

6.5 Instrumentation for Assessment of Individual Models of Organizational Effectiveness

Earlier research in this series has identified organizational effectiveness models from analysis of group data. An attempt was made to develop instruments for the identification of organizational effectiveness models implicitly held and applied by individual managers. A preliminary instrument was developed and applied in a comparative study of career managers and MBA students. Results of preliminary analysis of these data suggest that the instrumentation is faulty. No further work in this direction is intended at present. (See Technical Reports No. 7000,9000 for development of models).

6.6 Supporting Research

A Master's Thesis which would replicate earlier studies of organizational effectiveness in American organizations in a study of organizational effectiveness in Mexican organizations is under way. This research has been initiated and should be completed in a year.

6.7 Liaison Activities

Professor Thomas A. Mahoney visited the Naval Personnel Research and Development Laboratory, Washington, D.C., to present methods and findings of our studies of organizational effectiveness to the Laboratory staff. This visit was initiated by the R & D Laboratory as an aid in its development of studies of organizational effectiveness of Naval organizations.

Instruments developed for the study of organizational effectiveness have been requested by numerous researchers in the U.S. and Canada for application in related studies. Permission has been granted for use of the instruments and, presumably, this research is underway.

A paper, "Organization Size as an Influence on Organization Behavior", was presented to the XVIII International Meeting, The Institute of Management Science, College on Organization, March, 1971.

7. PERSONAL VALUE SYSTEMS OF NAVAL OFFICERS

This project continues study of the following major research objectives: a theoretically meaningful and useful description of the personal value systems of Naval officers, study of the differences in personal values for officers with different personal and organizational characteristics, and examination of the relationships between personal values and different behavioral measures and outcomes.

7.1 Reference to Pertinent Technical Reports

Detailed results for the reporting period have been presented in the following Technical Reports: Personal Values and Military Administration(No. 5000), Personal Value Systems of Naval Officers(No. 5002), and Administrative Behavior Simulations and Perceptions of Organizational Effectiveness of Naval Officers(No. 5003). These reports have described the development of a Personal Values Questionnaire for Naval officers, presented descriptive data on the value systems of a sample of Naval officers,described the development of instruments to assess reported behavior of Naval officers in several areas including problem solving and perceptions of organizational success and its achievement, and presented descriptive data on the reported behavior of a sample of Naval officers.

7.2 Current Analysis of Previous Report Findings

Results of these reports and one currently being completed (exploring several approaches to assess the relationships found between personal values and reported behavior) may be summarized as follows: that the principal

methodological finding is that meaningful relationships between personal values and reported behavior are found only when value groups are formed through combining conceptual distinctions made from theory (primary orientation and operative value notions) with empirical distinctions (hierarchical cluster analysis methods). This finding is viewed as a refinement which permits more meaningful classification of personal value systems when one is interested in relating values to behavior. Major substantive findings include the following behaviors:

7.2.1 Military versus individualistic clusters.

There is a marked contrast in the personal value systems of at least two groups of Naval officers as identified by the approach mentioned above. One group (Cluster I) places high value on concepts of a distinctive military flavor(such as military goals, military functions and practices, and military groups) while another group of officers (Cluster IV) places high values on concepts which might be termed individualistic in nature (such as personal goals, ideas associated with individuals and ideas associated with groups. While differences in demographic characteristics between the two groups were not large, they do suggest that valuing military concepts over individualistic concepts may be viewed as desirable. Officers who value military concepts (as opposed to those valuing individualistic concepts) are older, have less formal education, have spent more time in the military, have higher rank, have spent slightly longer time in their present rank and have higher job satisfaction scores. These findings are being used as the basis for studying the relationship of values and demographic characteristics to retention problems in a current study.

7.2.2 Problem solving behavior in two clusters.

The analysis of relationships between personal value systems of problem solving of typical incidents encountered by a Naval officer again showed the greatest difference between Cluster I and Cluster IV officers. The differences in problem solving behavior and in perceptions of what makes an effective organizational unit suggest that Value Cluster I officers (as compared to Value Cluster IV officers): use positive reinforcement more, communicate needed information among work group members and view planning as important, use "orders" less often in dealing with subordinates,and seek more information from subordinates in problem solving; furthermore, they have less reliance on recent past practices or reported verbal orders as criteria for problem solving and more reliance on one's own standards of right and wrong, and solve problems without seeking advice from superiors but inform superiors of actions taken.

7.2.3 Effectiveness of officers' organizational units.

There is little difference in the evaluation of the overall effectiveness of the organizational unit to which an officer belonged among officers with different value patterns.

7.3 Outcomes of Research

The major useful outcomes of this research are better understanding of the personal value systems of Naval officers, knowledge about the relationships between personal values and behavior, and providing data and a framework for the study of retention problems.

8. OPTIMAL STRATEGIES FOR MULTIVARIATE PREDICTION AND VARIABLE SUBGROUPING

During the period 7/1/70 - 6/30/71 the activities of this project were centered around the completion of the necessary computer routines (begun the previous year) for: (a) investigating the utility of hierarchical cluster analysis for different indices of covariation; (b) comparing cluster analysis with factor analysis in terms of factor stability and the judged meaningfulness of factor content; and (c) generating random sampling distribution for alternative multivariate prediction strategies. The completed programs were used to test research questions in (b) and (c) above. Area (a) was deferred.

8.1 Comparison of Cluster vs. Factor Analysis

The justification for this part of the project is that the factor analytic model is not really appropriate for the task of identifying maximally homogeneous clusters of variables even though it is often used that way. Also, previous literature suggests that under certain conditions, the degree of sampling error in factor analytic solutions is considerable. The cluster analysis program that has been developed is based on the hierarchical grouping method described by Ward and Hook (1963) which maximizes within cluster homogeneity. The index of homogeneity is the average intercorrelation among variables within clusters and our program begins by computing a k x k correlation matrix and choosing as the first cluster the pair of variables with the highest inter- r. In subsequent stages, variables are added to clusters or new clusters are formed such that the average inter-r within clusters is maximized. The investigator then chooses the solution which maximizes homogeneity and at the same time retains psychological meaningfulness in terms of substantive cluster contents.

Comparative solutions (clusters vs. Factors) were generated on three different pools of attitude type items varying from a 110 item questionnaire of limited reliability to a matrix generated from 20 highly reliable job satisfaction scale scores. In general, the cluster analyses were judged to have greater meaningfulness in terms of item content and were more stable across random samples from the same population. This line of investigation will continue.

8.2 Comparisons of Alternative Multivariate Prediction Strategies

During the period the computing programs were completed which generate empirical random sampling distributions from a simulated population for the following methods of estimating the level of predictive accuracy in a population: multiple regression using all sample data, above regression technique corrected for df by Lord and Wherry correction formulae, cross validated multiple regression estimate, average of double cross validation multiple regression estimates, estimates using zero order validity coefficients and weights, estimates using unit weights.

The crucial statistic for comparative purposes is the average absolute deviation of an estimate (averaged over 100 samples from populations) from the population value when all the data in the sample are used to derive prediction rules that are then used to make predictions for all the people in the population.

This is the value which the researcher is always trying to estimate. Random sampling distributions were generated for these six estimates on four different simulated populations. Results were obtained for predictors and criteria of the kind typically used in applied psychology. Simple cross validation is almost never warranted as a technique for estimating how multiple regression weights will fare in the population. The full sample biased estimate yields fewer errors. The average obtained from double cross validation is better than the full sample biased estimate when: $n < 100$ and validity is low, $n < 200$ and validity and reliability are low, $n < 300$ and validity and reliability are low and number of predictors is high (eight). Of the various formulae for correcting the biased multiple r for degrees of freedom, the Wherry estimate is superior to the Lord estimate. Concerning the question of whether multiple regression, using zero order validites as weights, or simply using unit weights yields more accurate predictions in the population, it was found that: if $n > 400$ use multiple regression weights; if $100 < n < 400$ use zero order validities as weights; if $n < 100$ use unit weights.

9. VOCATIONAL INTEREST MEASUREMENT

9.1 Organization of Files of Vocational Interest Inventory

One major segment of our activity in this final year of Themis funding has been the organization of files for continued use. We have a very elaborate archival system of vocational interest inventory data, easily the largest of its kind in existence. The basic problem is how to maintain these files for continued research, as it is difficult to predict exactly what use will be made of them. We have moved in the direction of storing everything on magnetic tape, where the individual is filed as a member of an occupational group. We have not filed each case individually, as we wish to avoid any problems of confidentiality. Proceding in this manner guarantees the individual anonymity, but it does make it more difficult if one wishes to do some kinds of research, such as, for example, separating out individuals who have particular patterns on their profiles. One major production of the year was a lengthy bibliography of research on vocational interests.

We now have a large battery of computer tapes with both basic item response data, and a variety of summary statistics. We also have a library of programs useful for working with the raw data and descriptive statistics. These will allow us to continue working with these data after cessation of Themis funding.

9.2 Holland Classification Scales for Women

Another project completed during this year, using these data, involved

the development of the Holland classification scales for women. In the past, Holland's classification scheme has been used to study the male occupational samples that are in the archieves, and this past year we did the same kind of study of female occupations. Basically, this meant studying whether or not the Holland occupational classification system worked well with our samples of employed females. In general, it did. His six classifications - Realistic, Investigative, Artistic, Social, Enterprising, and Conventional - are useful classifications for women's occupations as well as men's.

9.3 Vocational Interest Inventory - Discriminatory Practice?

A third type of research was begun on the study of the effects of having forms of the vocational interest inventory - male and female. Specifically, is this a discriminatory practice? Substantial information was organized to decide whether or not the existence of the two forms operates in a way to maintain occupational stereotypes among women. However, while these data have been organized so that some information can be gained on this point, initial scanning reveals no clear-cut conclusions. This research continues.

10. PERCEPTUAL - MOTOR LEARNING AND SKILLED BEHAVIOR

Effective performance of any complex skill involves the integration of a number of simpler behavioral components. The long-term objective of research on complex skills reported here is the identification and description of the simpler components contributing to the criterion skill of interest. The specification of the component behaviors (including processes of perception, information processing, and psychomotor movement) is tested by formulation of a skill composition model which attempts to predict performance on the criterion task, at any stage of practice, according to the proposed temporal combination of the component activities.

10.1 Development and Instrumentaion of the M.T.S.

The M.T.S. (Minnesota Tracking System) is a general-purpose apparatus for the study of single and multipart compensatory tracking. The basic device includes the capability for visual display in from one to four dimensions (with two five-inch CRT's mounted side-by-side) and manual response in four dimensions (two hand-held controls, each of which may be switched to enter corrective adjustments by fore-aft and left-right rotations. Prior to the present report period, generation of the stimulus forcing function and analos-to-digital conversion and analysis of data were performed off-line at the Hybrid Computer facility of the University of Minnesota's Space Science Center. Design modifications were begun during this report period to instrument (a) on-line generation of the tracking forcing function; and (b) on-line analog-to-digital conversion and data recording. These changes effect a very substantial economy in hybrid computer usage, as well as greatly increased flexibility of research use of the MTS. The system still requires computer analysis of the digital recordings, but this can be done off-line in a fraction of the time previously required.

10.2 Independence of Component Tasks in Multidimensional Compensatory Tracking (Dick, Fox)

This study was a partial replication of an earlier investigation by Chernikoff and LeMay(1963) involving relative motion tracking under conditions of (a) single dimension movements on two displays vs. two-dimensional movements on a single display; and (b) control adjustments in one dimension with each hand vs. single hand movements in two dimensions. The partial replication was designed to validate the revised MTS against a source of stable data. The basic question involved the extent of simultaneous corrective movement for two psychomotor components, measured singly, when criterion performance indexed the overall system accuracy of components measured jointly. Twelve adult males received four days of practice under the various control-display conditions noted above. The results consistently ranked the conditions from: one stimulus source, one hand best, to two sources and two hands poorest, thus confirming earlier results and showing that data gathered on the MTS may be expected to generalize well to other types of compensatory tracking apparatuses. Most importantly, the results showed that both absolute movement and movement accuracy in one control dimension were statistically independent of movement and accuracy in the other control dimension. Thus, although the task appeared superficially to require simultaneous movement adjustments in its several parts, i.e., psychomotor coordination(as proposed on the basis of correlational analysis of psychomotor performance in such tasks),the experimental data obtained gave no support to the idea of integrated movement dependencies, beyond a chance level.

10.3 Independent vs. Dependent Two-dimensional Forcing Functions in Multipart Compensatory Tracking (Hoppe, Fox)

On the basis of the preceding study, it was hypothesized that the interaxis dependency of the task forcing function represents a critical variable governing the movement dependencies obtained in relative motion tracking. Although it is customary to specify the nature of the forcing function in tracking research, the interaxis dependencies of a two-dimensional target display are almost always described as "irregular" or "unsystematic" without quantification. Thus, it may be proposed that the failure to observe moment-to-moment movement dependencies among the several control components is in part attributable to the fact that the momentary two-dimensional changes in the visual display are themselves independent. To answer this question it was necessary to generate forcing functions whose interaxis relations could be quantified, and varied from high positive to zero. This was done; and 42 adult male subjects served in a transfer experiment on the MTS with systematic variation of the stimulus dependencies. These data are now being analyzed.

10.4 Continuous vs. Terminal Visual Feedback(Fox, Little, Hoppe)

The focus here is on the role of on-going visual feedback in S's reproduction of a graded motor movement. In performing such a movement, S must often rely upon kinesthetic sources of feedback; visual feedback serves a supplementary function during response execution. When visual information is available concurrently, S's subsequent attempts to reproduce the movement without such visual feedback have occasionally been shown to be markedly degraded. Thus, we require a better understanding of the interactive effects of visual and movement-produced components of information in S's execution of a movement response.

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Previous work in this lab has shown that response concurrent visual feedback need not lead to response failures when the visual information is suddenly removed. This finding supports the use of training devices which provide concurrent as well as terminal visual error information. Research carried out during the present period on this problem has followed a suggestion by Annett that the control-display gain ratio of the visual feedback is critical for prediction of potential response failures when visual information is withdrawn. Our most recent study involved 64 S's and the factorial variation of (a) three movement extents required (a very simple push-pull graded response), and (b) three display gain ratios. The data have been analyzed and show clearly that gain is at best a minor variable, response movement extent being much more critical. This work is now being prepared for distribution.

11. VOCATIONAL AND EDUCATIONAL SIGNIFICANCE OF GUIDANCE TESTS

This project includes two subprojects with somewhat different foci. In the first, attention is on the significance, for individual guidance, of multiple aptitude test scores obtained early in high school. The goal of the project is to determine relationships between such test scores and subsequent educational choices and performance in educational programs and post-training circumstances, and to interpret these relationships in terms that will assist counselors and students to understand better the significance of a set of scores. In the second subproject the focus is on the contribution of test scores to understanding the educational program. Here attention is not on the relationship between early scores and subsequent performance but on the way in which school characteristics influence this relationship.

11.1 Criterion Data Preparation

The project will use as criteria type of college or vocational program attended, freshman grades in college, completion of vocational program, and rated satisfactoriness in work following training. College grades for 1968 high school graduates, and vocational school and job data for 1966-68 graduates are available from other projects. Because identification of high school was needed as a basis for matching records, some 25,000 criterion records were coded with high school codes and keypunched. Separate files of college data and vocational school identification data now exist in appropriate format.

11.2 Predictor Data Preparation

Approximately 300,000 Differential Aptitude Test score records for students tested in the eighth, ninth, and tenth grades between 1960 and 1970 have been put on magnetic tape. Special efforts were made to eliminate duplicate records, locate missing records, and convert varying high school codes to a consistent system for records from 1962-66 as these include the students for whom vocational school or college follow-up data are available.

11.3 Record Matching

Records from various files (test, vocational school, college) can each be identified by high school (code), date of high school graduation, and student name. The first two variables subgroup the records. Student name identifies individual records, but the identification is neither unique for a given student because of duplication in names nor identical for a given student

because of varying ways of recording names, use of nicknames, and errors in recording. A preliminary analysis of the problem of matching records from different files without a unique and identical variable in corresponding records indicates that, on the one hand, a completely manual matching process would be very difficult; and, on the other hand, a complete matching algorithm that could be computerized was not feasible. Consequently, a compromise computer-aided procedure was developed in which files are not matched by computer but are merged on the matching variables so that matching records are adjacent or nearly adjacent in the file. Human scanning of the merged file then identifies matching records for subsequent merging into a single record. Single pairs of identical names are automatically accepted, and human judgment can easily and quickly decide when a match is valid despite such problems as an omitted middle initial, a missing or incorrect letter, a nickname, differences in spacing, etc. An existing file manipulation program was adapted so that matching pairs of records adjacent in the merged file can be identified for merger with a single code number, and non-adjacent records can be pulled together at the same time.

11.4 Analysis

Matched records are to be analyzed to determine:

score differences between students entering liberal arts college, state college, two-year college, and vocational school;

score differences between students in vocational programs such as aircraft mechanics, agri-technology, electronics, accounting, data processing, sales, practical nursing (the specific programs included will depend on the number of cases available for each);

first-year college grades;

vocational program completion; and

job performance rating.

11.5 School Characteristics and Student Achievement

Seventh-grade Lorge-Thorndike Intelligence Test scores and eleventh-grade Iowa Test of Educational Development scores from the same school system four years later were found to correlate about .4 for one year and .6 for the next. These were correlations of school mean scores. Preliminary investigation of schools whose joint LTIT-ITED means placed them far from the line of regression of ITED on LTIT revealed that nearly all were characterized by a large influx of students from parochial schools between the seventh- and eleventh-grade levels. The same matching process used in the follow-up study will be used to identify students with test records at both levels.

REFERENCES

Chernikoff, R. & LeMay, M. Effect of various display-control configurations on tracking with identical and different control dynamics. Journal of Experimental Psychology, 1963, 66, 95-99.

Thompson, J.D. Organizations in action: social science bases of administrative theory. New York: McGraw-Hill, 1967.

Ward, J.H., Jr. & Hook, M.E. Application of a hierarchical procedure to a problem of grouping profiles. Educational and Psychological Measurement, 1963, 23, 69-81.

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PERSONNEL

The following persons were employed on this contract during the period 1 July 1970 through 30 June 1971. (This list does not include students who have served only as subjects in experi ents.)

Name	Title	Proportion of Time	Duration
Ace, M.E.	Res. Fellow	50 %	7/1/70 - 8/15/70
Agarwal,N.C.	Res. Fellow	50 %	7/1/70 - 6/30/71
Arnold,J.A.	Res. Assistant	57 %	7/1/70 - 6/30/71
Bixby, D.J.	Res. Assistant	50 %	7/1/70 - 9/15/70
Bradley, P.S.	Res. Assistant	50 %	9/16/70 - 1/21/71
Crandall, N.F.	Res. Assistant	50 %	9/16/70 - 6/30/71
Dahl, P.R.	Res. Assistant	50 %	7/1/70 - 9/15/70
Davis, T.C.	Res. Assistant	50 %	9/16/70 - 6/15/71
Dimick, D.E.	Res. Fellow	50 %	9/16/70 - 6/15/71
Dobmeyer,T.	Res. Assistant	25 %	7/1/70 - 9/15/70
Dowell, B.E.	Res. Assistant	50 %	9/16/70 - 6/15/71
Dunnette,M.D.	Professor	50 %	9/16/70 - 6/30/71
England, G.W.	Professor	50 %	7/1/70 - 9/15/70
Fox, P.W.	Assoc. Professor	50 %	7/16/70 - 9/15/70
Frost, P.J.	Teaching Associate	50 %	9/16/70 - 6/15/71
Gay, E.	Res. Assistant	60 %	7/16/70 - 8/16/70
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Hawks, C.	Secretary	100 %	4/23/70 - 6/30/71
Holtzman, R.C.	Res. Assistant	25 %	9/16/70 - 6/15/71
Hopp,M.	Res. Assistant	50 %	1/1/71 - 6/15/71
Hoppe, R.B.	Res. Assistant	50 %	7/1/70 - 9/15/70
Johansson, C.B.	Res. Specialist	100 %	7/1/70 - 6/30/71
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Swanekamp,S.	Secretary	100 %	7/1/70 - 9/15/70

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Thorpe, R.P.	Res. Fellow	62 1/2%	7/1/70 - 6/15/71
Tifft, W.W.	Res. Specialist	50 %	7/1/70 - 6/15/71
Tinsley, H.E.A.	Res. Fellow	50 %	9/16/70 - 6/15/71
Tornow, W.W.	Res. Fellow	50 %	7/1/70 - 8/31/70
Trerise, R.E.	Res. Assistant	50 %	7/1/70 - 8/15/70
Weber, M.L.	Res. Fellow	25 %	9/16/70 - 6/15/71
Weitzel, W.	Professor	100 %	7/1/70 - 8/31/70
Wheeler, K.G.	Res. Fellow	50 %	9/16/70 - 6/15/71
Whitely, S.E.	Res. Fellow	50 %	10/1/70 - 6/30/71
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13. ABSTRACT

This is a progress report summarizing research activities and results carried out under the Center for the Study of Organizational Performance and Human Effectiveness through 30 June, 1971. We present brief summaries of research activities under eleven major areas:

1. Motivational and Behavioral Consequences of Organizational Incentive Systems
2. Sources of Variation in Impression Formation in Interpersonal Perception
3. Development of an Integrated System for Auditing - Evaluating the Personnel Function
4. Ability-Aptitude Testing
5. Models of Manpower Allocation and Personnel Utilization
6. Organization Studies
7. Personal Value Systems of Naval Officers
8. Optimal Strategies for Multivariate Prediction and Variable Subgrouping
9. Vocational Interest Measurement
10. Perceptual - Motor Learning and Skilled Behavior
11. Vocational and Educational Significance of Guidance Tests

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A STATEWIDE PROGRAM IN DEVELOPMENTAL VOCATIONAL GUIDANCE (K-12) AND OCCUPATIONAL PREPARATION FOR THE CHANGING WORLD OF WORK. INTERIM REPORT (JULY 1, 1970-JUNE 30, 1971).

NORTH DAKOTA STATE BOARD FOR VOCATIONAL EDUCATION, BISMARCK.
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ABSTRACT - A LARGE PERCENTAGE OF NORTH DAKOTA YOUTH DO NOT HAVE ACCESS TO ADEQUATE VOCATIONAL INFORMATION ON WHICH TO BASE VOCATIONAL AND EDUCATIONAL DECISIONS. THUS, SPECIFIC OBJECTIVES OF THIS COMPREHENSIVE VOCATIONAL GUIDANCE AND PREPARATION PROJECT INCLUDED: (1) PROVIDING STUDENTS WITH EXPERIENCES DESIGNED TO ASSIST THEM IN EVALUATING THEIR INTERESTS, APTITUDES, VALUES AND NEEDS, (2) ASSISTING STUDENTS IN RECOGNIZING THE RANGE OF OCCUPATIONS THAT EXIST WHICH WOULD ALLOW THEM TO EXPRESS THEMSELVES AND LIVE THE TYPE OF LIFE THEY DESIRE, (3) HELPING STUDENTS EXPLORE SOME OCCUPATIONS IN DETAIL, AND (4) PROVIDING JOB ENTRY SKILLS THOUGH INTENSIVE TRAINING PROGRAMS AND COOPERATIVE EDUCATION. BASED ON EVALUATION DATA GATHERED AT THE THREE PROJECT SITES, THIS INTERIM REPORT NOTES CERTAIN ACCOMPLISHMENTS AMONG WHICH ARE: (1) TEACHERS IN THE BISMARCK SCHOOL DISTRICT WERE ACTIVELY INVOLVED IN DEVELOPING AND FIELD TESTING CAREER DEVELOPMENT ACTIVITIES FOR K-12, (2) THE NORTH DAKOTA STATE SCHOOL OF SCIENCE CONDUCTED TWO 5-WEEK SESSIONS ON WORLD OF WORK EXPLORATORY ACTIVITIES FOR DISADVANTAGED YOUTH, AND (3) INTENSIVE JOB TRAINING PROGRAMS WERE OFFERED IN FOUR OCCUPATIONAL AREAS FOR THOSE STUDENTS WITHOUT PREVIOUS VOCATIONAL EDUCATION BACKGROUNDS. A MAJOR CONCLUSION OF THIS PROJECT IS THAT CAREER DEVELOPMENT ACTIVITIES FOR K-12 WILL ENRICH THE CURRICULUM AND MAKE LEARNING MORE RELEVANT. (JS)

VT 014 631

INTERIM REPORT

Project No. 0-361-0047
Contract No. OEC-0-70-4752(361)

A Statewide Program in Developmental Vocational Guidance (K-12) and Occupational Preparation for the Changing World of Work

Exemplary Project in Vocational Education
Conducted Under
Part D of Public Law 90-576

Larry Selland
State Board for Vocational Education
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June 30, 1971

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Interim Report

Project No. 0-361-0047
Contract No. OEC-0-70-4752(361)

A Statewide Program in Developmental Vocational Guidance (k-12) and Occupational Preparation for the Changing World of Work

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Part D of Public Law 90-576

The Project reported herein was performed pursuant to a contract with the Bureau of Adult, Vocational, and Technical Education, Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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June 30, 1971

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Reporting Period

This reporting period extends from
July 1, 1970, to June 30, 1971

Signature of Project Director

August 30, 1971
Date

6712

BODY OF THE INTERIM REPORT

A. Problem Area Toward Which the Project was Directed.

The problem area to which the project addressed itself this first year was as outlined in the original proposal (page 1-8). The problem may be summarized as follows:

Because North Dakota is a rural, agricultural state, lacking major industry, the youth of the state have little or no opportunity to learn about the range of opportunities available to them in the world of work through observation or direct contact. Therefore greater pressure is placed on educators and guidance personnel to provide meaningful experiences that will accomplish what many urban children acquire because of living in an urban area. Since many youth leave the state with a limited background, the problem of preparing these young people for work experience and opportunities that they are unfamiliar with takes on greater significance.

Many local school districts are unable to provide financial support necessary to maintain the guidance services. This suggests that a cooperative approach to guidance services among schools will have to be implemented. This lack of guidance personnel will also place a greater responsibility on existing school personnel. With this reliance on current school personnel there will have to be an upgrading of the instructional staff so that they will have the necessary skills to provide these basic guidance services. Many of the teachers in the state, and especially those teaching in the rural areas, have not been exposed to current elementary and secondary vocational guidance concepts. In order to insure that the effort of this project filters down into the curriculum and classroom, a statewide training program will be implemented to provide these teachers with the necessary information and skill to utilize vocational guidance materials in the curriculum.

The great majority of elementary school children and staff do not have the availability of guidance personnel and consultation services. This absence of personnel has, in turn, resulted in a lack of adequate vocational information and material for a large percentage of North Dakota youth. This has resulted in many young people basing vocational and educational decisions on very little vocational information which makes appropriate decisions difficult to achieve.

Another major concern of educators and guidance personnel in North Dakota is the presence of sub groups of disadvantaged young people. There are rural pockets of poverty that have a number of educationally and culturally deprived individuals. Another group that needs increased vocational guidance services is the American Indian. It is felt that encouraging the vocational aspirations of the young people represented in these groups would be partial solution to a number of their problems and result in a general upgrading of these groups, both

socially and economically.

Specific Problems to which the project is directed include:

1. Providing students with experiences designed to assist them in evaluating their interests, aptitudes, values and needs.

2. Assisting students in recognizing the range of occupations that exist which would allow them to express themselves and live the type of life they desire.

3. Guiding students in recognizing the economic and social value that different forms of work have in our society.

4. Assisting the student to gain an understanding of the psychological meaning of work as it relates to human experience.

5. Assisting students to understand the intent, nature, and possible end results of alternative pathways compatible with their interests and abilities.

6. Helping students see the broad array of occupations available at local, state and national levels.

7. Helping students explore some occupations in detail.

8. Helping students to become aware of opportunities and potential satisfaction of different work roles and to gain some understanding of the occupational structure.

9. Directing students to better understand the nature of the decision-making process and assist them in recognizing the kinds of future decisions that must be made.

10. Providing job entry skill through intensive training programs and cooperative education.

B. Goals and Objectives of the Project.

The goals and objectives of the project are consistent with the broad goals set down by the United States Office of Education.

1. To provide for broad occupational orientation at the elementary and secondary school levels so as to increase student awareness of the range of options open to them in the world of work. The specific objectives at the various grade levels include:

   a. K-3 Level

      1. To develop positive attitudes toward the world of work.

2. To provide general observational experiences of the world of work.

3. To present appropriate occupational information about the world of work.

b. Grades 4-6

1. To develop a positive self-concept that will lead to future self-fulfillment in a vocation.

2. To develop wide and varied interests that will open up an expanded basis for vocational choice.

3. To develop the ability to make wise decisions and choices.

4. To have opportunities to express goals and aspirations.

5. To develop a positive attitude toward work and preparation for work.

6. To present appropriate occupational information about the world of work.

7. To provide more specific observational experiences about the world of work.

c. Grades 7-9

1. To provide an opportunity for the student to become acquainted with occupational and educational opportunities in the community.

2. To present information on broad fields of work to assist students in making long-range vocational plans.

3. To help students explore their abilities, interests and aptitudes.

4. To assist in selecting a curriculum that will satisfy student needs.

5. To aid students in developing proper attitudes toward all types of useful work.

d. Grades 10-12

1. To prepare youth to cope with the continued change in the world of work.

2. To acquaint students with major occupational fields.

3. To develop understanding of the need for continued education or training needed in various career areas.

4. To point out relationship between specific high school courses and the jobs for which they can prepare a student.

5. To develop attitudes of respect for cooperation with employers and employees.

6. To provide information regarding employment.

7. To provide students the opportunity to sample occupations through exploratory work experience.

   a. To offer high school students an introduction to the world of work through a variety of part-time jobs in industry, business, or the professions.

   b. To help students gain a better appreication of skills and abilities needed in various occupations.

8. To provide disadvantaged students the opportunity to investigate a cluster of occupations.

e. Parents

1. To acquaint parents with the vocational developmental needs of their children.

2. To provide for cooperative education in a variety of occupational areas. The specific objectives include:

   a. To identify vocational resource people to help orient students to the world of work.

   b. To utilize business and industry in the community as cooperative training and observational stations.

   c. To provide specific training in an occupation through cooperative education.

2. To provide, for students not previously enrolled in vocational programs, specific training in job entry skills just prior to their leaving school. The specific objectives include:

   a. To make available intensive training programs of short duration for students who have just finished high school or have "dropped out" and have not had access to vocational training.

   b. To incorporate cooperative education into the intensive training program.

c. to provide intensive training in a variety of occupations.

3. To provide intensive occupational guidance and counseling during the last years of school and assist in initial placement of all students at the completion of their schooling. Specific objectives include:

   a. To assist students during their last years of school in their eventual decisions concerning career choice.

   b. To assist students in their initial placement in post-high school occupational training.

   c. To assist students in their initial job placement.

   d. To provide assistance to school dropouts in placement to training programs to obtain job entry skills.

4. To upgrade the teaching staff, counseling procedures, and the elementary and secondary curriculum.

   a. To provide teachers with the materials and techniques to include vocational guidance in their classes.

   b. To provide supervisory services for counselors, administrators, and teachers to facilitate the vocational guidance programs of the local schools.

5. To inform North Dakota residents, through a statewide effort, of the vocational education needs of students at all levels.

C. Description of Project Design and Procedures.

The general design of the project and procedures followed were developed in light of the problem areas and objectives. Progress toward fulfillment of these objectives, the first year, involved a series of related activities which included:

1. Employment of a project staff - three professional men, a clerk and a project secretary. The project staff's primary responsibility was working with the teachers in the demonstration site in the development and field testing of the career development activities.

2. Establishment of general planning committees and eventually "working committees" within the demonstration site. The demonstration site (Bismarck school district) has eleven elementary schools with an enrollment of 4,387 students and 179 teachers; three junior high schools with enrollments of 2,050 and 113 teachers and one senior high school with enrollment of 1,710 and 85 teachers.

3. Establishment of a project advisory committee representing the various agencies involved.

4. Review of all the literature, materials and writings available on career development.

5. Selection and dissemination of materials within the demonstration site.

6. Planning and conducting in-service training activities for counselors, teachers and principals.

7. Providing for exploratory experiences and opportunities for disadvantaged students to investigate clusters of occupations.

8. Providing for intensive training programs to provide students job entry skill in selected occupations.

9. Coordinating activities of related agencies with similar purposes. The following agencies are involved in the project: Department of Public Instruction, North Dakota School Administrators Association, Secondary School Principals Association, Department of Elementary Principals, North Dakota Personnel and Guidance Association, North Dakota Association of Classroom Teachers, North Dakota Employment Security Bureau and Industry and Labor.

10. Presenting numerous programs on career development before service clubs, PTA's, school administrators, and general public meetings.

The specifice "career development" activities were developed by the selected teachers with assistance from the project staff throughout the year. The teachers in turn field tested these activities in their respective classrooms. At the close of the school year, the teachers involved spent two weeks in a concentrated workshop setting at which time the activities were refined, the behavioral objectives strengthened, and the activities sequenced by grade level and subject matter area. The guideline was then readied for dissemination throughout the demonstration site for further development, refinement and field testing during the second year of the project.

D. Results and Accomplishments of the Project.

The results and accomplishments during this reporting period are discussed in relation to the broad objectives of the project.

1. To provide for broad occupational orientation K-12 so as to increase student awareness of the range of option in the world of work.

About fifty teachers (K-12) in the Bismarck school district were actively involved in developing and field testing career development activities throughout the school year. These working committees (see Appendix A) met regularly with the project staff at which time the activities were discussed, materials reviewed and techniques for integrating the activity into the curriculum were outlined.

The result of this activity was a comprehensive series of "Career Development" activities K-12 (see Appendix B). The guideline was reproduced for dissemination throughout the demonstration site for further development and testing the second year of the project.

In addition to the development of the guideline, a very thorough review of related literature and materials was conducted (see Apendix C for bibliography of materials). A model occupational resource materials center was developed. The center will serve as a model for school libraries throughout the state. This model will be included in the ultimate guideline.

2. To provide opportunities for exploratory experiences to investigate clusters of occupations.

In pursuant of this objective, the project contracted with the North Dakota State School of Science at Wahpeton to conduct two-five week sessions devoted to world of work exploratory activities. The participants were disadvantaged students from throughout the state of North Dakota.

The main objectives of the summer institute program were to broaden the students' background in occupational areas in regard to:

a. The type of work he would do.

b. The skills necessary for a particular occupation.

c. The education requirements and where offered.

The program also provided the participants an opportunity to:

a. Work with the machines in each occupational area.

b. Improve their reading skills.

c. Test their aptitudes and skills in each area.

Students between their junior and senior year of high school were given first preference. However, students graduating in May of this year were also eligible to apply. One hundred and thirty students were served during the two-five week sessions.

3. To provide for students not previously enrolled in vocational programs to receive job entry skills through intensive training programs in selected occupational areas.

   In pursuant of this goal, intensive training programs providing job entry skills were offered in four different occupational areas. The project contracted with the Bismarck Junior College to offer, during the summer, training in the following areas: production typist and office duplicating skills, cashier checker training, nurses aide and service station attendent. Early placement reports indicated a high number of the graduates being placed in jobs immediately upon completion of the training. One year follow-up results will be included in subsequent reports.

   Similar programs were offered outside the demonstration site at the University Center in Williston, Lake Region Junior College and at Dickinson's area vocational school.

   These programs were developed through cooperation with business and industry representatives from the various occupational areas. The programs were conducted during the summer and each contained a cooperative aspect.

4. To provide intensive occupational guidance and counseling during the last years of school and to assist in initial placement of all students in advanced training or in a job.

   Accomplishments during this reporting period included:

   a. Intensive workshop sessions with counselors from the demonstration site.

      These sessions were dedicated to the development of a Career Development Guideline for counselors throughout the state. The guideline will offer suggestions to counselors in the areas of follow-up, evaluation, orientation, in-service, and placement. Acting as a supplement to the Career Development Guideline (K-12), this handbook will assist counselors in the area of vocational guidance, placement and follow-up.

   b. Model Summer Program in vocational guidance.

      This program, which was conducted in the demonstration site, was designed to offer students vocational guidance services not otherwise available. The specific objectives of the program were:

      1. To help students make better decisions by knowing more about their abilities and interests.

      2. To involve parents with the educational process of their children at the junior and senior high school level.

3. To become better acquainted with the student and better acquaint the student with his new situation at the high school.

4. To become better acquainted with personal, social and educational problems which could prevent a student from successfully completing a high school program.

The preliminary procedure of the program was to administer the General Aptitude Test Battery to all ninth grade students. The next step was to identify disadvantaged and handicapped students in order to alert teachers of these individuals so their needs could better be met. Conferences with parents of all students were organized. At these sessions, the parents, student and counselor discussed the results of the GATB and determined if the student's proposed program of studies were in line with his abilities. Additional orientation to the high school program concluded the parent, student conferences.

At the conclusion of the program the following outcomes are expected:

a. Development of a better understanding, on the part of students, about themselves and the ability to make better educational and vocational choices.

b. Reduction of drop-out rate and failures in subjects because of overload.

c. Development of improved attitude toward school.

d. Development of a better relationship between the student, parent, and school.

e. Development of a format to be used in parent-student-teacher conferences (to be used in exemplary guideline).

f. Development of a plan for getting occupational information to students (their use, where, etc.).

g. Development of the basic contents of the Vocational Guidance Handbook for incorporation in the Exemplary Project.

5. Numerous in-service workshops were conducted which resulted in an increased awareness of career development. Consultants utilized were Dr. Ken Hoyt, Director of Specialty Oriented Student Research program, Lee Laws, Consultant, and Dr. Wes Tenneyson, Counselor Educator. Major meetings in which the project staff had an input were the School Administrators Fall Conference, Department of Elementary Principals Annual Conference, North Dakota Guidance Personnel Meeting and the Secondary School Principals Winter Conference.

On-site visits were made to related projects in Oklahoma, Georgia and Wyoming. The project staff attended numerous conference, seminars and general meetings concerning career development.

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The Annual Evaluation Report of Project 0-361-0047

A STATE-WIDE PROGRAM IN DEVELOPMENTAL VOCATIONAL GUIDANCE (K-12) AND OCCUPATIONAL PREPARATION FOR THE CHANGING WORLD OF WORK

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Date Transmitted: June 30, 1971

6723

EVALUATION REPORT OF NORTH DAKOTA'S EXEMPLARY

WORLD OF WORK PROJECT

North Dakota's World of Work Project consists of three separate career development programs: (I) the K-12 career development program at the Bismarck Public Schools demonstration site; (II) the career exploration program at the State School of Science in Wahpeton; and (III) the intensive vocational training programs at the Dickinson State College and at the Williston Branch of the University of North Dakota. This report will be structured around the evaluation of these three programs.

I
K-12 CAREER DEVELOPMENT PROGRAM
BISMARCK PUBLIC SCHOOLS

One objective of the "world of work project" was to develop and implement a career development model for grades K-12 in the Bismarck Public Schools during the 1970-1971 academic year. As originally written and amended, the proposal for the program foresaw the completion of this objective during the first year. However, because of the insistence of the project staff for the development of a quality and workable model and because of the importance of including teachers in developing the program, it became evident that the original objective could not be realistically accomplished. Instead, efforts were focused on working toward that objective. Such efforts have produced career development units and activities which have been used in classrooms by committee members on an experimental basis.

Since the K-12 career development program stressed the development of a career orientation model, the evaluation of the program was

largely one of "process". The evaluation did not seek to detect changes in student attitude or behavior. Rather, the evaluation was developmental in nature and provided constant feedback throughout the past year to project staff and committee members with regard to the design and planning of the model. In that sense, the evaluation has been an on-going process with periodic oral and written reports submitted by the evaluation team to the project staff. (Copies of these reports are included in the Appendix.)

The following evaluation of the K-12 career development program in the Bismarck Public Schools was structured using the four grade-level groups: grades kindergarten through 3; grades 4 through 6; grades 7 through 9; and grades 10 through 12. In a concluding section, comments were directed toward the total program.

Information for this report resulted from several evaluation techniques. Sources for this report included: visits to the demonstration site by the evaluation team; questionnaires completed by program committee members; reports from the three exemplary project coordinators; meetings with exemplary project staff members; materials (brochures, career units, proposal for summer testing program) submitted to the evaluation team; and reports distributed to the project staff by the evaluation team.

Grades Kindergarten through Three

The progress experienced at the K-3 level of the Exemplary Project appears to be excellent. Based on the data gathered from the faculty involved directly in the project the attitude is quite positive and should serve as a sound basis on which to build future activities that will include the total school staff. The relationship between the Exemplary staff and the school personnel is also a very strong positive factor for anticipating success of the project. As the project staff develop more and specific classroom materials the commitment should be enhanced even more. This has already been observed, as the initial attitude was one of uncertainty and some come confusion but has since changed to the present attitude of positive commitment to the goals of the project. Therefore, it is concluded that the process of implementing the project at the K-3 level has been highly successful to this point.

The units that have been developed for use in the K-3 level appear to be educationally and behaviorally sound and will provide for quantifiable data on which to base a judgement as to whether the goals of the project are being met. The behavioral objectives stated in these units are attainable and designed so that teachers will be able to implement them in their classes. Although no attempt was made by the Project staff to statistically evaluate the success of the prepared materials, inspection of the work of the K-3 students indicate that they are definitely in accord with the goals of the Project. However, a more objective evaluation is necessary now that the materials have been developed, to determine if they are actually contributing to the meeting of the Project goals.

The organizational approach utilizing the committee working with the Project staff is quite successful. Further attention should be given to providing in-service training for all teachers in K-3. This should be started as soon as the 1971-72 school year begins. The fact that more in-service education was not attempted during this year is a weakness of the Project.

Grades Four through Six

The development of the exemplary program has progressed satisfactorily in the upper primary grades. Evidence gives indication that the program is proceeding as planned and should become an integral part of the total K-12 career development program.

Committee members and teachers displayed an increasing enthusiasm for the program. Earlier in the year, some teachers were skeptical about the program because of the extra work they thought the activities would entail. However, over the year, these same teachers have become more positive in their thinking about the program. Apparently, teachers and committee members have become more supportive of the program and its objectives. However, to insure continued teacher support, project staff should continue to undertake measures which increase teacher involvement in the program. Such involvement would serve to promote teacher commitment to the project.

Student response to program activities has been highly favorable. In the opinion of the teachers, students have experienced increased awareness of careers and the world of work. One aspect of the program which has been received well has been the showing of filmstrips.

The units which have been completed appear to be operationally sound. All committee members indicated that they have been able to implement program activities in their classrooms. The format used for the activity sheets appears to be very functional. More

important, however, is the fact that each activity is defined behaviorally. Such an approach permits the classroom teacher the opportunity to evaluate pupil progress toward the accomplishment of the stated, broad objective. The activities which have been developed blend into the curriculum very well. The appropriateness of such activities serves to encourage student enthusiasm for studying the world of work.

The cooperation between the project staff and committee members has been very good. A good working relationship appears to exist between the two groups. Recognizing that the project coordinator is spending much time in working with the 4-6 committee (as well as the K-3 committee), the need exists for a fourth coordinator at the primary level. It becomes very essential to the success of the program that the teachers and committee members be given as much assistance and direction as is needed.

Grades Seven through Nine

At the junior high school level, progress is being made on the career development program as outlined in the overall plan of the project. Initially, the junior high school committee members experienced difficulty in understanding their roles in developing the program. It was not until subcommittees were formed did the program really move forward. The subcommittee approach might be viewed as the key to the development of the career development program at the junior high school level.

Committee members at the junior high school level face a most difficult task in writing career units and activities. In addition

to meeting student needs and providing career information and exploration through the units, committee members must write activities which integrate the "world of work programs" of the primary grades and of the senior high school. In this sense, the program is a very important link in the world of work project. The activities which have been written by the committee members during the past year are of the nature which will provide the all important transition between the primary grades and senior high school which the career development program demands.

At the junior high school level, the students are enthusiastic about the units. Apparently, the activities included in the units are stimulating and arouse student interest. However, more important, the units and acitivities have started students thinking about career choices and about future education and training. Increased awareness of the world of work by students has enabled them to become more realistic in their planning for the future.

The assistance which has been given committee members by the project staff has been very good. The teachers who are involved in the program expressed the opinion that the quality of the assistance was very satisfactory; however, the same teachers felt that greater staff availability was necessary. As with grades four through six, some provision may have to be made to provide maximum teacher and committee contact with project staff. This becomes most necessary since the emphasis of the project will be expanding outside of its present demonstration site.

As viewed by the evaluation team, a very cooperative relationship exists between the junior high school committee members and the project staff. Such a relationship has served to make the first year of the program a very productive one.

Grades Ten through Twelve

The progress at the senior high school level was the least successful of any. This fact can be attributed to a number of factors all of which should be given serious attention during the next year of the project.

Based on the final on-site visitation the attitude of some key personnel at the senior high level appears to be shifting to a much more positive note. However, the data collected from the faculty actively engaged in the project was somewhat negative. The major concerns were in terms of the need for greater direction from the Project staff, a lack of knowledge about the goals of the project, and the feeling that many of the activities stressed by the project are currently being implemented in the classroom independent of the project.

The Project model that appears to be working so effectively at the lower levels is probably an inappropriate model for the senior high school. The very nature of the teacher student contact would suggest that a modified or entirely different approach is needed at this level. An added factor is that there are guidance counselors and vocational educators presently doing many things that parallel the goals of the Project. This suggests that a different organizational relationship between Project staff and school personnel is necessary.

The Project has resulted in an increased interest in developing occupational materials for the classroom and an interest in testing that will facilitate vocational guidance as evidenced by the proposal submitted to the Project by Bismarck High School. This type of activity is indicative of Project success.

Because the teaching methods at the senior high level are less experiential and more subject matter centered a good deal of emphasis needs to be given to the identification of the best approach to re-educating the teaching staff. A number of them no doubt view themselves as academicians and have a poor receptivity to a program of this sort. It would appear that some staff will have to be left out of active participation in the Project. This is unfortunate but unavoidable.

Although in one sense the results of the Project at the 10-12 level is the least successful, the amount of progress is acceptable considering the factors present at this level.

K-12 Career Development Program Conclusions

The following conclusions are based on the data gathered by the Evaluation committee and which was identified previously in this report.

1. There has been a definite shift in attitude in the positive direction since the beginning of the Project.
2. In general, the help given the committees by the Project staff in development and implementation of activities was seen as very positive.
3. Appropriate vocational curriculum units have been developed and implemented in grades K-9, with less done at the 10-12 level.
4. The progress of the Project was less than was initially anticipated but more realistic than the goals initially projected.
5. The work done during the year will contribute to the meeting of the goals of the Project in subsequent years.

6. The Project activity has been successful in the classroom and suggests a high degree of success when implemented on a much wider statewide scale.
7. The Project staff is cognizant of the need for planning for next year and has approached the need through summer workshops that have resulted in the refinement of materials previously developed and the development of additional materials.
8. The type of materials being developed are stated in behavioral objectives that are quantifiable, attainable, and that will serve as an excellent basis for a statistical analysis of the success of the Project in meeting its stated objectives.
9. The Project staff has been very willing to accept suggestions and criticism and have actively sought data that would improve the total Project.
10. The K-12 Career Development Program should be considered a success based on a process evaluation. The next step in the evaluation should be an emperical study that assesses whether or not the goals of the Project as stated in the proposal are being met. With data collected during the academic year 1971-1972 based on the materials developed during the first year, this can be accomplished.

II

Exploratory Program For Investigating Training
In A Questionable Vocational Occupation
North Dakota State School of Science, Wahpeton

1. IS THE PROJECT FULFILLING ITS PURPOSE AND OBJECTIVES AS DESCRIBED IN THE COMPREHENSIVE DEMONSTRATION PLAN (DCP)?

YES__X__ NO_____ PARTIALLY_____

COMMENTS:

The project was designed to broaden students background in occupational areas in regard to the type of work he would do, the skills necessary for a particular occupation, related courses, opportunities to work with machines in various occupational areas, opportunity to improve their reading skills, and opportunities to test their aptitudes. Skills in various areas and evaluation reports for each area studied by the student were sent to the high school counselors and principals of the participating schools. The evaluation of the project was made somewhat difficult because the evaluation team contracted with the exemplary project after the conclusion of the summer program and the basic information was gathered from the questionnaires filled out by the participating students. However, one of the evaluation team members was responsible for supervising graduate counselors who worked with the participating students during the summer session and was able to visit the program on occassions, and so input was gained by this type of contact. Based upon the responses from the students interviewed it appears that all the students indicated the institute had helped them in broadening their outlook toward occupations. The responses further indicated that many of them saw their initial choices as being unrealistic. The responses indicated that the students now had deeper insight into their own ability or capabilities for particular vocational areas and that it had stimulated their thinking regarding their interests and abilities. Some students had experiences which confirmed their choice as to occupational area, and some students were now able to look more critically at choices of subject matter for their last year in high school. In regard to the reading skill development program, no post results were furnished the evaluation team, but reports by the student's indicated that they felt some progress had been made during the five week period. The director of the project also stated that there was an indication of much improvement by many students. A side benefit of the project appeared to be the adjustment of the students to the independence of college life.

2. ARE THE OBJECTIVES REALISTIC? YES__X__ NO____ PARTIALLY____

COMMENTS:

It would appear that the objectives are quite realistic. There may be some limitations due to the number of course areas that the student is exposed to; students of this age who are having difficulty in reading pose a real problem. It is unrealistic to expect that their reading skills will be improved during such a short period of time.

However, the identification of reading skills is important and could lead toward more specific remediation in their home schools and thus be more helpful to them in preparing for their chosen vocational area. The program tasks attempted enable the students to test his skills necessary for a particular occupation. The reports filed with the students school appear to be a very positive aspect in that the information can be used for counseling purposes by officials within the school setting.

3. IS THE PROJECT CONTRIBUTING TOWARD PROGRAM OBJECTIVES?

YES__X__ NO_____ PARTIALLY_____

COMMENTS:

The project is one of the most positive of the State Exemplary Programs. The staff at Wahpeton State School including the director and the participating teachers are very positive in the attitudes towards the project, and the mechanics of the operation appeared to work very smoothly. All participants on the campus seemed to be enthused and the students reaction to the program was very favorable.

4. ARE THE INTENDED BENEFICIARIES BEING SERVED?

COMMENTS: YES_____ NO_____ PARTIALLY__X__

Based upon interviews with a number of the participating students and the director of the program it appears that selection of participants was not ideal because the project funding came quite late in the school year. This hampered selection because notification to the schools was not put out until a late day and as a result a number of students who may have indicated an interest had made other summer plans. As a result some of the students came to the campus without knowledge of what was to be done or expected to be accomplished during this particular time, and many students who could have profited by the experience were not included.

5. IS THE PROJECT FOLLOWING THE CDP IN REGARDS TO OPERATION AND CONTENT?

YES__X__ NO_____ PARTIALLY_____

COMMENTS:

The exemplary Project is attempting to meet all the requirements set up by the North Dakota Board of Vocational Education for pre-vocational training sessions. Five areas of study were incompassed the total of fifteen occupational areas covered. Seventy five students from throughout North Dakota were divided into these five sections with fifteen students in each section. Section shifts to different areas of study were made at the beginning of every week. The school day began at 8:00 a.m. and continued until 3:00 p.m. and was in effect each day. The students were free to go home on weekends but those students staying were subject to rules and regulations of the project staff. The students had extracurricular activities organized for them and these were held on a regular basis throughout the five week session.

6. WAS THE TIMETABLE DESCRIBED IN THE CDP FOLLOWED?

YES__X__ NO_____ PARTIALLY_____

COMMENTS:

The general schedule was followed with only minor changes made in the day to day activities listed.

7. DID THE PROJECT FUNDING CONFORM WITH THE FUNDING DESCRIPTION OF THE EXEMPLARY PROJECT?

YES__X__ NO_____ PARTIALLY_____

COMMENTS:

The funding for this project was funded for the exemplary project from the North Dakota State Board of Vocational Education. The funds provided for board, room, educational supplies for each of the students. The only expense to the student were those items of personal use and transportation to and from Wahpeton.

8. HAS THE SPONSOR DEMONSTRATED CAPABILITY TO ADMINISTER THIS PROJECT?

YES__X__ NO_____ PARTIALLY_____

COMMENTS:

The coordinator did an excellent job in administering the project and he had the full cooperation of project staff members and that maximum use was made of both staff and facilities.

9. FROM THE STANDPOINT OF EVALUATION, WHAT DEVELOPMENT OR LACK OF DEVELOPMENT IS EVIDENT IN THIS PROJECT?

COMMENTS:

The only lack of organization with in the Exemplary Project was the lateness in selecting the students or being able to select students for the project and an additional criticism would be the limited number of experiences allowed students in the various vocational areas. The limitation appeared even more acute in those areas restricted to womens professions.

10. IS THE PROJECT DIRECTED TO MEET PROBLEMS?

COMMENTS: YES_____ NO_____ PARTIALLY_____

In as much as the students involved in the institute are supposedly high risk students, there are obvious problems found in items like motivation and enthusiasm. This however, appeared to be a very strong point for the program and the students interviewed appeared to be both interested and very excited about the opportunity to explore the various occupational areas. They appeared to be pleased with the enthusiasm shown by the instructors and in their estimation this was a worthwhile project and one which they would encourage other students to participate in.

III

Intensive Training Program
PROJECT - NURSES AID EXEMPLARY PROGRAM
Dickinson Public Schools

1. IS THE PROJECT FILLING ITS PURPOSE AND OBJECTIVES STATED IN THE COMPREHENSIVE PLAN FOR THE EXEMPLARY PROGRAM FOR THE TRAINING OF NURSES AIDS?

YES__X__ NO_____ PARTIALLY_____

COMMENTS:

Courses designed to prepare trainees to become qualified nurses aides in hospitals, nursing homes, or other agencies providing all phases of non-professional health care to the patient. It was indicated that the skills necessary to perform nurses aide functions would be developed and that the knowledge necessary to effectively perform the responsibilities would be taught. The relationship of the nurses aide to the members of the health team and her responsibilities providing health care and the factors involved in fulfilling her duties of caring for patients would be effectively emphasized. It was impossible for the evaluation team to visit with the participants because of the lateness in contracting with the State Program, but information gathered from the director as well as follow-up on the students would appear that sixteen out of ninteen are making use of the training received in working in a medical related area.

2. IS THE PROJECT CONTRIBUTED TOWARDS PROGRAM OBJECTIVES?

YES__X__ NO_____ PARTIALLY_____

COMMENTS:

The objectives set up by the program appeared realistic and they were able to fulfill the curriculum demands to the students. It would appear that the project contributing towards the overall program objectives in that they are providing a number of qualified nurses aides. It would appear that to date no way is able to produce the number of aides projected by the project committee. The need was expressed for thirty aides in the immediate three months following the training session and that the need is approximately 276 over a three year period. The sixteen produced who will be working in the area are not adequate in number, but with expansion of the program and with the interest expressed in the program it is conceivable that more aids could be trained to meet the need.

3. ARE THE EXTENDED BENEFICIARIES BEING SERVED?

YES_____ NO_____ PARTIALLY__X__

COMMENTS:

The beneficiaries, that being the community, within the area are not reaping the benefits of the project. It was reported that six are working within the area as nurses aides and the others are still attending school in the area or are obtaining a further education in medically related fields in other parts of the state.

4. IS THE PROJECT CONTRIBUTING TOWARD PROGRAM OBJECTIVES?

YES_____ NO_____ PARTIALLY_X_

COMMENTS:

The project is contributing toward the objectives, however, the number of candidates appear to be minimal in that they are not able to meet the demands projected by the committee.

5. WAS THE TIMETABLE DESCRIBED IN THE PROPOSAL FOLLOWED?

YES_X_ NO_____ PARTIALLY_____

COMMENTS:

The five week course.

6. HAS THE SPONSOR DEMONSTRATED CAPABILITY TO ADMINISTER THE PROJECT?

YES_X_ NO_____ PARTIALLY_____

COMMENTS:

The program was administered responsibility and the number of participants completing the course 29 out of 20, would be a good indication that the course had holding power and that it was meeting the objectives stated.

7. FROM THE STANDPOINT OF THE EVALUATION WHAT DEVELOPMENT OR LACK OF DEVELOPMENT IS EVIDENT IN THIS PROJECT?

YES_____ NO_____ PARTIALLY_X_

COMMENTS:

From the standpoint of the evaluation it appears that the selection of candidates as well as jobs development could be firmed up in such a way that students selected would be assured of being placed on the job immediately following completion of the course within the geographical area designated.

8. IS THE PROJECT REASONABLY BEING DIRECTED TO MEET THE PROBLEMS?

COMMENTS: YES_____ NO_____ PARTIALLY_X_

The project is meeting some of the problems exhibited by the area, however, the number of participants staying in the area is not sufficient to meet the demands of the area.

PROJECTS

BANK TELLER
KEY PUNCH OPERATOR
PRODUCTION TYPIST
AUTOMOTIVE TUNE-UP MAN
UNIVERSITY OF NORTH DAKOTA
WILLISTON CENTER

The four intensive training programs conducted at UND Williston Center were evaluated on the basis of submitted reports and personal communication.

The reports suggest that the programs were partially successful if job placement in the area of training pursued is a valid criterion. A 100% placement should not necessarily be expected, especially in a rural area where moving to a different location would be prerequisite to finding a job in the area of training.

Student reaction to the programs were generally positive. There should be greater guidance as to what will be available to the participants in the various training programs as far as job placement goes. The majority anticipated finding work in Williston, the location of the training. This is quite unrealistic. Therfore, the students should be informed that they will have to locate in a different area in the state or participants from different sections of the state should be encouraged to apply for admission to the program, assuming that they would return to their original locality.

The choice of future intensive training programs must be based on employment opportunities of the state, not other factors such as teaching staff capabilities or even student interest.

In summary, the four training programs appeared to have quality and did receive positive student reaction. The weakness was the inability of a number of the trained students to find appropriate employment to match their newly acquired skills.

A REPORT BY THE EVALUATION COMMITTEE ON THE QUESTIONNAIRE COMPLETED BY THE VOCATIONAL GUIDANCE EXEMPLARY PROJECT COMMITTEE MEMBERS.

A. Table and graph of the mean ratings for the four Exemplary Project Committees on Selected Attitudinal Questions.

B. Graphic comparison of the means for the four Exemplary Project Committees on Selected Attitudinal Questions.

C. K-3 summary, conclusions, and recommendations.

D. 4-6 summary, conclusions, and recommendations.

E. 7-9 summary, conclusions, and recommendations.

F. 10-12 summary, conclusions, and recommendations.

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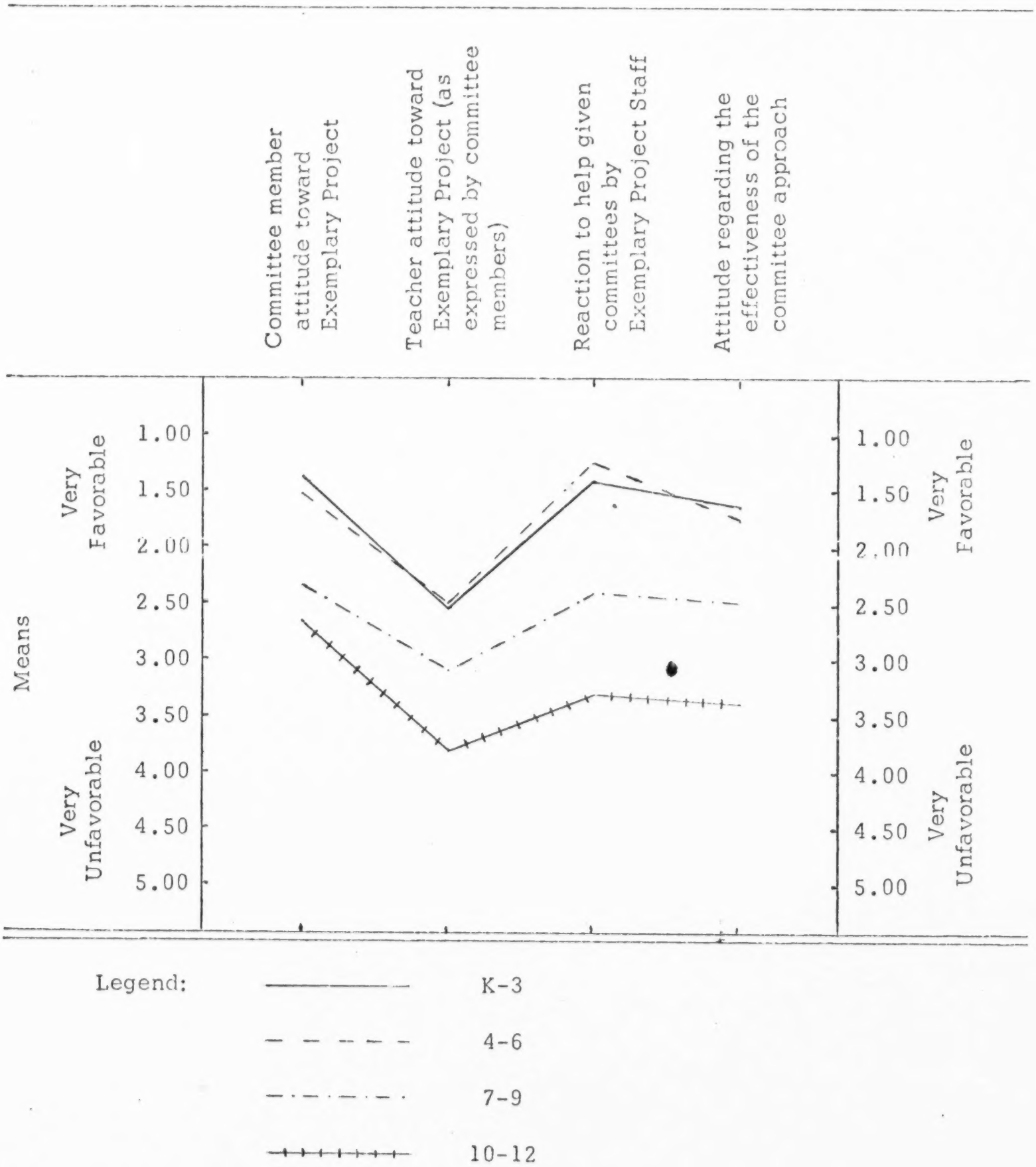
MEANS FOR THE FOUR EXEMPLARY PROJECT COMMITTEES

ON SELECTED ATTITUDINAL QUESTIONS

Attitudinal Question	Committees			
	K-3 (N=7)	4-6 (N=32)	7-9 (N=22)	10-12 (N=10)
Committee member attitude toward Exemplary Project	1.43	1.62	2.32	2.70
Teacher attitude toward Exemplary Project (as expressed by committee members)	2.57	2.50	3.14	3.80
Reaction to help given committees by Exemplary Project Staff	1.43	1.25	2.43	3.30
Attitude regarding the effectiveness of the committee approach	1.71	1.75	2.50	3.40

Key:
1 = Very favorable
2 = Favorable
3 = Moderately favorable
4 = Unfavorable
5 = Very unfavorable

GRAPHICAL COMPARISON OF THE MEANS FOR THE FOUR EXEMPLARY PROJECT COMMITTEES ON SELECTED ATTITUDINAL QUESTIONS



REPORT ON THE K-3 COMMITTEE MEMBER
EVALUATION OF THE EXEMPLARY PROJECT

The K-3 committee members completed the two-page evaluation questionnaire and the following report is based on their responses. These responses are appended to the end of the report. The report is divided into (1) summary, (2) conclusions, (3) recommendations.

Summary

1. Based on your knowledge of the exemplary project what is your overall attitude at this time?

The overall reaction of the K-3 committee was very favorable. All responses were of a positive nature. (Mean=1.43)

2. In talking to your fellow teachers what do you feel the general attitude toward the project is?

The feeling of the K-3 committee members about the faculty attitude is that they are fairly positive but that more information about the project is needed by the teaching staff. (Mean=2.57)

3. What is your reaction to the help given your committee by the Project staff?

There is a very positive attitude about the help given to the committee by the exemplary staff. (Mean-1.43)

4. What is your attitude regarding the effectiveness of the present committee approach in accomplishing the project's objectives?

The committee approach to developing the exemplary project received the approval of the committee members. The input of a number of individuals was seen as the strength of this approach.

5. What do you see as the strengths of the project? Be as specific as possible.

The committee appears to grasp the basic goal of the project and feels that the inclusion of the world of work is a beneficial addition to the curriculum.

6. What do you see as the weaknesses of the project? Be as specific as possible.

The committee saw a number of different problems as weaknesses. The lack of initial organization and the resulting confusion was mentioned by several. However, this appears to have been corrected and this attitude does not prevail as strongly as it did previously.

7. What recommendations could you make for improving any aspect of the program?

Better communication and greater direction are seen as ways of improving the project.

8. To what extent do you feel that you have been able to implement project activity in your classroom.

The teachers appear to be using the materials in their classes on an experimental basis, and have positive feelings about this aspect of the project.

9. How might this Project staff be of greater assistance to you as an individual or to the committee?

The feeling of the committee is that the exemplary staff is doing about all that it possibly can reflecting a very positive attitude. The one suggestion that was made was that more school visits be implemented by the project staff.

10. What would be your prediction of the future success of this project in the next two years?

The success of the program at this level is seen as being very probable. The committee sees the classroom teacher as the key to the eventual success of the program.

Conclusions

Based on the responses to the questionnaire the following conclusions are made:

1. The K-3 committee members feel very positive about the program and see it as successful, especially if the rest of the teaching staff is reached with an orientation program.
2. The relationship between the K-3 committee and the exemplary staff is excellent.
3. The one minor criticism was the need for more specific direction and laying out of goals.

Recommendations

1. The exemplary staff should continue working with the K-3 committee as they have in the past.
2. A program to reach the rest of the teaching staff should be implemented.
3. The exemplary staff should strive for greater visibility by visiting the elementary schools more often and should try and have as much direct contact with the teaching staff as time permits.

REPORT OF THE INTERMEDIATE ELEMENTARY COMMITTEE GRADES 4 THRU 6

MEMBER EVALUATION OF THE EXEMPLARY PROJECT

Thirty-two elementary teachers in grades 4 thru 6 completed the two page evaluation form. In an attempt to provide a meaningful analysis of the evaluation, this report was divided into three parts: (1) summary, (2) conclusions, and (3) recommendations. Since it was not possible to include and paraphrase all comments made by committee members in the main body of this report, a complete listing of responses of items was also made available in a separate report.

SUMMARY

Each of the following paragraphs represents a summarization of committee member responses to the ten items on the evaluation. Paragraphs are preceded by the items statement as it was presented on the evaluation form.

1. BASED ON YOUR KNOWLEDGE OF THE EXEMPLARY PROJECT WHAT IS YOUR OVERALL ATTITUDE AT THIS TIME?

   The attitude of the elementary school committee members for the exemplary project was quite favorable. It appeared that the opinion of a number of the teachers was that the project had significant value and there has been a definite attitude change towards acceptance of it as the year has progressed. (Mean = 1.62)

2. IN TALKING TO YOUR FELLOW TEACHERS WHAT DO YOU FEEL THE GENERAL ATTITUDE TOWARDS THE PROJECT IS?

The committee members looked upon the project with moderate favor. The opinions expressed by the committee members indicated that the teachers are interested in becoming involved in the project but that they are waiting for more specific guidelines. Responses indicated that there is a lack of understanding on the part of a number of the members and that there is some indifference as to the value of the total project. There did appear, however, to be a significant attitude change after the exemplary staff had met with the committee. (Mean = 2.50)

3. WHAT IS YOUR REACTION TO THE HELP GIVEN YOUR COMMITTEE BY THE PROJECT STAFF?

   The committee members in grades 4 thru 6 reacted very favorably to the help given to their committee by the project staff. Comments made by committee members displayed a consistently positive attitude towards the help provided by the staff in the form of advice and materials. (Mean = 1.25)

4. WHAT IS YOUR ATTITUDE REGARDING THE EFFECTIVENESS OF THE PRESENT COMMITTEE APPROACH IN ACCOMPLISHING THE PROJECT'S OBJECTIVES?

   The attitude of the committee members toward the committee approach was favorable. The responses indicated that the committee felt that they were getting closer to the problem at hand and were beginning to attack the objectives. They also indicated that the working in smaller teacher groups was much more effective than with the total group. (Mean = 1.75)

5. WHAT DO YOU SEE AS THE STRENGTHS OF THE PROJECT?

   The committee members indicated that the project would stimulate more awareness of job opportunities and benefit those youths who were not college bound. They also saw it as a good opportunity to develop good vocational type activities, and would provide the

needed vocational materials for use in the classroom. One individual also indicated that teacher involvement in the planning was a very positive aspect.

6. WHAT DO YOU SEE AS THE WEAKNESSES OF THE PROJECT?

The committee members indicated that there appeared to be a lack of comprehension among the teachers as to the implementation of the program. It would appear that they feel somewhat inadequate to carry out the objectives without sufficient advice and materials. Other comments also indicated that at the time of the questionnaire, the project was in such a preliminary state that they were unable to determine whether or not there were weaknesses in the project.

7. WHAT RECOMMENDATIONS COULD YOU MAKE FOR IMPROVING ANY ASPECT OF THE PROGRAM?

One committee member indicated that probably no recommendations could be made at this time because of the newness of the program. One recommendation made indicated that hopefully the organizational plan would fit into the existing curriculum structure as it is at the present time.

8. TO WHAT EXTENT DO YOU FEEL THAT YOU HAVE BEEN ABLE TO IMPLEMENT PROJECT ACTIVITY IN YOUR CLASSROOM.

All committee members indicated that they have been up to this time able to implement project activity in their classrooms.

9. HOW MIGHT THIS PROJECT STAFF BE OF GREATER ASSISTANCE TO YOU AS AN INDIVIDUAL OR TO THE COMMITTEE?

The committee members indicated that they would like the project staff to spend more time at the schools and it was also indicated that they would like to have access to the project staff and be able to discuss the goals and procedures to be used. However, they didn't

feel that at this particular time the staff was doing as much as could be expected of them.

10.. WHAT WOULD BE YOUR PREDICTION OF THE FUTURE SUCCESS OF THIS PROJECT IN THE NEXT TWO YEARS?

The majority of the committee members felt that the project will be successful but that it will depend upon the involvement of the teachers. It was also indicated that close working relationships and rapport will have to be established between teachers and project staff to insure overall success of the program. Many of their responses also indicated that additional materials and specifically outlined procedures would be needed by the teachers if the project was to succeed.

CONCLUSIONS

On the basis of the responses on the "Committee Member Evaluation of Exemplary Project" given by elementary school committee members in grades 4 thru 6, the following conclusions seemed appropriate:

1. Based on their comments, committee members attitudes towards the project has progressively become more favorable.
2. Progress in general has become more apparent and more positive as the committee members have gained a better understanding of the project and a better relationship with the exemplary project staff.
3. The committee members apparently feel that the strengths of the program are much greater than the weaknesses are at this point.
4. The tasks involved within the structure of the program appear to be quite easily implemented by the individual teachers.
5. The attitudes of the other teaching members appear to be supportive and this support should grow as the teacher becomes more familiar with the program.

6. The overall theme that appears to run through the responses made by committee members is that if the project is to be a success, the project staff will have to outline specific directions to both the committees and the teachers. A thorough knowledge of the specific behavioral objectives and materials appear to be the items that will enable teachers to feel more comfortable with project goals.

RECOMMENDATIONS

Based on the preceding summary and conclusions, the following recommendations that appeared warranted:

1. Committees as well as teachers should be given specific guide lines, such as behavioral objectives and materials or bibliographies, which would provide them with the direction that they are seeking.
2. More small group meetings with a project staff member in attendance to present materials and answer questions should be implemented.
3. Reviewing other programs that are operational within other states with committee members and teachers would appear to be beneficial at this time.
4. Committee members should be made aware of the objectives of the exemplary project and be kept up to date as to the progress that is being made throughout the entire school system.
5. The committee members and elementary teachers in the exemplary project should be involved in as much of the writing of behavioral objectives, pre and post testing, and final evaluation of project goals as possible.

6. A review of the committee members should be made at this time to determine if all of them would like to continue at this point.

7. Opportunity should be given for a flexible committee and for those who are not in agreement with the project goals and objectives should perhaps be replaced. If this is not possible as much individual attention should be given to the more negative committee members in order that they have a better understanding of the program in order that they might be able to make a more positive contribution towards the projects goals.

8. Educational goals should be outlined as well as specific behavioral objectives written for each subject area interest. It would appear to be most valuable to break down the task to be taught into a cookbook type of activity. The skill to be taught, the instructional technique, and the resource materials that are available either by the State Department or the public school system. This information should be listed very specifically. Supplementary materials such as books can be listed under vocational guidance bibliographies. These books can be both of a fiction and non-fiction type. Tapes can also be listed as they pertain to specific occupation or educational areas. Filmstrips and films should also be listed for teacher use and indicated at what point they will fit into the curriculum.

REPORT OF THE JUNIOR HIGH SCHOOL COMMITTEE MEMBER EVALUATION OF THE EXEMPLARY PROJECT

Twenty-two junior high school committee members completed the two-page evaluation form. In an attempt to provide a meaningful analysis of the evaluation, this report was divided into three parts: (1) summary, (2) conclusions, and (3) recommendations. Since it was not possible to include and paraphrase all comments made by committee members in the main body of this report, a complete listing of responses to items was also made available in a separate report.

Summary

Each of the following paragraphs represents a summarization of committee member responses to the ten items on the evaluation. Paragraphs are preceded by the item statement as it was presented on the evaluation form.

1. Based on your knowledge of the exemplary project what is your overall attitude at this time?

The attitude of junior high school committee members toward the exemplary project might be described as being quite favorable. (Mean = 2.32)

2. In talking to your fellow teachers what do you feel the general attitude toward the project is?

As rated by committee members, junior high school teachers look upon the exemplary project with less than moderate favor. It is the opinion of some committee members that much of what is being proposed is already being carried out. Others feel that teachers are reluctant to take an added

responsibility because of the extra time the project would demand of them. (Mean = 3.14)

3. What is your reaction to the help given your committee by the Project staff?

The junior high school committee members reacted from moderately favorable to favorable to the help given to their committee by the project staff. Comments made by committee members did not display any real consistency with regard to the quality of assistance available. Some members indicated that assistance is presently available, but at the same time others felt such assistance needs to be improved upon by having project staff working more closely with committee members. (Mean = 2.43)

4. What is your attitude regarding the effectiveness of the present committee approach in accomplishing the project's objectives?

The attitude of the committee members toward the committee approach was divided between favorable and moderately favorable. One individual did not think this approach was real effective. Two committee members were in agreement that the subcommittee idea and special sessions were helping to accomplish the objective of the project. (Mean = 2.50)

5. What do you see as the strengths of the project? Be as specific as possible.

Junior high school committee members lacked consensus as to what they viewed as being the strengths of the exemplary project. Three individuals agreed that teaching respect for all areas of work and developing a positive attitude toward work were the strengths of the project. (See the appendix for a more complete listing of strengths.)

6. What do you see as the weaknesses of the project? Be as specific as possible.

Compared to the frequency and length of responses when listing strengths of the exemplary project, junior high school committee members appeared to be more critical of the project than they were supportive when listing project weaknesses. Six of the twenty-two committee members felt that the major weakness of the project was their lack of direction. What the individuals want to know is not only where they are going but also where they are (or should be) at the present time. In connection with this expressed lack of direction, three individuals felt that more information was needed to clarify the objectives of the project to promote a thorough understanding of the project by committee members.

7. What recommendations could you make for improving any aspect of the program?

Recommendations as to how the project might be improved were varied. Several individuals felt that the project needed greater teacher involvement accompanied by in-service training for all involved. One individual recommended that " . . . committees should go back to their respective departments and share with their colleagues the ideas and convince them to participate." This might be just one of many possible approaches to bring about teacher involvement in the project. In addition, two committee members were concerned about the amount of overlap which might be occurring by having separate committees working on the program. If possible, the committees and subcommittees might profit from an

occasional exchange of information so that complete project integration might result.

8. To what extent do you feel that you have been able to implement project activity in your classroom.

A majority (12) of the committee members have utilized project materials and ideas in their classrooms. Since some individuals did not respond to this item, it is difficult to distinguish those who have not implemented a program in their classroom from those who cannot implement a program because of the nature of their position (e.g. principal, counselor, librarian, etc.).

9. How might this Project staff be of greater assistance to you as an individual or to the committee?

Comments made by committee members to this item represent a follow up to the weaknesses which were outlined in item six. Based upon responses to item nine, the committee appears to be divided into two groups. One group is asking for direction and a definition of their role and the objectives of the project. The second group appears to have direction but is looking for more specific information with regard to implementation of objectives. In either group, committee members are asking for increased assistance and greater availability of project of staff.

10. What would be your prediction of the future success of this project in the next two years?

With regard to the projected success of the exemplary project, committee members were generally of the opinion that it would be a success. However, most committee members qualified their success statements. The one most frequent qualification was with regard to the necessity for the involvement of teachers in the exemplary project. In addition, several committee members felt that success was inevitable if the project could maintain and continue its present rate of progress.

Conclusions

On the basis of the responses on the "Committee Member Evaluation of Exemplary Project" given by junior high school committee members, the following conclusions seemed appropriate:

1. In general, progress is being made by the junior high school committees according to the overall plan as projected by exemplary project staff.

2. Based upon their comments, committee member attitudes toward the project has become more favorable since the time the project was started.

3. Apparently, the committee and subcommittee approaches meet with committee member satisfaction in accomplishing their objectives.

4. When compared to listed weaknesses of the project, committee members found it difficult to designate what they felt were the strengths of the exemplary project.

5. Part of what has been planned for implementation as part of the exemplary project is already being carried out by some individual teachers.

6. The attitudes of colleagues of committee members are only moderately supportive of the exemplary project.

7. In spite of progress made by committees, it appears that committee members are demanding more assistance from project staff than has been true in the past. This is especially true with regard to providing more direction to committees and providing more information related to innovations in the area of occupational orientation.

Recommendations

Based on the preceding summary and conclusions, the following recommendations appeared warranted:

1. Committees should be given more guidelines and assistance which would provide committee members with the direction which they are seeking.

2. More information should be made available to committee members which presents what is being done in other programs throughout the country.

3. Project staff should review with committee members the objectives of the exemplary project and outline what is to be accomplished during the following year.

4. Junior high school committee members should be given feedback regarding what is being accomplished in the elementary and senior high school committees.

5. The need exists for increased involvement by junior high school teachers in the exemplary project. Such involvement might be accomplished by:

   a. having more in-service programs for teachers explaining the exemplary project

b. having project staff visit individual teachers and discuss contributions the teacher might make to the project

c. having committee members share with their colleagues the ideas developed during committee meetings.

6. Individual committee members should be evaluated with regard to contributions they are making to the exemplary project. Those individuals who are hindering committees from making progress should receive the individual attention of the project staff so that progress might be made.

6757

REPORT OF THE SENIOR HIGH SCHOOL COMMITTEE

MEMBER EVALUATION OF THE EXEMPLARY PROJECT

Ten senior high school committee members completed the two-page evaluation form. The report was divided into three parts: (1) summary, (2) conclusions, and (3) recommendations. A listing of actual and paraphrased responses is included at the end of the report.

Summary

The following paragraphs are a summary of the responses to the ten items. Paragraphs are preceded by the item statement as it was presented on the evaluation form.

1. Based on your knowledge of the exemplary project what is your overall attitude at this time?

The members of the senior high committee have a moderately favorable attitude toward the exemplary project. (Mean=2.70)

2. In talking to your fellow teachers what do you feel the general attitude toward the project is?

The committee members perception of other teachers' attitudes is that they are generally unfavorable. There appears to be a feeling that the project is duplicating what is already being done in the classroom. Lack of knowledge of the project was seen as a contributing factor to the unfavorable attitude. (Mean-3.80)

3. What is your reaction to the help given your committee by the Project staff?

The committee reaction to the help being given was moderately unfavorable. The greatest concern was in the area of lack of direction the committee felt and the attributing of this problem to the project staff. There also were favorable responses. (Mean=3.30)

4. What is your attitude regarding the effectiveness of the present committee approach in accomplishing the project's objectives?

The attitude of the committee toward the committee approach being used in the project was moderately unfavorable. Again the negative feeling seemed to center on the lack of direction the committee was experiencing. It would seem that the negative reaction was aimed more at the amount of accomplishment rather than the actual committee structure as an organizational system. (Mean=3.40)

5. What do you see as the strengths of the project? Be as specific as possible.

The senior high school committee members appear to have an adequate grasp of the purpose of the program and are able to identify this as a major strength of the project. The majority of responses did focus on the need and value of acquainting students with the world of work. Teacher participation in the planning was also noted as a strength.

6. What do you see as the weaknesses of the project? Be as specific as possible.

The committee had a number of varied suggestions concerning improvement in the exemplary project. Some of the items related to ways they could contribute more. Other responses reflected the feeling that the project staff should be having greater input. The list of responses for this item should be reviewed.

7. What recommendations could you make for improving any aspect of the program?

The suggestions for improving the program were varied. An overall generalization would be that there needs to be a more active exemplary project, including teachers, committee, and project staff.

8. To what extent do you feel that you have been able to implement project activity in your classroom?

The two major responses were that the type of activities suggested as part of the exemplary project were being implemented in the classroom at the senior high level prior to the project or secondly, that the activities were not being used much by the senior high committee members. There appears to be a general negative attitude that comes through on the responses to this item.

9. How might the Project staff be of greater assistance to you as an individual or to the committee?

The senior high committee appears to be looking for more structured leadership from the exemplary staff. There is also an interest by the committee to be better informed about concepts in the field and what other systems are doing.

10. What would be your prediction of the future success of this project in the next two years?

The senior committee seems divided on the future of the project. Some responses were quite pessimistic while others were positive if some conditions were met. If this truly represents the attitude of the senior high staff in general the project will have considerable difficulty attaining success in the Bismarck Senior High.

Conclusions

On the basis of the responses given by the Senior High project committee the following conclusions are made:

1. The majority attitude on the part of the committee toward the project is moderately favorable.
2. The purpose of the program is seen accurately by the committee although a number feel that these purposes are already being accomplished in the classroom.
3. The committee feels the need for much more specific direction from the project staff and feel moderately negative about the help given so far.
4. There appears to be a general negative attitude toward the project by the total senior high staff as judged by the committee members.
5. The future of the project is seen as uncertain at the senior high level.

Recommendations

1. The project staff should take the initiative in establishing better and more communication with the senior high committee. This should be aimed at strengthening the organization of the project and the direction it is going.

2. An orientation program designed to acquaint all senior high teachers with the program and to provide some type of involvement for more staff should be developed and implemented.

3. A complete review of the methods of the program for the senior high should be accomplished. If in fact the goals of the project are already being reached in the classroom a change in the program might be necessary. This would appear to move toward more coordinating of what is already being done rather than the introduction of a lot of new materials and methods.

4. An opportunity for those who are very negative toward the project to be relieved of their committee assignment should be given. This should make the committee a more viable approach.

6762

F. Conclusions and Recommendations for the Future.

The following conclusions are based upon a years experience of involving teachers in career development activities, a thorough review of literature and materials pertaining to career development and participation in numerous workshops, conferences and seminars concerning career development:

1. The integration of career development activities K-12 will enrich the curriculum and make learning experiences more meaningful for students.

2. A career development program will be successful, only if there is a total committment on the part of all teachers and administrators.

3. In-service training to orient teachers and administrator to the career development concept is essential for successful implementation of such a program.

4. Career development activities K-12, particularly in our state, need to be supplemented with special regional or statewide exploratory programs and intensive training offerings to provide for the lack of vocational education in our small schools.

5. It is essential that agencies and associations with similar purposes coordinate their efforts.

6. Parents must be involved in a career development program. Parents, as workers, provide excellent resource people for classroom discussion on the world of work.

7. The business and industry community must be involved in a career development program.

In light of the experiences during the initial year of the Exemplary Project, it becomes evident that certain recommendations can be made concerning future aspects of the project. The following list summarizes the recommendations for the future:

1. All activities developed for inclusion in the final guideline should be field tested in schools of various sizes. It is imperative that these activities have implication regardless of school size.

2. Active and cooperative involvement of administrators, teachers, counselors and librarians is a necessary part of the Career Development Program.

3. It is essential that adequate resource materials be available to supplement the Career Development activities.

4. Extensive in-service workshops should be conducted as a part of the dissemination of the Career Development Guideline.

5. Adequate funds must be committed at Federal, State and local levels to insure that the program can be fully developed and properly disseminated.

A P P E N D I X

6765

APPENDIX "A"

Exemplary Project Working Committees

A. Primary Level

Florence Nelson	Grade 1
Fay Weld	Grade 1
Yvonne Carlson	Grade 1
Anne Hillesland	Grade 2
Nina Seppanen	Grade 2
Beverly Trom	Grade 2
Marilyn Johnson	Grade 3
Jean Otteson	Grade 3
Linda Jordre	Grade 3
Matt Fettig	Principal
Lucille Tangedahl	Special Education
Harry Weisenberger	Exemplary Project Staff
Jerry Roth	Public Instruction

B. Intermediate Level

Marva Anderson	Grade 4
Myra Hanson	Grade 4
Marilyn Swanson	Grade 4
James Dunn	Grade 5
June Fettig	Grade 5
Ron Becker	Grade 5
Waldemar Maas	Grade 6
Hazel Trom	Grade 6
August Ritter	Grade 6
Wayne Granfor	Principal
Harry Weisenberger	Exemplary Project Staff
Leone Grooters	Special Education
Jerry Roth	Public Instruction

APPENDIX "A" (Continued)

C. Junior High Level

Evander Nelson	Principal
John Yonker	Principal
Gordon Holt	Principal
Clarence Gall	Counselor
Jerry Gusaas	Industrial Arts
Mike LaLonde	Social Studies
Larry Rosenow	Social Studies
Ray Jesser	English
Esther Lostegaard	Librarian
Carol Waggoner	Special Education
Wilbert Huber	Mathematics
Margaret Halland	Home Economics
Arlen Jacobson	Science
Ronald Larson	Social Studies
Robert L. Lamp	Exemplary Project Staff
Robert Baarstad	Public Instruction
Ordeen Lindemann	Public Instruction

D. Senior High Level

James Olson	Member-at-Large
Emroy Swanson	Principal
Nick Barbie	Assistant Principal
Dale Thorstenson	Counselor
Helga Olson	Librarian
Dennis Trom	English
Virginia George	Social Studies
Raymond Frandsen	Science
Robert Ohman	Mathematics
Larry Pollert	Business Education
Mary Engel	Language
Dan Keller	Industrial Arts
Gordon Knaak	Music
Jeanette Radig	Special Education
Richard K. Klein	Public Instruction
Harold Michelson	Public Instruction
Marvin Kollman	Exemplary Staff Member

APPENDIX "B"

Samples of Career Development Activities

6768

CAREER DEVELOPMENT ACTIVITIES

BROAD OBJECTIVE: To develop positive attitudes toward the World of Work

SPECIFIC BEHAVIORAL OBJECTIVE: To demonstrate student's knowledge of father's occupation , the student will name at least three tools that his father uses in his work.

SUGGESTED SUBJECT AREA Language Arts

SUGGESTED GRADE LEVEL 1

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
1. Make bags of cloth or paper (Daddy bags) 2. Have students take these home and have their father put tools into bag and explain to them what each is used for. 3. The child brings daddy-bags back to school and explains to the rest of the class what his father's job title is and tools used and how used.	1. Discuss work and workers and how each worker is very important. 2. Discuss how certain tools that their mother uses in the home make her work easier. (Example of tool) Do same for teacher (ruler) and student (pencil). 3. Discuss how their fathers need certain tools in their work.	Cloth Needle Thread Construction Paper Paste Egg Beater Pencil Ruler

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

63769

CAREER DEVELOPMENT ACTIVITIES

BROAD OBJECTIVE: To develop awareness of self-worth

SPECIFIC BEHAVIORAL OBJECTIVE: Each student will demonstrate responsibility by idependently performing three routine tasks and following all presented safety rules as observed by the teacher.

SUGGESTED SUBJECT AREA Soc. Studies

SUGGESTED GRADE LEVEL 1

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
1. Use Helper Chart - for pupils to learn responsibility for routine tasks that will assist in maintaining a smooth classroom operation. 2. View Filmstrips. 3. Practice walks. 4. Sing songs. 5. Practice in clothes care. 6. Daily health check. 7. View films.	1. Large tagboard chart with pictures depicting classroom jobs--names assigned to each job on a weekly basis. 2. Discuss filmstrips as they relate to care and respect for school materials and equipment - as they are used by the children. 3. Practice for correct behavior in halls, on playground, and crossing streets.	1. Large sheet, 22" x 28" tagboard for chart. 2. Filmstrips: *McGraw-Hill, School Series Rules and Plans: a) Getting Acquainted b) Getting To and From School c) Taking Care of Property 3. Field trips (short) 4. Songs: American Singer, Grade 1 "Crossing the Street" Music for Young Americans, A.B.C.

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

CONTINUATION ACTIVITY SHEET

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
	4. Use songs that relate to the specific activity under discussion.	4. cont- 1966 "Traffic Lights" p. 77, Bk II
	5. Encourage labeling of all wraps. Assign hooks for all outdoor wraps. Establish work habits of proper placing and storing of personal belongings in desks or about room.	
	6. Use daily health check to establish good personal health habits: "Did you brush your teeth? Did you eat a good breakfast?, etc.	
	7. Discuss and dramatize adaptable parts of films.	7. Films: *Encyclopeadia Britannica Films #2669, 11 min. Good Citizens #2204, 11 min. School for ted

6771

Crossing the Street

J. Wolverton

Opal Dillon

1. Look to the left! Look to the right! When you cross the street.
2. Look for the cars! Look for the trucks! When you cross the street.

Look to the left! Look to the right! When you cross the street.
Look for the cars! Look for the trucks! When you cross the street.

67772

Traffic Lights

Adapted Words German Folk Tune

WELL ACCENTED

1. The green light means "Go, and the yel - low "Take Care," The
2. When - ev - er we come to a street with no light, We

red light means "Dan-ger, you'd bet - ter be-ware!" So stop and wait un-
look to the left and then look to the right, When all is clear, we

til you see green. Walk safe-ly a - cross when the col-or is green.
go cross the street, By us - ing our heads, we will stay on our feet.

67723

CAREER DEVELOPMENT ACTIVITIES

BROAD OBJECTIVE: To develop a positive self-concept stressing respect and acceptance of self and others that will lead to future self-fulfillment in a vocation.

SPECIFIC BEHAVIORAL OBJECTIVE: Student will take a self-appraisal inventory and complete at least 90% of it.

SUGGESTED SUBJECT AREA Language

SUGGESTED GRADE LEVEL 4

Concept: Individuals differ in abilities, interests, attitudes, and values.

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
Group planning in a self-appraisal inventory or one prepared by teacher ahead of time. (See attached sheet) Displays and discussions of students hobbies or crafts they are interested in. Use the questions on the selfappraisal sheet as starter sentences for (cont)	1. What are ways to determine what our likes and dislikes are? 2. What does aptitude mean? (use dictionary) 3. How will this influence the kind of work we decide to do? 4. Take survey - What Do I Know About Me? 5. Discuss completed survey: a. What types of things does it tell us? b. Can this information be useful? c. How can a hobby become an occupation.	Self-Appraisal Sheet (attached to activity)

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

CONTINUATION ACTIVITY SHEET

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
creative writing. Inventory will again be given, at a later date, to determine changes in attitudes.	5. d. What things would you look at in an occupation before you choose it? e. Will your likes and dislikes have anything to do with the job you choose?	

67225

WHAT DO I KNOW ABOUT ME

1. What I like to do

2. The hobbies I have or would like to have

3. The clubs I belong to

4. Some clubs or things that I have done that I did not enjoy

5. What I most often do in my spare time

6. Contests or competitions I have entered

7. What subjects I like best in school

8. The subjects I do not enjoy in school

9. What sports or games I like best

10. What kind of person I like best to be with

11. Do I like to read in my spare time

12. What kind of jobs do I like to do best now

13. What kind of work would I like to do in the future

14. Do I spend most of my free time indoors or outdoors

CAREER DEVELOPMENT ACTIVITIES

BROAD OBJECTIVE: To present appropriate occupational information using a broad introduction of occupations throughout the world.

SPECIFIC BEHAVIORAL OBJECTIVE: All students will write a short paragraph explaining what the meteorologist does in his work.

SUGGESTED SUBJECT AREA Science Meteorology

SUGGESTED GRADE LEVEL 6

Concept: To expand the concept that an understanding of science helps many people in their work.

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
Develop an awareness of the importance of weather and its affect on different occupations. Watch T.V. weather reports and learn meanings of the terms and symbols used by the weatherman. Make a scrapbook of daily newspaper weather forecasts, headlines (cont)	Use in conjunction with the weather chapter in Science. Discuss with the students the ideas that this is a very scientific occupation that most of us know very little about. Much can be done through discussion and observation. Also visit a weather station and talk to weatherman about importance of their job to other occupations such as airplane pilots.	U. S. weather maps from local weather stations or newspapers. Filmstrips about weather Film: Unchained Goddess Available through N.W. Bell Books: Storms by Paul Lehr The Wind by Ethel Campbell Our Changing Weather by Carroll Fenton The Making of a Pilot, Richter E. J. Westminster Press, Witherspoon Bldg. Juniper & Walnut Sts. Philadelphia PA 19107 C. 1966 Gr. 5-7

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

CONTINUATION ACTIVITY SHEET

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
from newspapers about storms, pictures from the paper and magazines on weather and how it has affected things, people, places, etc. Build weather instruments, rain gauge, anemometer, wind wave, etc. Bring a barometer to school. Learn to read it. Observe cloud formations. See if you can forecast the weather for the day. Visit Weather Bureau at airport.	If conditions are available also visit an airport and talk to airport managers, pilots, stewardesses, and air traffic controllers about their work. What is the importance of weather forecasts to these occupations. List appropriate vocabulary and map symbols for forecasting weather.	Newspapers and magazines Resource person: Mr. Labore, Airtraffic Controller, Bismarck Airport Songs: "Who Has Seen the Wind" p. 250 Mastering Music VI ABC "Signs of Weather" P. 100-101 Mastering Music VI American Book co. 16 mm film You and the Weather , Texaco Inc. Mrs. R. B. Smithwick 1570 Grant Street Denver, Colorado 80203 Air Masses and Fronts Dept. of Air Force Air Force Film Library St. Louis, Mo. 63125

Signs of Weather *(Canon)*

Music and Words by James Niblock

Andante

1. Eve - ning red and morn - ing grey, Is___ the sign of
2. Eve - ning red and morn - ing grey, Send___ the sail - or

1. Eve - ning red and morn - ing grey,
2. Eve - ning red and morn - ing grey,

sun - ny day; Eve - ning grey and morn - ing red,
on his way; Eve - ning grey and morn - ing red,

Is___ the sign of sun - ny day; Eve - ning grey and
Send___ the sail - or on his way; Eve - ning grey and

Bring down rains___ up - on our head.
Bring down rains___ up - on his head.

morn - ing red, Bring down rains___ up - on our head.
morn - ing red, Bring down rains___ up - on his head.

Swenson

CAREER DEVELOPMENT ACTIVITIES

BROAD OBJECTIVE: To acquaint students with general occupational areas of their parents

SPECIFIC BEHAVIORAL OBJECTIVE: After the students have taken a poll of their parents' occupations, the class collectively, will construct a circle graph depicting general areas of parents' occupations.

SUGGESTED SUBJECT AREA Math

SUGGESTED GRADE LEVEL 7

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
After studying percents and angle degrees combine the two and have students construct a graph illustrating the work of their parents.	1. Take a poll of students asking them to list their parents' occupations. 2. Group all occupations, then catagorize them into four groups, (professional, technician, skilled and semi-skilled.) 3. Construct a circle graph depicting the percentages of parents in each category. 4. Discuss the four areas and relate to students that these are general areas.*	Parents Textbook * A graph depicting more specific occupational areas will be constructed later.

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

0780

CAREER DEVELOPMENT ACTIVITIES

LaLonde, Clayson
Job Hunt-Anytown U.S.A.

BROAD OBJECTIVE: To acquaint students with sources of job opportunities.

SPECIFIC BEHAVIORAL OBJECTIVE: After selecting five occupations using the yellow pages of the telephone directory, each student will demonstrate a knowledge of the yellow pages by listing the (1) name of the firm (2) address of the firm and (3) telephone number of each of three occupations.

SUGGESTED SUBJECT AREA Social Studies

SUGGESTED GRADE LEVEL 7

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
As an activity outside the classroom have the students pick out occupations from the yellow pages of the phone book. (Teacher might run a survey to see how many students picked the same jobs and where most of the interest was centered.)	1. Have students choose five occupations from the yellow pages of a phone book. 2. List these five occupations in the order of preference. 3. Have students list the a)name of the firm, b) address of the firm, c) telephone number. 4. Briefly describe why you think you would like these jobs. 5. Ask whether or not students feel that in time they would be able to do this work. Here they must look at themselves realistically. (continued)	Phone book Filmstrip: *Applying For the Job You Want #7-5-C Eye-Gate Booklet: *"Finding Part-time Jobs" #5-1184 SRA Guidance Series

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

6781

CONTINUATION ACTIVITY SHEET

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
	6. Discuss the importance of using the yellow pages in searching for a job.	

6782

CAREER DEVELOPMENT ACTIVITIES

LaLonde- Clayson
Job Hunt - Anytown U. S. A.

BROAD OBJECTIVE: To acquaint students with sources of job opportunities

SPECIFIC BEHAVIORAL OBJECTIVE: To demonstrate a knowledge of how to interpret want ads and how to apply for jobs, each student will choose a position from a prepared want ad page and apply for that job by writing a complete letter of application.

SUGGESTED SUBJECT AREA Soc. Studies

SUGGESTED GRADE LEVEL 7

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
Through the use of sample want ads (following page) students should learn how to interpret these ads and how to go about applying* for a job. *This activity should be correlated with an English class for the actual letter writing experience.	1. Distribute mimeographed sheet of sample want ads. (These are designed for 7th graders.) 2. Students should consider jobs - keeping in mind their individual interests and abilities. 3. Have students evaluate the demands of the job and what kind of satisfaction can be attained. 4. Have student write a letter of application for the job of his choice*	Sample Want Ads (Attached)* Language Arts teacher Filmstrip: *Applying For the Job You Want #7-5-C Eye Gate

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

Want Ads ANYTOWN, U.S.A. June 1, 1970

Girl needed to help with housework and two pre-school children. Excellent pay. Must live in. Mrs. Cartright, 917 Hampton Court

####

Help wanted. Young man to plant and care for garden. June 1 - September 15. Good Pay. Hard work. Write Will Jones 4171 Jay Avenue

####

Theater ushers and concessionaires. Six months trial basis. Fast advancement. Mr. Slauto, Bijou Theater

####

Baker's helpers needed. Learn trade while earning. Mr. Flores, Western Bakery, 1121 Central Avenue

####

Stock boy for new ladies' read-to-wear. Must be neat appearing and willing to work extra hours. Mrs. Cliffmore, 307 Elmwood Avenue

####

Need job? Write Fred Ferbert, 2118 Almost Drive for details of remunerative door-to-door selling of new household products. Blue law approved

####

Young lady companion for elderly widow. Read, visit, ride. No nursing or driving. Hours vary. No clock-watchers need apply. $25.00 per week. Mrs. Jackson Updike, 1115 Laural Canyon

####

Will let contract for painting two miles of farm fence. Write John McDougal, R.R. 7, State finishing date and your price.

####

Amateur typist. 20¢ per page, 5¢ per carbon. Use my typewriter or yours. S. E. Bosely, Apt. 10, Kay Apts.

####

Will hire window washer. Display windows of five shopping center establishments. Each daily - outside only. Write J. Heming, c/o Pall Mall.

CAREER DEVELOPMENT ACTIVITIES

Huber

BROAD OBJECTIVE: To show students that all jobs have a need for mathematics

SPECIFIC BEHAVIORAL OBJECTIVE: Each student will list six math related occupations and illustrate the specific math concept used in each occupation.

SUGGESTED SUBJECT AREA Math

SUGGESTED GRADE LEVEL 8

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
Students will become acquainted, through individual investigation, of the practicality of everyday mathematics and its application to the "World of Work".	1. Give students an example of one job that requires a basic knowledge of math. 2. Have students pick five more occupations (example: service station operator, auto mechanic, nurse, doctor, etc.) and let them explain how each uses mathematics in their everyday work. 3. Discuss the results.	* Finney's Occupational Guidance kit. * Occupational Outlook Handbook * Dictionary of Occupational Titles * Attached Sample

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

67385

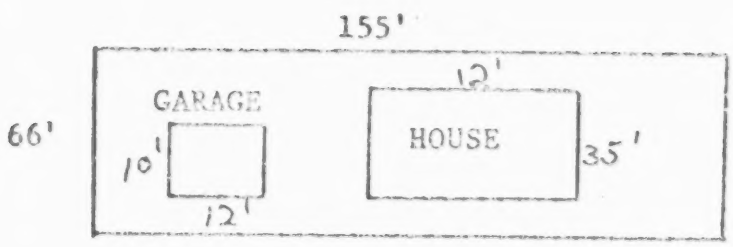
STUDENT EXAMPLE

1. Clerk

Sales Slip

1.45	pro
1.28	meat
.45	groc
.69	groc
.75	groc
$4.62	
.16	tax
4.78	total
10.00	amount
5.22	change

2. To Surveyor - House and Yard Lot



A=bh
A=(155) (66)
A=10,230 sq. ft.

A=bh
A=(10) (12)
A=120 sq ft

A=bh
A=(12) (35)
A=420

A=Total Sq. Ft.
A=10,230 - 540
A=9,690 sq. ft.

3. Chevrolet Garage

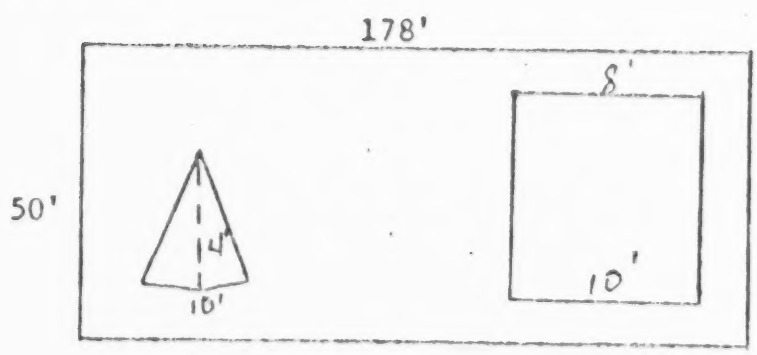
Service Slip

Muffler	4.89
Rocker arm	9.99
(2) brake shoes	10.85
wheel alinement	55.76
labor	19.95
	101.44 total

4. Painter - Wall, Paint, Plans

A=bh
A=(50) (178)
A=8,900 Sq. Ft.

A=½bh
A=½ (4x10)
A=20sq ft



A=bh
A=(8) (10)
A=80

A=8,900-100
A=8,800 Sq. Ft.

Total area to be painted is 8,800 square ft.

CAREER DEVELOPMENT ACTIVITIES Jacobson

BROAD OBJECTIVE: To acquaint students with how BTU's are instrumental in the air conditioning industry.

SPECIFIC BEHAVIORAL OBJECTIVE: Each student will calculate the BTU rating for their home air conditioning or heating unit and list five occupations related to the heating and refrigeration areas.

SUGGESTED SUBJECT AREA Physical Science

SUGGESTED GRADE LEVEL 9

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
When dealing with heat and fuels, have students calculate the BTU, rating needed to air condition or heat their own home and relate a number of occupations in the heating and refrigeration areas.	1. Obtain the formula used to calculate BTU rating. 2. Have students figure the areas of their own homes and then have them calculate the size of central air conditioner or heating unit they would need. 3. Ask students to list a number of occupations that this knowledge would be needed for. 4. Have an interested student investigate a common choice and report to the class on some details of that occupation.	Films: Principles of Refrigeration - 20 min U. S. Office of Education Washington, D. C. Gas for Home and Industry - 14 min. American Gas Association 420 Lexington Avenue New York 16, New York Free

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

6289

CAREER DEVELOPMENT ACTIVITIES

Gusaas

BROAD OBJECTIVE: To acquaint students with the various occupations and levels in the drafting cluster

SPECIFIC BEHAVIORAL OBJECTIVE: After completing the career ladder, each student will list five occupations from the cluster and list the information cited in the activity.

SUGGESTED SUBJECT AREA Ind. Arts

SUGGESTED GRADE LEVEL 9

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
The activity will provide information to the student, through his own investigation, on the variety of occupations that are available to him and some of the characteristics of the work.	1. Use blank ladder as a transparency and have students begin filling in the steps. 2. In a group setting, students should try to find at least one occupation that fits in each level. 3. After ladder is complete, have students investigate these areas for the five occupations: a. Conditions of work b. Location of work c. Earnings d. Training or education necessary e. Employment outlook (cont)	Occupational Outlook Handbook* Finney's Occupational Guidance Kit* Dictionary of Occupational Titles* Attached sheet of related occupations*

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

6788

CONTINUATION ACTIVITY SHEET

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
	f. Community resources for this work. g. Interests and aptitudes needed for this work.	

6789

WORLD
OF
WORK

MASTERS & UP

College Instructor Industrial Arts
Engineering

FOUR YEAR
DEGREE

Mechanical Drawing Instructor High School
Auto Body Designer
Architect

HIGH SCHOOL &
TECHNICAL

Aeronautical Draftsman
Aerospace, Engineering Technician
Architectural Technician
Architectural Draftsman
Fashion Designer
Interior Designer

HIGH SCHOOL OR
HIGH SCHOOL
EQUIVALENT

Electrical Draftsman
Structural Draftsman
Marine Draftsman
Map Draftsman
Mechanical Draftsman

LESS THAN
HIGH SCHOOL

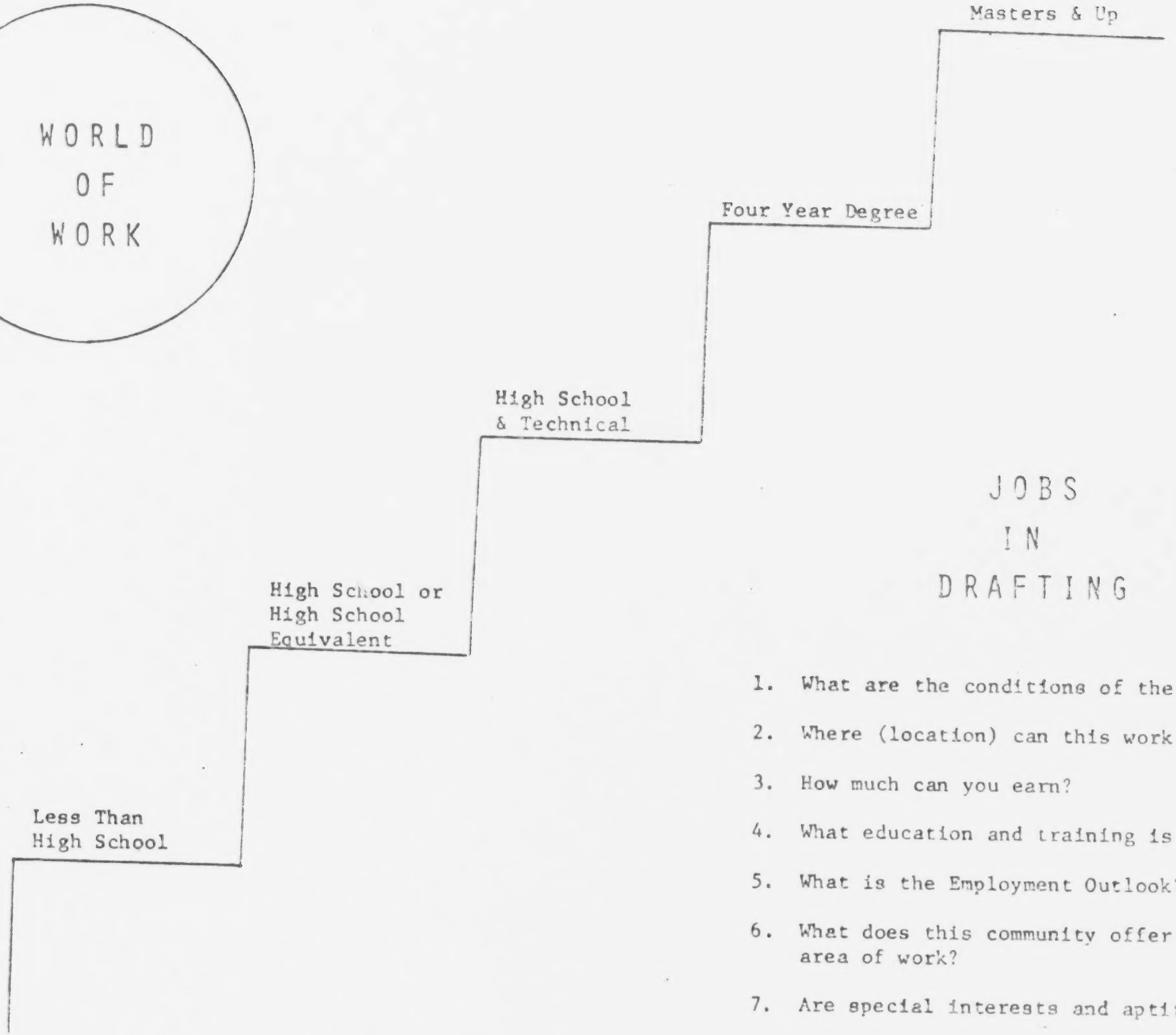
Carpenter's Helper
Construction Worker
Machinist Operator
(All operators read
drawings)

JOBS IN DRAFTING

1. WHAT ARE THE CONDITIONS OF THE WORK?
2. WHERE (LOCATION) CAN THIS WORK BE FOUND?
3. HOW MUCH CAN YOU EARN?
4. WHAT EDUCATION AND TRAINING IS NECESSARY?
5. WHAT IS THE EMPLOYMENT OUTLOOK?
6. WHAT DOES THIS COMMUNITY OFFER IN THIS AREA OF WORK?
7. ARE SPECIAL INTERESTS AND APTITUDES NECESSARY

6790

WORLD
OF
WORK



JOBS IN DRAFTING

1. What are the conditions of the work?
2. Where (location) can this work be found
3. How much can you earn?
4. What education and training is necessary?
5. What is the Employment Outlook?
6. What does this community offer in this area of work?
7. Are special interests and aptitudes necessary?

6791

CAREER DEVELOPMENT ACTIVITIES

Aafedt

BROAD OBJECTIVE: To acquaint students with outstanding people featured in biographies with emphasis on the various areas of work these people were involved in.

SPECIFIC BEHAVIORAL OBJECTIVE: After having read a biography, each student will write a comprehensive report on the biography of their choice emphasizing specific areas of work outlines in the suggested technique column.

SUGGESTED SUBJECT AREA Lang. Arts

SUGGESTED GRADE LEVEL 9

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
Have students prepare reports, both oral and written, on a biography of a person they are interested in. In these reports the student should stress the person's field of work and how it is related to something he may want to eventually do.	1. Introduce biographies as a type of literature explaining qualities. 2. Have students select and read a biography that talks about work they are interested in. 3. Study the biographer's successes and failures in this work and why he succeeded or failed. 4. Ask students to tell why they identify with the person written about. (Continued)	Biographical Section in the library. -Dictionary of American Biography -Current Biography -Who's Who Filmstrip: Applying for the Job You Want * #7-5-C Eye Gate

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

6729

CONTINUATION ACTIVITY SHEET

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
	5. Have students tell how this type of exposure makes them more aware of the "World of Work."	
	6. Investigate how people studied ended up doing work they did. This lends itself to a discussion of finding a place for yourself in society and its working world.	

6793

CAREER DEVELOPMENT ACTIVITIES

BROAD OBJECTIVE: To acquaint students with the major occupational fields. (To precede unit on "Research for an Occupation.")

SPECIFIC BEHAVIORAL OBJECTIVE: Each student will know how to use the Occupational Outlook Handbook by selecting three careers and reporting on training required, employment outlook and sources of additional information.

SUGGESTED SUBJECT AREA: English

SUGGESTED GRADE LEVEL: 10

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
Acquainting students with the major job classifications according to the Occupational Outlook Handbook- 1. Professional, managerial, and related occupations. 2. Clerical and related occupations. 3. Sales occupations 4. Service occupations	This activity could be incorporated into the library unit. Discuss the Occupational Outlook Handbook with students. Reading reports from brochures, occupational briefs, and books. Notebooks or collection of materials about occupations of students choice. Students interviews with workers. (cont)	Speakers from occupational fields. Occupational Outlook Handbook Dictionary of Occupational Titles Government agencies Department of Labor U. S. Office of Education Career Kits.

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

6294

CONTINUATION ACTIVITY SHEET

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
5. Skilled and other manual occupations. 6. Major industries and their occupations. 7. Occupations in agriculture 8. Occupations in government	Guest speakers Have each student write a theme discussing three careers which might be of interest to him using the Occupational Outlook Handbook as a guide. Have students write a term paper on selected occupations.	

6795

CAREER DEVELOPMENT ACTIVITIES

BROAD OBJECTIVE: To acquaint students with general characteristics of people in mathematics.

SPECIFIC BEHAVIORAL OBJECTIVE: Each student will list four characteristics of people in mathematically orientated jobs and will relate these characteristics to himself.

SUGGESTED SUBJECT AREA Math

SUGGESTED GRADE LEVEL High School

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
Identify characteristics that fit the image of a mathematician.	Duplicate and hand out for discussion the following: S. R. A Jobs In Mathematics #8 p. 7 "The Ties that Bind." Qualities Common to all Mathematics 1. Method-system of logic in order to reach conclusion. 2. Symbolism - all people can easily read and results are concise and clear. 3. Pattern-finds order amongst chaos. 4. Beauty - Rhythm and order are pleasing wherever they exist. Have each student list the above qualities and tell how he does or does not identify with them.	S.R.A. Cassette Jobs in Mathematics #8 Mathematicians Staticians Occupational Outlook Handbook Occupational Guidance Finney Company - Minnepolis, MN

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

9629

CAREER DEVELOPMENT ACTIVITIES

BROAD OBJECTIVE: To acquaint students with the possible relationships between jobs and foreign language courses.

SPECIFIC BEHAVIORAL OBJECTIVE: Each student of foreign language will list six careers in which foreign language is required.

SUGGESTED SUBJECT AREA Foreign Language

SUGGESTED GRADE LEVEL 10-12

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
Preparing a bulletin board (occupational clusters, etc.)	Show graphically specific careers in which foreign language is needed or helpful. A bulletin board could be used during the time of research if the teacher is having the students research a specific job utilizing foreign language.	Occupational clusters (Appendix E) Want ads Newspapers, magazines Guidance office.

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

6629

CAREER DEVELOPMENT ACTIVITIES

BROAD OBJECTIVE: To acquaint the student with career opportunities closely related to the social science courses.

SPECIFIC BEHAVIORAL OBJECTIVE: Each student will give oral or written expression to the basic nature of at least four social science related careers.

SUGGESTED SUBJECT AREA Soc. Studies

SUGGESTED GRADE LEVEL 12

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
Researching, formulating reports and discussing report information.	A. Introduce to the students the social science curriculum with the purpose of exposing them to its career preparation aspects. B. Divide the class into two groups. 1. *Assign one group of students to choose one of the following areas in the social sciences to be researched for the career implications: a. Anthropology b. Economics c. Geography d. Political Science e. History f. Sociology	Occupational Outlook Report Series U. S. Department of Labor U. S. Department of Health, Education, and welfare. S. R. A. Career Information

Teacher Evaluation:

1. Did this activity apply to the suggested subject area? _____; Grade level? _____.
2. Is the criteria for student performance (Specific Behavioral Objective) too high, too low, satisfactory? (circle one)
3. Please comment on reverse side regarding the following:
   a. What additions or deletions could you suggest in the activity and technique column?
   b. Could you suggest additional resource materials for this activity.

6798

CONTINUATION ACTIVITY SHEET

ACTIVITY	SUGGESTED TECHNIQUE	RESOURCE MATERIALS
	2. *Assign the other group of students to research the following occupational areas with special emphasis on their connection with the social sciences: a. Criminologists b. Economist c. Geographer d. Political Scientist e. Psychologist f. Sociologist g. Recreation worker h. Teachers. C. Panel presentation of research efforts should establish the correlation between the several careers researched and the social science curriculum. *The size of each group will determine the number of students to be assigned to each research area.	

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APPENDIX "C"

Bibliograph of materials which supplement the Career Development Guideline.

These materials have been field tested in the Demonstration site and are recommended for inclusion in school libraries, resource materials centers, etc.

6800

CAREER DEVELOPMENT RESOURCE MATERIALS

ELEMENTARY

Name Source	Author	Publisher	Address	Approx. Price
Picture Charts		Child's World	515 N. Front St.	
Moods and Emotions			Box 711	6.95
People Who Come to My House			Mankato, Minn. 56001	6.95
People in the Neighborhood				6.95
What Could I Be		Science Research Assoc.	259 W. Erie St. Chicago, Ill. 60611	1.34
Junior Guidance Series (20 booklets)		"	"	13.25
Focus on Self-Development Kit		"	"	95.00
Come to Work With Us (6 titles)	Wilkinson	Sextant Systems	3048 N. 34th St. Milwaukee, Wis. 53210	19.95
William, Ramon, Andy and Five Friends at School (filmstrip & records)		Taylor Audio-Visual	Box 1377 Huron, S. Dak. 57350	45.00
Occupational Information in the Elementary School	Norris	Science Research Assoc.	259 Erie St. W. Chicago, Ill. 60611	5.50
Guidance Kit for Elementary Counselors & Teachers		"	"	21.95
Filmstrips & Cassettes (or records)		Guidance Assoc.	41 Washington Ave. Pleasantville, NY 10570	
Who Do You Think You Are?		"	"	18.00
Guess Who's in a Group		"	"	20.00

6801

Name Source	Author	Publisher	Address	Approx. Price.
Filmstrips & Cassettes (con't)		Guidance Assoc.	41 Washington Ave. Pleasantville, NY 10570	
What Happens Between People				20.00
You Got Mad: Are You Glad?		"	"	20.00
What Do You Expect of Others?		"	"	20.00
Outset:				
Listen - There Are Sounds Around You		"	"	35.10
Look About You		"	"	35.10
People We Know		"	"	35.10
Places to Go		"	"	35.10
World of Work (filmstrips and records) K-3 Series and 4-6 Series		Denoyer-Geppert	Box 93550 Chicago, Ill. 60690	329.22
I Know A (series of 20 books on occupations)		E. M. Hale & Co.	Box B-1473 Mpls, Minn. 55480	2.68 each
What Will I Be From A-Z	Gelb, Donald	National Dairy Council	111 N. Canal St. Chicago, Ill. 60606	.25
Triple "I" Series	Franco	American Book Co.	300 Pike St. Cincinnati, Ohio 45202	
I Aim, Ask and Act		"	"	2.61
I Build, Belong & Believe		"	"	2.61
I Can, Compete & Care		"	"	3.15
I Do, Dare & Dream		"	"	3.69
I Earn, Explore & Excel		"	"	3.69
I Find, Follow and Finish		"	"	3.69
Me, Myself and I (filmstrips & cass.)		Eye Gate House	146-01 Archer Ave. Jamaica, NY 11435	47.00
School Series: Our School Workers		McGraw-Hill	Box 402 Hightstown, N.J. 08520	57.50
Autobiographies of Prominent individuals.				

2089

CAREER DEVELOPMENT RESOURCE MATERIALS

JUNIOR HIGH

Name Source	Author	Publisher	Address	Approx. Price
Finney's Occupational Guidance Kit (5 units)		Finney Company	3350 Gorham Ave. Mpls. Minn. 55426	197.50
Occupational Outlook Handbook		Supt. of Documents	U. S. Government Printing Office Washington, D.C. 20402	6.25
Filmstrips with Cassettes or records				
Job Attitudes:		Guidance Assoc.	41 Washington Ave.	
Trouble at Work		"	Pleasantville, NY 10570	39.00
Liking Your Job and Your Life		"	"	20.00
Why Work at All?		"	"	39.00
A Job That Goes Someplace		"	"	39.00
Getting and Keeping Your First Job		"	"	39.00
Preparing for the Jobs of the 70's		"	"	39.00
Your Job Interview		"	"	39.00
Junior Guidance Series (20 booklets)		Science Research Assoc.	259 W. Erie St. Chicago, Ill. 60611	13.25
Better Living Booklets (32)		"	"	23.00
Please Print Your Full Name (book)	Halligan, Dan	Dan Halligan	Box 80 Billings, Mont. 59103	2.00
101 Summer Jobs	Ashley, Roberta	E. M. Hale & Co.	Box B-1473 Minneapolis, Minn. 55480	4.59
Succeeding in the World of Work	Kimbell & Vineyard	McKnight & McKnight	Bloomington, Ill.	5.97

68003

Name Source	Author	Publisher	Address	Approx. Price
Choice or Chance, Career Planning & Development		County of Alameda	224 W. Winton Ave. Hayward, Calif. 94544	2.00
Career Choice & Career Preparation		Interstate Publishers & Printers	Paoli, Penn.	
Filmstrips:				
What is Your Future in the Changing World of Work? with cassette		Eye Gate House, Inc.	146-01 Archer Ave. Jamaica, NY 11435	
The ABC's of Getting and Keeping a Job 7-5 (8 filmstrips & 4 cassettes)				
The ABC's of Getting and Keeping a Job		Eye Gate House, Inc.	146-01 Archer Ave. Jamaica, NY 11435	74.00
Preparing for the Job you Want		"	"	
On the Job		"	"	
Budgeting Your Money		"	"	
Labor Unions		"	"	
Health Rules to Follow		"	"	
Quizstrip		"	"	

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CAREER DEVELOPMENT RESOURCE MATERIALS

SENIOR HIGH

Name Source	Author	Publisher	Address	Approx. Price
Toward Adult Living	Nat'l Forum Foundation	American Guidance Service	Publisher's Bldg. Circle Pines, Minn. 55014	3.05
Discovering Myself	"	"	"	2.85
Planning My Future	"	"	"	3.25
Occupational Exploration Kit		Science Research Assoc.	259 W. Erie St. Chicago, Ill. 60611	99.50
Career Information Kit		"	"	199.50
Handbook of Job Facts		"	"	4.50
Guidance Series Booklets (57)		"	"	37.00
Job Family Series (20 bklts)		"	"	19.50
Career Development Lab (cassettes) (interview of 60 different occupations)		Educational Progress Corp.	8538 E. 41st St. Tulsa, Okla. 74145	210.00
Occupational Outlook Handbook		Supt. of Documents	U. S. Government Printing Office Washington, D. C. 20402	6.25

6805
NORTH DAKOTA PRODUCT

VT 014 632

MCKINNEY, FLOYD L.; MANNEBACH, ALFRED J.
STUDY OF STUDENT COMMITTEES ON EVALUATION. A STUDY CONDUCTED AS A PART OF THE CENTRAL KENTUCKY VOCATIONAL EDUCATION EVALUATION PROJECT.

KENTUCKY RESEARCH COORDINATING UNIT, LEXINGTON.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - OCT71 80P.

DESCRIPTORS - *VOCATIONAL EDUCATION; *STUDENT PARTICIPATION; *PROGRAM EVALUATION; *COMMITTEES; RESEARCH PROJECTS; *ADMINISTRATIVE ORGANIZATION; ACTIVITIES; STUDENT ROLE; ADMINISTRATOR ROLE
IDENTIFIERS - VOCATIONAL EDUCATION EVALUATION PROJECT; VEEP

ABSTRACT - IN AN EFFORT TO IDENTIFY SUCCESSFUL APPROACHES FOR OPERATING STUDENT COMMITTEES AND TO DETERMINE OPINIONS HELD BY STUDENTS AND EDUCATORS REGARDING THEIR OPERATION AND FUNCTION, A QUESTIONNAIRE SURVEY WAS MADE OF 18 PARTICIPATING SCHOOL SYSTEMS. DEVELOPED AS PART OF THE VOCATIONAL EDUCATION EVALUATION PROJECT (VEEP), SPECIFIC OBJECTIVES OF THE STUDY INCLUDED EFFORTS TO IDENTIFY: (1) THE ORGANIZATIONAL STRUCTURE USED BY STUDENT COMMITTEES, (2) THE KINDS OF ACTIVITIES IN WHICH MEMBERS OF THE STUDENT COMMITTEES WERE ENGAGED, AND (3) DIFFERENCES IN THE PERCEPTIONS OF STUDENT MEMBERS AND THE EXPECTATIONS OF THE LOCAL DIRECTORS AND ASSISTANT DIRECTORS CONCERNING THE FUNCTIONS AND OPERATIONS OF THE STUDENT COMMITTEE ON EVALUATION. AMONG THE CONCLUSIONS OF THE STUDY ARE: (1) AS PERCEIVED BY THE ELEVEN PROJECT DIRECTORS, THE MAJOR PROBLEM REGARDING THE USE OF STUDENT COMMITTEES WAS ARRANGING A TIME FOR THE MEETINGS, AND (2) IN THE OPINION OF STUDENTS THE BEST SIZE FOR THE STUDENT EVALUATION COMMITTEE WAS FROM EIGHT TO TEN MEMBERS. A MAJOR RECOMMENDATION OF THE STUDY CALLS FOR FURTHER USE AND EXPERIMENTATIONS WITH STUDENT COMMITTEES. (JS)

VT 014 632

STUDY OF STUDENT COMMITTEES ON EVALUATION

Floyd L. McKinney
Alfred J. Manneback

VT014632

6807

STUDY OF STUDENT COMMITTEES ON EVALUATION

A STUDY CONDUCTED
AS A PART OF THE
CENTRAL KENTUCKY
VOCATIONAL EDUCATION EVALUATION PROJECT

Dr. Floyd L. McKinney

Dr. Alfred J. Mannebach

October, 1971

Dr. Clayton P. Omvig, Director
Kentucky Research Coordinating Unit
Department of Vocational Education
College of Education
University of Kentucky
Lexington, Kentucky

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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PREFACE

This study was conducted as a part of the Central Kentucky Vocational Education Evaluation Project. A final report of the evaluation project will be published at a later date.

The meaningful involvement of students in the process of evaluating educational programs is a unique experience for most educators. However, no group is more greatly affected than students by decisions regarding educational program improvement.

This study represents an attempt to discover the more successful organizational patterns for effective involvement of students. Students and vocational educators were also asked to express their opinion regarding appropriate activities for students.

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ACKNOWLEDGMENTS

The study directors wish to express their sincere appreciation to the students and vocational educators responding to the questionnaires. Both groups of respondents had experience with student committees as a result of their school's participation in the Central Kentucky Vocational Education Evaluation Project.

The encouragement of C. O. Neel, Coordinator Vocational Education Program Evaluation, Kentucky State Department of Education, to conduct the study was most helpful.

Lorraine Darley, Research Assistant, Kentucky Research Coordinating Unit for Vocational Education, spent many hours in helping conduct the study and compile the findings.

Finally, the study directors are grateful for the assistance of the KRCU secretaries Ann Mills, Suzanne Burger, and Donella Elliott.

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Chapter I

INTRODUCTION

This is a report of a sub-study conducted as a part of the Central Kentucky Vocational Education Evaluation Project (VEEP)[1]. VEEP was a locally directed-state assisted evaluation effort in the Central Kentucky Region. Personnel representing eighteen school systems and the regional staff for vocational education were involved in the project. The participating school systems included vocational education extension centers, county school systems, and independent school systems.

The points emphasized in VEEP included local involvement, performance objectives, product oriented evaluation, and continuous evaluation. As part of the emphasis on local involvement, many of the school systems used student committees as a means of effectively involving students in the evaluation process.

NEED FOR THE STUDY

In recent years much has been said and written about the importance of involving students in decision making processes. However, there is a critical need for invention and evaluation concerning the appropriate methods of student involvement. We desperately need to develop good practices for dealing with student groups. These practices may not be the same for all situations. In other words, the involvement of students is not an easy task. However, students represent a great untapped resource in assisting with the management of the educational system.

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[1] Floyd L. McKinney, Alfred J. Mannebach and C. O. Neel, Final Report of the Central Kentucky Vocational Education Evaluation Project (Lexington: Research Coordinating Unit for Vocational Education, University of Kentucky, 1971).

The initiation and operation of a student committee can be an involved pattern of relationships. For the most part, organized attempts to meaningfully involve students in educational management have been totally neglected. There is very little documented literature concerning the operation of a student committee. Without question, there is a dearth of research concerning the use of student committees.

STATEMENT OF THE PROBLEM

The broad purposes of the study were to identify successful approaches for operating student committees and to determine opinions held by students and educators regarding the operation and function of the student committee.

The educational enterprise is a most complex system. In nearly all of the program improvement efforts conducted in the educational setting, there is one key lesson. Unless citizens, students, and educators are personally involved in the process of designing and conducting program improvement efforts, attempts to improve the program will not be likely to result in much success. There is little doubt but what we can master the technological barriers to educational program improvement; the big hurdles are the barriers in the minds of people. We can assist in breaking down these barriers when we involve people to the extent that they have full knowledge of the needs for program improvement. Involvement of students and others should broaden their perspectives and assist in breaking down rigid attitudes regarding change.

Educators, at all levels, have frequently expressed a desire to more effectively involve students in the decision-making process. If educators and students are to effectively work in harmony through a student committee set-up, it

is important that educators and students possess an understanding of the opinions of each other regarding the operation and functioning of the student committee. Also, it would appear to be helpful to have identified organizational structures and meaningful activities for student committees. The basic problem of this study then becomes: What are the organizational patterns and activities of student committees and what are the differences between educators and students concerning the operation and functions of the student committee.

OBJECTIVES OF THE STUDY

1. To identify the organizational structure used by the student committee.
2. To identify the kinds of activities in which the members of the student committees were engaged.
3. To identify the ways in which student committees will be used by the school systems in future activities related to vocational education program evaluation.
4. To identify those activities students and members of the school staff believe should have been undertaken by the student committee.
5. To identify differences in the perceptions of student members of the committees and the expectations of the local directors and assistant directors of the evaluation efforts concerning the functions and operations of the student committee on evaluation.

LIMITATIONS OF THE STUDY

Since only schools associated with the Central Kentucky Vocational Education Evaluation Project were included in the study, the findings must necessarily relate only to these schools. The schools in VEEP were diverse in their vocational program offerings and in the methods used in conducting their evalu-

ation program, including the use of student committees. Because of this diversity, it seems reasonable to assume that the findings of this study may be generalized to situations where student committees are used other than those related to program evaluation or to vocational education.

Chapter II

RESEARCH PROCEDURES

INTRODUCTION

The steps which were taken while conducting the study are described in this chapter. The sections discussed include: (1) population, (2) development of the questionnaire, (3) data collection procedures, and (4) procedures for treatment of data.

POPULATION

Because this study is concerned with the operation and functions of the student committee it was deemed important to consider those groups closely associated with the operation and performance of such committees. The following groups were included:

1. Student members of student committees on evaluation.
2. Local evaluation project directors.
3. Local evaluation assistant project directors.

A major goal of the Central Kentucky Vocational Education Evaluation Project was the development and trial of a system of evaluation for local and regional programs of vocational education.

School systems participating in VEEP were limited to the Central Kentucky Region and included the area vocational school, vocational education extension centers, independent school systems, and county school systems. Participation

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in VEEP was on a voluntary basis. The school systems involved in VEEP are shown in Figure One.

The involvement of students through the use of student committees was encouraged by the state staff personnel associated with VEEP. Eleven of the school systems organized and used student committees in connection with their evaluation effort. These eleven schools involved 110 students, for an average of ten students per school.

DEVELOPMENT OF THE QUESTIONNAIRE

A review of the literature was undertaken regarding the operation and function of student committees as the first step in the development of the questionnaires. The review of literature was considered necessary prior to developing the questionnaires so that possible areas of conflict between students and educators could be identified. The review was also helpful in identifying the important areas of concern.

Two questionnaires were used in this study; one for the local evaluation project leaders[2] and one for student members of the committee[3]. Each questionnaire was divided into two major parts. Part I of the questionnaire for local project directors provided facts about the student committee. The local project director was asked to provide information regarding the number of members on the student committee, committee member selection processes, method of selecting officers, procedures used in planning committee meetings, activities of the com-

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[2]See Appendix A.

[3]See Appendix B.

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Figure I

LOCATION OF SCHOOL SYSTEMS PARTICIPATING IN THE
CENTRAL KENTUCKY VOCATIONAL EDUCATION EVALUATION PROJECT

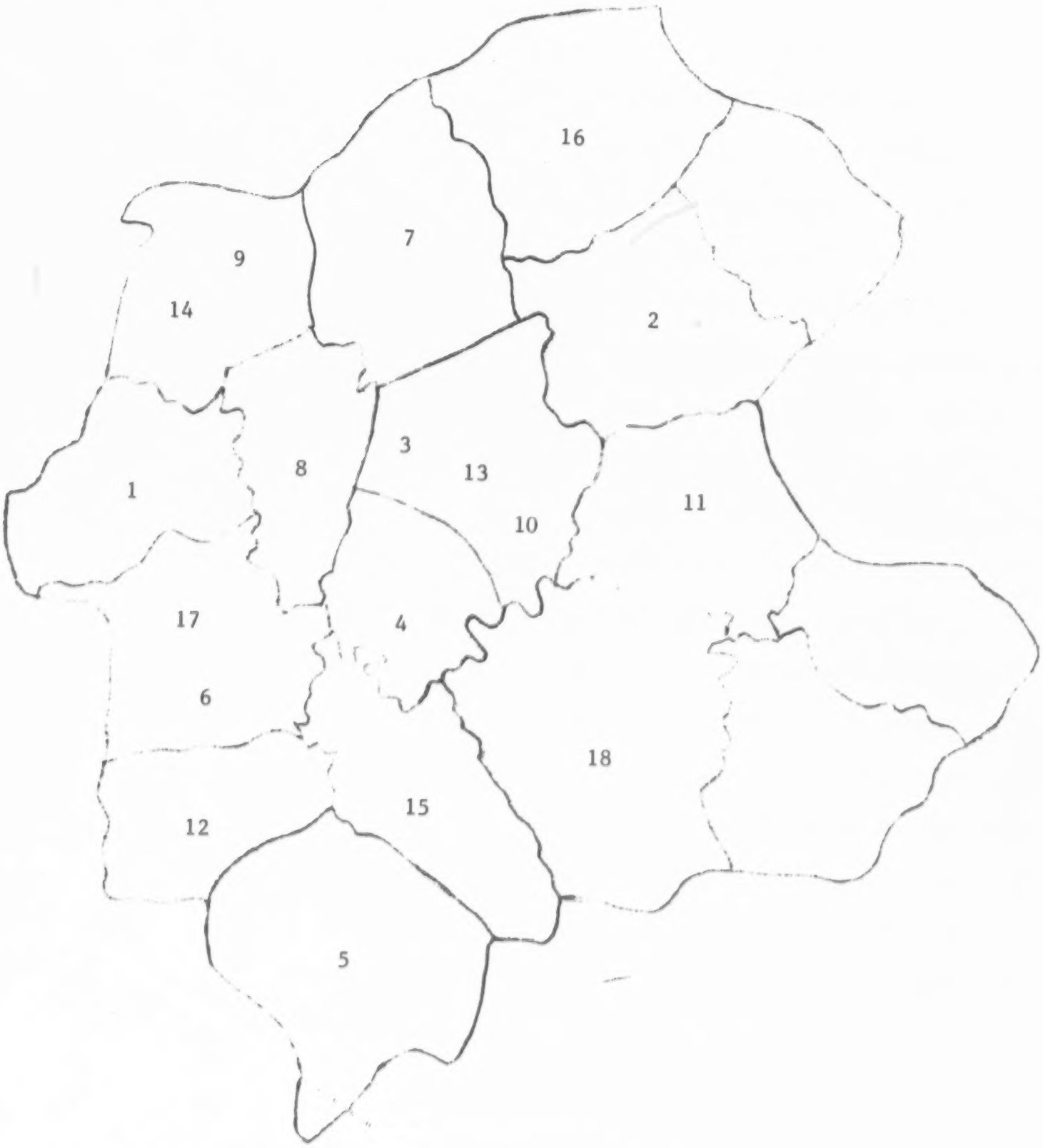

Figure I (continued)

LOCATION OF SCHOOL SYSTEMS PARTICIPATING IN THE
CENTRAL KENTUCKY VOCATIONAL EDUCATION EVALUATION PROJECT

1. Anderson County Public Schools
2. Bourbon County Public Schools
3. Fayette County Public Schools
4. Jessamine County Public Schools
5. Lincoln County Public Schools
6. Mercer County Public Schools
7. Scott County Public Schools
8. Woodford County Public Schools
9. Frankfort Independent Schools
10. Central Kentucky Area Vocational School
11. Clark County Vocational Education Extension Center
12. Danville School of Practical Nursing
13. Fayette County Vocational Education Extension Center
14. Franklin County Vocational Education Extension Center
15. Garrard County Vocational Education Extension Center
16. Harrison County Vocational Education Extension Center
17. Harrodsburg Vocational Education Extension Center
18. Madison County Vocational Education Extension Center

mittee and the significance of the committee contribution to the evaluation effort.

Part I of the questionnaire for student members of the committee provided information about the student respondent and asked the student to respond to certain questions about the student committee. Each respondent was asked to provide information regarding the grade in which he was enrolled, vocational education club membership, club offices held, the major accomplishments of the committee, the kinds of activities which they believed the student committee should accomplish in future years, and the best size for the student committee.

Part II of the questionnaire for local project directors and Part II of the student questionnaire contained items relative to the activities of a student committee on evaluation. Part II contained the same items for both questionnaires. Part II was designed using a five-point scale and the respondents were asked to indicate the importance of the item along this scale. As respondents recorded their evaluation of each item, both direction and intensity of their response was measured as follows:

1 - Strongly Agree

2 - Agree

3 - Undecided

4 - Disagree

5 - Strongly Disagree

DATA COLLECTION PROCEDURES

In this section a review is made of the procedures used in collecting the data. Copies of the letters and cards used in the data collection procedure

appear in the appendix of the study.

The first contact with the schools was a personal letter from Floyd L. McKinney to each superintendent of schools, each coordinator of a vocational education extension center and to the principal of the area vocational school asking for the cooperation of the school[4]. Copies of the letter were sent to all local project directors and assistant project directors. This letter also outlined the responsiblilities of the school and the State VEEP Staff subsequent to the school's agreement to participate in the study. Dr. McKinney offered to visit the superintendent or his representative to clarify any questions regarding the study.

The first contact letter with the chief school administrative officers requested them to return a post card indicating their willingness or lack of willingness to participate in the study.[5]

Following acceptance of the schools to participate in the study, the questionnaires were mailed to the local evaluation project director for administration.[6] The local evaluation project director was responsible for seeing that the questionnaires were completed by the members of his school's student committee on evaluation and that the questionnaires were returned to the State VEEP Staff.

A thank-you reminder letter was mailed to all local evaluation project directors about two weeks after the questionnaires had been mailed.[7]

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[4] See Appendix C.

[5] See Appendix D.

[6] See Appendix E.

[7] See Appendix F.

CHAPTER III

ANAYLIS OF DATA AND PRESENTATION OF FINDINGS

Two questionnaires were used to collect the data. One questionnaire was designed for local project directors; the other questionnaire was prepared for members of the student committee. Copies of the questionnaires can be found in Appendixes A and B.

The questionnaire to be completed by the local project directors was divided into two parts. Part I was designed to collect facts about the student committees and Part II was developed to obtain the opinions and attitudes of the directors regarding the structure, organization, and activities of the student committees on evaluation.

The student questionnaire also included two parts. Part I was designed to gather information about the students and Part II was developed to obtain the opinions and attitudes regarding the structure, organization, and activities of the student committee on evaluation. Responses of the local project directors and the students to the questionnaires were summarized, analyzed, and are reported in this chapter.

ANALYSIS

Responses regarding factual information about the student committees on evaluation were obtained from the project directors of the eleven school systems participating in the Central Kentucky Vocational Education Evaluation Project. The eleven project directors also responded to the attitudinal statements regarding the operation of the student committees. Responses of eight assistant

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project directors were included on attitudinal statements regarding the operation of student committees on evaluation.

Seventy-eight of the 110 students on student committees, or seventy-one percent, responded to the questionnaire. Their responses are summarized following the discussion of the questionnaire for local project directors.

Questionnaire For Local Project Directors

The first question on the questionnaire for local project directors was answered by the project directors in the eleven participating school systems. Question one asked, "How many members are on the student committee on evaluation?" As indicated by the data in Table I, eleven project directors responded to this question.

TABLE I

NUMBER, MEAN, AND RANGE OF MEMBERS ON THE STUDENT COMMITTEE ON EVALUATION IN ELEVEN SCHOOL SYSTEMS

NUMBER OF STUDENTS	MEAN	RANGE
110	10	5 - 20

There were 110 students on student committees in the eleven school systems. The range of students on each committee was from five to twenty. The mean number of students on the student committees was ten.

Question two asked for brief description of how members of the student committee were selected. Data in Table II reveal that forty-five percent of the students were selected by teachers and twenty-seven percent were selected by students with staff approval.

TABLE II

METHODS BY WHICH MEMBERS OF THE STUDENT COMMITTEE WERE SELECTED

PERSONS SELECTING	NUMBER	PERCENT
By teachers	5	45.5
By students with staff approval	3	27.3
By the leadership team	2	18.1
By the project directors	1	9.1
TOTAL	11	100.0

The eleven directors indicated that selection of students was based upon citizenship, scholarship, school activities, attendance, and representativeness of the student body. Attempts were made to include students who were from all ethnic, social, and economic groups. Responses from one project director indicated that a former graduate was represented on their committee.

Question three was concerned with what officers served on the student committee. Data in Table III reveal that there were eight chairmen, six vice-

TABLE III

OFFICERS SERVING ON THE STUDENT COMMITTEE ON EVALUATION IN ELEVEN SCHOOL SYSTEMS

OFFICERS	NUMBER
Chairman	8
Vice-Chairman	6
Secretary	7
Treasurer	1
Reporter	4
Committee Chairman	1
Student Representative to the Faculty	1

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chairmen, seven secretaries, one treasurer, four reporters, one committee chairman, and one student representative to meet with faculty members. This finding indicated that most committees had a chairman, a vice-chairman, or a secretary.

Question four asked, "By what method were the officers selected?" Data in Table IV indicate that in over half of the school systems, students were responsible

TABLE IV

METHOD BY WHICH OFFICERS OF THE STUDENT COMMITTEE ON EVALUATION WERE SELECTED

METHOD OF SELECTION	NUMBER	PERCENT
Teacher appointed members	1	9.1
Principal appointed members	2	18.1
Students elected members	6	54.7
The committee had no officers	2	18.1
TOTAL	11	100.0

for electing the officers of the committee. One project director indicated that teachers appointed the officers; two project directors said the principal appointed officers; and two project directors stated that their committees had no officers.

Data in Table V indicate the mean, range, and total number of student committee meetings held in the eleven school systems. The total number of

TABLE V

NUMBER, MEAN, AND RANGE OF MEETINGS ON THE STUDENT COMMITTEE ON EVALUATION IN ELEVEN SCHOOL SYSTEMS

NUMBER OF MEETINGS	MEAN	RANGE
55	5.0	2 - 13

student committee meetings in all eleven participating schools was fifty-five. The number of student committee meetings in the individual school systems ranged from two meetings to thirteen meetings. A mean number of five meetings were held in each school system.

The next question was concerned with the number of minutes required to conduct each student committee meeting on evaluation. Data in Table VI indicate that the mean number of minutes per student committee meeting was fifty-six minutes. The range of minutes per meeting was from twenty minutes to ninety minutes. This finding indicated that on the average almost one hour was spent on each committee meeting.

TABLE VI

MEAN AND RANGE OF MINUTES PER MEETING OF MEETINGS HELD BY THE STUDENT COMMITTEES ON EVALUATION IN ELEVEN SCHOOL SYSTEMS

MEAN NUMBER OF MINUTES PER MEETING	RANGE (Minutes)
56	20 - 90

Question seven asked, "What time during the day were meetings of the student committee held?" Data in Table VII indicate that ninety percent of the meetings in the eleven participating school systems were held during school hours. Ten percent of the meetings were held after school hours. None of the project directors reported that meetings were held before school hours. This finding indicated that the majority of the meetings of the student committee were held during school time.

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TABLE VII

TIME OF DAY IN WHICH MEETINGS OF THE STUDENT COMMITTEE WERE HELD

TIME OF DAY	NUMBER	PERCENT
Before school hours	0	0.0
During school hours	10	90.9
After school hours	1	9.1
TOTAL	11	100.0

Data in Table VIII reveal the frequency of student committee meetings. Three, or twenty-seven percent of the eleven project directors indicated that they had

TABLE VIII

FREQUENCY WITH WHICH STUDENT COMMITTEES ON EVALUATION MET

FREQUENCY	NUMBER	PERCENT
Once per week	0	0.0
Once every two weeks	3	27.3
Once per month	3	27.3
Once per quarter	1	9.2
Once per semester	2	18.1
Other	2	18.1
TOTAL	11	100.0

conducted meetings once every two weeks. Three, or another twenty-seven percent, stated that they met once per month. One school had meetings once per quarter.

Two schools met once per semester and two schools met whenever necessary. None of the schools met weekly on a regular basis. These findings indicate that over one-half of the student committees on evaluation met once per month or more.

Question nine asked, "Who planned the agenda for the meetings of the student committee?" As revealed by the data in Table IX, four, or thirty-six percent of

TABLE IX

PERSONS RESPONSIBLE FOR PLANNING THE AGENDA FOR MEETINGS OF THE STUDENT COMMITTEE ON EVALUATION

PERSONS RESPONSIBLE	NUMBER	PERCENT
Teacher(s) and Committee Chairman	4	36.5
Teacher(s)	1	9.1
Principal	1	9.1
Committee Chairman	2	18.1
All members of Student Committee	2	18.1
No Response	1	9.1
TOTAL	11	100.0

the project directors indicated that the teachers and the student committee chairman planned the agenda. One director reported that the teachers were responsible for preparing the agenda and another director stated that the principal planned the agenda for the student committee meetings. Two project directors indicated that the committee chairman was responsible for the agenda and two other directors stated that all members of the student committee planned the agenda. One director gave no response to the question. These findings indicated that members of the student committees were active in planning the agenda for committee meetings.

Question ten was concerned with who called meetings of the student committee. As indicated by the data in Table X, five or forty-five percent of the project directors stated that teachers and committee chairmen called the meetings. In

TABLE X

PERSON RESPONSIBLE FOR CALLING MEETINGS OF THE STUDENT COMMITTEE ON EVALUATION

PERSONS RESPONSIBLE	NUMBER	PERCENT
Teacher (s) and Committee Chairman	5	45.6
Teacher(s)	1	9.1
Principal	2	18.1
All members of Student Committee	2	18.1
No Response	1	9.1
TOTAL	11	100.0

one school, the teachers called the meetings. In two schools, the principal called the meetings and in two other schools, the committee members agreed cooperatively to call a meeting. One director did not respond to the question. These findings indicated that in the majority of the cases, students were involved in calling meetings of the student committee.

Question eleven asked the local project directors to list the activities of the student committee. The number and kind of activities engaged in by the committees are presented in Table XI. As can be seen from the data, assistance with student follow-up was the most popular activity. Nine of the eleven project directors indicated that the members of the student committee had assisted with the follow-up of former students.

TABLE XI

ACTIVITIES ENGAGED IN BY THE STUDENT COMMITTEE
ON EVALUATION IN ELEVEN SCHOOL SYSTEMS

ACTIVITIES	NUMBER OF TIMES MENTIONED
Assist with Student Follow-Up	9
Formulate Recommendations	5
Plan School Tours	3
Administer Surveys	3
Assist with Evaluation	2
Pre-test Follow-up Instruments	1
Placement of a Suggestion Box	1
Plan a Bulletin Board	1
Plan an Alumni Association	1
Develop Orientation Programs	1

The formulation of recommendations was the next most popular activity. According to the response of five project directors, recommendations formulated by the student committees included the development of dress codes and codes of conduct, changes in school policies, attendance requirements and types of social activities to be held in the school.

Three project directors mentioned the planning of school tours as an activity. Administering surveys was also mentioned as an activity by three project directors. The basic types of surveys administered were the Ohio Vocational Interest Survey (OVIS), Student Surveys, and Parent Surveys. Two project directors reported that students assisted with evaluations. The evaluations conducted were concerned with classroom activities and vocational programs. Other activities mentioned by project directors included the placement of a suggestion box in the school, the development of a bulletin board display, plans for organizing an alumni association, development of orientation programs, and the pre-testing of follow-up instruments.

Question twelve asked the local project directors to list possible future activities of the student committees. The suggestions of the directors can be found in Table XII. Three directors listed the planning of curriculum as an

TABLE XII

SUGGESTIONS OF ELEVEN PROJECT DIRECTORS FOR ACTIVITIES OF THE STUDENT COMMITTEE ON EVALUATION IN THE FUTURE

SUGGESTED ACTIVITIES	NUMBER OF TIMES MENTIONED
Plan Curriculum Development	3
Assist with Follow-up Activities	3
Assist in Conducting Surveys	3
Attend Meetings on Evaluation	2
Assist with Job Placement of Students	1
Revise School Policies	1
Rate Teacher Effectiveness	1
Plan Visits to Business and Industry	1
Inform Community of Evaluation Efforts	1
Plan for Outside Speakers	1

area to be considered by the student committees. Three directors listed follow-up activities as a major area for future student committee endeavors. Conducting surveys was also mentioned by three directors. Three types of surveys were listed: employment opportunities surveys, industrial needs surveys, and student opinion surveys. Two directors indicated that student committee members should attend progress review meetings on evaluation and citizens advisory committee meetings. Other activities listed included assisting with job placement, revising of school policies, rating teacher effectiveness, visiting business and industry, informing the community of evaluation efforts, and planning for outside speakers.

Question thirteen was designed to determine the major problems of the project directors regarding the use of student committees. Data in Table XIII

TABLE XIII

MAJOR PROBLEMS OF ELEVEN PROJECT DIRECTORS REGARDING THE USE OF STUDENT COMMITTEES ON EVALUATION

MAJOR PROBLEMS	NUMBER OF TIMES MENTIONED
Arranging Meeting Times	9
Interpreting Role of Student Committee	3
Selection of Members	2
Organization	1
Communication	1
Interpreting Rules to Student Committee Members	1
Keeping Meetings from becoming "Gripe Sessions"	1

relate to the responses of the eleven project directors to this question. The greatest problem reported was arranging meeting times. Nine of the eleven project directors reported having this problem. The reasons for the problem were that students missed classes, longer meeting times were needed, and other meetings conflicted with meetings of the student committee on evaluation.

Three project directors reported that they had trouble interpreting the role of the student committee members to the students. This problem may have resulted because few guidelines were established for student committee operation. The selection of members of the student committee also caused difficulty, especially when the schools desired to organize a student committee that was representative of the total student body. Other problems mentioned were lack of organization, difficulty in communication, difficulty in interpreting rules to the students and difficulty in keeping meetings from becoming "gripe sessions."

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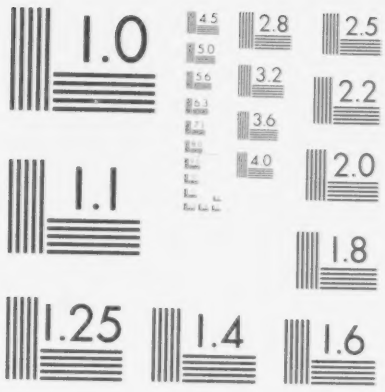

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Question fourteen asked, "To what extent do you feel that the student committee contributed to the evaluation effort in your school?" The eleven project directors and eight assistant project directors responded to this question. Data in Table XIV reveal that approximately ninety-five percent of the respondents

TABLE XIV

EXTENT TO WHICH NINETEEN PROJECT DIRECTORS AND ASSISTANT PROJECT DIRECTORS FELT THAT THE STUDENT COMMITTEE ON EVALUATION HAS CONTRIBUTED TO THE EVALUATION EFFORT IN ELEVEN SCHOOL SYSTEMS

EXTENT OF CONTRIBUTION	NUMBER	PERCENT
Great	8	42.1
Some	10	52.6
Little	1	5.3
None	0	0.0
TOTAL	19	100.0

stated that the student committee had contributed to either some extent or a great extent in the evaluation effort. One respondent indicated that the student committee had contributed little to the evaluation effort. None of the respondents indicated that the student committee contributed nothing.

Question fifteen asked whether or not the nineteen project directors and the assistant project directors were of the opinion that the student committee could make significant contribution to evaluation efforts in the future. Data in Table XV indicate that all of the respondents felt the student committee could make a contribution in the future. This finding indicated that the project directors believed that student committees on evaluation could be of value in the future.

TABLE XV

RESPONSES OF NINETEEN PROJECT DIRECTORS AND ASSISTANT PROJECT DIRECTORS REGARDING WHETHER OR NOT THE STUDENT COMMITTEE ON EVALUATION CAN MAKE A SIGNIFICANT CONTRIBUTION TO EVALUATION IN THE FUTURE

RESPONSES	NUMBER	PERCENT
Yes	19	100.0
No	0	0.0
TOTAL	19	100.0

Question sixteen asked, "Do you plan to continue the student committee on evaluation next year?" Data in Table XVI indicate that seventeen or approximately ninety percent of the directors indicated that the student committee

TABLE XVI

RESPONSES OF NINETEEN PROJECT DIRECTORS AND ASSISTANT PROJECT DIRECTORS REGARDING WHETHER OR NOT THEY PLAN TO CONTINUE THE STUDENT COMMITTEE ON EVALUATION NEXT YEAR

RESPONSES	NUMBER	PERCENT
Yes	17	89.5
No	0	0.0
Do Not Know	2	10.5
TOTAL	19	100.0

would be continued. Two, or approximately ten percent, said they did not know whether or not the committee would be continued. This finding indicated that a majority of the respondents were of the opinion that the student committee on evaluation would be continued in the school systems in the future.

Questionnaire For Student Committee Members

Part I of the questionnaire for members of the student committee was designed to gather information about the students. Seventy-eight students responded to the questionnaire. The first question on the questionnaire asked, "In what grade are you presently enrolled?" As shown by the data in Table XVII,

TABLE XVII

GRADE LEVEL IN WHICH STUDENTS REPRESENTED ON STUDENT COMMITTEES WERE CURRENTLY ENROLLED

GRADE	NUMBER	PERCENT
Junior	15	19.2
Senior	55	70.5
Post-High	8	10.3
TOTAL	78	100.0

fifty-five or over seventy percent responding were seniors. Fifteen or approximately twenty percent of committee members were juniors and ten percent were out-of-school adults.

Question two on the questionnaire for student committee members asked, "Are you a member of a vocational education club?" The responses to this question are presented in Table XVIII. As indicated by the data, forty-nine or sixty-two percent of the students indicated that they were not members of a vocational club. Twenty-nine, or thirty-seven percent stated that they were a member of a vocational club.

TABLE XVIII

RESPONSES OF STUDENTS REGARDING WHETHER OR NOT THEY WERE A MEMBER OF A VOCATIONAL EDUCATION CLUB

RESPONSE	NUMBER	PERCENT
Yes	29	37.2
No	49	62.8
TOTAL	78	100.0

Question three asked, "Do you hold an office in a vocational club?" The responses of the students are presented in Table XIX. Fifty-nine of the

TABLE XIX

RESPONSES OF STUDENTS REGARDING WHETHER OR NOT THEY WERE A MEMBER OF A VOCATIONAL EDUCATION CLUB

RESPONSE	NUMBER	PERCENT
Yes	19	24.4
No	59	75.6
TOTAL	78	100.0

seventy-eight students or seventy-five percent indicated they were not an officer in a vocational club. Approximately one-fourth of the respondents indicated that they were an officer in a vocational club.

Data in Table XX relate to the question which asked, "Are you an officer on the student committee on evaluation?" Ninety-six percent said they were not officers. This appears to be in conflict with the information provided by the local project directors. The local project directors reported that from

TABLE XX

RESPONSES OF STUDENTS REGARDING WHETHER OR NOT THEY WERE AN OFFICER ON THE STUDENT COMMITTEE ON EVALUATION

RESPONSES	NUMBER	PERCENT
Yes	3	3.8
No	75	96.2
TOTAL	78	100.0

six to eight of the committees had a chairman, vice-chairman and a secretary. It may be that those students holding offices in the Student Committe on Evaluation did not respond to the questionnaire or they may not have reported that they held a committee office. Another possibility is that although students were serving in the capacity of an officer, they were not given officer status.

The next question asked the students to list the major accomplishments of the student committee on evaluation during the past school year. Sixty of the seventy-eight students or seventy-seven percent responded to this question. The list of accomplishments and the number of times each accomplishment was reported are presented in Table XXI. The first activity listed was the formulation of recommendations. Thirty-two students listed this as an accomplishment. Recommendations were made concerning the improvement of vocational and

academic programs, the condition of equipment, the availability of materials, teaching procedures used, the classroom climate, and school rules.

TABLE XXI

RESPONSES OF STUDENTS REGARDING THE MAJOR ACCOMPLISHMENT OF THE STUDENT COMMITTEE ON EVALUATION DURING THE PAST SCHOOL YEAR

MAJOR ACCOMPLISHMENTS	NUMBER
Formulated Recommendations	32
Assisted with Follow-up Activities	24
Distributed Surveys	10
Provided Student Assistance	10
Provided Identification Cards for Students	8
Improved Breaktime Schedules	6
Evaluated School Programs	5
Encouraged School Awareness of Vocational Education	5
Planned Parking Lot Improvements	1
Improved Lunchroom Procedures	1

Twenty-four students reported that they had assisted with follow-up activities and ten students distributed surveys. The surveys distributed were student interest surveys and parent surveys. Several students reported that they had monitored the administration of the Ohio Vocational Interest Survey.

Ten students reported that they had provided student assistance in the evaluation effort. Activities entailed were typing, filing, coding, and assisting in planning and conducting student committee meetings. Eight students reported that an important accomplishment included the development and provision of identification cards for students.

Other major accomplishments reported by members of the student committees included improving breaktime schedules, evaluating school programs, encouraging school awareness, planning improvement for the parking lot and improving lunchroom procedures.

Question six on the student questionnaire was concerned with the kinds of major activities the students felt the student committee should accomplish in the future. The data are presented in Table XXII.

TABLE XXII

RESPONSES OF STUDENTS REGARDING MAJOR ACTIVITIES THE STUDENT COMMITTEE ON EVALUATION SHOULD ACCOMPLISH IN THE FUTURE

MAJOR ACTIVITIES	NUMBER
Formulate Recommendations	40
Evaluate School Programs	13
Obtain Student Opinions of Vocational Programs	10
Assist with Follow-up Activities	7
Plan for Community Involvement	6
Discuss the Philosophy of Vocational Education	2
Orient New Students	1

Forty students indicated that student committees should formulate recommendations. Thirteen students reported that a major activity should be to evaluate school programs while ten students reported that an appropriate activity would be to obtain student opinions of vocational programs. Other activities suggested for consideration by student committees in the future included assisting with follow-up activities, planning for community involvement in educational programs, discussing the philosophy of vocational education,

and orienting new students to the school and to vocational education. These findings indicated that the members of the student committees did have opinions regarding the kind of activities student committees on evaluation could accomplish in the future.

The last question on part one of the questionnaire completed by members of student committees was designed to ascertain the opinions of students regarding the best size for the student committee. As evidenced by the data in Table XXIII, forty-two or approximately fifty-four percent of the students

TABLE XXIII

RESPONSES OF STUDENTS REGARDING THE BEST SIZE FOR A STUDENT COMMITTEE ON EVALUATION

SIZE OF COMMITTEE	NUMBER	PERCENT
Less than 5	1	1.3
5 - 7	17	21.8
8 - 10	42	53.8
11 - 13	7	8.9
14 - 16	8	10.3
Over 16	3	3.9
TOTAL	78	100.0

reported that the best size for the student committee was from eight to ten members. This finding was congruent with the finding reported earlier in this chapter that the mean number of members on the student committees was ten.

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Seventeen or approximately twenty-two percent of the students responding on the questionnaire indicated that the best size for the committee was from five to seven members. Eighteen or over twenty-three percent of the respondents reported that the best size for the student committee was over ten members while one student indicated that the best size was less than five members. In summary, over seventy-five percent of the students stated that the best size for the student committee was from five to ten members.

Opinions of Project Directors and Student Committee Members

The opinions of the nineteen project directors and assistant project directors were compared with the opinions of the seventy-eight members of the student committees regarding the structure and activities of the student committees on evaluation. The data were collected on Part II of the questionnaires for students and project directors.

The hypothesis formulated for the opinion part of the study stated that the members of the student committee should have significantly different mean scores on each item of Part II of the questionnaires than the project directors. The null hypothesis tested was $M_1 = M_2$.

Data in Table XXIV reveal the mean scores of the student committee members and the project directors for each item on the questionnaire. The value of the t-ratio and the t-test probabilities for each item on the questionnaire are also shown. The research hypothesis stated that student committee members should have significantly different mean scores on each item of the questionnaire than the project directors. The null hypothesis tested was that there is no significant difference between the mean scores of the student committee members and the project directors on each item of the questionnaire. In accordance

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TABLE XXIV

DIFFERENCES IN MEAN SCORES ON A QUESTIONNAIRE[1] OF SEVENTY-EIGHT STUDENT COMMITTEE MEMBERS AND NINETEEN PROJECT DIRECTORS

STATEMENTS[2]	MEAN SCORES Students N = 78	MEAN SCORES Project Directors N = 19	t-ratio	Level of Significance[3]
1. The student committee should engage in only those activities assigned to it by the teachers or the school administration.	3.28	4.00	-2.23	0.028*
2. The student committee should make long-range proposals related to the improvement of the vocational education program in the local school.	2.18	1.74	+2.49	0.016*
3. Vocational teachers should be present at the meetings of the student committee.	2.31	3.37	-4.18	0.000***
4. The principal should be present at the meetings of the student committee.	2.82	3.79	-3.09	0.003**
5. Free discussion of issues in student committee meetings should be encouraged strongly.	1.37	1.26	+0.81	0.418
6. Student committees should evaluate their own work and effectiveness.	2.10	1.68	+1.67	0.098
7. Records should be kept of the proceedings of each committee meeting.	1.60	1.47	+0.85	0.398

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TABLE XXIV (cont'd)

STATEMENTS[2]	MEAN SCORES Students N = 78	MEAN SCORES Project Teachers N = 19	t-ratio	Level of Significance[3]
8. Student committees should make evaluations regarding the improvement of vocational course offerings.	1.86	1.74	+0.78	0.433
9. Membership on the student committee should represent students of various grade levels.	2.08	1.79	+1.44	0.159
10. The student committee should make evaluations regarding local vocational youth organizations.	2.33	2.26	+0.29	0.772
11. Minutes of student committee meetings should be duplicated and distributed to committee members promptly.	2.17	1.68	+3.13	0.003**
12. Teachers should not serve as voting members of the student committee.	2.50	1.63	+4.31	0.000***
13. The student committee should operate under a set of rules and regulations adopted by the school teachers and administrators.	3.10	3.26	-0.53	0.599
14. Student committees should make recommendations regarding the improvement of vocational education facilities.	1.77	1.89	-0.65	0.515

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TABLE XXIV (cont'd)

STATEMENTS[2]	MEAN SCORES Students N = 78	Project Directors N = 19	t-ratio	Level of Significance[3]
15. Meetings of the student committee should be scheduled regularly.	1.78	2.58	-3.05	0.006**
16. Members of the student committee should elect their own officers.	1.68	1.63	+0.26	0.796
17. Members of the student committee should make suggestions regarding the improvement of the vocational education program.	1.67	1.68	-0.09	0.924
18. Meetings of the student committee should be held only when there is sufficient need.	3.26	2.53	+2.35	0.021*
19. Teachers should make the final selection of committee members.	2.96	2.79	+0.70	0.486
20. There should be a definite agenda for each committee meeting.	2.21	1.79	+1.82	0.072
21. The student committee on evaluation should continue to serve in future years.	1.67	1.74	-0.43	0.667

[1]A copy of the questionnaire can be found in Appendixes A and B.
[2]Based upon a scoring scale of SA = 1, A = 2, U = 3, D = 4, and SD = 5.
[3]Two-tailed test of significance.
*Significant at the .05 level.
**Significant at the .01 level.
***Significant at the .001 level.

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with the research hypothesis, significant differences at the .05 level were found on eight items on the questionnaire. The student committee members agreed significantly more strongly than the project directors with items one, three, four, and fifteen on the questionnaire. The project directors agreed significantly more strongly than the members of the student committee with items two, eleven, twelve, and eighteen. No other significant differences between the mean scores of the two groups on the individual items were found at the .05 level of significance based upon the analysis of the data.

The analysis of item one indicated the project directors disagreed more strongly than the student committee members that the student committee should engage in only those activities assigned to it by the teachers or the school administration. The mean score of the project directors was 4.00, while the mean score of the students was 3.28. The t-ratio of 2.23 was significant at the .05 level. This finding indicated that the project directors felt more strongly than the members of the student committee that the activities of the student committee should not be limited only to those activities assigned by the teachers or the school administration.

The analysis of the data regarding item two revealed that the project directors agreed more strongly than the student committee members that the student committee should make long-range proposals for the improvement of the vocational education program in the local school. The mean score of the project directors was 1.74, while the mean score of the students was 2.18. The t-ratio was significant at the .05 level. This finding indicated the project directors agreed more strongly than the students that long-range proposals relating to improvements in school vocational education programs should be made by the student committee.

The analysis of item three indicated that the students agreed that the vocational teachers should be present at student committee meetings, while the project directors tended to be undecided concerning the presence of vocational teachers at meetings of the student committee. The mean score of the students was 2.31, while the mean score for the project directors was 3.37. The t-ratio was significant at the .001 level. This finding suggested that the students were more willing than the project directors to have vocational teachers present at student committee meetings.

According to the analysis of item four the students tended to agree that the principal should be present at student committee meetings. The project directors were undecided concerning this item. The mean score of the students was 2.82, while the mean score of the project directors was 3.79. The t-ratio was significant at the .01 level. This finding indicated that the students were more willing for the school principal to be present at the meetings of the student committee than were the project directors.

Analysis of item eleven indicated that the project directors agreed more strongly than the students that the minutes of student committee meetings should be duplicated and distributed to committee members promptly. The mean score of the project directors was 1.68, while the mean score of the students was 2.17. The t-ratio was significant at the .01 level. This finding suggested that the project directors were more in favor of duplicating and distributing the minutes of student committee meetings than were the students.

As revealed by the analysis of item twelve, the project directors agreed more strongly than the students that teachers should not serve as voting members

of the student committee. The mean score of the project directors was 1.63, while the mean score for the students was 2.50. The t-ratio was significant at the .001 level.

According to the analysis of item fifteen, the students agreed more strongly than the project directors that student committee meetings should be scheduled regularly. The mean score for the students was 1.78, while the mean score for the project directors was 2.58. The t-ratio was significant at the .01 level. This finding indicated that students felt more strongly than project directors that regularly scheduled meetings of the student committee were necessary.

The analysis of item eighteen indicated that the project directors agreed more strongly than the students that committee meetings should be held only when there is sufficient need for them. The students tended to be undecided concerning this item. The mean score of the project directors was 2.53, while the mean score of the students was 3.26. The t-ratio was significant at the .05 level. This finding pointed out that the project directors felt more strongly than the students that meetings should be held only when there was sufficient need for them.

No significant differences between the mean scores of the two groups on other individual items of the questionnaire were found at the .05 level of significance based upon the analysis of the data. In general, both the project directors and the members of the student committees tended to agree with the remaining items on the questionnaire. Both groups agreed that free discussion of issues in student committee meetings should be encouraged strongly; that student committees should evaluate their own work and effectiveness; that records should be kept of the proceedings of each committee meeting; that student

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committees should make evaluations regarding the improvement of vocational course offerings; that membership on the student committee should represent students of various grade levels; that the student committee should make evaluations regarding local vocational youth organizations; and that student committees should make recommendations regarding the improvement of vocational education facilities. They also agreed that members of the student committees should elect their own officers; that members of the student committee should make suggestions regarding the improvements of the vocational education program; that there should be a definite agenda for each committee meeting and that the student committee on evaluation should continue to serve in future years.

The project directors and the student committee members tended to be undecided on two items on the questionnaire. They were undecided as to whether or not the student committee should operate under a set of rules and regulations adopted by the school teachers and administrators. Both groups were also undecided on the statement that teachers should make the final selection of committee members.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The research herein reported was a sub-study conducted as a part of the Central Kentucky Vocational Education Evaluation Project. One of the key points of emphasis in the project included local involvement. As part of the emphasis on local involvement, many of the school systems participating in the evaluation project used student committees on evaluation. The study was conducted to determine ways of involving students effectively in vocational education program evaluation.

SUMMARY OF RESEARCH PROCEDURES

Eleven school systems participating in the Central Kentucky Vocational Education Evaluation Project had organized student committees on evaluation. The population surveyed in the study included the members of the student committees on evaluation, the local project directors, and assistant project directors.

Two questionnaires were used in the study. A review of literature regarding the operation and function of student committees was undertaken as the first step in the development of the questionnaires. One questionnaire was developed for the local project directors and the assistant project directors and the other was developed for members of the student committee. Part I of each questionnaire was designed to obtain factual information about the two groups respectively. Part II of the questionnaires was designed to obtain the opinions of the local project and assistant project directors and the student committee members. The questionnaires contained identical items. Respondents were asked

to indicate agreement or disagreement with individual items on the questionnaires along a five point scale.

A letter explaining the study was sent to the administrators and project directors of schools having student committees on evaluation. The letter asked for the cooperation of the school system with the study. Following acceptance, the questionnaires were mailed to the local project directors. They were responsible for distributing the questionnaires to members of the student committee and for returning them to the State Project Staff. Copies of the instruments used and the correspondence sent can be found in the appendix of the study.

SUMMARY OF FINDINGS

The responses of the local project directors to the sixteen questions requesting factual information about the student committees have been analyzed and were presented in Chapter III. According to the responses of the local project directors, the student committee on evaluation had an average membership of ten students. The main methods for selecting student members were by teachers and by students with staff approval.

Officers serving on the student committees were composed primarily of chairmen, vice-chairmen, or secretaries. The officers on the student committees were elected by the student members in a majority of the participating school systems.

Although the number of student committee meetings held during this year varied, the mean number of meetings held in each of the participating school systems was five. The number of minutes per meeting also varied, but the

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average meeting lasted fifty-six minutes. Ninety percent of the local project directors stated that student committee meetings were held during school hours and met in most schools once every two weeks or once per month.

The agenda for the student committee meetings was planned primarily by the teachers and the committee chairmen in the participating school systems. In approximately half of the cases teachers and committee chairmen were responsible for calling meetings of the student committee.

Each local project director was asked to list the activities engaged in by the student committee on evaluation in his school system. The two most popular activities mentioned were assistance with student follow-up activities and the formulation of recommendations. Each local project director was also asked to list suggestions for future activities of the student committee on evaluation. The most popular activities were planning curriculum development, assisting with follow-up activities, and assisting in conducting surveys.

The major problem mentioned regarding the use of student committees was arranging the meeting times. Local project directors found it difficult to find a time to meet. Another problem was interpreting the proper role of the student committees. Neither the project directors nor the students were confident of the role the student committee on evaluation should fulfill. On the other hand, over half of the nineteen local project directors and assistant project directors indicated that the student committee had contributed substantially to the evaluation effort in their school system. One hundred percent of the project directors and assistant project directors indicated they believed the student committee on evaluation could make a significant contribution in the future

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and almost ninety percent of the project directors and assistant project directors stated that they planned to continue the student committee on evaluation next year.

The next part of the study was concerned with seven factual questions to which seventy-eight members of the student committees in the eleven participating schools responded.

In summarizing the students responses, it was found that fifty-five or seventy percent of the student committee members who responded to the questionnaire were seniors.

Forty-nine or sixty-two percent of the students indicated that they were not a member of a vocational education club. Fifty-nine or seventy-five percent of the students stated they were not an officer in a vocational education club. Seventy-five or ninety-six percent of the students indicated they were not an officer on the student committee on evaluation.

The students were asked to list the major accomplishments of their student committee on evaluation. The four most popular responses were: formulate recommendations, assist with student follow-up activities, distribute surveys, and provide student assistance. The students were also asked to list major activities the student committee should accomplish in the future. The three most popular responses to this question were formulate recommendations, evaluate school programs, and obtain student opinions of vocational programs.

The last question asked the students what was the best size for a student committee on evaluation. Forty-two or fifty-three percent of the students indicated that eight to ten members was an ideal size for student committee membership.

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The last part of the study was concerned with the twenty-one attitudinal items found on Part II of the questionnaires administered to the project directors and the student committee members. In accordance with the research hypothesis, the student committee members had significantly different mean scores than the project directors on eight items on the questionnaire. No significant differences were found between the mean scores of the two groups on the other thirteen items.

The student committee members agreed significantly more strongly than the project directors with items one, three, four and fifteen on the questionnaire. The items were:

1. The student committee should engage in only those activities assigned to it by the teachers or the school administration.

3. Vocational teachers should be present at the meetings of the student committee.

4. The principal should be present at the meetings of the student committee.

15. Meetings of the student committee should be scheduled regularly.

The project directors agreed significantly more strongly than the members of the student committees with items two, eleven, twelve and eighteen. The items were:

2. The student committee should make long-range proposals related to the improvement of the vocational education program in the local school.

11. Minutes of student committee meetings should be duplicated and distributed to committee members promptly.

12. Teachers should not serve as voting members of the student committee.

18. Meetings of the student committee should be held only when there is sufficient need.

No significant differences in mean scores were found between the project directors and the student committee members on other items on the questionnaire. Although no significant differences were found, both the project directors and members of the student committee tended to agree or strongly agree with the following items:

5. Free discussion of issues in student committee meetings should be encouraged strongly.

6. Student committees should evaluate their own work and effectiveness.

7. Records should be kept of the proceedings of each committee meeting.

8. Student committees should make evaluations regarding the improvement of vocational course offerings.

9. Membership on the student committee should represent students of various grade levels.

10. The student committee should make evaluations regarding local vocational youth organizations.

14. Student committees should make recommendations regarding the improvement of vocational education facilities.

16. Members of the student committee should elect their own officers.

17. Members of the student committee should make suggestions regarding the improvements of the vocational education program.

20. There should be a defininte agenda for each committee meeting.

21. The student committee on evaluation should continue to serve in future years.

Both the project directors and members of the student committee tended to be undecided on two items. The items were:

13. The student committee should operate under a set of rules and regulations adopted by the school teachers and administrators.

19. Teachers should make the final selection of student committee members.

CONCLUSIONS

All conclusions were based upon the results obtained in the study and can be held tenable only for the population studied. However, generalizations can be made to populations with similar characteristics but caution must be exercised when attempting to generalize the findings of the study to populations of unknown or dissimilar characteristics.

The following conclusions were based upon the responses of the eleven project directors to the factual information requested on Part I of the questionnaire for local project directors. The conclusions were:

1. The student committees on evaluation had a mean membership of ten students. Members of the committee were selected primarily by teachers and by students with staff approval.

2. In most cases, officers serving on the student committee were chairmen, vice-chairmen, or secretaries. In some schools reporters served on the student committee. The officers were elected by student members in most school systems.

3. On the average, five student committee meetings were held in each of the participating schools. It was concluded that more meetings would have been held if the student committees had been in operation for the entire school year. The number of minutes per meeting varied, but the average meeting lasted fifty-six minutes.

4. The most popular meeting time was during school hours. Over one-half of the student committees met once every two weeks or once monthly. The agenda for the committee meetings was planned by teachers and the committee chairmen. Teachers and the committee chairmen were also responsible for calling meetings of the student committee.

5. The two most popular activities of the student committees were assistance with student follow-up and formulation of recommendations. The project directors indicated that future activities should include planning curriculum development, assisting with the follow-up of former students, and assisting in conducting surveys.

6. The major problem regarding the use of student committees was arranging a time for the meetings. Other problems were interpreting the role of the student committee and selecting committee members.

Based upon the opinions of the eleven project directors and the eight assistant project directors, the following conclusions were formulated:

1. The student committee had contributed to the evaluation effort to some or to a great extent in most participating school systems.

2. The student committee could make a significant contribution to evaluation in the future.

3. The student committees on evaluation would be continued in the coming school year.

The following conclusions were based upon the responses of the seventy-eight students to the questions found on Part I of the questionnaire for student committee members. The conclusions were:

1. Seventy percent of the student committee members were seniors. Approximately two-thirds of the students indicated that they were not a member of a vocational education youth organization, while over seventy-five percent stated that they were not officers in a vocational education club. Over ninety-five percent of the students indicated that they were not an officer on the student committee on evaluation.

2. The major accomplishments of the student committees were to formulate recommendations, assist with activities related to the follow-up of former students, distribute surveys, and provide student assistance in evaluation activities.

3. The major activities that the student committee on evaluation should accomplish in the future were to formulate recommendations, evaluate school programs, obtain student opinions about vocational programs, assist with follow-up activities, and plan for community involvement.

4. The best size for the student committee on evaluation was from eight to ten members.

Based upon the data collected on Part II of the questionnaires used, several conclusions were reached about the opinions of the student committee members and project and assistant project directors regarding the operation and function of the student committee on evaluation. The research hypothesis stated that the student committee members should have significantly different mean scores on each item of the questionnaire than the project directors. In accordance with the research hypothesis, significant differences at the .05 level were found on eight of the twenty-one items on the questionnaire. Based upon this finding, the following conclusions were formulated:

1. Of the twenty-one items on Part II of the questionnaires, the student committee members agreed significantly more strongly than the project and assistant project directors on four items while the project and assistant project directors agreed significantly more strongly than the student committee members. Of the remaining items in which no significant differences were found, both student committee members and project and assistant project directors tended to agree with eleven items and tended to be undecided about two items.

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2. Members of the student committees agreed significantly more strongly than project and assistant project directors that the presence of a teacher or administrator was essential in the operation of the committee. The student committee felt more strongly than the project directors that the committee should engage in only those activities assigned to it by the teachers or the school administration and that vocational teachers and the principle should be present at the meetings of the student committee. The project and assistant project directors agreed significantly more strongly than members of the student committee that teachers should not serve as voting members of the student committee.

3. A basic difference of opinion between the project and assistant project directors and the student committee members regarding how meetings should be scheduled was identified. Members of the student committee agreed more strongly than the project and assistant project directors that meetings of the student committee should be scheduled regularly. On the other hand, the project and assistant project directors felt more strongly than student committee members that meetings of the student committee should be held only when there is sufficient need.

4. The project and assistant project directors agreed more strongly than the student committee members that more organization and content was needed in student committee meetings. Project and assistant project directors agreed more strongly than members of the student committee that minutes of the student committee meetings should be duplicated and distributed to committee members promptly and that the student committee should make long-range proposals related to the improvement of the vocational education program in the local school.

5. Both the project and assistant project directors and the student committee members agreed on certain organizational procedures regarding the organization and function of student committees. Both groups agreed that records should be kept of the proceedings of each committee meeting; that membership on the student committee should represent students of various grade levels; that members of the student committee should elect their own officers; that there should be a definite agenda for each committee meeting; and that the student committee on evaluation should continue to serve in future years.

6. Both groups also agreed that the student committee should be involved in certain evaluation activities. It was generally agreed that the student committee should evaluate their own work and effectiveness, make evaluations regarding the improvement of vocational course offerings, make evaluations of local vocational youth organizations, make recommendations regarding the improvement of vocational education facilities, and make suggestions regarding the improvement of the vocational education program. In addition, both groups agreed that free discussion of issues in student committee meetings should be encouraged strongly.

7. Both the project and assistant project directors and the members of the student committees tended to be undecided regarding two organizational procedures. Both groups were undecided regarding whether or not the student committee should operate under a set of rules and regulations adopted by the school teachers and administration. They were also undecided about whether or not teachers should make the final selection of student committee members.

In summary, it was concluded that the student committees had made a significant contribution to the evaluation efforts in the participating school

systems. It was also concluded by the authors that further use and experimentation with student committees is needed. Further clarification of the role, function, and organization of student committees is necessary if school systems are to tap effectively the valuable source of student opinion and contribution.

RECOMMENDATIONS

The following recommendations formulated by the authors were based upon knowledge gained while directing the Central Kentucky Vocational Education Evaluation Project and while directing the study of Student Committees on Evaluation. Recommendations were also based upon observations made during the study and the statistical findings of the study. Therefore, the recommendations must be evaluated accordingly. The recommendations are:

1. Project and assistant project directors in schools participating in the Central Kentucky Vocational Evaluation Project should continue the use of student committees on evaluation. Evidence, collected from the participating project and assistant project directors indicated that the student committees on evaluation had made a significant contribution to the evaluation effort in the school system.

2. School systems participating in the Central Kentucky Vocational Education Evaluation Project who had not organized a student committee should consider its development. Other school systems participating in evaluation endeavors should organize a student committee on evaluation. Responses of the local project and assistant project directors offered evidence that school systems conducting evaluation projects have much to gain by organizing a student committee on evaluation.

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3. Student committees should be organized to provide insight into areas other than evaluation. Results of the findings indicated that student committees had a valuable contribution to make in the areas of program planning and implementation as well as program evaluation. Results also indicated that students made valuable recommendations regarding the operation of the educational program.

4. Further use and experimentation with student committees is needed. The implications of the study are that use of student committees in program planning, implementation and evaluation is an untapped resource of information, opinion and assistance. Students should be involved in program improvement endeavors.

5. Additional research should be conducted to clarify more explicitly the organization, role and function of student committees. Evidence collected during the study indicated that there were certain areas of disagreement and indecisiveness between the project and assistant project directors and the student committee members regarding the organization, role, and function of student committees.

6. Research regarding the organization and use of student committees not included in this study should be conducted. The findings of this study should be replicated and questions other than those raised in this study should be asked. The survey of research conducted prior to the study indicated a dearth of research in the area of effective student involvement in educational planning, implementation and evaluation.

7. The importance of student committees and the contribution that they can make to educational programs should be taught in preservice and inservice

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teacher education programs. Teacher educators should instruct present and potential teachers of the value of using student committees and should develop procedures and techniques for organizing and using students in program planning, development, implementation and evaluation. Based on observations made during the study, it was discovered that very few educators had focused previously on meaningful student involvement.

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APPENDIX A

STUDENT QUESTIONNAIRE

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STUDY OF STUDENT COMMITTEES ON EVALUATION

Student Questionnaire

Part I -- About Yourself

DIRECTIONS: Please read each question carefully. Select the correct answer and place a check mark (✓) in the space provided or respond in writing. Please do not omit any question.

1. In what grade are you presently enrolled?

Eighth_____
Freshman_____
Sophomore_____
Junior_____
Senior_____

2. Are you a member of a vocational education club? (FFA, FBLA, VICA, FHA, DECA, etc.)

Yes_____
No_____

3. Do you hold an office in a vocational education club?

Yes_____
No_____

4. Are you an officer on the Student Committee on Evaluation?

Yes_____
No_____

5. List the major accomplishments of the Student Committee on Evaluation during the past school year.

6. List the major kinds of activities which you believe the Student Committee on Evaluation should accomplish in future years.

7. The best size for the student committee is:

Less than 5_____
5-7_____
8-10_____
11-13_____
14-16_____
Over 16_____

Part II -- The Structure and Activities of the Student Committee on Evaluation

DIRECTIONS: Please read each statement listed below and circle:

SA: if you strongly agree with the statement
A: if on the whole you would tend to agree.
U: if you are undecided.
D: if on the whole you would tend to disagree.
SD: if you strongly disagree with the statement.

NOTE: When the word student committee is used, it refers to the Student Committee on Evaluation.

1. The student committee should engage in only those activities assigned to it by the teachers or the school administration.	SA	A	U	D	SD
2. The student committee should make long-range proposals related to the improvement of the vocational education program in the local school.	SA	A	U	D	SD
3. Vocational teachers should be present at the meetings of the student committee.	SA	A	U	D	SD

4. The principal should be present at the meetings of the student committee.	SA	A	U	D	SD
5. Free discussion of issues in student committee meetings should be encouraged strongly.	SA	A	U	D	SD
6. Student committees should evaluate their own work and effectiveness.	SA	A	U	D	SD
7. Records should be kept of the proceedings of each committee meeting.	SA	A	U	D	SD
8. Student committees should make evaluations regarding the improvement of vocational course offerings.	SA	A	U	D	SD
9. Membership on the student committee should represent students of various grade levels.	SA	A	U	D	SD
10. The student committee should make evaluations regarding local vocational youth organizations.	SA	A	U	D	SD
11. Minutes of student committee meetings should be duplicated and distributed to committee members promptly.	SA	A	U	D	SD
12. Teachers should not serve as voting members of the student committee.	SA	A	U	D	SD
13. The student committee should operate under a set of rules and regulations adopted by the school teachers and administrators.	SA	A	U	D	SD
14. Student committees should make recommendations regarding the improvement of vocational education facilities.	SA	A	U	D	SD
15. Meetings of the student committee should be scheduled regularly.	SA	A	U	D	SD
16. Members of the student committee should elect their own officers.	SA	A	U	D	SD

17. Members of the student committee should make suggestions regarding the improvement of the vocational education program.	SA	A	U	D	SD
18. Meetings of the student committee should be held only when there is sufficient need.	SA	A	U	D	SD
19. Teachers should make the final selection of committee members.	SA	A	U	D	SD
20. There should be a definite agenda for each committee meeting.	SA	A	U	D	SD
21. The student committee on evaluation should continue to serve in future years.	SA	A	U	D	SD

THANK YOU!

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APPENDIX B

QUESTIONNAIRE FOR LOCAL PROJECT DIRECTORS

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STUDY OF STUDENT COMMITTEES ON EVALUATION

Questionnaire for Local Project Directors

Part I -- Facts about the Committee

DIRECTIONS: Part I to be completed cooperatively by the local project directors. Please read each question carefully. Select the correct answer and place a check mark (✓) in the space provided or respond in writing. Please do not omit any question.

1. How many members are on the Student Committee on Evaluation?_____

2. Give a brief description of how the members of the student committee were selected.

3. What officers served on the student committee? (Check all that apply)

Chairman_____
Vice-Chairman_____
Secretary_____
Treasurer_____
Reporter_____
Committee Chairmen_____
Other (Please Specify)_____

_____

4. By what method were the officers selected? (Check all that apply)

Teacher appointed them_____
Principal appointed them_____
Students elected them_____
The committee had no officers_____
Other (Please Specify)_____

_____

5. How many meetings were held by the Student Committee on Evaluation in your school?_____

6. On the average, how many minutes did the meetings of the student committee last?_____

7. What time during the day were meetings of the student committee held?

Before school hours_____
During school hours_____
After school hours_____

8. How frequently did the student committee meet?

Once per week_____
Once every two weeks_____
Once per month_____
Once per quarter_____
Once per semester_____
Other (Please Specify)_____

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9. Who planned the agenda for the meetings of the student committee?

Teacher(s) and Committee Chairman_____
Teacher(s)_____
Principal_____
Committee Chairman_____
All the members of the student committee_____
Other (Please Specify)_____

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10. Who called the meetings of the student committee?

Teacher(s) and Committee Chairman_____
Teacher(s)_____
Principal_____
Committee Chairman_____
All the members of the student committee _____
Other (Please Specify)_____

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11. Please list the activities of the student committee. (Use back of page if you need additional space.)

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12. In what additional activities could student committees engage that would be of particular benefit to the evaluation effort in the future?

13. What were the three biggest problems you had regarding the use of the Student Committee on Evaluation?

14. To what extent do you feel that the student committee has contributed to the evaluation effort in your school?

Great_____
Some_____
Little_____
None_____

15. Do you feel that the Student Committee on Evaluation can make a significant contribution to evaluation in your school in the future?

Yes_____
No_____

16. Do you plan to continue the Student Committee on Evaluation next year?

Yes_____
No_____

Part II -- The Sturcture and Activities of the Student Committee on Evaluation

DIRECTIONS: Part II should be completed by the local project director and by the local assistant project director working seperately of each other. Read each statement listed below and circle:

NOTE: When the word student committee is used, it refers to the Student Committee on Evaluation.

1. The student committee should engage in only those activities assigned to it by the teachers or the school administration.	SA	A	U	D	SD
2. The student committee should make long-range proposals related to the improvement of the vocational education program in the local school.	SA	A	U	D	SD
3. Vocational teachers should be present at the meetings of the student committee.	SA	A	U	D	SD
4. The principal should be present at the meetings of the student committee.	SA	A	U	D	SD
5. Free discussion of issues in student committee meetings should be encouraged strongly.	SA	A	U	D	SD
6. Student committees should evaluate their own work and effectiveness.	SA	A	U	D	SD
7. Records should be kept of the proceedings of each committee meeting.	SA	A	U	D	SD
8. Student committees should make evaluations regarding the improvement of vocational course offerings.	SA	A	U	D	SD
9. Membership on the student committee should represent students of various grade levels.	SA	A	U	D	SD

10. The student committee should make evaluations regarding local vocational youth ofganizations.	SA	A	U	D	SD
11. Minutes of student committee meetings should be duplicated and distributed to committee members promptly.	SA	A	U	D	SD
12. Teachers should not serve as voting members of the student committee.	SA	A	U	D	SD
13. The student committee should operate under a set of rules and regulations adopted by the school teachers and administrators.	SA	A	U	D	SD
14. Student committees should make recommendations regarding the improvement of vocational education facilities.	SA	A	U	D	SD
15. Meetings of the student committee on evaluation should be scheduled regularly.	SA	A	U	D	SD
16. Members of the student committee should elect their own officers.	SA	A	U	D	SD
17. Members of the student committee should make suggestions regarding the improvement of the vocational education program.	SA	A	U	D	SD
18. Meetings of the student committee should be held only when there is sufficient need.	SA	A	U	D	SD
19. Teachers should make the final selection of committee members.	SA	A	U	D	SD
20. There should be a definite agenda for each committee meeting.	SA	A	U	D	SD
21. The student committee on evaluation should continue to serve in future years.	SA	A	U	D	SD

THANK YOU!

APPENDIX C

SAMPLE OF LETTER MAILED TO SUPERINTENDENTS OF SCHOOLS, COORDINATORS OF VOCATIONAL EDUCATION EXTENSION CENTERS AND PRINCIPAL OF AREA VOCATIONAL SCHOOL

68/69

UNIVERSITY OF KENTUCKY

LEXINGTON, KENTUCKY 40506

COLLEGE OF EDUCATION
VOCATIONAL EDUCATION
RESEARCH COORDINATING UNIT
152 TAYLOR EDUCATION BLDG

May 5, 1971

Mr. Donald Turpin, Coordinator
Madison County Vocational School
P. O. Box 809
Richmond, Kentucky 40475

Dear Mr. Turpin:

During the past few months we have enjoyed working with you and other Madison County Vocational personnel in the Central Kentucky Vocational Education Evaluation Project. As you are well aware, the use of student committees was encouraged in our approach to evaluation.

There is a dearth of information regarding the appropriate use of student committees. We would like for you and the members of your Student Committee on Evaluation to complete a questionnaire regarding experiences as they relate to the activities of the student committee. Copies of the questionnaires have been enclosed for your perusal.

There will be no cost involved with your participation in the study. We propose to mail the questionnaires to you for administration at your school. The questionnaires can be returned to us in a postage paid return envelope.

Your assistance and support of this study will be of help not just to those of us involved in the Central Kentucky Vocational Education Evaluation Project, but to all educators desirous of more effectively involving students in evaluation programs of vocational education. Should you have any questions regarding the study I would be happy to talk with you by phone or I can arrange a visit to your school.

Please indicate your interest in participating in the study by returning the enclosed postcard.

Thank you in advance for your cooperation.

Sincerely,

Floyd L. McKinney
Assistant Professor

cm

APPENDIX D

RETURN POSTCARD

6881

PLEASE RETURN BY MAY 10, 1971
STUDY OF STUDENT COMMITTEES ON EVALUATION
Please Check One:

_____Yes, we want to participate in the study.
Number of students on committee_____.

_____No, we are not interested in the study.

_____
signed

_____
school

APPENDIX E

LETTER ACCOMPANYING QUESTIONNAIRES TO LOCAL PROJECT DIRECTORS

UNIVERSITY OF KENTUCKY

LEXINGTON, KENTUCKY 40506

COLLEGE OF EDUCATION
VOCATIONAL EDUCATION
RESEARCH COORDINATING UNIT
152 TAYLOR EDUCATION BLDG

May 12, 1971

Mrs. Portia House
Jessamine County Schools
Nicholasville, Kentucky 40356

Dear Mrs. House:

We recently received notice from Mr. Adams of your school's interest in participating in the Study of Student Committees on Evaluation. Enclosed are the instruments for the study.

The two pink colored instruments should be completed by the local evaluation leadership team. The yellow colored instruments are for the students.

We are most grateful for your cooperation in conducting the study.

Sincerely,

Floyd L. McKinney
Assistant Professor

Enclosures

cm

APPENDIX F

THANK YOU-REMINDER LETTER

6885

80/81

UNIVERSITY OF KENTUCKY

LEXINGTON, KENTUCKY 40506

COLLEGE OF EDUCATION
VOCATIONAL EDUCATION
RESEARCH COORDINATING UNIT
152 TAYLOR EDUCATION BLDG

May 25, 1971

TO: Local Project Directors

FROM: Floyd L. McKinney

SUBJECT: Study of Student Committees on Evaluation

We deeply appreciate your participation in the Study of Student committees on Evaluation. You and the students who served on these committees can provide valuable insights as a result of your experience.

If your questionnaire or those of the students who served on your committee are already in the mail, thank you for your help. If not, could you mail them today?

VT 014 633
SOBEL, IRVIN
EMPLOYMENT, BACKGROUND AND ISSUES.

WHITE HOUSE CONFERENCE ON AGING, WASHINGTON, D.C. TECHNICAL COMMITTEE ON EMPLOYMENT AND RETIREMENT.
MF AVAILABLE IN VT-ERIC SET.
SUPERINTENDENT OF DOCUMENTS, U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 20402 (Y3.W58/4:2EM7/2, $.50)
PUB DATE - MAR71 44P.

DESCRIPTORS - *EMPLOYMENT PROBLEMS; *MIDDLE AGED; *MANPOWER UTILIZATION; EMPLOYMENT PROGRAMS; EMPLOYMENT OPPORTUNITIES; *UNEMPLOYMENT

ABSTRACT - AS A BACKGROUND PAPER FOR A NATIONAL CONFERENCE ON AGING, THIS REPORT DISCUSSES THE NEED FOR ADEQUATE EMPLOYMENT FOR OLDER WORKERS AND THE PROBLEMS FACING THESE WORKERS IN OUR SOCIETY. AN OVERVIEW OF EXISTING MANPOWER POLICIES AND PROGRAMS IS PROVIDED. SEVERAL FUNDAMENTAL ISSUES ARE IDENTIFIED, INCLUDING MODIFICATIONS OF MANPOWER PROGRAMS IN FAVOR OF OLDER WORKERS, LIMITS ON EMPLOYERS' ACTIONS AS A RESULT OF ANTI-DISCRIMINATION LEGISLATION AND OTHER MANPOWER POLICIES, AND GOVERNMENT AS AN "EMPLOYER OF LAST RESORT." (BH)

VT 014 633

Background and Issues

1971

EMPLOYMENT

VT014633

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71 WHITE HOUSE CONFERENCE ON AGING

WHITE HOUSE CONFERENCE ON AGING

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Steve Zumbach

Executive Committee: The Chairman, the Vice-Chairmen, and the members whose names are marked with an Asterisk (*)

The Honorable John B. Martin
Special Assistant to the President for the Aging
Director of the Conference

Willis W. Atwell
Conference Coordinator

1971 WHITE HOUSE CONFERENCE ON AGING

EMPLOYMENT

BACKGROUND

Irvin Sobel, Ph.D.

ISSUES

THE TECHNICAL COMMITTEE ON EMPLOYMENT AND RETIREMENT
with the collaboration of the author

A. Webb Hale, Chairman

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White House Conference on Aging
Washington, D.C. 20201
March 1971

6890

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FOREWORD

This paper on Employment provides information for the use of leaders concerned with the development of proposals and recommendations for national policy consideration and of delegates to the national White House Conference on Aging to be held in Washington, D.C., in November-December 1971.

The first four sections of the paper discuss: the need for adequate employment for older workers and the problems now facing the middle-aged and older workers in our society; goals proposed by previous conferences and groups; knowledge available on the present situation of public employment services; and identifiable gaps in meeting their employment needs. These sections of the paper were prepared by Irvin Sobel, Ph.D., Professor and Chairman, Department of Economics, Florida State University, with guidance from the Technical Committee on Employment.

The fifth section of the paper raises several issues relevant to employment for older people. The issues were formulated by the Technical Committee on Employment for consideration by participants in White House Conferences at all levels and by concerned national organizations. The purpose of the issues is to focus discussion on the development of recommendations looking toward the adoption of national policies aimed at meeting the employment needs of the older population. The proposals and recommendations developed in Community and State White House Conferences and by national organizations will provide the grist for the use of the delegates to the National Conference in their effort to formulate a National Policy for Aging.

Arthur S. Flemming
Chairman, National Advisory Committee
for the 1971 White House Conference
on Aging

John B. Martin
Special Assistant to the President
for the Aging and Director of the
1971 White House Conference on Aging

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I. INTRODUCTION—THE NEED

Modern economic thought increasingly views retirement as one phase—the dissaving phase in fact—of a lifetime income flow. In this view, the size and adequacy of retirement income is integrally related to the size and continuity of the income flow prior to retirement. Inadequacies and discontinuities in income flows prior to retirement can either reduce the potential amount of income which can be set aside for later years or even impose sufficient preretirement dissavings to adversely affect the well-being of the retiree. Because the great majority of individuals generate their incomes mainly through employment, the adequacy of retirement income is obviously related to the size, time-path, and continuity of earnings from employment prior to retirement. Unfortunately, in a dynamic economy—even one characterized by rising levels of per capita income—steadily rising levels of income cannot be deemed certain for all individuals and groups.

Middle-aged and older workers—those over 45 especially—have unique adjustment problems which can and do affect the continuity of their employment and the adequacy of their income during the crucial 2 to 2½ decades before retirement. Advancing age affects older worker patterns of utilization, earning capacity, and the ability to maintain employment with particular kinds of employers. When displaced, older workers find it relatively difficult to obtain new employment at earnings levels consonant with those obtained previously.

A major focus of the ensuing discussion, therefore, is upon the utilization, employment, and jobseeking responses of the aging. It is equally important to understand the responses of private and public institutions to the older workers and their problems. These responses manifest themselves in private and public policies and programs which vitally influence the employment, utilization, and earnings levels of the group labeled by some as "too old to rehire and too young to retire."

Recognition of the special employment problems confronting middle-aged and aging workers in the labor market is a prime precondition for generating the environment conducive to the acceptance of those policies and programs which could answer the basic needs of this group. Economic change both of a secular and cyclical nature has manifested generally disruptive effects upon the "human capital" of the over-45 age groups and threatens their ability either to maintain employment or, when displaced, to find equivalent employment—in fact, even to stay in the labor force itself.

The increasing recognition of public and private needs in the age-employment area and desires to implement programs to meet them should not rest solely or even appreciably upon humanitarian grounds even though human concerns are and have been an integral part of our societal heritage. More significantly, the close relationship between maximum utilization of our labor force potential and our economic growth rate means that successful solutions "pay off" for our society. A basic issue which is of crucial importance to public policy is whether, with coincident pressures from youth and minority unemployment, we can assign the aging a much higher priority in both private and public manpower policies than they have hitherto been accorded.

The role need for employment is also of crucial importance in generating the sense of urgency required as a prerequisite to a willingness to accord the aging a higher priority in our programs. Failure to maintain continuous employment in a society that is still basically work-oriented has adverse psychological and physiological consequences upon the individual and imposes costs upon both the families affected and upon our society as well.

From the outset, therefore, an overriding general need is the achievement of a much greater degree of sensitivity and understanding of age-employment problems by private and

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public institution and a true *de facto* rather than *de jure* elimination of age bias in employment.

The particular utilization, employment, earnings, and displacement problems confronting the aging call forth the need for certain basic programmatic adjustments. Programmatic recommendations have ranged from greater access to public and private training programs to individual job-creating assistance programs. Such efforts could on the one hand encompass programs designed to stimulate and enhance mobility and on the other stimulate attempts to increase employment in distressed areas. To the extent that programs can be devised to modify or even limit the extent and severity of displacement, older workers would be especially benefitted. And, above all, these older worker adjustment difficulties would indicate the need for an effective system, of both private and public employment services, willing to accord the aging a much higher priority in their placement efforts than hitherto. Such basic labor market institutions need sufficient resources to be engaged in educating employers, and in effectively counseling and finding employment for the more hard-to-place before they become either unemployable or discouraged.

In a real sense, the artificial separation of this over-45 age group and its problems from those of the retirees has serious consequences. The possibility, if not probability, that retiree-oriented organizations will regard the problems of preretirement continuity of employment and adequacy of income as secondary—and perhaps even view their younger preretirement counterparts as rival claimants for public and private resources—is a real one. There is a genuine danger that a society faced with both the urgent concerns of youth education, training, and employment, and the pressing problems of the retired aged, will assign a much too low priority to middle aged and aging whose problems of adjustment to a changing economy are equally acute. As a consequence, there is a pressing need to reassess and further develop the public and private employment policies affecting middle-aged and older workers.

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II. LONG-RANGE GOALS

Policymakers in all modern societies have been increasingly aware of the close relationship between maximum utilization of the national labor force potential and economic growth rates. In the past, this relationship was more likely to have been defined solely as requiring the achievement and maintenance of a full employment level of economic activity through monetary and fiscal policy. Today, elimination of the dislocations in the labor market which interfere with and negate the maximum development and utilization of human resources is also part of the "conventional wisdom" of the economic policymaker.

It is now recognized that the objective of developing and improving the quality and employment of the total manpower resources required for a nation's economic strength is equally important as a basic goal of national economic and social policy. This view implies—within the Western ideological framework of free choice by both workers and employers—an active labor market policy. An active labor market policy can be designed to harmonize private and public manpower policies directed towards maximizing per capita productivity by achieving a better balance between jobs, employment, and labor force potential. Attaining such economic goals requires employing and making employable those 45-to-65-year-old labor force members, who, even in a full-employment environment, would still encounter great difficulties in the labor market. This country's oft-repeated, longrun economic and social goals, therefore, involve manpower policies and programs which focus key manpower institutions upon the reduction or elimination of those basic labor market disabilities and structural malfunctions which interfere with the maximum matching of human potential, skills, and jobs.

This nation's longrun goals, as we have enunciated them in numerous Congresses, meetings, and before such bodies as the International Labor Organization and the Organization for Economic Cooperation and Development, involve not only full employment and the attainment of a better balance over time between manpower supply and demand but also the rapid placement of all workers in jobs commensurate with their highest abilities. Such policies necessitate the enhancement of equal access to job opportunities for every individual, regardless of age. The achievement of these longrun goals may require the filling of such diverse functions as vocational guidance and testing, counseling for training and retraining, rehabilitation of older workers, special services and job-creating activities for the hard-to-place, special consulting services to employers, job information, payment of maintenance and moving allowances, and limitations on displacement. Fulfilling these functions will necessitate a blending of general policies aimed at the entire labor force and specific policies directed toward the unique problems of the middle aged and aging.

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III. KNOWLEDGE AVAILABLE

A. INTRODUCTION

The rapid and intense pace of technological change accompanied by equally significant shifts in consumer tastes and preferences have been omnipresent factors affecting the employment and utilization of the entire labor force. It is obvious that these changes have produced important shifts in manpower requirements between industries, occupations, and economic sectors. Certainly the manner in which large numbers of workers have been utilized has been drastically altered.

The pattern of utilization and ability to change jobs and occupations of many workers over 45 have been affected by their lower average length of education and training which occurred 25 or more years ago in a somewhat different world of work. In attempting to understand the age-employment problem, it is of great importance to gain some knowledge of the consequent adjustments made by these workers. It should be pointed out that the choice of age 45 as the reference point for age-employment problems, while necessary for statistical purposes, is still arbitrary. The data which will be presented below would indicate that for major categories of workers adverse age-employment effects begin earlier. We will examine the basic differences between the occupational and industrial structure in which older workers prepared themselves and that to which they must currently adjust. The consequences to the aging of these differences in the world of work upon the utilization patterns, stability of employment, success in job search, and ability to adjust to displacement through new employment are examined herein. The analysis will be focused in such a way as to yield guides to labor market policies and programs.

B. MANPOWER IMPLICATIONS OF CURRENT PATTERNS OF ECONOMIC GROWTH: GENERAL EFFECT IN EMPLOYMENT ON OLDER WORKERS

Technological change, product innovation, and a continued rise in the general level of income are causing industrial and occupational shifts in employment which have special effects upon the over-45's who are in the labor force. The net effect of these changes is adverse to the over-45's in the labor market, some of whom find it difficult if not impossible to make the adjustments required to remain in the mainstream of an economy which is changing so rapidly.

1. Unskilled and Semi-Skilled Employment

Many of the more obvious and important occupational effects of current change can be ascertained from a brief examination of the impact upon unskilled and semi-skilled occupations in which a large proportion of the older workers are still engaged.

The increased mechanization of materials-handling, both in industry and in warehousing, has eliminated much manual labor. Factory jobs involving either manipulation of equipment or manual tending of machines are also becoming relatively fewer because of the introduction of automatic machinery. Even when semi-skilled operatives are still required for automatic machinery they are likely to be far fewer in number than the operatives replaced.

A continued rise, however, in the general level of income, accompanied by a rising demand for leisure and medical services, may mean more jobs for parking lot attendants, gardners, home repair mechanics, nurses' aides, attendants in rest homes, and hotel employees of all sorts. For all of the above relatively unskilled jobs, not only are these apparently no

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barriers inimical to the utilization and employment of older workers but these fields currently utilize higher proportions than normal (in terms of their percentages in the labor force) of such workers. However, the rise in employment in these few fields is sufficiently counterbalanced by losses in other low-level service sectors (e.g., laundries, elevator operation) and in other industrial activities to produce an expected decline in unskilled employment. At the same time, employment in the operative (or semi-skilled) category will at best rise at a rate which is proportionately half to two-thirds the rate of growth of the labor force.

Increasingly, the typical production worker is becoming a machine monitor, a function already characteristic of many operators of highly automated equipment. The substantial responsibilities involved in supervising complexes of costly automatic equipment require that the operator of such equipment be a skilled watchman with a much higher level of education than that demanded in the past for a factory operative.

2. Skilled Employment

Among the skilled, the number of maintenance and repair workers qualified to service and repair electronic equipment, instruments, and automated equipment will expand continuously, offsetting a substantial proportion of the numerical loss in semi-skilled and unskilled employment when such machinery is installed.

More, better, and perhaps a new kind of training is required for the maintenance positions in enterprises adopting this new type of complex equipment. The need for such new training results from the combined electronic, electro-mechanical, and sometimes even hydraulic operations involved in these new systems. Maintenance electricians, home appliance and even automobile and airplane servicemen will need more technical education in order to service the more complex models which come into use. Older workers are not likely to have acquired the training and skills necessary either to compete for these positions or to be eligible for entry into this field.

3. Clerical and Proprietary Employment

Among office and clerical workers, electronic data processing is eliminating routine jobs by performing such functions as accounting, addressing, billing, inventory and stock control, payrolls, handling and processing of vouchers, posting, and other record-keeping. Many of the new jobs created by the introduction of data processing, such as programmer and systems analyst, are either in the professional category or, as in the case of equipment operators, in the upper levels of clerical work. The ability of older clerical employees to adapt to the new workflows, and to work and meet the educational and skill requirements involved, is conjectural, especially for those who formerly performed the more routine clerical functions being eliminated.

Market trends have been continuously causing a reduction in the number of proprietors and will probably continue to do so—even though the numbers of specialized proprietors in the new service and repair areas may continue to advance. Certainly the type of proprietary small retail establishment, frequently the refuge of older persons, will continue to decline.

4. Professional Employment

In the scientific and engineering professions a noticeable effect, especially linked to the rapid rise in expenditures for research and development, has been the creation of new specialties little known even a decade ago, and more likely to have been encountered only in science fiction when most of the present day over-45's were undergoing their training. The development of computers has had a revolutionary effect upon many scientific and technical fields and specialties and increasingly requires interdisciplinary and interfield training. These continuing trends again impose very severe hardships and disadvantages for older (over-45)

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engineering and scientific personnel, whose education and training reflect the old disciplinary and field subdivisions.

C. THE PATTERNS OF OCCUPATIONAL AND INDUSTRIAL CHANGE, 1930-75

Individuals prepare for work (i.e., make their decisions about education, training, and choice of occupations, industries, and even localities) in terms of the situation prevailing at the time of their entry into the labor markets. Thus, the patterns of utilization of workers who today are 55 and over reflect and are heavily influenced by the economic world of the 1930's, the time today's older workers were entering the labor force. Similarly, the utilization patterns of today's 45-year-old reflect the 1940 period. Educational and training institutions would indeed be fortunate to keep current with the occupational trends and demands of the period in which they have to prepare people for economic activity. All too often, especially in vocational education, the pattern of preparation is for occupations and fields in vogue in the recent and sometimes not too recent past.

The ability to adjust to new fields, and even the patterns of utilization of older workers—given the tendency with mounting age to stay as long as possible in the fields in which one is employed—are themselves products of the type of economic world which prevailed at the time of entry into the labor force. Table 1 indicates the extent, both actual and prospective, of occupational change since the beginning of the twentieth century.

TABLE 1.—PERCENTAGE DISTRIBUTION OF UNITED STATES LABOR FORCE BY OCCUPATION 1900-1975 (BOTH SEXES)

Major Occupation Group	1975 est.	1970 est.	1969	1960	1950	1940	1930	1920	1910	1900
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
White-collar workers	47.8	46.6	47.3	42.3	36.6	31.1	29.4	24.9	21.3	17.6
Professional, technical, and kindred	14.2	13.3	13.8	11.4	8.6	7.5	6.8	5.4	4.7	4.3
Managers, proprietors, and officials	10.7	10.7	10.2	8.4	8.7	7.3	7.4	6.6	6.6	5.1
Clerical and kindred workers	16.2	15.9	17.2	15.0	12.3	9.6	8.9	8.0	5.3	3.0
Sales	6.7	6.7	6.0	7.5	7.0	6.7	6.3	4.9	4.7	4.5
Blue-collar workers	33.4	34.3	36.2	39.6	41.1	39.8	39.6	40.2	38.2	35.8
Craftsmen, foremen, and kindred	12.8	12.8	13.1	14.3	14.1	12.0	12.8	13.0	11.6	10.5
Operatives and kindred workers	16.3	16.9	18.4	19.9	20.4	18.4	15.8	15.6	14.6	12.8
Laborers, except farm and mine	4.3	4.6	4.7	5.4	6.6	9.4	11.0	11.6	12.0	12.5
Service workers	14.3	13.8	12.2	11.8	10.5	11.7	9.8	7.8	9.6	9.0
Private household			2.1	2.8	2.6	4.7	4.1	3.3	5.0	5.4
Service workers			10.1	9.0	7.9	7.1	5.7	4.5	4.6	3.6
Farm workers	4.5	5.3	4.2	6.3	11.8	17.4	21.2	27.0	30.9	37.5
Farmers and farm managers			2.4	3.9	7.4	10.4	12.4	15.3	16.5	19.9
Farm laborers and foremen			1.9	2.4	4.4	7.0	8.8	11.7	14.4	17.7

Source: U.S. Decennial Census 1900-1960. Estimates for 1970 and 1975 by the U.S. Department of Labor, taken from *Manpower Report of the President - March 1964* (Washington, D.C.: U.S. Government Printing Office), table E-5.

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The data underscore the relative movement to occupations and fields requiring higher levels of education and training. They indicate that older workers began their work careers in what might be termed a blue-collar world. Today the proportion of white-collar workers is approaching the 50 percent mark, far in excess of the blue-collar proportion which was first surpassed by the white-collar category only in 1960. Within all major occupational areas there has been a pronounced movement away from the unskilled fields toward those requiring higher levels of specialized skill and training. Most significantly, the 55-year-old prepared himself or herself in a period in which agriculture occupied between one out of four and one out of five of the labor force. Today only one in 20 is accommodated in the farm sector.

The rapidity of the industrial transformation has been such that some highly specialized industries and service fields constituting fields of major employment in the 1930's now employ a much smaller number of persons. To the extent that such industries decline and older workers, who tend to stay to the end in such fields, remain in them, a disproportionate share of the labor forces of these industries consists of older workers. The tendency to stay until displacement occurs is reinforced by the normal lack of liberal vesting provisions in many private pension plans. Thus, for many aging individuals, adequacy of retirement income is closely related to the ability to stay with one employer. Among such industries are mining (especially coal), textiles, apparel and related products, and, above all, railroad transportation which is now far surpassed by motor freight transportation as an employer of workers. While only 10 percent of all truck drivers are over 55, approximately 50 percent of railroad engineers and a higher proportion of conductors are that old.

Among the industries declining in an absolute numerical sense since 1930 are lumber and wood products, furniture and fixtures, food and kindred products, tobacco, and leather and leather products. The labor forces in these generally lower-paying fields are in the main heavily characterized by older workers. Stone, clay and glass products, blast furnace and basic steel products, oil and petroleum products, all characterized by relatively high proportions of over-45's, have declined relatively as employers of manpower. The most rapidly expanding industrial sectors are the service industries, including telephone communications, public utilities, wholesale and retail trade, finance, insurance, real estate, and all jurisdictions of government. Given both the basic differences in structure and in occupational requirements between the expanding and contracting sectors, and the limited mobility of older workers in general, it is not surprising to find that the contracting fields of employment are all characterized by a relatively aged work force. This characteristic is reinforced in such geographically concentrated industries as coal mining in which occupational and industrial mobility would also necessitate relocation and geographical mobility.

The broad occupational sectors encompassed so far in this discussion at best only hint at the basic changes which have occurred within specific occupations. While the labor force increased 35 percent between 1930-60, from 48 million to 65 million, the numbers in specific occupations and fields changed at markedly different rates. The number of accountants increased 2½ times, college professors 3 times, draftsmen 2½ times, and engineers 4 times to approximately 900,000. Other fields and occupations characterized by relatively large advances, i.e., by more than doubling, are natural and social sciences, technician employment, and teaching. Such occupations as actors, clergymen, dentists, mining engineers, chiropractors, funeral directors, osteopaths, pharmacists, and veterinarians either declined numerically or advanced slowly despite the rise in professional employment from 3.3 million to 7.3 million during this 30-year period.

Meanwhile, the number of managers, public officials, and proprietors increased from 3.6 million to 5.4 million during a period in which the number of selfemployed proprietors declined substantially—in fact, from 2.5 million to 1.9 million between 1950-60. Among the other occupations increasing numerically during the entire period are such clerical occupations as stenographers, typists and secretaries, cashiers, bank tellers, and sales clerks. The more numerically important occupations in the expanding fields are foremen, linemen and telephone servicemen, mechanics and repair men, road machinery operators, pressmen, and stationary engineers.

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A whole list of declining occupations, on the other hand, ranging from bakers, blacksmiths, boilermakers, bookbinders, masons, cabinetmakers, carpenters, forgemen, jewelers, locomotive engineers, firemen, loom-fixers, millers, painters, plasterers, shoemakers, compositors, and typesetters, should be noted. Many of these occupations accounted for major fields of either vocational education or apprentice-training in the 1920's and 1930's. Virtually all of the declining fields are characterized by relatively high proportions of aging workers.

Of note among the semi-skilled and unskilled workers are increases in such occupations as auto-service and parking attendants, deliverymen and routemen, checkers, baby sitters (a five-fold increase between 1950-60), hospital attendants, housekeepers, janitors and sextons, porters, guards and protective service workers, and waiters. All of these are low-level, low-income fields characterized by relatively high proportions of older workers. The decline in occupations such as dressmakers and seamstresses, furnacemen, knitters, laundry and dry cleaning workers, meatcutters, milliners, coal miners, motormen, spinners and weavers, and porters, has been, with the exception of miners, substantial. But the decline was not sufficiently precipitous so as to displace older workers with younger. Rather, the declines in these fields probably served more to discourage younger workers from entering, resulting in labor forces with a higher average age than in advancing fields. However, given that the declines in the fields were not distributed evenly between firms, industries, and areas, with some firms in given regions shutting down completely, the resulting displacement did bring about significant older worker unemployment.

Given these substantial changes in occupational distribution in the past decades, to which older workers can at best only partially adjust, the occupational and labor force profile of older workers differs significantly from that of their younger counterparts.

The data in Table 2 indicate relatively more older men in declining occupations, such as farmers or proprietors, and relatively fewer in the expanding professional, technical, clerical, and sales occupations. The data which combine both managers and proprietors may not indicate the real problems for the over-45's in that a much larger proportion of them are proprietors, mainly of small shops. Once adjusted for this fact, the proportions over-45 performing managerial services may not be significantly higher. In fact, if the below 25 category, mainly too young to achieve managerial rank, were excluded, the proportions over-45 in the managerial ranks are undoubtedly lower than those in the prime age categories 25 to 44.

TABLE 2.—OCCUPATIONAL DISTRIBUTION OF EMPLOYED MEN 14 to 44, AND 45 YEARS OLD AND OVER, 1960

Major Occupation Group	Men 14-44 years old	Men 45 years old and over
Total	100.0	100.0
Professional, technical, and kindred workers	12.2	8.6
Farmers and farm managers	3.7	8.8
Managers, officials, and proprietors, except farm	9.1	14.4
Clerical and kindred workers	7.9	6.3
Sales workers	7.5	6.7
Craftsmen, foremen, and kindred workers	19.9	21.3
Operatives and kindred workers	22.9	17.7
Private household workers	0.1	0.2
Service workers, except private household	5.5	7.4
Farm laborers and foremen	3.3	2.2
Laborers, except farm	7.8	6.4

Source: U.S. Bureau of the Census. *U.S. Census of Population: 1960. Detailed Characteristics. United States Summary.* Final Report PC (1)-1D (Washington, D.C.: U.S. Government Printing Office), Table 204.

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The much higher proportions of farmers and farm managers among the 45-and-over group reflect the continued movement out of agriculture and the decline in number of farms—affecting mainly young prospective farmers—and the occupational and geographical immobility of older persons.

It should be pointed out that the trend shown in table 2 accelerated in the 1960's. In fact, the movement to the upper and middle occupational categories was such that by 1969 the occupational structure approximated that projected for 1975. In short, the occupational structure of the economy was moving in a direction antithetical to that of the over-45's much more rapidly than had been anticipated only a few years before.

There are relatively fewer older workers in occupations that have had marked employment increases in recent years. It should be obvious, for instance, that older men would account for only a relatively small proportion of aeronautical, electrical, industrial engineers, and of electronic and instrument technicians. In like manner, there is only a small porportion of older workers, especially at the skilled level, in occupations in industries that have grown at a rapid rate. Although the older men over 55 comprise about one-fifth of the employed male labor force, the rapidly growing occupations listed in Table 3 have relatively small proportions in this age classification, i.e., much less than 10 percent. At the same time, according to the data in Table 4, older men represent large proportions of the workers in occupations which have had sharp employment decreases.

TABLE 3.—OCCUPATIONS IN WHICH MEN 55 YEARS OLD AND OVER REPRESENTED 10 PERCENT OR LESS OF ALL EMPLOYED MALES, 1960, AND PERCENT CHANGE IN EMPLOYMENT OF MEN, 1950 to 1960

Occupation[a]	Men 55 years old and over as percent of all employed males, 1960	Percent change in employment of men 14 years old and over, 1950 to 1960
Chemists	9	14
Designers and draftsmen	8	80
Engineers, aeronautical	4	194
Engineers, electrical	9	73
Natural scientists (not elsewhere classified)	7	71
Teachers, elementary school	9	[b] - -
Technicians, medical and dental	10	57
Technicians, electrical and electronic	3	[b] - -
Other specified sales workers[c]	10	[d] 71
Linemen and servicemen, telegraph, telephone, and power	8	30
Mechanics and repairmen, airplane	7	62
Mechancis and repairmen, radio and television	7	39
Attendants, auto service and parking	8	50
Truck drivers and deliverymen	10	26
Welders and flame-cutters	10	37
Operatives, paper and allied products	10	[d] 15
Operatives, chemicals and allied products	10	[d] 13
Firemen, fire protection	10	26
Farm laborers, unpaid family workers	6	-74
Laborers, wholesale and retail trade	10	[b] - -

Source: *Manpower Report of the President - March 1964* (Washington, D.C.: U.S. Government Printing Office), Table 39.

[a] Excludes apprentices.

[b] Not available.

[c] Includes advertising agents and salesmen, auctioneers, demonstrators, hucksters and peddlers, newsboys, and stock and bond salesmen.

[d] Data for 1950 and 1960 are not strictly comparable because of small differences in the occupations included.

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TABLE 4.—OCCUPATIONS IN WHICH MEN 55 YEARS OLD AND OVER REPRESENTED 30 PERCENT OR MORE OF ALL EMPLOYED MALES, 1960, AND PERCENT CHANGE IN EMPLOYMENT OF MEN, 1950 to 1960

Occupation	Men 55 years old and over as percent of all employed males, 1960	Percent change in employment of men 14 years old and over, 1950 to 1960
Dentists	32	11
Farmers and farm managers	36	-43
Officials and inspectors, State and local administration	36	20
Managers, officials, and proprietors (n. e. c.), self-employed	29	-23
Manufacturing	30	[a] -29
Wholesale trade	32	[a] -25
Retail trade, except eating and drinking places	30	[a] -30
Other industries (including those not reported elsewhere)	32	-15
Real estate agents and brokers	39	22
Blacksmith, forgemen, and hammermen	33	-44
Locomotive engineers	47	-22
Shoemakers and repairers, except factory	42	-37
Tailors and furriers	53	-54
Stationary firemen	30	-28
Private household workers	35	-17
Barbers	35	[a] -10
Charwomen, janitors and porters	36	17
Elevator operators	44	-21
Guards and watchmen	45	-2
Laborers, railroads and railway express service	30	-54

Source: *Manpower Report of the President - March 1964* (Washington, D.C.: U.S. Government Printing Office), Table 40.
[a] Data for 1950 and 1960 are not strictly comparable because of small differences in the occupations included.

Older men, as indicated previously, are also represented to a disproportionately large extent in a number of unskilled service occupations which require little skill and training. In many cases these are the only fields of activity in which formerly long-service older workers, displaced from better and higher paying jobs, can find employment without encountering age barriers.

Several of the major "traditional" professions have high proportions of older men. Men of this age, i.e., over 55, represent from over one-fifth to a third of all dentists, physicians and surgeons, clergymen, pharmacists, lawyers, and judges. These fields have had employment increases well below the national average for professional workers. The ability—given the traditional pattern of self-employment in these professions—to determine the pace and intensity of work and to go on practicing well beyond conventional retirement age is another characteristic of these fields and may largely account for the high proportions of older workers in them. In these fields where free choice still determines age of retirement, the high proportion of individuals who remain active past conventional retirement ages would also tentatively indicate that if retirement were optional rather than compulsory a smaller proportion over-65 would in fact retire.

Data on the industrial distribution of older workers is even more incomplete, but in general the same trends as pertain to occupations prevail. Older workers predominate, or are more than proportionately significant, in industries declining absolutely such as textiles, coal,

apparel, and railroads, or in those declining relatively, such as steel or automobiles, in which employment growth has kept proportionate pace to the rise of the labor force. Older workers also are more than proportionately represented in low level and menial service fields and in nondurable goods industries. In fact, these are the fields in which the typical older worker, separated from a long-standing and frequently relatively high paying semi-skilled or clerical job, can find employment.

D. OTHER FACETS OF UTILIZATION

1. Unemployment and Withdrawal from the Labor Force

When unemployment rates are superficially examined they seemingly do not confirm any serious competitive disadvantages in the labor market for older workers. The rates for male older workers in 1964, 3.2 percent for those 45-54, and 3.9 percent for the 55-64 classification, were significantly lower than the 4.7 average male unemployment rate. However, when the influence of high unemployment rates for younger workers is removed from the total, unemployment rates for older workers were significantly higher than the 2.9 percent in the preceding age category between 35-44 years. By 1969, a year of high employment, the unemployment rate of the over-45's was still slightly higher than for the prime age group, but the differences were much smaller than in the less than full employment year of 1964. The difference prevailed, notwithstanding the almost universal existence—either formally embodied in trade union collective bargaining agreements or informally through custom—of seniority. This practice, combined with much lower rates of voluntary job mobility, should have resulted in much lower rates of unemployment for older workers.

The reasons that unemployment rates, despite these favorable factors, mount after 45 lie in the much higher durations of unemployment after displacement and conceivably in the current nature of displacement. When displacement is less drastic and encompasses, at any time, only a small portion of the work force of a given firm, older workers generally have enough seniority to keep their jobs. However, when the nature of technological and market change—including mergers, consolidations, and relocation of plants—disrupts and displaces entire labor forces, seniority offers little or no protection. Virtually all labor market students contend that the nature of current change is much more disruptive in this context than previous change.[1] If such is the case and older jobseekers of all categories have difficulty in finding equivalent employment, measures which would limit or modify the effects of displacement could be highly significant instruments of manpower policy. Such measures have been utilized in other Western societies and will be discussed subsequently.

These data, in regard to rates of unemployment by age, represent the least important aspect of the problem. Such information can be likened to the relatively small, visible part of the employment iceberg. *The real problem is that many older workers after displacement, and after long quests for employment, tend to stop looking for work and are thus subsequently classified as out of the labor force rather than unemployed.* Thus, involuntary retirement at ages from 55 upward may represent one growing and highly undesirable facet of manpower utilization. These data are shown in Table 5. They indicate not only that labor force participation rates for the over-45 males are declining but also that nonwhite males, whose occupational and industrial concentration is such that they are likely to encounter the most severe employment difficulties, have the lowest labor force participation rates. Although no complete study of the relationship of labor force participation rates to occupational and industrial structure has been made, such evidence—as well as fragmentary evidence from plant

[1]This should not be taken to imply that this statement, in any way, supports some contentions by the "triple revolution" proponents that automation is reducing the total number of jobs.

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shutdown studies—indicates that labor force participation rates are most likely to decline in those occupations (unskilled and semi-skilled) and industries which are characterized by serious employment difficulties.

This decline in labor force participation rates for workers over 55 (and to a lesser extent over 45) has been continuous during the past decade, persisting even during the full employment period from 1965-69. The decline in labor force participation was of sufficient magnitude to more than compensate for the reduction in unemployment. These trends would indicate that the magnitude of the problem of premature withdrawal from the labor force is likely to become more serious.

TABLE 5.—EMPLOYMENT, UNEMPLOYMENT, AND LABOR FORCE STATUS OF MEN 25 to 64 YEARS OLD IN THE CIVILIAN NON-INSTITUTIONAL POPULATION, BY AGE AND COLOR, 1963, 1964, 1969 (RATE PER 1,000)

Age and Color	Employed			Not employed								
				Total			Unemployed			Not in labor force		
	1963	1964	1969	1963	1964	1969	1963	1964	1969	1963	1964	1969
Total, 25 to 34 years	928	940	949	72	60	51	44	34	19	28	26	32
White	936	946	953	64	54	47	38	29	17	26	25	30
Nonwhite	859	886	910	141	115	90	90	74	34	51	41	56
Total, 35 to 44 years	941	945	954	59	55	46	34	28	16	25	27	30
White	949	951	960	51	49	40	29	25	14	22	24	26
Nonwhite	873	885	903	127	114	97	76	58	24	51	56	73
Total, 45 to 54 years	923	926	930	77	74	70	35	31	16	42	43	54
White	930	933	937	70	67	63	32	28	14	38	39	49
Nonwhite	847	862	871	152	139	129	64	54	24	88	85	105
Total, 55 to 64 years	825	823	813	175	177	187	37	33	20	138	144	167
White	831	831	822	169	169	178	35	30	17	134	139	161
Nonwhite	763	740	747	238	260	253	61	65	32	177	194	221

Source: U.S. Bureau of the Census, *Current Population Survey*, January 1964, 1965, 1970. Data for 1963 and 1964 also available in *Manpower Report of the President - March 1965* (Washington, D.C.: U.S. Government Printing Office), Table 8.

2. Pattern of Movement over Time by Industry and Occupation

All available data from work histories, especially for semi-skilled and clerical workers, would indicate that in terms of such criteria as skill required, attractiveness of work, pay, and status of jobs, older workers generally move down the occupational ladder. In the main, such downward movement is the result of involuntary job mobility resulting from unemployment and displacement even though, as will be developed later, older workers who stay with their particular firms until retirement tend to suffer the same fate. In fact, the tendency in job search and job choice—initially and even for some time afterward—to resist such downward movement may be responsible for the much longer (almost double) average length of unemployment of workers over 45.

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The Ford Study (Sobel and Wilcock, 1963, 1966) of 4,000 workers, a great majority of whom were unemployed registrants with various State employment services, indicated a substantial amount of downward movement. Two-thirds of the almost 3,000 older workers in the sample had been discharged from long service and comparatively high paying semi-skilled or lower and middle level clerical jobs. They subsequently found employment in low-level service fields, light industry, routine clerical work, and in personal care activity, in those industries, firms, or types of establishment which were the lowest paying and least attractive from the standpoint of prestige and status. A relatively large proportion of these older workers were forced to take casual types of employment.

These data, combined with the data previously cited which show that a growing portion of older workers over 55 are dropping out of the labor force, indicate that the problem of maintaining employment for older workers up to retirement age will not fade away with full employment and can intensify despite it.

These conclusions are further supported by an analysis of data from the 1960 Census on earnings by age. Median incomes for men 45 to 54 are below those 35 to 44, while a further substantial reduction is experienced by the 55 to 64 group. If we associate higher levels of pay with higher degrees of utilization in more important positions and functions, we can make the following generalizations about utilization.

Professional and management employees reach their peak earnings between 50 and 54. At age 40, according to the *Manpower Report of the President of March 1965,* "the average teacher, lawyer or plant manager is still acquiring new knowledge and skills which will increase earning capacity and chances for promotion, while the self-employed professional is still expanding his practice" (p. 45).

The earnings of the average clerical worker (i.e., one who is not in the managerial stream), of craftsmen, and of operatives, reach earning peak between 45 to 50, and decline thereafter. Unskilled workers reach their earning peaks between 30 and 35. Earnings shrink because of greater time lost through unemployment, the downward movement either after unemployment or changes in function within a given firm, and a somewhat average greater amount of time lost by older workers due to illness.

Semi-skilled and skilled workers have somewhat ambiguous patterns of utilization. Due to seniority and the advantage gained by experience, the proportion of workers over 45 holding foremen and supervisory positions is higher than that for younger workers. There exist some very tentative and fragmentary data which indicate that up to 50 the advantages of seniority—by allowing bidding-in for higher level and higher paying production jobs—confers an advantage. Thus a higher proportion of older workers, 45 to 50, can be found at the top of manual and lower to middle level clerical and administrative job ladders. At age 50 or thereabouts, because of difficulties in some production jobs and the tendency to move older workers to lighter, easier, and less repetitive work (frequently in maintenance, and material-handling), the situation begins to change. Older workers, even when they retain their employment in a given firm, tend to move thereafter down the job ladder.

Very little systematic analysis of career utilization patterns can be found and whatever data exist are at best fragmentary. For instance, studies for engineers, one of the few fields in which such analysis exists, indicate that engineers over 45 are much more likely to have moved into administrative and managerial jobs, either within engineering departments or in production, and even into higher level, more generalized forms of management. Some proportion of those who do not move in the managerial stream move into technical sales. At the other extreme, some sizeable proportion of those who have not moved out of engineering are constrained, because of the inability to adapt to new fields and as a result of lack of modern training, to function at a technician's level—in many cases, however, at relatively high levels of pay. Such workers are, however, often very vulnerable to displacement resulting from decline in technical staff needs. The recent cutbacks in many technical or defense oriented industries have had severe impacts on engineering and technical personnel, many of them with 20 to 25 years of experience.

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The paucity of specific and conclusive data, within given professions, occupations, or even industries, as to how older workers are utilized somewhat limits this analysis. Studies, both over time and using larger samples, might fill in many of the gaps which render this analysis at best suggestive of broad trends.

2.1. Formal Education.

The substantial rise in the educational attainment of workers has often been cited as a basic source of United States economic growth. Because of the increasing tendency to use formal education as the foundation for entry into training, the ability of displaced older workers to obtain new jobs or training for them may rest upon their previous levels of education and training. The increasing proliferation of formal educational requirements as a condition for entry into many jobs also operates to the disadvantage of older workers. The tendency for the new jobs to require more education and intensive training has already been commented upon. Since older workers have substantially less education and training than their younger counterparts, one would infer from the data that what has been an overall gain for the American economy has placed older workers at a comparative disadvantage in adjusting to technological change.

TABLE 6.—EDUCATION, OCCUPATION, AND INCOME FOR MEN 18 YEARS OLD AND OVER, BY AGE AND COLOR, FOR SELECTED YEARS

Age	Median Years of School Completed, March 1962 and 1968						Proportion of Employed Persons in White-Collar Occupations, 1960		Median Income, 1959-1968					
	White		Nonwhite		White minus Nonwhite		White	Nonwhite	White		Nonwhite		Nonwhite as Percent of White	
	1962	1968	1962	1968	1962	1968			1959	1968	1959	1968	1959	1968
18 and 19 years	12.2	–	10.9	–	1.3	--	25.2	9.1	$ 978	$ --	$ 776	$ --	79%	--%
20 to 24	12.6	--	11.2	--	1.4	--	32.2	11.4	2,705	--	1,733	--	64	--
25 to 34	12.5	--	10.6	--	1.9	-	39.5	15.6	5,039	--	2,911	--	58	--
25 to 29*	12.5	12.6	11.0	12.2	1.5	.4	38.7	15.5	4,609	--	2,744	--	60	
30 to 34*	12.4	12.5	10.2	11.8	2.2	.7	40.2	15.7	5,431	3,101	--	5,547	57	62
35 to 44	12.3	12.3	8.9	10.1	3.4	2.2	39.1	13.8	5,680	10,401	3,215	6,143	57	60
45 to 54	11.3	12.0	7.8	8.8	3.5	3.2	36.8	11.0	5,324	10,759	2,812	6,142	53	62
55 to 64	9.0	9.9	6.1	6.5	2.9	3.4	35.8	10.1	4,601	9,151	2,249	5,207	49	57
65 years and over	8.4	8.5	4.2	5.0	4.2	3.5	38.6	12.1	1,831	4,746	963	3,070	53	63

*Data for median income are not strictly comparable with income data for other age groups.

Source: The education data are taken from U.S. Bureau of the Census, *Current Population Reports: Population Characteristics*, Series P-20, No. 121, February 7, 1963, and Series P-20, No. 182, April 28, 1969.

The proportions of white and nonwhite employment in white-collar occupations for 1960 are aggregates compiled from U.S. Bureau of the Census, *U.S. Census of Population: 1960. Detailed Characteristics. United States Summary*, Final Report PC(1)-1D (Washington D.C.: U.S. Government Printing Office), Table 204.

The income data are adapted from U.S. Bureau of the Census, *Current Population Reports: Consumer Income*, Series P-60, No. 35, January 5, 1961, and Series P-60, No. 66, December 23, 1969.

Less than one in 12 of workers presently 25 to 34 years of age has failed to complete the first eight elementary grades. Three times as many, or one in four of their 55 to 64 year old counterparts, encounter the same disadvantage, which is almost totally punitive as far as ability to compete for anything other than the most menial jobs. At the other end of the age spectrum, proportionately twice as many in the younger group have completed high school, and approximately three times as many (15 percent vs. 5 percent) have college degrees or better. The data in Table 6 indicate the continuing rise in educational achievement and the relative educational disadvantages of older groups and blacks. However, the relative educational disabilities of the nonwhite were drastically reduced during the 1960's.

2.2. Training.

The nature of modern training, i.e., the close relationship between formal education and training, would indicate that older workers would have far less formal training than younger ones. For example, three-fifths of the 24 million workers who had taken or were taking formal training had completed at least 12 years of school. In contrast, three-fourths of the 28 million with no formal training had failed to complete high school. The high correlation between education and training is attributable to the part played by high schools, junior colleges, technical institutes, and public vocational schools in developing formal job skills. The correlation also reflects the almost universal requirements of at least a high school diploma for entry into industry training programs. In addition, the more education workers had, the more likely they were to have multiple training and to be using the training in their current jobs. For instance, workers, both men and women alike, who had some college were three times more likely to have multiple training than those who had not gone beyond elementary levels.

The data in Table 7 taken in conjunction with the data cited earlier would also suggest rising levels of nonutilization of previous training as workers get older. This situation results from job changing over time and from the declining applicability of particular types of training made obsolete by sustained technological and market changes. The following data also indicate that the proportions of older workers enjoying formal job training are significantly lower than those for younger workers. These data are supported by other data not specifically cited in this paper which show that much higher proportions of older practitioners and license-holders in such fields as engineering, law, and accounting acquired their occupational preparation through experience mainly on the job. Thus, when confronted with the need for a job shift, many olders individuals, with substantial and sometimes highly distinguished experience in given fields, lack the formal educational base for job or occupational mobility.

TABLE 7.—EXTENT OF FORMAL JOB TRAINING AS OF APRIL 1963, BY YEAR OF BIRTH (PERSONS 22 TO 64 YEARS OLD, EXCLUDING THOSE WITH 3 YEARS OF COLLEGE OR MORE)

Year of Birth	Age in 1963	Percent with Formal Job Training
1899-1908	55-64	32
1909-1918	45-54	41
1919-1928	35-44	52
1929-1938	25-34	54
1939-1941	22-24	59

Source: *Manpower Report of the President - March 1964* (Washington, D.C.: U.S. Government Printing Office), Table F-8.

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2.3. Retaining.

These educational and formal training disadvantages carry over and affect the ability of older workers to respond through retraining to unemployment, in most cases induced by technological and market shifts. The available data on American retraining regarding the mass retraining effort initiated first through the Area Redevelopment Act and then through the Office of Manpower, Automation and Training emphasize the relatively small proportions (about 10 percent in fact) of workers over 45 in the retraining programs. These proportions have not varied significantly since the early 1960's (when the training programs began); in 1969 the percentages were 10.3 for Institutional Training Programs and 10 percent in "on-the-job-training" (OJT). To the extent that the training programs are concentrated in expanding sectors of employment opportunity this relatively low rate of retraining jeopardizes the ability of older workers to enter these fields. It should be pointed out that these proportions are about average compared to those experienced in other countries but relatively low when related to the approximately 40 percent of relative weight of the over-45's in the labor force. These very modest and relatively inadequate proportions prevailed despite a significant effort to include qualified older workers.

The reasons for the low participation rates lie partially in the reluctance by older workers to enter the training programs. At the same time, employment service personnel in charge of the selection process emphasized not only these factors but fear of inability to place the older trainees even after a successful completion of the training program. The result of these mutually reinforcing attitudes is reflected by the small proportions being retrained. To reverse these trends would require greatly augmented counseling efforts by employment service personnel and a basic change in attitudes by those who select individuals to be trained. Training authorities such as R. M. Belbin (1965) emphasize that much higher proportions of older workers—a doubling and tripling of the number—can be successfully trained. Other authorities on the economics of training (Stromsdorfer, 1964) have demonstrated that training programs of even a year's duration, and at age 55 and beyond, "pay-off."

In the Stromsdorfer study the typical benefit-cost ratios, even discounted to the present at such comparatively high rates as 10 percent, were of the magnitude of 200-300 percent for the over-55's and much higher for the over-45's.

Other fragmentary data, emanating from the formerly designated Office of Manpower, Automation and Training, would indicate that olders workers on the average remain longer in the fields and jobs for which they were trained. These data belie the frequent contention by employers, employment service and training personnel that training older workers is less likely to pay off than training their younger counterparts because older workers have less time remaining in the labor force. These above cited beliefs are often used to rationalize the tendency by decisionmakers to prefer younger over older workers for entry into training programs.

3. Adjustments by Older Worker Unemployed

Not least among the problems confronting public and private institutions attempting to facilitate older worker adjustment are the difficulties which result from the ways in which older workers seek new jobs and in general respond to labor markert realities. One consequence, as indicated in Table 8, is a rate of long-term unemployment normally about twice as great for the over-45's as for those classified as in the prime age group. The attitudes, preconceptions, and behavioral patterns of older workers can affect and ofttimes compromise programs designed to place them favorably, and may necessitate special techniques, methods, and counseling to encourage favorable labor market response.

The data from the Ford Foundation Study (Sobel and Wilcock, 1963) are revealing in this context. The data are based upon interviews with 4,000 predominately unemployed clients of unemployment services in six States and twelve labor market areas, and are carefully

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selected to delineate the spectrum of labor market characteristics. The research was especially designed to learn how displaced workers sought jobs and adjusted to their changed labor market.

TABLE 8.—DURATION OF UNEMPLOYMENT, BY AGE, SEX, AND COLOR

Age, Sex, and Color	Less than 5 weeks as a percent of unemployed in group		15 weeks and over as a percent of unemployed in group	
	1969	1968	1969	1968
Total	57.5	56.6	13.3	14.6
20 to 24 years	62.5	63.0	9.9	10.4
25 to 44 years	56.5	54.0	14.4	16.4
45 years and over	46.5	45.8	22.5	23.7
Male	55.1	53.4	14.5	16.0
16 to 21 years	63.3	61.9	8.1	8.9
16 to 19 years	63.6	61.9	7.8	8.4
20 to 24 years	61.7	60.6	10.5	9.8
25 to 44 years	51.7	51.1	15.8	18.1
45 years and over	42.0	40.5	24.9	27.4
Female	59.9	59.9	12.1	13.2
16 to 21 years	63.5	64.5	8.4	10.1
16 to 19 years	62.8	64.1	7.8	9.5
20 to 24 years	63.2	65.3	9.3	10.8
25 to 44 years	60.0	56.5	13.3	15.1
45 years and over	52.0	53.0	19.5	18.7
White: Total	58.1	56.9	13.1	14.7
Male	55.3	53.6	14.7	16.4
Female	61.0	60.4	11.5	12.9
Negro and Other Races: Total	55.3	55.3	13.9	14.5
Male	54.5	52.3	13.6	14.6
Female	56.1	58.0	14.1	14.5

Source: U.S. Bureau of Labor Statistics, *Employment and Earnings*, Vol. 16, No. 7, January 1970 (Washington, D.C.: U.S. Government Printing Office), Table A-13.

Older workers displayed little willingness to change types of work methods or methods of looking for work. Only two percent of those unemployed for one month or less were seeking, and only 18 percent of those unemployed for one to two years had actually sought lower level jobs. Flexibility was inversely related to age: only 13 percent of the under-45's said they were unwilling to shift levels of work as against 25 percent in the older group.

A much higher proportion of younger (control sample of 1,000) than older workers expressed strong interest in retraining. Only one in four older workers expressed strong interest in retraining as contrasted with approximately two-thirds of their younger counterparts.

The large majority of older workers was unwilling to adjust the wage rates they demanded. Only one-fifth of the sample was willing to make a downward adjustment regarded as significant, and this willingness was related more to greater length of unemployment than age.

These attitudes were highly unrealistic in that approximately two-thirds of the older workers sampled were long tenure employees (a minimum of five years in their last position)

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who had in most cases been displaced from higher paying jobs with durable and semi-durable firms. The great bulk of these workers had utilized their long tenure to gain experience in these firms, and this utilized experience enabled them to move up job ladders, whether semi-skilled or administrative. In short, they had a great deal of "specific or specialized" experience-generated human capital in particular firms, industries, and processes which in most cases they could not reasonably expect to transfer to other employers. When they then attempted to maintain previous earnings patterns, they made it more difficult to find new employment since their pay and type of position expectations were now not consonant with their currently reduced amounts of human capital. It should additionally be pointed out that most long tenure older workers have less human capital built up in job information and in knowledge of methods of job search.

That such inflexibility of expectations about type of job and pay is not consonant with reality can be inferred from the following data drawn from the sample in the Ford study which had been able to secure jobs. Of workers who had secured new employment there were far more increases than decreases in pay for workers in the below-35 sample. But this relationship was reversed at age 40. At age 55 the chances of getting a better job became very slight. Analysis of those job changers over 45 who had been able to find other employment one or more times indicated that in general they had left longer tenure jobs with durable and semidurable goods firms and in some case light industry. When they found new jobs they generally located them in either textiles, or soft goods firms, or in the more menial and lesser skilled service occupations, nearly always at lower rates of pay. The workers who were the most frequent job changers (two or more jobs during the five-year period) showed substantially lower average lengths of unemployment and much smaller reductions in pay than the two-thirds of the sample who had left a single long tenure position. Presumably these workers had already made their adjustment both in their pay expectations and to the kinds of jobs and industries in which they could find employment, and had acquired more human capital in job search methods. In fact, most of the flexibility displayed in the older worker sample was displayed by the one-third frequent job changers or "rolling stones." Contrary to the popular adage, it was in fact "the rolling stones that gathered the moss."

Little flexibility was shown by older workers in terms of willingness to change labor market areas to find new employment. Although about one in four workers under 35 sought work outside the local labor market area, only one in 11 of the over-45's had actually looked outside. The porportion even willing to consider moving declines rapidly with age, and this attitude is in no way altered by very long periods of unemployment.

The findings cited above supported by interviews with Employment Service personnel at all levels of authority suggest that in spite of the fact that workers tend to be realistic in estimating their chances of finding employment they are very reluctant to change their jobseeking behavior even when prospects for the kinds of jobs and pay they are seeking seem dim. Few respondents believed that their prospects of finding employment would be significantly improved, even at much lower rates of pay than currently demanded. But the data strongly indicate that reemployment prospects are greatly improved, even under less than full employment conditions, when workers are willing to accept lower wages and search for employment in lower wage industries.

Nearly all the data, and reinforcing comments made by officials attempting to place the middle aged and aging, indicate that older workers lack knowledge of job search methods, and have little or no experience in either finding a job or in presenting themselves advantageously when referred to a job.

In sum, these data strongly suggest that in the absence of basic changes in hiring policies, older workers wishing to improve their reemployment prospects would need to reduce their expectations about job, pay, and working conditions, accept retraining, and change their job search method.

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E. SUMMARY AND CONCLUSION

Older workers suffer certain disadvantages in responding to the newer patterns of human resource utilization necessitated by both changes in technology and in tastes and preferences. These changes have brought about a significantly different occupational distribution from that which prevailed at the time when the present day over-45's either entered the world of work or made educational and training decisions basic to their career choices. In the main, these changes have been towards occupations and activities requiring higher levels of skill, greater amounts of education and training, and have frequently embodied knowledge and methods unknown a few decades ago.

The results are occupational and industrial utilization patterns somewhat intermediate between those which prevailed when older workers entered the labor force and those which prevail currently. Naturally, the older the age group the greater the discrepancy between the present utilization patterns and that which prevails for that age group.

Those whom this paper has classified as older workers have significantly less education and training than do younger workers. As would be expected, much of the education and training of older workers took place in fields which, over time, either have been reduced in relative importance, or have ceased to employ the numbers formerly occupied in them. In the same context, the ability of older members of the labor force to respond to the new forces through retraining is limited by their own awareness of lesser degrees of education and previous training, as well as by a set of prevailing attitudes inimical to the relative trainability and employability of older workers. The result is a much lower rate of participation in such retraining programs, and hence somewhat reduced availability to respond to changes in manpower utilization patterns.

These are offsetting advantages, however, which may favorably influence utilization. These are experience gained on the job over time and certain institutional practices such as seniority which tends to prevail in determining movement to better positions and even in access to opportunity to acquire new skills and jobs. The increasing amounts spent by American industry—either within firms or even externally—for training, especially of middle and higher level personnel, seem to be helping toward such adjustments.

These so-called advantages may be decisive when the nature of change does not involve mass displacement, but may disappear when mass displacement has taken place. Thus, the fate of older workers and the ability to adjust patterns of utilization may be related to the degree of dislocation involved in technological and market changes. With displacement—given the growing tendency to prefer formal training and education to experience—the institutions and practices which brought advantages to the older worker who was continuously employed may be overcome and even offset.

The net effects of these displacement forces upon the patterns of utilization of older workers may be summarized as follows. Older workers, because of their limited mobility induced by the difficult realities of finding a new job and the human capital losses inherent in displacement, are more likely to be encountered and to constitute a larger proportion of the labor force in occupations, industries, and sectors of the economy which are declining. Older workers are more concentrated in the so-called traditional professions and in the independent proprietary fields where they can continue to perform beyond conventional retirement ages. These workers constitute a much smaller proportion in the new or more rapidly expanding industries and occupations not only in the professions but in clerical, skilled, semi-skilled, and unskilled fields. A somewhat higher proportion of semi-skilled and skilled workers over 45 attain low level supervisory status.

With displacement from an existing job, older workers, especially clerical, semi-skilled, and unskilled, tend to drift downward toward occupations and industries which are less attractive from the standpoint of pay, status, and employment security. These are generally light industries and lower level service industries or sectors of industries.

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When not displaced, older management and professional workers with continued experience tend to move upward within these fields and are, therefore, utilized at relatively higher levels somewhat longer than other lesser skilled personnel who reach peak earnings—and by implication peak levels of utilization—prior to age 45. Engineering and scientific workers continue to move upward, at least in terms of pay and general line responsibility, but are less able to maintain professional status and relative importance when confronted with a changing technology. Those older workers who remain with a given firm tend to be successful in bidding for higher production jobs until 50. But when confronted with new technology they are less successful, and after 50 tend to drift downward to less onerous and complicated jobs within the firm. It can be presumed that obsolescence and senescence of human capital have taken their toll.

One response to displacement imposed upon those older workers who are least able to respond to change is premature withdrawal from the labor force. The rates of labor force participation begin declining slightly at age 45, and decline rapidly after 55, a decade before conventional retirement ages have been reached. Labor force participation rates are lowest for those types of workers who encounter the greatest employment difficulties after displacement. Thus, involuntary retirement represents an unfortunate nonutilization response to technological changes.

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IV. THE PRESENT SITUATION

A. INTRODUCTION: PRESENT AND PROSPECTIVE PROGRAMS

The United States, like many of its democratic Western counterparts, is increasingly concerned with evolving well-articulated manpower policies aimed at achieving maximum productivity through optimum utilization of the labor force. In Western Europe the demographic structure has focused attention upon the needs of the middle aged and aging who comprise, in most of these societies, 40 to 50 percent of the total labor force. Various public and private manpower policies and programs—involving training, job-creating assistance programs, emergency public works programs, measures to stimulate mobility, increasing employment in distressed areas, and control of displacement—have been set in motion to deal with the special problems of the aging. Many of these programs in Western European countries are implemented by the public employment service whose smooth and efficient functioning may be of decisive importance for the ability of older workers to maintain employability and continuity of income, i.e., to be able to adjust to the changing situation of the job market.

This discussion, covering both the United States and countries of Western Europe, is thus divided into two parts: (1) the various public and private manpower policies aimed at older worker employment and (2) the functioning of the employment service and its possible improvement in the context of placing more older workers. In the United States, unlike other Western countries, private employment services are still of great significance in the labor market. Beyond advocating the sensitizing of these private institutions to the age-employment problem and the enforcing of anti-age discrimination legislation in the taking of job orders and in referrals—itself a formidable task—this paper has little to recommend or comment further.[2]

The emphasis in this section upon European manpower programs, especially the Swedish ones, is not intended to obscure the considerable developments in this country. The first steps in the United States in the direction of modern manpower policies were taken in 1961 with the passage of the training provisions of the Area Redevelopment Act (ARA). The ARA was rapidly followed by the Manpower Development and Training Act (MDTA, 1967) and the Economic Opportunity Act (1964). Subsequent amendments to these pieces of legislation added such programs as the Concentrated Employment Program and Community Action Agencies and broadened the scope and jurisdiction of the Employment Service, bringing direct annual financial support for manpower up to over two billion dollars. The mounting interest in manpower policies and programs in this society not only implies that we are likely to be moving continuously towards more comprehensive and integrated programs but that the success or failure of any group in the labor market is increasingly likely to be affected by the relationship between national manpower programs and other social and economic policies.

The programs described in the following pages have been tried in some Western countries. This paper will go to some length in identifying these programs and policies and the circumstances under which they have been initiated, with a view to their consideration by Conference participants as feasible or alternative methods of solving or ameliorating age-employment problems here.

A considerable amount of space has been devoted to Swedish programs, not only because of their comprehensive nature but also because they illustrate many of the basic issues—such as priorities, limitations upon freedom of choice, and the role of the government

[2]There are, in fact, little data on how private employment services function.

as employer of last resort—issues which are crucial to our subject. The various Western societies, within the broad framework of democratic values which they share, differ in their concept of the costs they are willing to impose upon various groups and institutions for achieving societal goals. These differences in viewpoints regarding the trade-offs between societal goals, e.g., the trade-off between greater freedom of choice for the worker or for the employer in order to maximize older worker employment, may be manifested in the kinds of restrictions the society is willing to place upon the various groups and institutions which operate in the labor market.

B. PUBLIC AND PRIVATE MANPOWER POLICIES

1. Training Programs

Virtually all modern societies are allocating increasing resources to adult training and retraining programs. These programs, while still nominally focused on training the unemployed, are more and more being oriented toward creating an occupational structure which is favorable to economic growth. Thus, fields and skills currently in great demand are emphasized, and a high proportion of trainees is likely to find that their new skills will enable them to be placed easily, and at satisfactory wage rates, regardless of age.

It is clear that, with the growing importance and size of such programs, policies with regard to the types of programs recommended and age criteria for entry policies are important determinants of the older jobseeker's success. In view of the problems which beset older jobseekers, it is evident that a great proportion need retraining to render them more competitive in the labor market. Thus a policy eliminating age criteria, either of a formal or informal nature, in access to training may be required. Data from various countries on the proportions of older workers admitted to training programs have not been very reassuring in this regard. Age limits prevail, at least for certain programs, and the percentage of older workers in training programs is still relatively low.

Reference should be made in this context to recent research which highlights the problem of the barriers to older worker participation in training programs (Belbin, 1965). The foundation for the barriers and for the reluctance to refer older workers for training—whether embodied in specific age limits or in a very low rate of acceptance—stems from beliefs about the lesser degree of older worker trainability and placeability,[3] for example, allegedly slower learning capacity, initial lower average levels and duration of education, the longer period away from school and formal education. The extent to which these beliefs permeate the employment service is important in view of the key role the service universally plays either in deciding on training programs and courses, or in selecting applicants for them.[4]

Institutional decisions and the persistence of these beliefs are not the only reasons for low levels of older worker participation in training programs. Only one out of four older unemployed jobseekers in the Ford study expressed "strong interest" in retraining, while approximately six out of ten younger workers were in the "strong interest" category. An understanding of the reasons for the general unwillingness to undergo training is crucial to any marked increase in older worker participation in training. Some reasons are, their awareness of lower average education, the long period away from school or formal training, and a fear of failure. But the reasons most frequently stated were the relatively small training allowance for a man with a family, "small chance of being accepted," and other responses denoting lack of knowledge of the existence and nature of the programs.

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[3] British placement rates are about 90 percent, Swedish 80-85 percent, and American and Canadian 70-75 percent initially, and 80-85 percent in the latter 1960's.

[4] Many potentially trainable older workers interviewed in the United States indicated no knowledge of the training programs, and said they had not been informed either of the existence of these programs or of their possible eligiblity for them. Thus, changing the interviewer's attitude is necessary to make older workers aware of their potential trainability and eligibility for existing programs.

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Although the data on the lesser degree of trainability of older workers are mixed, even the most adverse results do not justify the very low rates of older worker penetration in virtually all national training programs. In fact, this adverse data could be used to yield programmatic guides which, if followed, might increase the proportions of the older workers, who are fully competitive, in such programs (Belbin, 1965, pp. 52 and 53).

Virtually all studies of age and performance indicate that the variations among members of a given age group are far greater than the average variations between different age groups (Belbin, 1965, p. 55). These data indicate sufficiently large proportions of older workers have greater capacities for training than their younger counterparts to warrant a much higher entry rate into adult training programs. The proportion could be increased even more by incorporating training methods more suitable for older workers and by developing certain specified programs solely for older workers,[5] including pensioners and retirees. Many training authorities thus feel that the proportion of middle aged and aging in such programs can easily be doubled. It should be pointed out that the typical older worker is much more likely to remain in the position for which he was trained than his younger counterpart. Data indicate that the subsequent job tenure of older workers who have completed training is significantly higher than for the younger workers who more often move out of the fields for which trained. However, more attention would have to be paid to counseling, testing, and ultimate placement, as adjuncts of training, in order to minimize the possible adverse effects of accepting a larger proportion of older trainees.

In the United States the projection of older workers receiving training under the Manpower Development and Training Act has never exceeded 11 percent. But neither have placement rates for older workers in the program ever been sufficiently less than the overall rates to occasion any reason to believe that the approximately one to 10 over-45-trainees proportion could not have been increased substantially.

The Swedish and West German Federal Republic employment services (the latter to a somewhat lesser extent) have been authorized to arrange special training courses for older workers, with "particular attention being paid to the worker's ability to absorb such training" (Swedish National Labor Market Board, 1961, p. 3). Such special courses for older workers in Sweden include the following:

(1) Courses for pensioners only, as caretakers, guards, and custodians.

(2) Refresher courses for nurses and physiotherapists who are returning to the labor force.

(3) Courses for nurses' aides and home visitors.

(4) Courses for "grey workers," that is, older office employees generally at lower levels of specialization (Swedish National Labor Market Board, 1961, p. 12).

Training programs for older workers have recently been started in northern France (ex-textile workers), Belgium (ex-miners), and in the United States (New Orleans, solely for hard-to-place workers for training in 20 different occupations).

The longer average learning period of older workers has been dealt with in some Swedish programs, and in a small number of programs elsewhere, by flexible and continuous training sequences. Each trainee moves through an orderly sequence at his own pace, the maximum time allotted still being sufficient for the relatively slower learner.

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[5]These are generally fields in which older workers normally predominate and which are unattractive to younger workers.

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Training in Sweden is intended for the "unemployed," defined to cover persons considered by the labor exchange likely to become unemployed in the near future as a result of advance warning or a change in the structure of a particular industry. Thus, older workers who are likely to be adversely affected by technological change can obtain training while still employed, although not, however, for another job in the same firm.[6]

In the United States, the difficult problem of allowances for trainees, which very much affects the willingness of aging workers to undergo training, has been only partially solved under the Manpower Development and Training Act. Training allowances geared to the relatively lower levels of unemployment compensation paid in this country and Canada are insufficient to maintain trainees with limited financial reserves for the longer training programs. Due to fixed upper limits which have not kept pace with wages in many States, the average ratio of compensation to weekly wage before separation is between 35 and 40 percent.[7] European compensation during the training generally varies between 70 and 90 percent of former wages, and family allowances are also paid under some systems.

The above data on training would indicate that programs to increase the proportion of older workers undergoing training are not only feasible but can substantially improve this group's competitiveness in the labor market.

2. Individual Job-Creating Assistance Programs

One of the hallmarks of a society concerned about older worker employment is the variety of options for creating individualized employment. The Swedish system illustrates one approach, namely that of individual job creation if necessary. The approach is best expressed in the following quotation: "This [individual assistance] is important in the case of the handicapped and *older workers.* To this group belong persons (middle aged or elderly) who cannot continue in their own occupation and who without doubt belong the 'partially disabled' group in the proper sense since they are difficult to place in the labor market" (Olsson, 1963, p. 17).

The hard-to-place people, defined as handicapped in this broader sense, are given occupational tests and on-the-job training in special workshops organized either by the municipalities or privately with the aid of State grants. Allowances are paid by the national employment service during training, which may last from a few months to several years. Some workers who already possess particular skills and work experience or who, after training, cannot find jobs on the open market are given work in special sheltered workshops at guaranteed minimum wages. Sheltered workshops are also organized by cities and private foundations and will be subsidized if the need for additional workshop capacity is certified by the employment service. Special forms of sheltered workshops are provided by recordkeeping and bookkeeping jobs in central and local government offices, and, in a few subsidized cases, in private enterprise. Certain jobs as archivists and recordkeepers in libraries also fall within this designation.

Older workers who can neither be retrained nor transferred to another area can be given employment on special public works programs. These relatively simple, labor-intensive, public works include easier work such as clearing and cleaning parks, light road and street work, simple construction tasks, and work as porters, guides, and in other comparable service jobs in libraries and museums.

Similar efforts are made in other European countries, although the programs may not be so formalized or financed by the employment service to the same extent as in Sweden. The adoption of these programs involves the acceptance by the particular societies of a

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[6]This issue is raised because in our society we have preferred to wait until workers become unemployed. The Swedish policy can be likened to "preventive medicine."

[7]These fixed ceilings which cause the low rate of compensation are instituted to prevent insolvency, to maintain low merit tax rates, and to guard against "malingering."

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governmental role as the "employer of last resort." This fundamental issue of the governmental role, although discussed, has not been fully resolved in this country.

3. Emergency Public Works Programs

In Sweden, emergency public works of many different kinds can be started to deal with employment fluctuations of either a seasonal, cyclical, or regional nature. These programs consist of construction projects of various kinds initiated by local authorities.

The nature of the emergency works started would indicate that a major proportion of those employed are over 45. Referral and placement in these programs is through the placement office of the local employment services.

4. Measures to Stimulate Mobility: Financial Aids and Clearance

The data already presented indicate that one of the major factors which render older workers less competitive in the labor market is their high degree of occupational, industrial, and geographical immobility which tend to tie them to declining occupations, industries, and labor market areas.[8] Counseling, stressing cases where job prospects have been improved through mobility and calling attention to the various available mobility subsidies, are ways of helping to remove natural resistances to moving.

There are two aspects of this problem. The first is that of the variety and amounts of the allowances designed to cover the costs of mobility, such as travel and removal costs, plus living and housing allowances if the worker is obliged to maintain two residences. These types of aid to mobility exist to some extent in Canada and the United States,[9] and in Western Europe, but are granted and utilized more extensively in Germany and in Sweden. Travel allowances are paid, although the worker may not have committed himself to accept a job elsewhere and may only wish to examine the situation in another area.

The second aspect of the mobility problem is "clearance," a process by which a job vacancy in one area can be filled by a jobseeker from another. This process widens the scope of the labor market by giving jobseekers in all areas employment possibilities throughout the national economy. If the job can be filled by sending the worker's file, or if a referral can be arranged in advance, the typical jobseeker is likely to be more willing to move or at least to "go and look." The clearance process is also beneficial in that a great many of the jobs cleared are in shortage fields, generally on a higher level, often involving skilled, technical, professional, and administrative positions in which age discrimination is less likely to prevail.

Swedish national clearance placements are estimated at 70,000 annually, or 10 percent of total placements in the system.[10] Canadian national placements are estimated at 30,000, indicating either fewer "shortage" occupations, or fewer listings due to a higher level of unemployment. Clearance data from other systems are not available and the procedures are generally less developed.

In the United States, both because of the structure of the Employment Service which largely is under State jurisdiction and because mobility allowances have been given legislative sanction only under the Trade Adjustment Act, both clearance and mobility allowances are still relatively insignificant policy instruments. Facilitating labor mobility, however, is only a partial solution to a larger problem. Public policymakers and high Employment Service

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[8] This recurrent pattern of employment in certain seasonal industries during peak periods, and in public works during the "off season," has given rise to the contention by some labor market authorities that many workers remain uneconomically attached to particular industries and areas. The issue of whether certain types of employment-creating policies may frustrate normal labor market adjustments is a relevant one, and should be realistically faced through research on the effects of such programs upon mobility.

[9] The United States and Canada are just starting programs of this type.

[10] About 15 percent of these obtained mobility or housing allowances.

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officials must realize that the majority of older jobseekers have neither the desire for, nor the requisites of, mobility and are relatively immune to policies designed to stimulate such mobility.

5. Increasing Employment in Distressed Areas

According to the available data, distressed areas are characterized by much higher proportions of older workers. The development of new industry in these areas, therefore, would obviously benefit these workers.[11]

By and large, encouraging and even subsidizing new industry in areas defined as distressed has been an integral part of national policy in Great Britain, Germany, France, and Sweden. All of those countries report greater degrees of success than the Distressed Area and Appalachian Programs have apparently experienced in the United States.

The Manpower Services can play a part by activating training programs or providing on-the-job training projects for the manpower required by the new firms. Similarly, when government, as in Sweden, initiates and finances public works, it can utilize these programs to develop the economic infrastructure of the development area. This infrastructure may be instrumental in attracting new industry which could potentially absorb some older unemployed workers in the area.

6. Control of Displacement

The role and power given to public authorities to deal with redundancy and mass dismissals, and the extent to which the public sector can be given advance notice of dismissals, are of great importance. Older workers would benefit from any measures taken to arrest displacement, inasmuch as once displaced, they encounter much more difficulty than young workers in finding new jobs.

There is a great difference in the treatment of these problems in the Anglo-Saxon countries of the United States, Great Britain, and Canada as opposed to Western Europe. In general, the Anglo-Saxon approach is either one of "laissez-faire" or of relying on collective bargaining, especially seniority arrangements and severance pay, to deal with the problem equitably. Even though some of the European countries studied recognize voluntary collective bargaining procedures, most of them rely on legislation assigning an active role to the employment service or manpower agency.

The French system for dealing with redundancy is based on nominal state control of the employment and dismissal of workers. Every employer who wishes to dismiss an employee must obtain permission from the "Service d'Emploi" in his area. The request to release workers must be based on economic necessities and justified by the needs of the enterprise. Advance notice must generally be given to the service so that it can investigate the legitimacy of the mass dismissal. The criteria laid down concerning the order of dismissal to be followed in collective dismissals are as follows:

(1) Family responsibilities.
(2) Length of service in the establishment.
(3) Occupational qualifications.

This order is generally more favorable to older workers. Grants financed by the French National Employment Fund can be given to firms if reconversion or transfer of employees carry training or other costs. The employer is generally free to dismiss an individual employee, but if he abuses this right he may become liable for damages.

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[11] Many labor market authorities dispute this fact. They argue that the jobs created, at least in the first phases, go to younger workers from nearby agriculture, to returnees, secondary workers, and last to older workers.

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In the Netherlands, if either individual or mass dismissals are challenged, they are referred to tripartite boards composed of representatives of the employment service, trade unions, and employers. These boards can, in certain circumstances, decide that the discharge is manifestly unreasonable. Boards have reversed certain dismissal plans, even when legally formulated in conjunction with works councils, on the grounds that other workers not under dismissal orders have better prospects of finding employment elsewhere.

German law protects individual workers against socially unwarranted dismissal, and also lays down requirements concerning collective dismissals. Works councils, provided for by law, must be consulted in every case. In the event of disagreement, the individual worker goes to the Labor Court. A socially unwarranted dismissal is one which is not founded either on the personal conduct of the worker or on pressing operational requirements of the undertaking. Reduced ability to do the job or lower efficiency is not covered by this stipulation, especially if other jobs are available to which more senior workers with reduced efficiency can be transferred. Older workers must be given a longer notice period, going up to six months for employees with over twelve years' service. The employment service can, in certain cases, order that the mass dismissal be stayed up to a period of two months. Individual employees can protest if they consider that the method or order of selection is unfair.

Provisions for redundancy in Sweden are based on enough notice being given for the workers to transfer to alternative employment. This allows the employment service sufficient time to initiate retraining programs and possibly provide removal and resettlement allowances which will help the transfer to be made swiftly and efficiently. The employment service has no influence on the order of dismissal, unless the trade union and management disagree. The Swedish system defines as unemployed those who run a risk of becoming unemployed as a result of advance notice having been given. Workers covered by this definition then immediately become eligible for training allowances. Advance warning, which many European countries have found to be a useful tool of manpower policy, has been advocated in the United States but so far has not been adopted.

The French National Employment Fund has prevented some workers, generally older workers, from being dismissed by paying firms retraining subsidies. Similar options are available through the German Bundesanstalt, although these procedures are not as formalized as under the French system. In addition, French firms moving to other areas have been given certain allowances, either to move their existing labor forces or for retraining workers in the new areas. Other firms who would be willing to employ workers dismissed after a mass layoff in the same area or region can also be given training allowances if they take these workers on.

It is difficult to calculate statistically the total impact of these measures. The number of layoffs directly stayed or prevented is probably relatively small, even in France. However, subjecting mass dismissal to scrutiny on an individual basis, with standards directed towards length of service or difficulty in obtaining another job, is highly favorable to older workers.

In countries where mass dismissals have to be reported, new employment by the same firms is also scrutinized by employment services for periods varying from four to six months. This scrutiny is deemed necessary to prevent mass dismissal from being used to eliminate certain less productive workers. Employment services in these countries can order the reemployment of dismissed workers before new employees can be taken on.

7. Employment in Civil Service

In the United States, governmental institutions at all levels have frequently imposed either formal or informal age hiring limits on employment. While recent legislation now forbids formal age hiring limits, the imposition of irrelevant and unncessary educational, skill, and physical requirements and the downgrading of experience as opposed to formal education may still work against employing the older worker. Given the growing importance of the governmental sector in employment, it would appear incumbent upon governmental units not only to establish self-policing mechanisms but to have their decisions scrutinized by some

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higher review body, preferably at the Civil Service Commission level. The attention of top policymakers could then be drawn to those situations in which governmental practices depart from the goal of equal opportunity in employment. In this way governmental units could set an example for the private sector.

8. Employment Quotas for Older Workers

Almost unanimous disapproval of the use of quotas to determine the proportion of older workers to be either employed or trained was expressed by those trade union, management, and public officials interviewed for the OECD study on placement techniques.[12] This disapproval was expressed in the famous Laroque Report (France: Haut Comité Consultatif de la Population et de la Famille, 1962, p. 46), which represents one of the most comprehensive analyses yet undertaken on the problems of the aging in Western Europe.

Objections were raised on the grounds of (1) difficulties in administration and enforcement, (2) the insurmountable problems in devising rational criteria for fixing quotas, and (3) the belief in some industries which have traditionally employed relatively large proportions of aging workers that fixing quotas could result in a reduction of older worker employment opportunities.

9. Rehabilitation of Handicapped Older Workers

An active and well-defined rehabilitation program can greatly improve placement prospects for older workers, some of whom have physical handicaps which affect their success of placement when they become older. The establishment of such programs in the United States on a much larger scale, supported by more adequate training facilities, should be considered.

C. THE EMPLOYMENT SERVICE APPROACH

The public manpower policies which have been cited constitute tools which are, in most cases, implemented by the public employment service in each country. To implement these policies adequately, the employment service itself requires substantial modifications in its methods, procedures, and even outlook. An improved and more effective public employment service is probably a precondition for any effective manpower policy.

In addition to the supporting services provided for older workers, their successful placement probably depends on the nature, extent, variety, and flexibility of the instruments available to placement officers. A large variety of placement instruments which can be used without undue delay or administrative formalities permits placement personnel to devise individualized strategies for people who are really difficult to place. Such a system requires a sufficient number of experienced and highly competent placement officers with knowledge of the characteristics of the problems of older workers as well as sufficient time to pursue job development efforts on their behalf. An employment service assigned a key role in a well-conceived manpower program, with a competent professional staff and an adequate budget, must have at its command the great variety of tools and competences necessary to give special services to all the hard-to-place.

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[12] It should be pointed out that there is a quota (25 percent) for the construction industry in Sweden. These quotas could be fixed by firms, industries or occupations and, in some suggested quota systems, could be based on the proportion of older workers in the labor force.

The Japanese system of recommending 34 government and 78 private enterprise occupations as being suitable for older workers seems to suggest some attempt to reserve these jobs for older workers. However, there is no other indication that actual quotas are employed.

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In order to understand the problems involved, a brief description of the Employment Service in the United States would be in order. Unlike the European Employment Services which are national in nature, ours is a Federal system. Although treated in discussion as a single system, it is in reality composed of 54 individual and relatively autonomous systems—each varying somewhat in orientation and perspective.

Since 1962, when Federal manpower programs began, the United States Training and Employment Service has undergone considerable change in its responsibilities (President's Commission on Income Maintenance Programs, 1969). It is no longer considered primarily a labor exchange. Rather, it is increasingly oriented toward aiding those who are poorly prepared for work by helping them to meet hiring standards.

Faced with new manpower policies, our nation has assigned many new programs and activities to the National Employment Service, which has had to rely upon the local office as the manpower service center for implementing national programs. Since local offices are under State system jurisdiction, the lack of Federal control and the frequent difficulties in obtaining State cooperation have resulted in differential implementation of national policy in the various States.

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V. ISSUES

Certain fundamental issues lie at the heart of any policies and programs aimed at providing the aging with adequate and meaningful work opportunities. The way in which these issues are resolved will determine not only the nature of these programs, but their extent and magnitude. The following issues, therefore, deserve special attention.

Issue 1

Should placement, training, and job assistance programs—which are currently required to give priority to youth and minority groups—be modified to include higher proportions of older workers? Or, should total manpower funds for programs and services be increased in order to serve more older workers?

Our society has been confronted, even under conditions described as "full employment," with serious youth, hard core, black, and other minority group employment problems. The size of each of these categories is substantial and currently growing. The existence of these potentially rival claimants for jobs and access to job opportunities requires some continuing assessment of national employment priorities. *It is fact that the aging, who can be defined as disadvantaged in the labor market, have been assigned a much lower ranking than other disadvantaged groups* in training opportunities, allocation of placement resources, and in the number and size of special employment programs.

1. Training Programs

Data cited previously in this paper (see p. 16) indicate that the approximately one in 10 proportion of older workers over 45 in training programs is substantially below their four in 10 weight in the labor force. At various times those who make training decisions have been urged by governmental policymakers to recruit for and admit within their programs more blacks and minority group members, more youths, more dropouts, and more hard-core unemployed. In many cases when these groups have not proved suitable for regular training programs, special training and acclimatization to work programs have been designed for them. Very few, if any, special training programs have been developed for the over-45's. The data already presented in preceding sections not only strongly indicate that the proportion of the aging in such programs is relatively low but also that their numbers could be substantially increased without any impairment to the success of the programs.

2. Employment Service

Budgetary criteria for measuring efficiency and determining staff size can and do influence the allocation of resources which can be directed toward placement of particular disadvantaged groups. The United States system, which until recently based both the future size of placement offices and the evaluation of placement personnel efficiency exclusively upon the amount of time per placement, is highly adverse to older worker placement (Sobel and Wilcock, 1966).

These criteria have emphasized the quantity rather than the quality of placements. They have encouraged placement officers to concentrate on the younger, easy-to-place worker

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rather than on the older. Older workers require far more time for the initial interview, subsequent advice and counseling, and, on the average, at least twice as many referrals as their younger counterparts. These criteria discourage using special counselors whose efforts do not directly earn "points" as a result of successful placement. Yet such counselors are in many cases of decisive importance in devising the more individualized placement strategies for harder-to-place older workers.

Much material can be found concerning special programs leading to the assignment of substantial numbers of specialized personnel to placement of minority group members, youth, and other hard-core unemployed. But generally, in both regular mainstream and in special programs, workers defined as aging seem not to have had access to equal amounts of specialized placement resources.

These groups other than the aging have been the subject for specialized employment programs, such as the Neighborhood Youth Corps or the Hard Core Unemployment Program. To the extent that aging workers have been permitted to participate in such programs, they usually have been included only because they have been minority group members or have been defined as "hard core" cases.[13]

In short, all the available evidence indicates that the aging have—at least within recent history—received a low priority in those programs which have affected access to employment opportunities. Meeting more the needs of older workers would necessitate either some conscious modification of the current proportion of total manpower resources devoted to the aging (even if the existing priority rankings are not altered) or a major increase in the total amount of available manpower funds.

Issue 2

Some of the key measures suggested for the development of a national manpower policy as listing of vacancies, scrutiny of dismissals, anti-discrimination legislation, and early warning systems, may impose limits upon employers' action. To what extent is our nation willing to limit freedom of employer action in the labor market to solve or ameliorate age-employment problems?

Anti-age discrimination policies, limitations over firing and in some cases rehiring, advance warning systems, and other similar policies have often been opposed in the United States on the grounds that they limit the freedom of choice of employers. Yet despite these arguments, such policies have been deemed desirable and instituted in many other countries with long established democratic traditions. Many European societies have consciously traded off some freedom of employer choice to assure aging workers greater opportunities in the labor market.

1. Dismissal and Displacement Policy

The problems emanating from displacement are treated somewhat differently in Western Europe than in the United States. In this country, apart from anti-age discrimination legislation (which is rarely enforced) and employer-trade union collective bargaining agreements governing order of dismissal and rehiring, there is very little limitation on the employers' labor market decisions. Even though most of the European countries recognize voluntary collective bargaining procedures, they tend mainly to rely upon legislation assigning a review role in dismissal decisions to the employment services.

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[13] The enforcement of age anti-discrimination provisions in the fair employment practices sections of the civil rights laws of 1964 has been such as to suggest very low priorities in enforcement. By the end of 1969 only one age case had been filed under the provisions of this act.

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The French system, for instance, is based upon nominal state control of employment and dismissal of workers. Every employer who wishes to dismiss an employee must obtain permission from the "service." The need for a mass dismissal must be proven and workers must be laid off according to certain criteria in which length of service and difficulty in obtaining new employment are given primary consideration. In the Netherlands individual and mass dismissals are referred to tripartite boards which can define discharges as being unreasonable. The major criterion governing order of dismissal is whether the dismissed worker has a reasonable chance of reemployment. Boards have frequently reversed dismissal plans on such grounds. Germany has similar provisions and requires similar 60-day notice. Senior workers cannot be discharged even for reduced efficiency if other jobs are not available to which they can be transferred. Older workers (over 12 years of service) must be given at least six months' early warning notice prior to dismissal, and such notices can be stayed if they are deemed "socially unjustified."

In those countries—and this includes virtually all of the Western European countries—in which mass dismissals have to be reported, new employment by the same firms, is also scrutinized. This scrutiny is found necessary to prevent mass dismissal from being used to eliminate older workers considered less productive. Employment services can order the reemployment of dismissed workers before new employees are taken on. In many countries firms shutting down and moving to other areas must offer employment to their displaced work force.

2. Role of the Employment Service: The Job Vacancy Issue

Western European countries have accorded their public employment services a monopoly position through enactments which ban private employment agencies. The logic behind such laws is the belief that unless the public "Service" has a monopoly position it cannot serve as an instrument of national manpower policies, since the employer can avoid following these policies by using a private employment service more likely to defer to his needs. In the Anglo-Saxon countries societal preferences for maximizing competition are manifested through private employment agencies which still occupy an important role.[14] In all of the Western European countries and Canada vacancies have to be reported to the public service for statistical purposes. In some, such as Italy, the Netherlands, and Israel, not only do job vacancies have to be reported but the jobs must be listed with the service. In such cases the employment service must be given time to recommend a suitable candidate, and the employer cannot hire on his own until the service authorizes him to do so.[15] The criteria used by many of the employment services are such that older workers are given highly favorable consideration.[16] On the other hand, it is argued that private agencies have to survive by servicing the employer according to his norms—which generally means less favorable treatment to older workers.

In short, many Western societies with long-standing democratic traditions feel they have to impose limitations upon freedom of choice for the employer in the labor market in order to attain another desired societal goal of greater freedom and opportunity for the worker. A fundamental issue which, therefore, must be resolved before specific age-employment policies and programs are implemented is the extent to which the American society is willing to trade off one kind of freedom for another, in order to generate greater access to job opportunities for the aging.

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[14] The private services, however, are being subjected to increasing regulation, especially in Canada and Great Britain.

[15] Generally this procedure is true only for lower level positions.

[16] Many employment services operate on a point system in which age, ease of getting new employment, and social grounds are heavily weighted.

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Issue 3

Even if the policies and programs deemed favorable to older workers employment were adopted, would they prove sufficient to solve the employment problems of the aging? If not, as many authorities argue, can the problem be solved by having our government assume the role of "employer of last resort"?

Western European countries (e.g., Germany, Sweden, the Netherlands) have consistently maintained unemployment rates which are regarded as remarkably low—even in terms of our full employment experience of recent years when we reached the "inflationary over-employment" level of 3.4 percent in 1968-69. Yet despite the very low unemployment rates, the aforementioned countries have found that there still remain sufficient numbers of hard-to-place older workers to warrant programs in which their governments have assumed the role of "employer of last resort." The previously cited increase of 30 per thousand in the proportion of older workers over 55 who, despite our own prosperity of 1965-69, dropped out of the labor force would indicate that despite full employment the existing manpower programs would not be sufficient to find jobs for all of the hard-to-place older workers, especially the minority aged. A key issue, therefore, in older worker employment is whether this nation is willing to have the government assume "the employer of last resort" role. Recent programs such as the Neighborhood Youth Program and the proposed legislation for the Federal government to provide low-paying jobs indicate that our highest legislative bodies may be moving in this direction.

As noted and described in Section IV, perhaps the most extensive policies for government as a last resort employer are to be found in Western Europe, notably in the Federal Republic of Germany and Sweden. In the latter country hard-to-place workers, mainly aging and aged, are given on-the-job training in special workshops organized either by municipalities or privately with state funds. Allowances are paid by the employment services during training. Some workers who already possess certain skills and work experience and who cannot find jobs on the open market are also given jobs in special sheltered workshops at guaranteed minimum wages. Sheltered units are also organized by cities and private foundations if the need for them is certified by the employment service, and such units are granted subsidies of up to 50 percent for building and equipment and up to 15 percent for operating expenses. Both Germany and Sweden have sheltered workshop divisions in their employment services.

An increasing proportion of subsidized semi-sheltered workshop activity is also taking place in health assistance programs with aging workers employed as orderlies and attendants. Older workers in Sweden who can neither be retrained nor transferred to other areas can be given employment in special public works programs, relatively simple labor-intensive public works which provide lighter and easier tasks suitable for the aging. Local authorities who certify the need for such programs receive a subsidy of as much as 50 percent from the national government.

Efforts along these lines also exist in other European countries, although the programs may not be as formalized or financed to the same extent as they are in Sweden.[17] Examples include the West Berlin municipality's provision of special jobs for over 3,000 older clerks, and the programs for archivists and records work in the Netherlands and Denmark.

Recent Congressional bills (in which initial funding varies from $375 million to $1.5 billion) have proposed the same kinds of work possibilities and include areas of health, public safety, education, park maintenance, street cleaning, trash removal, city beautification, and conservation. The Federal Government would pay $4,000 a year, or 80 percent of a $5,000 total yearly wage. The programs are aimed at the so-called "chronically disadvantaged."

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[17] It is estimated that such programs in Sweden account for 0.4 to 0.5 percent of the total employment. With unemployment rates of 1.2 to 1.5 percent, approximately 25 to 33 percent of unemployment is offset by these programs.

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One fundamental question remains. Are such last resort programs seen as temporary expedients during recessionary periods or as a permanent feature of manpower policy designed to provide employment for those who either still would be unemployed or would have withdrawn from the labor force even during periods characterized as "full employment"? Before effective governmental employment policies and programs can be devised we must resolve the issue of the nature and extent of the government's last resort responsibility in providing employment for its disadvantaged citizens.

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VI. SUMMARY

About four out of 10 persons in the labor force are over 45. The employment problems confronting this large group is one of sharp contrasts: of still rising absolute levels of income and opportunity in the society accompanied by major prospects for dislocation and by highly complex problems of adjustment to change. The very forces in this country which are generating overall improvement in well-being and opportunity are the same forces which are imposing the kinds of change and dislocation to which many older members of the labor force are finding it difficult to adjust. The consequences are such that many members of this age group are finding it difficult to maintain either their former employment status or adequate levels of income in the 2 to 2½ decades prior to the conventional age of retirement. These same forces are also increasing post-retirement income needs and thus are creating pressures for at least part-time employment to maintain adequate living standards for the over-65's.

Public and private policies and programs designed to overcome the disadvantages confronting older workers in adjusting to the new patterns of human resource utilization brought about by rapid economic change would thus appear to be necessary. Such policies and programs would be pinpointed to overcome the specific and particular labor market disadvantages which confront older workers whose significantly lesser amounts of education and training 30 or more years ago in a very different world of work, render them especially vulnerable to change.

The following are the unique problems and characteristics of the aging to which specific public and private policy measures and progress are to be addressed.

(1) Older workers suffer certain disadvantages in responding to the recent patterns of human resource utilization. These changes have brought about a significantly different occupational and industrial structure from that which prevailed when the present day over-45's made the educational and training decisions inherent in their career choices. In the main, these changes have resulted in an occupational framework requiring higher levels of skill and frequently embodying knowledge and methods unknown a few decades ago. In short, much of the original stock of human capital possessed by the aging has been rendered obsolescent.

(2) Those whom this paper has classified as older workers have significantly lower amounts of education and training, much of the latter in fields which have either declined in importance or have ceased to be major employment centers.

(3) The ability of older workers to respond to these new forces through retraining is limited both by their own awareness of smaller amounts of education and previous training, as well as by a set of adverse societal attitudes regarding the potential trainability and employability of older workers. The result is a much lower rate of participation in retraining programs and a reduced ability by older workers to respond to changes in manpower utilization patterns.

(4) Offsetting advantages which favorably influence older workers' utilization are: experience gained over time, and certain institutional practices such as seniority which tend to prevail in determining movement to better jobs within the firm and even, in some cases, access to opportunity to acquire new skills.

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(5) The above advantages may be decisive when the nature of change does not involve mass displacement but may disappear when mass displacement has taken place. A majority of labor market authorities contend that the tendency toward mass displacement of entire work forces has been strengthened by recent technological and market forces. With displacement—given the growing tendency by employing units to prefer formal training and education over experience—the practices which conferred advantages on older workers within firms are entirely offset when they seek new employment.

The net effect of the above cited forces upon employment and earnings of the middle aged and aging are as follows.

(1) Older workers are aware of the difficult nature of finding equivalent new employment—an awareness induced by the likelihood that their experience-laden human capital will be wiped out. Thus they resist displacement to the last and are more likely to be concentrated in declining, low income, menial occupations in declining industries and sectors of the economy. Older workers constitute a much smaller proportion of the more financially remunerative, new, or more rapidly expanding industries and occupations.

(2) With displacement from a previous, generally long tenure, job, older workers, especially in clerical, semi-skilled, and unskilled occupations, tend to drift downward toward occupations and industries which are less attractive from the standpoint of pay, status, and employment security.

(3) When not displaced, older management and professional personnel with continued experience tend to move upward within these fields and reach their peak earnings almost a decade later than other lesser skilled personnel who reach peak earnings and skill levels prior to age 45.

(4) One response to displacement imposed upon those older workers whose human capital has been reduced the most is premature withdrawal from the labor force. Labor force participation rates begin declining slightly at 45, and rapidly after 55, a decade before conventional retirement age has been reached. These trends, ofttimes termed "premature involuntary retirement," have been continuous even through the full employment last half of the 1960's. Labor force participation rates are lowest and declining most constantly for those lesser-skilled types of workers—nonwhites for example—who are likely to encounter the greatest employment difficulties after displacement and hence become "discouraged."

(5) When unemployed, older workers do not adjust readily to the realities of their changed status in the labor market. The data from mass studies of older worker jobseekers indicate that the aging unemployed displayed little willingness to change either types of work, expected pay, or the kinds of employment sought. They were much less interested in retraining. In the main, they lacked knowledge of job search methods. These data suggest that older workers might be well-advised to reduce their expectations about jobs, pay, working conditions, and to improve their jobseeking methods and accept retraining. Indications are that counseling, which would aid the unemployed aging to make these adjustments, might significantly improve their reemployment prospects.

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BIBLIOGRAPHY

Belbin, R. M. 1965. Training Methods for Older Workers. Paris: Organization for Economic Cooperation and Development.

France. Haut Comité Consultatif de la Population et de la Famille. Commission D'Étude des Problèmes de la Vieillesse. 1962. Politique de la Vieillesse. Rapport. Paris: La Documentation Francaise.

Olsson, B. 1963. Employment Policy in Sweden. International Labor Review 87, 409-434.

President's Commission on Income Maintenance Programs. 1969. Poverty Amid Plenty: The American Paradox. Washington, D.C.: U.S. Government Printing Office.

Swedish National Labor Market Board. 1961. Activity Programs for the Middle Aged and Older Worker. Stockholm: The Board.

Sobel, Irvin. 1970. Economic Changes and Older Worker Utilization Patterns. In P. Paillat and M. Bunch (eds.), Interdisciplinary Topics in Gerontology, vol. 6. New York: Karger.

Sobel, Irvin and Folk, Hugh. 1965. Labor Market Adjustments by Unemployed Older Workers. In Arthur M. Ross (ed.), Employment Policy and the Labor Market. Berkeley: University of California Press.

Sobel, Irvin and Wilcock, Richard C. 1963. Job Placement Services for Older Workers in the United States. International Labor Review 88, 129-156.

_____ 1966. Placement Techniques: Employment of Older Workers. Paris: Organization for Economic Cooperation and Development.

Stromsdorfer, Ernst. 1964. A Cost Benefit Analysis of Retraining. Washington University. (Unpublished Ph.D. dissertation.)

U.S. Office of the President. 1964, 1965, 1969, and 1970. Manpower Report of the President. Washington, D.C.: U.S. Government Printing Office.

There is an extensive bibliography on employment and aging which is too lengthy to cite. An excellent set of references can be found in The Gerontologist, 1969, 9(2), 78-9.

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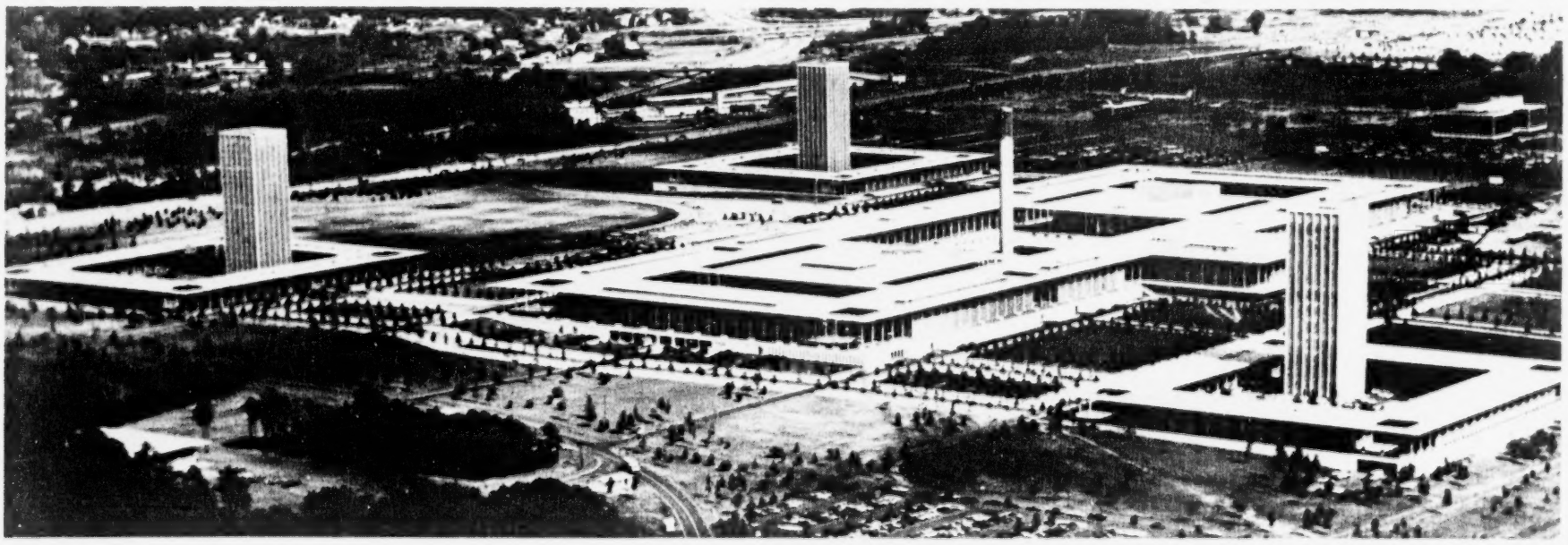

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CHIEF CURTIS W. VOLKAMER, Chief Fire Marshal, Room 105, City Hall, Chicago, Illinois 60600

CHIEF C. W. WYRICK, Fire Department Headquarters, Greensboro, North Carolina 27402

Professor D. F. Favreau, Executive Director,
State University of New York at Albany, Albany 12203

INTERNATIONAL FIRE ADMINISTRATION INSTITUTE
State University of New York at Albany
Sponsored by the International Association of Fire Chiefs

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INTRODUCTION

This study was initiated for the purpose of collecting and disseminating information related to some of the basic quantitative aspects of fire service education. It was anticipated that such information would be utilized by educators in program development and implementation; counsellors providing career guidance and students conducting research. The study also provides the fire service executive with the current academic posture of their profession.

Questionnaires were mailed to 250 colleges and universities. Non-responding institutions were mailed a second and third questionnaire with a letter of appeal to participate in the survey. The IFAI Newsletter and the IAFC Newsletter also appealed for cooperation. It was finally necessary to verify a number of programs through a previous Institute survey, AAJC publications and personal knowledge of IFAI and IAFC members. This data is included in the study.

While the total number of colleges and universities offering programs has grown significantly in the past decade, according to our records nineteen states have not, as yet, developed or implemented systematic and deliberate programs of higher education leading to academic degrees in Fire Science.

ACKNOWLEDGEMENTS

The author would like to express his sincere thanks to institutions and individuals who provided the data, without their cooperation the study could not have been completed. The assistance provided by Harvey Gruber in the data collected related to the California programs, is deeply appreciated. The project would not have reached fruition without the strong secretarial support provided by Mrs. Margaret Adams, IFAI-SUNYA. A special note of thanks to the International Association of Fire Chiefs for their continued support and encouragement. . . .

D.F.F.

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MILESTONES IN THE DEVELOPMENT OF FIRE SERVICE EDUCATION

RESEARCH EDUCATION
IFAI
SUNY-A

SIGNIFICANT IFAI ACHIEVEMENTS		OTHER RELATED EDUCATION AND DEVELOPMENT ACHIEVEMENTS
Fire Service Education 1971, Published by IFAI **Independent Study Course in Fire Science** offered by SUNY, D. F. Favreau, co-author	**1971**	Fire Science enrollments hit 13,700 in 130 colleges and universities — 30 states offer programs Presidential Commission on Fire Prevention and Control appointed
Volume 1, Number 1, IFAI Newsletter published IFAI represented at Joint Council of Fire Service Organizations Conference, Williamsburg, Virginia	**1970**	FEMSA grant to IFAI to support Newsletter
Guidelines for Fire Service Education Programs in Community and Junior Colleges, Published by American Association of Junior Colleges, author, D. F. Favreau **Fire Service Management,** Published by Book Division, Fire Engineering Magazine, author, D. F. Favreau. **An Analysis of Recruit Selection Practices in the Fire Service,** Published IFAI. **The Perceived Involvement of Fire Department Officers: Operational and Management Functions,** Published by IFAI	**1969**	
Management Bibliography — Selected and Annotated, Published by IFAI **Higher Education in the Nation's Fire Service,** Published by IFAI	**1968**	Fire Research and Safety Act passed
Role of International Fire Administration Published by IFAI **Crisis in the Fire Service, The Educational Dimension,** Published by IFAI	**1967**	IFAI Board Chairman testifies before Senate Sub Committee on Science, Research and Development in support of Fire Research and Safety Act John Jay School of Criminal Justice — City University of New York — offers Baccalaureate degree, Fire Science and Administration Saratoga Symposium, Saratoga Springs, N. Y. The Challenging Years for the Fire Service, Fire Engineering Magazine Symposium.
IFAI represented at Wingspread Conference, Racine, Wis. **Wingspread Conference on Fire Service Administration, Education and Research** published **Fire Science Technology Curricula Survey** published by IFAI	**1966**	
IFAI Board of Trustees elect Chief David B. Gratz, Chairman — SUNY-A Professor Donald F. Favreau, Executive Director	**1965**	IAFC initiates financial grant to IFAI "to carry out the objectives set forth in the charter" Fourteen states offer Fire Service Education programs
International Fire Administration Institute affiliated with State University of New York at Albany	**1964**	
IAFC - IFAI Pre-Conference seminars developed and initiated for 89th IAFC Conference, Toronto, Ontario, Canada.	**1962**	Five states offer Fire Service Education programs
International Fire Administration Institute chartered by Board of Regents, University of the State of New York	**1958**	
International Fire Administration Institute founded by Fire Chiefs at the New Orleans 84th IAFC Conference	**1957**	

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THE ROLE OF THE IFAI IN FIRE SERVICE EDUCATION

HISTORIC HIGHLIGHTS OF THE INSTITUTE

At the New Orleans conference of the International Association of Fire Chiefs held in 1957, a motion was passed calling for the founding of an educational institute which would be concerned with professional education for members of the Fire Service. Financing of this educational institute was to be provided by the International Association of Fire Chiefs.

On June 27, 1958, the Regents of the State of New York chartered the International Fire Administration Institute for the following purposes:

1. To engage in research and otherwise obtain material for the preparation of courses of study in fire administration and subjects related thereto, and to prepare such courses of study;

2. To make such material and courses of study in fire administration and subjects related thereto available for use by educational institutions particularly at college level, in the United States and foreign countries, and to work with and assist educational institutions in the development of such courses of study;

3. To give assistance by grants of funds or establishment of scholarships, or otherwise, to students in the field of fire administration; and to receive funds, grants and gifts for carrying out the purposes of the corporation.

On July 15, 1958, the formal organization by-laws were passed and the Board of Trustees formed. The by-laws of the International Fire Administration Institute give direction in the following areas: objectives of the Institute, formation of the Board of Trustees, meetings, officers, executive committee, other committees, execution of instruments, fiscal year, seal, and amendments.

The period from 1958-1962 were formative ones for the Institute. A brochure was prepared in order to acquaint the fire service with the role of the I.F.A.I. Some work was done with Queens College in New York City and University of Southern California in Los Angeles, in initiating programs in Fire Administration.

The purpose of these Fire Administration Programs was to provide education for members of the fire service leading to the degree of Associate in Applied Science with a major in Fire Administration, and to provide college level education for members of the fire service who were not degree candidates.

In 1962 it was decided by the Trustees of the Institute that a short conference or "institute" in fire department administration should be held just prior to the annual convention of the International Association of Fire Chiefs in Toronto. John Granito of the State University of New York at Albany acted as Director of that institute, and of the institute which was held in October of 1963 just prior to the Memphis convention of the International Association of Fire Chiefs. In December of 1963 an institute for Spanish speaking Fire Chiefs was held in Puerto Rico. In October of 1964 and 1965 a three day institute was held prior to the Houston and Miami conferences.

In January of 1964 the International Fire Administration Institute affiliated with the State University of New York at Albany. This affiliation has enabled the Institute to broaden considerably the scope of its activities and to utilize the resources of a multi-purpose university which has long been concerned with developing public service administrative leaders.

In 1965 Professor Donald F. Favreau was appointed Executive Director.

Since 1965, the Institute has made a significant contribution to the national fire service in Education, Research and Service.

The objectives set forth in the charter are being realized. These accomplishments could not have been realized without the expert services of so many interested and competent persons. These individuals have given freely of their time without thought of compensation, and frequently at substantial personal financial sacrifice.

6941

WINGSPREAD CONFERENCE

ON FIRE SERVICE ADMINISTRATION, EDUCATION AND RESEARCH

1966

PURPOSE

This Wingspread Committee offers these statements of national significance as an aid to clearer understanding of the fire problem and of the steps to be taken in achieving the objectives of bringing the national fire problem into sharp focus. The committee is not attempting to pass on any specific pending legislative proposals, programs or methods. Its purpose is to urge careful consideration of the objectives set forth in the statements and of the best means of accomplishing those objectives through administration, education and research.

STATEMENTS OF NATIONAL SIGNIFICANCE TO THE FIRE PROBLEM IN THE UNITED STATES

1. Unprecedented demands are being imposed on the fire service by rapid social and technological change.
2. The public is complacent toward the rising trend of life and property loss by fire.
3. There is a serious lack of communication between the public and the fire service.
4. Behavior patterns of the public have a direct influence on the fire problem.
5. The insurance interest has exerted a strong influence on the organization of the fire service. This dominance seems to be waning. The fire service must provide the leadership in establishing realistic criteria for determining proper levels of fire protection.
6. Professional status begins with education.
7. The scope, degree and depth of the educational requirements for efficient functioning of the fire service must be examined.
8. Increased mobility at the executive level of the fire service will be important to the achievement of professional status.
9. The career development of the fire executive must be systematic and deliberate.
10. Governing bodies and municipal administrators generally do not recognize the need for executive development of the fire officer.
11. Fire service labor and management, municipal officers and administrators must join together if professionalism is to become a reality.
12. The traditional concept that fire protection is strictly a responsibility of local government must be re-examined.

Racine, Wisconsin
February 11, 1966

6942

WILLIAMSBURG '70

1970

PURPOSE

To allow the national organizations serving the Fire Service of the United States to get together informally to exchange ideas, improve mutual understanding and to coordinate their efforts so far as may be practicable for maximum effectiveness.

OBJECTIVES

1. Establishment of goals and priorities based on the needs of the Fire Service.
2. Development of a unified policy on the national goals of the Fire Service.
3. Coordination of the efforts of the national organizations so they will pull together to obtain solutions to national fire problems.
4. Development and implementation of an action program to attain the agreed goals.

THE JOINT COUNCIL OF NATIONAL FIRE SERVICE ORGANIZATIONS IDENTIFIES THE FOLLOWING AS THE NATIONAL GOALS OF THE FIRE SERVICE

1. To develop nationally recognized standards for competency and achievement of skills development, technical proficiency and academic knowledge appropriate to every level of the Fire Service career ladder.

2. To make the public aware of the significant contributions made by the Fire Service of this nation in protecting life and property from fire, and the contribution made to the standard of living to which all citizens are entitled.

3. To make public officials at every level of government more aware of their responsibilities in providing increased financial and moral support to aid the Fire Service in carrying out their mission.

4. To reassess public fire protection in light of contemporary demands, assuring appropriate fire protection for all communities at a reasonable cost.

5. To establish realistic standards of educational achievement, and provide to every member of the Fire Service equal educational opportunities commensurate with professional requirements.

6. To identify and establish nationwide information systems that will enable improved analysis of the fire problem with particular emphasis on the life and safety factors for the public and the fire fighter.

7. To encourage and undertake the research and development necessary for the prompt and successful implementation of the goals stated above.

Williamsburg, Virginia
September 1, 1970

6943

WINGSPREAD CONFEREES

Seated left to right—John T. O'Hagan, William E. Clark, David B. Gratz. Standing left to right—Lester R. Schick, Henry D. Smith, Keith Royer, Donald F. Favreau.

Photo Credit: Johnson Foundation

WILLIAMBURG '70 CONFEREES

Attending the Williamsburg fire service conference were (front row, l. to r.): Chief Matthew Jimenez, IAFC; Albert E. Albertoni, IAFF; Emmett T. Cox, IFSTA; Charles S. Morgan, NFPA; Warren Y. Kimball, NFPA; Donald F. Favreau, IFAI; Harold Richman, ISFSI; (center row) Robert W. Grant, FMA; Donald M. O'Brien, IAFC; Robert B. Howard, Jr., Metropolitan Committee, IAFC; Chief Lawrence L. Kenney, Metropolitan Committee, IAFC; John Hoglund, ISFSI; W. Robert Wetherington, IAAI; (rear row) Samuel T. Sides, FMA; Everett Hudiburg, IFSTA; W. H. McClennan, IAFF; Dr. John L. Bryan, Moderator; Anthony R. Granito, FPRI; Chief David B. Gratz, IFAI; Martin E. Crimes, FPRI; and Captain Samuel S. Cobb, IAAI. Photo Credit: NFPA

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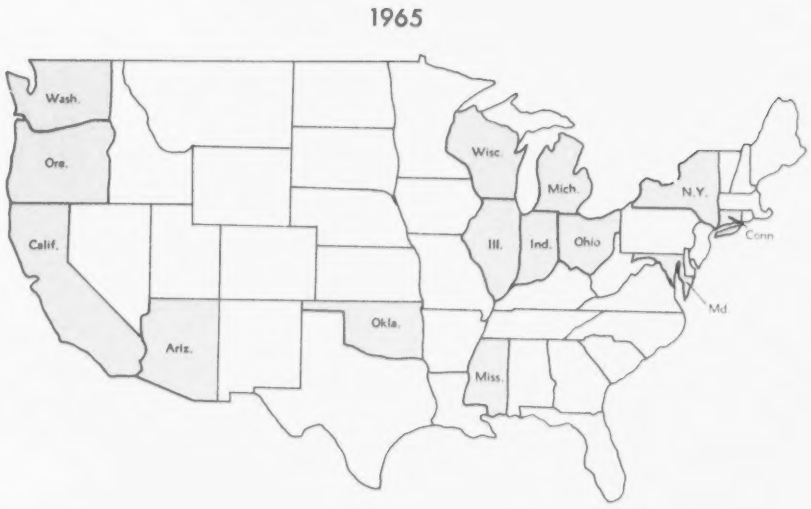
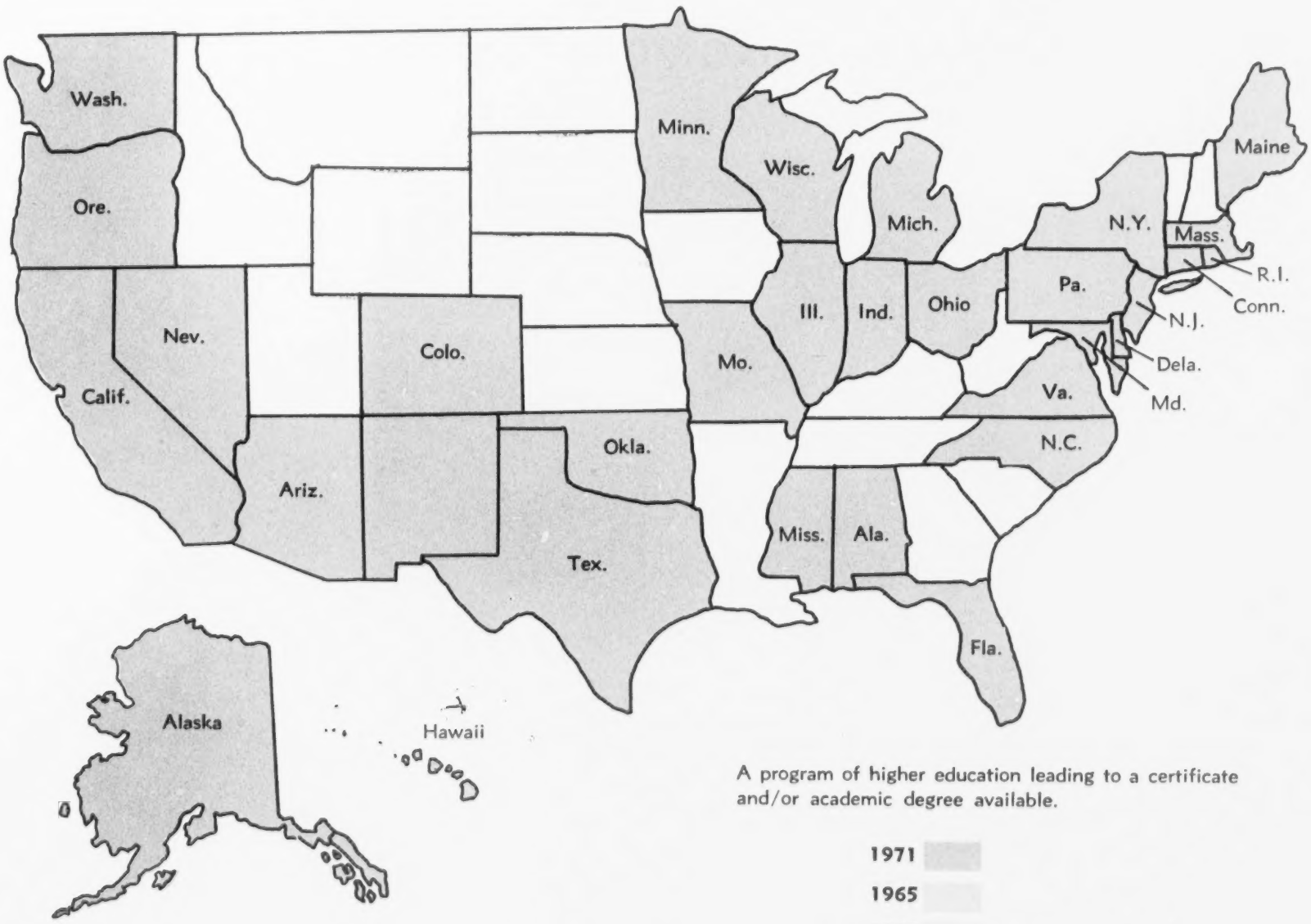
COMPARISON OF PROGRAM GROWTH

FIRE SERVICE EDUCATION





A program of higher education leading to a certificate and/or academic degree available.

1971

1965

1960

6945

SURVEY OF FIRE SERVICE EDUCATION

PROGRAM LISTED BY STATE

1971

ALABAMA

Alexander City State Junior College
P. O. Box 699
Alexander City, Alabama 35010
Coordinator: Arlon Widder
Program Established: 1970

Program Title: Fire Science Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

Jefferson State Junior College
2601 Carson Road
Birmingham, Alabama 35215
Coordinator: Scott A. Marshall
Program Established: 1970

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

ARIZONA

Glendale Community College
6000 West Olive Avenue
Glendale, Arizona 85301
Coordinator: Leslie McCoy
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Phoenix College
1202 West Thomas Road
Phoenix, Arizona 85013
Coordinator: Alan V. Brunacini
Program Established: 1960

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

ALASKA

Anchorage Community College
2533 Providence Avenue
Anchorage, Alaska 99504
Coordinator: Eugene Short
Program Established: 1970

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

6946

CALIFORNIA

Allan Hancock College
800 South College Drive
Santa Maria, California 93454
Coordinator: Brian McBride
Program Established: 1963

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

American River College
4700 College Oak Drive
Sacramento, Calif. 95841
Coordinator: Louis Quint
Program Established: 1964

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Antelope Valley College
3041 West Avenue K
Lancaster, Calif. 93534
Coordinator: R. W. Lundak
Program Established: 1965

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Bakersfield College
1801 Panorama Drive
Bakersfield, Calif. 93305
Coordinator: H. James Opperman
Richard Harkins
Program Established: 1968

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Barstow College
2700 Barstow Road
Barstow, Calif. 92311
Coordinator: Jack Sherman
Program Established: 1966

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Butte Junior College
P. O. Box 566
Durham, Calif. 95938
Coordinator: Earl P. McGhee
Program Established: 1967

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

6947

Cabrillo College
6500 Soquel Drive
Aptos, Calif. 95003
Coordinator: Jack Snyder
Program Established: 1967

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Chabot College
25555 Hesperian Boulevard
Hayward, Calif. 94545
Coordinator: Norman V. Olson
Program Established: 1963

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Chaffey College
5885 Haven Avenue
Alta Loma, Calif. 91701
Coordinator: Richard L. Custer
Ralph A. Porter
Program Established: 1965

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Columbia Junior College
P. O. Box 1849
Columbia, Calif. 95370
Coordinator: Robert Deal
Program Established: 1967

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Cuesta College
P. O. Box J
San Luis Obispo, Calif. 93401
Coordinator: Jim J. Greathouse
Program Established: 1966

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

College of the Desert
43-500 Monterey Avenue
Palm Desert, Calif. 92260
Coordinator: Ted Sypolt
Program Established: 1964

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Diablo Valley College
321 Golf Club Road
Pleasant Hill, Calif. 94523
Coordinator: Ward L. Cockerton
Program Established: 1951

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

6948

East Los Angeles College
5357 East Brooklyn Avenue
Los Angeles, Calif. 90022
Coordinator: Aram Tolegian
Program Established: 1949

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Fresno City College
1101 East University Avenue
Fresno, Calif. 93704
Coordinator: Donald E. Woodruff
Program Established: 1962

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Allan Hancock College
800 South College Drive
Santa Maria, Calif. 93454
Coordinator: Brian McBride
Program Established: 1966

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Hartnell College
156 Homestead Avenue
Salinas, Calif. 93901
Coordinator: Lyman Fowler
Norman Berdan
Program Established: 1960

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Imperial Valley College
P. O. Box 158
Imperial, Calif. 92251
Coordinator: Bill Rudolph
Program Established: 1966

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Lassen College
1100 Main Street
Susanville, Calif. 96130
Coordinator: John T. Spencer
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Long Beach City College
4901 East Carson Street
Long Beach, Calif. 90808
Coordinator: Bill Foster
Program Established: 1964

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

6949

Los Angeles Harbor College
1111 Figueroa Place
Wilmington, Calif. 90744
Coordinator: Ban Waring
Program Established: 1955

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Los Angeles Valley College
5800 Fulton Avenue
Van Nuys, Calif. 91401
Coordinator: Theodore H. Gerber
Program Established: 1956

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

College of Marin
Kentfield, Calif. 94904
Coordinator: Joseph Berruezo
Program Established: 1963

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Merced College
3600 M Street
Merced, Calif. 95340
Coordinator: Jack E. Williamson
John Mehrens
Program Established 1966

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Merritt College
5714 Grove Street
Oakland, Calif. 94609
Coordinator: Gary Howard
Program Established: 1959

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Modesto Junior College
College Avenue
Modesto, Calif. 95350
Coordinator: Louis A. Schwark
Robert N. Huber
Program Established: 1966

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Monterey Peninsula College
980 Fremont Avenue
Monterey, Calif. 93940
Coordinator: David Hopkins
Program Established: 1965

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

6950

Mt. St. Antonio College
1100 North Grand Avenue
Walnut, Calif. 91789
Coordinator: Gilbert B. Stuckey
Program Established: 1953

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Mt. San Jacinto College
P. O. Box 248
Gilman Hot Springs, Calif. 92340
Coordinator: Dale G. Walton
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Napa Junior College
2277 Napa-Vallejo Highway
Napa, Calif. 94558
Coordinator: Arlin Taylor
Leland E. Mitchell
Program Established: 1967

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Palomar College
Highway 78
San Marcos, Calif. 92069
Coordinator: James Soules
William Thurber, Jr.
Program Established: 1965

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Pasadena City College
1570 East Colorado Boulevard
Pasadena, Calif. 91106
Coordinator: Victor E. Stephens
Program Established: 1964

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

College of the Redwoods
Eureka, Calif. 95501
Coordinator: Van H. Tanner
Program Established: 1965

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Rio Hondo Junior College
3600 Workman Mill Road
Whittier, Calif. 90601
Coordinator: Wilbur W. Lorbeer
Program Established: 1965

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

6951

Riverside City College
3650 Fairfax Avenue
Riverside, Calif. 92506
Coordinator: Cecil D. Green
Program Established: 1963

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

San Bernardino Valley College
701 South Mt. Vernon Avenue
San Bernardino, Calif. 92403
Coordinator: John Horgan
Program Established: 1963

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

San Diego Community Colleges
Miramar Campus
10440 Black Mountain Road
San Diego, Calif. 92128
Coordinator: Richard Rossmaessler
Program Established: 1958

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

City College of San Francisco
50 Phelan Avenue
San Francisco, Calif. 94112
Coordinator: Harry Buttimer
Alex Potter
Program Established: 1966

Program Title: Fire Science Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

San Joaquin Delta College
3301 Kensington Way
Stockton, Calif.
Coordinator: Mel Stewart
Program Established: 1967

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

San Jose City College
2100 Moorpark Avenue
San Jose, Calif. 95114
Coordinator: Howard Biebesheimer
Program Established: 1953

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

6952

College of San Mateo
1700 West Hillsdale Boulevard
San Mateo, Calif. 94402
Coordinator: Sanford Gum
Program Established: 1960

Program Title: Fire Science

Programs
- ☒ Certificate (Basic)
- ☒ Certificate (Advanced)
- ☒ Associate Degree

Santa Ana College
1530 West 17th Street
Santa Ana, Calif. 92706
Coordinator: Richard Williams
Paul Roman
Program Established: 1958

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Santa Barbara City College
721 Cliff Drive
Santa Barbara, Calif. 93105
Coordinator: James E. Foxx
Program Established: 1965

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Santa Monica City College
1815 Pearl Street
Santa Monica, Calif. 90406
Coordinator: Fred J. Brierley
Program Established: 1964

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Santa Rosa Junior College
1501 Mendocino Avenue
Santa Rosa, Calif. 95401
Coordinator: John Healy
Program Established: 1958

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

College of the Sequoias
Mooney Boulevard
Visalia, Calif. 93277
Coordinator: Stephen W. Eggleston
Program Established: 1966

Program Title: Fire Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

6953

Shasta College
Old Oregon Trail
Redding, Calif. 96001
Coordinator: Lloyd Livingston
Ron Keilbart
Program Established: 1966

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Solano County Junior College
100 Whitney Avenue
Vallejo, Calif. 94590
Coordinator: Gerald Simoni
Program Established: 1967

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Ventura College
4667 Telegraph Road
Ventura, Calif. 93003
Coordinator: Harry C. Myers
Program Established: 1958

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Victor Valley College
18422 Bear Valley Road
Victorville, Calif. 92392
Coordinator: Gordon W. Blaisdel
Program Established: 1964

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Yuba College
2088 North Beale Road
Marysville, Calif. 95901
Coordinator: Dan Dillon
Program Established: 1966

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

COLORADO

Aims Community College
Box 69
Greeley, Colorado 80631
Coordinator: William Adamson
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

6954

Mesa College
Grand Junction, Colorado 81501
Coordinator: A. Goffredi
Program Established: 1970

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

El Paso Community College
5 West Las Vegas Avenue
Colorado Springs, Colorado 80903
Coordinator: Keith Godshall
Program Established: 1970

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Community College of Denver
West Campus, 1209 Quail
Denver, Colorado 80215
Coordinator: Anthony A. Pisciotta
Program Established: 1968

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

CONNECTICUT

Hartford State Technical College
401 Flatbush Avenue
Hartford, Conn. 06106
Coordinator: Andrew J. Flanagan
Program Established: 1964

Program Title: Fire Technology and Administration

Programs
- ☐ Certificate
- ☒ Associate Degree

Norwalk State Technical College
Richards Avenue
Norwalk, Conn. 06850
Coordinator: Arthur Meyers
Program Established: 1964

Program Title: Fire Technology and Administration

Programs
- ☐ Certificate
- ☒ Associate Degree

Thames Valley State Technical College
574 New London Turnpike
Norwich, Conn. 06060
Coordinator: Edward Rabinowitz
Program Established: 1964

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Waterbury State Technical College
1460 West Main Street
Waterbury, Conn. 06708
Coordinator: Kenneth DeRego
Program Established: 1964

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

DELAWARE

Delaware Technical and Community College
330 E. 30th Street
Wilmington, Delaware 19802
Coordinator: Thomas W. Dawson
Program Established: 1968

Program Title: Fire Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

FLORIDA

Broward Junior College
3501 S/W Davie Road
Fort Lauderdale, Florida 33312
Coordinator: Charles S. Redmond
Program Established: 1969

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Miami-Dade Junior College
11380 N. W. 27th Avenue
Miami, Florida 33167
Coordinator: James J. Guthrie
Program Established: 1967

Program Title: Fire Service Administration and Fire Science Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

St. Petersburg Junior College
Clearwater Campus
Clearwater, Florida 33733
Coordinator: William L. Miles
Program Established: 1968

Program Title: Fire Administration

Programs
- ☒ Certificate
- ☒ Associate Degree

Brevard Community College
Clear Lake Road
Cocoa, Florida 32922
Coordinator: Wilfred W. Wagner
Program Established: 1971

Program Title: Fire Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

6956

HAWAII

Honolulu Community College
874 Dillingham Blvd.
Honolulu, Hawaii 96817
Coordinator: Richard K. Miyashiro
Program Established: 1967

Program Title: Fire Science Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

ILLINOIS

Moraine Valley Community College
10900 South 88th Avenue
Palos Hills, Illinois 60465
Coordinator: Nelson W. Diebel
Program Established: 1969

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Triton College
2000 Fifth Avenue
River Grove, Illinois 60171
Coordinator: Leo E. Flynn
Program Established: 1969

Program Title: Fire Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

College of DuPage
22nd Street and Lambert Road
Glen Ellyn, Illinois 60137
Coordinator: Charles L. Roblee
Program Established: 1968

Program Title: Fire Science and Safety Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

Carl Sandburg College
Lake Storey Road — Box 1407
Galesburg, Illinois 61401
Coordinator: William D. Masters
Program Established: 1967

Program Title: Fire and Safety Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

Black Hawk College
6600 34th Avenue
Moline, Illinois 61265
Coordinator: Harold L. Little
Program Established: 1969

Program Title: Fire Science Technology

Programs
- ☒ Certificate
- ☐ Associate Degree

6957

Illinois Institute of Technology
Technology Center
Chicago, Illinois 60616
Coordinator: Rolf H. Jensen
Program Established: 1903

Program Title: Fire Protection Engineering

Programs
- ☐ Certificate
- ☐ Associate Degree
- ☒ Baccalaureate Degree

Harper College
Palatine, Illinois 60067
Coordinator: Richard Mathew
Program Established: 1970

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Prairie State College
197th and Halsted Sts.
Chicago Heights, Illinois 60411
Coordinator: Fred M. Creveling
Program Established: 1968

Program Title: Fire Science Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

INDIANA

Indiana Northern University
P. O. Box 1000, University Park
Gas City, Indiana 46933
Coordinator: G. A. DaCosta
Program Established: 1964

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree
- ☒ Baccalaureate Degree

MAINE

Southern Maine Vocational Technical Institute
Fort Road
South Portland, Maine 04106
Coordinator: Charles T. Morrin
Program Established: 1970

Program Title: Fire Science Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

MARYLAND

Catonsville Community College
800 S. Rolling Road
Catonsville, Maryland 21228
Coordinator: M. David Frank
Program Established: 1968

Program Title: Fire Service Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

6958

Montgomery College
Rockville Campus, 51 Mannakee Street
Rockville, Maryland 20850
Coordinator: Frank Brannigan
Program Established: 1967

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Prince George's Community College
301 Largo Road
Largo, Maryland 20870
Coordinator: Daniel C. Wise
Program Established: 1969

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

University of Maryland
College of Engineering
Fire Protection Curriculum
College Park, Maryland 20740
Coordinator: John L. Bryan
Program Established: 1957

Program Title: Fire Protection Curriculum

Programs
- ☐ Certificate
- ☐ Associate Degree
- ☒ Baccalaureate Degree

MASSACHUSETTS

Berkshire Community College
Second Street
Pittsfield, Mass. 01202
Coordinator: Arthur B. Phinney
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Bristol Community College
64 Durfee Street
Fall River, Mass. 02720
Coordinator: James W. Pelletier
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Cape Cod Community College
West Barnstable, Mass. 02668
Coordinator: Peter C. F. Birkel
Program Established: 1970

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Greenfield Community College
125 Federal Street
Greenfield, Mass. 01301
Coordinator: Ethel M. Case
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Massachusetts Bay Community College
57 Stanley Avenue
Watertown, Mass. 02172
Coordinator: Frederick Nasson
Program Established: 1968

Program Title: Fire Science

Program
- ☐ Certificate
- ☒ Associate Degree

Massasoit Community College
Howard Street
West Bridgewater, Mass. 02379
Coordinator: Frederick W. Barry
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Mt. Wachusett Community College
Elm Street
Gardner, Mass. 01440
Coordinator: Edward Stevens
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

North Shore Community College
3 Essex Street
Beverly, Mass. 01915
Coordinator: Francis M. Ryan
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Quinsigamond Community College
670 W. Boylston St.
Worcester, Mass. 01606
Coordinator: Gordon MacPhee
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Springfield Technical Community College
Armory Square
Springfield, Mass. 01105
Coordinator: Robert J. Parenteau, Jr.
Program Established: 1968

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

6960

MICHIGAN

Muskegon Community College
Quarterline Road
Muskegon, Michigan 49443
Coordinator: W. H. Falconer
Program Established: 1969

Program Title: Fire Protection Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

Genesee Community College
Flint, Michigan 48503
Coordinator: Paul J. Carlson
Program Established: 1969

Program Title: Fire Administration

Programs
- ☐ Certificate
- ☒ Associate Degree

St. Clair County Community College
323 Erie Street
Port Huron, Michigan 48060
Coordinator: Clarence F. Knight
Program Established: 1969

Program Title: Fire Science Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

Washtenaw Community College
Box 345
Ann Arbor, Michigan 48107
Coordinator: Paul W. Davis
Program Established: 1968

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

Lansing Community College
419 N. Capitol Avenue
Lansing, Michigan 48914
Coordinator: Edwin C. Bergmann
Program Established: 1965

Program Title: Fire Science Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

MINNESOTA

Metropolitan State Junior College
50 Willow Street
Minneapolis, Minn. 55403
Coordinator: Arlan A. Burmeister
Program Established: 1968

Program Title: Fire Protection

Programs
- ☐ Certificate
- ☒ Associate Degree

MISSISSIPPI

Hinds Junior College
Jackson Branch
3925 Sunset Drive
Jackson, Mississippi 39213
Coordinator: H. T. Busby
Program Established: 1970

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

MISSOURI

Metropolitan Junior College District
560 Westport Road
Kansas City, Missouri 64111
Coordinator: Kenneth H. Wright, Jr.
Program Established: 1969

Program Title: Fire Science Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

Forest Park Community College
5600 Oakland Avenue
St. Louis, Missouri 63110
Coordinator: Victor E. Reef
Program Established: 1964

Program Title: Fire Protection Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

NEVADA

University of Nevada
Las Vegas, Nevada
Coordinator: Kenneth O. Johnson
Program Established: 1967

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

Western Nevada Community College
Community College Division
100 N. Arlington Avenue
Reno, Nevada 89501
Coordinator:
Program Established: 1970

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

6962

NEW JERSEY

Jersey City State College
Center for Occupational Education
2039 Kennedy Boulevard
Jersey City, New Jersey 07305
Coordinator: Robert G. Kahrmann, Jr.
Program Established: 1967

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☐ Associate Degree
- ☐ Baccalaureate Degree

NEW YORK

Clinton Community College
P. O. Box 399
Plattsburgh, New York 12901
Coordinator: Michael D. Schwartz
Program Established: 1971

Program Title: Fire Science

Programs
- ☒ Certificate
- ☐ Associate Degree

Schenectady County Community College
Washington Avenue
Schenectady, New York 12305
Coordinator: Melvin E. Bartlett
Program Established: 1970

Program Title: Fire Science

Programs
- ☒ Certificate
- ☐ Associate Degree

Orange County Community College
115 South Street
Middletown, N. Y. 10940
Coordinator: Lewis C. Popham III
Program Established: 1968

Program Title: Fire Science

Programs
- ☒ Certificate
- ☐ Associate Degree

Mohawk Valley Community College
1101 Sherman Drive
Utica, New York 13501
Coordinator: Glenn W. Salsburg
Program Established: 1970

Program Title: Fire Science

Programs
- ☒ Certificate
- ☐ Associate Degree

Monroe Community College
P. O. Box 9720
Rochester, New York 14623
Coordinator: John T. Maher, Jr.
Program Established: 1968

Program Title: Fire Science

Programs
- ☒ Certificate
- ☐ Associate Degree

John Jay College of Criminal Justice
City University of New York
315 Park Avenue So.
New York, N. Y. 10010
Coordinator: Alexander Joseph
Program Established: 1967

Program Title: Fire Science and Administration

Programs
- ☐ Certificate
- ☐ Associate Degree
- ☒ Baccalaureate Degree
- ☐ Master's Degree

Suffolk County Community College
Selden, Long Island, N. Y. 11784
Coordinator: Robert W. Young
Program Established: 1966

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

Auburn Community College
Franklin Street
Auburn, New York 13021
Coordinator: Harold L. Leonard
Program Established: 1965

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

New York City Community College of the City University of New York
300 Jay Street
Brooklyn, New York 11201
Coordinator: Sylvan P. Stern
Program Established: 1965

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Westchester Community College
75 Grasslands Road
Valhalla, New York 10525
Coordinator: Charles S. Crowley
Program Established: 1966

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Onondaga Community College
700 East Water Street
Syracuse, New York 13210
Coordinator: Michael A. Falcone
Program Established: 1969

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

Erie Community College
Main Street and Youngs Road
Buffalo, New York 14221
Coordinator: John J. Kubisty
Program Established: 1969

Program Title: Fire Science

Programs
- ☐ Certificate
- ☒ Associate Degree

6964

NORTH CAROLINA

Guilford Technical Institute
P. O. Box 309
Jamestown, North Carolina 27282
Coordinator: W. Roger Sharrock
Program Established: 1968

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

Richmond Technical Institute
P. O. Box 1189
Hamlet, North Carolina 28345
Coordinator: Patrick H. Byrd
Program Established: 1967

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

OHIO

Cuyahoga Community College
2900 Community College Avenue
Cleveland, Ohio 44115
Coordinator: Fred C. Sutton
Program Established: 1965

Program Title: Fire Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

Sinclair Community College
140 South Perry Street
Dayton, Ohio 45402
Coordinator: Arthur Bergantz
Program Established: 1968

Program Title: Fire Science Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

University of Cincinnati
Ohio College of Applied Sciences
100 E. Central Parkway
Cincinnati, Ohio 45210
Coordinator: Vernon A. Armstrong
Program Established: 1970

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

OKLAHOMA

Oklahoma State University
School of Technology, Fire Protection Dept.
Stillwater, Oklahoma 74074
Coordinator: David Ballenger
Program Established: 1938

Program Title: Fire Protection Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

6965

OREGON

Chemeketa Community College
4389 Satter Drive, N. E.
Salem, Oregon 97303
Coordinator: Willard B. Emerson
Program Established: 1964

Program Title: Fire Protection Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

Portland Community College
12000 S. W. 49th Avenue
Portland, Oregon 97219
Coordinator: B. F. Emery
Program Established:

Program Title: Fire Protection

Programs
- ☐ Certificate
- ☒ Associate Degree

Lane Community College
4000 East 30th Avenue
Eugene, Oregon 97405
Coordinator: William J. Beals
Program Established: 1965

Program Title: Fire Prevention Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

PENNSYLVANIA

Northampton County Area Community College
3835 Green Pond Road
Bethlehem, Pennsylvania 18017
Coordinator: James R. Thompson
Program Established: 1970

Program Title: Fire Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

Community College of Allegheny County
Boyce Campus
Monroeville, Pennsylvania 15146
Coordinator: John Batiste
Program Established: 1968

Program Title: Fire Science and Administration

Programs
- ☐ Certificate
- ☒ Associate Degree

RHODE ISLAND

Rhode Island Junior College
199 Promenade Street
Providence, Rhode Island 02908
Coordinator: John G. Marmaras
Program Established:

Program Title: Fire Science

Programs
- ☒ Certificate
- ☐ Associate Degree

6966

Roger Williams College
266 Pine Street
Providence, Rhode Island 02903
Coordinator: Timothy P. Cartwright
Program Established: 1971

Program Title: Fire Science Administration

Programs
- ☐ Certificate
- ☒ Associate Degree

TEXAS

San Antonio College
1300 San Pedro
San Antonio, Texas 78212
Coordinator: George Kitchen
Program Established:

Program Title: Fire Science Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

El Centro College
Main and Lamar Streets
Dallas, Texas 75202
Coordinator: Alvin T. Bean
Program Established: 1966

Program Title: Fire Prevention Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

Tarrant County Junior College
5301 Campus Drive
Fort Worth, Texas 76119
Coordinator: J. B. Nichols
Program Established: 1967

Program Title: Fire Protection Technology

Programs
- ☒ Certificate
- ☒ Associate Degree

San Jacinto College
8060 Spencer Highway
Pasadena, Texas 77505
Coordinator: James A. Bland, Jr.
Program Established: 1966

Program Title: Fire and Safety Technology

Programs
- ☐ Certificate
- ☒ Associate Degree

VIRGINIA

Northern Virginia Community College
8333 Little River Turnpike
Annandale, Virginia 22003
Coordinator: Robert L. Smith
Program Established: 1969

Program Title: Fire Science

Programs
- ☒ Certificate
- ☒ Associate Degree

6967

Blue Ridge Community College
P. O. Box 80
Weyers Cave, Virginia 24486
Coordinator: Roland W. Macher
Program Established:

Program Title: Fire Science

Programs
- [x] Certificate
- [ ] Associate Degree

WASHINGTON

L. H. Bates Vocational-Technical Institute
1101 South Yakima
Tacoma, Washington 98405
Coordinator: Karl Kluge
Program Established: 1966

Program Title: Fire Service Training

Programs
- [x] Certificate
- [x] Associate Degree

Spokane Community College
E. 3403 Mission
Spokane, Washington 99202
Coordinator: H. C. Hunter
Program Established: 1964

Program Title: In-Service Fire Science

Programs
- [ ] Certificate
- [x] Associate Degree

Big Bend Community College
Hy 17 and Nelson Road
Moses Lake, Washington 98837
Coordinator: Fred Huston
Program Established: 1966

Program Title: Fire Science

Programs
- [ ] Certificate
- [x] Associate Degree

Fort Steilacoom Community College
6010 Mount Tacoma Drive, S. W.
Tacoma, Washington 98499
Coordinator: Homer J. Halverson
Program Established: 1970

Program Title: Fire Command and Administration

Programs
- [x] Certificate
- [x] Associate Degree

WISCONSIN

Racine Technical Institute
620 Lake Avenue
Racine, Wisconsin 53403
Coordinator: Winfred G. Pynes
Program Established: 1965

Program Title: Fire and Safety Engineering Technology

Programs
- [ ] Certificate
- [x] Associate Degree

6968

Milwaukee Area Technical College
1015 North Sixth Street
Milwaukee, Wisconsin 53203
Coordinator: George McDonald
Program Established: 1964

Program Title: Fire Technology

Programs

- ☐ Certificate
- ☒ Associate Degree

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A SUGGESTED CURRICULUM PATTERN

Fire Science Associate Degree Program

Professional

Courses	Semester Hours
Fire Protection (introduction)	3
Fire Suppression (introduction)	3
Fire Prevention (introduction)	3
Fire Protection Systems	3
Fire Fighting Tactics and Strategy	3
Building Construction	3
Hazardous Materials	3
Fire Hydraulics and Equipment	3
Electives	6
TOTAL	30

General

Courses	Semester Hours
Communication Skills (written-oral)	6
Mathematics (algebra)	6
Science (physics-chemistry)	6
Psychology (general)	3
Sociology	3
American Government (local, state, national)	3
Elective	3
	30

A SUGGESTED CURRICULUM PATTERN

Fire Science Certificate Program (30 credits)

Courses	Semester-Hour Credits
Introduction to Fire Protection	3
Introduction to Fire Suppression	3
Fundamentals of Fire Prevention	3
Fire Fighting Tactics and Strategy	3
Building Construction	3
Hazardous Materials	3
Fire Hydraulics and Equipment	3
	21
Communication Skills (written-oral)	3
Psychology (general)	3
Mathematics	3
	9
TOTAL	30

Favreau, D. F., Guidelines for Fire Service Education Programs in Community and Junior Colleges. AAJC. Washington, D.C., 1969. Reprinted with permission.

6970

The Fire Science Advisory Committee

Considerable care should be exercised in setting up the fire science advisory committee as the success of any fire science program will depend largely on the contributions of this body. The role of the advisory committee is to provide dynamic guidelines for developing and maintaining the fire science program. Members of the committee should be carefully selected from the community and should be individuals who are qualified to provide a wide spectrum of related occupational information to the college administrator and faculty in program planning. Some specific committee functions are:

1. Serves as a communication link between the college and local and national fire-oriented organizations, e.g., International Association of Fire Chiefs, International Fire Administration Institute, International Association of Fire Fighters, National Fire Protection Association, Fire Equipment Manufacturers Association, International City Managers Association and National League of Cities, to name several.

2. Conducts a systematic survey of the community to ascertain both immediate and long-range fire science educational needs. The scope of the survey should cover an area within realistic commuting distance.

3. Assists in recruiting personnel from business and industry; selects competent lecturers and instructors who are academically acceptable to the college and are knowledgeable in firematics.

4. Identifies and recommends a systematic body of technical knowledge to be utilized in the instructional pursuit of the educational objective. Evaluates instruction against performance standards in relationship to program objectives. The realistic evaluation of the program's success is the extent to which its graduates achieve self-realization.

5. Keeps college administration informed of changes in the labor market. Accumulates statistical evidence related to knowledge requirements and occupational skills which are presently and likely to be essential to those graduates responsible for safeguarding the health, safety, and welfare of the community.

6. Assists in recruiting of potential students, counseling, the job placement of program graduates, follow-up studies of graduates, develops rapport and maintains liaison with high school administrators and official bodies and units vested with responsibility for setting employment qualifications, establishing certification and personnel recruitment and selection.

7. Recommends and suggests methods toward improving the public image of the program and its graduates. Participates in "Career Day," "Open-House," and "Fire Prevention Week" activities in the school, college, and community. Arranges for publicity of fire science or related activities through the several news media.

8. The committee can provide invaluable expertise to the college administrator in establishing standards for equipment, facilities, and instructional material for the fire science program.

9. The committee may raise scholarships to provide incentives and motivate both the career and volunteer firefighter to enroll for the program, as well as to respond to financial needs of high school graduates.

10. Depending upon the stage of the program, the fire advisory committee might meet as often as monthly or as seldom as twice a year. However, members should be available for informal consultations as the need arises.

It is strongly recommended that the committee be comprised of not more than fifteen or less than six active community leaders. Committees larger than fifteen are unwieldy and cumbersome. It is, however, essential to include several fire department executives. The remainder of the committee should represent business, industry, labor, education, local, or state government. In the program's best interest, each committee member should be chosen for his willingness (time commitments) and competency to contribute significantly to a dynamic fire science program. Advisory committee members should be appointed for a definite term of office, serving from one to three years. Provision should be made for staggered replacements to insure that there are always experienced members serving.

When a term expires, a new committee member should be appointed. The college should have an option, however, to request members to be reappointed for a new term.

Favreau, D. F., Guidelines for Fire Service Education Programs in Community and Junior Colleges. AAJC, Washington, D.C., 1969. Reprinted with permission.

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SUMMARY
NUMBER OF FIRE SCIENCE PROGRAMS
1971

STATE	Certificate Programs	Associate Degree Programs (2-Year)	Baccalaureate Degree Programs (4-Year)	Number of Programs Available	Number of Separate Institutions
Alabama	1	2		3	2
Alaska		1		1	1
Arizona		2		2	2
Arkansas		0			
California	27	51		78	51
Colorado	1	4		5	4
Connecticut		4		4	4
Delaware		1		1	1
Florida	4	4		8	4
Georgia		0		0	0
Hawaii	1	1		2	1
Idaho		0		0	0
Illinois	5	6	1	12	8
Indiana		1	1	2	1
Iowa		0		0	0
Kansas		0		0	0
Kentucky		0		0	0
Louisiana		0		0	0
Maine	1	1		2	1
Maryland		3	1	4	4
Massachusetts		10		10	10
Michigan	2	5		7	5
Minnesota		1		1	1
Mississippi		1		1	1
Missouri	2	2		4	2
Montana		0		0	0
Nebraska		0		0	0
Nevada		2		2	2
New Hampshire		0		0	0
New Jersey		0		0	1
New Mexico		0		0	0
New York	6	9	1	16	12
No. Carolina		2		2	2
No. Dakota		0		0	0
Ohio	1	3		4	3
Oklahoma		1		1	1
Oregon		3		3	3
Pennsylvania	1	2		3	2
Rhode Island	1	1		2	2
South Carolina		0		0	0
South Dakota		0		0	0
Tennessee		0		0	0
Texas	1	4		5	4
Utah		0		0	0
Vermont		0		0	0
Virginia	2	1		3	2
Washington	2	4		6	4
West Virginia		0		0	0
Wisconsin		2		2	2
Wyoming		0		0	0
TOTAL	58	134	4	196	143

6972

VT 014 644
RICH, BETTIE R.
DEVELOPMENTAL, APPLIED RESEARCH PROJECT TO HELP DETERMINE THE EXTENT TO WHICH A MULTI MEDIA LESSON IS MORE EFFECTIVE WITH LOW INCOME MINORITY STUDENTS THAN IS A TRADITIONAL LESSON. FINAL REPORT.

MOUNT SAN JACINTO COLL., GILMAN HOT SPRINGS, CALIF.
CALIFORNIA COORDINATING UNIT FOR OCCUPATIONAL RESEARCH AND DEVELOPMENT, SACRAMENTO.
CALIFORNIA COMMUNITY COLLEGES, SACRAMENTO.
OFFICE OF THE ASSISTANT CHANCELLOR FOR VOCATIONAL EDUCATION.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - JUN71 43P.

DESCRIPTORS - *HEALTH OCCUPATIONS EDUCATION; *NURSING; EDUCATIONALLY DISADVANTAGED; *MULTIMEDIA INSTRUCTION; PROGRAMED INSTRUCTION; *AUTOINSTRUCTIONAL AIDS; *EDUCATIONAL RESEARCH; TEACHING METHODS; EFFECTIVE TEACHING

ABSTRACT - TO COMPARE THE PERFORMANCE OF TWO GROUPS OF NURSING STUDENTS RECEIVING DIFFERENT KINDS OF INSTRUCTION, A CONTROL GROUP OF 28 STUDENTS STUDIED A TRADITIONAL ASSIGNMENT BY READING A DUPLICATED SELF-INSTRUCTIONAL LESSON SIMULATING A TEXTBOOK ASSIGNMENT, WHILE AN EXPERIMENTAL GROUP OF 29 STUDENTS STUDIED A MULTI-MEDIA LESSON COVERING IDENTICAL MATERIAL USING A FILMSTRIP, AUDIO TAPE, AND PROGRAMED WORKSHEET. COMPARISONS OF THE TWO GROUPS' POSTTEST SCORES PLUS COMPARISONS OF THE POSTTEST SCORES OF STUDENTS RANKED IN THE LOWER HALF OF THE CLASS WITH THEIR PREVIOUS GRADES REVEALED THAT INCREASED LEARNING AND ACADEMIC IMPROVEMENT OCCURRED IN THE EXPERIMENTAL GROUP. IT WAS RECOMMENDED THAT A NUMBER OF UNITS BASED ON THE MULTI-MEDIA APPROACH BE PREPARED AND TESTED WITH A LARGE NUMBER OF STUDENTS TO DETERMINE IF THE EDUCATIONALLY DISADVANTAGED STUDENT MIGHT BE ASSISTED TO REACH HIS POTENTIAL AND FIND INCREASED OPPORTUNITIES FOR EMPLOYMENT, SERVICE, AND SELF-DEVELOPMENT. TEACHING MATERIALS FOR THE TWO GROUPS ARE INCLUDED IN THE REPORT. (SB)

VT 014 644

FINAL REPORT

Project No. 33-67132-AB23-002-71

Developmental, Applied Research Project to Help Determine the Extent to which a Multi Media Lesson is More Effective with Low Income Minority Students.

Bette R. Rich
Mt. San Jacinto College
P. O. Box 248
Gilman Hot Springs, California 92340

June, 1971

State of California
Department of Education
Program Services Unit
Vocational Education Section

VT014644

6974

FINAL REPORT
Project No. 33-67132-AB23-002-71

DEVELOPMENTAL, APPLIED RESEARCH PROJECT TO HELP DETERMINE THE EXTENT TO WHICH A MULTI MEDIA LESSON IS MORE EFFECTIVE WITH LOW INCOME MINORITY STUDENTS THAN IS A TRADITIONAL LESSON

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State of California
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ABSTRACT

This study compared the performance of two groups of Vocational Nursing students given a common post-test. The first group studied a traditional assignment by reading a duplicated self-instructional lesson simulating a textbook assignment. The second group studied the multi media lesson covering identical material, using a filmstrip, audio tape and programmed worksheet. The performances of the two groups were compared using the results of the post-test as the instrument. Further, the scores of the students in the lower half of the class, based on previous grades in nursing theory as supplied by the instructors, were compared with the grades on the post-test. The rank order of each student was compared with his class rank order to determine if the use of the multi media instructional system increased the effectiveness of learning for the students in the top half of the class or in the bottom half of the class.

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Chapter I

INTRODUCTION

Opportunities for employment as a Licensed Vocational Nurse are extensive. The acute care institutions employ them for much of the direct patient care, as well as in departments such as central service, physical therapy, inhalation therapy, emergency and post-anesthesia rooms. In many areas the graduate Licensed Vocational Nurse functions as a charge nurse in convalescent hospitals of 99 beds or less, which may employ only one Registered Nurse, Director or Supervisor.

Nursing has long appealed to many women as a prestige vocation, and some desire to enter it from altruistic reasons. Since courses in Vocational Nursing are largely centered in the Community Colleges in the State of California, more applicants are received from women of older years, and from members of ethnic minorities, than were received by hospital centered schools of nursing in the past. Funding to assist the disadvantaged, such as the Manpower Development Training Act, Extended Opportunity Programs and Work Incentive programs has encouraged the enrollment of the low income student in this curriculum. This has created some difficulties, since the older student may have had very limited educational background, or have been out of school for many years and her learning-study skills may be very rusty. California has required completion of the tenth grade, or its equivalent for enrollment, and many students enter the Vocational Nursing Curriculum with an average score of 35 or higher on the General Education Development examinations, rather than having actually completed the tenth grade. Although this score allegedly indicates the potential to successfully manage the vocational nursing curriculum, many of these students have been at a distinct disadvantage academically, when they were forced to compete academically with students recently graduated from high school.

Need For An Experimental Project

Vocational Nursing continues to be a popular course, often with many applicants from low income families and from economically disadvantaged minority groups, seeking admission. It was hoped that better learning methods could be developed, or old ones strengthened and improved to meet the learning needs of these students. Therefore, this research project has been undertaken to help determine the extent to which a multi media lesson in filmstrip, coordinated audio tape and duplicated worksheet format could more effectively teach a lesson to vocational nursing students than could the same lesson when taught by traditional methods - in this case by duplicated self-instructional material which simulates a study assignment from a vocational nursing textbook. A determination of whether the students who are in the lower half of their class as indicated by academic grades, learn more effectively with the polysensory stimulus of the multi media approach, needs to be made and is the purpose of this research.

If such an approach indicates the probability that these students can learn more effectively in this manner, then a significant number of multi media units from the vocational nursing curriculum might be developed in order to assist more students to successfully complete this program and find their way into the labor market, thereby benefiting themselves and society.

Chapter II

METHODS OF RESEARCH

Before the experimental portion of the project could be carried out, the researcher reviewed numerous chapters in current textbooks for Vocational Nurses to identify the content in the topic of Community Health. The student performance goals were then formulated and a simulated chapter from a textbook was written to present the information demanded by the objectives. A comparable lesson was prepared using the same information, but developed in a storyboard format.

The researcher and photographer then photographed actual health care personnel and their activities in the many community health agencies both voluntary and official, that are typical of the resources of a medium sized community. The artists supplied the graphics best rendered in this medium.

The technical aspects of development of the audio tape and filmstrip were done, and the workbook and post-test was designed to complete the research instrument.

Vocational nurse students from four institutions, one private, two community colleges, and one MDTA hospital-centered class, were used as test subjects. Each instructor divided her class into two groups, matched in academic achievements as determined by their semester class rank. Both groups were given the same post-test. One group studied the material in the traditional method, in this case a duplicated self-instructional lesson. The second group took the same lesson using the filmstrip, audio tape and programmed worksheet. Their scores on the post-test were compared to see which group had the higher mean score. The scores of the students from the lower half of the class (based on academic grades since enrollment in the vocational nursing curriculum) were compared with their grade on the post-test to determine if there was any significant shift in class standing as a result of the multi media type of learning experience.

Chapter III

FINDINGS AND ANALYSIS

Fifty-seven students were tested in a total of four classes. The following composite shows the composition of the classes:

Black: 3
Chicano: 7
Other ethnic groups whose native language is other than English: 3
Students on WIN: 8
Students on MDTA: 12
Students with financial problems that interfered with study (attempting to work 30-40 hours per week): 7

Since this totals forty of the 57 students we might conclude that the majority of students experience some language, or socio-economic problems that might cause them to be academically disadvantaged.

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TABLE I

	Control		Multi Media		
	Number Students	Mean Score	Number Students	Mean Score	Difference
Upper Half	20	26.8	9	30.0	+ 3.2
Lower Half	8	24.1	20	27.8	+ 3.7
Total	28	26.0	29	28.4	+ 2.4
Standard Deviation		4.44		2.86	
Standard Error of the Mean		.86		.54	

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Chapter IV

CONCLUSIONS AND RECOMMENDATIONS

Since the multi media method of learning appears to have brought about an increased learning among this limited number of test subjects, and since the students who ranked in the lower half of the class academically made significant improvement with this method of learning, it might be recommended that a number of units be prepared from the fundamentals of vocational nursing and a large number of students from many schools be tested to see if the student who is educationally disadvantaged might be assisted to reach his potential and find increased opportunities for employment, service, and self-development.

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TABLE II
DIRECTIONS TO STUDENT
(Multi Media Group)

You are assisting in a research project that is attempting to develop new and better methods of learning. You will be taking a lesson from the Vocational Nursing curriculum using a filmstrip, audio tape and a programmed worksheet which you will fill out as directed. You can assist the project by doing the following:

1. Read the booklet entitled "Making the Most of Multi-Media".
2. Take the multi media lesson. It will direct you in what to do. Please keep track of how long it takes you to go through the lesson. Do not count the time spent on the booklet "Making the Most of Multi-Media".
3. You will be given a post-test at your next regular class period about the lesson.
4. Fill out the questionnaire after taking the post-test in which you will indicate the amount of time spent on this lesson.

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TABLE III
DIRECTIONS TO STUDENT
(Control Group)

You are assisting in a research project that is attempting to find new and better methods of teaching. The material before you is a simulated chapter in a Vocational Nursing textbook. The lesson title is Introduction to Community Health for the LVN. You can assist this project in the following ways:

1. Write down the time you begin reading this assignment.
2. Proceed as you would with an ordinary reading-study assignment for your Vocational Nursing classes.
3. You may underline, make notes, outline and review as you ordinarily would for an assignment.
4. After completing your reading, note the total time it took you.
5. Keep track of any further study time spent on this lesson.
6. You will be given a post-test about the material at your next regular class period. The post-test will take about 10 minutes.
7. When you have completed the post-test you will be asked to fill out a short questionnaire. Be prepared to answer the question regarding the amount of time spent on the lesson.

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TABLE IV

INTRODUCTION TO COMMUNITY HEALTH FOR THE VOCATIONAL NURSE

People have required health care for as long as we have recorded information. An increasing world population, expanding industrialization and urbanization contribute to massive problems that affect the health and well being of large groups of people. This is the domain of Community Health. It is concerned with promoting health, preventing disease and prolonging useful life. While the individual person is the recipient of such health, it is groups of people who are the primary target.

HEALTH PROBLEMS IN THE SEVENTIES

There would be no need for community health agencies and services if people were not ill. What are some of the health problems affecting large numbers of people in the United States? The major killers of adults are heart disease, cancer, stroke and accidents. In addition to claiming thousands of lives annually, these disorders account for much misery and economic loss.

Other serious health problems are mental illness and drug abuse and alcoholism. More than one half of hospital beds are for the mentally ill.

Dental disease is a more widespread disorder than many realize. At sixteen years of age the average youth has seven teeth that are decayed, missing, or filled! Pneumonia and influenza are the only communicable diseases in the "top ten killers"; nevertheless, venereal disease, streptococcal infections, mumps, rubella and tuberculosis continue to be troublesome. The lowly common cold accounts for more loss of worktime than any other disorder.

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When people live together in communities their lives intertwine. The health of each person can be affected by that of his neighbor--close or distant. As a citizen and a vocational nurse each of us must be concerned about his neighbor's health.

COMMUNITIES

A "community" is a group of people living in a common area under a common set of laws. There are, therefore,:

Local Communities: A local community might be rural - with farms and open area. Its villages usually have less than 2500 persons. Community health problems might concern well water purity, and sewage disposal, or pest control, or environmental pollution by pesticides. An urban or city community could have quite different problems - such as air pollution from automobiles, and factories, and communicable diseases from overcrowded living quarters.

State Communities: Are formed by all of the local communities within the legal boundaries of the particular state, and are subject to the state laws.

The National Community: Is formed by the union of all the separate states. Federal law applies to all.

The International or World Community: Is formed by all of the people of the earth. There are no effective laws, as yet, that each nation agrees to abide by -- although many treaties and agreements regarding international quarantine, travel and immunizations have been made and are respected by many governments.

Recently man has extended his reaches into space -- we can only speculate about the future possibilities of interspace communities.

In this lesson we shall study about several local community health agencies, their roles, and personnel. These agencies are organized into two main divisions: I. The Official Agencies, and II. The Non-Official or Voluntary Agencies.

The official agencies are supported by tax dollars and are regulated by the laws of the local, state, or federal community. Official agencies concerned with health are sometimes called "Public Health Agencies."

Non-official or voluntary agencies are supported by private funds, not tax dollars. These funds may be gathered through donations, or provided by foundations, industry, religious, and service organizations. Volunteer assistance by concerned members of the community is necessary for their functioning. These agencies provide health education, carry on or support research, assist in promoting health education for society and professionals, and often supply a direct service to the public. Their private funding allows for greater flexibility than can be achieved by tax supported and publically governed institutions. The term "community health" includes all of the official and non-official agencies concerned with promoting and maintaining the health and well being of society. We shall examine several of these in more detail.

HOSPITALS AND HEALTH CARE FACILITIES

The home still is a major health care center. Many mild disorders are cared for by the patient himself or a member of his family. Although physicians make few house calls since they lack equipment and personnel to effectively diagnose and treat the patient in the home, a Visiting Nurse will give care to the home patient if the family request it, and the physician leaves orders. The Visiting Nurse Association is a voluntary

agency. The patient's family may pay for this service on a sliding scale according to their circumstances. Many people receive health care from their private dentists and physicians in the office or clinic.

The convalescent hospital or extended care facility provides care to increasing numbers of elderly or long term patients at a cost considerably lower than that of a general hospital. These hospitals do not provide surgery, diagnostic centers and other high cost facilities found in the general hospital.

Specialty hospitals care for patients with a specific type of disorder--for example, cancer, orthopedic problems or tuberculosis. They may be research centers where the latest techniques and equipment are available for that particular malady. The mentally ill or retarded who are in a psychiatric hospital for rather extended periods of time often require surgery, diagnosis, and other therapies for physical ailments. So a large psychiatric hospital frequently has most of the services offered by a general hospital.

A general hospital offers care to patients with medical, surgical, obstetrical, or psychiatric disorders (sometimes the mentally ill are kept for only a short observation period). Most have provision for care of persons with a communicable disease. The larger general hospitals contribute enormously to society by providing education for health personnel and for medical research.

A large general hospital is somewhat like a city. Many types of personnel are needed to maintain supplies, and repair, provide administrative and business activities, as well as provide for the diagnosis, treatment and rehabilitation of the patients.

Let's look briefly at some of the departments of a large teaching hospital.

The Diagnostic Center: This includes the clinical laboratory, pathology, X-ray department and facilities for doing electroencephalograms and electrocardiograms and other studies.

The Therapeutic Center: The patient might need treatment involving surgery, radiation, diet therapy, drug therapy, psychiatric therapy, or physical therapy.

The Rehabilitation Center: Could contain the department of occupational therapy, physical therapy, speech therapy, a prosthesis department, and health education.

Most general hospitals have out patient departments and emergency services. As a potential L.V.N. you will be most familiar with the hospital as a community health agency. The many vocational, technical and professional employees are your co-workers. The medical or psychiatric social worker is the team member qualified to assist patients in obtaining help from the various community health resources. Your function may often be to direct your patient to this service.

VOLUNTARY AGENCIES

The list of voluntary agencies is long. Their importance in community health is major. Only two will be mentioned here.

The American Cancer Society in 1969-70 gave $21,000,000 for cancer research. Public information and education is a continuing program. You may have had the attractive pamphlet on "Seven Danger Signals". Many other booklets, films, and brochures are available. Services at the local chapter might include use of equipment from the free "Loan Closet". A variety of hospital and convalescent type equipment is available. Dressings

are provided free. Speech therapy and ostomy clubs help the cancer patient. Transportation to and from the treatment center is given, or a friendly person will visit the cancer victim to just chat and offer moral support and encouragement.

The Tuberculosis and Respiratory Disease Association also provides education and service. Tuberculosis is still an enemy that must be watched for. Emphysema and other pulmonary diseases are major health problems. The familiar mobile x-ray unit does many thousands of screening examinations yearly. The Christmas Seal campaign has long been one source of funds for these activities.

SERVICE ORGANIZATION

Health projects are frequently undertaken by service clubs. Lions International has been concerned with sight conservation. You may have contributed to the White Cane Days project which helps the Lions underwrite the expense of providing glasses, sight-saving books or a seeing eye dog, for the blind. It costs approximately $1800 to $2000 to train one seeing eye dog! Other service organizations have equally important projects in health.

THE LOCAL HEALTH DEPARTMENT

Attempts at public health have been made in the United States since the 1700 by individual cities. This was many years before the state or federal governments developed more organized programs. A present day local health department is usually associated with a city or a county. The organizational structure varies somewhat. They are, of course, official agencies, and most have the seven major divisions that you will be studying very briefly.

1. Environmental Health
2. Maternal-Child Health
3. Vital or Health Statistics
4. Laboratories
5. Communicable Disease Control
6. Adult Health and Chronic Disease Control
7. Health Education

ENVIRONMENTAL HEALTH

Environmental health is gaining much attention recently as a result of increasing concern over ecological problems. Many specialists are employed in this department. Their assignments include water protection, radiation control, supervision of waste disposal, air pollution, and milk sanitation and quality control.

Food sanitation and storage, control of insect and rodent vectors, inspection of public buildings such as restaurants, hotels and hospitals are further responsibilities. The Registered Sanitarian is a college graduate with a background in biological sciences, and public health. While Sanitarians must uphold the ordinances of their municipality they emphasize education. By offering their professional expertise to the managers and owners of the institutions and properties that are their concern, they can often bring about desirable changes. They employ legal sanctions against uncooperative persons who persist in unsanitary procedures that endanger the health of the public only when other methods fail.

MATERNAL-CHILD HEALTH

The Maternal and Child Health division provides prenatal care for expectant mothers which has helped to reduce infant and maternal deaths. Maternity hospitals must be inspected and meet the standards required by the board of health. Well-baby or well-child conferences offer immunizations, health information and counseling to mothers of pre-school children. Sick children are not treated, but mothers may be directed to appropriate help.

The school child receives continuing health care through immunization, health screening for visual, hearing, or dental problems through school health programs. The school nurse (who is employed by the school board), assists in maintaining a safe and healthful school environment. She may offer health education, and coordinate the health examinations or tests given by the health department. The health department may act as a consultant to the school.

The professional nurse who is employed by the health department is a registered nurse with specialized college training that entitles her to use the initials P.H.N.--meaning Public Health Nurse. The P.H.N. assists in maternal-child health care and sometimes with school health activities. She also has many other duties involving the other departments of the health department. Some Health Departments also employ Licensed Vocational Nurses and Community Health Aides to assist in their many programs under the direction of the P.H.N.

An important child health care service is Crippled Childrens Service. This public health division assists children, who are crippled or who have some other types of impairment, get care from recognized specialists on a sliding scale basis according to the families financial circumstances. (Do

not confuse the health department's Crippled Children with the voluntary agency -- Crippled Children's Society or Easter Seal Society which provides a different type of service.)

DEPARTMENT OF VITAL AND HEALTH STATISTICS

This department records and analyzes the reported births, deaths, marriages, divorces, and incidence of disease, and compiles statistical data. This information is most helpful in planning programs to meet the needs of the community served by the health department. It is used also for research. A statistician is the professional who works with this mathematical data.

THE LABORATORY

Technologists, bacteriologists and technicians work in this realm. They perform diagnostic tests for the health department personnel or private physicians -- such as the blood tests for syphillis. Other bacteriological and chemical examinations are performed on samples of food, milk, and water.

COMMUNICABLE DISEASE CONTROL

Sanitation and communicable disease control were early public health functions. Ships coming into port were "quarantined" and even patients at home with a communicable disease had a big red "Quarantine" sign on the door! Modern advances in sanitation, immunization and medication have removed all but influenza and pneumonia from the ten leading causes of death in the United States. The health department plays a continuing role in this important area. Physicians notify the health department of certain "reportable" diseases. (MOST reportable diseases are communicable, but

not all are.) The specialists from the health department makes every effort to track down the source of communicable disease in order to prevent its spread. Immunization programs, environmental sanitation, and health education is needed to make the public aware that these potential killers are not eliminated - only held in check.

ADULT HEALTH AND CHRONIC DISEASE CONTROL

This department is assuming an expanded role in community health as the proportion of adults of middle and older years in the population increases. The chronic diseases afflict many in this age group. Arthritis and rheumatoid diseases are the major crippler. Diabetes, vascular disorders, and decreased hearing and sight are rather common problems. The health department is concerned with preventing these and other disorders, and in promoting healthful living in order to delay the onset of disease. By using radio, television and the press, health information is available to most everyone. Unfortunately, healthful living practices often conflict with personal habits and desires, and so the individual ignores the forty excess pounds, continues to smoke his pack of cigarettes a day, rides to the corner mailbox instead of walking and wonders why he is not well. Conscientious health workers will continue to offer health education, carry on screening programs to identify early health deviations, and to assist families in caring for their ill members. These efforts can make the "bonus years" which have been added to the life span meaningful and productive.

DEPARTMENT OF HEALTH EDUCATION

The health educator is a vital part of a dynamic local health department.

He or she works with each of the other divisions in an effort to assess the health needs of the community and effectively spread information throughout the community. In addition to his training in public health (with a masters degree) he must have a thorough knowledge of his community -- its population, customs, and beliefs. He must work closely with the professionals in the school system, medical and health care institutions, as well as the public. He offers technical assistance to promote health education wherever it can be effectively used. Speakers, films, and pamphlets are available to organizations who request them. Health educators organize seminars, workshops, prepare and coordinate radio and television information.

The administrative officer called "Health Officer" or "Director of Public Health" is a medical doctor with added preparation in public health and administration. He coordinates and administers the entire organization.

SUMMARY

This lesson has been an introduction to the voluntary and official agencies that contribute to community health. The L.V.N. may be employed or serve as a volunteer in many of them. In being aware of the resources available to you and your patients the health of your own community might be improved.

TABLE V

INTRODUCTION TO COMMUNITY HEALTH FOR THE VOCATIONAL NURSE

Frame 1 Narrator: People have been sick or injured for as long as we have recorded information. Today's increasing population, expanding industrialization, and urbanization contribute to massive problems that affect the health and well being of large groups of people. These problems require cooperative effort of many people for solution. This is a function of "community health".

Frame 2 It is concerned with PROMOTION HEALTH, PREVENTING DISEASE, AND PROLONGING USEFUL LIFE, among groups of people. These would be no need for community health agencies if people were not ill. What are some of the health problems affecting large numbers of people in the United States today?

FRame 3 The major KILLERS are heart disease, cancer, stroke and accidents Not one of these is communicable--and some of them can be prevented or their onset delayed.

Frame 4 The communicable diseases have been tamed in the past fifty years - though not eliminated. Only pneumonia and influenza remain in the top ten killers.

Frame 5 Nevertheless, venereal disease, streptococcal infections, mumps, rubella and tuberculosis continue to be troublesome.

Frame 6 The lowly common cold accounts for more loss of worktime than any other disorder!

Frame 7 Mental illness, retardation, drug abuse and alcoholism are serious health problems. Slightly more than one half the hospital beds in the United States are for the person with a mental illness! The social and economic problems associated with these illnesses are staggering.

Frame 8 Dental disease is a more widespread disorder than many realize. At age sixteen, the average youth has SEVEN teeth that are decayed, missing or filled!

Frame 9 When people live together in communities their lives intertwine. The health of each person can be affected by that of his neighbor--close or distant. As a citizen and a vocational nurse each of us must be concerned about his neighbor's health. A "community" is a group of people living in a common area under a common set of laws.

Frame 10 A local community might be rural or urban each having different health needs. The rural community with its open areas, farms, and villages of less than 2,500 people might be concerned with well water purity, or sewage disposal.

Frame 11 Pest control and environmental pollution by long-lasting pesticides are current ecological problems.

Frame 12 An urban or city community could have quite different problems--such as the air pollution that oppresses this city.

Frame 13 Problems of environmental pollution from factories and automobiles are challenging many who seek solutions.

Frame 14 Pollution of our rivers, lakes and ocean is creating serious disturbances in the ecology, which has and can affect the health and life of thousands of persons.

Frame 15 We have been discussing health needs of local communities. There are also State and National communities with their boundaries and laws.

Frame 16 The world community has not agreed on common laws--although many treaties and agreements regarding international quarantine, travel, and immunizations have been made and are respected by many governments.

Frame 17 Recently man has extended his reaches into space--we can only speculate about the future possibilities of interspace communities. Part II of "Community Health for the Vocational Nurse" will present the role of the state, federal and international community health agencies. In this lesson we shall study about several local agencies and their personnel. These agencies are organized into two main divisions:

Frame 18 I. The Official agencies which are tax supported, and regulated by the laws of the municipality, and II. Non-official or Voluntary agencies which are not tax supported. The term "community health" includes both of these groups. The voluntary agencies receive funds through donations, or from foundations,

religious and service organizations. Volunteer assistance by concerned members of the community is necessary for their functioning. Voluntary agencies provide health education, carry on or support research, assist in providing scholarships, and, often supply a direct service to the public. Private funding allows for greater flexibility than can be achieved by tax supported and publically governed institutions. We shall examine several of these agencies in more detail in this lesson. Before doing so, please turn off the audio tape and filmstrip and do Item #1 in the worksheet.

Frame 19 Of the many health care facilities available in a local community the home still figures as a major health care center. Many mild disorders are cared for by the patient himself, or by a member of the family. Some patients with a chronic or long-term disorder are cared for at home.

Frame 20 A Visiting Nurse will give care to the home patient if the family requests it, and the physician leaves orders. The Visiting Nurses Association is a voluntary agency. The patient's family may pay for this service on a sliding scale according to their circumstances. The Local Health Department in some areas send HOME HEALTH AIDES to perform basic nursing skills and to give limited household help, under the supervision of the Public Health Nurse. The local health department is an official agency.

Frame 21 Much health care is provided in the office of private physicians.

Frame 22 And Dentists.

Frame 23 The convalescent hospital cares for increasing numbers of elderly or long-term patients. Since these facilities do not provide surgery and some other departments found in the general hospital, their costs are lower for the patient.

Frame 24 Specialty hospitals care for patients with a specific disorder--for example: cancer, orthopedic problems or tuberculosis. They may be research centers where the latest techniques, equipment and specially trained personnel are available. The mentally ill or retarded who may be hospitalized for rather extended periods in a psychiatric institution, could require surgery, diagnosis and therapy for physical ailments. Therefore, a psychiatric hospital frequently has most of the services offered by a general hospital.

Frame 25 A general hospital offers care to patients with medical, surgical, obstetrical, psychiatric or communicable conditions. The larger general hospitals contribute enormously to society by providing education for health personnel and for medical research. A large general hospital is somewhat like a city. Many types of personnel are required to maintain it and to provide the medical services for diagnosis, treatment and rehabilitation of patients. Let's look briefly at some of the departments and their personnel.

Frame 26 The diagnostic facilities would include the clinical laboratory where this technologist is using her skills in performing diagnostic tests.

Frame 27 The pathology department makes microscopic and other examinations of tissues and cells which are important in diagnosis.

Frame 28 The x-ray technician takes many diagnostic pictures during her work day.

Frame 29 The radiologist, an M.D. specialist, interprets the films.

Frame 30 This patient is having an electrocardiogram made by the technician. Tracings of the electrical energy of the brain can also be made. This is called an electroencephalogram. Many other specialty departments could be a part of a diagnostic center of a major general hospital.

Frame 31 Departments and personnel available for <u>therapy</u> or <u>treatment</u> of patients are important in community health. This patient is being treated by surgery. A team of specialists is required to prepare for this open heart operation.

Frame 32 Radiation therapy has prolonged the lives of countless patients. This is a betatron which is used in radiation therapy as is x-ray, radio active cobalt and other sources.

Frame 33 These dieticians are planning the many details necessary in order to provide nutritional therapy for the hospital's patients.

Frame 34 Many helpers are needed to prepare and serve the trays.

Frame 35 The pharmacist compounds and dispenses the medications ordered by the doctor.

Frame 36 The Registered Nurse, and sometimes the Licensed Vocational Nurse is responsible for preparing and administering the medication to the patient. Drug therapy is a common form of treatment of the hospitalized patient.

Frame 37 Counseling and psychotherapy is a valuable therapeutic technique.

Frame 38 Many large general hospitals provide a chapel where patients and guests may seek spiritual help. The Priest, Minister and Rabbi are members of the health team.

Frame 39 Special departments to care for the critically ill,heart patients, post-anesthestic patients are operated in hospitals. This nurse specialist at her station watches the heart tracings of several patients.

Frame 40 These professionals are inhalation therapists. They are assisted by Inhalation therapy technicians and aides in providing several types of environmental controls to help patients with respiratory difficulties.

Frame 41 This Student Vocational Nurse is assisting the physical therapist apply traction. All of these departments and their vocational, technical and professional personnel help in therapy or treatment of the ill.

Turn off the audio tape and film and do Item #2 in the worksheet.

Frame 42 Rehabilitation means to help a person achieve his maximum potential within the limits of his disease or disability. It is an important function of community health.

Frame 43 The rehabilitation facilities of a large general hospital might include occupational therapy, which not only helps pass the long hours away, but assists the patient toward recovery by encouraging the use of inactive muscles.

Frame 44 This amputee is being retrained to continue his employment by using his left hand in operating the equipment.

Frame 45 The physical therapist also serves as a rehabilitation specialist. This lady is learning to walk in her brace.

Frame 46 The little child is helped by the speech therapist to reach his potential. He has a hearing loss.

Frame 47 A department to supply artificial body parts or "prosthesis" is necessary in rehabilitation. These student vocational nurses are examining a prosthesis before the technician applies it to the patient.

Frame 48 Many general hospitals have out patient departments or clinics.

Frame 49 Health education is offered to the waiting patients and their families, and institutions are employing health educators to work with patients.

Frame 50 Emergency services are a vital service to the community. This hospital has a heliport where accident victims and the seriously ill can be brought quickly into the emergency suite.

Frame 51 The medical or psychiatric social worker is the team member especially educated to assist patients obtain help from the various community health resources. One of your functions as an L.V.N. will be to direct your patient to this service.

Turn off tape and projector and do Item #3 in the worksheet.

Frame 52 Two voluntary community agencies will be presented as rather typical of a long list of such resources. The American Cancer Society in 1969-70 provided $21,000,000 for cancer research. Public information and education is an important activity of this organization. You may have read the attractive pamphlet on the "Seven Danger Signals". Many other booklets, films, and brochures are available.

Frame 53 Services at a local chapter include the free "LOAN CLOSET" from which a variety of hospital and convalescent type equipment and dressings are available. Speech therapy may be given to the post laryngectomy. "Ostomy clubs" assist the post-operative patient adjust to his condition. Transportation to and from the treatment center is provided to cancer patients, or a friendly visitor will

come just to chat and offer moral support and encouragement.

Frame 54 The Tuberculosis and Respiratory Disease Association also provides education and service. Tuberculosis is still an enemy that must be watched for -- while emphysema and other pulmonary diseases are major health problems.

Frame 55 The familiar mobile x-ray unit makes many thousands of screening films yearly.

Frame 56 The Christmas Seal campaign is one source of funds for these activities. These are pictures of the many Christmas Seal designs over the past years.

Frame 57 Health projects are undertaken by service clubs. Lions International is concerned with sight conservation. You may have contributed to the White Cane Days project which helps the Lions underwrite the expense of providing glasses, sight-saving books or

Frame 58 a seeing-eye dog for the visually handicapped. It costs approximately $1800 to $2000 to train one seeing-eye dog. Other service organizations have equally important projects that contribute to community health.

Turn off tape and projector and do Item #4 in the worksheet.

Frame 59 Let's visit the local health department--a major official community health agency. A present day local health department is

usually associated with a city or a county. The organizational structure may vary somewhat and the divisions may have slightly different terminology but most have these seven major divisions:

1. Environmental Health
2. Maternal-Child Health
3. Vital or Health Statistics
4. Laboratories
5. Communicable Disease Control
6. Adult Health and Chronic Disease Control
7. Health Education

Frame 60 Let's follow a Registered Sanitarian from the Division of Environmental Sanitation as he goes about his activities. Supervision of waste disposal and water protection are important duties. This is part of a sewer plant.

Frame 61 The sanitarian checks the chlorinator which helps kill bacteria in the water supply.

Frame 62 A sample of the effluent is taken for testing, after the sewage has been treated.

Frame 63 Air pollution and radiation control are part of environmental sanitation.

Frame 64 These technicians are testing samples of milk for the presence of antiobiotics and butterfat content. Milk sanitation and quality control, food sanitation and storage must meet proper standards.

Frame 65 The temperature of this meat storage compartment is checked.

Frame 66 The owner of a restaurant talks with the sanitarian about the dishwashing equipment. The inspection of public buildings such as restaurants, hotels and hospitals are responsibilities of the Division of Environmental Sanitation.

Frame 67 Some local ordinances require restaurants to display a grade card of "A", "B", or "C" according to how well they meet sanitary standards.

Frame 68 This restaurant has met the high standards. The Registered Sanitarian is a college graduate with a background in biological sciences and public health. While he must uphold the ordinances and laws of the municipality, he emphasizes education and by offering his professional expertise to the managers and owners of the institutions and properties that are his concern, he can often bring about desirable changes. Sanitarians employ legal sanctions against uncooperative persons who persist in unsanitary procedures that endanger the health of the public only when other methods fail.

Frame 69 Our next health department stop is to a well-child conference. This is one of the functions of the Division of Maternal-Child Health, which provides prenatal care, inspects maternity hospitals, and offers many services to mothers of pre-school children.

Frame 70 The well-child conference personnel immunizes the child, supplies health information and counseling to the mother.

Frame 71 Children are examined for growth and development. Sick children are not treated but mothers may be directed to appropriate help. Just a word about the Public Health Nurse seen assisting in this conference. She is a professional nurse with specialized college training that entitles her to use the initials P.H.N. meaning Public Health Nurse. She not only assists in the Division of Maternal-Child Health but in other Health Department divisions as well. Sometimes the L.V.N. is part of the team under her supervision. We have already briefly mentioned the Home Health Aids and her duties, she is also supervised by the P.H.N.

Frame 72 Sometimes the local health department serves as a consultant to school districts and provides immunizations, health screening for visual, hearing or dental examinations. (Some school districts employ their own school nurse, who is not necessarily a P.H.N.)

Frame 73 Children are aided through Crippled Children's Service, a function of the local health department which helps them get needed care from recognized specialists on a sliding scale basis according to the family's financial circumstances. This P.H.N. is making a home visit to a child who may need such service.

Frame 74 In the home, the P.H.N. administers a developmental test to the little boy. She makes an appointment for the child to come to the Child Development Clinic.

Frame 75 A pediatrician examines the child at the clinic.

Frame 76 A conference of specialists--pediatrician, psychologist, speech therapist, social worker, evaluate the findings and plan therapy for the child.

Frame 77 Meet a statistician--the professional who works with mathematical data and analyzes the reported births, deaths, marriages, divorces, and incidence of disease. This information is most helpful in planning programs to meet the health needs of the community. Such information is also valuable in research.

Frame 78 The division of laboratories employs technologists, bacteriologis and technicians to perform diagnostic tests for private physicians and health department personnel. This technologist is performing blood tests for syphillis.

Frame 79 Others make chemical examinations on samples of food, milk and water.

Frame 80 The Division of Communicable Disease Control is a most important guardian of the community health. Sanitation and communicable disease control were early public health functions and are a major reason that the once dreaded killers of diphtheria, typhoid fever, smallpox and other communicable diseases have been removed from the top ten killer list. The big red quarantine sign on a door is not seen anymore.

Frame 81 Immunizations, medication, sanitation and education have all made their contribution to this success story. The health department plays a continuing role in this important field. Physicians notify

the department of certain reportable diseases (MOST reportable diseases are communicable, but a few are not.) The specialists from the health department make every effort to track down the source of a communicable disease in order to prevent its spread. The public must be aware that these potential killers are not eliminated--only held in check.

Frame 82 The Department of Adult Health and Chronic Disease Control is assuming an expanding role in community health as the proportion of adults of middle and older years increases in the population. The chronic diseases afflict many in this age group.

Frame 83 Arthritis and rheumatoid diseases are the major cripplers. Diabetes, vascular disorders, and decreased hearing and sight are rather common problems of the elderly. The health department is concerned with preventing these and other disorders, and in promoting healthful living in order to delay the onset of disease. By using radio, television and the press, health information is available to most everyone.

Frame 84 Unfortunately, healthful living practices often conflict with personal habits and desires, and so the individual ignores the forty excess pounds, continues to smoke his pack of cigarettes a day, rides to the corner mailbox instead of walking and wonders why he is not well. Conscientious health workers will continue to offer health education, carry on screening programs to identify early health deviations, and to assist families in caring for their ill members.

Frame 85 These efforts can make the "bonus years" which have been added to the life span meaningful and productive - even without discovering a "fountain of youth".

Frame 86 The health educator is a vital part of a dynamic local health department. He or she works with each of the other divisions in an effort to assess the health needs of the community and effectively spread information throughout the community. In addition to his training in public health (with a masters degree) he must have a thorough knowledge of his community -- its population, customs, and beliefs. He must work closely with the professionals in the school system, medical and health care institutions, as well as the public. He offers technical assistance to promote health education wherever it can be effectively used.

Frame 87 Speakers, films, and pamphlets are available to organizations who request them. Health educators organize seminars, workshops, prepare and coordinate radio and television information.

Frame 88 The administrative officer called "Health Officer" or "Director of Public Health" is a medical doctor with added preparation in public health and administration. He coordinates and administers the entire organization.

In summary, this lesson has been an introduction to the voluntary and official agencies that contribute to community health.

Community health resources include human resources--the volunteers, vocational, technical and professional people who use their knowledge and skills in their work; and the agencies, voluntary and official which employ the workers. The L.V.N.

may be employed or serve as a volunteer in many of them. In being aware of the resources available to you and your patients the health of your own community might be improved.

Turn off tape and projector. Do Item #5 in the worksheet.

TABLE VI

Follow-up questionnaire for both control and multi media groups to be filled in after taking the post-test.

Name _____

Answer question number one only if you were assigned the reading lesson.
Answer question number two if you took the multi media lesson using filmstrip and audio tape.

1. How long did it take you to read this assignment? _____

2. How long did it take you to take the multi media lesson? _____

3. Is this about the same time you usually take on other assignments for this class? Yes _____ More time _____ Less time _____

4. Have you had this topic discussed or assigned already as part of your curriculum? Yes _____ No _____

5. Is English your native language? Yes _____ No _____

6. What grade in school did you complete? (Do not count the GED or equivalency levels) Grade _____

7. How would you rate your class standing based on grades in Vocational Nursing theory classes (NOT CLINICAL).

☐	Top 1/4
☐	2nd Quarter
☐	3rd Quarter
☐	Bottom 1/4

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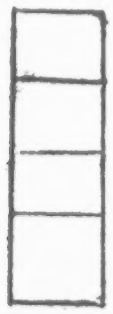
TABLE VII

Name of student _____

For the Instructor

1. Has the student had this topic as part of the Vocational Nursing curriculum? Yes _____ No _____

2. Within which quartile does this student fall based on grades in theory?



1st

2nd

3rd

4th

3. Is this student a member of an ethnic minority? Please indicate which.

Black _____

Chicano _____

American Indian _____

Oriental _____

Other (Specify) _____

4. Does this student speak another language in the home? Yes _____ No _____

VT 014 653
LEVENTHAL, GERALD
AN EXPLORATORY INVESTIGATION OF THE INFLUENCE OF SIBLING ASSOCIATIONS ON OCCUPATIONAL PREFERENCES.

NORTH CAROLINA STATE UNIV., RALEIGH. CENTER FOR OCCUPATIONAL EDUCATION.
NATIONAL CENTER FOR EDUCATIONAL RESEARCH AND DEVELOPMENT (DHEW/OE), WASHINGTON, D.C. DIV. OF COMPREHENSIVE AND VOCATIONAL EDUCATION
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DESCRIPTORS - *OCCUPATIONAL CHOICE; *MALES; *FAMILY INFLUENCE; *SIBLINGS; *BIRTH ORDER; CAREER CHOICE; RESEARCH NEEDS; OCCUPATIONAL ASPIRATION; VOCATIONAL INTERESTS

ABSTRACT - TO DETERMINE IF SIBLING ASSOCIATIONS CAN AFFECT OCCUPATIONAL PREFERENCES, BRIEF QUESTIONNAIRES WERE ADMINISTERED TO MORE THAN 500 MALE COLLEGE STUDENTS WITH ONE SIBLING. HOLLAND'S THEORY OF VOCATIONAL CHOICE WAS USED AS A FRAMEWORK FOR STUDYING RELATIONSHIPS BETWEEN THE INDEPENDENT VARIABLES OF BIRTH ORDER AND SEX OF SIBLING AND THE DEPENDENT VARIABLE OF OCCUPATIONAL PREFERENCES. IT WAS PREDICTED THAT MEN WITH AN OLDER SISTER WOULD DISPLAY GREATER PREFERENCE FOR OCCUPATIONS OF THE REALISTIC TYPE THAN MEN WITH AN OLDER BROTHER AND THAT FIRST-BORN MEN WOULD DISPLAY GREATER PREFERENCE FOR OCCUPATIONS OF THE INTELLECTUAL TYPE THAN SECOND-BORN MEN. SUBJECTS WERE ASKED TO RATE THEIR LIKING FOR OCCUPATIONS REPRESENTING EACH OF HOLLAND'S SIX OCCUPATIONAL TYPES, INCLUDING REALISTIC, INTELLECTUAL, SOCIAL, CONVENTIONAL, ENTERPRISING, AND ARTISTIC. THE PREDICTIONS WERE NOT CONFIRMED, AND ALTHOUGH SEVERAL UNEXPECTED SIGNIFICANT EFFECTS WERE OBTAINED, THESE DIFFERENCES MAY BE CHANCE EVENTS. USING INVALID ASSUMPTIONS IN DERIVING PREDICTIONS COULD ACCOUNT FOR THE NEGATIVE RESULTS. IT WAS RECOMMENDED THAT FURURE RESEARCH PURSUE TWO APPROACHES, THE FIRST EXAMINING THE EFFECT OF SIBLING ASSOCIATIONS ON THE DEVELOPMENT OF PERSONALITY AND INTEREST PATTERNS AND THE SECOND EXAMINING THE EFFECT OF PERSONALITY AND INTERESTS ON OCCUPATIONAL PREFERENCES. THE QUESTIONNAIRE IS APPENDED. (AUTHOR/SB)

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AN EXPLORATORY INVESTIGATION OF THE INFLUENCE OF SIBLING ASSOCIATIONS ON OCCUPATIONAL PREFERENCES

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OFFICE OF EDUCATION
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Center Technical Paper No. 1

CENTER FOR OCCUPATIONAL EDUCATION
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Raleigh, North Carolina

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Grant No. OEG-2-7-070348-2698

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PREFACE

The Center for Occupational Education is pleased to be able to inaugurate the Center Technical Paper Series with Dr. Leventhal's excellent study of sibling associations and occupational preference. This study should help to chart the future course of research in this important area.

Dr. Leventhal's report provides a two-fold service to the scientific community. For his fellow researcher he has prepared a careful assessment of an area of research which certainly warrants detailed investigation. The conclusions arising from his study clearly point the way toward the basic research necessary to lay a foundation for any future attack on the problems of sibling association and occupational preference. However, this is not the only contribution provided by Dr. Leventhal's study; indeed, it may not even be the major contribution.

For the administrator of a research and development center, Dr. Leventhal's paper, and others like it, provides a contribution of great benefit. The efficient allocation of scarce financial resources to research projects demands the type of information this report provides. The careful analysis demonstrated here gives the research administrator more information on which to base the important decisions of project selection. It tells the administrator what further information research must provide before other projects in this area will have appreciable chances for success. This knowledge is of incalculable value.

The Center extends its appreciation to Dr. Gerald Leventhal who completed the study and to the following members of the panel who reviewed the report:

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Dr. J. W. Cunningham, Associate Professor of Psychology
Dr. Charles V. Mercer, Associate Professor of Sociology and Anthropology
Dr. Bert W. Westbrook, Associate Professor of Psychology

all of North Carolina State University.

The Center also acknowledges the assistance of Mrs. Mary King and Mrs. Sue Mills in the preparation and reproduction of the manuscript.

A special note of thanks is due Mr. Clifford Reiffler whose help made possible the collection of the data reported in this paper.

John K. Coster
Director

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SUMMARY OF THE REPORT

Recent findings indicate that sibling associations can affect occupational preferences. However, these findings have limited theoretical significance and it is not clear whether more extensive studies of such relationships are warranted at the present time. To assess the potential usefulness of such studies, Holland's theory of vocational choice is used as a framework for a systematic exploratory study of relationships between the independent variables of birth order and sex of sibling and the dependent variable of occupational preferences. It was predicted that men with an older sister would display greater preference for occupations of the realistic type than men with an older brother. In addition, it was predicted that first-born men would display greater preference for occupations of the intellectual type than second-born men. To test these predictions, a brief questionnaire was administered to more than 500 male college students with one sibling. Subjects were asked to rate their liking for occupations representing each of Holland's six types. The predictions were not confirmed and, although several unexpected significant effects were obtained, these differences may well be chance events. The study is evaluated critically and judged relatively free from serious methodological flaws. It is suggested that the negative results probably stem from the use of invalid assumptions in deriving predictions. Finally, the utility of studies of the present type is questioned and an alternative strategy for future research is discussed.

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INTRODUCTION

Recent studies indicate that sibling associations can affect occupational preferences. For example, Very and Zannini (8) report that the number of second-born women among female beauticians is greater than would be expected by chance. Leventhal (5) has shown that men with an older sister are more likely to prefer engineering as an occupation than men with an older brother. An exploratory study by Sutton-Smith, Roberts and Rosenberg (7) suggests there may be some tendency for first-born individuals to be more attracted to teaching professions than second-born individuals. Their results also indicate the possibility that males with a brother are more likely to be attracted to occupations which involve producing, buying, and selling. Although these scattered findings indicate that sibling-association factors such as birth order and sex of sibling can affect vocational preferences, they have little theoretical significance because they have not been integrated with comprehensive theories of vocational choice. They hold the status of interesting but relatively uninformative findings and it is unclear whether it is worthwhile to invest substantial amounts of time and money to conduct more extensive investigations of such relationships. Consequently, the present study attempts to assess the potential usefulness of such research by exploring systematically the effect of sibling associations on occupational preferences.

There are two prerequisites for systematic exploration of the effect of sibling associations on occupational preferences. First, information is needed about the effect of sibling associations on interest

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patterns and personality. Second, a typology of occupations is needed that classifies occupations with respect to the patterns of interest and personality most appropriate to them. When these prerequisites are satisfied, i.e., when sibling associations are known to affect interest patterns and personality in certain ways and when interest patterns and personality are known to affect occupational preferences in certain ways, it becomes possible to predict relationships between sibling associations and occupational preferences. In effect, personality and interest patterns serve as intervening variables which mediate relationships between the independent variables of sibling associations and the dependent variable of occupational preferences. A particular sibling association will influence preference for a particular occupation when the association and the preference are linked together through common intervening variables of personality and interest patterns. The present study uses this assumption to predict effects of birth order and sex of sibling on subjects' preferences for clusters of occupations specified in Holland's (3) theory of vocational choice. The study also attempts to detect unexpected relationships between these variables.

Holland's (3) theory of vocational choice suggests a number of possible relationships between the intervening variables of personality and interest patterns and the dependent variable of occupational preference. He postulates six personality types which correspond to six types of occupational environments. An individual will prefer those occupations which correspond to his personality type. The six personality types and the modes of coping behavior and typical occupational preferences associated with them are listed below.

I. The realistic type who thinks in concrete terms and prefers activities which involve manual skills (mechanic, electronic technician, tree surgeon, ranch hand).

II. The intellectual type who likes to manipulate ideas and symbols (research scientist, mathematician, writer of scientific articles).

III. The social type who likes to use social skills to guide and train others (social worker, teacher, playground director).

IV. The conventional type who likes highly structured, subordinate roles which permit stereotyped and nonspontaneous behavior (clerk, bookkeeper, cashier).

V. The enterprising type who is extroverted and adventurous and seeks to lead and dominate others (salesman, manager, politician).

VI. The artistic type who seeks opportunities for creative self-expression through use of imagination and emotional sensitivity (artist, musician, playwright).

Recent findings by Leventhal (5) suggest possible relationships between the independent variables of birth order and sex of sibling and the intervening variables of personality and interest patterns contained in Holland's theory of vocational choice. Leventhal found that men with an older sister display greater interest in outdoor and technical activities than men with an older brother. This result suggests that men with an older sister bear a closer resemblance to Holland's (3) "realistic type" than do men with an older brother and that men with an older sister will be more attracted to occupations of the realistic type. Consistent with this suggestion, Leventhal (5) found that men with an older sister listed engineering as an occupational preference more often than men

with an older brother. The present study seeks to replicate this finding and to demonstrate similar effects for other occupations in the realistic category.

Leventhal (5) also found that the first born obtained higher scores on a test of health knowledge and were more likely to express interest in "reading and discussion of books" than the second born. These findings seem consistent with the results of Altus (1) and Schachter (6) which indicate that the first born display a stronger intellectual orientation than the second born. The findings suggest the hypothesis that the first born will be more attracted to occupations of the intellectual type than the second born.

METHOD

Subjects and Procedure

A brief questionnaire (see Appendix A) was administered to all freshmen entering the University of North Carolina at Chapel Hill in the Fall of 1967. Excluding individuals with half-siblings or step-siblings, there were 544 men with one sibling in this population. This constituted the sample for the present study. The mean age of these subjects was 18.3 years. The mean difference in age between subjects and their sibling ranged from 3.8 years among men with an older brother to 4.5 years among men with a younger brother. The effects of sex of sibling and birth order on age difference were nonsignificant. The breakdown of subjects according to birth order and sex of sibling is shown in the last two rows of Table 1.

The questionnaire listed 14 occupations drawn from Holland's

comprehensive classification for vocational choices and occupations (5, pp. 110-116). Each of Holland's occupational types was represented by two occupations with the exception of the realistic type for which four occupations were listed. The following occupations were listed under the respective headings:

I. Realistic, mechanic, civil engineer, rancher, hunter-trapper

II. Intellectual. scientific research worker, astronomer

III. Social. social worker, high school teacher

IV. Conventional. certified public accountant, bookkeeper

V. Enterprising. sales manager, life-insurance salesman

VI. Artistic. musician, artist

Subjects were asked to indicate their liking for each of these occupations by assigning a value from 1 (dislike quite a bit) to 4 (like quite a bit) to each occupation. They were instructed to disregard considerations such as salary, future advancement, permanency, training, and ability and consider only whether they would enjoy a particular type of work. Information about father's occupation and education was also obtained.[1] Procedures developed by Hollingshead (4) were used to convert these data to quantitative measures of social position.

For each of the occupations listed, there were always a few subjects who failed to respond. Consequently, the true Ns for the measures reported in Tables 1 and 2 are slightly lower than 544 in all cases but never less than 531.

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1. Two questions about smoking behavior were also asked. Results for these items are not discussed in this paper.

Table 1

Mean Preference for Realistic and Intellectual Occupations

(4 = like quite a bit; 1 = dislike quite a bit)

Occupations and Occupational Categories	Subject's Birth Order	Type of Sibling Brother	Sister
I. Realistic			
1. Mechanic	First	1.90	1.94
	Second	2.19	2.07
2. Civil engineer	First	2.30	2.36
	Second	2.49	2.46
3. Hunter-trapper	First	2.39	2.53
	Second	2.51	2.51
4. Rancher	First	2.34	2.37
	Second	2.49	2.32
II. Intellectual			
5. Scientific research worker	First	2.87	2.66
	Second	2.72	2.60
6. Astronomer	First	2.27	2.41
	Second	2.13	2.29
Approximate number of subjects in each group	First	134	157
	Second	116	137

Table 2

Mean Preference for Social, Conventional, Enterprising and Artistic Occupations

(4 = like quite a bit; 1 = dislike quite a bit)

Occupations and Occupational Categories	Subject's Birth Order	Type of Sibling Brother	Sister
III. Social			
1. Social worker	First	2.24	2.42
	Second	2.39	2.32
2. High school teacher	First	2.21	2.34
	Second	2.32	2.49
IV. Conventional			
3. Certified public accountant	First	2.17	2.38
	Second	2.23	2.07
4. Bookkeeper	First	1.58	1.72
	Second	1.54	1.58
V. Enterprising			
5. Life-insurance salesman	First	1.93	2.04
	Second	1.96	1.83
6. Sales manager	First	2.46	2.38
	Second	2.41	2.29
VI. Artistic			
7. Artist	First	2.15	2.30
	Second	2.12	2.29
8. Musician	First	2.28	2.34
	Second	2.32	2.55

RESULTS

Mean preferences for the four realistic occupations and two intellectual occupations are presented in Table 1. For each occupation, the data were analyzed with a 2 X 2 factorial analysis of variance for unweighted means (9). In addition, specific comparisons were performed between adjacent pairs of means. Men with an older sister were expected to display greater preference for realistic occupations than men with an older brother but, for each realistic occupation, the results fail to support this prediction. First-born men were expected to display stronger preference for intellectual occupations than second-born men but results do not support this prediction for either intellectual occupation. For the occupation "mechanic," there was an unanticipated main effect of birth order ($F = 6.29$, $p < .05$). The second born displayed greater preference for being a mechanic than the first born with the difference being largest among men with a brother. All other effects in Table 1 were nonsignificant.

Table 2 presents mean preferences for eight additional occupations for which no predictions were made. Among men with a sister, the first born expressed greater liking than the second born for the occupations of "certified public account" ($F = 8.02$, $p < .01$) and "life insurance salesman" ($F = 4.08$, $p < .05$). In addition, the interaction term was significant for the occupation of "certified public accountant." All other effects in Table 2 were nonsignificant.

In evaluating the importance of significant effects obtained in Tables 1 and 2, it is essential to note that, for each of the 14

occupations, seven F ratios were computed. Consequently, the number of values of F which exceed the critical value of 3.84 is scarcely greater than 5% of the total number of F ratios computed.

The four groups did not differ with respect to father's educational level of father's occupational level. The overall mean for the sample on Hollingshead's (4) 7-point Educational Scale was 2.98 (a scale value of 3 indicates that the father has had partial college training). The overall mean for the sample on Hollingshead's (4) 7-point Occupational Scale was 2.66, a value which indicates that subjects tended to come from families with fairly high rank in the occupational status structure.[2]

DISCUSSION

This study has attempted to detect relationships between the independent variables of birth order and sex of sibling and the dependent variable of occupational preferences. Relationships were predicted when earlier findings indicated that specific sibling associations might be linked to specific occupational preferences by virtue of common connections with intervening variables of personality and interest. Men with an older sister were expected to display stronger preference for occupations of the realistic type than men with an older brother. In addition, first-born men were expected to display stronger preference for occupations of the intellectual type than second-born men. The results

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[2]On both the Education and Occupational Scales, lower values indicate higher status.

of the study were quite disappointing. Neither hypothesis was confirmed and the few significant effects that were obtained might well be attributed to chance. The meager findings made it essential to assess the methodological adequacy of the study. To the extent that the study's failure cannot be attributed to methodological shortcomings, it is necessary to question the validity of the assumptions on which the study was based.

The study seems relatively free from serious methodological flaws which could account for the negative results. First, the negative results cannot be readily attributed to insufficient sample size. Enough subjects were tested to detect relationships of even modest strength. Second, the negative results cannot be readily attributed to the unique nature of the occupations which subjects rated. Four realistic and two intellectual occupations were used. The chances of selecting six occupations whose unique properties would obscure underlying relationships are small. Third, the negative results cannot be readily attributed to the four-point response scale that was used. The number of points was large enough to yield wide dispersion of responses both between and within subjects. For all occupations and for most individuals, responses were widely distributed across the four response categories. Consequently, it seems unlikely that the discriminative power and reliability of the response scale differs substantially from that of other *a priori* response scales which use a Likert-type format.

In the absence of obvious methodological shortcomings, the assumptions used to derive predictions must be reexamined. Errors in these assumptions could have occurred at several points. For example, incorrect generalizations may have been drawn from available studies of the effect

of sibling associations on interest patterns and personality This error could have occurred when it was assumed that men with an older sister resemble Holland's realistic type to a greater extent than do men with an older brother. The assumption was based on Leventhal's (5) finding that men with an older sister are more interested in outdoor and technical activities and display greater athletic skill. However, Holland's (3) definition of the realistic type is very comprehensive and includes a wide variety of traits and behaviors. Since Leventhal assessed a relatively small portion of the behaviors which characterize the realistic type, there could be many respects in which men with an older sister are not more similar to the realistic type than men with an older brother. Consequently, predictions based on the assumption that they are would not be confirmed.

Another type of error could have occurred when it was assumed that the classification of occupations and individuals with respect to Holland's (3) typology permits accurate prediction of occupational preferences. Holland's theory will yield accurate predictions only to the extent that the types are independent and the occupations classified correctly with respect to types. To the degree that the types overlap or that occupations are misclassified, an individual whose personality fits a particular type would prefer occupations of other types and the theory would generate inaccurate predictions. Holland's (2,3) own work suggests that overlap between types may pose a problem for his theory. Using an inventory which assessed preferences for occupations representing the six types, Holland has reported fairly sizeable correlations between several of the scales which measure preferences for the different

types of occupations. Consequently, problems of non-independence of types and miscategorization of occupations could be partly responsible for the negative results of the present study.

There is one negative result which cannot be readily attributed to errors in underlying assumptions. Because Leventhal (5) found that men with an older sister were more likely to list engineering as a preferred occupation, men with an older sister were expected to rate this occupation more favorably than men with an older brother. The absence of such a difference could stem from several causes. Leventhal's preference measure was an open-end question on an admissions application form which asked students to indicate their two most preferred occupations. In addition, Leventhal's subjects were entering a university in which engineering is a major field of study and many of them intended to enter the engineering curriculum. In the present study, preference measures were obtained in a mass-testing session with a questionnaire which made it clear that subjects' preference responses were hypothetical in nature and would not affect their future. Also, subjects were entering a university in which there is no school of engineering, a fact indicating that few, if any, planned to become engineers. Consequently, the subject populations used in the two studies probably differ with respect to their background and interests, their set at the time the preference measures were administered, and the nature and quantity of information they possessed about the occupation of engineering. It is perfectly reasonable that different results would be obtained in populations which differ in these ways but the exact cause of the discrepant findings remains obscure.

CONCLUSIONS AND RECOMMENDATIONS

Aside from testing specific hypotheses, the present study was addressed to the broader issue of assessing the potential utility of more extensive investigations of the effect of sibling associations on occupational preferences. This is an important question because previous findings are scattered in nature and of limited theoretical significance. In the writer's judgment, findings about relationships between sibling associations and occupational preferences will have the status of interesting but relatively uninformative curiosities until they are meaningfully integrated with comprehensive theories of vocational choice. As to the usefulness of investing substantial amounts of time and money in further studies of the present type, one can only make an educated guess. The results of this study provide little encouragement for the hope that, at present, such data can be integrated meaningfully into the framework of existing theories about the development of occupational preferences. A systematic attempt was made to predict and discover relationships between sibling associations and occupational preferences and place them in the context of a major theory of vocational choice. However, little has come of it. This outcome implies that studies of the present type are premature at this time.

The preceding discussion of possible causes of the negative results suggests an alternative strategy for future investigations. The present study attempted to predict relationships between independent and dependent variables by assuming they were linked together through common intervening variables of personality and interest patterns. The

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problem with this strategy is that too little is known about the links between sibling associations and occupational preferences on the one hand, and the intervening variables of personality and interest patterns on the other. Much more has to be learned about the influence of sibling associations on the development of interests and personality and about the influence of interests and personality on occupational preferences before studies of the present type can suceed. Thus, for the immediate future, it is recommended that research should pursue two separate paths, the first examining the effect of sibling associations on the development of personality and interest patterns and the second examining the effect of personality and interests on occupational preferences. Only when there is greater understanding of the relationship of the intervening variables to the independent and dependent variables will it be possible to predict with accuracy relationships between sibling associations and occupational preferences.

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REFERENCES

1. Altus, W. D. "Birth Order and its Sequelae." Science, 1966, Vol. 151.

2. Holland, J. L. Vocational Preference Inventory Manual. Sixth rev., Educational Research Associates, 1965.

3. Holland, J. L. The Psychology of Vocational Choice. Waltham: Blaisdell, 1966.

4. Hollingshead, A. B. The Two Factor Index of Social Position. New Haven: A. B. Hollingshead, 1965.

5. Leventhal, G. S. "The Influence of Brothers and Sisters on Sex-Role Behavior." Journal of Personality and Social Psychology, in press.

6. Schachter, S. "Birth Order, Eminence, and Higher Education." American Sociological Review, 1963, Vol. 28, pp. 757-767.

7. Sutton-Smith, B., Roberts, J. M., and Rosenberg, B. G. "Sibling Associations and Role Involvement." Merrill-Palmer Quarterly of Behavior and Development, 1964, Vol. 10, pp. 25-38.

8. Very, P. S., and Zannini, J. A. "Relation Between Birth Order and Being a Beautician." Journal of Applied Psychology, 1969, Vol. 53, pp. 149-151.

9. Winer, B. J. Statistical Principles in Experimental Design. New York: McGraw-Hill, 1962.

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APPENDIX A

The questions on this page are for research purposes. Answer all of them as accurately as you can. Be sure not to skip any of them.

1. NAME (PRINT CLEARLY) _____
(last) (first) (middle)

2. YOUR AGE (TO NEAREST 1/2 YEAR)_____. 3. STUDENT NO._____

4. How many older sisters do you have? (circle one) 1 2 3 or more

5. How many older brothers do you have? (circle one) 1 2 3 or more

6. How many younger sisters do you have? (circle one) 1 2 3 or more

7. How many younger brothers do you have? (circle one) 1 2 3 or more

8. Carefully list the age of each of your sisters to the nearest 1/2 year_____

9. List the age of each of your brothers to the nearest 1/2 year_____
_____

10. Are any of your brothers or sisters step-siblings or half-siblings?

11. Father's education (if deceased, give his education at time of death).
_____

12. Father's occupation (what he actually does). If deceased, give his occupation at time of death._____

13. Do you smoke? (circle one) YES NO

14. How many of the following do you smoke on an average day?
Cigarettes (indicate the number of cigarettes, NOT the number of packs) _____
Cigars_____
Pipefuls_____

15. Indicate next to each occupation listed below whether you would like that kind of work or not. Disregard considerations of salary or future advancement and consider only whether or not you would like the work. The question is not whether you would take up that occupation permanently, but merely whether or not you would enjoy that kind of work regardless of necessary skills, abilities or training which you may or may not have. To show your degree of liking for the occupation, write a number from 1 to 4 next to it. 4 means the most favorable rating, 1 the least favorable.

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WHAT EACH NUMBER MEANS

4 = like quite a bit
3 = like somewhat
2 = dislike somewhat
1 = dislike quite a bit

a. Certified public accountant_____
b. Musician_____
c. Social worker_____
d. Rancher_____
e. Scientific research worker_____
f. Sales manager_____
g. Civil engineer_____
h. Bookkeeper_____
i. High school teacher_____
j. Artist_____
k. Mechanic_____
l. Astronomer_____
m. Life insurance salesman_____
n. Hunter-trapper_____

VT 014 655

ENGINEERING EMPLOYMENT AND UNEMPLOYMENT DATA, 1971. ORIGINAL DATA FROM 1971 NATIONAL SURVEY OF ENGINEERING EMPLOYMENT.

ENGINEERS JOINT COUNCIL, NEW YORK, N.Y.
ENGINEERING MANPOWER COMMISSION.
NATIONAL SCIENCE FOUNDATION, WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
ENGINEERING MANPOWER COMMISSION, ENGINEERS JOINT COUNCIL, 345 EAST 47TH STREET, NEW YORK, N.Y. 10017 ($5.00)
PUB DATE - NOV71 32P.

DESCRIPTORS - *EMPLOYMENT STATISTICS; *ENGINEERS; UNEMPLOYMENT; *OCCUPATIONAL SURVEYS; TABLES (DATA); EMPLOYMENT OPPORTUNITIES

ABSTRACT - TO DETERMINE THE EXTENT OF THE EMPLOYMENT PROBLEM IN THE ENGINEERING PROFESSION RESULTING FROM A WORSENING ECONOMIC CLIMATE IN 1970, A SURVEY WAS CONDUCTED OF MEMBERS OF 23 ENGINEERING SOCIETIES. QUESTIONNAIRES WERE MAILED TO 98,000 INDIVIDUALS, IN A 20 PERCENT RANDOM SAMPLE OF MEMBERS. THE RESULTING TABLES, WHICH ARE BASED ON MORE THAN 59,000 RESPONSES, PRESENT DATA ON EMPLOYMENT STATUS BY INDIVIDUAL CHARACTERISTICS SUCH AS EDUCATION, AGE, SEX, CITIZENSHIP, AND TYPE OF EMPLOYER. COMPARISONS OF 1971 SURVEY RESULTS WITH 1970 EMPLOYMENT STATUS ARE INCLUDED. (BH)

VT 014 655

Original Data from the 1971 National Survey of Engineering Employmen

Conducted by

ENGINEERS JOINT COUNCIL

for the

NATIONAL SCIENCE FOUNDATION

Published by

ENGINEERING MANPOWER COMMISSION

of ENGINEERS JOINT COUNCIL

345 East 47th Street

New York, New York 10017

VT014655

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ENGINEERING EMPLOYMENT AND UNEMPLOYMENT DATA, 1971

Original Data from the 1971 National Survey of Engineering Employment

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New York, New York 10017

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November 1971

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INTRODUCTION

The National Survey of Engineering Employment

As the economic situation worsened during 1970 and 1971 and overall unemployment rates climbed, Engineers Joint Council urged the government to undertake a comprehensive survey in order to provide reliable statistics on the extent and nature of the employment problem. In May 1971 the National Science Foundation launched a survey of some 300,000 scientists and commissioned EJC to put together a special mailing list consisting of the combined and unduplicated membership rolls of twenty-three engineering societies that were broadly representative of all major disciplines and specialties in the United States. The societies included are listed on page 7 of this report. From this list, which included approximately 500,000 names and addresses, a sample consisting of every fifth name was drawn. Questionnaires were mailed to the resulting set of 98,000 individuals. By early August a response rate of 65 percent had been obtained and 59,200 usable questionnaires were prepared for computer analysis.

It should be noted that the survey was intended to be representative of engineering society members but not necessarily the total U.S. engineering population. The mailing list is believed to have included about 40 percent of the engineers in the nation. In view of the membership standards of the professional societies, the survey respondents constitute a better qualified, more experienced, and more professionally oriented group than engineers as a whole.

Those engineers who do not hold membership in a national professional engineering society are outside the scope of this survey. Since a selected portion of the total engineering population was sampled, the absolute numbers for any variable should not be considered as national totals. The percentage relationships developed in the survey, however, are considered to be representative for the members of engineering societies. The procedures used do not permit estimation of population totals in terms of the individual variables.

The survey is subject to sampling errors, response errors, nonresponse bias, and bias inherent in the mail list from which the sample was drawn. With respect to sampling errors alone, the error range depends upon both the size of the cell examined and the percentage of cases within

the cell with a particular characteristic. For example, the unemployment rate for all respondents, 3.0 percent, has a sampling error range of ± 0.1 percent at the 90-percent confidence level. A cell with about 1,400 responses and an unemployment rate of 2.9 percent has a sampling error range of ± 0.7 percent at the 90-percent confidence level. Biases introduced by response errors and nonresponse have not been measured, but respondents show characteristics similar to those reported in a 1969 survey using an Engineers Joint Council mailing list closely resembling the one used for this survey.

A summary of the statistical findings of the engineers' employment survey was published on September 23, 1971 by the National Science Foundation in Science Resources Studies Highlights, "Unemployment Rate for Engineers, June-July 1971," NSF 71-33. A similar survey of scientists was conducted and preliminary results published in Science Resources Studies Highlights, "Unemployment Rates for Scientists, Spring, 1971," NSF 71-26, dated July 2, 1971.

A full report containing more detailed data on the respondents to these employment surveys will be available at a later date from the Superintendent of Documents, U.S. Government Printing Office.

Instructions for the Use of the Data Tables in This Report

The tables in this report give the numbers of survey respondents according to characteristics set forth in the questionnaires. For details regarding the wording of specific questions, refer to the facsimile questionnaire reproduced at the end of this report. The data are presented in the form of a "total" column and seven "populations" whose composition is described below. Roman numerals I to XXXI identify the characteristics analyzed, with the exception that table XXIV, which gave the SMSA (Standard Metropolitan Statistical Area as delineated by the U.S. Department of Labor) of respondents' employment in March 1970 has been omitted to save space.

The seven "populations" included in this report were selected as the most generally useful of those produced by the National Science Foundation and are defined as follows:

Population W - Engineering related employed
Population X - Nonengineering related employed
Population P - Full-time employed, engineering related

Population N - Part-time employed, engineering related, indicating "YES" to seeking full-time employment

Population S - Full-time employed, nonengineering related, and checked item 7 in question 11b of survey form (engineering related position not available.)

Population U - Part-time employed, nonengineering related, indicating "YES" to seeking full-time employment and checked item 7 in question 11b of survey form (engineering related position not available.)

Population G - Not employed and seeking employment.

The relationships that exist among the various populations can be seen in section I of the data table, "Employment Status, 1971." Other important combinations are as follows:

Populations W plus X plus G equal the "labor force" as defined by the U.S. Department of Labor.

The "Total" column minus the labor force gives the number of survey respondents who were retired, or unemployed and not seeking employment. (These populations are not shown in the data tables to save space.)

The "unemployment rate" as defined by the U.S. Department of Labor is equal to Population G divided by the labor force.

Populations N plus S plus U plus G equal the "employment problem" group as defined by Engineers Joint Council.

Population P plus the "employment problem" group constitutes the total in or seeking full-time engineering work.

The "employment problem" rate as defined by Engineers Joint Council is equal to the "employment problem" group divided by the total in or seeking full-time engineering work, or

$$\frac{N + S + U + G}{P + N + S + U + G}$$

Illustrative computations of the unemployment rate and the "employment problem" rate for the entire survey are as follows:

ENGINEERING UNEMPLOYMENT RATE AS COMPUTED BY THE NATIONAL SCIENCE FOUNDATION

Employment Status	Number	Percent
Total survey respondents	59,200	
Not employed and not seeking employment or retired	3,500	
In labor force	55,800	100.0
Employed in engineering work	50,400	90.3
Employed in non-engineering work	3,700	6.7
Unemployed and seeking employment	1,700	3.0

ENGINEERING "EMPLOYMENT PROBLEM" RATE AS COMPUTED BY ENGINEERS JOINT COUNCIL

Employment Status	Number	Percent
Total Survey respondents	59,245	
Not employed and not seeking employment or retired	3,460	
Employed in non-engineering work by choice	3,224	
Employed part-time in engineering by choice	535	
Total in or seeking full-time engineering work	52,026	100.0
Employed full-time in engineering work	49,566	95.3
Not employed full-time in engineering work	2,460	4.7
Employed part-time in engineering, seeking full-time	294	0.6
Employed in non-engineering work, engineering not available	498	0.9
Unemployed and seeking employment	1,668	3.2

Engineering Societies Included in the National Survey of Engineering Employment, 1971

American Association of Cost Engineers
American Institute of Aeronautics and Astronautics
American Institute of Chemical Engineers
American Institute of Industrial Engineers
American Institute of Mining, Metallurgical, and Petroleum Engineers
American Institute of Plant Engineers
American Society for Engineering Education
American Society for Metals
American Society for Quality Control
American Society for Testing and Materials
American Society of Agricultural Engineers
American Society of Civil Engineers
American Society of Heating, Refrigerating, and Air Conditioning Engineers
American Society of Mechanical Engineers
Institute of Electrical and Electronics Engineers
Instrument Society of America
Society for Experimental Stress Analysis
Society of American Military Engineers
Society of Automotive Engineers
Society of Fire Protection Engineers
Society of Manufacturing Engineers
Society of Naval Architects and Marine Engineers
Society of Women Engineers

1971 EMPLOYMENT SURVEY - ENGINEERS
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY

	POPUL			
	TOTAL	W	X	P
ALL ENGINEERS - - - - - - - - - - - - - - - - -	59,245	50,395	3,722	49,5
I. EMPLOYMENT STATUS, 1971				
PRIOR TO MARCH, 1970				
FULL-TIME EMPLOYED				
ENGINEERING RELATED - - - - - - -	44,808	44,808	------	44,8
NONENGINEERING RELATED - - - - -	2,480	------	2,480	----
PART-TIME EMPLOYED				
ENGINEERING RELATED - - - - - - -	349	349	------	----
NONENGINEERING RELATED - - - - -	57	------	57	----
AFTER MARCH, 1970				
FULL-TIME EMPLOYED				
ENGINEERING RELATED - - - - - - -	4,758	4,758	------	4,7
NONENGINEERING RELATED - - - - -	1,014	------	1,014	----
PART-TIME EMPLOYED				
ENGINEERING RELATED - - - - - - -	480	480	------	----
NONENGINEERING RELATED - - - - -	171	------	171	----
NOT EMPLOYED & SEEKING EMPLOYMENT - -	1,668	------	------	----
NOT EMPLOYED & NOT SEEKING EMPLOYMENT	441	------	------	----
RETIRED - - - - - - - - - - - - - - - - -	3,019	------	------	----
II. HIGHEST DEGREE				
DOCTORATE - - - - - - - - - - - - - - - -	4,976	4,485	232	4,39
MASTER'S - - - - - - - - - - - - - - - -	14,004	11,996	957	11,69
BACHELOR'S - - - - - - - - - - - - - - -	32,505	27,905	2,003	27,5
ASSOCIATE - - - - - - - - - - - - - - - -	1,592	1,311	145	1,28
NONE - - - - - - - - - - - - - - - - - -	5,134	4,135	328	4,06
NO REPORT - - - - - - - - - - - - - - - -	1,034	563	57	54
III. AGE				
24 AND UNDER - - - - - - - - - - - - - -	1,361	1,068	144	1,01
25-29 - - - - - - - - - - - - - - - - - -	5,866	5,131	455	5,02
30-34 - - - - - - - - - - - - - - - - - -	7,672	6,941	503	6,85
35-39 - - - - - - - - - - - - - - - - - -	7,776	7,080	490	7,0
40-44 - - - - - - - - - - - - - - - - - -	8,337	7,584	497	7,52
45-49 - - - - - - - - - - - - - - - - - -	9,297	8,387	616	8,33
50-54 - - - - - - - - - - - - - - - - - -	7,193	6,441	452	6,36
55-59 - - - - - - - - - - - - - - - - - -	4,749	4,135	291	4,06
60-64 - - - - - - - - - - - - - - - - - -	2,928	2,263	161	2,19
65-69 - - - - - - - - - - - - - - - - - -	1,766	695	56	59
70 AND OVER - - - - - - - - - - - - - - -	1,637	294	24	19
NO REPORT - - - - - - - - - - - - - - - -	663	376	33	36

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - - -	59,245	50,395	3,722	49,566	294	408	90	1,668
1971								
70								
ED								
LATED - - - - - - -	44,808	44,808	------	44,808	------	------	------	------
RELATED - - - - -	2,480	------	2,480	------	------	98	------	------
ED								
LATED - - - - - - -	349	349	------	------	70	------	------	------
RELATED - - - - -	57	------	57	------	------	------	9	------
ED								
LATED - - - - - - -	4,758	4,758	------	4,758	------	------	------	------
RELATED - - - - -	1,014	------	1,014	------	------	310	------	------
ED								
LATED - - - - - - -	480	480	------	------	224	------	------	------
RELATED - - - - -	171	------	171	------	------	------	81	------
KING EMPLOYMENT - -	1,668	------	------	------	------	------	------	1,668
SEEKING EMPLOYMENT	441	------	------	------	------	------	------	------
- - - - - - - - - - -	3,019	------	------	------	------	------	------	------
- - - - - - - - - - -	4,976	4,485	232	4,393	45	11	2	90
- - - - - - - - - - -	14,004	11,996	957	11,696	110	100	20	426
- - - - - - - - - - -	32,505	27,905	2,003	27,575	109	223	58	857
- - - - - - - - - - -	1,592	1,311	145	1,287	3	32	5	59
- - - - - - - - - - -	5,134	4,135	328	4,066	21	39	5	214
- - - - - - - - - - -	1,034	563	57	549	6	3	------	22
- - - - - - - - - - -	1,361	1,068	144	1,018	9	30	11	71
- - - - - - - - - - -	5,866	5,131	455	5,026	27	58	9	193
- - - - - - - - - - -	7,672	6,941	503	6,851	45	54	5	168
- - - - - - - - - - -	7,776	7,080	490	7,027	26	43	10	173
- - - - - - - - - - -	8,337	7,584	497	7,529	27	55	12	225
- - - - - - - - - - -	9,297	8,387	616	8,334	35	63	14	260
- - - - - - - - - - -	7,193	6,441	452	6,368	35	52	16	237
- - - - - - - - - - -	4,749	4,135	291	4,066	40	33	8	187
- - - - - - - - - - -	2,928	2,263	161	2,195	20	14	4	106
- - - - - - - - - - -	1,766	695	56	592	11	4	------	27
- - - - - - - - - - -	1,637	294	24	192	7	1	------	11
- - - - - - - - - - -	663	376	33	368	2	1	1	10

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTIN

			POPUL	
	TOTAL	W	X	
IV. CURRICULUM OF HIGHEST DEGREE				
ENGINEERING CURRICULA - - - - - - - -	43,528	38,135	2,280	37,
AEROSPACE ENGINEERING - - - - - - -	1,500	1,314	79	1,
AGRICULTURAL ENGINEERING - - - - -	728	629	63	
AUTOMATION/CONTROL - - - - - - - -	121	103	11	
CHEMICAL ENGINEERING - - - - - - -	3,234	2,829	227	2,
CIVIL ENGINEERING - - - - - - - - -	6,961	6,204	207	6,
COMMUNICATIONS - - - - - - - - - -	183	146	16	
ELECTRICAL ENGINEERING - - - - - -	10,398	9,038	473	8,
ELECTRONICS ENGINEERING - - - - - -	2,769	2,451	146	2,
ENGINEERING, GENERAL - - - - - - -	637	548	45	
ENGINEERING SCIENCES - - - - - - -	435	386	23	
ENVIRONMENTAL/SANITARY ENGINEERING	377	347	11	
GEOLOGICAL ENGINEERING - - - - - -	269	219	19	
INDUSTRIAL ENGINEERING - - - - - -	1,736	1,459	197	1,
MANUFACTURING ENGINEERING - - - - -	172	152	9	
MECHANICAL ENGINEERING - - - - - -	9,071	8,001	454	7,
METALLURGICAL ENGINEERING - - - - -	1,577	1,386	94	1,
MINING ENGINEERING - - - - - - - -	476	376	38	
NAVAL ARCH/MARINE ENGINEERING - - -	289	256	13	
NUCLEAR ENGINEERING - - - - - - - -	114	104	4	
PETROLEUM ENGINEERING - - - - - - -	744	666	55	
PLANT/FACILITIES ENGINEERING - - -	16	11	1	
PRODUCT ENGINEERING - - - - - - - -	20	16	1	
SYSTEMS ENGINEERING - - - - - - - -	146	132	7	
TRANSPORTATION ENGINEERING - - - -	102	94	4	
OTHER ENGINEERING - - - - - - - - -	1,453	1,268	83	1
NONENGINEERING CURRICULA - - - - - -	6,523	5,163	846	5
COMPUTER/MATHEMATICS - - - - - - -	382	321	33	
EDUCATION - - - - - - - - - - - - -	291	223	39	
MANAGEMENT/BUSINESS ADMINISTRATION	2,295	1,806	370	1
SCIENCE, BASIC - - - - - - - - - -	1,082	894	76	
OTHER NONENGINEERING - - - - - - -	2,473	1,919	328	1
NO REPORT - - - - - - - - - - - - - -	9,194	7,097	596	6
V. SEX				
MALE - - - - - - - - - - - - - - - - -	58,924	50,194	3,691	49
FEMALE - - - - - - - - - - - - - - - -	321	201	31	
VI. CITIZENSHIP				
US CITIZEN - - - - - - - - - - - - - -	57,173	48,808	3,624	48
NON-US CITIZEN - - - - - - - - - - - -	1,495	1,336	66	1
NO REPORT - - - - - - - - - - - - - -	577	251	32	

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
OF HIGHEST DEGREE	TOTAL	W	X	P	N	S	U	G
CURRICULA - - - - - - - - -	43,528	38,135	2,280	37,517	222	272	63	1,123
ENGINEERING - - - - - - -	1,500	1,314	79	1,289	9	25	4	69
RAL ENGINEERING - - - - -	728	629	63	616	2	4	1	9
N/CONTROL - - - - - - - - -	121	103	11	100	1	3	1	4
ENGINEERING - - - - - - - -	3,234	2,829	227	2,803	6	15	1	60
INEERING - - - - - - - - - -	6,961	6,204	207	6,100	34	10	------	77
TIONS - - - - - - - - - - -	183	146	16	141	1	4	1	11
L ENGINEERING - - - - - -	10,398	9,038	473	8,889	53	75	25	317
CS ENGINEERING - - - - - -	2,769	2,451	146	2,414	15	36	13	143
NG, GENERAL - - - - - - -	637	548	45	543	1	4	1	21
NG SCIENCES - - - - - - -	435	386	23	378	3	6	------	13
NTAL/SANITARY ENGINEERING	377	347	11	335	4	------	------	6
L ENGINEERING - - - - - -	269	219	19	210	1	1	------	9
L ENGINEERING - - - - - -	1,736	1,459	197	1,437	13	20	6	50
RING ENGINEERING - - - - -	172	152	9	150	1	1	------	9
L ENGINEERING - - - - - -	9,071	8,001	454	7,902	39	41	7	217
ICAL ENGINEERING - - - - -	1,577	1,386	94	1,352	15	9	------	44
GINEERING - - - - - - - - -	476	376	38	363	5	2	------	8
H/MARINE ENGINEERING - - -	289	256	13	250	1	------	------	7
NGINEERING - - - - - - - -	114	104	4	102	2	1	------	3
ENGINEERING - - - - - - -	744	666	55	657	5	4	------	2
ILITIES ENGINEERING - - -	16	11	1	10	------	1	------	2
NGINEERING - - - - - - - -	20	16	1	15	------	1	------	1
NGINEERING - - - - - - - -	146	132	7	130	1	------	------	6
ATION ENGINEERING - - - -	102	94	4	94	------	1	------	1
INEERING - - - - - - - - -	1,453	1,268	83	1,237	10	8	3	34
ING CURRICULA - - - - - -	6,523	5,163	846	5,073	34	68	14	229
MATHEMATICS - - - - - - -	382	321	33	311	5	4	3	19
- - - - - - - - - - - - - -	291	223	39	218	------	5	------	6
T/BUSINESS ADMINISTRATION	2,295	1,806	370	1,790	6	30	6	78
BASIC - - - - - - - - - - -	1,082	894	76	862	13	11	1	47
ENGINEERING - - - - - - -	2,473	1,919	328	1,892	10	18	4	79
- - - - - - - - - - - - - - -	9,194	7,097	596	6,976	38	68	13	316
- - - - - - - - - - - - - - -	58,924	50,194	3,691	49,387	290	402	89	1,627
- - - - - - - - - - - - - - -	321	201	31	179	4	6	1	41
- - - - - - - - - - - - - - -	57,173	48,808	3,624	48,035	262	389	88	1,594
ZEN - - - - - - - - - - - -	1,495	1,336	66	1,289	29	15	2	68
- - - - - - - - - - - - - - -	577	251	32	242	3	4	------	6

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUE

			POPULA	
	TOTAL	W	X	P
VII. DEGREE YEAR OF FIRST DEGREE				
1900 OR EARLIER	4	------	1	-----
1901-1905	6	------	------	-----
1906-1910	21	2	------	
1911-1915	45	10	1	
1916-1920	97	19	1	1
1921-1925	254	77	5	4
1926-1930	447	262	20	24
1931-1935	718	609	39	59
1936-1940	1,076	951	67	92
1941-1945	1,414	1,273	82	1,24
1946-1950	2,681	2,418	177	2,39
1951-1955	2,540	2,295	166	2,27
1956-1960	3,401	3,133	183	3,08
1961	787	708	52	70
1962	716	654	40	64
1963	720	651	42	63
1964	679	597	53	57
1965	612	538	46	52
1966	554	482	36	46
1967	374	321	23	31
1968	207	173	17	16
1969	139	114	7	10
1970	34	20	3	1
1971	1	1	------	
NO REPORT	41,718	35,087	2,661	34,59
VIII. STUDENT STATUS				
FULL-TIME STUDENT	749	370	73	20
PART-TIME STUDENT	3,237	2,911	220	2,83
IX. REGISTRATION				
YES				
PROFESSIONAL ENGINEER	19,116	16,540	715	16,22
ENGINEER-IN-TRAINING	4,305	3,913	223	3,84
NO	33,907	28,661	2,652	28,24
NO REPORT	1,917	1,281	132	1,25

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
F FIRST DEGREE								
ER - - - - - - - - - - - -	4	------	1	------	------	------	------	------
- - - - - - - - - - - - -	6	------	------	------	------	------	------	------
- - - - - - - - - - - - -	21	2	------	2	------	------	------	------
- - - - - - - - - - - - -	45	10	1	4	------	------	------	------
- - - - - - - - - - - - -	97	19	1	11	------	------	------	1
- - - - - - - - - - - - -	254	77	5	48	2	1	------	1
- - - - - - - - - - - - -	447	262	20	240	5	------	------	9
- - - - - - - - - - - - -	718	609	39	592	9	5	1	17
- - - - - - - - - - - - -	1,076	951	67	927	12	9	3	41
- - - - - - - - - - - - -	1,414	1,273	82	1,248	13	3	------	49
- - - - - - - - - - - - -	2,681	2,418	177	2,390	19	20	8	74
- - - - - - - - - - - - -	2,540	2,295	166	2,271	14	18	2	66
- - - - - - - - - - - - -	3,401	3,133	183	3,088	28	18	3	67
- - - - - - - - - - - - -	787	708	52	701	4	5	------	19
- - - - - - - - - - - - -	716	654	40	642	3	1	------	15
- - - - - - - - - - - - -	720	651	42	634	6	4	------	17
- - - - - - - - - - - - -	679	597	53	578	12	3	------	23
- - - - - - - - - - - - -	612	538	46	522	4	6	------	20
- - - - - - - - - - - - -	554	482	36	464	6	3	------	23
- - - - - - - - - - - - -	374	321	23	315	3	6	1	22
- - - - - - - - - - - - -	207	173	17	165	3	4	1	14
- - - - - - - - - - - - -	139	114	7	106	1	1	------	11
- - - - - - - - - - - - -	34	20	3	19	------	------	1	5
- - - - - - - - - - - - -	1	1	------	1	------	------	------	------
- - - - - - - - - - - - -	41,718	35,087	2,661	34,598	150	301	70	1,174
S								
DENT - - - - - - - - - - -	749	370	73	201	41	4	4	91
DENT - - - - - - - - - - -	3,237	2,911	220	2,838	35	31	10	99
L ENGINEER - - - - - - -	19,116	16,540	715	16,221	106	56	16	339
TRAINING - - - - - - -	4,305	3,913	223	3,847	24	22	4	100
- - - - - - - - - - - - -	33,907	28,661	2,652	28,247	154	313	67	1,177
- - - - - - - - - - - - -	1,917	1,281	132	1,251	10	17	3	52

1971 EMPLOYMENT SURVEY - ENGINEERS
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY

X. WEEKS UNEMPLOYED SINCE MARCH 1, 1970	TOTAL	W	X
01	156	91	
02	204	144	
03	151	99	
04	251	184	
05	130	93	
06	236	161	
07	72	46	
08	244	162	
09	92	41	
10	181	105	
11	40	19	
12	235	145	
13	89	52	
14	96	63	
15	66	32	
16 TO 20	421	247	
21 TO 25	215	105	
26 TO 30	275	126	
31 TO 35	124	46	
36 TO 40	155	48	
41 TO 45	70	16	
46 TO 50	79	20	
51 TO 55	68	19	
56 TO 60	90	15	
61 OR MORE	127	9	-----
UNEMPLOYED, NO REPORT OF WEEKS UNEMPLOYED	251	104	
NONE	49,632	46,629	3,00
NO REPORT OF UNEMPLOYMENT	2,035	1,574	22
XI. BEGINNING DATE OF CURRENT EMPLOYMENT STATUS			
PRIOR TO MARCH 1970	47,838	45,157	2,53
MARCH 1970	473	341	7
APRIL 1970	411	309	6
MAY 1970	317	251	4
JUNE 1970	810	673	9
JULY 1970	447	325	6
AUGUST 1970	377	286	5
SEPTEMBER 1970	624	451	11
OCTOBER 1970	399	252	7
NOVEMBER 1970	369	254	5
DECEMBER 1970	293	186	4
JANUARY 1971	565	356	9
FEBRUARY 1971	448	268	6
MARCH 1971	523	301	7
APRIL 1971	520	279	8
MAY 1971	561	276	8
JUNE 1971	616	346	8
JULY 1971	134	84	2
NO REPORT	60	------	-----

1971 EMPLOYMENT SURVEY - ENGINEERS

HARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
ED SINCE MARCH 1, 1970	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - - - -	156	91	14	89	2	6	------	51
- - - - - - - - - - - -	204	144	16	140	1	7	1	44
- - - - - - - - - - - -	151	99	18	90	6	8	------	34
- - - - - - - - - - - -	251	184	22	176	5	11	------	45
- - - - - - - - - - - -	130	93	10	89	1	5	1	27
- - - - - - - - - - - -	236	161	29	149	3	14	1	46
- - - - - - - - - - - -	72	46	11	45	------	4	1	15
- - - - - - - - - - - -	244	162	35	151	5	13	7	47
- - - - - - - - - - - -	92	41	13	38	2	8	1	38
- - - - - - - - - - - -	181	105	23	95	8	11	------	53
- - - - - - - - - - - -	40	19	6	19	------	3	------	15
- - - - - - - - - - - -	235	145	34	128	9	16	5	56
- - - - - - - - - - - -	89	52	14	44	3	7	3	23
- - - - - - - - - - - -	96	63	14	56	5	6	3	19
- - - - - - - - - - - -	66	32	9	28	3	4	1	25
- - - - - - - - - - - -	421	247	55	216	23	24	7	119
- - - - - - - - - - - -	215	105	37	87	12	23	5	73
- - - - - - - - - - - -	275	126	51	100	15	22	9	98
- - - - - - - - - - - -	124	46	17	39	5	9	4	61
- - - - - - - - - - - -	155	48	22	37	9	12	5	85
- - - - - - - - - - - -	70	16	9	15	------	6	1	45
- - - - - - - - - - - -	79	20	7	14	5	1	1	52
- - - - - - - - - - - -	68	19	5	16	2	3	1	44
- - - - - - - - - - - -	90	15	9	10	4	3	2	66
- - - - - - - - - - - -	127	9	------	6	2	------	------	118
REPORT OF								
DYED - - - - - - - - - -	251	104	13	87	9	4	------	134
- - - - - - - - - - - -	49,632	46,629	3,003	46,185	114	159	13	------
NEMPLOYMENT - - - - - -	2,035	1,574	226	1,417	41	19	18	235
OF CURRENT EMPLOYMENT								
1970 - - - - - - - - - -	47,838	45,157	2,537	44,808	70	98	9	144
- - - - - - - - - - - -	473	341	70	306	11	12	2	62
- - - - - - - - - - - -	411	309	63	289	6	9	5	39
- - - - - - - - - - - -	317	251	45	235	6	[illegible]	[illegible]	21
- - - - - - - - - - - -	810	673	91	638	15	15	6	46
- - - - - - - - - - - -	447	325	62	306	7	13	5	60
- - - - - - - - - - - -	377	286	53	269	8	12	5	38
- - - - - - - - - - - -	624	451	115	390	21	36	5	58
- - - - - - - - - - - -	399	252	78	236	8	22	4	69
- - - - - - - - - - - -	369	254	55	234	12	15	7	60
- - - - - - - - - - - -	293	186	47	168	12	19	1	60
- - - - - - - - - - - -	565	356	96	306	29	22	8	113
- - - - - - - - - - - -	448	268	62	249	9	16	6	118
- - - - - - - - - - - -	523	301	79	264	23	36	5	143
- - - - - - - - - - - -	520	279	82	245	18	36	3	159
- - - - - - - - - - - -	561	276	86	254	10	22	8	199
- - - - - - - - - - - -	616	346	80	298	20	16	8	190
- - - - - - - - - - - -	134	84	21	71	9	3	------	29
- - - - - - - - - - - -	60	------	------	------	------	------	------	60

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	TOTAL	W	POPULAT X	POPULAT P
XII. TERMINATING DATE OF LAST ENGINEERING RELATED POSITION				
PRIOR TO MARCH 1970	1,752	------	1,752	------
MARCH 1970	40	------	40	------
APRIL 1970	39	------	39	------
MAY 1970	45	------	45	------
JUNE 1970	70	------	70	------
JULY 1970	50	------	50	------
AUGUST 1970	43	------	43	------
SEPTEMBER 1970	68	------	68	------
OCTOBER 1970	61	------	61	------
NOVEMBER 1970	32	------	32	------
DECEMBER 1970	42	------	42	------
JANUARY 1971	54	------	54	------
FEBRUARY 1971	36	------	36	------
MARCH 1971	30	------	30	------
APRIL 1971	32	------	32	------
MAY 1971	24	------	24	------
JUNE 1971	18	------	18	------
JULY 1971	1	------	1	------
NO REPORT	1,285	------	1,285	------
XIII. EXPLANATION FOR CURRENTLY BEING IN A NONENGINEERING RELATED POSITION				
NOT AN ENGINEER	164	------	164	------
PREFER NONENGR. RELATED POSITION	585	------	585	------
PROMOTED OUT OF ENGINEERING	989	------	989	------
BETTER PAY	245	------	245	------
LOCATIONAL PREFERENCE	58	------	58	------
LENGTH OF TIME AWAY FROM ENGINEERING	50	------	50	------
ENGR. RELATED POSITION NOT AVAILABLE	525	------	525	------
OTHER	445	------	445	------
NO REPORT	661	------	661	------
XIV. TYPE OF POSITION SEEKING				
FULL-TIME	1,407	------	------	------
PART-TIME	50	------	------	------
TEMPORARY	16	------	------	------
NO REPORT	195	------	------	------

1971 EMPLOYMENT SURVEY - ENGINEERS

TERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
LAST ENGINEERING								
- - - - - - - - - -	1,752	------	1,752	------	------	123	19	------
- - - - - - - - - -	40	------	40	------	------	18	4	------
- - - - - - - - - -	39	------	39	------	------	18	3	------
- - - - - - - - - -	45	------	45	------	------	14	7	------
- - - - - - - - - -	70	------	70	------	------	22	7	------
- - - - - - - - - -	50	------	50	------	------	15	6	------
- - - - - - - - - -	43	------	43	------	------	10	5	------
- - - - - - - - - -	68	------	68	------	------	20	3	------
- - - - - - - - - -	61	------	61	------	------	27	6	------
- - - - - - - - - -	32	------	32	------	------	9	2	------
- - - - - - - - - -	42	------	42	------	------	19	1	------
- - - - - - - - - -	54	------	54	------	------	19	3	------
- - - - - - - - - -	36	------	36	------	------	10	2	------
- - - - - - - - - -	30	------	30	------	------	10	1	------
- - - - - - - - - -	32	------	32	------	------	8	3	------
- - - - - - - - - -	24	------	24	------	------	4	2	------
- - - - - - - - - -	18	------	18	------	------	1	------	------
- - - - - - - - - -	1	------	1	------	------	------	------	------
- - - - - - - - - -	1,285	------	1,285	------	------	61	16	------
RENTLY BEING IN A ELATED POSITION								
- - - - - - - - - -	164	------	164	------	------	------	------	------
ATED POSITION - -	585	------	585	------	------	------	------	------
GINEERING - - - - -	989	------	989	------	------	------	------	------
- - - - - - - - - -	245	------	245	------	------	------	------	------
NCE - - - - - - - -	58	------	58	------	------	------	------	------
FROM ENGINEERING	50	------	50	------	------	------	------	------
ION NOT AVAILABLE	525	------	525	------	------	408	90	------
- - - - - - - - - -	445	------	445	------	------	------	------	------
- - - - - - - - - -	661	------	661	------	------	------	------	------
EEKING								
- - - - - - - - - -	1,407	------	------	------	------	------	------	1,407
- - - - - - - - - -	50	------	------	------	------	------	------	50
- - - - - - - - - -	16	------	------	------	------	------	------	16
- - - - - - - - - -	195	------	------	------	------	------	------	195

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVE

	TOTAL	W	
XV. TYPE OF EMPLOYER, 1971			
PRIVATE INDUSTRY OR BUSINESS - - - -	38,706	34,985	2,
SELF-EMPLOYED - - - - - - - - - - - - -	2,249	2,096	
COLLEGE OR UNIVERSITY - - - - - - - - -	3,615	3,380	
JUNIOR COLLEGE OR TECHNICAL INSTITUTE	282	237	
SECONDARY, ELEMENTARY, OR OTHER SCHOOL	66	39	
NONPROFIT ORGANIZATION - - - - - - - -	916	860	
FEDERAL GOVERNMENT - - - - - - - - - -	4,978	4,790	
MILITARY - - - - - - - - - - - - - - -	1,147	976	
STATE GOVERNMENT - - - - - - - - - - -	1,005	976	
LOCAL GOVERNMENT - - - - - - - - - - -	860	821	
OTHER - - - - - - - - - - - - - - - -	1,135	980	
NO REPORT - - - - - - - - - - - - - - -	826	255	
XVI. FIELD OF SPECIALIZATION, 1971			
AEROSPACE ENGINEERING - - - - - - - - -	3,861	3,467	
AGRICULTURAL ENGINEERING - - - - - - -	540	490	
AUTOMATION/CONTROL - - - - - - - - - -	860	810	
CHEMICAL ENGINEERING - - - - - - - - -	2,072	1,893	
CIVIL ENGINEERING - - - - - - - - - - -	5,626	5,402	
COMMUNICATIONS - - - - - - - - - - - -	1,398	1,282	
COMPUTER/MATHEMATICS - - - - - - - - -	1,293	1,142	
EDUCATION, GENERAL - - - - - - - - - -	419	361	
ELECTRICAL ENGINEERING - - - - - - - -	4,769	4,476	
ELECTRONICS ENGINEERING - - - - - - - -	4,262	3,852	
ENGINEERING, GENERAL - - - - - - - - -	2,343	2,225	
ENGINEERING SCIENCES - - - - - - - - -	479	450	
ENVIRONMENTAL/SANITARY ENGINEERING -	1,089	1,050	
GEOLOGICAL ENGINEERING - - - - - - - -	241	223	
INDUSTRIAL ENGINEERING - - - - - - - -	1,972	1,703	
MANAGEMENT/BUSINESS ADMINISTRATION -	3,091	2,659	
MANUFACTURING ENGINEERING - - - - - - -	2,751	2,420	
MECHANICAL ENGINEERING - - - - - - - -	5,232	4,896	
METALLURGICAL ENGINEERING - - - - - - -	1,797	1,640	
MINING ENGINEERING - - - - - - - - - -	439	402	
NAVAL ARCH/MARINE ENGINEERING - - - -	440	414	
NUCLEAR ENGINEERING - - - - - - - - - -	408	386	
PETROLEUM ENGINEERING - - - - - - - - -	1,149	1,047	
PLANT/FACILITIES ENGINEERING - - - -	1,406	1,292	
PRODUCT ENGINEERING - - - - - - - - - -	1,343	1,223	
SCIENCE, BASIC - - - - - - - - - - - -	312	278	
SYSTEMS ENGINEERING - - - - - - - - - -	1,610	1,466	
TRANSPORTATION ENGINEERING - - - - -	687	659	
OTHER ENGINEERING - - - - - - - - - - -	1,843	1,699	
OTHER NONENGINEERING - - - - - - - - -	436	212	
NO REPORT - - - - - - - - - - - - - - -	1,617	876	

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
OF EMPLOYER, 1971								
E INDUSTRY OR BUSINESS - - - -	38,706	34,985	2,416	34,733	103	278	60	1,305
MPLOYED - - - - - - - - - - - - -	2,249	2,096	116	1,852	80	16	4	37
E OR UNIVERSITY - - - - - - - - -	3,615	3,380	151	3,175	79	25	3	84
COLLEGE OR TECHNICAL INSTITUTE	282	237	29	226	4	6	1	16
ARY, ELEMENTARY, OR OTHER SCHOOL	66	39	22	37	2	5	4	5
OFIT ORGANIZATION - - - - - - -	916	860	34	834	10	4	3	22
L GOVERNMENT - - - - - - - - - -	4,978	4,790	125	4,758	4	13	5	63
RY - - - - - - - - - - - - - - -	1,147	976	139	974	1	11	3	32
GOVERNMENT - - - - - - - - - - -	1,005	976	22	969	1	4	------	7
GOVERNMENT - - - - - - - - - - -	860	821	32	811	3	1	------	7
- - - - - - - - - - - - - - - - -	1,135	980	108	966	4	21	4	47
ORT - - - - - - - - - - - - - - -	826	255	528	231	3	24	3	43
OF SPECIALIZATION, 1971								
ACE ENGINEERING - - - - - - - -	3,861	3,467	189	3,427	15	53	10	205
LTURAL ENGINEERING - - - - - -	540	490	45	479	2	3	------	5
TION/CONTROL - - - - - - - - -	860	810	26	798	7	4	1	24
AL ENGINEERING - - - - - - - -	2,072	1,893	139	1,867	7	6	------	40
ENGINEERING - - - - - - - - - -	5,626	5,402	157	5,305	29	8	1	67
ICATIONS - - - - - - - - - - -	1,398	1,282	75	1,258	13	5	2	41
ER/MATHEMATICS - - - - - - - -	1,293	1,142	103	1,115	12	14	3	48
ION, GENERAL - - - - - - - - -	419	361	43	351	4	4	3	15
ICAL ENGINEERING - - - - - - -	4,769	4,476	189	4,406	24	25	9	104
ONICS ENGINEERING - - - - - - -	4,262	3,852	184	3,787	32	36	20	226
ERING, GENERAL - - - - - - - -	2,343	2,225	72	2,195	5	9	1	46
FRING SCIENCES - - - - - - - -	479	450	10	433	5	2	1	19
NMENTAL/SANITARY ENGINEERING -	1,089	1,050	22	1,026	6	2	1	17
ICAL ENGINEERING - - - - - - -	241	223	13	209	4	1	------	5
RIAL ENGINEERING - - - - - - -	1,972	1,703	213	1,679	11	25	1	56
MENT/BUSINESS ADMINISTRATION -	3,091	2,659	339	2,626	12	22	6	93
ACTURING ENGINEERING - - - - - -	2,751	2,420	208	2,395	14	41	3	123
ICAL ENGINEERING - - - - - - -	5,232	4,896	191	4,830	29	21	3	145
URGICAL ENGINEERING - - - - - -	1,797	1,640	106	1,602	16	7	1	51
ENGINEERING - - - - - - - - - -	439	402	33	390	4	2	------	4
ARCH/MARINE ENGINEERING - - - -	440	414	17	408	------	------	------	9
R ENGINEERING - - - - - - - - -	408	386	12	378	3	------	------	10
EUM ENGINEERING - - - - - - - -	1,149	1,047	94	1,034	6	7	------	8
FACILITIES ENGINEERING - - - -	1,406	1,292	81	1,287	------	7	3	33
T ENGINEERING - - - - - - - - -	1,343	1,223	78	1,211	4	12	4	42
E, BASIC - - - - - - - - - - -	312	278	22	271	3	2	------	12
S ENGINEERING - - - - - - - - -	1,610	1,466	78	1,445	8	20	3	66
ORTATION ENGINEERING - - - - -	687	659	24	649	6	1	1	4
ENGINEERING - - - - - - - - - -	1,843	1,699	99	1,664	7	7	3	45
NONENGINEERING - - - - - - - -	436	212	198	203	3	22	2	26
ORT - - - - - - - - - - - - - -	1,617	876	662	838	3	40	8	79

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONT

	POPU		
	TOTAL	W	X
XVII. PRODUCT OR SERVICE AREA, 1971			
AGRICULTURE AND FOOD - - - - - - - -	738	651	77
AIRCRAFT AND SPACE - - - - - - - - - -	5,848	5,102	370
CERAMICS - - - - - - - - - - - - - - -	226	198	22
CHEMICALS/ALLIED PRODUCTS - - - - - -	2,640	2,371	217
COMMUNICATIONS SERVICES - - - - - - -	1,306	1,204	71
COMPUTERS - - - - - - - - - - - - - - -	2,051	1,847	126
CONSTRUCTION/CIVIL ENGINEERING - - -	6,121	5,878	161
EDUCATION AND INFORMATION SERVICES -	3,185	2,971	140
ELECTRICAL EQUIPMENT - - - - - - - -	2,075	1,895	123
ELECTRONIC EQUIPMENT - - - - - - - -	5,332	4,767	284
MACHINERY/MECHANICAL EQUIPMENT - - -	4,273	3,931	220
MARINE TRANSPORTATION - - - - - - - -	544	506	24
METALS, BASIC - - - - - - - - - - - - -	1,481	1,350	98
METAL FABRICATED PRODUCTS - - - - - -	2,540	2,281	183
MINING - - - - - - - - - - - - - - - -	718	657	48
MOTOR VEHICLES - - - - - - - - - - - -	1,365	1,283	69
ORDNANCE - - - - - - - - - - - - - - -	703	646	23
PETROLEUM - - - - - - - - - - - - - - -	2,061	1,875	165
RAIL TRANSPORTATION - - - - - - - - -	253	237	11
UTILITIES - - - - - - - - - - - - - - -	3,419	3,234	156
OTHER - - - - - - - - - - - - - - - - -	5,232	4,779	342
NO REPORT - - - - - - - - - - - - - - -	3,674	2,732	792
XVIII. JOB FUNCTION, 1971			
MANAGER - - - - - - - - - - - - - - - -	18,408	16,893	1,082
ADMINISTRATION - - - - - - - - - - - -	6,516	5,832	562
CONSULTATION - - - - - - - - - - - - -	2,781	2,608	111
CONSTRUCTION - - - - - - - - - - - - -	1,727	1,612	77
DESIGN - - - - - - - - - - - - - - - -	7,290	6,812	223
DEVELOPMENT - - - - - - - - - - - - - -	6,818	6,242	325
ENGINEERING, GENERAL - - - - - - - - -	10,659	9,928	431
PLANNING - - - - - - - - - - - - - - -	2,439	2,203	161
PRODUCTION - - - - - - - - - - - - - -	2,925	2,497	313
RESEARCH - - - - - - - - - - - - - - -	3,836	3,536	183
SALES AND SERVICE - - - - - - - - - - -	3,434	3,050	300
TEACHING - - - - - - - - - - - - - - -	2,705	2,550	103
OTHER - - - - - - - - - - - - - - - - -	2,229	1,935	214
NO REPORT - - - - - - - - - - - - - - -	2,426	1,590	719

1971 EMPLOYMENT SURVEY - ENGINEERS

ERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
REA, 1971								
- - - - - - - - -	738	651	77	638	3	1	1	10
- - - - - - - - -	5,848	5,102	370	5,053	19	107	27	376
- - - - - - - - -	226	198	22	191	2	1	------	6
DUCTS - - - - - -	2,640	2,371	217	2,358	4	13	1	52
CES - - - - - - -	1,306	1,204	71	1,190	6	6	2	31
- - - - - - - - -	2,051	1,847	126	1,819	14	19	1	78
NGINEERING - - -	6,121	5,878	161	5,784	27	8	2	82
ATION SERVICES -	3,185	2,971	140	2,856	45	14	9	74
- - - - - - - - -	2,075	1,895	123	1,876	9	11	3	57
- - - - - - - - -	5,332	4,767	284	4,689	36	61	15	281
EQUIPMENT - - -	4,273	3,931	220	3,873	27	21	3	122
N - - - - - - - -	544	506	24	495	2	1	------	14
- - - - - - - - -	1,481	1,350	98	1,330	6	7	1	33
DUCTS - - - - - -	2,540	2,281	183	2,250	14	23	------	76
- - - - - - - - -	718	657	48	640	5	3	------	13
- - - - - - - - -	1,365	1,283	69	1,272	5	4	------	13
- - - - - - - - -	703	646	23	639	3	2	------	34
- - - - - - - - -	2,061	1,875	165	1,857	8	8	------	21
- - - - - - - - -	253	237	11	234	1	------	1	5
- - - - - - - - -	3,419	3,234	156	3,202	9	8	2	29
- - - - - - - - -	5,232	4,779	342	4,682	33	38	8	111
- - - - - - - - -	3,674	2,732	792	2,638	16	52	14	150
- - - - - - - - -	18,408	16,893	1,082	16,730	72	91	25	433
- - - - - - - - -	6,516	5,832	562	5,803	10	32	6	122
- - - - - - - - -	2,781	2,608	111	2,373	60	18	------	62
- - - - - - - - -	1,727	1,612	77	1,605	1	3	3	38
- - - - - - - - -	7,290	6,812	223	6,759	24	43	6	255
- - - - - - - - -	6,818	6,242	325	6,199	26	55	17	251
L - - - - - - - -	10,659	9,928	431	9,845	37	56	9	300
- - - - - - - - -	2,439	2,203	161	2,178	8	24	4	75
- - - - - - - - -	2,925	2,497	313	2,483	6	31	7	115
- - - - - - - - -	3,836	3,536	183	3,400	52	30	5	117
- - - - - - - - -	3,434	3,050	300	3,031	12	28	8	84
- - - - - - - - -	2,705	2,550	103	2,454	38	13	6	52
- - - - - - - - -	2,229	1,935	214	1,908	9	33	9	80
- - - - - - - - -	2,426	1,590	719	1,528	11	42	10	117

1971 EMPLOYMENT SURVEY - ENGINEERS
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVE

	TOTAL	W	
XIX. AREA, 1971			
HEALTH	716	641	
PUBLIC WORKS	3,375	3,234	
URBAN DEVELOPMENT	727	688	
POLLUTION	1,345	1,289	
DEFENSE	9,648	8,644	
SPACE	2,586	2,273	
TRANSPORTATION	4,336	4,002	
ATOMIC ENERGY	1,267	1,198	
INDUSTRIAL PRODUCTS/PROCESSES	16,207	14,705	1
EDUCATION	3,335	3,108	
CONSUMER PRODUCTS	3,669	3,289	
OTHER	6,674	6,193	
NO REPORT	1,900	1,131	
XX. FEDERAL SUPPORT, 1971			
YES	24,204	22,192	1
NO	28,846	26,338	1
DON'T KNOW	1,681	1,457	
NO REPORT	1,054	408	
PERCENT OF FEDERAL SUPPORT, 1971			
1 TO 25 PERCENT	4,485	4,238	
26 TO 50 PERCENT	2,387	2,212	
51 TO 75 PERCENT	1,887	1,730	
76 TO 100 PERCENT	13,688	12,439	
DON'T KNOW	1,587	1,418	
NO REPORT	170	155	
XXI. NOTIFICATION OF POSITION TERMINATION			
PRIOR TO JULY 1, 1971	391	307	
PRIOR TO JANUARY 1, 1972	557	515	
PRIOR TO JULY 1, 1972	260	239	
NO REPORT	52,909	49,334	3

1971 EMPLOYMENT SURVEY - ENGINEERS

ACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - - -	716	641	53	615	9	4	2	22
- - - - - - - - - - -	3,375	3,234	96	3,177	11	8	4	45
- - - - - - - - - - -	727	688	26	671	5	3	1	13
- - - - - - - - - - -	1,345	1,289	27	1,256	10	3	1	29
- - - - - - - - - - -	9,648	8,644	537	8,549	42	113	20	467
- - - - - - - - - - -	2,586	2,273	149	2,249	11	46	12	164
- - - - - - - - - - -	4,336	4,002	191	3,946	28	25	4	143
- - - - - - - - - - -	1,267	1,198	45	1,181	6	4	1	24
TS/PROCESSES - - - -	16,207	14,705	1,088	14,525	68	78	20	414
- - - - - - - - - - -	3,335	3,108	149	2,970	52	21	5	78
- - - - - - - - - - -	3,669	3,289	297	3,257	11	29	6	83
- - - - - - - - - - -	6,674	6,193	386	6,090	31	35	5	95
- - - - - - - - - - -	1,900	1,131	678	1,080	10	39	9	91
1971								
- - - - - - - - - - -	24,204	22,192	1,135	21,838	130	204	46	877
- - - - - - - - - - -	28,846	26,338	1,858	25,945	143	154	32	650
- - - - - - - - - - -	1,681	1,457	138	1,409	17	24	8	86
- - - - - - - - - - -	1,054	408	591	374	4	26	4	55
L SUPPORT, 1971								
- - - - - - - - - - -	4,485	4,238	173	4,188	16	13	1	74
- - - - - - - - - - -	2,387	2,212	94	2,168	17	21	1	81
- - - - - - - - - - -	1,887	1,730	93	1,702	10	17	5	64
- - - - - - - - - - -	13,688	12,439	676	12,269	62	132	33	573
- - - - - - - - - - -	1,587	1,418	90	1,361	23	20	4	79
- - - - - - - - - - -	170	155	9	150	2	1	2	6
OSITION TERMINATION								
1971 - - - - - - - - -	391	307	84	242	44	34	20	------
1, 1972 - - - - - - -	557	515	42	450	42	16	8	------
1972 - - - - - - - - -	260	239	21	216	8	4	------	------
- - - - - - - - - - -	52,909	49,334	3,575	48,658	200	354	62	------

	TOTAL	W
XXII. EMPLOYMENT STATUS, 1970		
FULL-TIME EMPLOYED		
ENGINEERING RELATED - - - - - - - - -	49,362	47,540
NONENGINEERING RELATED - - - - - - -	2,762	269
PART-TIME EMPLOYED		
ENGINEERING RELATED - - - - - - - - -	799	718
NONENGINEERING RELATED - - - - - - -	165	71
NOT EMPLOYED & SEEKING EMPLOYMENT - -	890	523
NOT EMPLOYED & NOT SEEKING EMPLOYMENT	628	499
RETIRED - - - - - - - - - - - - - - - - -	18	15
NO REPORT - - - - - - - - - - - - - - - -	1,161	760
XXIII. TYPE OF EMPLOYER, 1970		
PRIVATE INDUSTRY OR BUSINESS - - - -	36,042	32,772
SELF-EMPLOYED - - - - - - - - - - - - -	1,870	1,685
COLLEGE OR UNIVERSITY - - - - - - - - -	3,559	3,359
JUNIOR COLLEGE OR TECHNICAL INSTITUTE	249	211
SECONDARY, ELEMENTARY, OR OTHER SCHOOL	71	38
NONPROFIT ORGANIZATION - - - - - - - -	862	794
FEDERAL GOVERNMENT - - - - - - - - - -	4,551	4,403
MILITARY - - - - - - - - - - - - - - - -	1,222	1,032
STATE GOVERNMENT - - - - - - - - - - -	903	875
LOCAL GOVERNMENT - - - - - - - - - - -	750	722
OTHER - - - - - - - - - - - - - - - - - -	1,040	919
NOT EMPLOYED - - - - - - - - - - - - - -	1,536	1,037
NO REPORT - - - - - - - - - - - - - - - -	3,130	2,548

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
OYMENT STATUS, 1970								
-TIME EMPLOYED								
GINEERING RELATED - - - - - - - - -	49,362	47,540	690	47,244	147	203	53	1,132
NENGINEERING RELATED - - - - - - -	2,762	269	2,422	257	4	127	2	71
-TIME EMPLOYED								
GINEERING RELATED - - - - - - - - -	799	718	23	316	109	6	1	58
NENGINEERING RELATED - - - - - - -	165	71	81	65	4	12	15	13
EMPLOYED & SEEKING EMPLOYMENT - -	890	523	84	487	20	40	11	283
EMPLOYED & NOT SEEKING EMPLOYMENT	628	499	68	462	9	13	5	61
RED - - - - - - - - - - - - - - - - -	18	15	2	13	------	-----	------	1
EPORT - - - - - - - - - - - - - - - -	1,161	760	352	722	1	7	3	49
OF EMPLOYER, 1970								
ATE INDUSTRY OR BUSINESS - - - -	36,042	32,772	2,266	32,493	121	241	48	1,004
-EMPLOYED - - - - - - - - - - - - -	1,870	1,685	155	1,533	39	12	5	30
EGE OR UNIVERSITY - - - - - - - - -	3,559	3,359	144	3,204	62	20	3	56
OR COLLEGE OR TECHNICAL INSTITUTE	249	211	30	200	4	1	1	8
NDARY,ELEMENTARY, OR OTHER SCHOOL	71	38	27	38	------	7	------	6
ROFIT ORGANIZATION - - - - - - - -	862	794	53	777	8	5	2	15
RAL GOVERNMENT - - - - - - - - - -	4,551	4,403	101	4,373	6	15	3	47
TARY - - - - - - - - - - - - - - - -	1,222	1,032	163	1,018	2	21	2	27
E GOVERNMENT - - - - - - - - - - -	903	875	22	872	1	3	1	6
L GOVERNMENT - - - - - - - - - - -	750	722	23	715	2	2	------	5
R - - - - - - - - - - - - - - - - - -	1,040	919	96	910	3	14	3	25
EMPLOYED - - - - - - - - - - - - - -	1,536	1,037	154	962	29	53	16	345
EPORT - - - - - - - - - - - - - - - -	3,130	2,548	488	2,471	17	14	6	94

1971 EMPLOYMENT SURVEY - ENGINEERS
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTI

XXV. FIELD OF SPECIALIZATION, 1970	TOTAL	W	X	P O P U
AEROSPACE ENGINEERING	3,821	3,573	106	
AGRICULTURAL ENGINEERING	497	472	18	
AUTOMATION/CONTROL	792	750	23	
CHEMICAL ENGINEERING	1,913	1,835	50	
CIVIL ENGINEERING	5,188	5,085	49	
COMMUNICATIONS	1,261	1,169	61	
COMPUTER/MATHEMATICS	1,282	1,089	150	
EDUCATION, GENERAL	478	383	83	
ELECTRICAL ENGINEERING	4,294	4,145	86	
ELECTRONICS ENGINEERING	3,895	3,628	88	
ENGINEERING, GENERAL	2,244	2,163	41	
ENGINEERING SCIENCES	451	433	4	
ENVIRONMENTAL/SANITARY ENGINEERING	912	889	11	
GEOLOGICAL ENGINEERING	233	217	11	
INDUSTRIAL ENGINEERING	1,759	1,622	95	
MANAGEMENT/BUSINESS ADMINISTRATION	3,281	2,509	690	
MANUFACTURING ENGINEERING	2,467	2,250	121	
MECHANICAL ENGINEERING	4,848	4,661	82	
METALLURGICAL ENGINEERING	1,672	1,572	59	
MINING ENGINEERING	387	371	15	
NAVAL ARCH/MARINE ENGINEERING	422	404	9	
NUCLEAR ENGINEERING	384	375	3	
PETROLEUM ENGINEERING	1,052	1,011	37	
PLANT/FACILITIES ENGINEERING	1,278	1,218	34	
PRODUCT ENGINEERING	1,229	1,160	39	
SCIENCE, BASIC	300	267	27	
SYSTEMS ENGINEERING	1,462	1,364	51	
TRANSPORTATION ENGINEERING	619	598	18	
OTHER ENGINEERING	1,667	1,580	45	
OTHER NONENGINEERING	1,371	455	873	
NOT EMPLOYED	1,536	1,037	154	
NO REPORT	2,790	2,110	589	

1971 EMPLOYMENT SURVEY - ENGINEERS

TERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
TION, 1970	TOTAL	W	X	P	N	S	U	G
NG - - - - - - - - -	3,821	3,573	106	3,527	22	39	9	142
ERING - - - - - -	497	472	18	463	2	1	------	7
- - - - - - - - - -	792	750	23	740	6	4	1	19
G - - - - - - - - -	1,913	1,835	50	1,814	6	4	------	28
- - - - - - - - - -	5,188	5,085	49	5,008	26	4	1	54
- - - - - - - - - -	1,261	1,169	61	1,154	7	6	3	31
S - - - - - - - - -	1,282	1,089	150	1,061	13	12	2	43
- - - - - - - - - -	478	383	83	373	3	8	2	12
ING - - - - - - -	4,294	4,145	86	4,086	19	15	3	63
RING - - - - - - -	3,895	3,628	88	3,575	25	24	15	179
L - - - - - - - - -	2,244	2,163	41	2,134	5	8	------	40
S - - - - - - - - -	451	433	4	422	3	1	------	14
ARY ENGINEERING -	912	889	11	873	5	------	1	12
ING - - - - - - -	233	217	11	205	3	1	------	5
ING - - - - - - -	1,759	1,622	95	1,604	7	13	2	42
ADMINISTRATION -	3,281	2,509	690	2,477	13	21	4	82
EERING - - - - - -	2,467	2,250	121	2,229	9	36	3	96
ING - - - - - - -	4,848	4,661	82	4,606	25	12	2	105
EERING - - - - - -	1,672	1,572	59	1,538	13	7	1	41
- - - - - - - - - -	387	371	15	358	3	------	------	1
NGINEERING - - - -	422	404	9	399	------	------	------	9
- - - - - - - - - -	384	375	3	367	3	------	------	6
NG - - - - - - - - -	1,052	1,011	37	999	5	1	------	4
GINEERING - - - -	1,278	1,218	34	1,214	------	6	2	26
- - - - - - - - - -	1,229	1,160	39	1,151	4	10	3	30
- - - - - - - - - -	300	267	27	261	3	3	------	6
- - - - - - - - - -	1,462	1,364	51	1,344	6	15	------	47
NEERING - - - - -	619	598	18	590	5	2	1	3
- - - - - - - - - -	1,667	1,580	45	1,551	9	4	3	42
G - - - - - - - - -	1,371	455	873	438	6	80	7	43
- - - - - - - - - -	1,536	1,037	154	962	29	53	16	345
- - - - - - - - - -	2,790	2,110	589	2,043	9	18	9	91

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

			POPULATIO	
	TOTAL	W	X	P
XXVI. PRODUCT OR SERVICE AREA, 1970				
AGRICULTURE AND FOOD - - - - - - - -	713	622	78	611
AIRCRAFT AND SPACE - - - - - - - - - -	5,748	5,202	253	5,145
CERAMICS - - - - - - - - - - - - - - -	202	178	20	173
CHEMICALS/ALLIED PRODUCTS - - - - - -	2,509	2,283	190	2,270
COMMUNICATIONS SERVICES - - - - - - -	1,157	1,074	61	1,062
COMPUTERS - - - - - - - - - - - - - -	1,943	1,700	169	1,674
CONSTRUCTION/CIVIL ENGINEERING - - -	5,569	5,429	80	5,352
EDUCATION AND INFORMATION SERVICES -	3,151	2,902	193	2,806
ELECTRICAL EQUIPMENT - - - - - - - -	1,888	1,749	98	1,736
ELECTRONIC EQUIPMENT - - - - - - - -	4,915	4,469	228	4,401
MACHINERY/MECHANICAL EQUIPMENT - - -	3,901	3,617	194	3,565
MARINE TRANSPORTATION - - - - - - - -	499	468	21	460
METALS, BASIC - - - - - - - - - - - -	1,382	1,267	93	1,253
METAL FABRICATED PRODUCTS - - - - - -	2,311	2,087	165	2,069
MINING - - - - - - - - - - - - - - -	662	608	46	594
MOTOR VEHICLES - - - - - - - - - - -	1,267	1,187	70	1,177
ORDNANCE - - - - - - - - - - - - - -	697	647	20	641
PETROLEUM - - - - - - - - - - - - - -	1,929	1,789	126	1,775
RAIL TRANSPORTATION - - - - - - - - -	223	209	10	206
UTILITIES - - - - - - - - - - - - - -	3,016	2,848	146	2,817
OTHER - - - - - - - - - - - - - - - -	5,263	4,535	630	4,454
NOT EMPLOYED - - - - - - - - - - - - -	1,536	1,037	154	962
NO REPORT - - - - - - - - - - - - - -	5,304	4,488	677	4,363
XXVII. JOB FUNCTION, 1970				
MANAGER - - - - - - - - - - - - - - -	16,144	14,700	1,108	14,552
ADMINISTRATION - - - - - - - - - - - -	6,318	5,415	795	5,374
CONSULTATION - - - - - - - - - - - - -	2,446	2,279	122	2,110
CONSTRUCTION - - - - - - - - - - - - -	1,515	1,449	39	1,440
DESIGN - - - - - - - - - - - - - - - -	6,767	6,473	100	6,420
DEVELOPMENT - - - - - - - - - - - - - -	6,333	5,969	164	5,931
ENGINEERING, GENERAL - - - - - - - - -	9,541	9,152	169	9,076
PLANNING - - - - - - - - - - - - - - -	2,251	2,029	158	2,009
PRODUCTION - - - - - - - - - - - - - -	2,752	2,381	294	2,372
RESEARCH - - - - - - - - - - - - - - -	3,789	3,580	125	3,469
SALES AND SERVICE - - - - - - - - - - -	3,345	2,858	410	2,838
TEACHING - - - - - - - - - - - - - - -	2,565	2,419	107	2,340
OTHER - - - - - - - - - - - - - - - -	2,458	1,918	471	1,892
NOT EMPLOYED - - - - - - - - - - - - -	1,536	1,037	154	962
NO REPORT - - - - - - - - - - - - - -	4,169	3,436	614	3,333

1971 EMPLOYMENT SURVEY - ENGINEERS

STICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
, 1970								
- - - - - - -	713	622	78	611	3	4	1	13
- - - - - - -	5,748	5,202	253	5,145	24	89	19	293
- - - - - - -	202	178	20	173	------	1	------	4
TS - - - - - -	2,509	2,283	190	2,270	5	10	------	36
- - - - - - -	1,157	1,074	61	1,062	4	5	2	22
- - - - - - -	1,943	1,700	169	1,674	14	19	1	74
NEERING - - -	5,569	5,429	80	5,352	27	2	1	60
ON SERVICES -	3,151	2,902	193	2,806	39	23	5	56
- - - - - - -	1,888	1,749	98	1,736	7	7	4	41
- - - - - - -	4,915	4,469	228	4,401	31	47	11	218
UIPMENT - - -	3,901	3,617	194	3,565	23	17	3	90
- - - - - - -	499	468	21	460	1	1	------	10
- - - - - - -	1,382	1,267	93	1,253	4	4	1	22
TS - - - - - -	2,311	2,087	165	2,069	4	18	1	59
- - - - - - -	662	608	46	594	3	1	------	8
- - - - - - -	1,267	1,187	70	1,177	5	6	------	10
- - - - - - -	697	647	20	641	2	------	1	30
- - - - - - -	1,929	1,789	126	1,775	5	3	------	14
- - - - - - -	223	209	10	206	1	------	1	4
- - - - - - -	3,016	2,848	146	2,817	8	6	------	22
- - - - - - -	5,263	4,535	630	4,454	35	61	11	98
- - - - - - -	1,536	1,037	154	962	29	53	16	345
- - - - - - -	5,304	4,488	677	4,363	20	31	12	139
- - - - - - -	16,144	14,700	1,108	14,552	66	73	24	336
- - - - - - -	6,318	5,415	795	5,374	14	26	4	108
- - - - - - -	2,446	2,279	122	2,110	40	10	1	45
- - - - - - -	1,515	1,449	39	1,440	4	------	2	27
- - - - - - -	6,767	6,473	100	6,420	27	29	7	194
- - - - - - -	6,333	5,969	164	5,931	20	33	14	200
- - - - - - -	9,541	9,152	169	9,076	30	39	4	270
- - - - - - -	2,251	2,029	158	2,009	7	26	2	64
- - - - - - -	2,752	2,381	294	2,372	4	30	4	77
- - - - - - -	3,789	3,580	125	3,469	45	14	4	84
- - - - - - -	3,345	2,858	410	2,838	12	35	7	77
- - - - - - -	2,565	2,419	107	2,340	33	18	2	39
- - - - - - -	2,458	1,918	471	1,892	9	65	14	69
- - - - - - -	1,536	1,037	154	962	29	53	16	345
- - - - - - -	4,169	3,436	614	3,333	20	30	9	119

1971 EMPLOYMENT SURVEY - ENGINEE
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SU

	TOTAL	W
XXVIII. AREA, 1970		
HEALTH	649	555
PUBLIC WORKS	3,072	2,993
URBAN DEVELOPMENT	609	571
POLLUTION	1,056	1,015
DEFENSE	9,488	8,678
SPACE	2,583	2,377
TRANSPORTATION	4,061	3,766
ATOMIC ENERGY	1,134	1,082
INDUSTRIAL PRODUCTS/PROCESSES	15,308	14,011
EDUCATION	3,333	3,078
CONSUMER PRODUCTS	3,454	3,044
OTHER	6,438	5,781
NOT EMPLOYED	1,536	1,037
NO REPORT	3,064	2,407
XXIX. FEDERAL SUPPORT, 1970		
YES	22,877	21,258
NO	27,263	24,737
DON'T KNOW	1,633	1,450
NOT EMPLOYED	1,536	1,037
NO REPORT	2,476	1,913
PERCENT OF FEDERAL SUPPORT, 1970		
1 TO 25 PERCENT	3,940	3,723
26 TO 50 PERCENT	2,170	2,021
51 TO 75 PERCENT	1,784	1,662
76 TO 100 PERCENT	13,521	12,510
DON'T KNOW	1,381	1,268
NO REPORT	81	74

1971 EMPLOYMENT SURVEY - ENGINEERS

ACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - - - -	649	555	78	539	6	9	3	16
- - - - - - - - - - - -	3,072	2,993	51	2,944	11	5	1	28
- - - - - - - - - - - -	609	571	30	561	4	1	------	8
- - - - - - - - - - - -	1,056	1,015	25	990	9	2	1	16
- - - - - - - - - - - -	9,488	8,678	437	8,576	44	95	17	373
- - - - - - - - - - - -	2,583	2,377	90	2,345	18	35	6	116
- - - - - - - - - - - -	4,061	3,766	183	3,720	20	25	3	112
- - - - - - - - - - - -	1,134	1,082	35	1,063	8	6	1	17
TS/PROCESSES - - - -	15,308	14,011	971	13,862	51	59	13	326
- - - - - - - - - - - -	3,333	3,078	191	2,965	42	28	4	64
- - - - - - - - - - - -	3,454	3,044	335	3,007	13	33	5	75
- - - - - - - - - - - -	6,438	5,781	574	5,694	26	39	10	83
- - - - - - - - - - - -	1,536	1,037	154	962	29	53	16	345
- - - - - - - - - - - -	3,064	2,407	568	2,338	13	18	10	89
1970								
- - - - - - - - - - - -	22,877	21,258	950	20,946	124	174	31	669
- - - - - - - - - - - -	27,263	24,737	2,018	24,384	123	152	32	508
- - - - - - - - - - - -	1,633	1,450	109	1,417	12	17	4	74
- - - - - - - - - - - -	1,536	1,037	154	962	29	53	16	345
- - - - - - - - - - - -	2,476	1,913	491	1,857	6	12	7	72
AL SUPPORT, 1970								
T - - - - - - - - - - -	3,940	3,723	163	3,680	19	16	------	54
T - - - - - - - - - - -	2,170	2,021	89	1,986	15	15	------	60
T - - - - - - - - - - -	1,784	1,662	66	1,633	9	12	5	56
T - - - - - - - - - - -	13,521	12,510	560	12,352	61	114	22	451
- - - - - - - - - - - -	1,381	1,268	67	1,223	18	15	4	46
- - - - - - - - - - - -	81	74	5	72	2	2	------	2

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

XXX. SMSA, 1971	TOTAL	W	X	P	
				POPULATI	
ALABAMA - - - - - - - - - - - - - - - -	704	620	35	616	
ALABAMA, OTHER - - - - - - - - - - - -	120	104	10	103	
BIRMINGHAM - - - - - - - - - - - - - -	179	159	8	158	---
GADSDEN - - - - - - - - - - - - - - - -	5	4	1	4	---
HUNTSVILLE - - - - - - - - - - - - - -	261	246	5	246	---
MOBILE - - - - - - - - - - - - - - - -	83	66	5	66	---
MONTGOMERY - - - - - - - - - - - - - -	18	13	2	13	---
TUSCALOOSA - - - - - - - - - - - - - -	38	28	4	26	---
COLUMBUS - - - - - - - - - - - - - - -	------	------	------	------	---
ALASKA - - - - - - - - - - - - - - - -	114	108	5	108	---
ALASKA, OTHER - - - - - - - - - - - -	114	108	5	108	---
ARIZONA - - - - - - - - - - - - - - - -	696	551	40	540	
ARIZONA, OTHER - - - - - - - - - - - -	105	83	5	82	---
PHOENIX - - - - - - - - - - - - - - - -	416	334	23	329	
TUCSON - - - - - - - - - - - - - - - -	175	134	12	129	
ARKANSAS - - - - - - - - - - - - - - -	189	152	9	151	---
ARKANSAS, OTHER - - - - - - - - - - -	96	68	4	67	---
LITTLE ROCK-NORTH LITTLE ROCK - - -	60	54	4	54	---
PINE BLUFF - - - - - - - - - - - - - -	17	15	1	15	---
MEMPHIS - - - - - - - - - - - - - - -	2	2	------	2	---
FORT SMITH - - - - - - - - - - - - - -	13	12	------	12	---
TEXARKANA - - - - - - - - - - - - - -	1	1	------	1	---
CALIFORNIA - - - - - - - - - - - - - -	8,213	6,944	447	6,790	
CALIFORNIA, OTHER - - - - - - - - - -	194	152	16	151	---
BAKERSFIELD - - - - - - - - - - - - -	100	90	2	90	---
FRESNO - - - - - - - - - - - - - - - -	33	29	2	29	---
LOS ANGELES-LONG BEACH - - - - - - -	2,969	2,503	167	2,438	
SACRAMENTO - - - - - - - - - - - - - -	274	235	15	234	---
SAN BERNARDINO-RIVERSIDE-ONTARIO -	206	161	15	156	
SAN DIEGO - - - - - - - - - - - - - - -	587	485	33	476	
SAN FRANCISCO-OAKLAND - - - - - - -	1,506	1,284	79	1,255	
SAN JOSE - - - - - - - - - - - - - - -	990	873	50	852	
SANTA BARBARA - - - - - - - - - - - -	168	139	8	136	
STOCKTON - - - - - - - - - - - - - - -	16	15	1	15	---
ANAHEIM-SANTA ANA-GARDEN GROVE - -	855	719	43	705	
VALLEJO-NAPA - - - - - - - - - - - - -	44	38	1	37	
SALINAS-MONTEREY - - - - - - - - - -	60	41	7	40	---
OXNARD-VENTURA - - - - - - - - - - -	211	180	8	176	
COLORADO - - - - - - - - - - - - - - -	961	836	57	817	
COLORADO, OTHER - - - - - - - - - - -	134	114	11	107	
COLORADO SPRINGS - - - - - - - - - -	75	61	8	59	
DENVER - - - - - - - - - - - - - - - -	740	652	36	642	
PUEBLO - - - - - - - - - - - - - - - -	12	9	2	9	---

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - - - - - -	704	620	35	616	1	3	------	11
ER - - - - - - - - - - - -	120	104	10	103	1	------	------	1
- - - - - - - - - - - - - -	179	159	8	158	------	------	------	------
- - - - - - - - - - - - - -	5	4	1	4	------	------	------	------
- - - - - - - - - - - - - -	261	246	5	246	------	2	------	7
- - - - - - - - - - - - - -	83	66	5	66	------	1	------	2
- - - - - - - - - - - - - -	18	13	2	13	------	------	------	------
- - - - - - - - - - - - - -	38	28	4	26	------	------	------	1
- - - - - - - - - - - - - -	------	------	------	------	------	------	------	------
- - - - - - - - - - - - - -	114	108	5	108	------	------	------	------
R - - - - - - - - - - - - -	114	108	5	108	------	------	------	------
- - - - - - - - - - - - - -	696	551	40	540	4	9	------	27
HER - - - - - - - - - - - -	105	83	5	82	------	1	------	3
- - - - - - - - - - - - - -	416	334	23	329	2	7	------	16
- - - - - - - - - - - - - -	175	134	12	129	2	1	------	8
- - - - - - - - - - - - - -	189	152	9	151	------	1	------	1
THER - - - - - - - - - - -	96	68	4	67	------	1	------	1
NORTH LITTLE ROCK - - -	60	54	4	54	------	------	------	------
- - - - - - - - - - - - - -	17	15	1	15	------	------	------	------
- - - - - - - - - - - - - -	2	2	------	2	------	------	------	------
- - - - - - - - - - - - - -	13	12	------	12	------	------	------	------
- - - - - - - - - - - - - -	1	1	------	1	------	------	------	------
- - - - - - - - - - - - - -	8,213	6,944	447	6,790	62	86	24	412
OTHER - - - - - - - - - -	194	152	16	151	------	3	2	7
- - - - - - - - - - - - - -	100	90	2	90	------	------	------	1
- - - - - - - - - - - - - -	33	29	2	29	------	------	------	------
LONG BEACH - - - - - - -	2,969	2,503	167	2,438	33	41	9	190
- - - - - - - - - - - - - -	274	235	15	234	------	3	------	8
NO-RIVERSIDE-ONTARIO -	206	161	15	156	2	3	1	11
- - - - - - - - - - - - - -	587	485	33	476	3	8	3	32
O-OAKLAND - - - - - - -	1,506	1,284	79	1,255	8	8	4	44
- - - - - - - - - - - - - -	990	873	50	852	8	12	2	33
A - - - - - - - - - - - - -	168	139	8	136	1	2	1	12
- - - - - - - - - - - - - -	16	15	1	15	------	------	------	------
A ANA-GARDEN GROVE - -	855	719	43	705	4	5	1	61
- - - - - - - - - - - - - -	44	38	1	37	1	------	------	------
EREY - - - - - - - - - - -	60	41	7	40	------	------	------	1
RA - - - - - - - - - - - - -	211	180	8	176	2	1	1	12
- - - - - - - - - - - - - -	961	836	57	817	6	2	1	17
HER - - - - - - - - - - - -	134	114	11	107	3	------	------	------
INGS - - - - - - - - - - -	75	61	8	59	1	------	------	2
- - - - - - - - - - - - - -	740	652	36	642	2	2	1	15
- - - - - - - - - - - - - -	12	9	2	9	------	------	------	------

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTIN

XXX. SMSA, 1971 - CONTINUED	TOTAL	W	POPUL X
CONNECTICUT	1,419	1,183	111
CONNECTICUT, OTHER	330	267	25
BRIDGEPORT	175	144	17
HARTFORD	373	325	18
MERIDEN	8	7	------
NEW BRITAIN	29	26	3
NEW HAVEN	98	79	12
NEW LONDON-GROTON-NORWICH	72	69	2
NORWALK	90	65	12
STAMFORD	148	122	13
WATERBURY	92	75	9
SPRINGFIELD-CHICOPEE-HOLYOKE	4	4	------
DELAWARE	329	281	27
DELAWARE, OTHER	27	23	2
WILMINGTON	302	258	25
DISTRICT OF COLUMBIA	390	328	27
DISTRICT OF COLUMBIA, OTHER	------	------	------
WASHINGTON	390	328	27
FLORIDA	1,491	1,099	88
FLORIDA, OTHER	298	189	18
FORT LAUDERDALE-HOLLYWOOD	94	58	3
JACKSONVILLE	82	66	4
MIAMI	196	166	14
ORLANDO	403	316	22
PENSACOLA	44	37	4
TAMPA-ST PETERSBURG	232	156	18
WEST PALM BEACH	119	90	5
TALLAHASSEE	23	21	------
GEORGIA	630	511	53
GEORGIA, OTHER	108	79	13
ALBANY	11	8	2
ATLANTA	426	349	33
MACON	30	28	1
SAVANNAH	36	29	3
AUGUSTA	12	11	1
CHATTANOOGA	------	------	------
COLUMBUS	7	7	------
HAWAII	214	190	13
HAWAII, OTHER	25	18	3
HONOLULU	189	172	10
IDAHO	148	134	4
IDAHO, OTHER	110	99	4
BOISE CITY	38	35	------

971 EMPLOYMENT SURVEY - ENGINEERS

S OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - -	1,419	1,183	111	1,162	3	13	1	59
- - - - -	330	267	25	259	1	4	------	19
- - - - -	175	144	17	142	------	3	------	6
- - - - -	373	325	18	323	------	------	------	19
- - - - -	8	7	------	7	------	------	------	------
- - - - -	29	26	3	24	1	------	------	------
- - - - -	98	79	12	78	1	2	------	2
- - - - -	72	69	2	68	------	1	------	------
- - - - -	90	65	12	63	------	------	1	7
- - - - -	148	122	13	119	------	------	------	2
- - - - -	92	75	9	75	------	3	------	4
OKE - - -	4	4	------	4	------	------	------	------
- - - - -	329	281	27	279	1	1	------	2
- - - - -	27	23	2	23	------	1	------	------
- - - - -	302	258	25	256	1	------	------	2
- - - - -	390	328	27	317	2	1	------	1
ER - - - -	------	------	------	------	------	------	------	------
- - - - -	390	328	27	317	2	1	------	1
- - - - -	1,491	1,099	88	1,085	5	12	3	51
- - - - -	298	189	18	183	3	2	1	7
- - - - -	94	58	3	57	------	------	------	3
- - - - -	82	66	4	63	------	------	------	1
- - - - -	196	166	14	164	2	2	------	6
- - - - -	403	316	22	315	------	4	1	24
- - - - -	44	37	4	36	------	------	------	------
- - - - -	232	156	18	156	------	3	1	8
- - - - -	119	90	5	90	------	1	------	1
- - - - -	23	21	------	21	------	------	------	1
- - - - -	630	511	53	506	2	8	------	12
- - - - -	108	79	13	77	------	2	------	4
- - - - -	11	8	2	8	------	1	------	------
- - - - -	426	349	33	346	2	4	------	6
- - - - -	30	28	1	28	------	------	------	1
- - - - -	36	29	3	29	------	------	------	1
- - - - -	12	11	1	11	------	1	------	------
- - - - -	------	------	------	------	------	------	------	------
- - - - -	7	7	------	7	------	------	------	------
- - - - -	214	190	13	187	3	1	------	4
- - - - -	25	18	3	18	------	------	------	1
- - - - -	189	172	10	169	3	1	------	3
- - - - -	148	134	4	131	------	------	------	3
- - - - -	110	99	4	96	------	------	------	3
- - - - -	38	35	------	35	------	------	------	------

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATIO			
	TOTAL	W	X	P
XXX. SMSA, 1971 - CONTINUED				
ILLINOIS	2,957	2,543	213	2,510
ILLINOIS, OTHER	196	160	18	156
CHAMPAIGN-URBANA	126	110	4	102
CHICAGO	2,022	1,722	156	1,709
DECATUR	59	52	5	51
PEORIA	187	165	15	164
ROCKFORD	113	102	5	99
SPRINGFIELD	56	47	4	47
BLOOMINGTON-NORMAL	10	9	1	9
DAVENPORT-ROCK ISLAND-MOLINE	112	105	4	105
ST LOUIS	76	71	1	68
INDIANA	1,210	1,056	80	1,039
INDIANA, OTHER	312	273	21	269
FORT WAYNE	116	101	12	101
GARY-HAMMOND-EAST CHICAGO	150	127	13	125
INDIANAPOLIS	269	244	12	243
MUNCIE	31	28	2	27
SOUTH BEND	78	64	8	61
TERRE HAUTE	22	16	2	16
LAFAYETTE-WEST LAFAYETTE	113	95	3	90
ANDERSON	32	30	2	30
CINCINNATI	2	1	1	1
EVANSVILLE	70	64	3	63
LOUISVILLE	15	13	1	13
IOWA	585	517	29	508
IOWA, OTHER	227	192	18	186
CEDAR RAPIDS	87	78	3	78
DES MOINES	72	69	1	67
DUBUQUE	37	35	2	35
WATERLOO	61	55	3	54
SIOUX CITY	14	12	------	12
DAVENPORT-ROCK ISLAND-MOLINE	81	72	1	72
OMAHA	6	4	1	4
KANSAS	442	371	28	361
KANSAS, OTHER	143	122	7	116
TOPEKA	38	32	1	31
WICHITA	116	95	9	94
KANSAS CITY	145	122	11	120
KENTUCKY	378	322	31	318
KENTUCKY, OTHER	116	102	11	100
LEXINGTON	76	70	1	69
CINCINNATI	19	12	3	12
EVANSVILLE	3	1	2	1
HUNTINGTON-ASHLAND	13	9	2	9
LOUISVILLE	151	128	12	127

OYMENT SURVEY - ENGINEERS

INEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
-	2,957	2,543	213	2,510	11	10	4	60
-	196	160	18	156	1	1	------	2
-	126	110	4	102	4	------	------	1
-	2,022	1,722	156	1,709	3	5	4	54
-	59	52	5	51	------	------	------	------
-	187	165	15	164	1	1	------	------
-	113	102	5	99	2	1	------	3
-	56	47	4	47	------	------	------	------
-	10	9	1	9	------	1	------	------
-	112	105	4	105	------	1	------	------
-	76	71	1	68	------	------	------	------
-	1,210	1,056	80	1,039	6	5	------	16
-	312	273	21	269	1	1	------	5
-	116	101	12	101	------	2	------	1
-	150	127	13	125	1	------	------	2
-	269	244	12	243	------	2	------	2
-	31	28	2	27	1	------	------	------
-	78	64	8	61	1	------	------	3
-	22	16	2	16	------	------	------	1
-	113	95	3	90	2	------	------	1
-	32	30	2	30	------	------	------	------
-	2	1	1	1	------	------	------	------
-	70	64	3	63	------	------	------	1
-	15	13	1	13	------	------	------	------
-	585	517	29	508	2	3	1	14
-	227	192	18	186	1	3	1	5
-	87	78	3	78	------	------	------	3
-	72	69	1	67	1	------	------	------
-	37	35	2	35	------	------	------	------
-	61	55	3	54	------	------	------	1
- -	14	12	------	12	------	------	------	------
- -	81	72	1	72	------	------	------	5
- -	6	4	1	4	------	------	------	------
- -	442	371	28	361	2	7	1	12
- -	143	122	7	116	2	1	1	2
- -	38	32	1	31	------	------	------	------
- -	116	95	9	94	------	6	------	8
- -	145	122	11	120	------	------	------	2
- -	378	322	31	318	1	2	------	7
- -	116	102	11	100	------	1	------	1
- -	76	70	1	69	------	------	------	2
- -	19	12	3	12	------	------	------	1
- -	3	1	2	1	------	------	------	------
- -	13	9	2	9	------	------	------	------
- -	151	128	12	127	1	1	------	3

1971 EMPLOYMENT SURVEY - ENGINEERS
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTI

XXX. SMSA, 1971 - CONTINUED	TOTAL	W	POPU X
LOUISIANA	744	681	31
LOUISIANA, OTHER	106	95	7
BATON ROUGE	141	130	6
LAKE CHARLES	39	37	2
MONROE	16	15	1
NEW ORLEANS	329	302	11
SHREVEPORT	63	55	3
LAFAYETTE	50	47	1
MAINE	162	130	8
MAINE, OTHER	134	107	4
LEWISTON-AUBURN	5	5	------
PORTLAND	23	18	4
MARYLAND	1,857	1,621	85
MARYLAND, OTHER	103	85	5
BALTIMORE	782	685	27
WASHINGTON	966	846	53
WILMINGTON	6	5	------
MASSACHUSETTS	2,408	2,018	151
MASSACHUSETTS, OTHER	351	285	23
BOSTON	1,516	1,275	95
BROCKTON	30	25	1
FITCHBURG-LEOMINSTER	21	16	1
LOWELL	67	59	5
NEW BEDFORD	29	27	1
PITTSFIELD	52	47	4
WORCESTER	117	103	5
SPRINGFIELD-CHICOPEE-HOLYOKE	105	84	10
FALL RIVER	8	7	------
LAWRENCE-HAVERHILL	73	58	2
PROVIDENCE-PAWTUCKET-WARWICK	39	32	4
MICHIGAN	2,280	1,980	128
MICHIGAN, OTHER	351	300	19
ANN ARBOR	162	137	6
BAY CITY	12	12	------
DETROIT	1,263	1,099	75
FLINT	99	90	3
GRAND RAPIDS	103	86	9
JACKSON	85	75	4
KALAMAZOO	37	32	3
LANSING	84	74	3
MUSKEGON-MUSKEGON HEIGHTS	38	36	2
SAGINAW	37	31	3
TOLEDO	9	8	1

71 EMPLOYMENT SURVEY - ENGINEERS
OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - -	744	681	31	672	3	2	------	10
- - - - -	106	95	7	95	------	1	------	------
- - - - -	141	130	6	128	------	1	------	2
- - - - -	39	37	2	36	------	------	------	------
- - - - -	16	15	1	15	------	------	------	------
- - - - -	329	302	11	297	3	------	------	5
- - - - -	63	55	3	55	------	------	------	1
- - - - -	50	47	1	46	------	------	------	2
- - - - -	162	130	8	129	------	1	1	4
- - - - -	134	107	4	106	------	1	------	4
- - - - -	5	5	------	5	------	------	------	------
- - - - -	23	18	4	18	------	------	1	------
- - - - -	1,857	1,621	85	1,600	6	4	1	29
- - - - -	103	85	5	83	------	------	1	3
- - - - -	782	685	27	676	3	------	------	10
- - - - -	966	846	53	836	3	4	------	16
- - - - -	6	5	------	5	------	------	------	------
- - - - -	2,408	2,018	151	1,976	11	15	5	98
- - - - -	351	285	23	281	1	3	1	14
- - - - -	1,516	1,275	95	1,247	7	8	4	65
- - - - -	30	25	1	24	------	------	------	2
- - - - -	21	16	1	16	------	------	------	1
- - - - -	67	59	5	59	------	------	------	1
- - - - -	29	27	1	27	------	------	------	------
- - - - -	52	47	4	47	------	------	------	------
- - - - -	117	103	5	100	------	2	------	3
KE - - -	105	84	10	79	2	------	------	3
- - - - -	8	7	------	7	------	------	------	------
- - - - -	73	58	2	57	1	------	------	7
K - - -	39	32	4	32	------	2	------	2
- - - - -	2,280	1,980	128	1,947	12	10	------	45
- - - - -	351	300	19	291	4	1	------	7
- - - - -	162	137	6	127	5	------	------	6
- - - - -	12	12	------	12	------	------	------	------
- - - - -	1,263	1,099	75	1,091	3	9	------	23
- - - - -	99	90	3	88	------	------	------	2
- - - - -	103	86	9	85	------	------	------	5
- - - - -	85	75	4	74	------	------	------	------
- - - - -	37	32	3	32	------	------	------	2
- - - - -	84	74	3	73	------	------	------	------
- - - - -	38	36	2	35	------	------	------	------
- - - - -	37	31	3	31	------	------	------	------
- - - - -	9	8	1	8	------	------	------	------

1971 EMPLOYMENT SURVEY - ENGINEERS
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

XXX. SMSA, 1971 - CONTINUED	POPULATIO			
	TOTAL	W	X	P
MINNESOTA	840	711	69	701
MINNESOTA, OTHER	138	111	19	111
MINNEAPOLIS-ST PAUL	638	548	44	538
DULUTH-SUPERIOR	61	52	4	52
FARGO-MOORHEAD	3	------	2	------
MISSISSIPPI	241	209	12	205
MISSISSIPPI, OTHER	176	154	10	150
JACKSON	50	43	2	43
BILOXI-GULFPORT	15	12	------	12
MISSOURI	1,186	1,004	71	991
MISSOURI, OTHER	193	149	12	146
ST JOSEPH	2	2	------	2
SPRINGFIELD	10	6	2	6
KANSAS CITY	260	230	12	229
ST LOUIS	721	617	45	608
MONTANA	110	93	8	90
MONTANA, OTHER	80	67	8	64
BILLINGS	22	20	------	20
GREAT FALLS	8	6	------	6
NEBRASKA	281	242	18	242
NEBRASKA, OTHER	55	44	8	44
LINCOLN	62	53	3	53
SIOUX CITY	1	------	1	------
OMAHA	163	145	6	145
NEVADA	138	116	8	113
NEVADA, OTHER	23	18	2	18
LAS VEGAS	72	64	2	63
RENO	43	34	4	32
NEW HAMPSHIRE	243	206	15	201
NEW HAMPSHIRE, OTHER	211	176	14	173
MANCHESTER	22	20	1	19
LAWRENCE	10	10	------	9
NEW JERSEY	3,142	2,649	198	2,610
NEW JERSEY, OTHER	791	675	48	666
ATLANTIC CITY	26	18	4	18
JERSEY CITY	73	57	6	55
NEWARK	1,099	940	63	926
PATERSON-CLIFTON-PASSAIC	580	477	47	468
TRENTON	189	156	10	152
VINELAND-MILLVILLE-BRIDGETON	8	8	------	8
ALLENTOWN	18	16	1	16
PHILADELPHIA	343	288	18	287
WILMINGTON	15	14	1	14

1971 EMPLOYMENT SURVEY - ENGINEERS

ICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - - - -	840	711	69	701	3	5	1	25
- - - - - - -	138	111	19	111	------	------	------	2
- - - - - - -	638	548	44	538	3	5	------	21
- - - - - - -	61	52	4	52	------	------	------	1
- - - - - - -	3	------	2	------	------	------	1	1
- - - - - - -	241	209	12	205	2	1	------	5
- - - - - - -	176	154	10	150	2	1	------	3
- - - - - - -	50	43	2	43	------	------	------	2
- - - - - - -	15	12	------	12	------	------	------	------
- - - - - - -	1,186	1,004	71	991	6	8	------	24
- - - - - - -	193	149	12	146	2	1	------	7
- - - - - - -	2	2	------	2	------	------	------	------
- - - - - - -	10	6	2	6	------	1	------	------
- - - - - - -	260	230	12	229	1	1	------	2
- - - - - - -	721	617	45	608	3	5	------	15
- - - - - - -	110	93	8	90	------	------	------	1
- - - - - - -	80	67	8	64	------	------	------	1
- - - - - - -	22	20	------	20	------	------	------	------
- - - - - - -	8	6	------	6	------	------	------	------
- - - - - - -	281	242	18	242	------	3	------	1
- - - - - - -	55	44	8	44	------	2	------	------
- - - - - - -	62	53	3	53	------	1	------	1
- - - - - - -	1	------	1	------	------	------	------	------
- - - - - - -	163	145	6	145	------	------	------	------
- - - - - - -	138	116	8	113	3	1	1	4
- - - - - - -	23	18	2	18	------	------	------	2
- - - - - - -	72	64	2	63	1	1	------	2
- - - - - - -	43	34	4	32	2	------	1	------
- - - - - - -	243	206	15	201	3	3	2	6
- - - - - - -	211	176	14	173	2	2	2	6
- - - - - - -	22	20	1	19	------	1	------	------
- - - - - - -	10	10	------	9	1	------	------	------
- - - - - - -	3,142	2,649	198	2,610	9	30	6	100
- - - - - - -	791	675	48	666	2	5	2	19
- - - - - - -	26	18	4	18	------	------	------	------
- - - - - - -	73	57	6	55	------	1	1	7
- - - - - - -	1,099	940	63	926	3	8	1	24
IC - - - - -	580	477	47	468	2	8	2	32
- - - - - - -	189	156	10	152	1	3	------	5
DGETON - - -	8	8	------	8	------	------	------	------
- - - - - - -	18	16	1	16	------	------	------	1
- - - - - - -	343	288	18	287	1	4	------	12
- - - - - - -	15	14	1	14	------	1	------	------

1971 EMPLOYMENT SURVEY - ENGINEERS
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTIN

			P O P U L	
XXX. SMSA, 1971 - CONTINUED	TOTAL	W	X	
NEW MEXICO	419	356	15	
NEW MEXICO, OTHER	187	159	6	
ALBUQUERQUE	232	197	9	
NEW YORK	5,338	4,432	428	4,
NEW YORK, OTHER	654	548	42	
ALBANY-SCHENECTADY-TROY	420	359	23	
BUFFALO	406	344	29	
NEW YORK	2,876	2,329	272	2,
ROCHESTER	424	356	33	
SYRACUSE	285	251	13	
UTICA-ROME	123	113	7	
BINGHAMTON	150	132	9	
NORTH CAROLINA	744	643	52	
NORTH CAROLINA, OTHER	170	143	15	
ASHEVILLE	31	25	------	
CHARLOTTE	148	131	9	
DURHAM	50	39	4	
GREENSBORO-WINSTON SALEM-HIGH POINT	163	148	10	
RALEIGH	140	121	10	
WILMINGTON	26	24	2	
FAYETTEVILLE	16	12	2	
NORTH DAKOTA	57	51	4	
NORTH DAKOTA, OTHER	43	37	4	
FARGO-MOORHEAD	14	14	------	
OHIO	3,158	2,777	195	2,
OHIO, OTHER	323	276	29	
AKRON	227	208	12	
CANTON	121	103	10	
CLEVELAND	801	705	51	
COLUMBUS	375	334	15	
DAYTON	457	420	11	
HAMILTON-MIDDLETOWN	46	37	5	
LIMA	34	31	2	
LORAIN-ELYRIA	39	34	3	
SPRINGFIELD	30	27	1	
YOUNGSTOWN-WARREN	85	73	8	
MANSFIELD	18	17	------	
TOLEDO	194	168	15	
CINCINNATI	387	325	31	
HUNTINGTON-ASHLAND	2	2	------	
STEUBENVILLE-WEIRTON	10	10	------	
WHEELING	9	7	2	

1971 EMPLOYMENT SURVEY - ENGINEERS

TICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - - - -	419	356	15	348	3	------	1	14
- - - - - - -	187	159	6	154	1	------	------	6
- - - - - - -	232	197	9	194	2	------	1	8
- - - - - - -	5,338	4,432	428	4,368	23	48	14	163
- - - - - - -	654	548	42	541	3	2	------	21
Y - - - - - - -	420	359	23	355	------	1	1	5
- - - - - - -	406	344	29	338	2	3	2	15
- - - - - - -	2,876	2,329	272	2,290	13	32	10	101
- - - - - - -	424	356	33	355	1	6	------	13
- - - - - - -	285	251	13	247	3	2	1	5
- - - - - - -	123	113	7	111	------	2	------	1
- - - - - - -	150	132	9	131	1	------	------	2
- - - - - - -	744	643	52	635	1	4	------	7
- - - - - - -	170	143	15	142	1	2	------	1
- - - - - - -	31	25	------	24	------	------	------	------
- - - - - - -	148	131	9	130	------	1	------	2
- - - - - - -	50	39	4	37	------	------	------	2
EM-HIGH POINT	163	148	10	147	------	------	------	------
- - - - - - -	140	121	10	121	------	------	------	2
- - - - - - -	26	24	2	23	------	------	------	------
- - - - - - -	16	12	2	11	------	1	------	------
- - - - - - -	57	51	4	51	------	------	------	------
- - - - - - -	43	37	4	37	------	------	------	------
- - - - - - -	14	14	------	14	------	------	------	------
- - - - - - -	3,158	2,777	195	2,748	16	11	7	58
- - - - - - -	323	276	29	275	1	3	2	6
- - - - - - -	227	208	12	207	------	------	2	2
- - - - - - -	121	103	10	103	------	1	------	3
- - - - - - -	801	705	51	697	5	4	------	17
- - - - - - -	375	334	15	329	2	1	------	8
- - - - - - -	457	420	11	415	4	------	1	4
- - - - - - -	46	37	5	36	------	1	------	1
- - - - - - -	34	31	2	31	------	------	1	1
- - - - - - -	39	34	3	33	------	------	------	1
- - - - - - -	30	27	1	27	------	------	------	1
- - - - - - -	85	73	8	73	------	------	------	2
- - - - - - -	18	17	------	17	------	------	------	------
- - - - - - -	194	168	15	166	1	------	------	2
- - - - - - -	387	325	31	320	3	1	1	10
- - - - - - -	2	2	------	2	------	------	------	------
- - - - - - -	10	10	------	10	------	------	------	------
- - - - - - -	9	7	2	7	------	------	------	------

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

XXX. SMSA, 1971 - CONTINUED	TOTAL	W	X	P O P U L A
OKLAHOMA	657	559	51	
OKLAHOMA, OTHER	182	151	10	
LAWTON	6	4	1	
OKLAHOMA CITY	214	178	22	
TULSA	251	222	18	
FORT SMITH	4	4	------	
OREGON	437	346	31	
OREGON, OTHER	102	80	8	
EUGENE	13	9	3	
SALEM	21	17	1	
PORTLAND	301	240	19	
PENNSYLVANIA	3,971	3,406	223	3,
PENNSYLVANIA, OTHER	441	364	37	
ALTOONA	12	9	1	
ERIE	121	102	6	
HARRISBURG	130	109	9	
JOHNSTOWN	30	23	2	
LANCASTER	84	68	6	
PITTSBURGH	1,228	1,099	50	1,
READING	103	97	4	
SCRANTON	26	18	1	
WILKES-BARRE-HAZLETON	38	34	------	
YORK	95	75	9	
BINGHAMTON	2	2	------	
ALLENTOWN-BETHLEHEM-EASTON	251	207	20	
PHILADELPHIA	1,410	1,199	78	1,
RHODE ISLAND	199	158	18	
RHODE ISLAND, OTHER	58	45	6	
FALL RIVER	2	1	------	
PROVIDENCE-PAWTUCKET-WARWICK	139	112	12	
SOUTH CAROLINA	401	343	27	
SOUTH CAROLINA, OTHER	163	135	8	
CHARLESTON	73	62	7	
COLUMBIA	67	56	6	
GREENVILLE	68	62	5	
AUGUSTA	30	28	1	
SOUTH DAKOTA	72	64	4	
SOUTH DAKOTA, OTHER	64	57	3	
SIOUX FALLS	8	7	1	
TENNESSEE	839	738	47	
TENNESSEE, OTHER	256	234	13	
KNOXVILLE	231	207	10	
NASHVILLE	126	101	9	
MEMPHIS	118	102	7	
CHATTANOOGA	108	94	8	

1971 EMPLOYMENT SURVEY - ENGINEERS

TERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
UED								
- - - - - - - - - -	657	559	51	547	6	4	1	12
- - - - - - - - - -	182	151	10	145	2	1	1	4
- - - - - - - - - -	6	4	1	4	------	------	------	1
- - - - - - - - - -	214	178	22	175	2	2	------	4
- - - - - - - - - -	251	222	18	219	2	1	------	3
- - - - - - - - - -	4	4	------	4	------	------	------	------
- - - - - - - - - -	437	346	31	340	2	6	------	12
- - - - - - - - - -	102	80	8	78	------	2	------	4
- - - - - - - - - -	13	9	3	9	------	------	------	------
- - - - - - - - - -	21	17	1	17	------	------	------	1
- - - - - - - - - -	301	240	19	236	2	4	------	7
- - - - - - - - - -	3,971	3,406	223	3,348	26	25	5	102
HER - - - - - - - - -	441	364	37	357	------	6	1	12
- - - - - - - - - -	12	9	1	9	------	------	------	------
- - - - - - - - - -	121	102	6	102	------	1	------	5
- - - - - - - - - -	130	109	9	105	2	2	------	2
- - - - - - - - - -	30	23	2	22	1	------	------	3
- - - - - - - - - -	84	68	6	68	------	1	------	2
- - - - - - - - - -	1,228	1,099	50	1,085	11	------	1	17
- - - - - - - - - -	103	97	4	95	1	------	1	------
- - - - - - - - - -	26	18	1	17	1	------	------	2
ETON - - - - - - - -	38	34	------	31	------	------	------	1
- - - - - - - - - -	95	75	9	73	------	------	------	3
- - - - - - - - - -	2	2	------	2	------	------	------	------
HEM-EASTON - - - -	251	207	20	202	3	3	------	4
- - - - - - - - - -	1,410	1,199	78	1,180	7	12	2	51
- - - - - - - - - -	199	158	18	156	------	1	------	7
HER - - - - - - - -	58	45	6	45	------	1	------	1
- - - - - - - - - -	2	1	------	1	------	------	------	------
KET-WARWICK - - -	139	112	12	110	------	------	------	6
- - - - - - - - - -	401	343	27	339	1	3	------	7
THER - - - - - - - -	163	135	8	133	1	1	------	5
- - - - - - - - - -	73	62	7	61	------	1	------	1
- - - - - - - - - -	67	56	6	55	------	1	------	1
- - - - - - - - - -	68	62	5	62	------	------	------	------
- - - - - - - - - -	30	28	1	28	------	------	------	------
- - - - - - - - - -	72	64	4	62	1	1	------	------
HER - - - - - - - -	64	57	3	55	1	1	------	------
- - - - - - - - - -	8	7	1	7	------	------	------	------
- - - - - - - - - -	839	738	47	729	5	1	1	12
- - - - - - - - - -	256	234	13	232	1	------	1	2
- - - - - - - - - -	231	207	10	204	2	------	------	3
- - - - - - - - - -	126	101	9	100	1	------	------	6
- - - - - - - - - -	118	102	7	100	1	1	------	1
- - - - - - - - - -	108	94	8	93	------	------	------	------

1971 EMPLOYMENT SURVEY - ENGINEERS
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY

XXX. SMSA, 1971 - CONTINUED	TOTAL	W	P
TEXAS	3,293	2,879	
TEXAS, OTHER	324	269	
ABILENE	10	9	
AMARILLO	44	42	
AUSTIN	138	120	
BEAUMONT-PORT ARTHUR-ORANGE	101	87	
BROWNSVILLE-HARLINGEN-SAN BENITO	5	3	
CORPUS CHRISTI	93	88	
DALLAS	658	578	
EL PASO	86	67	
FORT WORTH	277	239	
GALVESTON-TEXAS CITY	61	56	
HOUSTON	1,113	987	
LAREDO	2	2	---
LUBBOCK	32	27	
MIDLAND	98	89	
ODESSA	19	18	
SAN ANGELO	5	4	
SAN ANTONIO	143	124	
TYLER	19	18	---
WACO	15	13	
WICHITA FALLS	18	14	
MCALLEN-PHARR-EDINBURG	8	4	
SHERMAN-DENISON	13	11	---
TEXARKANA	11	10	---
UTAH	277	234	
UTAH, OTHER	49	46	
OGDEN	16	14	
PROVO-OREM	25	17	
SALT LAKE CITY	187	157	
VERMONT	115	93	
VERMONT, OTHER	115	93	
VIRGINIA	1,693	1,474	
VIRGINIA, OTHER	272	229	
LYNCHBURG	42	41	
NEWPORT NEWS-HAMPTON	160	149	
NORFOLK-PORTSMOUTH	125	104	
RICHMOND	167	146	
ROANOKE	48	39	
WASHINGTON	879	766	

1971 EMPLOYMENT SURVEY - ENGINEERS

ERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
ED	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - -	3,293	2,879	215	2,833	17	27	3	67
- - - - - - - - - -	324	269	27	258	6	4	------	5
- - - - - - - - - -	10	9	1	9	------	------	------	------
- - - - - - - - - -	44	42	1	41	------	------	------	------
- - - - - - - - - -	138	120	8	114	1	2	2	4
UR-ORANGE - - - -	101	87	5	87	------	------	------	3
GEN-SAN BENITO -	5	3	1	3	------	------	------	------
- - - - - - - - - -	93	88	2	87	1	------	------	2
- - - - - - - - - -	658	578	42	573	3	5	------	17
- - - - - - - - - -	86	67	7	65	------	------	------	5
- - - - - - - - - -	277	239	19	236	------	4	1	10
TY - - - - - - - -	61	56	2	55	------	------	------	2
- - - - - - - - - -	1,113	987	74	978	4	7	------	13
- - - - - - - - - -	2	2	------	2	------	------	------	------
- - - - - - - - - -	32	27	5	25	1	------	------	------
- - - - - - - - - -	98	89	6	88	------	------	------	2
- - - - - - - - - -	19	18	1	17	------	------	------	------
- - - - - - - - - -	5	4	1	4	------	------	------	------
- - - - - - - - - -	143	124	8	122	1	4	------	3
- - - - - - - - - -	19	18	------	17	------	------	------	------
- - - - - - - - - -	15	13	2	13	------	------	------	------
- - - - - - - - - -	18	14	2	14	------	1	------	------
BURG - - - - - - -	8	4	1	4	------	------	------	------
- - - - - - - - - -	13	11	------	11	------	------	------	1
- - - - - - - - - -	11	10	------	10	------	------	------	------
- - - - - - - - - -	277	234	25	228	3	3	------	8
- - - - - - - - - -	49	46	3	45	------	------	------	------
- - - - - - - - - -	16	14	2	13	------	1	------	------
- - - - - - - - - -	25	17	7	16	1	------	------	1
- - - - - - - - - -	187	157	13	154	2	2	------	7
- - - - - - - - - -	115	93	9	92	------	------	1	2
- - - - - - - - - -	115	93	9	92	------	------	1	2
- - - - - - - - - -	1,693	1,474	108	1,454	6	8	2	22
- - - - - - - - - -	272	229	18	220	3	------	------	3
- - - - - - - - - -	42	41	1	41	------	------	------	------
ON - - - - - - - -	160	149	6	147	------	------	------	1
- - - - - - - - - -	125	104	12	104	------	1	------	2
- - - - - - - - - -	167	146	10	146	------	1	------	1
- - - - - - - - - -	48	39	4	39	------	------	------	------
- - - - - - - - - -	879	766	57	757	3	6	2	15

1971 EMPLOYMENT SURVEY - ENGINEERS
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

		POPULAT	
	TOTAL	W	X	P
XXX. SMSA, 1971 - CONTINUED				
WASHINGTON	1,179	965	61	939
WASHINGTON, OTHER	242	211	8	206
SEATTLE-EVERETT	807	655	39	636
SPOKANE	51	43	3	41
TACOMA	54	33	11	33
PORTLAND	25	23	------	23
WEST VIRGINIA	300	268	15	265
WEST VIRGINIA, OTHER	129	113	8	112
CHARLESTON	118	105	6	104
HUNTINGTON-ASHLAND	36	35	------	34
STEUBENVILLE-WEIRTON	8	7	1	7
WHEELING	9	8	------	8
WISCONSIN	1,066	920	67	904
WISCONSIN, OTHER	232	195	22	194
GREEN BAY	25	24	------	22
KENOSHA	17	15	1	15
MADISON	144	125	9	118
MILWAUKEE	576	502	31	496
RACINE	69	57	3	57
DULUTH-SUPERIOR	3	2	1	2
WYOMING	90	82	5	80
WYOMING, OTHER	90	82	5	80
CANAL ZONE	1	1	------	1
CANAL ZONE, OTHER	1	1	------	1
PUERTO RICO	115	100	11	99
PUERTO RICO, OTHER	15	10	3	10
MAYAGUEZ	13	12	1	12
PONCE	18	16	1	16
SAN JUAN	69	62	6	61
VIRGIN ISLAND	3	2	------	2
VIRGIN ISLAND, OTHER	3	2	------	2
GUAM	3	3	------	3
GUAM, OTHER	3	3	------	3
FOREIGN	116	95	12	93
XXXI. PART-TIME, SEEKING FULL-TIME EMPLOYMENT				
YES	420	294	126	------
NO	400	345	55	------
NO REPORT	237	190	47	------

1971 EMPLOYMENT SURVEY - ENGINEERS

RACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
TINUED								
- - - - - - - - - - - -	1,179	965	61	939	12	9	2	81
HER - - - - - - - - - -	242	211	8	206	1	1	------	9
T - - - - - - - - - - -	807	655	39	636	10	4	2	69
- - - - - - - - - - - -	51	43	3	41	1	1	------	------
- - - - - - - - - - - -	54	33	11	33	------	3	------	3
- - - - - - - - - - - -	25	23	------	23	------	------	------	------
- - - - - - - - - - - -	300	268	15	265	------	1	------	2
OTHER - - - - - - - -	129	113	8	112	------	1	------	1
- - - - - - - - - - - -	118	105	6	104	------	------	------	1
LAND - - - - - - - - -	36	35	------	34	------	------	------	------
EIRTON - - - - - - - -	8	7	1	7	------	------	------	------
- - - - - - - - - - - -	9	8	------	8	------	------	------	------
- - - - - - - - - - - -	1,066	920	67	904	2	7	1	28
ER - - - - - - - - - -	232	195	22	194	------	3	------	3
- - - - - - - - - - - -	25	24	------	22	------	------	------	1
- - - - - - - - - - - -	17	15	1	15	------	------	------	1
- - - - - - - - - - - -	144	125	9	118	------	1	------	1
- - - - - - - - - - - -	576	502	31	496	2	3	1	18
- - - - - - - - - - - -	69	57	3	57	------	------	------	4
R - - - - - - - - - - -	3	2	1	2	------	------	------	------
- - - - - - - - - - - -	90	82	5	80	------	1	------	------
- - - - - - - - - - - -	90	82	5	80	------	1	------	------
- - - - - - - - - - - -	1	1	------	1	------	------	------	------
HER - - - - - - - - - -	1	1	------	1	------	------	------	------
- - - - - - - - - - - -	115	100	11	99	------	------	------	1
THER - - - - - - - - -	15	10	3	10	------	------	------	------
- - - - - - - - - - - -	13	12	1	12	------	------	------	------
- - - - - - - - - - - -	18	16	1	16	------	------	------	1
- - - - - - - - - - - -	69	62	6	61	------	------	------	------
- - - - - - - - - - - -	3	2	------	2	------	------	------	------
OTHER - - - - - - - -	3	2	------	2	------	------	------	------
- - - - - - - - - - - -	3	3	------	3	------	------	------	------
- - - - - - - - - - - -	3	3	------	3	------	------	------	------
- - - - - - - - - - - -	116	95	12	93	1	1	------	2
NG FULL-TIME								
- - - - - - - - - - - -	420	294	126	------	294	------	90	------
- - - - - - - - - - - -	400	345	55	------	------	------	------	------
- - - - - - - - - - - -	237	190	47	------	------	------	------	------

OMB NO. 099-S71001
Approval Expires October 1971

National Science Foundation

SURVEY OF ENGINEERING EMPLOYMENT

Conducted by the
Engineers Joint Council
345 East 47th Street, New York, N.Y. 10017

PLEASE PRINT ANSWERS IN DARK INK OR TYPE

If your name or address is incorrect, please enter correct information below:

Please give full name

.....

.....

.....

.....

.....

.....

Your response will be held in strict confidence—no individual will be identified and only statistical summaries will be released.

1. Date of Birth ..... Month Day Year

2. Citizenship ☐ 1—USA ☐ 2—Non-USA

3. Sex ☐ 1—Male ☐ 2—Female

4. What is your highest earned college degree? ☐ 1—None ☐ 2—Associate ☐ 3—Bachelor ☐ 4—Master ☐ 5—Doctor

5. Give the year of graduation for your first earned degree and year of graduation of highest earned degree (if different than the first) and check the appropriate curriculum for each degree. First degree year ..... Highest degree year .....

FIRST DEGREE	HIGHEST DEGREE		FIRST DEGREE	HIGHEST DEGREE	
☐	☐	01 Aerospace Engineering	☐	☐	16 Management/Business Administration
☐	☐	02 Agricultural Engineering	☐	☐	17 Manufacturing Engineering
☐	☐	03 Automation/Control	☐	☐	18 Mechanical Engineering
☐	☐	04 Chemical Engineering	☐	☐	19 Metallurgical Engineering
☐	☐	05 Civil Engineering	☐	☐	20 Mining Engineering
☐	☐	06 Communications	☐	☐	21 Naval Arch/Marine Engineering
☐	☐	07 Computer/Mathematics	☐	☐	22 Nuclear Engineering
☐	☐	08 Education	☐	☐	23 Petroleum Engineering
☐	☐	09 Electrical Engineering	☐	☐	24 Plant/Facilities Engineering
☐	☐	10 Electronics Engineering	☐	☐	25 Product Engineering
☐	☐	11 Engineering (general)	☐	☐	26 Science (basic)
☐	☐	12 Engineering Sciences	☐	☐	27 Systems Engineering
☐	☐	13 Environmental/Sanitary Engineering	☐	☐	28 Transportation Engineering
☐	☐	14 Geological Engineering	☐	☐	29 Other Engineering.....
☐	☐	15 Industrial Engineering	☐	☐	30 Other Nonengineering.....

6. If you are a student, check your status. ☐ 1—Student, full-time ☐ 2—Student, part-time

7. Are you registered by a state board of engineering examiners? ☐ 1—Yes, PE ☐ 2—Yes, EIT ☐ 3—No

8. Check current employment status.

EMPLOYED FULL-TIME:
☐ 1—Engineering related
☐ 2—Non[illegible]engineering related

EMPLOYED PART-TIME:
☐ 3—Engineering related
☐ 4—Nonengineering related

If you are *employed part-time*, are you seeking full-time employment?
☐ 1—Yes ☐ 2—No

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DEGREE	DEGREE		DEGREE	DEGREE	
☐	☐	01 Aerospace Engineering	☐	☐	16 Management/ Business Administration
☐	☐	02 Agricultural Engineering	☐	☐	17 Manufacturing Engineering
☐	☐	03 Automation/ Control	☐	☐	18 Mechanical Engineering
☐	☐	04 Chemical Engineering	☐	☐	19 Metallurgical Engineering
☐	☐	05 Civil Engineering	☐	☐	20 Mining Engineering
☐	☐	06 Communications	☐	☐	21 Naval Arch/ Marine Engineering
☐	☐	07 Computer/ Mathematics	☐	☐	22 Nuclear Engineering
☐	☐	08 Education	☐	☐	23 Petroleum Engineering
☐	☐	09 Electrical Engineering	☐	☐	24 Plant/ Facilities Engineering
☐	☐	10 Electronics Engineering	☐	☐	25 Product Engineering
☐	☐	11 Engineering (general)	☐	☐	26 Science (basic)
☐	☐	12 Engineering Sciences	☐	☐	27 Systems Engineering
☐	☐	13 Environmental/ Sanitary Engineering	☐	☐	28 Transportation Engineering
☐	☐	14 Geological Engineering	☐	☐	29 Other Engineering.....
☐	☐	15 Industrial Engineering	☐	☐	30 Other Nonengineering.....

6. If you are a student, check your status. ☐ 1—Student, full-time ☐ 2—Student, part-time

7. Are you registered by a state board of engineering examiners? ☐ 1—Yes, PE ☐ 2—Yes, EIT ☐ 3—No

8. Check current employment status.

EMPLOYED FULL-TIME:
☐ 1—Engineering related
☐ 2—Nonengineering related

EMPLOYED PART-TIME:
☐ 3—Engineering related
☐ 4—Nonengineering related

If you are *employed part-time*, are you seeking full-time employment?
☐ 1—Yes ☐ 2—No

☐ 5—Unemployed and seeking employment ☐ 6—Not employed and not seeking employment ☐ 7—Retired

9. When did you begin this employment status?.....(month).....(year). If you are **NOT EMPLOYED AND NOT SEEKING EMPLOYMENT** or are **RETIRED** and not seeking employment, please mail this questionnaire to Engineers Joint Council and do not proceed further; all others please continue.

10. Have you been **un**employed at any time since March 1, 1970? ☐ 1—Yes ☐ 2—No If yes, how many weeks?.....

11a. If you are employed in an **engineering related position,** answer items 12-18 in terms of your *present employment.*

11b. If you are employed in a **nonengineering related position,** what kind of work are you now doing?.....
Please indicate the MOST important reason for currently being in a nonengineering related position. (check only one)
☐ 1—I am not an engineer (do not proceed further, please return questionnaire to EJC)
☐ 2—Prefer nonengineering related position
☐ 3—Promoted out of engineering
☐ 4—Pay is better
☐ 5—Locational preference
☐ 6—Length of time away from engineering
☐ 7—Engineering related position not available
☐ 8—Other
Please give actual location of your employment.....
..... When did you leave your last
(city) (state)
engineering related position?.....
(month) (year)
Answer items 12-17 in terms of your *last engineering related employment*, and also answer item 18.

11c. If you are **unemployed and seeking employment** what type of position are you seeking?
☐ 1—Full-time
☐ 2—Part-time
☐ 3—Temporary

Answer items 12-17 in terms of your *last engineering related employment*, then skip to item 19.

12. Check the box of the category which is most appropriate for your principal employer in your present (or last engineering related) position. (check only one)
☐ 0—Private Industry or Business
☐ 1—Self-employed
☐ 2—College or University
☐ 3—Junior College or Technical Institute
☐ 4—Secondary, Elementary, or other school
☐ 5—Nonprofit organization, other than a school
☐ 6—Federal Government—Civilian Employee
☐ 7—Military Service, CC of USPHS or NOAA
☐ 8—State Government
☐ 9—Local Government
☐ 10—Other (specify) .....

13. Please give actual location of your present (or last engineering related) employment. .....
(city) (state)

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ment (check *only one term* from each list).

FIELD OF SPECIALIZATION

- ☐ 01 Aerospace Engineering
- ☐ 02 Agricultural Engineering
- ☐ 03 Automation/Control
- ☐ 04 Chemical Engineering
- ☐ 05 Civil Engineering
- ☐ 06 Communications
- ☐ 07 Computer/Mathematics
- ☐ 08 Education (general)
- ☐ 09 Electrical Engineering
- ☐ 10 Electronics Engineering
- ☐ 11 Engineering (general)
- ☐ 12 Engineering Sciences
- ☐ 13 Environmental/Sanitary Engineering
- ☐ 14 Geological Engineering
- ☐ 15 Industrial Engineering
- ☐ 16 Management/Business Administration
- ☐ 17 Manufacturing Engineering
- ☐ 18 Mechanical Engineering
- ☐ 19 Metallurgical Engineering
- ☐ 20 Mining Engineering
- ☐ 21 Naval Arch/Marine Engineering
- ☐ 22 Nuclear Engineering
- ☐ 23 Petroleum Engineering
- ☐ 24 Plant/Facilities Engineering
- ☐ 25 Product Engineering
- ☐ 26 Science (basic)
- ☐ 27 Systems Engineering
- ☐ 28 Transportation Engineering
- ☐ 29 Other Engineering
- ☐ 30 Other Nonengineering

PRODUCT OR SERVICE AREA

- ☐ 01 Agriculture and Food
- ☐ 02 Aircraft and Space
- ☐ 03 Ceramics
- ☐ 04 Chemicals/Allied Products
- ☐ 05 Communications Services
- ☐ 06 Computers
- ☐ 07 Construction/Civil Engineering
- ☐ 08 Education & Information Services
- ☐ 09 Electrical Equipment
- ☐ 10 Electronic Equipment
- ☐ 11 Machinery/Mechanical Equipment
- ☐ 12 Marine Transportation
- ☐ 13 Metals (basic)
- ☐ 14 Metal Fabricated Products
- ☐ 15 Mining
- ☐ 16 Motor Vehicles
- ☐ 17 Ordnance
- ☐ 18 Petroleum
- ☐ 19 Rail Transportation
- ☐ 20 Utilities
- ☐ 21 Other

JOB FUNCTION

Check your principal job function below. If you are (were) a *manager* of this function, check this box ☐ in addition to the function below.

- ☐ 01 Administration
- ☐ 02 Consultation
- ☐ 03 Construction
- ☐ 04 Design
- ☐ 05 Development
- ☐ 06 Engineering (general)
- ☐ 07 Planning
- ☐ 08 Production
- ☐ 09 Research
- ☐ 10 Sales and Service
- ☐ 11 Teaching
- ☐ 12 Other

15. Which area is (was) a major portion of your work related to? *(check only one)*

- ☐ 1—Health
- ☐ 2—Public Works
- ☐ 3—Urban Development
- ☐ 4—Pollution
- ☐ 5—Defense
- ☐ 6—Space
- ☐ 7—Transportation
- ☐ 8—Atomic Energy
- ☐ 9—Industrial Products/Processes
- ☐ 10—Education
- ☐ 11—Consumer Products
- ☐ 12—Other (specify).....

16. Is (was) any of your work supported or sponsored by U.S. Government funds? ☐ 1—Yes ☐ 2—No ☐ 3—Don't know

17. If yes, indicate the approximate part of Government support.

☐ 4 1%-25% ☐ 5 26%-50% ☐ 6 51%-75% ☐ 7 76%-100% ☐ 8 Don't know

The following item is to be answered only by *full-time or part-time employed* individuals.

18. Check if you have received notice that your position will terminate prior to ☐ 1—July 1, 1971, ☐ 2—Jan. 1, 1972, or ☐ 3—July 1, 1972. (Do not report planned voluntary retirement.)

NOTE: **Answer items 19-24 in terms of your employment situation as of March 1970,** about fourteen months ago. Information for that period is needed to establish a bench mark for changes that have taken place since then.

19. Check **March 1970** employment status.

EMPLOYED FULL-TIME:

- ☐ 1—Engineering related
- ☐ 2—Nonengineering related

EMPLOYED PART-TIME:

- ☐ 3—Engineering related
- ☐ 4—Nonengineering related
- ☐ 5—Unemployed and seeking employment
- ☐ 6—Not employed and not seeking employment
- ☐ 7—Retired

If as of March 1970, you were NOT EMPLOYED AND NOT SEEKING EMPLOYMENT or were RETIRED, please mail questionnaire to the Engineers Joint Council and do not proceed further; all others please continue.

20. Check the box of the category which is most appropriate for your **March 1970** principal employer (check only one).

- ☐ 0—Private Industry or Business
- ☐ 1—Self-employed
- ☐ 2—College or University
- ☐ 3—Junior College or Technical Institute
- ☐ 4—Secondary, Elementary or other school
- ☐ 5—Nonprofit Organization, other than a school
- ☐ 6—Federal Government—Civilian Employee
- ☐ 7—Military Service, CC of USPHS or NOAA
- ☐ 8—State Government
- ☐ 9—Local Government
- ☐ 10—Other (specify).....

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18. Check if you have received notice that your position will terminate prior to ☐ 1—July 1, 1971, ☐ 2—July 1, 1972, or ☐ 3—July 1, 1972
(Do not report planned voluntary retirement.)

NOTE: **Answer items 19-24 in terms of your employment situation as of March 1970,** about fourteen months ago. Information for that period is needed to establish a bench mark for changes that have taken place since then.

19. Check **March 1970** employment status.

EMPLOYED FULL-TIME:
- ☐ 1—Engineering related
- ☐ 2—Nonengineering related

EMPLOYED PART-TIME:
- ☐ 3—Engineering related
- ☐ 4—Nonengineering related

- ☐ 5—Unemployed and seeking employment
- ☐ 6—Not employed and not seeking employment
- ☐ 7—Retired

If as of March 1970, you were NOT EMPLOYED AND NOT SEEKING EMPLOYMENT or were RETIRED, please mail questionnaire to the Engineers Joint Council and do not proceed further; all others please continue.

20. Check the box of the category which is most appropriate for your **March 1970** principal employer (check only one).

- ☐ 0—Private Industry or Business
- ☐ 1—Self-employed
- ☐ 2—College or University
- ☐ 3—Junior College or Technical Institute
- ☐ 4—Secondary, Elementary or other school
- ☐ 5—Nonprofit Organization, other than a school
- ☐ 6—Federal Government—Civilian Employee
- ☐ 7—Military Service, CC of USPHS or NOAA
- ☐ 8—State Government
- ☐ 9—Local Government
- ☐ 10—Other (specify).....

21. Please give location of your **March 1970** employment. ..... (city) ..... (state)

22. Check the field of specialization, product or service area, and job function which best describes your **March 1970** employment *(check only one term from each list).*

FIELD OF SPECIALIZATION

☐ Same as indicated in item 14

- ☐ 01 Aerospace Engineering
- ☐ 02 Agricultural Engineering
- ☐ 03 Automation/Control
- ☐ 04 Chemical Engineering
- ☐ 05 Civil Engineering
- ☐ 06 Communications
- ☐ 07 Computer/Mathematics
- ☐ 08 Education (general)
- ☐ 09 Electrical Engineering
- ☐ 10 Electronics Engineering
- ☐ 11 Engineering (general)
- ☐ 12 Engineering Sciences
- ☐ 13 Environmental/Sanitary Engineering
- ☐ 14 Geological Engineering
- ☐ 15 Industrial Engineering
- ☐ 16 Management/Business Administration
- ☐ 17 Manufacturing Engineering
- ☐ 18 Mechanical Engineering
- ☐ 19 Metallurgical Engineering
- ☐ 20 Mining Engineering
- ☐ 21 Naval Arch/Marine Engineering
- ☐ 22 Nuclear Engineering
- ☐ 23 Petroleum Engineering
- ☐ 24 Plant/Facilities Engineering
- ☐ 25 Product Engineering
- ☐ 26 Science (basic)
- ☐ 27 Systems Engineering
- ☐ 28 Transportation Engineering
- ☐ 29 Other Engineering
- ☐ 30 Other Nonengineering

PRODUCT OR SERVICE AREA

☐ Same as indicated in item 14

- ☐ 01 Agriculture and Food
- ☐ 02 Aircraft and Space
- ☐ 03 Ceramics
- ☐ 04 Chemicals/Allied Products
- ☐ 05 Communications Services
- ☐ 06 Computers
- ☐ 07 Construction/Civil Engineering
- ☐ 08 Education & Information Services
- ☐ 09 Electrical Equipment
- ☐ 10 Electronic Equipment
- ☐ 11 Machinery/Mechanical Equipment
- ☐ 12 Marine Transportation
- ☐ 13 Metals (basic)
- ☐ 14 Metal Fabricated Products
- ☐ 15 Mining
- ☐ 16 Motor Vehicles
- ☐ 17 Ordnance
- ☐ 18 Petroleum
- ☐ 19 Rail Transportation
- ☐ 20 Utilities
- ☐ 21 Other

JOB FUNCTION

☐ Same as indicated in item 14

Check your principal job function below. If you were *a manager* of this function, check this box ☐ in addition to the function below.

- ☐ 01 Administration
- ☐ 02 Consultation
- ☐ 03 Construction
- ☐ 04 Design
- ☐ 05 Development
- ☐ 06 Engineering (general)
- ☐ 07 Planning
- ☐ 08 Production
- ☐ 09 Research
- ☐ 10 Sales and Service
- ☐ 11 Teaching
- ☐ 12 Other

23. Which area was a major portion of your work **as of March 1970** related to? *(check only one)* ☐ Same as indicated in item 15.

- ☐ 1—Health
- ☐ 2—Public Works
- ☐ 3—Urban Development
- ☐ 4—Pollution
- ☐ 5—Defense
- ☐ 6—Space
- ☐ 7—Transportation
- ☐ 8—Atomic Energy
- ☐ 9—Industrial Products/Processes
- ☐ 10—Education
- ☐ 11—Consumer Products
- ☐ 12—Other (specify).....

24. Was any of your work **as of March 1970** supported or sponsored by U.S. Government funds? ☐ 1—Yes ☐ 2—No ☐ 3—Don't know

25. If yes, indicate the approximate part of Government support.

☐ 4 1%-25% ☐ 5 26%-50% ☐ 6 51%-75% ☐ 7 76%-100% ☐ 8 Don't know

Thank you for your cooperation. Return questionnaire to Engineers Joint Council in the postpaid envelope provided.

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7095

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TRAINING AND TECHNOLOGY.

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IDENTIFIERS - *TRAINING AND TECHNOLOGY; TAT

ABSTRACT - THIS REPORT PRESENTS A HISTORICAL
REVIEW OF THE ROLE ORGANIZED LABOR HAS PLAYED
IN THE TRAINING AND TECHNOLOGY PROJECT SINCE
IT WAS INITIATED IN 1966. INCLUDED IN THE
DISCUSSION ARE THE CONTRIBUTIONS MADE BY
LABOR TO THE TRAINING FUNCTION AS WELL AS THE
SUPPORTIVE SERVICES FUNCTION. THE REPORT ALSO
INCLUDES A LIST OF MAJOR RECOMMENDATIONS TO
MANAGEMENT ON HOW TO INVOLVE LABOR IN A
MANPOWER TRAINING PROGRAM, AND SOME IMPORTANT
ASPECTS TO CONSIDER WHEN IMPLEMENTING A
SIMILAR TRAINING PROGRAM. (GEB)

VT 014 656

TRAINING AND TECHNOLOGY

Oak Ridge Associated Universities

Union Carbide Corporation

Tennessee Division of Vocational-Technical Education

Tennessee Department of Employment Security

University of Tennessee

Organized Labor

Y0014656

7097

CONDUCTED AT THE U. S. ATOMIC ENERGY COMMISSION'S OAK RIDGE Y-12 PLANT

Training and Technology

ORGANIZED LABOR AND MANPOWER TRAINING

Operated By

OAK RIDGE ASSOCIATED UNIVERSITIES

In Cooperation With

NUCLEAR DIVISION, UNION CARBIDE CORPORATION

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This report presents a historical review of the role organized labor has played in the Training and Technology project since it was initiated in 1966. Included in the discussion is the contributions made by labor to the training function as well as the supportive services function. The report also includes a list of major recommendations to management on how to involve labor in a manpower training program, and some important aspects to consider when implementing a similar training program.

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INTRODUCTION

This report provides a brief history of organized labor's participation in the Training and Technology (TAT) project and includes descriptions of the more important contributions made by various labor organizations to the project since it began as a training experiment in 1966.

TAT, a manpower development program which coordinates industrial resources with manpower agencies, joins the training needs of the disadvantaged with industry's requirements for skilled workers and technicians. TAT combines the management capability and training resources of Oak Ridge Associated Universities and the Nuclear Division, Union Carbide Corporation to provide skilled and technical training in an advanced industrial complex—the Oak Ridge Y-12 Plant of the U. S. Atomic Energy Commission.

Skilled training courses offered by TAT include machining and inspection, welding, and mechanical operations, which train for occupations usually represented by organized labor. Labor has long supported training of apprentices, and in more recent years has intensified its efforts to provide industry with well-trained journeymen in the various crafts. The apprentice programs, however, have not met modern industry's need for skilled operators and technicians for entry level jobs. Recognizing this need, organized labor at the local, state, and national levels has worked with TAT personnel to provide this needed training.

SUMMARY OF MAJOR FINDINGS

Based on TAT's experience, the following recommendations are made to those who contemplate the establishment of similar types of training programs:

CONSULT WITH LOCAL union leaders as soon as a program is contemplated, giving them full and accurate information and soliciting their contributions to the development of the project.

SEEK THE SUPPORT of the international unions involved through the Department of Labor and accompanied by local union representatives and continue contacts by occasional visits and communications.

SPELL OUT IN the proposed plan the functions which labor representatives are expected and have agreed to perform.

BE SURE THAT the unions are allowed and encouraged to perform the functions that have been proposed for them in the proposal.

PROVIDE FOR ADEQUATE representation of organized labor on any overall advisory committee.

PROVIDE INTERESTED union representatives with official reports and with any special documents that might be of interest to them in order to keep them currently informed.

INCLUDE LABOR REPRESENTATIVES in any appraisal or review of the program.

GIVE LABOR REPRESENTATIVES an opportunity to participate in any general conferences scheduled.

COMMITMENT OF TOP management to the participation of organized labor and its performance of the functions as embodied in the training plan.

ASSURANCE TO LOWER and intermediate management echelons of the company's interest in the success of the training program and in providing the unions the opportunities required to perform their assigned functions.

ACCEPTANCE BY MANAGEMENT of a flexibility with respect to company rules and policies in dealing with the trainees and training program which would not be possible if employees and production were involved.

EARLY PARTICIPATION OF ORGANIZED LABOR IN TAT EXPERIMENT

When Oak Ridge Associated Universities and Nuclear Division, Union Carbide Corporation first considered a plan to train operators and technicians in the Y-12 Plant, officers of the Atomic Trades and Labor Council were invited to express their ideas concerning such a program. This Council, comprised of 18 locals representing various international unions, represents all hourly employees in the Oak Ridge Y-12 Plant and Oak Ridge National Laboratory, both of which are operated for the Atomic Energy Commission by Nuclear Division, Union Carbide Corporation. During this initial discussion in 1966, officers of the Council expressed a genuine interest in the establishment of the program. When the program proposal was ready for presentation to the U. S. Department of Labor, two Council representatives accompanied ORAU and Union Carbide representatives to Washington to participate in the presentation. These Council representatives were officers of the International Brotherhood of Electrical Workers (IBEW) and the International Association of Machinists (IAM), unions particularly interested and well informed in two of the proposed training areas. International officers of these unions also participated in the discussions. One of the significant revisions made in the proposal as a result of labor participation was a more definitive list of functions in which labor unions would participate. This revised list of functions was included in the proposal as approved by the Department of Labor as follows:

> "The advice and assistance of organized labor will be particularly desirable and necessary for the following functions:
>
> 1. Assistance in recruitment of potential trainees for skill training and teacher preparation.
> 2. Assistance with the training process for unemployed workers, including instruction and evaluation of training accomplishment.
> 3. Assistance in identification of jobs and the placement on jobs of graduates of the occupational training.
> 4. Participation in project experimentation and research by providing organized labor representation for the design of training experiments and supplying qualified research personnel on an intermittent basis as members of the project research steering committee.
> 5. Supply ideas and assistance with the program development aspects of the project of special interest to organized labor.

6. Provide representatives for the project Advisory Committee or committees."

Of the above list of six functions the unions participated most frequently and helpfully during the first cycle in the first, second, and sixth functions and to some extent in the others.

Union Participation in Recruitment

During the summer of 1966, members of local IAM and IBEW organizations and United Association Local No. 718 were employed to assist with recruiting for the project in 19 counties of East Tennessee. As a result of their efforts, more than 1,200 applicants were reviewed, 173 of which were later selected as trainees in machining, welding, electronics, drafting, physical testing, and glass fabrication. Union representatives also supplied the project information concerning a number of individuals whom they thought would greatly benefit from the training to be offered.

Union Participation on the Advisory Committee

The following representatives of labor unions were appointed in August 1966 to the project Advisory Committee: Matthew Lynch, president, Tennessee AFL-CIO; N. L. Beeler, president, Atomic Trades and Labor Council; R. W. Hagood, business agent, IAM Lodge No. 480; C. E. Robinson, representing IBEW Local No. 760; R. H. Norman, representing United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry Local No. 718. In 1967, the Atomic Trades and Labor Council elected C. E. Robinson to succeed N. L. Beeler as president. Mr. Robinson replaced Mr. Beeler as representative of the Council. Mr. Reese Roark was appointed to represent IBEW Local No. 760.

Union Participation in Training

Three training areas selected for inclusion in the program—machining, electronics, welding—are skills represented at the Oak Ridge Y-12 Plant by the Atomic Trades and Labor Council. According to the TAT proposal, the unions which represent employees engaged in these skills expected to be called on to assist in the training process by providing trainee instruction and on-the-job evaluation of their progress.

At the second meeting of the project Advisory Committee in October 1966—about a month after the training program started—union representatives expressed their dissatisfaction with the degree to which they were being permitted to participate in the shop-training phase of the program. This

complaint related to all three training groups covering types of work done by employees in the bargaining unit in the Y-12 Plant. It was recognized that this union participation arrangement was not covered by the agreement between Union Carbide and the Atomic Trades and Labor Council. Therefore, an ORAU staff member was assigned to investigate the complaint and to try to work out an appropriate adjustment.

The investigation showed that journeymen were not routinely assigned to assist trainees in the electronics and welding shops, and that four union journeymen assigned to the machine shop each shift were primarily engaged in production work. Although trainees could watch and ask the journeymen questions, two foremen on each shift were actually providing most of the individual instruction and evaluation of the trainees. The journeymen reported that they had very little contact with the trainees, who seldom observed and asked questions about work being performed. Although the journeymen desired to help the trainees, they felt that their production work load was too heavy to permit much time to devote to the trainees.

After a number of conferences between ORAU and Union Carbide representatives concerning the role unions would play in the actual training of students, the following steps were agreed upon:

1. The electronics trainee group would be exposed to the equipment and the work going on in the electronics maintenance division, and when the electronic theory phase of the program had been covered, hourly technicians would be brought into the trainees' shop to work with trainees on specific phases of electronics and instrumentation.
2. A journeyman welder would be regularly assigned to participate in the welding shop training where only weekly and monthly payroll employees had been utilized.
3. The journeymen machinists, although continuing with some production assignments, would be expected to rate the shop work of machining trainees. This arrangement made it necessary for the journeymen to work with the trainees enough to be able to make a knowledgeable evaluation of their progress. It was agreed that these assignments would be distributed so as to involve all participating journeymen.

The points agreed upon were promptly put into effect in the welding and machining groups. The work schedule for the electronics group was rearranged to enable the trainees to observe and ask questions of journeymen performing work in the electrical maintenance shop. The union still maintained that too little use had been made of journeymen in the training shop. This problem, first cited by the union in October 1966, was only partially resolved

during the first cycle. The union representative wished to have the union discharge its responsibility by having its members help with the training program. The representative agreed to submit a list of journeymen whom he believed qualified to assist with training in certain phases of the electronic training course. The training supervisor agreed that these journeymen were qualified to assist with the training program. Management insisted, however, that its responsibility was to assign the best qualified instructors who could be spared from other duties in the electrical maintenance department, regardless of union affiliation. The union claimed that men from other departments had on occasion been assigned to the training project and maintained that departmental location should not be a limiting factor. One journeyman suggested by the union was assigned to assist with the training. One journeyman, however, was assigned whom the union had not requested. The union contended that because this journeyman was not a member and was anti-union in attitude, he could not possibly represent the union in discharging its responsibility to the training project. To management, the union's request seemed to be an effort to control employee assignments while to the union representative, management's reluctance to use those recommended appeared to be based upon a lack of desire to cooperate with the union in meeting its responsibility to the project. After considerable discussion of these differences between management and labor representatives, the non-union electrical worker was transferred out of the project and replaced with a former chief union steward who had been promoted to a supervisory position and this was acceptable to the union.

The journeymen instructors in the machine shop, working more closely with trainees, were able to identify areas of shop work and/or related studies in which special help was needed. Such help provided early tended to avoid an accumulated lag in understanding. Each trainee was rated by one or more journeymen and by the foreman in shop practices and various shop tasks assigned to him. These ratings, made independently, proved to be very similar. They provided a record of trainee progress and revealed whether weaknesses or difficulties observed in the shop were satisfactorily resolved.

Seminars on the Role of Unions in an Industrial Society

Since labor unions are an integral part of industrial life, it is desirable to give trainees a broad view of the functions of labor unions. To accomplish this goal, representatives of the local unions conducted an hour-long seminar for each training group. These seminars dealt with the

social, political, and legislative interests of labor as well as the better understood economic interests. Questions raised by the trainees have indicated an interest in and need for this broader view of labor's functions. These seminars later became a part of the series of industrial behavior seminars.

Seminar sessions on the functions of labor unions in an industrial society were conducted during both the first and second training cycles of Phase I (1966-68). A meeting was called early in the second cycle to discuss with representatives of electrical workers, machinists, and pipefitters the feasibility of continuing such seminars. The machinists' representative said the same problems as had existed in the first cycle—the lack of use of journeymen in the machine shop training—existed in one shift of machining trainees in the second cycle and that this problem would have to be resolved before he was willing to plan or participate in the proposed seminars. The other union representatives supported this position and the meeting was adjourned with only a general discussion of the seminars and their purpose. The misunderstanding was later resolved, and the seminars were held as proposed.

Organized Labor's Participation in TAT at the National Level

A program evaluation conference of training specialists was held in late February of 1967 in which a training representative of the national staff of the International Brotherhood of Electrical Workers (IBEW) participated. This representative's report was not only extremely critical of the electronics training program but of the project as a whole. He recommended to his international president that the IBEW withdraw its support from the project. Presumably, as a result of his report, the international president of IBEW advised the Department of Labor that the IBEW was withdrawing its support from the project. The IBEW local union subsequently notified the TAT project director that it had been asked to withdraw its participation in the project.

As a result of this position taken by the IBEW, ORAU staff personnel arranged a conference with IBEW President Gordon Freeman and members of his staff to explore the objectives and methods of the TAT project. Some mutual interests were found in the training of hard-to-supply technicians needed by employers with whom the IBEW has contacts and in the possibility that some personnel trained at TAT might be recruited for these employers. It was also found that the withdrawal of the IBEW and Local Union 760 from project participation could mainly be attributed to the fact that TAT recruitment

and placement cover a broader scope than the jurisdiction of the participating local union. Therefore, the IBEW insisted that the relationship between TAT and the IBEW should be with the international union rather than with Local 760. This problem was immediately recognized by TAT, and President Freeman was asked to designate a representative of his office to serve on the TAT Advisory Committee and as the international representative with whom TAT could consult when problems arose. TAT was later advised that IBEW recommended Mr. M. A. Williams, an international representative on the staff of Vice President Petty of this region, to serve as a member of the TAT Advisory Committee.

Mr. Williams was appointed to the TAT Advisory Committee and met with the Committee at its subsequent quarterly meeting. Williams was asked to explore the need of IBEW contractors for the type of electronic technicians being trained in TAT. The project staff believed this arrangement would enable the TAT placement officer to initiate the process of applications and interviews which would lead to placing some TAT graduates with union contractors whom Mr. Williams thought would have difficulties in finding the kinds of employees needed.

UNION PARTICIPATION IN PHASE II OF TAT

Phase II of TAT began in October 1968 after two annual cycles of the Experimentation and Demonstration Worker Training program were completed. The proposal for Phase II planned a greater emphasis (75%) on recruitment from the disadvantaged portion of the labor force according to Department of Labor criteria and from minority groups (40%). It also proposed recruitment from a wider rural area and the sponsorship of other agencies working with the disadvantaged. The unions were kept advised as this proposal was developed and maintained an interest in the modified objectives of the program. In addition to the type and source of trainees to be trained, these modifications also included a shift to an average six months training period (except for electronics trainees). The training period would vary according to the ability of individual trainees, and an attempt was made to provide for additional training after employment. During Phase I and at the beginning of Phase II, other changes had taken place which were of interest to the labor unions. The electronics training was converted into an intensive pre-apprenticeship course. Glass fabrication training was dropped because of few job opportunities, and training in mechanical operations was added. The latter trained for jobs usually falling within the jurisdiction of the machinist union. Several changes also took place in labor's representation on the TAT Advisory Committee. Lee Case, vice president of the Tennessee AFL-CIO Council replaced Matthew Lynch, president; B. W. Hensley replaced Charles Robinson as the new president and representative of the Atomic Trades and Labor Council; and W. A. Smith, IBEW representative on the Apprenticeship Committee at Union Carbide, replaced Reese Roark. In an effort to avoid some of the problems that arose in Phase I, the proposal for Phase II included the following statement of the functions of labor unions in TAT:

> "The advice and assistance of organized labor will be particularly desirable and necessary for the following functions:
>
> 1. Assistance in recruitment of potential trainees.
> 2. Union craftsmen's assistance with the occupational training including instruction and evaluation of trainee performance.
> 3. Assistance in identification of jobs and job placement.
> 4. Provide representatives for project Advisory Committee and other committees that may be appropriate."

The statement of the second function above was modified to specify union craftsmen to avoid one of the misunderstandings which had occurred during Phase I of the program, namely, the appointment of a non-union journeyman as a training instructor.

No significant problems involving organized labor occurred during the first year and a half of Phase II. The labor representatives on the TAT Advisory Committee attended meetings regularly, received regularly issued progress reports, and kept fully informed concerning developments. Seminars on the role of labor unions in an industrial society were held more frequently to accommodate the more rapid completion of training schedules which averaged about six months in length.

The most dramatic and significant incident indicating labor's genuine interest in and support of TAT occurred during a strike called by the Atomic Trades and Labor Council against the Nuclear Division, Union Carbide Corporation in the spring and summer of 1970.

In March 1970, a wage reopening clause in the Atomic Trades and Labor Council's (ATLC) three-year contract with the Nuclear Division, Union Carbide Corporation became effective and wage negotiations began. When days passed and no progress toward agreement in the wage negotiations was reported, a member of the TAT administrative staff approached the president of the ATLC concerning the continuance of the training program if a strike should occur. Though still hopeful that agreement would be reached before the deadline of April 15, the ATLC president agreed to discuss with the Council its attitude toward encouraging continuance of the program in the event of a strike. The representatives of Union Carbide were entirely favorable to continuing the program, provided a near normal attendance was maintained.

On April 14, 1970, the ATLC scheduled a vote on the company's last offer and, if rejected, on whether to authorize its officers to call a strike. Mr. B. W. Hensley, the president of the Council, informed an ORAU representative of the situation and reported that the Council had voted to encourage the continuance of the training program if a strike were authorized. Mr. Hensley said the Council realized that the trainees had been gathered from a wide area, and if they scattered to their homes during an interruption of their training, it would be very difficult to reassemble them. It was also understood by the Council that a number of the trainees had given up low-paying and part-time jobs to which they probably could not return, and to stop their training would leave them in an even more disadvantaged situation.

Mr. Hensley requested the opportunity to tell the trainees of the Council's action in the interest of continuing the program and to encouage them to stay on. Arrangements were made for him to speak briefly to trainees in each training area on the afternoon of April 14 while the union's vote was still in progress. In these short speeches he made the following points:

1. The Council has supported TAT from the beginning.
2. The Council did not wish to interfere in any way with their training and had authorized him to do anything he could to avoid interrupting their training if a strike should occur.
3. The union members were voting all that day on whether to accept or reject the Council's recommendation that a strike be called because agreement on wages had not been reached.
4. If a strike were called there would probably be pickets at road entrances leading to each of the gates.
5. If a strike were called, he would have passes made for each trainee to carry and asked them to do the pickets the courtesy of showing the pass to pickets when asked to do so. He ensured that all pickets would be instructed about the action of the Council to encourage continuance of TAT.

The only condition placed by the Council on its encouragement to the continuance of the training program if a strike were called was that no productive work would be done in the training area during the strike. The vote on April 14 authorized a strike which began on April 15.

With the strike authorized, the Council voted to encourage journeymen engaged in the training program to continue their service in the program if they elected to do so. This feature of union support was not forthcoming without objections within the unions. Some of the members of the union involved objected seriously to granting a few of their members the privilege of continuing with their assignments to TAT in a plant the union was striking.

After considerable discussion, however, the Council's position was sustained and passes were issued to the journeymen who had been assigned to TAT. After the first week of the strike, all six of the journeymen machinists reported and served until the end of the 69-day strike. The two journeymen steamfitters who were training welders had obligated themselves to take out-of-town jobs before learning of this approval by the Council and their union and were replaced by Union Carbide with qualified salaried employees. Identification passes were furnished by the Council to all trainees and only a few minor incidents occurred during the strike, all of which were handled cooperatively.

The strike continued for nine weeks, until June 22, 1970. Toward the end of this period, ORAU wished to invite to the project several groups of applicants for interviews, tests, and a chance to see the type of training available, which is a normal procedure prior to selecting additional trainees. The Council president agreed that such groups would raise no problems if he could just be informed of the dates on which they were expected. This plan was successfully implemented on June 2 and June 16 and worked smoothly.

There is no doubt that this cooperation of the Atomic Trades and Labor Council and its constituent unions effectively encouraged the trainees to continue their training. Most of them had little or no experience in industrial employment, and they would have been at least perplexed, if not fearful, as to what they should do in such a situation. The talk by the president of the Council and the passes issued to them gave them the assurance they needed. The trainee attendance throughout the strike was about normal, and no dropouts occurred as a result of the strike. The action of the Council was also a tangible demonstration to the trainees of the union's interest in their progress which the Council's representatives had professed in the numerous seminars on organized labor's role in an industrial society.

LABOR'S PARTICIPATION IN THE TAT COMMUNITY COUNCIL

During the summer of 1970, some incidents occurred between a few non-resident TAT trainees and some Oak Ridge citizens. As a result of publicity concerning these incidents, public reaction indicated a need for greater community understanding of TAT and its contributions to Oak Ridge and other communities. To supply this public relations need a Community Council was formed.

When the Community Council was formed in September 1970, the individuals who were asked to participate represented a wide variety of public agencies and community organizations. Mr. B. W. Hensley, president of the Atomic Trades and Labor Council, has served on the Council from its beginning.

The Council was formed at a time when relationships between the Oak Ridge community, the Training and Technology program, and trainees were at at low ebb. Mr. Hensley was an active participant and contributed to the recommendations which the Council subsequently submitted to the administrators of TAT.

One of the responsibilities of each of the Council members is to keep the organizations which they represent aware of the current status of TAT. The feedback which Mr. Hensley has presented at the Council meetings has shown that both ATLC and TAT have benefited from the participation of organized labor on the Community Council.

MANAGEMENT CONSIDERATIONS

During the development of a manpower training program, particularly one that involves the combination of industrial resources with manpower training agencies, project management must be aware of and make provisions for the role organized labor can play in the program, at the international, state, and local levels. Indeed, efforts must be made on the part of management to ensure that the various unions take an active part in the program in both a training and advisory capacity since meaningful participation will usually result in the support of the program by labor. In some instances, the lack of this support can be detrimental to the program and can actually delay approval of programs.

During the early development of the program, the active support of labor unions should be solicited and action taken to inform labor leaders and union members of the usefulness of the project. This information transfer can be accomplished by providing labor officials with discussion draft copies of proposals, visits by project staff at union meetings, and visits to offices of labor leaders. The rapport which can be established between project staff and organized labor leaders through this type of interaction can set the background and mutual respect that might be needed to resolve future problems.

An example of labor participation might be their use in recruiting trainees, as described in this report. In this capacity, union members have been very successful in finding trainees and providing information concerning individuals who might benefit from the training offered.

Finally management should attempt to involve labor in the upper echelons of project management through representation on the project advisory committee which meets at regular quarterly intervals. Providing that the representative takes an active part in advisory committee activities, significant advantages can accrue to management as a result of this representation. For example, the labor representative can often point out areas in which problems exist and prevent future situations from arising which might have an adverse effect on the program. Participation on this committee also provides labor with the opportunity to air any grievances that may have arisen as a result of labor representatives' contact with the trainees.

CONCLUSIONS

The close working relationship between organized labor, at local, state, and national levels, and TAT administrative personnel has undoubtedly been responsible for a good portion of the success the project has enjoyed. Organized labor has been instrumental in providing needed representatives on the Advisory Committee and the Community Council has been instrumental in maintaining a smooth working relationship between the two interest groups. Moreover, without the cooperation of labor in times of crises, such as the ATLC strike of 1970, there can be little doubt that progress at TAT would have been impaired.

There is every reason to believe the interest and helpful participation of organized labor in the TAT Worker Training program will continue. Provisions have been made for its participation in the proposed Experimentation and Demonstration program for upgrading of employees. As in the past, it is expected that union representatives will show considerable interest in this program and make significant contributions.

EBS-MLS:lk
11/22/71

VT 014 667
NORTMAN, RICHARD P., AND OTHERS
VOCATIONAL GUIDANCE INSTITUTE '71, SUMMARY REPORT. "A SENSE OF COMMUNITY."

CALIFORNIA UNIV., LOS ANGELES. UNIV. EXTENSION.
NATIONAL ALLIANCE OF BUSINESSMEN, WASHINGTON, D.C.
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DESCRIPTORS - *VOCATIONAL COUNSELING; SCHOOL INDUSTRY RELATIONSHIP; SCHOOL COMMUNITY RELATIONSHIP; *INSTITUTES (TRAINING PROGRAMS); OCCUPATIONAL INFORMATION; *HIGH SCHOOL STUDENTS; *JOB PLACEMENT; *TEAMWORK; COOPERATIVE PLANNING; LEADERSHIP TRAINING; TEAM ADMINISTRATION

ABSTRACT - TO PRODUCE AN INCREASED ARTICULATION BETWEEN AND AMONG THE SCHOOL (ESPECIALLY THE VOCATIONAL GUIDANCE COUNSELORS), BUSINESS AND INDUSTRY, AND THE COMMUNITY, FOUR TRAINING TEAMS FROM HIGH SCHOOLS IN THE CATHOLIC ARCHDIOCESE OF LOS ANGELES AND THE COMPTON AND LOS ANGELES UNIFIED SCHOOL DISTRICTS ATTENDED A 2-STAGE, 2-SITE VOCATIONAL GUIDANCE INSTITUTE. DURING THE FIRST STAGE, THE TRAINING STAFF PRESENTED INFORMATION, TAUGHT SKILLS, GUIDED PROCESS, AND TRAINED THE TRAINING TEAMS TO INSTALL VOCATIONAL INFORMATION COORDINATING COMMITTEES (VICC). DURING STAGE TWO, THE TRAINING STAFF OBSERVED THE TRAINING TEAMS AND PROVIDED FEEDBACK AS THE TEAMS WORKED WITH THE VICC. BASED IN THE LOCAL SCHOOLS, THE VICC WERE COMPOSED OF MEMBERS FROM THE SCHOOLS, BUSINESS AND INDUSTRY, AND THE COMMUNITY, AND THEIR FUNCTION WAS TO FIND AND COORDINATE INFORMATION TO HELP PLACE GRADUATING SENIORS IN JOBS. A REVIEW OF THE PROGRAM THUS FAR REVEALED THAT SIX VICC HAVE BEEN STARTED AND FIVE MORE ARE PLANNED FOR FALL. OTHER CHANGES OBSERVED IN THE TRAINING TEAMS INCLUDE: (1) CHANGE FROM REGARDING THEMSELVES AS INDIVIDUALS WITH LITTLE OR NO POWER TO MEMBERS OF A TEAM WITH GREAT POWER, (2) CHANGE FROM RELIANCE ON AUTHORITY TO INCREASED AWARENESS OF RESPONSIBILITIES, AND (3) CHANGE FROM NARROW UNDERSTANDING TO BROADER UNDERSTANDING OF LEADERSHIP. (SB)

VT 014 667

VOCATIONAL GUIDANCE INSTITUTE '71

SUMMARY REPORT

" A SENSE OF COMMUNITY "

Prepared by

Department of Daytime Programs
University Extension, University of Wisconsin

In cooperation with

The National Alliance of Businessmen

1971

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University Extension, UCLA, provides continuing education service linking the University, its scholars, research and resources with the people and the community. This service continues on a year-round basis, in various fields and many locations and includes the wide range of methods most effective in extending the education of adults.

National Alliance of Businessmen provides an organization through which the American Corporate and financial community combine forces for total employment and advancement opportunities -- throughout every level of industry -- for members of minority groups and the hard-core unemployed.

VOCATIONAL GUIDANCE INSTITUTE '71

SUMMARY REPORT

" A SENSE OF COMMUNITY "

U.S. DEPARTMENT OF HEALTH,
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Presented by

Department of Daytime Programs & Special Projects,
University Extension, University of California at Los Angeles

In cooperation with

The National Alliance of Businessmen

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VOCATIONAL GUIDANCE INSTITUTE '71

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July 8, 1971

Mr. Fred Wentzel
Director of Career Motivation
and Program Development
National Alliance of Businessmen
1730 K Street, N.W.
Washington, D.C. 20006

Dear Mr. Wentzel:

Attached is the report of the Los Angeles Vocational Guidance Institute for 1971 sponsored by the National Alliance of Businessmen. The project was an innovative and creative application of a systems approach to solving the problems of counseling minority youth in this vast metropolitan area. In order to change the behavior of a school-business community nearly immobilized by economic recession, the VGI'71 project designer combined Kurt Lewin's model of behavior as a field of forces, vectors, and barriers with an economics theory of integration and allocation of resources. This program to help educators learn how to rally, organize, and allocate the resources and energies of a community will go a long way in revitalizing the counseling program wherever it is applied.

Some responses of the enrollees as taken from their evaluation questionnaires are:

"We have united individual efforts and through the combined strength of all our endeavors we have been able to contact job placement people. We do have the jobs now and we have placed people."

"The integration of students, community personnel, and others into groups and afterward being able to see action, ideas, workable solutions became an exciting reality."

"We are thinking of piloting a work-experience program now, and encouraging business and community involvement in training programs as a result of the interest and concern of business and community leaders who are now on our action group."

"Other than the Advisory Committee, there had been little or no real community participation. Our programs have broadened in scope since the VGI and the formation of the action group. We know now that people in the community will become involved if you let them know your needs."

"I have proposed using the VGI model in a summer camp which would attempt to solve some of the problems of racial tension in high school athletics."

In large measure, I believe that the vitality and productivity of this project is due to the efforts of Dr. Richard Nortman, who served not only as Associate Project Director, but who originally conceived the program plan. His continuous training of the project staff and evaluation of the project with the participants, made it possible to achieve the results described in the attached.

Upon reviewing the goals stated in the proposal, I believe that we have accomplished a major number of the more important ones:

1. Increase job and upward mobility opportunities for minority youth.

2. To change the behavior of the people within the system so that they can take a more system-oriented, problem solving view of how to accomplish their daily, weekly, and yearly objectives.

3. Train Vocational Guidance Institute enrollees in methods of systems analysis, principles of organizational behavior, and skills in facilitating the process of problem solving and providing the opportunity for these enrollees to apply their skills by assisting work-groups in assessing, evaluating and solving their problems at the local level.

4. To increase effectiveness, improve communication, provide for articulation of information and unity between and among units of intra/inter school personnel and the industrial sector.

5. Establish methods in the schools for continual assessment, modification, development, and implementation of the program to enhance the transition of students from school to job.

For us at this moment in time, in this metropolitan area, these seem most valuable.

We believe that the project design can be replicated. I hope that the attached report will inspire others interested in conducting a vocational guidance institute to utilize the plan which we have found so helpful.

Cordially,

Rosalind Loring

Rosalind Loring, Director
Department of Daytime Programs
and Special Projects

VOCATIONAL GUIDANCE INSTITUTE '71

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A SENSE OF COMMUNITY

"We dance 'round in a ring
and suppose, while the
Secret sits in the middle
and knows."

Robert Frost

INTRODUCTION AND STATEMENT OF PROBLEM

For many years American education has operated on the premise that resources for education were unlimited. But in recent years, as bond elections failed and taxpayer revolts mounted in intensity and frequency, it became obvious to the administrators of educational enterprises that they could no longer operate as though resources were unlimited. Typically, education has reacted to the restriction of resources by retrenching; there has been a reduction in services, a reduction in personnel, and a general pulling back of all types of support programs.

An area that suffers most acutely in retrenching is student services such as vocational guidance counseling. Vocational counselors have taken on heavier and heavier counseling loads as student populations mounted with no corresponding increase in counselor

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personnel. The problems arising from the heavy case loads have become particularly acute in the inner city where the usual problems of vocational and general career counseling are compounded by (a) the need for students to get jobs in order to help support the student's family, (b) the flight of business and industry to the suburbs, (c) the "last hired - first fired" employment pattern for minorities, and so on.

It is possible to view some vocational counseling problems as problems of integration and allocation of resources. From a resources management point of view, there are several solutions available to resolve this problem. One solution would be to increase the number of personnel available to do vocational counseling - that is an improbability because of funding restrictions. A second possible solution would be to obtain paraprofessionals to assist in vocational counseling, and although this solution is being tried it meets obstacles of professionalism and training requirements. A third solution would be to look at all the resources available that could be integrated and reallocated to a problem solution. Resources that are infrequently utilized by the schools are the information and energy available in the community people, businessmen, and students of the school.

Therefore, the VGI'71 was born out of an idea that the vocational guidance counselors are already working as hard as they can possibly work. We believe that there will be no marked change in the amount of resources available to the schools from the usual sources. Therefore, if the problems of vocational guidance are to be attacked successfully, the schools must utilize solution paradigms other than the usual ones.

The overarching goal of the Vocational Guidance Institute, 1971 (VGI'71) was to produce change in the social behavior of local communities. The primary desired change in behavior was increased articulation between and among the school (especially the vocational guidance counselors), business and industry, and the community. We felt that the increased articulation would result in a "community of understanding" and would be evidenced by the establishment and operation of local action groups composed of representatives from the three major elements of the larger community. The action groups would initially take as their focus the vocational guidance purposes of the National Alliance of Businessmen and the VGI'71. However, once the vocational guidance purposes of the local action groups had been initiated, the groups

would be available both to perform other community tasks related to the original purposes of school-business-community cooperation and as a model for other local action groups to learn from and copy.

In other words, the goal of social change was to be achieved by means of local action work groups focused on vocational guidance for high school youth. We felt that it was possible to achieve the goals of the VGI'71 by training teams of representatives from the three school-business-community elements of a local community in techniques and skills of how to initiate and maintain local action work groups. The new teams of trainers would go back into their own communities and start work groups. The work groups, then, would be the agents of goal achievement. The teams of local people trained through the auspices of the VGI'71 were to be a way of starting the work groups and leaving a "seed" effect of how to organize the resources of a community to serve the purposes of that community.

The VGI'71 looked to the larger community to provide resources to help solve problems of vocational counseling for youngsters in high school and graduating from high school. However, because school people

have had very little training and experience in finding, organizing, and utilizing community resources, the immediate purpose of VGI'71 was to teach the people of the schools, business, and community (particularly vocational guidance counselors because they are the only fixed, permanent group of the three elements) how to organize community resources to help resolve problems of counseling youngsters in the high school.

The primary focus of the VGI'71 was on minority youth of the Los Angeles metropolitan area. A second very important focus was on getting jobs for graduating seniors.

> *"For a long time we have contended that some bonafide agency should be established to help young people make the crucial decisions on what career they want to pursue.*
>
> * * *
>
> *"Thus it was heart-warming to know that a substantial agency has just started to help high school graduates bridge the big and difficult gap from the student world to the challenging fields of employment. The new Agency, based at UCLA, is called the Vocational Guidance Institute. It is presently trying to combine the information and resources which exist within the larger community of schools, industry and community to aid the student in making intelligent career decisions.*
>
> * * *
>
> *"The basic concept of the Institute is team training for local action. Currently it is implementing four teams which will in turn go into a series of school communities and develop local action work groups.*
>
> * * *

"The Institute training teams and work groups include school representatives...administrators, counselors and teachers...and students. Representatives from the community, industry, and business round out the membership, and participants for both the Institute and work groups are recruited through the schools."
*Chester L. Washington, Editor of The Southwest Wave, Vol. 53:19, p. 1.**

The narrow focus on job placement for minority youth does not deny the very great importance of providing broad vocational and career counseling for youth. Neither does the narrow focus of the specific tasks of this institute deny the more global and transcending goal of helping people learn how to organize their own, existing resources to accomplish their own local purposes. Rather, we felt that a specific focus would help us concentrate our energies on one major task of the school-business-community triad, i.e., helping to place youngsters in gainful employment while they are still in school or upon their graduation. We also felt that the task-focused training would implement the larger, long-range goals of developing local skills for social change.

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*For the complete editorial, see Appendix A.

THE PROBLEM SETTING

The greater Los Angeles area has been particularly hard hit by the recent economic downturn in the United States. Unemployment has reached an all time high for a twenty year period. People responded to our statements about finding jobs for youngsters with the statement "There are no jobs for kids! There are no jobs for anyone!"

By all the usual signs, 1971 is a poor time to start a program to find jobs for high school youth. There are tens of thousands of men and women looking for work, out walking the streets every day. Men and women who are educated, trained, skilled, and experienced are taking jobs which do not require their education, training, or experience. The focus of the VGI'71 on "jobs for minority young people" was an affront to all the doom-criers and so-called economic experts who said there were no jobs.

However, we felt that the negative responses about jobs for youth were based primarily on a lack of information and organization of existing information and resources. Therefore, we went ahead with the idea that organizing the community and business resources would yield jobs and placements.

*"...the system said no jobs - well, we found them!"**

PARTICIPANTS

Three school districts participated in the VGI'71: (a) the Catholic Archdiocese of Los Angeles, (b) the Compton Unified School District, and (c) the Los Angeles Unified School District.

The Catholic Archdiocese of Los Angeles consists of 275 elementary and 71 high schools, with a total of 157,000 students. The system is the second largest in Southern California. The Archdiocesan schools represented in the VGI'71 are schools with a high percentage of minority youngsters in the lower economic range of Los Angelenos. The vocational guidance counselors of the Archdiocesan schools generally have teaching duties in addition to their counseling duties and have not had strong programs of vocational placement, i.e., finding jobs for youngsters as they graduate. The Archdiocesan team represented four high schools.

The Compton Unified School District consists of three high schools and associated junior high and elementary schools. The Compton district takes in several

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*From an evaluation questionnaire.

communities with high percentages of black and Mexican-American citizens, and some Caucasians. Compton is primarily a bedroom community with little industry or business located in the school-district area. From Compton, we received a team representing all three high schools of the district.

The third district to be represented was the Los Angeles Unified School District which consists of fifty-six senior high schools plus associated feeder schools. The Los Angeles District provided two teams to the VGI'71. One team represented a mostly Mexican-American school and one represented a mostly black school.

The Los Angeles Unified School District is the second largest school district in the United States. The district is plagued with organizational and management problems and in addition has recently been hit by a demand from the California legislature to reorganize and also by a Federal court order to desegregate.

THE PLAN OF ACTION

To achieve the goal of increased articulation among the several elements of a community and improved utilization of community resources as applied to vocational counseling, the most ideal situation would be for a team of professional trainers to go into a specific school and train those people in that school by helping them set up a school-industry-community committee. That would be the simplest and best solution to the problem. The difficulty with that solution is the expense in both money and time. A team of trainers could do about ten schools per year. So, if the idea of teaching school people how to organize their resources is to have any far-reaching impact at a reasonable cost, the program must be designed to produce local "trainers" to work at the place where the problems are.

The local trainers could organize and develop local action work groups to resolve vocational counseling problems, and the skills learned by the trainers as a product of developing vocational guidance work groups would be equally useful in organizing and developing other forces to attack other local problems. Perhaps more importantly, the skills de-

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veloped would be available for use in the community long after the National Alliance of Businessmen and the VGI'71 had left the scene. In other words, the essence of the VGI'71 program design is in creating local action work groups that can (a) work on immediate problems such as vocational counseling, (b) identify and work on other, local problems, and (c) organize and develop other training and work groups like themselves. The last item, creating a continuously widening effect, was felt to be the only reasonable long-range means of increasing the ability and power of local people to solve their own problems through improved organization and utilization of existing community resources.

IMPLEMENTATION OF THE ACTION PLAN

General Rationale

We conducted a two-stage, two-site Vocational Guidance Institute which was designed (a) to help VGI'71 attendees learn some skills on how to create and maintain local action work groups, and (b) to help the newly-trained VGI'71 attendees practice those skills to create a local-action work group.

The two stages of training took place at training sessions at the University of California at Los Angeles and at installation sessions of the work groups in the field. The school-business-community teams which participated in the VGI'71 had two roles. While in attendance at the UCLA based training sessions, they were VGI'71 trainees and were under the supervision of the VGI'71 training staff. When the VGI'71 trainees went to the field to initiate work groups, they became trainers, working under the guidance of the VGI'71 training staff. (For purposes of discussion, then, the VGI'71 attendees are called Training Teams, even though they were often being trained rather than training.)

The work groups were to be based in the schools. The members of the work group were to be drawn from the same three elements of the larger community, with the addition of a fourth element, the students themselves. The function of the work group was to find and coordinate information to help place graduating seniors in jobs. The local-action work groups were to be known as Vocational Information Coordinating Committees (VICC).

Four training teams were organized, one from the Archdiocese, one from Compton, and two from Los

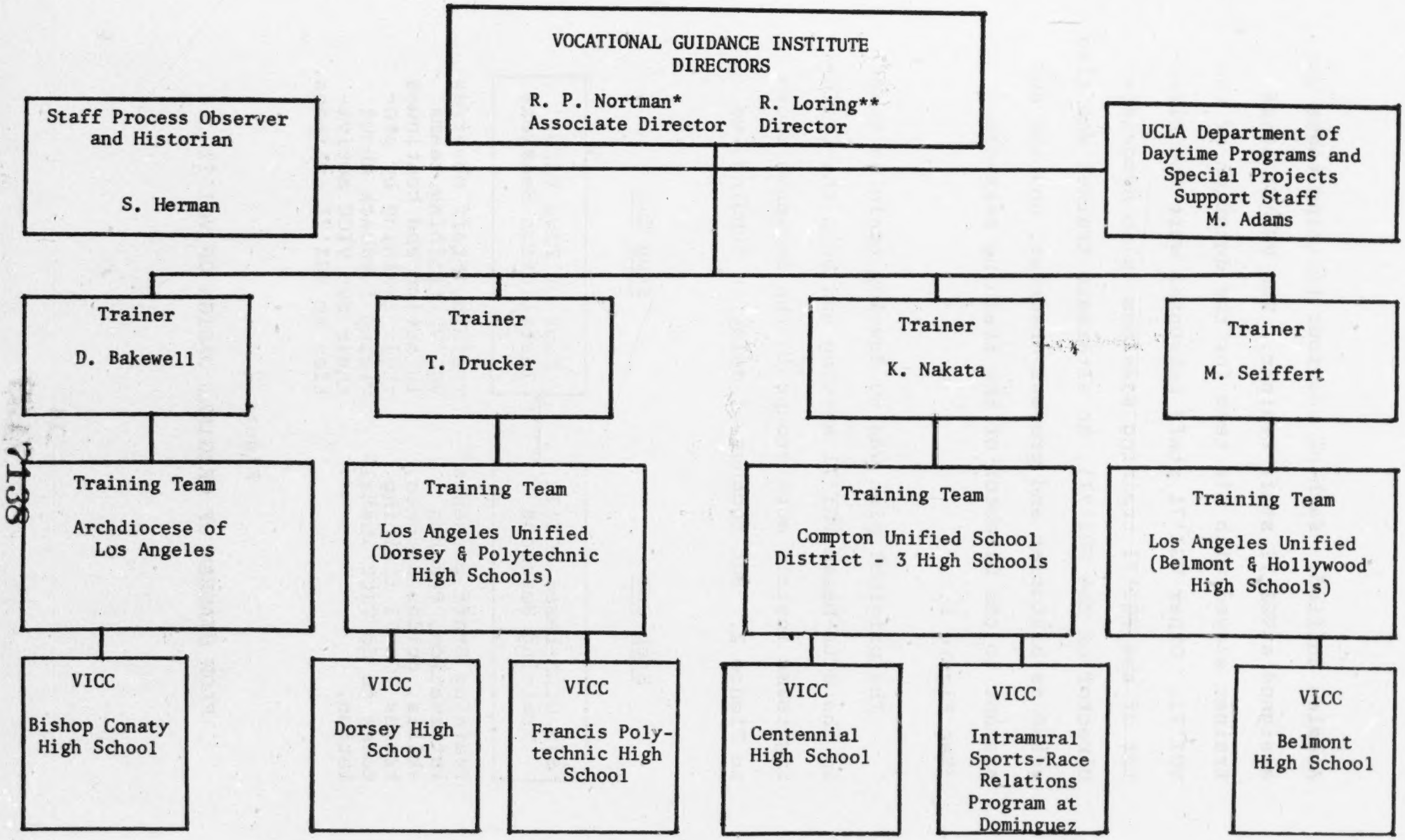

Figure 1
ORGANIZATIONAL RELATIONSHIPS OF VGI '71

*Director, VGI'71 Training Activities

**Director, Department of Daytime Programs and Special Projects, UCLA Extension

Angeles Unified. Each of the four training teams was assigned a VGI'71 staff trainer. The VGI'71 staff trainer stayed with his team for the duration of the VGI'71. Other VGI'71 staff personnel were the Director of the VGI'71 training sessions (also Associate Director of the VGI'71), an alternate trainer who also acted as historian and process observer, and the assistant to the Director of the training sessions. (See Figure 1.)

The original plan was to develop training teams in the UCLA-based VGI'71 setting and help the training teams install work groups in the sequence shown in Figure 2. But because of delay in funding, we

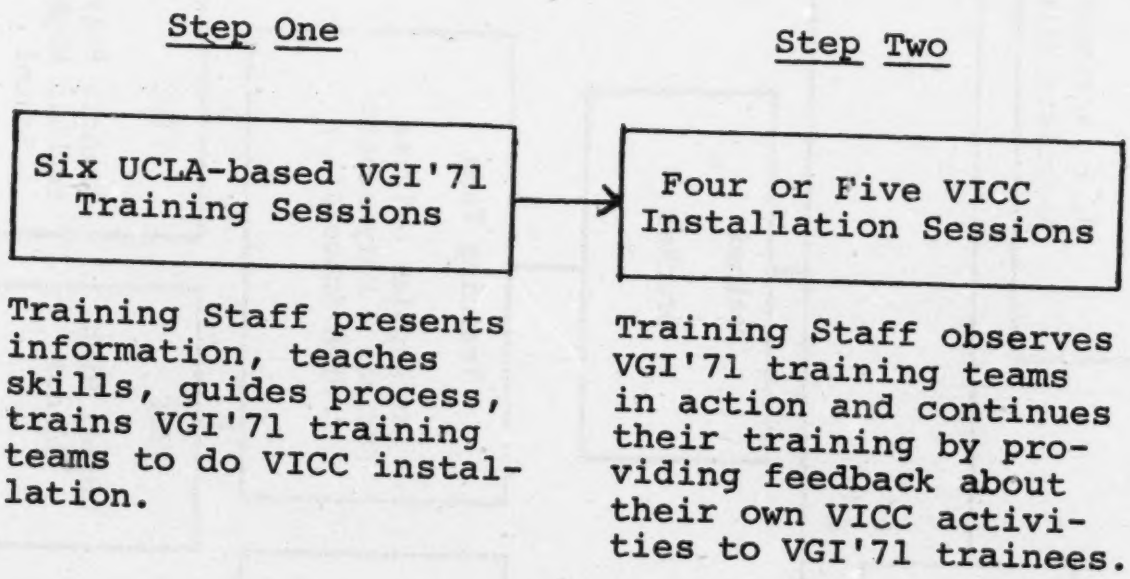

Figure 2

FLOW DIAGRAM OF ORIGINAL DESIGN OF VGI'71

were forced to overlap some of the VGI'71, UCLA-based training sessions with some of the VICC installation sessions. (See Figure 3.)

This forced overlap of VGI'71 training sessions with VICC installation sessions was a serendipitous but very useful change in the training process. It permitted the training teams to field-test their learnings. Because each training team was accompanied during its field experiences by its own VGI'71 staff trainer, the training teams tried their ideas in the marketplace of reality with assurance that they would receive good support from their trainer-in-attendance. As the teams progressed in the work-group installation, they brought to the UCLA-based VGI'71 sessions feedback about their field experiences. The field responses were also influential in changing many details within the general purposes and structure of the VGI'71. In effect, the interleaving of VGI'71 training sessions and VICC installation sessions created a quick-response feedback mechanism that was used to modify the training processes and design.

Daily VGI'71 Sessions: General Plan

The daily activities of the VGI'71 followed a two-step process of theory session followed by practice sessions to help members of the training teams learn progressively more difficult knowledges and skills.

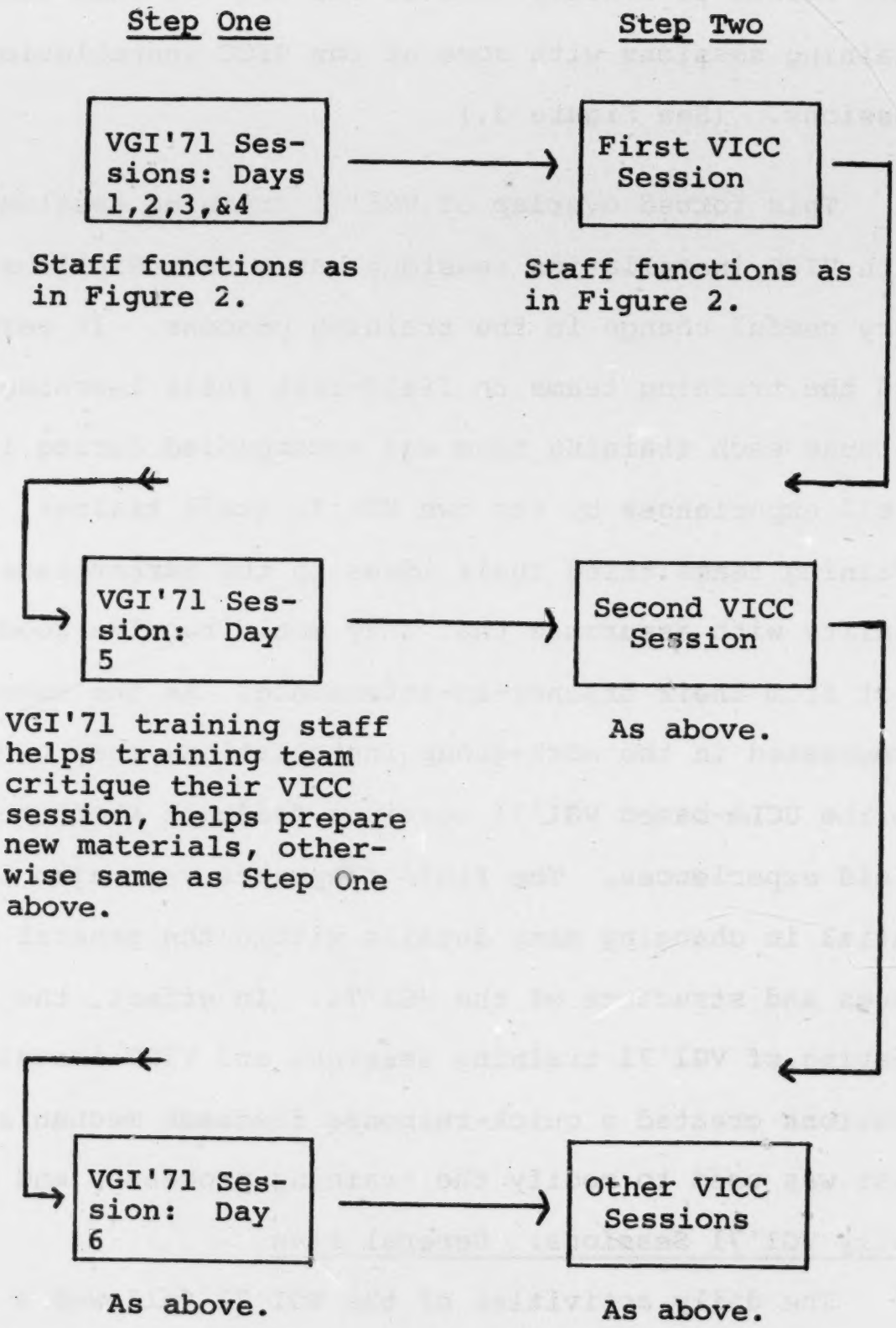

Figure 3

FLOW DIAGRAM OF DESIGN OF VGI'71 AS IMPLEMENTED

The morning sessions were generally given over (a) to presentations of information about the environment in which vocational counselors had to operate and the problem area on which the VGI'71 was focused or (b) to teach knowledges and skills on problem-solving processes and how to deal with the environment.

In the afternoon sessions, the participants worked in small groups as training teams organized around the target schools. The small-group sessions were designed to give the participants task-focused practice in using the knowledges and skills presented in the morning sessions. The tasks were usually related to the field installation and maintenance of a local-action work group. The acquisition by participants of skills they would use as trainers in their field work occurred mostly in the small training-team groups during the performance of the real or simulated tasks. (See Appendix B for daily schedule.)

Through all the training activities, the training staff put heavy emphasis on teaching the participants how to give and receive feedback about individual and group behavior. The type of training implemented by the VGI'71 is aimed at internalizing the effect of problem-solving by means of interaction with other people. This model of "learning from the inside out"

is completely dependent on the learner receiving and using feedback from others in order to modify and make more useful his own participation in the task activities of the group.

The training elements of each successive day included continued practice and use of knowledges and skills learned in the previous days. For example, on the morning of the second day the participants were presented with brainstorming techniques and the rules for brainstorming. The training teams immediately used the brainstorming technique to get ideas for constructing an interview instrument for use in their industry visits that afternoon. On the morning of the third day, after the teams had the first industry visit, the participants were presented with some techniques for analyzing the forces that inhibit or promote the goals of a working group, i.e., force-field analysis. During the small group work sessions following the presentation of the force field analysis, the task of the training team groups was to brainstorm some factors that had operated to hinder or help them achieve their objectives during the industry visits the previous day. So the brainstorming learned on the second day was used to achieve better force field analysis on the third day, and so on.

Daily VGI'71 Sessions: Preparation for Participation

Prior to plunging the participants into a training activity both intense and unusual, the Director of the VGI'71 training sessions felt it was necessary to prepare the participants for active, useful participation in training activities.

The outcomes of a training program such as the VGI'71 are very dependent on the amount and quality of participant motivation and involvement. Experience in other, similar training programs requiring participant involvement indicated that unless the trainees received proper psychological preparation their participation in ensuing activities was often poorly motivated and therefore minimal and of low quality, which produced low-quality learnings. The first task of the VGI'71 was to prepare the trainees for participation in all of the training activities to follow.

There were four main activities and techniques by means of which the training staff helped the participants prepare for maximum participation. First of all, a relaxed but business-like atmosphere was created. An urn of coffee was always available, there were no formal breaks, chairs were set for a discus-

sion circle, and people were encouraged to be comfortable. The atmosphere was designed to engender a feeling of personal freedom with the requirements of tasks to be performed. The remaining three preparation activities will be discussed in the next section about activities of the first day.

Daily VGI'71 Sessions

First Day, April 3, 1971. The training objectives for the first day were (a) to help the people on the training teams join together and become a working unit, (b) to present information about employment conditions for now and the future, (c) to present information about trends in the field of vocational guidance, and (d) to present some information about the VGI'71 target population (low-income, minority youth).

One of the major problems that needed to be overcome in this institute was the lack of articulation that exists between the schools, industry and community. Therefore, there was a very strong need to reduce the psychological distance (represented by inefficient and ineffective communication), and to increase the articulation, among the three elements represented on the training teams.

To achieve the first goal of unifying the members of a training team, each trainer directed his team of trainees in a non-verbal communications exercise called Scrambled Squares, in a special type of personal introductions, and in a goal-setting and tension-reduction session.

Scrambled Squares is a five player, non-verbal communications exercise. The group goal is to build five squares from fifteen puzzle pieces. The goal of each of the five individual players is to build a single square. Although individual and group goals may appear to conflict, the task is finished only when all five puzzles are completed, so the most effective and efficient interaction is cooperative team effort. The exchange is made more difficult by introducing several restrictions on communications, on giving and taking of pieces, and on the number of pieces a player may have.

The purpose of Scrambled Squares is to let people look at the communication systems that exist in small group interaction; to examine the contributions of individual members to a common goal; and to give the members of the small group a feeling of task orientation and accomplishment very early in the group process.

Following the exercise there is a post-exercise discussion - a debriefing - during which the players get a chance to examine their own behavior and to propose some observations and concepts about how they worked together and how they might better work together next time they have a task to perform.

The Scrambled Squares exercise can be used in several ways. In the VGI'71, because the exercise took place after a very brief oral introduction to the entire VGI'71 training process, Scrambled Squares served first as an "ice-breaker." Then, during the post-exercise discussion, the trainer assisted the participants to learn from their experiences in the Scrambled Squares. He helped the players look at some of the processes of cooperative team effort where each player has a subgoal which is integral to and can contribute to the group goal (an analog to organizational behavior). The trainer used feedback reports on behavior occurring during the exercise to help the players explore the necessity for an individual to be aware of the effect of his interactions with the organization, its subunits, and the individuals comprising it.

Experience with many other training groups of various kinds has demonstrated that this exercise can

be very effective in reducing psychological distance among disparate elements of a newly formed work group or training team. It is the observation of the Director of the VGI'71 training activities that groups who experience Scrambled Squares learn more about small group communications in less time than they would have learned without the exercise.

Following Scrambled Squares, each trainer engaged his team in an exercise called Introductions. In the Introductions exercise, each participant is asked to present himself to the other people on his training team as an approachable, human resource of the training team. The goal of Introductions is to increase cooperative effort and organizational synergy by helping the members of the group know more about their fellow teammates and the work they do. A human resource not fully used, or unused, is a resource lost to the purposes of the organization.

In Introductions, participants are asked to take about five minutes to answer four questions about themselves. The questions are:

1. Where and how was I raised? What was my life like until I started my present career?

2. What is my technical and professional background--education, training, experience?
3. What is my present role as related to this group--what do I do, and where?
4. What is my strength that others can tap into--what do I like to do and do well that might help in the accomplishment of the goals and objectives of the Institute?

Introductions done as described take a large amount of time--at least seven minutes per participant when both time for questions and time between introductions is considered.

A final activity used to help members of the newly formed training teams get ready was an exercise called Expectations and Concerns. The task in the Expectations and Concerns exercise was for the training team (5 - 8 people) to prepare a list of ideas and feelings about what the individual members of the group hope would happen to them as a result of and during the VGI'71 training sessions. The groups were also asked to prepare a list of what they feared might happen during and as a result of the sessions. Each small group presented the list it prepared to the large group of all the participants. The group presentation

demonstrated to the participants that the expectations and concerns of their training team were fairly common to all.

It has been observed that a large amount of the unease and psychological discomfort which participants have in a new and different training session can be somewhat dispelled by encouraging them to talk about their concerns and their goals and objectives. Expression of participant "hopes" and "fears" provides an opportunity for the training staff to talk about and reduce concerns of the participants and to help them arrive at realistic training objectives. At the same time that the participants reduce their fears by voicing them, the expression of expectations can help the participants create a positive goal system and thereby increase learning.

The result of the preparation-for-participation activities is better interpersonal communications in the small group. The more open climate improves discussion, planning, and questioning. Participants occasionally express a concern that the time spent in preparation activities is wasted, but the experience of the designer of this program, as well as others, quite clearly suggests that if the preparation is

slighted there is a reduction in the amount of learning that takes place in the ensuing training activities. On the rare occasions when preparation was restricted or eliminated because of time, during other training activities the participants have behaved in ways that demonstrated their confusion about goals and concerns, and they have shown reduced ability to communicate and cooperate with each other in the subsequent training tasks and discussions. Therefore, it is the conclusion of this writer that any time cut from the preparation and get-ready activities will be more than made up later in confusion, conflict, and reduced learning.

(In addition to their value in helping to produce a good psychological climate, exercises such as Scrambled Squares, Expectations and Concerns, and Introductions can provide substantive learnings in phenomena of organizational behavior. Days, weeks, or even months after an exercise has taken place, it is common for a former participant to remark about how something that happened to him in his work was "Just like the way Jerry held onto his pieces in Scrambled Squares! But now I understand why people do that and how to adjust for it.")

The training outcomes of the morning sessions of the first day included an increased feeling of community, increased awareness of commonalities and differences, and increased tolerance for each other's vagaries.

> *"I feel that day was primarily spent dealing with the building of trust."**

The afternoon of the first day was devoted to providing some basic information about trends in employment and vocational guidance, and about the target population - minority youth.

The first objective - presentation of information about employment patterns - was achieved by Anita Cohen from the California Department of Human Resources Development. Miss Cohen described the present employment picture as being very bleak and then talked about possible future employment opportunities for high school graduates. Miss Cohen presented volumes of information in a very short time.

Several members of the Institute challenged her as to the relevancy of much of the counseling help and written material presented by the Department of Human Resources Development. Much of the basis for

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*From a training staff report by Danny Bakewell.

their challenge was that many of the undereducated and poor Mexican-Americans could not use the help offered because it was not available in Spanish.

In order to achieve the second objective of the afternoon, Dr. Betty Ellis, Supervisor, Vocational Guidance Office, Los Angeles City Schools, gave the VGI'71 participants information about both the general field of vocational guidance and about specific plans for vocational guidance in the Los Angeles Unified School District. The main message was that many high schools of the Los Angeles Unified School District will have a new "career guidance" information center and a person to staff and direct the center. In addition, there seems to be generally emerging emphasis on work experience programs and on joining together with community and industry agencies to facilitate the transition of youngsters from the cloister of the school into the reality outside the school.

For the presentation of information about the client population, two men were invited to speak. Mr. Greg Ochoa is from the Benjamin Rush Spanish Language Counseling Center. He described how it felt to him twenty years ago, when as a Mexican-American young man, he was stereotyped by his vocational

counselor as having a good future in the farm fields as stoop labor. He described how today the same type of counseling (but perhaps not so blatant) is driving young men and women out of the schools and away from any significant opportunity to participate usefully in the larger society.

Mr. James Robenson is a special agent with the Pasadena Police. He recently completed an assignment as a police liason officer-in-residence in a Pasadena high school. His role and task was to work in the school as a counselor to youngsters who were having trouble with school authority and other authority. Mr. Robenson described the growth of youngsters who were given an opportunity to have a private place in the school where they could talk to a man in a non-authoritarian environment.

The primary message that both men gave to the members of the institute was that "The kids you say you're trying to help are not really in the schools, they're out on the streets! If you really want to help them you have to go out there to them!" A member of the institute inquired "You mean that we as vocational guidance counselors should set up our office out on the street corner and try to work with them

there?" And the response of Robenson and Ochoa was, "If you want to help the kids, you'd better go where they are because they won't come to where you are!" Comments made later by VGI'71 trainees suggests that the presentations by Robenson and Ochoa broke into their standard pattern of thinking. The trainees reexamined their institutional patterns and institutional goal systems and came to a realization that they would have to create new institutions or at least modify the old ones to reach their goals of helping youngsters make good career decisions.

The rest of the first day was spent in individual team discussion groups, each group with its own VGI'71 training staff member.

Second Day, April 4, 1971. The activities of the second and third days focused on the use of visits to business and industry to gain information and affect to use in counseling students.

Industry visits were scheduled for the afternoon of the second and third day. Although it may have been more appropriately timed in the developmental sequence of the VGI'71 to hold the industry visits later in the series of meetings, the specific days

were chosen because they occurred during Easter vacation, which meant automatic release-time for participants from the schools.

The goal of the industry visit was to give the members of the VGI'71 training teams an opportunity to see what the industrial and business world was like and to get a feeling for working conditions of entry-level jobs. To maximize the learnings, the industry visits were used to get specific kinds of information about working conditions, opportunities for promotion, special restrictions on hiring, and so on.

The specific objectives of the morning of the second day were (a) to teach the training teams some brainstorming, and (b) to develop an interview question-schedule to use during the industry visits.

The goals and objectives for the day were presented in the large group of all institute members. The rules and techniques for brainstorming were then presented by each trainer to his training team. The teams practiced brainstorming on the task of getting items for an interview schedule to be developed for use that afternoon.

Each team then evaluated, edited and put into an interview outline the items it had developed. The four outlines were combined and condensed into one by a committee composed of one member from each team. The committee constructed the new, combined interview outline while the rest of the large group observed.

By the end of the morning of the second day, the training teams had a rough outline which team members could use as an interview instrument as they visited an industry.

The four teams of the institute broke into two groups. One group of two teams visited Sears-Roebuck and the other group of two teams visited American Airlines.

The training staff found that many of the VGI'71 participants came to the industry visit with the idea that they should use the industry visit as an opportunity to change the hiring and promotion policies of the businesses and industries that they were interviewing.

The major learnings of the afternoon consisted of (a) information about jobs at the places visited, and (b) information and affect about how to ask ques-

tions of employers. Information and affect about how to interview employers was a particularly important outcome because there was a great deal of hostility brought to the industry visits by some members of VGI'71 training teams who were quite militant about the treatment which minority people get both when they go for job interviews and on the job. Some VGI'71 trainees also seemed to feel that the business representatives have the attitude that minority people are getting a fair deal while the VGI'71 participants feel they are not.

The training staff made immediate use of the hostility and anger and resulting lack of information exchange that arose out of the tour and interview sessions as a means and setting for teaching the participants how to ask questions in a way that reduces interpersonal conflict and tension and gets information. The training effect was achieved by giving the trainees feedback that their hostility produced defensiveness and a hostile reaction on the part of the representative of business and industry. Many of the participants went away from the afternoon of the second day feeling frustrated and as though they had been set back in reaching their objectives and goals rather than advancing toward them.

Third Day, April 5, 1971. The morning of the third day was given over to a presentation of Lewinian force field analysis by Mrs. Jean Renshaw, Management Consultant. She used a simplified model emphasizing vectors of restraining and driving forces. After some discussion of the model and its use for analysis of group behavior in the large group, each team went to its small group session. They applied techniques of force field analysis to what had happened the previous day in interviews with industry and business representatives.

The presentation of a model of force field analysis and subsequent brainstorming and discussion of the second day's interview behavior resulted in a rather marked change in the approach which the groups used in their industry visits on the afternoon of the third day. The interviews and visits of the second day had been quite openly hostile and had created defensiveness on the part of the industry and business representatives, but the visits to General Telephone and North American Rockwell on the afternoon of the third day were much smoother, and the VGI'71 training teams and the host businesses acquired a great deal more information from each other than they had on the second day.

As a result of the industry visits, by the end of the third day VGI'71 participants had learned three major things about dealing with employers. They learned (a) to have a constructive, information-gathering attitude and not an attitude of attempting to change the behavior of the system being interviewed, (b) that it is necessary to have well planned and organized both the questions to be asked and who will ask what questions so there is a minimum of overlap and confusion among the interviewers, and (c) that careful analysis of one's behavior can produce a climate for change and thereby create a new and more useful behavior toward accomplishment of objectives and goals.

Fourth Day, April 17, 1971. The goals for the fourth day were (a) to present information about the driving and restraining forces of the community environment where the training teams would be working, and (b) to have the training teams prepare physically and psychologically for the first Vocational Information Coordinating Committee meeting.

Dr. Harry Grace, a social psychologist and Professor of Management at the University of Southern California, gave a presentation on driving and restraining forces in the community. Dr Grace talked about

the problems and reactions that the training teams could expect from people and institutions whose behavior is being changed. He presented an analysis of the larger problem the VGI'71 was trying to solve, that of changing the behavior of existing institutions and the people in them.

Dr. Grace also pointed out to the VGI'71 trainees the kinds of problems they might anticipate in dealing with the environment they were going to affect - the people and the institutions of business and industry, the community, and the schools. After his presentation, each training team used their knowledges of brainstorming and force field analysis to determine the forces that they might find in their own specific environment.

Because the first meeting of the VICC was to transpire sometime during the following week, as the final activity of the afternoon of the fourth day each team developed an agenda for the first field installation meeting of the VICC. Specifically, the training teams were asked to prepare an agenda and to simulate the first VICC meeting.

The simulation was accomplished by part of each training team acting as the new VICC and the rest of

the training team acting as itself - a VICC-installation team. After their simulation, the training teams each went back through their agenda and repaired the places they had found inadequate during the simulation.

Fifth Day, April 24, 1971. The fifth day was given over to two major activities. The first was to get feedback from the training teams on what they had encountered at their first VICC meetings. The feedback was done in both large and small group discussions. The training staff focused the feedback on how to improve the VICC sessions. The training teams were guided through the process of finding causes of dysfunctional group behavior and preparing strategies and tactics to prevent the occurrence of the same behaviors at the next meeting.

The second activity of the morning of the fifth day was a presentation by Shan Herman of the Civil Defense Training Program, University of Southern California, and a member of the VGI staff. She presented information and conducted an exercise on the development of goals. After the formal presentation, the training teams met in small groups with the trainers to develop goals for their own training teams. In the afternoon, Tom Drucker, Director of South Bay Project Q.U.E.S.T. and a member of the training staff,

made a presentation of group dynamics activities that the training teams would need to perform in order to maintain the health of a task group.

The afternoon of the fifth day was spent in preparing agenda for the VICC meetings of the following week and working through some anticipated problems of group process the training teams and VICC's might meet in their meetings of the following week.

Sixth Day, May 1, 1971. The sixth day was the last day of the UCLA-based training sessions. (The training teams were scheduled to have at least one more field-session with their VICC's.)

On the morning of the sixth day, each trainer met with his own team and did some debriefing activity regarding the previous week's work. (This break from the usual pattern of beginning each day with a large group session was to encourage the training teams to feel independent of the VGI'71.) Dr. Grace made a presentation on the integration of an evaluation model into the training team and VICC activities. Following his presentation, the teams met in their small groups and began to develop and integrate an evaluation model into their own ongoing training activities.

The afternoon was devoted to preparing agenda and working through some of the group dynamics problems.

Problems Which the Training Teams Faced in the Field

It was felt from the very outset that the field experiences of the training teams - field experiences while trying to start up and maintain VICC's - would be one of the most valuable learning activities they could engage in. In order to assure maximum learnings on the part of the VGI'71 training teams, each trainer was assigned to go with his team during the installation sessions.

The learning model implemented in the VGI'71 was that people can learn effectively by being guided through a trial and error process. All of the small-group training activities were set in an atmosphere which encouraged the participants to be willing to try some behavior even if failure appeared probable because one can learn from failure as well as from success. The operational errors made by the new training teams during their VICC installation sessions were mostly the result of planning errors.

There were several types of planning errors. One group overplanned their first VICC meeting, and as a consequence had an agenda too long and too complex to operate. Their field-solution was to scrap the agenda and hope for the best. As a result a very dynamic and forceful member of the training team took over the VICC meeting. This training team spent almost the entire afternoon of the planning day on preparing the agenda and therefore didn't have much time to simulate the VICC meeting. They achieved success despite their prior planning.

Another team had prepared a very simple agenda. During their planning session both the team trainer and the Director of the VGI training activities pointed out to the team that they would likely run into the rocks of chaos if they didn't have specific roles assigned to training team members. But the team decided to let everyone on the training team do whatever he saw needed to be done. Furthermore, they could not be persuaded to simulate the first VICC meeting. Their first field session of the VICC was a shambles. Participants came in and went out of the meeting without logical reasons or patterns. Some people who had been invited to participate could not because of the chaos, and some people who had not been invited to

participate participated too much. The failure of their first field-session meeting required them to essentially scrap their first VICC and begin again with a new list of participants. Their second planning session was more productive, as was the second VICC.

A third group prepared a process-oriented outline agenda and by simulating it quite thoroughly anticipated many field problems. As a result of experiencing the simulation, they assigned and prepared specific people to deal with problem areas and in general prepared themselves for the first field session. At their first field meeting, they were successful in enlisting the help of community and business interests and organizing a VICC to take over the tasks of finding jobs for graduating seniors.

Although the experiences of the training teams with their first VICC meetings were quite different, all teams came to a fairly common set of learnings. In general, they learned from the experience the ideas and skills needed to produce a much better plan of action for the second, third and fourth VICC meetings. In the group which had not done a good job of planning and simulating the problems, it was necessary for them to go back to that planning and simulating

phase before they could proceed. In the group which had planned carefully and simulated quite carefully, the response to their successful first meeting was to continue the same pattern. The groups that simulated the first meeting seemed to be more aware of the problems they might face and were better prepared to deal with them. (It appears that in this situation, even a poor simulation was better than none.)

The effect of field experience was uniformly beneficial in that it forced each group to stop and look at its training team behavior and attempt to modify that behavior in order to achieve the goals of the VGI'71.

RESULTS

The Archdiocesan team has a VICC started and operating in one school. They have made plans for next fall and are ready to install VICC's at three more schools sometime before February, 1972.*

Score: One positive, three probable.

Compton has a VICC started and operating at one school. In addition, one of the members of the

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*See Appendix C for an excerpt from Archdiocesan training team report.

training team has taken the technique of training and organizing community resources and applied it to a different problem situation in his school.

Finding jobs for youngsters was already organized in this school, so the VGI'71 training techniques are being applied to the problem of interracial conflict at interscholastic athletic events. The VGI'71 participant and member of the Compton training team is training and organizing the young people of his school in group skills so they can help themselves resolve their own conflicts.

A third group in Compton is scheduled to start next fall with a VICC local action work group to find jobs for high school seniors.*

Score: One positive, plus one positive, and one probable.

In the Los Angeles schools, the Dorsey team is comprised mostly of students and is run by students with the VGI'71 training team playing a supporting role. The students have organized themselves, the businessmen, and local citizen groups into a local action work force. Students are presently soliciting money to support their organization. They have

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*See Appendix D for an excerpt from Compton training team report.

organized themselves into the Dorsey Employment Task Force so they can find jobs, create jobs, and initiate training programs. One of their long-range goals is to ask industry to come to their community and start industrial and business operations, create cottage industries, and so on. In other words, the students want to actually bring industry into their area to create new jobs that don't presently exist.

One member of the Dorsey team was from Francis Polytechnic High School. She has formed a new training team at the school and has begun a VICC local action work group there. This VICC decided to concentrate on work experience and vocational counseling programs for the youngsters in that school. In their first meeting they got industries, school, and students together for the first time in the history of the school to talk about their mutual problems and how they would organize themselves. They seem to be going and have plans as to what they are going to do next fall.*

Score: Two positive.

The second target school in the Los Angeles Unified School District, Belmont High School, had trouble

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*See Appendix E for excerpts from Dorsey High report, Appendix F for report from Francis Polytechnic High training team.

getting started. At this writing, they have met several times as a VICC. They have organized themselves into a student team to survey business and industry of the community. Their task is to find out where the jobs are in the community. It appears as though they have located a large number of jobs which none knew were in existence.

One member of the Belmont team was from Hollywood High School. He plans to begin a training team and VICC local action work group in Fall, 1971.

Score: One positive and one probable.

Total: Six positive and five probable.

The results are six local action work groups started now and five more planned for the fall. By this time next year, VGI'71 will have affected at least eleven schools.

OBSERVATIONS

In addition to the scorecard, there are several other outcomes. In conversations, both direct and overheard, the VGI'71 participants have said that they have learned new techniques and acquired new

tools to help them in the solution of many kinds of problems. Obviously, many educators have been exposed to various kinds of group dynamics training. But even for those who have been exposed to that training, the task-focus character of the process training of the VGI'71 was a unique framework. Many of the participants found that this training gave them an intellectual organization of knowledges and skills they already possessed. For others, this was a first exposure to knowledges, skills, and attitudes about the topics of the VGI'71.

Some Observed Changes

Specifically, the following changes have been observed in the participants in the VGI'71.

1. Change from regarding themselves as individuals with little or no power to members of a team with great power. The participants understand that their joint power is realized by combining the resources of each individual with those of other team members so the whole team, and therefore each individual, becomes more effective. (Many participants expressed wonder and awe at the amount of power they had assumed and used to accomplish their tasks and goals. Coun-

selors, students, and community people have an image of powerlessness; for some, the VGI'71 was revelatory of the power inherent in unity.)

2. Change from reliance on authority to increased awareness of the responsibilities of the individual to take and support action to achieve social benefit.

3. Change from viewing community problems as amenable only to solutions requiring resources and energy provided by some "higher authority" to the concept that most problems can be solved through intelligent organization and application of existing resources.

4. Change from a narrow understanding of the nature of leadership to a broader understanding of leadership, including the notion of shared leadership, delegation and assumption of power and responsibility, and integration of followership into the concept of leadership.

5. Change from regarding small groups primarily as vehicles for exchanging information to regarding small groups as a powerful technique for solving problems and taking action.

6. Change from focus by members of a small group only on task accomplishment to an understanding of the importance of attention to group process to achieve goals.

7. Change from attempting to meet one's own needs to putting aside personal goals if necessary to accomplish group goals.

Other Observations

There are some flaws in the results - all is not positive. A major disappointment was the minimal participation of business and industry in joint training activities with school and community people designed to help them become a part of the larger community. Although several representatives from the business community participated in the first two or three sessions, only one person went through the entire process of integration and allocation of their human resources into the larger community of understanding. The reasons for their non-continuance are not known, but we feel very strongly that the responsibility for the work of helping young men and women become useful producer-citizens cannot be put entirely on the schools. Only the larger community has the knowledges, skills, and resources adequate to that Herculean task.

The previous comments about business and industry participation does not negate the absolutely essential help given by many people from the business world. Dozens of men and women, managers and workers, known and unknown, gave unstintingly of their time and effort, often beyond the call of duty. We are only observing that more effect can be achieved when all elements of the community participate in the entire process of building new skills and agencies.

RECOMMENDATIONS

From our experience in this program, and seen in the light of experience in other training programs, we feel we can pass on to others some ideas for future action. The recommendations offered here are the result of continuing evaluation of our own observations and feedback from other people during the entire tenure of the VGI'71. The following ideas were selected from among many because of their generalizability and applicability to other situations.

Recommendation One: The Training Paradigm. We recommend that the training proceed from the local level where the problems are to the eventual train-

ing of trainers to widen the effect of the original trainers by creating new training teams to go to new target schools. It would engender better motivation for the entire process if the VGI training staff went first to the target school and helped the school people go through the procedure of finding and defining a problem, organizing a solution system, and then learning the principles which they had sort of intuitively applied.

Then, the training staff and the new work group could select from the work group several people for further training in techniques of starting new work groups. The advantage to this process of going from the problem to the tools is that by the time the training teams are prepared to build new work groups they have some very good experience as receivers of training and a good understanding of the roles of the work groups (VICC's).

The long-range goal would be the same - helping educators learn how to organize their community resources - but the process would come from local problems and would, therefore, be more relevant. The experience of being part of a successful work group would give confidence to the new training teams that

they would have the capabilities to take the next and last step in the chain, that of being an installation and training team for a new target school.

Recommendation Two: Planning. As much energy was spent in replanning and helping participants understand the goals, objectives, and processes of the VGI as was spent in the original organizing and planning. It is imperative that the program participants and all the persons who will be affected directly by the program engage in the planning process or at least be represented by their peers. In the VGI'71, district-level administrators were in on the early planning, but we feel now that the knowledges and understandings the administrators bring to the planning processes must be supplemented by the knowledges and understandings of the prospective participants - counselors, teachers, community people, and business and industry representatives. Planning must include - better still, start with - the grass-roots people who will be doing the work of installing and conducting work groups. (The use of the paradigm illustrated in Figure 4 will necessitate the deliberate and conscious inclusion of administrators because the process begins with people other than administrators.)

ACTIVITIES OF SCHOOL AND COMMUNITY PEOPLE	Find and define local problem	Organize local resources	Extract and formalize learnings on problem-solving and organizing of resources	Help new groups go through the same process
ACTIVITIES OF TRAINING STAFF	Help define and organize the problem	Help local people "do their thing"	Help local people learn and generalize the successful process to new problems and/or new target areas	Act only in support role, helping first group learn how to help others and make the process ongoing and self-generating

Figure 4

A PARADIGM FOR CREATING SOCIAL CHANGE THROUGH ORGANIZATIONAL DEVELOPMENT

In addition to the requirements for careful planning, the entire process must be open and flexible enough to permit and encourage replanning and revision of the program to meet the emerging and changing needs of the participants in order for them to reach their goals.

Recommendation Three: Timing of the Institute. The VGI'71 was not funded until March 28, 1971, so we didn't have much choice regarding the conduct of this institute. However, spring is the end of the school year and is one of the worst possible times to attempt an innovative program in the schools. We recommend that the program be started either in late summer - with time out for the opening of school - or after school has opened. The principle to be followed is to avoid the natural times of organizational pressures.

Recommendation Four: Selection of Staff. The staff is the critical element in a program for organization development. The first 30-45 minutes of contact the staff has with the trainees can set the tone of the training process for a long time. The following criteria may help in the selection of training staff. The ideas are listed in the general order of their importance. Members of the training staff should be:

a) committed to the goals and processes of the program;

b) experienced in training and development of organizations;

c) willing to learn, grow, and change their own processes and behavior;

d) objective about their role and involvement as trainers - the trainers must be able to stay outside the problem and the group and must be willing to let go of the group as it outgrows the need for training and intervention;

e) willing to participate in pre-session planning and preparation; and

f) adaptable and flexible in implementing the goals and objectives of the program.

Recommendation Five: Follow-on Actions. If our observations about the effects of the VGI'71 are correct, and the effects are desirable, there are two general follow-on activities to be performed.

We recommend that training and retraining support be provided to the VICC's. It would be necessary to provide one person, on a fee basis, who could act

as a process-trainer for work-groups already begun or about to be begun. The trainer would visit with VICC's (at their invitation) and observe them and give feedback about their process, and to help them move into new fields of action.

We further recommend that several one-day information-exchange sessions be instituted for VGI'71 attendees and work-group (VICC) participants. The objectives would focus around reporting and exchange of information about the many knowledges and skills developed and applied to the work of the several training teams and VICC's since the last formal VGI'71 training sessions. In addition, VICC participants could share job and client information, thereby starting a higher-order, informal institution to deal with system-wide problems on an ad hoc basis.

To test the idea, there should be no fewer than three separate information-exchange days, each about a month apart.

Recommendation Six: Another VGI. We have had considerable effect and made some dents in the problem areas. While directing this VGI'71, we have learned a lot about how to have greater effect next

time. We recommend very strongly that other institutes of this type be held, here at UCLA and Los Angeles and elsewhere. This experimental, pilot, and demonstration project has shown clearly that the training philosophy, model, and paradigm are valid. There is no question about the continuing need for training in the target groups of the VGI'71. We feel there is an audience of learners ready to participate in the next VGI and that we can both improve and widen the effect.

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APPENDIX A

Southwest Wave

DEDICATED TO COMMUNITY SERVICE

HE LARGEST NEGRO WEEKLY IN THE U. S. Vol. 53 No. 19 A CENTRAL NEWS-WAVE PUBLICATIO

hursday, April 22, 1971 119 1016 West Vernon Avenue, Los Angeles, California 90037 232-6221 10c a Copy

A Guideline for Future Careers

For a long time we have contended that some bona fide agency should be established to help young people make the crucial decisions on what career they want to pursue.

I have never forgotten the story told me by Paul R. Williams about his high school days, and his kindred career problem. Paul said that when his teacher asked him what he wanted to be and he answered, "an architect," he got the following answer: "You probably never could make it in that profession because you are a Negro." Paul replied that he was going to try to become such a good architect that people would retain him regardless of his race. Of course that was long ago. And the record shows that Paul R. Williams became, and is today one of the world's most successful architects. But Paul was an exception . . . and some of you young people today do not have his determination or vision.

Thus it was heart-warming to know that a substantial agency has just started to help high school graduates bridge the big and difficult gap from the student world to the challenging fields of employment. The new agency, based at UCLA, is called the Vocational Guidance Institute. It is presently trying to combine the information and resources which exist within the larger community of schools, industry and community to aid the student in making intelligent career decisions.

The basic concept of the agency is team training for local action. Currently it is implementing four teams which will in turn go into a series of school communities and develop local action work groups. These units will be based in three school areas, the Los Angeles Unified School District, the Compton District and the Catholic Diocese. The four target high schools are Dorsey, Centennial, Belmont and Bishop Conaty. Heading the Institute's project are Rosalind Loring of UCLA and Dr. Richard Nortman, a management consultant. Phillip Lewis of the L.A. City Schools has been my contact on the project.

Schools in the predominantly black and brown areas were intentionally selected. In the program, which is funded by the Nat'l. Alliance of Businessmen, the Institute is charged with concentrating at first in areas with a high ratio of minority students. It is also designed to help high school graduates who may decide to, or cannot go on to college.

The Institute training teams and work groups include school representatives . . . administrators, counselors and teachers . . . and students. Representatives from the community, industry and business round out the membership, and participants for both the Institute and work groups are recruited through the schools.

The unique program has many goals, most of them centered around the creation of institutions which will facilitate social change. The training model is one of self-help, a "bootstrap" type of motivation. The training occurs mostly in small groups, and concentrates on helping the participants learn how to organize the community to achieve maximum integration of resources to apply to problems of local concern.

The type of training which is implemented also helps to open lines of communication and organizational "feedback" and to increase articulation among the elements of the over-all community.

Basically, as the participants examine some of the problems associated with the crucial area of vocational guidance, sometimes what appeared to be insurmountable barriers to success become goals which can be achieved.

After a careful evaluation of the program, we believe that it is one which merits the entire community's whole-hearted support.

CHESTER L. WASHINGTON, Publisher.

P.S. from Ches: The first requisite of being a leader in your community is the ability to lead and the willingness to follow.

APPENDIX B

VOCATIONAL GUIDANCE INSTITUTE '71 -- SCHEDULE

TRAINING INSTITUTE

	April 3 Saturday	April 5 Monday	April 6 Tuesday
9:00 a.m.	Organization: The Participant & the VGI Interaction Exercise: Scrambled Squares Welcome & Introductions Introductions by Participants: a model for resource allocation --	Where are we? A feed-ahead session Preview of Industry Visits: Goals & objectives; operations problems; interview schedule How to use interview schedule in group interview Brainstorming techniques as applied to problem solving	Evaluation and Feedback: How are we doing? Revision of the Interview Schedule Analysis of the Group Interview: force & counterforce
1:00 p.m.	Vocational Guidance: present problems & trends VGI '71: client population Present & future employment picture	Industry Visits: Sears Roebuck & Company American Airlines, Inc.	Industry Visits: General Telephone North American Rockwell Corporation
3:00 p.m.	Expectations & Concerns Feedback & Evaluation		

VOCATIONAL GUIDANCE INSTITUTE '71 — SCHEDULE

TRAINING INSTITUTE/CONTINUED

	April 17 Saturday	April 24 Saturday	May 1 Saturday
9:00 a.m.	Where are we now? ...progress reports ...questions & answers ...problems to solve Community Forces of Action & Reaction	Announcements How to set group task-goals Goal Setting for Training Teams & VICC (training teams)	Announcements -- Training Teams Evaluation Strategies to Match Your Goals Training Teams: Intergration of Evaluation Strategies into Activities of VICC (training teams)
1:00 p.m.	Planning for first Vocational Information Coordinating Committee Meeting -- in small groups (training teams) ...anticipation of forces of action & reaction ...simulate first VICC meeting ...plan for corrective action for real meeting	Some ideas about maintenance activities in task-oriented, small-group maintenance Planning for VICC meetings (training teams) Feedback to large group ...plans for VICC ...progress report	Questions and Discussion Charge for remainder of day Planning for VICC next week & month ...evaluation of progress to date Feedback to large group ...evaluation reports ...what's next?

APPENDIX C

VOCATIONAL INFORMATIONAL COORDINATING COUNCIL

BISHOP CONATY HIGH SCHOOL

Outlined Agenda for Meeting

I. Introduction

A. Welcome guests.
B. Introduce members of the team.
C. Introduce guests (or have them introduce themselves).

II. Background of Vocational Guidance Institute

A. The origins of the group.
B. The affiliation of the Archdiocesan team with VGI.

III. Purpose of the Present Group

A. The task and the goals.
B. The role of the present group.
C. The role of the Archdiocesan team.
D. The need for the expertise of industry members, people from the community, teachers and students.
E. The strengths produced by a task-oriented group rather than the work of an individual.

IV. Brainstorming Session

A. What are the expectations of the group in regard to the outcome of the endeavors of this present group?
B. What does each invited member bring to the group to help reach the proposed goals?
C. Where do you think you can take us?
D. How can you help us, who are school people interested in assisting students obtain entry jobs, relate to the business world?

V. Direction

A. State the team's role as a facilitator.
B. Tell them the direction that we would like to go.
C. Discuss the time allotted to the project as a whole.
D. Discuss specific tasks that the group might undertake before the next meeting.

VI. Discuss Next Meeting Date, Time, Place

VII. Adjournment of Meeting

REQUIREMENTS FOR THE MEETING

I. Preface

The staff must be sensitive; determine where the group is after the first meeting and where you want to take them.

II. Roles Played by Team Members

A. Sister Rosalie _____

B. Sister Rita _____

C. Connie King _____

D. Sister Clarissa Marie _____

E. Doyle Smith _____

F. Maria Dobbs _____

G. Sister Dorothy _____

H. Danny Bakewell _____

III. Guides

A. Students _____

B. Signs _____

IV. Refreshments

A. Basic items
1. Cups, spoons, napkins
2. Coffee, punch, cookies, half and half, sugar

B. Host _____

V. Other Materials

A. Games

B. Miscellaneous items
1. Ash trays and name tags
2. Pads of paper and pencils

VI. Pre-Meeting Communication

Letter to each participant to remind them of the date, time, place of the meeting and the specific task to be accomplished by the next meeting date.

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

BISHOP CONATY MEMORIAL HIGH SCHOOL

737-0012 - 2900 West Pico Boulevard, Los Angeles, California 90006

Members of VICC

Lucinda Bastardo
Our Lady of Loretto H. S.

Page Buckingham
Sawyer College of Business

Luz Castillo
Sacred Heart H. S.

Stella Chinen
Stella Kalman
Cheryl Ratliff
Senora Sam
Bishop Conaty H. S.

-van N. Daniels, Jr.
Food Employers Council, Inc.

Sr. Martin de Porres
Benita Ellison
Deondra Mitchell
Don Norby
St. Michael's H. S.

Ruth Lorraine
Equalizer Magazine

Ernest Lucero
Wilshire Police Div.

Bill Shearer
KGFJ

John Stevens
Mattel, Inc.

Recognizing the particular need of young graduates of Bishop Conaty High School this year, a Vocational Information Coordinating Council was formed under the auspices of the Vocational Guidance Institute. Interested educators, students, and business and community leaders have been urgently working to bridge the work-information gap between school, industry and the community.

Will you join us in our commitment--to provide avenues of vocational opportunity and expansion for minority and low-income youth. In a time of broadening social awareness and responsibility within the business community, we are hopeful that you will be among those whose concern and service will reach out to meet the needs of our youth.

Bishop Conaty High is an all-girls school (85% minority youth), with approximately 180 graduating this year. Many will be seeking full-time employment on a permanent basis in a variety of areas. Still more will be seeking summer jobs to aid them in continuing education in the fall. The great need in these two areas is in entry-level positions.

They urgently need your help! You have much to offer them--not only in terms of financial gain but, more importantly perhaps, in terms of offering them a wider and more humane view of the business community which recognizes the worth of a young person and is willing to offer that needed first break in life.

The girls, in turn, offer their skills, dedication, enthusiasm, willingness to learn, and a background of continued guidance in character building and ethics.

May we hear from you today? The school is located at 2900 West Pico Boulevard, Los Angeles, 90006. Students attend from all areas of the city. You may write or call (737-0012). Miss Stella Chinen and Mrs. Stella Kalman will be very happy to answer any questions you might have.

We cannot accomplish our goals without your help and commitment. Our program aims high, but the importance of it will be measured greatly by the attitudes and future commitments of these young people we are guiding today.

We appreciate all you may be able to do.

Yours very truly,

VOCATIONAL GUIDANCE COORDINATING COUNCIL

(By) Stella Chinen

VOCATIONAL INFORMATION COORDINATING COUNCIL

BISHOP CONATY MEMORIAL HIGH SCHOOL

INTERIM NOTES (May 25, 1971)

The following notes are submitted to indicate our status at this point. We have compiled: (1) a preliminary master list of employer contacts and (2) a status breakdown of our graduating seniors.

Activity is really starting to pick up this week and with the students graduating next week, more interviews will be scheduled and more contacts made. We have begun to receive some good responses from our letter. We are hopeful that this will continue. If not immediate employment, at least many of these employers will keep our young people in mind for future opportunities.

The preliminary master list is still in the working stage as contacts are continuing to be made. We expect that additional firms will be added to the list also--and some deleted. A more finalized master list will be submitted when we reach a more conclusive stage. Descriptions of jobs have not been detailed on the preliminary master list except where clarification seemed necessary (under Special Notes).

Business and community VICC members are in touch with the school members of the council and may continue to do so during the summer months.

Status List of Graduating Seniors

Looking for permanent jobs	27
Looking for summer jobs	83
Not planning to work or have other plans	20
Already lined up for jobs (summer or permanent)	25
Undecided	14
Information on students still pending	4
TOTAL	179

APPENDIX D

REPORT OF THE COMPTON VOCATIONAL INFORMATION COORDINATING COMMITTEE

The immediate goal set forth by this committee was to find jobs for graduating seniors whose objective was employment rather than further schooling.

The means decided upon was for each member to take a number of names from the business directory and to make contact with employers. Their efforts were coordinated through the existing work experience office of Centennial High School.

A secondary goal was to seek funds to make the Compton V.I.C.C. a permanent group by the writing of a proposal to the district administration or other agency. This would include descriptions of the saleable skills generated in the occupational courses at the three Compton high schools. The permanent V.I.C.C. would then serve the function of liaison to business and industry to market these skills.

COMPTON VOCATIONAL INSTITUTE COORDINATING COMMITTEE AGENDA

DATE: TIME: 2-4 p.m. PLACE: Centennial H.S. Library

I. Introduction
   A. Welcome new guests.
   B. Introduce new members.

II. The Vocational Guidance Institute (V.G.I.)
   A. Bring members up to date on activities of V.G.I.
   B. Explain function of de-briefing.

III. Present goals and purposes of V.I.C.C. group.
   A. "Beat bushes" for summer jobs. Reports.
   B. Discuss interview format. V.I.C.C. - Employer.
   C. Directory of business.
   D. Checklist of information needed from employers.
   E. "Selling" Centennial students to employers.
      1. Special programs.
      2. Special interview skills.
   F. Proposal to fund V.I.C.C.

IV. Future direction of V.I.C.C.
   A. Present goals of V.I.C.C.
   B. Evaluation of V.I.C.C.

V. Discuss next meeting.
   A. Time.
   B. Place.

VI. Adjournment of meeting.

PRELIMINARY ACTION OF COMMITTEE

The industrial relations assistant for the following firm will interview three (3) senior welding students regarding full-time positions upon graduation.

Armce Steel Corporation
National Supply Division
1524 Border Avenue
Torrance, CA 90509

To date, thirty-three (33) Firestone dealers/stores have been visited regarding distributive education/summer employment. Seventy-five (75) student interviews have been arranged. Problems are arising in that some students are not following through with the interview or are not recontacting the employer after the initial interview in an effort to impress upon him their interest in employment.

Work at various dealer/stores varies quite widely. Some dealers are involved only in sales, tire mounting, and wheel alignment. Others offer tune-up, brake service, etc.

Discussions with district managers are being arranged in an attempt to accelerate the hiring process.

Contact will be made with the Firestone school, Southgate which trains hard core unemployed.

Interviews have been arranged with the following dealer/stores for next week.

1. 1415 Marcelina
   Torrance

2. 2636 W. Olympic
   West Los Angeles

3. Parnelli Jones Firestone
   16100 N. Tustin Avenue
   Orange

Three students are scheduled to be interviewed by each manager.

A meeting was held Monday, May 17, 1971 at which time interested students completed applications for the Compton Work Experience/Summer Employment Program.

APPENDIX E

DORSEY HIGH SCHOOL

V.I.C.C. MEETINGS

Goals for VICC - Set by Dorsey Training Team

1. Set up VICC as a Community Problem Solving Group.
2. We will act as group facilitators for group to implement their goals
3. Solve needs of youth related to employment
4. Not to impose but to help them arrive at their goals
5. Open lines of communication
   School Business Industry
6. Tune in and link up with other community groups that will provide action.
7. VICC needs to set up goals in priorities
8. VICC needs to problem solve these goals
9. Get jobs
10. Create jobs
11. Provide guidance and education about jobs
12. Solicit help from industry and community about jobs.

V.I.C.C. MEETING #2
Minutes

Needs Represented by Committee of the Whole:

Vocational training classes
Jobs for graduates
Transportation: Mini-buses to Regional Occupation Centers
Job information: Availability, location
Creating jobs
Finding jobs
Funds: Obtaining funds to set up an employment center and pay students to research and seek jobs (Get $50.00 donations and fund 12 students)
Finding employers who will train for no pay one week and take the trainee in for pay.

Finding another agency and helping them.
e.g. Crenshaw Youth Employment Center needs funds and Volunteers.

SubCommittee - Primary needs:

SubCommittee #1:
Need to know what jobs are available to youth for summer.

SubCommittee #2:
Priority of needs
1. Career Guidance
2. Job Training
3. Increased communications with community, business and industry.

It was agreed a name should be assigned to the group. Tentatively assigned is: Dorsey Employment Task Force.

To do:

Karen to advertise for funding in Crenshaw Neighbors.

Sarah: On May 6 -- Visitation of Business and Industry to Dorsey. Introduce members of Dorsey's Task Force.

Charmagne, Mike: Bring message of the task force to the Chamber of Commerce.

V.I.C.C. MEETING #3
Minutes

The meeting was called to order at 2:30. Karen suggested we determine how much money we need and the hours we would work at employment service before we seek funds. Once we establish this foundations may be approached by taskforce members or by letters.

Charmagne and Myra reported that they met industrial task force members from business and industry visiting Dorsey. A Mr. Norm Reader of United Airlines was recommended to Myra for advice about our task force ideas. Myra and Don Brock will make a phone contact.

Phil Lewis advised that staff has met with Mr. Davis, the principal, who approves of the Task Force. He would like to attend a meeting but so far has been very busy. He asks that we keep him informed.

Bob Reiman has a list of the visitors to establish a resource list. Howard Trotter will get 30 copies of the Black Directory to add to this resource bank.

Karen called attention to the Angeles Mesa News Advertiser, page 1 of Thursday, May 6, 1971, at the front page editorial regarding the Dorsey Employment Task Force.

Phil Lewis has discussed funding the program with school representatives of school offices. At this time the deadlines are passed for next year. We will attempt to establish a meeting with the Occupations Branch to obtain advice.

Scott advised that Dorsey is moving ahead with the Vocational Industry Club of America at Dorsey which will be a resource to the Task Force.

Bob Plumacher recommended establishing some organizational format so we might proceed with our objectives. It was agreed the task force could be a Committee of the Whole with four sub committees: (*Chairman)

Publicity and Information:
*Anthony, Scott, Frank, Phil Lewis

Fund Raising, Budget:
Mike, *Karen, Dawson, Jean, Mrs. Fortune, Bob Plumacher

Structure of the Corps, Jobs
Myra, Scott, Charmagne, Bob Reiman, *Ron Brock

A Speakers Committee is made up of: Scott, Mrs. Johnson, Bob Reiman

The Committee of the Whole agreed that Myra will serve as Task Force Secretary, and Phil Lewis as group facilitator.

Some Tentative Jobs:

Frank will get publicity to newspapers.

Karen will work on phone calls or letters to seek foundation funds.

Charmagne will send a representative or attend and advise the Chamber of Commerce of the Task Force Goals.

The Committee will create the rough structure for job placement.

V.I.C.C. MEETING #4
Minutes

The meeting was called to order at 2:45 p.m. by Ron Brock.

Bob Reiman reported on his visit to the Chamber of Commerce Meeting with two students. In attendance was the management of various businesses and banks. The "Twelve Student Committee" was described to them and the funding necessary to employ these people in searching out jobs for Dorsey students. Bill Wiley and Sharon talked with the members too. The Chamber is to present the Dorsey Employment Task Force in their publication and discuss their objectives in an executive session for possible action. It was learned that one member offered free weekend (Sunday) computer training and placement.

Karen adivses there is a need to go back to get commitments firmed with the Chamber. The luncheon set is generally receptive but is not always those who make the executive decisions.

Karen Friedson asked for a meeting with student representation to make a formal budget and to create an outline for letters to foundations requesting funding. Mike and Maurice will work with her.

Structure of the Corps Committee led by Ron Brock will work up an outline on the purposes of the task force, goals, organization, necessary forms.

Bob Plumacher reported on University High School's student employment service. A student, and student applicant call on a conference phone to employers who have listed jobs in the classified ads. Commitments are made in a three way conference. Ron Brock and Scott will arrange to visit University High to see the operation.

It was agreed that use of the YES office could be helpful and reduce the need for teacher supervision that would be necessary if we used school offices. Bob Reiman, Bob Plumacher volunteered to assist students in an advisory capacity. YES offices would be larger, and phones are available. We may have to approach the community to borrow a typewriter. After hours access would be better to the YES offices. Bob Plumacher could help with supplies. Karen talked with YES workers. They are placing too many limits on the arrangements. She and Charmagne will talk to YMCA staff to work out arrangements.

Jean Foutz told of her arrangements to meet with staff in the District's Occupations Branch to discuss government funding. She will have Committee members from the "Structure of the Corps" with her.

Mr. Plumacher adivsed six of the Student Employment Committee could be funded by NYC if their families meet minimum income requirements. Each may work 212 hours at $1.60 per hour. It is hoped to fund six more @ $1.60 per hour by donations and grants from private foundations, business, and industry.

Tasks:

Structure of the Corps Meeting, May 20, Period 6
Dorsey Employment Task Force Meeting, May 26, 2:00 p.m.
Budget Draft: Jean, Mike, Charmagne and Mrs. Johnson - May 18, Period 4
Mike and Scott will set up dates with organizations to give talks.

DORSEY EMPLOYMENT TASK FORCE*

I. Idea: To find employment for youth using a task oriented group of students whose job it will be to create jobs and set up training programs for other students.

II. Rationale: (literature in the field to be checked in to -- Parkway Program, University High, Mario Fantini Radical School Reform, Bremer,etc. Title III projects already being funded (Jean).
   1. Many students need jobs to help support themselves
   2. Working helps to increase a student's sense of responsibility, self-esteem, and efficacy.
   3. Schools should be in closer touch with the reality of community life; learning to work within society helps an individual gain insight into how he can create, change his society (Bremer)
   4. Finding jobs and working develops the skills of communication and interpersonal relationships.

III. Goals Defined:
   1. Jobs for Dorsey students -- immediate goal is jobs this summer, 1971
   2. Career Guidance
   3. Job Training: at Dorsey (phone company, etc.) & on the job (4/4 day)
   4. Communication with community, businesses, industry, and school. Closer contact with the "real world"; support from the community and from other sources

IV. The Job Corps: positions, job definitions, work setting
   1. Twelve students whose job in general will be to find jobs for other students and to set up training programs both on and off campus
   2. Job Definition
      a. Identify the area to canvas
      b. Research businesses in the community
      c. Write letters to the businesses
      d. Follow-up with phone calls
      e. Make personal contact with each business
      f. Follow-up
   3. Specifics
      a. 4 students to type, phone, file (2 morning, 2 afternoon)
      b. 8 students to interview representatives from the businesses identified; for example, these students might work in pairs -- four teams. Plan schedule, make contacts Mon.-Tues. Go out on three interviews each day Wed.-Fri, total 12 interviews per week each team=48 interviews each week by core.

---

*Projected activity for summer and fall 1971.

4. Student manager directly responsible to the Committee as a Whole for the work done by the Core
5. Facilitator: one adult to be directly responsible to students and to the Committee as a Whole. Paid.
   a. Skilled in group process--to get this group to function as a "team"; to enhance communication skills; and to facilitate an In Service Program (June 21-25)
   b. In Service Training
      1) Mock interviews, mock phone conversations role playing
      2) Devise a form letter
      3) Learn, improve communication skills
      4) Set up criteria for self-evaluation, evaluation of the Corps
   c. After this initial week, facilitator will work with students two days a week
6. Selection of the Corps
   a. Application
   b. Oral interview with the Committee as a Whole
   c. NYC will provide applications to the Committee for 6 positions
7. Working hours
   a. Students: 4 hours each day, 5 days a week = 20 hours a week
   b. Facilitator: 1st week, 20 hours; thereafter, 8 hours a week

V. <u>Budget</u>
1. Students: 12 students at $1.60/hour, 20 hours/week= $384.00/week, $1,535.00/month. NYC pays 1/2=$768.00 per month
2. Facilitator: 1 certificated person - 20 hours first week, 8 hours/week thereafter
3. Stationery: 1 ream (500 sheets of Eagle 16 weight= $3.30) (10 letters x 12 each week = 500 letters a month)
4. Second sheets (1000 sheets in pack, sub 8) $1.67
5. Carbon paper: Nu-Kote (100 per box) $3.15
6. Envelopes (500 legal #10) $3.08
7. Stamps (500 letters at 8¢) $40.00
8. Typewriters (2)
9. Phone (installation, service charge)
10. Use of mimeographing machine (fluid, maintenance)
11. Dorsey cost for printing stationery letterhead
12. Application forms
13. Rental Space, custodial time, office
14. Gas ($2.00 each student each week & facilitator) (4 teams & adult=$2.00 x 5= $10.00 each week, $40 mo., $40.00
15. Miscellaneous expenses (pens, paper, scotch tape, stappler (Apsco #5113=$4.50); staples 60¢; desk $50.00; file (double drawer 3x5 F35-16-D Flash $6.03; 3x5 cards; manilla envelopes; filing drawer

VI. Evaluation: To be decided upon by the Corps itself during the in service period of training. (Suggestions so far are as follows:)

1. Personal Work Habits: promptness, efficiency, cooperation
2. Work done by corps
   a. Letters mailed
   b. Calls made
   c. Personal contacts made
   d. Types of response: Youth employed out of Corps office
      Training programs established on campus
      Training programs established in the business community
      Material contributions
      Communication with community increased?
      Student growth (job corps members)

APPENDIX F

FRANCIS POLYTECHNIC HIGH SCHOOL V.I.C.C. MEETINGS

Francis Polytechnic High School was originally included in the Vocational Guidance Institute as one of the schools which would send one person for training and participation in a VICC committee for another school (Dorsey High School) with the ultimate goal of establishing a VICC program at Polytechnic High School during the year 1971 - 1972.

As the workshop progressed and dates were set for VICC meetings, it became obvious that because of the extreme distances, conflicting demands upon time, and varied goals of the planned programs adjustment would have to be made in the original plans.

At a meeting between Dr. Nortman and Miss Muriel Sheldon of the Los Angeles City Schools, it was determined that Polytechnic High School would add two or three more participants to the Vocational Guidance Institute and proceed with plans to institute a VICC program at Polytechnic High School this year. This involved the elimination of participation in the Dorsey High School VICC meeting.

Mrs. Blanche Morton was the original participating member. Mrs. Morton is the Head Counselor; Miss Larson is the counselor for the English as a Second Language program, and Mrs. Smith does special counseling for the Mexican-American students.

Polytechnic High School has approximately 20% Mexican-American enrollment, 3% oriental, and less than 1% Negro. However, proposed boundary changes will increase the Negro enrollment at Polytechnic to at least 4% and possibly more. In addition to the regular enrollment of the school, Polytechnic will serve as a Vocational and Occupational Information Resource Center for the West San Fernando Valley, which includes San Fernando High School, Sylmar High School and the new John F. Kennedy High School which have enrollments in both the Mexican-American and Negro communities.

The VICC program which has been planned for Polytechnic High School is a special vocational guidance and job placement program planned specifically for young people from minority or poverty backgrounds and it is an attempt to improve their self-image with regards to occupations. The program is planned on an exploratory work-experience as well as a paid work experience and summer job opportunity, and will be combined with in-school training in both classroom, group counseling, and laboratory sessions.

The first VICC committee meeting was held on May 15. Attached is a list of the participants. As a result of the meeting the following decisions were made:

1. A plan will be made and implemented to identify minority students who have the potential to enter more skilled trades than they currently believe will be open to them. Attempts will also be made to identify

students with the potential to enter management-level positions in business and finance after suitable training.

2. A committee will be formed consisting of students, community representatives, service clubs, business and industry representatives, and school staff. This committee will attempt to find employers who are willing to cooperate in offering employment on an exploratory basis to minority youth who have the potential for the position.

3. Students as well as faculty will become involved in a job-placement program for students who need jobs as an incentive to upgrade their occupational and educational goals. Jobs will be used as a complete end within themselves.

4. Students will receive personal counseling aimed at developing a better self-image, higher goals and improved habits of school attendance, study and personality factors which influence employability.

5. Planning for post-high school training will be coordinated within the program so that graduates will have realistic plans for continued growth and development as well as the skills necessary to take advantage of training opportunities.

6. As part of the program, counselors and staff of the San Fernando, Sylmar and Kennedy High Schools will be invited to participate in developing complementary counseling programs in their schools so that maximum benefit may be obtained from the use of the Occupational Information Resource Center.

7. During the summer months Miss Larson will work with a student committee, Mrs. Smith with Service Clubs and business representatives, and Mrs. Morton with the YES summer employment service to further develop plans.

8. The second meeting of the VICC will be held during the third week of the school year beginning in September. At that time we hope to have more representation from the students and business segments of our community.

Because the VICC program was late in starting at Polytechnic High School, the only attempts to place students in jobs this summer will be as part of the already planned ongoing program of the YES program which will be using the school facilities. This program ceases at the end of the vacation period. The proposed work-experience program will begin as soon as practicable in the Fall semester.

Mrs. Yolanda Smith
Miss Linda Larson
Mrs. Blanche Morton

APPENDIX G

VOCATIONAL

GUIDANCE

INSTITUTE '71

jointly sponsored by
Daytime Programs and Special Projects
University Extension, UCLA
& National Alliance of Businessmen

Beginning April 3 at UCLA
For educators, business and community leaders

A unique TRAINING & FIELD WORK experience

- *with a commitment to provide vocational information and guidance to minority and low-income youth*
- *who are seeking to extend, expand and enlarge their personal skills and influence*
- *whose aim is to reduce the work-information gap among schools, industry and the community*

PARTICIPANTS gain information and knowledge, insight and awareness, and skills and practical application in working with other concerned individuals to solve vocational guidance problems in a community setting. Our emphasis in this year's Institute is on effective use of school and community resources to increase the reach and power of existing and emerging vocational guidance programs.

The PROGRAM introduces change at the local level; involves members from the community, industry/business and the schools in a joint effort; makes possible analysis and identification of differing education and industry situations, as well as varying cultural patterns and community responses.

Institute participants establish vocational information coordinating committees (composed of educators, business/industry, community and student representatives) in a target school to delineate and solve problems associated with vocational guidance programs.

INSTITUTE TRAINING provides

- ... *substantive information about vocational guidance trends and practice; entry level job availability; minority youth life styles and unique problems; current programs and solutions*
- ... *training in methods for problem solving and decision-making*
- ... *skill training in working with groups*
- ... *techniques for evaluation*
- ... *understanding of work-oriented dynamics of interpersonal behavior*
- ... *field trips to business/industry with specific focus on vocational guidance problems*

Some QUALIFICATIONS for admission are

Enthusiasm about vocational guidance as a way to help young people

Belief in the effectiveness of local action to cause change

Experience in small group work and/or particular sensitivity to group process

(No one candidate is expected to meet all the above criteria; however, some of the attributes must be present to qualify.)

SCHEDULE for — Training -- six sessions, 9:00 a.m. - 4:00 p.m., at UCLA Saturday, Monday and Tuesday -- April 3, 5 and 6; and Saturdays -- April 17, 24 and May 1. (Note: Industry visits are scheduled for the two weekday afternoons during the training period.)
Vocational information coordinating committee -- Four, two and one-half hour sessions, to be arranged by participants in cooperation with the target schools.

CREDIT — 4 units -- Prior to enrollment, students should verify with the appropriate authority (e.g., employer, association, other educational institution, local school district) acceptance of credit for Extension study, and acceptance of passed/not passed grading if this option is desired.

APPLICATION PROCEDURE — If you wish to be considered for selection to this Institute, please fill out the application form below indicating the name of the Advisory Committee member who has recommended you for training. Final selection is by the Vocational Guidance Institute Advisory Committee and staff. Applications must be returned before March 15. All applicants are notified by mail whether or not they are accepted. Those accepted are sent complete program information and other details. This program is supported by grant funds, there is no enrollment fee.

ADVISORY COMMITTEE: Vocational Guidance Institute — LOS ANGELES UNIFIED SCHOOL DISTRICT: *Muriel Sheldon*, Coordinator, Secondary Counseling ... *Clyde Sorenson*, Coordinator, Counseling and Psychological Services, Zone A ... *Morris Bulwa*, Coordinator, Counseling and Psychological Services, Zone B ... *David Bower*, Coordinator, Counseling and Psychological Services, Zone C ... *Alfred Foster*, Coordinator, Counseling and Psychological Services, Zone D. LOS ANGELES COUNTY SCHOOLS: *Harry Smallenberg*, Director, Division of Research and Pupil Personnel Services. CATHOLIC ARCHDIOCESE OF LOS ANGELES: *Sister Mary Benigna*, Curriculum Coordinator, Education Department. COMPTON UNIFIED SCHOOL DISTRICT: *Richard Mitchell*, Assistant Coordinator, Distributive Education. NATIONAL ALLIANCE OF BUSINESSMEN: *Laurence Cooper*, Metropolitan Director. PACKARD BELL COMPANY: *Leo Plotkin*, Director of Training. AEROSPACE CORPORATION: *Jim Benning*, Personnel Director

PROJECT DIRECTORS — *Rosalind Loring*, Director, Daytime Programs and Special Projects, University Extension, UCLA
Richard Nortman, Richard Nortman Associates, Consultants in Organizational Behavior

. . . . . .

Application Form

Mail to: Dr. Richard P. Nortman, Daytime Programs and Special Projects, University Extension, UCLA, 10966 Le Conte Ave., Los Angeles, CA 90024

Name _____

Business Address _____

Position of Applicant _____ Recommended By _____

Home Phone _____ Business Phone _____

APPENDIX H

ADVISORY COMMITTEE, VGI'71

1. Sister Mary Benigna
   Curriculum Coordinator, Education Dept.
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   1520 West 9th Street
   Los Angeles, CA 90015

2. Mr. Jim Benning
   Personnel Director
   Aerospace Corporation
   P. O. Box 95085
   Los Angeles, CA 90045

3. Mr. Laurence Cooper
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   Los Angeles, California 90012

4. Dr. Betty Ellis
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   P. O. Box 3307
   Los Angeles, CA 90054

5. Mr. John Graham
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   Compton, CA 90220

6. Mr. Leo Plotkin
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   Los Angeles, CA 90064

7. Miss Muriel Sheldon
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   Los Angeles, CA 90012

8. Dr. Smallenberg
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   Los Angeles, CA 90015

APPENDIX I

BIBLIOGRAPHY

Boocock, S. S. & Schild, E. O., Simulation Games in Learning, Beverly Hills, California: Sage Publications, 1968.

Benne, K. D., Bennis W. G. & Chin, R., The Planning of Change, New York: Holt, Rinehart & Winston, 1962.

Bennis, Warren G., Changing Organizations, New York: McGraw-Hill Book Company, 1966.

Berne, E., Games People Play, New York: Grove Press, 1964.

Coleman, James, The Adolescent Society, Free Press.

Gardner, John W., Self-Renewal: The Individual and the Innovative Society, New York: Harper, 1963.

Grace, H. A., "A Model for Organizational Analysis," Unpublished manuscript, Santa Monica, California: Author, 1969.

Hall, Edward R., "Listening Behavior: Some Cultural Differences," Phi Delta Kappan, March, 1969.

Hall, E. T., The Silent Language, Greenwish, Connecticut: Fawcett, 1959.

Hare, A. P., Borgatta E. F., & Bales, R. F., Small Groups: Studies in Social Interaction. New York: Knopf, 1955.

Homans, G. C., The Human Group. New York: Harcourt, Brace, 1950.

Kahn, R. L., & Boulding, Elise (Eds.), Power and Conflict in Organizations, New York: Basic Books, 1964.

Klein, Josephine, Working With Groups: The Social Psychology of Discussion and Decision, New York: Hillary House, 1961.

Leavitt, H. J., Managerial Psychology, Chicago: University of Chicago Press, 1958.

Lewin, K., Field Theory in Social Science. Edited by D. Cartwright, New York: Harper, 1951.

Maier, N. R. F., Problem Solving Conferences and Discussions, New York: McGraw-Hill, 1964.

Massarik, Fred. "Goal Setting as Codetermined by Institutional and Class Factors," Institute of Industrial Relations, UCLA, 1969, Reprint #196.

Miles, M. B., Learning to Work in Groups, New York: Bureau of Publications, Teachers College, Columbia University, 1959.

Porter, E. H., Manpower Development, New York: Harper & Row, 1964.

Schindler-Rainman, Eva, "Leadership Training in Underdeveloped Neighborhoods," Adult Leadership, Washington, D.C.: AEA, June, 1963.

Shepherd, C. R., Small Groups: Some Sociological Perspectives, San Francicso: Chandler, 1964.

Tuckman, B. W., "Developmental Sequence in Small Groups," Psychological Bulletin, 1963, 6, 384-399.

Weiner, N., The Human Use of Human Beings: Cybernetics and Society, Boston: Houghton-Mifflin, 1954.

PARTICIPANT KIT OF MATERIALS

Franklin, Richard, Toward the Style of the Community Change Educator, Washington, D.C.: NTL Institute, 1969.

Harrison, M.A. and M.G. Holmen, "Techniques for Observing Behavior and Giving Feedback," Management Laboratory, USC, 1971.

Irelan, Lola M., Ed., Low-Income Life Styles, U.S. Department of Health, Education, and Welfare, 1967.

Maier, Norman R. F., Problem-solving Discussions and Conferences: Leadership Methods and Skills, New York: McGraw-Hill, 1963.

.....Planning the Community Meeting, Culver City: Western Center.

Rogers, Carl R. and Richard E. Farson, "Active Listening," Chicago: Industrial Relations Center, University of Chicago, 1957.

Rogers, Carl R. and F. J. Roethlisberger, "Barriers and Gateways to Communication," Harvard Business Review, July-August, 1952.

VT 014 668

PAPERS PRESENTED AT THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION ANNUAL CONFERENCE (NEW YORK, N.Y., FEBRUARY 6, 1971).

AMERICAN EDUCATIONAL RESEARCH ASSOCIATION, WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 6FEB71 158P.

DESCRIPTORS - *CONFERENCE REPORTS; *EDUCATIONAL RESEARCH; MODELS; INFORMATION UTILIZATION; *RESEARCH UTILIZATION; VOCATIONAL EDUCATION; INFORMATION DISSEMINATION; ASPIRATION; *CAREER PLANNING; RURAL AREAS; DISADVANTAGED GROUPS; JOB SATISFACTION; *VOCATIONAL COUNSELING; TECHNICAL EDUCATION; OCCUPATIONAL MOBILITY; PROGRAM EVALUATION; ROLE PERCEPTION

ABSTRACT - INCLUDED IN THIS PACKAGE ARE SEVEN PAPERS PRESENTED AT THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION ANNUAL CONFERENCE. PAPERS PRESENTED ARE: (1) "APPLICATION OF MODELS OF KNOWLEDGE UTILIZATION AND DISSEMINATION IN VOCATIONAL AND TECHNICAL EDUCATION" BY WILLIAM L. HULL, (2) "CONVERTING TEST DATA TO COUNSELING INFORMATION: SYSTEM IMPLEMENTATION IN A VOCATIONAL SCHOOL" BY DALE PREDIGER, (3) "THE CORRELATES OF CHANGE IN EDUCATIONAL ASPIRATIONS: A STUDY OF FACTORS RELATED TO DOWNWARD ADJUSTMENT AMONG YOUNG MEN, 14-24 YEARS OF AGE, 1966-1967" BY WIL A. SMITH AND FREDERICK A. ZELLER, (4) "THE INFLUENCE OF PROFESSIONAL ROLE IDENTIFICATION UPON THE DEVELOPMENT OF INTEREST IN HORIZONTAL CAREER MOBILITY BY NURSING STUDENTS" BY RICHARD DARNELL, (5) "A JOB SATISFACTION PREDICTOR" BY BORIS BLAI, (6) "TECHNICAL EDUCATION FOR NATIONAL PROSPERITY: INDUSTRIAL DYNAMICS APPLIED TO THE CLARIFICATION OF AN EDUCATIONAL CONTROVERSY" BY RICHARD B. ANDERSON, AND (7) "DEVELOPMENT AND EVALUATION OF A VOCATIONALLY ORIENTED EDUCATIONAL PROGRAM FOR DISADVANTAGED FAMILIES IN DEPRESSED RURAL AREAS" BY HOLLIE THOMAS. (JS)

VT 014 668

Papers Presented at the
American Educational Research
Association Annual Conference

New York City, New York

February 6, 1971

VT014668

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7209

APPLICATION OF MODELS OF KNOWLEDGE UTILIZATION AND DISSEMINATION IN VOCATIONAL AND TECHNICAL EDUCATION[1]

William L. Hull[2]

These comments represent a "best estimate" of knowledge utilization model application to vocational and technical education based on project observations and literature reviews. An attempt is made to present an overview of dissemination and diffusion activities as they exist in several states.

First we shall review briefly the models themselves. Second, we shall examine the unique structural elements of vocational and technical education. Finally, we shall focus on just two institutionalized agencies in vocational and technical education: the Research Coordination Unit (RCU) and the Area Vocational Education School and examine their roles as linking agents in the flow of knowledge. Most of our time will be spent fitting the models to elements of the vocational-technical education system.

Models of Change Processes

Havelock (6) classifies knowledge utilization models under the following headings: (a) Research, Development and Diffusion; (b) Social

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[1] This presentation was part of a symposium on Application of Models for Research Utilization on February 6, 1971 during the American Educational Research Association annual conference in New York City.

[2] The author is Research Specialist and Chairman, Change Process Program Area, The Center for Vocational and Technical Education, The Ohio State University. Appreciation is extended to colleagues at The Center who reviewed this paper. However, these remarks do not reflect official policy of The Center.

Interaction; and (c) Problem Solver. He synthesizes elements from these models into a knowledge linker model. Figure 1 illustrates relationships among the models. The Social Interaction model concentrates on adoption, one aspect of diffusion. The Problem Solver model contains an information user perspective, stressing the need for feedback from practitioners. The Havelock synthesized knowledge linker model (6) refines the basic Guba-Clark scheme (4) to relationships between the resource system and the client system. Knowledge linker roles and diffusion strategies are proposed for these relationships.

Vocational-Technical Education System Characteristics

Federal tax dollars have been earmarked for vocational education for at least half a century. State Divisions of Vocational and Technical Education have established direct lines of communication with operating divisions in the Office of Education. Each state division is organized to include the functions of planning, operation and evaluation. Organization arrangements for linking these functions within the division differ widely from state to state.

Relatively recent legislation[3] has encouraged state divisions to improve the utilization of scientific knowledge in vocational and technical education. The Vocational Education Act of 1963 emphasized the use of ancillary services to assure quality. This Act included provision for program evaluation, the use of exemplary projects and special demonstration projects. Some of these monies were used to establish Research Coordination Units which became institutionalized in the 1968 Amendments

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[3] P.L. 88-210 and P.L. 90-576 departed from previous legislation in many significant respects, e.g., the basis for allocating funds to the states, the provision for program evaluation, and so forth.

to the Vocational Education Act of 1963. We are concerned only with the knowledge-linker role of the RCU in this paper.

The concept of an "area vocational education school" was authorized in 1963 and reinforced in the 1968 legislation. School districts meeting criteria specified in the acts were eligible for funds set aside for construction. Frequently, local school districts pooled resources to support the development of an area vocational education school. Fiscal procedures for the support of these schools varied from state to state. However, these area schools linked high schools in different school districts through students served.

The RCU as a Linking Agency

Research Coordination Units were created in almost every state amid the climate of research utilization in the mid-sixties. They represent a vital link in the research, development, diffusion chain of vocational education information. This chain includes research and development centers and regional laboratories.

Swanson (8) recommends RCU involvement along the full continuum of research, development and diffusion. Many Research Coordination Units have access to a complete collection of Educational Resource Information Center (ERIC) microfiche. Some are disseminating documents to selected audiences such as vocational-technical education supervisors, teachers, teacher educators, advisory council members, administrators of area vocational schools, etc., on a continuing basis. Most have newsletters going to mass audiences of vocational-technical teachers within their state which contain information about research

and development projects. A few RCU's are developing the capability to search the ERIC computer tapes for requested information.

Frequently, RCU attempts to enhance research knowledge utilization are hampered by the problem of role ambiguity. Their knowledge linker role may be perceived by others as "not necessary" or as attempts to undermine the status quo. If these perceptions exist, they tend to block the free flow of knowledge particularly within the organization which administers the RCU. Under these conditions it becomes extremely important for the chief administrator to legitimize the functions of research, development, and diffusion conducted by the RCU. Swanson (8) stresses the need for linkage between RCU activities and the State Plan program of vocational education. A national conference on research in vocational education (7) underscored the need for commitment to research by the State Director of Vocational Education as a means for improvement of vocational education.

If this linker role includes feedback of information, the RCU role becomes one of a consultant or change agent. The utilization of research knowledge requires a personal component. People must interact with people to diagnose information needs, clarify questions, and design information search strategies. At least one RCU considers this interpersonal interaction with professional educators a valuable input to the development of priority research problems.

RCU's are in a good position to translate research knowledge into operational programs. Research findings can be packaged into curriculum materials and tested in appropriate school districts. Procedures for locating and developing such test sites are contained in a

manual from the Southwest Educational Development Laboratory (1). Exemplary ideas which survive development and testing can be placed in demonstration schools.

Area Vocational Education Schools

Knowledge utilization in local educational agencies was enhanced by the development of area vocational education schools. These area schools which could be community colleges, technical institutes, high schools, etc., were designed to provide vocational services not already available in cooperating secondary school systems. In some states, area schools provide services for handicapped students, special reading classes, etc. Most maintain a library facility which may include more volumes than many of the high school libraries.

In several states, RCU's have developed information dissemination sub-units in area vocational education schools. Area schools have been equipped with microfiche readers and, in some cases, reader-printers. Teachers from cooperating schools use area school libraries and in some cases attend in-service classes in area school facilities. Some area schools are exclusively post-high school; most are not. In many states, students attend the area school for half the day and their home high school for the remainder.

Perhaps because of their concentration on vocational education, some area schools have functioned as a catalytic agent in speeding up the process of knowledge utilization in the field. Teachers and students have exchanged ideas while attending area school functions. Area school staff have begun to field some of the questions, interpret problems and

refer knowledge users to appropriate staff in state vocational education agencies including RCU personnel. The development of area school staff as knowledge linkers may relieve state staff from the current information overload. Clearly, the relationship between area schools and secondary schools can provide a mechanism for knowledge utilization.

Conclusions and Implications for Action

The following tentative conclusions have been drawn from the change process literature and observation of Research Coordination Units in action. You may prefer to consider them assumptions, or at best, tentative propositions:

1. Research Coordination Units can serve as switching points for directing the flow of knowledge to specific targeted reference groups in vocational and technical education.

2. Area vocational education schools can serve as vehicles for enhancing knowledge utilization in local school systems. Area school personnel possess potential for consulting with secondary school staff on problems of mutual concern.

The process of knowledge utilization should not neglect the position of the problem solver. Every effort should be made to insure adequate validation of the knowledge to the context of the problem at every point along the research, development, diffusion continuum. The curriculum developer should be alert to anomalies which develop as practitioners attempt to utilize research knowledge.

Research, development and diffusion will be enhanced through role specifications of knowledge linkers and strategies for diffusing educational innovations to select target audiences. Perhaps the development of linker roles and diffusion strategies promise the greatest payoff for additional research and development investment.

References

1. Calipers: Planning the Systems Approach to Field Testing Educational Products. Austin, Texas: Southwest Educational Development Corporation, 1969.

2. Clemens, Thomas D. "Information Services for Improvement of Vocational Education," in Proceedings: National Conference on Research, 1968 Vocational Education Amendments. Stillwater, Oklahoma: Research Coordinating Unit, Oklahoma State University, April 1969.

3. Farr, Richard S. "Knowledge Linkers and the Flow of Educational Information." An Occasional Paper from Eric. Stanford, California: Institute for Communication Research, Stanford University, September 1969.

4. Guba, Egon and David Clark. "An Examination of Potential Change Roles in Education." Paper presented at the National Education Association, Conference on Innovation in Planning School Curricula, Airlehouse, Virginia, October 2 4, 1965.

5. Havelock, Ronald G. A Guide to Innovation in Education. Ann Arbor, Michigan: Center for Research on Utilization of Scientific Knowledge, University of Michigan, 1970.

6. Havelock, Ronald G., and others. Planning for Innovation Through Dissemination and Utilization of Knowledge. Ann Arbor, Michigan: Center for Research on Utilization of Scientific Knowledge, University of Michigan, 1969.

7. Hull, William L., William D. Frazier, and William W. Stevenson. Research Handbook for Vocational-Technical Education. Stillwater, Oklahoma: Research Coordinating Unit, Oklahoma State University, 1969.

8. Swanson, Gordon. "RCU's: A Basis for Assessment." Paper presented to a National Conference of Research Coordinating Unit Directors. Houston, Texas, April 8, 1970.

9. Taylor, Celianna I., and Joel H. Magisos. Guide for State Vocational-Technical Education Information Dissemination Systems, Columbus, Ohio: The Center for Vocational and Technical Education, The Ohio State University (In press).

Figure 1 Research, Development, and Diffusion Continuum

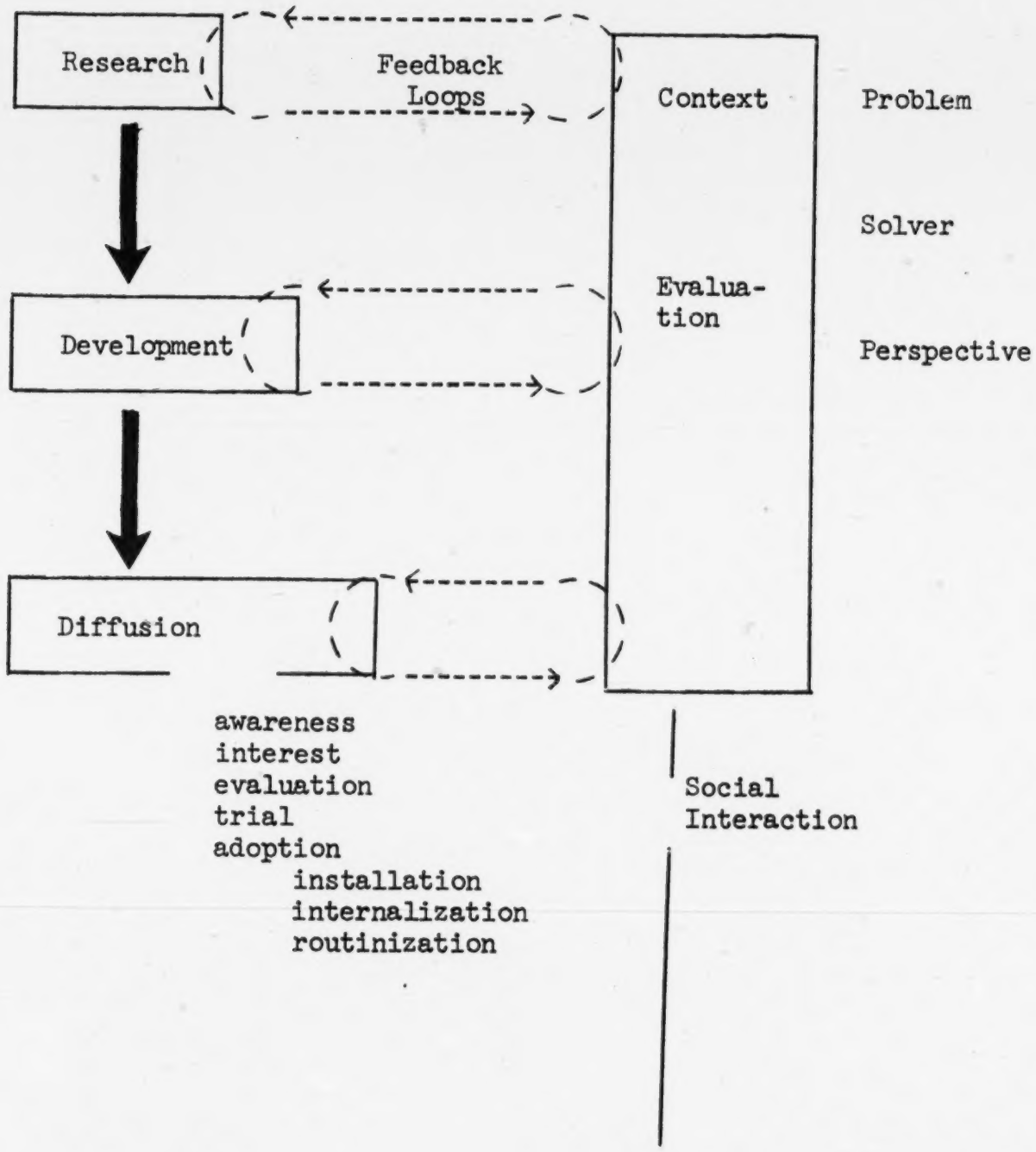


Figure 2 Knowledge Linker Model

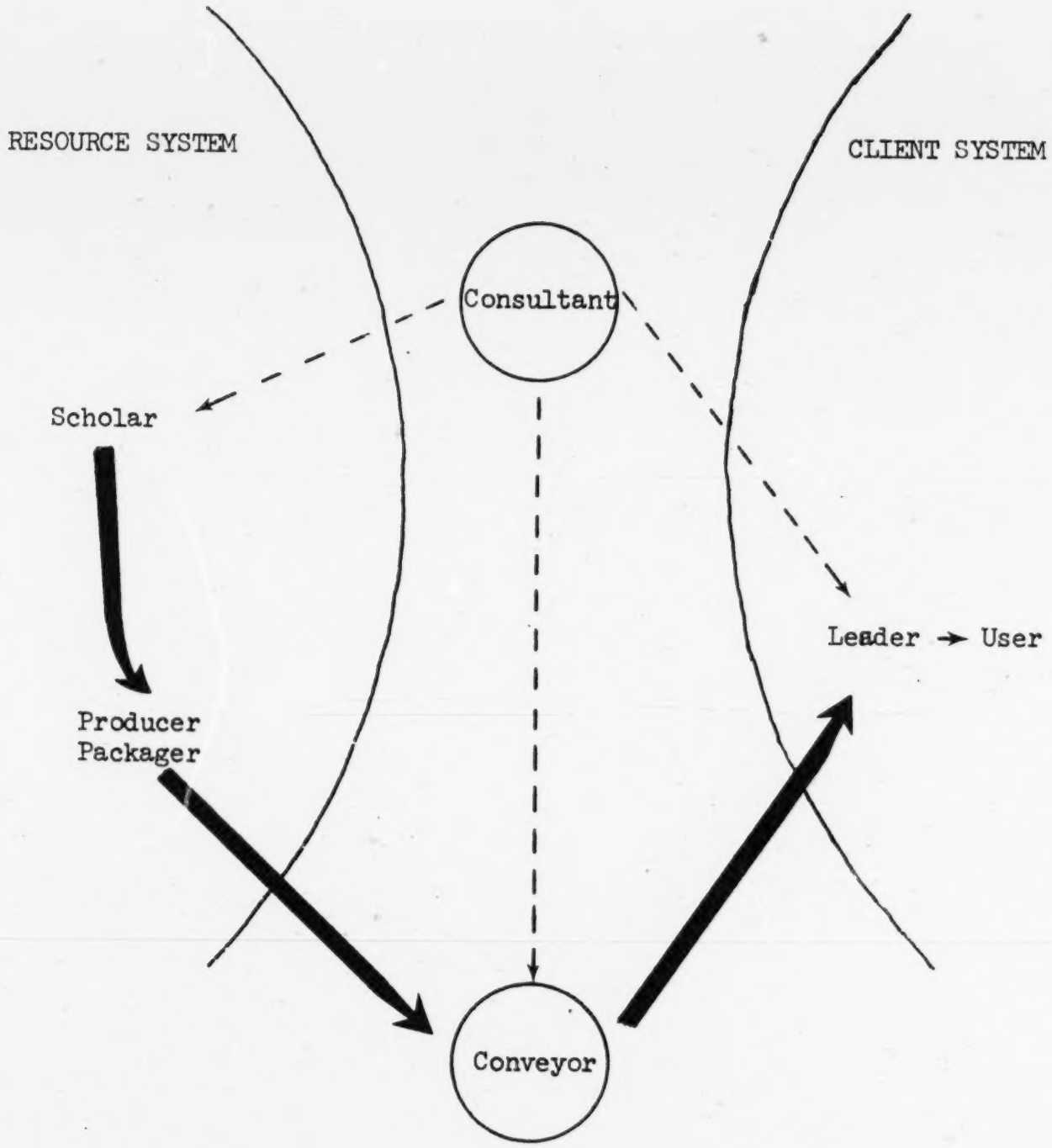
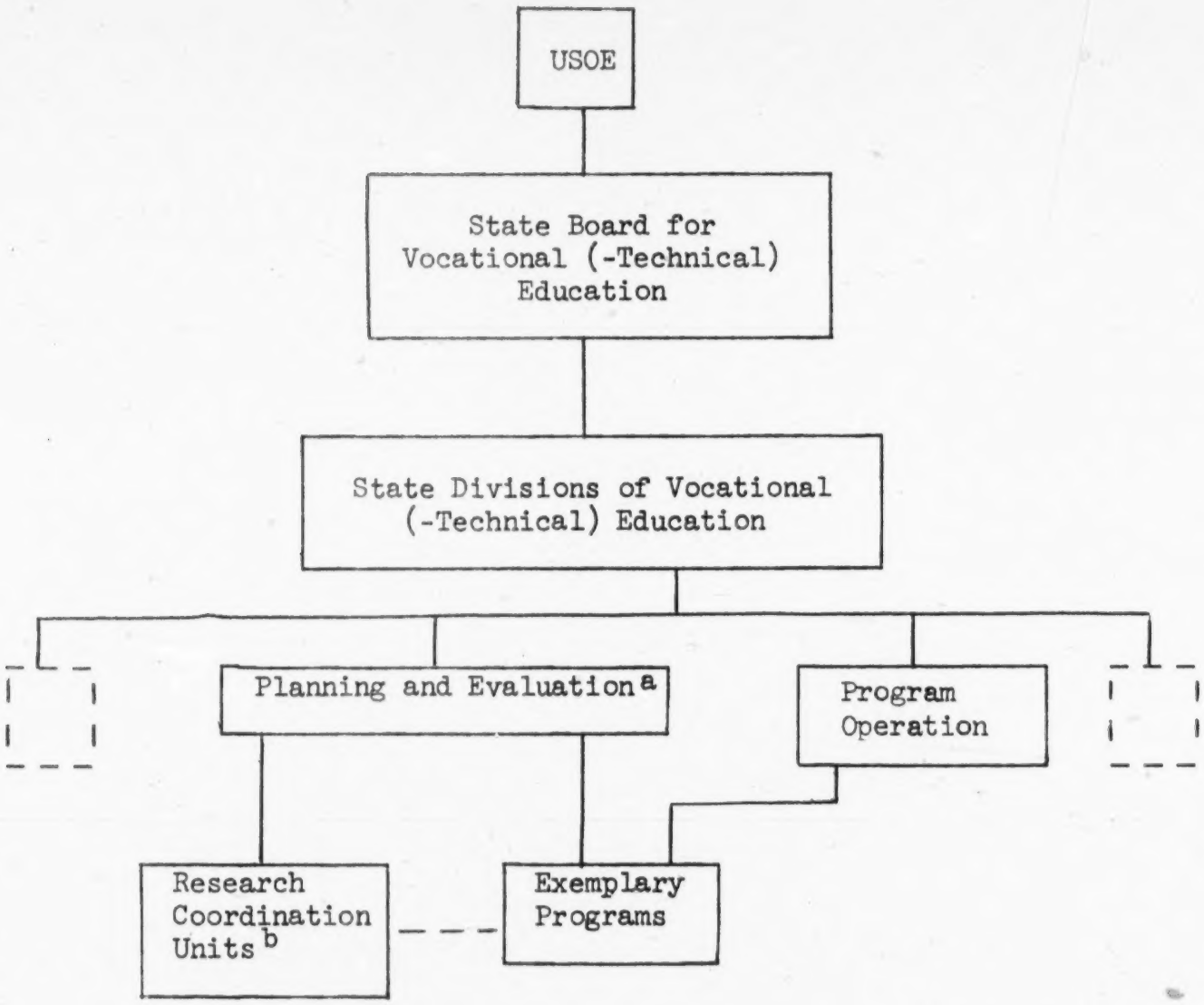


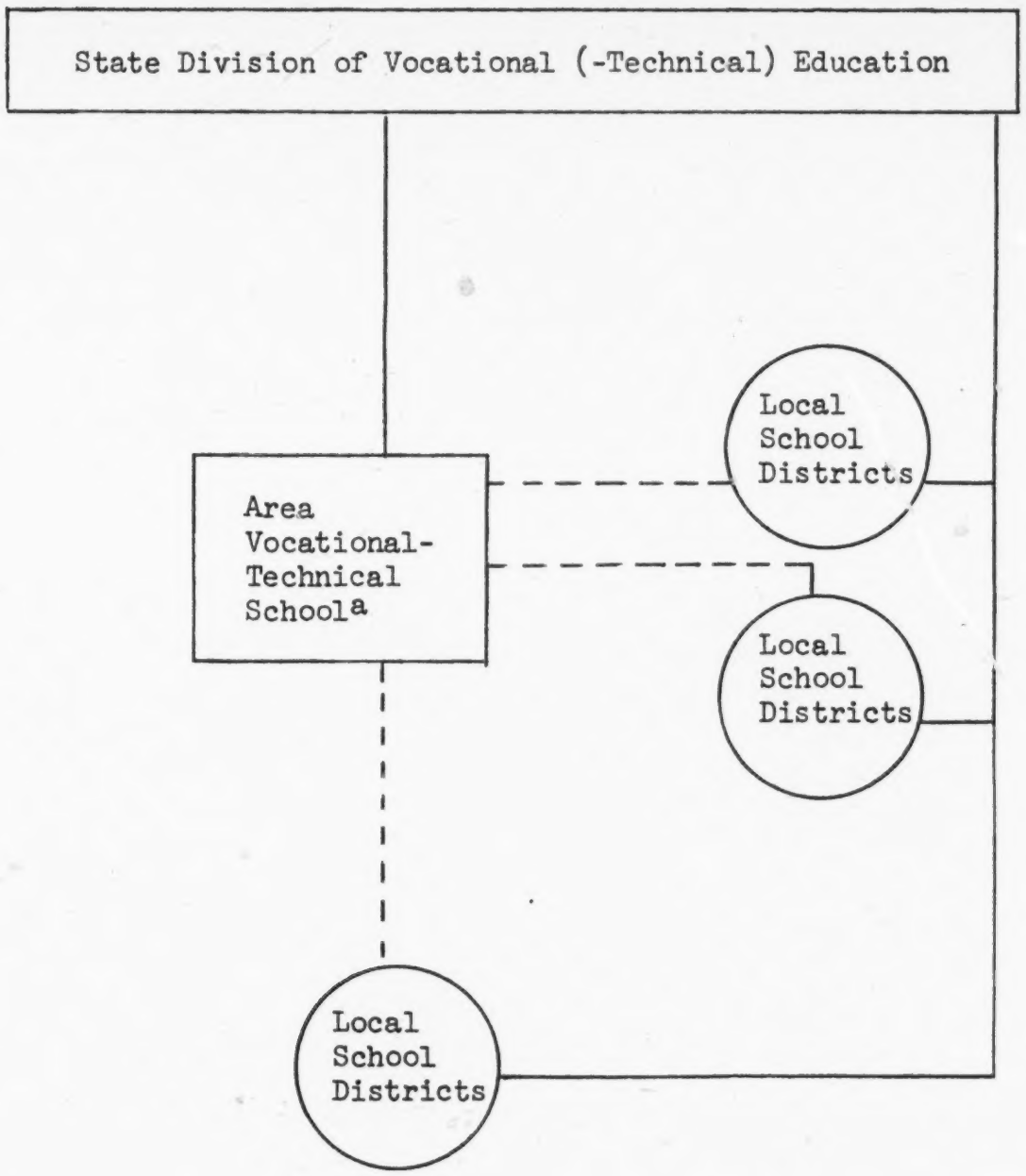
Figure 3 Typical Structural Relationships for Reimbursed Programs in Vocational (-Technical) Education



[a]Not all agencies combine the planning and evaluation functions.

[b]Some RCU's are not included in State Divisions of Vocational-Technical Education.

Figure 4 Patterns of Communication Among Local Educational Agencies



[a]The area concept may be found in many types of institutions, e.g., comprehensive high schools, junior and community colleges, technical institutes, etc.

C-519

CONVERTING TEST DATA TO COUNSELING INFORMATION: SYSTEM IMPLEMENTATION IN A VOCATIONAL SCHOOL[1]

Paper presented at the
1971 AERA National Convention

by
Dale J. Prediger
The American College Testing Program

The general objective of this project was to develop and implement computer-based procedures for obtaining validated data on the characteristics of vocational school students and to convert this data into information that could be used by counselors in helping students select an appropriate vocational education program. The rationale for the procedures used to convert test data into counseling information has been presented by Prediger (1970, in press) and can be summarized in the following eight points:

1. Information from tests, when viewed in the context of decision theory, can play an important role in vocational development.

2. This role is primarily one of stimulating and facilitating exploratory behavior.

3. Two data-information conversion procedures--similarity (centour) scores and success estimates--are crucial to this role.

4. On the basis of both logical and technical considerations, similarity scores are more appropriate than success estimates in stimulating and facilitating exploratory behavior. Success estimates represent one of many things to be considered in the process of exploration.

5. Similarity scores eliminate much of the guesswork inherent in test profile interpretation.

6. Graphical procedures are available to provide help in understanding the reasons underlying a given counselee's similarity scores, thus avoiding the take-it-or-leave-it aspects of test interpretation based on similarity scores alone.

7. These procedures can also facilitate use of test data to initiate changes in counselee characteristics and/or the characteristics of groups representing various choice options, rather than merely to represent the status quo.

8. Data-information conversion procedures must rely heavily on the availability of local validity data.

[1]This project was partially supported by a contract with the Office of Education, U.S. Department of Health, Education, and Welfare.

Several of the appendices noted in the paper have not been attached in order to conserve space. Copies of these appendices are presented in the USOE research report by Prediger (1970) cited in the reference list.

A prototype package of computer programs was developed to facilitate data-information conversion. In the approach that was used, heavy reliance was placed on the multivariate research and classification strategies represented by the work of Cooley and Lohnes (1962, 1968) and the decision-oriented paradigm for local guidance research proposed by Clarke, Gelatt, and Levine (1965). On the basis of research results and the experience gained through the use of the prototype system, specifications were developed for a generalized "Test Validation and Information Feedback System" (TVIFS) that would be applicable to divergent educational settings and a variety of data-information conversion needs. Support for the development of early phases of TVIFS was obtained from the Ohio Board of Regents. With the exception of the follow-up component, TVIFS is scheduled to become operational in 1971. An overview of TVIFS is attached at the end of this report.

Project activities were conducted in an area vocational high school drawing students from 14 feeder schools. Several considerations made this an ideal setting in which to develop and implement data-information conversion procedures. For example, vocational programs are little known and often misunderstood by students, parents, and counselors. Nevertheless, students in the feeder schools must decide sometime during their sophomore or junior year whether they want to attend the area vocational school, and if so, which of some 25 vocational education programs they wish to enter. Informed choice is crucial since the vocational school attempts to honor the requests of its applicants instead of applying arbitrary placement procedures. Because of the concentrated amount of time spent in the programs (six out of eight periods a day), the choice a student makes may have a substantial effect on his vocational development. Student program choices are also of interest to vocational instructors and supervisors since the success of their programs depends on having students with the requisite abilities, interests, and motivation. In this context, data-information conversion procedures that call to a student's attention the vocational education programs for which he appears to have the requisite characteristics, can play an important role in improving the quality of enrollees in the various programs. At the same time, the student's freedom of choice is preserved, and the process of choice is facilitated.

Data-information conversion procedures require the presence of certain relationships between the antecedent and outcome variables. There is ample evidence that these relationships exist in vocational-technical school settings. Patterson (1956); Prediger, Waple, and Nusbaum (1968), and Stock and Pratzner (1969) have reviewed studies in which the correlation between antecedent variables and success criteria was determined. In general, these reviews have shown that (a) success in vocational education programs (usually measured by grades) is predictable to an extent that has practical significance; (b) the level of predictability depends on the vocational area and the predictors that are used; and (c) the results of studies vary widely from one setting to another. These findings support the feasibility and desirability of developing success estimates based on local validity data.

Research in which multivariate procedures were used to study vocational program differences is finally beginning to accumulate. D'Costa (1968), Doerr and Ferguson (1968), Passmore (1968), Pucel (1969), Silver (1967), and Stewart (1966, 1968) have shown that students enrolled in various vocational programs can be differentiated to a statistically significant extent by aptitude, interest, and personality variables used alone or in various combinations. In all but Pucel's study, multiple discriminant analysis procedures were employed to determine the way in which the groups were differentiated. Without exception, the first two discriminant factors accounted for most (typically more than 80%) of the discriminating power of the variables. Since the nature of the predictor variables and criterion groups varied from study to study, general conclusions as to the composition of the discriminating factors or the manner in which the groups differed are not possible. Comparison and generalization across studies will continue to be difficult until some agreement is reached on bench-mark variables and criterion groups. Passmore (1968) has shown that even when the same variables and groups are involved, validity generalization cannot be assumed.

In several studies, the accuracy of program membership predictions based on a student's similarity scores was determined. The level of accuracy achieved from study to study varied with the nature of the variables, the number of vocational programs involved, and the statistical procedures used in obtaining the predictions. Only Silver (1967) concluded that accuracy of the predictions did not warrant guidance applications. Use of similarity scores in counseling was suggested in several of the studies.

Longitudinal validation procedures were employed in only two of the seven studies cited above (Pucel, 1969; Silver, 1967). Thus, most of the evidence that vocational programs can be differentiated is based on predictor and criterion data collected concurrently. No one has reported the actual use of analysis results in an ongoing guidance program. In the present study, the results of longitudinal analyses provided the basis for converting data on students into information that was used by counselors in 12 field-test schools. Student and counselor reactions to this experience are reported.

As noted above, previous research has shown that the relationships between antecedent and outcome variables required for data-information conversion are likely to vary from one vocational education setting to another. Hence, the nature of these relationships must be determined for the setting in which data-information conversion procedures are to be used. For this reason, answers to the following questions were sought during the course of the project.

Similarity scores

1. What procedures are appropriate for identifying and grouping similar vocational programs when the objective is to facilitate data-information conversion?

2. Is it possible to differentiate successful and satisfied students enrolled in these programs through use of comprehensive batteries of aptitude, interest, or personality measures obtained prior to or shortly after entry into the programs? If so,

3. Which variables are most effective, and what is the nature of the group differentiation that is achieved?

Success estimates

4. Within each of the vocational program areas, considered separately, which of the aptitude measures has the highest correlation with success?

5. Are guidance applications of the best two-variable combination of predictors warranted on the basis of the level of correlation achieved and the contribution made by each predictor?

Although the answers to the above questions are specific to the setting in which the study was conducted, the techniques are directly transferable to other settings. For example, the same questions could be asked of data obtained from students prior to entry into various college majors or occupational clusters.

Procedures

Subjects

The students in this study were enrolled at the Penta-County Vocational School, a vocational high school serving a five-county area surrounding Toledo, Ohio. When the project was begun early in 1966, 17 high schools sent students to Penta-County. As a result of consolidations, there were only 14 feeder high schools four years later. Enrollment in these schools varies from about 100 to 1,000 students with a median of about 500. The school districts range in socio-economic level and tax evaluation from low to above average and cover a composite of rural, small town, and urban areas, but not the center-city itself.

Penta-County operates approximately 24 different high-school-level vocational programs. (The number varies from year to year.) Most students enter as juniors; however, there are a few one-year programs open to seniors. The school has diligently tried to maintain an open-door policy that admits a student to the program of his choice. In cases where a large number of students apply for a program with limited space, this is sometimes impossible. However, every effort is then made to place the student in his second-choice program. Ramsey (1966) has presented a detailed description of the school, including the technical college with which it shares facilities.

Students entering Penta-County as juniors or seniors in the fall of 1966, 1967, and 1968 formed the sample used in the analyses. Since there is some shifting in and out of programs during the first month of school, sample membership was not determined until the end of September. The total sample consisted of 1,584 students, or approximately 500 students per year.

Variables

Scores from the following tests and inventories were used as antecedent variables:

1. General Aptitude Test Battery, Form B-1002, (GATB): Verbal Aptitude (V), Numerical Aptitude (N), Spatial Aptitude (S), Form Perception (P), Clerical Perception (Q), Motor Coordination (K), Finger Dexterity (F), and Manual Dexterity (M).

2. Differential Aptitude Tests, Form A, (DAT): Mechanical Reasoning subtest (MR).

3. Kuder Preference Record--Vocational, Form C, (Kuder) covering the following interest areas: outdoor (O-I), mechanical (M-I), computational (C-I), scientific (S-I), persuasive (P-I), artistic (A-I), literary (L-I), musical (MU-I), social service (SS-I), and clerical (CL-I).

4. Lorge-Thorndike Intelligence Tests, Form A: Verbal IQ (VIQ) and Nonverbal IQ (NVIQ).

5. Junior-Senior High School Personality Questionnaire, 1963 Edition, Form A, (HSPQ) covering the following personality dimensions: warmhearted (A-P), bright (B-P), emotionally stable (C-P), excitable (D-P), assertive (E-P), enthusiastic (F-P), conscientious (G-P), adventurous (H-P), tender-minded (I-P), reflective (J-P), apprehensive (O-P), self-sufficient (Q2-P), controlled (Q3-P), and tense (Q4-P).

Only the descriptive labels associated with high scores on the HSPQ are given for the above dimensions. Abbreviations for the HSPQ scales are identical to those appearing in the latest test manual (Cattell & Cattell, 1969). Since several Kuder and HSPQ scales are subject to rather substantial sex differences, normalized standard scores based on percentile ranks were used in the analyses. Students having verification scores of less than 33 were not included in the analyses of Kuder results. Range checks were made on the scores from all measures.

One additional antecedent variable, student GPA prior to entering Penta-County (PRE-GPA), was also available. Typically, information on students entering Penta-County as juniors included feeder school grades received during the freshman year and the first semester of the sophomore year. Grades for an additional year were available for students entering Penta-County as seniors.

There were 36 antecedent variables, altogether, with aptitude represented by 12 measures (8 GATB scores, MR, VIQ, NVIQ, and PRE-GPA), interests represented by the 10 Kuder measures, and personality characteristics represented by the 14 HSPQ dimensions. Except for the Lorge-Thorndike VIQ and the HSPQ, which were administered shortly after students entered Penta-County, the tests were generally given during the fall of the year preceding a student's entrance. The actual time of testing was left to the discretion of feeder school counselors. In all cases, testing was completed by midwinter. Several schools elected to give the tests in the spring of the year preceding a student's application to Penta-County. This would be slightly less than a year and one-half before entrance. Make-up testing involving approximately 15% of the sample was completed in the fall following entrance.

Design

In order to make the analyses, reports of results, and the interpretation of these reports more manageable, an answer to Research Question 1 was required; that is, a practical procedure for grouping the 24 vocational programs had to be found. Empirical procedures were considered, especially the Mahalanobis' D^2 technique (Rao, 1952); however, use of the results of the analyses in a counseling setting made a logical grouping seem more appropriate. The basic rationale was to obtain groups having face validity and utility for counselors and students rather than to maximize vocational program discrimination.

The Penta-County counseling staff and vocational supervisors participated in the initial grouping of the 24 vocational programs. Similarities in program content and student characteristics thought to be required in the programs served as the subjective criteria. The initial grouping was

used in preliminary discriminant analyses run on data available for 1966 and 1967 entrants. Slight revisions were made on the basis of group distribution in discriminant space and counselor reaction to similarity scores provided for a 1968-69 field-test sample. The revised grouping was subjected to a second discriminant analysis when data for the total sample became available. Additional counselor reaction, group size considerations, and the results of these analyses were used to arrive at the final grouping shown in Table 1.

Seven of the 12 groups are the same as they were in the initial grouping. Changes usually involved shifting a program from one group to another. For example, machine trades and welding switched places, and high skill steno became a separate area, having been initially combined with the cooperative office education and office machine programs.

The regression analyses required to answer Research Questions 4 and 5 were run separately for each of the 12 groups. However, answers to Research Questions 2 and 3 required that analyses be conducted across the various vocational programs. If the analyses were performed on all 12 groups simultaneously, sex differences from program to program would likely cloud information on program differences available in the antecedent variables. For example, one might find that programs enrolling girls can be differentiated from those enrolling boys on the basis of interests, aptitudes, and personality measures. This would be of little practical value, however, since there are better ways to tell girls from boys. Use of the results of the analyses for data-information conversion would also be limited since it makes little sense to report a girl's similarity to auto mechanics students or to report a boy's similarity to students in the high skill steno program. Such reports would most likely be meaningless from a statistical as well as a practical standpoint.

In order to avoid the problem noted above and at the same time provide for comprehensive analyses, the vocational programs were organized into three sex-related groups: programs enrolling primarily males, programs enrolling primarily females, and programs having a substantial enrollment of both males and females. As shown in Table 1, the male, female, and mixed groups each included four programs when the final analyses were performed. Separate analyses were run on the male and mixed groups combined (the M-MF analysis group) and the female and mixed groups combined (the F-MF analysis group). Thus, the M-MF and F-MF analysis groups each included eight vocational program groups. Similarity score reports were also based on this grouping.

Multivariate analyses of variance and discriminant analyses were used to study the differentiation of students enrolled in the vocational programs. These analyses were first run separately on each of the three types of antecedent variables. Ten of the most effective variables identified in these analyses were then combined in the final analysis on which the similarity score equations were based.

The vocational programs used in the discriminant analyses did not include students who dropped out of school or returned to the feeder high school, who expressed dissatisfaction with program choice, or who failed

Table 1

Final Grouping of Vocational Program Areas

Vocational area	Original sample	Discriminant analyses[a] Eligible	Discriminant analyses[a] Data available	Regression analyses
Programs primarily enrolling males				
A. Carpentry	57	48	41	52
B. Auto & Ag. Mech., machine trades	242	163	139	225
C. Radio & TV repair, electronics	88	58	54	82
D. Auto body, welding	116	88	73	108
Total	503	357	307	467
Programs enrolling both males and females				
E. Horticulture	50	29	24	41
F. Distributive Educ.	103	51	38	79
G. Commercial art, printing, drafting	204	150	134	185
H. Data processing, account clerk	126	93	86	113
Total	483	323	282	418
Programs primarily enrolling females				
I. Child care, Comm. & home Serv., dietary aid	162	95	87	128
J. Cosmetology, dental Asst.	199	151	132	171
K. Co-op. office Educ., office machines	154	116	102	124
L. High skill steno	83	66	61	61
Total	598	428	382	484
Total sample	1584	1108	971	1369
M-MF analysis group	986	680	589	885
F-MF analysis group	1081	751	664	902

[a]Sample sizes shown here are for the final analyses conducted on aptitude and interest measures, combined. Sample sizes for the separate analyses performed on the aptitude, interest, and personality variables are given in Table 2.

to achieve a satisfactory GPA in their vocational course work. The cut-off point for a satisfactory GPA was 1.8 or better with a "C" being 2.0 on a 4.0 scale. Academic course work was not included in calculating a student's GPA.

A survey of student satisfaction with program choice was taken at the end of the 1968-69 school year. Hence, results were available for juniors entering Penta-County in 1967 and juniors and seniors entering in 1968. Unfortunately, a post high school follow-up of 1966 entrants and the small group of seniors entering Penta-County in 1967 was not completed in time to include their satisfaction ratings in the definition of the criterion groups. Satisfaction ratings were available for about two thirds of the sample, however.

The ratings were obtained on a four-choice scale administered under conditions conducive to confidentiality of response. Students indicating that other vocational programs would definitely have been more appropriate to their abilities and interests or who expressed a more intense degree of dissatisfaction with the program in which they were enrolled were not included in the criterion groups. About 12% of the students who were surveyed were excluded for this reason.

The number of students available in each of the program groups after application of the success and satisfaction criteria is shown in the column labeled "eligible" in Table 1. Despite extensive make-up testing, not all of these students had a complete set of scores. The "data available" column of Table 1 shows the number of eligible students who had scores on the ten aptitude and interest measures used in the final discriminant analyses.

Students involved in the regression analyses did not have to meet the criteria of eligibility applied to the discriminant analysis groups. Vocational program GPA at time of graduation or drop-out was used as the criterion of success. Hence, only students who left school before they had established a grade record or who had missing test scores were excluded from the regression analyses. The number of students in the regression analyses groups is shown in Table 1.

Results and Conclusions

Conclusions reached with respect to the project objectives and research questions are stated in the context of the results supporting these conclusions. Because of the importance assumed by the data-information conversion procedures as the project progressed, these procedures and the field tests of them are given special attention in this section.

Modified versions of the Cooley-Lohnes computer programs (Cooley & Lohnes, 1962) were used for the multivariate analyses of variance and discriminant analyses required to answer Research Questions 2 and 3. These programs include Box's F test for homogeneity of group dispersions, Wilk's lambda test for overall group differentiation, and Rao's chi square test for group differentiation by a single discriminant function or factor.

The significance levels indicated by the statistical analyses were used in assessing the role that chance might have played in producing the observed results. Interest was primarily in data reduction and information feedback rather than the discovery of general laws of nature. Decisions with respect to data-information conversion strategies were based, in part, on the results of the significance tests and, in part, on other information produced by the statistical analyses.

Question 1

Workable procedures for identifying and grouping similar vocational programs were described in the design section of this report. Essentially, these procedures rely on the pooled judgment of counselors and vocational supervisors acquainted with the nature of the programs and students to be grouped. Major consideration is given to forming program clusters that will be helpful to students who are considering vocational program choice options. Empirical data on the characteristics of group members are used, along with counselor reactions based on field tests, to make adjustments in original group composition. Few adjustments were found to be necessary in the setting in which these procedures were implemented. Counselors expressed no dissatisfaction with the vocational program grouping used during the 1969-70 field tests. Hence, it may be concluded that the procedures are appropriate for identifying and grouping similar vocational programs when the objective is to facilitate data-information conversion.

Question 2

Eight vocational program groups were involved in the personality measure analyses. Nine groups were involved in the separate aptitude and interest measure analyses in order to obtain empirical information for use in grouping similar vocational programs. Group labels and sample sizes are shown in Table 2.

The F values obtained from Box's test for homogeneity of dispersions were uniformly small across all analyses. The median value was 1.11 with the range being 1.01 to 1.18. The size of these F values would not appear

Table 2

Vocational Program Areas Used in Separate Analyses of Aptitude, Interest, and Personality Measures

Vocational area		Sample size[a]		
		Aptitude	Interest	Personality
Programs primarily enrolling males				
A.	Carpentry	42	41	45
B1.	Auto & Ag. mechanics	114	104	161[b]
B2.	Machine trades	37	36	
C.	Radio & TV repair, electronics	52	56	55
D.	Auto body, welding	81	75	77
Total		326	312	338
Programs enrolling both males and females				
E.	Horticulture	24	24	26
F.	Distributive Educ.	31	39	44
G.	Commercial art, printing, drafting	135	137	146
H.	Data processing, account clerk	80	89	90
Total		270	289	306
Programs primarily enrolling females				
I1.	Child care	36	41	91[c]
I2.	Community & home serv., dietary aid	46	47	
J.	Cosmetology, dental assistant	133	136	130
K.	Co-op. office Educ., office machines	79	107	97
L.	High skill steno	49	62	53
Total		343	393	371
Total sample		939	994	1015
M-MF analysis group		596	601	644
F-MF analysis group		613	682	677

[a]Includes only those students meeting the success and satistaction criteria and who had data available.

[b]Areas B1 and B2 were combined in the HSPQ analyses.

[c]Areas I1 and I2 were combined in the HSPQ analyses.

to invalidate Wilks' lambda test for group differentiation. As noted by Cooley and Lohnes (1962), Wilks' test is relatively insensitive to slight departures from homogeneity of dispersion.

Results from Wilks' lambda test are presented in Table 3. All F values obtained via the multivariate analyses of variance are statistically significant at far beyond the .01 level. Thus, in answer to Research Question 2, vocational program differentiation is possible through use of aptitude, interest, or personality measures.

Perspective on the relative effectiveness of the different types of measures can be obtained by comparing the F values. For example, the interest measures appear to be somewhat more effective than the aptitude measures in the M-MF analysis group, but about equally effective in the F-MF group. The personality measures were, by far, the least effective of the three types. Since the number of groups used in the analyses differed, a strict comparison of F values obtained with the personality measures as versus the aptitude and interest measures is not warranted. However, multivariate analyses of variance involving 9 of the 12 aptitude measures across the same 8 groups used with the personality measures, resulted in F values of 4.34 and 7.48 for the M-MF and F-MF analysis groups, respectively. Both of these values are much larger than those obtained through use of the personality measures.

Because of their relatively poor showing in the separate analyses, the personality measures were eliminated from the final analyses. Only the most effective aptitude and interest measures, as judged on the basis of separate discriminant analyses, were included. Multivariate analyses of variance involving ten of these aptitude and interest measures in combination, resulted in F values of 9.10 and 11.83 for the M-MF and F-MF analysis groups, respectively. Since these values are much larger than those obtained for the aptitude and interest measures separately, it would appear that use of both types of measures, in conjunction, results in substantially more group differentiation than use of either, alone. A cross-validation sample is needed to provide conclusive evidence on this point, however.

Question 3

As already noted, discriminant analyses were performed in conjunction with each of the analyses discussed above. The statistical significance and relative effectiveness of the discriminant factors obtained in the discriminant analyses are reported in Table 4. The first two factors achieved significance at far beyond the .01 level. The significance tests for the aptitude and interest measures combined must be discounted, however, because a cross-validation sample was not used. Nevertheless, the size of the chi square values provides substantial evidence that the vocational program groups can be differentiated on a number of dimensions. The interest measures appeared to be particularly effective in this respect.

By noting the size of the chi square values obtained in the significance tests for a given set of predictors, it is possible to gain perspective on the relative effectiveness of the factors. Inspection of these

Table 3

Results of Wilks' Lambda Test

for Group Differentiation

Type of measure	No. of groups	No. of variables	Analysis group			
			M-MF		F-MF	
			F	*d.f.*	*F*	*d.f.*
Aptitude	9	12	3.86	96&3890	6.14	96&4005
Interest	9	10	5.98	80&3706	6.28	80&4220
Personality characteristics	8	14	1.77	98&3949	2.07	98&4158

Note.--An *F* value of 1.44 is needed for significance at the .01 level for 75 and 1000 degrees of freedom.

Table 4

Chi Squares Indicating Relative Differentiation

of Groups by Discriminant Factors

	Type of measure							
	Aptitude		Interest		Personality		Aptitude & interest	
Factor	M-MF	F-MF	M-MF	F-MF	M-MF	F-MF	M-MF	F-MF
1	191.5***	255.6***	154.7***	200.7***	75.8***	83.7***	257.0***	346.8***
2	98.3***	192.4***	132.0***	122.5***	35.3**	43.8***	147.6***	231.6***
3	23.7	44.9***	95.3***	56.6***	22.0	25.4	99.3***	74.3***
4	19.7	26.9*	36.8***	54.4***	17.2	18.6	49.7***	52.1***
5	12.8	15.3	20.8*	28.8***	11.6	17.5	22.9**	35.3***
6	8.9	12.2	13.2	10.7	6.5	8.8	10.4	13.2*
7	2.1	6.8	1.7	4.9	3.4	2.7	3.0	3.2
8[a]	1.7	3.2	1.2	1.1				

[a]Since only eight groups were involved in the analyses for the personality variables and the aptitude and interest measures combined, seven factors exhausted the discriminating power of the measures.

***$p < .001$, **$p < .01$, *$p < .05$

values shows that a large majority of the discriminating power of the measures was generally concentrated in the first two factors. Attention is focused on the first two factors in the results presented below.

Tables 5 through 8 show the correlation of the first two factors with the variables used in each of the analyses. The same information for Factors 3 and 4 is presented in Tables 11 through 14 in Appendix D. Vocational program means on the first four factors are presented in Tables 15 through 18 of the same appendix. The ten measures selected for the combined aptitude-interest analyses are listed in Table 8. Sample sizes appeared to be too small to warrant use of all 22 aptitude and interest measures in the final analyses. Unfortunately, specific guidelines have not yet appeared on the minimum number of cases per variable per group required for discriminant analysis.

The nature of the factors that best serve to differentiate students in the various vocational programs and the manner in which these programs are differentiated can best be seen from the similarity score profiles presented as Figures 2 through 9. These profiles each represent a concise answer to Research Question 3. In Figures 2 through 7, the positions of the vocational program means (centroids) on the first two factors have been plotted as single points. In Figures 8 and 9, the distribution of one of the groups is shown by an ellipse enclosing the scores of about 50% of the group members. Similar, but not identical, ellipses could have been plotted to each of the other groups. However, one ellipse per profile should be sufficient to provide perspective on the amount of group differentiation achieved.

Figure 2 will be used as an example of how similarity score profiles can provide information relevant to Research Question 3. Note that the first factor dimension is characterized by academic- and clerical-related aptitudes versus mechanical reasoning aptitude. Program differentiation on this factor is evident from the distribution of the groups along the standard score scale. For example, the data processing and account clerk students (area H) score toward the academic-clerical end of the dimension, and as one would also expect, auto-Ag. mechanics, welding, and auto body students (areas B1 and D) score toward the mechanical end. The second factor appears to represent a mechanical-technical dimension with radio-TV repair, electronics, and machine trades students (areas C and B2) obtaining the highest scores on the factor. Horticulture and distributive education students (areas E and F) score toward the other end of the dimension, as one would expect. More than one and one-half standard deviations separate the extreme groups on both factors. Thus, the major aptitude dimensions differentiating students enrolled in the nine vocational programs represented by the M-MF analysis group appear to be an academic-clerical versus mechanical reasoning dimension and a mechanical-technical dimension. Similar analysis procedures can be applied to the other profiles.

Table 5

Aptitude Variable Correlations with

First Two Factors

	M-MF analysis group		F-MF analysis group	
Variable	Factor 1	Factor 2	Factor 1	Factor 2
MR	-.42	.84	-.28	.87
V	.48	.33	.51	.36
N	.49	.35	.59	.29
S	.03	.59	-.01	.50
P	.31	.17	.39	-.02
Q	.52	.19	.56	-.11
K	.25	.04	.53	-.12
F	.25	-.09	.41	-.16
M	.00	.19	.29	.04
PRE-GPA	.67	.41	.77	.48
VIQ	.58	.46	.46	.57
NVIQ	.32	.57	.26	.70

Table 6

Interest Variable Correlations with

First Two Factors

	M-MF analysis group		F-MF analysis group	
Variable	Factor 1	Factor 2	Factor 1	Factor 2
O-I	.63	.33	.28	.13
M-I	.72	-.09	.27	.13
C-I	-.50	-.54	-.48	-.01
S-I	.11	-.40	.01	.10
P-I	-.28	-.12	-.04	-.27
A-I	-.17	.84	.33	.77
L-I	-.15	.08	.01	.07
MU-I	.04	-.08	-.01	.26
SS-I	.07	-.01	.45	-.59
CL-I	-.67	-.42	-.93	-.12

Table 7

Personality Variable Correlations with

First Two Factors

	M-MF analysis group		F-MF analysis group	
Variable	Factor 1	Factor 2	Factor 1	Factor 2
A-P	-.13	-.21	.33	.13
B-P	.54	.15	.71	.25
C-P	-.16	-.05	.09	.23
D-P	-.07	-.04	-.29	-.26
E-P	-.28	-.12	-.09	-.13
F-P	-.21	.13	.21	.48
G-P	.32	-.02	.38	.06
H-P	-.17	.45	-.01	.48
I-P	-.01	.29	.05	.16
J-P	-.26	.58	-.28	.43
O-P	.11	-.03	-.16	-.19
Q2-P	-.60	-.10	-.47	.15
Q3-P	.15	-.01	.14	-.01
Q4-P	.05	.13	-.14	.08

Table 8

Correlations of Aptitude and Interest Variables Used in Final Analyses with First Two Factors

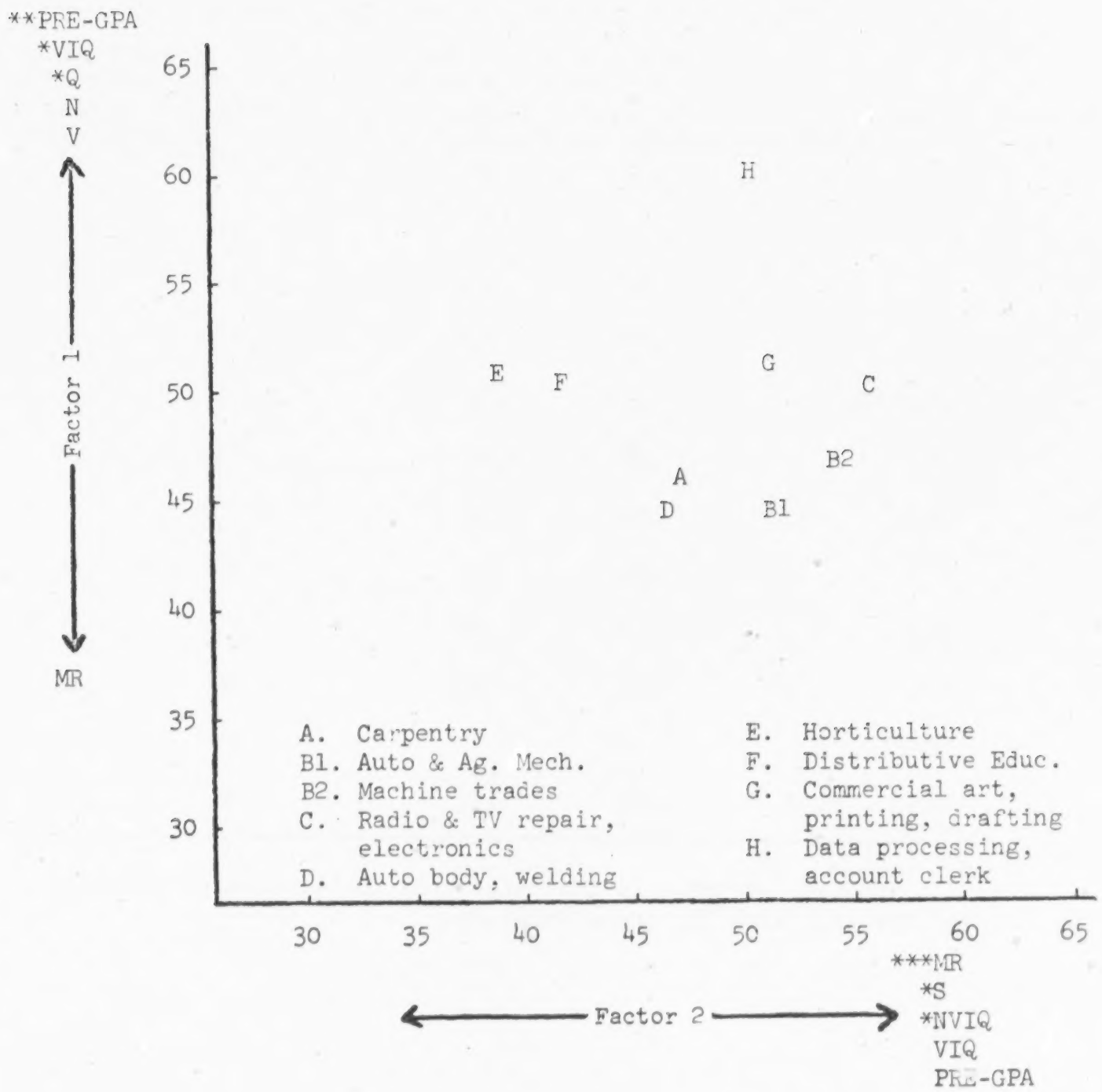
	M-MF analysis group		F-MF analysis group	
Variable	Factor 1	Factor 2	Factor 1	Factor 2
MR	.35	.58	-.02	.86
N			.64	.04
S	.01	.25	.07	.40
Q	-.45	.11	.38	-.32
PRE-GPA	-.55	.27	.79	.09
O-I	.50	-.22	-.24	.04
M-I	.54	.36		
C-I	-.51	.35	.37	.18
S-I	.02	.43		
A-I	.06	-.58	-.28	.44
SS-I			-.24	-.49
CL-I	-.63	.17	.70	.08

Note.--A vacant cell indicates that the associated variable was not used with the analysis group.

Figure 2

Distribution of M-MF Analysis Groups

on First Two Aptitude Factors

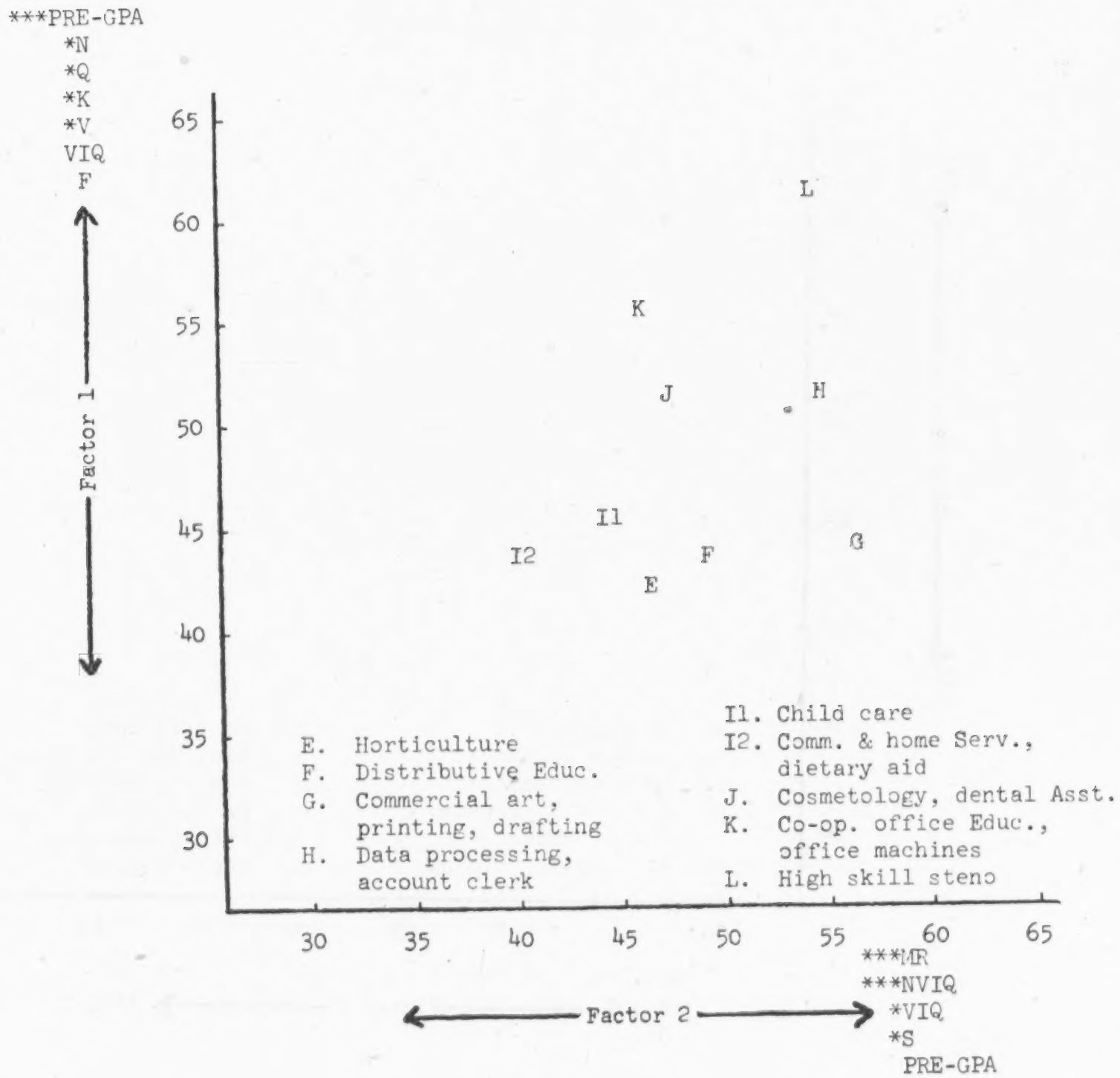


Note.--*** = r >.69; ** = r of .60-.69; * = r of .50-.59; no * = r of .40-.49. Variables having factor loadings with an absolute value of less than .40 are not listed as factor anchors.

Figure 3

Distribution of F-MF Analysis Groups

on First Two Aptitude Factors

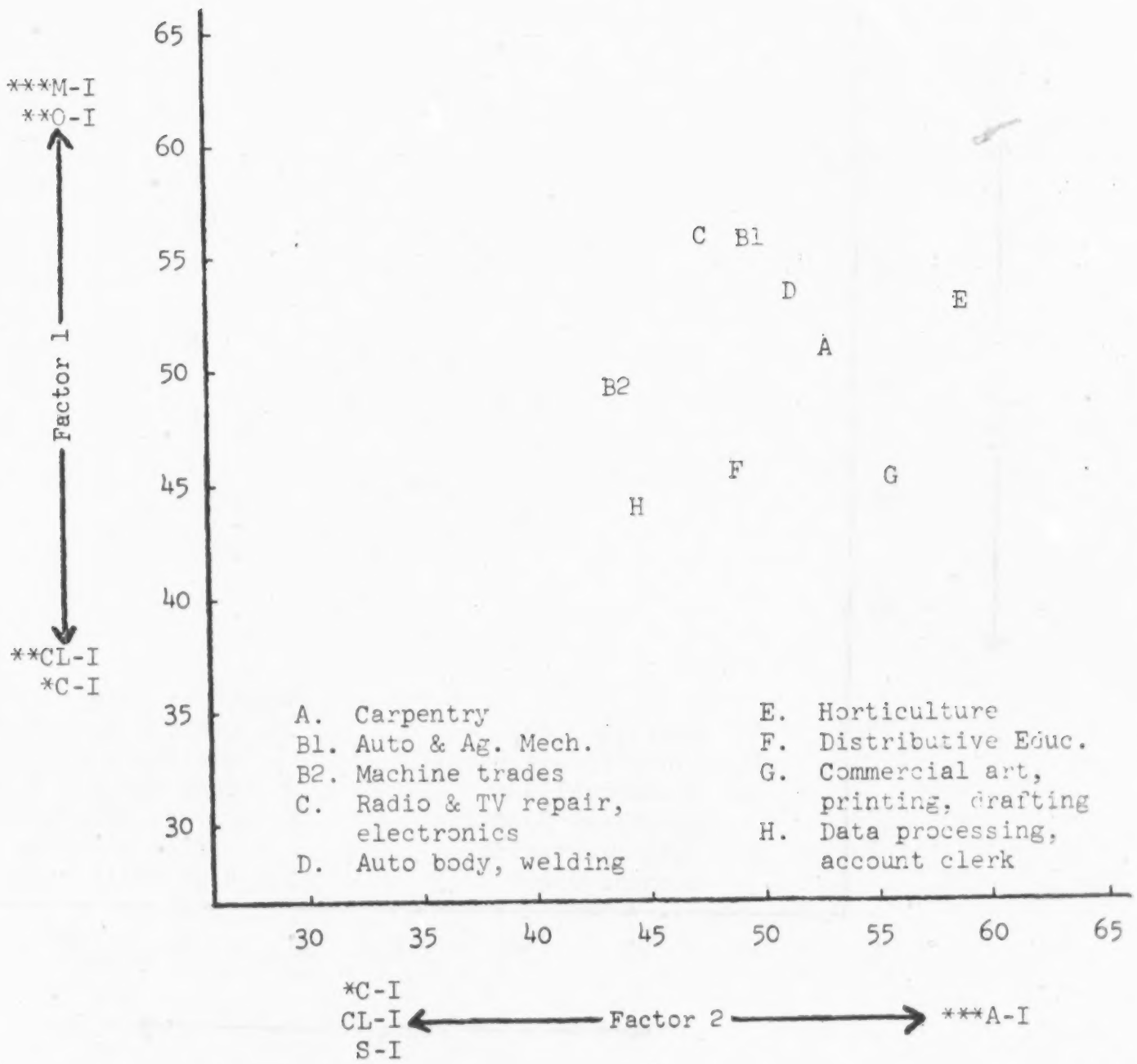


Note.--*** = r > .69; ** = r of .60-.69; * = r of .50-.59; no * = r of .40-.49. Variables having factor loadings with an absolute value of less than .40 are not listed as factor anchors.

Figure 4

Distribution of M-MF Analysis Groups

on First Two Interest Factors

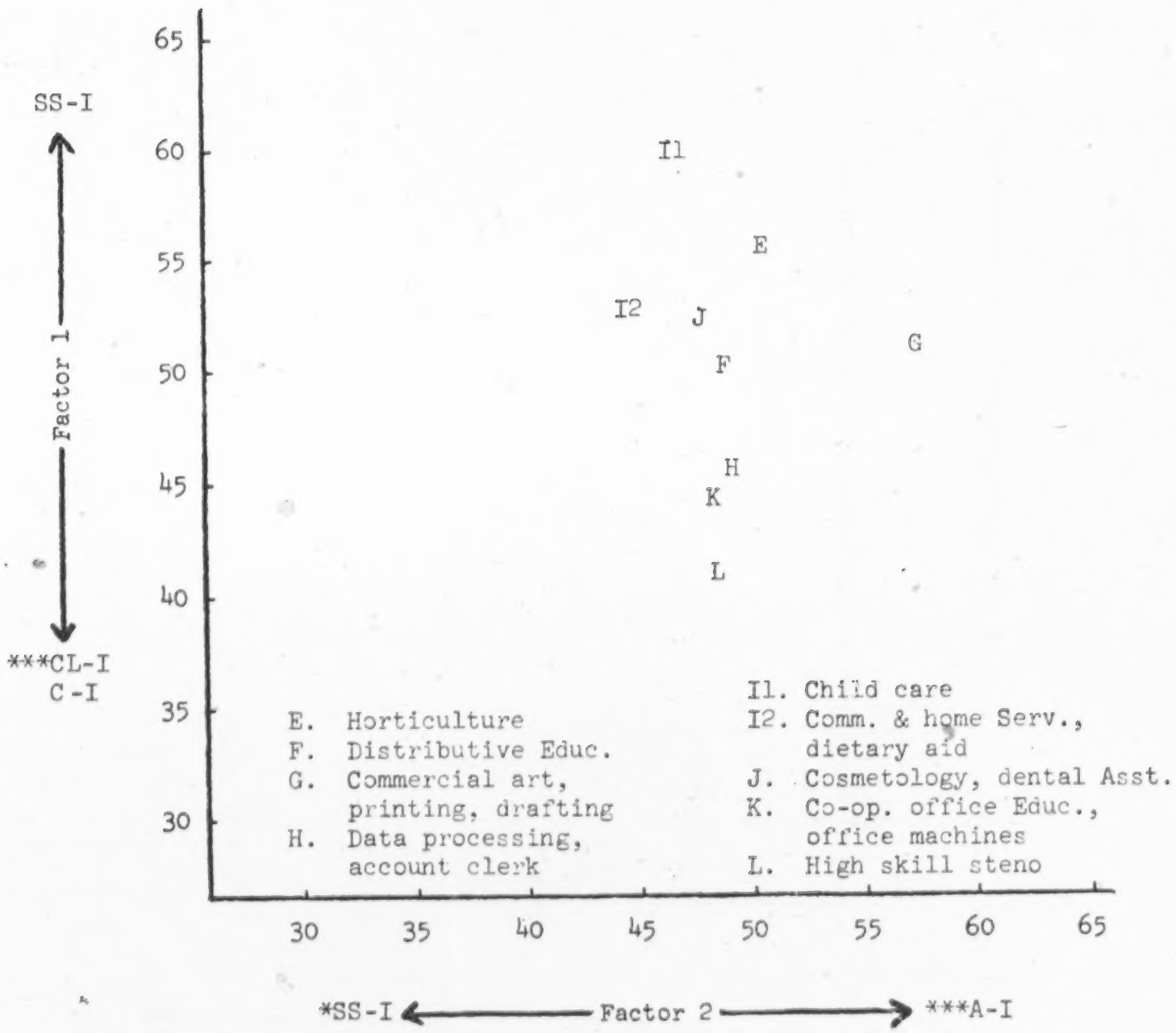


Note.--*** = r > .69; ** = r of .60-.69; * = r of .50-.59; no * = r of .40-.49. Variables having factor loadings with an absolute value of less than .40 are not listed as factor anchors.

Figure 5

Distribution of F-MF Analysis Groups

on First Two Interest Factors

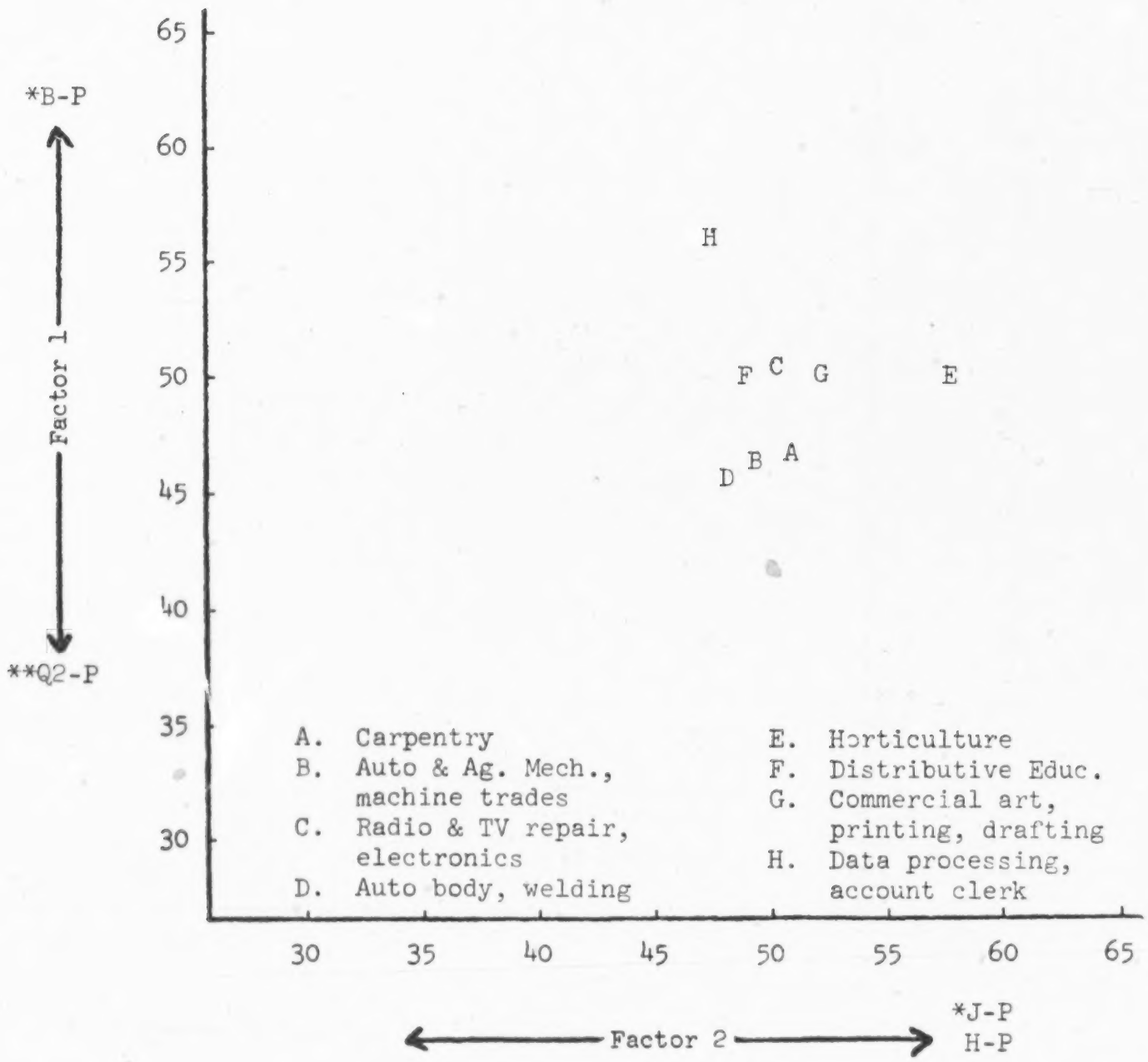


Note.--*** = r > .69; ** = r of .60-.69; * = r of .50-.59; no * = r of .40-.49. Variables having factor loadings with an absolute value of less than .40 are not listed as factor anchors.

Figure 6

Distribution of M-MF Analysis Groups

on First Two Personality Factors

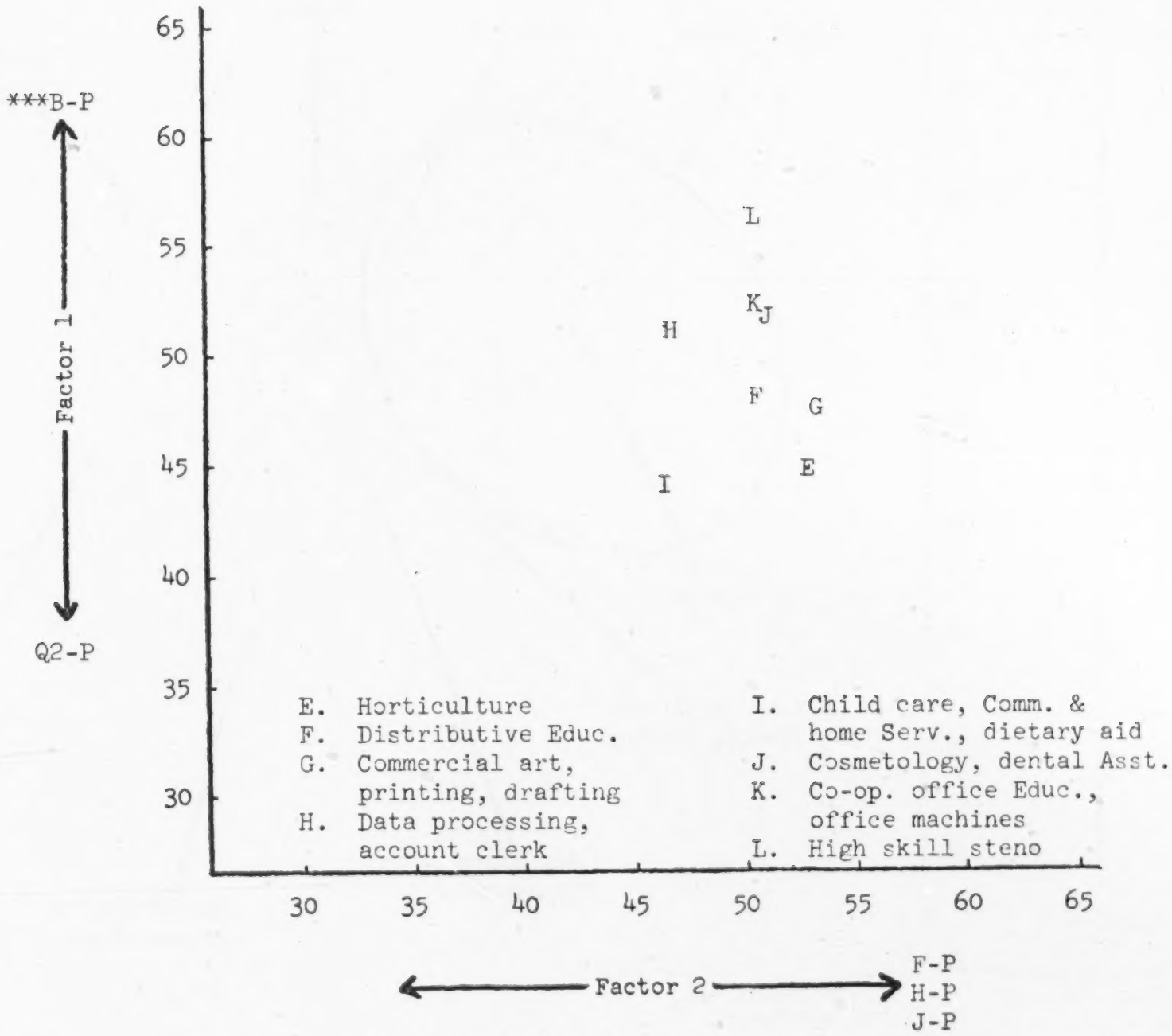


Note.--*** = r > .69; ** = r of .60-.69; * = r of .50-.59; no * = r of .40-.49. Variables having factor loadings with an absolute value of less than .40 are not listed as factor anchors.

Figure 7

Distribution of F-MF Analysis Groups

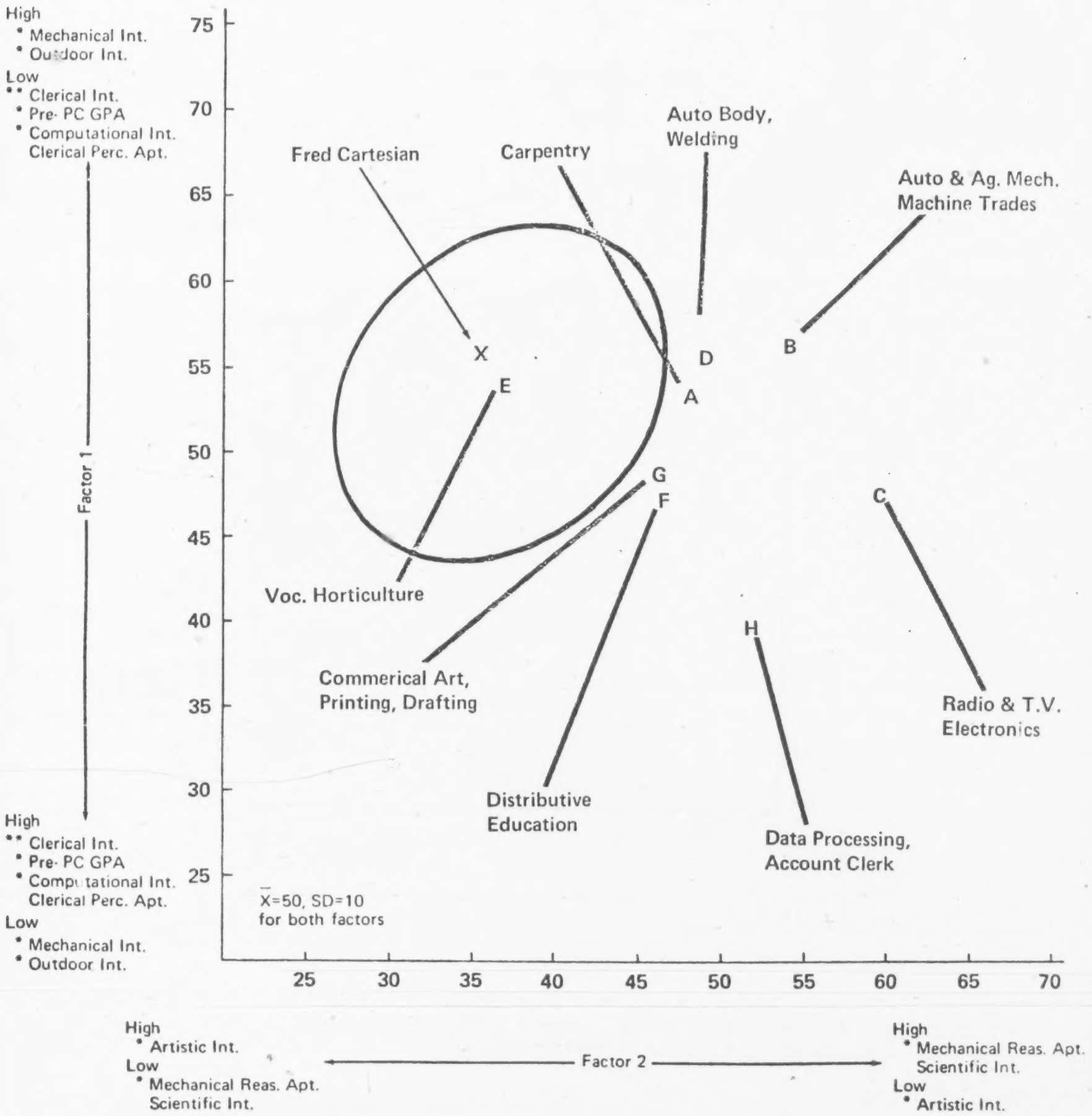
on First Two Personality Factors



Note.--*** = r > .69; ** = r of .60-.69; * = r of .50-.59; no * = r of .40-.49. Variables having factor loadings with an absolute value of less than .40 are not listed as factor anchors.

Figure 8

Similarity Score Profiles for Male and Mixed Groups
(with Sample Scores Plotted for a Fictitious Counselee)



This chart can be used to plot a student's factor scores in order to facilitate interpretation of the similarity scores given on the "Student Similarity Report..." The aptitude and interest dimensions represented by the factors are labeled at the ends of the factor scales. When ellipses are shown, they enclose about 50% of the factor scores of students falling in each of the indicated vocational areas. Correlation between variables and factors is indicated as follows:

*** = r > .69; ** = r of .60 – .69; * = r of .50 – .59. no * = r of .40 – 49

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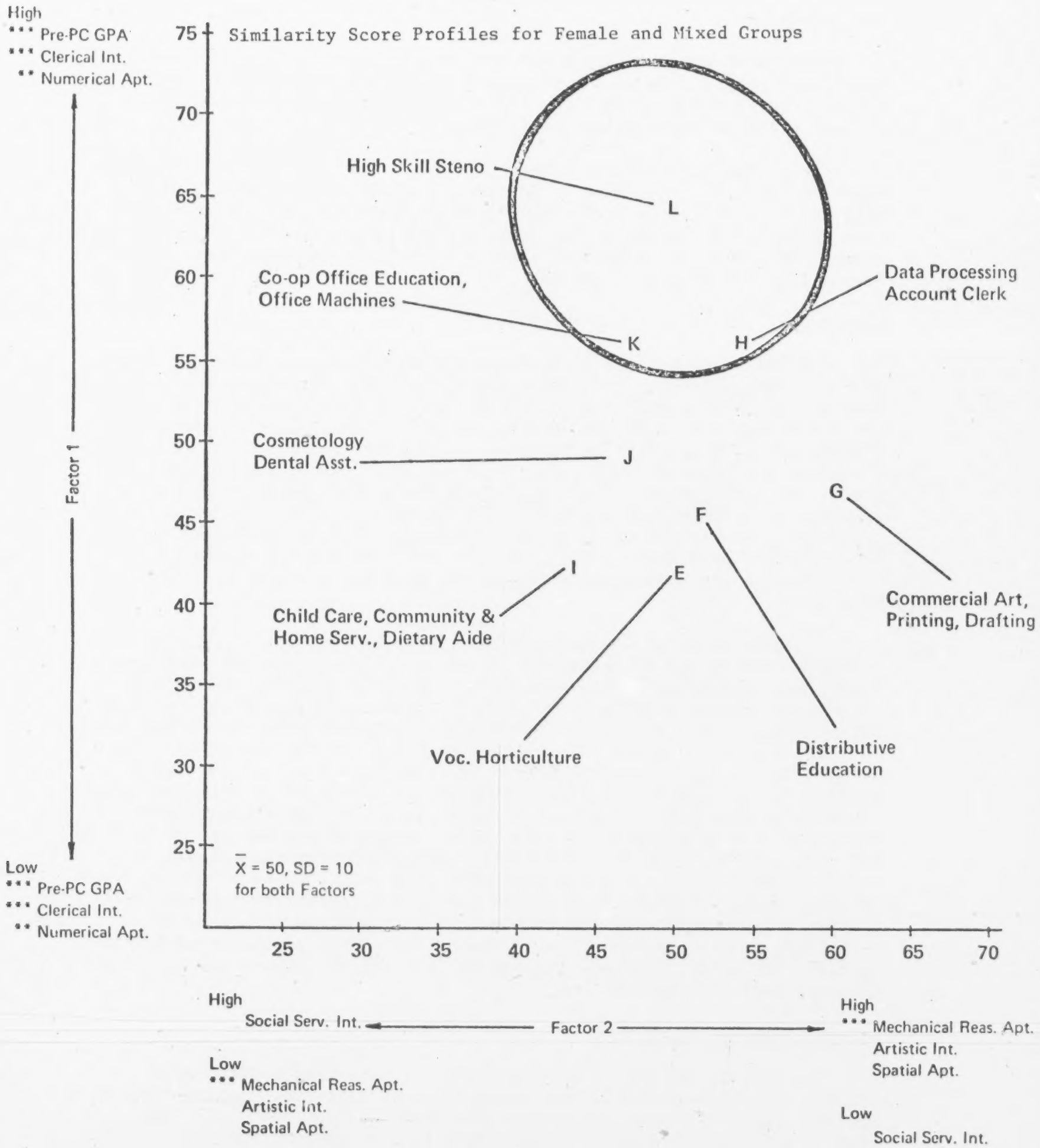
Figure 9



This chart can be used to plot a student's factor scores in order to facilitate interpretation of the similarity scores given on the "Student Similarity Report..." The aptitude and interest dimensions represented by the factors are labeled at the ends of the factor scales. When ellipses are shown, they enclose about 50% of the factor scores of students falling in each of the indicated vocational areas. Correlation between variables and factors is indicated as follows:

*** = r > .69; ** = r of .60 – .69, * = r of .50 – .59, no * = r of .40 – .49

Question 4

Regression analyses using the aptitude measures as predictors and vocational program GPA as the criterion of success were run for each of the 12 program groups. In these analyses, the GATB intelligence score (G) was added to the original predictors.

Zero-order correlations between the predictors and the criterion are given in Table 9. In answer to Research Question 4, PRE-GPA is, with only one exception, the best single predictor across the vocational program areas. The one exception involves VIQ and the vocational horticulture group. Depending on vocational area, a variety of other measures rank second in order of effectiveness.

Question 5

The best two-variable combination of predictors was determined for each vocational program group by means of multiple regression analyses. (The VIQ and NVIQ measures were not included in these analyses because the vocational school had decided to discontinue their use.) These combinations, along with the multiple correlation coefficients that were obtained, are shown in Table 10. The results for other combinations of predictors are also shown for sake of perspective. There is substantial evidence of differential predictability in the aptitude measures accompanying PRE-GPA in the two-variable combinations. In most cases, the measures involved make good sense. Very little predictive ability appears to be lost by using the best combination of two predictors rather than the best three.

In order to judge whether practical application of the best two-variable combination of predictors is warranted, two criteria were applied. First, each predictor in the best two-variable combination for a given vocational program group had to make a statistically significant contribution ($p < .05$) to the level of correlation achieved. This was judged by one-tailed t-tests on the Beta weights obtained for the variables. Two groups--carpentry, and auto body and welding--failed to achieve this criterion. The second criterion involved the amount of increase in correlation obtained through use of those variables meeting the first criterion. This increase had to be large enough to warrant use of both predictors rather than just the single best predictor. All predictor combinations meeting the first criterion were judged to have met the second. Thus, in answer to Research Question 5, practical application of two-variable predictor combinations is warranted in 10 of the 12 vocational program groups. Since application of the second criterion is purely a matter of judgment, the reader is urged to compare the correlations presented in Tables 9 and 10.

Data-information conversion

The results described above provide the potential Penta-County student with little help in the exploration of vocational program choice. The real pay-off of the statistical analyses does not come until the results are used to convert student data into counseling information.

Table 9

Correlations Between Aptitude Variables

and Vocational Course GPA

Vocational area	VIQ	NV-IQ	MR	General Aptitude Test Battery G	V	N	S	P	Q	K	F	M	PRE-GPA
A. Carpentry	05	-03	05	21	18	25	-01	-04	22	07	09	19	30
B. Auto & Ag. Mech., machine trades	19	17	27	19	07	19	25	15	09	07	05	06	37
C. Radio & TV repair, electronics	05	04	04	01	04	08	03	26	21	20	29	23	33
D. Auto body, welding	11	06	16	-02	-06	00	06	-08	00	-08	-03	05	38
E. Horticulture	60	16	-22	17	18	22	-07	26	17	29	33	42	55
F. Distributive Educ.	04	27	-04	08	09	15	01	21	26	18	10	03	38
G. Commercial art, printing, drafting	25	25	07	30	17	21	21	29	30	13	01	07	56
H. Data processing, account clerk	32	41	20	48	34	39	19	16	21	04	-01	04	52
I. Child care, Comm. & home Serv., dietary aid	28	30	24	28	21	19	27	18	07	-01	30	19	42
J. Cosmetology, dental assistant	24	21	-02	22	14	30	10	15	16	-01	22	08	47
K. Co-op. office Educ., office machines	38	26	29	49	54	39	20	22	24	30	18	22	56
L. High skill steno	50	44	11	43	35	41	14	13	10	12	-07	12	70

Note.--Decimals have been omitted from all correlation coefficients in order to conserve space.

Table 10

Multiple Correlations Between Aptitude Variables

and Vocational Course GPA

Vocational area	Two-variable combinations[a]			Best three-variable combination[a]
	Best	2nd	3rd	
A. Carpentry	M(.36)	Q(.34)	N(.33)	Q&M(.38)
B. Auto & Ag. Mech., machine trades	MR(.44)	S(.42)	P(.38)	MR&V(.46)
C. Radio & TV repair, electronics	F(.41)	M(.40)	P(.38)	G&F(.45)
D. Auto body, welding	MR(.40)	V(.40)	P(.39)	MR&V(.43)
E. Horticulture	M(.60)	MR(.58)	F(.58)	MR&M(.64)
F. Distributive Educ.	Q(.45)	P(.42)	K(.40)	Q&F(.45)
G. Commercial art, printing, drafting	P(.58)	Q(.58)	M(.56)	P&Q(.58)
H. Data processing, account clerk	G(.58)	V(.56)	Q(.55)	G&Q(.59)
I. Child care, Comm. & home Serv., dietary aid	F(.47)	S(.45)	P(.45)	K&F(.48)
J. Cosmetology, dental assistent	F(.50)	N(.49)	Q(.48)	N&F(.51)
K. Co-op. office Educ., office machines	V(.65)	G(.63)	K(.61)	V&M(.67)
L. High skill steno	G(.73)	V(.72)	N(.72)	G&S(.74)

Note.--The multiple correlation coefficient appears in parentheses after the variable label.

[a]In each case, PRE-GPA was one of the variables.

In the case of success estimates, this is readily accomplished via experience tables.

Results of the regression analyses conducted to answer Research Questions 4 and 5 were used to select the variables for which single- and double-entry experience tables were constructed. These tables are presented in Appendix B[2] in the form in which they were provided to the counselors during field tests. For most vocational program groups, PRE-GPA was by far the best predictor. Hence, all single-entry experience tables are based on this variable. The tables cover each of the 12 program groups even though the correlation for a given group sometimes indicated a negligible relationship. It seems desirable to provide the counselor and counselee with this information along with the tables for groups in which the relationship was substantial. However, double-entry tables were constructed for only those program groups in which a positive answer was obtained for Research Question 5.

Score categories in the experience tables were formed in such a manner as to divide the total number of students in a vocational program group into halves, thirds, or fourths--the number of categories depending on the number of students in the group. It was not always possible to set up intervals that included exactly 25%, 33 1/3%, etc., of the students in a group because tied scores at the category boundaries would have required allocating students with the same score to different categories.

Similarity scores, the second data-information conversion procedure used in the project, were based on the combination of ten aptitude and interest variables involved in the final discriminant analyses. Through application of centour score equations obtained from the M-MF and F-MF analysis groups, separate sets of similarity scores were developed for boys and girls. Each set contained scores for the eight areas appropriate to the student's sex. FORTRAN language computer programs, written as part of the project, were used to place the scores from the antecedent variables into a disk file established for each prospective Penta-County applicant. Commercially-available reports in the form of punched cards were obtained for all measures except the Lorge-Thorndike and the DAT-MR, which were scored locally. No similarity scores were generated for students having scores out of range or a Kuder verification score of less than 33.

A modification of the classification program written by Cooley and Lohnes (1962) was used to calculate the similarity scores. Reports were in the form of a computer-printed label pasted on a pre-printed interpretation sheet. A manual was prepared to assist counselors in the use of the reports. Important sections of this manual, including a "Student Similarity Report," for our fictitious friend, Fred Cartesian, are reproduced in Appendix B.

Similarity score labels and pre-printed interpretation sheets were sent to feeder school counselors as soon as all test score reports had been received and processed at an operations center established at the University of Toledo. Transfer of center responsibilities and computer programs to the Penta-County Vocational School is scheduled for completion by September, 1970. The vocational school district will continue project activities through use of its own funds and computer facilities.

[2]Examples attached.

Field tests

Initial field-testing of project data-information conversion procedures involved 160 sophomores enrolled in four feeder high schools during the 1968-69 school year. The counselors in these schools volunteered to use project reports with students considering application for entrance into Penta-County in the fall of 1969. The reports were based on preliminary analyses conducted in the summer of 1968 with data available from 1966 and 1967 entrants. Students in the analysis groups had a GPA of "D" or better in vocational course work and had not dropped out of school.

Two types of reports were provided to the counselors--local stanine norms for the aptitude variables and a preliminary version of the similarity score report illustrated in Appendix B.[3] The stanine norms were calculated separately for programs enrolling primarily males, primarily females, both males and females, and for the total sample. In order to provide perspective on the level of aptitude represented by the Penta-County student body, the total sample norms are presented as Table 19 in Appendix D.

Counselor reactions to use of the project reports can be summarized as follows:

1. The similarity scores were much more helpful than the local norms in counseling prospective Penta-County students.

2. The similarity scores were sometimes difficult to interpret, especially when a student's scores were all low or when a student questioned why his scores came out as they did.

3. Testing had to be completed earlier in the school year if there was to be adequate time for use of similarity scores in facilitating exploration of vocational program options.

As a result of these reactions, development of local stanine norms was discontinued; similarity score profiles were developed to facilitate similarity score interpretation; and feeder schools were urged to test potential Penta-County applicants late in the spring or early in the fall of the year preceding the late winter application deadline.

Field testing during the 1969-70 school year involved approximately 900 students enrolled in 12 of the 14 feeder high schools. All were potential Penta-County enrollees. The median number of students per school was 65 with the range being 30 to 185. Administration of all tests was completed by late fall, with five schools electing to test during the preceding spring.

In addition to the commercially-available test score reports, counselors received a set of experience tables, similarity score reports for each of their potential enrollees, similarity score profiles, and the interpretive manual mentioned previously. A half-day workshop was held to introduce counselors to project reports and data-information conversion procedures. Each school was visited at least once, and in several instances the project director observed or participated in the interpretation of similarity score reports and profiles.

[3]Later version attached.

Counselor reaction to the data-information conversion procedures used during the 1969-70 school year was sought both informally and via the 11-item survey sheet reproduced with a summary of counselor reactions in Appendix C.[4] A meeting was held with the counselors in order to provide an opportunity for them to elaborate on their survey reactions. Audio-tape copies of the discussion during this meeting are available upon request.

Overall counselor reaction to the reporting procedures was quite encouraging. Suggestions for improvement chiefly involved modifications of the similarity score profiles to facilitate their introduction to students. As a result, a three-step procedure for profile introduction was developed for field tests during the 1970-71 school year. This procedure involves a series of three similarity score profiles conveying progressively more detailed information on the "why" of a student's similarity scores. Counselors can use all three profiles with some students, or just one of them--depending on student readiness and need. The first profile shows the positions of the various vocational programs as coordinate points on two factors. The second profile contains, in addition, an ellipse enclosing the factor scores of about 50% of the students in one of the vocational areas as illustrated by Figure 8. The third profile has ellipses for all of the vocational programs. Examples of the first two profiles are presented in Appendix E.

An informal survey of student reaction to reporting procedures was also completed after the 1969-70 field tests. Nine of the 12 schools agreed to identify a "reasonably representative" sample of students who had received the reports. Various suggestions for doing this short of using a random number table were given. The median number of students surveyed per school was 10 with the range being 5 to 43. Student reactions to reporting procedures are summarized on the survey sheet reproduced in Appendix C.[4] It is encouraging to note that few students viewed the similarity scores as telling them what to do (item 3), and that only 8% felt that the similarity scores were of no help in thinking about vocational program options (item 2). Student comments on the reporting procedures are especially refreshing. Who could feel disappointed by a test interpretation that ". . .told a little more about me that I didn't quite know"!

Student and counselor reactions will again be sought during 1970-71 field testing. In addition, cross-validation analyses of vocational program membership predictions based on similarity scores are planned. It will also be possible to compare the satisfaction ratings of students who did not enter programs to which they were similar with the ratings of those who did. Finally, project reports will be provided to one randomly-selected group of potential enrollees but withheld from another. The normal, commercially-available test score reports will be available for use in counseling members of both groups. When follow-up data become available, success and satisfaction comparisons will be conducted for the experimental and control groups.

Secondary objective

The secondary objective of this project was to develop and field-test a prototype package of computer programs designed to facilitate data-information conversion. The computer-based procedures that were

[4] Attached.

developed and implemented as part of this project have already been described. Interpretive reports prepared for counselors and counselees have been illustrated. The development of one of these reports--similarity score profiles--represents an unexpected project outcome.

Counselor and student response to field tests of project data-information conversion procedures resulted in the decision by the host vocational school district to continue project activities through use of its own funds and computer facilities. In addition, support was obtained from the Ohio Board of Regents to generalize the prototype package of computer programs that was developed. It would seem clear, on the basis of the above evidence, that the secondary objective of the project has been accomplished.

Discussion

In this study, aptitude and interest measures were found to be substantially more effective than the personality measures in differentiating students enrolled in the various vocational programs. Although this finding is in general agreement with the results of research reported by Keim (1967), Pucel and Nelson (1969), and Stewart (1966, 1968), it must be viewed with caution because of possible criterion contamination by the aptitude and interest measures. Ideally, all test score reports would have been withheld from counselors until after the validation analyses were completed. However, this was not possible from a practical standpoint; i.e., the study could never have begun. Instead, the commercially-available score reports for all measures except HSPQ and VIQ were provided to feeder school counselors with no direction as to how they should be used. If there were uniform biases in the interpretation of the score reports across the feeder schools, it is possible that these biases would be reflected in choice of vocational program by prospective Penta-County students. However, the success and satisfaction criteria that were used in the study should have reduced the effect of any criterion group contamination resulting from test interpretation. One would expect that students who had made poor program choices as a result of test interpretation biases would have been excluded from the analysis groups by these criteria.

Even if all of the test score reports could have been withheld, Penta-County enrollees would not have randomly assigned themselves to vocational programs. Other antecedent data would still have had an influence on their decisions. One can only hope that counselors will help students to view data--from whatever source--in proper perspective.

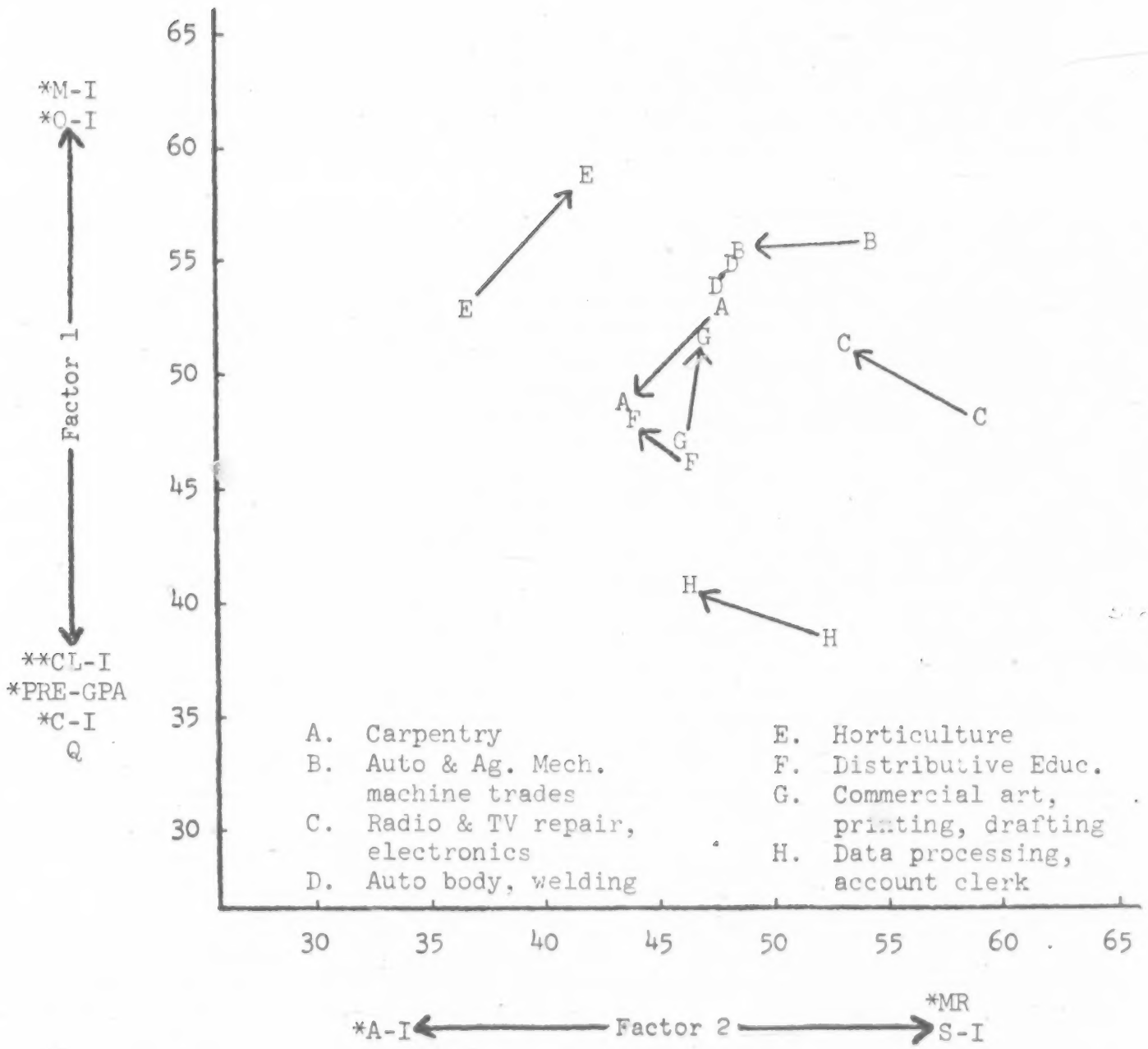
Empirical evidence on the possibility of criterion group contamination was obtained from analyses run on vocational program enrollees who did not meet the success and satisfaction criteria and, hence, were excluded from the analysis groups. One might reasonably expect differences between the factor scores of these "nonmembers" and their successful and satisfied counterparts. Figures 10 and 11 show the nature of these differences for the aptitude and interest variables combined. The factor positions of both members and nonmembers are based on equations obtained from the final analyses performed on members. The position of the nonmembers in relation to the members of each program group is indicated by an arrow pointing toward the nonmember group. Since several of the nonmember groups are rather small (as can be determined from Table 1), the results for those particular groups must be viewed with considerable caution.

In most cases, the member-nonmember differences appear to be plausible. For example, Figure 10 shows that the radio-TV repair and electronics nonmembers (area C) score further toward the artistic interest end of the second factor than their counterparts. The nonmembers also appear to be somewhat less able, as indicated by their position on the first factor. Likewise, Figure 11 shows that cooperative office education and office machines nonmembers (area K) score substantially lower than members on the clerical dimension represented by the first factor.

Figure 10

Distribution of M-MF Member-Nonmember Analysis Groups

on First Two Aptitude-Interest Factors



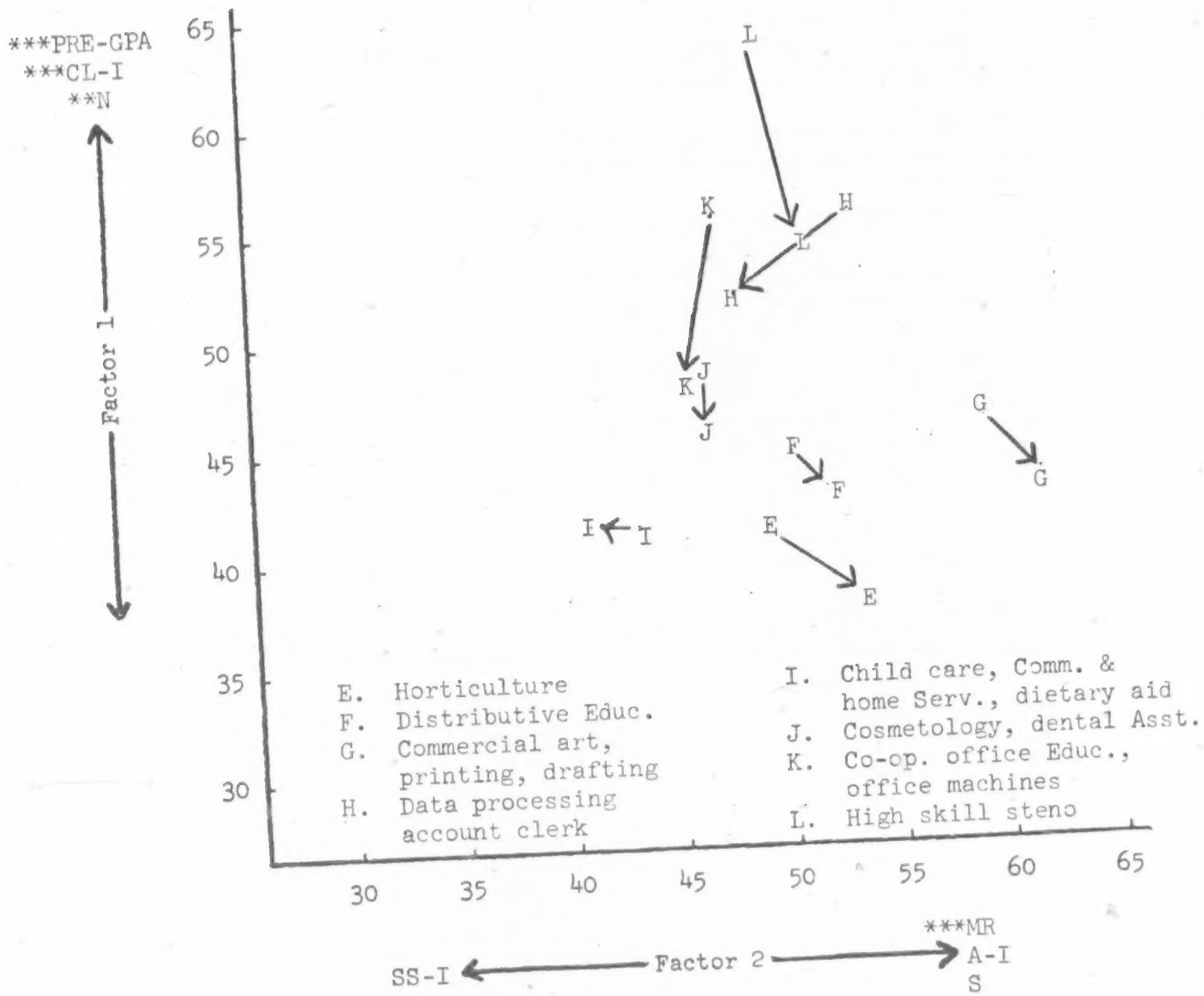
Note.--*** = r > .69; ** = r of .60-.69; * = r of .50-.59; no * = r of .40-.49. Variables having factor loadings with an absolute value of less than .40 are not listed as factor anchors.

Arrows point from member to nonmember groups.

Figure 11

Distribution of F-MF Member-Nonmember Analysis Groups

on First Two Aptitude-Interest Factors



Note.--*** = r > .69; ** = r of .60-.69; * = r of .50-.59; no * = r of .40-.49. Variables having factor loadings with an absolute value of less than .40 are not listed as factor anchors.

Arrows point from member to nonmember groups.

Separate multivariate analyses of variance were also conducted for the M-MF and F-MF nonmember students. The differentiation achieved by the combined set of aptitude and interest measures was substantially less for nonmembers than for their successful and satisfied counterparts. Wilks' lambda failed to achieve significance at the .05 level for the HSPQ analyses. Thus, in accordance with results reported by D'Costa (1968), application of group membership criteria substantially improved the amount of group differentiation that was achieved. Figures 10 and 11 suggest that the improvement might be due, at least in part, to the elimination of students who had made inappropriate choices in terms of their aptitudes and interests. This would serve to reduce any criterion group contamination by the aptitude and interest measures.

The fact remains that the HSPQ results were not available to counselors, while the results from the aptitude and interest measures were. The large differences in group differentiation obtained for the two sets of variables might be explained on this basis although it seems highly unlikely.

The effectiveness of PRE-GPA as a predictor of vocational course grades was not unexpected. This finding is in agreement with results reported for vocational-technical programs at the community college level (Baird, 1969; Lunneborg & Lunneborg, 1969). Whether vocational programs grades should be related to prior academic grades is a matter of debate. Certainly, one would hope that prior GPA in academic courses would not be the only effective predictor of vocational course GPA. This study did produce evidence of differential validity among the other predictors that were used.

The data-information conversion procedures developed and implemented in this project can only aid, not replace, educational-vocational guidance and counseling. As a result of employing these procedures, one obtains information--nothing more, nothing less. Although this information can vary in accuracy and usefulness, it can make no decisions. Neither can it substitute for the day-to-day vocational development that students experience in an ongoing guidance program. Information is a necessary but not sufficient condition for good decision making (Clarke, Gelatt, & Levine, 1965).

REFERENCES

Baird, L. L. The prediction of grades in occupational and academic curricula in 2-year colleges. Journal of Educational Measurement, 1969, 6, 247-254.

Cattell, R. B., & Cattell, M. D. L. Handbook for the Jr.-Sr. High School Personality Questionnaire. Champaign, Illinois: Institute for Personality and Ability Testing, 1969.

Clarke, R., Gelatt, H. B., & Levine, L. A decision-making paradigm for local guidance research. Personnel and Guidance Journal, 1965, 44, 40-51.

Cooley, W. W., & Lohnes, P. R. Multivariate procedures for the behavioral sciences. New York: Wiley, 1962.

Cooley, W. W., & Lohnes, P. R. Predicting development of young adults. Pittsburgh, Pa.: American Institutes for Research and School of Education, University of Pittsburgh, 1968.

D'Costa, A. G. J. E. The differentiation of high school students in vocational education areas by the Ohio Vocational Interest Survey. (Doctoral dissertation, Ohio University), Ann Arbor, Michigan: University Microfilms, 1968. No. 68-14, 885.

Doerr, J. J., & Ferguson, J. L. The selection of vocational-technical students. Vocational Guidance Quarterly, 1968, 17, 27-32.

Keim, L. A study of psychometric profile patterns of selected associate degree technology majors. (Doctoral dissertation, Purdue University), Ann Arbor, Michigan: University Microfilms, 1966. No. 66-13, 218.

Lunneborg, C. E., & Lunneborg, P. W. Predicting success in community college vocational courses. Journal of Counseling Psychology, 1969, 16, 353-357.

Passmore, J. L. Validation of a discriminant analysis of eight vocational-technical curricular groups. (Doctoral dissertation, University of Missouri), Ann Arbor, Mich.: University Microfilms, 1968. No. 69-3271.

Patterson, C. H. Predicting success in the trade and vocational courses: Review of the literature. Educational and Psychological Measurement, 1956, 16, 352-400.

Prediger, D. J. Validation of counseling-selection data for vocational school students. Toledo: University of Toledo, 1970. (Grant No. OEG-3-6-551169-0379, Bureau of Research, USOE).

Prediger, D. J. Data-information conversion in test interpretation. Journal of Counseling Psychology, in press.

Prediger, D. J., Waple, C. C., & Nusbaum, G. R. Predictors of success in high school level vocational education programs: A review, 1954-67. Personnel and Guidance Journal, 1968, 47, 137-145.

Pucel, D. J. The centour methodology applied to vocational student counseling and admission. Journal of Industrial Teacher Education, 1969, 7, 5-12.

Pucel, D. J., & Nelson, H. F. Project MINI-SCORE: An interim report, 1966-69. Paper presented at the American Vocational Association National Convention, Boston, December, 1969.

Ramsey, W. L. The Penta-County story. American Vocational Journal, 1966, 41 (5), 17-20.

Rao, C. R. Advanced statistical methods in biometric research. New York: Wiley, 1952.

Silver, H. A. A longitudinal validation study of the Minnesota Vocational Interest Inventory utilizing vocational high school boys. (Doctoral dissertation, State University of New York at Buffalo), Ann Arbor, Michigan: University Microfilms, 1967. No. 67-10, 160.

Stewart, L. H. Characteristics of junior college students in occupationally oriented curricula. Journal of Counseling Psychology, 1966, 13, 46-52.

Stewart, L. H. A study of certain characteristics of students and graduates of occupation-centered curricula. Berkeley: University of California, 1968. (Contract No. OE-6-85-072, Bureau of Research, USOE).

Stock, W. E., & Pratzner, F. C. Review of research on student selection and the prediction of success in occupational education. Minneapolis: Minnesota Research Coordination Unit in Occupational Education, University of Minnesota, 1969.

SELECTED APPENDICES

The appendices or sections of appendices listed below are included with this paper for ready reference. Appendices not appearing here can be found in the USOE research report by Prediger (1970) cited in the reference list.

APPENDIX A: TVIFS--Test Validation and Information Feedback System

APPENDIX B: Only two items are included--

1. Most recent revision of student report form entitled "Exploring Penta-County Vocational Programs"

2. Examples of single- and double-entry experience tables

APPENDIX C: Surveys of counselor and student reactions to field tests--

1. "Summary of Reactions," i.e., counselor reactions to field tests

2. "Student Survey Summary," i.e., student reactions to field tests

APPENDIX A

Abstract

TVIFS--Test Validation and Information Feedback System (A Computer-based Guidance Support System)

Objectives of system. TVIFS is a computer-based guidance support system that does not require student-computer interaction. The major purpose of the system is to transform test scores and other data into validated information readily useable in a counseling setting. Interpretive reports specific to individual counselees can be provided for many common guidance uses of test results. Through TVIFS, the counselor is relieved of much of the burden of data collection (including follow-up) and statistical analysis (including the extraction of useful information from analyses).

Description. TVIFS is a disk-oriented, modular system written in the FORTRAN programming language. Its three major functions are as follows:

1. Data collection, computer input, and random access storage.
2. Validation analysis by means of multiple discriminant analysis and regression packages.
3. Use of validation analysis results (when warranted) to generate the following types of feedback: (a) one- and two-way experience tables showing the relationship of test scores to criteria such as grades in specific courses or programs, persistence-dropout status, job satisfaction, etc.; (b) scores showing the similarity of a counselee's test results to the results of students in various criterion groups, e.g., academic programs, vocational programs, occupations, colleges; (c) similarity score profiles showing the performance of different criterion groups on the major discriminant factors represented in the test scores and/or other predictive data.

No restrictions have been placed on the tests that can be used. Other predictive data could include course grades, scaled ratings, attendance record, etc. Through use of correspondence tables, school or college progress data are accessible to TVIFS via the punched card or magnetic tape output normally developed by institutions having data processing equipment. Special data collection forms can be used by other institutions. Student follow-up, including selection of follow-up sample, printing of mailing labels, and tabulation of results, is performed by computer. Results of the follow-up become part of the data base and can be used in the validation analyses.

Current status. A prototype model of TVIFS was field tested during 1968-69 and 1969-70 academic years in 12 high schools associated with a vocational school district. Counselor and student reactions to interpretive reports were used to revise the portotype system and to develop specifications for TVIFS. With the exception of the post-high school and post-college follow-up components, TVIFS is scheduled to become operational in 1971. Examples of interpretive reports and summaries of counselor and student reaction to previous field tests will be provided upon request.

APPENDIX B

EXPLORING PENTA-COUNTY VOCATIONAL PROGRAMS

If you are thinking about going to Penta-County, you probably face a difficult decision—the choice of which vocational program you wish to enter. This report won't tell you what to do. But it will provide some information that can help you explore what Penta-County has to offer. The vocational programs at Penta have been grouped into the 12 areas listed to the left of the box below. Your counselor will give you a label that fits over the box. This label contains scores giving a rough estimate of your *similarity* to students in the different programs. These "similarity scores" are based on aptitude and interest tests you have taken in the last year.

THE KEY POINT IS THIS: The higher your score for an area, the more *similar* you are to students in that vocational area. The highest score you can get is 100. The lowest score is zero. A zero score for area E would mean that your test scores do not look like the scores made by students in vocational horticulture. It's still O.K. to consider horticulture, however. Test results, after all, don't give the whole picture. You must consider them *along with all the other things* you know about yourself and Penta-County programs.

THE BEST WAY TO USE THIS REPORT is to find the vocational programs in which you score the highest. These are programs you might want to explore—find out more about. Perhaps you would not have thought of them otherwise. You certainly don't want to overlook a good possibility. There's too much at stake.

VOCATIONAL AREAS

Mostly boys enroll

✓ A. Carpentry
B. Auto & Ag. Mechanics, Machine Trades
C. Radio & TV, Electronics
D. Auto Body, Welding

Both boys & girls enroll

✓ E. Vocational Horticulture
F. Distributive Education
✓ G. Commercial Art, Printing, Drafting
H. Data Processing, Account Clerk

Mostly girls enroll

I. Child Care Aide or Ass't., Community & Home Service, Dietary Aide
J. Cosmetology, Dental Assistant
K. Co-op Office Education, Office Machines
L. High Skill Steno

SAMPLE LABEL

032154 FRED E CARTESIAN 10/14/69

STUDENT SIMILARITY SCORES FOR P-C VOC. PROGRAMS

AREA=	A	B	C	D	E	F	G	H	I	J	K	L
SCORES=	41	14	03	26	87	25	28	01				
RANK=	2				1		3					
AREA=	A	B	C	D	E	F	G	H	I	J	K	L

PROFILE FACTOR SCORES: 56, 36

SO HOW DO YOU USE THE SCORES ON YOUR LABEL?

First, paste your label on the box shown above. Next, find and rank your top 3 or 4 scores. Give the highest score a rank of 1, etc., and write the ranks on the line below your scores. Finally, put a check mark beside the *names* of the 3 or 4 areas ranking the highest. These are the areas that your test results suggest you might want to find out more about. Some students receive low scores in all of the areas. This simply means that the test results aren't of much help in suggesting areas to explore. Whether your scores are "high" or "low," your counselor can help you figure out why they came out the way they did.

In order to judge *how successful* you might be in a program, you must also consider if you have the course work, aptitudes, and personal desire that is needed. This report does *not* tell you that. However, with the help of your counselor and your parents, you *can* use it along with other information as you explore the programs available at Penta-County.

APPENDIX B

SINGLE ENTRY EXPERIENCE TABLES (9/69)

Students in each of the groups listed below entered Penta-County in September of 1966, 1967, and 1968. The Penta-County vocational area grade point average (GPA) is based on vocational course work (related and shop or lab) completed up to (a) time of graduation (Fall '66 and '67 entrants); (b) end of junior year (Fall '68 entrants); or (c) dropout. For each predictor category (row) in the table, the percent of students whose grades at Penta-County fell into each of the PC-GPA categories (columns) is shown.
A = 40, B = 30, C = 30, D = 10, and F = 00.

E. VOCATIONAL HORTICULTURE

Predictor: Pre-PC GPA, r=.55, N=41

		PC Vocat. GPA F-C 00-20	C-A 21-40	Freq.
PREDICTOR	19-40	14%	86%	14
	15-18	31%	69%	13
	00-14	93%	7%	14

F. DISTRIBUTIVE EDUCATION

Predictor: Pre-PC GPA, r=.38, N=79

		PC Vocat. GPA F-C 00-20	C-B 21-30	B-A 31-40	Freq.
PREDICTOR	20-40	36%	57%	7%	28
	15-19	67%	33%	0%	24
	00-14	70%	30%	0%	27

G. COMMERCIAL ART, PRINTING, DRAFTING

Predictor: Pre-PC GPA, r=.56, N=185

		PC Vocat. GPA F-C 00-20	C-B 21-30	B-A 31-40	Freq.
PREDICTOR	24-40	7%	57%	36%	44
	21-23	24%	57%	20%	46
	17-20	37%	54%	9%	46
	00-16	71%	27%	2%	49

H. DATA PROCESSING, ACCOUNT CLERK

Predictor: Pre-PC GPA, r=.52, N=113

		PC Vocat. GPA F-C 00-20	C-B 21-30	B-A 31-40	Freq.
PREDICTOR	27-40	20%	31%	49%	35
	21-26	18%	61%	21%	38
	00-20	50%	48%	3%	40

DOUBLE ENTRY EXPERIENCE TABLES (9/69)

Students in each of the groups listed entered Penta-County in September of 1966, 1967, and 1968. Table cells represent various combinations of scores on two predictors. The percent of those students falling in a given cell who obtained a Penta-County Vocational GPA of 21 or better (20 = C) is shown for each cell. An asterisk is used to indicate fewer than 10 cases in a cell. The Penta-County vocational area grade point average (GPA) is based on vocational course work (related and shop or lab) completed up to (a) time of graduation (Fall '66 and '67 entrants); (b) end of junior year (Fall '68 entrants); or (c) dropout.

Data for column and row totals appear as follows: J/K with L% given underneath. K = number of students with scores falling in the column (or row) indicated. J = the number of these students obtaining a GPA of 21 or better (20 = C). L% = (J/K) X 100.

A = 40, B = 30, C = 20, D = 10, and F = 00.

I. CHILD CARE AIDE OR ASST., COMMUNITY & HOME SERVICE, DIETARY AIDE: N=128

Predictors: Pre-PC GPA (vertical axis) and GATB-F, R=.47

	GATB-F Stand. Scores 30-79	80-100	101-170	Total
20-40	80%*	93%	83%	28/32 88%
17-19	64%	67%	86%*	21/30 70%
14-16	50%	57%*	69%	18/30 60%
00-13	40%	40%	45%	15/36 42%
Total	22/41 54%	30/44 68%	30/43 70%	

J. COSMETOLOGY, DENTAL ASSISTANT: N=171

Predictors: Pre-PC GPA (vertical axis) and GATB-F, R=.50

	GATB-F Stand. Scores 30-90	91-100	101-112	113-170	Total
25-40	100%	63%*	92%	93%	41/46 89%
22-24	71%*	80%	80%	91%	31/38 82%
18-21	55%	80%	50%	83%	33/48 69%
00-17	73%	36%	64%	50%*	22/39 56%
Total	31/41 76%	29/44 66%	31/43 72%	36/43 84%	

APPENDIX C

SUMMARY OF REACTIONS

(with examples of counselor comments)

PC District Counselor

January 26, 1970

To: Penta-County District Counselors

From: PC-TU Project Office

Re: Feedback on Testing Reports (URGENT!)

There's been alot of blood under the bridge since the PC-TU Project began in January, 1966; and the time has come to get your final reactions to our efforts. You will have a chance to share your reactions with others during the February 3rd P-C District Counselors Meeting. However, we need to get some things on paper for use in the formal project report.

From the beginning, our goal has been to obtain validated test information that goes beyond the type of reports available through commercial publishers and scoring services. As you know, we are not promoting tests as the panacea for educational and vocational guidance. Rather, we see information from tests as properly taking its place along with all of the other information and experiences that go into the making of wise decisions.

The general purpose of the questions below is to obtain your professional estimate of the usefulness of the new reporting procedures provided this year. Please check the letter that best represents your response to each question. (This "multiple-choice" format is supposed to make your job easier!) Comments on your responses to the questions are welcome. Suggestions for changes in current project services or for additional services, etc. would also be appreciated.

Please return this survey to Louise Fought by FRIDAY, JANUARY 30TH. An extra survey has been included so that other counselors in your school who may have used the new reports can respond.

1. In what way were you able to make use of the Similarity Score Reports (blue forms)?

   ____a. Group interpretation only
   9 b. Both group and individual interpretation
   2 c. Individual interpretation only
   1 d. Other: Used own form for group interpretation and blue form with individuals.

2. Do you feel that the Similarity Score Reports (blue forms) readily lend themselves to group interpretation?

__9__ Yes: __2__ No __1__ No response--Used own form for group interpretation.

COMMENTS: One counselor answered "no" above because he felt that individual follow-ups after general group sessions were necessary (which they are). He did successfully communicate general concepts in groups, however.

3. How useful do you feel the Similarity Score Reports (blue forms) are in helping students consider their possibilities at Penta-County?

__5__ a. Very useful
__5__ b. Of some value
__2__ c. Of little value
____ d. Of no value at all

COMMENTS:

Reports came too late.

4. In terms of usefulness in helping students consider their possibilities at Penta-County, how do the Similarity Score Reports (blue forms) compare with the regular test score reports available from commercial publishers (Kuder profiles, GATB cards, DAT-MR score lists, etc.)?

__5__ a. Much more useful than the regular test score reports used alone.
__6__ b. Somewhat more useful than the regular score reports used alone.
____ c. Generally add little, if anything, to the usefulness of the regular score reports.
____ d. Test data, in any form, is of little or no value in working with potential Penta-County students.
1 No response

COMMENTS: The information on the similarity sheet is really the information the student wants to know. The Kuder amuses; the GATB informs, but the similarity scores direct their thoughts for specific consideration.

5. What is your reaction to the Similarity Score Profiles (ellipse charts) as a way to facilitate the counselor's understanding of why a given student's Similarity Scores came out as they did?

__1__ a. The Profiles are of no value in providing insights into the reasons for a student's Similarity Scores.
__5__ b. The Profiles are of some value.
__6__ c. The Profiles are quite useful.

COMMENTS: (Counselor who checked "C" above)--Except that I would not let the students in general find out I could do this because I would never have the time to do it with everyone.

(Counselor who checked "B" above)--Original ellipse charts with all ellipses on one sheet tend to be confusing. Did not have chance to use single ellipse approach [Introduced at mid-year].

6. What is your reaction to showing the Similarity Score Profiles (ellipse charts) to students as a means of facilitating their understanding of why their Similarity Scores came out as they did? (Assume that the two-stage process suggested in Feedback Bulletin No. 2 is followed, i.e., student is introduced to chart having only a single ellipse before being presented with a chart having all eight ellipses.)

__1__ a. The Profiles can be used with understanding by almost all potential Penta-County students.
__5__ b. The Profiles can be understood by a majority of these students.
__3__ c. A few students are able to understand the Profiles. However, most students would probably become confused.
__2__ d. Current format of "Similarity Score Profiles" is too confusing to permit use with any students.
1 Other--Depends on person doing interpretation & quality of explanation.

COMMENTS:
Encouraged many students to take a closer look at the areas involved.

I must honestly say I have confused students here. I am getting better.

7. If you had ample time to use the Similarity Score Profiles (ellipse charts), would you use them with--

____ a. no students at all?
__3__ b. only those students with low Similarity Scores?
__4__ c. only those students asking questions about why their Similarity Scores came out as they did?
__4__ d. almost all students?
__1__ e. Other: Need more time to think about this.

COMMENTS: Also useful with students having high similarity scores in areas that surprised them. Why did they score so high?

(Counselor who checked "D" above)--Why limit its application? Why allow inhibitions to keep this useful technique from some students?

8. To what extent do you feel your students were able to put their Similarity Scores to good use?

__2__ a. Most students appeared to make very little, if any, use of their Similarity Scores.
__7__ b. Most students appeared to maintain proper perspective in using their Similarity Scores; i.e., they used them as one kind of information to be considered in exploring their possibilities at Penta-County.
____ c. Most students appeared to place too much emphasis or reliance on the Similarity Scores, e.g., they let the scores make decisions for them, jumped to unwarranted conclusions, etc.
__3__ d. Other: Difficult to tell

COMMENTS:

9. How useful do you feel the Experience Tables (single-entry and double-entry) presented in the "Manual for Interpretation of Results" were in helping your students think about their possibilities at Penta-County?

2 a. Very useful
5 b. Of some value
1 c. Of little value
___ d. Of no value at all
4 Other--not used, no time, etc.

COMMENTS:

10. In terms of usefulness with potential Penta-County applicants, how do the new reporting procedures taken as a whole, i.e.--Similarity Score Reports, Profiles, and Experience Tables--compare with the regular test score reports available from commercial publishers (i.e., Kuder profiles, GATB cards, DAT-MR score lists, etc.)?

7 a. Much more useful than the regular test score reports used alone.
2 b. Somewhat more useful than the regular score reports used alone.
2 c. Generally add little, if anything, to the usefulness of the regular score reports.
1 d. Test data, in any form, is of little or no value in working with potential Penta-County students.

COMMENTS: (Counselor who checked "D" above)--Students seem to have their minds made up about wanting to attend vocational school regardless of their test scores.
Needed results earlier.

11. What modifications, changes, etc. in the reporting procedures, forms, "Manual for Interpretation of Results," etc., would you like to see?

1. Separate similarity score labels for boys and girls. This would eliminate the zeros.

2. Identify area on ellipse profiles, rather than using a letter code.

3. The change made earlier (single ellipses for introduction) was a good one.

4. Possibly changing the heading of the blue form to something about exploratory. Maybe the word similarity makes the student assume he should go into an area in which he scored high.

5. Color coding the centour score profiles for easier reading.

6. I think perhaps a centour - profile for each area will help, so I am making (attempting to make) my own.

7. More time to use reports.

Date _____ School _____ Counselor _____

February, 1970

Dear Student,

Your school counselor has been trying out a new way of reporting test results to students who are thinking about going to Penta-County. Examples of the new report forms are attached. We would like to get your reactions to these forms so that they may be revised and improved. Your answers to the questions below will help us find out how we can do things better. Please check the one response to each question that best expresses your reaction.

1. Do you recall receiving a copy of the attached blue form with your Similarity Score label pasted on it? 154 Yes; 9 No; 3 I'm not sure

   If your answer is yes, please go on to the second question. Otherwise, print your name at the bottom of the page and wait until the others have finished.

2. Did you find the Similarity Scores reported on your copy of the blue form to be helpful as you thought about programs that you might enter at Penta-County?

   13 a) They really weren't of any help to me.
   100 b) They were of some help.
   41 c) They helped alot.

3. What was the main way in which the Similarity Scores were helpful to you? (Please check only one response. Circle the letter for any other responses that you would also like to check.)

Circled		
	12 a)	They weren't of any help.
10	9 b)	They told me which program I should enter.
15	59 c)	They suggested programs that I hadn't thought about before. As a result, I looked into some of these programs.
12	52 d)	They backed up the program choices I had already made.
22	21 e)	They suggested that some programs I had been thinking about might not be as "right" for me as some other programs.
0	1 f)	They told me that I shouldn't go to Penta-County.

4. The white form attached to this sheet has some red and blue ovals on it. Did you discuss a form like this with your counselor?

   56 Yes; 83 No; 15 I don't remember for sure

   If your answer is yes, please go on to the 5th question. Otherwise, go on to question 6.

5. Did the white form help you understand the ways in which your interests and abilities were similar to or different from students in various vocational programs at Penta-County?

   13 a) It helped alot.
   34 b) It gave me some help in understanding my similarities and differences.
   6 c) It wasn't of much help.
   3 d) It just got me confused.

6. This space and the back of this sheet are for YOUR COMMENTS on the new reports. Was there anything special you liked about them or something that could be improved??

See attached sheet for sampling of student responses.

Date _____ School _____ Name _____

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STUDENT SURVEY SUMMARY (continued)

The quotations below are a sampling of the more interesting responses to item number 6 on the survey form. The item reads as follows: "This space and the back of this sheet are for YOUR COMMENTS on the new reports. Was there anything special you liked about them or something that could be improved??"

1. I think it helped to make me think about what I should take.

2. The reason they didn't help that much is because I already had my mind made up and I was gonna take cosmetology no matter what because I know I can do this well. I think these reports are good if you don't know what you want to take for sure. But otherwise if you know definitely what you want, I don't think there worth it. But you don't know who knows what they want. So I think its worth the time.

3. I think these tests helped me in trying to decide whether to take the P.C. program or look into another field. I liked the way it compared me to other students in a particular program. The discussion of these tests with the counselor helped me also.

4. When at first I saw my scores, it kind of dissapointed me to see such low scores but the circles helped explain why they were so.

5. It surprised me alot.

6. How many years do you have to have for Auto Body Repair man?

7. As long as there is a counselor or someone to go over the results and have the students understand them, I think this type of test is good and beneficial.

8. I liked it all right. But I wish they would translate the big words into small ones, and then I would probably understand it.

9. They help me a little on one hand and on the other hand they just confused me, not mutch but just a little bit.

10. I think the reports were very good. It in a way helped me make up my mind. Although I didn't score the highest in the field I'm planning to take, the reports were excellent guides.

11. Leave it like it is.

12. It didn't help. I wanted to take Cosmetology - and it showed that I only ranked 3rd in it. I still want to take Cosmetology, I really don't want Child Care. For a second choice, yes.

13. The results on similarity reports really helped my decision. I've changed my mind about my course completely, hopefuly for the better.

14. The reports told a little more about me that I didn't quite know.

T-901

THE CORRELATES OF CHANGE IN EDUCATIONAL ASPIRATIONS: A STUDY OF FACTORS RELATED TO DOWNWARD ADJUSTMENT AMONG YOUNG MEN, 14-24 YEARS OF AGE, 1966-1967

Paper presented at the 1971 Annual Meeting of the
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and

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THE CORRELATES OF CHANGE IN EDUCATIONAL ASPIRATIONS:
A STUDY OF FACTORS RELATED TO DOWNWARD ADJUSTMENT
AMONG YOUNG MEN, 14-24 YEARS OF AGE, 1966-1967

by

Wil J. Smith and Frederick A. Zeller*

Introduction

The research reported in this paper is based on data developed by Ohio State University's Center for Human Resource Research in conjunction with the U. S. Bureau of the Census and the U. S. Department of Labor.** The data were collected as part of a five-year longitudinal study of the labor market experience of four age-sex groups in the United States population: (1) men aged 45-59; (2) women aged 30-44; (3) young men aged 14-24; and (4) young women aged 14-24.[1]

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*The authors are staff members of the Social and Behavioral Research Program, Appalachian Center, West Virginia University and the Department of Economics, West Virginia University. The views expressed here are those of the authors. They should not be interpreted as reflecting the position or policies of the Department of Labor.

**The authors wish to acknowledge the assistance they received from Drs. Herbert Parnes and John Shea and Mr. Roger Wilkens of Ohio State University's Center for Human Resource Research in the preparation of this paper.

[1]Reports of this research already completed are as follows: The Pre-Retirement Years, Vols. I and II, 1968 and 1970 (men 45-59 years of age); Dual Careers, Vol. I, 1970 (women 30-44 years of age); and Career Thresholds, Vols. I and II, 1969 and 70 (young men 14-24 years of age). The first report on the young women should be available in the near future and succeeding volumes dealing with the other three age-sex groups will become available over the next several years. Copies of these Manpower Administration monographs are available from the U. S. Government Printing Office, Washington, D. C.

Although each of the four groups selected for study has its own special labor market challenges and problems, the young men and women are at especially important points of their lives in this respect. Many of them are making decisions about jobs and preparation for jobs which will have lifelong implications for their work careers. The educational and occupational decisions made during these years of their lives will determine the occupational and employment options subsequently available to them, occupational and employment options which, as indicated by the manpower development programs of the 1960's, are likely to be little affected by any such programs to which they are exposed in the future. If manpower and human resources policies are to be more effective in the future, they must be based on greater knowledge about the process by which youth select occupations and pursue educational programs which help them realize occupational aspirations in the future. More particularly, there is great need to know more about the variables significantly related to the formation and adjustment over time, of educational and occupational aspirations and expectations.[2] Hopefully, the

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[2]A number of researchers already have turned their attention to this general area focusing on a variety of explanatory economic, social and psychological variables. See, for example, the following: Research in Vocational Development, Vocational Aspects of Counselor Education: A Conference Report (Washington, D. C.: George Washington University, 1965); John Hayes, "Occupational Choice and the Perception of Occupational Roles," Occupational Psychology (January, 1969) pp. 15-22; William H. Sewell and Vimal P. Shah, "Socioeconomic Status, Intelligence, and the Attainment of Higher Education," Sociology of Education (Winter, 1967) pp. 1-23; William H. Sewell and Vimal P. Shah, "Social Class, Parental Encouragement, and Educational Aspirations," The American Journal of Sociology (March, 1968) pp. 559-61; and William H. Sewell and Alan M. Orenstein, "Community of Residence and Occupational Choice," The American Journal of Sociology (March, 1965) pp. 551-63.

research reported in this paper[3] will contribute to that goal. The reported work is limited to a group of young men with characteristics in 1966 promising in terms of study of change of educational aspiration over time: young men 14-24 years of age in 1966 who aspired to at least two years of college in 1966, who were in high school (grades 10-12) in 1966 and who were enrolled in school in 1967.[4]

Gross Changes in Aspirations, 1966-1967

In the 1966 survey, it was found that those in the age-sex cohort under examination (males, 14-24 years of age) tended to have unrealistically high educational aspirations as judged by current average educational attainment.[5] The discrepancy between aspiration and reality

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However, much of the relevance of these and related studies is related primarily to rather narrow geographic areas. Moreover, few efforts to date have been systematically longitudinal in nature thereby unable to identify the correlates of change in aspirations and expectations as confidently as would be desired. Exceptions to this are the Ohio State research, based on national probability samples of youth 14-24 years of age, and Jerald G. Bachman and Associates, Youth in Transition, Vols. I and II (Ann Arbor, Michigan: Institute for Social Research, Survey Research Center, University of Michigan, 1967 and 1970). The latter is a longitudinal study of tenth graders.

[3]Expanded discussion of this work at a more preliminary stage is presented in Frederick A. Zeller, John R. Shea, Andrew I. Kohen, and Jack A. Meyer, Career Thresholds, Vol. II, especially Chapter Four (Columbus: Center for Human Resource Research, The Ohio State University, 1970).

[4]Before any criteria were specified the sample N was approximately 5,000. When these constraints were specified the sample N was reduced to 1,043 observations.

[5]As pointed out in Zeller, et al., Career Thresholds, Vol. II, p. 61, "in our earlier report based on the first survey of the young men, we noted that their educational goals were high in light of known trends in educational achievement. Over 70 percent of the youth 14-17 years

was judged to be sufficiently high to warrant the hypothesis that the educational aspirations of the national sample would be lowered between 1966 and the year of the last survey. While the primary interest underlying the preparation of this paper is setting forth the variables most significantly related to reduction of educational aspirations, the overall changes of the indicated group of male youth first are briefly described. As indicated below, they were in the expected direction for those aspiring to 16 years or more education in 1966 but not in the expected direction for those aspiring to two years of college.

Among the white youth aspiring to two years of college in 1966, the proportions of those who changed their aspirations upward and downward were about the same, 20 percent adjusting downward compared to 23 percent adjusting upward (Table 1). On the other hand, about 10 percent of those aspiring to 16 years or more education in 1966 adjusted their aspirations downward by 1967. It should be pointed out here that those who dropped out of school also lowered their educational aspirations, but they were not interviewed in 1967. It would appear, then, that our data understate the downward revision in educational aspirations which actually took place.

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old who were enrolled in elementary or high school in 1966 wanted at least two years of post-secondary education, while as of 1967 only 38 percent of the young men in the United States between the ages of 20 and 24 had completed as much as a year of college, according to data from the Current Population Survey." See Parnes, et al., Careeer Thresholds, Vol. I, p. 165. The CPS data are taken from U. S. Department of Commerce, Current Population Reports, Series P-20, No. 169, pp. 9-10.

TABLE 1 -- NONBLACKS*

EDUCATIONAL ASPIRATIONS, 1966 AND 1967, BY GRADE IN 1966 AND COLOR: YOUNG MEN 14 TO 24 YEARS OF AGE ENROLLED IN SCHOOL BOTH YEARS AND IN HIGH SCHOOL 4 OR LESS IN 1966

Grade in 1966 and educational aspirations, 1966	Educational Aspirations, 1967								
	Total Number (Thousands)					Percent (Excluding NA's)			
	Total	12 or less	College 2	College 4 or more	NA	Total	12 or less	College 2	College 4 or more
All grades, total	4,603	1,008	613	2,964	19	100.0	21.9	13.3	64.6
12 or less	1,085	774	161	143	8	100.0	71.7	14.9	13.2
College 2	478	99	269	108	0	100.0	20.7	56.5	22.6
College 4 or more	3,025	126	179	2,713	8	100.0	4.1	5.9	89.8
Elementary & high school 1, total	1,033	373	100	550	11	100.0	36.4	9.8	53.8
12 or less	370	313	22	32	4	100.0	85.4	6.0	8.6
College 2	93	34	42	16	0	100.0	37.1	45.4	17.5
College 4 or more	562	20	36	502	4	100.0	3.6	6.4	89.9
High school 2, total	1,453	328	197	924	4	100.0	22.6	13.6	63.8
12 or less	341	244	49	48	0	100.0	71.6	14.5	14.0
College 2	135	26	78	31	0	100.0	19.5	57.7	22.8
College 4 or more	977	58	70	846	4	100.0	5.9	7.2	86.9
High school 3, total	1,424	295	278	847	4	100.0	20.8	19.6	59.6
12 or less	346	213	85	44	4	100.0	62.2	24.8	13.0
College 2	202	35	129	38	0	100.0	17.2	63.9	18.8
College 4 or more	869	44	60	765	0	100.0	5.1	6.9	88.0
High school 4, total	693	12	38	643	0	100.0	1.7	5.5	92.8
12 or less	28	4	5	19	0	100.0	13.2	18.2	68.5
College 2	48	4	20	23	0	100.0	8.9	42.0	49.1
College 4 or more	617	4	13	600	0	100.0	0.6	49.1	97.2

*In this table "Nonblacks" include Caucasians (Whites), Japanese, Chinese and Indians.

TABLE 1 -- BLACKS*

EDUCATIONAL ASPIRATIONS, 1966 AND 1967, BY GRADE IN 1966 AND COLOR:
YOUNG MEN 14 TO 24 YEARS OF AGE ENROLLED IN SCHOOL BOTH YEARS
AND IN HIGH SCHOOL 4 OR LESS IN 1966

Grade in 1966 and educational aspirations, 1966	Educational Aspirations, 1967								
	Total Number (Thousands)					Percent (Excluding NA's)			
	Total	12 or less	College 2	College 4 or more	NA	Total	12 or less	College 2	College 4 or more
All grades, total	633	202	107	319	4	100.0	32.0	17.3	50.6
12 or less	215	156	24	34	2	100.0	72.8	11.2	15.8
College 2	73	13	35	25	0	100.0	17.8	47.9	34.2
College 4 or more	341	34	48	258	2	100.0	10.0	14.1	75.8
Elementary & high school 1, total	212	96	24	91	2	100.0	45.7	11.2	43.2
12 or less	106	78	9	18	2	100.0	74.5	8.5	17.1
College 2	23	5	8	10	0	100.0	21.7	33.2	45.1
College 4 or more	82	14	7	61	0	100.0	16.6	8.7	76.7
High school 2, total	204	55	46	102	1	100.0	27.1	22.7	50.2
12 or less	55	40	8	8	0	100.0	72.2	13.7	14.1
College 2	29	7	13	9	0	100.0	23.5	44.4	32.2
College 4 or more	119	8	25	85	1	100.0	7.0	21.5	71.5
High school 3, total	169	49	33	87	0	100.0	29.2	19.4	51.4
12 or less	52	37	6	8	0	100.0	71.3	12.5	16.2
College 2	14	1	12	1	0	100.0	7.1	87.2	5.7
College 4 or more	102	11	13	78	0	100.0	11.2	13.0	75.8
High school 4, total	48	2	6	39	1	100.0	3.6	12.4	84.0
12 or less	2	1	1	0	0	100.0	47.2	52.8	0.0
College 2	7	0	2	5	0	100.0	0.0	27.8	72.2
College 4 or more	38	1	3	34	1	100.0	2.1	7.4	90.5

*In this table "Blacks" include only the Negro population.

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When controlling for color, the same tendencies were found for whites and blacks[6] but they were much stronger among the black youth. Over the one year period 34 percent of the black youth who aspired to two years of college in 1966 revised their expectations upward compared to 18 percent who lowered their aspirations (Table 1). And, fully 24 percent of those aspiring to 16 years or more at the time of the first survey had lowered their aspirations by 1967.

Therefore, there is evidence that, over time, the educational aspirations of those who initially want 16 years or more are more stable than the aspirations of those youth who want only two years of college. (But it must be recognized that given the level of aggregation in this paper, the aspirations of the former group can only move downward). In addition, the intercolor difference (i.e., the relatively greater instability of aspirations among the blacks in both aspiration categories) may reflect status and role uncertainty among the blacks during a period characterized by fairly rapid, but far from complete, improvement in the blacks' position in the United States. But while these findings are of some interest, we were more interested in identifying the correlates of downward revision of aspiration between 1966 and 1967 irrespective of color and distinction between aspiring to 14 or 16 years of education at the time of the first survey.

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[6]When intercolor comparisons are made in this paper, we use the term "black" to refer to Negroes. The term "nonblacks" refers to all others including whites, Indians, Chinese, Japanese, etc.

Methodology Used in the Analysis

Since we were primarily interested in determining which variables best "explain" (i.e., are statistically most significant in terms of the "t" test) downward aspirational revision, as well as determining how much variables interact to assure aspirational changes for a given number of sample cases, we decided to use Automatic Interaction Detector Analysis (AID).[7] Use of this AID computer algorithm, or procedure, enabled us to identify those explanatory variables most significantly or strongly associated with the probability of downward adjustment in the educational aspirations of this group of young men 14-24 years of age.

Two AID algorithms were used in this analysis. In the first, no constraints were placed on the number of observations in the programme's terminal groups. In the second, terminal groups were constrained to a minimum of 25 observations. In addition, certain variables were dropped (particularly, occupational goals) and others were added. This paper is based on the results of the first AID algorithm only. The results of the second AID algorithm will be included in a later paper.

The following independent variables were initially considered in the analysis of the downward adjustment of educational aspirations for the sample of young men aged 14-24:

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[7]For an explanation of this multivariate technique see John A. Sonquist and James N. Morgan, The Detection of Interaction Effects, (Ann Arbor: The University of Michigan, Institute for Social Research), Sixth Edition, March, 1970. See also, James N. Morgan, Ismail Sirageldin, and Nancy Baerwaldt, A Study of How Individuals Contribute to Economic Progress, (Ann Arbor: The University of Michigan, Survey Research Center, Institute for Social Research), 1966, Appendix E, pp. 515-522.

--School enrollment status, 1966
--High school grade in 1967
--1966 total family income
--Highest year of school completed by father
--Occupation of father
--1967 age of respondent
--High school curriculum
--Knowledge of the world of work
--Cultural exposure at age 14
--Educational expectations, 1966
--Comparison of aspirations and expectations, 1966
--Occupational goal reported in 1967
--Area of residence
--Size of labor force in local labor market
--IQ score
--School quality index
--Reaction to high school experience
--Location of most recent college with respect to location of high school
--Means of financing additional education
--Index of demand for the labor of male youth
--Location of high school by region
--Type of high school attended
--Number of weeks worked by father during past 12 months
--Location of high school with respect to current address
--Health of respondent
--Residence at age 14
--Number of persons related to respondent living in household
--Whether the respondent is the oldest child in the family
--Total number of weeks employed by parents during the past 12 months
--Draft status of respondent
--Comparison of family income, 1966/1967

The list of independent variables above are those which we felt might be significant as explanatory or predictor variables. However, only the fourteen (14) variables listed below and shown in Figure 1 were found to result in splits when the first algorithm (without terminal constraints) was run.[8]

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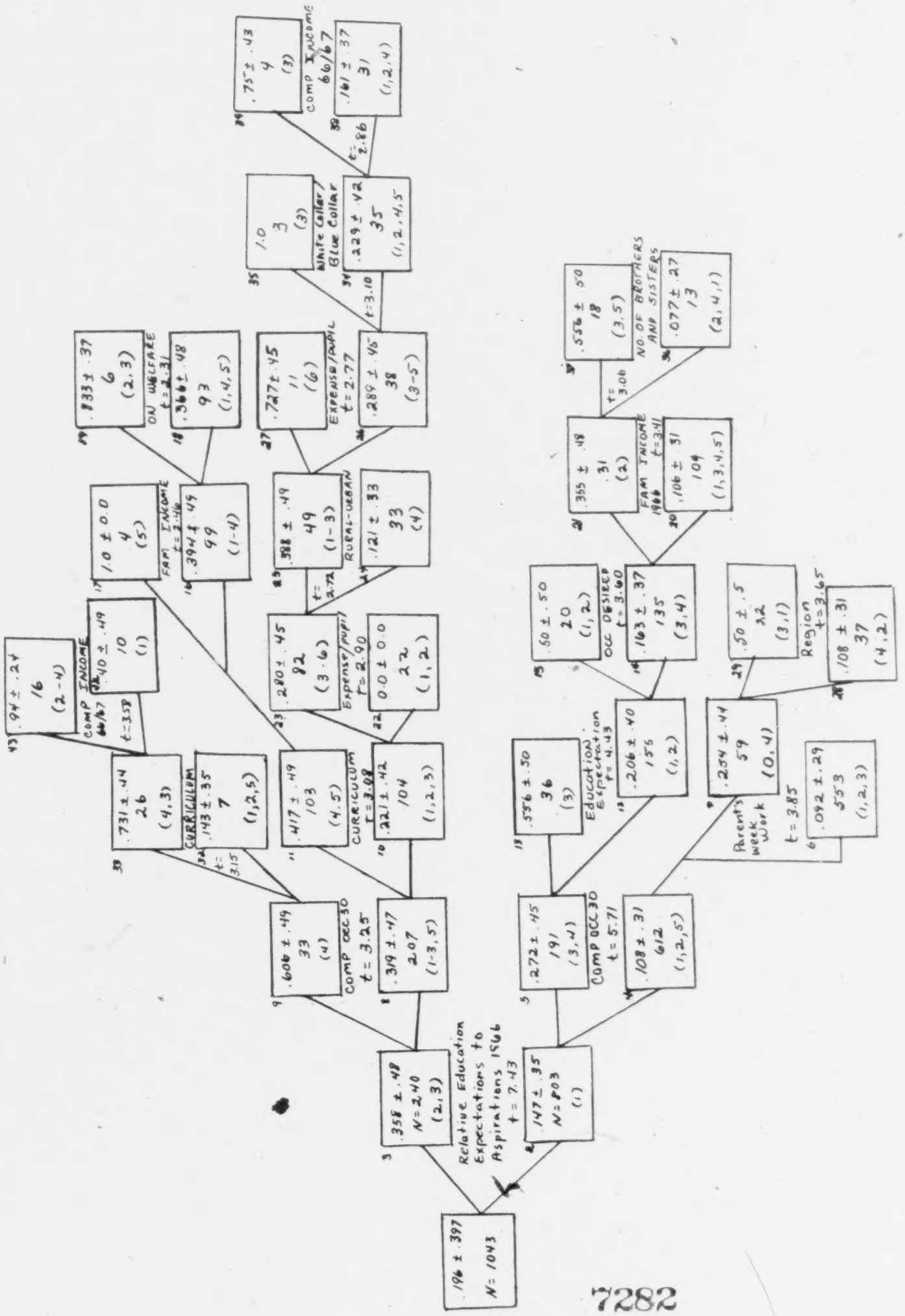
[8]This does not mean that these other factors (page 27 and Appendix B are not associated with educational aspirations, since several of these variables are inter-correlated with those in the list of 14 noted on page 11.

FIGURE 1 - DOWNWARD ADJUSTMENT IN EDUCATIONAL ASPIRATIONS AMONG YOUNG MEN, 14-24, 1966-1967



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.00 — Proportion lowering their educational aspirations in 1967
240 — Number of sample cases
(2,3,4) — Code categories (See Appendix A for definitions)

--Relation of educational expectations to educational aspirations, 1966
--Comparison of occupational goals at age 30, 1966 and 1967
--Curriculum in high school
--Educational expectations, 1966
--Parents, weeks worked during the past 12 months
--Occupation desired at age 30, Duncan Index
--Location of high school, 1966
--Number of brothers and sisters, 1966
--Adjusted expense per pupil in ADA
--Comparison of family income, 1966 and 1967
--Total family income
--Residence at the time of the survey (rural/urban)
--Family members receiving welfare or public assistance
--Father's occupation or class of work

As expected, not all of the fourteen variables listed above which resulted in splits when the AID algorithm was run were found to be significant. In certain instances the relatively small size of the sample cases reduced the explanatory value of the variables.

Correlates of Downward Adjustment in the Educational Aspirations of Young Men Using AID Algorithm Without Terminal Constraints on the Number of Sample Observations

Figure 1 is a diagram of the results of the AID algorithm run on our sample of young men who aspired to at least two years of college in 1966, were enrolled in high school in 1966 and enrolled in school (high school or post high school) in 1967. Of the 1,043 young men in the sample in 1966, approximately 20 percent lowered their educational aspirations in 1967. Although at first blush the proportion who lowered their educational aspirations might seem rather insignificant, one should remember this downward adjustment occurred over only one year, 1966-1967, and that this excludes (admittedly, by design) those who dropped out of school. Since those who dropped out of school also lowered their educational aspirations (perhaps by substantially more

than those who remained in school) the figure above probably understates the actual proportion of the young men in the United States aged 14-24 who lowered their educational aspirations.

Turning to the more important correlates of downward revision, for the 20 percent who lowered their educational aspirations, having educational aspirations which were higher than educational expectations in 1966 proved to be the most powerful or significant explanatory variable for this analysis.[9] The relationship between past educational aspiration-educational expertation levels (in this case having aspirations which exceed expectations) and the downward revision in aspirations one year later might well be at least partially explained by (1) the composition of the sample, i.e. the overrepresentation of blacks in our sample (discussed more fully in the following paragraphs), and (2) the natural tendency for the majority of people as they grow older to attempt to bring aspirations and expectations into some approximation of equilibrium. The long run psychological health of the individual (and society) might well be a function of his ability to establish realistic aspirations relatively to expectations and to make adjustments in these aspirations when conditions warrant revisions.

Almost 36 percent of the young men in this sample whose educational aspirations were greater than their educational expectations (including

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[9]It should be pointed out that this group having educational aspirations higher than their educational expectations includes eleven (11) young men for whom the educational aspirations, educational expectation relationship was not determined in 1966. Since there were only 11 persons whose aspirations-expectations relationship was not ascertained in 1966, they are lumped with the high aspiration group in the AID analysis.

the nonascertained group discussed in Footnote 9 below) in 1966, lowered their educational aspirations in 1967.[10] On the other hand, somewhat less than 15 percent of those having educational aspirations that were the same or lower than their educational expectations in 1966, lowered their educational aspirations in 1967. Or put another way, somewhat more than 1 of 3 whose educational aspirations were higher than their educational expectations in 1966 lowered their educational aspirations in 1967, compared to about 1 of 7 who lowered their educational aspirations in 1967 whose aspirations were the same or lower than their educational expectations in 1966. The data presented in Table 1 and the findings of other research being conducted by those associated with the National Longitudinal Surveys at Ohio State University indicate that blacks are disproportionately represented among those with apparently unrealistically high educational aspirations, given social, cultural, economic and institutional realities.

In the Longitudinal Survey the blacks were (by design) oversampled relative to whites or nonblacks, with one (1) white representing 4,000 whites and one (1) black representing 1,000 blacks. However, the sample cases have been weighted thus eliminating any bias which blacks might bring to the sample.

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[10] Two questions were used in the initial survey in 1966 to obtain data on educational aspirations and educational expectations. To obtain data on aspirations each student was asked: (Questions 34a and 35 in the 1966 survey questionnaire) "How much more education would you like to receive?" Each student was then asked: (Question 36a in the 1966 survey questionnaire) "As things now stand, how much more education do you think you will actually get? See Parnes et. al., Career Thresholds, Vol. I, pp. 250-251.

But in our AID analysis blacks are overrepresented, especially among those whose educational aspirations were higher than their educational expectations in 1966. Of our total sample of 1,043, 804 were whites (or nonblacks) and 239 were blacks. For those with high educational aspiration, 179 were whites and 61 were blacks. For those with educational aspirations that were lower or the same as expectation in 1966, 625 were whites and 178 were blacks. If, in fact, blacks behave differently from whites, and if they are affected differently by the same or a different set of variables, then this will produce an AID tree which would be different from a random sample of the universe.

Looking first at those members of the sample whose educational aspirations were higher than their educational expectations (the upper branch of the diagram), it can be seen that those members of the sample who had lowered their occupational goals at age 30 by more than 5 points (on the Duncan Index) in 1967, were much more likely than the other groups with educational aspirations greater than their educational expectations to have lowered their educational aspirations in 1967. In fact, almost 61 percent of this group lowered their educational aspirations in 1967. If one adds splits on curriculum and family income comparison in 1966-67, and specifically looks at those enrolled in general and academic curriculums whose families had incomes which were unchanged in 1967 or higher in 1966, the proportion lowering their educational aspiration moves to 94 percent. However, the number of sample cases for the last two splits appears to be too small to be statistically significant.

On the other hand, of those who aspired to at least 2 years of college in 1966, who lowered their occupational goals at age 30 by more than 5 points on the Duncan Index and were enrolled in a college preparatory curriculum in high school, only about 42 percent adjusted their educational aspirations downward in 1967.[11]

Looking further at the upper branch of the diagram, the group of 207 young men in our sample having occupational goals for age 30 which were the same or higher in 1967 and enrolled in a general curriculum were considerably more likely than those young men with the same occupational goals for age 30 who were enrolled in commercial, vocational or academic curriculums in high school to have lowered their educational aspirations in 1967.

Extending our analysis of this high aspirational group to those who maintained or raised their age 30 occupational goals in 1967, it

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[11]Although the number of sample cases is very small, it is interesting to note that of those in the sample who aspired to two years of college or more in 1966, who lowered their occupational goals at age 30 by 5 or more on the Duncan Scale in 1967 but were enrolled in a vocational or commercial curriculum, only about 14 percent lowered their educational aspiration in 1967. This compares with 73 percent of those enrolled in a college preparatory curriculum who lowered their educational aspirations in 1967. The rather low probability of downward adjustment in the educational aspirations of those young men pursuing a vocational or commercial education can perhaps be explained best by the nature of the vocational and commercial curriculum and the educational orientation and philosophy of those associated with the vocational education system. Where there is a strong emphasis on vocational and commercial education, students are urged to prepare for an occupation and entry into the world of work quite early. They are urged to determine what they like to do and then follow a path of study that will lead to that goal. Where the education is work oriented, it would appear that there would not be as much temptation for experimentation and consequently less fluctuation in the educational aspirations of the student -- he would view his educational options as limited and largely vocational in nature.

can be seen that those young men who were enrolled in vocational, commercial and college preparatory curriculums, attended high schools where expenditures per pupil in average daily attendance were low medium to very high and (in 1966) resided in rural areas, towns with less than 25,000 or small cities of less than 250,000 exhibited a higher probability of lowering their educational aspirations overtime than any other group of young men in our sample with the same age 30 occupational goals. Approximately 39 percent of this group of young men lowered their educational aspirations in 1967.[12]

Concluding the analysis of the upper branch of this diagram, it would appear that the young men in our sample who (1) were members of families with stable or growing incomes; (2) had fathers who were employed in white collar, blue collar or farm occupations; (3) resided in large cities where educational expenditures (per pupil in average daily attendance) were medium low to very high; (4) lowered their occupational goals for age 30 by more than 5 points on the Duncan Scale and were enrolled in vocational or commercial curriculums in high school were much less likely to have lowered their educational aspirations over time, at least in the relatively short-run.

Shifting our analysis to those in the sample whose educational aspirations in 1966 were equal to or lower than their educational

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[12]It can be seen that the "splits" for "expense per pupil in average daily attendance," "location of respondent's residence (rural/urban)," "occupation of father" and "comparison of family income, 1966-1967" produced a higher probability of downward adjustment in educational aspirations than the "splits" covered in the preceding analysis. However, it would appear that the sample N for each of these variables is so small as to make the explanatory power of these variables suspect.

expectations (the lower branch of Diagram 1), again we note that the first split is on the comparison of occupational goals at age 30 as revealed by the respondents in 1966 and 1967. Following through on this split we note that the young men in our sample whose age 30 occupational goals had been revised downward by more than five (5) points (Duncan Index) or stabilized within the same range (±5 on the Duncan Scale) and whose expectations in 1966 were for 6 or more years of college, were a good deal more likely to have lowered their educational aspirations in 1967 than any others in the sample with the same level of educational and occupational goals. Approximately 56 percent of those in our sample who lowered their age 30 occupational goals in 1967 but stated in 1966 that they expected to receive 6 or more years of college, made downward revisions in their educational aspirations in 1967.

In addition to these more significant relationships, identified and defined by the more powerful explanatory variables above, there are other variables which appear to be associated, perhaps more weakly, with the decision of certain members of our sample to make downward revisions in their educational aspirations.

Among the members of our sample who made downward revisions in their age 30 occupational goals or maintained these goals within a relatively small range, those who expected to receive 2 to 4 years of college, desired (or would have been satisfied with) an occupation which fell into the low or medium ranges of the Duncan Scale (0-39 and 40-59) and were members of relatively moderate-sized families with

low or moderate incomes, exhibited a similarly strong tendency to lower their educational aspirations over time. About 56 percent of the young men in our sample characterized by the factors above lowered their educational aspirations in 1967.

As was pointed out in the initial discussion of the lower branch of Diagram 1, 15 percent of the young men in our sample whose educational aspirations were lower than or equal to their expectations in 1966 had made downward adjustments in their educational aspirations by 1967. If one extends this to include the splits for "age 30 occupational goal comparisons," "Parent's weeks worked during the preceding 12 months," and "location of high school by region," the percent of the sample with all these characteristics lowering their educational aspiration in 1967 jumps to 50 percent. However, there would appear to be little reason why the addition of the "location of high school" variable should strengthen the explanatory power of these variables by this magnitude. Since it isn't clear why the "location" (region) factor should be such a strong explanatory variable (that is, since it isn't clear at this point why young men attending high schools in northcentral and western United States should have a greater tendency to revise their educational aspirations downward than those young men attending high schools in other regions of the United States), it would appear best to cut off the analysis after the "parent's weeks worked" variable. With this limitation, of those who had age 30 occupational goals in 1967 that were the same or more than 5 points higher than in 1966 and were members of families where the parents did not work during the preceding

year (or had parents for whom the number of weeks worked was not ascertained), only about 25 percent lowered their educational aspirations in 1967.

Perhaps the most interesting and critically important (though perhaps for some not totally unexpected) finding of this AID analysis is related to the work activity of the parents of the young men in our sample. Specifically, we refer to the influence of the variable "number of weeks worked" on the occupational goals and educational aspirations of members of our sample. If one looks closely at the lower branch of Diagram 1 on page 10, one can see that of those who maintained or increased their age 30 occupational goals in 1967 and had one or both parents who were employed primarily full time with but little unemployment, only about 9 percent lowered their educational aspirations in 1967. The nature and duration of the work activity of one or both parents would appear to play a crucial role in the occupational goal setting process as well as in the establishment of educational expectations and educational aspirations that are realistic -- at least in the short-run.

Concluding the analysis of Diagram 1, (bottom branch) it should be pointed out that there were other groups where the probabilities of downward adjustments in educational aspirations were quite low. For example, relatively speaking, very few members of our sample with educational aspirations the same or somewhat less than expectations in 1966, who expected to receive 2 or 4 years of college and desired an occupation which fell in the upper-middle and very high Duncan

ranges, altered their educational aspirations. The same is true also for those stating that they would like to have an occupation that ranked in the high-medium and high Duncan ranges, who expected 2 or 4 years of college and were members of families with very low, moderate and high incomes or were members of small or very large families with incomes ranging from $3,000-$6,000.

SUMMARY AND CONCLUSIONS

Basing our analysis on data developed by Ohio State University's Center for Human Resources Research from their national survey of the labor market experience of over 5,000 young men 14-24 years of age, we have explored the relationships between approximately 30 social, economic, demographic, locational, and attitudinal variables and the downward adjustment in educational aspirations over a one year period, 1966-1967.

In an analysis of the national probability sample (the weighted sample, not the sample which served as the basis for the AID analysis), it was found that among white (nonblack) youths aspiring to two years of college in 1966, 20 percent revised their educational aspirations downward compared with 23 percent who revised their aspirations upward. Among black youth who aspired to two years of college in 1966, 34 percent adjusted their educational aspirations upward and 18 percent made downward adjustments in their educational aspirations. Given current social, economic, cultural and institutional realities which tend to narrow the educational and employment options open to blacks, it would

appear that the educational aspirations of blacks, particularly, were somewhat more unrealistic than those of the nonblacks at the time of the first survey. However, not only the apparent unrealistically high level of educational aspirations of the blacks but also the discrepancy between the known educational attainment of all young men in the United States under 25 years of age and the educational aspirations of the young men in our sample irrespective of color led us to attempt to determine the most important variables associated with downward adjustment in educational aspirations. The AID algorithm which was used in this analysis enabled us to ascertain a number of important relationships.

Of all variables examined, the relationship between educational expectations and educational aspirations proved to be the strongest explanatory or predictor variable associated with the downward revision of educational aspirations in 1967. Of the high aspirational group, (the upper branch of Diagram 1), those demonstrating the greatest probability of lowering their educational aspirations over time were those who had recently adjusted their age 30 occupational goals downward. Downward adjustment in educational aspirations was also associated with enrollment in a general curriculum, attending a school where educational expenditures per pupil in average daily attendance were either quite low or very high, residing in a rural area, small town or small city, and holding extremely high educational expectations, (i.e. more than 6 years of college).

It would appear that educational aspirations, expectations, and occupational goals are brought into some semblance of balance over time. The "age" or maturity factor seems to play an important role here, in that as one grows older one is apparently better able to realistically assess one's own limitations and abilities and the social and institutional constraints which limit the fullest development and utilization of these abilities and thus adjust one's aspirations accordingly. Our analysis would appear to bear out this statement.

It is interesting to note that those in our sample who were members of moderate-sized families tended to have relatively higher probabilities of lowering their educational aspirations over time than those from large (6 or more brothers and/or sisters) or small (1 to 2 brothers and/or sisters) families. This can perhaps be explained by the fact that income pressures exist which spell out quite early to the members of moderate-sized families the educational options available. Also, in certain cases the younger members of these families may note quite early that because of income constraints few of their brothers and/or sisters were able to fulfill their educational aspirations. Consequently, they adjust their aspirations to align more closely with the economic realities they face. In the case of small or large-sized families (note definitions above), it would appear likely that at a very early age members of small families perceive their relatively unlimited opportunities horizons and members of large-sized families perceive their severely limited opportunities horizons and both act to bring their educational aspirations and educational expectations into approximate

alignment. If this be true one would not expect a high probability for downward revision in educational aspirations for this group.

Perhaps the most significant finding which resulted from this AID analysis is that given one or more parents who are, for the most part, infrequently unemployed, there will likely be less adjustment by the young men in these families in their occupational goals and educational aspirations. In fact, of the 553 young men in our sample who had one or both parents working full-time, only about 50 (9.2 percent) lowered their educational aspirations in 1967.

Based upon our initial look at aspirational change and educational expectations it is difficult to make any "hard" policy statements. However, one or two policy-related points might be stated at this time.

The level and the revision in aspirations and expectations over time are, in part at least, functions of the quality of the educational system which is itself related to the level of per pupil expenditures. To some extent our analysis bears this out. But our analysis suggests that even more critically important in the development of the most desirable aspirations-expectations relationship, where both are sufficiently high, yet realistic and in harmony, is a secure and stable home environment where family income is sufficient and continuous. This would suggest that a permanent and expanded national human resources development (manpower) program which integrates both work and training and income maintenance components is highly desirable at this time.

Since our analysis also points up the salutary affect on the educational aspirations of the young men in our sample of both parents

working full or part-time, it would appear that manpower and employment policies which seek to breakdown sex discrimination barriers and to otherwise expand work and training opportunities for women in the labor force are sorely needed also at this time.

In conclusion our analysis would appear to suggest that family relationships and the home environment play the most singificant roles in determining the relative level of educational aspirations and educational expectations. Social policy which seeks to effectuate improvement in these environments would no doubt raise the educational aspirations and expectations for certain youths from these environments. For others, such social policy might well result in the establishments of educational aspirations which are more realistic and in harmony with expectations.

APPENDIX A

EXPLANATORY VARIABLES AND CODE CATEGORIES -- AID ALGORITHM 1

Relation of Educational Expectations to Educational Aspirations -- 1966
- 1 = Same or More
- 2 = Lower
- 3 = NA

Comparison of Occupational Goals at Age 30 -- 1966 and 1967
- 1 = Same Three Digit Occupation
- 2 = 5 + Hi in '67
- 3 = Same Range +5
- 4 = Duncan Scale 5+ Low '67
- 5 = NA and Other

Curriculum in High School
- 1 = Vocational
- 2 = Commercial
- 3 = Academic
- 4 = General
- 5 = NA

Educational Expectations -- 1966
- 0 = Less Than 2 Years College
- 1 = College 2
- 2 = College 4
- 3 = College 6+
- 4 = NA

Parents -- Weeks Worked During Past 12 Months
- 0 = 0 Weeks
- 1 = M/F 26-
- 2 = M/F 27-52
- 3 = M/F Both
- 4 = NA

Occupation Desired at Age 30 -- Duncan Index
- 1 = 0-39
- 2 = 40-59
- 3 = 60-79
- 4 = 80-99
- 5 = NA

Location of High School -- 1966
- 1 = West
- 2 = South
- 3 = North Central
- 4 = Northeast
- 5 = Outside U.S. and NA

Number of Brothers and Sisters -- 1966
1 = 1 Bro-Sis
2 = 2-3 Bro-Sis
3 = 4-5 Bro-Sis
4 = 6 or More Bro-Sis
5 = NA

Adjusted Expense Per Pupil in ADA
1 = $1 to $249
2 = $250 to $349
3 = $350 to $449
4 = $450 to $549
5 = $550 to $649
6 = $650 to $1,999
7 = NA

Comparison of Family Income -- 1966 and 1967
1 = 1967 Higher
2 = Same Income
3 = 1966 Higher
4 = NA

Total Family Income -- 1966
1 = $3,000 or Less
2 = $3,000 - $6,000
3 = $6,000 - $10,000
4 = $10,000 +
5 = NA

Residence at the Time of the Survey (Rural/Urban)
1 = Rural
2 = 25,000 or Less
3 = Small City
4 = Large City (250,000 +)

Family Members Receiving Welfare or Public Assistance
1 = '66 Yes, '67 Yes
2 = '66 Yes, '67 No
3 = '66 No, '67 Yes
4 = '66 No, '67 No
5 = NA

Father's Occupation
1 = White Collar
2 = Blue Collar
3 = Services
4 = Farmer
5 = NA

APPENDIX B

FACTORS RELATED TO THE DOWNWARD ADJUSTMENT OF EDUCATIONAL ASPIRATIONS AMONG YOUNG MEN

Independent Variables Used In AID Analysis And Universe Restrictions

Independent Variables

1. School enrollment status, 1966
2. High school grade in 1967
3. 1966 total family income
4. Highest year of school completed by father
5. Occupation of father
6. 1967 age of respondent
7. High school curriculum
8. Knowledge of the world of work
9. Cultural exposure at age 14
10. Educational expectations 1966
11. Comparison of aspirations and expectations 1966
12. Occupational goal reported in 1967
13. Area of residence
14. Size of labor force in local labor market
15. IQ score
16. School quality index
17. Reaction to high school experience
18. Location of most recent college with respect to location of high school
19. Means of financing additional education
20. Index of demand for the labor male youth
21. Location of high school by region
22. Type of high school attended
23. Number of weeks worked by father during past 12 months
24. Location of high school with respect to current address
25. Health of respondent
26. Residence at age 14
27. Number of persons related to respondent living in household
28. Whether respondent is oldest child in the family
29. Total number of weeks employed by parents during past 12 months
30. Draft status of respondent
31. Comparison of family incomes, 1966/1967

Universe Restrictions

1. All respondents in the sample in 1966 and 1967;
2. All respondents enrolled in high school (grades 10-12) in 1966 and in school in 1967;
3. All respondents aspired to at least two years of college in 1966.

ABSTRACT

The Influence of Professional Role Identification upon the Development of Interest in Horizontal Career Mobility by Nursing Students

by

Richard E. Darnell, M.A.

Each of 283 nursing students at Michigan State University were exposed to occupational information booklets constructed by nursing and medical educators which represented the role of the nurse physician associate as (1) an expansion of nursing, (2) an extension of medicine, or (3) an amalgamation of medicine and nursing. Measures were obtained of stated interest in that role as a potential career opportunity, information seeking behavior regarding that role (manifest interest), and amount of information retained (tested interest). There was no differential development of interest in the role of the nurse physician associate as a result of exposure to different occupational information booklets. There was no meaningful difference in interest development as a function of student level of training. Post experimental interviews with participants in the study indicated that interest development in the role of the nurse physician associate may be associated with identification of that role with a distinct new professional identity.

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Introduction

The present health care crisis has contributed to the development of many new service roles in intermediary positions between established health care professions. Contributors to the health manpower literature have proposed the establishment of opportunities for career mobility between established health care professions (horizontal mobility) as well as within a given health care profession (vertical mobility) (Hiestand, 1966; Perry, 1969).

It has been postulated that major factors influencing the development of interest by students in health care professions offering the possibility of horizontal career mobility toward a more highly trained profession are 1) the professional identity associated with that new health role (Shep and Bachor, 1964; Silver, 1967; MaGraw, 1968, Jacobi, 1970); and 2) the level of training of these potential practitioners (Gynther and Gertz, 1962; Nikkari, 1969). The development of the nurse physician associate, a new health care role in an intermediary position between the lesser trained profession of nursing and the more highly trained profession of medicine, presented an opportunity to study the dynamics of the development of interest by nursing students in mobility between these two major health care professions.

Purpose of Study

This study attempted to evaluate six hypotheses. The first two hypotheses related to the effect of professional role identification upon interest development:

I. Students training for health careers in a less highly trained profession will demonstrate a significantly greater development of interest in a new health care role after identification of that role with the less highly trained profession than will students after identification of that role with an amalgamation of the less and the more highly trained profession.

II. Students training for health careers in a less highly trained profession will demonstrate a significantly greater development of interest in a new health care role after identification of that role with an amalgamation of the less and more highly trained profession than will students after identification of that role with the more highly trained profession.

The next three hypotheses related to the effect of professional level of training upon interest development:

III. Students with a high level of training (seniors) in the less highly trained profession will develop significantly greater interest in a new health care role than will students with an intermediate level of training (juniors) in the less highly trained profession.

IV. Students with an intermediate level of training (juniors) in the less highly trained profession will develop significantly greater interest in a new health care role than will students with a low level of training (sophomores) in the less highly trained profession.

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V. Students with a low level of training (sophomores) in the less highly trained profession will develop significantly greater interest in a new health care role than will students with a minimal level of training (freshmen) in the less highly trained profession.

The last hypothesis pertained to the relationship between role identification and level of training:

VI. There will be no interaction between role identification and level of training.

Methodology

Three different occupational information booklets portraying the role of the nurse physician associate as 1) an expansion of nursing, 2) an extension of medicine, or 3) an amalgamation of nursing and medicine were developed by a nursing advisory committee and a medical advisory committee, each committee meeting independently with the researcher. Each committee consisted of three trained practitioners in that profession. These booklets served as independent variables and were randomly distributed during regular class periods to one hundred and ninety-six nursing students enrolled as sophomores, juniors and seniors at the Michigan State University School of Nursing. Eighty-seven freshmen having no class contact with the School of Nursing were randomly exposed to occupational information booklets as part of research activities sponsored by the Nursing School. Subsequent contacts with freshmen were accomplished by having the freshmen serve as paid volunteers.

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This study employed six dependent variables. Each occupational information booklet provided a measure of pre-knowledge of the role of the nurse physician associate which was utilized as a covariable, 1) interest by the student in obtaining further information, and 2) the student's impressions of interest in information seeking by her peers. It also provided an information resource sheet which identified opportunities for further information seeking by 3) mailing a postcard, speaking with a resource person or utilizing library resource materials. During a second contact occurring approximately ten days later, students were provided with additional information on the role of the nurse physician associate. During a third contact one week later, 4) selective retention of information provided during the previous week was tested, and 5) interest by the student in a potential career as a nurse physician associate and 6) the student's impression regarding the attractiveness of such a career to her peers were assessed. Following the experimental phase, interviews were carried out with a sample of forty nursing students who participated in the study.

Results

A multivariate analysis of covariance was performed.

TABLE I

F Ratios for Multivariate
Tests of Equality of Mean Vectors for Main Effects

Main Effect	Multivariate F Ratio	Degrees of Freedom	Significant at p = .01
Effect associated with differential exposure to occupational information booklets	0.653	12 and 532	No
Effect associated with level of training	5.841	18 and 752	Yes
Effect associated with interaction	0.558	36 and 1170	No

No significant difference was found in interest development in the role of the nurse physician associate as a result of differential exposure to occupational information booklets (see Table I). Hypotheses I and II failed to be substantiated.

Because a significant main effect for level of training was ascertained (see Table I), Scheffe post hoc comparisons were performed. There were no significant differences in interest development between seniors and juniors. Hypothesis III failed to be substantiated. Sophomores demonstrated significantly greater information seeking than did juniors. This finding was attributed to situational factors and was in a direction opposite to that hypothesized. Hypothesis IV thus failed to be substantiated. It was found that sophomores demonstrated

significantly higher informational recall and stated interest in the role of the nurse physician associate as a potential career opportunity for both herself and her peers than did freshmen. Although Hypothesis V received statistical support, differences in sampling procedures between freshmen and sophomores, and significant freshmen mortality between contact one and contact three impaired the meaningfulness of these findings.

There was no significant interaction found between differential exposure to occupational information booklets and level of training (see Table I). Hypothesis VI was substantiated.

No differences in interest development were found between seniors who were registered nurses and seniors who were not.

Post experimental interviews revealed that subjects were not aware that they were exposed to different experimental treatments and that interest development in the role of the nurse physician associate may have more effectively occurred as a function of identification of that role with a distinct new professional identity.

Conclusions

This study was unable to demonstrate that students training for health careers in the less highly trained profession of nursing demonstrate significantly different development of interest in a new health care role after identification of that role with that less highly trained profession, the more highly trained profession of medicine or an amalgamation of nursing and medicine. Furthermore, level of training in the less highly trained profession of nursing does not appear to have a meaningful

relationship with the development of interest in a new associated health care role.

Implications for Future Research

The absence of treatment main effects may indicate that professional role identification by nursing students associated with interest development in the role of the nurse physician associate appears to be in the process of evolution. This evolution is presently accompanied by deep conflicts and strains within nursing and nursing education regarding a definition of the nursing role in today's society. Replication of this research at some future time may be more productive.

There was some indication that interest in a new health care role intermediate between the professions of nursing and medicine may possibly occur as a result of identification of that new health care role with a distinct new professional identity. Such new professional identities often evolve from the clinical setting. Thus, interest development in new health care professions may be the result of interaction with specific work settings rather than with stereotypic professional role identifications.

Experimental studies based upon the theoretical formulations of Thompson, Avery and Carlson (1962), which postulate the development of interest in health careers as a complex interaction of four basic career strategies and four career patterns with individual competencies, aspirations and specific situational opportunities, may provide a more fruitful understanding of interest development in lateral career mobility between health professions.

Future efforts to assess the dynamics of lateral mobility in

health care professions will have to address the following questions.

1. Do persons preparing for health care professions demonstrate different dynamics in the development of interest in lateral mobility than persons in other professions or occupations?
2. Do health care personnel in professions different from nursing have similar dynamics of interest development in lateral mobility?
3. Are there different dynamics operating in the development of interest in lateral mobility by personnel presently functioning at different vertical levels in professional practice settings?
4. What is the relationship between the short term dynamics of interest development in lateral mobility and longitudinal components measured over a period of years?

REFERENCES

Gynther, M.D., and Gertz, B. "Personality Characteristics of Student Nurses in South Carolina," Journal of Social Psychology, vol. 56 (1962), 277-284.

Hiestand, Dale L. "Research into Manpower for Health Service" in The Bilgank Memorial Fund Quarterly, (Part II), Vol. XLIV, No 4, Oct. 1966, pp. 141-178.

Jacobi, Eileen. As quoted in "Can Doctors' Aides Solve the Manpower Crises," Medical World News, (January 23, 1970), 27.

MaGraw, Richard M. "Interdisciplinary Teamwork for Medical Care and Health Services," Annals of Internal Medicine, vol. 69, no. 4 (October, 1968), 821-835.

Nikkari, John Gorton. "Freshman-to-Senior Personality Changes in Basic Collegiate Student Nurses as Compared to Changes in Females in a Liberal Arts College in a Large Midwestern State University." Unpublished Doctoral Dissertation, Michigan State University, 1969.

Perry, Warren J. "Career Mobility in Allied Health Education," Journal of the American Medical Association, vol. 210, no. 1 (October 6, 1969), 107-110.

Shep, Cecil G., and Bachor, Miriam E. "Nursing and Medicine - Emerging Patterns of Practice," American Journal of Nursing, Vol. 64, No. 9 (September, 1964), 107-109.

Silver, Henry, and Ford, Loretta. "The Pediatric Nurse Practitioner at Colorado," American Journal of Nursing, vol. 67, no. 7 (July, 1967), 1443-1444.

Thompson, James., Avery, Robert W., and Carlson, Richard. Occupations, Personnel and Careers. Pittsburgh: Administrative Science Center, University of Pittsburgh, 1962.

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A Job Satisfaction Predictor

Suppose a non-complex instrument could be devised which successfully estimates job satisfaction well beyond what chance alone could predict. Validation of such an instrument would provide both vocational counselors and placement specialists with a most useful tool for their respective activities.

Such an instrument was found to be a short questionnaire (6 multiple-choice questions) developed in connection with a broad study of job satisfaction and needs satisfaction. It was concluded that listing a number of needs, and having subjects rank them in terms of their judged importance was a simple, most direct method for obtaining need satisfaction measures. Here, the individual simply responds in terms of his aware needs. Also, this method would permit wide use of the instrument without requiring highly specialized training for the administrator.

Fourteen needs were selected for investigation, and for the purposes of this study, a need was regarded as a hypothetical force within the individual which promotes activity. These 14 needs were: Leadership, Esteem, Job Security, Outdoors, Competition, Good Pay, Dependence, Self-actualization, Power, Social Service, Congeniality, Advancement, Independence, and Interesting Duties.

A questionnaire was constructed to determine how well job satisfaction (as reported by the respondents) could in fact be estimated from measurements of varying degrees of need satisfaction. The questionnaire was administered to a sample of 470 individuals employed in three very large and occupationally diversified organizations. There were 29 kinds of jobs in the sample, distributed among 5 major occupational groups. These included 89 respondents among 8 different jobs in the Professional group; 101 among 3 jobs in the Managerial-Official group; 155 among 5 jobs in the Clerical group; 45 among 2 Service group jobs, and 82 among 12 Trades-Manual jobs.

The questionnaire was designed to measure two variables: (1) degrees of need satisfaction, and (2) the individual's self-evaluated degree of job satisfaction. Five of the six questions related to need. The respondents were required to select from among the 14 need statements the 3 they considered most important. They were also required to rank each selection in order of importance; first choice most important, third choice least. The same needs statements, slightly modified in language, but quite apparently the same need statement, were listed as the 14 possible forced choices in each of the 5 questions. The order of need statements was randomized to reduce the liklihood of 'top-of-the-list' position influencing the answers.

Each respondent therefore had 15 opportunities to select and rank any of these 14 needs among those he considered of greatest importance. From these responses, i.e., the number of times a need was selected, and the rank order of the selection, measures were obtained for varying degrees of need strength among

470 individuals in a very broad occupational range of jobs.

The sixth questionnaire item related to degrees of job satisfaction in currently held positions. The respondent was required to indicate which of seven forced-choice statements, ranging from "hate it" to "like it extremely well," most nearly described his usual degree of job satisfaction.

The assumption that job satisfaction varies with the strength of needs satisfaction as they relate to the work situation - the stronger the need satisfaction, the greater the job satisfaction - is the hypothesis upon which this instrument was developed.

A Pearson "r" was computed between job satisfaction and need satisfaction strengths, since a product-moment coefficient correlation indicates the extent to which changes in one variable are accompanied by, or are dependent upon, changes in a second variable. The Pearson "r" was +.58, therefore this substantial positive correlation indicates that this instrument and technique have marked construct validity and predictive value in estimating worker job satisfaction from measures of need satisfaction.

Additionally, other job satisfaction data was obtained which suggests that further research in this area might well be undertaken. Among the 5 major occupational groups, differences were noted both in the needs selected, and the relative satisfaction strengths of needs, the latter expressed as percentages of the total number of times needs could be selected.

These differences, both in needs selected and in relative satisfaction of needs, might well be utilized in vocational guidance. For example, assume an individual

indicates in his questionnaire answers that he considers the 3 principal job satisfiers for professional work (as found in this study) to be of very minor importance to his job satisfaction. Assume further that the individual expresses a strong interest and desire to seek a professional-type job. This evident divergence of important job satisfiers might well suggest to him that the types of things he considers to be of prime importance to job satisfaction are not at all the types of things that professional people consider to be important to job satisfaction. From the standpoint of his future adjustment to, and satisfaction in, professional occupations, this type of information might be of considerable value to him with regard to vocational choices and decisions.

It is recognized that some interest inventories provide measures of similarity between an individual's pattern of responses and the pattern unique, yet common, among individuals in a particular occupation. However, a procedure which measures strength idfferences among needs, not only can provide the same type of comparison, but might also make possible further individual understanding. To advise someone that he has a high clerical interest score is indeed helpful. To be able to explore with him his psychological needs, particularly as they relate to the principal need satisfiers associated with various occupations, would suggest an additional counseling tool of value.

In short - relating the expressed psychological needs of individuals to the need-satisfaction offerings of various occupations, suggests a potentially useful job satisfaction prediction technique.

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TECHNICAL EDUCATION FOR NATIONAL PROSPERITY: INDUSTRIAL DYNAMICS APPLIED TO THE CLARIFICATION OF AN EDUCATIONAL CONTROVERSY

by

Richard B. Anderson

Adapted from the author's Doctoral Thesis of the same title, accepted in December, 1970, at the Harvard Graduate School of Education.

Presented at the Annual Meeting of the American Educational Research Association, 5 February 1970.

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CHAPTER 1

THE SUBSTANTIVE PROBLEM: TECHNICAL EDUCATION AS A MEANS TO NATIONAL PROSPERITY

Poverty and ignorance: ignorance and poverty. Wealthy nations perceive the growing economic disparity between themselves and their neighbors as the result of a vicious cycle of poverty and ignorance, and they " . . . feel very strongly their responsibility towards the less developed countries."[1] Surely, a nation whose historical policies have made it rich and powerful should be able to advise a poor, weak nation as to the policies that will best foster its development.

But can it, really? What policies can a developing nation adopt in order to close the gap? Today's highly-developed countries did not have to grow up quickly in a world of super-states and instantaneous communications. Although they are the only obvious candidates for the role of wise counselor, they risk falling rather into the role of the fatuous father who never ceases to mouth irrelevancies

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[1]Organisation for Economic Co-operation and Development, Policy Conference on Economic Growth and Investment in Education, Vol. III: "The Challenge of Aid to Newly Developing Countries" (Washington: 1961), p. 5.

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about the way things were when he was a boy. There is a perilous gap between knowing how we did it and knowing how they ought to do it.

On the advice or example of wealthier neighbors, a number of developing countries have recently seen the rapid expansion of education, and particularly of technical education, as a principal means of accelerating industrialization and thus economic growth. Ernest Stabler describes the emergence of this point of view in Kenya in the 1960's:

> . . . A new principle appeared: education and national development must form a partnership. Economic growth can be speeded up if education produces the middle- and high-level manpower which a developing country needs so desperately. . . . Never before had education been regarded as the seed of economic development."[2]

An official Kenyan expression of the "new principle" appeared in print in 1965:

> At Kenya's stage of development, education is much more an economic than a social service. It is our principal means for relieving the shortage of domestic skilled manpower and equalizing economic opportunities among all citizens. . . . The immediate objectives in education are to expand secondary level facilities as rapidly as teacher supply and recurrent cost implications permit. This is, of course, important to the training of manpower. . . ."[3]

The theme recurs in Thailand:

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[2]Stabler, Ernest, Education Since Uhuru: The Schools of Kenya (Middletown, Conn: Wesleyan University Press, 1969), p. xxiii.

[3]Sessional Paper No. 10, African Socialism and its Application to Planning in Kenya (Nairobi: Government Printer, 1965), p. 40, cited in Stabler, op. cit., p. xxiv.

> . . . The educational system is geared to meet the . . . human resource needs of Thailand. Meeting these needs constitutes a rock-bottom requirement for sustained economic growth. . . .[4]

And in Vietnam:

> In the field of education we have only one concern--how to perfect on an emergency basis all educational installations . . . how to make programs of studies more suitable to the conditions of our nation, an agricultural, underdeveloped nation which is on the way to industrialization and which needs many specialists and technicians.[5]

The authors of the Vietnamese National Education Survey commented further:

> There appears to be no basic disagreement on the objective to develop technical and vocational education. . . . The achievement and maintenance of an expanding economy is the well recognized problem that needs solving.[6]

The expansion of technical education is an attractive expedient for a number of reasons: (1) a lack of trained manpower can obviously hinder industrial development, and a far-sighted government should remove such hindrances as soon as it becomes aware of them; (2) technical education confers an aura of up-to-dateness: the government that fosters it is clearly on top of the situation; (3) technical education

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[4] Current and Projected Secondary Education Programs for Thailand, Publication No. 9 (Bangkok: Educational Planning Office, Ministry of Education, 1966), p. A.

[5] Bui-Tuong-Huan, Vietnamese Minister of National Education, quoted in Education Vietnam: Proposals for Reorganization, a National Education Study, 1967, p. 181.

[6] Ibid.

enhances the potential productivity of its recipients and thus may plausibly be expected to provide an economic multiplier effect that is lacking in direct welfare relief; (4) direct economic effects aside, education is commonly credited with slowing down the population explosion (which medical advances, for example, may actually encourage), thus permitting per-capita prosperity to grow more nearly at the same rate as absolute production.

Despite its manifold attractions, the policy of expanding technical education for economic purposes is a subject of controversy and doubt. The popular press has reported, for example, that India's great push of the last decade has generated a national excess of engineers, and that half the pharmacists in Korea are unemployed.[7]

On the academic side, Thomas Balogh can still write "a proposal to relate education directly to production,"[8] but other observers are quick to assert that the causal connections between education and prosperity are neither simple nor direct. Philip J. Foster, for example, in explicit rebuttal to Balogh, declares that

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[7]Eren, Nuri, "Supply, Demand, and the Brain Drain," Saturday Review, 2 August 1969, p. 12.

[8]Balogh, Thomas, "A Proposal to Relate Education Directly to Production," in John W. Hansen and Cole S. Brembeck, eds., Education and the Development of Nations (New York: Holt, Rinehart and Winston, 1966), pp. 160-167.

> . . . in the initial stages technical and vocational instruction is the cart rather than the horse in economic growth and its development depends upon real and perceived opportunities existing within the economic structure. Thus its provision must be directly related to those points at which some development is already apparent and where demand for skills is beginning to manifest itself. . . .[9]

In less colloquial terms, Foster argues further that

> . . . those factors which really give the impetus to early economic growth are far more subtle than the proponents of vocational education suppose. In effect, we would suggest that the crucial variables lie in the structure of incentives within the economic system and the degree to which the institutional framework provides a milieu which is supportive of entrepreneurial activity. Without such a milieu no amount of vocational instruction can be effective since the skills acquired will not be utilised.[10]

In a recent publication of the Organisation for Economic Co-operation and Development, John Vaizey asserts that

> . . . it is evident that technical education must have a high degree of priority as it is directly connected with the provision of skilled manpower. The major problem however is that of providing technical teachers. . . .[11]

In the same publication, F. H. Harbison argues for a more involved theory of the system that links technical schooling with national wealth:

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[9]Foster, Philip J., "The Vocational School Fallacy in Development Planning," in Hansen and Brembeck, op. cit., p. 173.

[10]Ibid.

[11]Vaizey, John, "Some of the Main Issues in the Strategy of Educational Supply," in OECD, op. cit., p. 58.

> I would argue most strongly that situations of this kind [the low social status of technical work in comparison to literary work] will not be corrected by publicity, exhortations of prime ministers, and the building of more educational institutions. They will be changed only when the system of rewards and status values in a modernizing society are changed.[12]

And, finally, Philip H. Coombs warns:

> A developing country can land in deep trouble by slavishly adhering to the educational forms and rituals of industrialized countries, in a context where they simply do not fit. . . . A particularly troublesome sector is technical and vocational training at the secondary or post-secondary level. . . . There are many sad stories whose common plot tells of technical training schemes, embraced by all parties with good intentions, yet rendered irrelevant in their application.[13]

These quotations suffice to demonstrate that a controversy exists: that well-informed men of good will, intimately involved in the problems of the developing world and eager to solve them, can and do hold diametrically opposed views on the causal connections between education and prosperity. Each of the authors quoted clearly has in his mind, in some more or less explicit form, a set of causal hypotheses (a theory) which seems to him to imply either that technical education is a key to development or that it is not. This diversity of theories can lead only to a corresponding and confusing diversity in the expert advice that a nation must consider

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[12] Harbison, F. H., "The Strategy of Human Resource Development in Modernizing Economies," in OECD, op. cit., p. 21.

[13] Coombs, Philip H., The World Educational Crisis (London: Oxford University Press, 1968), p. 76.

in deciding whether to expand its technical education commitments.

In the face of conflicting counsel, what can the decision-maker for a developing country do? Must he consider the question to be ultimately an empirical one and accordingly surrender up his nation to be used as a guinea pig in an experimental test of one theoretical position or the other? Many have done so, in essence. We have already cited the cases of India and Korea, but we need not go so far afield to find nations pushing their technical education expansion well ahead of other aspects of economic development: the Republic of Ireland is in the process of creating nine regional technical colleges which are intended to accommodate some 15,000 Irish youth by 1972 and 20,000 by 1975. Given that in 1963 Ireland had only about 400 per year entering full-time technical studies and 700 entering part-time,[14] the introduction of these new colleges clearly represents a truly radical and sudden change in Irish technical education. Given the controversy we have documented, it also represents a very expensive piece of trial-and-error experimentation.

But what alternatives are there? If not by trial and error, then on what basis can the decision-maker choose between two or more convincingly-presented theoretical

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[14] Steering Committee on Technical Education, "Report to the Minister for Education on Regional Technical Colleges" (Dublin: Stationery Office, 1967), p. 42.

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constructs which seem to imply opposite policy conclusions? This question underlies the methodological considerations of Chapter 2.

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CHAPTER 2

THE METHODOLOGICAL PROBLEM

FORMULATING AND MANIPULATING COMPLEX CAUSAL THEORIES

2.1 The need for an explicit theory to clarify the content of the controversy

As long as the opposing camps in the technical education controversy communicate primarily in the vernacular, they are not likely to resolve the issue until they have tried every conceivable variation on each theory in every conceivable real-world situation. Until "the evidence is in," in this exaggerated sense, there will very likely always be some partisan of the losing side who will maintain that his theory has not had a fair trial. Such is the power of semantics in ordinary conversation and debate that two verbal antagonists can both appear to make good sense while expressing totally irreconcilable theories about complex systems of causality. As we shall see later, in fact, such verbally-formulated theories can still seem reasonable even if the logical content of each, taken individually, is internally inconsistent or absurd.

To the extent that we are correct in blaming semantic ambiguity and vagueness for a significant part of the

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confusion in the technical education controversy, we might hope to eliminate that part of the problem by translating the logical content of the competing theories from the vernacular into some other language which does not suffer from these semantic disabilities. Two questions remain: (1) Does a language exist which provides an uncluttered representation for the naked logic of theoretical assertions, stripped of their semantic camouflage? (2) Once a theory is expressed in such a language, are its policy implications any clearer than they were before?

Industrial Dynamics purports to provide an affirmative answer to both questions. The purpose of this thesis is to investigate that claim, using the technical education controversy as a case in point.

2.2 Policies and causal hypotheses: definitional considerations

Responsible educators--and others responsible for education--normally do what they do because they believe that their actions will produce desired consequences. In other words, they act in accordance with policies, or action rules, which follow from causal hypotheses (elements of theories) which they believe to be true. Such causal hypotheses may exist at any of three hierarchical levels of definition: one may hypothesize

(a) the mere existence of a relationship ("A and B are causally connected"),

(b) its direction ("A acts upon B"), or

(c) its form (e.g., $B_t = A^2_{t-1}$).

At the first level, a hypothesis has little if any policy-relevant content. At the second level, it identifies one variable which can in principle be manipulated indirectly through the mediating influence of another. And finally, at the third level, a precisely specified hypothetical relationship implies, unambiguously and verifiably, the behavior that one variable will supposedly exhibit in response to a given behavior of the other variable.

The (often implicit) causal hypotheses that guide actual professional practice generally lie somewhere between the second and third levels of definition. If they were to fall below the second level, they would provide no guidance, but, on the other hand, practitioners seldom go to the considerable effort of specifying completely the forms of their theories. It is not common knowledge, in fact, that a language exists in which one can represent one's causal theories unambiguously and naturally.

Practitioners therefore base their practice on hypotheses whose forms are only partially specified. One may, for example, hypothesize

(a) the sign of a causal relationship ("A has a

positive effect upon B," that is, the more A there is, the more B results), or

(b) its relative strength with respect to other relationships ("A has a more powerful effect on B than C has").

It remains, clearly enough, to hypothesize the absolute strength of a causal relationship, that is, to formulate expressions which specify quantitatively over time the magnitudes of effects, given the quantitative time behavior of their causes. As it turns out, the notation of ordinary algebra and calculus provides a convenient language which is well adapted to such expressions.

The resulting theoretical formulations, however, do not lend themselves to useful manipulation by means of the usual rules of algebra and calculus. Now, we can make little use of a theory until we can discover what it implies by manipulating it. We can choose at this point (1) to distort our theory until the usual algebraic processes can handle it, (2) to seek other means of manipulation, or (3) to abandon the quest for a precise and manipulable theory. Educators and educational researchers often choose the first and third alternatives, attempting to fit the phenomena of education to computational Procrustean beds fashioned in other academic regions or else devising elaborate philosophical arguments to explain why we cannot have precisely specified theories in

education and would not want them if we could.

There are obvious advantages to following the second course if possible, and so we have taken a particular interest in the claims of Industrial Dynamics. Developed over the past few years by Professor Jay W. Forrester of M. I. T., Industrial Dynamics is an approach to the study of complex causal systems which provides the theoretician with a framework within which he can (1) express an exceedingly broad range of quantitative causal hypotheses, (2) combine them into realistically complex models (representations of theories), and (3) manipulate the models.

Forrester makes many far-reaching claims concerning the generality and power of Industrial Dynamics.
In this paper, we have used the technical education controversy as a vehicle for investigating only one small segment of Forrester's claims: the ability of the approach to serve as a common language for the disentangling of semantically-confounded controversies over complex systems of causality related to education. We are concerned here specifically with the causalities that may be hypothesized as linking technical education with national prosperity.

We have therefore formulated an Industrial Dynamics model which embodies one theory of these causal connections and which can easily be altered to represent a wide range of

alternative theories. The two sides in the technical-education controversy appear in the model as special cases (oversimplifications, if you will). This model, as it stands, is by no means ready to guide any nation's educational policy-making. We do not claim to have included in it all and only the important causalities in the real world system, nor do we claim to have represented perfectly those that we have included. We have begun with certain assumptions on which a number of developing nations seem to base their technical education expansion policies, and we have represented these assumptions in the model, together with a number of further assumptions that internal consistency seems to demand.

The assumptions that we have included seem plausible to us, and they turn out to have some interesting consequences. Other students of the international scene may have differing (and doubtless superior) insights which imply differing theories and thus differing models. The present model can very easily accommodate changes in the magnitudes of its parameters. It can also accommodate structural changes with more or less facility, depending on their extent. The model will succeed in its purpose to the extent that it comes to provide a common ground on which experts from various disciplines can meet to study the logical content of their various views of the problem. We seek here to discover whether we can reasonably expect it to do so.

CHAPTER 3

COMPUTER SIMULATIONS UNDER TWO CONTRASTING POLICY ALTERNATIVES

Now that we have a model, it becomes fair to ask what we can do with it that we could not do without it.

To begin with, thanks to the DYNAMO compiler, we can find out how the model behaves in its present form. We designed it to reflect what we called a "new principle" policy, according to which the government of a developing nation, regarding technical education as a primary tool for catching up economically with the more industrialized nations, decides to peg its school expansion to the prosperity gap: the wider the gap, the greater the perceived need for technical school capacity. Governments keep on following such policies: one must suppose that they expect good results. Academicians keep on criticizing "new principle" policies: one must suppose that they expect less happy results. Our model includes what we have been able to gather of the causal logic of both sides of the controversy. DYNAMO simulation can help us to see what follows from these combined assumptions.

We can then study the fine structure of model functioning to find out why it behaves as it does. If the "new principle"

model configuration leads to desirable behavior, we can then ask what was wrong with the critics' warnings. If it leads to undesirable behavior, on the other hand, we can seek to identify the causes of the dysfunctions and to design an alternative policy that might eliminate them.

In the event, our task took the second form: policy redesign. Accordingly, we provided to the computer complete DYNAMO specifications for two distinct simulations: (1) the basic simulation, which traces the behavior that the model implies when it takes the form we have already described, assuming a "new principle" policy, and (2) the modified simulation, which traces the model's behavior under a newly designed policy based on planned growth of both the technical schools and the national economy.

The first two computer plots (Figures 3.1a and 3.1b) show what the basic model implies. The trace the parallel developments of the national economy and the technical school system over a fifty-year period, assuming that the underdeveloped country expands technical education primarily in response to a perceived prosperity gap between itself and its neighbors. When the first plot is oriented so that the letters are upright, the time scale runs down the left margin from top to bottom, and the scales of the eight plotted variables run across the top of the page; in these scales, T means "thousands," and B means "billions."

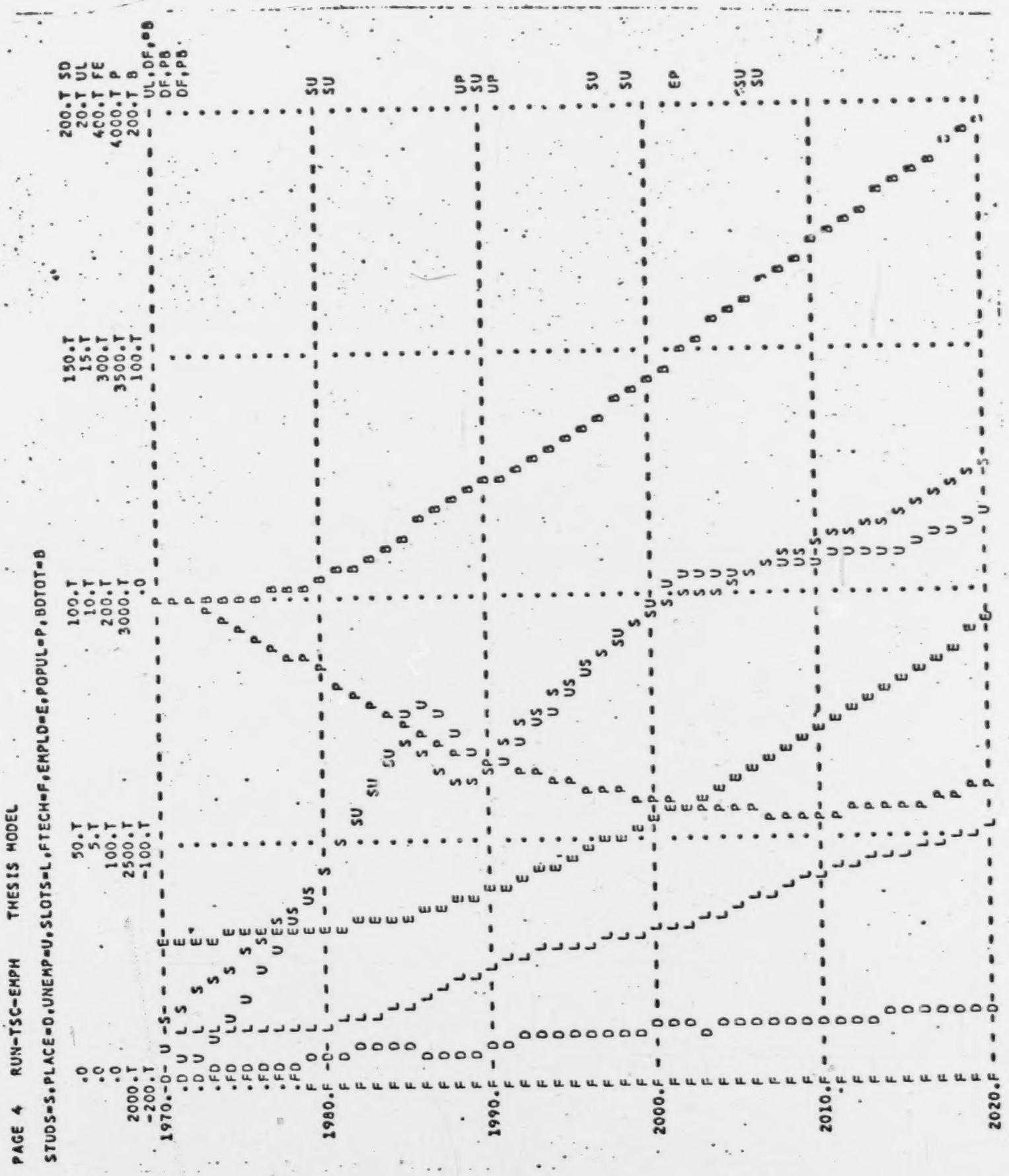

Figure 3.1a.--Plotted output from the basic simulation

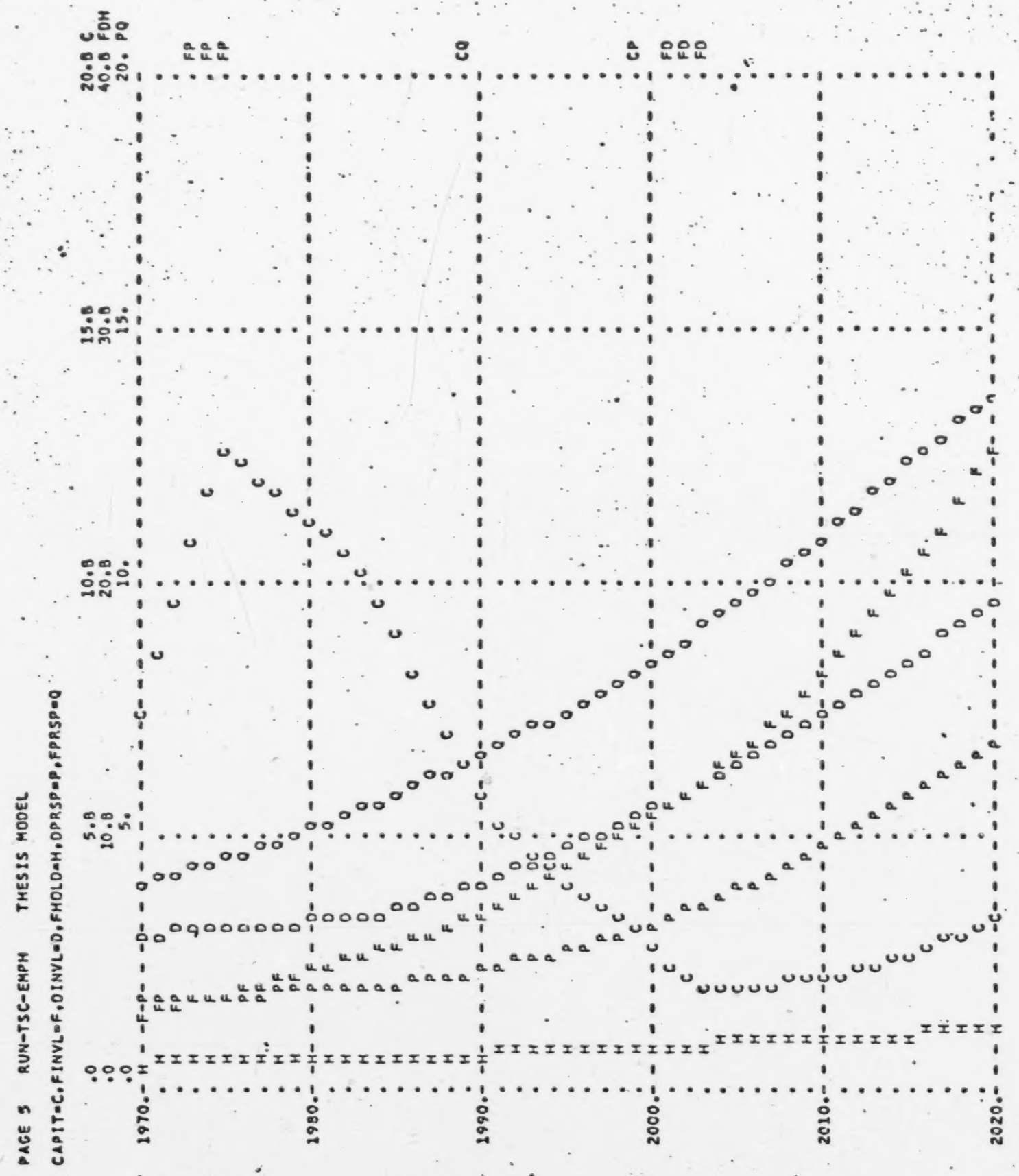

Figure 3.1b.--Plotted output from the basic simulation (concluded)

The initial conditions imply a substantial prosperity gap which is evident in the initial separation of domestic prosperity (P) from foreign prosperity (Q) in Figure 3.1b. Looking back to Figure 3.1a, we see that the government responds to this prosperity gap by expanding technical education in accordance with the "new principle": the number of students in technical schools (S) increases more than threefold over the first ten years of the simulation. The number of empty places (D) also increases, but less dramatically, since enrollment fills the places nearly as fast as they are created.

Concomitantly, of course, unemployment (U) of technically-trained people rises even more precipitously: at any given moment the level of technical school capacity determines to a large extent the rate at which people are being added to the unemployed pool, so that the unemployment which results from an oversupply of school capacity continues to pile up even after 1985, when the government discerns the oversupply and slows down school expansion so that industrialization can catch up.

The level of industrialization, as we have defined it, is the sum of the employed technical work force (E) and the empty technical job slots (L) in the country. It responds only very slowly to the favorable employment situation that the high level of unemployment represents,

partly because the out-migration or brain drain (plotted cumulatively as B) limits the actual size of the unemployed technical labor pool. It is primarily perception of the migration or brain drain that puts the brakes on school expansion: tabulated output (not included) at the end of ten years shows that the country is losing over 20% of its technical school graduates to its more affluent neighbor at year 20, this percentage has risen to about 45%. At the end of the fifty-year simulation, the accumulated brain drain amounts to some 200,000 trained people lost. Meanwhile, the population (P), stagnant at first, drops slightly. Since trained people are generally in excess, no appreciable number of foreigh technical workers (F), is imported.

Figure 3.1b shows the behavior of the levels of foreign and domestic prosperity (P and Q, respectively); of foreign and domestic investment of domestic capital (f and D, respectively); of foreign capital investment in domestic enterprise (H); and of domestic capital available for investment (C). Note that although industrialization proceeds under the assumptions of the model of this form, it does not proceed rapidly enough to close the prosperity gap; the gap widens steadily, in fact, throughout the fifty-year simulation.

Unemployment is the principal undesirable feature of the system's performance under these initial assumptions,

both for its own sake and for the sake of the brain drain that it occasions. Clearly enough, the unemployment results directly from an imbalance between investment in technical education and investment in productive enterprise: by pushing the technical schools ahead faster than the technical job supply can keep up, the government insures that the average graduate of the schools will have to spend a substantial period of time unemployed. The rate of school expansion thus becomes governed by a rather long feedback loop in which the desire for additional school capacity seeks to balance off the positive influence of the (slowly perceived) prosperity gap against the negative influence of the (again slowly perceived) relative brain drain level. The oscillations that are evident in the first plot result from the system's efforts to achieve this balance. The nearly steady progress of the cumulative brain drain attests to the fact that the equilibrium is characterized by a high unemployment level. By deciding to peg school expansion to the prosperity gap, the government thus puts itself in a position where the negative consequences of its own policy limit its ability to carry out that policy, and where the resulting equilibrium has some very distasteful characteristics.

But what policy alternatives are there? In the western world, at least, a government does not have the

same direct control over investment in enterprise that it has over investment in schools. By means of tax incentives and other fiscal devices, the government can exercise a moderate encouraging or discouraging influence on the creation of jobs, but once again it is unlikely to have a clear view of the consequences of its actions in time to take useful corrective measures. The temptation is strong to try to stimulate progress by pushing what has the power to push, as we have initially assumed the governments of developing nations do.

Ideally, of course, the government would like to implement a balanced policy that would stimulate the parallel growth of enterprise and education so that the output of education would smoothly feed the manpower needs of enterprise.

Our modified simulation embodies an alternative policy which eliminates several of the undesirable features of the "new principle" system's behavior. We present it primarily for its methodological interest: it illustrates the power of Industrial Dynamics to clarify the non-obvious consequences of complex theories such as our model represents. For this second run, the model is just as it was before except that

(1) the government institutes investment incentives which it estimates will encourage a 6% annual growth in domestic enterprise investment; and

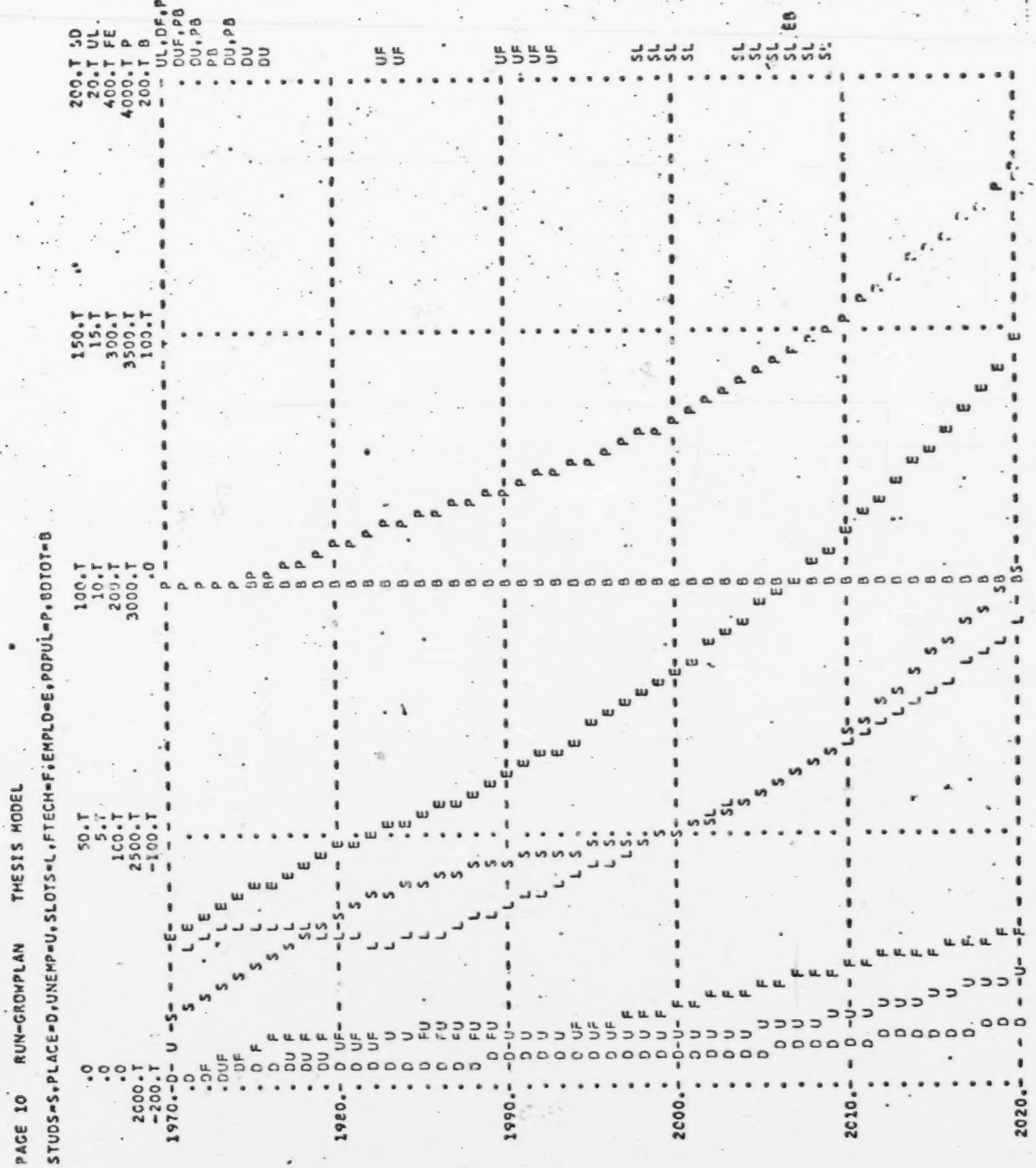

Figure 3.2a.--Plotted output from the modified simulation

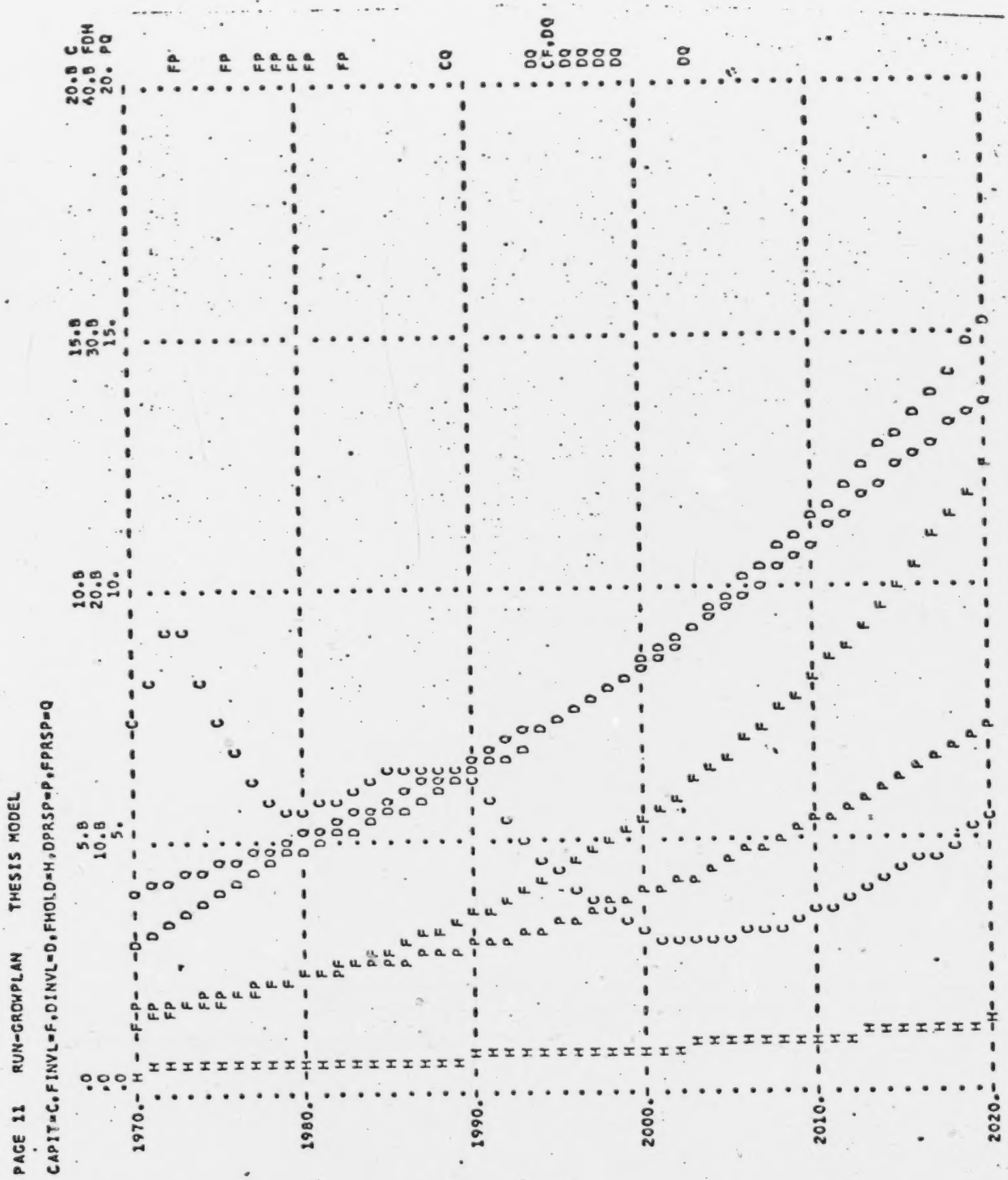

Figure 3.2b.--Plotted output from the modified simulation (concluded)

(2) the desired technical education level no longer depends on the prosperity gap but on the current level of industrialization, projected forward three years to allow for expansion of the job market that current students will encounter when they emerge from school.

As Figure 3.2a and 3.2b shows, the model behaves much as before, except that:

(1) both student (S) and employed technical workers (E) increase smoothly, rather than in an oscillatory fashion;

(2) a substantial number of foreign technical workers (F) are imported to fill some of the new jobs being created, though foreigners never exceed 10% or so of the work force;

(3) population (P) increases by more than 30%.

One very interesting--and initially disconcerting--point of similarity between the two runs is the widening prosperity gap phenomenon. The second policy comes off only ever so slightly better than the first as a stimulator of national prosperity. The reason, it turns out, is that growth inevitably generates empty slots. To the extent that newly-created industries lies idle for lack of manpower, investors are hesitant to create yet more jobs. In both runs, then, prosperity growth is limited by a factor that is tightly bound up both with education and with investment in enterprise but that does not seem to respond particularly well to the manipulation of either kind of investment. Under the second policy, the nation is able to support almost half again as many people at the same prosperity level as under the first.

CHAPTER 4

CONCLUSIONS AND A PROPOSAL

Many pages ago, we noted that national educational policies in many developing countries are being influenced by conflicting and ill-formulated theories of the economic consequences of expanding technical education. Academicians argue over these theories but seem scarcely to have formulated them any better than the politicians have done. The complexity of the economic-educational system in a developing nation seems to get severely in the way of rational policy-making.

Accordingly, we set out to investigate the claim of Industrial Dynamics to be (among other things) a suitable vehicle for expressing and manipulating the logical content of complex and fuzzily-understood systems of causal hypotheses. We undertook to formulate an Industrial Dynamics model that would incorporate both the "new principle" theory by which governments have sought to justify recent great leaps forward in technical schooling and also the various theoretical insights which have moved some academicians to criticize the "new principle." Such a model now exists: we have described it in these pages, and it has some very interesting consequences.

At the end of this long theoretical exercise, what have

we learned, and where should we go from here? How does Industrial Dynamics measure up as a medium for formulating complex theories? As a medium for interdisciplinary communication? How can our model help the educational decision-maker in a developing nation? What ought to be done next, and what evidence do we have that further work would be worth the trouble?

These are all fair questions, of varying degrees of difficulty. Let us treat them one at a time.

4.1 Industrial Dynamics as a medium for formulating complex theories

The reader will have to judge for himself, based on the evidence we have presented, whether an Industrial Dynamics model is likely to fulfill his own needs for theoretical formulations. For our part, we found the process of building the model most enlightening and satisfying, from several points of view:

(1) We were able to bring together in a single theory all the diverse variables that seemed to us to be important to the causal connections between technical education and national prosperity in developing nations. At no point did we find it necessary to omit a variable merely because it would not fit conveniently into the model, or because it "belonged" to one discipline rather than to another. It may be that we have been so conditioned by our work in Industrial

Dynamics that we look only for the kinds of variables that an Industrial Dynamics model can accommodate. If all genuinely important variables fall in this category, then such conditioning is a valuable and adaptive acquisition--a distinct contribution of the approach. If, on the other hand, an Industrial Dynamics bias has led us to leave out some vital component, the burden is now on the critic to identify such a component. None of our evidence suggests the existence of any such problem.

(2) We were able to put the model variables together in ways that reflect accurately the state of our understanding of the real system. At no point did we have to devise an approximate relationship merely for the sake of a consistent formalism. We made plenty of guesses and approximations, of course, but it was always our relative ignorance, not the nature of the modelling language, that forced these on us. Whatever we knew or were willing to surmise about the system found its way into the model, if it seemed important, and the logic of the developing model obliged us on many occasions to make plausible surmises about aspects of the real system that we would gladly have passed over undetected in vernacular or jargon discussions. This is not to say that the process of formulation was easy and straightforward, nor that the first versions of many relationships survived unaltered to the present, nor that the present model is perfectly accurate and

consistent. The curious reader is invited to contact the author for a guided tour through the earlier versions of the model: it now bears little resemblance to some of its ancestors, and it is no more accurate or consistent even now than its author's current understanding of the problem. But the language rules of Industrial Dynamics have not, to our knowledge, imposed any counter-intuitive constraints on its present form.

(3) The DYNAMO simulations of the model's behavior sharpened our understanding of the logical consequences of our assumptions. Through the long process of model development, it was never quite obvious in advance how each tentative version of the model would behave: many interacting influences were at work, and we really needed the computer's memory and speed to sort them all out and see what they implied. Once the simulation was in, however, it was easy to see why the model had behaved as it had, even though the results often took initially-unexpected forms.

When we were trying to devise an investment policy that would lead to faster prosperity growth, for example, we found ourselves relying on exogenous incentives to enterprise investment. In one relatively recent version of the model, we found that we could generate any desired prosperity growth rate simply by making investment more attractive, but that the number of empty technical job slots

would then tend to increase exponentially without limit. This counterintuitive behavior called our attention to the fairly obvious fact--which had not occurred to us before--that investors are likely to hesitate to create new enterprise if much existing enterprise lies idle for lack of manpower. The "excess slot" effect variable was born, and from then on prosperity responded much less readily--and much more realistically--to attempted manipulation.

The simulated behavior of even the crudest early versions of the model thus provided ready and valuable insights into the internal logic of our developing theory. Inconsistencies such as the one we described above became evident by virtue of their consequences and were eliminated. After a long period of cycling through simulation, diagnosis, modification, and back to simulation, the model finally stopped showing us our mistakes and started behaving more as we might expect the real system to behave. It is this form of the model that we have documented in the foregoing chapters. It now embodies our limited understanding of the problem, and we can probably take it no further on our own resources, from our own point of view. Which brings us to the next question:

4.2 Industrial Dynamics as a medium for interdisciplinary communication

When a person formulates an Industrial Dynamics model, he is in a sense communicating with himself, with the DYNAMO compiler as interpreter. We have described the fruitful

experience that this communication can be, even with only one person involved. We initially undertook this effort, however, in the hope that the resulting model would provide a common ground on which experts with complementary insights could meet to combine their understandings into a single master theory, incorporating all available wisdom on our substantive topic. We saw Industrial Dynamics as a potentially effective tool for abstracting out of each contributor's idiosyncratically-presented view of the problem its pure logical content, then unifying all these contributions into a single model.

An interdisciplinary modelling effort might take one of two forms: (1) a group of experts might create the model from scratch, acting as a committee, or (2) a subcommittee of one or more members might create a first-order model, much as we have done, and submit it to the refining criticism of the larger group. Either form requires that at least one member of the group be thoroughly proficient in the application of Industrial Dynamics and that each member be at least familiar enough with the modelling language to be able to judge whether his insights are being accurately represented. The committee-of-the-whole approach requires a more uniform distribution of modelling expertise than does the subcommittee approach.

To understand what is going on in an Industrial Dynamics model demands no particularly high level of mathematical accomplishment. Beyond the simple notion that an integration

is an accumulation, one need know no calculus; Industrial Dynamics literacy really requires little or nothing beyond a reasonable grasp of high-school algebra. One may be literate in English, however, and still be unable to discuss intelligently the works of T. S. Eliot. Similarly, it requires a non-trivial effort to familiarize oneself with all the ramifications of a typically complex Industrial Dynamics model, as Chapter 6 and Appendix B should convince the reader. Extending the analogy perhaps a little too far, we may observe that many people can expound on Eliot who could not write the equal of Prufrock. Similarly, proficiency in Industrial Dynamics is much harder to come by than familiarity with it.

To realize an interdisciplinary theory through the medium of Industrial Dynamics, one must therefore present the project to the relevant experts convincingly enough that they will be persuaded to invest the necessary time (1) to become acquainted with the notation and general outlook of the approach and then (2) to participate and persevere in the long and often frustrating processes of model formulation and refinement. This done, it remains a fascinating empirical question whether those who have been trained in the less mathematical disciplines will be able to feel at home in the very numerical atmosphere of a modelling effort. It will also be interesting to see to what extent the experts will pick up the language and use it to communicate with each other across disciplinary

barriers; alternatively, of course, they might choose to pattern their interaction on the teacher-centered classroom, each dealing separately with the principal modelling expert, to the detriment of the cooperative enterprise.

4.3 The present model as a guide to policy-makers in developing nations

As we insisted as early as Chapter 2, the model is not ready to play any important role in any nation's educational planning. The most that we would dare suggest from it now is that planners might do well to distrust proposed policies whose rationale is nothing more than the "new principle" that technical education is the key to economic progress. We have displayed the implications of only two model configurations, although we have examined many others; we are aware of several areas in which the current model needs refining, and it has doubtless many flaws which will show up only in the refinement process and in subsequent experiential verification.

We have assumed, for example, that jobs and job candidates match perfectly, so that hiring always takes place as long as both jobs and people are available in sufficient quantities. There is such a thing as qualitative unemployment, though, in which skilled people cannot find work at the same time that technical jobs go begging,

because the technical schooling system has provided the people with the wrong kinds of skills. An apprenticeship system or other on-the-job training scheme probably comes closest to achieving a perfect qualitative match between job openings and candidates' skills. A technical college modelled upon a liberal-arts academic institution probably approaches the other end of the spectrum: such a school may well turn out candidates for the brain drain wholesale at the very moment when enterprise is crying for skills--other skills. Before drawing specific policy conclusions for the case of any developing nation, and most particularly before putting forth any guesses about the behavior of such a nation's future brain drain, we should insist on investigating very carefully the qualitative match between the technical skills inculcated and required in that nation.

In our modified model, furthermore, we have not yet included any consideration of what it must cost the government to institute investment incentives. If these incentives take the form of tax advantages for entrepreneurs or for the financial backers of entrepreneurs, what effects will the resulting loss of governmental revenue have upon the variables in the present model? Before making recommendations to any nation's government, we should be sure to incorporate in the model the insights of somebody with a clear understanding of that nation's economic structure.

In other words, by building our model we have not

answered once and for all every pressing question that educational planners in developing countries need to answer, nor do we claim to have done so. We have produced, on the other hand, a manipulable theory that incorporates many clearly important aspects of one real problem, and we have developed that theory just about as far as we can without major interdisciplinary assistance.

4.4 What now, and why?

If the question remains salient, and if the foregoing descriptions and discussions have convinced the interested reader of the potential power of the Industrial Dynamics approach to provide better answers than are now available, the next step is clearly to bring interdisciplinary forces to bear on the task of turning the present model into a practical planning tool. We have outlined in section 4.2 some of the practical considerations that we must take into account in undertaking an interdisciplinary theory-development project:

(1) We must identify people who know at first hand the educational-economic system of developing nations: educators, economists, governmental planners, academicians, employers, teachers, students, and what not. For the sake of easy communication, we seek the smallest group that possesses essentially all the currently-available knowledge about the system.

(2) We must secure their commitment to the project by convincing them that it has a good chance of producing progress in hitherto-intractable matters of concern to them. This will involve careful planning, to insure that the project's anticipated outcomes will strike a realistic balance among the interests of the potential participants.

(3) We must obtain funding to pay the project's expenses. The time of the kinds of people we want seldom comes free--especially at the outset, when they are likely to perceive the project as a dubious and risky enterprise--and a successful project will require a considerable time investment on the part of each participant.

(4) We must introduce them to the modelling approach, technique, and notation, if they are not already familiar with it. If we use the present version of the model for this instruction, we shall not have to teach its content separately later on.

(5) We must solicit the reactions of the participants to the model in its present form. We need especially to know in what respects it now violates their informed intuition.

(6) Finally, we must enlist their active involvement in model revision, preferably as a group. A quotation from Forrester aptly sums up both the rational and the intended results of this effort:

> . . . We need to call upon the full variety of knowledge that is available about the system. Most of our knowledge

is in the experiences and the minds of people who have observed and worked with the system. . . . Industrial dynamics models are built on the same information and evidence used for the manager's usual mental model of the management process. The power of industrial dynamics models does not come from access to better information than the manager has. Their power lies in their ability to use more of the same information and to portray more usefully its implications.[1]

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[1]Forrester, Jay W., Industrial Dynamics, (Cambridge, Massachusetts: M. I. T. Press, 1961), p.117.

Development and Evaluation of a Vocationally Oriented Educational Program for Disadvantaged Families in Depressed Rural Areas

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Increased concern has been focused recently on the disadvantaged people in our society... whether that disadvantagement be cultural, social, educational, or economic. In addition to defining these groups, attention is also given to the study of ways to help these people better their conditions... in effect, to overcome their disadvantagement, or to turn these disadvantages into advantages (e.g. Torrance, 1968). Although these deficiencies may be amenable to change in the areas of cultural and educational disadvantagement, other areas, such as the socioeconomic, yield more challenges.

The University of Illinois has been involved for some time in research in this area. Such a study is that by Fuller and Phipps (1968) who designed the development and evaluation of a project with rural disadvantaged citizens in Illinois. It is this project, with emphasis on the evaluation aspects, which will be discussed in this paper.

The purpose of the project was the development and evaluation of a vocationally oriented, family-centered educational program which would bring about increased utilization of the potential capabilities of the severely disadvantaged citizen living in economically depressed rural areas. The target group was the youth, since younger people are more open to change. In addition, it has been found that often an individual will accept the fact that he is disadvantaged, and with that acceptance comes a fatalistic attitude about any potential changes. Thus, an educational program was designed, based on the needs of rural families, to help the youth not accept, or to overcome, the fatalistic attitudes held by his parents and elders.

Note: This paper is based on a final report of a project submitted to the U.S. Office of Education entitled Development of Human Resources Through A Vocationally Oriented Educational Program for Disadvantaged Families in Depressed Rural Areas by Lloyd J. Phipps, Hollie B. Thomas, and David L. Williams. The project is commonly referred to as Project REDY (Rural Education: Disadvantaged Youth).

Paper presented at the annual meeting of the American Educational Research Association, New York, February, 1971.

Development of the Program

The characteristics and needs of severely disadvantaged families were determined through an in-depth study of these families. A review of the literature provided information about the nature of possible variables to be considered. Based on this review, instruments were selected and developed. In addition, census data were obtained and reviewed.

Data were obtained from random samples of disadvantaged families as well as the total population of families, which consisted of all the families in a single southern Illinois county. Analysis of variance and chi square were the statistical techniques used to analyze the data to determine the commonalities and differences between the families defined as severely disadvantaged and the total population. Severely socially and economically disadvantaged families were defined as those families who had an average annual income of less than $3,000, and who, in addition, were considered to be socially or economically disadvantaged by officials of state or county agencies.

This first portion of the study yielded the following characteristics of severely socially and economically disadvantaged families, as contrasted with the total population in the county (Phipps, Fuller, Williams, and Thomas, 1970):

1. Larger families.
2. Lower educational level attained by parents.
3. Lack of geographical mobility.
4. Lower educational attainment of out-of-school children, resulting in this group of children holding jobs that were temporary in nature and requiring limited skills.
5. Living in dilapidated houses that frequently lacked one or more of the normal conveniences; less than one-half had functional bathrooms.
6. Devoid of adequate home furnishings.
7. Surrounded by a yard full of trash and litter.
8. Living in remote areas.
9. Frequently unknown by the more affluent neighbors.
10. Operating some type of farm business that was poorly managed and which produced only limited family income.
11. Employed part-time off the farm.
12. Lacked business management skills necessary to operate a farm business.
13. Associates themselves with lower social classes.
14. Dissatisfied with local government.
15. Lacked general adjustment to their environment.
16. Possessed a low morale.
17. Participated less in leisure time activities.

The educational program, based upon the characteristics defined above, was designed to focus upon three manor areas: (1) determining the realistic career choices and plans for the children, (2) improving family financial management, and (3) improving the family income. Twelve teaching units were developed within these three areas. These included:

1. Understanding the high school occupational training and guidance program.
2. Identifying educational and training agencies in the community and state.
3. Helping family members establish educational and occupational goals.
4. Helping youth through community action programs.
5. Analyzing family expenditures.
6. Establishing long-range family financial goals.
7. Developing family financial plans.
8. Developing financial plans and using business and family records.
9. Adjusting family resources to increase family income.
10. Using credit wisely.
11. Utilizing community services.
12. Reviewing and revising family goals.

This educational program served as the treatment for experimentally designed evaluation.

Evaluation of the Educational Program

Evaluation of the educational program was conducted in two phases: a model phase (Thomas, Phipps, and Williams, 1970a) and an exemplary phase (Thomas, Phipps, and Williams, 1970b). Procedures for the two phases, including instrumentation, treatment, identification of the research population, and design and analyses, were similar; thus, procedures for the two phases will discussed concurrently.

Data and Instrumentation.

A battery of instruments was assembled from the standardized instruments available as well as those developed by the researchers. These instruments were chosen to collect data regarding a specific aspect of the expected outcomes of the educational program. All instruments were administered by trained interviewers during visits to the homes of families participating in the study.

The standardized instruments selected for use in the project were:

1. Community Solidarity Index Schedule by Donald R. Fessler. The mean of the total score is considered as the index of a person's opinion of the quality of the community. The scores represent the consensus of opinion between individuals living in a community regarding certain selected aspects of their community. (Fessler 1952)

2. Minnesota Survey of Opinion (Short Form) by E. A. Rundquist and R. F. Sletto. The scores obtained from this instrument provide an indication of a person's morale and general adjustment in terms of his or her present way of life in American society. (Milles 1964)
3. Sims SCI Occupational Rating Scale by Verner M. Sims. The score obtained from the scale reveals the level in the social structure of American society with which a person identifies. The scale also yields a measure of "occupational", or "social class" tolerance. (Sims 1952)
4. Wants and Satisfaction Scale by Edgar C. McVoy. The scale measures the wants of individuals and the degree to which the people feel their wants are being satisfied. (Miller 1964)
5. Your Leisure Time Activities by C. R. Pace. The instrument measures the degree to which people use and enjoy their leisure time in terms of customary leisure time activities. (Miller 1964)

It was recognized that certain family characteristics would not be identified by using only standardized instruments. Thus, the researchers developed a family data record form. The dimensions for which data were collected by employing this instrument included: (1) residence, (2) income, (3) ancestry, and (4) family.

Instruments designed to collect data related to the family situation, desires, and goals were also developed by the research staff. These instruments were:

1. Schedule I, Parental Desires for Their Children
2. Schedule II, Occupations and Organizations of Parents
3. Schedule III, Situation and Goals of Children Age Twelve and Over Living at Home
4. Schedule IV, Situation and Goals of Family
5. Schedule V, The Farm Business
6. Schedule VI, The Home and Its Surroundings

School Data

Permission was obtained from school officials to collect data from the permanent files of the cooperating schools. Forms were developed to collect the following types of data:

1. Year in school
2. Non-vocational grade point average

3. Vocational and practical arts grade point average
4. Overall grade point average
5. Number of days absent from school
6. Number of days tardy to school

Research Population

The research population included all economically and socially disadvantaged families from one and ten counties respectively for the model and exemplary phases. The definition of severely disadvantaged families was augmented by additional criteria for the purpose of delimiting the research population to the target group: the disadvantaged rural youth. The following conditions were added:

1. The family had at least one child in junior or senior high school.
2. The head of the household was 55 years of age or younger. (This age limit was exceeded if there were children in the family twelve years of age or older and in school.)
3. The family lived in a rural environment.

Procedures for the random assignment of families to treatment groups were somewhat different for the model and exemplary phases. In the model phase, 35 severely disadvantaged families from a single county were randomly selected to participate. These families were assigned to an experimental and two control groups. For the exemplary phase, ten communities, earlier identified as economically depressed, were selected to participate in the study. The ten communities were matched to form five pairs of communities on an *a priori* decision based on census data. One school in each pair was randomly assigned to receive the treatment.

The teachers of agriculture in the local schools, who acted as coordinators of the experimental programs, and the project staff who handled the control schools, identified families who fulfilled the criteria. All families so identified were randomly ordered, and contacted in order of random assignment to determine their willingness and ability to cooperate. Those designated as experimental families were asked to participate in an educational program, while those designated as the control group were asked to take part in an educational survey. The final sample included ten or more families from each of the ten communities who were willing to cooperate.

The Experimental Design

A pretest-posttest control group design was used in both the model and exemplary phases. Campbell and Stanley (1963) illustrate the design as follows:

R O_1 X O_2

R O_1 X O_2

where O represents the process of measurements or observations, X refers to the experimental treatment, and R indicates random assignment. Expanding the experimental design to include all treatment groups, the design for the model phase was:

Selection Process	Group	Pretest	Treatment	Postest
Random	1	0	X	0
Random	2	0		0
Random	3	0		0

Families in the treatment group received the model vocationally oriented, family-centered educational program. The families in the control group received no special treatment, but had the regular educational opportunities available to all citizens in the area.

The exemplary phase of the project included five replications of the educational program. However, in this phase, one control group, rather than two, was used for each of the experimental treatments. Thus, the design for this phase was as follows:

Selection Process	Communities	Pretest	Treatment	Posttest
Random	1	0	X	0
	1a	0		0
Random	2	0	X	0
	2a	0		0
Random	3	0	X	0
	3a	0		0
Random	4	0	X	0
	4a	0		0
Random	5	0	X	0
	5a	0		0

Statistical Analyses

Analysis of covariance (Winer, 1962) was used to analyze data obtained from the standardized instruments. The pretest score from each instrument was used as the covariate for the corresponding posttest score. This, in effect, held constant any initial differences so that the amount of gain could be determined. The chi square statistic (Lathrop, 1969) was used to compare the experimental and control groups to determine the extent to which the environmental and sociological variables on the posttest were functions of the educational program.

Results and Discussions

The Model Phase

The results of the model phase (Thomas, Phipps, and Williams, 1970a) served as a guide for the refinement of the educational program. Since a low number of families were involved in this phase, few significant differences or changes in patterns of behavior were obtained. However, trends were identified which indicated that the educational program has a positive effect on the participants. Specific results of this phase will not be presented here.

The Exemplary Phase

The educational program, thus refined, was subjected to an expanded evaluation (Thomas, Phipps, and Williams, 1970b) in five communities. The evaluation was based on data obtained from the various instruments. Thus, the discussion will be facilitated by discussing the results for each of the various instruments.

Morale. Raising the level of morale, the status of emotional well-being that delimits the effectiveness with which one works and reflects one's outlook on life, was considered to be a key factor in bringing socially disadvantaged families back into active societal life. Changes in the level of morale in a positive direction should increase the individuals' energetic participation and enhance his effectiveness to accomplish the task before him. Hence, a concerted effort was made as part of the experimental treatment, to change the family members' attitudes toward their own feelings of inferiority and pessimistic attitudes toward the community and environment.

The results of the treatment were reflected in a significant difference in the level of morale and general adjustment between the experimental and control group adjusted treatment means for both the total morale and the general adjustment variables. The experimental group when compared to the control group, exhibited higher morale and better adjustment. Thus, it was concluded that the

educational program had a positive effect on the family members' feelings of hopelessness and attitudes toward life and society.

Leisure time activities. The dearth of leisure time activities in which the socioeconomically disadvantaged rural family members participated and the low level of enjoyment derived from leisure time activities was identified in an earlier phase of the study. This social deprivation may have resulted from the low level of morale and feelings of inferiority exhibited by the families in the treatment groups.

After being involved in a vocationally oriented educational program, the families exhibited a significantly higher level of enjoyment from this participation. However, this result was confounded with the replications of the study as indicated by a significant interaction effect.

Community social behavior. In order to ascertain the effect of the educational program on community social behavior, pretest and posttest measures on nine scales of community solidarity were obtained. These scales were: (1) community spirit, (2) interpersonal relations, (3) family responsibility toward the community, (4) schools, (5) churches, (6) economic behavior, (7) local government, (8) tension areas, and (9) a total score. Treatment effects were significant for the scales representing the families' attitudes toward schools and local government. The experimental group exhibited a significantly better attitude toward local government. The main effects of treatment and replications were non-additive for both the schools and government scales. Thus, the treatment effect and the replication effect were confounded.

Perceived social class. It was ascertained in an earlier phase of the research that adults in severely disadvantaged rural families perceive themselves as belonging to the lower socioeconomic classes, namely: (1) upperworking, (2) working, and (3) lower working. The social class to which an individual associates himself appears to be related to his level of income. Increasing the income of the families would probably increase the socioeconomic class level to which the individual perceives he belongs.

The one year vocationally oriented educational program in which the experimental group families were involved in this study had very little effect on their perceived social class.

Deprivation. The researchers had mixed thoughts regarding the desirability

of decreasing the level of feelings of deprivation. It was theorized that if the disadvantaged families did not feel deprived they would do nothing to alleviate their situation that had been identified as being severley disadvantaged in relation to the norm of the community.

Results of the analysis of the scales of deprivation appeared to indicate a trend for the severely disadvantaged families to feel more deprived as a result of the vocationally oriented education program. Since the families in the experimental group did make significant changes in their environmental situation, the theory that changing the environmental situation is dependent upon increasing the feeling of deprivation appeared to have some basis.

School data. The possibility that children who were involved in the vocationally oriented educational program would improve their grades and attendance in school was anticipated by the researchers. However, these changes were not observable during the short duration of the experimental treatment.

Parental desires for their children. It was ascertained that the experimental group parents desired to leave their children's occupational choice up to the child whereas the control group tended to respond that they did not know what occupation they desired for their children. Significant differences in response patterns for the occupation the parents desired for their children were obtained only for the third from the oldest child.

A significant chi square value was obtained for the level of education that the parents in the treatment groups desired for their oldest child. A higher percentage of the experimental group had educational aspirations of specialized vocational and two-year college. Fewer of the experimental group parents than control group parents desired educational levels of high school or left the decision of level of education up to the child. Thus, it appears that the educational program, which encouraged parents to establish realistic educational goals for their children, had an effect on the educational aspirations of the parents for the children.

The educational program also included the establishment of realistic goals for the level of income parents desired for their children when they became adults. The level of income classification was found to be a function of the treatment group for the parents; desires for sons, but not for daughters. A higher percentage of the parents in the experimental group as compared to the control group wanted their sons to earn an income that was between $6,001 and $10,000. The control group largely did not know or did not respond to what level

of income they desired for their sons. Thus, in the opinion of the researchers, the experimental group parents had established realistic goals for their sons' annual income.

The response classification for the parental desires of the location they would like for their children to reside in when they became adults both in relation to the location of the parents' residence and the location of the residence with regard to rural or urban area were both found to be functions of the treatment group. A higher percentage of the experimental group parents left the decision of the locations of the residence up to the child as compared to the control group parents who tended to want their children to live in a rural area near them. Hence, the effect of the educational program appeared to be toward an increase in the willingness of the parents to allow their children to get away from home in order to acquire jobs which would provide an adequate living. This would decrease the limitation that parents imposed on their children thus allowing economic mobility as well as geographic mobility.

A significantly higher proportion of the experimental group parents compared to the control group parents were able to estimate the annual cost of post-secondary education for their children. A majority of the experimental group parents estimated the annual cost of post-secondary education to be between $500 and $2,000. Considering that the nature of post-secondary education would affect these costs, it appeared that these estimates were realistic.

Occupations and organizations of parents. Statistically different patterns of responses were observed for the type of occupation in which the wife was employed, new job skills acquired by the husbands, other kinds of jobs desired by the husbands, wives' participation in civic, fraternal and political organizations, and husbands' participation in job related organizations, but not for the type of occupation in which the husband was employed, new job skills acquired by wives, other kinds of jobs desired by the wives, husbands' participation in job related organizations.

The proportion of the wives who reported being employed in home economics and unemployed deviated considerably; more wives in the experimental group reported that they were unemployed. Since the researchers did not consider the possibility of the wives being unemployed as being conceivable, it was assumed that experimental group wives reported that they were unemployed because of the emphasis placed on wage earning occupations in the educational program.

More husbands in the experimental group than in the control group reported learning new agricultural and business skills, while a higher percentage of the control group reported learning no new skills.

A disproportionate number of the husbands in the experimental group wanted to obtain a different job than the one they held at the time of the posttest. This indicated to the researchers that they were more dissatisfied with their situation.

Situations and goals of children age twelve and over living at home. A disproportionate percentage of the experimental group children as compared to the control group children were employed in occupational fields of agriculture, business, industry and home economics. A higher proportion of the experimental group children were employed in agriculture and industry as compared to the control group, of which a higher percentage of the children were employed in business and home economics occupational fields.

More children in the experimental group indicated desires for a career in agriculture while a higher percentage of the control group children were undecided regarding the type of career they desired.

Children in the experimental group were able to estimate the cost of one year of post-secondary education with a higher degree of accuracy than the children in the control group. A majority of the control group were not able to give any estimate of the cost of one year of post-secondary education.

Compared to the control group, significantly higher proportions of the children in the educational program desired the rural area or small town for the location of their lifetime work. Thus, the effect of the program was to minimize the migration to the suburban and metropolitan areas.

Family situation and goals. Significant postive changes in the behavior of the adults in the experimental group as compared to the control group were observed for the variables of (1) having more family members obtain a job, (2) expanding the production of home-raised products to adjust family expenditures, (3) developing a shopping list and shopping around for good buys to adjust family expenditures, (4) keeping records of expenditures to adjust family expenditures, (5) eliminating certain items of expense to adjust family expenditures, (6) budgeting amounts spent for certain items to adjust family expenditures, (7) doing without some items to adjust family expenditures, (8) receiving services from the local school, (9) receiving services from the Office of Economic Opportunity, and (10) receiving services from the employment service.

Farm business goals. The experimental treatment appeared to have very little effect on the production goals of the farm business operators for the enterprises of corn, soybeans, swine, calves, or lambs. Approximately one-half of the families had some type of farm business.

The researchers theorized that the duration of the educational program was not long enough to allow the farm business operators to complete one production cycle and start another, thus they may have tried out better production methods, but had not had time to observe results from the improved methods.

The home environment. Significant positive changes were made by the experimental group as compared to the control group regarding the variables relating to the home and its surroundings of (1) repairing and remodeling the house, (2) obtaining better furniture, and (3) improving the condition of the yard and surroundings. Positive trends favoring the experimental group families were observed for the variable of (1) renting or buying a better or larger house, (2) obtaining a better water supply, (3) obtaining electricity for the home, and (4) obtaining a telephone for the home.

Conclusions

Conclusions that could be drawn from a study of this scope are limitless. Thus, only those conclusions that were considered to be of special significance are reported here. These conclusions are:

1. An effective family centered vocational oriented education program can be conducted by a local school teacher that will produce significant changes in the attitudes and situations of severely disadvantaged rural family members.

2. Severely disadvantaged rural families who have become isolated from society can be involved in an educational program conducted by local school personnel.

3. Teachers can and will conduct educational programs for rural disadvantaged families if adequate materials, instructions in conducting a program, and adequate support of their morale are provided.

4. Motivation of rural disadvantaged adults to mitigate their situation can be obtained by focusing attention on the future of their children.

5. Involving severely disadvantaged families in a vocationally oriented educational program significantly improves the morale of family members.

6. Improving disadvantaged family members' outlook on life, their morale, results in the improvements in the physical environmental condition of the home and its surroundings.

7. The aspirations of parents in severely disadvantaged rural families can be effected by involving them in a vocationally oriented educational program.

8. Significant progress toward bringing disadvantaged families back into the mainstream of society can be made during a one year educational program.

9. Both parents and children can be caused to recognize that education and vocational training are means of alleviating their disadvantaged situation.

10. Involving the entire family in a vocationally oriented program designed to develop the capabilities of youth is an effective way of obtaining desired changes in the attitudes and aspirations of children and gaining family support for children's desires.

Bibliography

Campbell, Donald T. and Julian C. Stanley. "Experimental and Quasi-Experimental Design for Research on Teaching", In Handbook of Research on Teaching. Chicago: Rand McNally and Company, 1963.

Fessler, Donald R. "The Development of a Scale for Measuring Community Solidarity", Rural Sociology, Vol 17, 1952, pp. 144-52.

Fuller, Gerald R. and Lloyd J. Phipps. Development of Human Resources Through a Vocationally Oriented Educational Program for Disadvantaged Families in Depressed Rural Areas. Interim Report No.1. Urbana, Illinois: Vocational and Technical Education Department, University of Illinois, September 1968a, 34 pp.

Fuller, Gerald R. and Lloyd J. Phipps. Development of Human Resources Through a Vocationally Oriented Educational Program for Disadvantaged Families in Depressed Rural Areas. Intermin Report No. 2. Urbana, Illinois: Vocational and Technical Education Department, University of Illinois, September 1968b, 13 pp.

Fuller, Gerald R. and Lloyd J. Phipps. Degree to Which Families Are Satisfied With Selected Aspects of Family Life in an Economically Depressed Rural Area. Interim Report No. 3. Urbana, Illinois: Vocational and Technical Education Department, University of Illinois, September 1968c, 18 pp.

Lathrop, Richard G. Introduction to Psychological Research - Logic, Design, and Analysis. New York: Harper and Row, 1969.

Miller, Delbert C. Handbook of Research Design and Social Measurement. New York: David McKay Company, 1964.

Phipps, Lloyd J. Leisure Time Activities of Families in an Economically Depressed Rural Area. Interim Report No. 5. Urbana, Illinois: Vocational and Technical Education Department, University of Illinois, April 1970, 14pp.

Phipps, Lloyd J., Gerald R. Fuller, David L. Williams, and Hollie B. Thomas Socioeconomic Aspects of Family Life in a Depressed Rural Area. A Research Report. Vocational and Technical Education Department, University of Illinois, July 1970, 58 pp.

Phipps, Lloyd J., Hollie B. Thomas and David L. Williams. A Family Centered Vocationally Oriented Educational Program for Disadvantaged Families in Depressed Rural Areas. An U. S. Office of Educational Final Research Report. Urbana, Illinois: Vocational and Technical Education Department, University of Illinois, June 1970a 650 pp.

Phipps, Lloyd J., David L. Williams, and Hollie B. Thomas. A Family Centered Vocationally Oriented Educational Program for Disadvantaged Families in Depressed Rural Areas. Intermin Report No. 7. Urbana, Illinoia: Vocational and Technical Education Department, University of Illinois, April 1970, 287 pp.

Sims, Verner M. Sims SCI Occupational Rating Scale Manual of Directions. New York: Harcourt, Brace, and World, 1952.

Thomas, Hollie B. Morale of Families in an Economically Depressed Rural Area. Interim Report No. 6. Urbana, Illinois: Vocational and Technical Education Department, University of Illinois, April 1970, 12 pp.

Thomas, Hollie B., Lloyd J. Phipps, and David L. Williams. Educational Program Development for the Rural Disadvantaged. A Research Report. Urbana, Illinois: Vocational and Technical Education Department, University of Illinois, July 1970a, 51 pp.

Thomas, Hollie B., Lloyd J. Phipps, and David L. Williams. Evaluation of an Educational Program for the Rural Disadvantaged. A Research Report. Urbana, Illinois: Vocational and Technical Education Department, University of Illinois, July 1970b, 106 pp.

Torrance, E. P. "Finding Hidden Talents Among Disadvantaged Children" Gifted Child Quarterly, 1968, 12, 131-137.

Williams, David L. Community Social Behavior of Families in an Economically Depressed Rural Area. Intermin Report No. 4. Urbana, Illinois: Vocational and Technical Education Department, University of Illinois, April 1970, 12pp.

Williams, David L., Lloyd J. Phipps, and Hollie B. Thomas. Characteristics of Disadvantaged Families Residing in Depressed Rural Areas. A Research Report. Urbana, Illinois: Vocational and Technical Education Department, University of Illinois, July 1970a, 43 pp.

Williams, David L., Lloyd J. Phipps, and Hollie B. Thomas. Education for the Rural Disadvantaged: Summary of Findings and Conclusions of an Experimental Study. A Research Report. Urbana, Illinois: Vocational and Technical Education Department, University of Illinois, July 1970b, 37 pp.

Winer, B. J. Statistical Principles in Experimental Design. New York: McGraw-Hill, 1962.

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AN APPRAISAL OF TRADITIONAL AND SELECTED MULTI-UNIT DRIVER EDUCATION COURSES.

SAN DIEGO COUNTY DEPT. OF EDUCATION, CALIF.
CALIFORNIA STATE OFFICE OF TRAFFIC SAFETY, SACRAMENTO
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DESCRIPTORS - *DRIVER EDUCATION; *PROGRAM EVALUATION; *EDUCATIONAL IMPROVEMENT; *EXPENDITURE PER STUDENT; CURRICULUM DEVELOPMENT; COMPARATIVE ANALYSIS; *TEACHING METHODS; SIMULATION; *TEACHING TECHNIQUES; MULTIMEDIA INSTRUCTION

ABSTRACT - TWO TRADITIONAL TYPES OF DRIVER EDUCATION COURSES WERE COMPARED WITH EACH OF FIVE TYPES OF MULTI-UNIT COURSES. IN ADDITION TO AN EXAMINATION OF COST FACTORS, THE INVESTIGATION SOUGHT TO IDENTIFY POSSIBLE CONTRIBUTIONS OF SPECIFIC INSTRUCTIONAL UNITS AND CERTAIN COMBINATIONS THEREOF AS MEASURED BY A DRIVING KNOWLEDGE-OPINION TEST AND A ROAD PERFORMANCE TEST. USING A DRIVING KNOWLEDGE-OPINION SCALE DEVELOPED AS A PART OF THE PROJECT, 315 STUDENTS WERE EXAMINED ON A PRE-AND POSTTEST BASIS. IN ADDITION, THE MCGLADE ROAD TEST WAS ADMINISTERED UPON COMPLETION OF INSTRUCTION. FOR EACH OF THE SEVEN GROUPS, POSTTEST SCORES ON THE DRIVING KNOWLEDGE-OPINION EXAMINATION WERE SIGNIFICANTLY BETTER THAN PRETEST SCORES. MEANINGFUL COURSE CONTENT WAS PRESENTED IN EACH OF THE SEVEN TYPES OF COURSES AS EVIDENCED BY A LACK OF SIGNIFICANT DIFFERENCES AMONG POSTTEST SCORES. IN REGARD TO ROAD PERFORMANCE, NEARLY EVERY MULTI-UNIT COURSE WAS SIGNIFICANTLY SUPERIOR TO THE TWO TRADITIONAL-TYPE COURSES. IT WAS CONCLUDED, THEREFORE, THAT ALMOST ANY ONE OF ANY COMBINATION OF SIMULATION, OFFSTREET MULTIPLE-CAR DRIVING RANGE, AND MULTIMEDIA UNITS CAN FORM A VALUABLE SUPPLEMENT TO CLASSWORK AND ONSTREET PRACTICE. ALTHOUGH EXPANDED TIME ALLOTMENT AND EXPENDITURE OF SUBSTANTIAL AMOUNTS OF MONEY ARE INVOLVED, MULTI-UNIT COURSES CAN BE PROVIDED AT A LOWER COST LEVEL PER STUDENT THAN THE TRADITIONAL TYPE OF COURSE, DUE TO IMPROVED TEACHER-PUPIL RATIOS. (AUTHOR/BH)

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AN APPRAISAL OF TRADITIONAL AND SELECTED MULTI-UNIT DRIVER EDUCATION COURSES

SUPERINTENDENT OF SCHOOLS
DEPARTMENT OF EDUCATION
SAN DIEGO COUNTY

VT014673

AN APPRAISAL OF TRADITIONAL AND SELECTED MULTI-UNIT DRIVER EDUCATION COURSES

by

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ABSTRACT

Two traditional types of driver education courses were compared with each of five types of multi-unit courses. In addition to an examination of cost factors, the investigation sought to identify possible contributions of specific instructional units and certain combinations thereof as measured by a driving knowledge-opinion test and a road performance test.

The study population was composed of sophomore students who desired to receive driver education during a given semester at a centrally located high school in San Diego County, California. From a potential of 600 students, 315 were assigned at random to each of seven types of courses. The random assignment was stratified to assure balance for (1) number of males and females and (2) academic performance.

Five of the seven types of courses were of a multi-unit nature. One of the remaining two consisted of 30 hours of classroom instruction with six hours per student of behind-the-wheel onstreet experience. The second varied only to the extent that three instead of six hours of behind-the-wheel experience were provided.

Using a driving knowledge-opinion scale developed as a part of the project, students were examined on a pre and post-test basis. In addition, the McGlade Road Test was administered upon completion of instruction. Analysis of variance was applied to scores made by students in each of the seven instructional treatment groups to test null hypotheses that no main effects or interactions were significant at the .01 level.

For each of the seven groups, post-test scores on the driving knowledge-opinion examination were significantly better than pre-test scores. Meaningful course content was presented in each of the seven types of courses as evidenced by a lack of significant differences among post-test scores. In regard to road performance, every multi-unit course was significantly superior to the two traditional type courses with the exception that there was no significant difference between an instructional treatment composed of classwork, electronic simulation, and onstreet practice and one composed of 30 hours of classwork plus six hours per student of behind-the-wheel onstreet experience.

It was concluded, therefore, that almost any one or any combination of simulation, offstreet multiple car driving range, and multimedia units can form a valuable supplement to classwork and onstreet practice. Although expanded time allotment and expenditure of substantial amounts of money are involved, multi-unit courses can be provided at a lower cost level per student than for the traditional type of course. This is due to improved teacher-pupil ratios.

The primary recommendation is that decision-making school administrators, curriculum specialists, and legislators give every consideration to adoption of the multi-unit approach to improvement of high school driver education.

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CHAPTER I

INTRODUCTION

Background

During the past half century, school systems in California have been encouraged to accept responsibility for driver and safety education. As early as 1929, for example, the California Education Code required that safety education be a part of instruction in elementary and secondary schools. Another noteworthy event occurred in 1949 when the State legislature established enrollment in the classroom phase of driver education as a prerequisite to graduation from high school. This action was followed in 1953 with an enactment which provided school systems with financial support for the laboratory phase of driver education as an optional supplement to the classroom phase. Then in 1967 successful completion of both classroom and laboratory instruction was established as a prerequisite to licensing of drivers under 18 years of age. Supportive legislation alone, however, was not enough to assure that all safety education programs within California school systems would demonstrate the quantitative-qualitative earmarks that are in conformance with an ever-increasing need.

In regard to school safety education, as it applies to kindergarten through grade twelve, a variety of worthwhile activities could be cited. Yet, on a statewide basis, it is not claimed that a coordinated approach of maximum effectiveness has been instituted. Likewise, while high school driver education (classroom and laboratory phases) has received legislative support over the years, the effectiveness of many ongoing courses has been questioned by representatives from the state legislature as well as by some traffic safety officials and school administrators. In a report to Governor Edmund G. Brown, in 1966, the California Traffic Safety Coordinating Committee stated as follows:

> "Among several factors accounting for the program status, the following stand out: (1) variability in the nature of instruction from place to place, (2) insufficient qualified teachers, (3) funding which, while substantial, falls short of the amount needed to reach the stated goals, and (4) lack of carefully researched information as to the most effective content, most effective teaching methods, and what the results are in specific relation to the content and methods.
>
> "The Committee recommends that the next steps with respect to the education and training of vehicle drivers be as follows: (1) thoroughgoing restudy of the elements of

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promising programs now in effect; in this connection, the present variability among California programs might provide opportunity for making comparisons to identify effective program elements, although not to the exclusion of evaluations of other kinds; (2) adoption, through legislative expression, of policies and guidelines which would bring the total statewide effort to a new level of effectiveness, and yet provide flexibility for further experimentation and adjustment to the needs and characteristics of the different parts of the State; (3) fixing of responsibility so as to assure effective execution of the program decided on; and (4) providing a source and amount of funds appropriate to the character and scope of the program adopted, and sufficient to secure maximum returns on the basic investment."[1]

The Committee's statement stressed the need for a continuing study to discover better ways of producing improved street and highway performers through high school driver education.

At the Federal level, Title 23, United States Code, which was enacted as the Highway Safety Act of 1966, gave further credence to the need for change in driver education. The wording contained in the law, in the accompanying reports, and in the standard on driver education with its advisory volume on the subject not only implied that a change should take place but gave direction for such program modification.

Title 23, United States Code, left no doubt as to the desire of Congress. Driver education was to be an integral part of effective highway safety programs in every State. The section on driver education stated that:

"The Secretary shall not approve any State highway safety program...which does not...provide for comprehensive driver training programs, including...the initiation of a State program for driver education in the school systems or for a significant expansion and improvement of such a program already in existence...the training of qualified school instructors and their certification...and...adequate research, development and procurement of practice driving facilities, simulators, and other similar teaching aids..."[2]

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[1] California Traffic Safety Coordinating Committee, California's Traffic Safety Strategy (Sacramento: Office of the Governor, October 1966), p. 27.

[2] National Highway Safety Bureau, Highway Safety Program Manual, Vol. 4, Driver Education (Washington: National Highway Safety Bureau, Department of Transportation, January, 1969), p. 1.

The standard on driver education, released to the States during June, 1967, required that each make driver education available "to all youths of licensing age."[1] Beyond this definite requirement, the standard permitted States to set many of their own regulations. The Volume on Driver Education, contained in the National Highway Safety Bureau's Highway Safety Program Manual, gave specific suggestions for the interpretation of the Federal law's wording and intent and its standard on driver education. Specific recommended minimums were provided for objectives, course content, supervision of instruction, preparation and certification of teachers, time allotment and course structure, and eligibility for enrollment.

Project Description

The ongoing driver education program in San Diego County was no exception to the program limitations implied in State and Federal documents. During the 1968-69 school year, only 70 percent of eligible students were enrolled in a complete driver education course. Moreover, many questions have been raised in regard to program quality.

Developments called for a new approach so that San Diego County could move more rapidly toward the goal of an expanded and improved driver education program to serve as a model for California. With support from the California Office of Traffic Safety and the National Highway Safety Bureau, progress toward attainment of this goal was accomplished through the establishment of a model program in a centrally located high school. The location was designed to serve as a hub for inservice education of teachers throughout the county and as a site where school administrators, curriculum specialists, school trustees, and traffic officials could observe and adopt components of an effective action program.

An intent of establishing a multi-unit type of driver education program was to show that improved classroom and laboratory instruction could be received by a higher than normal percentage of learners at a reasonable per student cost. The conjecture was that observation and study by decision-makers from the field of education would result in widespread recognition of the values to be derived from improved courses. Other schools, throughout California, would tend to find means for driver education course improvement based on the demonstrated pattern.

Another intent was that the experience could form a basis for improved instruction of adult beginners, refresher courses for experienced

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[1] National Highway Safety Bureau, op. cit., p. A-1.

drivers, school bus driver training, and driver improvement courses for collision repeaters and chronic traffic law violators.

During early planning, a review of research and field experience revealed that a multi-unit course was the most progressive type of driver education course in existence.[1] With some values proved, a decision was made that the project's "ideal" course would include the minimum time allotment shown for each of the following phases:

		Clock Hours
1.	Classroom unit	30
2.	Multimedia unit	15
3.	Simulator unit	12
4.	Offstreet multiple car driving range unit	6
5.	Onstreet behind-the-wheel practice driving unit	3
6.	In-car observation unit	3

Each of the units was to be scheduled concurrently during one semester. This was in compliance with the highest recommendations contained in the Highway Safety Program Manual's Volume on Driver Education, developed through the National Highway Safety Bureau.

Using varied methods of instruction, an attempt was made to present the content outlined in the Bureau's standard on driver education. As a supplement to 30 clock hours of classroom instruction, plans called for enriched student experience through the use of a multimedia system. The combination of multimedia hardware and software would permit teachers to establish favorable tutorial relationships with student groups through the use of movies, slides, and filmstrips in conjunction with a student response system. The system would utilize magnetic tape in presenting selected audio material and in controlling video presentations. A student response recorder was to be used by teachers to register instant response of individuals and groups to queries. It was concluded that the constant evaluation opportunity would encourage teachers to use creativity in providing students with both knowledge and understanding of human behaviors that are essential to efficiency within the highway transportation system and, at the same time, would enable students to acquire critical knowledge pertaining to ongoing highway safety programs.

A feature of the work plan was that a special series of 15 software instructional units was to be developed for presentation in a multimedia laboratory. Each programmed lesson, covering from 20 to 30 minutes of instructional time, would consist of a combination of sound-color motion films, slide presentations, and evaluation items coordinated by magnetic

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[1] Charles E. McDaniel, A Study of the Relative Effectiveness of Selected Laboratory and Classroom Programs in Driver and Traffic Safety Education (Olympia, Washington: Office of Superintendent of Public Instruction, August, 1969), pp. 19-52.

tape. With content "tailor-made" for conditions in California, the central purpose of driver education as stated in the NHSB Highway Safety Program Manual's Volume on Driver Education would serve as the foundational concept for development of subject matter and presentation techniques.

Another key instructional unit would make use of electronic simulation equipment. Simulators have been used by more than 1,000 high schools in at least 40 states as an integral part of high school driver education.[1] Because learners, through this medium, can be exposed to an unlimited number of traffic experiences and can be equipped to respond correctly to common and unusual emergency situations, the value of simulation as an adjunct to onstreet practice has been well-established. The system emphasizes recorded student response to audio-visual presentations while students are seated in a simulated auto compartment. For these reasons, simulator experiences were considered to be essential in program planning for the model driver education program.

Although seldom applied to driver education programs in California, early planners recognized that an offstreet multiple car driving range affords up to twelve students (in separate practice driving vehicles) an opportunity to learn the fundamental operating skills and to practice decision-making processes under the leadership and direction of one teacher (See Figure 1). Backed by research evidence from many sections of the nation, this facet of the multi-unit course appears to increase the efficiency of driver education by improving the teacher-pupil ratio and by building confidence and self-reliance among student learners.

With student experience in regular classroom and multimedia units supplemented by experience in a simulator laboratory and on an offstreet multiple car driving range, it was decided that the onstreet unit of instruction would concentrate on acquirement of advanced operational skills rather than development of fundamentals.

The project time schedule was as follows:

> July 1, 1969 - January 20, 1970 -- Program planning time for (1) procurement of equipment, facilities, materials, and personnel; (2) development of detailed plans; and (3) preparation of personnel.
>
> January 21, 1970 - June 30, 1970 -- Presentation of a variety of types of courses to randomly assigned students to demonstrate the cost-effectiveness of specific program components and combinations thereof.

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[1] Insurance Institute for Highway Safety, 21st Annual Driver Education Achievement Program (Washington, Insurance Institute for Highway Safety, 1968).

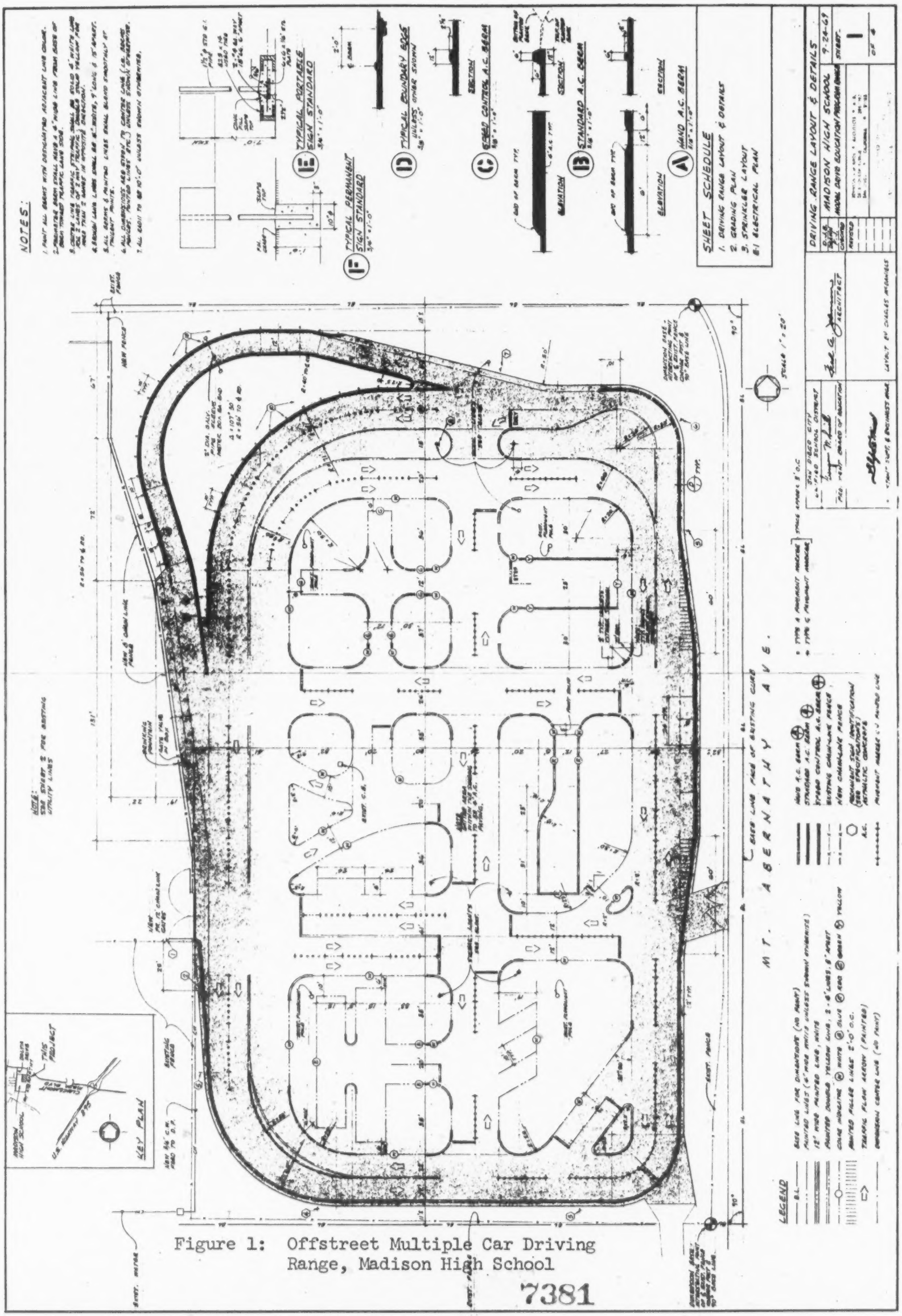

Figure 1: Offstreet Multiple Car Driving Range, Madison High School

July 1, 1970 - August 31, 1970 -- Development of final plans for model program implementation.

September 1, 1970 - June 30, 1971 -- Implementation of the model course including initation of activities related to inservice experiences for teachers from San Diego County and interpretation of the program to concerned school officials.

The foregoing description forms a background for the following pages which report on the project's evaluation phase.

The Problem

This study sought to compare a traditional driver education course with each of several types of multi-unit courses to shed light on contributions of specific units of instruction and certain combinations thereof as measured by written tests and a road performance examination. A second purpose was to examine cost factors of various types of courses.

Such comparisons required a satisfactory completion of certain tasks. These included the following:

1. Locating a group of high school students who were slated to receive a traditional driver education course in a school which had the essential facilities for program development and installation.

2. Selecting a location with available study subjects who would be somewhat representative of the beginning driver population of California.

3. Creating a study design that would result in meaningful findings yet remain within the limitations of available funds, personnel, equipment, and facilities.

4. Developing and selecting appropriate measurement instruments and executing sound procedures for collecting the data.

5. Providing a teaching staff that would be considered typical of available professional driver education personnel.

6. Developing among selected teachers the competencies needed to implement the newer innovative approaches to driver education.

7. Designing, constructing, and installing the necessary facilities and equipment with due consideration to special problems arising from the site selection.

8. Standardizing course content to assure that basic concepts would be an integral part of each instructional treatment.

9. Developing an acceptable system for assigning students to each instructional treatment group so that the probability would be high that comparison groups would be balanced for factors which could influence the results.

10. Reducing the teacher variable by appropriate assignment and scheduling procedures.

11. Analyzing and interpreting the data.

12. Determining an acceptable procedure for comparing the cost of various types of driver education courses.

Definitions

Achievement Scale on Motor Vehicle Transportation.--An evaluation instrument developed by the Department of Education, San Diego County, California, to measure the effectiveness of various types of driver education courses. The multiple-choice test consisted of three sections. The first section dealt with driving knowledge as it related to vehicular movement, the second section covered general traffic knowledge, and the third section consisted of attitude-slanted opinion items. Content validity and desirable responses were determined by a selected group of fifty traffic authorities. Reliability for the Achievement Scale on Motor Vehicle Transportation and each of its three sections was based on the test-retest procedure. With a five-month interval, achievement scores made by a random sample of 315 sophomore students were compared. The students were enrolled in driver education at James Madison High School, San Diego, California, during the second semester of the 1969-70 school year. Reliability coefficients were as follows:

Section 1	Section 2	Section 3	Total Test
.82	.82	.80	.83

Curricular or content validity of the scale and its sections was considered to be the extent to which the profile of test items reflected the wording and intent of the central purpose of driver education as promulgated by the National Highway Safety Bureau. Selected driving knowledge and attitude-related items were based on a thorough review of literature. A panel of fifty traffic authorities was utilized to refine the total evaluation instrument and each of its sections.

Achievement Score.--A number representing correct items on a specific section of the "Achievement Scale on Motor Vehicle Transportation" or on one of the battery of three sections. The term is also applied to the road performance test.

Central Purpose.--A statement of what driver education aimed to provide for course enrollees. The central purpose of instructional treatments involved in this report was to provide meaningful psychomotor, cognitive, and affective learning experiences designed to enable individuals and groups to apply safer and more efficient performance standards within the traffic environment and to contribute to safety and efficiency within the total highway transportation system.

Class Hour.--A scheduled instructional period consisting of 50 minutes.

Classroom Phase.--Learning experiences provided for groups of students in a classroom environment. In this project, the classroom phase consisted of either the regular classroom unit or the regular classroom unit plus one of two multimedia units.

Clock Hour.--Sixty minutes.

Complete Course.--A driver education course consisting of both classroom and laboratory phases.

Driver Education.--An identifiable course consisting of classroom and laboratory phases with content and approaches that were in conformance with the central purpose recorded in this chapter.

Dual Control.--An extra brake pedal for use by a driver education teacher or passenger during an emergency situation.

Eligible Student.--A youth between 15½ and 18 years of age who had not been enrolled in a driver education course as defined in this chapter.

Electronic Simulation Unit.--A learning module in driver education which made use of color-motion films in conjunction with electro-mechanical devices that represented the driver compartment of a motor vehicle.

In-Car Observation.--Student experience in the onstreet unit exclusive of actual driving time.

Inservice Education.--Experiences provided for teachers of driver education designed to equip them with competencies that were considered essential to improved instruction.

Instructional Treatment.--A type of driver education course composed of various combinations of units. For example, in this report, one instructional treatment consisted of the regular classroom unit plus the onstreet unit while another consisted of regular classroom, electronic simulation, multimedia, offstreet multiple car driving range, and onstreet units. A total of seven instructional treatments were involved.

Laboratory Phase.--An extension of the classroom phase which enabled students to perform driving tasks under actual or simulated conditions.

Model Driver Education Program.--A cooperative project involving the Department of Education, San Diego County, and the San Diego Unified School District with financial support from the California Office of Traffic Safety and the National Highway Safety Bureau. Located at Madison High School, 4833 Doliva Drive, San Diego, the project's intent was to develop, implement, evaluate, and demonstrate the best type of driver education course known at the time of concern.

Multimedia Unit.--A semiautomated program utilizing a combination of media such as motion pictures, slides, and film strips with control provided by magnetic tape. A feature of the unit was that, through electronic recording of student responses to audio-visual queries, teachers had an immediate readout on student performance. In this report, a software package used on a nationwide basis was compared with a new software package developed in California.

Multi-Unit Course.--A complete driver education course composed of units in excess of the regular classroom unit and the onstreet unit. In this report, for certain instructional treatments, the classroom phase consisted of the traditional classroom unit and a multimedia unit. The laboratory phase consisted of a simulator unit, an offstreet multiple car driving range unit, and an onstreet unit.

National Highway Safety Bureau.--An agency of the Federal government charged with responsibility for carrying out the wording and intent of Title 23, United States Code.

Office of Traffic Safety.--An agency of the California government charged with carrying out the wording and intent of Title 23, United States Code, with emphasis on development and implementation of a comprehensive highway safety program.

Offstreet Multiple Car Driving Range Unit.--Learning experiences provided for students on a hard-surfaced area on which eight to twelve student-operated automobiles were used simultaneously under the direct supervision of one driver education teacher. The area included space for development of operational skills; multiple-lane traffic; two-way traffic; various types of intersections, signs, signals, lane markings, and curves; expressway acceleration and deceleration lanes; and parking. A communication system utilizing AM radio enabled the teacher to give instructions to students.

Onstreet Unit.--Students received experience in the operation of a dual-control practice driving car on public streets and highways under the direction of a certificated teacher of driver education, seated to the student driver's right.

Performance Objectives.--Applicable to an entire course or a phase or unit contained therein, performance objectives covered the intent of the central purpose, described expected specific outcomes of an instructional

treatment, made use of phases that were open to a limited number of interpretations, covered a narrow area of terminal behavior, and identified certain behaviors that were to be accepted as satisfactory performance.

Regular Classroom Unit.--Thirty clock hours of group instruction in a classroom environment. Content included coverage of topics such as laws and regulations, characteristics of drivers, highway transportation problems, role of government, and traffic citizenship.

Road Performance Test.--A road test, with acceptable validity and reliability, used to determine the level of student performance while operating a motor vehicle under actual traffic conditions.

Semester.--One-half of a regular school year with schedule time for each period of the day amounting to about 90 class hours.

Software.--Instructional programs composed of films, slides, filmstrips, overhead projector transparencies, tapes, or a combination thereof for use with appropriate equipment or hardware.

Title 23, United States Code.--The Highway Safety Act of 1966 enacted by the 89th Congress of the United States.

Traditional Course.--An instructional treatment composed of 30 clock hours in the regular classroom unit plus 6 clock hours per student of actual driving experience in the onstreet unit.

Hypotheses

1. In regard to a pre-test on driving knowledge as it related to vehicular movement, no difference would exist among mean achievement scores made by students randomly assigned to seven driver education instructional treatments.

   H_0: $M_1 = M_2 = M_3 = M_4 = M_5 = M_6 = M_7$

   H_1: A significant difference would exist between mean achievement scores made by two or more of the instructional treatment groups.

2. In regard to a pre-test on traffic knowledge as it related to highway transportation other than vehicular movement, no difference would exist among mean achievement scores made by students randomly assigned to seven driver education instructional treatments.

   H_0: $M_1 = M_2 = M_3 = M_4 = M_5 = M_6 = M_7$

   H_1: A significant difference would exist between mean achievement scores made by two or more of the instructional treatment groups.

3. In regard to a pre-test on attitude-related traffic opinions, no difference would exist among mean achievement scores made by students randomly assigned to seven driver education instructional treatments.

   H_0: $M_1 = M_2 = M_3 = M_4 = M_5 = M_6 = M_7$

   H_1: A significant difference would exist between mean achievement scores made by two or more of the instructional treatment groups.

4. In regard to a pre-test on driving knowledge as it related to vehicular movement, traffic knowledge as it related to highway transportation other than vehicular movement, and attitude-related traffic opinion, no difference would exist among the mean achievement scores made by students randomly assigned to seven driver education instructional treatments.

   H_0: $M_1 = M_2 = M_3 = M_4 = M_5 = M_6 = M_7$

   H_1: A significant difference would exist between mean achievement scores made by two or more of the instructional treatment groups.

5. In regard to a post-test on driving knowledge as it related to vehicular movement, no difference would exist among the mean achievement scores made by students randomly assigned to seven driver education instructional treatments.

   H_0: $M_1 = M_2 = M_3 = M_4 = M_5 = M_6 = M_7$

   H_1: A significant difference would exist between mean achievement scores made by two or more of the instructional treatment groups.

6. In regard to a post-test on traffic knowledge as it related to highway transportation other than vehicular movement, no difference would exist among mean achievement scores made by students randomly assigned to seven driver education instructional treatments.

   H_0: $M_1 = M_2 = M_3 = M_4 = M_5 = M_6 = M_7$

   H_1: A significant difference would exist between mean achievement scores made by two or more of the instructional treatment groups.

7. In regard to a post-test on attitude-related traffic opinions, no difference would exist among mean achievement scores made by students randomly assigned to seven driver education instructional treatments.

H_0: $M_1 = M_2 = M_3 = M_4 = M_5 = M_6 = M_7$

H_1: A significant difference would exist between mean achievement scores made by two or more of the instructional treatment groups.

8. In regard to a post-test on driving knowledge as it related to vehicular movement, traffic knowledge as it relates to highway transportation other than vehicular movement, and attitude-related traffic opinion, no difference would exist among the mean achievement scores made by students randomly assigned to seven driver education instructional treatments.

H_0: $M_1 = M_2 = M_3 = M_4 = M_5 = M_6 = M_7$

H_1: A significant difference would exist between mean achievement scores made by two or more of the instructional treatment groups.

9. In regard to a post-test on road performance, no difference would exist among the mean achievement scores made by students randomly assigned to seven driver education instructional treatments.

H_0: $M_1 = M_2 = M_3 = M_4 = M_5 = M_6 = M_7$

H_1: A significant difference would exist between mean achievement scores made by two or more of the instructional treatment groups.

10. In regard to student groups completing seven types of instructional treatments, pre-test mean achievement scores on an "Achievement Scale on Motor Vehicle Transportation" and each of its three sections would be equal to mean post-test achievement scores on the same scale.

H_0: $M_{a1} = M_{a2}$; $M_{b1} = M_{b2}$; $M_{c1} = M_{c2}$;

$M_{d1} = M_{d2}$; $M_{e1} = M_{e2}$; $M_{f1} = M_{f2}$;

$M_{g1} = M_{g2}$.

H_1: $M_{a1} < M_{a2}$; $M_{b1} < M_{b2}$; $M_{c1} < M_{c2}$;

$M_{d1} < M_{d2}$; $M_{e1} < M_{e2}$; $M_{f1} < M_{f2}$;

$M_{g1} < M_{g2}$.

Basic Assumptions

1. The "Achievement Scale on Motor Vehicle Transportation" was a valid and reliable instrument for measurement of driving knowledge and traffic attitude-opinion.

2. The McGlade Road Test was a valid and reliable instrument for determining the level of driving performance under test conditions.

3. The procedure of random assignment of students to testing personnel and special preparation of testing personnel were sufficient to produce standardization of application of testing instruments.

4. Use of an adopted course of study based on performance objectives, the inservice education for teachers, and the method of assignment of teachers among the various instructional units were adequate to assure a desirable degree of standardization of instruction.

5. Mean achievement scores on the "Achievement Scale on Motor Vehicle Transportation" and the McGlade Road Test were an acceptable measure of quality instruction.

6. Random assignment of students, with guaranteed balance for sex and grade point average, was sufficient to assure that the seven comparison groups were balanced in regard to factors which might have affected the results.

Delimitations

This investigation was confined to the total enrollment in driver education from the sophomore class at Madison High School, 4833 Doliva Drive, San Diego, California, during the second semester of the 1969-70 school year. The relative merit of seven types of driver education courses was gauged by achievement scores made on (1) a written multiple choice test on motor vehicle transportation with sections covering knowledge of vehicular movement, knowledge of traffic safety in general, and traffic attitude-related opinions and (2) a road performance examination administered by teachers. The conclusions, therefore, were based on test evidence regarding highway safety knowledge and attitude-opinion as well as ability to perform under actual conditions immediately after completing a driver education course.

Significance

The increasing need for improved human performance within the highway transportation system has encouraged boards of education, school administrators, legislators, and community leaders to explore newer innovative approaches to improve the effectiveness of driver education among the school systems. With backing from highway and traffic engineers, police traffic supervisors, court personnel, license examiners, and traffic safety officials, repeated examinations have been made of the school curriculum with more and better traffic safety education as a goal. All

too often, progress has not been made because of financial barriers, shortage of prepared personnel, lack of understanding of new approaches, scheduling difficulties, and lack of research-proved content and teaching approaches. Regardless, such formidable obstacles have not erased the increasing need for providing every beginning motor vehicle operator with an opportunity to enroll in a driver education course that would enable individuals to perform at an optimum level under all traffic and roadway conditions as well as to understand and appreciate constructive efforts designed to improve the efficiency of the system. The direction for program expansion and improvement was made clear in Title 23, United States Code by its reference to the proper utilization of "practice driving facilities, simulators, and other similar teaching aids...."

Numerous reports on field experience as well as research investigations have presented evidence that comprehensive driver education courses, built around regular classroom, multimedia, electronic simulation, off-street multiple car driving range, and onstreet units, have contributed to both the quantitative and qualitative aspects of driver education, in California and elsewhere. However, many decision-making legislators, school administrators, and curriculum specialists have not been convinced of the values to be derived from instructional units such as multimedia, electronic simulation, and offstreet multiple car driving ranges. Thus, additional investigative assessment of these innovative approaches has been deemed desirable.

CHAPTER II

REVIEW OF LITERATURE

Initiation of the evaluative action represented by this report was prompted, in part, by previous experience in the conduct of related studies by the principal investigators. In 1966, Seals completed a doctoral dissertation at Florida State University in which three types of multi-unit driver education courses were compared with a traditional type of course.[1] In 1969, McDaniel investigated multi-unit courses in the State of Washington.[2] While in both instances multi-unit courses, in general, were shown to be superior to the traditional type of course, certain differences appeared in the results. The differences included varying outcomes of specific types of instructional treatments. The differences, backed by previous work in the field, pointed toward the need for further investigation in other geographical areas. In both the 1966 and 1969 studies, it was recognized that development of new evaluation instruments was of primary importance.

Prior to the separate studies by Seals and McDaniel, a considerable number of investigations dealt with the multi-unit approach. One of the more comprehensive studies was a comparison of a course in Pennsylvania which included a simulator unit in addition to regular classwork and reduced amounts of onstreet experience with the traditional type of course. The study resulted in the following major conclusions:

1. Immediate standardized learning reinforcement involving instructional films which are coordinated electronically with individual learning stations in a simulator can be used to improve significantly the acquisition of complex mental-motor skills involved in learning to drive an automobile provided an integrated teaching approach is used where simulator instruction is interwoven with dual-control car instruction.

2. With an integrated teaching approach the new simulator with its immediate learning reinforcement can be used to substitute nine hours of simulated training for three of six hours of observation in a dual-control car.

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[1] Thomas A. Seals, "An Evaluation of Selected Driver and Traffic Safety Education Courses" (Doctoral dissertation, Florida State University, August, 1966), pp. 36-37.

[2] McDaniel, op. cit., pp. 162-163.

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3. With proper scheduling to take advantage of an improved student-teacher ratio in the simulator (12-1) compared to a dual-control car (2-1), the number of students trained per instructor per year can be increased 60 percent over the present conventional standardized programs provided conclusion 2 is implemented.

4. The new simulator with an integrated instruction method produces significantly better results than does the non-simulator method in specific areas of driving skill of road position, turn signals, and intersections.[1]

Earlier, in 1965, Gustafson used a test technique to compare the results of laboratory instruction composed of student experience on both simulation equipment and an offstreet multiple car driving range with results of laboratory instruction composed of student experience on an offstreet multiple car driving range exclusively.[2] He also examined the effects of onstreet instruction as a supplement to each type of laboratory instruction. The experimental course provided six hours of instruction with simulation equipment, four hours of range instruction, and two hours of onstreet instruction. The control group received ten hours of experience on an offstreet multiple car driving range plus two hours of onstreet instruction. Upon completion of the simulator and/or range instruction, no significant difference between groups was found in regard to driving knowledge. After onstreet instruction, there was no significant difference between groups in driving knowledge or on the "traffic problems and road problems" section of the road test. A significant difference in favor of the control group was found on the "vehicle handling section" of the road test.

During the same year, a study by Nolan made use of a test procedure to determine the relative value of two types of driver education courses.[3] The laboratory instruction for the first treatment consisted of ten hours on simulation equipment plus three hours of onstreet instruction. The second treatment included ten hours of instruction on an offstreet multiple car driving range plus two hours of onstreet instruction behind-

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[1] Robert B. Hayes, David L. Porter, Peter J. Saja, and Ivan J. Stehman, Immediate Standardized Learning Reinforcement to a Complex Mental-Motor Skill Using Electronically Coordinated Motion Pictures (Harrisburg, Pennsylvania: Department of Education, 1965).

[2] Robert E. Gustafson, "A Study to Compare the Effectiveness of Instruction in the Allstate Good Driver Trainer and the Multiple Car Off-Street Driving Range with the Multiple Car Off-Street Driving Range" (unpublished doctoral dissertation, Michigan State University, 1965).

[3] Robert O. Nolan, "A Comparative Study of the Teaching Effectiveness of the Multiple Car Off-Street Driving Range and the Aetna Drivotrainer" (unpublished doctoral dissertation, Michigan State University, 1965).

the-wheel. No significant difference between the groups was found in regard to driving knowledge or road test scores.

In 1963, Bishop found that a course which combined twelve hours of simulator instruction with three hours of onstreet instruction was at least equivalent to the recommended minimum of six hours of onstreet instruction behind-the-wheel.[1]

In a unique study, Brazell attempted to evaluate five types of driver education courses which were provided by the public school system of Dearborn, Michigan.[2] The principal criterion was the accident and violation records established by student groups. It was found that students who had completed courses which had included instruction on simulation equipment established an accident record comparable to that of "non-simulator" students. Since the description did not provide sufficient detail concerning influencing factors such as exposure to traffic accidents, uniformity of traffic law enforcement, and uniformity of traffic accident reporting, it would appear that further investigation is needed.

According to a report published in 1959, a study of New York City High School students found that time on simulation equipment served as a meaningful replacement for a portion of onstreet instruction.[3]

Testing an assumption that complex motor skills may be acquired only through actual practice, Brody sought to determine the effectiveness of classroom viewed moving pictures in developing selected mechanical skills of motor vehicle operation.[4] This study involved two groups of male high school students which were equated for grade level, intelligence level, and driving familiarity. The control group and the experimental group were exposed to instruction concerning four specific driving skills. The control group was provided with "live" instruction in a dual-controlled automobile, while the experimental group viewed films related to the

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[1] Richard W. Bishop, "Evaluating Simulator Instruction for Accomplishing Driver Education Objectives" (unpublished research study, Florida Institute for Continuing University Studies, Tallahassee, 1963).

[2] Robert E. Brazell, "A Follow-Up Study of Public School Driver Trainees, Relating Driving Performance Records to Selected Academic and Training Factors" (unpublished doctoral dissertation, University of Michigan, 1961).

[3] George Forlano and J. Wayne Wrightstone, An Evaluation of the Aetna Drivotrainer in Selected New York City High Schools (Divisional Bulletin No. 3; New York: Board of Education of the City of New York, 1959).

[4] Leon Brody, "A Study of the Learning of Selected Driving Skills Through Exposure to a Specially Produced Motion Picture Film," Traffic Safety, June, 1961, pp. 25-29.

selected motor skill. A knowledge test and a road test were administered immediately after the training sessions and one month later. The investigator interpreted the findings to mean that student time in a practice driving automobile could be reduced through the use of high-quality motion picture films.

In 1961, in California, Bernoff published a study which re-enforced previous conclusions that instructional time on electronic simulation equipment could replace with effectiveness onstreet instruction time at a 4:1 ratio. This meant that twelve hours of simulator instruction was at least equivalent to three of the nationally recommended minimum of six hours of onstreet instruction in a dual-controlled car.[1] In addition, it was concluded that use of the simulation equipment in the manner described permitted an instructional staff to provide a driver education course to approximately thirty percent more students per unit of instructional time.

In 1959, Allgaier and Yaksich reported on a two-year study conducted in Washington, D.C.[2] A control group was given the traditional type of onstreet instruction and an experimental group was given experience on simplified simulation equipment (Auto Trainer) as a substitute for a portion of behind-the-wheel instruction. It was concluded that (1) the control and the experimental groups did "equally well" on a final road test, and that (2) use of the Auto Trainer enabled a given number of teachers to produce one-third more students per unit of instructional time.

A 1956 study in Iowa explored the feasibility of simulator instruction as a portion of the established minimum time for onstreet instruction.[3] Using a written license examination and a road test, the study revealed no significant difference between groups which received instruction on simulation equipment and groups which received the traditional type of onstreet instruction when the simulation instruction was used at a 4:1 ratio.

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1 L. I. Bernoff, An Experimental Study of Teaching Efficiency of the Aetna Drivotrainer (Los Angeles: University of Southern California, 1958).

2 Earl Allgaier and Sam Yaksich, Effectiveness of a Driving Simulator (Washington: American Automobile Association, Traffic Engineering and Safety Department, 1959), p. 4.

3 Gordon J. Rhum, Bertram L. Woodcock, and Tom A. Lamke, The Effectiveness of the Aetna Drivotrainer in Driver Education (Cedar Falls, Iowa: Iowa State Teachers College, 1956).

As early as 1953, a master's degree thesis at Temple University investigated the time-saving value of simulation equipment usage in driver education courses.[1] According to a review by Fox, the study involved a control group which received the traditional type of laboratory instruction and an experimental group which received varying but reduced amounts of onstreet instruction and varying amounts of instructional time on simulation equipment. The simulation device used in the Pennsylvania study was the Auto Trainer.[2] With no statistically significant difference between road test scores made by the two groups, it was concluded that about 148 minutes of instructional time on the Auto Trainer saved 47.5 minutes of time for onstreet instruction.

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[1] James H. Fox, Driver Education and Driving Simulators (Washington: National Education Association, National Commission on Safety Education, 1960) pp. 52-54, citing Paul S. LeVan, "The Value of an Auto Training Device in the Teaching of Driver Training" (Master's Thesis, Temple University, 1953).

[2] Distributed by the American Automobile Association.

CHAPTER III

PROCEDURES

The primary purpose of this investigation was to compare a traditional driver education course with each of several types of multi-unit courses in driver education in an attempt to shed light on possible contributions of specific unit approaches and certain combinations thereof as measured by written tests and a road performance test. A secondary purpose was to examine cost factors of various types of courses.

Identification of Tasks

Accomplishment involved identification of the following tasks:

1. Locating a group of high school students who were slated to receive a traditional driver education course in a school which had the essential facilities for program development and implementation.

2. Selecting a location with available study subjects who would be somewhat representative of the beginning driver population of California.

3. Creating a study design that would result in meaningful findings yet remain within the limitations of available funds, personnel, equipment, and facilities.

4. Developing and selecting appropriate measurement instruments and executing sound procedures for collecting the data.

5. Providing a teaching staff that would be considered typical of available professional driver education personnel.

6. Developing among selected teachers the competencies needed to implement the newer innovative approaches to driver education.

7. Designing, constructing, and installing the necessary facilities and equipment with due consideration to special problems arising from the site selection.

8. Standardizing course content to assure that basic concepts would be an integral part of each instructional treatment.

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9. Developing an acceptable system for assigning students to each instructional treatment group so that the probability would be high that comparison groups would be balanced for factors which could influence the results.

10. Reducing the teacher variable by appropriate assignment and scheduling procedures.

11. Analyzing and interpreting statistical data.

12. Determining an acceptable procedure for comparing the cost of various types of driver education courses.

Selection of Student Group

Task 1 was to locate a group of students who were slated to receive a traditional driver education course in a school system which had the essential facilities for program development and implementation.

Difficulty was not encountered in locating a secondary school in which students were scheduled to receive the traditional type of course. The principal problem was to find a centrally located school site on which the administrative staff was willing to assign space for program development. This was especially true in regard to space for constructing an offstreet multiple car driving range which would be of sufficient size and would be located in the immediate proximity of the instructional center.

Although several schools were considered, the final selection was James Madison High School, 4833 Doliva Drive, San Diego, California.

Location

Task 2 was to select a school with driver education enrollment that would be somewhat representative of California's beginning driver population. In addition to socio-economic considerations, the task required a driver education enrollment sufficient in number to assure the selection of a study sample that would be acceptable from a statistical viewpoint. In selecting the location, answers to the following questions were considered:

1. Are district and school officials willing to participate and to support experimental activity?

2. Is it possible for the school to effect necessary scheduling changes?

3. Can driver education be made available to all students at the 10th grade level?

4. How many students could be subjected to possible selection as study subjects?

5. Is it feasible to construct an offstreet multiple car driving range on the school site?

6. Are available classrooms adequate for installation of simulator and multimedia equipment?

7. Would the district provide the essential support services?

Answers to these questions and those related to task 1 formed a basis for selecting James Madison High School within the San Diego Unified School District. All concerned school officials were anxious and willing to cooperate in every possible way.

Madison High School, with a sophomore class enrollment of over 1,100 students, is located on the fringe of the San Diego metropolitan area. With a variety of industrial operations as well as rural areas in the vicinity, students represented a cross section of socio-economic levels and ethnic groups. Madison's administrative staff expressed willingness to schedule driver education, on a full-semester basis, for the entire sophomore class.

Study Design

Task 3 was to create a research design structured so that conclusions could be drawn as to the cost-effectiveness of seven types of driver education courses. From the total 10th grade enrollment of over 1,100 students, upward of 600 desired driver education during the second semester of the 1969-70 school year. With the latter as the potential study population, 340 were selected at random for participation in the study. While students not selected received various types of courses, the group of 340 were slated for study without being informed as to their selection. Teachers were not informed as to whether individual students were to become a part of the investigation.

The study subjects were assigned at random to each of seven types of driver education courses. The random assignment was stratified to assure that each instructional treatment group was balanced for (1) number of males and females and (2) academic performance as indicated by grade point averages.

Aside from content and teaching techniques, the time allotment and structure of the selected seven instructional treatment groups were as follows:

Group 1 30 clock hours of classroom work
3 clock hours of behind-the-wheel onstreet instruction

Group 2 30 clock hours of classroom work
12 clock hours of simulator experience
3 clock hours of behind-the-wheel onstreet instruction

Group 3 30 clock hours of classroom work
6 clock hours of offstreet multiple car driving range instruction
3 clock hours of behind-the-wheel onstreet instruction

Group 4 30 clock hours of classroom work
12 clock hours of simulator experience
6 clock hours of offstreet multiple car driving range instruction
3 clock hours of behind-the-wheel onstreet instruction

Group 5 30 clock hours of classroom work
15 clock hours of multimedia instruction based on a software package (Aetna) made available for students everywhere
12 clock hours of simulator experience
6 clock hours of offstreet multiple car driving range instruction
3 clock hours of behind-the-wheel onstreet instruction

Group 6 30 clock hours of classroom work
15 clock hours of multimedia instruction based on a software package (California) produced to fit local conditions
12 clock hours of simulator experience
6 clock hours of offstreet multiple car driving range instruction
3 clock hours of behind-the-wheel onstreet instruction

Group 7 30 clock hours of classroom work
6 clock hours of behind-the-wheel onstreet instruction

Grouping of the study sample into seven instructional treatments provided an opportunity to compare treatments for significant differences which might exist among the mean scores derived from the evaluation criteria.

Evaluation Instruments

Task 4 dealt with the development and selection of evaluation tools.

It was concluded that the most appropriate areas for short-range evaluation were knowledge about motor vehicle operation and traffic safety, attitude-oriented opinions on issues, and ability to operate a motor vehicle under onstreet conditions. The time span of the project demanded that evaluation be restricted to short-range methods.

Recognizing the limitations of existing short-range evaluation tools which cover the cognitive and affective domains, an attempt was made to

develop an improved evaluation instrument. In the absence of comprehensive research dealing with driving task analysis, the basis for content selection was a review of literature with emphasis on documents arising from the Highway Safety Act of 1966 and the resulting publications produced by the National Highway Safety Bureau, U. S. Department of Transportation.

The initial draft of the testing instrument, produced during October, 1969, was entitled "Traffic Education Inventory." It was composed of 260 multiple-choice items that dealt with an amplification of the central purpose of driver education emanating from the National Highway Safety Bureau:

> "Driver education seeks to develop safe and efficient drivers who understand the essential facets of evolving highway safety programs and who participate in the traffic environment in a manner that enhances the effectiveness of such programs."[1]

The original version was divided into the following categories:

A. Light Urban Traffic
B. Rural Traffic
C. Heavy Urban Traffic
D. Expressway Traffic
E. General Traffic Knowledge
F. Traffic Behavior Tendency

The intent was to cover the more pertinent traffic sub-environments as well as knowledge and attitude-opinion related to the Bureau's central purpose of driver education.

The initial draft was distributed to a selected panel of traffic authorities with members from education, engineering, and enforcement specialty areas within the highway safety profession. Members of the panel were asked to (1) record the best response to each item, (2) make editorial suggestions, (3) suggest deletion of specific items, (4) recommend revision of format, and (5) comment on the breadth and depth of coverage. From the more than one hundred returned in completed form, fifty were selected to verify content validity. The fifty traffic authorities were in basic agreement as to (1) the most desirable response to items and (2) the adequacy of content.

In accordance with suggestions from members of the panel, the number of items was reduced to 133. In addition the format was changed so that, instead of six categories, the content was re-organized into three sections covering (1) driving knowledge as it pertains to the movement of motor vehicles, (2) traffic knowledge not pertaining to the movement of motor vehicles, and (3) highway safety attitudes and opinions.

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[1] National Highway Safety Bureau, op. cit., p. 1.

The test-retest procedure (5-month interval) was used with a random sample of 315 10th grade students to establish reliability of the total instrument after item analysis reduced the number of items to 99. Reliability was established for each of the three sections of the testing tool as well as for the battery of three sections. Reliability coefficients were as follows:

Section 1	Section 2	Section 3	Total Test
.82	.82	.80	.83

The final version was entitled "Achievement Scale on Motor Vehicle Transportation." The instrument was copyrighted by the San Diego County Department of Education.

The written examination, consisting of three sections, was administered to study subjects before beginning and upon completion of the driver education course at Madison High School during the second semester of the 1969-70 school year. It was intended that the mean scores achieved by instructional treatment groups be examined to determine whether significant improvement was made during the time span of the course and whether significant differences existed among the mean post-test scores of the seven instructional treatment groups. The .01 level of significance was accepted as the decision rule.

Upon completion of the course, study subjects were examined for road performance under actual traffic conditions. The selected instrument was the McGlade Road Test which was developed from a study of a number of license examination tests among the States. The test has shown sufficient discrimination among student drivers, experienced drivers, and problem drivers. Its reliability was determined by McGlade to range from .77 to .93. Distributed by the Center for Safety, New York University, the McGlade Road Test has been used extensively as a research tool.

The seven teacher-examiners, after special preparation and practice in administering the test to non-study students, were not aware of the type of course received by individual students. Planning enabled the random assignment of an equal number of students from each instructional treatment group to each teacher-examiner.

Teaching Staff

Completion of task 5 provided a teaching staff composed of eight teachers who were certificated in driver instruction by the California Department of Education. With all selected teachers having experience in the classroom phase, the laboratory phase, or both, the staff represented a cross section of available professional driver education personnel. Experience of selected teachers in driver education ranged from less than one year to more than fifteen years. Seven of the teachers were male and one was female.

Although each of the eight teachers was certificated, there existed a wide range in the amount of college preparation for teaching in general and for teaching driver education in particular. Several teachers had experience in working in as many as two of the units of instruction, but not one of the staff had experience in use of multimedia equipment or an offstreet multiple car driving range.

The lack of appropriate experience demanded that inservice experiences be provided during the first semester of the 1969-70 school year. In addition to formal classwork dealing with each of the unit approaches, the teaching staff was given experience in working with non-study students in each of the units. Each of the eight teachers were asked to demonstrate competency in teaching regular classwork, multimedia, simulator, offstreet multiple car driving range, and onstreet units.

Facilities and Equipment

The simulation laboratory was a classroom in which 18 simulator cars were installed. The Raytheon Mark X model was used with software instructional packages distributed by Aetna Life and Casualty Company.

The multimedia laboratory was also in a classroom. A 40-place Drivocator installation consisted of a communications console with tape unit, class response recorder, an individual response recorder, and student response recorders. The laboratory was also equipped with overhead, film strip, and 16 mm movie projectors and necessary control hardware. Two software packages were used. The first had been used on a nationwide basis, while the second was produced as a part of the project.

The offstreet multiple car driving range (See Figure 1, Chapter I) was constructed on the school site in an area which would enable the space to be used for overflow parking for special occasions when the range was not being used for instructional purposes. On a plot measuring about 415 by 260 feet, an asphalt paved surface was provided on which one teacher worked with twelve student-operated motor vehicles in a series of learning experiences. With painted lines, elevated ridges, and curbs, the surface was patterned with various types of roadways, intersections, and skill development areas, including an expressway exit and entrance. The surface design, and the planned learning experiences, were such that students could acquire fundamental and somewhat advanced operational skills in a realistic traffic environment as well as build confidence and self-reliance in the decision-making process as it concerns operational matters.

Several conventional classrooms were utilized for the 30 clock hours allocated to the classroom unit.

The onstreet unit was offered in automatic transmission automobiles, equipped with dual controls, on the streets and highways in the immediate vicinity of the school.

Course Content

During the planning stage, the faculty worked as a team to develop the outlined content of the driver education course. The developed outline was then adapted for application to each of the seven instructional treatments so that, regardless of type of course, students would be exposed to each of the selected primary and secondary conceptual areas. An attempt was made to see that the basic content of the seven treatments varied only in regard to enrichment learning and extent of exposure (as well as method of presentation) to primary and secondary content areas. An outline of objectives and content is presented as Appendix A.

Assignment of Students

Task 9 was to assign students randomly to the seven instructional treatment groups. Sophomore students desiring to receive driver education during the second semester were listed in accordance with normal scheduling applications for each of 7 periods of the regular school day. The list for each of the 7 periods was then reduced in number by eliminating those who (1) were not 15½ years of age by January 20, 1970, (2) had received formal driver education or any part of such a course, (3) had not presented a parent's consent form for student enrollment, (4) were impaired by a serious physical or mental defect as determined by the school nurse, or (5) were scheduled for transfer to another school during the school term of concern.

To the complete list of the remaining eligible study participants, a grade point average was determined and recorded for each student. A mean grade point average was then determined. The grade point averages were stratified so that there were 4 levels above the mean and 4 levels below the mean. Within each level the names of eligible participants were arranged in alphabetical order and marked as to male or female. The subjects on the alphabetical list were numbered from 1 through 7 as a method of random assignment of 340 students to instructional treatment groups with numbers corresponding to the type of course to be received. At the end of the instructional period, the number of study subjects for each treatment group was further reduced by eliminating those who were no longer enrolled in the course or who did not have a complete file of evaluative criteria. The final number involved in the study was 315.

Teacher Variable

Task 10 was to assign teachers to instructional treatments in a manner that would reduce to a minimum the probability that differences in teaching ability would affect the results. After receiving inservice experience in each of the unit approaches, members of the faculty were asked to list the five units in order of preference for teaching assignment. As an eventual result, every teacher was assigned to at least two unit approaches, but in no cases more than three units in which study subjects were involved. Three teachers taught two groups of

students in the classroom unit and the multimedia unit. Six teachers taught one period of simulator instruction. Three teachers taught two consecutive periods of the offstreet multiple car driving range unit. In the onstreet unit, a maximum of one group of students among any two of the seven instructional treatment groups received behind-the-wheel instruction from a given teacher. With an equal number of students per period of the school day assigned to each of the seven instructional treatment groups, it was concluded that the teacher assignment procedure negated the probability that teacher variable affected the study results.

Treatment of Data

For each of the seven instructional treatment groups, achievement scores were assembled for:

1. Pre-test for driving knowledge-opinion using the Achievement Scale on Motor Vehicle Transportation, including separate tabulation of scores for each of three sections of the scale.

2. Post-test for driving knowledge-opinion using the Achievement Scale on Motor Vehicle Transportation, including separate tabulation of scores for each of three sections of the scale.

3. Post-test for road performance using the McGlade Road Test.

The following statistical treatments were used in connection with the data:

1. Analysis of variance was applied to the scores on the pre- and post-tests (Achievement Scale on Motor Vehicle Transportation) to test the null hypothesis that no main effects or interactions were significant.[1]

2. Analysis of variance was applied to the scores on the post-test for road performance to test the null hypothesis that no difference existed among the mean achievement scores of the seven groups.

3. An appropriate statistical test (Newman-Keuls ordered means differences) was applied to the mean scores when significant differences were detected through analysis

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[1] B. J. Winer, Statistical Principles in Experimental Design. (New York: McGraw-Hill Book Company, Inc., 1962).

of variance.[1] This technique isolated the groups among which a significant difference existed.

In each instance, the .01 level of significance was used as a decision rule.

Cost Factors

Task 12 was to establish a procedure for comparing the cost of various types of driver education courses.

Because of the wide variance in cost accounting procedures among school systems, completion of this task was not easy. The selected procedure was based on the premise that expenditures for salaries of teachers, without exception, are the major consideration. In every case, therefore, the procedure was to determine the number of teachers that would be needed to provide a given instructional treatment for an arbitrary number of students. An "average" salary was chosen for use among the comparisons. While the chosen figure may not apply in many locations, its constant use made the comparisons more valid. Likewise, a constant figure was used to cover items such as overhead, insurance, repair and maintenance of motor vehicles and other equipment, and instructional materials.

With a constant figure used for teacher salary and general expenditures, selected types of driver education courses were compared. Costs for special facilities and equipment (simulation, range, and multimedia) were then based on procurement figures which were associated with the situation in California during 1969. The latter was pro-rated over a period of years for comparison purposes.

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[1] Winer, op. cit., p. 80.

CHAPTER IV

ANALYSIS OF DATA

Pre-Test, Achievement Scale on Motor Vehicle Transportation

Prior to instruction, an objective written examination consisting of three sections was administered to the study population.[1] In regard to the achievement scores made by each of the seven instructional treatment groups, there was very little difference in group means and standard deviations (See Table 1).

TABLE 1

MEAN AND STANDARD DEVIATION OF ACHIEVEMENT SCORES ON THE PRE-TEST ACHIEVEMENT SCALE ON MOTOR VEHICLE TRANSPORTATION

GROUP	MEAN				STANDARD DEVIATION			
	Section 1	Section 2	Section 3	Total	Section 1	Section 2	Section 3	Total
1	19.86	19.67	20.71	60.00	4.70	4.85	4.83	11.81
2	20.25	21.52	21.84	63.61	3.72	4.85	4.75	10.70
3	20.29	20.31	20.55	60.93	4.18	5.25	4.39	11.04
4	20.58	20.69	21.49	62.75	3.96	4.45	4.78	11.50
5	19.83	20.32	21.36	61.51	4.28	4.17	2.98	8.91
6	20.38	19.83	20.55	60.77	4.71	4.86	4.52	11.24
7	19.77	19.33	20.47	59.58	4.08	4.26	4.49	6.73

Analysis of variance was used to test the null hypothesis that no difference existed among the mean achievement scores made by the seven instructional treatment groups.[2] The analysis was applied to mean scores on each of the test sections and the total testing instrument. In each of the four instances, the null hypothesis was accepted at the .01 level of significance. The means were, in fact, almost identical.

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[1] See Appendix for achievement scores on pre-test.

[2] Winer, op. cit.

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Post-Test, Achievement Scale on Motor Vehicle Transportation

The written examination consisting of three sections was again administered to the study population immediately following completion of a driver education course. In regard to mean post-test achievement scores on each of the three sections and the entire battery of sections, only a slight variation existed among the group means and standard deviations (See Table 2).

TABLE 2

MEAN AND STANDARD DEVIATION OF ACHIEVEMENT SCORES ON THE POST-TEST ACHIEVEMENT SCALE ON MOTOR VEHICLE TRANSPORTATION

GROUP	MEAN				STANDARD DEVIATION			
	Section 1	Section 2	Section 3	Total	Section 1	Section 2	Section 3	Total
1	25.24	24.00	23.66	71.71	4.38	5.08	6.58	10.86
2	26.16	26.43	23.02	75.70	3.49	3.96	3.55	8.63
3	25:69	25.13	22.84	73.66	3.15	4.50	3.17	8.03
4	26.00	25.78	23.29	75.20	3.21	4.59	2.98	5.71
5	26.62	26.11	23.08	75.81	2.64	3.41	3.36	6.97
6	25.91	25.72	23.64	75.28	3.40	4.18	3.58	8.66
7	25.31	24.11	22.07	71.49	2.91	3.84	3.43	9.22

Analysis of variance was applied to the post-test scores to test the null hypothesis that no differences existed among the groups.[1] The mean scores were examined for each of the sections of the evaluation instrument as well as for the total mean score. Although visual differences appeared among the means, the amount of differences was not deemed sufficient to reject the null hypothesis in any of the four instances.[2] The null hypothesis was accepted at the .01 level of significance.

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[1] Ibid.

[2] Achievement scores listed in Appendix.

Improvement, Achievement Scale on Motor Vehicle Transportation

For each of the seven instructional treatments, an analysis was made to determine whether there was a significant difference between pre-test scores and the post-test scores accumulated by students on the Achievement Scale on Motor Vehicle Transportation and each of its three sections. Testing the hypothesis of no improvement, the decision rule was to reject the null hypothesis at the .01 level of significance. As a result of the analysis, the null hypotheses were rejected for each of the evaluation instruments' three sections and for the entire test. The alternate hypothesis of real improvement was accepted at the .01 level of significance for each of the seven instructional treatments.

Post-Test, Road Performance

Upon completion of the course, the McGlade Road Test was administered to a randomly selected sample of 22 subjects from each of the seven instructional treatment groups. The means and standard deviations of the achievement scores made by students in each of the types of courses indicated that a considerable amount of variation was a result (See Table 3).

TABLE 3

MEAN AND STANDARD DEVIATION OF ACHIEVEMENT SCORES ON THE McGLADE ROAD TEST

GROUP	MEAN	STANDARD DEVIATION
1	169.00	29.55
2	196.82	15.24
3	209.00	12.54
4	214.09	11.43
5	217.95	12.70
6	214.00	12.24
7	189.68	18.12

Analysis of variance was used to test the null hypothesis that no difference existed among the scores made by each of the seven groups of concern.[1] With the critical value of F well within the limits, the null hypothesis

[1] Scores listed in Appendix.

was rejected at the .01 level of significance. The alternate hypothesis of a genuine difference between achievement scores made by two or more of the groups was accepted.

Appropriate statistical treatment (Newman-Keuls ordered means differences) was applied to the analysis of variance results to isolate instructional treatment groups among which there was a difference in mean achievement scores.[1] The testing procedure revealed that, at the .01 level of significance, there was a difference between the following:

Groups With Difference	In Favor of
1 and 2	2
1 and 3	3
1 and 4	4
1 and 5	5
1 and 6	6
1 and 7	7
2 and 4	4
2 and 5	5
2 and 6	6
3 and 7	3
4 and 7	4
5 and 7	5
6 and 7	6

The statistical treatment did not detect a significant difference, at the .01 level, between Groups 2 and 3, 2 and 7, 3 and 4, 3 and 5, 3 and 6, 4 and 5, 4 and 6, 5 and 6. Groups 2 and 3 were different at the .05 level of significance with Group 3 having the higher mean.

A frequency distribution of grouped scores on the road performance post-test provides a basis for comparing the mean ability to exhibit driving form under test conditions (See Table 4).

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[1] Winer, op. cit., p. 80.

TABLE 4

FREQUENCY DISTRIBUTION, ACHIEVEMENT SCORES
ON POST-TEST FOR ROAD PERFORMANCE

ACHIEVEMENT SCORE INTERVAL	FREQUENCY BY GROUP 1	2	3	4	5	6	7
225 - 240		1	2	4	9	4	
210 - 224		2	10	11	7	11	3
195 - 209	2	10	7	5	6	7	5
180 - 194	7	5	3	2			10
165 - 179	5	4					1
150 - 164	6						2
135 - 149							1
120 - 134	1						
105 - 119							
90 - 104							
75 - 89							
60 - 74	1						

The following frequency polygon depicts clearly the superiority of multi-unit courses (Groups 2, 3, 4, 5, and 6) over the traditional course (Group 7) in regard to achievement scores on the road performance test. Each of the preceding groups differed significantly from Group 1 which consisted of 30 clock hours of classroom instruction and 3 clock hours per student for behind-the-wheel onstreet instruction.

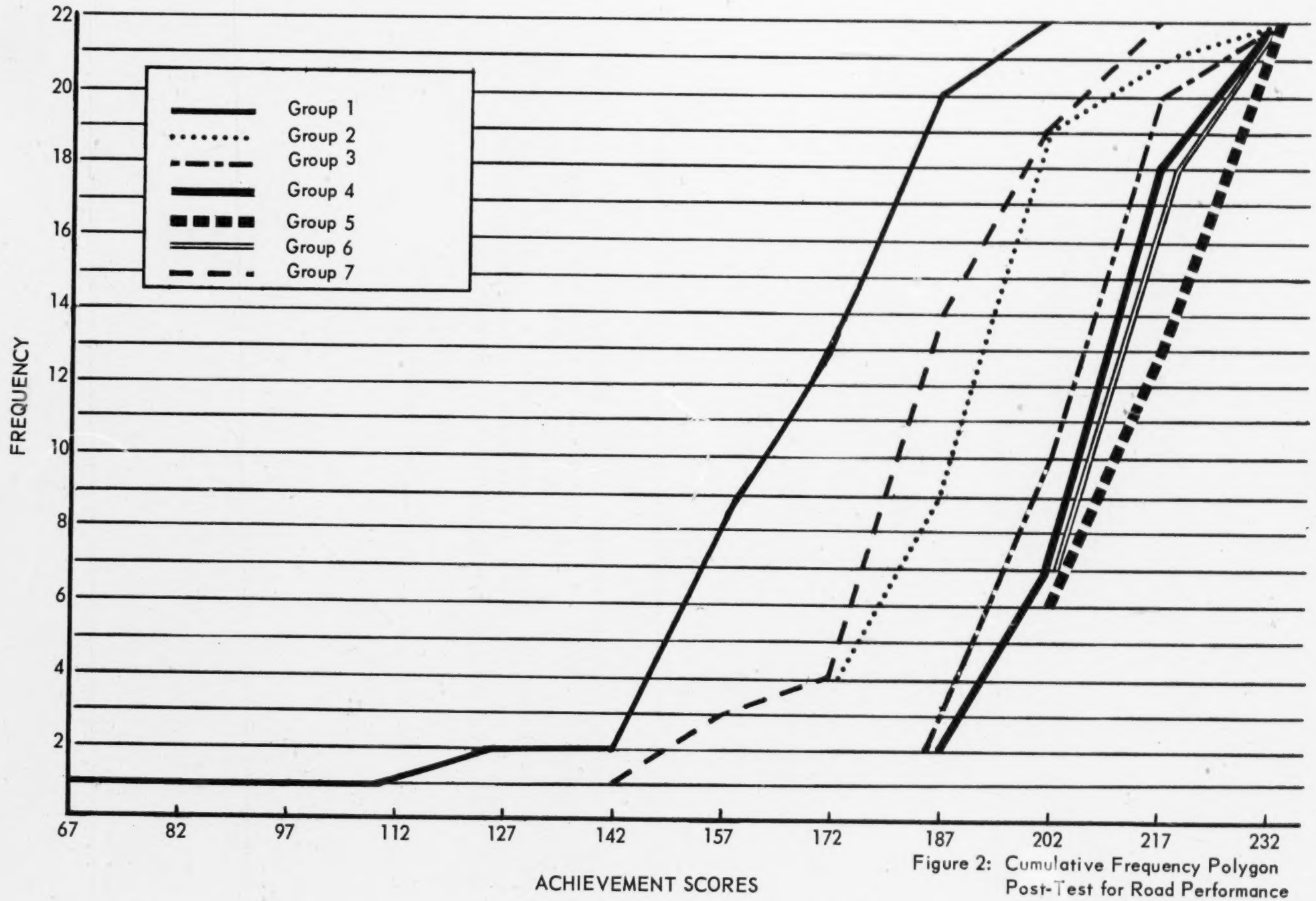

Figure 2: Cumulative Frequency Polygon Post-Test for Road Performance

Cost of Driver Education

According to studies by Bernoff, Bishop, Gustafson, McDaniel, Nolan, Seals, and others, it has been demonstrated that the multi-unit approach to driver education can produce students who are better prepared for survival in the traffic world than students who have received the traditional type of course.

Although course effectiveness should be labeled as the primary consideration, cost factors cannot be ignored. Thus, aside from course outcomes, an examination of cost factors has been made to determine feasibility of implementation in other locations in California and elsewhere. To this end, the following cost comparisons were based on a fictitious school in which 300 driver education students were enrolled during one semester.

Dual-Control Car Plan (Traditional Course) $95.80 per student

Student Treatment.--30 clock hours (36 50-minute periods) for the classroom phase, 6 clock hours of behind-the-wheel instruction and 12 clock hours of in-car observation for the laboratory phase. Should three students be scheduled for onstreet instruction per class period, then each student would receive 17 minutes of actual driving experience and 33 minutes of observation during each scheduled period of instruction. Thus 22 periods would be needed in order to meet the minimum requirement for time allotted to the laboratory phase of the traditional course.

Teacher Requirement.--During a given semester, a teacher has 90 periods available for each scheduled period of the regular school day. Assuming that a teacher would be assigned to instructional duty 5 periods per school day, 450 periods per teacher would be available.

Classroom Phase.--10 groups of 30 students each would require 360 periods for instruction in the classroom. One teacher could handle the classwork and have 90 periods remaining for other activities such as assignment to the laboratory phase.

Laboratory Phase.--The 90 periods would allow the "classroom" teacher to reach 12 students with onstreet instruction (behind-the-wheel and observation) at the rate of 22 periods per group of 3 students. This would leave 288 students in need of laboratory experience. A full-time teacher with 450 periods could provide laboratory instruction for 61 students during the semester--450/22 x 3 = 61.35. Thus an additional group of 4.72 teachers would be needed for the laboratory phase. With the classroom teacher, the traditional course for 300 students during a given semester would require 5.72 teachers.

Cost.--Assuming an "average" salary expenditure of $4,500 per teacher per semester, $25,740 would be needed for the 5.72 teachers. Assuming that other costs for instructional materials, insurance, auto maintenance, gasoline, etc. would amount to $1,000 per 100 students, the total cost would be $28,740 or $95.80 per student. At 300 students per semester,

the annual cost for 600 students being provided with the traditional course during the regular school year would be $57,480.

Simulator Plan $71.95 per student

Student Treatment.--30 clock hours (36 50-minute periods) for the classroom phase, 12 clock hours (15 periods) for the simulator unit in the laboratory phase, and 3 clock hours of behind-the-wheel instruction with 6 clock hours of in-car observation (11 periods) for the onstreet unit in the laboratory phase.

Teacher Requirement.--The classroom phase would require one teacher who would have 90 periods remaining for assignment to the laboratory phase. With a 12-place installation, the simulator unit would require 25 schedule blocks of 15 periods or a total of 375 periods. Should a second teacher be assigned to this unit of instruction, the teacher would have 75 periods remaining for further assignment. Since the classroom and simulator teachers would have a total of 165 periods available, the two could accommodate 15 groups of three students each for onstreet practice and observation--165/11 = 15. This would leave 255 students in need of onstreet instruction. Since each additional teacher can provide the required amount of laboratory instruction for 120 students per semester--450/11 x 3 = 120, 2.13 teachers would be needed. Thus a total of 4.13 teachers could provide 300 students per semester with the more sophisticated type of course.

Cost.--Using the salary and general expense estimates previously cited, the cost for a semester would be $21,585 or $71.95 per student. For a regular school year of two semesters, the cost for 600 students would be $43,170 or $14,310 less than the traditional type of course. The savings could well be applied toward cost for procuring simulation equipment.

Offstreet Multiple Car Driving Range Plan $66.25 per student

Student Treatment.--300 clock hours (36 periods) in the classroom phase, 6 clock hours (8 periods) on the range, and 3 clock hours behind-the-wheel with 6 clock hours of in-car observation (11 periods).

Teacher Requirement.--One teacher could handle the classroom phase and have 90 periods remaining. Assuming that the range could accommodate 12 practice driving vehicles under the direction of one teacher, 200 periods would be needed to provide 300 students with range experience during a given semester. A second teacher could cover the range learning and have 250 periods remaining. Since the classroom and range teachers would have a total of 340 periods available, the two could provide 90 students with onstreet instruction in a dual-control practice driving vehicle. This would leave 210 students in need of onstreet work. These could be accommodated by 1.75 additional teachers--210/120 = 1.75. Thus a total of 3.75 teachers could provide this type of course.

Cost.--Using the salary and general expense estimates as applied to other treatments, the cost for a semester would be $19,875 or $66.25 per student. For the regular school year with an enrollment of 600 students, the total would be $39,750 which is $3,420 less than for the simulator plan and $17,730 less than the dual-control car plan. The savings would go a long way toward covering the cost for constructing the offstreet multiple car driving range.

Multi-Unit Plan $78.55 per student

Student Treatment.--30 clock hours (36 periods) of regular classroom instruction, 12 clock hours (15 periods) in the simulator laboratory, 6 clock hours (8 periods) on the driving range, and 3 clock hours behind-the-wheel with 6 clock hours of in-car observation (11 periods).

Teacher Requirement.--Again, one teacher could cover the regular classroom work and have 90 periods available for further assignment. A second teacher could provide the 300 students with simulator instruction and have 75 periods remaining. A third teacher could handle the range experience and have 250 periods available. Since the three teachers would have a total of 415 periods available, 111 students could be furnished with onstreet instruction. The 189 students still in need of onstreet work would require 1.57 additional teachers. Thus 4.57 teachers could provide this type of multi-unit course for 300 students during a given semester.

Cost.--Applying the salary and general expense estimates, the cost for a semester would be $23,565 or $78.55 per student. The cost for 600 students during the two semesters of the regular school year would be $47,130. The annual cost would be $10,350 less than for the traditional type of course. Over a short span of years, the cost for special equipment and facilities could be covered.

The preceding descriptions have demonstrated that improved teacher-student ratios, which are characteristic of multi-unit approaches, permit medium and large school systems to provide better driver education instruction at a per student cost for salaries of teachers and general expenses less than for the traditional type of course.

In summary, consider a school that would provide the traditional driver education course (30 and 6) for 600 students during the two semesters of the regular school year. As previously shown, the annual expenditure for salaries and general expenses would be $57,480. If that school were to adopt the simulator plan, the annual savings for teacher salaries would amount to $14,310. Since a simulator installation to handle this number of students would cost less than $30,000, the purchase cost for the equipment would be saved within a period of two years. Thereafter, the per student cost would continue at a level lower than for the traditional type of course with a probable higher level of effectiveness.

If a school, which has provided the traditional type of course (30 and 6) for 600 students during the two semesters of the regular school year would decide to implement the offstreet multiple car driving range plan, the annual savings for salaries and general expenses would be $17,730. Assume that the school would spend $50,000 for range construction on a site already owned by the school. The annual savings would cover construction costs in less than three years.

Should the school decide to procure both simulation equipment and the range facility, the annual cost reduction would be $10,250. The $80,000 for the equipment and range would be saved in less than eight years. Even if the school would add multimedia equipment as a valuable supplement to the classroom phase, the extra costs would be covered within the time span.

Looking at an actual situation, the site of this investigation was a senior high school with an annual driver education enrollment of about 1,200 students. Suppose that each of the 1,200 students would receive during the regular school day, the minimum time allotment of 30 clock hours in the classroom phase and 6 clock hours of behind-the-wheel instruction as was described under the dual-control car plan. Six hundred students would be reached each semester. During one semester, two teachers with 90 class hours available per scheduled period could provide the 600 students with classroom instruction and provide 24 students with the required amount of onstreet work. This would leave 576 students to be reached with laboratory experience. Assuming that a full-time teacher would provide the required behind-the-wheel time for 61 students per semester, a total of 9.44 additional teachers would be needed to reach the 576 students. Thus, including the two classroom teachers, 11.44 teachers would be needed to reach the 1,200 students during two semesters of a school year. This would call for a salary expenditure of $102,960 and $12,000 for general costs. The total cost of $114,960 would bring the per student cost to $95.80.

Now, assume that the school would decide to implement a driver education course in which each of the 1,200 eligible students received 30 clock hours of regular classroom instruction, 15 clock hours of multimedia instruction, 12 clock hours of simulator instruction, 6 clock hours of range instruction, and 3 clock hours of behind-the-wheel instruction under actual traffic conditions. How many teachers would be needed to work primarily in the classroom phase offering the regular classroom work as well as multimedia experiences? With class periods of 50 minutes in length, 54 class periods would be scheduled to provide the 45 clock hours. With 90 class hours available per scheduled period, one teacher would handle 1.66 groups of 30 students each. In rounded terms, one teacher would reach 50 students per scheduled period or 250 students per semester. To reach the 600 students in the classroom phase during one semester, 2.4 teachers would be required.

Using an 18-place simulator unit for 6 periods of the school day, one teacher would provide 600 students with 12 clock hours of simulator instruction.

With 12 cars operating on an offstreet multiple car driving range, two teachers could enable 600 students to have 6 clock hours of range experience.

During the semester, a full-time teacher could provide 120 students with 3 clock hours of behind-the-wheel instruction under actual traffic conditions. Therefore, in order to reach the 600 students, five teachers would need to be assigned to this unit of instruction.

To implement the "model" course, 10.4 teachers would be needed. This would call for a salary expenditure of $93,600 and $12,000 for general expenses. The total cost for salaries and general expenses would be $105,600 or $88 per student.

Comparing the types of courses, the reduced number of teachers would result in a saving of $9,360 per school year.

In this particular case, approximately $50,000 would have been spent for range construction, $25,000 for simulator installation, and $18,000 for a multimedia laboratory. The total of $93,000 would have been covered by savings within a period of ten years.

CHAPTER V

DISCUSSION AND RECOMMENDATIONS

This study explored the outcomes and cost factors of seven types of driver education courses. Although results of instructional treatments were compared, it should be obvious that the scope of the evaluation procedures was not sufficient to measure all driving attributes possessed by the concerned high school students.

Effectiveness

Improvement, Achievement Scale

Apart from the relative value of various course structures, the results of analysis of pre-test and post-test scores on the Achievement Scale for Motor Vehicle Transportation were considered to be of primary importance. With no significant difference among the mean scores of instructional treatment groups prior to instruction in driver education, each of the seven types of courses demonstrated a significant improvement at the .01 level. This applied to the three test sections as well as to the total battery of sections. A conclusion was that meaningful course content was adapted for effective presentation to students through each of the seven course structures.

Post-Test Scores, Achievement Scale

Statistical treatment of data revealed no significant difference at the .01 level among the seven instructional treatment groups in regard to post-test scores on the Achievement Scale for Motor Vehicle Transportation and no interactions with the pre-post test. This was also true in regard to sections within the named scale. While in many instances the mean scores of multi-unit courses were higher than for courses structured in accordance with the traditional pattern, the amount of superiority was not significant.

As recorded earlier in Chapter III, in investigating the effectiveness of the various types of driver education courses, every effort was made to expose all study subjects, who were randomly assigned to each of the instructional treatment groups, to the concepts that were considered to be of major importance. This balancing of cognitive and affective content was considered to form the most plausible explanation of the lack of significant difference in acquired knowledge-opinion among the groups. It is also possible that the items contained in the evaluation instrument of concern did not have sufficient sensitivity to detect acquisition of

valuable knowledge-opinion gained by specific student groups. Another possibility was that the actual course content, offered through the seven instructional treatments, was not congruent with the content of the testing instrument. As is always the case with statistical treatment of data based on the laws of probability, the fact that there were no real differences among the post-test scores of the seven groups did not necessarily prove that true differences were missing. Statements made by both students and teachers, as quoted later in this chapter, indicate that learners did acquire more useful information in multi-unit courses than in the traditional type.

Road Performance

In terms of mean scores on the McGlade Road Test, a number of significant differences were found to exist. The following is a review of the course structure for each of the seven instructional treatment groups:

Group 1 received 30 clock hours in the classroom and 3 clock hours of onstreet work behind-the-wheel.

Group 2 received 30 clock hours of classwork, 12 clock hours of simulator experience, and 3 clock hours of onstreet driving behind-the-wheel.

Group 3 received 30 clock hours in the classroom, 6 clock hours of offstreet multiple car driving range instruction, and 3 clock hours of in-car driving in traffic.

Group 4 received the same classroom exposure, 12 clock hours with the simulator, 6 clock hours on the offstreet multiple car driving range, and 3 clock hours of onstreet driving.

Group 5 added 15 clock hours of multimedia instruction to the multi-unit course described by Group 4. The multimedia software package was one developed for use by students everywhere.[1]

Group 6 received the course described for Group 5 except that the 15 clock hours of multimedia instruction was based on a software package developed for conditions in California but applicable elsewhere.

Group 7 consisted of the traditional course made up of 30 clock hours of classroom work plus 6 clock hours of behind-the-wheel instruction in actual traffic.

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[1] Produced by Aetna Life and Casualty Company, Hartford, Connecticut.

Statistical treatment of road performance scores revealed a significant superiority at the .01 level of the following:

Group 2 over 1
Group 3 over 1
Group 3 over 7
Group 4 over 1
Group 4 over 2
Group 4 over 7
Group 5 over 1
Group 5 over 2
Group 5 over 7
Group 6 over 1
Group 6 over 2
Group 6 over 7
Group 7 over 1

There was no significant difference at the .01 level between the following pairs of instructional treatments:

Group 2 and 3
Group 2 and 7
Group 3 and 4
Group 3 and 5
Group 3 and 6
Group 4 and 5
Group 4 and 6
Group 5 and 6

From the criterion viewpoint of road performance test scores, the list of significant differences provided conclusive evidence that almost any one or any combination of simulation, offstreet multiple car driving range, and multimedia units formed a valuable supplement to the traditional units of regular classwork and onstreet practice. It appeared that the quality of instruction was enhanced in proportion to the number of units within the course structure.

Of special importance for consideration in California, the results showed that a driver education course composed of 30 clock hours of classwork, 6 clock hours of offstreet multiple car driving range experience, and 3 clock hours of onstreet driving, at the .01 level, was equivalent to a course composed of an identical amount of class and onstreet experience with 12 clock hours of simulator experience. It should be observed that there was no significant difference at the .01 level between Group 2 and Group 3 but that, at the same level of significance, Group 3 was superior to Group 7. No significant difference existed at the .01 level between Group 2 and Group 7. This indicated that range experience contributed

more to road performance ability as measured by the McGlade Road Test than did simulator experience. An additional strong indication was that Group 3 was superior to Group 2 at the .05 level of significance.

Reports from students and teachers favor the use of the offstreet multiple car driving range unit as an integral part of a comprehensive driver education course. The technique enables students to acquire self-reliance through solo practice, under supervision, of basic and advanced operational skills. Because such a facility provides worthwhile learning experiences with a favorable teacher-pupil ratio, the offstreet multiple car driving range approach is recommended as an integral part of effective programming for driver education.

The finding that, at the .01 level, there was no significant difference between Group 2 and Group 7 deserves comment. A plausible explanation may well be associated with the nature of the testing instrument and its administration. The McGlade Road Test gauges road performance over a short period of time with obvious limitations in regard to the number and complexity of encountered traffic situations. During the time span for administration, direct measurement of perceptual capability and desirable responses to complex traffic situations or emergencies are not an integral part of the scoring procedure. Improvement of these driver attributes appear to be among the major contributions of the simulator unit. In other words, the absence of a significant difference should not be interpreted to mean that simulator experience was not beneficial. Rather, one may observe that in this instance the testing procedure was not sufficiently sensitive to the contributions of the simulator unit to overall driver performance.

Reactions of Students and Teachers

The multi-unit driver education course at Madison High School resulted in numerous informal reactions on the part of participating students. Although accustomed to the traditional classroom and laboratory type of course, in general, the student reaction toward the newer approach was positive in nature. The following samples of comments were selected from unsolicited remarks by students recorded as a part of a non-related school activity:

> "I feel that the driver education program...was very good. In the classroom I learned about the hazards of driving and how to cope with them. In the simulator I was able to compare my reactions with the actions of the driver on the film. On the range I was able to practice the techniques of driving and get the feel of the car. And, onstreet I was able to put my knowledge to work..."

> "I feel that the driver education classes...have really helped me to become a safer driver. Through classroom lessons and multimedia I learned rules of the road which can't be read from a book or be learned from an experienced driver. The range I found to be

most helpful. I was able to get used to other cars on the road ...and get rid of the fear of cars coming along side in passing maneuvers. The onstreet lessons were absolutely great. Without these lessons I would not be a responsible driver. Every teen-ager should go through this course. It would save a lot of lives..."

"I enjoyed this course because of the variety of teaching techniques. The range was excellent."

"In regard to the program...the range was really a great benefit...I didn't think so in the beginning but I do now!"

"The multimedia is very much like the classroom, but is more interesting and attracts the student's attention more. The simulator program was very interesting...the entire course was helpful..."

For teachers, working with the multi-unit driver education course was a new experience. Six of the eight teachers had long exposure to the traditional classroom and laboratory approach. The remaining two teachers had received formal preparation for work with the traditional course. Because substantial changes in teacher behavior was called for in implementing the multi-unit course, one might have expected that a percentage of teachers would express a negative reaction to the overall program. This was not the case. The following comments by teachers were considered to be representative of teacher opinion:

"Students who received the total treatment of the multi-unit course were far superior in regard to manipulative skills, driving knowledge, and basic operational principles to students who were exposed only to the classroom and onstreet units."

"The multi-unit course is rewarding. Multimedia provides for a livelier classroom with more active student participation. In the range and simulator units, student performance is centered around the ability of learners to demonstrate knowledge of classroom material and to apply it within a controlled traffic environment. This integration of classroom and laboratory phases leads to exciting student progress."

"Students receiving classroom, multimedia, range, simulator, and onstreet instruction appeared to be far better equipped at the end of the course than those receiving the '30 and 6' course."

"Working with the multi-unit driver education course convinced me of its value. The students who had simulator and multimedia knew what to do when they came to the car. The range also helped save instructor time."

"Those students who had the multi-unit type of course seemed to be able to identify a potential traffic danger more readily than those who had only classroom and onstreet instruction."

"In regard to supplemental units to the '30 and 6' course, the range student seemed to have an edge over the simulator student when it came to controlling speed and maneuvering the vehicle. On the other hand, the simulator student appeared to have better performance in regard to perceptual skills."

"The multimedia unit enabled teachers to cover a wider range of material. The content, presented in close coordination with other units, added greatly to overall effectiveness of the course."

"The range students, when compared with 'onstreet only' students, seemed to have much more self-assurance in regard to command of the automobile. They required little, if any, instruction on the manipulative skills."

"The simulator student developed earlier. A high degree of perceptual ability was developed which resulted in more effective recognition of road channelizations, signs and signals, and collision potentials, so that proper evasive action was usually taken."

Feasibility of Multi-Unit Courses

In terms of road performance under onstreet test conditions, this study has shown that multi-unit driver education courses can be superior to the traditional type of course. Moreover, through cost analysis of various types of courses, it was made clear that the newer multi-unit courses can be provided for given numbers of students at a lower cost level per student than for the traditional type of course. The latter, naturally, depends upon student volume. At some point, the economic feasibility may be reduced to a point of impracticality. In this regard, experience indicates that when a school has an annual driver education enrollment in excess of 300 students per regular school year, the multi-unit approach can be applied over a period of years without exceeding the per student cost for the traditional type of course. As the annual number of driver education enrollees increases, the shorter the period needed to amortize the investment in special facilities and equipment.

From the administrative viewpoint, the cost reduction feature of multi-unit courses is one that should encourage program expansion through this approach. Also, it should not be forgotten that the budgetary savings are supported by evidence of program improvement. Assuming that a positive correlation between road performance and collision avoidance exists, even more substantial financial benefits would be derived over

the years through reduced number and severity of traffic collisions that may occur to those who have successfully completed an improved type of driver education course.

Recommendations

With a gain in knowledge-opinion significant at the .01 level, each of the seven instructional treatments examined in this study provided beginning motor vehicle operators with valuable experiences in education for traffic safety. A closer examination of the results revealed that the various types of courses were not equal in respect to developing road performance ability. Concrete evidence was presented that when a multi-unit approach to driver education was applied over a full semester; when re-enforcement of fundamental concepts was accomplished through careful scheduling; when teachers were provided with the competencies essential to teaching on a team basis in any of the units; and when all teachers were credentialed in accordance with standards for certification promulgated by the California Department of Education during the 1969-70 school year; the demonstrated road performance ability of students who had completed multi-unit driver education courses was superior at the .01 level of significance to the demonstrated road performance ability of students who had completed the traditional type of driver education course composed of classroom work and onstreet practice. Therefore, since the cost for an expanded time allotment is reasonable, this study has indicated a direction for structural improvement of driver education courses.

The primary recommendation is that decision-making school administrators, curriculum specialists, and legislators give every consideration to adoption of the multi-unit approach to improvement of high school driver education courses. Such courses, scheduled during a full semester of a given school year, should include student experience in a regular classroom unit, a multimedia unit, a simulator unit, an offstreet multiple car driving range unit, and an onstreet actual driving unit. While working toward implementation of the recommended comprehensive multi-unit course, schools are encouraged to adopt the multimedia, simulator, and range units one or more at a time as supplements to regular classroom and onstreet units. The cost-benefits are favorable.

Attempts to balance cognitive information for presentation to the various instructional treatment groups resulted in a keen awareness of content shortcomings. This lead to the strong suggestion that increased research attention be given to driving task analysis, development of specific goals that are derived from task analysis, formulation of performance objectives that are stated in measurable terms, transfer of objectives to conceptual course content, application of teaching approaches and techniques that are in line with goals and objectives, and improvement of evaluation procedures with direct reference to performance objectives. Recognizing that certain steps in this direction have been taken by the National Highway Safety Bureau, ongoing driver

education programs should take maximum advantage of the results by adapting the findings to the real world of school programs. Although the structure through which driver education course content is offered is important, research-based curricular improvement should not be ignored. New educational experiences in the affective, cognitive, and physical domains are needed. Also, much work needs to be done in allocating primary, secondary, and enrichment learnings among the available units of instruction with cost-effectiveness in mind.

Aside from structure and content of high school driver education courses, school authorities should consider the initiation of improvements in the overall school safety education program. Obviously, a school program is not complete that devotes all its time to developing the minds and bodies of young people without instilling within them those traits that will enable them to protect themselves and others from serious injury or even death. Therefore, in addition to driver education at the secondary level, curriculum planners should strive to make safety education an integral part of school activity from kindergarten through graduation from high school. It is recommended that K-12 safety education programs embrace every facet of school activity. In this regard, safety education has been identified as the process of coordinating administrative procedures, protective measures, and planned instruction in a comprehensive school program designed to conserve human and material resources.

As a final observation, experience gained in the conduct of this investigation resulted in an increased awareness that a driver education program can be no better than the capability of the involved teaching staff. The key to quality instruction is the teacher. In order that innovative structural and content improvements can reach the pinnacle of effectiveness, preservice and inservice teacher education experiences should be provided with sufficient intensity to effect positive changes in teacher behavior. These changes should not only provide teachers with ability to utilize the newer teaching tools but should provide them with both the desire and the "know how" to maintain a school environment in which students are encouraged to learn effectively as opposed to an environment in which students are told how they should act, think, or feel. In California and in other States, the minimum standard for certification in driver education, based on a college degree including 12 semester hours in the specialty field, is lower than that which is desirable. With college preparation remaining as a basic essential, it is recommended that the 12 semester hours of special preparation be raised to that which is required for an academic minor and that a new look be taken at the content of existing teacher preparation courses. It is vital that teachers become equipped with ability to implement more effective teaching techniques and the newer innovative approaches to the changing content of driver education courses.

The primary recommendation arising from this investigation is that decision-making school administrators, curriculum specialists, and legislators give every consideration to adoption of the multi-unit approach to improvement of high school driver education courses.

Secondary recommendations, based on experience associated with a conduct of this study rather than treatment of data, are as follows:

1. Increased research attention should be given to driving task analysis, development of specific goals that are derived from task analysis, formulation of performance objectives that are stated in measurable terms, transfer of objectives to conceptual course content, application of teaching approaches and techniques that are in line with goals and objectives, and improvement of evaluation procedures with direct reference to performance objectives.

2. The minimum standard for certification in driver education should include a college degree with preparation for work in the broad field of education and at least an academic minor in the driver and safety education specialty field.

3. A new look should be taken at the content of existing teacher preparation courses so that teachers will be equipped with ability to implement more effective teaching techniques and the newer innovative approaches to the changing content of driver education courses.

4. For maximum achievement, improvement of high school driver education should be accompanied by the establishment or improvement of safety education at each grade level and in every subject field.

BIBLIOGRAPHY

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A. Publications

Automotive Safety Foundation. A Resource Curriculum in Driver and Traffic Safety Education. Washington: Highway Users Federation for Safety and Mobility, January, 1966.

Automotive Safety Foundation. The Multiple-Car Method. Washington: Highway Users Federation for Safety and Mobility, March, 1967.

Bernoff, Louis I. An Experimental Study of the Teaching Efficiency of the Aetna Drivotrainer System. Hartford, Connecticut: Aetna Life and Casualty, June, 1958.

Bishop, Richard W., et al. The Driving Simulator Method, Fixed Base Simulators for Group Instruction in Driver and Traffic Safety Education. Washington: Highway Users Federation for Safety and Mobility, April, 1970.

Florida Department of Education. A Guide, Driver Education in Florida Secondary Schools. Tallahassee: State Department of Education, 1963.

Forlano, George, and Wrightstone, J. Wayne. An Evaluation of the Aetna Drivotrainer in Selected New York City High Schools. New York City: Board of Education of the City of New York, October, 1959.

Fourth National Conference on Driver Education. Policies and Practices for Driver and Traffic Safety Education. Washington: National Education Association, National Commission on Safety Education, 1964.

Fox, James H. Driver Education and Driving Simulators. Washington: National Education Association, National Commission on Safety Education, 1960.

Hayes, Robert B., et al. Immediate Standardized Learning Reinforcement to a Complex Mental-Motor Skill Using Electronically-Coordinated Motion Pictures. Harrisburg, Pennsylvania: State Department of Education, 1964.

Insurance Institute for Highway Safety. 21st Annual Driver Education Achievement Program. Washington: Insurance Institute for Highway Safety, 1968.

Little, Arthur D., Inc. The State of the Art of Traffic Safety. Cambridge, Massachusetts: Arthur D. Little, Inc., June, 1966.

McDaniel, Charles E. A Study of the Relative Effectiveness of Selected Laboratory and Classroom Programs in Driver and Traffic Safety Education. Olympia, Washington: Office of the State Superintendent of Public Instruction, 1969.

McGlade, Francis S. A New Road Test for Use in Driver Licensing, Education, and Employment. New York City: New York University, Center for Safety, 1961.

Moynihan, Daniel P., et al. A Report of the Secretary's Advisory Committee on Traffic Safety. Washington: Department of Health, Education, and Welfare, February, 1968.

Rhum, Gordan J., et al. The Effectiveness of the Aetna Drivotrainer in Driver Education. Hartford, Connecticut: Aetna Life and Casualty, 1956.

San Diego County Department of Education. A Guide, Safety Education. San Diego: Department of Education, San Diego County, December, 1969.

Seals, Thomas A. An Evaluation of Selected Driver and Traffic Safety Education Courses. Hartford, Connecticut: Aetna Life and Casualty, August, 1966.

Seals, Thomas A. and Jacobson, Thomas J. Achievement Scale on Motor Vehicle Transportation. San Diego: Department of Education, San Diego County, 1970.

Stack, Herbert J., et al. History of Driver Education in the United States. Washington: National Education Association, National Commission on Safety Education, 1966.

B. Periodicals

Bishop, Richard W. "Questions and Answers About Driving Simulators," Safety Education, Vol. 44, No. 4 (December, 1964), pp. 8-11.

Brody, Leon. "A Study of the Learning of Selected Driving Skills Through Exposure to a Specially Produced Motion Picture Film," Traffic Safety Research Review (June, 1961), pp. 25-29.

Cook, Dean R. "Multimedia--A New Classroom Concept," CALDEA Calendar, Vol. XV, No. 1 (October, 1967), pp. 9, 24.

Haddon, William, Jr. "Haddon on Highway Safety," Analogy (Winter, 1968), pp. 4-7.

Horne, Virgil L. "Driving Range--Creation and Cost," Safety, Vol. IV, No. 2 (March-April, 1968), pp. 16-17.

"Jefferson County, Colorado, Combines Driving Range, Behind-the-Wheel and Simulators in Unique Driver Education Program." Rockwell Safety News, Vol. II, No. 1 (Winter, 1964), pp. 10-13.

Kaywood, Richard. "Coordinating Drivotrainer System and Dual Control Car," Drivotrainer Digest, Vol. V, No. 3 (November, 1962), pp. 3-6.

McDaniel, Charles E. "A Four-Phased Driver Education Program," 1964 National Safety Congress Transactions, Vol. XXIII. Chicago: National Safety Council (1964), pp. 51-55.

Nolan, Robert O. "East Lansing Combines Drivotrainer and Range Plan Program in Second Year," Drivotrainer Digest, Vol. III, No. 2 (April, 1960), pp. 3-5.

"Public Law 89-564, an Act," Safety, Vol. 2, No. 2 (November-December, 1966), pp. 13-16.

Ribicoff, Abraham. "You Drive As You Live," Analogy (Winter, 1966), pp. 16-18.

Stack, Herbert J. "A Resume and Evaluation of Research on the Teaching Effectiveness of Simulated Driving Experiences and Conventional Driver Education Methods," Traffic Safety Research Review, Vol. 3, No. 4 (December, 1959), pp. 12-14.

C. Unpublished Materials

Bishop, Richard W. "Comparing the Effectiveness of Various Combinations of On-Street and Multiple Car Driving Range Instructional Hours." Unpublished research study, State Department of Education, Tallahassee, Florida, 1965.

Bishop, Richard W. "Evaluating Simulator Instruction for Accomplishing Driver Education Objectives." Unpublished research study, Florida Institute for Continuing University Studies, Tallahassee, Florida, 1963.

Brazell, Robert E. "A Follow-Up Study of Public School Driver Trainees, Relating Driving Performance Records to Selected Academic and Training Factors." Unpublished doctoral dissertation, University of Michigan, 1961.

Dorner, Edmund. "The Effect of Active Versus Passive Traffic Simulation Instruction on Visual Perception." Master's thesis, Normal, Illinois: Illinois State University, 1968.

Gustafson, Robert E. "A Study to Compare the Effectiveness of Instruction in the Allstate Good Driver Trainer and on the Multiple Car Off-Street Driving Range with the Multiple Car Off-Street Driving Range." Unpublished doctoral dissertation, Michigan State University, 1965.

LeVan, Paul S. "The Value of an Auto Training Device in the Teaching of Driver Training." Unpublished master's thesis, Temple University, 1953.

McPherson, Kenard. "Perception of Traffic Hazards: A Comparative Study." Master's thesis, Normal, Illinois: Illinois State University, 1966.

Nolan, Robert O. "A Comparative Study of the Teaching Effectiveness of the Multiple Car Off-Street Driving Range and the Aetna Drivotrainer." Unpublished doctoral dissertation, Michigan State University, 1964.

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APPENDIX A

OUTLINE OF OBJECTIVES AND CONTENT

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OUTLINE OF OBJECTIVES AND CONTENT

Model Driver Education Program
Madison High School
San Diego, California

NOTE: The following is a condensation of lesson plans used during the evaluation phase of the model driver education project. The outline is presented to provide the examiner with a picture of curricular offerings in the entire course, the classroom and laboratory phases, and each of the units contained therein.

Central Purpose

The central purpose of driver education is to provide meaningful psychomotor, cognitive, and affective learning experiences designed to enable individuals and groups to apply safer and more efficient performance standards within the traffic environment and to contribute to safety and efficiency within the total highway transportation system.

Philosophy

Work toward accomplishing the central purpose is to be implemented by providing learning experiences in a driver education course consisting of a classroom phase and a laboratory phase. Scheduled over a full semester of the 1969-70 school year, the experiences within the two phases will be planned so that maximum re-enforcement of vital concepts is both possible and probable. This requires that student experience in the classroom and laboratory phases be scheduled in a concurrent manner.

The principle of re-enforcement of vital concepts will also apply to the identifiable units within each of the two phases.

The structure of the classroom phase will include 30 clock hours of the traditional type of classroom activity. For purposes of this project, the activity will be labeled as the classroom unit. Using a variety of teaching techniques with emphasis on the inquiry method, the classroom unit will expose student participants to an overview of the entire course content. Teaching methods will be based on the premise that behavioral learning does not take place efficiently when students are told how they should act, think, or feel or are told what they should know from a dictatorial viewpoint. A challenge to the teaching staff is to provide students with a shaped learning environment in which learners are encouraged to acquire those psychomotor, cognitive, and affective traits that are characteristic of good drivers and progressive citizens.

The second identifiable unit of the classroom phase will take place in a multimedia laboratory. In the multimedia unit, efforts should be extended in three directions: (1) re-enforcement of primary and secondary

concepts that were introduced in the classroom unit, (2) provision of student experiences not available in other identifiable units, and (3) application of teaching techniques that make best use of the software content and the unique presentation and evaluation capabilities of the hardware. The latter refers to teachers having immediate information as to student response to oral or programmed inquiries.

The laboratory phase of the driver education course will consist of the simulator unit, the offstreet multiple car driving range unit, and the onstreet unit. In planning and executing student experiences for each of the laboratory units, re-enforcement of vital concepts will be considered as a primary thrust. Secondarily, curriculum planning and execution will consider the experience-proved contributions that are unique to each unit. For example, in the simulator unit, heavy attention should be given to experiences aimed toward the establishment of psychomotor capability which is based on improved perception and semi-automatic reactions to complex traffic conditions and driving emergencies. In the offstreet multiple car driving range unit, stress should be placed on development of efficient decision-making processes as well as on the development of fundamental abilities associated with maneuvering motor vehicles in a simulated traffic environment. In the onstreet unit, selected student experiences should not focus on basic operational skills. The basic skills will have been learned in other units. Rather, emphasis should be placed on wise decision-making in the real world traffic environment. Observable reactions to relevant stimuli should form the basis for the onstreet unit content.

Objectives, Classroom Phase

Performance objectives should form a basis for utilization of textbook and resource materials. The following is a list of sample objectives that may be considered of value in developing primary, secondary, and enrichment concepts.

Fundamental Skills

The student is able to

-- List, in proper sequence, the recommended steps for pre-ignition check, starting the engine, putting the car into forward motion, reducing speed, stopping the car, backing the car, making right and left turns, overtaking and passing, using common types of intersections, lane changing, parking under various conditions, and entering and leaving an expressway.
-- Point out the primary dangers of walking along a rural roadway at night and cite three or more precautions that can be taken by pedestrians to reduce the danger.
-- Explain why it is often wise to shift to a lower gear when descending a long hill with a steep grade.
-- Discuss in detail the multiple cause concept of collision causation.

-- Cite an example of how, under given conditions, an increase in speed may increase risk out of proportion to time saved.
-- Give a detailed outline of dangers involved in backing a vehicle under various conditions.
-- Use specific examples to show that driving too fast for conditions or too slow for conditions may create avoidable emergency situations.
-- Explain in detail the procedural steps to be taken when desiring to move an automobile that is mired in mud, sand, or snow.
-- Record a clear explanation of why one should not drive too close behind other vehicles.
-- Cite specific changes in driver behavior patterns to be exercised when driving at night.
-- List in correct order the recommended steps for overtaking and passing other vehicles.
-- List the major differences in driving practices to be exhibited while driving on one-way streets.
-- Give examples of how an increase in the number of critical elements at a given time may create a decision-making problem that is greater than the mathematical total.
-- Identify the more common mistakes made by drivers who become involved in railroad crossing collisions.
-- Give rules for changing operational practices when driving under adverse conditions such as fog, rain, snow, ice, and excessive wind.
-- List at least one advantage and one disadvantage of regular-tread tires, snow-tread tires, and tires with chains when driving on a paved surface on which there are several inches of wet snow.
-- List in correct order the steps to be taken should a collision occur.
-- Name the principal sections of an automobile's power train, identifying the overall function of each section.
-- Describe the more important maintenance practices that are related to safety.
-- Demonstrate the proper first aid procedure for treating victims of shock and excessive bleeding.

Physical and Mental Limitations

The student is able to

-- Describe the specific effects of alcohol on human functions as they relate to motor vehicle operation.
-- Name the prevalent drugs and describe the probable effects of each on motor vehicle operation.
-- Give examples to illustrate the importance of maintaining an acceptable level of visual acuity in order to drive a motor vehicle.
-- List the common physical defects that affect driver performance and explain corrective or compensatory procedures for each.

-- Demonstrate an awareness of his own physical defects and know how to compensate for those not subject to correction.
-- Cite real life examples of the negative effects of strong emotions on driver performance.
-- Give meaningful examples of how the effects of fatigue may be avoided.

Natural and Man-Made Laws

The student is able to

-- List the major operational characteristics of automobiles, trucks, motorcycles, bicycles, and pedestrians.
-- Provide a satisfactory explanation of why the shortest braking distance is attained just before vehicular wheels are locked.
-- Discuss a sampling of traffic laws in a manner which indicates an understanding of both the wording and intent.
-- List at least three road conditions that present the motorcycle operator with more control difficulty than automobile drivers.
-- Give a satisfactory explanation of the difference between absolute and prima facie speed limits.
-- Estimate the average braking distance when given a rate of speed and the applicable coefficient of friction.
-- Record a basic formula for predicting approximate braking distance for any speed.
-- Demonstrate a thorough knowledge of rules and regulations pertaining to passing stopped school buses.
-- Describe why hydroplaning may occur at regular highway speeds.
-- Demonstrate detailed knowledge of highway collision reporting requirements.
-- Explain why a motor vehicle cannot be steered when all wheels are locked by braking action.
-- Identify the primary components of total stopping distance of motor vehicles.
-- Name two natural forces that tend to prevent a car from skidding on a sharp curve.
-- Define traction and explain why it is necessary to the operation of motor vehicles.
-- Identify why traction is regained by decleration when hydroplaning occurs.
-- Demonstrate a working knowledge of static, sliding, and rolling friction.
-- Define inertia and explain its relationship to kinetic energy using vehicular movement as a medium.
-- Write a paragraph describing the arithmetical relationship between speed and braking distance.
-- Describe how an automobile's engine changes potential energy into kinetic energy.
-- Cite the basic right-of-way rules.

Critical Situations

The student is able to

- -- Outline procedural steps which should be taken when faced with sudden emergencies such as blowouts, car drops off the edge of the pavement, the accelerator sticks in open position, engine stalls on railroad crossing, and brake failure.
- -- Give a detailed description of recommended driver actions to be taken in at least three impending-crash situations in order to minimize the probability of serious injury to the driver.
- -- List steps, in proper order, to take when each of several types of skidding occurs.
- -- Describe an acceptable method for practicing evasive actions through mental exercise.

Highway Safety Programming

The student is able to

- -- Cite specific examples to illustrate the need for improved coordination of highway safety efforts on the state and local levels.
- -- Write several paragraphs containing a description of how highway transportation efficiency is linked with man-machine-roadway interactions.
- -- Cite several examples of how highway transportation efficiency depends upon the quality of driver performance.
- -- Illustrate the need for improved collision record data.
- -- Name the primary highway safety management approaches and describe the primary purpose of each.
- -- Explain how improved ambulance service can do much to reduce the annual traffic fatality rate.
- -- Identify three or more safety features in automotive design that should be considered when purchasing a motor vehicle.
- -- Define a highway collision from a semi-legal viewpoint.
- -- Outline the operation of the local traffic court system and make specific suggestions for improving the treatment of traffic cases in courts.
- -- Justify the need for improved police traffic supervision.
- -- Detect common highway and traffic engineering faults.
- -- Complete a collision reporting form in accordance with current laws and regulations.
- -- List several reasons why many traffic authorities recommend re-examination of all drivers every three to five years.
- -- Discuss the relationships between implied consent laws and the drinking driver problem.
- -- List the pros and cons of the several types of mandatory periodic motor vehicle inspection.
- -- Describe the techniques used by driver licensing authorities to improve the performance of collision repeaters and chronic violators of traffic laws.

-- Cite specific examples of the need for more uniform traffic laws among the states and their political sub-divisions.
-- Justify required motor vehicle registration as an integral part of programming for highway safety.
-- Demonstrate that increased attention should be given to planning for adequate parking of motor vehicles.

Objectives, Laboratory Phase

Performance objectives will also form the basis for student learning experiences in the simulator unit, the offstreet multiple car driving range unit, and the onstreet unit. The following is a list of sample objectives for laboratory instruction. In general, the objectives call for students to be able to demonstrate both the knowledge and the ability to perform safely and efficiently the driving maneuvers covered in the classroom phase.

Simulator, Range and Onstreet Units

The student

-- Takes steps, before driving, to see that the windshield and car windows are clean.
-- Checks, before starting the engine, to see that all doors are closed and locked and that every passenger has made proper use of restraining devices.
-- Maintains an erect, alert sitting position when the car is in motion.
-- Performs basic control tasks with smoothness and confidence.
-- Drives in a manner that keeps interference with others at a minimum.
-- Maintains visual contact with the roadway while adjusting compartment controls or conversing with passengers.
-- Keeps foot poised over the brake pedal when approaching locations where potential conflict is a probability.
-- Recognizes the meaning of road signs by their shape and color.
-- Comes to a full stop at stop signs and proceeds only when safe to do so.
-- Complies with laws and ordinances which deal with marked and imaginary pedestrian crosswalks.
-- Demonstrates willingness and ability to react properly when a pedestrian moves into the trafficway.
-- Obeys all traffic control devices.
-- Uses the proper lane while executing right and left turns.
-- Takes appropriate advantage of speed and steering controls to reduce the number of simultaneous elements that must be faced at given points in the traffic environment.
-- Completes right and left turns as quickly as safety will permit.
-- Signals intent to change direction.
-- Carries out lane changing maneuvers without interfering with other components of the traffic stream.

-- Makes accurate time-space judgments.
-- Maintains readiness to adjust speed or direction when an overtaking vehicle is in the process of passing.
-- Keeps possible interference with others at a minimum when parking a motor vehicle.
-- Exhibits a willingness to make speed adjustments in order to help other vehicles as they enter or leave an expressway.
-- Reduces speed, whenever practical, only after the vehicle has been positioned in the deceleration lane of an expressway.
-- Shows minimal ability to control both speed and direction of a motor vehicle when it is being operated in a variety of traffic conditions.
-- Demonstrates an awareness of vehicles in the front, rear, and sides of his car and adjusts speed and vehicle position so as to minimize the probability of conflict.
-- Maintains proper following distance at all times.
-- Checks rear-view mirrors often enough to maintain awareness of movement of vehicles approaching from that direction.
-- Drives so as to avoid sudden braking or sharp-angle steering.
-- Compensates for driving mistakes of others.
-- Perceives relevant warning clues that may require reduced speed, stop, or a change in direction.
-- Controls temper when rude blunders are made by other drivers.
-- Avoids non-relevant distractions while performing in the traffic environment.
-- Takes special care when minor vehicles or pedestrians are in the vicinity.
-- Allows extra following distance behind motorcycles that are moving at less than 30 miles per hour.
-- Avoids unnecessary or repeated exposure to traffic situations in which experience-based judgments cannot be made.
-- Does not stop on the paved surface of rural highways.
-- Avoids stopping on the shoulder of rural highways where other more satisfactory alternatives exist.
-- Uses low-beam headlights when driving in heavy traffic at night and when driving in fog or rain.
-- Drives at a speed that is in conformance with the traffic flow when that speed is in conformance with the posted speed limit and road conditions.
-- Accepts right-of-way privileges only after making sure that other drivers are in the process of yielding and, then, maintains a readiness to take appropriate evasive action when necessary.
-- Warns following vehicles of intent to reduce speed or stop by flashing brake lights.
-- Makes proper use of brakes and engine power to control speed when driving down steep grades.
-- Is alert to the movement of school buses and emergency vehicles and reacts accordingly.
-- Avoids the use of sunglasses when the sun is not shining.
-- Adjusts speed in locations where loss of traction is a threat.

-- Remains alert in highway construction areas.
-- Operates at a speed, when driving at night, that will permit a stop within the field of the headlights.
-- Uses low-beam headlights when following or approaching other cars at night.
-- Exhibits a logical approach to decision-making in traffic.
-- Allows room for error in judgments of relative speed and distance of other vehicles.
-- Recognizes indications that other drivers are under the influence of alcohol or drugs and adjusts accordingly.
-- Remains aware that as vehicular speed increases, the time available for decision-making often decreases.
-- Considers that reducing risk to an absolute minimum should be a basic guide for traffic behavior.
-- Makes a constant practice of scanning the field for relevant cues to potentially dangerous situations, predicting what might happen in every likely alternative, deciding what to do in each case, and executing the decision with dispatch.
-- Shows evidence of possessing a comprehensive set of prepared decisions for application in common emergency situations.
-- Demonstrates ability to apply prepared decisions in simulated or actual driving emergencies.
-- Is able to demonstrate desirable driver actions for reducing the probability of serious injury resulting from a "second collision" when a highway crash occurs.

Content, Classroom Unit

The following topics are to be covered in the driver education classroom.

-- The Traffic Accident Problem

a. Number of Traffic Accidents
b. Significance
c. Effect of Accidents
d. Combating Traffic Accidents
e. Privilege vs. Right to Drive

-- Safe Driving is a State of Mind

a. Different Kinds of Drivers
b. Psychological Factors in Driving
c. Driver Personality

-- Keeping Physically Fit to Drive

a. Vision and Hearing
b. Special Disabling Conditions
c. Compensating for Physical Conditions

-- Alcohol, Drugs, and Driving

a. Alcohol and the Driver
b. Alcohol and Accidents
c. Drugs and Driving
d. Types of Drugs and Narcotics
e. Similarities Between Effects of Alcohol and Drugs

-- When You Own a Car

a. Buying a Car--New and Used
b. Automobile Insurance
c. Total Cost of Automobile--All Aspects Which Should be Considered
d. Accident--What to Do

-- What Makes Your Car Go

a. Primarily the Power Plant

-- Taking Care of Your Car

a. Prevention and Regular Maintenance
b. Tires
c. Lights
d. Brakes
e. Battery

-- How Natural Forces Affect Driving

a. Inertia, Energy, and Motion
b. Friction
c. Gravity
d. Force on Impact
e. Factors That Influence Stopping Distance

-- How Man-Made Laws Affect Driving

a. Rules of the Road
b. Traffic Controls
c. Regulations for Drivers and Car Owners
d. Overview of Uniform Vehicle Code

-- Getting Ready to Drive

a. The Driving Compartment
b. The Instrument Panel
c. Control, Safety, and Comfort Devices

-- Learning the Basic Driving Skills

a. Basically Covered Driving Procedures
b. Those in Book were Related to the Ones We Developed

-- The Cyclist

a. Motor Cycles
b. Mini-Bikes
c. Other Users of the Highway

-- Defensive Driving

a. Vision and Driving
b. Analyzing Traffic Situations
c. Identify
Predict
Decision
Execute

-- City Traffic

a. Driving in the City
b. Pedestrians in Traffic

-- Highway and Expressway Driving

a. Driving on Highways
b. Driving on Expressways
c. Driving at Night
d. Planning a Trip

-- Driving Under Adverse Conditions

a. Weather and Visibility
b. Weather and Road Surfaces
c. Snow--Skidding
d. Hydroplaning

-- Special Driving Conditions

a. Mechanical problems
b. Driving Emergencies
c. 100 Driving Blunders

-- Engineering for Traffic Safety

a. Automotive Engineering
b. Highway Engineering
c. Traffic Engineering

-- Meeting the Challenge of Traffic

a. What is Being Done
b. What You Can Do

Content, Multimedia Unit

Two multimedia software packages will be available. The first is a product of Aetna Life and Casualty Company for use with the Drivocator System. Titles of specific lessons are as follows:

-- The Challenge of Traffic
-- The Forces of Nature
-- Psychophysical Factors
-- Social Pressures
-- Attitudes and Emotions
-- Rules of the Road
-- Signs of Life
-- Getting Ready to Drive
-- Learning Basic Skills
-- Precise Maneuvers
-- City Driving
-- The Open Road
-- Defensive Driving
-- Driving Emergencies
-- Adverse Driving Conditions
-- The Responsible Driver
-- Missing Links

The second multimedia software package was produced, as a part of the project, to give special treatment to traffic conditions in California. Titles of specific lessons are as follows:

-- It's a Moving World
-- Signs of Life
-- A Look at the Equipment
-- It Takes More Than Cars
-- The World Outside
-- The Driver
-- Expect the Unexpected
-- Handling Emergencies
-- City Driving
-- Expressway Driving
-- Rural Driving
-- Driving Like a Pro
-- Special Conditions
-- Jungle on Wheels
-- Where Do We Go From Here

Content, Simulator Unit

Utilizing the Raytheon Mark X simulator hardware, the titles of software lessons are as follows:

-- Simulator Orientation
-- Left and Right Turns
-- Angle Parking and Turning Maneuvers
-- Blending into Traffic
-- Precision Passing
-- Safety Driving on Highways
-- Freeway Excellence
-- Special Driving Methods
-- Strategic Driving
-- Parallel Parking
-- Driving Emergencies
-- Good Driving in Bad Weather
-- Understanding Freeways
-- Using the Standard Shift Automobile
-- The Final Road Check

Content, Offstreet Multiple Car Driving Range Unit

Titles of lessons on the offstreet multiple car driving range are as follows:

-- Range Orientation, Discipline, and Basic Maneuvers
-- Vehicular Control to Avoid Conflicts
-- Close Maneuvering on and off Street
-- Parking Under Various Circumstances
-- Intersections and Turning Around
-- Lane Changing and Passing
-- Expressway Procedures
-- Review and Testing

Content, Onstreet Unit

Titles of lessons are as follows:

-- Basic Skills in Speed and Direction Control
-- Residential Driving
-- Light Urban Driving
-- Highway Driving
-- Expressway Introduction and Rural Roads
-- Heavy City Driving
-- Driving on Hills
-- Expressway Driving

APPENDIX B

SAMPLES OF EVALUATION INSTRUMENTS

7444

ACHIEVEMENT SCALE ON
MOTOR VEHICLE TRANSPORTATION

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SECTION I. DRIVING KNOWLEDGE

1. You are driving in a light residential area when, without warning, a car ahead stops suddenly. Although your engine stalls, you are able to stop without striking the vehicle ahead. Then you hear a distant train whistle and notice that you are stalled on the railroad track. Which of the following series of steps would be best?

   a. Blow horn, quickly restart the vehicle, and move ahead toward the right edge of the street.
   b. Jump out of the car and run along the track in the same direction that the train is going.
   c. Place gears in neutral, leave the car, ask the driver of the car ahead to help you push, and be ready to run from the area should the train get close.
   d. Blow horn, depress starter button with gearshift in low position, and accelerate rapidly.

2. Should a quick stop be necessary on a slippery road surface, it is best to

   a. Be sure a hand signal precedes brake application.
   b. Alternately apply and realease the foot brake, avoiding locking of the wheels.
   c. Use the parking brake because it can stop the car in less distance than the foot brake.
   d. Shift to a lower gear, apply the foot brake, and turn the ignition to the off position.

3. You are driving in the right lane on an expressway when you notice that a driver is approaching your lane from an access ramp. Your best action is to

   a. Move to your left to create a gap for the merging automobile.
   b. Speed up to create a gap behind you.
   c. Maintain your speed, staying in the right lane.
   d. Accelerate before switching to an inside lane.

4. Which of the following driving actions should you take when you encounter heavy fog?

   a. Turn on the high beam headlights.
   b. Turn on the low beam headlights.
   c. Turn on the parking lights.
   d. Turn off all lights.

5. Assume that a driver has stopped on the shoulder of an expressway because of an engine breakdown. He has no passengers. While waiting for the tow truck, he should

   a. Sit quietly in the car until a traffic officer arrives.
   b. Tie a handkerchief to the left door and stand beside the handkerchief.
   c. Open the hood and stand on the outside edge of the shoulder.
   d. Open the hood and stand behind the car so approaching cars can see him.

6. As you approach an expressway on an acceleration lane, it is best to

   a. Stop before entering the traffic lane if there is no gap in the line of cars.
   b. Approach cautiously at a speed of about one-half that on the expressway.
   c. Signal for left turn and attain speed in acceleration lane before merging.
   d. Speed up as you approach the traffic lane and then signal immediately before entering.

7. You are driving on a road with one lane for each direction of traffic. An approaching car begins to pass another approaching vehicle without enough space ahead. Your smartest move is to

   a. Hit the right shoulder of the road.
   b. Hold your speed and road position because the passing driver will likely move to the road's shoulder.
   c. Reduce speed and move toward your right to create more passing room.
   d. Blow the horn and move sharply to the road shoulder on your left.

8. Consider that your car has been forced off the road into a deep lake. Although all windows are rolled up, your car sinks rapidly beneath the surface. What would be the best procedure to follow?

   a. Move quickly to the area closest to the surface, roll down the window glass, climb out the window, and swim to the surface.
   b. As the car begins to fill with water, move to the air space remaining and wait for rescue from the outside.
   c. Grasping a door handle firmly, open the door quickly and float to the surface.
   d. Wait for the car to right itself with wheels down, use any sharp tool to break the windshield and swim to the surface.

9. Should someone say that you are "overdriving your headlights," it means that

   a. You should clean the headlight glass.
   b. The light beams are set too low, indicating need for adjustment.
   c. You are looking too far ahead of the area illuminated by the headlights.
   d. You cannot stop your car in the distance that the lights shine ahead.

10. When overtaking and passing another vehicle, less risk is involved when the maneuver is made

   a. As you approach the crest of a hill if you can return to the right lane before reaching the top.
   b. On a bridge if there is an unbroken center line.
   c. At an intersection if no car is within 500 feet.
   d. On a slight curve if there is a broken center line.

11. An approaching driver fails to use low beam headlights. The best thing to do is

   a. Blow your horn and alternate between bright and dim headlights.
   b. Alternate between parking lights and dim headlights.
   c. Dim your headlights but flash a spotlight on the approaching vehicle.
   d. Alternate between dim and bright headlights and then place control in dim position.

12. You are driving on a multiple-lane freeway and wish to switch from the outside lane to the adjacent inner lane. You should

    a. Move to inner edge of lane, check blind spot, use directional signal, turn gradually.
    b. Check blind spot, use directional signal, check rearview mirror, turn sharply.
    c. Use directional signal, check rearview mirror, check blind spot, turn sharply.
    d. Check the rearview mirror, check the blind spot, use directional signal, turn gradually.

13. One should avoid wearing tinted eyeglasses when driving at night because they

    a. Limit side vision.
    b. Reduce visual acuity.
    c. Are often poorly made.
    d. Tend to lower driver alertness.

14. You are riding a bicycle down a steep grade approaching a cross street. A car will enter the intersection from your left, so you apply the brakes only to discover that the brakes have failed. To avoid a collision, you should

    a. Pedal faster so that you can pass safely in front of the car.
    b. Place both feet on one side of the bike, lean over so that the cycle will slide on its side, and jump off the bicycle when speed is reduced.
    c. Jam your shoe into the spokes of the rear wheel and slide to a stop.
    d. Jump off the bicycle, tuck your head down, and roll until you stop.

15. Which of the following is the best order of steps for starting a car into motion?

    a. Start engine, check traffic, signal, place gear in drive, accelerate, release parking brake.
    b. Start engine, place gear in drive, release parking brake, check traffic, signal, accelerate.
    c. Check traffic, start engine, place gear in drive, signal, release parking brake, accelerate.
    d. Release parking brake, start engine, check traffic, place gear in drive, signal, accelerate.

16. You are beginning to pass another car on a 2-lane road when the overtaken vehicle increases its speed. You should

    a. Blow the horn to warn that you are passing.
    b. Hold your speed steady until the overtaken driver shows clearly what he is going to do.
    c. Accelerate sharply to complete the maneuver as rapidly as possible.
    d. Slow down and return to the right lane.

17. Which of the following is the best order of steps for routine stopping of an automobile?

    a. Move to right lane, give hand signal for stopping, check traffic, release accelerator, move to the curb, apply foot brakes, set parking brake.
    b. Give hand signal for stopping, release accelerator, apply foot brakes, check traffic, move to right lane, move to the curb, set parking brake.
    c. Check traffic, move to right lane, give hand signal for stopping, release accelerator, apply foot brakes, move to the curb, set parking brake.
    d. Release accelerator, check traffic, move to right lane, give hand signal for stopping, apply foot brakes, move to the curb, set parking brake.

18. In urban areas, you should select an average speed which

    a. Is at least 5 mph below the posted limit.
    b. Encourages the very slow driver to speed up.
    c. Conforms to average speed of traffic if not above the posted limit.
    d. Is not more than 5 mph above the posted limit.

19. On a one-way street, a right turn may be made from

    a. Any lane unless a sign or marking prohibits the maneuver.
    b. Only the right lane unless otherwise marked.
    c. A position on the right half of the roadway.
    d. Either of the two lanes next to the right curb.

20. Which of the following procedures is best position for stopping at an intersection controlled by a stop sign?

    a. Stop even with the stop sign and check traffic. If you cannot see approaching traffic due to an obstruction, ease ahead and proceed when the way is clear.
    b. Stop just before the line marking the edge of the cross street or road. Check traffic and proceed when safe to do so.
    c. Stop behind the real or the imaginary pedestrian crosswalk and check traffic. If you cannot see approaching traffic due to an obstruction, ease forward stopping again if necessary.
    d. Stop in a position which will permit you to view approaching traffic from either side. Check traffic and proceed when the way is clear.

21. When backing a motor vehicle, you

    a. Have the right-of-way if the movement takes place on the shoulder or extreme right edge of a roadway.
    b. Have the right-of-way provided the appropriate signal is given.
    c. Have the right-of-way over all other vehicles traveling in the opposite direction.
    d. Do not have the right-of-way.

22. You are driving around a curve on wet pavement. The rear of your car skids toward your right toward the edge of the roadway. Which of the following should <u>not</u> be done?

    a. Reduce pressure on the gas pedal.
    b. Turn the steering wheel to the right.
    c. Turn the steering wheel to the left.
    d. Leave the clutch pedal engaged.

23. Heavy fog is encountered on an expressway. The best thing to do is

    a. Stop on the right shoulder and turn lights off.
    b. Maintain regular speed and turn on fog lights or parking lights.
    c. Turn on low beam lights, reduce speed, and stop at next rest area.
    d. Turn on low beam lights, maintain regular speed, and stop at next rest area.

24. When approaching the traffic lanes of an expressway from an entrance, it is best to

    a. Approach cautiously and stop for traffic if no gap in traffic exists.
    b. Treat the intersection as one controlled by a flashing red light.
    c. Approach cautiously, locate a gap in the traffic stream, time your entry so that you do not interfere with traffic.
    d. Move rapidly into the traffic stream because approaching traffic is required to yield.

25. Because of varying traffic volumes and weather conditions, a good rule to follow is to

    a. Determine how fast you can drive with safety, ignoring the average speed of traffic.
    b. Set your speed 5 mph below that which is posted.
    c. Blend into the traffic stream allowing for special conditions.
    d. Stay as close as practical to the posted speed limit to improve the traffic flow.

26. On multiple-lane expressways, traffic moving at the highest speed should use which of the following lanes?

    a. Left
    b. Right
    c. Middle
    d. Any

27. When using the hand-over-hand technique of steering while making a right or left turn,

    a. The palm of the hand should be up when a new grip is taken.
    b. Maximum advantage should be taken of the wheel's spokes by using the fingers to make the turn.
    c. The hands should be placed on the wheel in a palm down position.
    d. Each new grip should be at the 6 o'clock position.

28. In rural areas, motorists should

    a. Watch for unmarked railroad crossings.
    b. Operate the radio to keep alert.
    c. Drive slower than normal because of a possible tire blowout.
    d. Be on the lookout for loose farm animals.

29. While driving through a park, you see another car approaching in your lane about 200 yards ahead. You should

a. Blow the horn, move to the right, and apply brakes.
b. Apply brakes and give signal for stopping.
c. Give directional signal and move quickly to the left.
d. Apply brakes and blow the horn.

30. On one-way streets, left turns are usually made

a. From the lane closest to the center of the street.
b. By turning from the extreme left lane unless otherwise marked.
c. By going around the block to the right.
d. In a manner similar to such turns on a two-way street.

31. On a two-way street with two or more lanes for each direction of traffic, a right turn should be started from

a. The lane nearest the center of the street.
b. Any lane if no traffic is following you.
c. The lane nearest the curb unless additional lanes are so marked.
d. The middle lane if one is available.

32. When one must back a vehicle in a straight line, it is best to

a. Open the left front door to assure maximum visibility of the danger zone.
b. Steer with one hand, looking out the rearview mirrors.
c. Steer with one hand, looking out the rear window.
d. Steer with both hands, looking out the left front window.

33. On multiple-lane expressways, slower moving vehicles should use

a. Any lane if use of an exit is not anticipated.
b. The middle lane so that overtaking traffic may pass on either side.
c. The extreme left lane.
d. The lane next to the right edge of the road.

SECTION II: TRAFFIC KNOWLEDGE

1. Maximum speed limits are posted on

   a. Rectangular signs.
   b. Square signs.
   c. Triangular signs.
   d. Round signs.

2. Financial responsibility laws help protect the public from the

   a. Unscrupulous insurance agents.
   b. Uninsured motorist.
   c. Tax agencies.
   d. Money lending businesses.

3. Perceptive driving means much more than seeing; it means

   a. Reacting automatically to common emergency situations.
   b. Becoming aware of distant clues to danger situations.
   c. Recognizing, analyzing, and interpreting all important elements.
   d. Responding to any stimulus that warns of pending danger.

4. A crowned road is one that is

   a. Higher in the center than at the sides.
   b. Higher at each edge of the pavement than in the center.
   c. Designed to make maximum use of banked curves.
   d. Designed to prevent skidding.

5. A blind intersection is one that has

   a. No traffic controls for vehicular traffic.
   b. Limited visibility from the driver viewpoint.
   c. Full signalization and pavement markings.
   d. Stop signs on each of the cross streets.

6. Which of the following <u>least</u> affects friction in stopping a car?

   a. Road surface
   b. Vehicle speed
   c. Condition of tires
   d. Engine horsepower

7. Interstate highway numbers appear on

   a. Rectangular signs.
   b. Round signs.
   c. Shield-shaped signs.
   d. Green signs with white letters.

8. When a collision victim appears to have suffered a back or neck injury, it is best to

   a. Be sure that a rigid support is used before moving the patient.
   b. Move the patient without delay using a stretcher or blanket.
   c. Avoid moving the patient except under the direction of a doctor.
   d. Ask the patient to move slowly and cautiously.

9. A diamond-shaped yellow sign with black markings

   a. Serves as a reminder of a specific traffic law or regulation.
   b. Requires that drivers reduce speed.
   c. Provides useful information.
   d. Warns of a potential hazard ahead.

10. When the rate of your car's speed is doubled, the braking distance is increased about

    a. Four times.
    b. Two times.
    c. Three times.
    d. Six times.

11. Smoking should be prohibited at the scene of a collision because of the

    a. Danger of fire or explosion.
    b. Proved hazard to health.
    c. Adverse effect on the nervous system.
    d. Confusion produced by numerous flares.

12. Carbon monoxide

    a. Smells like gasoline fumes.
    b. Temporarily decreases alertness.
    c. Causes drowziness and loss of consciousness.
    d. Has a sharp taste similar to vinegar.

13. The number of registered vehicles in the United States

    a. Continues to increase every year.
    b. Increases almost every year.
    c. Has remained the same for 5 years or more.
    d. Has decreased slightly during the past 2 years.

14. Injured persons should be treated for shock by

    a. Using blankets, clothing, or other means to keep the body warm.
    b. Applying artificial respiration.
    c. Encouraging body movement to improve blood circulation.
    d. Applying cold packs to the forehead and neck.

15. Excessive wear in the center of a tire's tread indicates that the tire has been

    a. Used only on smooth pavement.
    b. Out of balance.
    c. Under-inflated.
    d. Over-inflated.

16. An octagonal-shaped sign means

    a. Yield right-of-way.
    b. Stop and proceed when the way is clear.
    c. Railroad ahead.
    d. Warning of special hazard.

17. Driving habits are

    a. The result of chance experience on streets and highways.
    b. Acquired through the process of trial and error.
    c. Performance patterns that can be shaped by conscious effort.
    d. Learned traffic practices that result from experience.

18. Driving in city traffic is potentially more hazardous than driving on rural roads because

    a. One-way streets present special dangers.
    b. More traffic control measures are applied.
    c. Street repairs produce unexpected obstacles.
    d. Traffic is usually more congested.

19. In most states, the motorcycle is considered as a

a. Special vehicle not requiring a license plate.
b. Menace to all highway users.
c. Motor vehicle for licensing and registration purposes.
d. Non-motor vehicle which must be licensed and registered.

20. Expressways have been designed primarily to

a. Permit rapid movement of manufactured products.
b. Prevent intersection conflicts.
c. Allow for varying speeds used by drivers.
d. Reduce the number of rear-end collisions.

21. On a one-way street consisting of more than two lanes, the tendency of traffic is to

a. Crowd into the right lanes because slower traffic uses the left lanes.
b. Be the least congested in the lanes on the right side.
c. Move slower in the left lanes since a high percentage of vehicles are preparing to make a left turn.
d. Be heavier in the center lanes, leaving the outside lanes for cars making turns.

22. Cars with a low center of gravity tend to

a. Be subject to skidding at relatively low rates of speed.
b. Stop quicker if the foot brakes are applied properly.
c. Have trouble in maintaining speed when going up long hills.
d. Be able to go around curves or corners at a higher rate of speed without excess sway.

23. Visual acuity is a term used to describe

a. Nearsightedness.
b. Distortion of visible shapes.
c. Sharpness of vision.
d. Ability to judge distance.

24. On a continuing basis, the good driver

    a. Identifies pertinent cues, predicts their importance, makes decisions regarding action, and executes resulting decisions.
    b. Observes the scene, foresees what will happen, alters the traffic environment, and adjusts to surroundings.
    c. Perceives total situations, modifies the circumstances, minimizes risks, and maneuvers with skill.
    d. Classifies hazards so that appropriate changes in speed and direction can be made.

25. Traffic laws are enacted for the primary purpose of

    a. Penalizing those who repeatedly exhibit poor driver performance.
    b. Gathering revenue from those who need rehabilitation.
    c. Providing employment for members of the legal profession.
    d. Providing a set of rules to guide driver performance.

26. Centrifugal force is a phrase used to describe the tendency of a vehicle to

    a. Travel in a straight line when rounding a curve.
    b. Continue in motion once a given velocity is attained.
    c. Lose response to steering effort when water is on the pavement.
    d. Increase speed when going down hill.

27. The interstate highway system uses

    a. Numerals ending in 5 for long distance east-west routes.
    b. Two-digit numerals for urban routes.
    c. Odd numerals for north-south routes.
    d. Even numerals for north-south routes.

28. It has been said that some expressway drivers become "velocitized." Which of the following best defines the word?

    a. Unaware of actual speed.
    b. Confident while driving at high speed.
    c. Hypnotized due to straight road.
    d. Accustomed to steady drone of the engine.

29. In planning streets, the most important consideration by concerned engineers should be

    a. The availability of land space.
    b. Efficient movement of traffic.
    c. The amount of money provided for construction.
    d. The volume of heavy-duty vehicles.

30. The most dangerous effect of alcoholic beverages consumed by drivers is that they tend to

    a. Reduce brake reaction time.
    b. Affect good judgment.
    c. Increase braking distance.
    d. Sharpen perception.

31. Use of tire chains on icy roads will often

    a. Reduce braking distance.
    b. Increase braking distance.
    c. Produce skidding on curves.
    d. Result in tire failure.

32. If all registered motor vehicles in the United States were filled to capacity, they could carry

    a. One-half the people.
    b. The entire population.
    c. More than 50 percent of citizens.
    d. At least two thirds of registered voters.

33. After parking parallel to the curb in a congested area, it is best to

    a. Leave the vehicle from the curb side.
    b. Open the left front door only when there are no approaching cars.
    c. Be sure your right wheels are within two inches of the curb.
    d. Assume responsibility for the safety of passengers.

SECTION III: TRAFFIC OPINION

1. Minimum driver licensing requirements should

   a. Be uniform among the states.
   b. Allow for individual differences.
   c. Conform with safety needs at the community level.
   d. Vary in accordance with age of applicants.

2. Which of the following should <u>not</u> be considered as a goal of the driver licensing procedure?

   a. Identify persons who do not drive safely.
   b. Assist citizens in becoming safer motor vehicle operators.
   c. Withdraw the driving privilege from those who do not drive safely.
   d. Issue a driver license only to those who demonstrate superior ability.

3. People tend to

   a. Change character when behind-the-wheel.
   b. Perform in traffic in a manner unlike the pattern they set for other social contacts.
   c. Drive in a manner which reflects their personality.
   d. Drive like other users of highway facilities unless emotions become involved.

4. When a driver runs out of gasoline on a limited access highway, a traffic policeman should

   a. Issue a ticket for driver negligence.
   b. Be helpful by providing the driver with fuel.
   c. Issue a warning ticket to the driver.
   d. Call a tow truck and require that the driver pay the charges.

5. Which of the following comes closest to your feelings about your ability to handle traffic situations without mishap?

   a. Always
   b. Usually
   c. Seldom
   d. Never

6. In your opinion, a most serious limitation of traffic law enforcement, as a means of collision prevention, is that

   a. Police vehicles are not uniformly marked.
   b. Traffic court judges, in general, are opposed to issuance of tickets for traffic law violations.
   c. Penalties upon conviction are often too harsh.
   d. There is a lack of uniformity in regard to laws and ordinances.

7. When you are following another car using the proper following distance, an overtaking vehicle passes and cuts into the space between you and the car ahead. Which of the following best describes your actions?

   a. Although irritated, you drop back to a safe following distance behind the passing car.
   b. The action does not bother you. So, you maintain your position in relation to the first car.
   c. Since you are not likely to be in a hurry, you create a new cushion of space between you and the passing car.
   d. Blow your horn and pull up close to the passing car to let him know that he did wrong.

8. Assume that you are driving at close to the speed limit on a congested highway when you overtake a slow driver. Passing is impossible. Which of the following best describes the way you feel?

   a. People who don't move with traffic should not have a license.
   b. You want to creep up behind the other car and shove it out of the way.
   c. Such drivers cause people to take chances in passing and you are one of them.
   d. Policemen should be writing more tickets for people who hold up traffic.

9. In regard to stop signs, drivers should

   a. Stop and then proceed provided no other vehicle is within 200 feet of the intersection.
   b. Obey the letters on the sign by coming to a complete stop and proceeding when safe.
   c. Consider that cars on the intersecting streets have the right-of-way and, therefore, treat the sign as a yield sign.
   d. Come to a rolling stop or a complete stop if traffic demands it.

10. Automobile registration best serves to

    a. Remind owners of assigned responsibility.
    b. Provide a means of auto identification.
    c. Provide much-needed revenue for the State.
    d. Give drivers pride of ownership.

11. When driving an automobile, you think of the welfare of

    a. Yourself more than others.
    b. Others more than yourself.
    c. Others as much as yourself.
    d. Neither yourself nor others.

12. In regard to highway safety programs, the government is

    a. Spending too much money.
    b. Not spending enough money.
    c. Spending money on the wrong things.
    d. Spreading its money too thin.

13. Which of the following statements best describes your feeling about what requirements for motorcycle riders should be? Riders should be

    a. At least 21 years of age.
    b. Required to take an oath attesting to knowledge of traffic laws and ability to ride.
    c. Asked to show reason why such a dangerous means of transportation is to be used.
    d. Licensed to operate an automobile and should also be required to pass special tests related to the motorcycle.

14. Which of the following types of auto safety equipment has the greatest potential in reducing the severity of injuries which are the result of collisions?

    a. Seat and upper torso belts
    b. Cushioned steering wheels
    c. Head restraint mechanisms
    d. Padded control panels

15. In regard to the use of radar to catch speeders, you feel that

    a. Setting a trap for unsuspecting drivers is an unfair way to apprehend law violators.
    b. The technique is excellent and its use should be increased.
    c. The practice is bad because the speed of your car is clocked for only a very short distance.
    d. Policemen should use plainly marked cars and should follow suspected speeders for at least one mile.

16. Traffic courts should

    a. Derive financial support from fines they collect.
    b. Be financed by contributions from private business foundations.
    c. Seek financial support from federal rather than state sources.
    d. Be supported from tax monies not associated with fines for traffic law violations.

17. When driving an automobile, you

    a. Resent others telling you what to do.
    b. Appreciate the advice of others.
    c. Often ask others for advice.
    d. Want to be left alone.

18. Drivers above 65 years of age are

    a. Past their prime and should be required to surrender the driver license.
    b. Thorns in the side of a generation that knows where it is going and how to get there.
    c. Stubborn oldsters who think they are right and the world is wrong.
    d. Often confused people who are floundering in a traffic environment that is too complex for their driving ability.

19. In your opinion, persons charged with driving under the influence of alcohol should

    a. Be required to take a breath, urine, or blood test for alcohol or lose their driver license.
    b. Volunteer to take a test for alcohol but should not be required to submit.
    c. Not be required to take a test for alcohol because it is an invasion of privacy.
    d. Be offered a wider choice of tests for driving under the influence of alcohol.

20. Your feeling is that state highway safety programs, in general, are

    a. Well planned and in little need of improvement.
    b. Designed to collect revenue to pay political appointees.
    c. Headed by politicians who know little about the safety field.
    d. Somewhat effective but in need of improvement.

21. Changing bad driving habits

    a. Is such a slow process that improvement is seldom noticed.
    b. Is a speedy process if real determination exists.
    c. Is easy if one has a strong desire and a few hours of practice.
    d. May not be easy but can be done if one has a strong desire.

22. Since pedestrians are involved in many traffic collisions, they should be

    a. Required to pass a pedestrian test and obtain a special license.
    b. Provided with unlimited opportunities to receive special education.
    c. More subject to penalties for violation of pedestrian laws.
    d. Given better instruction throughout their years in school.

23. Each state should

    a. Issue a driver license to qualified persons and take away the license only after a poor driving record is established.
    b. Re-examine all drivers every 3 to 5 years for both driving knowledge and road performance.
    c. Permit anyone to drive on the basis that the poorly qualified will learn, stop driving, or be eliminated from the scene.
    d. Provide cash rewards to those who maintain good driving records.

24. Aware that many drivers have more driving ability than you, you feel that

    a. The best way to gain ability is to remain alert and practice constantly.
    b. They got that way by putting on a big front and learning from hard experience.
    c. People with superior ability are likely to be overconfident and, as a result, get into trouble.
    d. Skillful drivers are often impatient and inattentive.

25. Most traffic law violators are people who

    a. Gloss over traffic law violations because there was adequate justification due to special circumstances.
    b. Harbor a grudge for policemen and traffic court judges.
    c. Go off their rocker, at times, due to loss of temper.
    d. Have no intention of complying with traffic laws made for amateur drivers.

26. The way you feel about passenger restraining devices is that

    a. Seat belts are all right, but shoulder straps are for the birds.
    b. Seat belts are dangerous because, in case of fire, you can become trapped.
    c. Seat belts and shoulder straps tend to keep passengers from rattling around inside the car.
    d. Seat belts are an insult to your driving ability.

27. Driver licensing examinations should be administered by

    a. Experienced traffic policemen.
    b. Trained driver license examiners.
    c. Persons designated by a traffic court judge.
    d. Representatives of the Federal government.

28. Which of the following presents you with the most danger?

    a. Parking parallel to the curb on the wrong side of the street.
    b. Driving at night when sleepy.
    c. Hands in incorrect position on the steering wheel.
    d. Failing to give a hand signal for a left turn.

29. After receiving a ticket for a traffic law violation, you would tend to feel

    a. Downcast.
    b. Proud.
    c. Insulted.
    d. Trampled upon.

30. Many roadways have posted minimum speed limits. Which of the following best describes your thoughts on the matter?

    a. Minimum speed laws should be strictly enforced.
    b. The practice is an unnecessary restriction on personal liberty.
    c. Elimination of the practice is recommended.
    d. Increased application of such laws is recommended.

31. State traffic records systems should include complete and accurate information on

    a. Locations of highway collisions and the degree of law enforcement being applied.
    b. Collisions linked to involved drivers, vehicles, and roadway locations.
    c. People involved in collisions along with their past driving record.
    d. None of the above.

32. A primary purpose of required periodic motor vehicle inspection is to

    a. Provide a source of revenue for licensing of auto mechanics.
    b. Present the public with opportunities to have vehicles checked by experts.
    c. Help assure that all motor vehicles are properly equipped and maintained.
    d. See that manufacturers maintain minimum standards for constructing vehicles.

33. While leaving a parallel parking space, which of the following do you consider to be the most important?

    a. Giving a directional signal before your car enters the traffic lane.
    b. Checking traffic to be sure you do not conflict with another vehicle.
    c. Keeping your foot poised over the brake pedal so that a quick stop can be made.
    d. Being able to turn the steering wheel rapidly while the car's speed is slow.

Abridged Manual

THE McGLADE ROAD TEST FOR USE IN DRIVER LICENSING, EDUCATION AND EMPLOYMENT

published by the
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Introduction

Traffic experts have long recognized the need for a scientifically designed test that would provide more adequate and uniform measurement of a driver's performance on the road. This test is the outcome of a doctoral study by Francis S. McGlade at the New York University Center for Safety Education (1960). Developed from an evaluation of current road tests in 46 cooperating states and validated with various groups of drivers, the McGlade test is recommended for use as follows: (1) by administrators of driver licensing agencies on a pilot basis (in connection with examination of prospective drivers and re-examination of problem drivers); (2) in high school driver education classes for assessment of student achievement; (3) in connection with employment of commercial fleet personnel; (4) by business and industry sponsoring educational programs of off-the-job safety for their employees.

SCORING

To record errors on the Road Test Score Sheet, draw a line through the value of the item in the proper column (FAIR or BAD). FAIR refers to performance that falls short of "good." If an error scored in the FAIR column is repeated, change the score to BAD by continuing the line through the BAD column. If the performance is originally scored as BAD then no further demerits are assigned to the given item. In totaling demerits do not count the values for FAIR performance on items which have also been marked BAD. The Grand Total Score is the total of the demerits representing BAD performance plus the total number of demerits for FAIR performance on items which have not also received a designation of BAD performance.

The examiner is urged to keep in mind that each of the items on the Score Sheet involves a number of acts or factors. For example, SIGNALING and CHECKING TRAFFIC are important components of many of the Score Sheet items. Observance of these components should be taken into account in assigning a FAIR or BAD score to a given item.

Errors should be scored under designated items only. E.g., observance of a STOP sign which may appear in an intersection is scored under

item 24 which deals with STOP signs and not under item 11 which deals with intersection observance.

Before an examinee can be failed for refusing to follow instructions, there must be certainty that the instructions were loud and clear enough and that their execution would be compatible with existing traffic conditions.

The examiner must be thoroughly familiar with State laws and the road test material so that the examinee may be assured for a fair and valid assessment of his driving skill.

In an investigation with the New Road Test, using licensed vehicle operators as subjects, a distribution of point deductions which are summarized in Table I was obtained. On the basis of this distribution it is recommended that a maximum of 54 point deductions be allowed to pass an applicant.

It should be noted that item 20, USE OF THE CLUTCH, will not apply to applicants using automatic transmission vehicles. Nonetheless the same maximum point deduction is recommended for both automatic and standard transmission users since it is clear that the standard transmission user must possess a greater skill in the operation of his vehicle and must therefore demonstrate an additional competency in its use.

Grounds for Immediate Rejection

The following definitions are offered as guides in judging whether an applicant deserves immediate failure on the road test:

Accident: Any contact with a pedestrian except from pedestrian's intent, any contact (except for slight bumper to bumper) with another car, knocking a parking standard in manner which would damage a car, any contact (except slight bumper contact) with objects.

Dangerous action: Any maneuver which forces defensive driving on the part of another driver to avoid an accident, forcing a pedestrian to dodge, forcing examiner to aid in controlling the car by braking, holding the wheel or in any other way, driving one or more wheels over a curb or onto a sidewalk.

Clear Violation of Any Traffic Law: Any act for which a driver might be arrested or liable for damages in case an accident occurred.

Lack of Cooperation or Refusal to Perform: Refuses to try to do any maneuver, repeatedly fails to follow instructions, offers bribes or gratuities, accuses examiner of discriminating against him.

Test Validity

Field tests confirmed expert judgement in demonstrating that experienced drivers obtained significantly better scores than a group of violators and a relatively inexperienced group of drivers. High school students receiving practice driving instruction were also shown to receive better scores than those who have not received such instruction. Differences were found to be significant at better than the .01 level.

Reliability

Simultaneous but independent ratings by two examiners of the same group of drivers and by the same examiner on two separate occasions resulted in correlations ranging from .77 to .93 all of which were significant at a confidence level of .01.

Test Time and Route

About 16 minutes are needed to go through the recommended two mile testing route for each applicant. Conditions on the road should be of the kind and frequency specified on the score sheet.

TABLE I

PER CENT OF DULY LICENSED DRIVERS EXAMINED BY THE NEW ROAD TEST WHO WOULD PASS WHEN OBTAINING GIVEN AMOUNT OF DEDUCTIONS

Maximum Allowable Point Deductions	Per Cent Who Would Pass
22	30%
29	40%
33	50%
38	60%
54	70%

About This Abridgement

This abridged Manual is based on the more complete Manual published by the Center for Safety Education and the Shell Oil Company as No. 2 of the Second Series of Research Contributions to Accident Prevention, copyrighted 1961 by New York University.

THE McGLADE ROAD TEST SCORE SHEET

Francis S. McGlade, Ph.D.
(Reprinted by permission of the publisher)

ITEM	(Applicable Number of Trials Given in Parentheses) Date of Road Test _____		Score Fair	Score Bad
1.	Prior to Start (1)		3	6
2.	Start, Pull Out (1)		5	10
3.	Backing, 50 feet (1)		3	6
4.	Turnabout (1) (30 ft. street)		3	6
5.	Parallel Park (1)		3	6
6.	Shifting Gears		3	6
7.	Use of Accelerator		3	6
8.	Park, Uphill (1)		5	10
9.	Start on Upgrade (1)		3	6
10.	Lane Observance		5	10
11.	Intersection Observance		5	10
	Blind (1)			
	Uncontrolled, Going Straight Through (2)			
	Uncontrolled, Turning (2)			
12.	Intersection Speed		5	10
13.	Speed Control		5	10
14.	Following		5	10
15.	Right of Way		5	10
16.	Steering		5	10
17.	Attention		5	10
18.	Defensive Driving		5	10
19.	Unfamiliar with Rules		5	10
20.	Use of Clutch (Standard Transmission only)		5	10
21.	Use of Footbrake		5	10
22.	Use of Mirror		5	10
23.	SLOW and Other Signs	First	1.0	2
		Second	1.0	2
		Third	1.0	2
24.	STOP Signs	First	2.5	5
		Second	2.5	5
25.	Traffic Lights	First	2.5	5
		Second	2.5	5
26.	Change Lanes	First	2.5	5
		Second	2.5	5
27.	Right Turns	First	1.5	3
		Second	1.5	3
		Third	1.5	3
28.	Left Turns	First	1.5	3
		Second	1.5	3
		Third	1.5	3

APPENDIX C

ACHIEVEMENT SCORES

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INSTRUCTIONAL TREATMENT 1

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
001	16	17	19	52	17	22	19	58	192
002	15	19	23	57	26	31	26	83	
003	19	24	23	66	28	23	19	70	
004	23	19	05	47	27	20	24	71	
005	12	15	20	47	20	13	22	55	
006	22	20	26	68	26	26	23	75	
007	13	14	17	44	19	16	19	54	188
008	22	19	23	64	30	26	18	74	
010	21	26	20	67	28	31	25	84	193
011	20	26	21	67	28	26	24	78	184
012	22	21	23	66	27	25	26	78	
013	20	15	17	52	22	23	22	67	
014	24	20	22	66	31	28	23	82	
016	23	15	13	51	27	21	22	70	194
017	16	20	22	58	17	24	21	62	061
018	28	28	18	74	28	30	21	79	
019	19	20	19	58	27	22	21	70	
020	17	17	18	52	25	17	22	64	157
021	25	20	23	68	28	29	24	81	158
022	26	26	21	73	30	27	25	82	169
025	14	12	16	42	23	23	23	69	
026	10	09	10	29	17	10	12	39	154
028	17	17	24	58	21	25	23	69	152
030	26	27	29	82	30	30	28	88	164
031	21	20	29	70	17	24	25	66	126
032	25	24	23	72	31	32	24	87	

Instructional Treatment 1 (continued)

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
033	25	18	25	68	27	25	27	79	179
034	17	18	18	53	27	27	23	77	176
035	22	16	14	52	24	22	19	65	
036	19	22	21	62	30	21	17	68	
037	19	22	26	67	25	27	30	82	163
038	16	24	20	60	27	25	21	73	
039	18	19	21	58	18	25	21	64	
040	17	17	24	58	24	22	27	73	
041	23	29	27	79	29	31	25	85	
042	12	15	20	47	22	18	19	59	
043	12	13	21	46	23	19	23	65	196
044	23	20	21	64	30	23	22	75	202
046	20	16	19	55	28	23	21	72	165
047	23	30	28	81	30	32	27	89	175
048	13	12	15	40	17	15	17	49	183
049	29	25	26	80	29	29	24	82	187

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INSTRUCTIONAL TREATMENT 2

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
050	17	22	18	57	19	24	21	64	197
051	17	18	25	60	19	24	26	69	187
052	20	25	27	72	28	30	26	84	
053	18	14	20	52	28	18	19	65	172
054	28	26	27	81	31	28	23	82	
055	15	13	16	44	21	21	16	58	
056	23	16	22	61	28	27	21	76	194
057	25	29	21	75	31	30	24	85	213
058	20	19	25	64	20	27	20	67	
059	19	24	16	59	22	27	22	71	206
060	18	21	08	47	25	26	22	73	
061	16	20	27	63	29	28	25	82	
062	22	25	25	72	30	28	23	81	207
063	18	21	15	54	26	27	22	75	
064	25	30	28	83	27	31	23	81	
065	22	21	16	59	23	24	22	69	
066	19	15	20	54	22	24	24	70	191
067	23	23	19	65	29	27	22	78	
068	18	14	15	47	18	16	20	54	
069	18	14	09	41	25	24	24	73	205
070	26	26	28	80	30	30	25	85	200
071	15	22	27	64	24	30	28	82	165
072	21	25	23	69	27	31	27	85	
073	15	14	17	46	21	23	17	61	174
074	22	25	25	72	30	28	23	81	193
075	23	26	26	75	29	32	19	80	
076	29	24	26	79	29	29	25	83	220

Instructional Treatment 4 (continued)

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
175	13	20	18	51	27	26	16	69	213
176	26	28	28	82	26	31	25	82	231
177	20	23	26	69	27	26	26	79	
178	24	24	27	75	31	31	24	86	
179	21	28	29	78	29	28	25	82	219
180	24	26	28	78	30	30	26	86	
181	24	21	21	66	25	23	25	73	
182	21	18	22	61	29	29	28	86	224
184	16	18	22	56	20	24	25	69	187
185	23	22	21	66	28	27	20	75	231
186	23	26	17	66	26	32	20	78	224
187	25	29	27	81	29	30	26	85	
188	20	20	26	66	30	23	28	81	223
189	23	21	23	67	26	29	24	79	
190	21	23	25	69	29	26	24	79	
191	15	16	16	47	20	15	21	56	
192	18	15	18	51	26	18	24	68	
194	20	20	20	60	25	26	22	73	

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INSTRUCTIONAL TREATMENT 5

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
195	24	22	21	67	29	24	25	78	207
196	23	25	19	67	28	26	22	76	212
197	24	21	19	64	28	30	27	85	211
198	19	20	14	53	26	29	14	69	206
199	15	16	19	50	23	22	21	66	
200	18	21	24	63	27	26	28	81	196
201	16	15	16	47	29	26	27	82	
202	24	21	22	67	30	29	27	86	204
204	25	26	23	74	28	25	20	73	234
205	18	23	27	68	28	31	30	89	213
206	22	24	27	73	22	31	26	79	203
207	13	23	18	54	23	22	19	64	
208	17	13	23	53	26	23	22	71	225
209	21	22	21	64	30	27	25	82	222
210	13	24	26	63	21	21	27	69	
211	28	29	25	82	30	32	22	84	
212	21	20	23	64	26	27	22	75	
213	18	22	20	60	26	28	20	74	218
214	17	13	21	51	25	19	22	66	
215	23	23	27	73	31	32	24	87	240
216	10	14	16	40	25	27	21	73	
217	20	29	16	65	30	32	24	86	
218	23	25	24	72	28	29	22	79	201
219	21	19	21	61	28	27	25	80	
220	19	18	20	57	24	24	19	67	
221	19	23	20	62	21	20	22	63	
222	13	18	23	54	21	27	20	68	225

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Instructional Treatment 5 (continued)

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
223	15	22	18	55	26	23	21	70	
224	23	19	23	65	24	22	21	67	
225	22	21	25	68	28	29	25	82	
226	26	27	24	77	28	28	30	86	
227	20	20	24	64	27	25	23	75	
228	21	18	21	60	26	26	17	69	
229	27	23	21	71	29	29	25	83	226
230	15	19	18	52	23	23	22	68	207
231	14	15	20	49	23	20	22	65	
232	13	14	24	51	30	23	25	78	
233	26	25	23	74	28	32	22	82	236
234	26	23	22	71	28	26	25	79	215
235	25	25	23	73	31	29	20	80	
236	16	17	18	51	25	26	27	78	
237	20	15	21	56	27	26	25	78	227
238	17	21	20	58	28	26	24	78	232
239	21	15	22	58	25	23	26	74	
240	18	17	22	57	26	28	24	78	
241	20	15	20	55	29	21	16	66	
242	23	15	20	58	27	26	22	75	235

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INSTRUCTIONAL TREATMENT 6

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
243	15	16	21	52	19	22	14	55	
244	13	12	22	47	26	23	17	66	
245	14	16	18	48	26	23	22	71	
246	18	22	17	57	25	26	20	71	
247	28	27	29	84	30	29	26	85	
248	23	17	22	62	25	27	24	76	
249	21	13	16	50	21	20	22	63	
250	20	18	22	60	26	18	25	69	219
251	18	19	21	58	27	18	28	73	
252	27	26	27	80	30	32	28	90	232
253	24	24	22	70	30	31	25	86	221
255	25	27	21	73	30	30	28	88	
256	17	14	08	39	19	19	26	64	209
257	15	23	20	58	25	29	23	77	211
258	21	19	19	59	29	31	22	82	196
259	19	30	21	70	29	33	23	85	
261	27	20	26	73	27	28	26	81	
262	25	19	27	71	27	27	25	79	
263	20	25	25	70	30	31	26	87	
264	14	16	17	47	16	25	21	62	191
266	22	28	23	73	28	31	28	87	
267	11	20	16	47	28	18	18	64	209
268	18	21	20	59	24	29	30	83	194
269	16	08	13	37	21	27	15	63	
270	25	27	25	77	28	29	26	83	
271	19	20	24	63	26	21	24	71	
272	27	17	24	68	30	26	22	78	

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Instructional Treatment 6 (continued)

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
273	15	22	19	56	25	22	24	71	210
274	26	24	23	73	28	24	24	76	
275	26	20	24	70	27	25	24	76	196
276	23	18	24	65	21	28	20	69	214
277	12	10	17	39	22	14	17	53	
278	18	18	24	60	26	25	25	76	
279	27	27	27	81	30	29	28	87	220
280	24	18	19	61	26	27	24	77	196
281	27	21	19	67	27	28	25	80	217
282	18	15	16	49	22	21	23	66	220
283	19	19	20	58	27	24	30	81	
284	19	23	24	66	25	28	28	81	223
285	24	14	07	45	29	26	24	79	
286	23	19	13	55	28	27	22	77	228
287	26	23	18	67	30	29	26	85	
289	24	25	20	69	26	26	24	76	
290	15	23	24	62	25	28	23	76	222
291	18	15	22	55	26	24	20	70	226
292	17	18	19	54	20	26	26	72	230
293	15	16	21	52	26	25	20	71	224

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INSTRUCTIONAL TREATMENT 7

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
295	21	22	22	65	25	26	26	77	
296	24	17	21	62	25	24	18	67	191
297	25	25	22	72	23	25	27	75	
298	13	09	12	34	24	24	17	65	
299	23	22	22	67	26	28	22	76	
300	16	13	14	43	24	19	19	62	
301	20	20	26	66	25	27	23	75	
302	25	23	24	72	29	30	21	80	
303	14	24	23	61	27	29	20	76	171
304	20	23	25	68	27	29	20	76	214
305	17	19	14	50	24	17	20	61	
306	27	22	24	73	29	29	26	84	185
307	23	20	14	57	26	20	19	65	
308	28	24	29	81	26	28	27	81	217
309	21	27	26	74	24	26	28	78	149
310	19	17	11	47	26	20	19	65	198
311	24	20	20	64	30	28	16	74	207
312	22	12	20	54	25	23	21	69	
313	26	20	21	67	29	25	24	78	196
314	22	20	21	63	30	24	24	78	198
315	09	18	11	38	17	19	18	54	162
316	22	16	27	65	27	27	23	77	
317	19	19	23	61	27	20	27	74	
318	19	16	23	58	25	20	22	67	
320	18	20	22	60	22	22	26	70	151
321	16	16	21	53	29	28	23	80	
322	14	13	14	41	25	25	22	72	218

Instructional Treatment 7 (continued)

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
323	19	17	20	56	21	18	20	59	
324	16	10	22	48	19	15	22	56	204
325	18	19	18	55	18	21	13	52	
326	20	28	28	76	29	31	27	87	191
327	15	12	11	38	26	24	20	70	
328	20	22	20	62	28	27	21	76	
329	25	23	23	71	28	27	25	80	
330	15	20	19	54	23	20	21	64	
331	17	19	24	60	24	20	22	66	
332	23	24	20	67	25	28	28	81	191
333	18	21	24	63	25	21	23	69	
334	15	22	23	60	25	27	26	78	188
335	17	19	19	55	23	24	19	66	187
336	24	19	23	66	28	21	23	72	
337	24	21	19	64	28	26	22	76	196
338	19	25	23	67	23	26	22	71	187
339	21	18	16	55	24	26	25	75	185
340	17	14	17	48	26	21	16	63	187

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VT 014 676
WOTOWIEC, PETER J.
IN SERVICE EDUCATION FOR TEACHERS OF VOCATIONAL HORTICULTURE IN OHIO. A SPECIAL STUDY IN AGRICULTURAL EDUCATION.

OHIO STATE UNIV., COLUMBUS. DEPT. OF AGRICULTURAL EDUCATION.
OHIO STATE DEPT. OF EDUCATION, COLUMBUS. DIV. OF VOCATIONAL EDUCATION.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 70CT71 54P.

DESCRIPTORS - *AGRICULTURAL EDUCATION; *HORTICULTURE; *STATE SURVEYS; *VOCATIONAL AGRICULTURE TEACHERS; *INSERVICE EDUCATION; PROGRAM PLANNING; PROGRAM DEVELOPMENT; TEACHER BACKGROUND
IDENTIFIERS - OHIO

ABSTRACT - AN EXISTING PROBLEM IN OHIO, AS WELL AS OTHER STATES, IS HOW TO ECONOMICALLY PROVIDE FOR THE NECESSARY INSERVICE NEEDS OF VOCATIONAL HORTICULTURE TEACHERS. THUS, THE OVERALL PURPOSE OF THIS STUDY WAS TO OBTAIN INFORMATION WHICH WOULD BE OF VALUE IN PLANNING A 3-YEAR PROGRAM. SPECIFIC OBJECTIVES OF THE STUDY WERE TO OBTAIN BACKGROUND INFORMATION CONCERNING THE EDUCATION, WORK EXPERIENCE AND ACADEMIC STATUS OF TEACHERS AND TO DETERMINE THEIR INSERVICE NEEDS. INCLUDED AS FINDINGS OF THE STUDY ARE THAT: (1) HALF OF THE HORTICULTURE TEACHERS IN OHIO ARE UNDER 29 YEARS OF AGE, (2) THE MAJORITY HAVE BACHELORS DEGREES, (3) ONE-FOURTH HAVE BEEN IN THE ARMED FORCES, (4) FEWER THAN ONE-THIRD HAVE BEEN ADMITTED TO GRADUATE SCHOOLS, AND (5) MORE THAN HALF WHO HELD BACHELORS DEGREES HAD AN ACCUMULATIVE UNDERGRADUATE POINT HOUR OF LESS THAN 2.7. AMONG THE SUGGESTIONS FOR INSERVICE PROGRAMS WERE: (1) LANDSCAPE DESIGN, (2) HORTICULTURE EQUIPMENT OPERATION AND MAINTENANCE, (3) BUSINESS MANAGEMENT IN HORTICULTURE, (4) PLANNING AND CONDUCTING STUDENT OCCUPATIONAL PROGRAMS, (5) ADVISING YOUTH ORGANIZATIONS, AND (6) CONDUCTING CLASS AND LABORATORY ACTIVITIES. (JS)

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PROFILE OF OHIO

VOCATIONAL HORTICULTRE

TEACHERS

	Number of Teachers	Percent of Respondents
Less Than 29 Years of Age	28	50.0
Hold BS Degree	34	69.4
Majored in Ornamental Horticulture	13	26.5
Served in the Military Service	14	28.6
Have Horticulture or Related Work Experience	42	85.7
Have had Other Types of Work Experience	26	53.6
Have Taught 10 Years or Less	40	81.6
Teach in Comprehensive Schools	36	73.5
Emphasize Ornamental Horticulture in their Curriculum	33	67.3
Hold Four Year Provisional Teaching Certificates	27	55.2
Had an Undergraduate Point Hour Under 2.7	28	57.1
Have Taken The Graduate Record Exam	15	30.6
Have Been Admitted to Graduate School	15	30.6
Have Taken From 3-24 Hours of Graduate Credit	9	18.3
Enrolled in Certification Program, Graduate School or as Special Students	22	44.9
Plan To Take From 1-7 Graduate Courses Within The Next Three Years	17	41.3
Plan To Take From 11-30 Graduate Credit Hours Within The Next Three Years	9	19.6

PART I

EDUCATION AND WORK EXPERIENCE OF TEACHERS OF VOCATIONAL HORTICULTURE IN OHIO

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NEED FOR THE STUDY

The program of inservice education for teachers of vocational agriculture in Ohio has been based primarily on the needs of the teachers. With the rapid development of vocational horticulture in the state, it has become necessary to develop additional inservice programs for these specialized teachers.

In order to effectively plan a state wide inservice program it becomes necessary to have certain information about the teachers. Horticulture teachers vary considerably in their formal education and experience in the horticulture industry. The inservice program can help to achieve a reasonable balance between formal education and work experience for a teacher if his background is known. A teacher who has entered teaching upon graduation and has had little or no work experience in horticulture would likely benefit from inservice experience which take him to industry. On the other hand, a teacher wihtout a degree hired directly from industry would need to emphasize formal professional education course work in his inservice program. Between these extremes are teachers with varying degrees of education and work experience as well as teachers with varying lengths of teaching experience. Each would have unique inservice needs.

The availability of information on teacher backgrounds would enable those planning inservice education programs to do a more effective job.

PURPOSE OF THE STUDY

The purpose of this study was to provide information on the educational and work experience background of teachers of vocational horticulture in Ohio.

Specific objectives of the study were:

1. To describe the formal education background and status for each teacher of vocational horticulture in Ohio.
2. To describe the horticulture related and non-related work experiences of teachers of vocational horticulture in Ohio.

LIMITATIONS OF THE STUDY

This study was limited by the percentage of responses which was 86.3% of the total number of vocational horticulture teachers in Ohio as of March 1, 1971.

Further limitation of the results of this study were due to the fact that the information collected would change with time. The results must be considered valid only for the March 1, 1971 date.

An additional limitation is imposed by the use of a questionnaire to obtain the necessary data.

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CONCLUSIONS

The following conclusions are based upon an interpertation of data presented in the study.

1. Teachers of vocational horticulture in Ohio tend to be young men. Over half of these teachers are 29 years of age or younger.
2. Most of the teachers of vocational horticulture in Ohio who responded have been teaching ten years or less. This figure corresponds to that found by Wooden and Parks for all teachers of vocational agriculture in Ohio in 1968.[1] About one third of the respondents have taught two years or less.
3. The majority of the respondents have bachelors degrees. Three teachers have less the a bachelors degree. One of these has an associate degree and two have no degree. These figures generally correspond to those reported by Wooden and Parks for all teachers of vocational agriculture in Ohio.[2]
4. One fourth of the respondents have been members of the armed forces.
5. Well over three fourths of the respondents have held a job in the horticulture industry and slightly over half indicated that they have held a job in other than the horticulture industry.
6. Approximately one third of the respondents taught in joint vocational schools. The remainder taught in comprehensive or special school.

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1. Ralph J. Wooden and Darrell L. Parks. Graduate Work Completed by Ohio Teachers of Vocational Agriculture, the Ohio State University Department of Agricultureal Education, 1968, Columbus, Ohio.
2. Ibid.

7. Slightly fewer than one third of the respondents held temporary teaching certificates. Over half held four year provisional certificates. The remainder of the respondents held eight year and permanent certificates. Wooden and Parks reported that for all vocational agriculture teachers in Ohio, 6% had temporary certificates, 59% had provisional certificates and the remainder held eight year and permanent certificates.[3]

8. More than half of the respondents who held bachelors degrees indicated they had an accumulative undergraduate point hour of less than 2.7. This means they have taken or must take the Graduate Record Exam in order to enroll in graduate school. Wooden and Parks reported similar figures for teachers of vocational agriculture.[4]

9. Fewer than one third of the respondents have been admitted to graduate school. Over three fourths of those who have been admitted took the Graduate Record Exam. Wooden and Parks reported that 12% of all vocational agriculture teachers had been admitted to graduate school and 6% had taken the Graduate Record Exam.[5]

10. Approximatley one fifth of the respondents were enrolled in programs leading to certification. A like number were enrolled in graduate programs and a similar number indicated that they were not enrolled in any formal education program. The remainder of the respondents indicated that they were enrolled either as special students or were taking non-credit inservice courses.

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3. Ibid.
4. Ibid.
5. Ibid.

STUDY PROCEDURE

A list of the teachers of vocational horticulture for the 1970-71 year was obtained from the Agriculture Services Office, State Department of Education. This list of 57 teachers was used as the source for the names of the vocational horticulture teachers in Ohio.

A questionnaire was devised to obtain the desired information. It was reviewed by this writer's advisor and several graduate students and horticulture teachers to determine the clarity and value of the questions.

This questionnaire was presented to those teachers in attendance at the horticulture teachers meeting held at the Ohio State University on December 28 and 29, 1970. Twenty eight teachers completed the questionnaire and returned it either during the meeting or within several weeks. The remaining teachers were sent the questionnaires via U.S. mail during the week following the meeting. A followup card was sent to those not returning the questionnaire on January 26, 1971. A second followup card was sent to the non-respondents on February 16, 1971.

MAJOR FINDINGS

A total of fourty nine teachers responded by completing the questionnaire either at the December meeting or via the mail. This was an 86.3% return.

Age of Teachers

Each teacher was asked to indicate his age. The ages ranged from 22 to 63. The median age was 29, the mean was 32.2 years.

TABLE 1

AGE OF TEACHERS

Age Range	Number of Teachers	Percent of Respondents
20-25	14	28.6
26-30	17	34.7
31-35	7	14.3
36-40	2	4.1
41-45	1	2.0
46-50	2	4.1
51-55	3	6.1
55-60	0	0
61 65	3	6.1

Formal Education

Thirty four, or 69.4% of the teachers of vocational horticulture in Ohio had a bachelors degree. Twelve teachers, or 24.4% had a masters degree. One teacher had a two year Associate degree and two have no college degrees.

Thirty nine of the respondents listed their major subject specialty areas in college. Thirteen were Ornamental Horticulture majors, ten were Agriculture Education majors, nine were Floriculture majors, two Biology, two General Horticulture, and one each in Physical Education, Agriculture, and Food Processing.

TABLE 2

FORMAL EDUCATION OF TEACHERS

Category	Number of Teachers	Percent of Respondents
No Degree	2	4.1
Associate Degree	1	2.0
Bachelors Degree	34	69.4
Masters Degree	12	24.5

TABLE 7

TEACHING EXPERIENCE

Range in Years	Number of Teachers	Percent of Respondents
0-2	15	30.6
3-5	13	26.5
6-10	12	24.4
11-15	3	6.1
16-20	4	8.1
21-25	0	0
26-	2	4.0

Teaching Location

Thirty six of the respondents were teaching in comprehensive schools and thirteen in area vocational schools. As the number of area vocational schools increase these figures will tend to balance out.

TABLE 8

TEACHING LOCATION

Category	Number of Teachers	Percent of Respondents
Comprehensive Schools	36	[illegible]
Joint Vocational Schools	13	26.5

Categories of Horticulture Occupation Taught

An attempt was made to determine the categories of horticultural occupations for which students are prepared at the respondents schools. Since a program may cover more than one area these figures should be read only to indicate the relationship in size of the job preparation categories as they exist in the schools of the respondents. Twenty schools prepared students for jobs in floriculture, thirty three in ornamental horticulture, seven in vegetable and fruit, and twenty four considered their program general

vocational horticulture. Sixteen respondents indicated "other" categories which included turf, landscaping, natural resources, conservation, environmental control, tree maintenance, forestry, and small gasoline engine repair.

The relatively large number of teachers preparing students for employment in vegetable and fruit can be interpreted in two ways. Either the schools are located in major vegetable producing areas or there are small numbers of students interested in vegetables in nearly every school.

The "other" category includes the many specialized employment areas which exist in the field of horticulture. In addition some teachers also include landscaping in this category rather than as part of ornamental horticulture.

TABLE 9

CATEGORIES OF HORTICULTURAL OCCUPATIONS TAUGHT

Category	Number of Teachers	Percent of Respondents
Ornamental Horticulture	33	62.3
General Horticulture	24	49.0
Floriculture	20	40.8
Vegetable & Fruit	7	14.3
Other	16	32.4

(Note: Percentages exceed 100 since one school may prepare students for jobs in several categories)

Teacher Certification

Teachers were asked to indicate which certificate they held. Fifteen, or 30.6% of the respondnets held temporary certificates. Twenty seven or 55.2% held 4 year provisional certificates. Four, or 8% held 8 year professional certificates and three teachers or 6.2% held permanent certificates.

An increasing number of teachers are coming into the horticultural education field with degrees in horticulture or directly from the horticulture industry. This was reflected in the sizable numbers of teachers who held temporary certificates. It is also interesting to note that relatively few teachers have secured professional or permanent certificates.

TABLE 10

TEACHER CERTIFICATION

Certificate	Number of Teachers	Percent of Respondnets
Temporary	[illegible]	30.6
Four Year Provisional	27	55.2
Eight Year Professional	4	8.1
Permanent	3	6.1

Undergraduate Point Hour

In order to determine the number of teachers who would have to take the graduate record exam in order to enroll in graduate school they were asked to list their undergraduate point hour. Five of the forty nine respondents did not answer the question. Three of those five men entered the teaching profession directly from industry and do not have an undergraduate point hour to report. The lowest reported undergraduate point hour was 1.9, the highest

was 3.69. The median point hour was 2.5. The mean was 2.47. Since the Graduate Record Exam must be taken be a person with a 2.7 or below undergraduate point hour, thirty one of the respondents who listed their point hour either have taken or will have to take the GRE if they expect to be accepted into graduate school.

TABLE 11

UNDERGRADUATE POINT HOUR

Range	Number of Teachers	Percent of Respondents
1.9 - 2.29	10	20.4
2.3 - 2.69	18	36.7
2.7 - 3.09	7	14.3
3.1 - 3.54	7	14.3
3.6 - 4.0	1	2.0
Did not answer question	5	12.2

Graduate Record Exam

Fifteen of the respondents had taken the Graduate Record Exam. Thirty one have not. Three respondents did not answer this question. Less than ½ of those who , according to their point hour, must take the GRE in order to be admitted to graduate school have done so.

TABLE 12

GRADUATE RECORD EXAM

	Number of Teachers	Percent of Respondnets
Have taken the exam	15	30.6
Have not taken the exam	31	63.3
Did not answer the question	3	6.1

Admitted To Graduate School

Fifteen of the respondents have been admitted to graduate school, thirty one have not. Three individuals did not answer this question.

TABLE 13

ADMITTED TO GRADUATE SCHOOL

	Number of Teachers	Percent of Respondents
Have been admitted	15	30.6
Have not been admitted	31	63.3
Did not answer question	3	6.1

Quarter Hours of Graduate Credit

An attempt was made to determine the extent of graduate work which had been completed be the respondents. Twelve did not answer this question. This is the same number who have Masters degrees, however no attempt at correlating these two facts was made. Seventeen respondents indicated no graduate credits. Those who answered this question by listing the credits earned listed from three to sixty five. The median was twenty seven, the mean was thirty two.

TABLE 14

QUARTER HOURS OF GRADUATE CREDIT

Number of Credits	Number of Teachers	Percent of Respondents
0	17	34.7
3 - 12	3	6.1
13- 24	6	12.2
25- 36	5	10.2
37- 48	1	2.0
49- 60	3	6.1
61	2	4.1
Did not answer question	12	24.5

Over 34% of the teachers had no graduate credit. In order for teachers to maintain their professional education and technical horticulture competencies, they must either begin graduate work or participate in a non graduate credit facet of inservice education. Approximetely 30% of the teachers are earning graduate credits within the Masters degree range (3-48 credit hours). These teachers are either admitted to graduate school or are working as special students and should be encouraged and assested to qualify for admission.

Academic Plans

Nine teachers or 18.4% indicated they were enrolled in an educational program leading to certification. Nine teachers indicated they were formally enrolled in a graduate program. Seven of these were working on a Masters program and two on a pHd program. Four teachers,8.1% listed themselves as enrolled as special students. Three of these four desired to enroll in graduate school, but have not taken the GRE exam. The fourth teacher who listed himself as a special student is a person who entered the teaching profession from industry, holds a temporary certificate, and perhaps should be working towards full certification. Nine teachers or 18.4% indicated that they were not enrolled in any formal education programs. Eleven teachers checked the "other" category. Most of those commented that they plan to enroll in graduate school or had completed all the graduate work they wanted.

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TABLE 15

ACADEMIC PLANS

	Number of Teachers	Percent of Respondents
Enrolled in Certification Program	9	18.4
Enrolled in Graduate School	9	18.4
Enrolled as Special Students	4	8.1
Not enrolled in Any Educational Program	9	18.4
Other (Undecided-Completed Grad. Work Etc.)	11	22.4
Did not answer Question	7	14.3

PART II

INSERVICE EDUCATION NEEDS OF TEACHERS OF VOCATIONAL HORTICULTURE IN OHIO

A total of 46 teachers responded by completing and returning the questionnaire. This was an 80.7% return.

The data for questions 1 and 2 were separately tabulated listing the total number of teachers who ranked each subject area "1","2",Etc.. The total score for each subject area was calculated by multiplying the number of teachers who ranked each area as "1", "2",etc. by the inverse number in the total number of listed responses for that question. For example, in question one, the number of teachers who ranked each area as "1" was multiplied by 12,(12 possible listed responses for question one.), the number of teachers who ranked each area as "2", by 11, Etc.. These figures were added together for each listed response which resulted in the total score for each subject area. The total scores were than ranked from high to low to provide a composite representation of the rankings of all teachers.

MAJOR FINDINGS

Technical Horticulture Needs

Each teacher was asked to rank the areas of technical horticulture in whoch he believed he needed further education within the next three years. Since each teacher did not expect to take a course in every subject area listed, they ranked only those which they felt they needed and would take.

TABLE 1

TECHNICAL HORTICULTURE INSERVICE
NEEDS AS RANKED BY TEACHERS

Item	Percent of Teachers Ranking as: 1-4	5-8	9-12	Final Rank
Landscape Design	63	10.9	26.1	1
Horticulture Equipment Operation and Maintenance	39.2	32.6	17.4	2
Business Management in Horticulture	47.8	26.1	10.9	3
Ornamental Plant Identification	41.3	23.9	17.4	4
Horticulture Laws and Regulations	34.8	32.6	19.6	5
Floral Arrangement	30.4	32.6	19.6	6
Turf	39.2	23.9	15.2	7
School Greenhouse Management	39.2	19.6	23.9	8
Florist Shop Management	30.4	32.6	19.6	9
Small Gasoline Engine Tune up and Overhaul	32.6	17.4	26.1	10
Electrical and Plumbing Techniques and Skills	23.9	17.4	39.2	11
Electric Arc and Acetylene Welding	17.4	8.7	56.6	12

The areas of technical horticulture need indicated by the respondents varied as was expected due to their previous work experience, education and teaching experience. Table 1 shows that Landscape Design was ranked highest and Electric Arc and Acetylene Welding lowest. The graduation of responses was generally uniform from the highest subject to the lowest. No write in responses were made in the "other" category.

Means of Offering Technical Horticulture Inservice Programs

Each teacher was asked to indicate his preference as to how the subject area should be offered. The following table lists the responses for each technical subject area.

TABLE 2

TEACHER PREFERENCE FOR MEANS OF TECHNICAL HORTICULTURE INSERVICE OFFERINGS

Subject Area	2-3 Day Non-Credit Workshop	Quarter Length or 3 Week Summer Session Graduate Credit Courses
Landscape Design	10	23
Horticulture Equipment Operation and Maintenance	17	20
Business Management in Horticulture	16	21
Ornamental Plant Identification	14	20
Horticulture Laws and Regulations	27	11
Floral Arrangement	20	13
Turf	16	17
School Greenhouse Management	11	1[illegible]
Florist Shop Management	18	15
Small Gas Engine Tune up and Overhaul	15	18
Electrical and Plumbing Techniques & Skills	21	10
Electric Arc and Acetylene Welding	20	11
Other	0	0

The preference of how the subjects should be taught can be analyzed from two view points: that of need for graduate credit, and that of economy of time. Teachers who are on graduate credit credit programs could be expected to prefer graduate courses. Those teachers must use their vacation time for the course work, but are willing to do that because of their graduate work. Teachers who

are not on a graduate program could be expected to prefer a short term non-credit offering. Thus, the means of offering a subject is not as easily resolved due to the complex interrelationships involved.

Teachers prefer the following courses to be taught as 2-3 day non-credit workshops:

Horticulture Laws and Regulations

Floral Arrangement

Florist Shop Management

Electrical and Plumbing Techniques and Skills

Electric Arc and Acetylene Welding

Teachers prefer the following courses to be taught as quarter length or 3 week summer sessions for graduate work:

Landscape Design

Horticultural Equipment Operation and Maintenance

Business Management in Horticulture

Ornamental Plant Identification

Turf

School Greenhouse Management

Small Gas Engine Tune up and Overhaul

Professional Education Needs

Each teacher was asked to rank the areas of professional education needs which he believed he needed and which he would take if offered within the next three years. The teachers ranked only those subject areas which they felt they needed.

TABLE 3

PROFESSIONAL EDUCATION INSERVICE NEEDS
AS RANKED BY TEACHERS

Item	Percent of Teachers Ranking As: 1-3	4-7	8-10	Final Rank
Planning and Conducting Student Occupational Experience Programs	60.9	21.7	6.5	1
Advising Youth Organizations in Horticulture	30.4	21.7	30.4	2
Conducting Class and Laboratory Activities	32.6	34.8	8.7	3
Preparing and Using Teaching Aids For Vocational Horticulture	52.1	23.9	8.7	4
Managing Facilities and Educational Resources	32.6	32.6	15.2	5
Guidance , Counselling and Placement	32.6	28.3	13.0	6
Working With Horticultural Advisory Groups	17.4	26.1	21.7	7
Developing Adult Programs in Horticulture	19.6	28.3	23.4	8
Working With Other Horticulture Groups in the Community	21.7	27.0	21.7	9
Principles of Vocational Education	10.9	23.9	30.4	10

Table 3 shows that Planning and Conducting Student Occupational Experience Programs was ranked highest by all teachers. Principles of Vocational Education was ranked lowest. The gradation of responses was generally uniform from the highest to the lowest. There were no write in responses in the "other" category.

Means of Offering Professional Education Inservice Programs

Each teacher was asked to indicate his preference as to how the subject area should be offered. The following table lists the responses for each professional education subject area.

TABLE 4

TEACHER PREFERENCE FOR MEANS OF PROFESSIONAL EDUCATION INSERVICE OFFERINGS

Subject Area	2-3 Day Non-Credit Workshop	Quarter Length or 3 Week Summer Session Graduate Credit Courses
Planning and Conducting Student Occupational Experience Programs	14	21
Advising Youth Organizations in Horticulture	14	19
Conducting Class And Laboratory Activities	11	25
Preparing and Using Teaching Aids For Vocational Horticulture	10	34
Managing Facilities And Educational Resources	12	22
Guidance , Counselling, and Placement	14	19
Working With Horticultural Advisory Groups	21	11
Developing Adult Programs in Horticulture	15	18
Working With Other Horticulture Groups in the Community	17	14
Principles of Vocational Education	16	16
Other	0	0

Teachers prefer the following areas to be offered as 2-3 day Non-Credit Workshops:

Working With Horticultural Advisory Groups

Working With Other Horticultural Groups in the Community

Teachers prefer the following areas to be offered as Quarter Length or 3 Week Summer Session Graduate Credit Courses:

Planning and Conducting Student Occupational Experience Programs

Advising Youth Organizations in Horticulture

Conducting Class and Laboratory Activities

Preparing and Using Teaching Aids for Vocational Horticulture

Managing Facilities and Educational Resources

Guidence, Counselling, and Placement

Developing Adult Programs in Horticulture

The area "Principles of Vocational Education" could be taught as a Non-Credit Workshop of a Graduate Credit Course.

Future Education Plans

During the next three years the respondents indicated they would participate in the inservice program as follows:

Seventy one and seven tenths percent of the respondents indicated they would attend from 1-3 three week summer sessions within the next three years. The responses were quite evenly divided among one, two, and three sessions.

TABLE 5

NUMBER OF 3 WEEK SUMMER SESSIONS TEACHERS PLAN TO ATTEND WITHIN THE NEXT 3 YEARS

Number of Sessions Teachers Expect to Attend	Number of Teachers
0	8
1	10
2	11
3	13

Eighty two and seven tenths percent of the respondents indicated they would attend from one to nine (or as many as they could benefit from and schedule) 2-3 day non-credit workshops within the next three years.

TABLE 6

NUMBER OF 2-3 DAY NON-CREDIT INSERVICE EDUCATION WORKSHOPS TEACHERS PLAN TO ATTEND WITHIN THE NEXT 3 YEARS

Number of Workshops Teachers expect to Attend	Number of Teachers
0	2
1-2	8
3-6	29
7+	2

Fourty one and three tenths percent of the respondents indicated they would take quarter length graduate courses during the nest three years. The number of courses varied from one to eight for those teachers who plan to also teach full time. One respondent expects to obtain a leave of absence to do full time graduate work.

placement of high school students in industry would certainly hold in the inservice education of teachers.

Outside resources would be more limited in the professional education area and perhaps the classroom would be the most effective base for instruction. However, it is likely that some effective inservice learning can take place in this area through visits to other high school horticulture programs. In practicality it is usually quite rare for teachers to observe other teachers in action. Perhaps a visiting teacher arrangement could be made whereby a single teacher would visit and observe another teacher for a day. This exchange could provide opportunity for teachers with several years of experience to keep out of the routine monotonous pattern of teaching they tend to develop. Group visits to other horticulture school facilities should also receive more emphasis.

More extensive use of Video tape and tape recordings Etc. would be of value and could serve to help in the individualization of inservice education. As an example, virtually every teacher with several years of experience feels and is competent in some area in his curriculum. Each teacher tends to have his specialty in teaching. A video tape or if necessary a tape recording could be made and these tapes exchanged among the teachers. They would then have a model by which thay could compare their presentation of the same subject.

Those responsible for inservice education should develop a long range (3Year?) plan and schedule of formal inservice activities and a list of available informal inservice resources.

This information would be used by teachers in planning their individual inservice program.

An equally important responsibility of those administering the inservice program is to provide some means by which teacher educators can assist the teacher to individually assess his strength and weaknesses at regular intervals, and to develop a plan for personal growth based on the available resources. This would likely require a more extensive teacher education field staff since all teachers would be visited and also to prepare for the expected increase in high school horticulture units.

Basically the state level philosophy of inservice education for teachers of vocational horticulture should encompass a broadened concept of what actually are valid inservice activities and what existing resources can be utilized. Accordingly, the philosophy should consider the unique character of the inservice needs of each teacher and the means by which he can utilize both formal and informal inservice activities and resources to improve his function as a teacher.

Specific Recommendations

The following specific recommendations are made as a result of this survey.

1. In view of the fact that most of the teachers who responded have been teaching ten years of less and in addition about one third of the respondents have taught two years or less, the inservice program should be primarily geared to this group.

2. Since only about twenty five percent of the respondents had Masters degrees it is reasonable to expect that the overall inservice education program would include a large proportion of

graduate credit courses.

3. Since nearly one third of the teachers held temporary certificates, one emphasis of the inservice program should be to provide the course work necessary for provisional certification.

4. Over three fourths of the respondents have held a job in the horticultural industry. Since work experience increases the teachers effectiveness, inservice credit should be given for pertinent horticulture work experience taken at reasonable intervals during a teacher's career.

5. Since the technical and professional inservice needs of teachers varied considerably, inservice program planning should be more closely oriented to meeting the needs of individual teachers rather then the needs of the group as a whole.

6. The following top ranked areas of technical horticulture should be included in the inservice program within the next three years.

a. Landscape Design offered as a quarter length course or a 3 week summer session for graduate credit.

b. Horticulture Equipment Operation and Maintenance offered as a quarter length or a 3 week summer session for graduate credit.

c. Business Management in Horticulture offered as a quarter length or 3 week summer session for graduate credit.

7. The following top ranked areas of professional education should be included in the inservice program within the next three years.

a. Planning and Conducting Student Occupational Experience Programs, offered as a 3 week graduate credit summer session or a quarter length graduate credit course.

b. Advising Youth Organizations in Horticulture offered as a 3 week graduate credit summer session of a quarter length graduate credit course.

c. Conducting Class and Laboratory Activities offered as a 3 week graduate credit summer session or a quarter length graduate credit course.

8. Since nearly three fourths of the respondents indicated they would enroll for one or more 3 week graduate credit summer sessions during the next three years, emphasis should be made in planning the appropriate subject areas in the format.

9. Since over eighty percent of the respondents indicated they would attend one or more 2-3 day workshops within the next three years the appropriate areas should be planned in that format. The following technical horticulture and professional education areas were prefered in the 2-3 day workshop format by the respondents.

a. Horticulture Laws and Regulations

b. Floral Arrangement

c. Electrical And Plumbing Techniques and Skills

d. Electric Arc and Acetylene Welding

e. Florist Shop Management

f. Working With Horticulture Advisory Groups

g. Working With Other Horticulture Groups in the Community.

10. Since over one half of the respondents indicated they would participate in inservice activities for eight to ten Saturdays per year, special attention should be given to developing an appropriate activity in that format.

11. Inservice activities during the school year should be located 50 miles or less from the teacher's home school in order to achieve maximum participation.

12. Inservice activities during the summer should be located 100 miles or less from the teacher's home school in order to achieve maximum participation.

13. A regular survey of inservice needs of teachers should be made and used to update the ongoing inservice program.

14. Innovative approaches should be used in the inservice program to present an up to date image of inservice education to the teacher. Some possible approaches would include:

a. Use of video tape, telelectures, single concept movie films, etc.

b. A concentrated effort to meet the needs of each teacher rather than the group through closer teacher educator/ supervisor and teacher rapport.

c. More extensive use of existing resources such as Co-Op Extension meetings, Equipment and Suppliers Workshops, Industry Work Experience, Etc..

PART I
APPENDIX

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MARTIN ESSEX
SUPERINTENDENT OF
PUBLIC INSTRUCTION

STATE OF OHIO
DEPARTMENT OF EDUCATION
COLUMBUS
43215

DIVISION OF VOCATIONAL
EDUCATION

612 STATE OFFICE BUILDING

BYRL R. SHOEMAKER
DIRECTOR

January 19, 1971

To: Selected Horticulture Teachers

Re: Horticulture In-Service Education Survey

A coordinated effort is under way to develop a Vocational Horticulture In-Service program designed to meet your needs.

The attached form was completed by teachers who attended the Horticulture Teacher Seminar at The Ohio State University on December 28 and 29. Schedule problems did not permit every teacher to attend; however, we do need the completed forms from every horticulture teacher in order to make the in-service program more meaningful.

Please take several minutes of your time to complete the form, and return it in the enclosed envelope today.

Thanks for your cooperation.

Sincerely,

Pete Wotowiec

Pete Wotowiec
Research Assistant

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STATE OF OHIO
DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
AGRICULTURE EDUCATION SERVICE
SUPPLEMENTARY PERSONNEL RECORD - HORTICULTURE

NAME _____ AGE _____ DATE _____
(last) (first) (middle)

HOME ADDRESS _____ PHONE _____

SCHOOL WHERE EMPLOYED _____

SCHOOL ADDRESS _____ PHONE _____

FORMAL EDUCATION

	Institution	Major Area of Study (ie Hort - Floriculture)	Highest Degree Rec'd	Years of Attendance
High School				to
Tech School				to
College or Univ.				to
Other				to

MILITARY SERVICE

Yes _____ Branch of Service _____ Dates of Service From _____ To _____ Specialty _____

No _____

HORTICULTURE AND RELATED WORK EXPERIENCE

Firm or Company	Location	Your Responsibility	Years of Service
			to
			to
			to
			to

OTHER WORK EXPERIENCE

Firm or Company	Location	Your Responsibility	Years of Service
			to
			to
			to
			to

TEACHING EXPERIENCE

School	Subject Area	Years of Service
		to
		to
		to
		to

Instructional Treatment 2 (continued)

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
077	16	11	17	44	22	17	21	60	193
078	22	28	24	74	30	29	30	89	176
079	14	25	24	63	27	26	22	75	231
080	18	25	22	65	31	28	27	86	205
081	17	17	19	53	28	24	23	75	
083	20	24	22	66	26	29	27	82	
084	24	24	25	73	27	29	25	81	202
085	24	22	24	70	26	27	21	74	
087	26	30	25	81	30	31	26	87	198
088	14	19	25	58	25	24	23	72	
090	19	23	23	65	27	25	26	78	
091	19	16	22	57	26	19	20	65	197
092	21	26	23	70	27	29	23	79	
093	26	26	27	79	28	32	25	85	204
094	21	20	26	67	24	21	20	65	
096	19	23	20	62	28	31	23	82	
097	19	16	22	57	28	28	26	82	

INSTRUCTIONAL TREATMENT 3

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
098	13	12	13	38	24	16	18	58	
099	18	19	11	48	22	24	19	65	
100	19	10	15	44	25	12	18	55	
101	22	20	18	60	25	24	21	70	228
102	22	14	18	54	20	17	23	60	212
103	26	21	18	65	27	20	22	69	209
104	13	12	13	38	23	23	20	66	
106	26	27	26	79	31	30	27	88	217
107	25	24	22	71	22	30	22	74	
108	19	25	26	70	27	26	30	83	
109	18	19	23	60	24	28	23	75	
110	17	15	17	49	23	18	24	65	
111	20	17	19	56	26	25	22	73	192
112	24	19	23	66	21	22	20	63	198
113	19	20	19	58	30	26	22	78	
114	15	24	25	64	26	29	28	83	
115	21	14	21	56	24	26	24	74	
116	21	20	18	59	23	24	17	64	224
117	26	29	21	76	28	31	26	85	
118	24	24	18	66	27	30	29	86	
119	14	16	20	50	21	27	24	72	195
120	25	27	26	78	30	28	24	82	213
122	22	25	20	67	24	30	20	74	
123	22	11	23	56	27	19	20	66	
124	26	25	28	79	27	28	24	79	
125	17	19	21	57	29	23	18	70	202
126	18	20	24	62	22	26	23	71	220

Instructional Treatment 3 (continued)

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
128	21	24	22	67	28	25	28	81	210
129	12	16	15	43	20	25	20	65	
130	14	15	18	47	20	20	22	62	
131	23	19	21	63	28	28	24	80	223
132	23	24	28	75	29	31	28	88	205
133	16	15	16	47	25	21	22	68	182
134	23	20	13	56	30	27	20	77	212
136	19	23	24	66	27	28	22	77	
137	26	30	19	75	32	31	23	86	
138	15	18	20	53	29	27	24	80	
139	15	18	25	58	24	25	24	73	188
140	17	20	17	54	22	26	23	71	206
141	26	21	25	72	24	25	27	76	214
142	26	29	30	85	29	32	28	89	223
143	18	18	20	56	27	25	20	72	226
144	26	26	24	76	29	29	20	78	
145	19	25	25	69	27	27	22	76	
146	22	15	17	54	28	17	23	68	199

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INSTRUCTIONAL TREATMENT 4

Student Number	PRE-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST Driving Knowledge-Opinion Section 1	2	3	Total	POST-TEST McGlade Road Test
147	25	24	26	75	30	27	25	82	208
148	18	19	24	61	20	25	25	70	
149	23	21	18	62	22	27	25	74	207
151	27	20	22	69	29	25	26	80	205
152	22	19	22	63	25	29	25	79	211
153	18	16	24	58	26	25	25	76	
154	16	13	19	48	27	23	22	72	
155	23	20	22	65	25	22	24	71	225
156	25	24	27	76	30	29	21	80	
157	19	15	14	48	23	21	17	61	217
158	19	20	21	60	24	26	27	77	
159	13	28	23	64	24	30	23	77	
160	26	22	27	75	29	30	25	84	202
161	23	25	24	72	27	22	21	70	214
162	17	17	20	54	24	22	23	69	206
163	19	21	28	68	29	29	26	84	217
164	24	28	23	75	29	28	25	82	217
165	27	25	19	71	29	29	19	77	
166	20	18	23	61	24	27	24	75	
167	20	09	13	42	18	16	23	57	
168	20	16	13	49	24	24	17	65	
169	08	11	07	26	20	23	19	62	226
170	22	20	28	70	30	30	28	88	213
171	20	19	13	52	24	25	18	67	
172	21	24	22	67	24	25	23	72	190
173	19	18	22	59	27	28	23	78	
174	15	21	09	45	24	25	20	69	

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IN SERVICE EDUCATION FOR TEACHERS OF VOCATIONAL HORTICULTURE IN OHIO

A SPECIAL STUDY IN AGRICULTURAL EDUCATION
FOR
THE DIVISION OF VOCATIONAL EDUCATION
OHIO DEPARTMENT OF EDUCATION

By

Peter J. Wotowiec, B.S. M.S.

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
OFFICE OF EDUCATION
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Issued by
The Department of Agricultural Education
The Ohio State University
Columbus, Ohio

October 7, 1971

VT014676

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INTRODUCTION

The overall purpose of this study was to obtain information which would be of value in planning a 3 year program of inservice education for the Vocational Horticulture teachers in Ohio.

The study was conducted in two parts. The first part was designed to obtain pertinent background information concerning education, work experience and academic status of the Vocational Horticulture teachers in Ohio in 1971. The second part of the study was an attempt to determine the inservice needs of the teachers as they perceived them.

The study includes an analysis of the inservice education needs of the Vocational Horticulture teachers in Ohio and suggestions for planning the inservice program for the next three years.

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TABLE 3

MAJOR AREA OF STUDY IN
TEACHERS' FORMAL EDUCATION

Area of Study	Number of Teachers	Percent of Respondents
Ornamental Horticulture	13	26.5
Agricultural Education	10	20.5
Floriculture	9	18.5
Biology	2	4.0
General Horticulture	2	4.0
Physical Education	1	2.0
General Agriculture	1	2.0
Food Processing	1	2.0
Did not answer question	10	20.5

Military Service

Fourteen teachers had had a military service record. This constitutes 28.6% of the respondents. Thirty two, or 65.4% have not had any military service. Three or those who returned the questionnaire did not answer the question.

Teachers who have had military service may have acquired certain skills which would be valuable in horticulture teaching. Mechanical and office practice skills are examples which would relate to horticulture education. Since the majority of teachers have not had military service training, this factor would not greatly affect inservice program planning. On an individual basis for those who have had military service, however, it could have some implications. As examples, clerical, chemical warfare, construction and mechanic specialties were listed by some of the individuals who indicated they had military service.

TABLE 4

MILITARY SERVICE

	Number of Teachers	Percent of Respondents
Have had military service experience	14	28.6
Have not had military service experience	32	65.4
Did not answer question	3	6.1

Horticulture and Related Work Experience

Fourty two or 85.7% of the respondents have held a job in the horticulture industry. Three of the respondents said they did not have industry experience. Four individuals did not answer this question. Actual work experience in the field in which a teacher is teaching is a valuable asset to him in making his instruction realistic and meaningful. While a large number of the Ohio Vocational Horticulture teachers have had appropriate work experience it would be valuable if all had the experience.

TABLE 5

HORTICULTURE AND RELATED
WORK EXPERIENCE

	Number of Teachers	Percent or Respondents
Have had Horticultural & Related work experience	42	85.7
Have not had Horticultural & Related work experience	3	6.1
Did not answer the question	4	8.1

The respondents listed the following job titles in response to the horticulture and related work experience question.

Garden Sales--Landscaping
Greenhouse & Florist
Greenhouse Laborer
Golf Course Laborer
USDA Plant Quarantine Inspector
Self Employed Arborist & Nurserymen
Grower
Landscape Laborer
Farm Laborer
Florist
Wholesale Produce Co. Laborer
Farm Operator
Landscape Maintenance Man
Research Assistant
Nursery Salesman
Climber(arborist)
Assistant Greenhouse Grower
Hort. Supply Company Salsemen
Groundskeeper
Turf Research
Floral Designer
Student Conservation Aid
"Packing Grass Seed"
Food Technician
Manager-Florist Shop
Assistant 4H Agent
Plant Breeder
Manager-Garden Center
Plant Propogator

The horticultural work experience of the respondents included a broad spectrum of positions. In addition to employment experience, the person very likely obtained technical information, developed skills which could likely be used in his teaching.

Other Work Experience

This question was included in the survey since a number of skills in other than horticulture industry employment could be valuable to a horticulture teacher. Mechanical and business skills are examples.

Twenty six teachers, or 53.6% of the respondents had worked in other than the horticulture industry. Four individuals did not have other work experience. Nineteen respondents did not answer this question.

TABLE 6

OTHER WORK EXPERIENCE

	Number of Teachers	Percent of Respondents
Have had other work experience	26	53.0
Have not had other work experience	4	8.1
Did not answer question	19	38.7

The respondents listed the following job titles in response to the Other Work Exterience question.

Department Store Floor Man	Stock Boy
Spray Painter	Research Aid
Sheet Metal &Plastic Worker	General Sales
	Electronic Technician
Lab. Technician	Bag Bailer (Paper bag Mfg. Co.)
Mason Tender	Delivery Man
General Laborer	Welder
Typist	Bus Operator
Construction Laborer	Clerk
Factory Worker	Accountant
Roofer	County Road &Sign Inspector

Any employment in addition to teaching could be expected to provide a teacher with more realistic insight into the psychology of work as well as provide him with technical skills which could be applicable in his teaching specialty.

Teaching Experience

Forty of the forty nine respondents had been teaching ten years or less. Seven have between eleven and twenty years, and two had taught twenty six years or more. Of those who had taught ten years or less, fifteen had less than two years of teaching experience.

Inservice education is an important part of the overall education of teachers. In order for teachers to maintain and update professional and technical competencies, it is necessary that a planned program exists to meet their needs. In Ohio, the State Department of Agricultural Education Services and the Department of Agriculture Education at the Ohio State University operate a state wide program of inservice education for all teachers of vocational agriculture.

As new specialized types of vocational agriculture programs are developed, modifications to the overall inservice program must be made. In Ohio, vocational horticulture is a rapidly expanding phase of agricultural education. This study is an attempt to obtain information which would be of value in the planning of inservice programs for teachers of vocational horticulture.

PURPOSE OF THE STUDY

The major purpose of this section was to determine the inservice needs of teachers of vocational horticulture in Ohio as perceived by these teachers.

The specific objectives were:

1. To identify specific technical and professional subject areas in which the teachers feel they need further education.
2. To identify the factors which inhibit teacher participation in the inservice program.
3. To identify the most acceptable methods of presenting inservice programming to meet the needs of vocational horticulture teachers in Ohio.

CONCLUSIONS

The following conclusions are based upon an interpretation of the data presented in the study.

1. The technical horticulture inservice needs of vocational horticulture teachers varied considerably.
2. The technical horticulture areas of landscape design, horticulture equipment operation and maintenance, business management in horticulture (in that order) were ranked highest by the respondents as areas of inservice need.
3. The respondents preferred to have landscape design presented as either a 3 week graduate credit summer session or a quarter length graduate credit course.
4. The respondents preferred to have horticulture equipment operation and maintenance offered as a 3 week graduate credit summer session of a quarter length graduate credit course.
5. The respondents preferred to have business management in horticulture offered as a 3 week graduate credit summer session or a quarter length graduate credit course.
6. The professional education areas of planning and conducting students occupational programs, advising youth organizations in horticulture, and conducting class and laboratory activities (in that order) were ranked highest by the respondents as areas of inservice need.
7. The respondents preferred to have the professional education area, Planning and Conducting Student Occupational Experience Programs, offered as a 3 week graduate credit summer session or a quarter length graduate credit course.

8. The respondents preferred to have the professional educational area, Advising Youth Organization in Horticulture, offered as a 3 week graduate credit summer session or a quarter length graduate credit course.

9. The respondents preferred to have the professional education area, Conducting Class and Laboratory Activities, offered as a 3 week graduate credit summer session or a quarter length graduate credit course.

10. In general, the respondents were more interested in enrolling for either the quarter length graduate credit course or the 3 week graduate credit summer session.

11. Nearly three fourths of the respondents indicated they would enroll for one or more 3 week graduate credit summer sessions during the next three years.

12. Over 80% of the respondents indicated they would attend one or more 2-3 day non-credit workshops within the next three years.

13. Slightly over 40% of the respondnets indicated they intended to enroll for quarter length graduate credit courses within the next three years. The credit hours they expect to earn varies from 3 to 40.

14. Over 56% of the respondents indicated they would be willing to participate in inservice courses offered on 8 to 10 Saturdays during the year.

15. The majority of the respondents preferred to travel 50 miles or less for inservice courses during the school year. During the summer, the majority of the teachers preferred to

travel 100 miles or less to an inservice course.

16. The respondents were generally satisfied with the present credit and non-credit inservice program, but suggested that courses be located in their areas of the state, that the courses deal more directly with horticulture, and that continuous updating be carried out.

STUDY PROCEDURE

A list of the teachers of vocational horticulture in Ohio in 1970-1971 was obtained from the Department of Agricultural Education Servoces in the State Department of Education. The teachers on this list were mailed a survey form for them to complete.

The survey form was developed using as a base the professional and technical subject listings from a study conducted be D. Darell Parks in 1969. These subject listings were expanded after consultation with this writer's advisor and the district state supervisor of vocational agriculture. While the list did not include the areas of need of every teacher it is assumed to be reasonable complete. Space was allowed on the survey form for the teachers to write in any areas of need not included in the list.

The survey form was reviewed and then field tested. Modifications were made and the form was mailed to each of the teachers of vocational horticulture in Ohio. A followup card was sent to the non-respondents two weeks after the original mailing. A second letter and another copy of the survey form were sent to those not responding to the card notice.

TABLE 7

NUMBER OF QUARTER LENGTH GRADUATE CREDIT COURSES TEACHERS EXPECT TO TAKE WITHIN THE NEXT 3 YEARS

Number of Courses Teachers Expect To Take	Number of Teachers
0	21
1-2	3
3-6	10
7+	4

The number of graduate credit hours the respondents expect to take varies from 0 to 40 for those who expect to teach full time.

TABLE 8

NUMBER OF HOURS OF GRADUATE CREDIT TEACHERS EXPECT TO TAKE WITHIN THE NEXT 3 YEARS

Number of Hours Credit Teachers Expect To Take	Number of Teachers
0-10	17
11-20	[illegible]
21-30	[illegible]
31-40	[illegible]
Undecided	[illegible]

Fifty six and five tenths percent of the respondents indicated they would participate in inservice courses offered on 8-10 Saturdays during the year. Thirty two and six tenths percent stated they would not participate. Three and one thent percent were doubtful of their participation, but four and three tenths percent indicated they might attend if the subject area was what they needed and if the location of the meeting was nearby. Three and five

tenths of the respondents did not answer that question.

TABLE 9

PERCENT OF TEACHERS WHO WOULD PARTICIPATE IN INSERVICE COURSES OFFERED ON 8-10 SATURDAYS PER YEAR

Did Not Answer Question	Yes	No	Doubtful	Yes if Appropriate Subject
3.5%	56.6%	32.6%	3.1%	4.3%

The distance the respondents were willing to travel for an inservice course during the school year varied up to 150 miles. However sixty three percent of the respondents preferred to travel 50 miles or less. During the summer, the majority of the respondents preferred to travel 100 miles or less, although several stated they had no limit on travel distance. Inservice offerings during the school year should be located relatively close to the teachers home schools. The teachers would be willing to travel somewhat farther during the summer.

TABLE 10

DISTANCES TEACHERS WOULD BE WILLING TO TRAVEL TO INSERVICE COURSES

Did Not Answer Question	0-50 Miles	51-100 Miles	101-150 Miles	Qualified Response
During School Year				
5	29	5	1	6
During Summer				
5	15	9	5	12

Suggested Changes In Inservice Program Operation

The teachers were asked to suggest changes in the operation of the inservice program for teachers of vocational horticulture which would facilitate their participation.

For the credit program the responses indicated interest in locating courses "closer to home", scheduling them during the winter quarter, scheduling more on campus courses during the evening, and making them more relevant to horticulture teacher needs.

For the non-credit program the responses indicated the teachers would like more one day sessions located closer to their home locale. The general tone of the responses was of satisfaction with the present program and efforts being made to improve it. Several respondents recommended keeping the program up to date since the field of horticulture is relatively new and changing.

SUMMARY AND RECOMMENDATIONS

In the consideration for planning and effective state wide in-service education program for teachers of vocational horticulture, the fact that each teacher has unique and distinct needs poses a difficult situation. Not only do those needs vary between the categories of professional education and technical horticulture, but also within each of these areas. Furthermore, since the total number of vocational horticulture teachers in Ohio is relatively small (57), the number who would have similar inservice needs would be considerably smaller. The problem which results is how to effectively provide the necessary inservice needs for each teacher on an economical basis.

Perhaps a review of the philosophy of operation of the inservice program for teachers of vocational horticulture should be made. In order to provide for meeting the unique needs of each teacher the writer suggests that the function of those responsible for inservice education should be primarily to continually study the inservice needs of the teachers and to develop and/or locate resources which would meet the sum total of the individual teacher needs. Much more emphasis should be placed on using existing resources where they apply rather than developing special workshops or courses. This idea is more readily applied to the technical horticulture area. It is also very likely that many aspects of that area could be more effectively learned in the horticulture industry rather than only in a classroom. The values we claim for

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4 WHICH CATEGORIES OF HORTICULTURAL OCCUPATIONS DO YOU PRIMARILY PREPARE YOUR STUDENTS?

loriculture _____ Ornamental Horticulture _____

Vegetables & Fruit _____ General _____

Other _____

Comments: _____

_____

WHICH CERTIFICATE DO YOU NOW HOLD? _____

Temporary _____ 4 Year Provisional _____

8 Year Provisional _____ Permanent _____

WHAT IS YOUR UNDERGRADUATE ACCUMULATIVE POINT HOUR? _____

HAVE YOU TAKEN THE GRADUATE RECORD EXAM (GRE)? _____

HAVE YOU BEEN ADMITTED TO GRADUATE SCHOOL? _____

If so, which institution? _____

HOW MANY QUARTER HOURS OF GRADUATE WORK HAVE YOU COMPLETED IN EACH INSTITUTION IN WHICH YOU HAVE BEEN ENROLLED? _____

WHAT ARE YOUR ACADEMIC PLANS? _____

Enrolled in certification program _____ Date for completion _____

Enrolled in undergraduate program _____ Date for completion _____

Enrolled in graduate school _____ Present total number of graduate credits _____

Degree expected _____

Enrolled as a special student _____

Not enrolled in any formal educational program _____

Other _____

_____

_____

PART II
APPENDIX

STATE OF OHIO
DEPARTMENT OF EDUCATION
COLUMBUS
43215

MARTIN ESSEX
SUPERINTENDENT OF
PUBLIC INSTRUCTION

DIVISION OF VOCATIONAL
EDUCATION

612 STATE OFFICE BUILDING

DATE: April 20, 1071

TO: Ohio Teachers of Vocational Horticulture

FROM: John Davis, State Supervisor and Pete Wotowiec, Research Assistant

RE: Horticulture Teacher In-service Education Needs Survey

In order to plan in-service programs which are appropriate and timely to the needs and interests of Vocational Horticulture Teachers, we need your assistance.

The enclosed questionnaire is, in part, a follow-up to the survey made by Dr. Darell Parks in February 1970. Your response is vital in updating the original survey results which will be used in current in-service program planning.

Please complete the enclosed survey form and return it in the enclosed self-addressed envelope no later than _____.

We are grateful for your interest and the time you take out of your schedule to complete this survey form.

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VOCATIONAL HORTICULTURE
TEACHER IN-SERVICE EDUCATION SURVEY

NAME _____ SCHOOL _____

In order to effectively plan an in-service program for teachers of vocational horticulture we need to know what subject areas you believe you need and will take if offered within the next three years.

1. On the basis of your own personal needs within the next 3 years, please rank the following technical horticulture areas which would be most valuable to you as in-service offerings. In the left hand column rank them in order of most valuable to the least valuable placing a one (1) for the most valuable, a two (2) for the second most valuable, etc.
In the right hand column indicate how each subject area should be offered using these symbols: A = 2-3 day non-credit workshop
B = Quarter length Grad credit course
C = 3 week Grad credit summer session

RANK ORDER		TYPE OF OFFERING
_____	Landscape Design	_____
_____	Turf	_____
_____	Business management in horticulture	_____
_____	Horticulture equipment operation and maintenance	_____
_____	Electrical and plumbing techniques and skills	_____
_____	Small gasoline engine tune-up and overhaul	_____
_____	Electric arc and oxyacetylene welding	_____
_____	Ornamental plant identification	_____
_____	Floral arrangement	_____
_____	Horticulture laws and regulations	_____
_____	Florist shop management	_____
_____	School greenhouse management	_____
_____	Other (Please identify) _____	_____
_____	_____	_____
_____	_____	_____

2. On the basis of your own personal needs within the next 3 years, please rank the following professional education areas which would be most valuable as in-service offerings. Follow the instructions given in question 1.

_____	Planning and conducting student occupational experience programs.	_____
_____	Preparing and using teaching aids for vocational horticulture.	_____
_____	Managing facilities and educational resources	_____
_____	Advising youth organizations in horticulture	_____
_____	Working with horticulture advisory groups	_____
_____	Developing adult programs in horticulture	_____
_____	Principles of vocational education	_____
_____	Working with other horticulture groups in the community	_____
_____	Conducting class and laboratory activities	_____
_____	Guidance, counselling and placement	_____
_____	Other (Please identify) _____	_____
_____	_____	_____
_____	_____	_____

VOCATIONAL HORTICULTURE
TEACHER INSERVICE EDUCATION SURVEY

NAME_____ SCHOOL_____

3. During the next 3 years:

How many 3 week summer sessions do you expect to attend? _____

How many 2-3 day non-credit in-service education workshops do you plan to attend? _____

How many Quarter length graduate credit courses do you expect to take? _____

How many hours of graduate credit do you expect to take? _____

Would you participate if an in-service course were offered on 8-10 Saturdays during a year? _____

How far would you travel for an in-service course
during the school year? _____
during the summer? _____

4. Please suggest changes in operation of the in-service program for teachers of vocational horticulture which would facilitate your participation.

The credit program:_____

_____

_____

_____

The non-credit program: _____

_____

_____

_____

VT 014 679
BRISTOL, BENTON K.
CREATIVE APPROACHES TO TEACHING APPLIED BIOLOGICAL AND AGRICULTURAL OCCUPATIONS SHORT COURSES. FINAL REPORT.

ILLINOIS STATE UNIV., NORMAL. DEPT. OF AGRICULTURE.
ILLINOIS STATE BOARD OF VOCATIONAL EDUCATION AND REHABILITATION, SPRINGFIELD. VOCATIONAL AND TECHNICAL EDUCATION DIV.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - NOV71 53P.

DESCRIPTORS - *VOCATIONAL EDUCATION; *TEACHING METHODS; TEACHER EDUCATION; *TEACHER WORKSHOPS; VOCATIONAL AGRICULTURE; *CREATIVITY; *BIOLOGICAL SCIENCES; EDUCATIONAL INNOVATION; PROGRAM DEVELOPMENT; PROGRAM EVALUATION; AGRICULTURAL OCCUPATIONS
IDENTIFIERS - ILLINOIS

ABSTRACT - BELIEVING THAT THE RESULTS WOULD FURNISH AN ESTIMATE OF THE SUCCESS POTENTIAL OF THE CREATIVE PROBLEM-SOLVING CONCEPT, THE INVESTIGATOR IN THIS PROJECT SOUGHT TO: (1) IDENTIFY 20 INSTRUCTORS WITH AN INTEREST IN CREATIVITY, (2) GIVE THEM SPECIAL TRAINING IN A 1-DAY SHORT COURSE, (3) ARRANGE FOR THEM TO TRY OUT CREATIVE APPROACHES TO TEACHING APPLIED BIOLOGICAL AND AGRICULTURAL OCCUPATIONS IN THEIR CLASSES, AND (4) LET THEM PARTICIPATE IN A 2-DAY SHORT COURSE TO SUMMARIZE AND EVALUATE THEIR EXPERIENCES. AMONG THE CONCLUSIONS FROM THESE EFFORTS ARE: (1) IT IS POSSIBLE TO CONDUCT A SUCCESSFUL 3-DAY COURSE TITLED CREATIVE APPROACHES TO TEACHING APPLIED BIOLOGICAL AND AGRICULTURAL OCCUPATIONS, (2) PARTICIPANTS WHO COMPLETED THE SEQUENCE WERE UNANIMOUSLY FAVORABLE TO THE EXPERIENCES WHICH THEY HAD SHARED, AND (3) THERE IS REASON TO BELIEVE THAT OTHER SEGMENTS OF THE VOCATIONAL AND TECHNICAL EDUCATOR GROUP IN ILLINOIS WOULD PROFIT FROM SIMILAR SHORT COURSES. (JS)

VT 014 679

CREATIVE APPROACHES TO TEACHING APPLIED BIOLOGICAL AND AGRICULTURAL OCCUPATIONS SHORT COURSES

FINAL REPORT

By

Benton K. Bristol

DEPARTMENT OF AGRICULTURE
COLLEGE OF APPLIED SCIENCE AND TECHNOLOGY
ILLINOIS STATE UNIVERSITY
NORMAL, ILLINOIS

1971

VT014679

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CREATIVE APPROACHES TO TEACHING APPLIED BIOLOGICAL AND AGRICULTURAL OCCUPATIONS SHORT COURSES

FINAL REPORT

By

Benton K. Bristol

This study was supported by a grant from the Professional and Curriculum Development Unit, Division of Vocational and Technical Education, Board of Vocational Education and Rehabilitation, State of Illinois, Springfield. No. PDT-A1-059.

"A course in creative thinking enhances an individual's self-development and advancement opportunities. For one thing, it teaches him to look for alternatives. Applied to his job, he can certainly discover ways to perform it better and more economically." -- Tom Kuby

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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DEPARTMENT OF AGRICULTURE
COLLEGE OF APPLIED SCIENCE AND TECHNOLOGY
ILLINOIS STATE UNIVERSITY
NORMAL, ILLINOIS

November, 1971

7541

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The investigator expresses his appreciation to the following for the financial help and other assistance provided for this study:

Professional and Curriculum Development Unit,
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Acknowledgment is due the 20 persons who attended the first short course. The 14 individuals who participated in the study from the first short course through the third deserve special recognition for their efforts.

The free items and/or materials furnished by the following added to the value and interest of the three day-long sessions: Mr. Tom Kuby, TRW Inc., Cleveland, Ohio; Dr. Clayton A. Morgan, Oklahoma State University, Stillwater, Oklahoma; Mr. Edward E. Wiseman, B. F. Goodrich Chemical Company, Avon Lake, Ohio; Creative Education Foundation, Buffalo, New York; Department of Program Development for Gifted Children, Office of the Superintendent of Public Instruction, Springfield, Illinois; Dick Blick, Galesburg, Illinois; Edmund Scientific Company, Barrington, New Jersey.

A significant amount of art work was performed free of charge by Mrs. Bettyjo Bristol.

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INTRODUCTION AND DEFINITION OF THE PROBLEM

The need for new approaches in education is apparent to all. In order for the teaching of applied biological and agricultural occupations to be relevant in a rapidly changing environment, a considerable amount of creative effort is required of instructors and students.

For the last 15 years, research findings have shown that creative problem-solving is an exciting and effective way to teach and learn. There is little doubt that students' creative-productivity levels can be significantly increased by deliberate educational programs.[1]

Overall purposes of project

The overall purposes of this project were to identify 20 instructors with an interest in creativity, give them special training in a one-day short course, have them try out creative approaches to teaching applied biological and agricultural occupations in their classes, and then have them participate in a two-day short course to summarize and evaluate their experiences.

It was believed that the results of the study would furnish an estimate of the success-potential of the creative problem-solving concept and the related creative approaches to teaching for Illinois high school teachers of applied biological and agricultural occupation's classes. Implications for other vocational classes were expected to be another outcome.

Specific objectives for the study

There were four specific objectives for the study:

1. To determine the creative talent of twenty high school applied biological and agricultural occupations instructors who identified themselves as being creatively inclined, and who were willing and able to engage in the action research specified by the investigator.

2. To make a beginning at implementing the findings of research in creative behavior completed during the last 15 years.

3. To evaluate the results of creative approaches to teaching employed by Illinois instructors during the Spring Semester 1971.

4. To identify further applied research which might be undertaken with profitable results, on a short-term and/or long term basis.

---

[1] Parnes, Sidney J., Creative Behavior Guidebook. New York: Charles Scribner's Sons, 1967, p. 45.

Definition of creative behavior

Creative behavior was defined as that which demonstrates both uniqueness and value in its product. The product may be unique and valuable to a group or organization, to society as a whole, or only to the individual himself or herself. This is the definition furnished by Dr. Sidney J. Parnes in his Creative Behavior Guidebook, page 6. Other quotations from Parnes, with corresponding Guidebook page numbers, are:

> "Creativity is thus a function of knowledge, imagination and evaluation." -- page 6.

> ".... in creative learning, the greater our knowledge, the more patterns, combinations or ideas we can achieve." -- page 7.

> "Without knowledge, imagination cannot be productive. Without imaginative manipulation, abundant knowledge cannot help us live in a world of change. And without the ability to synthesize, evaluate and develop our ideas, we achieve no effective creativity." -- page 7.

PRESENTATION AND INTERPRETATION OF DATA

Cover letter and survey form to high school instructors

A cover letter and survey form were sent to all high school applied biological and agricultural occupations instructors in Illinois in order to identify the 20 who were interested and able to engage in the action research specified by the investigator. No self-addressed, stamped envelopes were enclosed.

Evaluative instruments and questions for instructors

Instructors chosen were to complete the "What Kind of Person Are You" test early in the short course program,[2] the "Alpha Biographical Inventory"[3] about midway, and "The Sixteen Personality Factor Questionnaire"[4] at the end.

---

[2]Author, Dr. E. Paul Torrance, now is Head and Professor, Educational Psychology, University of Georgia, Athens, Georgia. Special written permission was obtained from Dr. Torrance to reproduce and use the test in the study without charge.

[3]Inventory may be purchased from Prediction Press, Box 298, Greensboro, North Carolina.

[4]Questionnaire may be purchased from Institute for Personality and Ability Testing, 1602-04 Coronado Drive, Champaign, Illinois.

They were to answer the question, "What is the most creative thing you've ever done?" [5] list all creative accomplishments to date, and attend the short courses without compensation.

Cover letter and survey form to community college instructors

When 20 participants were not obtained from the high school agriculture instructor group, a cover letter and survey form were sent to all community college agriculture instructors in Illinois. In this instance, informational sketches about the investigator were provided.

The total of 20 participants still was not obtained, so the study was broadened to include other groups.

Groups represented at the first short course meeting

Table 1 lists the groups represented at the first short course meeting (or the make-up meeting) and the number of participants in each.

Table 1

Groups Represented by the 20 Participants at the First Short Course Meeting or the Make-Up Meeting [6]

Group	Number of Participants
Instructors -- High School Biological (Applied) and Agricultural Occupations	11
Student Teachers -- Agricultural Education	4
University Staff -- Agricultural Education and Agricultural Mechanics	2
Head Consultant -- Applied Biological and Agricultural Occupations	1
Instructor -- Agriculture -- Community College	1
Undergraduate Student -- Agriculture	1
Total	20

[5] This question has been asked of thousands of people.

[6] Two participants attended the make-up meeting.

A copy of the agenda for the first short course meeting (March 13, 1971) and the make-up short course (March 20, 1971) appears in Appendix A. Shortly before May 22, a reminder letter was sent each participant. A copy of this letter appears in Appendix A. Copies of the agenda for the second short course (May 22, 1971) and for the third short course (May 29, 1971) also appear in Appendix A. No make-up was held for the second short course.[7] A make-up was held on June 12, 1971, for two participants who did not attend short course number three on May 29.

Attendance at second and third short courses

Table 2 lists the group classifications of the five participants who did not attend either short course number two or three.

Table 2

Group Classifications of Five Participants Who Did Not Attend the Last Two Meetings[8]

Group	Number of Participants
Instructors -- High School Biological (Applied) and Agricultural Occupations	3
University Staff Member -- Agricultural Mechanics	1
Head Consultant -- Applied Biological and Agricultural Occupations	1
Total	5

[7]It was not possible to schedule a make-up for the second short course which suited the participants and the investigator.

[8]Attempts were made to determine why the five who attended the first short course did not attend short courses two and three. One admitted he got involved in some long-postponed work at home and forgot about short course number two. Another had a professional commitment which he had to keep. A third participant wrote that his wife had to be taken to the hospital on the date of the second short course meeting. The other two who missed did not reply to the investigator's letters of inquiry. In order for essential continuity to be maintained by participants in the study, there was no point in having those who missed short course number two attend short course number three. Those who missed the second short course would not have been able to participate effectively in the third short course.

A student teacher who did attend the second short course was able to attend only one-half of short course number three because of conflicting times with his job interviews. A similar reason prevented his attending the last make-up session.

As explained in footnote number eight on page four, six participants did not attend all three short courses for the full amount of time scheduled. Fourteen, however, attended the entire three-day sequence for a total of 18 hours of formal instruction. Table 3 shows the group classifications for the 14 participants.

Table 3

Group Classifications of 14 Participants Who Attended All Three Short Courses[9]

Group	Number of Participants
Instructors -- High School Applied Biological and Agricultural Occupations	8
Student Teachers -- Agricultural Education	3
University Staff -- Agricultural Education	1
Instructor -- Agriculture -- Community College	1
Undergraduate Student -- Agriculture	1
Total	14

[9]The 14 participants who received certificates of completion were encouraged to report their accomplishment to their local newspapers. At least one did so, and an article was published.

A suggested news release was given to each of the 14 participants with a space left for inserting his or her name. Where more than one newspaper served a local area, more copies of the news release were furnished.

Thirteen men and one woman completed the sequence of three short courses. They expressed appreciation for the certificate which was printed on heavy stock and was suitable for framing. Old English style lettering was used for printing the names on the certificates.

The short courses were given on a "no university credit basis." Those who attended did so because of their interest in creativity, and the importance they attached to what they might learn. In order to participate, all had to choose the short courses over a number of competing activities.

Remarks about sample selection

Theoretically, each high school instructor of applied biological and agricultural occupations in Illinois had an equal chance of being included in the study. All on the official list[10] were sent identical invitations and enclosures. None of these were returned to the sender as being undeliverable. Spot checks made on a non-random basis, the comments volunteered by instructors at different times, and chance discoveries would tend to show that most of the recipients had noticed the materials. The News Service of Illinois State University sent an article about the project to all agriculture editors in the State more than three weeks before the first short course meeting. A number of newspapers published the item. No high school instructor who volunteered to participate was excluded.

Despite the possibility of the theoretical "unrestricted random sampling" suggested, no claim is made that such a sampling actually occurred. Rather, it is believed that volunteers tended to be individuals who were best acquainted with the investigator and most familiar with his previous professional and/or creative activities.

All community college instructors of agriculture in Illinois were sent short course invitations and enclosures. The one community college instructor who volunteered had previously enjoyed an extended discussion with the researcher about creativity and the Creative Problem-Solving Institute, Buffalo, New York. This was the result of a chance meeting at a dinner held not far from the community college where the instructor was (and still is) employed.

The writer believes that the restrictions imposed on the study tended to discourage potential volunteers who had no more than an average interest in creativity. Among the restrictions were: the responsibility of participants for their own travel and meal expenses, a relatively small budget for the study, the specific and rather detailed (at times demanding) forms to be completed, the total time required to complete the short courses satisfactorily, and the fact that no university credit was awarded.[11]

---

[10] State of Illinois, Board of Vocational Education and Rehabilitation, Division of Vocational and Technical Education, Applied Biological and Agricultural Occupations 1970-1971 Annual Directory, 24 pp.

[11] It further was recognized that emergencies, unforseen circumstances, and/or changing conditions could make it inconvenient (even impossible) for one or more who attended the first short course meeting to attend the other two.

Comparisons -- Evidence

Tables in Appendix B show a number of comparisons which were made to determine possible differences among groups and sub-groups identified. The t test and the chi square statistical technique revealed no significant differences at either the .05 or .01 levels of confidence. In other words, the null hypothesis of no difference could not be rejected at these levels.

The study tended to confirm the results of related research known to the author and the statements of recognized leaders in the field of creative thinking. For example, age need not be a great hindrance to creativity. Formal instruction in creative thinking can produce desirable gains in such areas as: conceptual fluency, originality, appropriate suspension of judgment, less authoritarian view of life, creative evaluation of information, and willingness to attack problems in pioneering ways.

Appendix C contains participant-reactions to questions posed and/or information requested during the Spring 1971. Not all the significant happenings and experiences shared can be adequately explained via the written word.

It will be noted that the actual words of those taking part in the study are often recorded. It is believed this procedure will result in a greater understanding of what actually happened (or is meant) than if too much summarizing is done.

Those who participated in the study were happy with their experiences. At one time or other,all related ways the creativity short course meetings had been beneficial. Many thought they would benefit in the future from their efforts to think creatively "with the brakes off." A determination to utilize what they had learned was evident. A surprisingly large number had been successful in kindling the interest of others in what they had done. The enthusiastic, specific statements should provide helpful insights to anyone with an interest in the subject of "Creative Approaches to ... "

Interest was uniformly high, and cooperation during the sessions was excellent, even on the one Saturday when the meeting room was cold and efforts to make it warmer were unsuccessful. While it may be true that those who already were creatively talented profited most from the meetings, the less talented made significant gains also -- according to their self-evaluations. Several who were reluctant to admit they would have much chance of being creative had, by the end of the third short course, decided they could utilize creative problem-solving in appropriate ways. "Confidence-building" is one thing which quite a few of the participants may have appreciated most.

SUMMARY, MAJOR CONCLUSIONS AND/OR RESULTS, AND RECOMMENDATIONS

Summary

There is a need for new approaches in education. Creative efforts by instructors and students of applied biological and agricultural occupations are necessary if desired successes are to be achieved.

Research findings have shown that creative problem-solving is an exciting and effective way to teach and learn. If students' creative-productivity levels can be significantly increased by deliberate educational programs, it would seem that 20 instructors of applied biological and agricultural occupations in Illinois would agree to attend a sequence of three short course meetings of six hours each.

It proved to be more difficult than anticipated to locate 20 high school instructors with a sufficient interest in creativity and the time to attend the proposed Saturday short course sessions. More than one-half the 20 individuals who attended the first meeting, however, were high school instructors of applied biological and agricultural occupations. The same was true for the 14 who received certificates of completion.

A wider range of ages and educational backgrounds were represented than would have been the case had it been possible to follow the original plan for the selection of participants. This resulted in some additional insights which had not been considered previously.

When all the evidence was considered, the creative talent of those taking part in the study appeared to be somewhat above average (when compared with others in their occupational fields). Their interest in creativity was well above average.

A beginning was made at implementing the research in creative behavior completed during the last 15 years.

The results of the creative approaches to teaching employed by Illinois instructors during the Spring Semester 1971 (and other creative involvement with others) were evaluated. Despite the lack of time available and other important responsibilities which competed for each individual's attention, participants (teachers and others) thought their creative efforts with others were quite successful. The evidence (both written and verbal) would tend to support their belief.

Further applied research projects which might be undertaken with profitable results, on a short-term and/or long-term basis, were identified. These are listed under the recommendations section of this report.

Creative behavior was considered in a broad and inclusive way rather than in a narrow and restrictive way. It was enough that the individual considered the product of his or her effort to be unique and valuable for himself or herself.

Major conclusions and/or results of the study

Major conclusions and/or results of the study were:

1. It was possible to conduct a successful three-day short course sequence in Illinois titled "Creative Approaches to Teaching Applied Biological and Agricultural Occupations."

2. Participants who completed the sequence were unanimously favorable to the experiences which they had shared.

3. Teachers, (and student teachers in cooperating centers during the Spring 1971), who attended all three meetings, believed they had been helped to do a more effective job with students as a result of their participation in the study.

4. All who received short course certificates of completion seemed to feel their experiences in creativity might be quite helpful in many parts of their lives.

5. All who attended only the first short course meeting, and who responded to the researcher's questions, believed they had been helped in some way by their brief exposure to formal creativity activities.

6. All who participated in the study indicated (either orally or in writing) they had made, were making, or would make some constructive use of what they had learned.

7. There is good reason to believe that other segments of the vocational and technical educator group in Illinois would profit from similar short course efforts. Such efforts should have an appeal to a wide range of age groups, and a rather wide range of ages can be successfully accomodated in a single group at a given time.

8. There were indications that at least ten percent of Illinois high school students would respond favorably to one or more creativity short courses. The ones with greatest interest would not necessarily be the most academically talented, or even the most creative. There are likely to be a wide range of reasons for high school students to be interested in such a course at any given time.

Recommendations

1. Separate but similar creative short course studies should be made of each of the occupational classifications represented by this study:

a. Instructors -- High School Applied Biological and Agricultural Occupations

b. Student Teachers -- Agricultural Education

c. University Staff

(1) Agricultural Education

(2) Agricultural Mechanics

d. State Staff -- Consultants of Applied Biological and Agricultural Occupations

e. Instructors -- Agriculture -- Community College

f. Undergraduate Students -- Agriculture

2. If possible, short course studies should be conducted with the cooperation of high school students of applied biological and agricultural occupations. The studies would emphasize creativity.

3. Creative problem-solving studies should be completed with the assistance and active involvement of other vocational and technical educator groups in Illinois.

4. Potential interest in creative thinking short courses should be determined for other Illinois teacher and student groups not previously mentioned here.

The studies recommended should provide valuable information on either a short-term or long-term basis. The "creative approaches to teaching" theme might be modified to meet the specific needs and interests of any group. Any appropriate designation could be inserted after "creative approaches to."

It is believed that more than a single semester and three Saturday meetings of six hours each are required if instructors are to involve high school students in the creative problem-solving processes to any great extent.

The bibliography which begins on the next page of this report is selective rather than comprehensive. Entries were selected on the basis of the direct relationship they had to "Creative Approaches to Teaching Applied Biological and Agricultural Occupations Short Courses."

BIBLIOGRAPHY

Anderson, H. H. (Ed.). Creativity in Childhood and Adolescence: A Variety of Approaches. (Palo Alto, Calif.: Science and Behavior Books, Inc., 1965).

Andrews, M. F. Creative Education: The Liberation of Man. (Syracuse, N. Y.: Syracuse University Press, 1965).

Anthony, W. S. "Working Backward and Working Forward in Problem-Solving." (Brit. J. Psychol., 1966, 57: 53-59).

Anzalone, P. and Stahl, D. "Strategies for Creative Teaching." (Instructor, 1967, 76: 15-26).

Archambault, R. D. "Education and Creativity." (J. Gen. Educ., 1966, 18: 191-205).

Barron, F. "The Disposition toward Originality." (J. Abnorm. & Soc. Psychol., 1965, 51: 478-485).

Bristol, Benton K. "Creativity for Everyone." (The Normalite newspaper, Normal, Ill., July 23, 1971, p. 4, cols. 3-5).

_____. "Clues to Evaluating Creative Ability." (The Normalite newspaper, Aug. 6, 1971, p. 5, cols. 1-2).

_____. "Why Do People Attend Meetings?" (The Normalite newspaper, Aug. 20, 1971, p. 4, col. 2).

_____. "An Evaluation of a Meeting." (The Normalite newspaper, Sept. 3, 1971, p. 3, cols. 3-5).

_____. "Fifty-One Answers To a Question." (The Normalite newspaper, Sept. 10, 1971, p. 7, cols. 2-4).

_____. "You Can Choose To Be Lucky." (The Normalite newspaper, Oct. 1, 1971, p. 5, cols. 3-4).

_____. "Creativity for the Masses." (The Normalite newspaper, Oct. 15, 1971, p. 3, cols. 3-4).

_____. "What Is Creativity?" (The Normalite newspaper, Oct. 29, 1971, p. 5, cols. 2-3).

_____. "Observed Creative Characteristics as Recorded in One Book." (J. of Creative Behavior, 1971, 5: 1-6).

Bruner, J. S. Toward a Theory of Instruction. (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1966).

Gardner, John W. Self-Renewal: The Individual and the Innovative Society. (New York: Harper and Row, 1963).

Guilford, J. P. The Nature of Human Intelligence. (New York: McGraw-Hill, 1967).

_____. "Creativity." (Amer. Psychol., 1950, 5: 444-454).

MacKinnon, D. W. "The Highly Effective Individual." (Teachers College Record, 1960, 61: 367-378).

Maslow, A. H. "Creativity in Self-Actualizing People." In Anderson, H. H. (Ed.). Creativity and Its Cultivation. (New York: Harper, 1959).

_____. Motivation and Personality. (New York: Harper and Row, 1954).

Osborn, Alex F., Applied Imagination. (New York: Charles Scribner's Sons, 1957).

Parnes, Sidney J., and Harding, Harold F. (Editors). A Source Book for Creative Thinking. (New York, Charles Scribner's Sons, 1962).

Parnes, Sidney J. Creative Behavior Guidebook. (New York: Charles Scribner's Sons, 1967).

_____. Creative Behavior Workbook. (New York: Charles Scribner's Sons, 1967).

_____. "Effects of Extended Effort in Creative Problem-Solving." (J. of Educ. Psychol., 1961, 52: 117-122.

Taylor, C. W. "Cultivating Creativity within the New Curriculum." (Natl. Ass. Sec. Sch. Princ. Bull., April 1966, 50: 110-131).

Torrance, E. Paul. Education and the Creative Potential. (Minneapolis, Minn.: The University of Minnesota Press, 1963).

_____. Encouraging Creativity in the Classroom. (Dubuque, Iowa: William C. Brown, 1970).

_____. Guiding Creative Talent. (Englewood Cliffs, N. J.: Prentice-Hall, 1962).

_____. Mental Health and Constructive Behavior. (Belmont, Calif.: Wadsworth Pub. Co., 1965).

Walker, W. J. "Creativity and High School Climate." (Gifted Child Quart., 1966, 10: 139-144).

APPENDICES

A. Agendas for Short Courses

B. Tables Comparing Groups

C. Answers and/or Responses to Questions and Requests for Information

APPENDIX A

Agenda for March 13, 1971 Short Course

Agenda for May 22, 1971 Short Course

Agenda for May 29, 1971 Short Course

AGENDA FOR MARCH 13, 1971 SHORT COURSE-
-and for March 20 Make-up Short Course

8:30 -- 9:00 a.m.	Coffee, doughnuts and informal conversation
9:00 -- 9:30	"Twelve Pages of Concentrated Creative Thought" -- Read and discuss
9:30 -- 9:45	"Think: Guilty? Not Guilty??? Killer? or Just Careless? ...."
	Folder containing: "Fourteen Great Ideas for Improved Agricultural Mechanics Instruction;" "Problem and Answer Sheets for Learning Engine Maintenance Principles;" "Suggestions for the Preparation of Manuscript Drawings;" "509 Items Tools and Equipment;" "Planes;" and other teaching aids
	"I Know You Think ...." Discuss briefly
9:45 - 10:30	Fill out Alpha Biographical Inventory, Section I -- 100 items
10:30 - 10:40	Hand out "String Puzzle." Furnish candy
10:40 - 11:00	Sheep Exercise, Starvation Slide, other slides and overhead transparencies
11:00 - 11:50	Theoretical Framework -- Creative Approaches to Teaching -- Evaluating Creative Talent
11:50 -- 1:00	Lunch
1:00 -- 1:15 p.m.	Creative Coloring Book -- Ruler -- Think Products Listing
1:15 -- 1:30	Participation: 100 ways to use creativity
1:30 -- 2:30	Small group efforts to brainstorm "How to encourage creativity in others"
2:30 -- 2:40	Break
2:40 -- 4:00	Group reports, discussion, and preparation for two more short courses

Additional information about March 13, 1971, short course and March 20 make-up short course:

1. Extensive use was made of posters at various times to stimulate interest or to renew interest

2. A pressure-responsive liquid crystal demonstrator was handed around at one point to keep interest at a high level

March 13, 1971, and March 20 make-up short course (continued)

3. There was a large table display of creativity books, copies of the Journal of Creative Behavior, Edmund Scientific Company Catalog, and Dick Blick catalog of "Complete Creative Materials"

4. Hard candy wrapped in paper was made available for the breaks, and hot coffee and doughnuts were available at all times

5. It was emphasized that the short course could change and improve each participant's life, and the lives of those with whom he (or she) lives and/or works

6. The use of creative problem-solving in the solution of any kind of problem for any part of a person's life was stressed

7. The "What Kind of Person Are You?" test was answered by short course participants

   The participants were given copies of this test to administer to others

8. All participants were asked the following question: "What is the most creative thing you've ever done?"

9. All present at the short course were asked to complete the Alpha Biographical Inventory no later than the May meetings

10. The following items were handed out:

    a. Dick Blick Catalog

    b. Illinois State University folder

    c. Seventeenth Annual Creative Problem-Solving Institute Announcement: "Creative Education -- Impetus for Innovation -- The Creative Education Foundation

11. The posters mentioned (item number one in this list) were not given to participants. They were utilized briefly by the instructor (held up so all could see). Examples of the color posters follow:

    a. "When You're as great as I am ... It's hard to be humble"

    b. Drawing of man and owl on the same limb

    c. "Please tell me your troubles"

    Note: A few of the posters were not in color

AGENDA FOR MAY 22, 1971 SHORT COURSE

8:30 -- 9:00 a.m.	Coffee, doughnuts and informal conversation
9:00 -- 9:15	Pick up materials from participants
	Hand out "Smart Pill"
9:15 - 10:30	Hand out Creative Behavior Workbook
	Briefly discuss "Course Summary" card in front of book
	Participants read "Prefatory Note" and "Introduction to Course"
	Complete Session 1
10:30 - 10:40	Break
10:40 - 12:00 noon	Complete Sessions 2 and 3 in Workbook
12:00 - 1:00 p.m.	Lunch
1:00 -- 1:05	Hand out booklet, "Suggested Course of Study in Landscape Design," and "Basic Exhibit Principles"
1:05 -- 2:30	Complete Sessions 4 and 5
2:30 -- 2:40	Break
2:40 -- 3:30	Complete Session 6. Hand out Edmund Scientific Company Catalog and order blank
	Skip Session 7. Complete Session 8

Additional information about May 22, 1971, short course:

1. With Session 5,a specific attempt was made to put some tension on all individuals in the group and to make them somewhat uneasy. One test of a person's creativity is how much tension he (or she) can put up with and still "get the creative job done"

2. A few had to leave a bit earlier than the rest of the group. The period from 3:30 p.m. on was utilized for individual assistance to those who stayed

3. For Session 6, permission was given for working on own idea

4. The poster, "Have a Nice Day", was shown at the start of the short course

5. All issues of the Journal of Creative Behavior were displayed on a table

AGENDA FOR MAY 29, 1971 SHORT COURSE
and June 12 Make-Up

8:30 -- 9:00 a.m.	Coffee, doughnuts and informal conversation
9:00 -- 9:15	Pick up materials participants have to hand in
	Hand out "Plan for Today - Think - Decide - Action"
9:15 - 10:00	Complete Institute for Personality and Ability Testing (IPAT) "The 16 PF Test"
	State plan for awarding first, second and third prizes. Furnish examples of what might be included in five minute (or less) presentation by each participant who wishes to be considered for a prize
10:00 - 10:10	Break
10:10 - 11:30	Complete Session 7 in Creative Behavior Workbook
11:30 - 12:30 p.m.	Lunch
12:30 -- 1:00	Complete Session 9 Snowballing Problem
1:00 -- 1:30	Hand out and explain Creative Behavior Guidebook
	Illustrate how Session 5 could have been conducted, if instructor had not thought group would benefit more from tension which was introduced by original, alternate method
1:30 -- 2:00	Hand out special folder -- some ideas for increasing and/or maintaining creativity at work, at home, and in every situation in life -- past -- present -- future; creativity exercise -- sheep and goats picture assignment and examples of responses; creative thinking and how to develop it in the classroom .... Discuss
2:00 -- 3:00	Hand out Brief Biography forms
	Have brief presentations by short course participants
	Vote on who is to receive first, second and third prizes
3:00 -- 4:00	Hand out "Certificates of Completion" and "No Thinking before Five"
	Award prizes. Adjourn

May 29, 1971, and June 12 make-up short course (continued)

Additional information about May 29, 1971, short course and June 12 make-up short course:

1. Instructor established some guidelines about who would be eligible to receive an award, and collected information from each participant regarding progress each had made toward completing assignments

2. By common consent, no breaks were taken. The short course was conducted on a relaxed, informal basis, and the group members could take a few minutes as needed. Few did so

3. There was a display on a large table of Think Products and other creativity items

4. One of the participants displayed a "Writer's Creativity Corner" which he planned to use with junior high school students to encourage safety

5. A participant brought some highly creative Christmas cards for display, and another brought a most creative folding airplane chemical advertisement

6. The following questions were asked of group members:

   a. How will this short course help you in the future?

   b. How might the short course be improved?

   c. How did students (or others) respond to short course involvement?

7. Prizes awarded were: first -- Techniques Notes Tips for Teachers book by James O. Proctor; The Journal of Creative Behavior, Volume 5, Number 1, First Quarter, 1971 -- second; and a pressure-responsive liquid crystal demonstrator -- third

8. The third short course was adjourned before the scheduled 4:00 p.m. closing time

9. Group members expressed an interest in being placed on the mailing list for The Creative Thinker newsletter by J. O. Proctor, 1209 Robin Hood Circle, Towson, Maryland 21204. The investigator agreed to send members' names and addresses to Mr. Proctor

10. The investigator promised to send test score interpretations to all participants no later than September 1971

11. Copies of a suggested news release were provided those who completed the three short course sequence. They were encouraged to fill in their names and send the release to their local newspapers

APPENDIX B

Table 4. Age Comparison of Two Groups of Participants

Table 5. Distance Traveled Comparison of Two Groups of Participants

Table 6. A Comparison of Groups of People Who Completed the Test, "What Kind of Person Are You?" and Attended One or More Short Course Meetings

Table 7. A Comparison of Groups of People Who Completed the Test, "What Kind of Person Are You?"

Table 8. A Comparison of Two Groups of Participants Completing Entire Sequence of Short Course Meetings Who Also Completed "The 16 PF Test"

Table 9. A Comparison of Two Groups of Participants Completing Entire Sequence of Short Course Meetings Who Also Completed the "Alpha Biographical Inventory"

Table 4

Age Comparison of Two Groups of Participants

Group	Number in Group	Mean Age	Difference
Completing entire sequence -- short course meetings	14	34.43	
			4.40
Not completing entire sequence -- short course meetings	6	38.83	
Total	20		

Table 5

Distance Traveled Comparison of Two Groups of Participants

Group	Number in Group	Mean Distance	Difference
Completing entire sequence -- short course meetings	14	44.00	
			7.50
Not completing entire sequence -- short course meetings	6	36.50	
Total	20		

Table 6

A Comparison of Groups of People
Who Completed the Test, "What Kind of Person Are You?"
and
Attended One or More Short Course Meetings

Group	Number in Group	Mean Score	Difference
Under 30 years of age, and attending first meeting	11	24.82	
			1.71
Over 30 years of age, and attending first meeting	9	23.11	

Continued on next page

Table 6 continued

A Comparison of Groups of People
Who Completed the Test, "What Kind of Person Are You?"
and
Attended One or More Short Course Meetings

Group	Number in Group	Mean Score	Difference
Under 30 years of age, and attending all three meetings	8	24.75	
			.58
Over 30 years of age, and attending all three meetings	6	24.17	
Under 30 years of age, and not attending all three meetings	3	25.00	
			4.00
Over 30 years of age, and not attending all three meetings	3	21.00	

Table 7

A Comparison of Groups of People
Who Completed the Test, "What Kind of Person Are You?"

Group	Number in Group	Mean Score	Difference
Attended first meeting of "Creative Approaches to Teaching Short Course"	20	24.05	
			.52
Attended all three meetings of "Creative Approaches to Teaching Short Course"	14	24.57	
			1.57
Did not attend all three meetings of "Creative Approaches to Teaching Short Course"	6	23.00	
Attended first meeting of "Creative Approaches to Teaching Short Course"	20	24.05	
			.05
Agricultural Accident Prevention class -- Advanced Undergraduate and Graduate Students -- Illinois State University, Spring 1971	29	24.00	

Continued on next page

Table 7 continued
A Comparison of Groups of People
Who Completed the Test, "What Kind of Person Are You?"

Group	Number in Group	Mean Score	Difference
Introduction to Agricultural Mechanics, Illinois State University, Fall 1970	58	21.57	
			1.19
Introduction to Agricultural Mechanics, Illinois State University, Spring 1971	78	22.76	
Agriculture of Developing Countries -- Creative Approaches to Understanding, Fall 1971, Illinois State University	38	27.80	
			3.18
Introduction to Agricultural Mechanics, Fall 1971, Illinois State University	59	30.98	
Students from four public high school applied biological and agricultural occupations classes in towns with average population of 990. Range for populations was from low of 526 to high of 1,821.	80	25.53	
			3.00
Students from single public high school applied biological and agricultural occupations classes in town with population of 6,771.	19	28.53	
			3.52
Students from two public high school applied biological and agricultural occupations classes in cities with average population of 20,628. One had population of 19,565; the other a population of 21,690.	73	25.01	

Note: Population figures were obtained from the 1971 Official Highway Map of Illinois.

Note: A special attempt was made by the instructor to obtain student interest and cooperation for the Fall 1971 classes at Illinois State University before they were asked to complete the test, "What Kind of Person Are You?" The attempt to "relax and loosen up" the students prior to their taking the test seems to have been successful. The Agriculture of Developing Countries course is a new experimental general education course, and majors from 19 different fields signed up for "a unique educational experience."

Table 8

A Comparison of Two Groups of Participants
Completing Entire Sequence of Short Course Meetings
Who Also Completed "The 16 PF Test"

Factor A: Reserved vs. Outgoing. Sten of 1 to 3 is low. Sten of 8 to 10 is high. Sten of 4 to 7 is medium between low (reserved) and high (outgoing). Note: For all factors, low score direction is toward first personality factor mentioned (left), and the high score is toward second personality factor mentioned (right). Numerical meanings are the same for all factors. Column headings remain the same throughout table.

Group	Number in Group	Mean Score	Difference
Under 30 years of age	8	5.00	1.50
Over 30 years of age	6	6.50	
Factor B: Less Intelligent vs. More Intelligent			
Under 30 years of age	8	5.75	.58
Over 30 years of age	6	6.33	
Factor C: Affected by Feelings vs. Emotionally Stable			
Under 30 years of age	8	6.38	.05
Over 30 years of age	6	6.33	
Factor E: Humble vs. Assertive			
Under 30 years of age	8	6.13	.46
Over 30 years of age	6	5.67	
Factor F: Sober vs. Happy-go-lucky			
Under 30 years of age	8	5.63	.54
Over 30 years of age	6	6.17	
Factor G: Expedient vs. Conscientious			
Under 30 years of age	8	6.25	.25
Over 30 years of age	6	6.50	

Continued on next page

Table 8 continued

A Comparison of Two Groups of Participants
Completing Entire Sequence of Short Course Meetings
Who Also Completed "The 16 PF Test"

Group	Number in Group	Mean Score	Difference
Factor H. Shy vs. Venturesome			
Under 30 years of age	8	5.00	1.17
Over 30 years of age	6	6.17	
Factor I. Tough-minded vs. Tender-minded			
Under 30 years of age	8	4.75	.25
Over 30 years of age	6	4.50	
Factor L. Trusting vs. Suspicious			
Under 30 years of age	8	4.38	1.29
Over 30 years of age	6	5.67	
Factor M. Practical vs. Imaginative			
Under 30 years of age	8	4.88	.21
Over 30 years of age	6	4.67	
Factor N. Forthright vs. Shrewd			
Under 30 years of age	8	5.00	.83
Over 30 years of age	6	4.17	
Factor O. Placid vs. Apprehensive			
Under 30 years of age	8	6.13	.04
Over 30 years of age	6	6.17	

Continued on next page

Table 8 continued

A Comparison of Two Groups of Participants
Completing Entire Sequence of Short Course Meetings
Who Also Completed "The 16 PF Test"

Factor Q_1. Conservative vs. Experimenting

Group	Number in Group	Mean Score	Difference
Under 30 years of age	8	6.13	1.96
Over 30 years of age	6	4.17	

Factor Q_2. Group-dependent vs. Self-sufficient

Under 30 years of age	8	5.63	.20
Over 30 years of age	6	5.83	

Factor Q_3. Undisciplined Self-Conflict vs. Controlled

Under 30 years of age	8	6.25	.08
Over 30 years of age	6	6.33	

Factor Q_4. Relaxed vs. Tense

Under 30 years of age	8	6.00	.17
Over 30 years of age	6	6.17	

Notes about tables:

1. Age comparisons were made on the basis of under and over 30 years of age because this is the dividing point often mentioned by those who write about the "generation gap." Many seem to believe that members of the so-called "Establishment" generally are those over 30 years of age.

2. Although not included in the tables presented in this report, comparisons were made between the eight teachers of applied biological and agricultural occupations who completed the three-meeting sequence and the six others who completed the sequence. None of the differences noted were statistically significant when these two groups were compared.

Table 9

A Comparison of Two Groups of Participants
Completing Entire Sequence of Short Course Meetings
Who Also Completed the "Alpha Biographical Inventory"

Group	Number in Group	Mean Percentile Rank	Difference
Academic Performance			
Under 30 years of age	7	64.71	23.79
Over 30 years of age	6	88.50	
Creativity			
Under 30 years of age	7	64.29	14.38
Over 30 years of age	6	78.67	

Special notes about Table 9:

1. Even less mean percentile rank differences were found when the following two groups of participants were compared: (a) teachers of applied biological and agricultural occupations, and (b) others.

2. The .05 level of significance was selected as being appropriate for this study.

3. The "Alpha Biographical Inventory" consists of 300 items about the individual's background and life history. It requires relatively high motivation on the part of each person supplying the required information. Scoring costs are rather expensive, since answer sheets must be sent to National Computer Systems. No scoring key is available for local use. It would seem to be most appropriate for use with students at the high school level.

4. As mentioned on the score cards received from National Computer Systems: "These scores are only approximate estimates of these abilities and should be used and interpreted cautiously and only in conjunction with all other information." This statement would apply to all tests and inventories.

APPENDIX C

Answers Provided by 20 Short Course Participants To Question: "What is the most creative thing you've ever done?"

Answers Provided by 15 Short Course Participants To "Spur of the Moment" Question: "What is creativity?"

Other Creative Accomplishments Listed by Short Course Participants

Indications of "Greatest Ambition" by 16 Participants

Indications of "Favorite Use of Spare Time" by 16 Participants

Indications of "Favorite Subject in School" and "Subject Liked Least" by 16 Participants

Representative Responses to Question: "How will short course help you in the future?"

Representative Responses to Question: "How might the short course have been improved?"

Representative Responses to Question: "How did students or others respond to short course involvement?"

Summary of Student Responses to Requests for Information about Creativity

Statement about student responses

Favorite subject and subject liked least

Favorite use of spare time

Plans after graduation from high school

Greatest ambition

Most creative thing done so far

Other creative accomplishments to date

Answers Provided by 20 Short Course Participants
To Question: "What is the most creative thing you've ever done?"

1. Further my education.

2. Return to college after five years to complete degree.

3. "Engineered" the Star Farmer of Illinois.

4. Sign up for this course in creativity.

5. Started a course in high school called "Applied Mechanics."

6. Through the years, to have been an influential part in the lives of many young people and adults.

7. Designed a tool cabinet for use in the shop using glass windows so the tools would be visible when cabinet was locked.

8. Made a climatarium, a type of indoor greenhouse.

9. Establishment of the local corn demonstration plot more than 25 years ago. This was very new at the time.

10. Teach landscaping and flower arranging in creative ways.

11. To make the military a parallel career to teaching.

12. Build a house.

13. Established and helped build Grade A milk set-ups on farms.

14. Designed a floral arrangement from all natural material.

15. While teaching agriculture, wrote 15 short plays which were presented by the FFA members at the Parents - Son Banquet. One titled "Farm of Broken Men" was published by Better Farming Methods Magazine, and later included in the National 4-H Safety Materials.

16. Getting as far as I have in school.

17. Deciding to go back to school when I was 24 hours behind a scheduled education and getting caught up.

18. Work with raw wood to design and build furniture and art items.

19. First individual to be on a farm placement experience program for agriculture in high school.

20. Developed leadership handbook, slidefilms, and tried to improve qualities of leadership.

Note: Eleven of the participants were under 30 years of age; nine were over 30 years of age. The youngest was 21, the oldest 57.

Answers Provided by 15 Short Course Participants
To "Spur of the Moment" Question: "What is creativity?"

1. Creativity is the birth of anything; whether it be a being, thing or an idea; whether it be your own ideas, or a combination of the ideas of others.

2. Thinking up an idea or solution that will work for the situation -- now! "Make things happen." Creativity should fill a need or void. Silence could be creative if that is the need for the situation at that time.

3. Different meanings at different times! To me it is to come up with new ideas and approaches to meet the everyday challenges that are constantly presenting themselves to me, and which will improve my way of life or existence.

4. The process of drawing on past knowledge and experience, and redesigning or developing new innovations.

5. Carefully developing and examining all possible ways of doing something, or solving a problem, and choosing the best solution or best combination of solutions which will satisfy your goal.

6. The ability to think more clearly, present ideas in a more appropriate fashion, to reflect upon ideas previously presented, and to expand and improve upon these ideas.

7. Being able to do something different in a way that no one else can.

8. Doing an original thing or having an original idea for one's self.

9. Developing as many possibilities for the solution to a problem as possible, visualizing or analyzing each, and trying to select the alternatives which show the most promise. It involves evaluation, experimentation and reevaluation.

10. A developed ability to plan, think, replan, rethink in an orderly manner to resolve a problem or problems and/or solutions that might or might not have presented themselves before -- all toward the improvement of one's well being.

11. A learning experience which pools together the resources of knowledge, imagination, judgment and improvement of one's self through new and useful ideas.

12. The ability to create useful newness in that which has been discarded as being old.

13. The expression of thought-out solutions to a defined problem.

Continued on next page

Answers Provided by 15 Short Course Participants
To "Spur of the Moment" Question: "What is creativity?" continued

14. Willingness to dare to try something new and different, even though its worth has not yet been proven, and going about it in such a way as to exhaust all efforts conceivable to accomplish your goal.

15. The developing of new thoughts and ideas which can come to reality.

Note: Participants taking part in this phase of the study included eight high school instructors of applied biological and agricultural occupations, four student teachers of agriculture, one university staff member, one community college instructor of agriculture, and one undergraduate student of agriculture. The university staff member was in the field of agricultural education. One of the student teachers of agriculture did not quite complete the three-meeting sequence. He attended all except the last half day.

Ages of participants ranged from 21 to 54. The three later voted by their peers as "most creative" were 54, 26, and 27 years of age respectively.

Other Creative Accomplishments Listed by Short Course Participants

1. Six children. Illustrated vo-ag units. Articles for publications. Developed and guided five state winners in FFA work. Developed FFA picnic area on school campus. Outdoor cookers (deep fat frying). Designed and built outdoor fireplaces. Picnic-table jig. Outdoor cooking grills for park area (designed and built). Wagon wheel hub lamps. Refinish furniture. Build own furniture (tables, lamps, chairs, etc.) Paintings for my own home. Promoted FFA park and lake area. Built family room and enclosed porch-patio area. Landscaped high school campus in Logan County. Cross-section of a house for a shop teaching aid. State FFA displays at conventions. Started small horticulture laboratory at school. Working with antique tools. Wine making.

2. Deciding whether to enlist or wait for draft. Decisions about: whether to go to college or "go to work;" whether to teach in home town or not. Developed a National Winner in FFA Program of Work Activities for home town school.

3. Designed shop hoist and constructed. Made a riding garden tractor from scratch. Wrote units of construction for University of Illinois Warsaw Project. Also helped write the proposal for the Research Coordinating Unit and gave a report to the Unit which resulted in the Warsaw Project's being funded again. Set of visuals for use on the flannel board. Made a set of slides and tape for junior high orientations of agriculture program.

4. Scuba diving. Raising purebred Yorkshire runt pigs. Made a giant toy chest with colonial styling. Attended a "Creative Thinking" workshop. Was secretary of Alpha Tau Alpha. As a high school student, built model rockets which flew.

5. Constructed a hutch. Showed hogs. Worked in ceramics -- one piece went to New York for Art Fair.

6. Helped start a weekly newspaper in home town the summer after graduation from high school. -- The Sesser Herald is now the offspring of this venture of 39 years ago. Attained rank of leader in Civilian Conservation Corps in 1934, and then had to decide whether to "stay on" or go to school. Other decisions made: whether to accept permanent commission or not after World War II; whether to teach school at the elementary level or go back to school and get enough education to teach at the secondary level; even though married, whether to teach vocational agriculture or go ahead and get my master's degree; whether to leave town after the tornado of four years ago; whether to stay in secondary teaching or go to State Office 15 years ago; whether to continue teaching or become administrator (offered four times at present location); whether to farm or teach after World War II; whether to rent or buy a home; whether to invest in fertilizer plant or stock market; whether or not to "go up through the officers' posts of IAVAT and IVA." Turned down desire to "go on" to additional leadership positions in NVATA, and refused to run for Regional NVATA Vice-President. Refused to diet.

Other Creative Accomplishments Listed by Short Course Participants
continued

7. Pollution project bibliography. Special project for student teachers. Creative writer's corner for safety class. Made starting position on basketball squad after being cut from tournament team the year before. Came back to school after dropping out as sophomore.

8. First individual to be on a farm placement experience program for agriculture in high school. First individual to draw a shop plan to give away to visitors. Enlarged and drew a map of where students live. Instigator to change open house policy of dormitory.

9. Developed curriculum for farm management and agricultural mechanics at area vocational center.

10. Developed a series of annual reports for FFA. Assisted in the development of the public information program used by the FFA. Active in the development of safety materials.

11. Automatic starter for small horsepower engines. Designed three tools for engine repair work.

12. Designed an "instant response" machine so students can give their responses in unison -- and the responses can be monitored by the teacher. Note: This participant indicated this had replaced his earlier "most creative thing." He also indicated the creativity class had improved some of his pictures tremendously as the result of a different approach he was now taking to his hobby of photography. Working on wagon, truck or car "rim cutting device."

13. To attend this workshop. Note: Another participant who said this now was "most creative thing."

14. To attend the Creativity Seminar at I.S.U., and the development of new attitudes and ideas as the result. Note: Still another participant who said this now was "most creative thing." Other creative things listed by the participant were: designing and making furniture; developing attention-holders for classroom use.

15. Barbecue a pig on a spit.

16. Home design and interior decorating. With FFA reporter, designed and built a crystal ball with revolving pictures and related tape recording for state exhibit last summer.

Explanation: Not all participants listed "other creative accomplishments." Some who attended only the first meeting did, and some who attended all three short course meetings didn't.

Other Creative Accomplishments Listed by Short Course Participants
continued

Explanation continued: Each listing represents a single individual's contribution to the study at a particular time. The 16 listings up to this point thus represent fewer than 16 individuals. Toward the end of the short course sequence, for example, the individual who had previously furnished the information for item 4, handed in a summary "Outline on Creative Accomplishments." It was written in ink neatly on a brown paper sack section in his words: "This way it will get your attention." The information provided by this creative student teacher follows:

17. Task I. Made a Climatarium. This is a type of indoor greenhouse which will have Grow-lux lights and automatic waterer when funds are available.

    Task II. Have plans underway to make boxes for holding electrical appliances for my electricity class. The top, and one side will open and contain three sliding trays in each box.

    Task III. I've started a new hobby which is photography. Only hold back is lack of knowledge and money.

    Task IV. First person in my surrounding community to join the Peace Corps.

    Task V. Rearranged the FFA Bulletin Board and put all plaques in a row in order to distinguish what the chapter has done. Fills in a wall which previously had large bare spots in it.

    Task VI. Built a giant toybox 32" x 40" x 30". Has Colonial style, and really adds something to the room.

    Task VII. Made a cross for the Wesleyan Foundation on campus. Table model.

    Task VIII. Made a pair of candle holders of Mediterranean styling. 18" x 9". Look great!

Statement by researcher: The enthusiasm displayed by this student teacher is indicative of the many instances where workshop participants expressed their satisfaction. The difficulty sometimes experienced in deciding how to respond to questions posed, however, is illustrated by the following quotation from another participant: "To impart the most creative thing I have done would be like writing down which one of my children I like most." This man's "other creative accomplishments" were:

18. One of two individuals from my high school graduating class to graduate from college. Walked four and one-half miles each way to get on a school bus for my freshman and sophomore years in high school. Received Eagle Rank in scouting. Served as Scoutmaster for two different troops. Helped several students financially so they could attend high school.

Other Creative Accomplishments Listed by Short Course Participants
continued

18. continued. Was the teacher where 22 students received State Farmer Degrees and two received American Farmer Degrees. Served as the teacher where hundreds of students received state recognition in agriculture in most FFA contests (public speaking, parliamentary procedure, record books, and offices at state level are examples). Served as church school superintendent three different years, and teacher of young people for many years. Committed myself to the Ed. D. Program and was awarded the Ed. D. Degree. Have a family of three children and wife that believe in doing things for other people. Have helped develop an agricultural education program that is highly successful in a non-land grant university.

19. New son. Married my wife. Armed forces service made me a better person.

Reasons Given by Participants for Cooperating in the Study

1. Most were looking for ideas which would help them professionally.

2. A few indicated they hoped it would assist them in other ways as well.

3. A clearly written, effective, and revealing statement was submitted by one participant:

> I feel I've never been creative because I've never had the time to be. By the time I did all the required things, (job-wise and at home), met deadlines, and stayed within my financial limits, I did not have the energy or inclination to let my mind be creative. After 20 years of teaching I feel I want something new to try, or see if I can come up with a stimulating new experience -- either in the teaching field or outside it.

Indications of "Greatest Ambition"
by 16 Participants

1. To serve the community as a good agriculture teacher.

2. To serve the needs of youth through vocational youth activities.

3. Raise my family without any trouble, retire early, travel and see a little of the world.

4. To teach agricultural mechanics in a Junior College.

5. To make a contribution to the field of education.

6. Someday, to go into business for myself. Would like a business that would give me many contacts with people.

7. To be a master teacher.

8. To be the best agricultural occupations teacher in the United States.

9. To be a successful farmer.

10. To do a good job in whatever I start.

11. To become an excellent teacher of agriculture and be recognized as such.

12. One constant growth -- To wake up each morning and to make the world better for me and those around me -- better than it was the day before.

13. Teach vocational agriculture.

14. To create new ways of being a more effective teacher.

15. To be successful at the jobs that I undertake.

16. To be a superintendent.

Note: Only enough editing was done to maintain the confidential nature of the responses.

Indications of "Favorite Use of Spare Time"
by 16 Participants

1. Fishing or working on the lawn.

2. Fishing and reading.

3. Hobbies such as working old wood, antiques, and fishing.

4. Working.

5. Golf, travel, fishing and reading.

6. Working on my own private home grounds -- trying to beautify these surroundings and making them more practical and livable.

7. Collecting ideas, talks and quotes from well known people. I also like to participate in meetings and talk to and observe people.

8. Other than the obvious thing an ag. teacher would do after not seeing his wife for three nights in a row -- photography and hunting.

9. Athletic activities and mechanical work.

10. Sports, hunting and fishing.

11. Relaxing and doing things with my wife and two daughters. I don't get much spare time.

12. The study of people and their reactions to the world around them.

13. Watch TV and take part in sports.

14. Making wood projects and playing golf.

15. Working at hobbies: gardening, hunting (bow and arrow), fishing, and repairing broken items.

16. TV or movies.

Note: Only enough editing was done to maintain the confidential nature of the responses.

Indications of "Favorite Subject in School" and "Subject Liked Least" by 16 Participants

Favorite Subject in School	Subject Liked Least
1. Agriculture	History
2. History and Agriculture	English
3. Vocational Agriculture	Civics
4. Vocational Agriculture	English
5. Agricultural Mechanics	Algebra
6. Anything relating to farming and agriculture	Really didn't have any subject I didn't like too much -- perhaps Political Science
7. History in high school; education courses in college	Really never had a course I disliked
8. Agriculture and Science	History
9. Agriculture	Mathematics
10. Agriculture	Latin
11. Vocational Agriculture	Latin
12. Science	English
13. Agriculture	English
14. Science and Agriculture	English
15. Mathematics	History
16. Agriculture	English Literature

Note: "Highest grade completed in school" or "highest college degree" ranged from those still working for their first college degree (all but one would soon be awarded this degree) to those who had achieved either the Ed. D. or Ph. D. degree.

Representative Responses to Question

Question: How will short course help you in the future?

1. I didn't really feel that the creativity course was affecting me at all until I was talking to my wife about it. She said that she had noticed a difference in my ideas for teaching. From time to time, even when riding in a car, I might think of something and write it on a piece of envelope -- or once I wrote a note on the dash of the car in some dust.

   Being a new teacher I've been somewhat skeptical and/or reluctant to try new teaching techniques. We tend to teach the way we have been taught by others, or we try to teach like our supervising teacher did while student teaching. I'm not saying that either of these methods is wrong; I'm saying that each individual person teaches in his own manner.

   Before taking the creativity course I wasn't sure about my teaching techniques and some of the "weird" ideas that I had about rearranging the agriculture shop. But the creativity course helped me "find myself" and gave me confidence in carrying out these ideas, (now I call them "creative ideas"). As for my teaching techniques, I'm confident that I will build them stronger and improve on them more easily due to the creativity course.

2. It has been an enjoyable stimulus. I will use some in every day contacts with people, and hope I will be unconsciously and consciously using knowledge obtained from the course in my approach to teaching.

3. It will improve student class interest. It will improve the lessons I teach and help make them naturally interesting. It will help me in my hobbies and in solving problems in my daily life.

4. I believe I have a better outlook on life by looking for different methods, topics, etc., which I can be creative in.

5. I think it will be helpful in many general ways.

6. I have used many of the things learned in the short course, but I feel that the "string thing" that I devised to creative interest for the eighth graders when they came for our visitation day was best. I got their attention and also got the message over as to the agriculture department.

7. The course has already made me more conscious of my teaching methods and my students' interests.

8. By attending the workshop, my lesson plans have changed, and also the way I review for an exam. The "attention getters" will help serve as motivation for classes which I will teach.

Representative Responses to Question continued

Question: How will short course help you in the future?

9. The greatest thing I received from the course was confidence in my ideas, the ability to "brainstorm" an idea until it became more functional, and to realize that good ideas come from concentration and thought on a subject.

10. Developed new teaching aids (sprayer calibration test stand and new slides for technical courses). Have used "interest and attention getters." Ideas from the creative short course in teaching the problem-solving process (smart pill, puzzles, etc.) have been helpful. Made resolution to start classes with a picture thought or short problem riddle to gain immediate student attention. New interest developed in the Phi Delta Kappan.

11. Ideas for Evaluation of Creative Behavior Institute

    a. Good chance to think about and explore yourself.

    b. Try to create a sincere interest in others' ideas and thought.

    c. Could be used as interest approach for eighth grade students who may become agriculture students in the future.

    d. Take time to look at problems and arrive at solutions.

    e. Allow yourself the time to give more consideration and patience toward understanding the ideas of others.

    f. Create an orderly procedure for improving your own thinking process in solving problems.

    g. Learn not to "put down" or discourage other ideas.

    h. Time very well spent. Would continue other similar programs if they were offered.

    i. Will share ideas with administrator.

12. I have used the ideas from the workshop and added some new ones of my own to prepare lesson plans, and to solve problems in my other classes.

    Participation up to this time has enabled me to take a different outlook or point of view of the things I do. As an example, for my special project in ..., I brought in many of the creative ideas and approaches brought out at our first meeting. It was either this or the fact I was stimulated enough to think of new ideas and forms myself. To this I feel I owe the success of that particular project.

Representative Responses to Question continued

Question: How will short course help you in the future?

12. continued. The first meeting also enabled me to secure information about where to order new useful and interesting material. Specifically, I found I could order transparencies for making my own overheads from ... Creative Materials Catalog cheaper than buying them at the ...

In my project I utilized changing an idea of someone else's to fit an area of ... Also, I brainstormed as many ideas as I could for the use of the Creative Writer's Corner and came up with five very good ones. Before our March meeting, I never would have thought of making my own overhead transparencies for classroom use. After our March meeting, I dared to even try my hand at some art work (and in colors) to improve the quality of ordinary overheads for projection.

I have found if someone really works hard at trying to come up with something creative he can do it -- even if he is not naturally creative -- as we think of the great writers and artists being. The workshop has been a great benefit to me.

Note: The following was handed in by a participant at the close of the first meeting:

Think this day has been well spent. Am really happy that I have been chosen as one of the 20 teachers accepted for the course. This is the first course I have ever taken just because I wanted to take it!

Note: One of the men, who was unable to attend the second and third meetings because of serious illness in his family, wrote:

I greatly enjoyed the one meeting that I did attend, and am certainly sorry that I missed the rest of them.

Representative Responses to Question

Question: How might the short course have been improved?

1. More specific assignment of outside class activities that we could try and get results back to the class before it was over. Some of us probably would do a better job.

2. Not as long a lapse between first and second sessions.

3. It was well done. I believe that free time for more study of displays and talking among participants would have added.

4. I thoroughly enjoyed myself; and, at this time, I cannot think of any way to improve it.

5. I think the course could be improved by eliminating some of the long questionnaires.

6. I have attended all three of the meetings and feel the time has been well spent.

7. Offer more problems to be selected by students and solved as part of the course. This could be especially valuable to teachers as a part of an in-service project for credit as a special problem, etc.

8. Generally speaking, I think the Creative Approaches to Teaching Applied Biological and Agricultural Occupations Short Course was a big success. As for myself, it was a tremendous success and help to me.

9. Excellent, for the first time. The size of the group was fine.

10. Set time schedules for completion of materials.

11. Make it longer.

12. It's hard to say how to improve this short course. Since it was so new to me, I can't say.

Representative Responses to Question

Question: How did students or others respond to short course involvement?

1. Will try and find out this fall.

2. Okay -- what parts of it they were exposed to. I used some of the picture ideas, but I am planning on using more of the ideas in my agricultural business class that I'll teach next year.

3. I put some of the THINK products out in the teachers' lounge, and didn't tell where they came from. The results were very favorable.

   Here are the things most important to me that I have done as a result of the creative thinking workshop.

   a. What I have done at school with my lessons (the main reason I came to the workshop).

      (1) I have solved a problem of getting responses from the slower students. I am preparing to build a <u>response monitoring system</u> using four switches for each student connected to four lights in front -- the switches marked A. B. C. D. Each student has a set and the class answers multiple choice and true-false review or discussion questions by turning on the appropriate light.

      (2) A game for reviewing which involves a large board with questions typed on 3 x 5 cards. On the back side of each card there is a given point value -- harder questions get higher points. Easier questions are at the top and harder questions are at the bottom.

      Use two teams. Students take turns picking their own questions. They pick the number of points they need and the question is turned over. If the answer is correct,their team gets the points. If the answer is wrong, the points are deducted from the team score.

      (3) Used the same methods of workshop to get ideas from FFA members for convention display.

      (4) Encouraged members in shop, especially welding, to design their own projects to meet their needs.

   b. What I have done to improve thinking of my fellow teachers.

      (1) I have discussed workshop with other teachers with the idea of improving everybody's teaching.

Representative Responses to Question
continued

Question: How did students or others respond to short course involvement?

3. continued.

b. What I have done to improve thinking of my fellow teachers. continued

(2) I feel we become stagnant in our jobs because we lack imagination, daring and initiative to try new and "wild" things in the classroom.

c. What I have done at home.

(1) I have used the principle of writing down many ideas for the solution of a problem and choosing the best.

(2) Some problems solved:

(a) Placement of fences around buildings of my 25 acres.

(b) Adding shelves to provide storage in the house.

d. What I have done with my hobbies.

(1) My biggest hobby is photography, and I am now not contented to take pictures of events, people and sightseeing, but I am trying to record impressions, closeups and the different ways that people observe their surroundings.

(2) I have added a plan to my taking of pictures. I try to think of pictures that would help explain a point. I write down what I want, and then look for that picture.

Note: This participant did not explain how students and the others involved in one way or another with his impressive activities were responding. The general impression, however, is that the responses were quite favorable. While this information could have been included as responses to other questions, the participant included it at this point in the study. The researcher is happy to abide by his decision.

4. Students responded quite readily. In the classroom, they thought things we did were quite interesting. The students thought the projects I started and finished (as a student teacher) were quite original. They asked how I ever thought of them.

Representative Responses to Question
continued

Question: How did students or others respond to short course involvement?

5. People seemed to be interested in the ideas in the course, (high school especially).

6. I talked about the things we were doing with most of the faculty, and most of them were at a loss to know what it was all about. They did express interest once we started talking about the things involved. I managed to work it into the conversation when I was visiting socially with friends. They had many questions. I have used many of the things successfully with students.

7. My students were interested and wanted to know more about it. We spent the entire hour explaining and talking about the short course. I was pleased with their reactions.

8. I talked to several of the students in the dorm about it, and they seemed interested. Students at the supervising center liked the "attention getters", and thought the short course sounded interesting.

9. The chairman of a local creative seminar was interested in the ideas and material presented by Bristol.

10. When I told my wife what I was going to do, she thought I was "nuts." Students thought they were in a "dream world" for a while when I showed them the paper string "deal", and approached them with the idea of "What's this picture remind you of?"

Note: The relatively short time available for involving students and determining their true feelings resulted in fewer and less positive responses to this question than was the case for the other questions which participants were asked to respond to. Previously planned and regular educational activities would be expected to take precedence over the student activities planned as part of the study.

Summary of Student Responses to Requests for Information about Creativity

Statement about student responses

Lack of time and inadequate instructions provided teachers (for working with their students) were the main reasons for the collection of less written information from fewer high school students than originally had been desired. It also appeared that students of applied biological and agricultural occupations in Illinois may have felt somewhat inadequate when asked to respond to questions about creativity.

Favorite subject and subject liked least

Agriculture tended to be the favorite subject, with those most closely related to some phase of agriculture (mechanical drawing and shop courses) being next. Some would not admit to having a favorite subject, and others left this part of the "Brief Biographical Inventory" blank.

English was the subject most often listed as "least liked." Trigonometry and study hall were examples of others mentioned. Fewer students left this item blank than was the case for the "favorite subject."

Favorite use of spare time

Most often listed here (in order of popularity) were: working on car or related activity, girls, hunting or other sport, and farming. Several left this item blank.

Plans after graduation from high school

College, junior college, trucking, farming and unspecified "full-time job" were most often listed in planning for the future.

Greatest ambition

Quite a few did not list anything for this item. Farming, trucking, and related ambitions were most frequently mentioned. An example of a "gag-type reply" is illustrated by the individual who wrote "President of the U. S. A. or good farmer or stud."

Most creative thing done so far

Farming, formal education completed to this time, "nothing," and blanks were the most frequent responses here.

Other creative accomplishments to date

Most of those responding left this item blank. A few listed farming.

EXAMPLE OF TEACHING AID USED IN SHORT COURSES

Spring 1971

The CREATIVE THINKING COLORING BOOK

See the nice man? He is a "creative thinker." He is optimistic, enthusiastic and imaginative ... he takes notes, he is smart, he gets lots of IDEAS that help his company and himself. Color him smart.

THINK Products - J. O. Proctor, 1209 Robin Hood Circle,
Towson, Maryland 21204

VT 014 689
ANNUAL EVALUATION REPORT, 1971 FISCAL YEAR.

ALABAMA STATE ADVISORY COUNCIL ON VOCATIONAL EDUCATION, AUBURN.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - SEP71 54P.

DESCRIPTORS - *VOCATIONAL EDUCATION; *PROGRAM EVALUATION; *ANNUAL REPORTS; EDUCATIONAL OBJECTIVES; *PROGRAM EFFECTIVENESS; *EDUCATIONAL NEEDS; STATE PROGRAMS; PROGRAM IMPROVEMENT; STUDENT NEEDS; ENROLLMENT
IDENTIFIERS - ALABAMA

ABSTRACT - INCLUDED IN THIS REPORT ARE THE RESULTS OF THE ANNUAL EVALUATION OF ALABAMA VOCATIONAL EDUCATION PROGRAMS, SERVICES, AND ACTIVITIES. CONDUCTED BY THE ADVISORY COUNCIL ON VOCATIONAL EDUCATION, THE EVALUATION MAKES NOTE OF SEVERAL POINTS INCLUDING: (1) EIGHTY-EIGHT PERCENT OF THE EMPLOYMENT IN ALABAMA IS IN JOBS WHICH DO NOT REQUIRE BACCALAUREATE DEGREES, (2) ONLY 26 PERCENT OF ALABAMA SECONDARY SCHOOL STUDENTS ARE ENROLLED IN VOCATIONAL EDUCATION PROGRAMS, (3) ONLY 30 PERCENT OF ALABAMA HIGH SCHOOL GRADUATES ARE COMPLETING COLLEGE, (4) IT IS ESTIMATED THAT THERE ARE 131,540 YOUNG ADULTS IN ALABAMA WHO COULD BENEFIT FROM EITHER POST-SECONDARY LEVEL VOCATIONAL INSTRUCTION OR VOCATIONAL ADULT EDUCATION, AND (5) OF THE 131,540 YOUNG ADULTS, IT IS ESTIMATED THAT 16,800--LESS THAN 22 YEARS OF AGE--ARE KNOWN TO BE UNEMPLOYED AND ACTIVELY SEEKING EMPLOYMENT. A MAJOR RECOMMENDATION CALLS FOR THE DEVELOPMENT OF A SYSTEM OF EDUCATION FOR EMPLOYMENT FROM GRADE 1 THROUGH GRADE 14. (JS)

VT 014 689

ALABAMA ADVISORY COUNCIL ON VOCATIONAL EDUCATION

ANNUAL EVALUATION REPORT

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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SEPTEMBER 1971

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September 9, 1971

Dr. Harold C. Martin
Vice-President
State Board of Education
State Office Building
Montgomery, Alabama 36104

Dear Dr. Martin:

In accordance with Section 102.23(c) Federal Rules and Regulations, the Alabama Advisory Council on Vocational Education submits to the State Board of Education its evaluation report for the 1971 fiscal year.

This report is for consideration by the State Board, and subsequent transmittal to the U.S. Commissioner of Education and the Chairman of the National Advisory Council on Vocational Education. The law provides that, when transmitted, this report may be accompanied by such additional information as the State Board deems appropriate. This additional information may be in the form of comments and other reports which support, supplement or differ with the evaluation results by the Council.

The present Council was somewhat handicapped in preparing its report due to a lack of membership continuity from the 1971 fiscal year Council. The Council's subsequent reports will be more inclusive and will relate our views, concerns and recommendations in more specific terms.

We do believe that the content of this report will be beneficial to vocational education and, in turn, to the people of Alabama.

Very truly yours,

Henry R. Morgan

Henry R. Morgan, Chairman

HRM:hm

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S U M M A R Y S T A T E M E N T

The purpose of this report is to describe the results of the annual evaluation of Alabama vocational education programs, services and activities as required by Public Law 90-576 to be conducted by the Alabama Advisory Council on Vocational Education. It includes recommendations for consideration by the State Board of Education based on Council observations, discussions with educators and lay people, and information distributed by local educational agencies, the State Department of Education and other agencies of state government.

The Council is favorably impressed with the efforts being made by the State Department of Education and local educational agencies in providing vocational education in light of the scarcity of resources available. This is not to imply that additional effort toward further expansion is not needed. Much work remains to be done, both quantitatively and qualitatively, in the establishment of vocational education programs if the State even approaches the goal of adequate vocational education opportunities for all youth and adults in every community of the State. The Council believes that the following statistical digest will support this point:

1. Eighty-eight percent of the employment in Alabama is in jobs which do not require baccalaureate degrees.

2. Only 26 percent of Alabama secondary school students are enrolled in vocational education programs.

3. Only 16 percent of Alabama secondary school students are enrolled in job-related vocational education programs.

4. Of the total Alabama school leavers, approximately 30 percent indicate they leave because the school program does not meet their need and interests.

5. Only 30 percent of Alabama high school graduates are completing college.

6. Therefore, 54 percent of Alabama secondary school students are not receiving needed job-related vocational instruction.

7. Assuming a 20 percent school dropout rate, it is estimated that there are 57,360 school dropouts in Alabama in the 18-21 age range who have received no formal vocational instruction.

8. With 30 percent of Alabama high school graduates earning a baccalaureate degree and only 16 percent having received vocational instruction, it is estimated that there are 73,180 Alabama high school graduates in the 18-21 age range who have received no sequenced job-related vocational instruction.

9. Therefore, it is estimated that there are 131,540 young adults in Alabama who could benefit from either post-secondary level vocational instruction or vocational adult education.

10. Of the 131,540 young adults, it is estimated that 16,800 (less than 22 years of age) are known to be unemployed and actively seeking employment.

Based on the aforementioned statistics and the more specific recommendations as outlined elsewhere in this report, the following general recommendations are made to the State Board of Education:

1. *The Board should intensify and expand its efforts to develop a system of education for employment from grade one through fourteen.*

2. *The Board, in addition to seeking additional monies for education, should strive to allocate a more equitable share of the State's educational dollar to vocational education.*

3. *The Board should promote the improvement of the administration of vocational education through seminars for local school board members, superintendents of education, technical institute directors, and junior college presidents.*

4. *The Board should intensify and expand its efforts in assisting local boards of education with planning and programming vocational education.*

Schools can no longer ignore the development of the State's total human resources. Some Alabamians believe that the educational programs in schools are becoming less and less relevant to more and more students. The margin for educational error or failure, which is what the skilled or semi-skilled job in the old work force constituted, has been taken up by technology. Machinery and technology do not lessen the demand for labor, but they demand a new kind of labor. Educational programs must be developed that enable people to get and hold these new jobs.

Educators should establish a multiplicity of goals for schools. They should forget tract curriculums and move to a school program aimed at career preparation and development. The dichotomy between academic and vocational education is out of date, therefore, programs should be designed that broaden employment options for students at all levels of education.

E V A L U A T I O N A R E A S

AREA I

STATE GOALS AND PRIORITIES AS SET FORTH IN THE 1971 STATE PLAN

Item Observed:

1. *How appropriate were the State's goals in terms of student needs, employment opportunities, the specific needs of population groups and to manpower development in the State?*

Findings/Conclusion:

There was an absence of clearly stated goals in the plan. The Council feels that goals statements should be explicitly stated in Parts II and III of the State plan.

Recommendations:

1. *The Board should formulate clear and concise goals based on student needs and employment opportunities for each occupational area program. Goals should be measurable and stated in terms of program outcomes.*

Item Observed:

2. *Were procedures set forth in Parts II and III of the State plan to accomplish each of the stated goals, objectives and priorities?*

Findings/Conclusion:

There was an absence of clearly stated program objectives and priorities in the plan.

In general, the maps and tables included as part of the plan text revealed only implicit objectives. This indirectness made it impossible to evaluate the performance of the State's vocational education program. The Council feels that continuous evaluation of vocational education in terms of specific goals and objectives is imperative.

Program priorities were vague and immeasurable. There was no ranking of priorities or procedures set forth in the plan to accomplish the priorities in terms of time and cost dimensions.

Therefore, it was difficult for the Council to determine program direction and evaluate anticipated program outcomes for occupational areas by program levels and target groups.

In general, it appeared that the implied program direction as reflected in the plan was in keeping with the Federal legislation. However, the Council feels that the State plan is not adequate for the planning and programming of vocational education programs which are to be administered largely by local educational agencies. The plan format for Parts II and III were not appropriate for drawing sound conclusions regarding program direction and subsequent evaluations regarding levels of performance.

If realistic goals, objectives and priorities are to be explicitly stated and subsequently evaluated, adequate planning and programming information must be available. This was stressed in the Council's 1970 evaluation report. The Council is not aware of any information system in the state that can provide on a regional or state basis the information needed for comprehensive local and state level planning.

Recommendations:

1. *The Board should clearly state in Part III of the State plan the annual program objectives, rank order priorities and procedures for implementing the plan. Objectives should be stated in measurable terms for each occupational area by program levels and target groups, and made available to local boards of education, technical institutes, and junior colleges for local level planning.*

2. *The Board should design, develop and implement by the end of the 1972 fiscal year a functional regional and state comprehensive manpower demand and supply information system for planning and programming vocational education.*

3. *The Board should design, develop and implement by the end of the 1973 fiscal year a functional computerized management information system for vocational education.*

Item Observed:

3. *To what extent were the State's goals met in 1971 and to what extent does this represent an improvement over 1970?*

Findings/Conclusion:

The lack of clearly stated objectives in Part III of the State plan made it difficult for the Council to measure achievement by comparing the data in the 1970 and 1971 plan. A study of the plan revealed the establishment of unrealistic objectives due to inadequacies in planning, methods of determining needs, and the setting of realistic program objectives by local educational agencies.

Comparisons of Tables in Part III of the year under review (1971) and Tables of Part III for the fiscal years 1970 and 1972 reveal a reasonable increase in the number of program services and activities offered. The Council feels that a level of performance evaluation against unrealistic goals would be misleading to the State Board and the general public.

Recommendations:

1. *The Board should design a systematic method (format) for reporting program information in Part III of the State plan so that information will be comparable from year to year.*

2. *The Board should develop an annual time schedule for the review and revision of the State plan so that the plan can be reviewed by the Advisory Council on Vocational Education and other state agencies as required by the Intergovernmental Cooperation Act (P.L. 90-577).*

AREA II

EFFECTIVENESS WITH WHICH PEOPLE AND THEIR NEEDS WERE SERVED

Item Observed:

1. *What was done about occupational awareness and orientation at the elementary school level?*

Findings/Conclusion:

There is little evidence that elementary school teachers employed by local boards of education are exposing elementary school students to the world of work.

Very little vocational education funds were expended for this type of activity during the 1971 fiscal year. Two school systems initiated plans for elementary school programs as a part of their total exemplary vocational program. These two systems should begin their awareness and orientation instruction during the 1972 fiscal.

Fundamentally, the elementary school has as its objectives the provisions of that basic knowledge and skills which are necessary for the further accumulation and use of knowledge. The Council does not advocate the teaching of job skills to elementary school age children, but certainly elementary school children should be exposed to the fact that (1) the primary sources of income come from working as either an employee, employer or self-employment; (2) there is a vast range of employment opportunities each with its own job requirements, working conditions and rewards; and (3) not now but at some point in the future a vocational choice must be made and occupational preparation undertaken.

Recommendations:

1. *The Board should establish during the 1972 fiscal year a functional task force to develop curriculum guidelines for occupational awareness and orientation programs for elementary school education.*

2. *The Board should provide several planning grants during the 1973 fiscal year to local school systems throughout the state to pilot the curriculum guidelines developed by the 1972 fiscal year task force.*

Item Observed:

2. *To what extent were vocational education opportunities available to all the people at the secondary, post-secondary and adult levels?*

Findings/Conclusion:

Only 26 percent of Alabama's secondary school students were enrolled in vocational education programs. This percentage includes students enrolled in consumer homemaking education. Of the total number represented in the 26 percent, only 16 percent were enrolled in vocational programs related to job or job cluster training.

Instruction in all six occupational area programs was offered at the secondary school level in only 16 of the 67 counties in the state. In many cases, only one vocational program was available to a small number of students in the school system. Only two occupational area programs, including the non-sequenced business courses, were offered in fifteen (21%) counties in the state.

There were 27 post-secondary vocational technical institutes operating in the state with transportation readily available to any student. The range of courses offered by the 27 schools was 6 to 24 with an average offering of 15 courses per school. The estimated continuing average enrollment for the schools is 345 students for the 1972 fiscal year. This figure includes an estimate of the first year student enrollment. The estimated average enrollment for the schools is 23 students per course. The estimated annual continuing enrollment range for courses being offered by the 27 schools is from 3 to 85 students.

In addition to the vocational technical institutes, 17 junior colleges are offering associate applied science degrees in occupational programs.

Program offerings in vocational adult education vary in type, duration and purpose. The extent to which opportunities were available during the 1971 fiscal was dependent upon monies budgeted for the funding of those classes requested by business and industry through local boards of education.

Recommendations:

1. *The Board should intensify and expand its efforts to develop a state plan which encourages local boards of education to assume the responsibility of preparing high school students for employment by providing a wide variety of vocational education opportunities.*

2. *The Board should design, develop and pilot by the end of the 1974 fiscal year occupational cluster programs for high school students.*

Item Observed:

3. *To what extent was there coordination of training opportunities among agencies?*

Findings/Conclusion:

A common criticism of vocational training by lay people is the lack of coordination of training opportunities among manpower training agencies. This criticism is probably caused by the proliferation of agencies created by Federal legislation that provide vocational training. Many of these agencies also provide special needs groups with related services which are beyond the scope of vocational programs offered through the State Department of Education.

The Council feels that the framework for coordination within the State Department of Education is excellent. There is a departmental agreement between several divisions for the coordination of services to the handicapped in the state.

There is also an agreement between the state employment service and the vocational division related to provide manpower demand and supply information. Provisions of the agreement were carried out during the 1971 fiscal year. However, individuals from both state agencies feel that the information transmitted by each agency is of questionable value to the receiving agencies.

Recommendations:

1. *The Board should establish during the 1972 fiscal year a functional task force consisting of vocational educators and state employment service personnel to study the manpower demand and supply functions under the cooperative agreement.*

2. *The Board should establish during the 1972 fiscal year a functional task force to study the job bank activities of the state employment services.*

3. *The Board should design and implement by the end of the 1974 fiscal year a vocational program "terminee bank" and a cooperative state-wide placement service with the state employment service.*

Item Observed:

4. *To what extent was vocational education involved in the total manpower development program of the state?*

Findings/Conclusion:

In addition to the traditional secondary, post-secondary and vocational adult education programs offered during the 1971 fiscal year, the State Department of Education also initiated a training for industry program.

If the State is to have a total manpower development program, state agencies' goals must be set which are definitive. The Council feels that the recently established State Manpower Planning Council is certainly a beginning toward planning and interagency coordination.

Recommendations:

1. *The Board should intensify and expand its effort in providing more vocational adult education programs.*

2. *The Board should intensify and expand its efforts in state interagency planning and coordination so that those resources already available in the State can be used effectively and efficiently to deliver the educational and related services to the youth and adults when needed.*

Item Observed:

5. *To what extent were employer needs being considered in program planning?*

Findings/Conclusion:

A majority of the vocational adult programs conducted in the state during the 1971 fiscal were at the request of employers.

Each local board of education established a general advisory council for vocational education. A telephone survey of members on fifteen randomly selected councils raises a question as to how active the councils are throughout the state. Ninety percent of the councils did not meet during the fiscal year.

Many teachers report that they utilize advisory council or craft committees. Yet of 100 teachers selected at random from one half the systems in the state, only 24 held meetings during the 1970 fiscal year. The 24 teachers spent an average of 24 hours in advisory council sessions.

The Council's findings this year are similar to the findings reported in its 1970 evaluation report. The Council feels that effective programs of vocational education require advice and guidance from business and trade advisory councils.

Recommendations:

1. *The Board should make a concerted effort to impress on school administrators and vocational teachers the need for local advisory councils.*

2. *The Board should develop special guidelines and provide consultant services to local boards of education for the effective use of advisory councils on vocational education.*

Item Observed:

6. *To what extent was there coordination and articulation among secondary, post-secondary and adult education agencies?*

Findings/Conclusion:

There is some evidence that the several vocational services in the State Department of Education are making a concerted effort through curriculum structures and curriculum development activities to foster better articulation and coordination among program levels.

Lay people and educators have often been critical of vocational education because of the lack of articulation. The common belief that the various school levels should take students to given predetermined levels of competence is not well-founded for vocational education in Alabama. A study of students enrolled in programs by levels will reveal differences in chronological ages, educational background and psychological characteristics.

Articulation and coordination by program levels can be provided best through individualized instructional systems. Each occupational program curriculum is based on job and task descriptions. Students should be allowed to move along at their own pace, not in lock-step with other students. If they can demonstrate the required level of skills and knowledges, they should be allowed to bypass instruction and move to more advanced tasks. Therefore, if a student is capable of performing the basic general education skills needed in the curriculum and is allowed to advance only by demonstrated performance, then articulation and coordination are built into the individualized instructional approach.

Recommendations:

1. *The Board should sponsor at least one workshop devoted to individualized instructional systems in each occupational area by the end of the 1973 fiscal year.*

2. *The Board should design, develop and pilot at least one individualized instrucitonal system in each occupational area by the end of the 1974 fiscal year.*

Item Observed:

7. *What indications are there that students feel that vocational programs adequately meet their needs?*

Findings/Conclusion:

There is very little information available to assess the degree to which programs are meeting the educational needs of students.

A review of program statistics reveals an increase in enrollment in vocational education programs. On the other hand, the increase in enrollment is disproportional to the increase in teachers. An increase in the student-teacher ratio beyond a certain point will in fact reduce the quality of instructional programs.

Recommendations:

1. *The Board should design, develop and implement by the end of the 1974 fiscal year a comprehensive vocational student follow-up system. The system should include previous and present employment patterns, curriculum adequacy information, job satisfaction information and job satisfactoriness information from employers.*

2. *The Board should establish and distribute to local boards of education, vocational technical institutes and junior colleges by the end of the 1974 fiscal year minimum and maximum enrollment standards for vocational programs. These standards should be based on a student-teacher ratio and facility utilization formula.*

Item Observed:

8. *To what extent did educational institutions assist in the job placement of graduates?*

Findings/Conclusion:

It was not possible to assess the degree to which institutions were involved in placement activities during the 1971 fiscal year. Each vocational teacher was required to submit a list of qualified graduates to the state employment service.

It is generalized by vocational educators that post-secondary institutions are more effective in conducting placement activities than secondary schools and preparatory adult programs. There is no student follow-up system, therefore, it is not known how many students actually receive jobs as a result of school placement activities.

Recommendations:

1. *The Board should design and implement by the end of the 1974 fiscal year a vocational program "terminee bank" and a cooperative state-wide placement service with the state employment service.*

2. *The Board should design and implement by the end of the 1973 fiscal year a program designed to assist local boards of education, vocational technical institutes and junior colleges with the placement of vocational program students who leave programs whether by graduation or otherwise.*

Item Observed:

9. *To what extent were ancillary services provided students and teachers?*

Findings/Conclusion:

Of the 123 local boards of education providing vocational instruction, only 23 employed vocational counselors. Most of these were assigned to one single school within the system. Only 18 of the 27 technical institutes employed counselors.

Of the 123 local boards of education providing vocational instruction, only 20 employed full-time directors of vocational education.

The effort made by the State Department of Education to provide comprehensive ancillary services to local educational agencies is commendable. Teacher education and research services were provided by state universities.

There is no state level planning and evaluation unit for vocational education.

Curriculum development activities were conducted by each respective vocational service within the department's vocational division.

Recommendations:

1. *The Board should intensify and expand its efforts to encourage local boards of education and vocational technical institutes to employ vocational counselors.*

2. *The Board should intensify and expand its efforts to encourage local boards of education to employ qualified full-time or part-time local directors of vocational education.*

3. *The Board should intensify and expand vocational education planning and programming by establishing a state level planning and evaluation unit. The unit should be an independent entity within the department's vocational division.*

4. *The Board should establish during the 1972 fiscal year a functional task force to develop curriculum guidelines for occupational awareness and orientation programs for elementary school education.*

Item Observed:

10. *To what extent were new instructional programs and services initiated during the 1971 fiscal year?*

Findings/Conclusions:

Two hundred eighty-one expanding and new programs were initiated in the state during the 1971 fiscal year. Twenty-eight new occupational area instructional programs were offered in 1971 that were not offered during the 1970 fiscal.

Recommendations:

1. *The Board should intensify and expand its efforts to provide more technical and mid-management programs in junior colleges.*

AREA III

ACTION ON COUNCIL RECOMMENDATIONS

Item Observed:

1. *To whom were recommendations made during the 1971 fiscal year?*

Findings:

The Council made seven general recommendations in its 1970 evaluation report to the State Board of Education.

During the spring of 1971, the Council made fifteen recommendations by a memorandum to the State Board of Education, Superintendent of Education, and State Director of Vocational Education. Seven of the fifteen were for consideration in developing administrative policies for vocational education.

Item Observed:

2. *What actions have been taken and to what extent have these actions fulfilled the intent of the recommendations?*

Findings:

Four of the seven general recommendations made in the Council's evaluation report to the State Board of Education were broad, vague and immeasurable.

The Council is not aware of any appreciable actions taken by the State Board to fulfill the intent of two of the three remaining recommendations.

The State Department of Education participated cooperatively with other state agencies in an attempt to fulfill the intent of the 1970 recommendation which stated:

3. *An adequate data system should be developed in cooperation with other agencies.*

Staff members of the State Department of Education spent several days consulting with Boeing Civil Systems, Huntsville, Alabama in the development of a pilot project for a state management information system. This project (ALAMIS) was discontinued in January of 1971 due to lack of continued funding.

Item Observed:

3. *What factors influenced the success or failure of the recommendations?*

Conclusion:

A majority of the Council's recommendations have been broad, vague and stated so that actions toward the recommendations were immeasurable. Subsequent recommendations by the Council will be more inclusive and stated in measurable terms.

Item Observed:

4. *What follow-through is being maintained by the Council?*

Statement:

The Council has recently employed a full-time executive director and developed a comprehensive evaluation plan. The Council's organizational structure will consist of six evaluation committes. Each committee will follow through with its recommendations and determine to what extent action is being taken.

In addition, each subsequent annual evaluation report will restate recommendations made and action taken by the State Board.

The Council is not aware of any action being taken on one recommendation made in its 1970 evaluation report. It is being restated in more detail for further consideration.

1. *The Board should develop comprehensive guidelines for submitting formal applications for area school construction. The application should be appendaged with (a) projected school system populations, (b) projected vocational program enrollments, (c) projected employment opportunities for vocational programs to be included, (d) projected program graduates for vocational programs in the surrounding geographic area, (e) and a facility utilization study of existing facilities in the system making the application as well as surrounding school systems.*

APPENDIXES

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APPENDIX A

GLOSSARY OF TERMS

1. "Local educational agency" refers to a board of education or other legally constituted local authority having administrative control and direction of public elementary or secondary schools in a city, county, or any other public educational institution or agency (such as a state-operated junior or community college or state-operated area vocational school) having administrative control and direction of a vocational education program. In this report anything modified by the adjective "local" pertains to a local educational agency.

2. The term "vocational education" refers to vocational or technical training or retraining which is given in schools or classes (including field or laboratory work and remedial or related academic and technical instruction incident thereto) designed to prepare individuals for gainful employment as semiskilled or skilled workers or technicians or subprofessionals in recognized occupations or to prepare individuals for enrollment in advanced vocational or technical education programs, but excluding any program to prepare individuals for employment in occupations to be generally considered professional or which require a baccalaureate or higher degree.

3. "Consumer and homemaking education" refers to instruction designed to help individuals and families improve home environments and the quality of personal and family life, and include instruction in food and nutrition, child development, clothing, housing, family relations, and management of resources with emphasis on selection, use, and care of goods and services, budgeting and other consumer responsibilities. Consumer and homemaking is included as part of the broad term "vocational education programs" in this report.

4. The term "job related vocational education programs" includes all instructional programs designed to prepare individuals for gainful employment in the labor market.

5. The term "occupational area program" refers to vocational programs within an occupational field such as agriculture, business and office, distribution, health, job related home economics, and trade and industrial.

6. The term "vocational program" refers to a specific instructional program (auto mechanics, child care, carpentry, horticulture, etc.) within an occupational field design to train individuals for a specific job, cluster of jobs, or cluster of occupations.

7. The term "school leavers" refers to students who either transfer from one school or school system to another, or dropout of schools.

8. The term "program terminee" refers to students who either leave a vocational program upon completion or who drop out of the program.

9. A "secondary school" vocational program refers to instruction offered in grades seven through twelve or any arrangement thereof during regular school day hours.

10. A "post-secondary" vocational program refers to instruction offered on a full-time basis for students who have completed or left high school and are beyond compulsory high school age. Usually they are considered terminal programs offered by vocational-technical schools and junior colleges.

11. The term "adult vocational education" refers to instruction offered day or evening on a part-time basis to adults or out-of-school youth over 16 years of age who are engaged in or are preparing to enter an occupation. Vocational education for adults is chiefly of an upgrading and updating nature, offered on a part-time basis, or of a retraining nature for persons displaced by automation or technological changes.

12. The term "training for industry" refers to the training of employees or potential employees for a new or expanding industry in a community.

13. The term "handicapped" refers to individuals who cannot succeed in regular vocational programs without special assistance or services. These individuals include those who have abnormal physical and mental characteristics.

14. The term "disadvantaged" refers to individuals who cannot succeed in regular vocational programs without special assistance or services. These individuals include those who are educationally, socio-economically and/or culturally deprived.

15. The term "target group" refers to student groups enrolled as handicapped, disadvantaged and regular.

16. The term "special needs" refers to handicapped and disadvantaged students.

17. An organization's "mission" is its purpose for existence, or what it was brought into being to accomplish. A mission statement delineates an organization's general functions, its relationships with its environment, and its authority and jurisdictional boundaries.

18. "Goals" are statements of anticipated accomplishments in fulfillment of an organization's mission. Goals are frequently stated in terms of outcomes, or consequences of organizational activities, and are not necessarily quantitative nor associated with a specific period of time.

19. "Objectives" are statements of specific planned organizational outputs or activities directed toward mission and goal achievement, usually indicating the output in measurable terms and associated with a specific period of time. Objectives provide the basic elements for year-to-year planning, allocation and management of resources, and evaluation of organizational effectiveness.

20. The term "planning and programming" refers to the process of determining objectives, specifying methods of achieving objectives, and the allocation of resources to attain specified objectives.

21. The term "program terminee bank" refers to an organized system or procedure for making available to prospective employers all of the names and addresses of qualified former vocational students living in a given geographical area.

22. "Ancillary services and activities" refers to supportive services and activities necessary to assure quality in vocational education programs. In this report, such services and activities include (i) administration and supervision of instructional programs (ii) vocational counseling, (iii) evaluation of programs, (iv) training of teachers and other program personnel, (v) special demonstration and experimental programs, (vi) development of curricula and instructional materials, and (vii) research and research related activities.

23. The term "school facilities" means classrooms and related facilities (including initial equipment) and interests in lands on which such facilities are constructed.

24. The term "construction" includes construction of new buildings and acquisition, expansion, remodeling, and alteration of existing buildings, and includes site grading and improvement and architects fees.

25. The term "expanded vocational programs" refers to an increase in the number of the same types of instructional programs.

26. The term "new vocational program" refers to a type of instructional program which did not previously exist.

APPENDIX B

COMPARISON ANALYSIS OF SELECTED VOCATIONAL EDUCATION PROGRAMS, SERVICES AND ACTIVITIES FOR ALABAMA, FISCAL YEARS 1969-71

Line No.	Item	Unit	Fiscal Year 1969	Fiscal Year 1970	Fiscal Year 1971	Percent Change 69-70	Percent Change 70-71	Percent Change 69-71
	Funding							
1.	Total funds expended all sources	Dol.	24,905,852	27,672,388	39,068,358	11.1	42.2	56.8
2.	Federal funds available	Dol.	5,897,866	8,048,768	9,089,636	36.4	12.9	54.1
3.	Federal funds expended	Dol.	5,897,866	5,769,317	6,718,733	-2.1	16.4	13.9
4.	Proportion of line 1	Pct.	23.7	20.8	17.2	....	....	....

NOTES:

Data sources: Annual Federal Reports for 1968, 1969 and 1970, Vocational Division, State Department of Education; State Plans for Vocational Education, Parts II and III, 1970, 1971 and 1972; and unpublished data for fiscal years 1969, 1970 and 1971, Vocational Division, State Department of Education.

All data reported are for federal/state reimbursed programs.
Omission of data (blank) in table indicates data not available or unknown.
.... indicates not applicable or incomplete data for calculation or excessive data for report format.

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	Fiscal Year 1970	Fiscal Year 1971	Percent Change 69-70	Percent Change 70-71	Percent Change 69-71
5.	Carry-over federal funds of total available	Pct.	.01	28.3	26.1*	....	....	....
6.	State/local funds expended	Dol.	20,460,463	21,903,071	24,370,887	7.0	11.2	19.1
7.	Proportion of line 1	Pct.	82.2	79.2	62.4	....	....	....
8.	Expenditures for instruction by occupational areas (Total)	Dol.	18,733,155	22,186,966	24,048,662	18.4	8.4	28.4
9.	Agribusiness	Dol.	1,142,419	1,408,782	1,604,120	23.3	13.9	40.4
10.	Proportion of line 8	Pct.	6.1	6.3	6.7	....	....	....
11.	Business & Office	Dol.	1,931,224	1,216,181	1,154,963	-37.0	-5.0	-40.2
12.	Proportion of line 8	Pct.	10.3	5.5	4.8	....	....	....

* Carry-over obligated for staffing area vocational centers under construction, 1972.

APPENDIX B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
13.	Distributive	Dol.	669,751	834,504	830,853	24.6	-.4	24.1
14.	Proportion of line 8	Pct.	3.6	3.8	3.6	....	....	....
15.	Health	Dol.	503,493	155,324	198,901	-69.1	28.1	-60.5
16.	Proportion of line 8	Pct.	2.7	.7	.8	....	....	....
17.	Occ. Home Economics	Dol.	317,890	304,956	391,575	-4.1	28.4	23.2
18.	Proportion of line 8	Pct.	1.7	1.4	1.6	....	....	....
19.	Technical	Dol.	689,675	365,473	392,759	-83.2	7.5	-43.1
20.	Proportion of line 8	Pct.	3.7	1.6	1.6	....	....	....
21.	Trade and Industrial	Dol.	11,159,247	15,167,051	16,744,151	35.9	10.4	50.0
22.	Proportion of line 8	Pct.	59.6	68.4	69.6	....	....	....
23.	Basic Voc. Education	Dol.	2,319,456	2,734,695	2,731,340	17.9	-.1	17.8

APPENDIX B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	Fiscal Year 1970	Fiscal Year 1971	Percent Change 69-70	Percent Change 70-71	Percent Change 69-71
24.	Proportion of line 8	Pct.	12.4	12.3	11.4	....	....	....
25.	Expenditures for Consumer Homemaking	Dol.	2,831,983	3,420,494	3,479,759	20.8	1.7	22.9
26.	Proportion of line 1	Pct.	11.4	12.4	8.9	....	....	....
	Expenditures for instruction by program levels and target groups							
27.	Elementary	Dol.	-0-	-0-	-0-	....	....	....
28.	Proportion of line 1	Pct.	-0-	-0-	-0-	....	....	....
29.	Secondary	Dol.	9,552,995	6,833,472	7,744,106	-28.5	13.3	-18.9
30.	Proportion of line 1	Pct.	38.4	24.7	19.8	....	....	....
31.	Postsecondary	Dol.	7,384,000	11,564,625	12,789,011	56.6	10.6	73.2
32.	Proportion of line 1	Pct.	29.6	41.8	32.7	....	....	....

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APPENDIX B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	Fiscal Year 1970	Fiscal Year 1971	Percent Change 69-70	Percent Change 70-71	Percent Change 69-71
33.	Adult	Dol.	393,194	581,851	566,915	48.0	-2.6	44.2
34.	Proportion of line 1	Pct.	1.6	2.1	1.5	....	....	....
35.	Regular	Dol.		24,928,219	21,100,032	....	-15.4	....
36.	Proportion of line 1	Pct.		90.1	54.0	....	....	....
37.	Disadvantaged	Dol.		2,367,549	1,658,898	....	-29.9	....
38.	Proportion of line 1	Pct.		8.6	4.2	....	....	....
39.	Handicapped	Dol.		376,620	1,282,633	....	240.6	....
40.	Proportion of line 1	Pct.		1.4	3.3	....	....	....
41.	Ancillary Services Expenditures (Total)	Dol.	1,604,216	2,053,899	3,006,600	28.0	46.4	87.4
42.	Proportion of line 1	Pct.	6.4	7.4	7.7	....	....	....
43.	Planning and Evaluation	Dol.						

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A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
44.	Proportion of line 41	Pct.	....	....	....	....	....	....
45.	Administration, Supervision and Evaluation	Dol.	936,806	1,035,910	1,693,592	10.6	63.5	80.8
46.	Proportion of line 41	Pct.	58.4	50.4	56.3	....	....	....
47.	Guidance and Counseling	Dol.	454,638	605,963	734,372	33.3	21.2	61.5
48.	Proportion of line 1	Pct.	1.8	2.2	1.9	....	....	....
49.	Proportion of line 41	Pct.	28.3	29.5	24.4	....	....	....
50.	Research	Dol.	88,950	108,221	245,757	21.7	127.1	176.3
51	Proportion of line 1	Pct.	.4	.4	.6	....	....	....
52.	Teacher Education	Dol.	212,772	277,593	322,789	30.5	16.3	51.7
53.	Proportion of line 1	Pct.	1.1	1.0	.8	....	....	....

APPENDIX B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
54.	Proportion of line 41	Pct.	13.3	13.5	10.7	....	....	....
55.	Curriculum	Dol.		26,212				
56.	Proportion of line 41	Pct.		1.3				
	Construction							
57.	Federal/State/Local funds expended*	Dol.	5,097,789	6,889,200	7,978,738	36.5	15.8	58.1
58.	Federal VEA funds expended for construction.	Dol.	3,595,292	160,000	1,722,105	-95.5	976.3	-52.1
59.	Proportion of line 1	Pct.	14.4	.6	4.4	....	....	....
60.	Area schools projects completed	No.	2	1	4	-50.0	300.0	100.0

*Includes VEA and Appalachia funds.

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APPENDIX B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	Fiscal Year 1970	Fiscal Year 1971	Percent Change 69-70	Percent Change 70-71	Percent Change 69-71
	Student Enrollment by levels and target groups*							
61.	Secondary	No.	84,475	91,883	98,390	8.8	7.1	16.5
62.	Postsecondary	No.	11,135	15,354	16,556	37.9	7.8	48.7
63.	Adult	No.	32,129	48,318	41,096	50.4	-15.6	27.9
64.	Disadvantaged	No.	(901)	30,261	34,460	....	13.9	....
65.	Handicapped	No.		3,019	3,286	....	8.8	....
	Student Enrollment by Occupational Areas	No.	82,288	91,430	95,631	11.1	4.6	16.2
66.	Agribusiness	No.	27,009	27,473	28,613	1.7	4.1	5.9
67.	Business & Office	No.	11,960	14,465	14,207	20.9	-1.8	18.8
68.	Distributive	No.	5,145	5,049	6,104	-1.9	20.9	18.7

*Includes duplicated enrollment count for all program levels.

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APPENDIX B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
69.	Health	No.	2,535	1,184	2,975	-53.3	151.3	17.4
70.	Occ. Home Economics	No.	5,481	6,011	6,770	9.7	12.6	23.5
71.	Technical	No.	2,347	2,636	2,330	12.3	-11.6	-0.7
72.	Trade & Industrial	No.	27,811	34,612	34,632	24.5	0.05	24.5
	Student Enrollment other programs							
73.	Consumer Homemaking	No.	35,655	39,739	40,947	11.5	3.0	14.8
74.	Basic Voc. Education	No.	17,332	17,763	18,457	2.5	3.9	6.5
	Teacher Units by level and target groups*							
75.	Elementary	No.	-0-	-0-	-0-	....	....	....
76.	Secondary	No.	1,441	1,661	1,551	15.3	-6.6	7.6
77.	Postsecondary	No.	567	628	731	10.8	16.4	28.9

*Duplicate count

APPENDIX B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
78.	Adult*	No.	1,011	1,284	1,117	27.0	-13.0	10.5
79.	Disadvantaged	No.		78	120	....	53.8	....
80.	Handicapped	No.		51	51	....	-0-	....
81.	Teacher Units by Occupational Areas (Total)**	No.	2,064	2,468	2,749	19.6	11.3	33.2
82.	Agribusiness	No.	389	389	426	-0-	9.5	9.5
83.	Business & Office	No.	383	437	414	14.1	-5.3	8.1
84.	Distributive	No.	118	97	135	-17.8	39.2	14.4
85.	Health	No.	116	143	105	23.3	-26.5	-9.5
86.	Occ. Home Economics	No.	34	110	161	223.5	46.4	373.5
87.	Technical	No.	91	130	75	42.9	-42.3	-17.6
88.	Trade & Industrial	No.	933	1,162	1,433	24.5	23.3	53.6

*Includes full-time and part-time contract units
**Includes teachers units all levels

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APPENDIX B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Teacher Units other programs							
89.	Consumer Homemaking	No.	464	432	431	-6.9	-0.2	-7.1
90.	Basic Voc. Education*	No.	389	389	426	-0-	9.5	9.5
	Ancillary Services Personnel							
91.	State level admin. and supv.	No.	35	37	41	5.7	10.8	17.1
92.	Comparison with line 81	Ratio	1:72	1:67	1:67	....	....	....
93.	State level program specialists	No.	15	17	24	41.2	13.3	60.0
94.	State level research and evaluation	No.	4	4	5	-0-	25.0	25.0
95.	Total lines 91, 93 & 94	No.	54	58	70	7.4	20.7	30.0

*Duplicate count

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
96.	Local level admin. and supv.	No.	29	36	61	24.1	69.4	110.3
97.	Comparison with line 81	Ratio	1:71	1:69	1:45	....	....	....
98.	Local level Counselors (Total)	No.	71	80	92	12.7	15.0	29.6
99.	Secondary	No.	59	68	74	15.3	8.8	25.4
100.	Comparison with line 61	Ratio	1:1432	1:1351	1:1330	....	....	....
101.	Postsecondary	No.	12	12	18	-0-	50.0	50.0
102.	Comparison with line 62	Ratio	1:928	1:1280	1:920	....	....	....
103.	Teacher Educators by Program-Areas (Total)	No.	18	18	19	-0-	5.6	5.6
104.	Agribusiness	No.	8	8	8	-0-	-0-	-0-
105.	Business & Office	No.	2	2	2	-0-	-0-	-0-

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A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
106.	Distributive	No.	1	1	1	-0-	-0-	-0-
107.	Health	No.	-0-	-0-	-0-	....	....	....
108.	Home Economics	No.	2	2	3	-0-	50.0	50.0
109.	Technical	No.	-0-	-0-	-0-	....	....	....
110.	Trade & Industrial	No.	5	5	5	-0-	-0-	-0-
111.	Counseling	No.	-0-	-0-	-0-	....	....	....
112.	Basic Voc. Education	No.	-0-	-0-	-0-	....	....	....
	Professional Development Activities							
113.	State leadership institutes and conferences in vocational education for all state level personnel	No.	-0-	-0-	2	....	....	....

APPENDIX B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
114.	State level personnel attending at least one national leadership institute or conference	No.	47	54	64	14.9	18.5	36.2
115.	Number of state level personnel attending at least one national leadership institute or conference as compared to line 95	Pct.	87.0	93.1	91.4	....	....	....
116	State leadership institutes and conferences in vocational education held for local level personnel.	No.	1	1	4	-0-	300.0	300.0
117.	School Administrators	No.	1	-0-	-0-	....	....	....
118.	Local Directors and Supervisors (Total)	No.	5	16	21	220.0	31.3	320.0
119.	School systems	No.	1	2	2	100.0	-0-	100.0

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
120.	Postsecondary institutions	No.	4	14	19	250.0	35.7	375.0
121.	Exemplary programs	No.	-0-	-0-	4	....	....	....
122.	Personnel involved	No.	-0-	-0-	28	....	....	....
123.	Students involved	No.	-0-	-0-	1,600	....	....	....
124.	Area Vocational Schools	No.	44	45	49	2.3	8.9	11.4
125.	Secondary	No.	17	18	22	5.9	22.2	29.4
126.	Postsecondary	No.	27	27	27	....	....	....
127.	Research projects completed	No.	3	4	7	33.3	75.0	133.3
	Dissemination of research findings to selected audiences							
128.	Hardcopy	Vol. pages	800	1,325	1,150	65.6	-13.2	43.8
129.	Seminars	No.	2	4	2	100.0	-50.0	-0-

7632

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Secondary Follow-up for All Occupational Areas							
130.	Enrollment eligible for completion	No.	11,429	11,743		2.7		
131.	Enrollees completing	No.	10,996	11,278	13,380	2.5	18.6	21.6
132.	Enrollees left program line 130 prior to completion of requirements with marketable skills	No.	431	465		7.8		
		Pct.	3.8	4.0		....		
133.	Line 131 known to be available for employment	No.	5,390	6,333	8,374	17.4	32.2	55.3
		Pct.	49.0	56.1	62.5	....	....	....
134.	Line 131 known to be continuing education	No.	3,514	3,280	3,130	-6.6	-4.5	-10.9
		Pct.	31.9	29.0	23.3	....	....	....
135.	Line 131 known to be employed full time in field related to training.	No.	3,825	4,771	5,732	24.7	20.1	49.8
		Pct.	34.7	42.3	42.8	....	....	....
136.	Line 131 known to be unemployed	No.	351	390	1,617	11.1	314.6	360.6
		Pct.	3.1	3.4	12.0	....	....	....

Lines 130,131, and 132 are data for students who were enrolled in fiscal years 1968, 1969 and 1970 with one year follow-up being conducted in 1969, 1970 and 1971 by vocational teachers.

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A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Post-secondary Follow-up for All Occupational Areas							
137.	Enrollment eligible for completion	No.	3,241	4,889		50.8	....	....
138.	Enrollees completing	No.	2,336	3,630	4,079	55.3	12.3	74.6
139.	Enrollees left program line 137 prior to completion of requirements	No.	905	1,259		39.1	....	....
	with marketable skills	Pct.	27.9	25.8		....	....	....
140.	Line 138 known to be available for employment	No.	1,953	2,940	3,402	50.5	15.7	74.1
		Pct.	83.6	80.9	83.4	....	....	....
141.	Line 138 known to be continuing education	No.	53	154	183	190.5	18.8	245.2
		Pct.	2.2	4.2	4.4	....	....	....
142.	Line 138 known to be employed full time in field related to training	No.	1,898	2,715	3,127	43.0	15.1	64.7
		Pct.	81.2	74.7	76.6	....	....	....
143.	Line 138 known to be unemployed	No.	12	58	177	383.3	205.1	375.0
		Pct.	0.5	1.5	4.3	....	....	....

Lines 137, 138, and 139 are data for students who were enrolled in fiscal years 1968, 1969 and 1970 with one-year follow-up being conducted in 1969, 1970 and 1971 by vocational teachers.

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Secondary Agribusiness Follow-up							
144.	Enrollment eligible for completion	No.	5,006	4,399		-12.1		
145.	Enrollees completing	No.	4,744	4,086	4,614	-13.8	12.9	-2.7
146.	Enrollees left program line 144 prior to completion of requirements	No.	262	313		19.4		
	with marketable skills	Pct.	5.2	7.1		....		
147.	Line 145 known to be available for employment	No.	2,033	2,146	2,937	5.5	13.5	44.4
		Pct.	42.8	52.5	63.6	....	....	....
148.	Line 145 known to be continuing education	No.	1,693	1,322	967	-21.9	-26.8	-42.8
		Pct.	35.6	32.3	20.9	....	....	....
149.	Line 145 known to be employed full time in field related to training	No.	1,230	1,436	1,118	16.7	-22.1	-9.1
		Pct.	25.9	35.1	24.2	....	....	....
150.	Line 145 known to be unemployed	No.	98	88	947	-10.2	976.1	866.3
		Pct.	2.0	2.1	20.5	....	....	....

Lines 144, 145, and 146 are data for students who were enrolled in fiscal years 1968, 1969 and 1970 with one-year follow-up being conducted in 1969, 1970 and 1971 by vocational teachers.

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Secondary Business and Office Follow-up							
151.	Enrollment eligible for completion	No.	2,300	2,620		13.9		
152.	Enrollees completing	No.	2,260	2,595	3,672	14.8	41.5	62.4
153.	Enrollees left program line 151 prior to completion of requirements with marketable skills	No.	40	25		-37.5		
		Pct.	1.7	0.9		....		
154.	Line 152 known to be available for employment	No.	1,315	1,660	2,521	26.2	51.8	91.7
		Pct.	58.1	63.9	68.6	....	....	....
155.	Line 152 known to be continuing education	No.	551	637	776	15.6	21.8	40.8
		Pct.	24.3	24.5	21.1	....	....	....
156.	Line 152 known to be employed full time in field related to training	No.	968	1,358	2,185	40.2	60.8	125.7
		Pct.	42.8	52.3	59.5	....	....	....
157.	Line 152 known to be unemployed	No.	171	182	336	6.4	84.6	96.4
		Pct.	7.5	7.0	9.1	....	....	....

Lines 151, 152, and 153 are data for students who were enrolled in fiscal years 1968, 1969 and 1970 with one-year follow-up being conducted in 1969, 1970 and 1971 by vocational teachers.

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Post-secondary Business and Office Follow-up							
158.	Enrollment eligible for completion	No.		1,133				
159.	Enrollees completing	No.		755	393		-47.9	
160.	Enrollees left program line 158 prior to completion of requirements with marketable skills	No.		378				
		Pct.		33.4				
161.	Line 159 known to be available for employment	No.		630	287		-54.4	
		Pct.		83.4	73.0			
162.	Line 159 known to be continuing education	No.		30	15		-50.0	
		Pct.		3.9	3.8			
163.	Line 159 known to be employed full time in field related to training	No.		562	201		-64.2	
		Pct.		74.4	51.1			
164.	Line 159 known to be unemployed	No.		32	86		168.7	
		Pct.		4.2	21.8			

Lines 158, 159, and 160 are data for students who were enrolled in fiscal years 1968, 1969, and 1970 with one-year follow-up being conducted in 1969, 1970, and 1971 by vocational teachers.

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Secondary Distributive Follow-up							
165.	Enrollment eligible for completion	No.	1,115	1,066		-4.3		
166.	Enrollees completing	No.	1,066	1,039	1,147	-2.5	10.3	7.5
167.	Enrollees left program line 165 prior to completion of requirements	No.	49	27		-44.8		
	with marketable skills	Pct.	4.4	2.5		....	....	
168.	Line 166 known to be available for employment	No.	561	536	678	-4.4	26.4	20.8
		Pct.	52.6	51.5	59.1	....	....	....
169.	Line 166 known to be continuing education	No.	265	361	325	36.2	-9.9	22.6
		Pct.	24.8	34.7	28.3	....	....	....
170.	Line 166 known to be employed full time in field related to training	No.	461	472	634	2.3	34.3	37.5
		Pct.	43.2	45.4	55.2	....	....	....
171.	Line 166 known to be unemployed	No.	19	5	44	-73.6	780.0	131.5
		Pct.	1.7	0.4	3.8	....	....	....

Lines 165, 166, and 167 are data for students who were enrolled in fiscal years 1968, 1969, and 1970 with one-year follow-up being conducted in 1969, 1970, and 1971 by vocational teachers.

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Post-secondary Distributive Follow-up							
172.	Enrollment eligible for completion	No.	20	32		60.0	....	
173.	Enrollees completing	No.	20	32	21	60.0	-34.3	5.0
174.	Enrollees left program line 172 prior to completion of requirements with marketable skills	No.	-0-	-0-				
		Pct.	-0-	-0-		....	....	
175.	Line 173 known to be available for employment	No.	15	23	14	53.3	-39.1	-6.6
		Pct.	75.0	71.8	66.6	....	....	....
176.	Line 173 known to be continuing education	No.	3	8	7	166.6	-12.5	133.3
		Pct.	15.0	25.0	33.3	....	....	....
177.	Line 173 known to be employed full time in field related to training	No.	15	20	14	33.3	-30.0	-6.6
		Pct.	75.0	62.5	66.6	....	....	....
178.	Line 173 known to be unemployed	No.	-0-	-0-	-0-	....	....	....
		Pct.				....	....	....

Lines 172, 173, and 174 are data for students who were enrolled in fiscal years 1968, 1969, and 1970 with one-year follow-up being conducted in 1969, 1970, and 1971 by vocational teachers.

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A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Secondary Health Follow-up							
179.	Enrollment eligible for completion	No.	297	329		10.7		
180.	Enrollees completing	No.	276	325	313	15.0	-3.6	13.4
181.	Enrollees left program line 179 prior to completion of requirements	No.	21	4		-80.9		
	with marketable skills	Pct.	7.1	1.2		....		
182.	Line 180 known to be	No.	156	194		24.3		
	available for employment	Pct.	56.5	59.6	57.5	....	....	....
183.	Line 180 known to be	No.	97	16	108	-83.5	575.0	11.3
	continuing education	Pct.	35.1	4.9	34.5	....	....	....
184.	Line 180 known to be employed full time in	No.	137	171	148	24.8	-13.4	8.0
	field related to training	Pct.	49.6	52.6	47.2	....	....	....
185.	Line 180 known to be	No.	3	3	16	0.0	433.3	433.3
	unemployed	Pct.	1.0	0.9	5.1	....	....	....

Lines 179, 180, and 181 are data for students who were enrolled in fiscal years 1968, 1969, and 1970 with one-year follow-up being conducted in 1969, 1970, and 1971 by vocational teachers.

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Post-Secondary Health Follow-up							
186.	Enrollment eligible for completion	No.	536	572		6.7		
187.	Enrollees completing	No.	507	512	788	0.9	53.9	55.4
188.	Enrollees left program line 186 prior to completion of requirements with marketable skills	No.	29	60		106.8		
		Pct.	5.4	10.5		....		
189.	Line 187 known to be available for employment	No.	494	497	725	0.6	45.8	46.7
		Pct.	97.4	97.0	92.0	....	....	....
190.	Line 187 known to be continuing education	No.	4	4	17	0.0	325.0	325.0
		Pct.	0.7	0.7	2.1	....	....	....
191.	Line 187 known to be employed full time in field related to training	No.	492	493	712	0.2	44.4	44.7
		Pct.	97.0	96.2	90.3	....	....	....
192.	Line 187 known to be unemployed	No.	-0-	3	9	0.0	200.0	0.0
		Pct.	0.0	0.5	1.1	....	....	....

Lines 186, 187, and 188 are data for students who were enrolled in fiscal years 1968, 1969, and 1970 with one-year follow-up being conducted in 1969, 1970, and 1971 by vocational teachers.

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Secondary Occupational Home Ec. Follow-up							
193.	Enrollment eligible for completion	No.	391	631		61.3		
194.	Enrollees completing	No.	391	621	674	58.8	8.5	72.3
195.	Enrollees left program line 193 prior to completion of requirements with marketable skills	No.	-0-	10				
		Pct.	-0-	1.6		....		
196.	Line 194 known to be available for employment	No.	128	271	315	111 .7	16.2	146.0
		Pct.	32.7	43.6	46.7	....	....	....
197.	Line 194 known to be continuing higher education	No.	183	205	250	12.0	21.9	36.6
		Pct.	46.8	33.0	37.0	....	....	....
198.	Line 194 known to be employed full time in field related to training	No.	73	146	225	100.0	54.1	208.2
		Pct.	18.6	23.5	33.3	....	....	....
199.	Line 194 known to be unemployed	No.	32	40	90	25.0	125.0	181.2
		Pct.	8.1	6.4	13.3	....	....	....

Lines 193, 194, and 195 are data for students who were enrolled in fiscal years 1968, 1969, and 1970 with one-year follow-up being conducted in 1969, 1970, and 1971 by vocational teachers.

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971*	Percent Change 69-70	70-71	69-71
	Secondary Technical Follow-up							
200.	Enrollment eligible for completion	No.	68	77		13.2		
201.	Enrollees completing	No.	67	76		13.4		
202.	Enrollees left program line 200 prior to completion of requirements	No.		1		....		
	with marketable skills	Pct.		1.3		....		
203.	Line 201 known to be	No.	34	34		0.0		
	available for employment	Pct.	50.7	44.7		....		
204.	Line 201 known to be	No.	24	16		-33.3		
	continuing education	Pct.	35.8	21.0		....		
205.	Line 201 known to be employed full time in	No.	28	30		7.1		
	field related to training	Pct.	41.7	39.4		-5.5		
206.	Line 201 known to be	No.		2		....		
	unemployed	Pct.		2.6		....		

Lines 200, 201, and 202 are data for students who were enrolled in fiscal years 1968, 1969, and 1970 with one-year follow-up being conducted in 1969, 1970, and 1971 by vocational teachers.

*Included in trade and industrial followup

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A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971*	Percent Change 69-70	70-71	69-71
	Post-secondary Technical Follow-up							
207.	Enrollment eligible for completion	No.	325	552		69.8		
208.	Enrollees completing	No.	243	329		35.3		
209.	Enrollees left program line 207 prior to completion of requirements with marketable skills	No.	82	223		171.9		
		Pct.	25.2	40.4		....		
210.	Line 208 known to be available for employment	No.	197	222		12.6		
		Pct.	81.0	67.4		....		
211.	Line 208 known to be continuing education	No.	7	22		214.2		
		Pct.	2.8	6.6				
212.	Line 208 known to be employed full time in field related to training	No.	181	190		4.9		
		Pct.	74.4	57.7		....		
213.	Line 208 known to be unemployed	No.	4	5		25.0		
		Pct.	1.6	1.5		....		

Lines 207, 208 and 209 are data for students who were enrolled in fiscal years 1968, 1969, and 1970 with one-year follow-up being conducted in 1969, 1970, and 1971 by vocational teachers.

*Included in trade and industrial followup

A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Secondary Trade and Industrial Follow-up*							
214.	Enrollment eligible for completion	No.	2,250	2,621		16.4		
215.	Enrollees completing	No.	2,192	2,536	2,960	15.6	16.7	35.0
216.	Enrollees left program line 214 prior to completion of requirements	No.	58	85		46.5		
	with marketable skills	Pct.	2.6	3.2				
217.	Line 215 known to be available for employment	No.	1,163	1,492	1,743	28.2	16.8	49.8
		Pct.	53.0	58.8	58.8	....	....	....
218.	Line 215 known to be continuing education	No.	601	644	704	7.1	9.3	17.1
		Pct.	27.4	25.3	23.7	....	....	....
219.	Line 215 known to be employed full time in field related to training	No.	928	1,158	1,423	24.7	22.8	53.3
		Pct.	42.3	45.6	48.0	....	....	....
220.	Line 215 known to be unemployed	No.	28	70	84	150.0	20.0	200.0
		Pct.	1.2	2.7	2.8	....	....	....

Lines 214, 215, and 216 are data for students who were enrolled in fiscal years 1968, 1969 and 1970 with one-year follow-up being conducted in 1969, 1970 and 1971 by vocational teachers.

*Includes technical education follow-up most of which were industrial occupations.

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A P P E N D I X B (Continued)

Line No.	Item	Unit	Fiscal Year 1969	1970	1971	Percent Change 69-70	70-71	69-71
	Post-secondary Trade and Industrial Follow-up*							
221.	Enrollment eligible for completion	No.	2,360	2,600		10.1		
222.	Enrollees completing	No.	1,566	2,002	2,877	27.8	43.7	83.7
223.	Enrollees left program Line 221 prior to completion of requirements	No.	794	598		-24.6		
	with marketable skills	Pct.	50.7	29.8		....		
224.	Line 222 known to be available for employment	No.	1,247	1,566	2,376	25.5	51.7	90.5
		Pct.	79.6	78.2	82.5	....	....	....
225.	Line 222 known to be continuing education	No.	39	90	144	130.7	60.0	269.2
		Pct.	2.4	4.4	5.0	....	....	....
226.	Line 222 known to be employed full time in field related to training	No.	1,210	1,450	2,200	19.8	51.7	81.8
		Pct.	77.2	72.4	76.4	....	....	....
227.	Line 222 known to be unemployed	No.	8	18	82	125.0	355.5	925.0
		Pct.	0.5	0.8	2.8	....	....	....

Lines 221, 222, and 223 are data for students who were enrolled in fiscal years 1968, 1969, and 1970 with one-year follow-up being conducted in 1969, 1970, and 1971 by vocational teachers.
*Includes technical education follow-up, most of which were industrial occupations.

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EVALUATION OF SECONDARY MATHEMATICS CURRICULUMS IN DISTRICT 15 AS THEY RELATE TO THE MATH BACKGROUND REQUIREMENTS OF POST-SECONDARY VTAE STUDENTS. FINAL REPORT.

NORTH CENTRAL TECHNICAL INST., WAUSAU, WIS.
WISCONSIN STATE BOARD OF VOCATIONAL, TECHNICAL, AND ADULT EDUCATION, MADISON.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
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ABSTRACT - IN AN ATTEMPT TO DETERMINE THE USEFULNESS OF MATHEMATICS IN DISTRICT FIFTEEN, PERSONS WHO WERE RESPONSIBLE FOR CURRICULUM DEVELOPMENT WERE INTERVIEWED AND OTHER DATA WERE COLLECTED THROUGH MATH SURVEY FORMS COMPLETED BY STUDENTS. THE STUDY INVOLVED 21 SECONDARY SCHOOLS AND 2,675 SENIORS, APPROXIMATELY 81 PERCENT OF A TOTAL ENROLLMENT OF 3,315. IT WAS CONCLUDED THAT THE MATHEMATICS PROGRAM FOR STUDENTS INTERESTED IN VOCATIONAL AND TECHNICAL FIELDS WAS TOTALLY INADEQUATE, PRIMARILY BECAUSE TOO MUCH EMPHASIS WAS PLACED ON COLLEGE PREPARATION. ALSO, IT WAS DETERMINED THAT APPROXIMATELY ONE IN EVERY FOUR SENIORS GRADUATED WITH ONLY A SINGLE CREDIT IN MATH. IT IS RECOMMENDED THAT ACTION BE TAKEN TO STAFF GENERAL MATH CLASSES WITH THE BEST TEACHERS AND TO BECOME CONCERNED ABOUT THOSE STUDENTS WHO NEED THE GENERAL MATH COURSE. ALSO, THERE IS AN IMMEDIATE NEED FOR A VOCATIONAL-TECHNICAL MATH PROGRAM. (GEB)

VT 014 692

FINAL REPORT

Project No. 15.034.151.221

EVALUATION OF SECONDARY MATHEMATICS CURRICULUMS IN DISTRICT 15 AS THEY RELATE TO THE MATH BACKGROUND REQUIREMENTS OF POST-SECONDARY VTAE STUDENTS

AUGUST, 1971

NORTH CENTRAL TECHNICAL INSTITUTE
WAUSAU, WISCONSIN 54401

VT014692

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Final Report

Project No. 15.034.151.221

EVALUATION OF SECONDARY MATHEMATICS CURRICULUMS IN DISTRICT 15 AS THEY RELATE TO THE MATH BACKGROUND REQUIREMENTS OF POST-SECONDARY VTAE STUDENTS

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August, 1971

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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PREFACE

This study is not intended to be the last or only word in vocational-technical mathematics in secondary schools of District Fifteen. It does not attempt to answer all the complex problems relating to the existing general math programs nor does it offer a magical panacea for the development and implementation of a comprehensive vocational technical math program.

Perhaps, in its most optimistic sense, this brief study might become a focal point about which we, who are concerned with vocational-technical mathematics, can begin to rally. Comprehensive vocational-technical mathematics programs in District Fifteen will not evolve by themselves. Therefore, we who are concerned must be purposeful, and we must act together if we hope to develop a program that will meet the needs of students who plan to enter vocational and technical fields.

Lawrence Kaffine

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INTRODUCTION

It is an unfortunate truism that in America the role of vocational and technical education has never been fully understood by a great many secondary educators and that it too often has been offered not as an educational opportunity but as a solution to the problem of what to do with students who cannot succeed in the academic curriculum. It is then no surprise that though obviously the same kind of education is not equally appropriate for all, many secondary educators still pursue with great vigor the American ideal of a college education for all. Perhaps the ideal is a natural consequence when one considers that our society is "degree conscious" and that secondary educators are products of baccalaureate institutions.

It is not, however, the purpose of this study to seek out the problems of widespread indifference and the lack of understanding displayed by secondary educators concerning vocational and technical education. What we are primarily concerned with is an attempt to determine the adequacy of secondary mathematics curriculums in District Fifteen, and to reveal the basic mathematical needs of those students who aspire to vocational and technical education, and the degree to which secondary schools are meeting these needs.

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Problem

The adequacy of vocational-technical mathematics curriculums in the secondary schools of District Fifteen is the specific problem under research.

The "in" mathematics curriculum of today is "modern" and theory-oriented. It is designed primarily to meet the needs of those students who have college aspirations. Little, if any, emphasis is placed upon the needs of the average, below average, and non-college-aspiring students.

The problem is not peculiar to District Fifteen, for anyone knowledgeable in secondary math curriculums realizes that the problem exists throughout the state, primarily but not exclusively in the rural areas.

Objectives

The primary objective of this study is an evaluation of the secondary school mathematics curriculums in District Fifteen. Such an evaluation will be in terms of the needs of those students who plan to enter vocational and technical fields.

A compilation of all relevant materials concerning the study will be distributed to all participating schools.

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Secondary objectives of the study are:

A. Establish avenues of communication between the Math Department of NCTI and the secondary schools in District Fifteen.

B. Provide an opportunity for secondary schools to expound on their positions and problems involved in implementing a math curriculum which is vocational-technical oriented.

C. Provide an opportunity for NCTI to help identify the strengths, weaknesses, and deficiencies of the vocational-technical math curriculums of participating schools.

D. Enable the participating schools to gain first-hand information concerning the nature of the math curriculum at NCTI and what the Math Department of NCTI expects of students who plan to enter its math program.

E. Provide the Math Department of NCTI with an opportunity to evaluate its own curriculum in light of the newly acquired research material.

The evaluation of the secondary curriculums should be completed during the summer of 1971. The secondary objectives can only be realized to their fullest potential if the study is continued into the 1971-72 school year.

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METHODOLOGY

The evaluation of math curriculums was done primarily by personal interviews with personnel who are responsible for curriculum development; that is, chairmen of math departments and high school administrators. Information on the number and kind of math courses completed by the high school seniors during the past four years was acquired by having them complete the Mathematics Profile Survey form (Appendix B). Information on the number and kind of high school math courses completed by NCTI students who were in the third and fourth semester of a two year program and in second semester of a one year program was acquired by having them complete the NCTI Math Survey form (Appendix C).

The following schools were visited and personal interviews were conducted. Department chairmen were given the math survey forms and were asked to have them completed and returned to NCTI as soon as possible.

Abbotsford	Newman (Wausau)
Antigo	Park Falls
Athens	Phillips
Colby	Rib Lake
D. C. Everest (Schofield)	Rosholt
Edgar	*Shawano
Loyal	Stratford
Marathon	Wausau East
Medford	Wausau West
Merrill	Wittenberg-Birnamwood
Mosinee	**

* District Thirteen
** Spencer and Prentice did not participate in the study.

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One hundred percent of the above listed schools returned the math survey forms completed by their seniors.

No attempt was made to evaluate the academic or college oriented math courses.

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FINDINGS-AN ANALYSIS

This study involved 21 secondary schools and 2,675 seniors, approximately 81% of a total enrollment of 3,315.

Let me begin by stating that secondary schools realize that there are deficiencies in their existing math programs and that modern math apparently does not live up to all of its great expectations. Obviously it is good math for the college prep student - no one seemed to question that; but, there definitely is uneasiness as to how well it is meeting the needs of the non-college-oriented students. A majority of the department chairmen indicated they are unhappy with the general math situation and that they desired assistance, particularly as to what materials and texts were available for this group. The frustrations of the secondary math teachers are borne out by their fragmentary or piecemeal approach in meeting the needs of the non-college group. Schools throughout the District are introducing two year Algebra I courses and new general math courses. They are also dropping or revising some of the old general math courses, and in some instances just giving them new names. Along with the conglomeration of the courses there still remains the archaic one-math-credit requirement for graduation. It must be noted that even the one-credit requirement is changing. Some schools are now requiring two credits, and still

others plan on having no math requirement at all. This then is the state of general mathematics, a state best described as one of general confusion. It is not too surprising that the respective math chairmen are looking for better things to come, for general math must either be replaced or improved upon.

The majority of schools in District Fifteen, I believe, are ready and willing to accept some kind of vocational-technical math program. They are interested, and several have shown great desire to revise their existing programs by giving more consideration to those students who are not college oriented. Presently, vocational-technical mathematics curriculums on a formal basis, with the exception of Mosinee, do not exist in the high schools of this District. In some instances, they may exist by implication of the courses offered. For example, some schools do offer courses in business math, consumer math, computational and practical math; or in other instances, some schools consider vocational-technical math as part of the college prep program. These claims of the existence of a vocational-technical program, however, are without foundation, and my original statement still stands.

Developing and implementing a comprehensive vocational-technical math program, unfortunately, is not an easy task. Administrators of any joint venture made by technical institutions and secondary schools should bear in mind that such an undertaking

is indeed formidable. The development of a comprehensive program is a topic which will be treated later in the Recommendations section of this study.

Since 411 students, or about 15% of the 2,675 students surveyed, indicated an interest in technical education, it behooves us to examine in detail the existing math programs.

First, let us attempt to identify the mathematical needs of a student who plans to enter a vocational and technical institution. Having identified these needs, let us determine whether or not they have been met by the secondary schools.

Contrary to what many secondary educators might believe, the needs of a vocational-technical student go far beyond general mathematics. According to Table II, the average successful student at NCTI has had at least two courses of high school math. Also as indicated, and as would be expected, the needs of a one year diploma program differ substantially, .8 of a course, from that of an associate degree program.

Table I, A,B,C,D, indicates the amount of mathematics desirable for students who plan to enter specific programs at NCTI. In the Electronics and Mechanical Design programs, three credits of math are recommended. Automotive Technology and Residential Design also require a strong background in math. It is interesting to note that for Electronics Servicing, a one year diploma program, at least two credits is recommended.

NCTI MATH SURVEY

NCTI math survey for third and fourth semester students in two year programs and second semester students in one year programs. Second semester 1971.

Table I - A

	Electronics Two Year Associate Degree Program	Residential Design Two Year Associate Degree Program	Automotive Technology Two Year Associate Degree Program	Marketing Two Year Associate Degree Program
1 Number of students that completed survey	31	26	25	33
2 Total number of high school courses taken in item one	90	66	59	76
3 Average courses per student item two / item one	2.9	2.5	2.4	2.3
4 Number of math courses taken by the individual students in item one	Courses - Students 4 - 9 3 - 14 2 - 4 1 - 4 0 - 0	4 - 3 3 - 10 2 - 11 1 - 2 0 - 0	4 - 4 3 - 6 2 - 10 1 - 5 0 - 0	4 - 3 3 - 13 2 - 8 1 - 9 0 - 0
5 Kinds of math courses taken by the students in item one.	General Math - 0 Business Math - 0 Algebra I - 31 Geometry - 27 Algebra II - 23 Trigonometry - 2 Advanced Math - 7	0 0 26 24 13 2 1	4 2 23 17 9 4 0	5 1 32 22 13 1 2

NCTI MATH SURVEY

Table I - B

	Mechanical Design Two Year Associate Degree Program	Machine Tool Operation Two Year Diploma Program	Insurance Two Year Associate Degree Program	Electronics Servici One Year Diploma Program
1	18	23	5	20
2	53	51	11	44
3	2.9	2.2	2.2	2.2
4	4 - 6 3 - 6 2 - 5 1 - 1 0 - 0	4 - 4 3 - 7 2 - 2 1 - 10 0 - 0	4 - 1 3 - 0 2 - 3 1 - 1 0 - 0	4 - 1 3 - 6 2 - 9 1 - 4 0 - 0
5	0 0 18 17 11 4 3	8 1 19 12 8 0 3	0 0 5 4 1 1 0	5 0 17 14 5 1 2

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NCTI MATH SURVEY

Table I - C

Agricultural Mechanics Two Year Diploma Program	Secretarial Science Two Year Associate Degree Program	Home Economics One Year Diploma Program	Merchandising One Year Diploma Program	Welding One Year Diploma Program
11	14	20	12	14
22	30	35	21	23
2	2.1	1.8	1.8	1.7
4 - 2 3 - 1 2 - 4 1 - 3 0 - 1	4 - 1 3 - 3 2 - 7 1 - 3 0 - 0	4 - 0 3 - 2 2 - 11 1 - 7 0 - 0	4 - 0 3 - 2 2 - 6 1 - 3 0 - 1	4 - 1 3 - 2 2 - 4 1 - 5 0 - 2
1 0 10 6 3 1 1	1 1 13 10 4 1 0	5 2 18 10 0 0 0	3 1 9 7 1 0 0	6 1 9 4 2 1 0

NCTI MATH SURVEY

Table I - D

Farm Machinery Partsman One Year Diploma Program	Mechanical Drafting One Year Diploma Program	Printing Two Year Diploma Program	Clerk-Typist One Year Diploma Program	
12	13	10	13	
18	18	13	16	
1.5	1.4	1.3	1.2	
4 - 0 3 - 2 2 - 2 1 - 8 0 - 0	4 - 0 3 - 0 2 - 7 1 - 4 0 - 2	4 - 0 3 - 1 2 - 2 1 - 6 0 - 1	4 - 0 3 - 2 2 - 2 1 - 6 0 - 3	
8 0 5 4 1 0 0	7 0 7 4 0 0 0	7 0 5 1 0 0 0	2 1 9 2 2 0 0	

NCTI MATH SURVEY

Table II

Average number of math courses per student for diploma and associate degree programs. Second semester 1971.

	Total number that completed survey	Total number of high school math courses taken	Average courses/student
One Year Diploma Program			
Home Economist Clerk-Typist Electronics Servicing Merchandising Mechanical Drafting Welding Farm Machinery Partsman	104	175	1.7
Two Year Diploma Program			
Agricultural Mechanics Machine Tool Operation Printing	44	86	2
Two Year Associate Degree Program			
Residential Design Automotive Technology Electronics Mechanical Design Secretarial Science Marketing Insurance	152	385	2.5
TOTALS	300	646	2.1

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Welding, a one year diploma program for which many educators might suspect a light preparation is all that is necessary - requires 1.7 math credits as indicated by Table I. Table I also indicates more than one credit of math is desirable for all the programs surveyed at NCTI.

Table III indicates the particular high school math courses taken by successful NCTI students. While no hard and fast conclusions can be made, certainly one can draw some interesting generalizations. First, a student with no math has little chance of success at our institution. Second, four of five successful students at our institution have had Algebra I. Third, on the assumption that geometry follows Algebra I, over half of the successful students at our institution have had both Algebra I and Geometry.

Table III also puts the general math problem in its proper perspective. With only 21% of the successful students taking general math, and with Table I indicating that more than one credit is desirable for all the programs surveyed, it would be fair to state that general math in itself is not adequate preparation for a vocational and technical institution.

To conclude, the mathematical needs of students who plan to enter vocational and technical fields are much greater than most secondary educators would care to believe. A strong background, three or more credits, is highly recommended for some

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Table III

Tabulation of figures found in items 4 and 5 of Table Two.

COURSE	NUMBER OF STUDENTS	PERCENT BASED ON 300 RETURNS
General Math	62	21%
Algebra I	256	86%
Geometry	185	61%
No Math	10	3%

From the above results several generalizations can be made.

One: General Math in itself is not adequate preparation for the Vocational-Technical Institute.
Two: Four of every five successful students at the Institute have had Algebra I.
Three: On the assumption that Geometry follows Algebra I, over one-half the successful students at the Institute have had both Algebra I and Geometry.
Four: A student with no Math has little chance of success at the Institute.

associate degree programs. A moderate background, two or more credits, is recommended for the one and two year diploma programs. The general Math I credit terminal course is not acceptable for it cannot be considered adequate preparation for vocational and technical education.

Having determined some of the basic mathematical needs of the vocational and technical student, let us now consider just how successful secondary schools have been in meeting them. Have the schools of District Fifteen encouraged their students to consider careers in vocational and technical fields by offering a variety of math courses, or have they been indifferent to student needs by offering a stunted and unimaginative math program. Of twenty-one schools surveyed, six, all rural, offered a four year college prep program with one year of general math. One senior high school consisting of grades ten through twelve, does not offer any courses that can be considered non-college oriented. Of the fourteen remaining schools, a majority of them offer the usual general math and a second course of business, consumer, and senior math. The latter are really irrelevant since most of them are still basically arithmetic courses, some of which are designed primarily to keep the students busy. The above, I believe, represent in various degrees programs that are stunted, unimaginative, and indifferent to the needs of the vocational and technical student.

To those who claim Algebra I is also for non-college students, I respond by stating that it would pretty much depend upon the text being used. For example, the popular Houghton Mifflin Series Algebra I text cannot be considered non-college by any stretch of the imagination.

On the positive side of the ledger, there are several schools that have, or will have this coming school year, two-year Algebra I courses. Such courses are excellent. Not only do more students have an opportunity to succeed in basic algebra, but also the concept of a sequence is being developed outside of the college prep program. This is of utmost importance in the development of any kind of vocational technical math program. In one other area, that of remedial math, progress is also being made. There are schools in the District that are identifying remedial math as such and are not attempting to hide remedial courses in the general math program. This too is very important for if a vocational-technical math program is to be successful, it must be divorced from remedial math.

Let us now turn to the issue of math preparation for those students who plan to enter vocational and technical schools. As indicated previously, two credits are recommended for the diploma programs and three credits are recommended for some of

the associate degree programs. Are the secondary schools, with their college oriented programs, adequately preparing the potential vocational-technical student? At first glance, the answer would appear to be a weak yes for the average preparation, Table IV, is 2.3 courses. Such preparation would be adequate for the diploma programs, and though a bit deficient, certainly could not be considered completely inadequate for the associate degree programs. However, I suspect that many of the students in this group represent "dropouts" from the college prep program; consequently, they are in the technical column by accident and not by design. They don't really represent the technical group but certainly influence it by virtue of being previously in the college prep math program.

Perhaps some would say my reasoning is faulty and that 2.3 credits is accurate. So be it. Nevertheless, let us continue to pursue this issue still further and relate it to the data in Table VI. This table indicates that only 15% of the students surveyed were interested in technical education. It would appear then that although preparatory courses offered by the schools could be considered adequate, the number of students being prepared is definitely inadequate. That is to say, 15% of a total student population entering technical education is just unrealistic when one considers that we live in a society that is technology oriented.

It is also interesting to note that the total percent of the two and four year college columns is double that of the technical. This too is unrealistic but it does lend credence to my earlier statement that secondary schools still pursue the college ideal vigorously.

Before concluding this issue of math preparation, I would like to make some comments concerning the Seek Employment column of Table IV. Here the average math preparation is 1.8 credits. Many of the students in this group will eventually enroll at a technical institute or attend classes there on a part time basis. They are students who have no particular objective in mind. Some have full time work, others part time, all getting their feet wet in the labor market. They soon realize that their opportunities are limited unless they further their education on a formal or informal basis. Upon entering an institution such as NCTI, many of these students find themselves in our Prep Program. This is a no credit program which enables students to make up some of their deficiencies. In mathematics, we offer courses in arithmetic review and basic algebra. This is necessary because their chances of success would be small indeed without such special preparation. The 1.8 average math preparation is not adequate. It is not realistic preparation for young people who plan to enter a highly competitive labor market. Two credits of math should be required of all graduating seniors.

TABLE IV
MATH BACKGROUND OF HIGH SCHOOL
STUDENT RELATED TO FUTURE PLANS

SCHOOL	4-YEAR COLLEGE NO.	4-YEAR COLLEGE PCNT	AVERAGE MATH PREPARATION	TECHNICAL INSTITUTE NO.	TECHNICAL INSTITUTE PCNT	AVERAGE MATH PREPARATION	SEEK EMPLOYMENT NO.	SEEK EMPLOYMENT PCNT	AVERAGE MATH PREPARATION
Abbotsford	18	38	3.6	3	6	2.7	13	28	1.5
Antigo Senior High	78	30	2.9	34	13	1.9	61	23	1.6
Athens High School	12	19	2.7	9	14	2.1	19	30	1.7
Colby Public Schools	20	18	3.1	25	23	2.5	36	33	1.9
D. C. Everest	38	21	2.8	34	18	2.3	48	26	2.0
Edgar	15	38	3.3	9	23	2.7	7	18	1.7
Loyal High	18	26	3.1	23	33	2.7	5	7	1.8
Marathon High	11	15	3.4	15	21	2.5	24	33	1.9
Medford Senior High	32	17	3.3	36	20	2.2	38	21	1.6
Merrill Senior High	53	21	2.9	33	13	2.4	68	28	1.6
Mosinee High	27	23	3.2	24	20	2.0	31	26	1.6
Newman	59	46	3.3	11	9	3.2	14	11	2.4
Park Falls High	19	21	3.5	19	21	2.4	30	33	1.9
Phillips High School	36	36	2.8	20	20	2.0	22	22	1.1
Rib Lake High	11	19	3.4	6	10	2.7	18	31	1.8
Rosholt	5	12	2.6	5	12	2.2	10	24	2.2
Shawano High	70	37	3.2	27	14	2.8	41	22	2.1
Stratford	17	23	2.8	14	19	2.5	18	25	2.1
Wausau East High	104	44	3.0	16	7	2.3	29	12	1.6
Wausau West High	79	27	3.0	37	13	2.1	57	20	1.7
Wittenberg-Birnamwood	18	21	3.3	11	13	1.9	29	35	1.6
Totals and Total averages	740	28	3.1	411	15	2.3	618	23	1.8

TABLE V

MATH BACKGROUND OF HIGH SCHOOL STUDENTS

SCHOOL	STUDENTS WITH 1 MATH COURSE		STUDENTS WITH 2 MATH COURSES		STUDENTS WITH 3 MATH COURSES	
	NO.	PCNT	NO.	PCNT	NO.	PCNT
Abbotsford	12	26	10	21	8	17
Antigo Senior High	86	33	94	36	61	23
Athens High School	17	27	29	46	12	19
Colby Public Schools	23	21	43	39	34	31
D. C. Everest	37	20	81	44	42	23
Edgar	8	20	10	25	9	23
Loyal High	3	4	32	46	16	23
Marathon High	13	18	34	47	17	23
Medford Senior High	59	32	66	36	33	18
Merrill Senior High	64	26	99	40	60	24
Mosinee High	39	33	35	30	22	19
Newman	1	1	33	26	52	41
Park Falls High	19	21	38	41	12	13
Phillips High School	41	41	28	28	22	22
Rib Lake High	14	24	22	37	8	14
Rosholt	2	5	32	78	6	15
Shawano High	19	10	60	32	64	34
Stratford	10	14	36	49	18	25
Wausau East High	44	19	74	31	64	27
Wausau West High	70	24	93	32	85	30
Wittenberg-Birnamwood	30	36	28	33	10	12
Final TOTALS and Total Averages	611	23	977	36	655	24

Table VI

VTAE DIST. 15 STUDY OF GRADUATING HIGH SCHOOL SENIORS
PLANS FOR FALL - 1971
Conducted April and May 1971

High School	No. of Seniors	No. of Replies	Seek Employment		Military Service		4 Year College		2 Year College		Technical Institute		Other School		Homemaker		Plans Not Definite		Other		Multiple Reply	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Abbotsford	47	47	13	28	2	4	18	38	1	2	3	6	2	4	1	2	3	6			4	9
Antigo	332	264	61	23	14	5	78	30	4	2	34	13	3	1	6	2	40	15	2	1	22	8
Athens	70	63	19	30	1	2	12	19	3	5	9	14	4	6	1	2	11	17	1	2	1	2
Colby	115	110	36	33	5	5	20	18	5	5	25	23	3	3			13	12	1	1	2	2
D. C. Everest	262	184	48	26	3	2	38	21	7	4	34	18	4	2	4	2	25	14	2	1	19	10
Edgar	76	40	7	18	2	5	15	38			9	23	2	5			4	10			1	3
Loyal	88	70	5	7	4	6	18	26	2	3	23	33	2	3	1	1	12	17	2	3	1	1
Marathon	77	73	24	33	3	4	11	15	2	3	15	21	2	3			11	15	1	1	4	5
Medford	208	184	38	21	18	10	32	17	10	5	36	20	9	5	1	1	31	17	6	3	3	2
Merrill	275	247	68	28	15	6	53	21	10	4	33	13	7	3	4	2	33	13	5	2	19	8
Mosinee	128	118	31	26	11	9	27	23	5	4	24	20	5	4			8	7			7	6
Newman	162	127	14	11	2	2	59	46	19	15	11	9	4	3	1	1	5	4			13	10

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Table VI

VTAE DIST. 15 STUDY OF GRADUATING HIGH SCHOOL SENIORS
PLANS FOR FALL - 1971
Conducted April and May 1971

High School	No. of Seniors	No. of Replies	Seek Employment		Military Service		4 Year College		2 Year College		Technical Institute		Other School		Homemaker		Plans Not Definite		Other		Multiple Reply	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Park Falls	97	92	30	33	5	5	19	21	1	1	19	21	2	2			10	11	2	2	4	4
Phillips	104	102	22	22	1	1	36	35			20	20	1	1	1	1	13	13	6	6		
Rib Lake	59	59	18	31	4	7	11	19			6	10	5	8	4	7	9	15	1	2	1	2
Rosholt	44	41	10	24	6	15	5	12	1	2	5	12	1	2			5	12	2	5	6	15
Shawano	230	187	41	22	4	2	70	37	6	3	27	14	5	3	3	2	15	8	3	2	13	7
Stratford	90	73	18	25			17	23	2	3	14	19	5	7	1	1	7	10	4	5	5	7
Wausau East	340	238	29	12	5	2	104	44	22	9	16	7	4	2	2	1	19	8	3	1	32	13
Wausau West	400	272	57	21	6	2	79	29	23	8	37	14	3	1	3	1	39	14	5	2	36	13
Wittenberg-Birnamwood	111	84	29	35	5	6	18	21	2	2	11	13	3	4			12	14	1	1	3	4
Total Senior Plans	3315	2675	618	23	116	4	740	27	125	4	411	15	76	2	33	1	325	12	47	1	196	7

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A final issue to be considered is that of requiring only a single math credit for graduation. Of twenty-one schools surveyed (Appendix A) two schools required no credits, two schools required two credits and seventeen schools required one credit. The one or zero math credit requirement is completely inadequate. The disastrous results of such a requirement is clearly indicated in Table V. Five schools graduated about one-third of their seniors with one credit. In one school, two of every five seniors had only one credit of math. For the entire District, 611 students or about 23% of those surveyed graduated with only a single course of math, and, to add insult to injury, bear in mind that a majority or more of these students had that single course in their freshman year. I do not know the rationale behind the one credit requirement but whatever it is, it should be reconsidered as soon as possible. Our complex technological society can no longer afford the luxury of sending out each year from the secondary schools thousands of young people untrained in the basic fundamentals of mathematics.

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CONCLUSION AND RECOMMENDATIONS

Are the secondary schools of District Fifteen meeting the needs of those students oriented to vocational and technical fields? The answer to that question, based on the data included herein, is no. There are no formal vocational-technical programs, with one exception, in this District. The programs that do exist are college-oriented and anything left over euphemistically called general math, consists of two unrelated courses. The general math program is adequately described as stunted and unimaginative. Since secondary schools continue to emphasize their college programs, an unrealistic figure of 15% of the students surveyed indicated an interest in technical education - a figure that is certainly not in line with a society oriented to technology. Finally, about one in every four seniors in the district graduated with only a single credit of math. This too is an intolerable situation, it is a luxury our society can ill afford.

My recommendations, like this study, will be limited and in no sense should be considered all-inclusive. They are, in general, not original and many of them have been discussed by concerned teachers, counselors and administrators on numerous occasions. Although I do propose to slay several sacred cows, I am not prepared at this time to administer the coup de grace to "modern math".

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Education is an evolutionary process; vocational-technical math programs are not going to be developed overnight. In recognition of this, let us first consider how we can improve the already existing general mathematics programs.

An administrative philosophy prevalent in secondary schools is "anyone can teach general math". As a result, the most competent math teachers are scheduled into the college prep courses and all others; the novices, the indifferent, the uninformed, and the incompetent will teach the remaining general math courses. The latter group includes the chemistry, physics, and business education teachers, all substitutes, as well as the administrator himself. And, since general math is so easy to teach, the teachers are often loaded down with large classes, inadequate teaching aids and equipment, and a wide variety of students some of whom are behavioral problems. The latter are "guided" into general math classes because not only can anyone teach general math but also "anyone can learn general math". The result of this unhappy situation is that most teachers are eager to move up to the college prep courses. Even the most dedicated and talented soon realize there is no future in bucking the system and they too leave the ranks of general math teachers. General mathematics on the secondary level continues to be a dirty word. It connotes deficiencies of all kinds along with indifferent, incompetent and novice teachers.

If we are to improve the general math program, we must first challenge the philosophy "anyone can teach general math" for this simply is not true. Some soul-searching must be done by administrators who must face up to the fact that "anyone" just can't do the job and that it is unfair to a great number of students if schools continue to staff the general math classes with second best teachers. A good knowledge of subject matter is not the only criteria by which a teacher is selected for a particular course. Granted it is necessary, but other characteristics must be given due consideration. Is the teacher enthusiastic or does he just go through the motions of teaching? In a college prep course, such a teacher could be reasonably successful. In a general math course, however, he would be an utter failure. Does the teacher have a sense of humor, is he patient, and is he so knowledgeable as to present his material in a concrete, specific manner which will be interesting to the students. Is he familiar with the basic tenets of the psychology of learning and is he acquainted with the characteristics of average and below average learner? My criteria, perhaps, is too idealistic. However, I submit that many of these characteristics can be found in the college prep teachers whose presence in the general math classroom a portion of the school day would do much for the general math program. In conclusion, it is unfair to monopolize the best

teachers throughout the day with college prep courses. If the administrators wish to strike a first blow for general math, let them schedule these teachers into general math classes at least a small portion of the school day.

Let us now consider the issue of one credit of math for graduation and the general math terminal course concept. Under this system usually all of the students take either general math or algebra their first year in high school. One result of this program is that a great many seniors are graduating who have had little or no math the last two or three years of school. When the members of this group attempt to enter the military, vocational and technical institutions, or the labor market, they are stymied and soon realize that opportunities are limited because of their deficiencies in mathematics. Why must this general math course be mandatory at the ninth grade level. Why not make it optional up to grades eleven and twelve and mandatory for grade twelve if a senior has had no math in the previous three years. The present general math course, at the ninth grade level, is pretty much a review of the seventh and eighth grade plus several other uninteresting topics such as taxes, social security, the reading of light and water meters, and budgeting of money. High school freshmen are bored to tears with this kind of mathematics for they see no great need for it. Unfortunately, they soon begin

to hate mathematics with a passion. If we are patient, many of these same students will have limited experiences with the labor market as they progress through school and soon begin to feel a "need" for math. They begin to realize that math, in some form, is necessary for most jobs. I submit that these same students, taking the same general math course but two or three years older and wiser, will be more interested because the course will meet some of their basic needs. To conclude, reversing the grade level at which general math is offered would do much to improve the program.

Having taken the administrators to task for their lack of understanding of general math, I will now turn to the teachers who have also shown very little inclination to lead the way in this field. As mentioned previously, large classes, a high rate of absenteeism, inadequate teaching aids and equipment, poor textbooks, and student behavioral problems are just some of the routine problems that confront the general math teacher. Consequently, it is no surprise that a teacher looks upon general math as something to be tolerated, a necessary evil. It is something that is considered temporary and as soon as an opportunity avails itself, the teacher will advance up to the college prep courses.

The problems of the general math teacher, thus far considered, have been quite explicit. I suspect that with an all-out effort on the part of administrators and teachers these problems could be corrected for they are not monumental. However, it is not all that easy for we have failed to consider the prestige and status problem which is implicit in the failure of most general math programs. What I am saying is that the teaching of general math is very hazardous to the "teaching ego". College prep courses, for example, are very rewarding for a teacher. Students go on to be successful in college, business, industry and many other fields of endeavor. Their parents praise the teacher at the local school ice-cream social or PTA meeting. Professional people of the community take time to personally thank the teacher for doing such an outstanding job of teaching their sons and daughters. Even the school board members and school administrators express their gratitude for a job well done. Conversely, what does the general math teacher expect from his group of students. He can expect some static from the administrator if he can't control a behavioral problem in the classroom. He can't though, expect words of praise at the ice cream social because in all probability the parents are not interested in ice cream nor are they interested in the PTA. So it is with the professional people in the community, the board members and the school administrators. In a degree conscious society, who has time to compliment the teacher who is

instrumental in helping a student become a successful plumber or carpenter. A marvelous paradox exists in our society. We do little, if anything, to encourage and prepare our young people for vocational and technical careers while at the same time we perpetually complain about the lack of services, quality and workmanship that exists throughout business and industry.

The status and prestige problem is elusive. Unlike a lack of equipment or textbooks it can't be solved by money alone. Many general math programs still fail after much time, effort, and money have been poured into them simply because the math teachers were just not prepared to give of themselves one hundred percent. General math, for many teachers, is an exercise in futility. One day of failure follows still another in a routine that not all teachers can live with. Any improvement in the general math program must take into consideration the issue of prestige and status for teachers are not going to support a program that they themselves do not believe in.

In conclusion, general mathematics, in any form, by any name, is an unwanted child. It has survived the "modern math" movement unchanged, and it would appear to have a built in resiliency to any other kind of change. Its future is indeed bleak.

Let us now turn to the most pressing issue at hand - the development and implementation of a vocational-technical mathematics curriculum on the secondary level which will meet the needs of those students who plan to enter vocational and technical fields. Consider for a moment the college prep math curriculum and the many successes it has enjoyed, which is not too surprising when we consider that strong leadership was provided by colleges and universities throughout the country as well as the National Science Foundation. Who will provide the strong leadership which is so necessary to develop the vocational-technical math curriculum? Obviously, it should be the vocational and technical institutions. Unfortunately, they have failed in this respect. They have not provided strong leadership nor have they in any sense been the guiding light for secondary schools. By default they have let college prep math courses over-run the secondary curriculums. All is not lost though for vocational and technical institutions are beginning to acknowledge the fact that if they wish to have better prepared students from the secondary schools, they will have to do something about it besides complain over a cup of coffee. Vocational-technical mathematics on the secondary level is an idea that has come of age. The question is no longer "Do you wish to have vocational-technical mathematics in your high school curriculum?" It is "When do you wish to have vocational-technical mathematics in your high school curriculum?"

For example, the Milwaukee Area Technical College will begin this September to conduct an in-service program "Technical Mathematics in Secondary Schools". It is sponsored by the National Science Foundation and is primarily designed for the secondary math teachers in District Nine. I shall quote from their descriptive brochure two of the objectives of this in-service program.

One: To acquaint the participants with the type of mathematical understandings and skills needed in industrial and health services technician-training programs, and in related training programs for apprentices, tradesmen, and health services personnel.

Two: To encourage the participants to consider the addition to their curriculum of a mathematics sequence in grades 11 and 12 for students who intend to enroll in a post-high-school program at a vocational-technical college.

I will conclude by listing a few characteristics which I believe should be considered if we in District Fifteen are serious about developing a comprehensive vocational-technical math curriculum.

One: General mathematics must be sentenced to oblivion. Its dual objective of serving both the remedial and non-college bound student is an impossibility. It does neither

very well. Any comprehensive vocational-technical math program must exclude remedial mathematics. If this is not done, we will still have the same animal but will have given it another name.

Two: Vocational-technical math must never be considered the complement of college prep math for that is precisely how general math fell into ill repute. Vocational technical math will serve the students who are interested in vocational and technical fields. It is not remedial math and is not designed to meet the needs of remedial students.

Three: The vocational-technical math program must be sequential in nature just as is the college prep program. A fragmentary offering of courses, such as now being done in some of the schools in District Fifteen, will not adequately prepare students for vocational and technical institutions.

Four: A watered-down or slowed-down version of the math used in the college prep program is not appropriate. Vocational and technical students needs are met by utilitarian mathematics. They should not be forced through a rigorous and sophisticated theory-oriented college prep program.

Five: Require all students to have at least two years of mathematics but not necessarily two credits. It is realized that some of them do not get beyond the remedial stages of mathematics. All students should be encouraged to take a math course in their last year at school.

Six: A full year of formal geometry is not necessary nor is it desirable for a vocational-technical program. An integrated course of algebra and geometry along with basic fundamentals of the slide rule could be considered as its replacement.

Seven: We must be flexible in the development of a vocational-technical program and utmost consideration must be given to the establishment of semester courses and classes that do not meet every day. For example, the problem of remedial math, a class that should not meet every day throughout the school year, could be solved by having it meet every other day and interspersing it with a semester vocational-technical math course.

The development of a comprehensive vocational-technical program, contrary to what some teachers might think, will not be the ruination of the college prep program. Teachers who are happy with the status quo, in particular those who are presently teaching the college prep courses, need not fear having

their courses watered down nor do they have to be concerned with an influx of less capable students. With the addition of a vocational-technical mathematics program the entire math curriculum will be broadened and consequently the students can be more selective in their courses. As of now, many students are in college prep classes not because they plan to go to college but because they feel that general math just doesn't prepare them adequately for anything in particular.

I am tempted to write that vocational-technical math will be the second great revolution in mathematics within two decades. However, since so many good parents and educators have not recovered from the first, I shall remain silent. Suffice to say that vocational-technical mathematics is finally making serious in-roads into the college prep oriented courses.

In conclusion, a comprehensive vocational-technical mathematics program can and should be developed at the earliest date possible. Let us, NCTI and the secondary schools of District Fifteen, not have a "wait and see" attitude for if we are to be successful in our endeavor, we ourselves must develop this program. Let us not look for a convenient scapegoat for our present failures in general math for we are all responsible

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to some degree. Let us, with aid of the Department of Public Instruction, other institutions of higher learning, business, and industry, begin to develop a comprehensive math program which will meet the needs of those students who plan to enter vocational and technical fields.

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GLOSSARY

General Mathematics The term general mathematics will be used in the traditional sense, that is, all mathematics in the curriculum that is not considered college prep math.

Vocational-technical Mathematics This term shall denote a sequence of math courses designed specifically for students who are vocational and technically oriented. It is, by its very nature, primarily utilitarian mathematics, and does not include remedial mathematics.

Successful Students Successful students at NCTI are those that completed the math survey form and are in the third and fourth semester of a two year program or the second semester of a one year program.

The terms program and curriculum when in reference to mathematics are used interchangeably throughout the study.

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APPENDIX A

Results of High School Mathematics Profile Survey

NOTE: In each column the first figure indicates the number of students that completed a particular course, and the second figure indicates the percent which is based on the number of seniors that completed the survey.

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
ABBOTSFORD								
NO COURSE			16	34	23	49	25	53
ALGEBRA I	34	72	5	11	2	4		
ALGEBRA II					22	47	1	2
ALGEBRA II & TRIG								
TRIGONOMETRY								
PLANE GEOMETRY			26	55				
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY							17	36
GENERAL MATH	13	28						
BUSINESS MATH							4	9
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS								
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
47	47	1

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SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
ANTIGO SENIOR HIGH								
NO COURSE	28	11	84	32	174	66	223	84
ALGEBRA I	165	63	19	7	8	3	2	1
ALGEBRA II					2	1	1	
ALGEBRA II & TRIG					64	24	9	3
TRIGONOMETRY								
PLANE GEOMETRY	1		132	50	12	5	2	1
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY			1					
GENERAL MATH	64	24	14	5			1	
BUSINESS MATH	6	2	13	5	4	2	4	2
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS			1				22	8
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
332	264	1

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
ATHENS HIGH SCHOOL								
NO COURSE			25	40	41	65	53	84
ALGEBRA I	50	79	1	2				
ALGEBRA II			22	35				
ALGEBRA II & TRIG								
TRIGONOMETRY								
PLANE GEOMETRY			15	24	21	33	4	6
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY								
GENERAL MATH	13	21						
BUSINESS MATH								
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS							5	8
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
70	63	1

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
COLBY PUBLIC SCHOOLS								
NO COURSE	2	2	24	22	65	59	98	89
ALGEBRA I	90	82	11	10				
ALGEBRA II					41	37	2	2
ALGEBRA II & TRIG								
TRIGONOMETRY								
PLANE GEOMETRY			74	67	4	4		
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY								
GENERAL MATH	18	16	1	1				
BUSINESS MATH								
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS							10	9
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
115	110	1

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
D. C. EVEREST								
NO COURSE	6	3	85	46	100	54	124	67
ALGEBRA I	104	57	28	15	5	3	4	2
ALGEBRA II					40	22	11	6
ALGEBRA II & TRIG								
TRIGONOMETRY							1	1
PLANE GEOMETRY			66	36	16	9	7	4
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY								
GENERAL MATH	74	40	4	2				
BUSINESS MATH			1	1	23	13	18	10
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS							19	10
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
262	184	1

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
EDGAR								
NO COURSE	3	8	10	25	17	43	24	60
ALGEBRA I	32	80	2	5	1	3		
ALGEBRA II			1	3	20	50	2	5
ALGEBRA II & TRIG								
TRIGONOMETRY								
PLANE GEOMETRY			27	68	2	5	1	3
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY							12	30
GENERAL MATH	5	13					1	3
BUSINESS MATH								
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS								
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
76	40	0

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
LOYAL HIGH								
NO COURSE	2	3	31	44	33	47	23	33
ALGEBRA I	37	53	10	14	1	1		
ALGEBRA II			1	1	19	27	4	6
ALGEBRA II & TRIG					1	1		
TRIGONOMETRY								
PLANE GEOMETRY			27	39	15	21		
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY							14	20
GENERAL MATH	31	44	1	1	1	1		
BUSINESS MATH							29	41
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS								
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
88	70	1

SCHOOL MARATHON HIGH	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
NO COURSE			23	32	52	71	49	67
ALGEBRA I	44	60	18	25				
ALGEBRA II			31	42	1	1		
ALGEBRA II & TRIG								
TRIGONOMETRY								
PLANE GEOMETRY			1	1	20	27	1	1
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY							9	12
GENERAL MATH	29	40						
BUSINESS MATH							14	19
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS								
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
77	73	1

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SCHOOL MEDFORD SENIOR HIGH	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
NO COURSE	4	2	72	39	119	65	147	80
ALGEBRA I	77	42	40	22	7	4		
ALGEBRA II					36	20	8	4
ALGEBRA II & TRIG								
TRIGONOMETRY								
PLANE GEOMETRY			62	34	19	10	3	2
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY							21	11
GENERAL MATH	103	56	2	1	1	1		
BUSINESS MATH								
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS			8	4				
OTHER					2	1	5	3

No. Seniors	No. Replies	Math. Requirements for Graduation
208	184	1

7700

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
MERRILL SENIOR HIGH								
NO COURSE	1		76	31	158	64	215	87
ALGEBRA I	139	56	64	26	6	2	4	2
ALGEBRA II								
ALGEBRA II & TRIG			2	1	56	23	8	3
TRIGONOMETRY								
PLANE GEOMETRY			105	43	27	11	2	1
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY							18	7
GENERAL MATH	107	43						
BUSINESS MATH								
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS								
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
275	247	1

SCHOOL MOSINEE HIGH	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
NO COURSE	2	2	52	44	72	61	83	70
ALGEBRA I	59	50	20	17	8	7	2	2
ALGEBRA II	1	1					1	1
ALGEBRA II & TRIG					30	25	9	8
TRIGONOMETRY								
PLANE GEOMETRY			44	37	8	7	2	2
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY								
GENERAL MATH	56	47	1	1			1	1
BUSINESS MATH			1	1				
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS								
OTHER							20	17

No. Seniors	No. Replies	Math. Requirements for Graduation
128	118	1

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
NEWMAN								
NO COURSE	3	2	6	5	36	28	77	61
ALGEBRA I	106	83	9	7	2	2		
ALGEBRA II								
ALGEBRA II & TRIG			3	2	71	56	4	3
TRIGONOMETRY							1	1
PLANE GEOMETRY	2	2	101	80	6	5	1	1
ANALYTIC GEOMETRY			1	1				
TRIG & ANALYTIC GEOMETRY								
GENERAL MATH	17	13	1	1				
BUSINESS MATH			7	6	11	9	5	4
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS					2	2	39	31
OTHER							1	1

No. Seniors	No. Replies	Math. Requirements for Graduation
162	127	2

7703

SCHOOL PARK FALLS HIGH	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
NO COURSE	3	3	30	33	51	55	64	70
ALGEBRA I	65	71	11	12	6	7	1	1
ALGEBRA II								
ALGEBRA II & TRIG								
TRIGONOMETRY					1	1		
PLANE GEOMETRY			51	55	4	4	4	4
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY					30	33	2	2
GENERAL MATH	24	26						
BUSINESS MATH								
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS							21	23
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
97	92	0

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
PHILLIPS HIGH SCHOOL								
NO COURSE	6	6	51	50	64	63	77	75
ALGEBRA I	62	61	4	4	5	5	4	4
ALGEBRA II					1	1		
ALGEBRA II & TRIG					22	22	6	6
TRIGONOMETRY								
PLANE GEOMETRY			41	40	7	7	4	4
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY								
GENERAL MATH	22	22	4	4	1	1		
BUSINESS MATH								
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS							9	9
OTHER	10	10						

No. Seniors	No. Replies	Math. Requirements for Graduation
104	102	1

SCHOOL RIB LAKE HIGH	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
NO COURSE	1	2	19	32	37	63	37	63
ALGEBRA I	41	69	7	12	1	2	3	5
ALGEBRA II					19	32	3	5
ALGEBRA II & TRIG								
TRIGONOMETRY								
PLANE GEOMETRY			33	56	2	3	2	3
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY							14	24
GENERAL MATH	17	29						
BUSINESS MATH								
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS								
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
59	59	1

SCHOOL ROSHOLT	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
NO COURSE	3	7	35	85	22	54	16	39
ALGEBRA I	27	66	2	5	5	12		
ALGEBRA II			2	5	11	27		
ALGEBRA II & TRIG								
TRIGONOMETRY								
PLANE GEOMETRY			1	2	3	7	2	5
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY								
GENERAL MATH	11	27	1	2				
BUSINESS MATH							21	51
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS							2	5
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
44	41	2

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
SHAWNO HIGH								
NO COURSE	10	5	40	21	88	47	105	56
ALGEBRA I	128	68	25	13	4	2	1	1
ALGEBRA II			64	34	45	24	11	6
ALGEBRA II & TRIG					1	1		
TRIGONOMETRY								
PLANE GEOMETRY			48	26	47	25	2	1
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY					1	1	20	11
GENERAL MATH	49	26	8	4				
BUSINESS MATH			1	1			27	14
SHOP MATH								
PROBABILITY & STATISTICS			1	1				
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS							8	4
OTHER					1	1	13	7

No. Seniors	No. Replies	Math. Requirements for Graduation
230	187	1

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
STRATFORD								
NO COURSE			10	14	47	64	63	86
ALGEBRA I	61	84	7	10				
ALGEBRA II								
ALGEBRA II & TRIG			2	3	23	32	1	1
TRIGONOMETRY								
PLANE GEOMETRY			54	74	3	4		
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY								
GENERAL MATH	12	16						
BUSINESS MATH								
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS							9	12
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
90	73	1

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
WAUSAU EAST HIGH								
NO COURSE	15	6	61	26	110	46	163	68
ALGEBRA I	173	73	23	10	5	2		
ALGEBRA II			19	8	81	34	13	5
ALGEBRA II & TRIG			1					
TRIGONOMETRY								
PLANE GEOMETRY	15	6	124	52	19	8	4	2
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY								
GENERAL MATH	32	13	4	2	1			
BUSINESS MATH	1		4	2	6	3	4	2
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS							51	21
OTHER					14	6	1	

No. Seniors	No. Replies	Math. Requirements for Graduation
340	238	1

7710

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
WAUSAU WEST HIGH								
NO COURSE	14	5	116	43	155	57	201	74
ALGEBRA I	179	66	31	11	11	4	3	1
ALGEBRA II			9	3	76	28	23	8
ALGEBRA II & TRIG					1		1	
TRIGONOMETRY								
PLANE GEOMETRY	11	4	120	44	31	11	10	4
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY			1					
GENERAL MATH	74	27	10	4	2	1	4	1
BUSINESS MATH			1		7	3	10	4
SHOP MATH					1			
PROBABILITY & STATISTICS	1							
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS							35	13
OTHER					4	1		

No. Seniors	No. Replies	Math. Requirements for Graduation
400	272	1

7711

SCHOOL	GRADE 9		GRADE 10		GRADE 11		GRADE 12	
WITTENBERG-BIRNAMWOO								
NO COURSE	7	8	37	44	56	67	56	67
ALGEBRA I	50	60	12	14	3	4	2	2
ALGEBRA II								
ALGEBRA II & TRIG			1	1	19	23	5	6
TRIGONOMETRY								
PLANE GEOMETRY			33	39	6	7		
ANALYTIC GEOMETRY								
TRIG & ANALYTIC GEOMETRY								
GENERAL MATH	27	32	1	1			7	8
BUSINESS MATH								
SHOP MATH								
PROBABILITY & STATISTICS								
COMPUTER MATH								
LINEAR ALGEBRA								
INTRODUCTORY ANALYSIS							14	17
OTHER								

No. Seniors	No. Replies	Math. Requirements for Graduation
111	84	1

7712

APPENDIX B

High School Mathematics Profile
Survey Form

This survey form was completed by 2675 of 3315 seniors in the twenty-one high schools that participated in the study. This represents approximately 81 percent of the entire group.

7713

North Central Technical Institute
Research and Development

MATHEMATICS PROFILE SURVEY

Name _____ School _____

Please indicate in the spaces below the number of the course you successfully completed (Grade D or better) during your past four years in school. Place a zero in the blank if no course was taken for a particular year.

Nine	Ten	Eleven	Twelve

0	No course	8	General math
1	Algebra one	9	Business math
2	Algebra two	10	Shop math
3	Algebra two & trig	11	Probability & Statistics
4	Trigonometry	12	Computer math
5	Plane geometry	13	Linear algebra
6	Analytic geometry	14	Introductory analysis
7	Trig & Analytic Geometry	15	Other - please indicate

Place an * next to the number if it was a semester course.

WHAT ARE YOUR PLANS AFTER GRADUATION?

Please check one of the following:

a. Seek full time employment _____

b. Military service _____

c. Continue education

4 year college _____

2 year college or university center _____

technical institute _____

other (ex-business school, beauty school) _____

d. Homemaker _____

e. Plans not definite _____

f. Other _____

THANK YOU - YOUR COOPERATION IS VERY MUCH APPRECIATED.

APPENDIX C

NCTI Mathematics Survey

This survey form was completed by 300 students at NCTI. They represent third and fourth semester students in two year programs, and second semester students in one year programs.

7715

NORTH CENTRAL TECHNICAL INSTITUTE
MATHEMATICS SURVEY

Name _____

Course _____

Major _____

Program (check one)

Associate Degree _____ Semester _____ Diploma _____ Semester _____

High School Graduate Yes _____ No _____

Prep Algebra Yes _____ No _____

Prep Arithmetic Yes _____ No _____

High School Courses (check)

Algebra I _____

Geometry _____

Algebra II _____

Other (please indicate)_____

Other post graduate math courses

_____

_____

_____

7716

APPENDIX D

Number of students and per cent of those students who had "exactly" one, two and three courses of math.

Schools are grouped by their senior enrollment. The increment of each group is 150 students. Group one, 0 to 150 students; Group two, 151 to 300 students; Group three, 301 or more students.

SCHOOL	STUDENTS WITH 1 MATH COURSE NO.	PCNT	STUDENTS WITH 2 MATH COURSES NO.	PCNT	STUDENTS WITH 3 MATH COURSES NO.	PCNT
BBOTSFORD	12	26	10	21	8	17
THENS HIGH SCHOOL	17	27	29	46	12	19
OLBY PUBLIC SCHOOLS	23	21	43	39	34	31
DGAR	8	20	10	25	9	23
OYAL HIGH	3	4	32	46	16	23
ARATHON HIGH	13	18	34	47	17	23
OSINEE HIGH	39	33	35	30	22	19
ARK FALLS HIGH	19	21	38	41	12	13
HILLIPS HIGH SCHOOL	41	41	28	28	22	22
IB LAKE HIGH	14	24	22	37	8	14
OSHOLT	2	5	32	78	6	15
TRATFORD	10	14	36	49	18	25
ITTENBERG-BIRNAMWOO	30	36	28	33	10	12
TOTALS	231	24	377	39	194	20

SCHOOL	STUDENTS WITH 1 MATH COURSE NO.	PCNT	STUDENTS WITH 2 MATH COURSES NO.	PCNT	STUDENTS WITH 3 MATH COURSES NO.	PCNT
C. EVEREST	37	20	81	44	42	23
)FORD SENIOR HIGH	59	32	66	36	33	18
RRILL SENIOR HIGH	64	26	99	40	60	24
MAN	1	1	33	26	52	41
WNO HIGH	19	10	60	32	64	34
TOTALS	180	19	339	36	251	27

SCHOOL	STUDENTS WITH 1 MATH COURSE		STUDENTS WITH 2 MATH COURSES		STUDENTS WITH 3 MATH COURSE	
	NO.	PCNT	NO.	PCNT	NO.	PCNT
TIGO SENIOR HIGH	86	33	94	36	61	23
JSAU EAST HIGH	44	19	74	31	64	27
JSAU WEST HIGH	70	24	93	32	85	30
TOTALS	200	25	261	33	210	27

APPENDIX E

Average math preparation and per cent of those students indicating an interest in four year college, technical institute or seek employment. Per cents are based on number of returns from each particular school.

Schools are grouped by their senior enrollment. The increment of each group is 150 students. Group one, 0 to 150 students; Group two, 151 to 300 students; Group three, 301 ~~orm~~ more students.

SCHOOL	TOTAL SENIORS ENROLLED	4 YEAR COLLEGE No.	4 YEAR COLLEGE PCNT	AVERAGE MATH PREPARATION	TECHNICAL INSTITUTE NO.	TECHNICAL INSTITUTE PCNT	AVERAGE MATH PREPARATION	SEEK EMPLOYMENT NO.	SEEK EMPLOYMENT PCNT	AVERAGE MATH PREPARATION
Abbotsford	47	18	38	3.6	3	6	2.7	13	28	1.5
Athens High School	70	12	19	2.7	9	14	2.1	19	30	1.7
Colby Public Schools	115	20	18	3.1	25	23	2.5	36	33	1.9
Edgar	76	15	38	3.3	9	23	2.7	7	18	1.7
Loyal High	88	18	26	3.1	23	33	2.7	5	7	1.8
Marathon High	77	11	15	3.4	15	21	2.5	24	33	1.9
Mosinee High	128	27	23	3.2	24	20	2.0	31	26	1.6
Park Falls High	97	19	21	3.5	19	21	2.4	30	33	1.9
Phillips High School	104	36	36	2.8	20	20	2.0	22	22	1.1
Rib Lake High	59	11	19	3.4	6	10	2.7	18	31	1.8
Rosholt	44	5	12	2.6	5	12	2.2	10	24	2.2
Stratford	90	17	23	2.8	14	19	2.5	18	25	2.1
Wittenberg-Birnamwood	111	18	21	3.3	11	13	1.9	29	35	1.6
FINAL TOTALS AND TOTAL AVERAGES -	1106	227	23	3.1	183	19	2.3	262	27	1.7

7722

SCHOOL	TOTAL SENIORS ENROLLED	4 YEAR COLLEGE No.	4 YEAR COLLEGE PCNT	AVERAGE MATH PREPARATION	TECHNICAL INSTITUTE NO.	TECHNICAL INSTITUTE PCNT	AVERAGE MATH PREPARATION	SEEK EMPLOYMENT NO.	SEEK EMPLOYMENT PCNT	AVERAGE MATH PREPARATION
D. C. Everest	262	38	21	2.8	34	18	2.3	48	26	2.0
Medford Senior High	208	32	17	3.3	36	20	2.2	38	21	1.6
Merrill Senior High	275	53	21	2.9	33	13	2.4	68	28	1.6
Newman	162	59	46	3.3	11	9	3.2	14	11	2.4
Shawano High	230	70	37	3.2	27	14	2.8	41	22	2.1
FINAL TOTALS AND TOTAL AVERAGES	1137	252	27	3.1	141	15	2.5	209	22	1.9

7723

SCHOOL	TOTAL SENIORS ENROLLED	4 YEAR COLLEGE No.	4 YEAR COLLEGE PCNT	AVERAGE MATH PREPARATION	TECHNICAL INSTITUTE NO.	TECHNICAL INSTITUTE PCNT	AVERAGE MATH PREPARATION	SEEK EMPLOYMENT NO.	SEEK EMPLOYMENT PCNT	AVERAGE MATH PREPARATION
Antigo Senior High	332	78	30	2.9	34	13	1.9	61	23	1.6
Wausau East High	340	104	44	3.0	16	7	2.3	29	12	1.6
Wausau West High	400	79	27	3.0	37	13	2.1	57	20	1.7
FINAL TOTALS AND TOTAL AVERAGES	1072	261	33	3.0	87	11	2.0	147	19	1.6

A724

VT 014 712
1970 SUMMER INSTITUTE ON CAREER EDUCATION
(SALEM, OREGON, JUNE 8-12, 1970).

OREGON STATE BOARD OF EDUCATION, SALEM
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - JUN70 48P.

DESCRIPTORS - *CAREER EDUCATION; *VOCATIONAL EDUCATION; *CURRICULUM DEVELOPMENT; CLUSTER GROUPING; *CONFERENCE REPORTS; ADVISORY COMMITTEES; VOCATIONAL COUNSELING; CURRICULUM PLANNING; RELEVANCE (EDUCATION); *SUMMER INSTITUTES

ABSTRACT - TWENTY-FIVE PARTICIPANTS, MEETING WITH NUMEROUS CONSULTANTS, EXPLORED WAYS TO MAKE THE HIGH SCHOOL CURRICULUM RELEVANT TO THE NEEDS OF ALL STUDENTS. AMONG THE PAPERS HEARD AT THE 5-DAY CONFERENCE WERE PRESENTATIONS ON TOPICS SUCH AS: (1) "ADVISORY COUNCILS" BY BURR FANCHER, (2) "CAREER COUNSELING" BY MAYNARD CORLETT, (3) "WORK EXPERIENCE" BY GERALD LEADHAM, (4) "CONFERENCE INSPIRATION" BY JULIUS BIALOSTOSKY, (5) "DESIGN FOR PLANNING" BY MARVIN RASMUSSEN, AND (6) "CONFERENCE CHALLENGE" BY AMO DE BERNARDIS. A FEATURE OF THE INSTITUTE WAS AN INTERDISCIPLINARY EXERCISE LED BY RICHARD SCHMIDT AND BOB SMITH. AN EVALUATION OF THE CONFERENCE AND A DIRECTORY OF SCHOOLS WORKING WITH CLUSTERS ARE INCLUDED. (JS)

VT 014 712

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Salem, Oregon

Sponsored by:

OREGON SMALL SCHOOLS PROGRAM

and the

CAREER EDUCATION SECTION

OREGON BOARD OF EDUCATION

942 Lancaster Drive, NE

Salem, Oregon 97310

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INTRODUCTION

by Richard W. Schmidt
Career Education Task Force
Oregon State University

Today, in a society oriented to higher education, one out of five Oregonians does not finish high school, and only about two in ten actually graduate from a four-year college or university. This indicates that school life has by-passed a large segment of our population in preparing them for the very real world of work upon high school graduation. The dilemma that education in Oregon faces is that of providing a realistic and comprehensive program that is geared to the needs of all students. Therefore, the problem is two pronged as it is outlined in the recent Oregon Board of Education's publication, Career Education in Oregon. The problems are listed as follows:

1. How can secondary schools become preparatory for all students?
2. Can the total school curriculum be related to the real life goals of students so they are motivated while in school and are also better equipped to choose, from many alternatives, the direction they will take after high school, whether it is on-the-job training, apprenticeship, community college, the armed services, private vocational school, or a four-year college?

The Oregon Board of Education has outlined a three-fold objective of career education that will help young people to:

1. discover their individual interests and abilities
2. explore the many avenues of productive activity
3. learn the wise exercise of freedom of choice, self direction, self discipline, and responsibility.

Hopefully, career education and the accompanying cluster concept will go a long way toward solving the problems outlined. No discussion on career education in Oregon is complete without a short definition of the Cluster Concept. The cluster has its birth in the world of work. Through occupational analysis, families of occupations are formed by the relationships of the common skills and knowledges. These families of occupations, or key occupations, are then subject to the scrutiny of task analysis. The task analysis gives the answer to the question: What is it a person must be able to do to perform the necessary functions for successful progression on the job? The instructional analysis then rounds out the concept by organizing the curriculum for any given cluster in the following manner.

1. What are the required skills and knowledges?
2. What are the expected behaviors?
3. What are the teaching activities that aptly demonstrate the skills, knowledges, and changed behaviors?

A career cluster curriculum is designed to provide meaningful occupational education for Oregon's high school students. It enables occupational education to become an integral part of a comprehensive high school program. It enlarges the alternatives for students. It allows them to make a choice and then change if necessary. It is easily geared to an individualized approach designed to meet the needs of all our students so they might enjoy and be fulfilled as citizens involved in the "good life."

OREGON SMALL SCHOOLS PROGRAM * * 1970 SUMMER INSTITUTE SCHEDULE * * WILLAMETTE UNIVERSITY, SALEM

	Monday, June 8	Tuesday, June 9	Wednesday, June 10	Thursday, June 11	Friday, June 12
7:30	Breakfast, Matthews	Dining Room - - -

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MANPOWER AND EDUCATION

KEYNOTE ADDRESS
by Ross Morgan
Administrator, Division of Employment
Monday, June 8, 1970

The Employment Division is directly related to the work which you people in education perform through its involvement in such activities and programs as the Youth Opportunity Center, Neighborhood Youth Corps, Job Corps, Summer Youth Employment Programs, job counseling, testing and placement, Manpower Development and Training Act, and on-the-job training.

I'm afraid we often see your students and former students at the most desperate period of their lives. We see them confused--even frightened--at the prospect of entering the world of work, the world to which they are complete strangers in many cases.

Last year at the Youth Opportunity Center in Portland, we received over 140,000 applications for work. Countless times the initial interview would begin like this: Question: What kind of work are you interested in? Answer: I don't know--anything, I guess. Listen to that reply again, "I don't know--anything, I guess." The young person who replies in that fashion--and we meet tens of thousands of them a year in our business--is as frightened and confused as a land-lubber setting out to cross an unknown sea with no knowledge of navigation, sailing, nor even what kind of a boat he is in, least of all, his destination.

These young people have good reason to be confused and frightened. Even in their short lifetime the world of work has gone through a revolution. Fifteen years ago, 70 per cent of all workers were employed in blue collar occupations. Today, 70 per cent of all workers are employed in white collar occupations. Technology is stampeding throughout the entire labor market, and it has only begun. Our leading national economists are predicting that in another fifteen years, at least 50 per cent of all the people working will be doing jobs that have not yet been invented.

When I mentioned that 70 per cent of our jobs today are white collar, that does not necessarily mean that these jobs require any college education. Most of these white collar jobs are technical and service occupations. Although they do not require college, they do require specialized skills.

As a matter of fact, we do not really require an increase in the number of college graduates. We do require a significant increase in technically trained people. Our society today is oriented to higher education. Unfortunately, however, one out of five Americans still does not finish high school, and only one in ten actually graduates from a four-year college. Nonetheless, most of the school curriculum, particularly in high schools, has been structured as though everyone had been preparing for a four-year college education.

Those of us who are responsible for developing and utilizing the manpower resources of Oregon frequently become frustrated and angry as we see tragic circumstances of literally thousands of young people who are ill-prepared for the realities of the modern labor market.

What do we in the manpower business have to say to you in the education business?

Design your school curriculum so that it is practical to the individual needs of each of your students. Dale Parnell is becoming more and more influential in education circles for preaching this message. You who are here today are beginning an institute which will be focusing on the career cluster concept of secondary education. People in my line of work almost literally have tears of joy in their eyes as they witness the implementation of more realistic concepts in our primary and secondary schools. Let me tell you why.

We know that we can expect to meet many thousands of young men and women in these next few years who will be totally disillusioned and embittered if something is not done to improve their opportunities for meaningful careers. In the last five years the Public Welfare Division in Oregon has had to triple its payments for aid to families with dependent children. Most of these families are young families. Nearly 42 million dollars will be paid this year for AFDC. Thousands of these children live in families where there is no father at home any longer. Their mothers are mostly in their twenties. These are young women who went to school in Portland, in Salem, in McKenzie, in Mapleton, Myrtle Creek, and nearly every other school in Oregon. They are young women ill-equipped to earn a living, and, needless to say, they are terribly disillusioned. For them, the American dream has become a nightmare.

This summer there will be over 30,000 new high school graduates in Oregon. A minority of them will go on to college--the vast majority will try to find employment. They will be doing this at a time when unemployment is already high and the competition for jobs will be keen. Many thousands of them will be unsuccessful in finding any kind of work other than picking berries or doing casual labor. Furthermore, several thousands will feel as though this country has let them down. These are the ones who will answer that question about what kind of work they want and will be able to say only, "I don't know--anything, I guess."

The career cluster approach to secondary education is much more than an interesting theoretical innovation. It possesses the potential to dynamically improve the opportunities for success for each of your students. Much more able men than I will be discussing the career cluster plan through this week. As a matter of fact, I--and some of my people--plan on sitting in on parts of this conference.

I do want to impress upon you today the great urgency which people such as yourselves in education must feel. H. G. Wells said that "Civilization is a race between education and catastrophe." We need only to look around us at our society to realize that that race is half over and we're not winning it yet.

INDUSTRIAL ARTS
by John Fessant
Oregon Board of Education
Monday, June 8, 1970

Industrial Arts is non-vocational education. It is a system of explaining our technological system to students in grades K-12. Technology has many definitions. It is man expressing himself with materials, tools, machines, and energies.

The exploratory nature of Industrial Arts should cause us to offer as wide a variety of experiences as possible for students. The education of students and their personal growth should be one of the important considerations in an Industrial Arts program.

Oregon is moving to the four functions of industry approach to Industrial Arts education. This allows the course offerings to be offered by groupings reflecting their functions. They are:

Fabrication processes, consisting of material removing, combining, extracting, forming; traditionally woodworking, metalworking, plastics, ceramics.

Electronics

Graphic communications, traditionally drafting-photography, but now covering all forms of mass communication media.

Mechanical power, covering energy sources, control, conversion, transmission, application, consumption, and instrumentation. Traditionally, this is power mechanics, fluid power, auto mechanics, refrigeration, air conditioning.

This is just to give you an idea of what we are doing. This can be a guide to future plans in Industrial Arts. These areas are exploratory in nature and do form a base for the clusters. Individual situations will demand flexibility to implement any of these things.

There are many exciting ways the Industrial Arts program in a small school can give the student a look at technology. All the disciplines can work together to provide real examples of how they can relate to life through career education. All students are going on to a career; we can, together, provide them with meaningful experiences.

HEALTH OCCUPATIONS

by Joan Stoddard
Health Occupations Education Specialist
Oregon Board of Education
Monday, June 8, 1970

The health industry is now the number two employer of manpower in the United States. Over 3.5 million people are directly involved in health care activities. If all support personnel were included, over 5.5 million are employed. The health industry is projected to be the nation's number one employer of manpower by 1975. Some authorities believe that this goal will be reached by 1972. With these projections in mind, the need for prepared health manpower at the vocational and technical level is obvious.

Health Occupations Education will play a more major role within the educational structure in the immediate future. Health Occupations Education programs prepare workers for services which are preventive, restorative, or curative in nature as related to meeting the mental, physical, and environmental health needs of the people. Often one may think only of the traditional health occupations such as nursing, medical assisting and dental assisting, without the awareness that there are now over 400 occupational titles related to the health field. Health occupations, therefore, encompass a broad spectrum such as from the aide level through the highly trained medical specialist.

Educational institutions can assume an important role in helping to meet the manpower shortage in the health field by: (1) providing career information, (2) career exploration, (3) preparation for job entry and/or post-secondary education, (4) specialized occupational preparation from short-term duration to approximately three years in length, (5) refresher programs for health workers who have been out of the labor force for a period of time, (6) adult supplementary courses for upgrading and retraining.

In order to plan and implement programs in health occupations, administrators need to become aware of some of the problems, complexities, and differences related to health occupations than may be encountered in the more traditional occupational fields. It is most important that there be a working relationship between the educational agency and a clinical health facility or community health agency to provide students with learning opportunities necessary to achieve the instructional objectives. Due to the medico-legal implications and protection of the patients' rights, it is essential to have a training agreement between the educational agency and the extended campus facilities for the protection of individual patients, the clinical institution, the student, and the educational agency. Licensure, certification, and registration control many of the health occupations. Therefore, it is essential to have a working knowledge of the occupations so controlled that programs can be developed at appropriate levels in accordance with the legal requirements or national standards. This is important to meet the long-range needs of students who may, at a later point

in time, wish to continue their education in a horizontal or vertical direction or even practice their career in another state.

One problem that frequently faces us in the health occupations area is assisting new teachers in a role transition from being that of a health practitioner to that of a health occupations educator; or to state this another way, to assist persons to move from meeting patients' needs as a first priority to that of meeting student needs.

Probably the most important concept of all in programs at any level is that of team relationship. To develop this concept in students it is highly important that they have the opportunity to experience team relationships. Likewise, it is important for health occupations educators to model health team relationships in working with clinical facilities and community agencies, as well as to be able to work in an interdisciplinary structure within education. This becomes especially important for teachers as we move more quickly toward the implementation of team teaching and differentiated staffing in order that personnel resources may be more efficiently utilized.

At the present stage of development of the health occupations education program in Oregon, priorities from the Oregon Board of Education will be in the following areas: (1) the development of new programs based on manpower needs, community college health occupations programs; (2) program articulation between secondary and post-secondary education, between community colleges and the four-year programs; (3) the development of a comprehensive health occupations teacher education program.

ADVISORY COUNCIL
by Burr Fancher
Lebanon High School
Tuesday, June 9, 1970

Ingredients for a Good Advisory Council

1. Need
2. Well balanced membership--dedicated, cross section
3. Active involvement
4. Planned meetings--when needed, good agendas
5. Communication with members, teachers, administration, and community

Role of Advisory Council

1. Provide direction to curriculum
2. Supply technical information
3. Sounding board for community sentiment
4. Public relations for programs
5. Give validity to proposals for new and expanded programs
6. Gives teacher confidence in moves toward program improvement
7. Assist in development of work experience program
8. Serve as an evaluation team for vocational programs

CAREER COUNSELING

by Maynard Corlett
Counselor, Occupational Skills Center
Wednesday, June 10, 1970

The importance of the individual must become that which we strive for in offering guidance services to those in our secondary schools. It is not enough to talk about counseling and guidance as two separate areas. If we are going to work toward the total development of the student, we must orient ourselves to developing an understanding of the individual goals of the student and then use the available resources to give the student those experiences which will help him make a meaningful decision for a post-secondary career. Perhaps it will include several decisions or the possibility of looking into several careers. It is not for us to attach pat answers to what the student decides. It is up to us to provide that which will relate to and assist the student in making the decisions which are a part of and not apart from his own goals.

If we are to really be effective in reaching this as a goal, it means we must look to resources within and outside of the school. It means that as guidance specialists, as teachers, and as administrators, we must utilize the resources of the community as well as the professionals in the schools to assist in a meaningful way of allowing students to prepare for whatever post-secondary experiences they feel will best suit them. We must learn to know who people are in the community so that their talents may be used on a short and long range basis to provide work experiences, informational experiences, as well as just getting to know what career prospects a person might have in any given field.

It will mean getting out into the community and making those contacts which can help us. If we really believe that guidance, as a function of the school, is to assist in the development of the student, then we must also believe that it requires a team effort to define, direct and clarify the students' sense of development. If we really accomplish this total "team approach" it will mean the utilization of outside agencies, professional business organizations, advisory committees, school staff personnel, as well as those who wear the title of guidance specialist.

The benefit of developing a cooperative team approach to guidance services is the knowledge that those in the community will become better aware of the fact that we are interested in the students as people. This is a concept which people can understand and should be an effective force in drawing the school and the community closer together to make the educational system one that has meaning.

In closing, I would have to add that unless we get to know and understand: (1) our community's leadership, (2) our community resources, (3) community needs, (4) and how an effective partnership can be drawn between the school, the community, and the student, then we will not really reach our goal of guidance for career preparation. It is a challenge which will require extra effort and time. However, in terms of benefit to the students involved, it is well worth the investment.

WORK EXPERIENCE

"LEARNING THAT STICKS!"

by Gerald Leadham
Oregon Board of Education
Tuesday, June 9, 1970

Learning, remembering, and recalling are best made possible through activity oriented experiences--much more than rote learning alone.

Work experience activities make learning stick!

1. There are 3 major activities in Education
   a. Traditional academic programs
   b. Vocational type programs
   c. Work experience education

2. In the past, these three activities have not really been planned as a total education program for young people.

3. The total education program should include all 3 activities in a planned, sequential order and should support one another.

4. Work Experience Programs for small schools:

   a. Exploratory--grades 7-10, activity oriented
   b. General--not related to a vocational program
   c. Cooperative--related to a vocational program; part of the total program.
   d. Diversified occupations--umbrella program
   e. Project and/or Lab approach--very small schools
   f. Work Study--economic provision, needy students

5. Reimbursable Programs and criteria

   a. Part G Funds
   b. Diversified Occupations--ongoing programs
   c. Work Study Programs

6. One program usually will not meet all student needs for work experience education.

7. Handout material available:
   a. Diversified Occupations Program
   b. Common Characteristics of Cooperative Work-Experience Programs.

8. A quality work experience program takes time but "turns kids on" and involves the community with the school in a direct way. Communities support work experience education.

INTERDISCIPLINARY EXERCISE
Conducted by Richard Schmidt
Oregon State University
and
Bob Smith
Hermiston High School
Wednesday, June 10, 1970

The Interdisciplinary Exercise was conducted Wednesday afternoon and Thursday morning. Participants were divided into groups of about 12. Each group had at least one guidance or vocational teacher, an administrator, and a general mix of teachers from all curriculum areas, but not from the same schools.

Everyone was given large sheets of newsprint and a felt tip pen and asked to list the six major concepts he tried to teach in his subject. Under each of the six concepts, each was then asked to list two to five activities used in teaching the concept.

The lists were hung on the wall with masking tape, and the participants looked at each other's lists to determine what activities could be integrated or used in other curriculum areas.

By doing this, those present were able to draw up a rough outline for using the interdisciplinary approach.

Mrs. Bernice Payne, one of the group leaders reported:

> Our group consisted of persons from almost every area in the high school curriculum. It was interesting to note some of the similarities both in concept and in activities. One was found in music and English, play acting. Many in oral communication were found.
>
> One person used thinking as a concept which he pointed out so necessary in his mathematics program. This brought about a lively discussion, since a person in another area had used the same thing.
>
> We didn't get a course devised for our high school curriculum, but all of the group agreed that it would be possible.

CONFERENCE INSPIRATION
by Julius Bialostosky
Assistant Superintendent
Multnomah County IED
Thursday, June 11, 1970

For the two years I was with the Oregon Board of Education, I always prefaced my remarks by saying, "The views you are about to hear are not necessarily those of the Oregon Board of Education." How did I know what 150 other people believed? That was before they published all those position papers, one a week now, so now you know what you believe.

I enjoy getting out of my own district, hitting hard, and going back in and acting like a Casper Milquetoast, which many people think I am. Now, I have to be very honest with you. One reason that I keep showing up is that I come cheap. Let's be honest about this, right, Miller? The Oregon Small Schools Program has not been funded adequately for a long time, and we hope it does come through; but when there is a half-hour slot open somewhere, I get a call. And being one who loves audiences, here I am, and very much appreciative of the opportunity.

I'm listed as an inspirer. I don't feel inspirational, but I looked that up in the Thesaurus and found that to inspire is to challenge. So, I've changed the program already. I hope there will be some kind of challenge here.

What can we possibly say about career education that hasn't already been said? Well, I might as well read what I've written, "Opening remarks." You know, it's like teaching. You set up a lesson plan. You overplan. You can teach for 30 hours. My first year, I ran out in 15 minutes. For my next 14 or 15 years of teaching, my lesson plans had only really one word; it was this way. If it were an average class, there was one word, "Talk." If it were a slow class, it said, "Talk slowly." Those were my lesson plans for 15 years, and I got away with it.

Another reason I think I was invited . . . I know you had your big bash last night, so I think in the next 30 minutes I'm supposed to get you sobered up, with apologies to the good sisters and the fathers here, so that when things begin happening at 9:30 a.m. you will be amenable to the remarks. I take that challenge.

The Small Schools Program is always out in front. On the program I'm listed as Assistant Superintendent, and I was introduced that way, but it really doesn't happen until July 1, so you've beat the gang again.

In researching this topic, I thoroughly enjoyed reading magazines and books, looking for possibly a different approach. The words kept staring out at me; you've heard them before, and you've had them up to here--relevancy. I couldn't really find a good definition of relevancy until I read this:

"A secretarial school in London, England, has as its stated objective, the goal of producing a special breed of secretaries. 'Each of my girls should marry her boss,' explains the director. 'To prepare for this dual role, students receive instruction in etiquette, flower arranging, dancing, interior decorating, design, art appreciation, gourmet cooking, and selection of antique furniture. Some dictation and typing is also offered.'" Talk about relevancy!

So, if you're developing your career education goals, make sure they're relevant. If there's a wealthy young man in town, and in some of these small towns you can pick them out right away, get the girls ready. Get them primed. Find out his interests. That's what we mean by the interdisciplinary approach.

Then you hear the word specialization. We want to stay away from specialization. They're hitting us with the beautiful cluster terms, interdisciplinary, and so forth, but here's real specialization. And once you hear the name, you'll realize they're doing pretty well. At Elkgrove Village, Illinois, students can earn a Bachelor of Hamburgerology. The school offering the degree is Hamburger University, the training center for MacDonalds Systems Incorporated. They've sold 5 billion. You can't beat that!

Now what kind of relevant training will you offer in your school? When you peruse some of the literature coming out of the Oregon Board of Education, you sometimes get the feeling that Career Education is the only thing going on. Once in a while we read about the fourth R, or early childhood education, the disadvantaged, but career education is the thing. And, in reading these beautiful documents you already have; "The Oregon Way," by Dale Parnell and Leonard Kunzman's "Position Paper," you recognize immediately that these are powerful, convincing statements that show Oregon is on the cutting edge when it comes to career education.

However, other states are moving at least as fast. Ohio will become the first state to require all school districts to offer comprehensive, vocational education for all students. Under the new law, the state will provide matching funds for construction and materials, the school systems may provide a portion of their own to contract with another district to form a joint vocational district with other schools; Ohio.

Let's go to Michigan. The Michigan Board of Education has approved a tentative state plan for vocational education, calling for 90 secondary vocational centers, 30 community colleges with vocational-technical facilities, and 10 colleges or universities are offering less than baccaulareate programs in vocational education. I was surprised to read the idea for vocational centers; here in Oregon we're saying that vocational centers have been made rather obsolete by the cluster concept. I'm sure you've heard something about that this week.

Everybody is getting into the vocational act. I'll be responsible for the audio-visual program in our county. I get Audio Visual Instruction, an excellent

magazine. This entire April 1970 issue is given over to media and vocational education. Some of the articles are "Listening Stations to Teach Shorthand," "Educational Media in Occupational Education," "Media in Distributive Education," "A Remote Access Instructional Systems Model for a Regional Occupational Center," "A Microfilm Occupational Information System," "Media and Vocational Guidance." We read so much about it.

But does everyone agree that Career Education should be the linking thread in a high school curriculum? Let's take a look. Since I'm in the curriculum area, I get most of the material that's put out. This one, Curriculum Guidelines in an Era of Change, by Dr. Vern Anderson, University of Maryland, (I knew Vern when he was in the Portland system) projects ahead. I felt certain there would be something on career education. I found the term "work experience" on page 94. This was the only reference to career, occupational, or vocational education. So, I asked myself, "Maybe everybody isn't buying the idea?"

Some educators feel the disciplines should be the basis of a curriculum. That is, the pure academics, math, science, social science. Others refer to the humanities as the base of the curriculum, tying in literature, music, art, and other areas. You can't read the material now without the emphasis being laid on environmental or ecology as yet another thread that links the curriculum.

I found an excellent article that says love should be the basis of organizing a curriculum. The article is in Educational Leadership, April 1969, put out by the ASCD.

"Consider the question. What can be done with love in the redeveloped curriculum?" And they go on in a very excellent article. They give an outline, just as in any curriculum guide. They show the concepts. I'll bet you'd like to know the activities that go along with it, but you can read the article yourself. They even have a poem:

In love is the foundation laid for education.
For to love and be loved is to enter fully into life
Then learning is born of experience.

In love is the foundation laid for education.
For to love and be loved is to participate in society
Then learning is a child of social interaction.

In love is the foundation laid for education.
For to love and be loved is to value the person
Then learning is for individual fulfillment.

In love is the foundation laid for education.
For to love and be loved is to be purposefully employed
Then learning matures knowledge into wisdom.

In love is the foundation laid for education.
For to love and be loved is the goal most valued.
Then learning is love expression experiencing itself in being.

How would you like to plan that kind of curriculum?

We have other claims for curriculum development. I'm talking about people who say, "This should be the way." They call it a humane education. Did you realize that you were not involved in a humane education? These people are setting up schools and experimental programs--no curriculum, no grades, letting students develop their own learning program. Is this something to come? No! My own youngsters attend just that kind of a program in School District No. 1, Portland. They did this year and they will be there next year. These things are already on the board.

The humane education is exemplified in this kind of terms. "Our educational system must prepare people to live in a world in which work will not hold the central position it has held in the past. It will be off to one side, contributing to society, but not dominating it. Concern will have to shift more to the development of people as decent human beings and less preparing them to become cogs in an economic machine."

Many outstanding educators feel that the present surge of interest in career education is just something old, wrapped in a new package. I hope you read something about Mildred Crosby. She was here last year with ASCD. She's past president of the National Council Teachers of English, very active in ASCD, and here's what she said. "In the late 19th century, the government decided that vocational education was relevant, and instituted its now historic financial support in the context of control to assure effective preparation of the working man. Justly or unjustly, supporters of vocational education are claiming to constitute the most powerful of the educational lobbyists in Washington, and there is little doubt that the funds appropriated for training in occupations, trades, or related jobs greatly exceed those for any other single type of specialized education. It is reasonable to add, how effective is vocational education today? It's been around for a long time.

"The first annual report of the newly created national advisory council on vocational education is a blistering attack on the vocational education programs in the nation's schools. Claiming that 25 per cent of the youth who turn 18 each year are not educated to a level of adequate employability, the council report closes with this appeal, 'We believe the reform the American school so desperately needs will not come about if the federal government continues to invest nearly $4 in the remedial manpower program to every $1 invested in preventative programs. Of course, this appeal was reinforced by requests for even greater expenditures by the federal government for effective change.'"

Mrs. Crosby then comments, "I suggest that is buying more of the same thing that hasn't worked to begin with."

I'm surprised that in all these magazines there is no mention or only a negative mention of career education.

Now, why have I presented these different viewpoints? In the last two months I have been interacting with various teachers who have read or heard the information you have been exposed to in the last three days. Marv Rasmussen and Al Ringo were in Multnomah County; there have been other sessions; people have been attending classes, so there is a backlog of information, and we are beginning to understand career education. Most of them are teaching the so-called academic courses, and, to the man, they have been putting forth some of the same comments and counter arguments regarding career education that I have been citing. This negative attitude concerns me greatly.

It is the classroom teacher who will determine the failure or success of this entire program. The most important thing that could happen this week is that you develop a sense of commitment to the objectives and philosophy of career education. Your attitude towards the world of work is much more significant than any curriculum you may develop.

I bring emphasis to this point because at my desk, and I'm sure on your desks, too, we have been getting research reports on the various programs that have been funded on the federal, state, and local levels. You read the data, and it's not until you come to the last paragraph do they say what's really important. "The determining factors in this project were the teacher's enthusiasm and positive attitude towards the program." That's what it is. It doesn't matter how much money went in there; it's the teacher's attitude, the person interacting with the youngster.

For too long in the high school we have regarded vocational education as an experience outside the general curriculum. I was shocked to find this kind of statement, "The vocational training field is now frequently called occupational training in an effort to upgrade its status." Of course, with many it has been in disrepute. Now why didn't it succeed the first time?

Because the people in the academic areas were, how does Agnew say it, effète snobs. (I never thought I'd be quoting Spiro Agnew; we're on opposite ends of the political spectrum.) I'll repeat that. For too long in the high schools we have regarded vocational education as an experience outside the general curriculum. For too long we have saluted the accomplishments of the college bound and have treated the occupation bound student as a second class citizen.

I recommend to you that you read a treatise called Pygmalion in the Classroom, by Robert Rosenthal. It was an experiment in California where they gave different teachers certain kinds of students, labeling one group outstanding and the other average, when in reality, they were the opposite groups. Once again, it was the teacher's expectancy about student accomplishment that made the difference. Those who were average accomplished more because the teacher expected them to, thinking they were accelerated students.

Attitude, my friend, that's what it's all about. You know, they're finding out in research that your facial expression, not what you say but how you say it and what your face shows is important. These kids can see right through us these days. They say a lot of us are plastic. That's a bad word nowadays. You have to show the real "you." For too long we teachers have been transmitting our academic hang-ups to many students who long to use their hands as well as their minds, and I wrote up a hypothetical situation to illustrate these hang-ups.

You are now teaching one of the disciplines, you are in math, in science, in social science or English literature, and your top A student, so intelligent, doing so well, comes to you and says, "I think I want to go on and study to be an electrician or a plumber. What do you think?" What kind of advice would you give that youngster? It would be a challenge to me. Most of us would probably say, "My son, out there somewhere is the university where you can make an outstanding contribution." Your attitude towards the world of work is by far the most significant thing in the classroom situation.

I feel confident that the small high schools are much more aware of the dignity of labor and that teachers in these schools are clearly cognizant of the value of career education. However, I must warn you that smallness of school by itself is not enough; it must be coupled with the correct attitude and commitment to the idea.

Now, much in the way of career education is already going on in the Oregon Small Schools Program. I hope you received this. [Promising Practices in Small High Schools, published by the Northwest Regional Educational Laboratory.] Mr. Miller has extra copies. Beautiful document. What is going on in the small school? Some of these are your very own. The gentleman I'm about to mention is a very humble man, Ben Jones, Santiam High School in Mill City, Oregon. He has something going here. I know Ben. I think he has the attitude and the commitment. In 1964 career exploration units were not offered to freshmen at Santiam. That year, 40 per cent of the graduates continued their studies. In 1968, 92 per cent of the graduates who had career research as freshmen entered college, or 83 per cent of the total graduating class. More than 90 per cent of the 1969 graduating class entered post high school training, one-third of them enrolled in 4-year programs. Ben didn't wait for career education to become big in Oregon.

On page 27 of this book you will find the Field Experience Program at Glendale High School. This was designed to provide 10 to 15 junior and senior boys with experiences necessary to enter the world of work. The boys spend half days working in city and county parks, taking field trips to manufacturing plants, and working with commercial firms and the State Forestry Department. I am citing two; I know there are many more besides these.

I found this quotation in a book by Paul Nash, called Authority and Freedom in Education. "Education must produce in the same person both man and worker. Moreover, the two goals must be achieved in the same process. The relationship between man and worker is structural, rather than additive. Structural. Unified,

rather than additive. The worker is part of the man and not stuck on to him. Hence, we must question whether the distinction between liberal and vocational education is a truthful one." One of the most beautiful statements I found.

Another quotation from "The Oregon Way," developed by Dr. Parnell and the Oregon Board of Education, "Career Education with its cluster concept and interdisciplinary approach represent a beautiful marriage of the liberal and vocational education."

With the help of you people, we will be able to assist young Americans to find their rightful place in our society, armed with both knowledge and applicable skills.

I think Dale Parnell says it beautifully at the end of his remarks, "Career education means a move away from the caste system of college prep, advanced, terminal, remedial, dropout. Students in a universal system of education must be able to move through the school programs proudly, energetically, and with purpose. It is fundamental to design our curriculum in such a way that every student sees something there that makes sense to him."

We owe our students all of this, and more. Your efforts this week are sure to have a payoff in the future. Good luck to each and everyone of you.

DESIGN FOR PLANNING
by Marvin Rasmussen
Oregon Board of Education
Thursday, June 11, 1970

We all know Oregon leads the United States in educational ratings. There are a great deal of things we are doing right. Our position is well recognized. But, we know we are not meeting the needs of all students, and we know the traditional offerings are not enough.

As we attempt changes, we must keep the feelings of the teacher in mind.

Career education--job clusters--is a strong leadership package. It is an excellent way to go. If changes are essential, they can be made. The job clusters are in the developmental stages--the dark ages of development. Local people are innovating and adapting, using the position paper, the state plan, and other materials. The Oregon Board of Education specialists know all of the questions and are helping to search for the answers.

The key to vocational education is attitude, program direction, and funding. Steps essential to career education implementation are:

1. Understand Career Education--Job Clusters.
2. Analyze each cluster.
3. Relate clusters to community and school curriculum.
4. Select clusters, either full or partial clusters.
5. Adopt Board Policy Statement.
6. Accommodate existing curriculum to clusters.
7. Develop long-range plan for clusters (5 year).
8. Alter curricular materials--forecast materials.
9. Develop personnel in-service.
10. Develop long-range interdisciplinary programs.

A booklet, Master Plan for Determining Occupational Offerings in Oregon Secondary Schools, developed by the Division of Community Colleges and Vocational Education, Oregon Board of Education, provides a step-by-step procedure for determining what the specific needs are for any given community and school. The plan has been thoroughly tested by the Hood River School District and has proven itself to provide answers in determining what kinds of occupational programs will meet the needs of youth.

The plan has three parts:

Part I makes an assessment of the school and community to determine what the situation is currently in the school and its setting.

Part II is the Master Plan, or new units, courses, curriculums, and occupational programs interrelated with the existing programs to show the suggested total school offering.

Part III is a plan for implementing the vocational offering in the school.

Part I - Assessment

Inventory Data Needed About Schools

Enrollment projections, grades 7-12
Selected student personnel data
Follow-up data--graduates
High school student interest inventories
Course enrollments in vocational and related
Number of faculty and subjects taught
Guidance service available

Data About Community Assessment

Population data of community and state
Population of work force, etc.
- Major occupational groups
- Major vocational clusters
- County data
- Future employment prospects, etc.

Socio-economic status of community
- (see planning booklet)

Post high school educational opportunities
Area planning
- Potential to plan with nearby districts
- Regional cooperation

Part II - Master Plan

Suggested Occupational Offerings

Vocational curriculums, plans, courses, etc.
Exploratory programs and vocational guidance
Supporting (recommended elective) courses
Industrial Arts
Supporting academic courses
Interdisciplinary approaches

Provisions Needed to Implement Curriculum

Instructor needs and qualifications
Equipment and facilities needed
Current financial resources available
Potential financial resources

Part III - Implementation

Orientation of all Concerned

Procedure for orienting the personnel
- Faculty - Administration
- Board (detailed description)
- Students - Parents
- Occupational Advisory Committies

Procedure for community public relations
- Curriculum publications
- Financial support (procedure to aid)

Materials available are the Oregon Board of Education Position Paper, the State Plan, OBE Goals, Art Guide, and the Cluster Guides. All are available from the OBE.

In doing your planning, use planning forms like those attached; plan both for short- and long-range.

Small schools have equal or better opportunity to develop most aspects of career education. Teachers and counselors are closer to the students and to the community. Use this pattern:

K - 6 Orientation--teach about the world of work
7 - 10 Exploration
11 - 12 Clusters. These are more difficult. Don't attempt large numbers of clusters. Do what is logical. Take parts of of a cluster and/or combine parts.

I don't pretend to really understand your problems completely. Some possibilities for you might be:

Draw out parts of Cluster Guides to fulfill your own needs.
Expand existing programs, such as office education, shops, etc.
Utilize community resources with cooperative programs, work/study, etc.
Mobile occupational learning labs might be used.
Work on strong exploratory programs.

Develop library-resource areas.
Infuse occupational information into all programs.
Develop counseling and guidance around careers.
Use programmed learning, self study, single concept loops.
Follow up student placement. Small schools have an excellent opportunity to do this.
Develop clusters to their potential in your school.
Use community colleges, shared services with other schools or districts.
Utilize resources that are available to you:

- OBE staff members
- Rich Schmidt, who will be on the OBE staff after July 1.
- Task force report and summary
- Development centers
- Keep your eyes on other special programs
- Regional vocational coordinators from 8 of the IED's
- OSU In-service

I don't have to remind you to keep the kids uppermost in your minds. Their needs are our primary concern. Personnel in your size of schools are the most responsive in the state. You can be proud of the positive attitude your group reflects.

CLUSTER PLANNING FORM

Mechanical Cluster

Assets	Needs
Grouping of Subjects	
Occupational Courses (cluster)	
Recommended Electives (allied supporting courses--exploratory)	
Facilities and Equipment	
Financial Resources	
In-Service (workshops, local)	
Interdisciplinary	
Other	

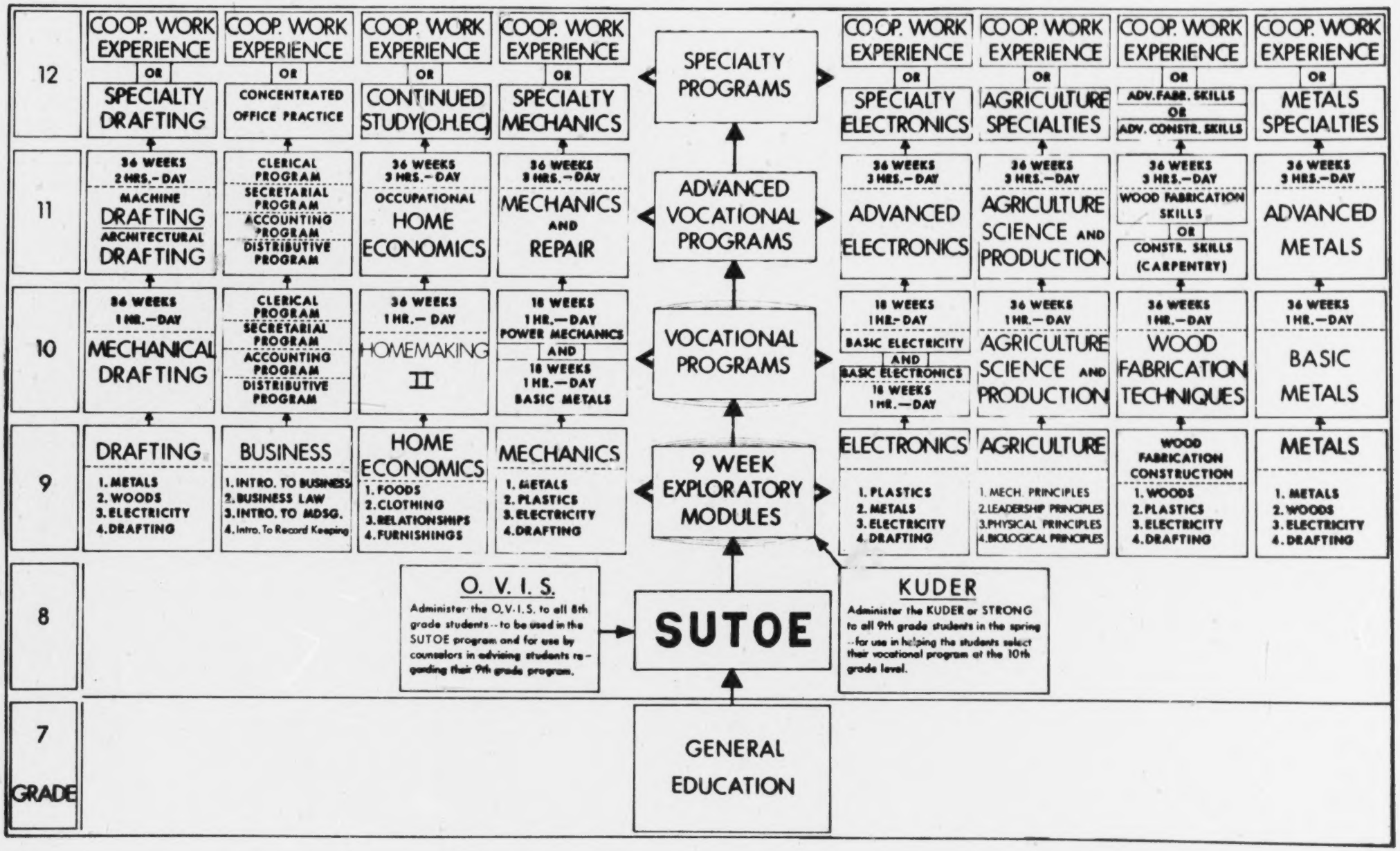
Estimated Expenses _____

SUGGESTED GOALS FOR 5-YEAR DEVELOPMENT

CAREER EDUCATION -- JOB CLUSTERS

_____ School District

	Present/	Year 1/	Year 2/	Year 3/	Year 4/	Year 5/
Clusters						
Grouping Subjects						
Occupational Specialty Courses (clusters)						
Recommended Allied Supporting Courses (exploratory)						
Facilities & Equipment						
Financial Resources						
In-Service (OSU, local)						
Work Experience						
Youth Organizations						
Interdisciplinary						


12
11
10
9
8
7
GRADE
COOP. WORK EXPERIENCE OR SPECIALTY DRAFTING
COOP. WORK EXPERIENCE OR CONCENTRATED OFFICE PRACTICE
COOP. WORK EXPERIENCE OR CONTINUED STUDY (O.H.EC)
COOP. WORK EXPERIENCE OR SPECIALTY MECHANICS
SPECIALTY PROGRAMS
COOP. WORK EXPERIENCE OR SPECIALTY ELECTRONICS
COOP. WORK EXPERIENCE OR AGRICULTURE SPECIALTIES
COOP. WORK EXPERIENCE OR ADV. FABR. SKILLS OR ADV. CONSTR. SKILLS
COOP. WORK EXPERIENCE OR METALS SPECIALTIES
36 WEEKS 2 HRS.-DAY MACHINE DRAFTING ARCHITECTURAL DRAFTING
CLERICAL PROGRAM SECRETARIAL PROGRAM ACCOUNTING PROGRAM DISTRIBUTIVE PROGRAM
36 WEEKS 3 HRS.-DAY OCCUPATIONAL HOME ECONOMICS
36 WEEKS 3 HRS.-DAY MECHANICS AND REPAIR
ADVANCED VOCATIONAL PROGRAMS
36 WEEKS 3 HRS.-DAY ADVANCED ELECTRONICS
36 WEEKS 3 HRS.-DAY AGRICULTURE SCIENCE AND PRODUCTION
36 WEEKS 3 HRS.-DAY WOOD FABRICATION SKILLS OR CONSTR. SKILLS (CARPENTRY)
36 WEEKS 3 HRS.-DAY ADVANCED METALS
36 WEEKS 1 HR.-DAY MECHANICAL DRAFTING
CLERICAL PROGRAM SECRETARIAL PROGRAM ACCOUNTING PROGRAM DISTRIBUTIVE PROGRAM
36 WEEKS 1 HR.-DAY HOMEMAKING II
18 WEEKS 1 HR.-DAY POWER MECHANICS AND 18 WEEKS 1 HR.-DAY BASIC METALS
VOCATIONAL PROGRAMS
18 WEEKS 1 HR.-DAY BASIC ELECTRICITY AND BASIC ELECTRONICS 18 WEEKS 1 HR.-DAY
36 WEEKS 1 HR.-DAY AGRICULTURE SCIENCE AND PRODUCTION
36 WEEKS 1 HR.-DAY WOOD FABRICATION TECHNIQUES
36 WEEKS 1 HR.-DAY BASIC METALS
DRAFTING 1. METALS 2. WOODS 3. ELECTRICITY 4. DRAFTING
BUSINESS 1. INTRO. TO BUSINESS 2. BUSINESS LAW 3. INTRO. TO MDSG. 4. Intro. To Record Keeping
HOME ECONOMICS 1. FOODS 2. CLOTHING 3. RELATIONSHIPS 4. FURNISHINGS
MECHANICS 1. METALS 2. PLASTICS 3. ELECTRICITY 4. DRAFTING
9 WEEK EXPLORATORY MODULES
ELECTRONICS 1. PLASTICS 2. METALS 3. ELECTRICITY 4. DRAFTING
AGRICULTURE 1. MECH. PRINCIPLES 2. LEADERSHIP PRINCIPLES 3. PHYSICAL PRINCIPLES 4. BIOLOGICAL PRINCIPLES
WOOD FABRICATION CONSTRUCTION 1. WOODS 2. PLASTICS 3. ELECTRICITY 4. DRAFTING
METALS 1. METALS 2. WOODS 3. ELECTRICITY 4. DRAFTING
O. V. I. S.
Administer the O.V.I.S. to all 8th grade students -- to be used in the SUTOE program and for use by counselors in advising students regarding their 9th grade program.
SUTOE
KUDER
Administer the KUDER or STRONG to all 9th grade students in the spring -- for use in helping the students select their vocational program at the 10th grade level.
GENERAL EDUCATION

27758

CONFERENCE CHALLENGE
by Dr. Amo De Bernardis
President, Portland Community College
Friday, June 12, 1970

I received a letter from Mr. Miller asking me to come and make an address. I don't make addresses, I don't make keynote speeches; I just talk. When John Dewey used to lecture to a class, he'd talk and mumble in his beard. He was not a dynamic nor an effective lecturer, but a great thinker. After he finished he would close his notebook, walk away, and say, "You know, I think I understand that a little better myself, now."

I have looked over all the material by Leonard Kunzman and Dale Parnell, and they are great pieces of work. As I looked over the program, I wondered: A workshop, a whole week of your time, and some of your money, some taxpayers' money, some state money (that's taxpayers' money, too); I wondered what kind of people you would be as a result of this workshop. Will you go out talking to yourselves? Will you just go back and do the same thing you did last year? What changes will be made? Will your students even recognize the change?

If you come in with a new dress or a new suit, the students recognize change. So you've been to a workshop, a big educational shopping spree, so to speak. What will your students know is different about you educationally? That is the real test. Practically everything we're talking about today in education, with the exception of hardware, i.e. television, video tapes, was talked about 2,000 years ago by Quintilian. Do you know who Quintilian was? He was a great Roman educator who talked about the very things we're talking about here today--making education relevant. The only thing they didn't talk about then was education for women, because then women didn't count in the man's world.

We've educated women and they're about to take over business. We should have left them alone. They say that when the white man came to Manhattan he found the Indian culture, and he changed it. At that time Indians were found on the coast; the Indian males were hunting and fishing and relaxing, playing games, and the women were doing the hard work. The white man changed it all around. He civilized them. He brought religion to these people; he brought all the new ways of the white man. Now men are dying early; the women are running around getting old.

I've wondered as I read the morning papers in the last few weeks. I wondered if we, as educators, as administrators, or as anyone who is in the public sector of education are not looking at the tea leaves that have been only rearranged. As you look at these tea leaves, you'd better read something new into them; your fortune as a public servant is different than it's ever been before in our lifetime.

Just look at the headlines. SECOND TRY TAX BASE FAILS, EDUCATION BOARD ASKS FOR REVIEW OF STUDENT CONDUCT, BOARD APPROVES CONTRACT WITH OUTSIDE FIRM TO TEACH READING. Ladies and gentlemen, you'd better take a good, hard look at those headlines. There are millions of dollars being contracted outside the system to do the very job we were set up to do. I don't know how you feel about it, but personally, I think that's an insult. For 12 years we've had these kids, and they don't know how to read.

Then you pick up an issue of the Atlantic magazine--not a pulp magazine-- and read "Murder in School Room--How the Public Schools Kill Dreams and Mutilate Minds." As I read this I see thousands of kids, hundreds of schools, and I know what he's talking about.

It's not enough to increase the efficiency of our schools and colleges. The objective must be to create a humane society. We talk about that. The social science teachers talk about it, English teachers talk about it, but then the kids come out as dope fiends, or pregnant, even vicious.

Another headline you might look at but no one wants to read because there is a lot of the gutter in it, THE STUDENT AS NIGGER. This headline is the title of an article by an English professor. I will read what the author says:

"A student at Cal State is expected to know his place. He calls a faculty member 'Sir,' or 'Doctor,' or 'Professor,' and he smiles and shuffles as he stands outside that professor's office, waiting for permission to enter. When a teacher says 'Jump,' a student jumps. I know one professor who refused to take class time for his examinations. He required students to show up for tests at 6:30 in the morning, and they did, by God."

He continues, "I said to this faculty, 'As I have looked at this school, and I've been in it many times, the only difference I can see between this school and the penitentiary is that the teachers don't carry guns.'"

Think of what this man is saying. Get a copy of the article if you can; it's worth reading. It's worth looking into the mirror and saying, "Is this a picture of me as a teacher? Is this my school?"

I don't want to appear to be emotional about it, but I think the tide is turning.

The students are telling us, the public is telling us, "For God's sake, do the job you set out to do." The evidence is all around us. In this morning's paper, for instance, no one thought that the professor would be fired from UCLA. It's going to cause all kinds of traumatic experiences up and down the line, but the public is going to say, "We don't want that kind of person in the classroom." It matters not if we agree or disagree, it is happening. Now we can fold our arms and say, "We are the teachers. We are the educators. We came from heaven, and we shall stay here." Like hell, you will. The public will take away your birthright in education if you don't move. Don't think it can't happen.

The public wants change. Not just any change, but significant change to meet the society that is evolving. Society is different. It's not enough for society to know how to build a television set. And yet, we, the very people who should be helping to develop kids to move into this society with dignity and respect and with goals and something relevant, are sending out 80%, 60%, 50% of our students who are disillusioned. Oh, sure, we will survive, but so did primitive society.

What are people trying to tell us? What are parents trying to tell us? I think they want their children to be treated like people. We must be humane with them. Give them the kind of nurturing you would give a flower in the garden, or even a bunch of carrots. You can actually build people by giving them the same treatment as you do a garden. You know how much time we take cultivating, taking out weeds, and nurturing plants. What do we do with kids?

They grow up wild, and we look at some of them and say, "You're no good." Each of you may have done this; think about it. When people go to a hospital, they aren't told, "You're sick, we don't want you here." Does this happen in your school? Do you say, "If a kid can't read, he shouldn't be here. If a kid can't do math, he shouldn't be here. If he can't do English, don't bring him to this place. If he doesn't have a good background, his parents don't have a lot of books and they don't speak English, we don't want him--send him some place else."

And the vocational people are just as bad, or worse. "If he can't do the math, don't send him to me. If he can't do English, don't bring him to me because this is just as tough." A parent sends his child to school, hoping that you, as the professional, will nurture that kid, and help him to grow and develop in the way that God gave him potential.

But we mold them all in the same image. If they can't do English composition and literature the way we want them to, we throw them out! Isn't that great? How would you like to be treated that way at the hospital or by the dentist? Did you ever go to the dentist with a toothache and have him tell you, "It doesn't ache." You wouldn't go back to that dentist.

But the kids are locked into our educational system. They're beginning to rebel. They're not just breaking windows, they're rebelling intellectually. It's not only at the college level, but it's happening in the high schools--maybe in the elementary schools. I was a rebel. I led a strike when I was in elementary school. There's one difference. They didn't call the police; the principal just gave me a licking. And, when I got home, my father gave me the second installment. But he wasn't really concerned about my personality. He was interested in having me shape up a little and live in society as we knew it then.

The parents want you to treat their kids well, and they want them to come out with some worthwhile goals in life. Do you know how many kids who are graduating from high school have no real goals except maybe to go to college,

which they know deep down they don't want to do and can't do? But they have to go because somebody told them, "You won't amount to a hill of beans unless you go to college." Then they apologize if they come to a community college or a vocational school to become auto mechanics. Their parents apologize for them, and everyone apologizes.

They want them to feel security, not security in terms of money, but security within themselves. They forget about what the student wants to do. If the kid is a good athlete, they say, "You may be able to make a million bucks, but you have to pass every test in school before you can play football." What a height of stupidity. I could say to the kid, "If you want on the football team, I won't let you take English and math and everything else." It would make just as much sense. I had a principal who did that once. He said, "Until those kids win some ball games, they're not going to take any more arithmetic or English." Doesn't that make just as much sense?

But society (parents) keeps hoping. They really hope that these young men and women going through our schools will come out as effective, efficient, participating citizens. And if you really analyze the whole business, that's the only reason they support the schools.

A community supports schools not to perpetuate the old stuff but to keep evolving--keeping the culture active and dynamic by taking out the bum stuff and putting in the new. Most societies that fall flat on their faces do so because they aren't able to evolve.

How would I know your school is different if I went into it? This is not a theoretical question, but a practical one.

I'd like to go into a school once in awhile that didn't have a lot of bells ringing. When we started the college, I said, "There are one or two rules we're going to have. One is that we're not going to have any bells ringing." So far we haven't hooked up a bell, and we aren't putting any into our new buildings. The other day I was in a high school. I was sitting, drinking a cup of coffee. The bell rang, and I jumped about three feet. I got to thinking, we're like Pavlov and his dog with these bells. We assume that kids in 1970 can't tell time and that teachers don't know when to dismiss the classes.

What is so tragic about someone showing up three minutes late to your class? In the first place, you're never ready to go in the first three minutes, anyhow. You know that. A lot of the time teachers are not there, but the kids are there. And the bells create all kinds of problems. The kids play games with you. They do it in every high school and every elementary school. They wait until the three-minute bell and run. If you didn't have the bells, the kids might come in late, but they're there without all that running. Learning doesn't take place in that little bit of time. We know that. That would be one significant change you could make without any difficulty--shut the bells off. I dare you to try it. You won't, I'll bet.

I'd like to see the school be a little flexible. Who decided you could learn English literature in 11 weeks, or 12 weeks, or 10? Who made that decision? You can't give me one bit of evidence. It just happened to break that way; it was so nice to let teachers and students off at a certain time because the strawberries needed to be harvested, or whatever. A reason logical 50 years ago is not logical now. Who decided that you could do arithmetic in a certain period of time? Why do students all have to finish high school in four years or three years or whatever you have? You cannot give me one good logical reason. I've tried to find out why you do it. So, the textbook has 200 pages, divided into three pieces. Now that the books are thicker, I don't know what we're going to do.

More flexibility is needed. Not only in the length of the term but in the hours of the school day. Why do we start school at 8:30? They told us, "Nobody will come to school at 7 a.m." But at 6:30 on any morning of the week except Saturday and Sunday you will find students on our campus. These are the same goof-offs you had in high school.

They're there at 6:30. For one reason, they can get something to eat. Do you realize how many kids in your community really don't have much home life? The school is their second home, maybe the only home they have.

I'd like to see a school that has in place of prison halls and peek-in doors a little openness which says, "This is a place for fun and learning. The teachers are here for you, to help you learn." Learning can be fun. Let's not make it like pulling teeth. In fact, the dentist is smarter than we are. Kids like to go to the dentist today. They didn't when I was a kid, but that's all been changed. Dentists have learned.

I would like to see more students learning and fewer teachers teaching. Do you follow that? Ninety percent or at least 70 percent of the instruction that's done above the third grade is done by the lecture method, spilling out materials which could be done better in other ways. So I would like to see more students learning. That doesn't mean students seated with their hands folded, with books in front of them, all in neat rows. More learning, more active learning with more kinds of things going on. Kids learn lots of different ways. Kids in the so-called ghetto area learn many things about books. They can hot wire cars, pick a safe, rob, pick your pocket without your knowing it, or lead a gang. That's learning, but it's learning they didn't get in school. It's not channeled toward what we like in society, but it's really creative learning. It's up to you to channel it. Don't just mickey mouse around and make a bulletin board and another mural. That's not what we're talking about.

Somehow, some way, the change that must take place in your school is that learning must be based on some kind of performance. The only place you really have performance in your school is in the athletic program. A boy who performs makes the team. You don't care if the boy is 4 feet high or 5 feet high, whether he can read or write; if he can run a ball, you don't say, "Wait a minute. You have to wait and pass two years of English literature and this and this, then you can get on our team." They'll get him on the team somehow.

One time in the Portland schools, our superintendent had to step in because in some school kids coming from a Spanish background who could speak, read, and write Spanish still had to take Spanish I if they wanted credit in Spanish. We fought the high school principal to give them credit in Spanish I, but he said they didn't take it in school, so they couldn't be given credit. Do you see how crazy we are? Even the low ability people in China can speak Chinese without school. We've made a mystery out of teaching and learning.

If I looked into your school, I'd like to see the school moving into the community. This has been talked about for fifty years. The kids should be learning in the community. Surely, we take the class to city council meetings, we take them down to see the mayor, but how about really getting into it once in awhile to see what it's about? The school is an island removed from society. The kids come to it each day, we draw up the bridge, beat the heck out of them, then let the bridge down for them to go home to the world of reality--which isn't related at all to what they've been learning in school.

I'd like to see a school where you don't fail students out of school. If failure is so good for kids, why isn't it good for teachers? I just finished a class with 40 instructors. Most of them were on our own staff, which is a unique situation. All quarter long I built up to the fact that we were going to have exams. Those people were so frustrated, and, finally, the week before the exam, I said, "Isn't it interesting? You give exams all the time. You threaten the kids, but you don't like to take exams yourselves."

Failure is part of learning, but in the educational process, failure is not part of learning, because it is a threat. Not only is it a threat, but it is a way to excommunicate a student.

How many of you play golf? If we applied the same methodology to golf, you'd give it up in a hurry. If you didn't shoot par the first time around, you'd be through, or at least by the second time. If a kid doesn't pass math the first time, what do you do? Be honest. What do we do? Give him a second chance? Maybe. But if we give him that second chance, we add in all the scores he had before that one to bring his score down. You'd never get your par in golf--impossible. Do you know how many holes-in-one you'd have to make to average out all those 100's and 90's?

Why don't we start a different method? Why do we put all his failures in with his successes? Right now I'll bet you'd fight the process of saying to those kids, "If you flunk biology once or twice and make it the third time, there will be no flunk on your transcript. You'll get what you got the third time. You did biology, it just took you three times longer." You should hear the logic given for keeping those two flunks on that transcript.

You've had a workshop. What is the challenge? The challenge is to go back and at least try some of the things that may have sounded crazy. Try to make some changes, not just changes any old way, but changes you think might make a difference.

I know, some of you will say, "But my principal won't let me." I used to hear that all the time. You can never find the principal, anyhow, they're so far removed. They sit in offices, and they have other problems. You could almost burn a school down, and they wouldn't know about it unless someone told them. Most principals will not stop you from doing things that make good sense. I've never found an administrator who wouldn't say, "God bless you, go ahead and try something." Most of them are happy when a teacher wants to do something.

We have an open challenge for our 200 full-time teachers and 300 part-time teachers to come up with innovative plans--anything in the ball park; no administrator can veto it, no one does anything to the plan. A screening committee looks it over, and if it's a good plan, they tell the person to go on with it. This offer includes secretaries, custodians, instructors, all of the people in the college. How many plans do you think we got? Ten. Most administrators and principals will be happy to have someone try. I think most of us are fearful of trying; we're not in the experimental mode. Some of us are just a little lazy, too; I am. Someone has to push us along.

I think I'd try to make some changes, even if they were just tiny changes. Change someting--not the textbooks. We change those all the time; that doesn't make any difference in school. Kids are smarter than that.

If I were going to improve education, I'd aboli sh textbooks. I didn't say I'd abolish books. I'd have classroom libraries; I'd have books that kids could use. But I wouldn't have kids use books the way we tell them to use books. We won't even let them take them out. Really. And although most libraries have carpets in them now, they still have turnstiles in them and bells that ring if a student takes a book out the wrong door. Stop to think of what we do. A kid won't be caught dead in a library. Why? Because it's a bad place to go.

We're building a library that has a cafeteria right next door, and they take books and food all together. There are six doors and not a bell; in fact, one end has no door; the cafeteria opens directly into the library. Sure, we're going to lose books, but we won't lose any more than if we had bells. And look what we're developing for a lot of students--a desire to come in.

The school ought to say, "Come on in, this is the best place to be. It's warm, it's full of opportunity, and you can learn." That's what I'd do with a school if I could do it.

Our American society depends upon the kind of an educational system we develop if it's going to survive as we know it with the values we have in it. Now, if the values are no good, then we change them. But if you believe in the value of human dignity and respect, freedom, mobility, etc., then the school system must gear itself to developing that kind of person. The only resource we have is these young people. And we have more to do with what they will be than their parents. I said that when my kids started school, and I thought the teachers were going to flip. You have them more, you see them more, and in many ways they respect

you more. Really, I get sick of people saying, "Kids don't respect the teachers any more." They do. The trouble is we won't let them get inside of our offices--inside of us.

Let me read you something from a high-class pulp magazine; it really has a message. Two thousand kids were asked to react to "drop-outs" and to "schools."

"What would you learn without school? I learn in school; well, I memorize things anyway, unimportant things, at that. What would I do without a day of school? If I weren't in school, I'd find the world. Go for walks, talk to friends, gaze at stars, learn the meaning of God, a meaning that can't be taught. I'd build things, and paint things, and create things. I'd read a lot and write a bit, and sometimes just sit. And think about myself for hours on end. I don't really know me. Surely it's important to know one's self. Someday, when I have time, away from school and homework and family and summer vacations, I'll meet me and have fun just knowing myself. What couldn't I do with a day completely away from school?" That's a high school student talking.

And we sit on our lofty perch as little gods. See what these kids want? They don't want to burn the buildings, they don't want to hit teachers, they want a school that relates to them. Schools are not for teachers and administrators; they're for kids. You think about that. Thank you.

1970 SUMMER INSTITUTE EVALUATION SUMMARY
"Career Education in Small Schools"

122 People Registered
Representing 40 School Districts
87 Evaluations Returned

1. To what degree was pre-conference information adequate?

   Superior: 22; Adequate: 55; Needs improvement: 8; No answer: 2

2. Please state your primary objective in registering for this workshop.

   School plans to implement cluster or interdisciplinary approach - 12
   Interested in career education and relevancy - 11
   To better understand interdisciplinary - 3
   Interaction among people - 1
   For college credit - 5
   To correlate elementary and high school programs - 4
   To learn - 5
   To understand cluster concept - 20
   To improve communication - 2
   For inspiration - 4
   To find out what other schools are doing - 3
   New ideas; to keep up with trends - 9
   To seek means of curriculum improvement - 3
   Want to involve all teachers in our school in a uniform, consistent approach to students - 1
   To discover something to be used in my school - 1
   To discover how the English department could help implement vocational programs - 1
   To meet the new principal - 1

3. Was this objective largely achieved through your participation in this conference?

   Well achieved: 28; Mostly achieved: 36; Moderately achieved: 17; Not achieved: 3; No answer: 3.

4. To what degree did you become acquainted with the interdisciplinary approach?

   Extremely well: 24; Quite well: 2; Moderately: 53; Very little: 2; No answer: 6.

5. The secretary's apologies; number 5 should have read: To what degree did you become acquainted with the cluster concept?

6. Did you and/or your fellow staff members obtain sufficient information to develop one or two job clusters in your school?

Very adequate: 26; Adequate: 3; Barely adequate: 7; Not enough: 7;
Sufficient information, but need more time to plan: 52;
Need follow-up or regional conference devoted to this subject: 29 yes, 3 no;
No answer: 3

7. What do you feel were the real strengths of the Conference? React to each item on a 1-5 scale, 5 is superior, 3 average, and 1, poor.

Career cluster concept	5: 20; 4: 25; 3: 23; 2: 9; 1: 2; Not rated by number: 8.
Presentation by schools	5: 16; 4: 18; 3: 23; 2: 11; 1: 3; Not rated by number: 16.
Interdisciplinary exercise	5: 10; 4: 13; 3: 32; 2: 14; 1: 8; Not rated by number: 10.
Long range planning	5: 6; 4: 13; 3: 32; 2: 13; 1: 9; Not rated by number: 14.
Major speakers	5: 32; 4: 25; 3: 11; 2: 5; 1: 6; Not rated by number: 8.
Evening seminar sessions	5: 10; 4: 11; 3: 26; 2: 7; 1: 4; Not rated by number: 29.

8. How do you rate the conference, in general?

Good: 50; Medium: 27; Poor: 7; No answer: 3.

Comments:

Valuable - 1
Well organized - 2
Interesting - 5
Worthwhile - 2
The most useful conference ever attended - 1
Excellent accomodations - 2
Inspirational and educational - 1
Conference will bring about changes in our school - 2
I'll be back! - 2
Good speakers - 1
I have finally attended an educational conference which makes sense - 1
Need more unscheduled time - 1
Should have more planned recreational activities - 1
Thin towards end - 2

8. Continued

Don Miller & Rich Schmidt did an excellent, dedicated, enthusiastic job - 1
Gained ideas which I'll use - 1
Generated enthusiasm - 1
Would have liked to meet by subject area - 3
This conference ranks at the very top - 1
Needed more activity and movement in small groups - 1
Seemed weak - 1
Not as good as last year's - 2
Dr. De Bernardis would be an exciting person to work with for a week - 1
Needed more practicality--more how and what, less why - 1
Wanted more time to work - 1
Too many leaders and speakers were not inspirational - 1
Too much repetition - 2
Would have liked more examples from a small school - 1
Do not agree with the concept; workshop was a waste of time - 1

9. Have you received the monthly Oregon Small Schools Program Newsletters?

Yes: 66; Sometimes: 5; No: 7; No answer: 9.

Would you prefer having Newsletters sent to you individually rather than to your building principal?

Yes: 23; Either way: 11; No: 38; No answer: 15.

BIBLIOGRAPHY

Oregon Board of Education, Occupational Cluster Guides

Oregon Board of Education, Master Plan for Determining Occupational Offerings in Oregon Secondary Schools

Work Experience

American Vocational Association, Inc., Definitions of Terms in Vocational Technical and Practical Arts Education.

Center for Vocational and Technical Education, Ohio State University, Guidelines in Cooperative Education.

Oregon Board of Education, Co-op Program, the Common Bond. (This is presently being revised, but even the older copies are valuable.)

U. S. Department of Health, Education and Welfare, Organization and Operation of a Local Program of Vocational Education.

Another book used, but exact title unknown--California State's Guidelines for Cooperative Education.

Advisory Councils

Board of Education of School District No. UH-1, Lebanon, Oregon, "Constitution of the Lebanon Advisory Council for Vocational Education."

SCHOOLS WORKING WITH CLUSTERS

School	Contact Person
Developmental Projects:	
Hermiston High School Multi: Agriculture, Metals, Mechanics, Construction, Marketing, and Secretarial	Garth Davis
Milwaukie Occupational Skills Center Electronics	Jim Hargas and Maynard Corlett
Adams High School, Portland Mechanics	Leroy Wallace
Aloha High School, Beaverton Food Service	Barbara Lewis
Cascade High School Agriculture	Gene Streight
Lebanon High School Secretarial	Jenny Piluso and Burr Fancher
Grants Pass High School Health	John Mayfield
Other schools with clusters:	
Toledo High School Office occupations	Mary Sloan
David Douglas High School Multi clusters	Stan Gomer
Milwaukie Occupational Skills Center Construction	Maynard Corlett
Lebanon High School Agriculture	Burr Fancher

OSSP
6/8/70
brm

VOCATIONAL OPPORTUNITIES IN MUSIC

Compiled by Del Aebischer
Music Consultant

ARTS

Arranging and orchestration
Adapting music for use in a different way from that for which it was written.

Choreography
Planning and working out movements of dancers to music.

Composer
Writes original music.

Copyist
Copies music. Must be neat and fast. May work under a composer or arranger as an apprentice.

Dancer
Ballet, tap, modern, or square dancer.

BUSINESS

Manager
Books and publicizes performers for tours and other public appearances.

Manufacture
Making and testing of musical instruments.

Publisher
Publishes music of all types. Includes all work connected with printing, editing, proofreading, etc.

Sales
Promotion and distribution of music and musical instruments. May be store owner or clerk or a representative for a large company.

Secretarial
Includes all office and clerical work for a person or business in the music field.

ENTERTAINMENT

Concert artist
Opera, tours, appearances with groups or alone.

Conductor
Orchestra, band, dance band, vocal.

Disc jockey
Emcees radio show of recorded music.

Performers
Members of orchestras, bands, choruses, ensembles, etc. who play or sing professionally but rarely, if ever, alone.

Recording artist
Soloist or member of group making recordings.

Star of radio, TV, movies, nightclubs

Troupe member
One performing with specialized groups such as dancers, ice skaters, aqua ballet, etc.

JOURNALISM

Author
Writes books--educational, biographical, technical, humorous, historical--in the music field.

Critic
Evaluates performers, books, compositions, etc. for newspapers, magazines or other communication media.

Music editor
Supervises or writes for a special dept. of music for a publication or broadcaster.

JOURNALISM (continued)

Music librarian
Specialist in the field of music. May include books, written music, records, or just the organization and filing of music belonging to a person or organization.

Publicity director
Writes releases for publication, takes care of photographs and all arrangements such as travel, accomodations, receptions etc. for a professional artist or group.

MEDICAL

Music therapist
Works with patients by helping them to express emotions and problems through use of music, through listening or participation.

RELIGIOUS

Director of music
May be in a local church, in a denomination, or with an individual or group.

Pianist, organists, or other instrumentalist
Again may play in church, or may be attached to an individual or group.

Soloist

Song evangelist
May also be a speaker or may be a soloist or director.

SCIENTIFIC - TECHNICAL

Acoustical engineer
Plans and constructs rooms or buildings on basis of sound production.

Hi-fi and stereo
Building or operating equipment for high fidelity sound reproduction.

Recording
Manufacture and operation of recording equipment.

Radio or TV technician

Research
Experiment and research into ways of producing music, materials for making instruments, music of other cultures, effect of music on people, animals.

SKILLED CRAFTS

Instrument maker
One who makes instruments by hand.

Instrument repair and restoration
Repair of modern instruments or repair and restoration of antique or museum pieces.

TEACHING

Clinician
One who demonstrates and performs for education and entertainment of others. Often a professional artist, too.

Conservatory or University Professor
Teaches voice, instrumental music, theory, teaching methods, appreciation; often also a conductor.

Private tutor
Teaches students privately in vocal or instrumental music.

School teacher
Teaches vocal or instrumental music in public or private and/or grade school.

Supervision and administration
One who oversees music program or part of it in large school system or university. May also be at a higher governmental level.

Testing
Administers and evaluates tests to determine musical aptitude and interest. Also the development of such tests.

VT 014 716
CLARK, RAYMOND M.
EXPERIENCES IN VOCATIONAL AGRICULTURAL EDUCATION. PART I, TEACHING HIGH SCHOOL STUDENTS.

MICHIGAN STATE UNIV., EAST LANSING. DEPT. OF SECONDARY EDUCATION AND CURRICULUM.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - AUG71 48P.

DESCRIPTORS - *VOCATIONAL AGRICULTURE; AGRICULTURAL EDUCATION; PROGRAM DEVELOPMENT; *TEACHING EXPERIENCE; STUDENT ORGANIZATIONS; *HIGH SCHOOL CURRICULUM; DISCIPLINE PROBLEMS; PARENT CHILD RELATIONSHIP

ABSTRACT - WRITTEN AS ONE OF A SERIES OF PAMPHLETS REFLECTING A RETIRED TEACHER'S 45 YEARS OF EXPERIENCE IN SEVERAL ASPECTS OF THE VOCATIONAL AGRICULTURE FIELD, THIS SERIES OF ANECDOTES DEAL WITH EXPERIENCES AT THE HIGH SCHOOL LEVEL AND ARE INTENDED FOR STUDENTS, STUDENT TEACHERS, AND TEACHERS. THE ANECDOTES, WHICH REFLECT THE OBJECTIVES OF "ESTABLISHMENT IN FARMING" AND "DEVELOPING AGRICULTURAL LEADERSHIP" ACCEPTED AT THE TIME THEY WERE WRITTEN, ARE CONCERNED WITH: (1) FIELD TRIP EXPERIENCES, (2) WORKING WITH FUTURE FARMERS OF AMERICA MEMBERS, (3) REJUVENATING A VOCATIONAL AGRICULTURAL DEPARTMENT, (4) HELPING ESTABLISH A FATHER-SON RELATIONSHIP, (5) DEVELOPING STUDENTS' INTERPERSONAL SKILLS, (6) INTERVIEWING PARENTS, (7) HANDLING DISCIPLINE PROBLEMS, AND (8) DEVELOPING COURSES. RELATED PAMPHLETS ARE AVAILABLE AS VT 014 717 AND VT 014 718 IN THIS ISSUE. (SB)

VT 014 716

PERSONAL OBSERVATIONS WITH IMPLICATIONS FOR TEACHER EDUCATION IN AGRICULTURE

by Raymond Clark

EXPERIENCES IN VOCATIONAL AGRICULTURE

PART I

Teaching High School Students

Department of
SECONDARY EDUCATION AND CURRICULUM
College of Education
Michigan State University
East Lansing, Michigan 48823

August, 1971

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EXPERIENCES IN VOCATIONAL AGRICULTURAL EDUCATION

Part I
Teaching High School Students

Dr. Raymond M. Clark, Professor Emeritus

Department of
Secondary Education and Curriculum
College of Education
Michigan State University
East Lansing, Michigan 48823

August 1971

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EDUCATION & WELFARE
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Foreword

This is one of a series of pamphlets dealing with several aspects of the program of vocational agriculture. Each pamphlet consists of a series of events and happenings as they actually occured. Each is a true story, and it describes an actual experience which I have had during the past forty-five years in the vocational agriculture field. Many of the experiences described here are those which I had while I was a teacher of vocational agriculture. Others describe experiences as a teacher-educator or as a state supervisor of vocational education in agriculture.

These stories of events and happenings may be used by many different persons. (1) By students to discover the nature of some of the work of the teacher of vocational agriculture. Some who read these stories may become more determined to enter the profession. Others may decide to find other fields of work. (2) By student teachers who may read these stories as they find themselves confronted with similar experiences or problems. We may be able to share experiences through the medium of these pages. Some ideas may be found to help smooth out rough spots for student teachers. I hope they will be able to discover other solutions to problems and other methods which will be of value to them. (3) By my colleagues in vocational agriculture. They may find a few new suggestions; they are likely to discover that we have had similar problems; and, I feel certain that they will be in a position to say, "That reminds me of an experience I had _ _ _ _ _."

In presenting this series of anecdotes, it is recognized that they reflect the objectives of "establishment in farming," and "developing agricultural leadership" which were accepted at the time they were written. Teachers in service and those who are preparing for teaching may ask themselves, "How would I meet similar situations today?" What new or different solutions would I need to use to meet similar situations with students preparing for careers in farming and/or agricultural business?

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While any division of the series of anecdotes results in some overlapping, for the convenience of readers, the anecdotes have been assembled into pamphlets under the following titles:

1. Teaching High School Students
2. Future Farmers Programs
3. Post-High School Farmer Training Programs
   A. Young-Farmer Programs
   B. Adult-Farmer Programs
4. Problems of Relationship
5. Program Planning
6. Student Teachers

Students preparing to teach vocational agriculture will find in these anecdotes examples of many typical problems faced by teachers of agriculture. It is hoped that these problems will help students visualize real situations as they work through the professional education courses required for certification, and as they consider the subject matter of technical agriculture in relation to planning and conducting instructional programs in local schools.

Teachers in-service, who may read these stories, will say, "Let me tell you about a similar experience I had _ _ _ _ _," and "I would have done it differently. I would _ _ _ _ _." In groups of experienced teachers this could lead to spirited discussion and demonstration to emphasize an aspect of method, or application of principle.

Among either pre-service or in-service groups of teachers it is hoped that these experiences and happenings will stimulate teachers to study methods and principles in a realistic and constructive manner.

Raymond M. Clark, Professor (Retired)
Department of Secondary Education and Curriculum
July 1971

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TEACHING HIGH SCHOOL STUDENTS

The series of anecdotes in this section deals with experiences in the high school vocational agriculture program. At the time these were written the primary objective of the vocational agriculture program was, "establishment in farming." We did not attempt to prepare students specifically for non-farm agricultural business.

As you study these stories I suggest that you ask yourself a number of questions - and prepare answers to them! Such questions as the following may be included in your list:

1. What educational, sociological or psychological problems are involved in this story?

2. Did the author use acceptable methods in solving the problem? What alternative methods might be used?

3. How would similar problems be handled when one or more of the students in the class have agricultural business as an occupational objective?

TEACHING HIGH SCHOOL STUDENTS

I VISIT A FARMING PROGRAM

Many times one has an experience which has a "little bit of bad mixed with a little bit of good." I would like to tell you about one such experience I had.

One hot summer day, I called at one of the schools in the fruit belt of Michigan and asked for the teacher of vocational agriculture. The teacher had been notified that I was coming, so he was available. I indicated that I would like to go with him to visit some of his boys and to see their farming programs. I wanted him to chose the places we would visit and let me ride along to observe.

We started out and soon came to a farmstead, with a nicely landscaped, modern home, fruit storages, and machine sheds surrounded by beautiful orchards. We stopped at the machine shed where we found our vocational agriculture boy who would be a senior in September.

The teacher introduced us and went to find the boy's father, while I stayed back and struck up a conversation with the boy.

I asked, "What grade are you in?"

"I'll be a senior this year," was the reply.

"That's good; what are you going to do when you graduate?" was my next question.

"I dunno, come back here and help dad, I guess."

I then said, "Well, what do you grow here, anything except fruit?"

"No, we just grow peaches and apples. The only other thing we have on the farm is a quarter acre of pop corn that I have for my project."

Then I asked, "Have you any brothers or sisters?"

"One little brother."

I thought it was time to change the conversation to another direction, so I asked, "What do you use to spray your orchards?"

He climbed up on a sprayer which was attached to a big caterpillar tractor and said, "Why, this sprayer and this big spray gun."

I had expected a reply in terms of fungicides and insecticides, so I said, "But what material do you use to control scab on apples?"

He said, "I dunno, but we use this spray gun. You sure can cover 'em fast with it."

I said, "What do you use to control worms in apples?"

"I dunno, dad mixes all the sprays, I just run the gun."

I hated to give up, so I said, "What method of pruning do you use on apples?"

Again I got the same reply, "I dunno, dad takes care of that."

Just at that point the teacher came back with "dad". We were introduced and then dad started to "show us around." First, we looked at three or four storages where dad said, "The college came in and wanted to run some experiments on storage of peaches. We are trying to find out how long we can hold them and what's the best method of holding them."

We then started up through the orchard. We came to a block of apples which were probably about eight years old. Dad pulled back some of the branches and said, "We're trying a new method of pruning on this block. Mr. _____(an extension specialist from State College) went out to the west coast and came back with this idea, so we're trying it to see if it will work here."

We went on to another block of apples. They were mammoth big trees and perfectly sound. Dad said, "Look at these trees, aren't they beautiful? My grand-dad planted them and they're still going strong. I noticed a little scab the other day, but we burned that out with a good spray. I think we got it all." He brought out a pocket magnifying glass and looked at the leaves to convince himself that he had really "burned it out."

On a piece of higher ground we came to a large block of peaches and dad said, "Look at these peaches, aren't they just about perfect? You can't find a healthier block of peaches for their age in Michigan." I believed him. They were certainly a credit to him and to his ability.

But I had been thinking, "Here is one of the most up-to-date, progressive, well informed farmers I have ever met. But his high school

son doesn't know anything about the business except how to turn the spray gun on and off, and his farming program consists of a quarter of an acre of pop corn, the only other crop on the farm besides the fruit. Besides, the son hasn't said a word since dad appeared."

I decided to take a chance and see what would happen, so I said to dad, "These peaches are wonderful, and I never saw nicer apple trees, but who is going to take this over when you are through with it?"

Dad said, "Why this boy here."

"What does he know about it?" was my next question. Dad had quite a covering of the proverbial red hair, and his face turned an equally brilliant hue. I thought I might have to run, and then he said, "My _____, he doesn't know anything does he?"

I said, "I think it's about time you were teaching him something."

Dad agreed, and we began to outline what experience the son could be given in this highly specialized industry which requires so much "know how." We discussed plans for a real farming program which would prepare the boy for a real partnership rather than the, "Guess I'll just come back and help dad" idea.

I don't need to review the discussion I had with the teacher after we left the farm. I will say that he "saw the light" and worked out a program which resulted in a very satisfactory farming situation for this boy.

I have met this father many times since and he never fails to remind me of our first meeting and to express appreciation for my boldness in calling attention to a problem and an opportunity which had not been mentioned by the teacher of vocational agriculture.

* * * *

1. How would you have approached this father to develop a farming program for his son?

2. Can you justify popcorn as the major productive enterprise for this boy on this farm?

3. How would you attempt to develop a suitable farming program for this boy on this farm?

4. Outline a suggested farming program for this boy from his first year in vocational agriculture in high school through five years of a young farmer program.

I HELP A FUTURE FARMER MEMBER BALANCE A RATION

For many years I taught vocational agriculture in one area of southeastern Michigan. This area was considered by the residents as "just about tops" so far as its agriculture was concerned. The soil was productive, the farmers generally used good practices, and they made relatively high incomes.

Nevertheless, I knew there was still room for improvement on many farms. Besides, I felt a responsibility to get my students ready to take over where their dads left off. I wanted them to be better farmers than their dads and to continue to keep abreast of new developments in agriculture. Obviously it would be necessary for me to base my teaching on their home farm situations, discover problems, find solutions and put them into practice.

We had been studying the feeding of producing dairy cows for several days. We had worked out practical rations, using the feeds which the boys reported were available on their home farms. I was sitting at my desk one morning before classes assembled when one of my boys came in and said, "Will you help me recheck a ration for our herd of cows? We have these feeds on the farm." He handed me a list, which he had prepared, of roughages and typical farm grown feeds.

This boy was a shy individual, who had not said much in class. I had begun to feel that I wasn't getting much out of him, so I felt happy that he had come in. At the same time I was a little worried because his dad had an excellent herd of high producing animals. I had visited the farm many times and had never discovered anything which I felt would improve the situation with regard to feeding the dairy herd.

I said, "Sure, come down the third hour and we'll go to work on it and see what we can do."

We worked out a ration based on the test records which the boy had compiled from his class work in agriculture. We checked every detail

against college experiment station recommendations and against Morrison's Feeds and Feeding. "Now take this ration home and feed it to only one or two cows for a month and see what happens to their production. We don't want to throw the whole herd off."

We had already determined that the grain ration we had worked out would be considerably cheaper than the one being fed and I could hardly believe that such a saving could be accomplished without a decrease in production.

The boy agreed, so I forgot the matter for about two weeks and then I said to him one day, "How is that ration working out?"

"Oh, Swell!"

"Well that's good, are those cows holding up their production?"

"Sure, it's even increased."

"Good, are you sure the two you picked weren't on the way up anyway?"

"Oh, we're feeding it to the whole herd. Dad thought there wasn't any use of waiting and the production went up on the whole herd."

The herd continued to hold the higher production level.

What was accomplished? It is obvious that the farmer saved money. Actually the annual savings from this changed practice amounted to approximately one-half of my annual salary.

More important, I feel was the effect on the boy. He gained confidence in himself. He learned that he could solve problems and be successful in the introduction of new scientific practices. He gained greater respect from his classmates because he had been successful in part of his farming program. Most important of all, a relationship between father and son became firmly cemented. The son had been able to help dad improve the production of his dairy herd and dad recognized the son's ability. They were one step nearer a sound partnership which would carry the farming program into a new generation.

* * * *

1. Do you believe that a teacher is justified in helping an individual boy work out solutions to home farm problems after the material has been thoroughly covered in class?

2. Do you believe that I should have made specific recommendations to this son for the feeding of this dairy herd?

3. Do you believe I could have made equally good recommendations as to feeding this dairy herd had I not been well acquainted with the family and with the farm conditions? Why?

4. How might a similar situation today be used by a teacher to help students who are interested in careers in the feed industry?

A BEGINNING TEACHER TAKES OVER A RUN DOWN
DEPARTMENT OF VOCATIONAL AGRICULTURE

A young teacher with whom I had worked as a student teacher in vocational agriculture accepted a position in a consolidated school. His predecessor had let the program and the facilities become disorganized. The boys had lost interest. They had no pride in the department or in their Future Farmer Chapter. The teacher told me the boys had a habit of coming into the agriculture room, jumping on the tables and running or jumping across the room from one table top to another.

The school had recently built a new vocational building which included a large shop and a room for vocational agriculture. The furniture was old and with the treatment the boys had given it, was badly scarred.

I called on the teacher at his school about the middle of his first year. I had previously learned of the situation which had existed in the school, so I went on this visit a little dubious as to what I would find.

As I went into the agriculture room a class was just coming out at the close of a period. They were orderly and came out as gentlemen. I went in and found a room with freshly painted walls. The cupboards and bookshelves were painted in attractive colors and the materials were all neatly arranged and in order. There were plants in bloom and new drapes at the windows.

After the usual greetings, I asked, "What's happened here? I expected to find some trouble and everything seems to be going along very smoothly."

The teacher grinned and said, "Yes, everything's OK now, but boy did I have a time for the first few days!"

I inquired as to what kind of a time he had had. He described the table walking scene, and the disorder of the room in general.

I then asked, "What did you do about it?"

"Well," he replied, "I decided that I had to do something to develop pride in the department. The first thing I did was to get permission to paint the walls. They had never been painted and looked dark and unattractive. There was nothing about the whole place that was attractive."

"Did you do all the painting yourself?" was my next question.

"No, I announced in my classes one day that I was going to start to paint and anybody that wanted to come in after school or in the evening could come and help. I worked two nights alone and the third night one boy showed up. Before the end of the week we had so many that we had to make a waiting list. They all wanted to help."

I had noted that new tables and chairs were in the room, so I asked about them, and the teacher said, "Yes the school board had ordered the new tables and chairs and after we finished the painting we talked over the question of putting the furniture in. The boys decided that they wanted it. I think they would just about kill anyone who would mark one of those tables."

I then turned to the drapes and asked, "What about these drapes? Aren't they pretty fancy for an ag room?"

"Yes", he replied, "We needed something to control the light. You know this is a new building and there were no shades in here. The Board of Education felt they could not spend any more money than necessary just now, so we priced shades and these drapes. The drapes were about twice as much as the shades, so the boys proposed that the Future Farmer Chapter pay the difference. The Board would pay the amount the shades would cost and the Chapter would pay enough more to get the drapes. The Board agreed so we got the drapes."

There was no question in my mind that this young teacher had developed pride in the room and facilities on the part of the students.

There was no longer any problem of boys walking on the tables or otherwise causing trouble in the classroom. But I was still wondering about the attitude of the students toward their Future Farmer Chapter and toward the study of vocational agriculture.

I asked the teacher, "What is your F.F.A. Chapter doing?"

"Well," he replied, "The program was pretty well down, but this summer I got some of the officers to attend the leadership training camp with me. They hadn't been participating before so it was a new experience for them. The camp was organized to include representatives from all the chapters in this part of the state. There were representatives from about 35 chapters present."

"Did it get any results?" I asked.

"Yes, the boys came home with some ideas to try out. They are working now on their parliamentary procedure. They also have plans for improving their supervised farming programs."

I looked over the bulletin board in the room. It had snap shots of boys' individual projects, as well as snap shots of the camp activities. Also included on the bulletin board was a very creditable program of work which the boys had developed to fit their chapter.

I wanted to needle the teacher a little, so I said, "Where did you copy this program of work?"

Very quickly I got my answer, "We didn't copy it. We did look over some other programs, but we decided they wouldn't fit our needs this year, so we wrote our own."

Much more might be written about this beginning teacher. However, I feel the point has been made that he was able to recognize some of the causes back of his situation. More than that, he was able to see that he must develop a feeling of pride in the department of vocational agriculture. There must be an acceptance of standards on the part of the students and that the standards should be determined by the students

themselves under his leadership. The results provide ample evidence that he was successful.

* * * *

1. Was this teacher justified in spending time after school and evenings to paint the agriculture room?

2. What other means could you devise to develop pride in the department on the part of the students?

3. Do you believe that this teacher might have accomplished more with his students if he had posted a set of rules on the bulletin board?

4. Can you suggest other activities which would help this Future Farmer Chapter to develop even more rapidly?

5. What principles of developing and maintaining interest did this teacher use?

A TEACHER WHO IS A MISFIT

A number of years ago a young man came to a neighboring school in my county to begin teaching vocational agriculture. He was a likeable young man, just out of college and full of zeal and energy to make good in the profession. He had an excellent farm background. He probably knew more real practical agriculture subject matter and skills than any of the other eight agriculture teachers in the county. We all wanted to see our new agriculture teacher make good. I watched his work with much interest.

One day just at the close of the school day, he walked into my room. He looked worried as I greeted him and asked him to sit down. We soon got to the point of his visit. He said, "My superintendent is after me because I am spending too much time on the farms." That seemed odd to me. Farm visits were then, just as they are now, one of the most important activities of the teacher of vocational agriculture.

I said, "What do you do on your visits?"

"Oh," he replied, "they call up in the evening and say they are going to spray potatoes tomorrow. They ask me if I will come out and help, so I agree and go out and work."

I asked, "Do you mean that you teach the boy how to mix the spray and show him how to apply it?"

"No, I just go out and help them get the job done."

"But don't you teach anything on the visit?"

"No, I guess not. Sometimes we just hoe the truck crops, and sometimes I ride the tractor for one of the farmers. They are short of help and I like to help them out."

"But," I asked, "How do you justify drawing a salary from a public school to do a job of teaching and then spend your time working for the neighbors? Is that a proper use of taxpayers money?"

He seemed to be taken aback. I think he expected me to tell him to defy his superintendent and go ahead with his present program. After

considerable more discussion along the same line he thanked me and said, "I'll try to do better. From now on I'm going to have a reason for every visit, and I'm going to see that my boys learn how to do things for themselves. I'm going to be a teacher, not a hired man."

A few weeks later, he was back again. He said, "You know we've got a lot of farmers with just a few apple trees. They don't take care of them and I'm going to buy a duster and dust their tress for them. What do you think of that?"

Apple orchards were not a significant factor in the farm income of his area. They were not adapted to the area and probably might better have been removed entirely.

I asked, "Why do you want to take on this job?"

"Well," he replied, "They have the trees and I think they ought to take care of them."

"Do you think you can improve the quality of the crop?"

"Sure."

"Will you be teaching your boys how to take care of a home orchard, or will you do all the work yourself?"

He remembered our previous conversation, and he said, "Oh, I'll take some of the boys along each time and they'll learn how to take care of their orchards too."

"Who is going to own the duster?"

"Well, I'll have to buy it. The school doesn't want to buy it, and the F.F.A. doesn't have the money."

I said, "Jim, you aren't going to do this to make money on the side are you?"

"No! I just figured this would be something to help out these farmers."

I cautioned him again about keeping his activities in line with the philosophy of vocational programs. I emphasized that vocational agriculture must provide organized, systematic instruction. I pointed out that his activities must be of such a nature as to warrant public

support in line with this philosophy.

He went home and bought his duster and operated it through the spring and summer. In the fall I was at the county fair, visiting with one of my farmer friends who lived in the area served by the young teachers' school. My farmer friend was on the Board of Education of the school. He said, "I don't know what we're going to do. Jim got that duster and he gets out early in the morning and runs up and down the rows of trees with it. He works hard, but that's not what we're paying him for. I wish he would work as hard on the job he's supposed to do."

I asked hopefully, "Does he bring some of his boys along and teach them how to do the job?"

"No, if he did it wouldn't be so bad, but never once has he had a boy along. He just doesn't seem to know how to handle himself on a tax supported job."

I said, "Well he certainly knows his agriculture."

"He surely does! He's the best we ever had in that respect, but he doesn't know how to assume the role of a teacher instead of a high class hired man."

I felt "in the middle". After all I was just a neighboring teacher of vocational agriculture and had no desire to interfere except to help a fellow teacher make good. I decided to have another talk with Jim. I met him later in the week, at the fair; we found a quiet corner and had another talk. We talked about the necessity of gearing our activities to a program of teaching young folks and adults how to farm, not working for farmers as hired men. He agreed that I was right and that he would try to improve. He still wanted to make good.

I wish I could say, "He became a very successful teacher of vocational agriculture," but I can't. He continued throughout that school year with the same poor judgement. In the spring the Board of Education decided to hire another man to teach vocational agriculture. Our teacher took over his dad's farm and has become a very successful farmer. He is a strong supporter of the program of the local teacher

of vocational agriculture in his area.

* * * *

1. Can you describe situations where a young teacher might be justified in working with a farmer, or in an agri-business situation?

2. Do you agree that the teacher "should be teaching" when he works on the farm or in agri-business?

3. Might a teacher be justified in working a day or two in agri-business, or on a farm to get experience he had not previously had? Should he accept wages for this kind of work in addition to his salary from the Board of Education?

A STUDENT OF VOCATIONAL AGRICULTURE
GROWS CELERY

"That boy is so dumb, I'm going to kick him out of agriculture," is a statement I hear from teachers of vocational agriculture many times during each year. Each time I hear it, I think about Bill.

Bill was one of my "dumb" students. He was one of those boys who just about drives a teacher to distraction trying to decide what to do with him. His family background was good. His father was an intelligent, law abiding citizen who did a good job of truck farming. The family was interested in school. Bill was the youngest of five children and four had already graduated from high school.

I was in the habit of occasionally making inquiries of other teachers about some of my students. Bill was one of these. "But," the English teacher would say when I would ask about him, "Bill can't write! I assign a theme and he just can't write anything."

"And even if he did write something, you probably couldn't read it," I would reply.

"That's right, and spell! Heavens, he couldn't even spell c-a-t. I can't see how I can pass that boy."

Then I would try to think up something, so we could try again. I'd ask, "How about letting him write his themes on some agricultural topic, maybe something about his farming program. He likes agriculture and maybe we could get a little spark of interest there?"

"Well, I don't think it will work, but I'll try, just once more!" she would say.

I would reply, "I know we can't make Bill feel that he is a special character around here, but I'd hate to see him out of school with nothing to do. We might be responsible for turning him into a bum."

Sometimes I felt that, if she told the truth, the English teacher felt that he didn't have far to go.

Then I would drop in on the social science teacher and we would

have much the same sort of conversation. I usually began with, "Well, how is Bill doing this six weeks?"

"Terrible, I'll have to fail him. He can't read, - poor elementary school training! I just can't have that boy around any longer. He's got to fail!"

"Well, that's too bad. Bill knows quite a lot about marketing vegetables. Did you know that he and his dad furnish practically all of the fresh out-of-season vegetables sold here in town?"

"No, I didn't know that."

"Why don't you try to get him going on that subject some day? Ask him about grades and prices of vegetables and all that sort of thing. That's part of social science isn't it?"

"Yes, I guess so. It's a little out of the ordinary. Our text book doesn't say anything about such things but, _ _ _ I'll try."

Then I'd get hold of Bill and say, "Bill, now look here, you aren't doing much in English are you?"

"No, I don't care much for that stuff."

"But Bill, you've got to get through high school."

"Yeah I guess so. Dad wants me to, and I guess it's a good thing, but I don't see much sense to some of that stuff."

"Well," I'd say, "I have been talking with some of your teachers and they said they are going to assign some special reports. Now I want you to work on them. They are part of agriculture and you've got to do a good job on them"

Bill would agree and I would hear somewhat grudging reports from his teachers, that he was doing a little better. So I would be encouraged to make my calls again just before the next marking period.

Of course Bill was not a brilliant student in vocational agriculture either. He worked hard, and he learned much about the growing and storage and marketing of fresh vegetables. He learned how to control water tables on the muck area which constituted the family farm.

When Bill was in his second year in agriculture, he announced that he was going to have celery for his major productive enterprise during the coming summer. He spent much of his time in class working on details

of his plans. The remainder of the class were livestock farmers, so Bill worked a good deal by himself, except that he had an opportunity to report his plans to the class and he listened and participated in discussion when other class members reported their plans.

* * * *

"FUTURE FARMER BOY MAKES * * * * DOLLARS ON CELERY," was the headline in the local daily paper on a day just before school opened in the fall. The principal opened the teachers meeting on the first day of school by displaying the clipping from the paper. For two years he had been a quiet, but very interested and cooperative person, helping me in my effort to keep Bill in school. I had not mentioned his celery project, so I was as surprised as any other faculty member when the principal brought out the clipping.

He said, "Here's a high school boy - a senior beginning today - whom we have called dumb. Yet he made as much money this summer as any of us will make during this school year. And that's not all, he has learned that he can get along financially. He can still hold up his head and meet folks with confidence. He isn't branded with failure as he would have been if we had forced him out of school last year. We'll still have our troubles this year, but let's remember that Bill has something - that he's not just plain failure."

* * * *

1. Do you believe teachers are justified in adapting the curriculum to help students, such as Bill to succeed?

2. What is the role of the teacher and of the guidance counselor in working with students like Bill?

3. Do you believe I was justified in allowing Bill to pursue work in vegetable production while he was enrolled in an "animal husbandry" class? What dangers do you see in my procedures?

A FATHER WISHES THIS TEACHER WOULD HELP DEVELOP A FATHER-SON PARTNERSHIP

Father-son partnerships represent one route over which young men are able to establish themselves in farming. The route has become increasingly popular and teachers of vocational agriculture have learned to help parents and sons to develop satisfactory partnerships as time has provided more and more experience.

"Don't dig too deep into a farmer's business," was the advice I heard many times as a young teacher. "Help them improve their livestock production or fertilize their crops, but don't interfere with their financial affairs," was also part of the advice which these well-wishers often volunteered. Needless to say, we learned to heed much of this kind of advice and, I fear, missed opportunities to help young men get started in farming as a result.

I doubt that the advice was particularly sound. One instance will serve to raise the question of soundness. It may also present a challenge to some teachers of vocational agriculture to check their own activities regarding the development of partnership agreements.

During the first year that I served as a state supervisor of agricultural education, I visited a number of teachers of vocational agricultural during the summer months so that we could spend our time visiting the farming programs of the students. I was interested in seeing the programs and in observing the work of teachers in their contacts with parents and students on the farm.

One of these visits was to a teacher located in the fruit section of south-western Michigan. The teacher and I started out one morning and made our first stop at a nicely kept farm near the edge of the village. A quick glance around indicated that there were no enterprises on the farm except fruit, also, that there was a diversity of fruits including apples, peaches, and some other tree fruits together with an acreage of small fruits such as raspberries.

We soon located the father and his son. After the usual formalities were over, the four of us started out to look over the boy's "project". The teacher and his student started out ahead and left the father and myself to bring up the rear. I had seen many projects before, but this morning I wanted to know what this father, in a highly specialized farming business, was thinking about his son and the program of vocational agriculture.

As we walked along I asked, "Do you have other children?"

"No, Jim is the only child."

"What grade is he in in school?"

"He's just finished the tenth grade. He has two more years to go in high school."

"Will he go on to college?"

"No-o, I don't think so. He can if he wants to, but I don't think he'll want to go. He might take a short course some time."

"Is he interested in his agriculture work in high school?"

"Oh, yes! That agriculture course is good for our farm boys."

"You mean then that you think Jim will stay on the farm?"

"Yes, I think he'd like to. _ _ _ You know, I wish this agriculture teacher would come out and help Jim and me fix up a partnership agreement. I've thought a lot about it, but it seems as if we need a third party just to help us get started, _ _ to sort of break the ice."

There it was, within twenty minutes of the time we first met, and without much effort on my part, this father had opened up the opportunity to get father and son together and to help them work out an agreement which would be mutually helpful.

We went on and looked over the berries. We talked about disease control, cultivation, pruning and many other practices, all of which are important, but I had a picture in my mind of a teacher and a boy hurrying ahead to look at the berry plants, when there was, following, a father who had a vision of his son, a partner in the total business.

I wish I could describe a successful and happy conclusion. On the way back to the village, I told the teacher of my visit with the father.

I described our conversation and then said, "Now I think you ought to get out your materials on partnerships and get back there within a day or two. See this father and help them get started on this partnership. They want your help and here's a chance to help this boy improve his programs. It's one of the best opportunities you could ask for."

"Yes, I guess you're right, I'll have to do that," he drawled in lazy agreement, but he never did. The next spring they fired the teacher and closed the department.

* * * *

1. What are some advantages and some disadvantages of making farm visits when the parents as well as the high school student (their son) can be involved in discussions?

2. Describe how a parent-son (or father-son) agreement may be a logical, and a psychological, next step for the boy who starts a farming program with a "project."

3. How might a teacher use the actual situation of one student as a basis for a unit of instruction to the entire class?

I HELP A BOY OVERCOME HIS BASHFULNESS

I suppose all teachers have been confronted with the problem of what to do with bashful students. There is nothing new or unusual about such problems and we have learned to cope with them. I have seen a few teachers who simply ignored such students and "passed them on." So long as they did not cause a disturbance in the class they were allowed to remain and get a grade, but no special effort was made to help them overcome their problems.

I want to review an experience which I had with one such bashful boy which seemed to get desirable results. This boy enrolled in my class in vocational agriculture one fall, after I had contacted him during the summer and visited with him about attending high school and described the programs of vocational agriculture, of machine shop, of commercial art, and other courses which could be elected by students in our school.

We worked along in class for a few weeks and the boys were beginning to participate freely in discussions, and to raise questions - all except Jim. He hadn't made a contribution. Occassionally I had asked him a direct question and he would shrug his shoulders and say, "I dunno." That is all I had been able to get out of him.

I watched his written work more carefully for the next week or two. It was always neat, well done, and accurate. It gave evidence that Jim was interested in agriculture and that he could be a good student.

Of course I had verified these conclusions from my farm visits and my contacts with his parents. I spent many hours of thought on the problem before doing much about it. I did not want to embarrass the boy before the other boys. I wanted to develop his confidence because I felt this would be the only way to help him.

Finally I launched a three-way program. First, I had a private talk with Jim about his farming program. He already had some rather poor quality ewes which he indicated would represent the beginning of his farming program. Using this plan as a beginning, we planned to buy

a good pure bred ewe and a pure bred ram to use as a nucleus to improve his flock. This decision gave me an opportunity to take Jim with me to look over a number of flocks so we could make a selection of foundation stock for him. I always took one or two other boys along and we managed to get Jim to take part in our conversations.

As a second point of attack, I talked with some of the leaders in my Future Farmer Chapter, as I always had done in the past, about boys we had in our beginning class who might make the State Farmer degree later on. My Future Farmer officers and other leaders had been in the habit of trying to discover potential State Farmers early so that they could help provide opportunities for experience for all who had a chance of qualifying for the degree. The boys agreed that Jim was a good student in terms of ability to read and understand the subject matter, but that "he would have to learn to talk." They began to go out of their way to bring him into their group and encourage him to participate in their discussions outside of class as well as in the classroom.

My third point of attack was more direct. After a few weeks of the more indirect approaches, I sat down with Jim after class one day and said, "Jim, you don't talk much in class do you?"

"Nope."

"I'll bet you say, 'I dunno', just because it's easier than coming through with an answer. Is that right?"

"Yes, I guess so."

"You know the answers, don't you?"

"Sure."

"Well, a fellow has to learn to talk some time, I'll make a bargain with you. The next time you come to class, I'm going to ask you a simple question and I want you to promise to answer it. Will you do it?"

"Yes," was all I could get out of him and that's all I wanted.

The next day I asked the question and Jim answered. After class I congratulated him and asked if he would try again tomorrow and he agreed to try.

From that time on things happened rapidly with Jim. The sheep

project developed nicely, but Jim developed more than the sheep. He entered the Future Farmer speaking contest. True he didn't win any state or national honors, but he became a very effective public speaker.

I left the school in the middle of the year in which Jim was a senior and the following summer, I had the pleasure of sitting in the annual state conference of teachers of vocational agriculture and listening to an address given by Jim before 200 teachers of vocational agriculture on his concept of the program of the Future Farmers. It was one of the best addresses I have ever heard on the subject by any one. Occasionally a teacher of vocational agriculture who was present at this meeting, more than twenty years ago, will remind me of that talk by that outstanding Future Farmer boy so many years ago.

Jim came a long way. I have been glad that my boys and I didn't pass him up as being "Too bashful for any use."

* * * *

1. Do you believe that the teacher of vocational agriculture has a responsibility to help correct handicaps such as Jim had?

2. What activities could a Future Farmer chapter undertake to help members overcome such personal problems as Jim had?

3. What other agencies in the school or community could be called upon for assistance with the problem of bashfulness?

4. Was I justified in enlisting the aid of Future Farmer members to help Jim solve his problem?

5. Were we justified in attempting to help Jim with his problem of bashfulness without first determining its underlying cause?

A SECOND COURSE IN ANIMAL HUSBANDRY

Once upon a time we taught our high school classes in vocational agriculture on a basis of subject matter courses, rather than on a more or less individualized basis as we do today. In the school where I taught, we offered vocational agriculture for high school students in only three grades, tenth, eleventh and twelfth. We taught Farm Crops and Soils, Animal Husbandry, and Farm Management in the three respective grades.

In Animal Husbandry, we placed major emphasis on dairy cattle since dairying represented the most important enterprise in the school area. Feeding beef cattle, swine, and poultry enterprises were also important. Our Animal Husbandry year was always a very busy one with the boys trying to cram as much as possible into that year. Often times they complained that we did't cover enough to help them to adequately develop their livestock programs. We didn't lack for interest. We lacked time.

I would discuss the problem with my students and they would agree that we were doing all we could under the circumstances. With such agreement I usually went ahead, dismissing from my mind any further study to see if we really were "doing all we could."

My students were not as easily satisfied. They kept on studying the problem and finally came up with a solution. One morning, in early spring, a group of my eleventh grade boys came into my room before school. This was not unusual, but I could see that "something was up," so I asked, "Well, what's on your minds today?"

The spokesman was a little embarrassed but he finally managed, "Mr. Clark, we are wondering if we could have another year of Animal Husbandry. Would you teach it?"

"What do you want with another year of Animal Husbandry?" I asked.

"Well, we aren't covering all we need now and we thought maybe you could go heavier on beef and hogs and maybe a little more on chickens next year. We covered dairy pretty good this year, but we need some more on these other things."

The boys all looked eager and seemed to be anxious about my response. I asked, "But what would happen to our Farm Management course? I thought you fellows would be in that class next year."

"Oh, we will, we'd take two courses in agriculture next year; Animal Husbandry and Farm Management."

"Do you mean you would get two credits in agriculture next year?"

"Sure, why not. It'll do us as much good as anything else around here."

"Do you think Mr. (the principal) would go along with a scheme like that?" I asked.

"Yeah, we got that all taken care of."

"You have! What did you do?" I exclaimed.

"Why, we thought we shouldn't bother you with this business, so we got up a petition and all us boys signed it and took it to the principal."

"What did he say?" I asked dubiously.

"He said to see you and see if you'd do it," replied the spokesman.

Naturally I was flattered. Also I wondered what would be the reaction of the principal when he saw me. Would he think I engineered the petition and accuse me of interfering with his administration of the school? Could we find a way to schedule another class in agriculture? Could I possibly find time to teach another class? With these and many more questions in mind, I finally said, "Well boys, I certainly appreciate the invitation to teach the class, and I'll do it if the principal and I can work out a schedule for it."

I wasted no time in getting to the principal's office. He saw me enter the outer office and said, "Come on in and sit down a minute."

I sat down and he continued, "Some of your boys were in here this morning. They want another Animal Husbandry class next year. Do you think you can teach it?"

I said, "They just told me. The whole idea for another class came from the boys."

"I know that. Do you think you can handle the class?" was his reply.

"Sure, I can handle it all right, can you schedule it?"

"Yes, I'll take care of that. We'll probably have to send a biology class over to Junior High School." (At that time, part of the job of the teacher of vocational agriculture in our state was to teach biology.) "You could teach the Animal Husbandry in the third period."

"What about the Farm Management," I asked. "Will you let those boys take two years of agriculture in one year and give two credits in agriculture?"

"Sure, why not? They might just as well take two agriculture subjects as to load up with a lot of academic work that they don't need. They've had all the English and social science that we require already."

So it was agreed, and for many years we taught a second year of animal husbandry.

* * * *

1. Was it essential, or merely important, that I deferred my decision with the boys until after I met with the principal?

2. What are some other alternatives (in addition to a second year of Animal Husbandry) which we might have considered?

A TEACHER INTERVIEWS THE PARENTS
OF A NINTH GRADE BOY

Many teachers of vocational agriculture have exhibited some concern over the process of inducting new students into the program of vocational agriculture. This problem is particularly acute when the student trans fers from a one-room rural school into the village or city high school. As a teacher of vocational agriculture, I have encountered this problem and I never have felt that I did a particularly good job, either with the boy or with his parents in helping them adjust to the high school program.

When I became a state supervisor, I had an opportunity to visit other teachers and occassionally I accompanied one of them on a visit to a prospective student and watched him work with the parents and the student. I would like to recall one of these visits with Joe, the teacher of vocational agriculture.

It was in August and I had written Joe a letter saying, "I'll be out to visit you on August . . . ." I arrived at the school early enough so that Joe would not be held up if he planned to visit his students.

When Joe came he said, "I had planned to visit a boy from the one-room school up north of here a ways. He graduated from the eighth grade last spring."

"I see," I replied. "Do you know the family?"

"No, I've never met them," replied Joe, "But we get quite a few students from that district and I try to call on all the prospects before school opens in the fall."

"I think that's a good idea," I replied. "Do the folks know you are coming?"

"Yes, I called them yesterday," Joe said. "I didn't think you would want me to change my plans, but I told the folks that I'd call this morning if I couldn't make it."

"Sure we'll go, I replied. "I hope I won't cramp your style, but I'll be interested in what you do."

We walked over to Joe's car and got in. As we started off Joe said, "I think these visits are very important. It helps the boy come into the high school and into the agriculture program knowing what he's getting into; and it helps the parents understand their responsibility too."

"What kind of responsibility can you pin on a parent on your first visit?" I asked.

Joe replied, "Well, of course it varies, and sometimes I fail to do what I wanted to do, but I like them to know what we expect in the way of supervised farming programs."

"How about F.F.A.?" I asked.

"Yes, that too," said Joe. "But more particularly I try to emphasize a farming program which will help get the boy started toward establishment somewhere in agriculture.

"Okay," I replied, I'll try to keep still and listen. You go ahead just as if I weren't here."

We drove into a fairly well kept farm yard. Evidently the family had been looking for us and they came out to the car to meet us. Joe introduced himself saying, "I'm Joe Brown, the agricultural teacher down at the high school."

The father said, "I'm Bill Jones and this is my wife and this is Bill, Jr."

Joe then said, "I'd like you to meet Ray Clark. He's riding with me today just to get acquainted with what we're doing at high school." Then turning to Bill Jr., Joe said, "I hear you're planning to enroll at high school next month."

Bill said, "Yes, I'm planning to. What day do we come down to enroll?"

"You come down on Tuesday after Labor Day for enrollment; that's when you'll get lined up for classes. But the way, what are you going to take? Have you decided yet?"

Mr. Jones interrupted, "We were talking about that the other day. I suppose he'll take some English and math, same as I did. But what about that agriculture course? They didn't have that when I went to school."

Bill said, "I think I'd like to take it if I can. Some of the boys that went last year took it."

Joe replied, "You have to decide that for yourself. Do you know what you want to do when you finish high school?"

Bill said, "No, not for sure. I think I'd like to farm, maybe."

Joe turned to Mr. Jones and said, "How large a farm do you have here?"

Mr. Jones said, "We own 200 acres and rent some besides. We were thinking that if Bill wants to come back here to farm, we probably could manage it. But we wouldn't want to stand in the way of his doing something else."

Joe said, "No of course not" then turning toward the barn yard he said, "By the way how many sows do you have? I see two or three out there now."

As we strolled toward the barn, Joe asked more questions until he had a fairly good picture of the crop and livestock program of the farm. He had observed some of the sanitation problems and he knew something of the fertilizer program used on the crops.

After they had visited a little longer Joe said, "This agriculture program at school is planned to help boys get started in agriculture. In order to do that, a boy needs to have a farming program so that he can gain experience at the same time he is studying in school."

Mr. Jones said, "You mean a project like an acre of corn?"

Joe said, "It's more than that. On this farm your major enterprises are dairy and hogs. I'd like to see Bill here begin to get experience in those enterprises by having a gilt and a heifer of his own. Then he could manage them to suit himself and still have your advice and guidance. He'd be learning here by experience and of course we'd try to make it the right kind of experience."

Mr. Jones looked thoughtful, then he said, "Well that makes sense all right."

Joe continued, "Later on I'd like to see Bill's program expand into crops to feed his livestock and into other aspects of farming so he'd be just as good a farmer as possible by the time he graduates."

Mrs. Jones had been a silent and interested listener, but here she interrupted to say, "It seems to me you're outlining a pretty big job for a boy going to school."

Joe said, "That's right, Mrs. Jones, and we certainly need to watch that angle too. Bill looks pretty healthy, but we'd have to gear the program to what Bill could do. What do you think Bill?"

Bill said, "It sounds good to me. I'd like to try anyway. What about the F.F.A.? Is that part of the agriculture work too?"

"Yes," said Joe, "The F.F.A. is an organization of the boys who are taking agriculture in high school. We have quite a program too. The boys buy some of their feeds cooperatively and they give talks and demonstrations. We have meetings for the parents, and we'd want you to bring your folks and come. Then we have our regular meetings every two weeks. We'd want you to attend them too."

Bill said, "I want to get into that organization when I get down there. It sounds like a lot of fun."

Joe said, "It is a lot of fun and a lot of work too. It gives a fellow a chance to learn a lot that he couldn't learn in ordinary class activity." Then he said, "Well, I guess we'd better be going along. I'll see Bill at school the day after Labor Day. It's been nice meeting you and when Bill gets started at school we'll have a lot of details to work out. Drop in to see us at school any time you can."

Mr. Jones said, "We're sure glad you stopped in. We were wondering about a lot of these things for Bill here, and it's going to help a lot having someone down there at school to look after him and help him along. Come out again and we'll do the best we can to help Bill from this end."

* * * *

1. How would you criticise Joe's visit to this farm?

2. Did he go far enough in setting up a farming program on this first visit? Did he go too far?

3. Why did the teacher of agriculture switch the conversation to a question about the student's goals rather than provide an "answer" about taking the agricultural course?

A TEACHER WHO HAD DISCIPLINE PROBLEMS

Most of us like to tell success stories. They are the most pleasurable and are most likely to be remembered. Occasionally one recalls a story which represents something less than success and yet one from which we may gain a worthwhile experience without all the undesirable results. I want to tell you this kind of a story about one of my former students of agricultural education.

In our education classes on campus my students had often asked the question, "What about discipline? When we get out for practice teaching, how are we going to control discipline?" Sometimes they would say, "When we get out on the job, how will we avoid having discipline troubles?"

Of course my answer to such questions always was, "You won't have discipline problems as a rule, but if you do look to your methods of teaching. Discipline is the fault of the teacher not of the students."

Bill always seemed to agree without question. (Some of the others did not.) He even learned to recite the words back to me on exams or in oral discussion.

In his student teaching work, Bill was quite successful. He worked with classes in vocational agriculture which were going strong with their farming programs and with their F.F.A. work. He was a hard worker and he was very well qualified in subject matter information. The boys in the training center responded very well.

In spite of this success in the training center, the supervising teacher and I both cautioned Bill about keeping his work interesting. We urged him to be positive and forceful and emphasized the necessity for him to become a leader of boys, not just follow where they might lead. In short, we kept after him to improve his methods. Our report on him at the close of his student teaching said in part, "He will be likely to need help to improve his methods during the first year of teaching, otherwise he will have problems with discipline."

The year after Bill graduated, I was visiting first year teachers to provide in-service help to smooth out some of the rough spots which are always present in the road of the first year teacher. I placed Bill's school on my list for an early visit.

Along in October, I finally got to Bill. I arrived before school in the morning and went to the office of the superintendent. We were well acquainted and after the usual greetings I asked, "How is Bill getting along?"

"Just fine," replied the superintendent. "I know you had a statement in the credential file on Bill about possible discipline problems, and I've been watching out, but so far I haven't seen a sign of a problem. I think he's going to be OK."

"I'm certainly glad to hear that," I said, "How are his farm visits? Does he get out to contact parents?"

"Yes, he's out a lot," was the superintendent's answer, "and the folks like him too. I've had a number of farmers mention that he'd been out and how well he seemed to be doing. He's also calling on the young men who are out of school and he's going to start both an adult-farmer class and a young-farmer class next month."

"That's good," I replied. "I see you've given him some time for these classes too. That's certainly a good move if you're going to serve the adults and out-of-school youth. I'll go on to the agriculture room and see how Bill is doing this morning."

"You know the way," replied the superintendent. "I'll see you before you leave and if there's anything I need to do to help that agricultural program along, I want you to let me know."

I went to Bill's room. We visited for a few minutes and then the first class came in. Juniors and seniors made up the membership of the class and the enrollment was quite low. The class work moved along satisfactorily. The students were cooperative and seemed mildly interested even though I felt that the lesson was drab and uninteresting. After the class I asked Bill, "How are you getting along?"

"Oh, OK I guess," he replied. "But I've got one class coming in next hour that's quite a problem. They're nice kids, but I can't seem

to get them interested."

"Are they causing you real trouble?" I asked. "Have they become serious discipline problems?"

"No, I wouldn't say that," Bill replied. "But there's thrity of them and _ _ _, well you'll see," he finished as they began to come in.

Bill turned to his notes, his back to the door as the class gathered. I stood in the fartherest corner of the room and watched as the boys came into the room. They were normal youngsters, full of pep, but quite obviously from substantial homes where a background of good behavior had been developed.

Bill called the class to order. He took a long time to call the roll. After the slips were properly made out and posted outside the door, he opened the discussion with a brief review of the previous day's work.

The students had become restless with the long delays for roll call and other details and they contributed to the discussion with a free-for-all argument aimed at each other as well as at Bill. No one quoted any authority for his statements and Bill asked for none. Occasionally he would raise his voice demanding quiet and there would be a momentary lull in the argument and then it would rise to a new cresendo.

Bill continued with his mild ineffective voice and manner throughout the hour. He smiled occasionally, but for the most part was following the lead of class members rather than exerting leadership of his own.

One bright spot occurred during the class period. One boy, disgusted with the pointless argument finally rose and asked permission of Bill to go to another room for a panel board on which were displayed some materials he wished to use to prove a point.

Before permission was granted, the boy was gone. He soon returned with a piece of plywood on which were mounted a series of electrical units and devices. With no prompting from Bill he set up his board and actually called the class to order, explained the points illustrated

on the panel, demonstrated the circuits and described the application to the farm problem they had been arguing. For the ten or fifteen minutes that this one boy was in command, they had a really functional class.

I had a long talk with Bill after the class. I said, "Bill, you haven't really lost that class yet, but you'll have to get on the ball or you will. You've been on their farms, you know the parents and the families of these boys. Why don't you work with them to develop some real honest to goodness agricultural problems for them to work on. They're swell kids, just itching for something worthwhile to do."

Bill replied, "Yes, they're good kids. You couldn't ask for any better. But I don't think they're too bad in class. They get a little noisy at times but they're alright."

"But really now, when you analyze that class period, what was accomplished?" I asked. "It seemed to me they did nothing but argue. They didn't start with a specific problem and they didn't bring any information to bear on a solution to what they did have as a problem. The only exception was when that boy brought in that panel. Did you notice how they changed while he was demonstrating? That got them interested for a few minutes anyway."

"Well, I guess you're right," replied Bill, "But I figure if I can just make them like me, they'll be all right. That'll take care of all the problems."

"But Bill, kids don't like a man who can't control them. You've got to take care of that problem first and that means you've got to look to your methods." I insisted.

"I'll try," Bill said as we parted.

I went back to the superintendent and said, "Bill's going to have some real discipline problems unless we can help him a little. Will you look in once in a while, and try to get him to recognize the symptoms and encourage him to correct the causes?"

"You bet I will," replied the superintendent, "He's too good a man to lose. If I can help him over this hump, he'll be a top-notch teacher. Boy, I'm glad you warned me! I've dropped into his classes

several times and of course when I am there the discipline looks all right."

I agreed to return later in the year and went on my way. Late in the winter I returned to visit Bill again. The superintendent met me as I entered the building early in the morning. He said, "Bill is about washed up. I have tried my best, but I haven't been able to snap him out of it. He's swell with the young'farmers and with the adult-farmers, but he can't interest the high school boys."

I'm certainly sorry to hear that," I replied. "I hoped Bill would make the grade. I felt last year that he could fail or that he might become one of our best teachers depending on that one thing."

"Yes, I think you were right too, in recommending him for a teaching certificate, but he has gone the wrong way for us. We'll have to let him go. I don't know whether we'll even be able to keep him the rest of the year."

I visited Bill's classes, but there was no point in discussing them. Bill and I simply agreed that he had failed to use methods which he had practiced as a student teacher. We discussed work he might do in the future. Bill said, "I don't want to take another high school job. It isn't fair to the kids to have a teacher who is a failure."

* * * *

1. Should I have indicated the potential weakness as well as strength for Bill on his student teaching report?

2. Can an individual learn good methods of teaching?

3. What other approaches might I have tried to help Bill improve his methods of teaching?

A FIELD TRIP WITH A CLASS
IN VOCATIONAL AGRICULTURE

When a state supervisor visits schools, he encounters many different kinds of situations. These are difficult to classify because they are created by many personalities operating under varied social and economic circumstances.

Some teachers of agriculture whom I have visited have always run a movie for every class I visited; others have "put on a show" where the students obviously had rehearsed the lesson on previous days and everything went too smoothly; others have found it necessary to assign students "supervised study", so they could talk over their problems with me; and a few seem to go ahead with their normal program.

I visited one of these latter teachers in western Michigan some time ago. After I had visited for a few minutes with the superintendent, he said, "Perhaps you had better go on down to the agriculture room. John wants to take a field trip with this first-hour class and he wants to see you before the class comes in."

I went to the room and was greeted courteously by the teacher. He immediately said, "We have been planning to take a field trip today to visit a poultry farm and I wondered if it would put you out if we went ahead? We planned this trip before we knew you were coming and hated to cancel it. Could you go along, and would it be alright with you if we go ahead with our plans?"

I assured him that it would be a pleasure to go along on the trip and also said, "I'd certainly hate to think any agriculture teacher would upset his instructional program just because a supervisor was planning a visit. After all, that wouldn't be helping to improve the program."

"Well, that's what I thought, but I wanted to make sure," was his reply.

The class came in with coats and hats, ready to go. John called them to order and said, "Now you remember we planned this trip in con-

nection with this unit of work. We decided that we wanted to see how Mr. _____ makes a success of his poultry business. We all have a list of questions we want answered. Let's remember that we agreed on the necessity of being reasonably quiet in the laying houses so as not to frighten the birds. Now we'll get in the bus and get started."

We boarded the bus and John drove us out to the farm. When we arrived, John took us into a supply shed and introduced us to the owner. John started the group discussion by asking a question about the enterprise. The owner began his answer and then led the boys into the first laying house.

The boys examined the construction of the house, studied the equipment, and asked questions regarding feeding and management. After the discussion had been going for a time, John passed out a sheet for each boy, showing a detailed financial summary of the poultry enterprise on the farm, for the past five years. It showed per cent of production of eggs, feed used, labor, and other expenses and receipts by months.

This sheet gave rise to further questions. The boys were led into other laying houses with slightly different construction. They learned of the problems the owner had faced in developing his business and they discovered how his practices had paid off in net income.

On the way back to school I asked John, "Have you known Mr. _____ very long?"

"Yes, quite a while," was his answer, "There are quite a number of poultrymen around here whom we might have visited, but this man had the best set of records."

"But didn't you have quite a time to get him to provide such detailed records?" I asked.

"No, I came out about three weeks ago and told him I would like to bring the class out and asked if it would be all right. He said I could and to let him know when we were ready to come," replied John.

"You must have come out since then," I said.

"Yes, I made another trip out a week ago and we set the date so it would fit in with the work we had in class. Then I came out last night

after school to make sure everything was OK."

"When did you get the records?" was my next question.

"Oh, I got them last night. We were talking about our plans for today and I asked Mr. _____ about some of his feed costs, and about his production records. He went over to his desk and pulled out that sheet. He said I could make copies for the boys if I wanted to. He let me take the sheet back to school and I ran off enough for the class. I thought it was pretty nice of him to let us copy them like that and the boys seem to appreciate it too."

"Yes, I think they did," I replied, then I asked, "By the way, I've been on a lot of field trips and I've conducted some too, but I don't believe I ever saw one where there was no horse-play and such close attention as there was today. How do you account for it?"

John thought a moment and then said, "I don't know, I really hadn't thought much about it. You see poultry is our major farm enterprise in this area, so we're interested in the subject. Then too, we planned this trip for a purpose. It wasn't something I set up. We really wanted to learn some things. It was the boys' trip and I don't believe, when you have that combination, that you need to worry much about inattention."

"Well, I guess you're right. It certainly was interesting."

"I'm glad you could go," John replied, "There's another thing in my favor here. You see, we've got just about the best kind of people you could find anywhere, right here in this community and that helps a lot too."

* * * *

1. What do you think of the teacher going ahead with his plans for a field trip when he learned that the state supervisor was planning a visit?

2. How would you criticise this field trip as a teaching device? What suggestions would you offer for improving the trip?

3. Had the teacher made adequate plans for the trip?

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CLARK, RAYMOND M.
EXPERIENCES IN VOCATIONAL AGRICULTURAL EDUCATION. PART II, FUTURE FARMER PROGRAM.

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ABSTRACT - WRITTEN AS ONE OF A SERIES OF PAMPHLETS REFLECTING A RETIRED TEACHER'S 45 YEARS OF EXPERIENCE IN SEVERAL ASPECTS OF THE VOCATIONAL AGRICULTURE FIELD, THIS SERIES OF ANECDOTES DEAL WITH EXPERIENCES IN THE FUTURE FARMERS OF AMERICA (FFA) PROGRAM AND ARE INTENDED PRIMARILY FOR TEACHERS. THE ANECDOTES, WHICH REFLECT THE OBJECTIVES OF "ESTABLISHMENT IN FARMING" AND "DEVELOPING AGRICULTURAL LEADERSHIP" ACCEPTED AT THE TIME THEY WERE WRITTEN, ARE CONCERNED WITH SOME OF THE PROBLEMS FACED BY ADVISORS IN CONDUCTING FFA PROJECTS AND SOME OF THE METHODS USED BY TEACHERS TO PROVIDE DESIRABLE TRAINING. RELATED PAMPHLETS ARE AVAILABLE AS VT 014 716 AND VT 014 718 IN THIS ISSUE. (SB)

VT 014 717

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PERSONAL OBSERVATIONS WITH IMPLICATIONS FOR TEACHER EDUCATION IN AGRICULTURE

by Raymond Clark

EXPERIENCES IN VOCATIONAL AGRICULTURE

PART II

Future Farmers of America Programs

Department of
SECONDARY EDUCATION AND CURRICULUM
College of Education
Michigan State University
East Lansing, Michigan 48823

August, 1971

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EXPERIENCES IN VOCATIONAL AGRICULTURAL EDUCATION

Part II
Future Farmer Program

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September 1971

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Foreword

This is one of a series of pamphlets dealing with several aspects of the program of vocational agriculture. Each pamphlet consists of a series of events and happenings as they actually occured. Each is a true story, and it describes an actual experience which I have had during the past forty-five years in the vocational agriculture field. Many of the experiences described here are those which I had while I was a teacher of vocational agriculture. Others describe experiences as a teacher-educator or as a state supervisor of vocational education in agriculture.

These stories of events and happenings may be used by many different persons. (1) By students to discover the nature of some of the work of the teacher of vocational agriculture. Some who read these stories may become more determined to enter the profession. Others may decide to find other fields of work. (2) By student teachers who may read these stories as they find themselves confronted with similar experiences or problems. We may be able to share experiences through the medium of these pages. Some ideas may be found to help smooth out rough spots for student teachers. I hope they will be able to discover other solutions to problems and other methods which will be of value to them. (3) By my colleagues in vocational agriculture. They may find a few new suggestions; they are likely to discover that we have had similar problems; and, I feel certain that they will be in a position to say, "That reminds me of an experience I had _ _ _ _ _."

In presenting this series of anecdotes, it is recognized that they reflect the objectives of "establishment in farming," and "developing agricultural leadership" which were accepted at the time they were written. Teachers in service and those who are preparing for teaching may ask themselves, "How would I meet similar situations today?" What new or different solutions would I need to use to meet similar situations with students preparing for careers in farming and/or agricultural business?

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While any division of the series of anecdotes results in some overlapping, for the convenience of readers, the anecdotes have been assembled into pamphlets under the following titles:

1. Teaching High School Students
2. Future Farmers Programs
3. Post-High School Farmer Training Programs
   A. Young-Farmer Programs
   B. Adult-Farmer Programs
4. Problems of Relationship
5. Program Planning
6. Student Teachers

Students preparing to teach vocational agriculture will find in these anecdotes examples of many typical problems faced by teachers of agriculture. It is hoped that these problems will help students visualize real situations as they work through the professional education courses required for certification, and as they consider the subject matter of technical agriculture in relation to planning and conducting instructional programs in local schools.

Teachers in-service, who may read these stories, will say, "Let me tell you about a similar experience I had _ _ _ _ _," and "I would have done it differently. I would _ _ _ _ _." In groups of experienced teachers this could lead to spirited discussion and demonstration to emphasize an aspect of method, or application of principle.

Among either pre-service of in-service groups of teachers it is hoped that these experiences and happenings will stimulate teachers to study methods and principles in a realistic and constructive manner.

Raymond M. Clark, Professor Emeritus
Department of Secondary Education and Curriculum
July 1971

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FUTURE FARMER PROGRAM

This series of anecdotes deals primarily with the Future Farmer program. For those who view a youth organization as a vehicle for training of its members, the ideas and problems suggested here will be applicable to any youth organization of high school students. The projects of the organization will vary with interests and program, but the techniques of organization, motivation and leadership will be essentially identical. Certainly the problem of handling finances will still exist and will need to be handled.

The Future Farmer Program is a vital part of the program of vocational agriculture. The name and some of the purposes of the organization may be changed to encompass activities related to agricultural business as well as farming. However, a youth organization of vocational agricultural students should remain a vital part of the vocational education program.

This series of stories was prepared primarily for use of pre-service teachers of vocational agriculture. It contains little in the way of planning programs of work or organizing and conducting specific FFA projects. Discussion on these and similar problems may be found in many other publications. Included here, on the other hand, are stories of some of the problems faced by advisers in the conduct of FFA projects and some of the methods used by teachers to provide desirable training, without allowing the activity to get out of hand or loom too large in relation to other aspects of the vocational agriculture and Future Farmer Program.

As you read these anecdotes, I suggest that you ask yourself such questions as the following:

1. How do the activities suggested in these anecdotes contribute to the purposes of the organization.

2. (In the case of the anecdotes on financing and accounting) Did the teacher use the best possible methods for teaching appropriate accounting procedures?

3. What activities can you suggest for the FFA program, at the local or state level which would merit the needs and/or interests of a segment of FFA members, which are not now being met?

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FUTURE FARMER PROGRAMS

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I DROP IN ON A FUTURE FARMER CHAPTER MEETING

One day, while traveling as a supervisor of vocational agriculture education, I drove into a village where I had not planned to stop. However, I was ahead of schedule, so I decided to break the usual policy of notifying the superintendent prior to a visit and to stop to see what was happening.

I had some good reasons for stopping. The teacher of vocational agriculture was one of those rare individuals with energy, ideas, and ability to transmit enthusaism to those around him. His Future Farmer boys had won the state parliamentary procedure contest for two or three years in succession. They had been high in other contests of the Future Farmers. There had been a continuous parade of State and American farmers from the chapter.

I had visited the school on previous occasions and had asked many questions of the teacher such as, "What were your objectives in encouraging your students to buy this carload of feeder steers? Why did you let your F.F.A. boys rent that land to plant wheat? What do you expect as outcomes of this program of raising sows and their litters as a group project? Couldn't these boys go further if they put all their energies into farming programs at home instead of being involved in these group projects?" You see, I wanted to find out if this teacher, who had so many radical ideas, had thought through his program and really knew where he was going.

To my questions, I always received direct and concise answers such as; "I want to give these boys experiences which would be impossible for them to get at home, such as how to finance the purchase and feeding of a carload of steers. We can demonstrate practices in the fertilization of wheat and in the feeding of swine that I would never be able to get adopted at home without the demonstration. I want to help these boys grow up with the kinds of abilities they need as top-notch farmers and

business men in their generation."

I had never doubted that this teacher knew what he was doing, so I was interested in dropping in unannounced, to see what might be going on this time. I went into the building, and as usual, went to the superintendent's office. We were well acquainted and he met me at the door with a handshake and a welcome. Then he hastened to say, "There's an F.F.A. meeting going on in the Agriculture room. You'd better go down and see it and I'll see you later."

I walked into a room full of boys. There were approximately 75 boys in a room suitable for about twenty. They had filled every chair. They were seated on tables placed against the walls and they were standing in the corners. I couldn't see the teacher, but I found out later that he was standing in one of the corners along with the boys.

For many teachers the very physical conditions would have created an impossible situation in which to work. The boys would have lost interest in the business of the F.F.A. and discipline problems would have become the major issue of the day.

None of these problems existed here. I have never seen a meeting conducted more efficiently, nor with greater cooperation from the members. The parliamentary procedure was very nearly perfect. Once the boys got stuck on a parliamentary point and called on the teacher to explain. That's when I discovered that he was present.

During the meeting the boys voted to send their loan committee to the bank to repay a note which they owed for feed used to feed their last lot of pigs. They received a report of their committee on the steer feeding project together with their budget for finishing the steers ready for market. The cost was estimated and they instructed their loan committee to negotiate another loan at the bank. Several other items were disposed of before the meeting was adjourned. It should be clear that real business was going on.

After the boys had left and the usual greetings were over, I asked,

"_____, how do you train your parliamentary teams? I notice you win nearly every year.

The answer was, "Oh, I don't have time to train a team. We just pick out a team from our chapter to represent us. We might send an entirely different group of boys to the regional contest than the group we send to the district, and a still different group to the state contest if we should win in the regional.* We could pick six or seven different teams out of that group of chapter members to represent us in a contest and we wouldn't be ashamed of any one of them"

"Well, do all your meetings click like this one did?"

"Sure, that's where the boys learn parliamentary procedure. Enough happens here so that they learn to think on their feet. They seldom get stumped and when they do, they find out how to handle the situation right there. That's how they are able to handle the problems which are given them in the contests."

"You believe then that we shouldn't spend a lot of time coaching teams for the Future Farmer contests?"

"I believe everyone needs the training and that the team is merely an outgrowth of the program you have in the department."

"Would you apply the same idea to our other contests, like livestock judging or public speaking?"

"I sure would! I believe we can do a better job if we go ahead and do a real job of teaching boys and then pick some of them to represent us in the contests. That way everyone gets a square deal and no one gets short changed in instruction."

* * * *

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* Rules of the state contest in Michigan allow different members of a team for district, regional and state contests.

1. Do you agree with this teacher?

2. Can you justify taking time out of instruction to prepare Future Farmer members for contests? If your answer is, Yes, under what conditions do you believe the practice is justifiable?

MY FUTURE FARMER CHAPTER
GETS A NEW LEASE ON LIFE

I suppose every teacher who has had several years of experience has had a feeling that at times his program is near a peak and at other times that it is pretty well down. Sometimes the students seem to be interested and enthusiastic. They tackle every new project with enthusiasm and vigor; there is no challenge they won't accept; nothing can stop them. At other times they seem disinterested. They lack enthusiasm and the teacher frets and stews trying to find something to get them started again. We learn through experiences. When we refuse to accept opportunities for new experiences there is little opportunity for new learning.

My Future Farmer members went into a slump one summer. I still don't know why. Probably it was something I had done, or failed to do, as their advisor. I was concerned with the problem of how to get them out of the slump and started again on the road to new experiences of value to them. There was nothing wrong with the boys. They were intelligent farm boys, but they simply lacked any incentive for carrying out a challenging program of work.

I gave the problem a great deal of thought. I suggested activities to the boys and they were indifferent to my suggestions. I asked them for their suggestions and they had none. I knew I needed to find some activity which they would undertake and in which they would be successful. I felt that if they could be successful in one activity, they would go ahead with other more important activities.

It seemed to me that I was up against a stone wall. Nothing seemed to strike a spark of interest. Finally I went over to see one of my good friends who was teaching vocational agriculture in a neighboring town. I knew his chapter was enjoying a period of peak activity and accomplishment. I thought he might help me out. We discussed my problem, and finally I said, "If we should get an invitation to come over and initiate your Green Hands, maybe that would start us off, but

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you would have to avoid letting anyone know that I suggested it."

He said, "I'll take care of that."

I went home and in a week or so my Future Farmer secretary came in one morning with a letter which he showed me. It was a letter from the secretary of the neighboring chapter inviting us over to initiate their Green Hands. My secretary said, "What'll we do?"

I said, "I don't know, but we couldn't go over there and not know our parts in the ritual, could we?"

The neighboring school was a traditional rival in athletics and other school contests, so my secretary said, "No, and we can't turn them down either. They would think we didn't know how to put on that initiation."

We agreed that we would get the members together and decide what to do. We had the meeting and instructed the secretary to write a note accepting the invitation for the next week.

The week following was one of unprecedented activity. The officers had to "learn their parts," get the paraphernalia together and fixed up. They practiced at every opportunity. Pairs of boys would come into the room during the noon hour and help each other. The day before our date one of the boys became ill and they had to find a substitute. They found a boy and coached him nearly all day, but they made it.

We made a creditable showing and my friend, the neighboring teacher, praised my boys enthusiastically. On the way home I too praised the work they had done. I wanted this seed to germinate so we could avoid another slump.

The next day the boys reported their success to the members and we began to plan what to do next. We decided that we needed to develop an officer training program so that new officers would not have to start with no experience each year. The officers and I had discussed this problem earlier and they proposed to the boys that we might develop a "degree" team of underclassmen. They explained reasons and asked the

members what they thought about the idea. The boys agreed that the idea might work and decided to try it.

At their next meeting, they elected a degree team. In reality these degree team members became a second group of officers. They demonstrated the Future Farmer ritual at Grange meetings, at Service Clubs, at meetings of other chapters in the area and at high school assemblies. Each year a new team was elected and the former degree team members who had made good were elected as officers of the chapter.

"Nothing succeeds like success," and this movement in my chapter was no exception. The chapter went ahead with increased vigor and with a broader vision of the activities they could undertake for the development of their members and the improvement of their chapter.

* * * *

1. Can you list mistakes I may have made which caused my chapter to go into a slump?

2. What means of officer training can you describe in addition to the idea of the degree team described above?

3. What means could be used in chapters with large memberships to provide training in leadership to a large proportion of the members?

THE TEACHER WHO REFUSED TO USE
THE INTERNAL ACCOUNTING SYSTEM FOR THE F.F.A. FUNDS

"How do you recommend that F.F.A. money be handled?" was a question asked of me by a superintendent one morning soon after I arrived to visit his teacher of vocational agriculture.

"Why, through your internal accounting system, if you have one," I replied.

"Oh we have one alright, but our agriculture teacher has so far refused to allow the F.F.A. money to be deposited in the account." Then he continued, "He's a good man and I wouldn't want to cause any trouble, but I don't understand his attitude."

"I don't understand either. How does your system work anyway?" I asked.

"It's a standard system " he replied. "The money is deposited and the student treasurer gets a receipt and makes the entries in his book. Then we deposit the money in the bank. We keep a separate record for each school organization. Withdrawals are made on the basis of an order signed by the teacher and the treasurer. That way the students get the same experience they would if they deposited the money directly in the bank."

"Yes," I replied, "And the system relieves the teacher and the student treasurer of a lot of responsibility. It would be pretty hard for anyone to accuse them of misuse of funds when they are handled through that kind of a system. Do you have any idea as to why he refuses? Does he cooperate in other matters?"

"Oh, sure, he's one of the best teachers we have and he's one-hundred per cent cooperative in every respect except this one thing. I wouldn't care, except that I'm afraid someone may accuse him of something and I won't be able to defend him. He said once that he needed to have the

money available on a moments notice, but that is just an excuse. My office girl is here all the time, even in the summer and she can write the checks. Besides, they can always draw out a check for a cash deal if they want to buy supplies, or feeder steers, or seeds for the farming programs."

"I wonder if he is afraid that you would stop him from doing some of those things such as buying that carload of feeder calves for the boys, if he had to withdraw the money from the school account?" I asked.

"No, I don't think it's that," replied the superintendent. "He talks over most of those projects anyway. So far I've given him free reign and I don't want to discourage him in any way, but I don't know how to handle this situation. You know that when hundreds of dollars are handled they need to have a pretty sound system of records or they will have trouble with their accounts, and that means reputations are hurt."

"I know that," I replied. "I've seen just that sort of thing happen to other agriculture teachers. Besides the F.F.A. is a school organization and ought to be responsible to the school regulations just as is any other school organization. I'll go on to the agriculture room and before I leave, I'll have a talk with the teacher and see if I can help out."

"OK", said the superintendent, "But remember he's tops as a teacher and I don't want the program to suffer."

I went down the corridor and entered the vocational agriculture room. There were many evidences of an excellent program of vocational agriculture in the room. The students were alert and working at problems which obviously concerned them.

When time came in the schedule so that I could visit with the teacher, I complemented him on the evidences of progress which I could see. I asked, "What kinds of things are being done by the F.F.A.?"

"Oh, we're trying to help these boys improve their farming programs as rapidly as they can. We have bought quite a lot of certified seed

this year. We've bought some pure-bred dairy calves for the boys and we bought a carload of feeder calves for some of the boys. We sold most of the stuff to the individual members and some we kept for the chapter," was the reply.

"You mean the chapter has some land where they're growing crops and where they have some steers?" I asked.

"Yes, we have about twenty acres with a barn on it, that we rent."

"How do you keep the records?" I asked.

"Oh, we pay our bills as we go along. We handled about $5,000 last year and will handle a lot more this year," he replied.

"That's a lot of money to handle," I replied. "It must take quite a lot of bookkeeping to keep all the accounts accurate and up to date. Who handles that work for you?"

"We've got a good F.F.A. treasurer and he keeps the books this year," he said.

"You handle your accounts through the school accounting system, don't you?" I asked.

"No," he replied, "That's too slow. I'd rather pay cash for what we buy and be done with it. It's easier that way."

"What would you do if someone came up tonight and asked for a strict accounting?" I asked.

"Oh, that won't happen," he replied.

"Well, it might. Could you prove that your bills are all paid?"

"No, I guess I couldn't," was his halting reply.

"Could you show an invoice for every payment recorded in the treasurers book and a canceled check or a receipt for every bill you have paid?" I asked.

"No, I certainly couldn't do that," he replied.

"Then someone could accuse either you or your treasurer of pocketing some of that $5,000. Is that right?" I asked.

"Gee, I guess you're right. The superintendent was talking about

that the other day. I thought he was 'nuts' then, but now I see what he was driving at. I'll see him tomorrow and get this business straightened out just as soon as I can. I'd sure hate to have anything happen to our treasurer and I don't want to get in a mess myself."

* * * *

1. What are the minimum essentials a teacher of vocational agriculture would need to safe guard F.F.A. finances, so far as records are concerned?

2. What opportunities for teaching students of vocational agriculture do you see in the financial aspects of projects described above?

3. Should this teacher have dropped the projects to avoid the problem of keeping financial records?

TRAINING F.F.A. BOYS FOR CONTESTS

"It takes too much time out of class work," is the complaint of many teachers of vocational agriculture when the subject of contests is brought into the discussion. This has been a common complaint for many years and I thought I would like to talk with a few teachers who had been entering contests for a number of years to see if I could discover any differences in their proceedures. I would like to tell you about two of these interviews.

The first teacher had been consistently successful in F.F.A. contests for many years. He had had winning public speaking contestants, winning parliamentary procedure contest teams, and demonstration teams, as well as livestock judging teams in the state contests. When his teams were not state winners one could expect them to be near the top.

I asked this teacher, "Bill, how do you go about training your teams for the contests?"

Bill replied, "Well, along about the first of December, I have the boys in all my classes choose which contest they want to enter. They choose one, either public speaking, parliamentary proceedure, or demonstration. The livestock judging contests are handled the same way only we work on them later in the year."

"You mean they choose one out of the three to prepare for. Do they stay with that one?" I interrupted.

"Yes," replied Bill, "They choose and then they stay with it until the eliminations in February. If they win there they keep on working until the state contest in March."

"Let's see, that's three to four months devoted to these three contests for all your students every year. Is that right?" I asked.

"Yes, that's right," replied Bill. "It's a lot of time, but I fig

ure the state wants us to work on them, or they wouldn't have the contests. Of course the boys do learn some agriculture in preparing their material."

"But it's not necessarily related to their farming programs or to their occupational objectives?" I asked.

"No, it's more likely not related," said Bill.

"Well, go ahead, how do you organize the classes?" I asked.

"We divide up into groups in the classes and everybody works on one of these contests the whole time. Each boy, or each team gathers it's own materials and they prepare their own speeches. We give them time to practice in their group and also in the whole class."

"Then finally do you choose one group to represent the chapter in the elimination contest?" I asked.

"Yes, we run our own elimination contest in the chapter meetings during the school day." replied Bill.

"But what about your agriculture work in the mean time?" I asked. "What do you do about farming programs and the work you have outlined to cover?"

"We just don't cover it," replied Bill. "Of course as I said a minute ago, the boys learn something by reading the stuff they bring in for the contests, but our objective is to win contests and we do a pretty good job of it."

* * * *

The second teacher was a younger man. His F.F.A. had been successful in winning a state demonstration contest, but they did not have a history of consistently high winnings over many years.

I asked, "Dick, how do you train your boys for the contests in F.F.A.?"

Dick grinned and said, "Well you'd think I didn't train them, judging by the number of times we get eliminated. We decide while we are studying a unit whether the subject lends itself to a demonstration or a speech. The parliamentary procedure, we leave to the chapter meetings. Our boys practice parliamentary procedure in their meetings so they can select a team most any time. They practice some outside of class and outside the meetings and we enter them in the contest. They haven't won yet, but we learn a lot and the boys like it."

"What about the speeches and demonstration contests that you mentioned? Do you select a few students and give them special coaching?" I asked.

"No," said Dick. "I don't have time, and I don't think it's a good idea anyway. I'll tell you how we did that demonstration contest we just won. That'll give you an idea as to how we do any of our demonstration or speech contests."

"Go ahead," I said.

Dick stated, "The demonstration was on farm safety. We had been studying farm safety in one of my classes and they had been making some surveys of safety factors around their farms. One day one of the boys said, 'Why don't we put some of these things together and make a demonstration out of it for the contest that's coming up in about two weeks?'"

"Did you do it?" I asked.

"Yes," said Dick. "That started them off. I went to the blackboard and the boys made a list of materials we would need. Then they appointed a committee to build the set in the shop. Another group was to prepare the charts and another was to write the script. We had some other committees, but that's the general idea."

"In other words, they all worked on one demonstration, is that

right?" I asked.

"Yes, and they sure worked," said Bill. "When it was all ready they voted on two members to do the talking, but almost any pair could have done it satisfactorily."

"And the demonstration was part of a regular unit of work?" I asked next.

"Yes," replied Dick. "I don't believe in interrupting a regular program just to enter a contest. If the contest can motivate learning it's okay, but otherwise I don't use it."

"How about public speaking?" I asked.

"It's the same thing," said Dick. "Sometimes the boys agree that here's a subject on which they can prepare a speech. Then we can develop speeches in a class and maybe discover a good speaker for the contest. In the mean-time everyone has had the experience of working out a speech on the subject he has been studying in class."

* * * *

1. Which teacher was most nearly right in the way he used contests?

2. Can you justify contests as they were used by either teacher?

3. There are evident weaknesses in each teacher's program in relation to contests. Can you identify any of these?

A TEACHER WHO FAILED TO KEEP ACCURATE
F.F.A. ACCOUNTS

"What are the major activities of your F.F.A. chapter?" I once asked a teacher of vocational agriculture as I was visiting in his department. At the time I was serving as a state supervisor of vocational agriculture and was making one of my regular visits to the department in a local school.

"Oh, we have the usual kind of activities," he replied. "Nothing new or spectacular, but we keep the boys pretty busy at that."

"What kind of things do you do?" I asked again.

"We start out in the fall with a school fair. Then during the winter we try to have a banquet for the F.F.A. members and their parents. Then we take a trip down to the college for the state convention and again in June for the judging contests," he replied.

"That's a good list," I answered. "How do you finance your trips and banquets?"

"We have a few money making activities. For one thing we are in an area where it is advisable to grow trees on some of the land. The F.F.A. own's a small forest and we've been harvesting Christmas trees each year for the past five or six years. Of course we replant each spring so we can maintain or increase our forest. This gives us some money to go on. Then you know, we get some money through your office for our fair and for our delegates to the state convention."

"Yes, I know about the state money for F.F.A. chapters," I replied. "By the way, what system of accounting do you use for your F.F.A. money?" was my next question.

"Oh, we have an F.F.A. treasurer and he keeps the record," was his reply.

"You mean you don't have a school accounting system for activities of school organizations?" I asked.

"No, we don't," was his reply.

"Well!" I exclaimed, "that puts quite a responsibility on you and your treasurer, doesn't it? Tell me, how do you pay your bills?"

The teacher replied, "Whenever we collect some money, I just go down and pay the bills in cash, out of the money we have taken in."

"Do you get a receipt?" I asked.

"No," replied the teacher, "not as a rule. I just pay cash and turn in what's left to the treasurer."

"What record does he keep?" was my next question.

"He just records the amount of cash I give him," replied the teacher.

"Then, if I understand you correctly, there is no record of the total amount of receipts or of the expenses. Is that right?" I asked.

"Yes, it's simpler that way," was the teacher's answer.

"Suppose someone should accuse you of mixing your own and the F.F.A. money. According to what you have said, you couldn't prove you hadn't." I said.

"Oh, well, nobody will," the teacher replied, "and I know I'm honest."

"I'm not questioning your honesty," I replied, "I'd be perfectly willing to trust you, but I worry about your putting yourself in a position where you can't prove yourself honest to everyone. You ought to have an itemized invoice for every item purchased by the F.F.A. Then you should have a canceled check or a receipt which would show specifically what has been paid. For your income you should have a record of the amount received, it's source, and the nature of the receipt. If

you issued a receipt, you should have a duplicate for your record."

"Oh, I know," replied the teacher, "but that's too much bother. We don't need to do that here in this community."

Two or three years passed and the teacher decided to move to another school in a new community. He was not under pressure to move, but felt the change would improve his own situation and offer greater advantages to his family.

Shortly after settling in the new community, the superintendent from the former school wrote the teacher demanding an accounting of the F.F.A. funds. The student treasurer had reported that the funds collected by the teacher for banquet tickets, and for the sale of Christmas trees had not been turned in, and the bills were unpaid.

Of course the teacher denied the accusation that he had run away with F.F.A. money, but he had no records and no proof. The Board of Education sued the teacher for the money they believed had not been turned in by the teacher and the court ruled that the teacher must pay.

* * * *

1. Outline a system of record keeping which would have protected the teacher.

2. Since there was no internal school accounting system, what other steps could the teacher have taken to safeguard the F.F.A. money and his own reputation?

3. Was the teacher making adequate use of the F.F.A. projects to teach accounting and management practices to the members?

VT 014 718
CLARK, RAYMOND M.
EXPERIENCES IN VOCATIONAL AGRICULTURAL EDUCATION. PART III, POST-HIGH SCHOOL FARMER TRAINING PROGRAMS: A. YOUNG-FARMER PROGRAMS AND B. ADULT-FARMER PROGRAMS.

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ABSTRACT - WRITTEN AS ONE OF A SERIES OF PAMPHLETS REFLECTING A RETIRED TEACHER'S 45 YEARS OF EXPERIENCE IN SEVERAL ASPECTS OF THE VOCATIONAL AGRICULTURE FIELD, THIS SERIES OF ANECDOTES DEAL WITH POST-HIGH SCHOOL FARMER TRAINING PROGRAMS AND ARE INTENDED FOR STUDENTS, STUDENT TEACHERS, AND TEACHERS. THE ANECDOTES, WHICH REFLECT THE OBJECTIVES OF "ESTABLISHMENT IN FARMING" AND "DEVELOPING AGRICULTURAL LEADERSHIP" ACCEPTED AT THE TIME THEY WERE WRITTEN ARE CONCERNED WITH ORGANIZING AND CONDUCTING YOUNG FARMER AND ADULT FARMER PROGRAMS. RELATED PAMPHLETS ARE AVAILABLE AS VT 014 716 AND VT 014 717 IN THIS ISSUE. (SB)

VT 014 718

DEC 1 7 1971

PERSONAL OBSERVATIONS WITH IMPLICATIONS FOR TEACHER EDUCATION IN AGRICULTURE

by Raymond Clark

AGRICULTURE

PART III

Farmer Education

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EXPERIENCES IN VOCATIONAL AGRICULTURAL EDUCATION

Part III
Post-High School Farmer Training Programs

A. Young-Farmer Programs

B. Adult-Farmer Programs

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October 1971

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Foreword

This is one of a series of pamphlets dealing with several aspects of the program of vocational agriculture. Each pamphlet consists of a series of events and happenings as they actually occured. Each is a true story, and it describes an actual experience which I have had during the past forty-five years in the vocational agriculture field. Many of the experiences described here are those which I had while I was a teacher of vocational agriculture. Others describe experiences as a teacher-educator or as a state supervisor of vocational education in agriculture.

These stories of events and happenings may be used by many different persons. (1) By students to discover the nature of some of the work of the teacher of vocational agriculture. Some who read these stories may become more determined to enter the profession. Others may decide to find other fields of work. (2) By student teachers who may read these stories as they find themselves confronted with similar experiences or problems. We may be able to share experiences through the medium of these pages. Some ideas may be found to help smooth out rough spots for student teachers. I hope they will be able to discover other solutions to problems and other methods which will be of value to them. (3) By my colleagues in vocational agriculture. They may find a few new suggestions; they are likely to discover that we have had similar problems; and, I feel certain that they will be in a position to say, "That reminds me of an experience I had _ _ _ _ _."

In presenting this series of anecdotes, it is recognized that they reflect the objectives of "establishment in farming," and "developing agricultural leadership" which were accepted at the time they were written. Teachers in service and those who are preparing for teaching may ask themselves, "How would I meet similar situations today?" What new or different solutions would I need to use to meet similar situations with students preparing for careers in farming and/or agricultural business?

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While any division of the series of anecdotes results in some overlapping, for the convenience of readers, the anecdotes have been assembled into pamphlets under the following titles:

1. Teaching High School Students
2. Future Farmers Programs
3. Post-High School Farmer Training Programs
   A. Young-Farmer Programs
   B. Adult-Farmer Programs
4. Problems of Relationship
5. Program Planning
6. Student Teachers

Students preparing to teach vocational agriculture will find in these anecdotes examples of many typical problems faced by teachers of agriculture. It is hoped that these problems will help students visualize real situations as they work through the professional education courses required for certification, and as they consider the subject matter of technical agriculture in relation to planning and conducting instructional programs in local schools

Teachers in-service, who may read these stories, will say, "Let me tell you about a similar experience I had _ _ _ _ _," and "I would have done it differently. I would _ _ _ _ _." In groups of experienced teachers this could lead to spirited discussion and demonstration to emphasize an aspect of method, or application of principle.

Among either pre-serivce or in-service groups of teachers it is hoped that these experiences and happenings will stimulate teachers to study methods and principles in a realistic and constructive manner.

Raymond M. Clark, Professor Emeritus
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July 1971

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The Post-High School Farmer Training Programs

The young-farmer program was originally designed to help out-of-school young men to continue their education in agriculture under the direction of the local teacher of vocational agriculture. More recently the program has been modified to assist men to continue preparation for farming and/or for agricultural business and industry. Usually it is a part-time non-credit program as contrasted with the more concentrated technical programs offered at Michigan State University and some other Land Grant universities and at some of the community colleges.

The adult-farmer program was originally intended to serve farmers who were already established in farming but who needed to learn about new practices, new varieties, different management procedures and other matters of concern to farmers.

As you read this series of anecdotes regarding some of the experiences I have had with farmer classes, you will discover that here are challenging groups of men who are anxious to keep moving toward their goals. For the teacher they can provide not only challenge, but also great satisfaction and lasting friendships.

Many of the anecdotes in this pamphlet were originally written in the early 1950's. At that time most farmers had a poultry enterprise, at least to supply the farm family. Poultry was very nearly a universal farm enterprise. Also, farm programs were much more diversified in terms of enterprises than they are today. This will account for some of the kinds of classes and for some of the conversation recorded in these anecdotes.

However, in spite of the "out-of-dateness" of some of the technical agriculture included in these anecdotes, we believe they carry some suggestions used by the teachers such as the use of committees of class members to help plan, the participation of class members, and many other characteristics to be studied and evaluated by present and prospective teachers of agriculture.

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As one studies the needs of men engaged in agriculture--both on-farm and off-farm he will discover vast areas to be covered. He will begin to discover the need to work with the class members in selecting areas for study, and perhaps encouraging some forms of independent and individualized study to help students make application to their individual problems.

We have not included questions following each of these anecdotes, as has been done in some other pamphlets of this series. We suggest that these anecdotes be used as a "take-off" for discussing such topics as: (1) the function of the school for providing part-time continuing education for out-of-school youth and adults; (2) how to organize out-of-school youth and adults for a continuing educational program, and (3) how to conduct class sessions for out-of-school youth.

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POST-HIGH SCHOOL FARMER TRAINING PROGRAMS

A. Young-Farmer Programs

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WE ORGANIZE A YOUNG FARMER CLASS

One afternoon in the early fall, just as school was closing for the day, I was cleaning up the Vocational Agriculture room at the high school when in walked four or five of my graduates of past years. They were young men who had been active in the Future Farmer Chapter and they were now farming in the school area.

I had seen them occasionally since they had finished their high school, but had never mentioned further education to them. We had never considered young farmer classes at that time, in fact there was not a single young farmer class organized in the whole state. I am afraid we had the idea that when a boy graduated from high school, our responsibility had ended.

I greeted these young men as warmly as I knew how and we brought ourselves up to date on each others activities. Then their spokesman said, "We have been talking among ourselves and have decided that we would like to have some meetings to sort of keep up-to-date on the new things that are happening in agriculture. Maybe we could talk over some of the new ideas and exchange some of our experiences. Its kind of hard to keep up on everything by reading. We wondered if you would have time to meet with us and sort of help us get organized and help plan our program."

What a compliment, and what a challenge that was! Here was a group of young farmers who had voluntarily, and without a single suggestion from anyone outside their group, coming back for more vocational agriculture. I had never even heard of a young farmers class in a secondary school at that time.

Needless to say we had "some meetings". The boys brought about 25 of their neighbors, nearly all former vocational agriculture students of mine. They agreed on the topics they wanted to discuss. They elected their officers to keep the records and to plan for a recreational

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program and I helped lead discussions on the topics they selected for study. We met regularly for several years without any of the formalities of reports on supervised farming, reimbursement on salary, or records of attendance. I visited the young men on their farms whenever I could and we had farming programs which would be a credit to any young farmer program of a more modern period.

We had more than that; some of the issues these boys brought up had dynamite in them for a teacher in the public school, yet many were vital to these young men and they tackled them. I remember one evening the president got up to call the meeting to order and he said, "You know the county board of supervisors voted today to put up the question of retention of the office of county agricultural agent to a vote of the people at the next election. Now it doesn't seem to me that us young fellows just getting started in farming can afford to let the people do away with the county agent's office." This was a hot issue in the county and I wondered how the people would feel about my boys taking up such an issue in a meeting for which I was responsible.

I told the boys that this was an issue they would have to handle themselves and they went ahead. Before the evening was much older, they had made plans for members of the group to hold meetings in every township in the county to discuss the issue and urge retention of the office. The voters retained the office, I am sure largely through the efforts of these boys. The political experts in the county were sure that the vote would be against the office.

I have often wondered what happened in the training or experience of these young men to cause them to come in and ask for "some meetings so we can keep up-to-date on our agriculture." In looking back over the many intervening years I think I can see some features of their high school vocational agriculture program which may have contributed to their request for more training. At the risk of seeming conceited, I should like to enumerate some of them:

1. A practical problem approach was always used for all of our technical

agriculture subject matter. The boys were prepared to seek up-to-date, scientific information to use in the solution of their problems. The problems discussed in our classes were their problems, taken from their farms and the findings in class were used in the solution of the problems at home. They had to be right!

2. The boys recognized that conditions change rapidly and constantly. They had been taught to keep their information and their practices up-to-date. They realized how rapidly farming practices change and they knew that high school graduation for them could not mean the end of education if they wanted to become successful, well-established farmers.

3. They had learned to exchange ideas freely in vocational agriculture - in the classes and in the Future Farmer work. They recognized that they could help themselves by exchanging ideas regarding the solution of their problems, particularly if they could have access to the new ideas and information available to them in the local department of vocational agriculture.

4. They had unlimited confidence in their own ability to meet problems and to find solutions so long as they could work together on them. They had learned in their Future Farmer work that together they could be successful in almost any undertaking. This confidence carried over to their adult life in activities such as the undertaking which resulted in the retention of the county agricultural agent's office.

5. I am sure they believed in the Creed of the Future Farmer which they had memorized and which they were living--"I believe in the future of farming...I believe in leadership from ourselves and respect from others...I believe in less dependence on begging and more power in bargaining..." They were living their creed.

A YOUNG-FARMER CLASS REVISES ITS PROGRAM

The state supervisor was at lunch one day with Dick Jones, a very successful teacher of vocational agriculture, when the conversation shifted to the topic of organizing and conducting young-farmer classes. Dick seemed lost in thought and troubled for a few moments and then burst forth with, "You know, I'm worried about my young-farmer class. They just don't seem to be interested this year like they were last year when we started."

This was a surprise to the supervisor. Dick was one of the best teachers and no one dreamed that he really worried about maintaining interest in any of his classes. He said, "Is that so? What are they studying this year?"

"They're working on dairy production. Just now the subject is feeding cows."

"How did you pick that subject? Did you pick it for them?"

"No, of course not. They have a committee that I meet with. They decide on the lessons and report to the class. If the class want the lessons changed, they say so and we change."

"Well, that's supposed to be a good technique, but why do you suppose they chose dairy?"

Dick looked puzzled for a moment. He wondered what the supervisor could be getting at. He replied, "They all have dairy cows on their home farms. Why wouldn't they study dairy. It's their most important enterprise."

The supervisor thought a moment and then said, "Yes, you're right, but Dick, What is a young-farmer anyway?"

"He's an out of school young man who wants to become established in farming, but who isn't yet established. But what's that got to do with it?"

"Well, I was just wondering, Do you suppose these young men of yours are concerned with feeding cows, or in how to rent or buy land? Do you suppose their real problems lie in the area of how can I get established

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in farming instead of in the areas they accepted from the committee?"

Dick thought some more and then he said, "Maybe you're right! They wouldn't be likely to put that thought into words would they? But I'll bet that's what they really would go for. I'm going to try it and find out."

The supervisor and Dick listed a number of problem areas having to do with credit, partnership and lease agreements, purchase of land, and the like. When they had finished Dick said, "Boy! If they go for this we'll be on it for the next three or four years. I believe we've got something!"

"Well, let me know how it works after you try it," were the parting words of the supervisor.

Dick left with, "Don't worry, I will."

Several months later Dick and the Supervisor met again and Dick started the conversation with, "Say! You know that idea worked! Those boys just eat that stuff up and we've got a lot of written partnerships in operation already."

"That's good, must be the dads accept it too if they agree to the partnerships."

"Sure they do. We had some joint meetings after we had studied the ideas in class and explained the ideas to the dads and its going good. I'm sure glad we had that talk that day."

"So am I. How about next year, will this same group be back for another class?"

"Yes, they'll be back. They don't want to give up their group and they want to do some more work on how to get established. In another year or two they will be far enough along the route to establishment so they will be ready for some of the production problems we were on before our last talk. That's when I'll begin to call them an adult-farmer class. They won't need to know the difference. But we'll have to start another class to take care of the younger boys."

A YOUNG-FARMER CLASS ENTERS POLITICS

Dick Jones was a teacher of vocational agriculture in a relatively large high school in southern Michigan. The school was located in a county where the farmers had been asserting themselves every year or two by doing away with the office of county agricultural agent. Sometimes they requested his resignation and sometimes their board of supervisors simply failed to vote an appropriation to maintain his office. This time the supervisors were almost equally divided in their opinions regarding the maintenance of the office so they decided to leave the matter to the voters at the next election.

Dick had read reports of the action of the supervisors in the local newspaper. He hated to see the office discontinued. He had a very nice working relationship with the county agent, and they had been of mutual help on many occasions. However, Dick felt that he was a public servant and therefore could not enter the fight himself, so he decided to continue his program and let the voters decide the issue on their own.

The young-farmer class was scheduled to have a meeting this evening. Dick was proud of this group. They had asked to have, "some meetings to keep up to date on new developments in agriculture," and Dick had been meeting with them once a week all winter. As they came into the room tonight John, the president, said to Dick, "We'd like to take some time tonight to discuss a problem by ourselves. You can stay if you want , but we don't want to involve you in this business in any way."

Dick was taken by surprise and he was bursting with curiosity as to what the business could be. He said, "O.K. Do you want to have the discussion we had planned first?"

John said, "Yes, we don't want to miss that. Can you close it up a half hour early? That will give us a chance to take care of our business."

Dick agreed and went ahead with the discussion which had been planned. When he had finished, he turned the meeting over to president, John.

John opened the discussion with, "You fellows probably read in the paper about the county agent problem. You know we have been without an agent more than half of the time for the last six years or more. I don't know what you fellows think about it, but I don't see how us fellows, just getting started in farming can afford to lose our agent now. What do you fellows think?"

"I agree."

"He certainly helped me out of a jam last week."

"I don't know what I'd do without him."

These replies and many similiar ones were immediately forthcoming. Then someone said, "What can we do about it?"

Another said, "I think we ought to get right out and tell the people what we think."

One young man said, "Do you mean we ought to cover the whole county? After all we only represent a small part of the county in this group."

Still another said, "Yes, I believe we could cover the whole county. I believe the people would listen to us and we could carry the vote the way we want it."

After the discussion died down, John said, "Well, do you want to vote on the question of covering the county?"

They voted to hold a meeting in each township in the county. It was agreed that they would advertise the meetings, arrange for the halls in each township and present their views.

Before the meeting adjourned they had appointed members to be responsible for each meeting. They were to work in pairs and were to report back at later meetings regarding their success.

Needless to say they carried the election to retain the office of county agricultural agent and never since then has the question been debated by the board of supervisors.

THE STATE SUPERVISOR VISITS
A YOUNG-FARMER CLASS

The state supervisor of agricultural education called at a school in one of the oldest farming areas of Michigan one evening for the purpose of visiting a young farmer program which had been started there. It was one of the first young farmer programs in the state and it had aroused much interest. Many pessimists had said, "You can't interest young men between the ages of sixteen and twenty-five in anything that looks like an organization."

Others had said, "Let's try and see." Dick Jones the teacher of vocational agriculture in the school was one of those who wanted to "Try it out and see what he could do." He was considered to be a very good teacher of high school boys and he was making his first attempt at organizing and teaching a class of young-farmers.

The state supervisor arrived early, long before the class was scheduled to begin. Dick met him at the door of the agriculture room. Dick said, "I'm glad you're here. I have been wanting to talk over this new program with someone."

"What's the trouble, isn't the class running OK?"

"Yes, it's going good. We're studying dairying and the boys seem to be interested. They are working on how to get started with a dairy herd of their own along with their study of feeding and breeding. I think these topics seem to fit together in nice shape and the men are interested."

"Well then what do you want to talk over?"

"Its pretty hard to explain, but I'm not quite satisfied. You know the farms in this area are pretty largely in families that have owned them for three or four generations. But these boys don't seem to quite measure up to the traditions - - - I guess I can't explain my feeling, but you'll sense it when they come in. I'm going to ask you to talk to them for a few minutes just before we close the class."

The state supervisor was horrified and shocked. Who ever heard of a supervisor talking to a class without having his speech all written out and rehearsed? So he said, "But what'll I talk about? I haven't any speech to give!"

"Oh, That's all right. Just tell them about what other classes are doing, or something like that. Maybe you can tell them something that will help us improve the situation I have been worrying about."

The young men began to drift in. They looked like normal, healthy young farmers, but without much pride in themselves. They were unshaven. Many of them were smoking cigars, with every appearance of the small boy who is having his first smoke. Their boots were dirty and their blue jeans equally soiled with the mud and dirt of a late winter day on a southern Michigan farm.

Dick called the class to order and went ahead with the lesson. He had a very good discussion on the aspects of the dairy enterprise which had been planned for the meeting. When he finished the lesson, he called on the state supervisor for "some remarks."

The state supervisor had been wondering what he should say to these young men. Should he suggest to them that they clean up and exhibit some pride in themselves? Should he suggest other activities in which they might engage as a group? What should he say?

He still had these questions in his mind when he faced the class. He began, "You fellows represent one of many groups in this state which have come together to work on new developments in agriculture. You are interested in problems of becoming established in farming. - - - in partnership agreements, - - - in credit and financing, - - - of renting and buying, - - -. But I believe there are other things you are interested in too." Here he edged closer to the door and continued.

"I'll bet some of you fellows can't ask a girl for a dance without being embarrassed." Some of the young men looked pretty black at such a blunt statement. The supervisor continued, "I'll bet some of you fellows are at a loss to know how to handle the array of silver at a

banquet." At this point the supervisor felt that the young men might try to beat him to the door, but they didn't. Instead they began to nod assent.

"Why don't you fellows get organized and put on a little dance down in the gym some night?" was the next question of the supervisor. "Possibly you could even swing a banquet at the close of the season. After all, those are some of the things a fellow has to learn if he is to be a good farmer in this day and age."

After the men had gone, Dick said, "Boy! I'm glad you said those things." You could say them while I couldn't. That's just what I think they needed."

The state supervisor went on his way. Several months later he met Dick and inquired, "What happened after that class meeting that night?"

"Well", replied Dick, "They began to clean up when they came to class."

"Did they have a dance or a banquet?"

"They had a banquet at the close of our winter meetings. They didn't get around to the dance. I think that will come next winter."

A YOUNG-FARMER CLASS BRING THEIR WIVES

Dick Jones was a new teacher of vocational agriculture in the school. He had had several very successful years as a teacher of vocational agriculture in another school and had now entered a situation where he would supervise student teachers and serve as a second teacher of vocational agriculture in a strong department.

Dick was visiting with the state supervisor one day about his new position. They were talking about experiences for student teachers and about the program in the school when Dick said, "You know, we've begun to serve some new territory out north and east of town. There's a bunch of young men out there that ought to be in a young farmer class, but I can't get them to come to our school. They went to high school in another town where they didn't have vocational agriculture and they feel out of place in our school. I don't know what to do about it."

The supervisor was interested. "I wonder why they won't come?" he asked.

"I don't know. I have asked them and I don't get much of an answer."

"Are they married?"

"Yes, most of them are. Maybe that's one reason they don't come. Besides it's hard to get them in the habit of coming to a new place. Do you suppose they would meet in their own neighborhood?"

The state supervisor was a little skeptical. He said, "Could you teach them any agriculture out there? You wouldn't have your equipment and materials to work with."

"That's true, but what about the wives. Wouldn't they object just as much to the boys meeting out there as here in town?"

"Well maybe," Dick said, "How about having them come along? After all they're just as interested as their husbands in these problems."

"Why don't you try it? Maybe the wives would be interested in budgets and accounting anyway. I suppose they keep the books, don't they?"

"Sure they do. I think I'll try it and see what happens."

"It'll be an interesting experiment anyway."

"Let me know how it comes out," was the reply of the supervisor.

* * * *

Four years passed and then the supervisor and Dick were visiting again. The supervisor said, "How did that young-farmers class ever come out? That one where the wives were to be invited to come along?"

Dick replied, "Oh, that's still going. We meet once a month the year around and have a more concentrated series of meetings in the winter."

"Is that so! Don't they have a lot of babies? What do they do with them?"

"Oh, they bring them along and let them go to sleep, just like going to any other farm meeting."

"Do the women meet with the men every time?"

"No, sometimes they meet in a separate room and sew or work on foods for the family and other things like that. My wife goes out and works with them sometimes. Other times they meet with the men and we work on farm planning, farm accounts, and other problems they are interested in."

"Well that sounds good!"

"Yes, it's gone better than I had hoped. Now I find that I've got to start another group of the younger folks out there. This gang has developed its own recreation and has become a strong social group, so I'm getting ready now to get the younger one's started in their own group."

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POST-HIGH SCHOOL FARMER TRAINING PROGRAMS

B. Adult-Farmer Programs

AN ADULT CLASS CARRIES ON

Before the out-break of World War II, I visited a series of adult classes in the Thumb of Michigan. The teachers of the area had previously held some meetings and discussed methods of conducting such classes. Adult-farmer classes were new in Michigan and teachers pooled their ideas and experiences for the purpose of promoting and improving their programs.

One feature characterized each of these classes, viz, the organization of the class group. In each instance, one of the class members acted as chairman. He called the meeting to order, appointed committees, and conducted other business of the group. A secretary read a report of the previous meeting. The report embodied any business which had been conducted and also a summary of the lesson which had been covered at the previous meeting. In each case the teacher of vocational agriculture then took over to lead the class in the lesson for the evening.

The report of the secretary served to give the teacher an idea of the interpretations from the previous meeting. The class was able to recall the previous discussion so that they had a common ground for beginning the new discussion.

I want to describe one of these meetings further. Approximately seventy-five persons attended the meeting. I have forgotten the subject, but I believe it was on some phase of dairying. At the close of the class discussion the teacher "turned the meeting back to the chairman," and he announced, "Now we'll have a meeting of the banquet committee, the rest of you may sit in, go to the gym for volley ball, or go on home."

I stayed for the committee meeting. Arrangements were made for food, dates were set and then the question of program came up. The teacher of vocational agriculture said, "I'm going down to the college on Saturday, do you want me to get a speaker?" It did not take long for them to agree on a certain member of the college extension staff as a desirable speaker. Then the chairman turned to the teacher and said,

"If you can get _ _ _ _ _ it will be OK but if you can't get him, don't get any, we'll run our own program."

Such independence paid dividends. Soon afterward the war began and this department closed for lack of a teacher, but this class didn't close. They held a class every winter throughout the war period. They drafted one of their number to act as teacher and they exchanged information and ideas of mutual benefit. They didn't bother with salary or reimbursement, but when the department was reestablished they were still operating and ready to take over the new agriculture man for their teacher. They are still going strong.

I feel sure that the early ideas of the group of teachers for placing responsibility on the farmer members of their classes, paid dividends in this instance. No doubt our newer ideas of advisory councils and committees can serve a similar purpose provided we place responsibility on them and give them the opportunity to do some independent planning and to carry out some purposeful activities. In any case the idea of independent, yet cooperative group action will pay off in terms of a long time functional program.

* * * *

1. As you see it, what is the role of the teacher in the adult-farmer program?

2. Is a "farmer run" adult class likely to result in the participation primarily by a "socially close" group to the exclusion of other farmers? Why or why not?

I VISIT AN ADULT FARMER CLASS

One cold winter evening, I drove into a small town in Michigan and went to the high school to visit the adult farmer class which was scheduled to meet in the agriculture room. The village is located in the Thumb of Michigan. It is the county seat of a prosperous agricultural county where beans and sugar beets are the chief cash crops and where dairying is the main livestock enterprise.

It was in the early part of World War II and the teacher who had served the community for several years had been called into service the previous spring. The new teacher had had many years of service in several different schools in Michigan and was in the middle of his first year in this town.

When the class was called to order, there were fifteen or twenty farmers present. The subject of the course was Farm Management and the lesson for the evening was on Size of Farm Business. I sat in the rear of the room beside a big, wide awake, burly farmer, and listened to the teacher discussing material from a chart which he had borrowed from the College of Agriculture. The chart was based on records from the farm account cooperators in Michigan. The teacher would say, "Now you see, the farmers with the biggest gross, got the most net income," and "you see, these farmers with the big farms made more than this group over here who had smaller farms."

No one else said anything, and as I looked around the group I was unable to detect any glimmer of interest on the part of any one present.

I have always been an unruly pupil and on this evening my farmer neighbor and I struck up a whispered conversation which began with my questions and his answers. It went something like this:

I leaned over and whispered, "How big a farm do you operate?"
"Two-hundred and forty acres," was the reply.
"Gee, that's quite a layout of this flat black land. What do you

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grow?"

He replied, "Yeah, it's pretty good size. We grow some beans and sugar beets, and some hay and grain."

"Do you have some livestock then?"

"Yeah, we milk about forty head of cattle."

And so it went until I had a pretty good idea of the farming program, including crop yields; percentage of tillable acres in row-crops, legumes, etc.; machinery; and other data concerning the farm.

Then I asked, "With that kind of a layout, why do you bother to come to these classes?"

The answer came quick as a flash, "Oh, I made a thousand dollars on this class last year."

I as quickly replied, "I don't believe it, how come?"

"Well it was this way, he said, "Last year Jim was the teacher and we came down here for the meetin's. We was talking about feeding cows and Jim got each of us telling about what we was feeding. We all chipped in our two-bits worth and when we got done, Jim turned around to the black board and wrote down a grain mixture that would go with the roughage we had and that would use the feed we were growing. I copied it down and took it home and started feeding it to my cows. That ration saved me fifty cents a hundred on feed and that was worth 1000 dollars alone. Besides my production went up and I didn't count that!"

So I was convinced, and then I said, "But what have you got out of this course so far this year?"

"So far I haven't gotten a damn thing, but I'm still hoping! Besides I like to come down and see the boys once a week."

I feel this true story illustrates a vital point for teachers of vocational agriculture. The first teacher, who taught the dairy course, brought out the problems and questions of the farmers. He even brought about a situation in which they discovered additional weaknesses in their practices, and he helped them develop sound, practical solutions to their problems.

In contrast, the second teacher never once stopped to ask, "What is your situation?" with regard to the size of farm business. "What are some of the problems in your situation?" "What are some of the changes you could make to remedy the situation?" Let me hasten to add that there were problems in the group. I learned of some of them in my brief visit with my farmer friend in the class. I also learned that the group had decided with Jim at the close of the previous lessons on dairy, that their biggest problems lay in the area of farm management and, "they are still hoping!"

* * * *

1. How would you have taught the class?

AN ADULT CLASS ASKS FOR MORE

Just as the first brown furrows of early spring were being turned, I drove into a small Michigan village in the late afternoon. I walked over to the high school and called at the office of the superintendent of schools. We passed the time of day and then I inquired about the department of vocational agriculture. The teacher was a first year man, having graduated from the college the preceding June.

The superintendent was enthusiastic in his praise of his new agricultural teacher. He was a "good community man." He "ran his classes well, and he cooperated with the other teachers in the matter of field trips and other activities which sometimes take pupils out of other classes."

The records had indicated that this teacher had an adult-farmer class which would meet during this evening. I asked the superintendent about it. He said the class had been very successful, however he "didn't approve of schools offering educational programs beyond the high school, and we aren't going to have any more of the damn nonsense." This class would close tonight and they would close up the adult program for good.

I was a little disheartened, but also pleased that the present class had gone well and that the teacher was doing a satisfactory job. I indicated that I would like to visit the class tonight and received a cordial invitation from the superintendent to do so.

When the time came for the class, I returned to the school and walked into the agriculture room. Eighteen farmers soon gathered around a big table with the teacher sitting at the head of the table. Of course he was nervous with a state supervisor present, but he managed to call the class to order.

When they came to order, the first thing the teacher said was, "Now this is the last meeting of this class for this year."

A big, unshaven farmer down the table said, "The hell it is!"

I thought the teacher would fall off his chair, but he finally managed a "What do you mean!"

"We gotta have more meetin's," was the reply.

After a moment of thought, the teacher said, "Why, you wouldn't come to meetings now that farm work is opening up, you'll be too busy."

There was a chorus of, "By _ _ _ _ _, we will!"

Then the teacher asked, "Well, what kind of meetings would you like?"

He immediately got a whole series of replies. One farmer said, "We gotta have some meetin's on chickens. I never paid no attention to the chickens on our place, but I guess I'm gonna have to. The government wants more eggs." (this was in the early months of World War II.)

Another farmer said, "Bill planted some of that new-fangled pasture out to his place. We ought'a have a meetin' out there about the first of July to see how its a doin'."

A third man said, "I wanna' have some meetin's on feeding cows on pasture."

There were several other contributions and finally they listed all of the items on the blackboard, set their dates for regular meetings for the summer months.

When the meeting closed the teacher said to me, "What shall I do? The superintendent said we wouldn't have any more adult-farmer classes?"

I suggested we wait until morning and then we would see the superintendent together. I thought we might be able "to work out something." I felt very sure that no school administrator would turn down such a demand from adults who were patrons of his school.

We called on the superintendent in the morning and presented the results of last evening's discussion. He voiced no objection, and enthusiastically entered into the business of setting the administative machinery in motion for carrying out the plans. And so was begun the first adult-farmer class in Michigan to meet regularly throughout the summer months.

I have tried to analyize what made this program click. I am not sure I can list all of the factors, but here are a few which I feel sure contributed:

1. The teacher had an intimate acquaintance with every member of his class. He knew their farms. He had talked over their plans with them and he was able to gear his instruction to help them to a solution of their problems.

2. The instruction was based on common problems of the group and emphasized practices and developed understandings which could be of immediate use to the class members.

3. The instructional procedure was informal. It encouraged much discussion and exchange of experiences; but it also never failed to present up-to-date, scientific information which was pertinent to the discussion. The teacher avoided allowing a member to draw incorrect conclusions from the ideas or experiences of his neighbor.

4. There was excellent cooperation between the county agricultural agent and the teacher. Both knew the others program, and they agreed on desirable practices which were needed for the improvement of the farming in the area.

5. There was the stimulus of demand for food production to meet war needs. I feel this was a relatively minor factor. However, it cannot be ignored. Farmers have always been willing and anxious to do their share in contribution to the general welfare of the nation.

6. Finally, there was a teacher who had a sincere interest in the community. He was motivated by a spirit of service. He was not afraid of work and he had a personality that radiated enthusiasm for the job of a teacher.

* * * *

1. Should a few farmers be permitted to "set policy" for a school dis-

trict by requesting an educational program? Why?

2. Should a school district offer instruction to adult farmers? Why?

I VISIT MY ADULT-FARMER CLASS MEMBERS ON THEIR FARMS

For many years I had had adult-farmer classes of a sort. The classes were a series of meetings, held during the winter months of the school year so that farmers could attend without interference with their work. As teachers we had never discussed adult classes as part of our program and we never bothered to report them to the state office in our annual reports. They were good public relations work and the results in terms of improved practices were worth far more each year in increased returns than our annual salaries. We felt this was sufficient justification for holding the classes.

But now I faced a new situation. I had moved to a new school and had become a supervising teacher with responsibility to organize and conduct a program which would provide satisfactory experience for student teachers. A new state administration for vocational education had announced that hence forth adult-farmer classes should be part of the program, and it was up to me to deliver.

A committee had been organized prior to my arrival and the members decided on the subject for their classes in the next year. Little information was left concerning potential members for the class and no one seemed to know whether there would be any interest in the subject.

During the summer, after my arrival, I called on all the adult-farmers I could contact. Our conversation would go somewhat as follows: "Good morning, I'm the new ag. teacher down at school."

"Well, glad to meet 'cha. I heard we had a new man down at school."

I would reply, "Well, I'm glad folks know about us anyway. Crops look pretty good this year, don't they?"

Usually I would get a reply such as, "Yeah, they ain't bad."

I would then steer the conversation around to such items as, "How many acres do you have here?" "How many cows do you keep?" "How many hens do you have?" Sometimes I would ask about yields of the crops and

production of livestock.

After I got answers to these questions I would say, "We're planning on some meetings down at school this winter. Some of the men thought they would like to discuss some of the problems on dairy. "What do you think about that?"

"That's a pretty good idea," would be the reply, "Ike Jones down the road here, he sure needs some help on how to feed his cows."

I would say, "Is that so, how about you bringing him along? I'll stop and see him, but you be sure to get him there!"

Most of the time the answer would be, "Yeah, I'll come, an' I'll try to get Ike to come too." Sometimes the reply would be, "Well, you see we ain't got only a small acreage here an' only one or two cows an' I work in the factory nights. But I'll come when I kin."

I would leave with some idea of the problems of the farm from the point of view of farm organization, livestock load, cropping program, and many other problems. I wanted that adult class to be a success!

Finally time came for the first meeting of the class. We had a good attendance of men with widely varied backgrounds. One farmer left school at the third grade. He had five scrub cows and worked in an automobile factory in the nearby city. Another farmer was a graduate in dairy husbandry from Michigan State College. He had a large herd of pure-bred Holsteins and was considered a very successful dairyman. Others were probably between these two extremes.

We discussed our plans for the courses and opened up a discussion on problems of feeding dairy cows for production.

I wanted to keep the discussion on a very practical level and still keep it challenging to every member of the class. I decided that I must learn more about the farms of my class members. I had visited all of them during the summer, but I had not gone into a detailed study of the practices on each farm with regard to the management of the dairy herd, so I decided I must visit these farms again.

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Every afternoon, after my last all-day class I would start out to visit. I'd arrive at the farm, find the farmer if he was at home and we would begin our conversation something like this, "Let's see, you said you had ten cows didn't you?"

"Yeah, we have ten Holsteins. They ain't doing too well this year," would be the typical reply.

"That so, What's the matter?"

"Oh, I dunno, maybe it's the feed, or maybe it's something else, anyway it ain't so good."

While we visited I would walk toward the barn and then I'd say, "Let's take a look at the cows." When we got in the barn I would edge over to the hay mow and get hold of a sample of the hay. I'd look at the hay, studying its color, proportion of leaves, mixture, weeds, and coarseness of the stems. I would ask, "How much hay did you put up last summer?"

I would get a reply something like, "Oh, about twenty acres I guess."

"Let's see, that's about one and one'half tons to the acre. How long have you had hay on that field?"

"Oh, about three years. It's pretty hard to get a seedling, so we leave it as long as we can."

"Do you have much grass coming in?"

Often the reply would be, "No, not much. The hay is pretty good alfalfa, don't you think?"

This would give me an opportunity to point out the mixtures in the hay, and to suggest that a sample be brought in to class next time so we could plan rations to fit the kind of hay on the farm and also to compare hay from different farms.

Then we would get over to the grain bin and carry on a similar conversation about the grain mixtures. "What kind of commercial feed are you feeding?" "What protein supplement are you using with your corn and oats?" would be the typical questions.

Did these visits pay off? I thought they did. In the class discussions, I was able to say, "Bill, when I was at your place last week,

I saw some very good hay. Tell us how you mix a grain ration to balance with that hay. Would you need to change it if your hay had more grass in it?"

These questions helped me to develop the discussion on the level of the class members. Their interest was maintained and their practices improved.

* * * *

1. How can the teacher help the farmers become aware of possible causes and solutions to their problems?

2. What would you have done differently to organize and conduct an adult farmer class? Why?

A CLASS OF VETERANS DEVELOP
SOME SOCIAL REFINEMENT

A few years ago, I went out from the state supervisor's office to visit schools. We were working with teachers at the time on the development of institutional-on-farm training for veterans. I arrived at one school where two classes for veterans had been organized. One of the classes met in the local school and the other met some miles away in a neighboring school. Both were under the same administration and were directed by the teacher of vocational agriculture whom I was visiting.

I spent some time with the teacher answering his questions and occasionally asking some, but always with the feeling that the teacher was about to say something, if I could only find a clue and get him to open up. Finally I must have hit the right chord for he said, "You know that class that meets over at _____ is a lot different than the one that meets here."

I said, "Is that so? How is it different?"

He replied, "Well, I don't know, those boys up there don't seem to have any pride. They come to class with their boots all covered with mud and manure. They seem to take pride in the fact that they don't shave for a week at a time. They cuss and swear, I guess they are just a rowdy bunch."

I said, "And the class that meets down here isn't like that?"

"No! They at least clean up when they come to class, and they watch their language a little bit."

Then I asked, "Well, what are you doing about it?" I wondered if he would say that he wasn't doing anything, or that/that had nothing to do with training for farming.

Instead he said, "Oh, we had a good Christmas party."

"You did? With both groups together?"

"Yes, I figured I had to do something. We'll never get the best kind of farmers unless we take care of some of those kinds of social problems. We got both groups together and they brought their sweethearts and wives along and really had a good time."

I was pleased and let him know it. Then I asked, "Are you doing anything else?"

He said, "Yes, we're having a banquet in the spring, along in March sometime. We'll get up a program and try to have a real banquet."

"Are those things doing any good?" I asked.

"Yes sir! They're beginning to clean up a little. They take a little more pride in their looks and manners and you can see it in their work in class."

"That's good. I agree you can't train men to be the best kind of farmers unless you help them to develop more than the farm skills necessary for profitable production. I think you are doing a fine job of training men to be farmers."

* * * *

1. Should agricultural instructors be concerned with instruction which is other than technical agriculture?

2. What other suggestions might you have offered to the agricultural teacher?

7886

MY ADULT CLASS MEMBERS MAKE MONEY

During my first thirteen years of teaching vocational agriculture in high school I was never encouraged by local or state administrators to conduct adult-farmer classes. Adult-farmer classes were not considered an essential part of the program as they are today.

I felt, however, that an adult-farmer class would be a good undertaking. It would let the adults who attended know something of my programs; it would be a good public relations program; and it might give some farmers ideas which could be profitable on their farms. With these ideas in mind, I made a practice to invite in farmers of the area each winter for a "series of meetings" on some topic of interest to them.

One winter the series was on poultry. I was having only mediocre success. Attendence was regular, relationships were satisfactory, but I felt there was not much acceptance of new ideas, until one night in the early spring when we were discussing feeding of growing pullets.

We exchanged experiences and passed many suggestions back and forth. One of my contributions during the evening was to write on the black-board a ration recommended by Michigan State College for feeding growing pullets. One member of my group was the operator of a small country elevator some miles out of town. He was a part-time farmer, but his influence spread far and wide over the area because he sold a great many tons of feed each year. He contributed much free advice to his patrons and the advice coupled with his particular feeds had a great deal of influence on the feeding practices of the area.

When I put the college recommended ration on the board and showed that it consisted mainly of home-grown feeds, he said, "I don't believe that's any cheaper than the commercial brand of feed I'm selling."

I replied, "I don't know that it is. How much is your feed costing the farmers right now?"

He gave us the price, and then we figured up the cost of the college ration using his quotations for our prices. When we had finished he

said, "By gosh, it is cheaper isn't it."

We all agreed and I saw him reach for a piece of paper and copy down our ration. I had little hope that anything significant would happen as the result of our little conversation. However, I made it a point to drop in at the elevator a few days later and was pleased to find a nice big chart showing the college ration tacked up over the feed bins. I inquired about sales and was told, "Oh yes, we're telling everyone who comes in about that ration and they're buying it."

I checked at the close of the season, and for several seasons after that first one, and I found that each year in which I checked, the savings to farmers compared with the price of the commercial feed which had been sold previously, amounted to more than my annual salary. The manager of the elevator was pleased with results since the farmers gained new confidence in him and his business increased correspondingly. I checked with growers and they claimed to be getting equally good results with their growing flocks.

There could be many discussions concerning this little story. Some educators would insist that we should not measure results of our efforts in dollars and cents terms. I agree that dollars and cents is not the only criterion we should use, but when results are shown as clearly as they were in this case I think it helps. I know my superintendent and board of education were interested -- they didn't cut my salary either!

Some vocational educators might argue that my elevator friend should not have attended my adult-farmer class. After all he was not a farmer, and we weren't actually trying to improve his farming practices.

At that time I was not worried about this point since I had no official responsibility to check membership against any state or federal policy. This was just a group of farmers who got together because they were interested in finding solutions to their problems. They became good supporters of the department at the same time that they received some of the help which they wanted. The elevator man simply helped by "spreading the gospel" more rapidly and over a wider territory than

I could have reached. I tried to help him spread a gospel which would be of greatest value to the farmer patrons of his elevator.

* * * *

1. How would you evaluate the results of an adult class which you had taught?

2. Can you justify, "to improve the public relations of the school," as one objective for conducting an adult-farmer class?

3. Can you justify inviting the elevator manager, or other commercial agencies serving farmers, to become members of an adult-farmer class?

4. Do you believe that my work with this adult-farmer class had an ill effect on the manufacturer and distributor of the commercial feed which was sold through the elevator? If so, should I have refrained from presenting the college ration?

A BANQUET AND GRADUATION EXERCISES
FOR VETERANS

"We're having a banquet tonight for the veterans who have finished their course under the G.I. training program and we'd like you to stay over for it." So said a teacher of vocational agriculture, who was also director of the veterans program, when I arrived at the school in the morning. There were three other teachers of agriculture in the school and I had come to visit one who was a first-year teacher of veterans. I was working with first year teachers on a program of in-service training.

"You mean you are having graduation exercises for veterans?" I asked.

"Yes, that's the idea," he replied. They'll bring their wives and we will present diplomas. We have a speaker coming from the college and are planning quite a nice program."

"Do the vets care about graduation exercises and diplomas?" I asked.

"Yes," replied the teacher, "They're looking forward to this event as an important affair. Some of them never got a diploma. They didn't graduate from high school, and they're all interested in having an event just for them."

What about your regular adult-farmer program?" I asked. Won't this affair tend to develop the idea that they are all done with school and that there is no need for them to enroll in your adult-farmer classes?"

"No, I don't think that will happen," he replied. "In fact, that's one of the things we discussed with the superintendent and all the agriculture teachers. We decided that we would try to develop the idea that upon graduation they will be ready to enroll in our adult-farmer courses. I think these seven who are graduating tonight are looking forward to enrolling in the adult-farmer classes right away."

"That's an interesting point that I hadn't thought about," I replied. "Maybe you've got something there. I'll be interested in the banquet program tonight and also in how well you succeed in holding these veterans

in your adult education program."

"So will I," replied the teacher.

I visited veterans with the first-year teacher during the day and when the time came for the banquet, I went to the high school. I found the crowd beginning to gather. I circulated among the veterans and their wives. When no one was around to introduce me, I would introduce myself to one of the veterans and his wife. Then we would discuss the weather and other neutral subjects for a few minutes. Finally, I would ask a question something like this, "What are you getting out of this farm training program anyway, besides the subsistence?"

"Oh, I get a lot out of it," was the reply in every case.

"But just what have you gotten that's any good to you," I would ask.

Typical answers were, "Well, my teacher helped me select some good dairy heifers to get my herd started up. You gotta have good stuff to make a go of it these days, an' we got some of the best. I never could have found 'em myself."

Another said, "My teacher got me to do a better job of feeding my hogs and I begun to use some protein supplement in the ration. It certainly has helped my hogs."

Still another said, "This new man, he's my teacher, come out to my farm an' he helped me figger out some strips on my farm to help control erosion. It's goin' to help me a lot. Crop yields'll increase an' I'll quit losin' all my soil down the creek."

After following this discussion for a few minutes, I would ask, "Well, what are you going to do when you graduate, like these men are doing tonight? Will you be all through then?"

Practically all the veterans in the group said, "No, we can't quit. This farming business is changing so fast that we've got to keep on going to school in order to keep up on new things. We're planning on enrolling in the adult classes they've got for non-veterans. We're eligible to join right now, but we figure we're better off under the G.I. training as long as it lasts. For one thing we get the subsistence, an' we need it to get started, and for another the teacher gets out to our place oftener than he can under the regular program.

When the crowd had gathered and my colleague from the college had arrived, we sat down for the banquet. The Future Homemakers did an excellent job of serving the food and the veterans and their wives seemed to enjoy themselves. The speaker gave a very good talk on the need for a continuous program of education for every individual; the importance of developing one's self so that he can make a maximum contribution to society; and the necessity for keeping abreast of events in a rapidly changing world. I thought he was right. The veterans liked his way of stating his points, but actually they had told me the same ideas before the meal. They were certainly thinking as we were. Possibly they were ahead of us.

After the speech, the president of the board of education gave out the diplomas and congratulated the graduates. He said, "The board of education wanted me to congratulate you on your achievement up to this point and we want to urge you to continue your educational program in our adult classes."

When the program was over and the photographers had finished their work, I found the teacher of agriculture and congratulated him on the success of the program and then I said, "I think you have accomplished your purpose. You have been able to graduate these men and at the same time I believe you are going to enroll them in the adult-farmer classes. Instead of graduation meaning that they are finished, you have been able to tie them closer to the school"

The teacher said, "That's what we hoped to do, as I told you this morning. I'll let you know how we come out. I'm glad you could stay."

So we said, "Good night," and I left. Later the teacher did write to tell me that all of the graduates of that evening had enrolled in the adult-farmer class.

* * * *

1. How would you try to motivate farmers to "desire" additional education?

YOU CAN'T DO THAT WITH ADULTS

We learn much by experience, and learning to teach adult-farmer classes is no exception. One cold winter night, I visited an adult-farmer class in Farm Mechanics which was being taught by one of my good agriculture teacher friends. I had been visiting his high school classes during the afternoon and he had invited me to his home for dinner and to visit the class in the evening.

At the house, the teacher said, "You know, we don't have much of a shop at school and it has been a problem to offer a course in farm mechanics for adults because of that."

I said, "I know. I wondered what you could do in that little industrial arts set-up. It's all filled up with wood working benches."

"That's right," he replied. "We got the farmers together and they wanted farm mechanics, so we rented a little building in another part of town and put in some tools and equipment. It isn't good, but the farmers seem to like it and I think we're doing some good."

"I'm sure you are," I answered. "Where did you get the tools and equipment to move into this shop?"

"The school board furnished most of it and the class members brought in some too. The board realizes that we need a new shop and they're willing for us to get tools and equipment to fit into a shop when they are able to build," replied the teacher.

"Do you have a pretty steady enrollment in your class?" I asked.

"Yes, they come every night unless they have a very good reason for not attending," answered the teacher.

After dinner, we went over to the small building which had been fixed up with a bench across one side and a few tool panels to make a shop for the adult class.

The farmers began to gather and as they arrived, they went to work on their individual projects. Some had projects requiring wood working tools, others had welding to do, one or two were cutting and threading

pipe for installing running water in their homes.

The teacher was busy circulating from one to another. Occasionally I would hear him say, "How about doing that this way?" and he would stop and demonstrate a practice or a skill that seemed to be lacking.

Once or twice during the evening he called together a group who seemed to have similar problems and demonstrated for them as a group, pointing out the key points which were essential for success in their jobs.

During the evening the teacher checked his roll and marked the attendence of each member just as carefully as if they were all-day students in the high school.

I was interested in watching the reactions of class members to this teacher, who was several years younger than any member of his class, when he would call them away from their jobs for a demonstration, or when he would say, "Let me show you how to do that." I wondered if they would accept these methods from their teacher.

The crowning event of the evening came when the period was about one-half over. One of the farmers came up to the teacher and I overheard him say, "I have to leave early tonight, my wife _ _ _ _ _."

The teacher said, "That sounds like a reasonable excuse. Do you want to leave now?"

The farmer sounded much relieved and said, "Yeah, I'd like to. Will it be okay?"

The teacher said, "Are your tools all picked up and your place cleaned up? Let's go see."

They went over where the man had been working and the teacher said, "That looks pretty good, and the tools are all in place. Okay, go ahead, see you next time."

I thought, "I wish all teachers could command that much respect and that much cooperative spirit on the part of class members."

1. Was I right in my thought, or should the teacher have allowed more freedom?

2. What do you think are the qualities needed by a teacher to be successful in his work with adults?

3. In what ways should an adult class be different than a high school class?

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I ACCOMPANY AN ADULT CLASS ON AN ALL-DAY FIELD TRIP

"On the day you are planning to visit our agriculture program, we are planning on taking an all day field trip with the adult-farmer class. Our high school will be closed that day and the adult class wanted to take this field trip, so we scheduled it. I hope you can come and take the time to go with us on the trip. We will leave the school at 9:00 AM." So said a letter I received from a teacher of agriculture who had been notified that the state supervisor would visit his department on this date.

It always pleases me to find a teacher who goes ahead with his program, without any apology, and without modification when the supervisor announces his visit, so I notified the teacher that I would plan to make the trip with him.

I arrived at the school early and found the teacher already there. Some of his adult class members were gathering. I asked, "What kind of a field trip are you taking today?"

One of the farmers replied, "We have been studying some soil conservation in our class this winter an' we figured we would like to see some of the conservation practices that's going on in our own county."

I said, "You mean the trip will be around this county? You aren't going outside the county?"

The farmer replied, "Yeah, we been hearing a lot about what's going on right here at home. Some of our neighbors been doing some things, but we figured if we spent the day at it we'd get a better idea of the whole thing."

I turned to the teacher and asked, "What did you cover in the adult class this winter?"

"Oh, we talked about the soil on our farms. We did some testing and learned some things about erosion control, planting the right crops on the soil, and that sort of thing."

I asked, "Are you taking any other people along today besides your adult class members?"

"Yes," was his reply, "A couple of farmers who weren't in the class heard about our trip and asked if they could go. I told them to come along. They might sign up for the class next year. I also asked the county agricultural agent to come along. He's been working on soil conservation for a long time and we thought he might contribute to our trip."

I wondered who had planned the trip and if the farmer class members had had a part in the planning, so I turned to another farmer and asked, "What kind of things are you going to see today? Will it be strip cropping or tree planting, or what?"

His answer gave me the information I really was after. He said, "We'll see both of those things. I ain't never seen all the things we plan to see today, but we're goin' to see some pine plantings on the dunes along Lake Michigan where they've stopped the sand from blowing. I got some sand on my place an' if it looks good I'm goin' to try some myself. Besides them pine makes good Christmas trees."

Another farmer interrupted with, "Yeah an' we're goin' up to one of them there blueberry marshes that's been cleared an' planted in the last year or two. I got some of that kind of land on my place an' maybe I ought'a clear it up an' get it producin' something."

A third farmer contributed, "From there we're going over in the other corner of the county where they was havin' a lot of trouble with blowing. They say there's a man over there that's stopped it by planting his crops in strips. That's what I want to see."

Before we had finished the teacher interrupted to say, "Well, let's get under way. I think we can all get in one bus and I'll drive. If anybody can't stay all day, he may want to follow along in his car. Here's the plan for the day showing the location of each stop and describing what we're going to see. Everyone can have one of these sheets and then we'll have them to remind ourselves when we meet in class next time. At that time we'll discuss what we've seen. If there are no questions, we can get in Number 20 bus out in front of the building."

1. Do you feel that the field trip would be successful? What factors would cause it to be successful? What factors would contribute to lack of success?

2. How would you evaluate this field trip as a means of instruction? Would the fact that the class members knew of the places they would stop and that they knew what they would see, be likely to lower their interest?

3. Do you think it wise to organize and conduct a field trip for adult-farmers in their own county?

AN EXTENSION SPECIALIST DEMONSTRATES
QUALITY OF EGGS

Many years ago a few teachers of vocational agriculture in the country organized groups of adult-farmers for a series of meetings during the winter months. Today we would call these adult-farmer classes, but in those earlier days we simply said, "a series of meetings."

Occasionally we would invite in a speaker for one of our meetings. He helped maintain interest and he sometimes brought new information which the farmers felt was worth while.

In one instance an extension specialist whom I had invited for one of my meetings demonstrated his points in a way which, at that time, was novel and new, yet which really demonstrated a high degree of teaching skill. Let me tell you about him.

The series of meetings was on poultry. This particular evening the subject was quality of eggs and I had invited the extension specialist from the college, since I felt that I didn't know much about the subject.

The specialist arrived about one-half hour before the meeting was scheduled to begin. I greeted him as he came in and we shook hands. Then he said, "What did you have in mind for tonight?"

I replied, "We usually have thirty five or forty farmers in each meeting. They have laying flocks of one-hundred to ten or fifteen hundred layers. Lately we've been hearing a lot about quality of eggs. The buyers are talking of paying a premium for eggs from certain flocks because they are consistently better quality. What we'd like to know is, 'What are the factors that affect quality and what can we do about them?' Besides, I think we need to know something about, 'What is good quality in an egg anyway?' I'm sure that a lot of us don't know a good quality egg from a poor one when we see it, unless it's completely spoiled."

The specialist smiled and said, "I guess you're right. At least that's true of most people. We'll do our best and see if we can answer some of the questions you have raised."

I watched as the farmers gathered. The specialist had not come loaded down with the usual pack of charts and mimeographs. He had two or three egg cartons and he borrowed a few saucers from my store room. That was all.

As the farmers gathered, he took time from his preparation to shake hands and visit for a minute with each one. When the meeting began he had already been introduced to every farmer in the group and he knew a little of the poultry enterprise of each man.

After the formal opening of the meeting, members of the group raised a few questions on the subject of quality of eggs and then I called on our specialist to give us some facts on the subject of what is a good quality egg, and to make recommendations as to practices which would help improve the quality of the eggs.

The specialist arose and began his remarks with, "A good many of us don't know just what to look for when we look at eggs to determine their quality. I would like to show you some of the things we have been studying at the college."

As he spoke he opened one of the cartons and broke an egg into one of the saucers. He continued, "We have noted that a really fresh egg stands up, like this. Now here's one," - breaking another egg into a second saucer, "which spreads out more and is flatter. It is not as good as the first, although it is perfectly edible."

Before he had finished, the specialist had broken a dozen eggs representing different qualities. He had explained some of the factors which affected quality and had listed practices the farmers might use to improve the quality of the eggs they marketed.

After the meeting, I congratulated the specialist on his fine demon-

stration. I said, "That's the first time I have seen anyone do that kind of a demonstration."

The specialist said, "It seems to be an effective way to get people to see the differences in quality of eggs."

"It certainly gets interest," I replied. "Did you notice those men sit up when you began to break those eggs?"

"Yes, they always do. I suppose they think there's a lot of money being wasted," he replied.

"Maybe they do, but they also appreciate a new way of presenting material and they've got sense enough to realize that the cost amounted to only one or two cents per person here tonight. If one man improves one practice, it will save more than that on just a small fraction of a day's production."

"That's right," replied the specialist.

"It's a real challenge to me as a teacher and to you as a specialist to keep up with new ideas, and to develop new ones, on methods of teaching. This idea of yours is new to me and I think it's good," I said.

"It certainly is a challenge. It will only be a short time before this demonstration will have to be changed for something better. It keeps all of us on our toes to keep finding new and better ways to present our materials," was his reply.

* * * *

Select a problem or a job and outline a new method of presenting the material, which you believe will be more effective than any you have seen to date. Try to be original as the extension specialist was in his day.

VT 014 722
MUTHARD, JOHN E., AND OTHERS
THE TASKS OF REHABILITATION COUNSELOR AIDES
IN A STATE VOCATIONAL REHABILITATION AGENCY.

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ABSTRACT - REHABILITATION COUNSELOR AIDES
EMPLOYED AT THREE DIFFERENT SALARY RATES BY
THE TEXAS REHABILITATION COMMISSION WERE
SURVEYED ON A TASK INVENTORY WHICH ASKED FOR
THE RELATIVE AMOUNT OF TIME THEY DEVOTED TO
CERTAIN TASKS AND THE AMOUNT OF TRAINING THEY
THOUGHT NECESSARY TO SATISFACTORILY PERFORM
THESE TASKS. RESPONSES FROM THREE JOB GROUPS
SHOWED THAT A MAJOR SOURCE OF DIFFERENCE WAS
THE WIDER SPECTRUM OF TASKS PERFORMED AS THE
SALARY LEVEL INCREASED. AT THE LOWEST LEVEL,
THE AIDE WAS PRIMARILY CONCERNED WITH
INTERVIEWING NEW CLIENTS TO OBTAIN BASIC
INFORMATION AND EXPLAINING THE REHABILITATION
PROGRAM TO THEM. FOR THE HIGHEST LEVEL AIDE,
THE RANGE OF ACTIVITIES INCLUDED NEARLY ALL
TASKS ON THE INVENTORY EXCEPT THOSE CLERICAL
IN NATURE OR THOSE WHICH MIGHT BE CONSTRUED
AS RESPONSIBILITIES OF THE COUNSELOR ALONE.
FURTHER, THE FINDINGS DO NOT SUPPORT THE
ACADEMIC REQUIREMENTS WHICH HAVE BEEN SET FOR
AIDES AT THE HIGHER SALARY LEVELS. A LOOK AT
THE PRIMARY TASKS CONDUCTED BY AIDES FAILS TO
SHOW A NEED FOR HIGHER GENERAL EDUCATION BUT
DOES INDICATE A NEED FOR ABILITY TO LEARN THE
FUNDAMENTALS OF VOCATIONAL REHABILITATION
SERVICE AND A TALENT FOR EFFECTIVE
INTERPERSONAL RELATIONSHIPS. (AUTHOR/JS)

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ABSTRACT

Rehabilitation counselor aides employed at three different salary rates by the Texas Rehabilitation Commission were surveyed on a task inventory which requested them to report the relative amount of time they devoted to certain tasks and the amount of training they thought necessary to satisfactorily perform these tasks. Eighty-two percent of the aides submitted completed inventories. Analysis of variance showed that aides at different salary levels were performing different combinations of tasks. Examination of the modal responses made by the three job groups showed how the groups differed. A major source of difference was the wider spectrum of tasks performed as the salary level increased. At the lowest level, SG 9, the aide was primarily concerned with interviewing new clients to obtain basic information and explaining the rehabilitation program to them. For the highest level aide, SG 13, the range of activities included nearly all tasks on the inventory except those clerical in nature or which might be construed as responsibilities of the counselor alone. It was suggested that the findings do not support the academic requirements (2-4 years of college training) which have been set for aides at the higher salary levels. A look at the primary tasks conducted by aides fails to show a need for higher general education but does indicate a need for ability to learn the fundamentals of vocational rehabilitation service and a talent for effective interpersonal relationships.

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The Tasks of Rehabilitation Counselor Aides in a State Vocational Rehabilitation Agency

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Introduction

IN THE FIELD of vocational rehabilitation considerable interest in the use of counselor aides has been aroused during the last five years. Several experimental programs for training and employing support personnel have already been initiated. Thus far, however, descriptive studies and evaluations of such programs have not been sufficient to provide guidelines for determining what tasks counselor aides can perform and the amount and type of training required to perform these tasks. This study is focused on the functions of the rehabilitation counselor aides in the Texas Rehabilitation Commission (TRC). A self-report task inventory was used to determine the extent to which tasks were being performed by aides at different levels in the personnel hierarchy. A prime objective of this study was the compilation of complete job-descriptions for support personnel employed at three distinct salary levels. A second objective was to obtain the aides' estimates of the amount of training required to perform the tasks involved in their jobs. Although this study is essentially descriptive and limited to the use of aides in one particular state agency, these findings may be instructive to others who are considering the use of counselor aides or rehabilitation specialists. In addition, such studies can be a vital first step in defining the work-role of the sub-professional, establishing minimal training requirements, and perhaps in shaping curricula of institutions which will be preparing students to fulfill this role.

In the next section, a review of literature relevant to the function of counselor aides in vocational rehabilitation will be presented. Following this, the specific problems under investigation in this study and the methodological procedures will be described. Results of the analysis, discussion, and a summary of conclusions are presented in the final sections.

REVIEW OF RELEVANT LITERATURE

It is now clear that the demand for health and rehabilitative services is likely to increase in the foreseeable future. It is also clear that existing patterns of service are no longer feasible, especially the use of

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professional specialists to provide the full range of services in such areas as rehabilitation counseling or physical therapy. With the continued growth in the population and the increased expectations for health and rehabilitation services it appears imperative that we heed Mase's admonition (1964) that health and rehabilitation personnel with full professional qualifications do the tasks they are uniquely trained and qualified to do and that assistants and aides be prepared to perform many tasks that professionals now do. There is no need to belabor the point that the use of aides or assistants would complement the work of professional staff rather than be a substitute for it.

Five years ago at one of the first meetings focusing on the utilization of personnel in rehabilitation, Hipkens (Lesie, 1967, p. 1) asserted "this conference is meeting at a time when the question is no longer 'whether or not' to utilize support personnel in rehabilitation facilities. Rather it is how, how soon, how prepared, by whom, and similar." Since that meeting, there has been a series of other meetings and there has been a good deal of experimentation in state vocational rehabilitation agencies and rehabilitation facilities. Despite the general interest in using support personnel to meet rehabilitation manpower needs, there have been few studies which have systematically examined the use of support personnel in rehabilitation counseling. There appear to be no generally accepted patterns for selecting and preparing these support personnel for undertaking significant jobs within the rehabilitation agencies. Thus, the urgent need for additional personnel continues but efforts to establish any substantial or large scale use of support personnel appear to be stymied either by apathy on the part of agency administrators or by other barriers such as personnel requirements or state civil service regulations.

CONFERENCES ON SUPPORT PERSONNEL

Between 1965 and 1970 a great deal of interest was shown in the use of support personnel or aides in vocational rehabilitation. In addition to being a perennial discussion topic at national conventions of rehabilitation and counseling workers, it has been the primary subject of several national meetings. In July, 1966, the University of Maryland was host to a conference on "Rehabilitation Counselor Aide Functions and Relationships", (Waldrop, 1966) which brought together rehabilitation counselor educators, administrators, and practitioners in order to examine the need for aides and the problems associated with training and utilizing individuals at that level. The essence of that conference's recommendations was that the aide should be identified, both by title and

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function, as a worker who provides a different type of services than does a rehabilitation counselor, and that the person working with the client in the decision-making role should be a professional counselor. It was generally accepted that the aide or support personnel worker should be primarily trained for his responsibilities by the state agency and that the fully qualified rehabilitation counselor should have a M.A. degree in rehabilitation counseling. The conferees urged that additional materials be developed to serve as a handbook or guidelines for the use of support personnel in vocational rehabilitation. There was no substantial agreement among the various groups represented regarding the functions and training of support personnel but there was a general acceptance of the value of support personnel for vocational rehabilitation. There was also agreement that the job title "rehabilitation coordinator" or "rehabilitation specialist" was more appropriate than "counselor aide."

The recommendations of the Maryland group for more guidelines on this problem area were realized when two major rehabilitation groups focused upon this topic. An extended and comprehensive effort was made by a state agency personnel study group as a function of the Institute for Rehabilitation Services. In reporting the activities of the study group, Lucas and Wolfe (1968) present a thorough review of the literature through 1967 and report on many implications of using aides; the roles of the aide; qualifications, selection and training of rehabilitation aides; and future trends of using support personnel in vocational rehabilitation. They surveyed the use of rehabilitation aides in state agency programs and found that 13 of the 58 agencies responding had formal programs for utilizing support personnel. These agencies represented one-third of all the general agencies responding, although none of the agencies for the blind were found to have a support personnel program of the type being considered by the study group. The comments of the respondents clearly showed that a continuing problem with many agencies was defining the duties of the aides and determining how they would best fit into the agency. Additional problems (job descriptions, pay scales, promotions to higher level jobs) were also noted.

Vocational rehabilitation agency administrators and rehabilitation counselor educators met at Clearwater, Florida in December, 1968 to review and discuss the implications of the growing demand for using support personnel in rehabilitation (Joint Liaison Committee, 1969). Papers were presented on many subjects. Among them were discussions on the growing need for using support personnel, the experiences of agencies employing aides, the benefits and concerns associated with

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using support personnel, the problems of roles and duties for support personnel, and the selection and training procedures of non-professional personnel in rehabilitation counseling. However, the conference was devoted primarily to discussions among educators and administrators regarding the issues and approaches associated with using supportive personnel. The report, which summarizes the many group discussions, shows that there were differences of opinion on such matters as the training and utilization of support personnel in vocational rehabilitation, but that there was general agreement that such workers are needed and will be used in the future in both the public and private rehabilitation agencies.

USE OF SUPPORT PERSONNEL

Support personnel have been used in almost all types of rehabilitation programs and agencies. They have undertaken a wide range of functions in the state/federal vocational rehabilitation program. Two agencies well known for extensive use of counselor aides are California and Wyoming. In California they have helped provide rehabilitation services to the disadvantaged in Contra Costa, a non-farm rural county on the outskirts of the city of Pittsburg. As described by Davis (1968), the rehabilitation counselor assistants performed such duties as: 1) interviewing prospective clients and developing evaluations and possible training plans; 2) maintaining frequent contacts with clients and performing supportive functions; 3) contacting employers relative to job placement; 4) closing "rehabilitated" cases and performing other related clerical functions; 5) scheduling medical and psychological testing, and 6) obtaining necessary information from other agencies for use in the evaluation and training of clients. Spanish-speaking and black aides were used extensively in a Rehabilitation Services Administration and Office of Economic Opportunity sponsored project in Watts and nearby communities. In describing the use of aides in this setting, Ridenour (1968) reports on recruiting, selecting, and training this group. She suggests that in this setting the main value of aides was as a bridge between the agency and the community being served. The extensive experience of the California group provides others with information which may be useful in developing their own programs. Although rehabilitation counseling aides were widely used in California in special projects with poverty groups of the Watts area and in an alcoholism project, there was a marked reduction in the use of aides after extensive federal support was no longer available to underwrite their employment.

One of the best known state VR projects for using rehabilitation

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counselor aides was undertaken in Wyoming (Galloway and Kelso, 1966). Set up to establish the value of part-time aides in assisting a counselor to provide better service to disabled residents in sparsely settled areas, the project appears to have been relatively successful. Compared to the previous services of the agency, Aides were able to provide improved services to the disabled in sparsely settled areas and they were able to extend services to a broader range of disability groups. Their assistance allowed counselors to spend more time and effort with more seriously disabled clients and to deal with problems which they had previously lacked time to consider. Clients with aides assigned to them were seen two or three times more often than those without aides and were more satisfied with rehabilitation services than those without aides. The small sample of aides and offices involved did not permit generalization of the findings to other similar settings.

Arkansas has been a pioneer in exploring the use of counselor aides in rehabilitation. Long before counselor aides were generally considered as a possible alternative to providing additional professional staff, the Arkansas DVR (Arkansas Rehabilitation Service, 1961) experimented with using a team of two counselors, a psychologist and social worker who were assisted by three counselor aides in intake, physical restoration, and training and placement. In this preliminary project they found that the group approach to the solution of the individual's vocational problems served more people who were severely disabled and also had an advantage in the number of employed closures. The cost of services to clients was slightly less for the group approach and clients of the experimental section were more likely to retain employment secured after rehabilitative services. Again, the study's size and design limited the ready generalization of the findings to other settings.

In more recent years the Arkansas Rehabilitation Research and Training Center and the Hot Springs Rehabilitation Center have conducted research to evaluate the effects of support personnel in rehabilitation counseling (Leslie, 1967, p. 123-161). In a carefully developed design Truax and his colleagues at the Arkansas center randomly assigned new clients to one of three experimental conditions: 1) a counselor working alone in a traditional manner, 2) a counselor assisted by a counselor aide under maximal supervision, and 3) a counselor aide who, under daily supervision, functioned in the complete role of the counselor. The Center's evaluation record provided ratings of: 1) client work quantity or work production, 2) client cooperativeness, 3) client work attitude, 4) quality of client work, 5) client dependability, 6) client ability to learn, 7) client progress in course during last month, and 8)

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overall progress in course of training. "For each of the criteria used the best results were obtained by the aides working alone under the daily supervision of professional counselors. The professional counselors working alone had the next best results, while the counselor plus the aide working with the same individual cases had the poorest effects on clients" (p. 148). Despite the sophisticated design of this study, it is again clear that the small sample of counselor aides and counselors limits the generalizations one can make from these findings. In addition, the ratings of vocational evaluation supervisors in the rehabilitation center might have been biased by their knowledge of the type of service being provided their clients and their knowledge of the investigators' working hypotheses.

Thus, it appears that successful experiences and experimentation in the use of support personnel, counselor aide or rehabilitation specialist have been reported in a wide variety of settings. The reported studies and projects have been conducted with limited samples. Since the approaches have differed either with respect to settings, clientele served, or patterns of activities by counselors and counselor aides it is difficult to make any reasonable generalizations regarding the results obtained thus far. Nevertheless, there appears to be sufficient evidence to justify large scale experimentation in the use of counselor aides. This alternative approach to meeting the manpower needs of the field appears to have gained broad acceptance. The various experimental projects conducted provide some guidelines for establishing programs for selecting, preparing, and using counselor aides. They also suggest some of the problems to be anticipated in developing measures of effectiveness in using this group. Thus, in the past year there has been further extension of the use of aides in state programs such as Texas and Wisconsin, but unfortunately until this time these programs have not included plans to test the effectiveness of the revised staffing patterns.

PURPOSE OF STUDY

One important area which has received scant attention in previous descriptions and evaluations of counselor aide programs has been elaboration on the actual duties assigned to the support personnel. No detailed job analysis studies have thus far been conducted. In addition, little consideration has been given to the possibility of employing counselor aides at several different job levels with commensurate training requirements, job responsibilities, and salary classifications for each level.

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The study of counselor aide utilization in the Texas Rehabilitation Commission (TRC) was undertaken to determine the nature of the work performed by counselor aides with varying educational backgrounds and personnel classifications. Three subprofessional groups with different job titles and different salary classes were studied. Since the agency did not have detailed job descriptions for the different levels, there was some concern as to the extent to which persons of different personnel classifications were actually performing similar duties. The goal in this study were threefold. Specifically we wanted to know:

1. Were counselor aides in different salary classes actually performing identical jobs?
2. If the jobs were different, what tasks actually comprised the respective jobs of GS 9, GS 11, and GS 13 counselor aides?
3. What level of skill or training was necessary to perform the tasks involved in these jobs?

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Methodology

TO SECURE DESCRIPTIVE DATA from the supportive rehabilitation personnel of TRC a task inventory designed in the pattern established by the Air Force Personnel Research Branch at Lackland (1962) was developed. Task statements for this inventory were obtained from three sources. The first were tasks which rehabilitation counselors had designated as appropriate for supportive personnel in a study by Muthard and Salomone (1969). A second source was the daily logs maintained by counselor aides working in an expansion and improvement project in the Wisconsin DVR. Finally, statements from counselors of the Pennsylvania Bureau of Vocational Rehabilitation describing tasks which they felt counselors could perform were used. Two of the investigators categorized the tasks into duties, prepared the instructions, pretested them with a small group of counselor aides from the Texas agency, and decided upon the two scales to be used for the study. This inventory was distributed to the 197 counselor-aides in the TRC with salary classifications of GS 9, GS 11, and GS 13. Subjects were asked to rate each task, indicating whether its performance required an average, less-than-average, or greater-than-average amount of time in relation to all other tasks they perform in their jobs. They also estimated the amount of training needed to perform the task using a five point rating scale. (This inventory and instructions are shown in appendix A.)

The number of completed rating scales secured from the subjects in each personnel classification were: salary group 9 = 59; salary group 11 = 44; salary group 12 = 6; and salary group 13 = 55 (a total response rate of 84%). Because of the small numbers of individuals in group 12, their responses were combined with those of group 11 for the analysis. To facilitate analysis an equal number of subjects (50) in each group was obtained by random elimination of the responses of nine individuals from salary group 9, and five from salary group 13. Thus, the final analyses were performed using the responses of 150 subjects (50 from each of groups 9, 11, and 13).

An examination of demographic characteristics of the three groups revealed that group 9 was composed of 3.8% males, 96.2% females;

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group 11 was 35.6% male and 64.4% female; group 13 was 63.6% male and 36.4% female. The median educational level for groups 9 and 11 indicated that these specialists had received some college training but did not have a bachelor's degree. The median educational level for group 13 was a completed 4-year degree program. The median age category for group 9 was 30-34 years; for groups 11 and 13, 35-39 years. For group 9 the median length of job tenure was 3-4 years; for groups 11 and 13, length of service was 1-2 years.

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Results and Discussion

I. Were counselor aides in different salary classes actually performing identical jobs?

To answer this question a three-way analysis of variance was performed, treating salary classification, subjects, and task as independent variables. The design of the study was actually a salary-class × tasks × subjects format with subject nested within salary class, and tasks treated as repeated measures (Dixon, 1970). The dependent variable was the subjects' ratings of the time required to perform the various tasks. The purpose of this analysis was to determine whether all counselor aides were actually doing identical jobs regardless of job titles or personnel classification. This was accomplished by examining the significance of the task/salary level interaction. If all subjects were actually devoting equal time to the same tasks, regardless of salary levels, then no significant interaction effect would be found. On the other hand, if the subjects in different salary classes were allocating their time differentially to the various tasks, then a significant interaction effect of task/salary level could be expected. As shown in Table 1, a significant (α = .01) interaction was found. This indicated that counselor aides with different salary classifications were not performing identical jobs. For some of the tasks, the counselor aide's salary level was strongly associated with the type of work he performed.

TABLE 1. THREE-WAY ANALYSIS OF VARIANCE FOR A SALARY-LEVEL × TASK × SUBJECTS FORMAT

Source	S.S	d.f.	M.S.	Error Term	F-Value
I	553.12	2	276.56	J(I)	13.93**
K	1234.39	33	37.40	JK(I)	21.20**
J(I)	2917.64	147	19.85		
IK	839.25	66	12.72	JK(I)	7.21**
JK(I)	8558.22	4,851	1.76		

Where I is the factor salary level, J is subjects, K is tasks.
**Significant at the 0.1 level.

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II. What tasks comprised the counselor-aides' jobs?

A second and fairly simple analytic procedure was used to determine which tasks actually comprised the jobs of the levels 9, 11, and 13 employees. The response frequencies were tabulated for each group on all tasks. The modal response was then used to determine whether a task was performed with high, medium, or low frequency by the counselor aides in a particular group. When the responses did not reflect a clear-cut modal pattern for a task, the task was designated a discrepancy task. Tasks which were never performed by a majority of the counselor aides were designated as such. The figures presented in Table 2 indicate the estimated number of tasks on the inventory which were performed with high, medium, or low frequency by personnel in the three different salary groups, based upon this modal computation.

TABLE 2. THE NUMBER OF TASKS PERFORMED AT THREE FREQUENCY LEVELS BY REHABILITATION COUNSELOR AIDES

Modal rate of occurrence	Personnel Classes		
	9	11	13
High	5	2	4
Medium	1	14	19
Low	7	9	18
Not Performed	59	34	16
Discrepancy Tasks	7	20	21

From this second analysis, it was also possible to compile lists of high, medium, and low frequency tasks performed by workers at each salary level and thus obtain a job description based upon actual workers reports, (see Tables 3, 4, and 5).

TABLE 3. JOB DESCRIPTION FOR COUNSELOR AIDES IN SALARY GROUP 9

I. High Frequency Tasks

(designated by counselor aides as requiring a greater than average amount of time.)

Secures basic information from new clients in order to establish the client as a referral.

Interviews new clients to obtain background information prior to counseling interview.

Secures background information about the client for the rehabilitation counselor.

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Authorizes general medical examinations for new clients.

Schedules and arranges for medical examinations or psychological and special examinations for new clients.

II. Medium Frequency Tasks

(designated by counselor aides as requiring an average amount of time.

Describes and discusses vocational rehabilitation services with applicants.

III. Low Frequency Tasks

(designated by counselor aides as requiring less than average amount of time.)

Replies to routine requests for information about VR services.

Telephones clients who fail to keep appointments.

Assists clients to apply and receive services from other agencies.

Gives basic background information to examining physicians or other consultants.

Reminds the client of appointments with the counselor or medical and psychological examiners.

Refers individuals who are ineligible for or unsuited to the agency's services to other social agencies.

Locates files, documents, or other information requested by the counselor or supervisor.

TABLE 4. JOB DESCRIPTION FOR COUNSELOR AIDES IN SALARY GROUP 11

I. High Frequency Tasks

(Designated by counselor aides as requiring greater-than-average amount of time)

Interviews an unmotivated client, perhaps over several meetings, to develop his motivation for remunerative employment.

Writes case notes and summaries so that others can understand the client's progress.

II. Medium Frequency Tasks

(Designated by counselor aides as requiring an average amount of time)

Describes and discusses vocational rehabilitation services with applicants.

Secures basic information from new clients in order to establish the client as a referral.

Interviews new clients to obtain background information.

Secures background information about the client for the rehabilitation counselor.

Participates in staff planning for the client.

Maintains contact (interview, telephone, visit) with clients currently receiving services from vocational rehabilitation.

Reminds the clients of appointments with the counselor or medical and psychological examiners.

Conducts supportive interview.

Discusses with the client the purpose and need for referral when referring the client to cooperating agencies.

Interviews the client after he is employed to provide support and reassurance.

Reviews the client's progress in a training program with him or his instructor.

Secures information from the client about his performance on an adjustment to his new job.

Reports verbally on the client's progress to a rehabilitation team or other collaborators.

Attends and participates in agency in-service training sessions.

III. Low Frequency Tasks

(Designated by counselor aides as requiring less than average amount of time.)

Replies to routine requests for information about VR services.

Discusses the rehabilitation specialists' functions in the rehabilitation process with the client.

Discusses client's case with consultants in order to determine whether special examinations or services should be requested.

Assists clients to apply and receive services from other agencies.

Verifies information supplied by the client by communicating with schools, employers, etc.

Informs the referral source and other involved agencies of client status changes and the outcome of the case.

Discusses the client's personal hygiene habits with him.

Discusses with client alternative ways for the client to answer people's questions about his disability.

Locates files, documents or other information requested by the counselor or supervisor.

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TABLE 5. JOB DESCRIPTION FOR COUNSELOR AIDE
IN SALARY GROUP 13

I. High Frequency Tasks

(Designated counselor aides as requiring a greater than average amount of time.)

Interviews an unmotivated client, perhaps over several meetings, to develop his motivation for remunerative employment.

Maintains contact (interview, telephone, visit) with clients currently receiving services from vocational rehabilitation.

Interviews the client after he is employed to provide support and reassurance.

Writes case notes and summaries so that others can understand the client's progress.

II. Medium Frequency Tasks

(Designated by aides as requiring an average amount of time.)

Describes and discusses vocational rehabilitation services with applicants.

Secures basic information from new clients in order to establish the client as a referral.

Interviews new clients to obtain background information prior to counseling interview.

Secures background information about the client for the rehabilitation counselor.

Determines the client's eligibility for the agency's services.

Participates in staff planning for the client.

Arranges for client services to begin, including housing, transportation, and meals when necessary.

Obtains information from training facilities and other agencies programs (costs, tuition, etc.)

Provides the client information about community services, recreation, transportation, etc.

Conducts supportive interview with the client.

Coordinates the activities of agencies involved in a rehabilitation plan to assure optimal benefits to the client.

Discusses sources of job leads with the client to help him develop specific job-seeking skills.

Discusses the client's abilities and needs with prospective employers.

Reviews the client's progress in a training program with him or his instructor.

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Secures information from the clients about his performance on an adjustment to his new job.

Reports verbally on the client's progress to a rehabilitation team or other collaborators.

Completes agency forms or statistical reports.

Checks client's records and folder to correct and bring them up to date prior to case reviews.

Attends and participates in agency in-service training sessions.

III. Low Frequency Tasks

(Designated by aides as requiring less than average time.)

Replies to routine requests for information about VR services.

Discusses the rehabilitation specialists' functions in the rehabilitation process with the client.

Discusses client's case with consultants in order to determine whether special examinations or services should be requested.

Calls on clients who fail to keep appointments.

Telephones clients who fail to keep appointments.

Schedules and arranges for medical examinations or psychological and special examinations for new clients.

Assists clients to apply and receive services from other agencies.

Gives basic background information to examining physicians or other consultants.

Reminds the client of appointments with the counselor or medical and psychological examiners.

Verifies information supplied by the client by communicating with schools, employers, etc.

Informs the referral source and other involved agencies of client status changes and the outcome of the case.

Talks with the clients' relatives concerning problems arising from rehabilitation services, training, etc.

Discusses the client's personal hygiene habits with him.

Discusses with client alternative ways for the client to answer people's questions about his disability.

Discusses with the client the purpose and need for referrel when referring the client to cooperating agencies.

Refers individuals who are ineligible for or unsuited to the agency's services to other social agencies.

Calls on referring agencies and other referral sources to encourage appropriate referrals.

Visits training agencies and schools to determine suitability for clients.

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The discussion of these results is based on three primary concerns: A. How closely did the workers' job descriptions correspond to the job description originated by the agency? B. How did these job descriptions compare with descriptions of the function of counselor aides found in the literature? C. What implications for selection and training of counselor aides could be found in these job descriptions?

As shown in Tables 2 and 3, personnel in salary group 9 perform the most limited range of tasks. In accord with the agency job description (appendix A) the counselor aide at this level is primarily involved with interviewing new clients to obtain basic information and with explaining to them the function of the rehabilitation program. He has little responsibility in planning the rehabilitation program nor does he participate to any extent in the processes of vocational rehabilitation, placement, or follow-up of clients. His interactions are restricted mainly to the client and the counselor. One notable discrepancy between the agency's job description and the tasks reported by the SG 9 workers was that these employees do not devote as much time to specialized clerical tasks (e.g., securing medical records or controlling correspondence files) as indicated in the agency job description. Also, contrary to the expectations of the rehabilitation counselors studied by Muthard and Salomone (1969) and the unpublished Pennsylvania survey, the counselor aides at TRC were not involved in test administration and scoring, nor did they maintain occupational information files.

As indicated by both the rehabilitation aide ratings and the agency job description, the activities of the SG 11 aide go substantially beyond the information-gathering level of the SG 9 aide. Table 4 shows that a level 11 aide may interact with client, counselor, and personnel outside the agency in order to facilitate a client's rehabilitation. He also spends considerable time recording the client's progress. In reference to duties performed, the workers' ratings and the agency job description were in fairly close agreement for the SG 11 aide or specialist.

The SG 11 requirements for work experience in dealing with the public and evidence of ability to establish a working relationship with clients and other groups appear to be important to the job as it is being performed. The most frequent tasks of the SG 11 suggest that previous experience in a vocational rehabilitation agency would be an asset. It would seem also that proven experience in working effectively with the public in a service relationship would be a more important background than extensive formal education. Thus the nature of the job would suggest a minimum of one year's successful, relevant employment for even college educated applicants. From the job descriptions of the aides it

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seems probable that more emphasis should be placed on the talent for creating good interpersonal relationships than upon the aides' academic record. There appears to have been a tendency in the past to favor individuals with a collegiate background rather than individuals with less education but with related experience or other personal qualifications.

The SG 13 counselor aide handles the broadest range of tasks. Although the job description supplied by the agency indicates that most of the duties fall in the areas of placement and follow-up, the task-ratings obtained from the workers (Table 5) indicate that the aide may frequently be involved in earlier stages of the rehabilitative process (e.g., securing basic information from new clients, determining his eligibility for services, and participating in planning a client's program). Like the SG 11 personnel, he also devotes substantial time to preparing case reports.

The counselor aide at level 13 performs most of the tasks listed in the counselor aide inventory, at least to some extent. In this respect, he comes closer to meeting the expectations of counselors in the Muthard and Salomone study than do either of the other two groups. A few exceptions occur, however, where tasks are essentially clerical (e.g., scoring pencil and paper tests), require professional skills (e.g., leading group discussions), or are administrative-clerical tasks which are normally the responsibility of counselors. On the whole, these tasks were not performed by the SG 13 counselor aide at TRC.

The tasks performed by SG 13 counselor aides may raise the question of the necessity of having either a college degree or two years of college plus three years of experience in the field in order to perform the duties as are now required by the agency. The rehabilitation agencies' social service objectives require aides to have had some successful experience in working with the public. However, the most frequent tasks do not appear to demand skills or knowledge which would be beyond the scope of the high school graduate. It is doubtful if a non-specialized junior college or college program would develop the knowledge and skills needed by the job aside from those resulting from a liberal arts education. Thus, it seems that at all levels, educational and experience requirements for counselor aides should be more flexible so that applicants who have the basic skills and knowledge should be able to qualify for jobs within their capabilities and not be eliminated by rigid educational requirements. This comment, in effect, might be a general criticism of the arbitrariness of some job requirements and of the tendency for agency personnel directors to bolster the requirements for positions to justify higher salaries for personnel in those positions. We would not suggest a general attack upon present state personnel systems but would urge

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rather that these new types of jobs be established with all possible flexibility in the requirements so that individuals may be recruited who have an intrinsic interest in this type of work and would not see it as primarily a stepping stone type of employment.

III. How much training is required to perform the tasks of counselor aides?

A third analysis was conducted using the subjects' ratings of the training required to perform the tasks on the inventory. Subjects rated each task on a five point scale to indicate the relative amount of training they thought performing the task required. A rating of "1" indicated that the task could be performed with little or no training; a "5" indicated that extensive training was necessary. Mean training and standard deviation were computed for each task. In the data presented in Appendix C only the responses of workers who actually performed the task in question were used in computing the mean of training-required ratings.

The counselor aides' estimated that only an average amount of training is required for the vast majority of the tasks. While the standard deviation of the ratings ranged from .75 to 1.0 on a 5.0 scale it appears that counselor aides thought most of their tasks require some degree of training but that none requires a great amount of training. As Appendix C shows, those tasks which involve interviewing clients and interaction with counselors and other rehabilitation workers and employers tend to be rated relatively high. On the other hand, the essentially clerical tasks listed in the inventory were not judged to require substantial training as indicated by relatively low ratings in the 2.10 to 2.30 range.

The scale used to secure estimates of training time needed for each of the tasks was not a very useful one for this type of position since it fails to yield enough variability in response for comparative analyses. Furthermore, the scale yields results which are not readily translated into plans for the preparation of counselor aides unless one can accept some tasks as base-line tasks and then use them as a basis from which to compare others. It would probably be more fruitful to ask the job incumbents to estimate the length of on-the-job experience and training needed to master the tasks on a satisfactory level of skill rather than to make a relative judgment regarding the task as compared to all other tasks.

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Summary

REHABILITATION COUNSELOR AIDES employed at three different salary rates by the Texas Rehabilitation Commission were surveyed on a task inventory which requested them to report the relative amount of time they devoted to certain tasks and the amount of training they thought necessary to satisfactorily perform the tasks. Eighty-two percent of the aides submitted complete inventories. Analysis of variance showed that aides at different salary levels were performing different combinations of tasks. Examination of the modal responses made by three job groups showed how the groups differed. A major source of difference was the wider spectrum of tasks performed as the salary level increased. At the lowest level, SG 9, the aide was primarily concerned with interviewing new clients to obtain basic information and interpreting the rehabilitation program to them. For the highest level aide, SG 13, the range of activities included nearly all tasks on the inventory except those which were clerical in nature or which might be construed as responsibilities of the counselor alone. It was suggested that the findings do not support the academic requirements (2-4 years of college training) which have been set for aides at the higher salary levels. A look at the primary tasks conducted by aides does not show a need for higher general education but instead a need for some facility in learning the fundamentals of vocational rehabilitation service and a talent for effective interpersonal relationships.

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Appendixes

APPENDIX A

VOCATIONAL REHABILITATION SPECIALIST TASK INVENTORY

Instructions and Simple Items

The attached task inventory will provide information regarding the job of the rehabilitation specialist. The tasks listed are those which specialists and counselor aides have been doing and also tasks which counselors think supportive personnel could do in their agency. If we have omitted any tasks which are a part of your job, you should add the task under the appropriate DUTY Section.

With reference to each task listed (that includes those you decide to add) we would like your answer to three questions.

1. Is this task PART OF YOUR JOB?
2. Compared to all other tasks you do, HOW MUCH TIME do you spend on the task?
3. Compared to all other tasks you do, HOW MUCH TRAINING AND EXPERIENCE do you think is required to do the task satisfactorily?

In the pages that follow, the tasks are grouped according to DUTIES. The main reason for putting them together that way is to permit you to more readily know whether tasks need to be added to the inventory. Whenever the list of tasks under a duty DOES NOT include something which is part of your job, we would like you to write it in the blank spaces at the bottom of the page. Should it happen that the task appears later in the inventory under another duty, no harm will be done. Since the rehabilitation specialist is a relatively new job, we are interested in learning about all the different activities the specialists perform. We want as complete a list of the tasks you perform as we can reasonably secure.

Read each task description carefully before selecting the appropriate response for each scale.

1. First Column: you should place a check for each task you do.
2. Second Column: you are to indicate the relative amount of time you spend on that task. As you can see, we want an ESTIMATE of the extent to which you do the task more, less, or about the same as the other tasks you perform. Thus, when you rate each task you are comparing it, in a general way, with all other tasks.
3. Third Column: we need your ESTIMATE of the AMOUNT OF TRAINING you think is required to do the task satisfactorily. Again, you should rate each task relative to the other tasks which you perform. We want to learn whether the tasks you do require a great amount, a small amount, or just average amount of training. In thinking about TRAINING include all kinds of informal learning situations (on-the-job, staff conferences, staff meetings, classroom teaching, etc.)

For both ratings we are looking for an ESTIMATE and do not want you to spend a great deal of time weighing each judgment. Although we hope that your responses will accurately reflect the job as you see it, our interest is in learning what tasks rehabilitation specialists do in different settings and not in your INDIVIDUAL report. We will be getting the average for the various groups and will **not** be examining individual reports.

Be guided by the everyday meaning of the statements. If you are in doubt about the meaning of a task description, let the first word or two determine its meaning.

May we again remind you to use the space at the end of each DUTY SECTION, to list any tasks which are a regular or occasional part of that duty in your job, but which do not fit any of the task statements given. For really unusual tasks, you should use the space under MISCELLANEOUS at the end of the inventory.

We want and need your candid reports. Your responses will not be used to evaluate your job performance. The results will help to plan for the use and preparation of other rehabilitation specialists.

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NAME_____ SEX M F AGE_____

OFFICE ADDRESS_____ DATE EMPLOYED BY TRC

_____ _____
Month Year

_____

SUPERVISOR _____

JOB TITLE_____ CLASSIFICATION 7 8 9 10 11 12 13
(circle one)

JOB BACKGROUND (most recent first)

JOB TITLE	FROM	TO	(Dates)

WHAT IS THE EXTENT OF YOUR FORMAL EDUCATION?_____

_____

WHAT DO YOU SUGGEST COULD BE DONE TO MAKE YOUR JOB MORE INTERESTING TO YOU AND MORE HELPFUL TO TRC CLIENTS?_____

_____

_____

_____

WHAT RECOMMENDATIONS DO YOU HAVE FOR IMPROVING THE TRAINING AND SUPERVISION OF COUNSELOR TECHNICIANS IN TRC?_____

_____

_____

_____

_____

Listed below are a duty and the tasks which it includes. Check all tasks which you perform. Add any tasks you do which are not listed. Then rate the tasks you have checked.	CHECK	TIME SPENT	TNG & EXP
DUTY: I. INTAKE INTERVIEWING	√ if done	1 Small Amt. 2 Below Av. 3 Aver. 4 Above Av. 5 Great Amt.	1 Small Amt. 2 Below Av. 3 Aver. 4 Above Av. 5 Great Amt.
TASKS INCLUDED IN ABOVE DUTY			
1. Describes and discusses vocational rehabilitation services with applicants.			
2. Secures basic information from new clients in order to establish the client as a referral.			
3. Interviews new clients to obtain background information prior to counseling interview.			
4. Replies to routine requests for information about VR services.			
5. Discusses the rehabilitation specialists' functions in the rehabilitation process with the client.			
6. Conducts classes for clients or their relatives to orient them to the agency's services and to enlist their cooperation.			

*See Appendix C for remaining duty and task items.

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APPENDIX B

AGENCY JOB DESCRIPTIONS

Rehabilitation Interviewing Clerk (SG 9)

General description

Performs highly specialized clerical and interviewing work in the Division of Vocational Rehabilitation, Texas Educational Agency. Under supervision of a Vocational Rehabilitation Counselor, is responsible for conducting initial interviews with persons referred to the John Sealey Hospital and Clinic; making recommendations to rehabilitation counselors concerning services provided by the Hospital or Clinic; and interpreting functions of the rehabilitation program.

Examples of work performed

Conducts initial interviews with persons referred by the Medical Staff, or Social Service Staff in John Sealy Hospital and Clinic.

Interprets the function of the Vocational Rehabilitation Division to each individual referred, and advises as to eligibility requirements and services that are available.

Obtains from the persons referred identifying information, such as age, type and extent of disability, and employment status.

Obtains from the hospital and clinic records all needed medical information, and if necessary, requests further diagnostic procedures from the hospital or clinic.

Assumes some responsibility for initial rehabilitation planning, and makes recommendations to rehabilitation counselors relative to any of the services that are to be provided by John Sealy Hospital or Clinic.

Maintains control of correspondence files, showing request for information on patients at John Sealy Hospital and Clinic, and keeps careful record of the number of medical reports provided to counselors.

Secures medical information from hospital records at request of Supervisor of Disability Determination Unit of the Division, and makes necessary records for transmittal.

Makes arrangements for patients to be admitted to either the hospital or clinic, when requested to do so by a Rehabilitation Counselor.

Performs related work as assigned.

General qualification requirements

Experience and Training

Should have considerable work experience in a medical setting.

Education

Junior college plus business college training supplemented by work experience in a medical setting.

Knowledges, Skills, and Abilities

Considerable knowledge of the Vocational Rehabilitation programs and the policies outlined by John Sealy Hospital.

Ability to evaluate medical, psychological, and vocational data; and to work effectively with clients.

Rehabilitation Technician I (SG 11)

General description

Under close supervision of the rehabilitation counselor, performs technical duties and functions in the rehabilitation process. Responsible for periodic review, detail reporting in the case records and periodic follow-up of active and closed cases. Arranges necessary services to execute the rehabilitation plan.

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Examples of work performed

Makes arrangements for obtaining additional medical, educational or psychological information.
Makes periodic contact with clients in active status and reports on progress.
Completes all arrangements for initiating services.
Assists Disability Determination Division of the Texas Education Agency in determining eligibilty for disability benefits under Social Security by arranging for medical examinations and preparing reports.
Prepares special and periodic reports.
Performs follow-up services to determine if clients are satisfactorily employed.
Arranges all GATB testing of clients with Texas Employment Commission.
Handles counselors routine telephone calls to clients.
Assists counselor in maintaining Master List.
Responsible for completing transfer of cases.
Responsible for routine case correspondence.
Performs related work as assigned.

General qualification requirements

Experience

Should have considerable work experience dealing with the public and individuals in an assistive capacity or experience in the field of Vocational Rehabilitation.

Education and Training

60 semester hours from an accredited college or graduation from a recognized senior high school with three years of successful work experience in a public or private service organization, two of which involve experience with behavioral or vocational problems of individuals.

Knowledge, Skills, and Abilities

Considerable understanding of the Vocational Rehabilitation process.
A thorough knowledge of the duties and responsibilities of the rehabilitation counselor.
Demonstrated ability to establish working relationships with clients, employers and professional groups.

Rehabilitation Technician II (SG 13)

General description

Under the general supervision of the rehabilitation counselor, arranges necessary services to execute the rehabilitation plan with some latitude for individual action. Performs highly specialized duties and functions in the rehabilitation process. Assists the counselor in maintaining and updating case records.

Examples of work performed

Contacts employers and Texas Employment Commission to develop job opportunities.
Places clients on jobs consistent with training and physical and mental abilities.
Confers with employers and client to determine job performance.
Responsible for reviewing and updating case records.
Performs periodic contacts with client in training.
Responsible for follow-up and reporting on clients in extended evaluation.
Makes final arrangements for clients to be admitted to hospitals or clinics.
Responsible for making equipment inventory.
Abstracts and annotates medical and educational records.
Responds to routine correspondence.
Maintains liaison between client and counselor.
Performs related work as assigned.

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General qualification requirements

Experience

Should have extensive experience working with people on an individual basis or in public contact type work.

Education and Training

A bachelor's degree or 60 semester hours of college and three years of successful work experience in a public or private service organization, two of which involve experience with behavior or vocational problems of individuals. Extensive training in rehabilitation of specific disability groups may be substituted for the college requirement.

Knowledge, Skills, and Abilities

Considerable understanding of the Vocational Rehabilitation process.

A thorough knowledge of the duties and responsibilities of the rehabilitation counselor.

Demonstrated ability to establish working relationships with clients, employers and professional groups.

APPENDIX C

MEAN RATINGS OF TRAINING REQUIRED FOR TASKS PERFORMED BY COUNSELOR AIDES

DUTIES AND TASKS	*Mean*	*S.D.*	*N*
I. INTAKE INTERVIEWING			
1. Describes and discusses vocational rehabilitation services with applicants.	3.11	0.97	142
2. Secures basic information from new clients in order to establish the client as a referral.	2.91	1.05	127
3. Interviews new clients to obtain background information prior to counseling interview.	3.51	0.86	129
4. Replies to routine requests for information about VR services.	2.89	0.89	126
5. Discusses the rehabilitation specialists' functions in the rehabilitation process with the client.	2.72	1.04	106
6. Conducts classes for clients or their relatives to orient them to the agency's services and to enlist their cooperation.	3.62	0.94	29
II. CASE DEVELOPMENT			
1. Secures background information about the client for the rehabilitation counselor.	3.17	0.85	123
2. Determines the client's eligibility for the agency's services.	3.29	1.06	78
3. Participates in staff planning for the client.	3.32	1.02	104
4. Discusses client's case with consultants in order to determine whether special examinations or services should be requested.	3.23	0.92	107
5. Interviews an unmotivated client, perhaps over several meetings, to develop his motivation for remunerative employment.	3.69	0.91	96
6. Calls on clients who fail to keep appointments.	2.46	1.15	85
7. Telephones clients who fail to keep appointments.	2.10	1.01	99
8. Authorizes general medical examinations for new clients.	2.70	1.05	73

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DUTIES AND TASKS	*Mean*	*S.D.*	*N*
9. Schedules and arranges for medical examinations or psychological and special examinations for new clients.	2.72	1.07	107
10. Assists clients to apply and receive services from other agencies.	2.96	1.06	109
11. Gives basic background information to examining physicians or other consultants.	2.88	1.10	104
12. Maintains contact (interview, telephone, visit) with clients currently receiving services from vocational rehabilitation.	3.19	0.94	112
13. Reminds the client of appointments with the counselor or medical and psychological examiners.	2.22	1.03	98
14. Verifies information supplied by the client by communicating with schools, employers, etc.	2.47	1.01	95
III. CASE SERVICES			
1. Arranges for client services to begin, including his housing, transportation, and meals when necessary.	3.08	0.97	79
2. Informs the referral source and other involved agencies of client status changes and the outcome of the case.	2.60	1.10	99
3. Obtains information from training facilities and other agencies about their programs (costs, tuition, etc.)	2.75	0.10	91
4. Arranges on-the-job training programs for the client.	3.22	1.04	69
5. Arranges a work program for homebound clients.	3.15	0.89	34
6. Serves as an interpreter for other helping agencies when the client has a special problem e.g., deafness.	3.12	0.97	42
7. Prepares the client for taking employment tests.	3.00	1.10	57
8. Provides the client information about community services, recreation, transportation, etc.	2.91	1.04	93
9. Talks with the client's relatives concerning problems arising from rehabilitation services, training, etc.	3.32	0.89	84
10. Conducts supportive interview with the client.	3.61	0.90	109
11. Discusses the client's personal hygiene habits with him.	2.84	1.12	94
12. Discusses with client alternative ways for the client to answer people's questions about his disability.	3.10	1.13	80
13. Makes available occupational materials for the client to read.	2.38	1.08	53
IV. REFERRAL			
1. Discusses with the client the purpose and need for referral when referring the client to cooperating agencies.	3.04	0.89	104
2. Refers individuals who are ineligible for or unsuited to the agency's services to other social agencies.	3.04	1.06	97
3. Telephones referring agencies and other referral sources to encourage appropriate referrals.	2.90	0.99	78
4. Calls on referring agencies and other referral sources to encourage appropriate referrals.	2.96	1.03	56
5. Visits training agencies and schools to determine their suitability for clients.	3.12	1.12	66

DUTIES AND TASKS	*MEAN*	*S.D.*	*N*
6. Acts as a liaison person between his agency and unions, businesses, or other groups.	3.21	0.87	62
7. Coordinates the activities of agencies involved in a rehabilitation plan to assure optimal benefits to the client.	3.27	1.01	64
V. PLACEMENT			
1. Role plays the part of an employer in preparing client for job interviews.	3.13	0.96	48
2. Reviews and discusses the client's completed job applications with him.	2.88	0.96	50
3. Gives the client placement-related information (e.g., functions of state and private employment agencies.)	2.82	0.98	76
4. Discusses sources of job leads with the client to help him develop specific job-seeking skills.	3.05	0.93	79
5. Leads a group of clients in discussion of placement techniques.	3.53	0.90	30
6. Maintains a list of previous placement sources and current opportunities for placement.	2.90	1.00	60
7. Calls on placement resources to obtain job orders.	3.11	0.97	53
8. Telephones placement resources to obtain job orders.	2.96	1.03	61
9. Intervenes with government agencies (USES, Civil Service, etc.), on the client's behalf.	3.02	1.15	38
10. Discusses the client's abilities and needs with prospective employers.	3.24	1.08	82
11. Provides placement assistance to members of the client's family.	2.62	1.17	26
VI. FOLLOW-UP			
1. Interviews the client after he is employed to provide support and reassurance.	3.34	0.92	86
2. Discusses a former client's performance and work attitudes with his employer in order to follow-up the case.	3.00	0.98	70
3. Reviews the client's progress in a training program with him or his instructor.	3.17	.89	88
4. Secures information from the clients about his performance on an adjustment to his new job.	2.97	1.04	89
5. Interviews clients who have been closed rehabilitated.	2.82	0.98	73
VII. CASE RECORDING			
1. Writes case notes and summaries so that others can understand the client's progress.	3.33	0.80	120
2. Prepares summaries of intra-or inter-agency conferences concerning clients.	3.10	0.88	51
3. Prepares a summary report or letter to describe a client to cooperating individuals or agencies.	3.18	0.92	73
4. Reports verbally on the client's progress to a rehabilitation team or other collaborators.	3.04	1.00	102

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DUTIES AND TASKS	*Mean*	*S.D.*	*N*
5. Completes agency forms or statistical reports.	3.01	1.09	107
6. Fills out closure forms for clients found by the counselor to be ineligible for further rehabilitation services.	3.07	1.06	69
7. Records interview notes for the counselor following interviews with the client or others involved with the client's case.	3.19	0.96	95
VIII. RECORD MAINTENANCE AND RELATED ACTIVITIES			
1. Approves diagnostic bills for payment of services rendered the client.	2.92	1.04	59
2. Obtains delinquent bills and needed cancellation forms from vendors of services to clients.	2.82	0.94	45
3. Lists and calculates for the counselor his current expenditures for case services.	2.78	1.16	32
4. Checks client's records and folder to correct and bring them up-to-date prior to case reviews.	3.19	0.88	84
5. Records an itinerary and arranges for interviews for the counselor.	2.74	0.96	54
6. Completes expense account forms for the counselor in preparation for central billing for reimbursement.	2.71	0.31	24
7. Records the current status of client in agency reports.	2.93	0.85	69
8. Locates files, documents or other information requested by the counselor or supervisor.	2.65	0.93	98
9. Scores paper-and-pencil tests obtained from clients.	2.72	1.36	18
10. Administers paper-and pencil tests to clients.	3.00	1.35	24
11. Selects, secures, and keeps up-to-date, with clerical assistance, a file of occupational information.	2.83	0.94	52
12. Selects, secures, and keeps up-to-date, with clerical assistance, a file of training facilities information.	2.73	0.94	59
IX. MISCELLANEOUS			
1. Talks to community clubs, agencies and other groups interested in learning about vocational rehabilitation.	3.31	1.10	61
2. Attends and participates in agency in-service training sessions.	3.00	1.04	111
3. Provides first aid when medical emergencies arise (e.g., seizures, cuts).	3.15	1.01	39
4. Reviews instructions with naive, retarded, or immature clients to be sure they use prescribed medication properly.	3.37	0.92	60

References

Davis, C. E.
In a rural poverty area. **Rehabilitation Record**, 1968, 9, (2), 36-37.

Dixon, W. J. (Ed.)
Biomedical computer programs. Berkeley, California: University of California, 1970. (Analysis of Variance pp. 586-593).

Galloway, J. R. and Kelso, R.
Do not handcuff the aide. **Rehabilitation Record**, 1966, 7, (2), 1-3.

Joint Liaison Committee
The utilization of support personnel in rehabilitation counseling. Studies in Rehabilitation Counselor Training No. 7., Author, Rehabilitation Services Administration, Social and Rehabilitation Service, U. S. Department of Health, Education and Welfare, 1969.

Leslie, G. R. (Ed.)
Supportive personnel in rehabilitation; current practices and future needs. Washington, D. C.: Association of Rehabilitation Centers, 1967.

Lucas, H. and Wolfe, R. R. (Eds.)
Use of support personnel in vocational rehabilitation. Sixth Institute on Rehabilitation Services, Rehabilitation Service Series No. 69-13. Vocational Rehabilitation Administration, Social and Rehabilitation Service, HEW, Washington, D. C., 1968.

Mase, D. J.
Manpower utilization for the future. **Journal of Rehabilitation**, 1964, 30, (1), 37-39.

McAlees, D. C. and Warren, S. L.
Increasing the supply of qualified rehabilitation counseling personnel in state vocational rehabilitation agencies. Vocational Rehabilitation Administration, Dept. of Health, Education and Welfare, Washington, D. C., 1965.

Morsh, J. E.
Job analysis in the United States Air Force. **Personnel Psychology**, 1964, 17, 7-17.

Muthard, J. E. and P. R. Salomone
The roles and functions of the rehabilitation counselor. **Rehabilitation Counseling Bulletin**, Special Issue, 1969, 13, 81-168.

Ooley, W. R.
Vocational rehabilitation: This is one way. Little Rock, Arkansas: Arkansas Rehabilitation Service, Final Report RD 147. Dept. of Health, Education and Welfare, 1961.

Ridenour, Lenorex Karpelowsky
In Watts and nearby neighborhood, **Rehabilitation Record**, 1968, 9, 38-40 (2).

Waldrop, R. S. (Ed.)
Rehabilitation counselor aide functions and relationships. VRA Training Conference, July 7-9, 1966 (Report of proceedings and recommendations) University of Maryland, College Park, Maryland, 1966.

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VT 014 749

DOTY, CHARLES R.; COOGAN, JOHN P.

AN ASSESSMENT OF P.A.C. PLAN-A-CAREER.

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DEPT. OF VOCATIONAL-TECHNICAL EDUCATION.
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IDENTIFIERS - PLAN A CAREER PROGRAM; PAC

ABSTRACT - THIS REPORT EVALUATES THE PLAINFIELD, NEW JERSEY PROGRAM FOR THE POTENTIAL DROPOUT AND THE SPECIAL EDUCATION STUDENT. KNOWN AS THE PLAN-A-CAREER PROGRAM (PAC), EMPHASIS WAS PLACED ON IMPROVING JOB ASPIRATIONS OF LOWER INCOME CHILDREN THROUGH A HANDS-ON EXPERIENCE OF JUNIOR HIGH STUDENTS IN THE BUSINESS DEPARTMENT OF THE SCHOOL, TAUGHT BY SENIOR HIGH SCHOOL STUDENTS. BASED UPON EVALUATION DATA, OBTAINED FROM INTERVIEWS OF A RANDOM SAMPLE OF 9TH GRADE STUDENTS, THEIR PARENTS, AND THE STUDENT-TEACHERS, IT WAS CONCLUDED THAT SIX OF THE NINE OBJECTIVES FOR THE 9TH GRADE STUDENTS WERE ACHIEVED TO SOME EXTENT. HOWEVER, MEASUREMENTS FOR VANDALISM, THE RATE OF DROPOUT, AND STUDENTS' ABILITY TO SEE THEIR LEARNED SKILLS APPLIED IN BUSINESS WERE NOT AVAILABLE AT THE TIME OF THIS REPORT. IT WAS JUDGED THAT STUDENT TEACHERS INVOLVED WITH PAC ACQUIRED VALUABLE EXPERIENCE IN TEACHING. AMONG THE RECOMMENDATIONS ARE THAT THE PROGRAM BE CONTINUED AND THAT LONG-RANGE EVALUATION PROCEDURES BE INSTITUTED TO MEASURE CHANGE IN STUDENT BEHAVIOR, E.G. VANDALISM, DROPOUT. (JS)

VT 014 749

AN ASSESSMENT OF

P.A.C.

PLAN-A-CAREER

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July 1971

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EDUCATION & WELFARE
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SUMMARY

The P.A.C. (Plan-A-Career) program was established in an attempt to resolve several problems in the Planfield educational system. These problems are described in the abstract of the program proposal.

> Plainfield High School had a drop-out rate of 24% for the class of 1968. It is higher than this now. We know that lower income children have aspirations for job and money; but they lose this somewhere between junior high school and graduation. We hope to identify when this change takes place by providing the junior high disadvantaged, potential drop out and special education students with a P.A.C. (Plan-A-Career) program. This will be a hands on experience in the Business Department at Plainfield High School. The classes will be taught by paid "student teachers" (Our own senior high school students). We believe that not only will the junior high school students benefit from the experience but so will the "student teachers."

Of the nine objectives for the 9th grade students, six were achieved to some extent as revealed by the persons sampled. Measurement of vandalism, reducing dropouts, and students seeing the skills they were exposed to in school applied in business were not measurable at the time of this report or not achieved.

Two of the objectives for the student teachers were achieved, objectives on achieving rapport with the 9th graders and experimenting in teaching. The majority of the parents had talked about the P.A.C. Program with their children. The persons responsible for the program rated the results of the program as being exceedingly high and recommend its continuance.

SUMMARY

MAJOR RECOMMENDATIONS WERE:

1. Long range evaluation procedures be instituted to measure change in student behavior due to the P.A.C. Program, e.g., vandalism, dropout.

2. Time be alloted between phases of the program to incorporate changes needed that are discovered by the evaluation.

3. Tours should be coordinated with the mini courses so students may see the skills and hardware they use in school used in business and industry.

4. The program should be continued at least once a year.

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PREFACE

This assessment is the result of observations and data collection by the following persons:

Mr. John P. Coogan, Chairman Business Department, Plainfield High School

Mrs. L. Braxton, Community Adviser

Dr. Bruce W. Tuckman, Department of Vocational and Technical Education, Rutgers University

Dr. James G. Bennett, Department of Vocational and Technical Education, Rutgers University

Dr. Adam Scrupski, Department of Sociological and Philosophic Foundations, Rutgers University

I wish to acknowledge their valuable services and to state that the interpretation in this report of their observations and data collection is the responsibility of the writer.

Charles R. Doty
Adviser in Technical Education
Rutgers University

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Background of Program

The Plan-a-Career program grew from definite societal problems. These problems are succinctly described by John Coogan in the abstract of the program (see Appendix 1).

> Plainfield High School had a drop-out rate of 24% for the class of 1968. It is higher than this now. We know that lower income children have aspirations for jobs and money; but they lose this somewhere between junior high school and graduation. We hope to identify when this change takes place by providing the junior high disadvantaged potential dropout and special education students with a P.A.C. (Plan-a-Career) program. This will be a hands on experience in the business department at Plainfield High School. The classes will be taught by paid "student teachers" (our own senior high school students). We believe that not only will the junior high school students benefit from the experience but so will the "student teachers."

Not included in that statement are the facts that Plainfield High School has been under constant stress from potential fights, student strikes, racial problems and vandalism. Local papers abound in news items concerning these problems. Consider the following quotes from the New Brunswick, New Jersey Sunday Home News (July 18, 1971) which concerns another school district but have the same applicability to the Plainfield problem.

> ..., a member of the Madison Board of Education, says school vandalism cost the board $6,000 last month and almost $80,000 last year.
>
> In these days of skyrocketing school costs, no municipality can really afford the costs of vandalism.

A tour of the Plainfield High School will reveal such items as all typewriters or similar equipment bolted to the desks and a room stocked with communication equipment to coordinate the security patrol which polices the school. Yet, this is a beautiful facility with a good teaching

staff. One would assume that students would respect the school and remain in school. Drop-out and abseentism facts show otherwise.

P.A.C. Program

Phase I. The P.A.C. program has gone through two phases at present. These are financed by the New Jersey State Department of Education. Future programs will, of course, depend on this financing and local support.

The first phase of P.A.C. was completed in the fall of 1971. The objectives of this stage were to bridge the gap between the junior high and senior high school. Pupils were to be exposed to "careers in the BUSINESS AREAS through "Hands On" classroom experiences and field trips to LOCAL BUSINESSES" (see Appendix 2). The instruction in this phase was done by regular staff members. A typical program is shown in Appendix 3. Note that the students were provided refreshments (milk, orange drink, rolls) and the program was conducted on Saturday morning.

Unwritten objectives were to show the students what courses were offered in the high school and, even more important, to show the relevance of high school to career goals.

Phase 2. The second phase of P.A.C. was a result of the student enthusiasm generated and the faculty of the junior high school and senior high school positive observations. The writer observed one of the sessions in the first phase and was overwhelmed at the observation that these students did not seem to have any past experiences in using

their hands. Their enthusiasm reminded the writer of a third grade class going on a picnic.

A variation in the structure of the second phase, was in part, due to a question asked at the end of the first phase when the students were assembled, "Now that you have been through this program would you like to teach the same things to your friends?" The question triggered a response from each student, everyone talking at the same time on what they had learned and would teach.

This outburst of enthusiasm caused the program designers to alter the second phase. This alteration did not involve 9th graders teaching 9th graders but 9th graders being taught by senior high students (12th graders). This change was made to develop rapport between incoming students to the high school and the senior high students. Regular staff members provided lesson plans and assistance to the senior high student teachers.

Phase 2 ran from March 13 to June 12 (see Appendix 4). Twelve sessions were held, each from 9:00 to 12:00 on Saturday morning and five tours to different business and industry facilities were conducted. Attendance average was twenty five with 9th graders entering or leaving the program at any time. Approximately 65 different students came to the sessions and tours. Twenty-one senior high student teachers participated. Each "student teacher" was paid $5.00 per session. Five mini courses were taught by these "student teachers", data processing, distributive education, office practice, bookkeeping, shorthand and dictation and included in all of the offerings was how to get a job - how to keep a job.

The phase two objectives for the junior high school students were:

1. To bridge the gap in communications between the junior high school and senior high school. (This included students, guidance personnel, and administration.)

2. To develop rapport with senior high school students. (General human relations and racial relations were included in this objective.)

3. To reduce vandalism of high school facilities.

4. To increase students' knowledge of jobs and careers.

5. to reduce dropouts of incoming students.

6. To begin the preparation of students in business careers.

7. To inspire the junior high students to become teachers in the P.A.C. program in the future.

8. To show the use of skills taught in the school being used in business through field trips.

9. To enable the students to view their aspirations against the requirements of reality.

Phase 2 objectives for the senior high school students who became the teachers were:

1. To reduce the tendency to dropout.

2. To develop rapport with the 9th graders.

3. To experiment in teaching as a possible career.

4. To increase students' knowledge of jobs and careers through field trips.

5. To enable the students to view their aspirations against the requirements of reality.

The sequence of phase 2 was to publicize the program (Appendix 5), obtain parental consent for their child to attend (Appendix 6) and to select the students (Appendix 7). Actual meetings of the program began with two Saturday morning meetings to instruct the senior high

school students in teaching. Two Rutgers University consultants, Dr. Adam Scrupski and Dr. Charles Doty, gave instruction on priority teaching skills the first morning. During the second meeting the "student teachers" were given lesson plans and practical teaching under the direction of the regular staff. Ninth graders were not brought in until the third session.

After the ninth graders began attending they were rotated through the six mini courses or were given a choice of the course they wanted. Tours were conducted at the same time the courses were being offered. Refreshments were served every morning. Appendix 8 shows the project director schedule with the potential items to be planned for each session.

Assessment

Due to the urgency to begin the program and the lack of planning time available to the program director, the assessment was completed during the program and at the end. The assessment during the program was done by the project director. The post evaluation was completed by independent consultants. No pre-test was available for data collection. The person who was employed to interview the different participants was untrained in interview techniques. Nor was an adequate budget line for a thorough evaluation provided. These conditions must be considered by the reader.

The assessment procedure for this report will be to describe the on-going assessment, the post assessment procedures, the data and interpretation of achievement of objectives for the 9th graders and

student teachers and information collected from the parents and participating staff personnel. Recommendations will then be given.

On-Going-Assessment. At the end of each session the project director collected information from the 9th graders, student teachers and staff. Appendix 9 shows one of the forms. Appendix 10 shows the project director's summation of the evaluation of one session and a change in the program. This shows flexibility on the part of the director to immediately respond to the feedback. Appendixes 11 and 12 show two other forms. Note that these forms are different revealing the director and staff were learning and seeking varied information to improve the program as well as information on change in the participants.

Post Assessment. The post assessment is based upon interviews of a random sample of 9th graders and student teachers and parents of the 9th graders. Staff at the senior high schools, guidance personnel at the junior high school and senior high school administrators completed questionnaires. The instruments for interviewing the 9th graders and student teachers are based upon the nine and five respective objectives listed previously. The following Appendixes contain the directions for interviewing and the instruments:

Appendix 13 Directions to Interviewer

Appendix 14 Interview Schedule for Students

Appendix 15 Interview Schedule for Student Teachers

Appendix 16 Interview Schedule for Parents

Appendix 17 Interview Schedule for Staff

Appendixes 18, 19, 20 and 21 contain the tables of data for 9th graders, student teachers, parents of 9th graders and staff personnel respectively. Note that in Appendix 18, Table 1 that each item is correlated to the objective pertaining to the 9th grade students. This procedure is followed when applicable to a specific objective. Objectives labeled "operational" refer to mechanics of the program not necessarily pertaining to a major objective. The size of sample is also given under Table 1.

Appendixes 22 and 23 place in summary form the objectives and corresponding tables and question items for the 9th graders and student teachers respectively. However, it is not necessary for the reader to read these Appendixes except to compare interpretations with the writer.

Achievement of Objectives for 9th Grade Students. Objective one concerned bridging the 9th graders' knowledge between junior high school and senior high school. Checking Table 1 in Appendix 18 reveals ten changed and nineteen with no change. This is somewhat misleading because item 2 asks if they were looking forward to going to high school, which all ten did. The three who changed went from negative to positive. Actual figures (in the positive sense of encouraging persons toward high school) would be ten changed and nine did not. This seems a positive achievement of objective to the writer.

Objective two on developing rapport with senior high students was achieved. Checking Tables 1, 4, 5 and 6 shows a summation of 50 positive responses to nine neutral or no change responses. Student comments were all positive.

The reduction of vandalism, objective three, cannot be measured except longitudinally. The cost of vandalism or persons who participated in the program should be observed to determine any effect.

The increase in students' knowledge of jobs and careers was achieved to some degree. The listing of jobs new to the students was insufficient. What data that does exist shows twelve of the sixteen listing two or three new jobs. The writer expected a higher number of new jobs being listed. What is unexplained is why fifty percent of the jobs new to the students are unrelated to business occupations. At least they did list new jobs to them.

The measurement to determine the P.A.C. program in reducing dropouts among the incoming 9th graders revealed no useful data. Evidently the students questioned were educationally motivated. Voluntary Saturday morning attendance indicates motivation. However, many of the participants were not strongly academically oriented.

Data was not collected, except indirectly from senior high staff for objective six. This is the beginning of preparation of students in business careers. Item 4 in Table 23, Appendix 21 shows sixteen guidance, business staff and administrator personnel rating 9th graders as having learned a great deal. Only two persons checked the "some" category.

Objective seven was testing the students' attitude toward teaching in the P.A.C. program in the future. Eight of the sample of sixteen indicated yes while three stated no and three were undecided. It is interesting from an educator's point that three of the sixteen extended their comments to teaching as a career - and expressed doubt especially the comment, "hard work and no pay." The P.A.C. program, if continued,

should, from these findings, have a sufficient supply of teachers. Objective eight cannot be answered to any degree. Six of the respondees did not attend tours and three made no comment. Whether the students saw the relevance of skills taught in school and their actual use in business and industry will require more data.

There is some data and comments by students to give an indication that they were weighing their aspirations against the requirements of reality. Which means the program was providing them with the tools to do this comparing. Nine of the twelve students who replied had made some adjustment in their career selection. The three remaining were those who consistently held to the college graduation goal. Objective nine was probably accomplished for those students who attended regularly.

Achievement of Objectives for Student Teachers. The objective to reduce the tendency to dropout was not achieved because none of the eight student teachers questions had intentions of dropping out of school. Only one expressed that some thought had occured to dropout - and this was long ago.

The rapport with 9th graders was probably achieved more from the student teachers point of view than the ninth graders. The student teachers had more comments on their change in attitude toward the ninth grade. For example, four comments by the senior high students dealt with the unexpected maturity of the incoming students and five comments were summed up in the expression, "some really want to learn."

The student teachers generally favored teaching as something they would like to try again in the future. Six of the eight indicated yes and two

were undecided. The objective was achieved because the students did receive the opportunity to teach with professional assistance.

Objective four was not achieved due to the fact that no student teacher had gone on a tour.

In comparison of their aspirations with reality three of the eight indicated some change. At least, the students were given the opportunity to receive more education concerning possible careers. Whether this could have been done in the regular school setting is open for analysis.

The remainder of questions were operational in nature. Item twelve in Table 16, Appendix 19 should be given attention by the program planners. The effort to influence more 9th graders seems dependent on solving transportation problems and publicity. Note that two students indicated 7th and 8th graders should be in the program. A ninth grader made the same suggestion.

Parents' Responses. Probably the best thing learned from the five parents was that they had talked with their children in four cases. Table 7, Appendix 18, indicates an interesting fact. That is of ten references by the 9th graders to parents, eight references were to she or mother. Father was mentioned only one time.

Guidance, Staff and Administrator Personnel Responses. The evaluations of these persons ran extremely high. Some of their initial thoughts revealed doubts but their participation and observations swayed them to approve the program. They were bothered by irregular attendance. And they did not reveal that they fully understood the objectives of the

program as defined in the proposal.

In summary, of the nine objectives for the 9th grade students, six were achieved to some extent as revealed by the persons sampled. Measurement of vandalism, reducing dropouts and students seeing the skills they were exposed to in school applied in business were not measureable at the time of this report or not achieved.

Two of the objectives for the student teachers were achieved, objectives on achieving rapport with the 9th graders and experimenting in teaching. The majority of the parents had talked about the P.A.C. program with their children. The persons responsible for the program rated the results of the program as being exceedingly high and recommended its continuance.

Recommendations

Based upon the data and comments of the participants of the P.A.C. program the following recommendations are made:

1. Long range evaluation procedures be instituted to measure change in student behavior due to the P.A.C. program, e.g., vandalism, dropout.

2. Time be allotted between phases of the program to incorporate changes needed that are discovered by the evaluation.

3. Interviewing for data collection be conducted by a person thoroughly trained in interview techniques.

4. The evaluation should be based on a minimum of twenty percent of the students and their parents, all of the student teachers and all persons involved in planning the program, the business education staff and school staff other than business education observing the students in regular school classes.

5. Participation of students in the seventh or eighth grades might be appropriate.

6. Transportation must be given more attention. School staff picking up students is a good gesture but legally explosive if there is a car accident and injury.

7. Tours should be coordinated with the mini courses so students may see the skills and hardware they use in school used in business and industry.

8. The program should probably not be scheduled to run into spring when outdoor activity becomes too strong a competitor for attendance.

9. Attendance should not be forced upon the students. Innovative ways to increase their interest should be focused upon.

10. Regular attendance was a problem. Students (9th grade level) who did not attend regularly should be interviewed to determine the reasons for irregular attendance.

11. Some staff members viewed the program as one to increase student knowledge of business processes and machinery. The purpose was to increase the students' knowledge of opportunities in the business area. Processes and machinery were only a means to an end. The purposes should be more clearly defined for the staff in future programs.

12. The program should be continued at least once a year.

Appendixes

7957

Appendix 1

TO: C. Doty

FROM: J. P. Coogan

RE: P.A.C. (PLAN-A-CAREER) PROGRAM

ABSTRACT:

Plainfield High School had a drop-out rate of 24% for the class of 1968. It is higher than this now. We know that lower income children have aspirations for jobs and money; but they lose this somewhere between junior high school and graduation. We hope to identify when this change takes place by providing the junior high disadvantaged, potential drop-out and special education students with a P.A.C. (Plan-a-Career) Program. This will be a hands on experience in the business department of Plainfield High SChool. The classes will be taught by paid "student teachers" (our own high school students). We believe that not only will the junior high school students benefit from the experience but so will the "student teachers".

1. Describe the existing situation in behavioral terms: The class of 1968 had a total of 795 students, at one time or another, between grade 7 (1962-63) and graduation in 1968. However, only 467 (76%) graduated and 145 (24%) were drop-outs. Although official data is not available for the graduating class of 1969 and 1970, it is believed that this rate is much higher than it was for the class of 1968.

   With over 24% of the young people dropping out of school in Plainfield, and more inadequately prepared for jobs, we must admit that possibly the schools are not meeting the challenges in all areas of education. At one time or another most lower class young people entertain aspirations for jobs and money. At some point in their lives, however, a great many of these people come to the conclusion that these two ways toward a valid identity are simply not within the realm of possibility for them.

2. Describe the projected situation in behavioral terms: What can be done to help most young people acquire the skills necessary for employment? Needless to say, we can't keep all young people in school until they graduate. However, the role of the school can be changed by the development of Saturday morning programs centered on individual interest in business careers. We believe these programs will motivate both junior and senior high school students to acquire employment skills, remain in school and graduate or long enough to acquire a job entry skill.

Our proposed Saturday morning and summer school P.A.C. (Plan-a-Career) program can provide disadvantaged and potential drop-out junior high school students with practical hands-on-experience courses in the business department.

The drop-out rate can be reduced 25% over the three year period by providing practical career oriented programs taught by senior high school, "student teachers", (pursuing courses in the business department).

Not only will the P.A.C. program help junior high school students but it will also motivate the senior high "buddy teachers" to know and understand the courses they are teaching. These "student teachers" will be compensated for their teaching and will be supervised by a certified teacher from the business department.

3. Describe the strategies for bringing about the change:

A. Strategies which will result in changes in things:
An in-service training program will be provided to train "student teachers" in the proper methods and procedures to reach all junior high school students. The offerings - Data Processing, Dictation, Shorthand, Bookkeeping, Typing, Office Machines, and Distributive Education - all "Hands On Experiences" - will be offered Saturday mornings from 9:30 a.m. until 11:40 a.m.

Following an introductory survey of each course, the junior high students will be allowed to enroll in any course and continue in this course as long as they are interested. By providing a student to "student teacher" ratio of two to one, this enables a student to leave one course at any time and enroll in one of the other offerings. The available "student teachers" can easily pick of the new entrant and teach at the student rate of interest and progress. This buddy system of "student teaching" provides a tremendous opportunity for us to also help the students learn skills for employment in business occupations.

B. Strategies which will result in changes in people:
The program will be offered to junior high school students on a voluntary basis. However, the potential drop-out and disadvantaged students will be identified and encouraged, through personal and family contacts, to enroll in the program.

The Kuder preference, California Battery, the Strong Vocational Interest Test and the wide range tests will be administered before, during, and following the completion of the program, to determine a student's progress in career interests. A six-month follow-up study will be used to determine the "success" of the student-scholastic-attitude and career goals will be reassured.

The P.A.C. program will also enable junior high school students to more easily bridge the gap between junior and senior high school. Rapport between junior and senior high school students will be improved. Racial tensions will be reduced and vandalism by 10th graders, often demonstrated by new students in school, will be minimized because of this early exposure to the high school.

Junior high school students will be more conscious of jobs and careers. Bookkeeping no longer be placing books on shelves, as a 9th grader recently told me when she visited P.H.S. to see the offerings in the Business Department. Senior high school students selected as "student teachers" will be motivated to stay in school and learn as much as possible to be effective "teachers." Needless to say, this buddy system will not only motivate both groups of students but will also reduce the drop-out rates at both the junior and senior high school. It also prepares people for careers.

4. Describe the strategies for enlarging the scope of the innovation, if it is successful:

   A. Strategies for assuring continuation of the program: The classroom educational "hands on" experience will be supplemented by numerous field trips to businesses and industry to observe how the acquired skills can lead to jobs and careers.

   Businesses can open their doors by providing our students with "a day in industry" which enables students to see how adults work and earn their living.

   Encouraging business and industry to visit our school, participate in our program and "adopt" our students bridge the gap between education and employment. It also gains their support in continuing the program by providing qualified, well-trained students (they will advise us of latest trends and procedures) and employees. They personally know - a welcome asset to any business.

Many of the boys participating in the program will discover an interest in repairing office machines. A vocational program offered at Plainfield High School and supported by business firms can teach students the skills required for successful careers in these areas. It can become a regular part of the P.A.C. program.

B. Strategies for achieving broader applications within the district: The success of this program can have far reaching affects. Science, Industrial Arts, Vocational Programs, and Special Education can become involved in their own P.A.C. programs to train students for realistic careers and, consequently, reduce the drop-out rate and minimize racial friction because of the personal involvement of students "teaching" each other.

5. Is there anything else you would like us to know about your proposal or about the capacity of your district to implement it? The P.A.C. program encourages the development of a twelve month school concept. Normally, during the summer months and on Saturdays, the equipment in the business department remains idle. Industry cannot afford to have equipment remain idle or the plant on "down time." Neither can our schools. We own or lease the equipment that will be used in the program, why not use it to the fullest to train our junior high school students and "student teachers" for careers.

The high school students selected to "student teach" will be compensated for their work. These "student teachers" will, for the most part, be disadvantaged students. At one time or another, most lower class young people entertain aspirations for jobs and money. At some point in their lives, however, a great many of these people come to the conclusion that these two ways toward a valid identity are simply not within the realm of possibility for them; their "student teaching" convinces them that there are opportunities for themselves and others like them.

The junior high school students will aspire to become "student teachers" and also learn the skills for employment. The "student teachers" selected will include a number of "difficult" students. Encouraging these "difficult" students to assume positive responsibilities can result in producing good citizens.

Appendix 2

SATURDAY MORNING "P.A.C." PROGRAM

P.A.C. PLAN A CAREER!

AIMS OR OBJECTIVES:

Expose students to CAREERS in the BUSINESS AREAS through "Hands On" classroom experiences and field trips to LOCAL BUSINESSES.

PROCEDURES:

1. Create an exciting classroom situation which will SHOW students the courses available in the business department at Plainfield High School.

2. Provide "Hands On" experience that will enable our students to gain the knowledge essential to understanding the skills required for success in the business fields.

3. Create a classroom atmosphere that will encourage students to seriously consider enrolling in a business course.

4. Expose students to the many careers available in business and how our program can help them SUCCEED in that CAREER !!!

Appendix 3

SATURDAY MORNING P.A.C. PROGRAM (PLAN-A-CAREER) March 20, 1971

Program for Today:

1. 9:00 to 9:30 A.M. - "coffee break" and discussion period
2. 9:30 to 11:20 A.M. - techniques in teaching

   Miss Scott - Dictation and Shorthand

   Mr. Dicks - Distributive Education

   Mr. Mirota - Bookkeeping

   Mr. Malt and Mr. Gearhart - Office Practices and Data Processing
3. 11:20 to 12:00 Noon - group feedback and evaluation

Next Week's Program

1. 9th grade students from Maxson and Hubbard will arrive at 9:15. All other participants report at 9:00 a.m.
2. Donuts, etc., until 9:30.
3. Program begins at 9:30

   A. You will teach the subjects you are working in today.
   B. The junior high students will stay with you for the entire morning.
   C. You are their teacher but the supervising teachers will be available for assistance, etc.
4. The junior high school students will have an opportunity to move from one group to another but they must remain in a class for an entire morning. In other words, a student cannot go to a class for twenty minutes and then decide to move to another class.

Classes run from 9:30 until 11:30.

Appendix 4

April 3, 1971

P.A.C. II
(PLAN-A-CAREER)

SATURDAY MORNING PROGRAM FOR 9th GRADE JUNIOR HIGH SCHOOL STUDENTS

TO: Junior High School P.A.C. Students

FROM: J. P. Coogan, Chairman-Business Department,
Plainfield High School

Welcome to the second session of your Plan-A-Career (P.A.C.) Program. The 12th grade senior high school "student teachers" and the junior and senior high school staff are real pleased to have you with us on Saturday mornings. We hope that the experiences you have in P.A.C. II will be of real value to you in selecting courses at the high school and also help you to prepare for careers.

All of us are enthusiastic about the program and, as you may know, this is an unusual experience for all of us. So far as we know, this is the only program of its kind anywhere. Consequently, you are an exceptional group of students.

We hope that you will enjoy yourself and find the Saturday morning sessions fund and worthwhile.

TENTATIVE SCHEDULE

March 13, 1971	Orientation for Student Teachers
20	Orientation for Student Teachers
27	First Session for Junior High School Students
April 3	Second Session for Junior High School Students
10	Easter Vacation - No Program
17	Easter Vacation - No Program
24	Third Session for Junior High Students
May 1	Fourth Session for Junior High Students
8	Fifth Session for Junior High Students
15	Sixth Session for Junior High Students
22	Seventh Session for Junior High Students
29	Memorial Day Weekend Holiday - No Program

Additional Saturday Morning Activities
Special guest speakers - mini trips to visit local businesses- and distinguished visitors

Appendix 5

Plainfield High School

March 4, 1971

Dear Parents,

The Plainfield Board of Education has received a grant from the New Jersey State Department of Education to sponsor a Saturday morning experimental careers program at Plainfield High School. As you know, your child has been selected to participate in this program.

The purpose of the Saturday morning experience is to expose 9th grade junior high school students to the business courses and programs available to them at the high school. We also hope to explain how these courses can lead to successful business careers.

Each Saturday morning will be a new "hands on" experience for your child. We hope that through the Saturday experiences your child will have a better understanding of business careers and how the programs available at Plainfield High School can help with realistic career choices.

Thank you for your interest and support.

Sincerely yours,

John P. Coogan
Plainfield High School
Plainfield 7-7000 Ext. 264

Appendix 6

Plainfield High School
Plainfield, New Jersey

Date _____

To the School Authorities:

I wish to have my son/daughter _____ participate in the Saturday morning P.A.C (Plan-A-Career) Program being held at Plainfield High School.

Saturday morning sessions will begin promptly at 9:30 a.m. and conclude at 11:40 a.m. P.A.C. field trips are also planned for several Saturday mornings. The bus will depart promptly at 9:00 a.m. from the main entrance on Park Avenue and return at 12 Noon.

Remarks: _____

_____

_____.

_____

Parent's Signature

Appendix 7

Plainfield High School
Plainfield, New Jersey

March 3, 1971

Dear _____:

Congratulations on being selected to participate in a new, exciting, experimental P.A.C. (Plan-A-Career) program being held on Saturday mornings at Plainfield High School. The purpose of the program is to expose junior high school students to occupations at an earlier age so that you may make more realistic career choices.

As you well know, next year you will be enrolled in 10th grade. Our Saturday morning program will expose you to the many courses that are available at your high school. Each Saturday morning will be a new and exciting experience for you. You will learn how to use the latest, and most sophisticated office equipment found in businesses. You will also take field trips to see how this equipment is used in offices.

We hope that by exposing you to the courses available at Plainfield High School you will realize that there are many employment opportunities for qualified and trained people.

Thank you for your interest in our new P.A.C. program.

Sincerely yours,

John P. Coogan
Chairman, Business Department
Plainfield High School

DATE	STUDENT TEACHERS	TEACHERS	COUNSELORS	CON-SULTANTS	ADMINIS-TRATORS	SUPERVISOR	BUS DRIVER	CUSTODIAN	MISC. EXPENSES	TOTAL EXPENSES
3-13-71										
3-20-71										
3-27-71										
4-3-71										
4-24-71										
A.M.										
5-1-71										
P.M.										
5-8-71										
5-15-71										
5-22-71										
6-5-71										

Appendix 8

Appendix 9

FEEDBACK EVALUATION

DATE: March 20, 1971

We need your assistance in evaluating the Saturday morning P.A.C. program. Following each Saturday morning session we will take a few minutes to discuss that day's program. We will also give you an opportunity to offer suggestions on how the program can be improved as well as your observations about the day's session. Here is your opportunity to improve the program!!!!! Do not hesitate to offer suggestions and criticism. We welcome it because your comments are the only real evaluation we have.

Please circle the group that you were assigned to:

Miss Scott - Mr. Dicks - Mr. Mirota - Mr. Malt - Mr. Gearhart

Suggestions:

Observations:

Criticism:

Recommendations:

Do you feel comfortable in what you are doing? What can we do to help you do a better job?

What did you learn today?

Appendix 10

P.A.C. Feedback

TO: Dr. Charles Doty

FROM: Jack Coogan

RE: Saturday, March 13th P.A.C. Program

The response of the "student teachers" to the orientation program conducted by Rutgers Professors Chuck Doty and Adam Scrupski was very positive. The students indicated, by their feedback, that they believe the program will be successful.

It has been decided that on March 20th we will hold an additional orientation class for the "student teachers". We will not have the junior high students at this session. This will be a "dry run" to enable the "teachers" to run through several lessons before they have the 9th graders on the 20th.

Appendix 11

April 3, 1971

Student Evaluation

NAME _____

STREET ADDRESS _____

PHONE _____

School you attend _____

What business courses have you taken?

_____

_____

_____

_____

What are your career plans?

Were you interested in today's program?

What did you like the most?

Do you think there are other ninth grade students who would benefit by this program?

How would you suggest we get them enrolled?

Can you bring a friend next week?

Appendix 12

Name_____

P.A.C. Program -- Survey Sheet

1. Would you like to know the results of the test you took this morning? YES ___ NO ___

2. This test will inform you of your abilities and things you are best suited to do in the future. Knowing this information, do you think you might take courses at PHS that will benefit you in this career or future occupation? YES ___ NO ___

3. What did you do differently this morning: 1) try a new course 2) stay in the same course or 3) go back to a course that you had tried before?

(UNDERLINE ONE OF THE CHOICES)

4. Do you feel this P.A.C. program will help you when you enter the Plainfield High School in selecting business courses that will interest you and help prepare you for a job? YES ___ NO ___

5. ONLY FOR STUDENT TEACHERS - Do you feel that you have taught your students worthwhile information to benefit them when and if they enroll in a business course? If yes, explain _____

_____

If the answer is no, how will you change your teaching techniques?

_____

Appendix 13

P.A.C.
Plan-A-Career

Directions to interviewer: The purpose for interviewing the students (9th grade), teachers (senior high grades) and parents is to determine the changes that occurred, if any, due to the P.A.C. program. You must be consistent in your interviews, that is, do not ask different questions during each of the interviews. (Probably one or two interviews should be done before actual collection of data is begun.) Listen carefully and record the comments fully during the interview. Do not give your own opinions or give information during the interview. Remember you are collecting information not giving information during the interview.

Procedures:

1. Introduce yourself.

2. State that the interview is to determine the educational value of the P.A.C. program being conducted at Plainfield High School.

3. Conduct the interview and record the information.

4. Close the interview and answer any questions that the interviewee may have, especially the parents.

5. Check your notes to determine if they are complete enough to be understood at a later date, especially by someone other than yourself.

Note in the interview schedules that the interviewee is first asked to give his present evaluation of the program and the second question concerns his initial expectations. With this technique, a measure of change can be determined from the interviewee.

Appendix 14

P.A.C.
Interview Schedule for Students (9th grade)

1.	What do you expect to do in high school, for example, courses, activities, work?	Before being in P.A.C., what did you expect to do when you enrolled in senior high school, for example, courses, activities, work?
2.	Are you looking forward to going to senior high school?	Did you look forward to going to high school before being in the P.A.C. program?
3.	How do senior high school students act?	How did you expect senior high school students to act before being in the P.A.C. program?
4.	List the jobs you might like to work in some day.	Before entering P.A.C., which of the jobs you just listed did you know existed?
5.	Do you plan to drop out of school? Why?	Before P.A.C. did you plan to drop out of school? Why?
6.	What kind of job would you like to have?	Before taking part in P.A.C. what kind of job did you want?

7. Would you like to teach in the future to students coming into senior high school?

Prior to participating in P.A.C. what were your attitudes toward teaching?

8. What did you learn during the field trips?

9. What do you like best about the class you are in?

10. What do you like least about the class you are in?

11. How successful do you feel?

12. Of how much help is the teacher?

13. Does he (she) try to help too much?

14. Does he know what he is talking about?

15. Are directions and instructions clear?

16. Is the teacher fair?

17. Does the teacher respect you?

18. How does the teacher treat you?

19. What do your parents think about the P.A.C. program?

20. How could we get 9th graders to participate in the program?

Appendix 15

Interview Schedule for Teachers (Senior High Students)

1. Do you plan to drop out of school? Why?

   Before P.A.C. did you plan to drop out of school? Why?

2. How do the 9th graders act?

   How did you expect 9th graders to act before being in the P.A.C. program?

3. Would you like to teach more in the future? Why?

   Before P.A.C. why did you decide to teach?

4. What did you learn during the field trips?

5. What kind of job would you like to have?

   Before P.A.C. what kind of job did you want?

6. Did you feel prepared to teach?

7. How were you helped to organize the subject content?

8. Did the students respect you?

9. Did you require any help in teaching the students?

10. Did you need any help in disciplining the students?

11. What do your parents think about the P.A.C. program?

12. How could we get more 9th graders to participate in the program?

Appendix 16

Interview Schedule for Parents of 9th Graders

1. Do you know what P.A.C., Planning-A-Career, is?

2. Has your child talked about P.A.C.?

3. Why did your child enroll in P.A.C.?

4. Has your child talked about different jobs because of P.A.C.?

5. Do you feel that P.A.C. has changed your child? In what ways?

6. Would you encourage the school to continue P.A.C.?

Appendix 17

Interview for Staff Members

1 a) How did the P.A.C. students react to the Saturday a.m. P.A.C. program.?

b) How do they feel about the program now?

2 a) Do you think P.A.C. has accomplished what it set out to do?

b) If not, what has it accomplished?

3 a) What id you think of the P.A.C. program when you first heard of it?

b) What od you think of the program now?

4. Do you feel the 9th grade students gained anything from the P.A.C. program?

very little some a great deal

5. What did the student teachers gain from their participation in the program?

very little some a great deal

6 a) Would you like to see the P.A.C. program continue next year?

b) Why not?

7 a) Do you think the P.A.C. courses offered were broad enough?

b) What courses would you like to add?

8. How would you rate the P.A.C. program?

poor fair good excellent

Appendix 18

Table 1

Interview Data from 9th Grade Students[1]

Item	Objective	Change	No Change	Comments/ Information
1	1	7	9	Had no plans (3 in no change) College bound (3 in no change)
2	1	3	10	Three wanted more from high school after being in P.A.C.
3	2	9	7	Act nice; not snobbish, more intelligent
4	4	12	4	50% of new jobs listed were not business related
5	5	0	16	Students attending were evidently education motivated
6	9	9	3	(4 had no response) Change seemed to be students evaluating their abilities. E.G., four students changed from computer work to less demanding job levels

[1] Sample size of sixteen

Table 2

Data from 9th Grade Students

Item	Objective	Yes	No	Maybe	Comments/ Information
7	7	8	3	3	Hard work no pay - 3 in yes category express doubt that teaching as a career would be desirable

Table 3

Data from 9th Grade Students

Item	Objective	Response			
8	8	New jobs	1	Did not attend	6
		Security jobs	1	No comment	3
		Foods service	1	Learned much	1
		Business mgt.	2		

Table 4

Data from 9th Grade Students

Item	Objective	Neutral	Positive	Negative	No Response
9	9		14		2
10	cancel - same as item 9				
11	5		12	3	1
12	2		13		3

Table 5

Data from 9th Grade Students

Item	Objective	Yes	No	Sometime	No Response
13	operational	4	11	1	
14	operational	14	1		1
15	operational	16			
16	2	13		3	
17	2	15		1	

Table 6

Data from 9th Grade Students

Item	Objective	Descriptors	Students
18	2	Fair	3
		Good	2
		Friend	1
		OK	3
		Nice	5
		Mature person	1
		Young lady	2

Table 7

Data from 9th Grade Students

Item	Objective	Descriptors	Students	Writes Comments
19	5	Worthwhile	11	Of ten references to parents, eight referred to she or mother
		Encouraged to go	2	
		Do not know	1	
		Wants information	2	

Table 8

Data from 9th Grade Students

Item	Objective	Suggestions	Students
20	5	Publicize	6
		Provide transportation	1
		Personal talks	1
		Start in 8th grade	1
		Change from Sat. mornings	3
		Later in day	1
		During school time	1

Appendix 19

Table 9

Data from Student Teachers[1]

Item	Objective	Yes	No	Comments
1	1	1	7	
2	2	5	3	Acted more mature (4) Some really want to learn (5)

[1] Sample size of eight

Table 10

Data from Student Teachers

Item	Objective	Yes	No	?	Descriptor	Students
3a	3	6		2		
3b	3				Experiment	2
					Work with people	2
					Educational	1
					No response	3

Table 11

Data from Student Teachers

Item	Objective	Did not attend
4	4	All responses

Table 12

Data from Student Teachers

Item	Objective	Descriptors	Students
5a	5	Interesting	1
		Office job	2
		No change*	5
		Change*	3
5b	5	Office job	1
		Social work	1
		No response	1

*Eight persons in sample of which only three changed the type of job they would like to have.

Table 13

Data from Student Teachers

Item	Objective	Yes	No
6	operational	4	4

Table 14

Data from Student Teachers

Item	Objective	Descriptors	Students
7	operational	By staff	3
		Common sense	1
		Speakers	1
		Learned in class	3
		Student teacher (real)	1

Table 15

Data from Student Teachers

Item	Objective	Yes	No	Comments
8	2	8		
9	operational	4	4	
10	2		8	They are young men and ladies and there was no need for it.

Table 16

Data from Student Teachers

Item	Objective	Descriptors	Students
11		Worthwhile	6
		Don't know	2
12	operational	Don't know	1
		Better transportation	1
		Poll student wants	1
		Include 7 & 8 graders	2
		Advertise by participants	1
		Publicity flier	2

Appendix 20

Table 17

Data from Parents[1] of 9th Graders

Item	Objective for 9th graders	Yes	No	Comments
1	1, 5	5		
2	1, 5	4	1	
4		5		
5		4		1 hard to say
6		5		

Table 18

Data from Parents of 9th Graders

Item	Objective for 9th graders	Descriptors
3	4	Learn shorthand Friend told my child Learn typing Something to do on Saturday

[1] Sample size of five

Appendix 21

Table 19

Data from Guidance, Staff and Administration Personnel

Item	Positive	Negative	Comments
1a	19		
1b	Same response as for 1a		

Table 20

Data from Guidance, Staff and Administration Personnel

Item	Yes	No	Comments
2	18	1	Suprised attendance was large as it was Regular attendance hindered program

Table 21

Data from Guidance, Staff and Administration Personnel

Item	Descriptors	Number of persons
3	Indifferent	1
	Necessary	1
	Foggy	1
	Students would not come	1
	Good idea	10
	Not sure of student reaction	1
	Plan not fully developed	1

Table 22

Data from Guidance, Staff and Administration Personnel

Item	Merit	No Merit	Comments
3b	15		Must have met some student needs Beneficial but expensive Has definite goals

Table 23

Data from Guidance, Staff and Administration Personnel

Item	Yes	No	Some	Great Deal
4			2	16
5			1	16
6	19			
7a	14	4		

Table 24

Data from Guidance, Staff and Administration Personnel

Item	Descriptors
7b	Charm school Public speaking Reading and spelling Research a company Economics General recordkeeping Exposure to colleges Typing I

Table 25

Data from Guidance, Staff and Administration Personnel

Item	Poor	Fair	Good	Excellent
8		2	11	6

Appendix 22

Objectives for 9th Grade Students

Objective	Appendix 18 Table	Appendix 18 Item	Appendix 20 Table	Appendix 20 Item
1	1	1	17	1
	1	2	17	2
2	1	3		
	4	12		
	5	16		
	5	17		
	6	18		
3	no date			
4	1	4	18	4
5	1	5	17	1
	4	11	17	2
	7	19		
	20	20		
6	no date			
7	1	7		
8	3	8		
9	1	6		
	4	9		
	4	10		

Items 13, 14, 15 are operational objectives

Appendix 23

Objectives for Student Teachers

Objective	Appendix 19 Table	Item
1	9	1
2	9	2
	15	8
	15	10
3a	10	3a
3b	10	3b
4	11	4
5a	12	5a
5b	12	5b

VT 014 768
MCKINNEY, FLOYD L., AND OTHERS
PROCEEDINGS AND FOLLOW-UP OF A WORKSHOP ON DETERMINING PERFORMANCE OBJECTIVES. FINAL REPORT.

KENTUCKY RESEARCH COORDINATING UNIT, LEXINGTON.
KENTUCKY STATE DEPT. OF EDUCATION, FRANKFORT
MF AVAILABLE IN VT-ERIC SET.
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DESCRIPTORS - *WORKSHOPS; *VOCATIONAL EDUCATION; *BEHAVIORAL OBJECTIVES; *EDUCATIONAL OBJECTIVES; PROGRAM DEVELOPMENT; CURRICULUM DEVELOPMENT; *STUDENT EVALUATION; CONFERENCE REPORTS
IDENTIFIERS - KENTUCKY

ABSTRACT - DESIGNED TO ASSIST VOCATIONAL EDUCATION PERSONNEL IN WRITING MORE REALISTIC PERFORMANCE OBJECTIVES, THIS 5-DAY WORKSHOP INVOLVED 36 PARTICIPANTS FROM KENTUCKY INTERACTING WITH CONSULTANTS AND HEARING NUMEROUS PRESENTATIONS. PRESENTATIONS MADE AT THE WORKSHOP WERE: (1) "IMPORTANCE OF PERFORMANCE OBJECTIVES" BY ROBERT PRUITT, (2) "THE NEED FOR PERFORMANCE OBJECTIVES IN PLANNING AND EVALUATING" BY CARL F. LAMAR, (3) "RELATIONSHIP OF PERFORMANCE OBJECTIVES TO PROGRAMS, CURRICULUM AND INSTRUCTION" BY HARRY BARNARD, (4) "DERIVATION OF PERFORMANCE OBJECTIVES" BY RAYMOND M. CLARK, (5) "SPECIFICATION OF PERFORMANCE OBJECTIVES" BY ELAINE UTHE, (6) "SELECTION AND IMPLEMENTATION OF PERFORMANCE OBJECTIVES" BY RAYMOND M. CLARK, (7) "ASSESSMENT OF PERFORMANCE OBJECTIVES" BY ELAINE UTHE, AND (8) "THE ORDEAL OF ELIMINATING IRRELEVANT OBJECTIVES" BY JAMES HANNEMAN. EVALUATION OF THE WORKSHOP INVOLVED THE FOLLOWING TECHNIQUES: (1) THE USE OF INTERPRETERS, (2) THE EVALUATION OF SMALL GROUP MEETINGS, (3) THE ADMINISTRATION OF A WORKSHOP EVALUATION SCALE, AND (4) THE USE OF A WORKSHOP FOLLOWUP INSTRUMENT. A 200-PAGE APPENDIX PROVIDES PLANS, FORMS, CONTENT OUTLINES, REFERENCES, AND EXERCISES USED FOR THE VARIOUS MEETINGS, A SELECTED BIBLIOGRAPHY, AND THE TEXT OF EACH PRESENTATION. (JS)

VT 014 768

Proceedings And Follow-up of

A WORKSHOP ON DETERMINING PERFORMANCE OBJECTIVES

7992

OCTOBER 1971 FLOYD L. McKINNEY ALFRED J. MANNEBACH

THIS WORKSHOP WAS SPONSORED BY THE
KENTUCKY STATE DEPARTMENT OF EDUCATION
BUREAU OF VOCATIONAL EDUCATION

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STATE PROGRAM EVALUATION

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DR. CLAYTON P. OMVIG, DIRECTOR

7993

FINAL REPORT

PROCEEDINGS AND FOLLOW-UP OF A WORKSHOP ON DETERMINING PERFORMANCE OBJECTIVES

Workshop Management

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Dr. Alfred J. Mannebach

C. O. Neel

November, 1971

Dr. Clayton P. Omvig, Director
Kentucky Research Coordinating Unit for Vocational Education
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WORKSHOP SPONSOR

Kentucky State Department of Education
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CHAPTER I

INTRODUCTION

STATEMENT OF PROBLEM

As programs of vocational education become more refined, expanded and more costly, the word 'accountability' is becoming more pronounced in the vocabulary of legislators and the public. What implication does the word 'accountability' have for vocational educators? What can be done to help vocational educators meet the challenge of informing the public that programs of vocational education are effective?

Accountability in the minds of the public and legislators, concerns the effectiveness and efficiency of the use of resources in equipping individuals with characteristics enabling them to function at a given level of performance. To what extent have vocational educators kept programs of vocational education commensurate with the needs of employment opportunities and requirements in our technical economy? Do vocational educators have the data to substantiate the effectiveness of their programs? Do they know whether or not students leaving their programs are capable of performing at a specified level?

One method of measuring program effectiveness is for vocational educators to develop realistic, measurable, performance objectives. Performance objectives must reveal explicit formulation of the results to be obtained due to some influence over which we have control. Vocational educators should develop objectives in their area of responsibility just as businessmen do in private business and industry. Educators should be able to measure the extent to which the objectives for their program or area of responsibility have been attained and they should be able to specify the conditions under which the changes are to occur. Persons working in vocational education should also define the criterion of acceptable performance for their objectives.

This precludes, however, the existence of realistic, explicitly defined, measurable, performance objectives. Objectives stated in performance terms are being used more and more extensively in education. As the cost of education continues to increase, accountability becomes a more and more important term to legislators and to the public. Educators must meet the challenge by specifying objectives in performance terms. Realistic evidence of success of programs of vocational education can then be presented to the public. Also, nonsuccessful programs can be changed, adapted or eliminated to ensure a quality, comprehensive program of vocational education.

The major problem for the project then was: Can selected staff members responsible for various phases of vocational education in the State gain the competence to write performance objectives for their area of specialty in a four-day workshop utilizing consultant leadership and professional education assistance?

RATIONALE

The rationale for conducting a workshop on the development of performance objectives emerged from several sources. The workshop was designed to assist vocational education personnel in the State to write more realistic per-

formance objectives. Many of the workshop participants were in positions of influence and leadership, and it was hoped that those participating in the workshop could provide the leadership needed in helping other vocational educators to revise and develop relevant, measurable objectives.

As members of a leadership and supervisory team, the Bureau of Vocational Education staff members are in a position to assist vocational education personnel at the local level to write meaningful, performance objectives. As behavior modification techniques and precision teaching become more widely accepted in the classroom both teachers and supervisors must become more explicit in the kinds of behavior and performance expected of the students. The workshop was designed to help the participants to do a more effective job of supervision and leadership in this regard.

Finally, the workshop on determining performance objectives paved the way for the first step in evaluation. Only if realistic, explicitly stated measurable objectives are developed will a valid measure of the degree of success of vocational education be provided. The development of performance objectives is the first step toward gathering evidence regarding the accountability of programs of vocational education. The leadership personnel in vocational education must specify performance objectives, obtain evidence of the attainment or the lack of attainment of these objectives, and be willing to make decisions as a result of evaluations made.

OBJECTIVES

1. Participants at the completion of the workshop will be able to develop and state objectives which:
   a. describe how students are to perform after having had educational experiences;
   b. describe both the behavior to be displayed and the context in which the behavior is to occur; and
   c. are stated at a level of specificity that makes it possible to recognize the behavior should it be displayed.

2. The workshop participants will develop and write performance objectives for the program areas of vocational education which they represent.

GENERAL PLAN OF OPERATION

The project involved planning, conducting and evaluating a four-day workshop held in Lexington, Kentucky, October 5-9, 1970. The workshop program was planned so as to actively involve the participants in a variety of activities specifically designed to promote the achievement of the objectives for the workshop. The workshop program focused on major presentations concerning performance objectives, a series of programmed filmstrips and tapes about performance objectives and small group work sessions.

In the small group sessions the participants were able to discuss the points presented, complete exercises regarding performance objectives and to develop a plan of action related to their job responsibilities.

CHAPTER II

METHODS AND PROCEDURES

SELECTION OF PARTICIPANTS

Prior to the funding of the workshop the following groups of people who are directly concerned with the supervision and/or administration of programs of vocational education in the Bureau of Vocational Education, Kentucky State Department of Education were identified as groups of individuals who should be represented at the workshop:

1. Division Directors and/or Assistant Division Directors,
2. Bureau Assistant Directors,
3. Staff Members of the Instructional Materials Laboratory, and
4. A representative of each of Kentucky's vocational education regions (these representatives were members of the regional evaluation task force).

Shortly after official notification that the workshop was funded, letters announcing the workshop were sent to the selected individuals. The letters were signed by Dr. Carl F. Lamar, Assistant Superintendent for Vocational Education, State Department of Education, Frankfort, Kentucky.

The second mailing, regarding the workshop, received by the prospective participants was a flyer and pre-registration form from the workshop directors. The flyer provided information about the time, location and objectives of the workshop. See Appendix A and B for copies of the flyer and pre-registration forms.

A list of the workshop participants giving their name, professional title and office address is contained in Appendix C.

PLANNING THE WORKSHOP

The workshop management worked cooperatively in making the final plans for the workshop. The workshop management refined and finalized the workshop topics and general procedures.

Two meetings were held with the small groups leaders to orient them to the materials to be used and the procedures to be followed during the workshop. Dr. Herbert Bruce, Doug McKinley, Donnalie Stratton and Mary Bell Vaughan served as small group leaders for the workshop. General topics discussed in the pre-workshop meetings of the small group leaders included the role of the small group leader, outline for the small group sessions, development of the participant's plan of action and evaluation of the small group sessions. Agenda for the small group leaders meetings are in Appendix D.

All individuals who pre-registered for the workshop received a workshop program prior to the workshop. A complete copy of the workshop program appears in Appendix E.

CONDUCTING THE WORKSHOP

The workshop opened with registration at 4:00 p.m., Monday, October 5, 1970 at the Carnahan House, University of Kentucky, Lexington. Following dinner the keynote address for the workshop was presented by Robert Pruitt, U.S. Office of Education.

In general, the workshop format consisted of major presentations followed by reaction panels and/or questions from the participants. A filmstrip-tape series (see Appendix F) was used to amplify certain points regarding performance objectives. Opportunity was provided in small group sessions for the participants to discuss the ideas presented by the speakers and by the filmstrip-tape presentations.

All workshop participants, consultants and staff members were provided a three-ring notebook and a packet of selected references. The references dealt with writing performance objectives. A complete listing of these reference materials is provided in Appendix G.

Each workshop participant was assigned to one of four small groups. Each small group was composed of participants with similar kinds of job duties and responsibilities. A breakdown of the small groups appears in Appendix H.

In Appendix I is the outline for the small group meetings. The outline was developed by the workshop managers in cooperation with the small group leaders. It was not the intent of the workshop staff to so structure the small group sessions that freedom of expression was stifled. However, it was felt that a "plan of action" was necessary for the small groups if the workshop was to accomplish the objectives.

Each workshop participant received a copy of the small group meeting outline. This outline identified the objectives of each session, provided a list of references and a suggested procedure to follow in each session. Each small group was free to vary from the suggested outline as long as the objectives were accomplished.

Exercises concerning performance objectives were provided for the use of the workshop participants in the small group meetings. The exercises, provided in Appendix J, were developed by Dr. Elanie Uthe and Dr. Raymond Clark, Workshop Consultants.

At the final small group meeting each workshop participant outlined a plan explaining how he would apply the knowledge gained at the workshop. The plan was developed to serve as a model of how objectives could be developed for a specific purpose, how the plan of action can be carried out and how the degree of attainment of the stated objectives can be assessed. A copy of the guidelines for individual plans is provided in Appendix K.

EVALUATING THE WORKSHOP

Several techniques were used to evaluate the workshop while it was in progress and after the conclusion of the workshop. Four workshop participants were chosen by the workshop staff as interpreters. The interpreters were

chosen so as to represent the different groupings of individuals attending the workshop. They were also judged to be capable of grasping the significance of evaluative types of comments made by the workshop participants. The interpreters usually met once a day with the workshop staff to provide feedback regarding changes that should be made in the workshop procedures. The workshop interpreters were Jack Hatfield, Anne Hayes, Virginia Pratt and Charles Wade.

The second form of evaluation during the workshop was the evaluation of the small group meetings by the workshop participants. The form used for this purpose can be found in Appendix L. An analysis of the information from these forms is in Chapter IV.

At the concluding session of the workshop each participant responded to a workshop evaluation scale. (See Appendix M). The responses of the participants are analyzed in Chapter IV.

Six months following the completion of the workshop a follow-up instrument was mailed to all of the workshop participants. The follow-up instrument was designed by the workshop staff in an attempt to determine the activities in which the participants had engaged since attending the workshop. The follow-up instrument is provided in Appendix N.

Enclosed with the follow-up instrument was a letter from the workshop staff (see Appendix O). A thank you-reminder card (see Appendix P) was mailed to all workshop participants. The final contact with the workshop participants was a second follow-up instrument and letter from the workshop staff (see Appendix Q). The final mailing was sent only to those who had not returned the first follow-up instrument.

Follow-up items followed a ten to fourteen day interval with the following order of items being mailed to the workshop participants.

1. Follow-up instrument, addressed-postage paid return envelope and a cover letter signed by the workshop managers.
2. Thank you-reminder card signed by the workshop managers.
3. Second follow-up instrument, addressed-postage paid return envelope and a letter from the project managers.

PUBLICITY

Mary Alta Tucker, Coordinator of Information Services for the Kentucky Bureau of Vocational Education, assisted in providing publicity for the workshop. Pictures were taken by the official photographer for the Kentucky State Department of Education.

New releases concerning the workshop appeared in the "Vo - Ed Highlights," "Kentucky Department of Education Weekly News," the University of Kentucky "Communi - K," the "Kentucky Department of Education School News," and various State Newspapers.

6/7

CHAPTER III

ABSTRACTS OF

WORKSHOP PRESENTATIONS

IMPORTANCE OF PERFORMANCE OBJECTIVES

Robert Pruitt

Mr. Pruitt's first concern was with the divergent opinion of educators about the usefulness of performance objectives. Many curriculum makers feel there is nothing new about the idea of educational objectives. They also state that there are many topics in education that cannot be measured in performance terms, thus, performance objectives are not appropriate. At the other extreme are the people who read a few articles about performance objectives and declare themselves experts. Mr. Pruitt placed himself among the educators who regard the preparation of meaningful objectives as a very complex matter.

Several issues confront anyone attempting to develop performance objectives for a course: (1) relevancy to student's needs, (2) individualization to the student's abilities, (3) individualization to the student's field of study and (4) learning styles.

Relevancy should encompass present and future personal needs of the student plus the needs of the social order. If programs are designed in this manner, the student will receive learning experiences that will provide him with a multi-option curriculum.

Individualization is vital in the development of performance objectives. Programs must be flexible so that subject matter can be presented in a form and at a time relevant to the career plans of the students. Instructional materials and methods must be designed to meet the individual needs of each student.

The basic teaching methods have been speeches and textbooks. The new learning media and new approaches to learning must be used because of the heterogeneous characteristics of most classes.

The concept of coordinating performance objectives with the goals of the total school curriculum was stressed. In order to be able to state that the curriculum is meeting its goals, educators must be able to measure the progress of the students, hence the need for precise, behaviorally stated objectives.

Mr. Pruitt noted some of the approaches educational specialists take when developing performance objectives. First, are the ones concerned with learning blocks of material. Too often there is no concern about putting the bits of information together. Next are the programmed learning people who establish pre-requisites which lead to broad objectives. Many times these people are selling teaching machines rather than well developed instructional programs. Another group concerns itself with concepts; failing in many cases to explain what is meant by concepts or what the student could do with his collection of concepts. Next are the specialists concerned with the problem solving approach to learning. These people try to combine programmed instruction and concepts. Last we find the specialists concerned with process objectives. These people are concerned with long term learning which requires life-long effort on the part of the students.

Mr. Pruitt stressed the difficulty of blending objectives from the three domains of knowledge; psychomotor, cognitive, and affective. Another problem is overcoming the mechanization of learning. Many people believe that the concern for each learner as a human being is more important than the subject matter taught.

NEED FOR PERFORMANCE OBJECTIVES IN PLANNING AND EVALUATION

Dr. Carl F. Lamar

Dr. Lamar stressed the responsibility that vocational educators have for preparing people for the world of work, and in turn, for carrying out the State Program of Vocational Education. In the process of accomplishing the above responsibilities, Dr. Lamar emphasized the need for performance objectives in program planning and program evaluation. Performance objectives can help provide the evidence which educators need to modify, improve, and recycle their programs.

Dr. Lamar pointed out that performance objectives are helpful in defining an individual's plans. They are also helpful in evaluating the plans of an individual. Use of performance objectives provide the information by which the individual will be better able to improve his performance.

Performance objectives are significant when they are used to coordinate federal, regional and local plans. The National Advisory Council of Vocational Education and the State Advisory Council are beginning to operate by objectives. "Management by Objectives" insures proper allocation of resources to obtain the desired results. Also built in is the ability to measure the attainment of stated goals. This type of operational planning system has five essential aspects:

1. Developing short-term objectives,
2. Developing operational plans to achieve the objectives,
3. Directing and coordinating the implementation of plans,
4. Receiving and evaluating information on progress and results, and
5. Following up with corrective action.

It is hoped that through operational planning systems, using performance objectives as a basis, educators will be able to implement change in vocational education and meet the needs of individuals and of society.

RELATIONSHIP OF PERFORMANCE OBJECTIVES TO PROGRAMS, CURRICULUM, AND INSTRUCTION

Dr. Harry Barnard

Dr. Barnard initiated his presentation by stating that educators today must re-evaluate not only their methods, but also their goals. The development and use of performance objectives seems to be the answer to educational problems in many cases. Dr. Barnard stressed that the use of performance objectives still allows the school to incorporate the views of the public, educational specialists, and state standards into their programs.

If schools have objectives they should be identifiable, usable, and relevant otherwise, they are a waste of time. Without well stated objectives, educators have no basis for making judgments about student progress or about the achievement of program goals. The teachers are responsible for translating written and relevant objectives into obtainable goals through their instruction.

Dr. Barnard then discussed the three domains of the taxonomy of educational objectives; the psychomotor, the cognitive, and the affective. He pointed out the value of performance objectives in the first two domains but stressed the difficulty of preparing objectives for the third domain.

In terms of the total curriculum, Dr. Barnard stated that performance objectives must never be viewed as a primary focus around which we organize an educational program. However, performance objectives can remind us of the fact that educators all too often place their emphasis on the minutiae rather than substance.

DERIVATION OF PERFORMANCE OBJECTIVES

Dr. Raymond M. Clark

Dr. Clark indicated that a statement of objectives should tell what a learner is to be able to do at the time of leaving school and how well and under what circumstances a worker should be able to perform. He went on to identify five sources of information which will help educators write such objectives. The sources include asking the worker himself, asking the supervisor, studying job descriptions, using advisory councils, and assessing the target population.

A complete list of exactly what the worker does will give us a good idea of the required performance from his viewpoint. Although this sounds quite simple, it may turn into quite a task.

The supervisor will be able to tell us what and how well the worker should be able to perform. However he may not know all the answers. In asking the supervisor about what a worker needs to know, it is important to list all the activities of a particular job, including the cognitive and the affective aspects of the performance desired as well as the psychomotor.

Written job descriptions tell something about the conditions under which the worker performs, however, many firms have no job descriptions. Also, there is little uniformity of job descriptions between industries.

The use of advisory councils is important. If knowledgeable people are on the council, they can be of great benefit in helping educators derive their objectives.

Since performance objectives are written for the benefit of the target population, educators must know many things about the population in order to meet their needs. It is important for educators to know about the physical characteristics, the level of education, the level of motivation, the interests, the aptitudes, attitudes, biases, and prejudices of the target population. By using information from the above sources, educators can plan more effectively for the future and be in a better position to write objectives that are relevant to the student and compatible with the entrance requirements in business and industry.

SPECIFICATION OF PERFORMANCE OBJECTIVES

Dr. Elaine Uthe

The two methods of specifying performance objectives discussed by Dr. Uthe were (1) by classification and hierarchy, and (2) by precision in writing.

The main concern in the classification of objectives is with labeling the objectives. In her presentation, Dr. Uthe included charts which elaborated on the classification of performance objectives in four different ways. They included (1) the taxonomies of the educational objectives, (2) the hierarchy within each taxonomy, (3) the specificity of objectives and (4) the use of the objective for program development or instructional purposes.

The cognitive taxonomy deals with the knowledge area; the affective taxonomy deals with attitudes, values and feelings. The psychomotor taxonomy deals with sensory experiences and motor skills. Each of these taxonomies has a number of levels or a hierarchy. Therefore, when specifying objectives for instructional programs, we consider which taxonomy to use and what level within the given taxonomy is appropriate. Another concern is whether the objective is terminal, intermediate, or a subobjective.

Dr. Uthe also discussed the specification of performance objectives by precision of writing. Prescision in writing helps make the writer clarify his thoughts and provides communication between the writer and user of the objectives.

Some important points to remember when writing objectives are:

1. Include an action verb that identifies an observable behavior.
2. Include a measurable level of performance for evaluation.

These points are necessary so that we can have an accurate model to follow when we are measuring what the student is performing, how well the student's performing, and render what conditions the student is performing.

SELECTION AND IMPLEMENTATION OF PERFORMANCE OBJECTIVES

Dr. Raymond M. Clark

Dr. Clark first discussed the selection of performance objectives and then he presented his viewpoints on the implementation of objectives. Selection is important because performance objectives serve as a blueprint for attaining the level of performance we hope the students will attain. As such, they serve as a measurement of how well the students have performed. Performance objectives can be most useful when the student is allowed to help select the objectives or at least see the objectives formulated by his teacher so he can know where he is to go and what he is to do. Performance objectives can also help to organize instruction.

It is good to make a task list about a particular job indicating the type of work done, the frequency and importance of each task, and the learning difficulty of each task, in this way we can be sure we are selecting the most important objectives as a guide for teaching.

Dr. Clark stressed three points in the selection process - (1) identify prerequisites for the course, in order to eliminate unnecessary objectives, (2) know the vocational needs of the group you are working with so that the objectives you choose will help reach solutions to their needs, and (3) select objectives that are essential to successful beginning performance so that students will develop a base of knowledge on which they can build.

Dr. Clark discussed three aspects of the implementation process--how to teach.

1) Appropriate practices - giving students the opportunity to equivalent practice as stated in the objectives or an analagous opportunity. Too often teachers have students engage in activities which are not relevant to their instructional goals and thereby lessen the effectiveness of their teaching.
2) Instructional devices - examples of multi-media instructional programs were presented. Dr. Clark indicated that it is important to include various instructional devices in any educational program because people learn in many different ways and at different rates.
3) Sequencing of objectives was stressed. Placing performance objectives in a proper sequence is important in helping a student build from one performance objective to another.

ASSESSMENT OF PERFORMANCE OBJECTIVES

Dr. Elaine Uthe

Dr. Uthe emphasized that objectives are of value only if they are useful, usable, and used.

She discussed the assessment of performance objectives before their use and by criterion measurement as the objectives are being used.

The assessment of performance objectives can be achieved by optically inspecting the objectives to see that they include - what the student must do, how well the student should perform, and under what conditions the student should perform. Optical inspection can be useful in assessing the format, sequence, and value of the performance objectives; this method also allows you to see if the objectives are drawn from all three taxonomies.

Dr. Uthe indicated that it is better to set up an evaluation grid which will allow you to see that the objectives are taken from all three taxonomies listed across the top of the grid and down the left side are listed the activities or topics selected to fit each objective, plus estimates of the needed instructional time for each activity. The evaluation grid serves to direct attention to the overall spread of objectives so that weaknesses in the planned instructional program can be identified and corrected.

Assessment by criterion measurement is useful and necessary because the criterion statement states explicitly the manner in which a student is to be measured and what level of performance the student should reach. The criterion statement has three specific purposes: (1) to help design instruction - by providing educators with a model of expected behavior which can be used for selection of instructional activities, (2) to help determine the student's ability to perform - it simplifies the evaluation procedure because the test style and performance level are already determined, and (3) to help evaluate instruction - by setting minimal student standards, plus a class minimal standard which aid the teacher in judging the effectiveness of his instruction.

THE ORDEAL OF ELIMINATING IRRELEVANT OBJECTIVES

Dr. James Hanneman

Dr. Hanneman introduced his speech with a short history of his personal involvement with performance objectives during the last ten years.

When a person attends a workshop on performance objectives, Dr. Hanneman noted that other people will assume he is an expert and therefore the task of eliminating irrelevant performance objectives will be given to him.

Four suggestions, which may aid in reducing the ordeal of eliminating irrelevant objectives, were offered by Dr. Hanneman.

(1) Consider your philosophical position concerning education. This activity will provide you with a set of principles and a way of approaching, analyzing and resolving problems in vocational - technical education. You must know what you believe and are willing to defend concerning the student, the curriculum, and the teaching process.

(2) Consider the kind of people you will be working with. Some people will view performance objectives as a threat to their competence. Others will be innovative and develop new techniques for writing performance objectives. A third group will be people of talent who develop and polish performance objectives. A fourth group will include a core group of workers waiting for a leader to provide the model to follow. Much time will be spent trying to change other people, however if everyone formulating a set of performance objectives agrees on a point of reference as a starting point, the task will be easier.

(3) Have a point of reference. Hopefully, this reference point will be the student. Educators must formulate performance objectives for all types of students; low-income, various backgrounds, and different social levels. Otherwise, the recipients of our efforts will not benefit from our efforts to develop performance objectives.

(4) Be aware of the dangers of performance objectives. Do not let them become an end in themselves, but rather a means to an end. Developing performance objectives consumes time, money, energy, and enthusiasm. It is important that those people involved in the task of writing performance objectives be aware of this fact.

CHAPTER IV

EVALUATION

The workshop on determining performance objectives was evaluated by the use of four different techniques. The evaluation techniques were used to aid in making needed modification's in the program while the workshop was in session and to determine the effectiveness of the workshop after its completion. The four techniques used to evaluate the workshop were (1) the use of interpreters, (2) the evaluation of small group meetings, (3) the administration of a Workshop Evaluation Scale, and (4) the use of a workshop follow-up instrument.

USE OF INTERPRETERS

Four workshop participants were selected by the project management as interpreters. The interpreters were chosen so as to represent the different groupings of individuals attending the workshop. They were also judged as being capable of grasping the significance of evaluative types of comments made by the workshop participants. The interpreters usually met once a day with the workshop management to provide feedback regarding the modifications or adjustments that should be made in the conduct of the workshop. Adjustments of time schedules and changes of emphasis within the small groups constituted the areas in which modifications of program were made.

EVALUATION OF SMALL GROUP MEETINGS

At the end of each small group session, an evaluation form was used to determine whether or not the participants were satisfied with the content and conduct of the small groups. The form was designed to give the participants an opportunity to provide feedback to the small group leaders and to the project management. The participants responded to several questions on the form and rated them as excellent, good, fair or poor. This rating by the participants gave the small group leaders an indication of how the activities in the small groups were progressing. The scale was also designed to allow the participants an opportunity to elaborate on any of the ratings made. A copy of the form for evaluating the small group meetings is found in Appendix L.

The small group leaders analyzed the responses of the participants after each small group session. Attempts were made to adjust the structure and content of the small group meetings to satisfy the needs of the participants. The results from the small group meeting evaluation forms allowed the small group leaders to plan the activities of the small groups more effectively, to focus on areas desired by the participants, and to use the limited time in small groups to the best advantage.

WORKSHOP EVALUATION SCALE

To assess the attitudes of the participants toward the arrangements, purposes, and program for the workshop, a Workshop Evaluation Scale was administered. The Workshop Evaluation Scale was adapted from a scale designed by Weldon.* The scale was administered to evaluate partially the effect of the workshop. The Scale was administered to thirty-five participants who were present at the last session of the workshop. Each participant completed the instrument and returned it to the workshop management at the end of the testing session. A copy of the Workshop Evaluation Scale can be found in Appendix M.

Each item on the Workshop Evaluation Scale was scored on the degree to which the participants agreed with the statements indicating a favorable attitude toward the workshop and disagreed with the statements indicating an unfavorable attitude.

Scores of five, four, three, two and one were given to favorable statements with responses of strongly agree, agree, undecided, disagree and strongly disagree respectively. The scoring scale was reversed for unfavorable statements. The data were then summarized. The number of responses to each category on each item and the mean response for each item on the scale are presented in Table I.

As evidenced by the data in Table I, the reaction of the participants to the workshop was favorable. The participants tended to agree with the favorable items on the Workshop Evaluation Scale and to disagree with the unfavorable items. The range of the mean responses on the items was from 3.60 to 4.68. The total mean for all items was 3.99. This finding indicated that, as evidenced by the responses on the Workshop Evaluation Scale, the participants were satisfied with the arrangements, purposes, and content of the Workshop.

FOLLOW-UP OF WORKSHOP

During the month of April, 1971, six months after the workshop was completed, a follow-up instrument was sent to each of the thirty-eight full-time participants in the workshop. The follow-up was conducted to determine the extent to which the participants had (1) used the knowledge gained at the workshop, (2) been able to attain the objectives outlined in the plan which they developed during the workshop, (3) conducted or helped conduct any type of educational program on performance objectives since the workshop, and (4) judged the workshop to be of value to them. Comments regarding the content and structure of the workshop were also solicited from the participants. In addition participants were asked to submit examples of evidence of the attainment of the objectives specified in the plan which they developed at the workshop. These

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*Eugene J. Weldon. The Further Development of Research Competencies in Vocational Education Research and Development. (U.S.O.E. Project No. ERD444-65) Ithaca, New York: Cornell University, 1966.

TABLE I

NUMBER AND MEAN RESPONSES ON THE WORKSHOP EVALUATION SCALE ADMINISTERED TO THIRTY-FIVE PARTICIPANTS COMPLETING THE OBJECTIVES WORKSHOP[1] ON DEVELOPING AND WRITING PROGRAM OBJECTIVES IN PERFORMANCE TERMS

		Statement	Number of Responses SA	A	U	D	SD	Mean X
1.	+	The purposes of this workshop were clear to me	6	25	2	1	1	3.97
2.	-	The objectives of this workshop were not realistic	1	2	2	22	8	3.97
3.	+	Specific purposes made it easy to work efficiently	7	20	6	2	0	3.91
4.	+	The participants accepted the purposes of this workshop	5	24	4	2	0	3.91
5.	-	The objectives of this workshop were not the same as my objectives . . .	1	7	3	16	8	3.65
6.	-	I didn't learn anything new	0	0	1	9	25	4.68
7.	+	The material presented was valuable to me	17	17	1	0	0	4.45
8.	-	I could have learned as much by reading a book	0	0	0	21	14	4.40
9.	+	Possible solutions to my problems were considered	0	24	7	4	0	4.42

8017

TABLE I (CONTINUED)

		Statement	Number of Responses SA	A	U	D	SD	Mean $\overline{X}$.
10.	-	The information presented was too elementary	1	0	1	18	15	4.31
11.	+	The speakers really knew their subject	8	25	0	2	0	4.11
12.	-	The discussion leaders were not well prepared	0	1	3	16	15	4.28
13.	+	I was stimulated to think objectively about the topics presented	6	27	1	0	1	4.05
14.	+	New acquaintances were made which will help in my future work	6	21	5	3	0	3.85
15.	+	We worked together as a group . . .	10	21	5	3	0	4.28
16.	-	We did not relate theory to practice	0	1	4	26	4	3.94
17.	+	The sessions followed a logical pattern	10	23	2	0	0	4.22
18.	-	The schedule was too fixed.	0	2	1	27	5	4.00
19.	+	The group discussions were excellent	8	23	3	1	0	4.08
20.	-	There was very little time for informal conversation	1	5	1	26	2	3.60
21.	-	I did not have an opportunity to express my ideas	0	1	0	22	12	4.28

8018

TABLE I (CONTINUED)

		Statements	Number of Responses SA	A	U	D	SD	Mean $\bar{X}$.
22.	+	I really felt a part of this group .	12	20	2	1	0	4.22
23.	+	My time was well spent	10	21	4	0	0	4.17
24.	+	The program met my expectations . .	6	21	4	4	0	3.82
25.	-	I have no guide for future action . .	0	0	2	21	12	4.28
26.	-	Too much time was devoted to trivial matters	1	3	0	20	11	4.05
27.	-	The information presented was too advanced	0	1	2	28	4	4.00
28.	-	The content presented was not applicable to occupational programs .	0	3	2	26	4	3.88
29.	+	Workshops of this nature should be offered again in future years . . .	12	21	2	0	0	4.28
30.	-	Workshops such as this will contribute little to my work	0	0	3	16	16	4.37
31.	+	The research findings presented were useful to me in my job	4	21	9	1	0	3.80
32.	-	The references available to participants were not appropirate	0	1	0	23	11	4.25
		Total Mean For All Items						3.99

[1]A copy of the Workshop Evaluation Scale can be found in Appendix M.
+ Favorable Statement - Unfavorable statement

8019

examples served as evidence that specific activities had been accomplished and that the knowledge gained at the workshop had been applied.

The follow-up instrument was developed cooperatively by the project management. The follow-up instrument, a cover letter signed by the project management, and a pre-addressed stamped envelope were sent to each participant on April 12, 1971. One week later, a thank-you reminder card was sent to all participants. After another one week interval, a second follow-up instrument along with a pre-addressed stamped envelope and a second letter from the project management was sent. A copy of the follow-up instrument used is found in Appendix N. Copies of the letters sent by the project management and a copy of the thank-you reminder card can be found in Appendices O, P, and Q.

The follow-up instrument was sent to thirty-eight participants who were judged by the project management to be full-time participants at the workshop. Thirty-seven of the thirty-eight participants returned the follow-up instrument for a response of 97.5 percent. No response was obtained from one workshop participant.

The responses obtained on the follow-up instruments represented the viewpoints of a diverse group of participants who had varying duties and responsibilities. Because the group was diverse, the workshop management did not expect that all participants would become involved in all of the activities surveyed on the follow-up instrument. No attempt was made to distinguish differences of response between the participants from the Bureau of Vocational Education, the regional evaluation task force, or the Instructional Materials Laboratory. Because each participant has varying roles and responsibilities, each person attending the workshop was assumed to have different needs and opportunities for applying the knowledge gained at the workshop. For summary purposes, the number of activities reported by the participants are presented. No attempt was made to ascertain the quality of the activities reported by the participants and it cannot be concluded that all of the activities reported were a direct result of the objectives workshop. However, it can be assumed that the objectives workshop had a direct influence on some of the activities reported and that it may have influenced to some extent all of the activities reported by the participants on the follow-up forms.

The first question on the follow-up instrument asked, "In what areas has the information gained at the objectives workshop been beneficial to you?" The participants were asked to check all areas that applied. As can be seen from the data presented in Table II, twenty-five of the thirty-seven participants who replied or sixty-seven percent indicated that the information gained at the objectives workshop was beneficial to them in their jobs. Twenty-one or fifty-six percent reported that the workshop had been beneficial to them in writing instructional objectives while fifteen or forty percent stated that the workshop had been most beneficial in writing service area program objectives. Eighteen or forty-eight percent of the participants responding on the follow-up instrument indicated that the workshop had been most helpful in writing vocational education program objectives. These findings indicate that although two-thirds of the participants felt that the workshop had been most beneficial to them in their jobs, the workshop was also beneficial in writing objectives in specific areas of concern.

TABLE II

AREAS IN WHICH INFORMATION GAINED AT THE OBJECTIVES WORKSHOP HAS BEEN BENEFICIAL TO THE PARTICIPANTS

Response	Number	Percent
Developing objectives related to my job	25	67
Writing instructional objectives	21	56
Writing service area program objectives	15	40
Writing vocational education program objectives	18	48
N = 37		

The second question asked, "To what extent has attendance at the objectives workshop influenced your ability to write objectives in performance terms?" As revealed by the data in Table III, sixteen or forty-three percent or the participants reported that attendance at the workshop had influenced their ability to a great extent. Nineteen or fifty-one percent felt that the workshop had some influence on their ability to write objectives in performance terms. Two participants reported that the workshop had little effect while no one reported that the workshop had no effect. This finding indicated that as rated by over ninety-four percent of the participants, the workshop had some to great effect on their ability to write objectives in performance terms.

TABLE III

EXTENT TO WHICH ATTENDANCE AT THE OBJECTIVES WORKSHOP INFLUENCED THE ABILITY OF THE PARTICIPANTS TO WRITE OBJECTIVES IN PERFORMANCE TERMS

Response	Number	Percent
Great	16	43.3
Some	19	51.3
Little	2	5.4
No Extent	0	0.0
TOTAL	37	100.0

Question three on the follow-up form asked, "Of what value have performance objectives been to you in your job?" The data in Table IV indicate the responses of the participants to this question. As revealed by the data, twenty-one or fifty-seven percent of the participants indicated that performance objectives were of some value in their jobs while ninety-five percent indicated that performance objectives were either of some value or of great value in their jobs. This finding indicated that those attending the objectives workshop have become aware of the important role which objectives written in performance terms can have in their jobs.

TABLE IV

THE VALUE THAT PERFORMANCE OBJECTIVES HAVE BEEN IN THE JOBS OF THE PARTICIPANTS

Response	Number	Percent
Great	14	38
Some	21	57
Little	2	5
No Extent	0	0
TOTAL	37	100%

At the last session of the workshop, each participant worte a plan including one or more objectives which specified how, in the next six months, he would apply the knowledge gained at the workshop. Questions four and five on the follow-up instrument were designed to help the workshop management assess the extent to which the objectives specified in the plan were accomplished. Question four was concerned with the extent to which the participants attained the objectives they formulated in the plan which they developed at the workshop. As revealed by the data in Table V, fifteen or forty percent of the participants were able to attain most or all of the objectives specified in the plan of action. Sixteen or forty-three percent reported that some of the plan had been accomplished. Six participants or sixteen percent indicated that none of the plan had been accomplished. This finding indicated that approximately eighty-four percent of the participants had been active to some extent in attaining the objectives specified in the plans of action developed at the workshop.

TABLE V

EXTENT TO WHICH THE PARTICIPANTS WERE ABLE TO ATTAIN THE OBJECTIVES IN THE PLAN WHICH THEY DEVELOPED AT THE OBJECTIVES WORKSHOP

Response	Number	Percent
All	3	8.1
Most	12	32.4
Some	16	43.3
None	6	16.2
TOTAL	37	100.0

The fifth question on the follow-up instrument asked, "How many hours were spent in implementing the plan which you developed at the workshop?"

TABLE VI

HOURS SPENT IMPLEMENTING THE PLANS WHICH PARTICIPANTS DEVELOPED AT THE OBJECTIVES WORKSHOP

Response	Number	Percent
0 - 5 hours	12	32.4
6 - 10 hours	12	32.4
11 - 15 hours	5	13.5
16 - 20 hours	3	8.1
Over 20 hours	5	13.5
TOTAL	37	100.0

Data in Table VI reveal that approximately sixty-five percent of the participants spent ten hours or less implementing their plans. Five or thirteen percent of the participants spent eleven to fifteen hours, three or eight percent spent sixteen to twenty hours, and five or thirteen percent spent over twenty hours implementing their plans. This finding indicated that, although there was considerable variation in the time spent implementing their plans, over one-third of the participants spent more than ten hours in implementing the plan of action after the workshop.

The sixth question on the workshop follow-up instrument asked, "Have you conducted or helped conduct any type of educational program on performance objectives since the objectives workshop?" Data in Table VII reveal that nineteen or fifty-one percent of the participants responded "yes" to this question while eighteen or forty-nine percent responded "no."

TABLE VII

NUMBER AND PERCENT OF PARTICIPANTS WHO HAVE CONDUCTED OR HAVE HELPED CONDUCT EDUCATIONAL PROGRAMS ON PERFORMANCE OBJECTIVES SINCE ATTENDING THE OBJECTIVES WORKSHOP.

Response	Number	Percent
Yes	19	51.3
No	18	48.7
TOTAL	37	100.0

Question seven was concerned with the participants who responded "yes" to question six on the follow-up instrument. These were the persons who indicated that they had conducted or helped conduct educational programs on performance objectives since the workshop. The data in Table VIII-A, B, C, D, and E are based upon the nineteen "yes" responses to question six.

Data in Table VIII-A relate to the question, "How many people were involved?" As revealed by the data in Table VIII-A, a total of 734 persons were

involved in educational programs conducted by the nineteen persons who were participants in the objectives workshop. The number of participants involved

TABLE VIII-A

NUMBER, RANGE AND MEAN NUMBER OF PARTICIPANTS INVOLVED IN EDUCATIONAL PROGRAMS ON PERFORMANCE OBJECTIVES CONDUCTED BY NINETEEN WORKSHOP PARTICIPANTS

Number of People Taught	Range	Mean
734	6 - 150	38.6

in the educational programs ranged from six to one-hundred fifty. The mean number of participants was thirty-eight persons per group. This finding indicated that the participants did play an active role in disseminating to other educators the knowledge gained at the objectives workshop.

The second question regarding educational programs offered asked, "How many hours of instruction were involved?" Data in Table VIII-B reveal that the nineteen participants who attended the objectives workshop spent a total of seventy-three hours of instruction on performance objectives.

TABLE VIII-B

NUMBER, RANGE, AND MEAN NUMBER OF HOURS OF INSTRUCTION ON PERFORMANCE OBJECTIVES CONDUCTED BY NINETEEN WORKSHOP PARTICIPANTS

Number of Hours Of Instruction	Range	Mean
73	2 - 8	4.1

The time spent instructing others ranged from two to eight hours. A mean of 4.1 hours was spent by the nineteen workshop participants. This finding indicated that the nineteen participants who conducted or assisted with educational programs on performance objectives spent over half-a-day teaching others about performance objectives.

The next question asked, "What kind of objectives did the participants write?" The respondents were asked to check all that applied. Data in Table VIII-C reveal that six of the nineteen or thirty-two percent of the respondents reported that those involved in instructional programs wrote objectives related to their jobs, twelve or sixty-four percent wrote instructional objectives and ten or fifty-three percent wrote program objectives, both service area and vocational education. This finding indicated that the objectives written

tended to be instructional or program objectives and not objectives related directly to the jobs of the individuals.

TABLE VIII-C

TYPE OF OBJECTIVES WRITTEN BY PERSONS PARTICIPATING IN EDUCATIONAL PROGRAMS CONDUCTED BY NINETEEN WORKSHOP PARTICIPANTS

Response	Number	Percent
Objectives related to their jobs	6	31.6
Instructional Objectives	12	63.6
Service Area program objectives	10	52.6
Vocational education program objectives	10	52.6
N = 19		

The fourth question regarding the educational program offered asked, "How would you rate the reception of the instruction which you provided the participants on performance objectives?" As shown by the data in Table VIII-D, none of the workshop participants who conducted educational programs felt that the reception of their instruction was excellent. However, seventeen of the nineteen or eighty-nine percent rated the reception as good. This finding indicated that workshop participants who conducted educational programs on performance objectives after the workshop perceived their instruction as being well received by their colleagues.

TABLE VIII-D

RECEPTION OF INSTRUCTION PROVIDED TO THEIR COLLEAGUES BY NINETEEN WORKSHOP PARTICIPANTS

Response	Number	Percent
Excellent	0	0.0
Good	17	89.4
Fair	1	5.3
Poor	1	5.3
TOTAL	19	100.0

The fifth question regarding the educational programs on objectives offered by the nineteen workshop participants asked, "How important did the persons which you instructed feel that performance objectives are in their work?" The data in Table VIII-E reveal that eighteen of the nineteen or ninety-five percent of the workshop participants perceived that the persons which they instructed felt that performance objectives were very important or of some importance in their work.

TABLE VIII-E

PERCEPTION OF NINETEEN WORKSHOP PARTICIPANTS OF HOW IMPORTANT PERSONS INSTRUCTED BY THEM FELT PERFORMANCE OBJECTIVES ARE IN THEIR WORK

Response	Number	Percent
Very Important	7	36.9
Of Some Importance	11	58.8
Of Little Importance	1	5.3
Of No Importance	0	0.0
TOTAL	19	100.0

One participant perceived that performance objectives were of little importance while no participant felt that they were of no importance. This finding indicated that nearly ninety-five percent of those offering instructional programs on performance objectives after the workshop perceived that those instructed felt performance objectives were important in their present positions.

Question eight on the workshop follow-up instrument asked, "Do you feel that the objectives workshop has made a positive impact on the program of vocational education in Kentucky?" All thirty-seven workshop participants responded to this question. Thirty-five or ninety-five percent of the workshop participants responded "yes" to this question. Two participants indicated that the answer was "no". This finding indicated that an overwhelming number of participants felt that the objectives workshop has made a positive impact on the program of vocational education in Kentucky.

The ninth question asked the participants was, "Would you recommend that workshops of this nature be conducted in the future?" All thirty-seven workshop participants responded "yes" to this question. The unanimous support of the values of the workshop expressed by the participants indicated that further workshops are desired in the future.

The next question on the follow-up instrument asked, "Would you like further assistance on developing and writing performance objectives?" Thirty-two or eighty-seven percent of the participants responded "yes" to this question while five or thirteen percent answered "no". This finding indicated that enough interest was aroused in the majority of the participants to stimulate them to seek further assistance. If the answer to question ten was "yes", the participants were asked to respond to question eleven by indicating what kind of assistance was desired.

Nineteen participants indicated that they would like more assistance on writing performance objectives through small group instruction. Fifteen participants expressed the need for additional workshops and six indicated that they would like a credit course on developing and writing objectives in performance terms. None of the workshop participants indicated that they would like individual instruction.

Space on the follow-up form was provided for the participants to explain the type of additional assistance desired. Specific requests indicated that additional assistance on writing performance objectives was desired for the staff of the Instructional Materials Laboratory, for the staff in the Bureau of Vocational Education, for teachers in the Louisville region, for teachers of the handicapped and the disadvantaged, and for teachers in the various service areas. This finding indicated that those participating in the objectives workshop would like more assistance in writing objectives themselves and would also like similar assistance for their colleagues.

Question twelve on the follow-up instrument asked, "In your opinion, what was the overall effect of the objectives workshop?" Responses of the participants to this question are presented in Table IX.

TABLE IX

OPINIONS OF THIRTY-SEVEN PARTICIPANTS ABOUT THE OVERALL EFFECT OF THE OBJECTIVES WORKSHOP

Response	Number	Percent
Excellent	13	35.1
Good	21	56.8
Fair	3	8.1
Poor	0	0.0
TOTAL	37	100.0

As shown by the data, thirteen or thirty-five percent of the participants expressed the opinion that the overall effect of the objectives workshop was excellent. Twenty-one or fifty-seven percent stated that the overall effect was good and three or eight percent of the participants rated the overall effect as fair. No one rated the overall effect of the workshop as being poor. The finding that ninety-two percent rated the overall effect of the workshop as being either good or excellent indicated that the workshop did have a positive overall effect on programs of vocational education in Kentucky.

The next question on the follow-up instrument asked, "What additional comments do you have about the objectives workshop?" Twenty-one of the thirty-seven respondents to the follow-up instrument or fifty-seven percent commented in writing to this question. The responses of the twenty-one individuals are listed to indicate more explicitly the opinions of the participants. Following are the additional comments of the twenty-one participants.

- More time is needed for the participants to practice writing objectives.

- The workshop was well planned and executed. The chief learnings came from the filmstrips and tapes and the small group assignments. More emphasis should be placed on small group work at future workshops, utilizing a person for the group leader who is quite knowledgable in the field.

- Teachers should have been involved in the workshop. It took me from zero to a working knowledge of performance objectives. The workshop was extremely demanding. The reimbursed coordinators met Thursday night and all were at the point of mental fatigue.

- I feel that of all the meetings I have attended this year, the workshop on performance objectives has been the most informative, straight to the point, and effective. I think all extension center coordinators should have participated in the workshop. It would have been helpful to them in preparing for accreditation next year. It would have decreased the time needed for orientation to this topic. A workshop of this nature makes people realize how ineffective our present objectives really are.

- The workshop was of most benefit to me, as I have been working with school districts and teachers. I have been better able to point out the need for performance objectives. I have been able to show the need for them, and also furnish some help in writing objectives in performance terms.

- The information gained at this workshop needs to be related to information gained at other workshops. This will take time, however, for the good of program planning, it was a fine initial step.

- Too structured. Little opportunity to work on own objectives. Too detailed for need of group. Could have been shortened. Some excellent material presented.

- The teachers need an objectives workshop as do all administrators in the Louisville region.

- The workshop has been most helpful in developing the State Plan and projected activities in conjunction with special education.

- Some things should be more concise, teachers do not have time to read volumes of material.

- Information obtained at the workshop has been most helpful in working with persons on writing objectives for Special Vocational Programs.

- I truly feel that everyone in the workshop gained more than they themselves realize. I think it changed our "way of thinking" in many cases.

- I think the workshop developed an awareness on the part of most participants of the important role and necessity of performance objectives in the planning and implementation of vocational programs and the evaluation process. It also provided basic and fundamental information concerning development of performance objectives.

- Very helpful.

- I would like for all of the faculty at the Danville School of Practical Nursing to have the opportunity to learn how to write performance objectives. I personally could use additional help myself.

- Very well done. It helped me personally in writing more adequate objectives.

- Things were fuzzy the first three days, but came to light the last two days. It makes sense!

- Workshop served as a means of up-dating professional staff. Would it be possible to explore views held by other authorities on objectives?

- I think it was well organized and very helpful to me and the four IML staff members.

- The quality was excellent. The personnel well qualified. The facilities excellent. The rapport was high.

Question fourteen stated, "Please attach examples of evidence of the attainment of the objectives specified in the plan which you developed at the workshop. Please include:

- Examples of objectives developed by you.

- Examples of objectives developed by persons taught by you.

- Agendas or programs for meetings regarding the writing of objectives.

- Lists of activities performed in the accomplishment of the objectives.

- Other examples of important evidence."

Sixteen of the thirty-seven or forty-three percent of the participants completing the follow-up instrument attached examples of evidence. Examples include letters and workshop agendas, objectives developed by participants, objectives developed by persons taught by participants, and visuals and handout materials used in conducting educational programs on objectives. Although all the evidence submitted cannot be included in this report, selected examples of evidence submitted by the participants can be found in Appendix R.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

All conclusions were based upon the formal and informal evaluations conducted both during and after the workshop and can be held tenable only for the participants included in the workshop. However, generalizations can be made to workshops with similar participants and characteristics, but caution must be exercised when attempting to generalize the findings to workshops of unknown or dissimilar participants and characteristics.

As stated in the original proposal for the workshop, the major problem was: Can selected staff members responsible for various phases of vocational education in the state gain the competence to write performance objectives in their area of specialty in a four-day workshop utilizing consultant leadership and professional education services?

As evidenced by the results of the instruments used and the evaluative comments made since the conduct of the workshop, the answer to the major problem must certainly be "yes." Based upon the comments of the interpreters, the evaluation results of the small group meetings, the results of the workshop evaluation scale, and the workshop follow-up results, the workshop was a valuable experience for those who participated.

The use of interpreters assured that the workshop proceeded according to schedule. The comments of the interpreters allowed minor adjustments and modifications to be made in the program as the need arose. The interpreters served as an effective mechanism for keeping the workshop running smoothly.

The organization of the participants into small groups was a successful technique to use in helping the participants to discuss the materials presented in the general sessions and to practice writing performance objectives. Interaction of the small group members, their enthusiasm, and the ratings and written comments on the small group meeting evaluation forms offered evidence that the small group activities provided an excellent opportunity for the participants to develop knowledge and skill in writing performance objectives.

It was concluded that the conduct and content of the workshop were acceptable to the participants involved. As evidenced by the responses of the thirty-five participants on the workshop evaluation scale, they were highly satisfied with the conduct and content of the workshop. Based upon a possible mean score of 5.00 in agreement with the operation of the workshop, the mean score of the participants on the total of all items on the workshop evaluation scale was 3.99. This mean rating indicated that, as measured by the items on the scale used, the participants were highly satisfied with the conduct and content of the workshop.

As indicated by the evidence collected in the follow-up of the workshop participants six months after its completion, the participants had been involved in conducting many of the activities presented, discussed, and planned at

the workshop. The follow-up instrument was sent to thirty-eight participants. Thirty-seven of the thirty-eight participants returned the follow-up instrument for a response of 97.5 percent. The conclusions, based upon evidence obtained from the follow-up instrument, are:

1. Two-thirds of the participants indicated that the objectives workshop had been most beneficial to them in developing objectives for their jobs, and over half of the participants indicated that the workshop had been beneficial to them in writing instructional objectives.

2. Over ninety-four percent of the participants indicated that the objectives workshop had some to great effect on their ability to write objectives in performance terms.

3. Over ninety-five percent of the participants indicated that performance objectives were either of some value or of great value in their jobs.

4. Approximately eighty-four percent of the participants had been active to some or great extent in attaining the objectives specified in the plans of action which they developed at the objectives workshop.

5. Over one-third of the participants spent more than ten hours implementing the plan of action developed at the workshop.

6. Over half of the workshop participants had conducted or had helped conduct educational programs on performance objectives since attending the workshop.

7. A total of 734 persons were involved in educational programs on performance objectives conducted by the nineteen persons who were participants in the objectives workshop.

8. The nineteen participants who conducted or assisted with educational programs on performance objectives spent a mean of over one-half day teaching others to write performance objectives.

9. The major type of objectives written by persons participating in educational programs conducted by the nineteen workshop participants were instructional objectives.

10. Over eighty-nine percent of the workshop participants who conducted evaluation programs on performance objectives after the workshop perceived the reception of their instructions as being good.

11. Nearly ninety-five percent of those offering instructional programs on performance objectives after the workshop perceived that those instructed felt performance objectives were either of some importance or very important in their work.

12. Ninety-five percent of the participants indicated that the objectives workshop has made a positive impact on the program of vocational education in Kentucky.

13. All thirty-seven or one hundred percent of the workshop participants indicated that they would recommend that workshops similar to the objectives workshop be conducted in the future.

14. Eighty-seven percent of the workshop participants indicated that they would like further assistance on developing and writing performance objectives. Assistance was desired through small group instruction, through additional workshops, and through credit courses on developing and writing objectives in performance terms.

15. Ninety-two percent of the participants rated the overall effect of the workshop as being either good or excellent.

16. Over fifty-seven percent of the workshop participants listed additional comments about the conduct, content, and effect of the objectives workshop.

17. Sixteen of the thirty-seven or forty-three percent of the participants completing the follow-up instrument attached examples of evidence of the attainment of their objectives.

In summary, it was concluded that the objectives workshop did make a significant contribution to the program of vocational education in the State of Kentucky. The data collected on the evaluation instrument, the comments of the participants, and the general enthusiasm found throughout the state regarding the importance of stating objectives in performance terms offered evidence that the objectives workshop was a valuable experience for those who participated.

RECOMMENDATIONS

The following recommendations, formulated by the workshop staff, were based upon the knowledge gained while developing, executing, and evaluating the objectives workshop. In addition, recommendations were based upon observations made during and after the workshop and the statistical findings of the workshop evaluations. Therefore, the recommendations must be evaluated accordingly. The recommendations are:

1. In-service educational programs on performance objectives should be conducted for other vocational educators in the state. The in-service educational program should be conducted by participants from the regions who have attended the objectives workshop. Assistance from others on the state and regional level who have attended the objectives workshop should be solicited by those conducting additional workshops. Results of the evaluations conducted indicated that the in-service educational program on performance objectives is having an important impact on programs of vocational education in Kentucky.

2. Workshops on performance objectives should be conducted in states other than Kentucky. Leadership personnel within the state who are in key positions should be involved in such workshops.

3. In-service educational programs, conducted similar to the objectives workshop, should be continued in areas other than performance objectives in future years. The outcomes derived from the objectives workshop indicated that workshops of this nature can make a valuable contribution to the program of vocational education in the future.

4. Leadership personnel who are in positions to act as change agents should attend workshops on performance objectives in the future. Results of the follow-up on the objectives workshop indicated that key personnel in positions of leadership can play an active role in stimulating action on writing performance objectives. Over 734 persons were taught by nineteen of the participants who conducted in-service educational programs on performance objectives after having attended the objectives workshop.

5. Consultants, who are knowledgeable regarding performance of objectives, should be used in workshops on performance objectives in the future. Results of the follow-up indicated that the consultants made a valuable contribution to the workshop.

6. Workshop participants should continue to develop plans of action at workshops on performance objectives. Results of the follow-up indicated that almost one-third of the participants were able to obtain most of the objectives specified in the plans of action developed and over eighty-four percent of the participants were able to attain some, most, or all of the plans developed.

7. Follow-up workshops of this nature should be conducted in future years. Results of the follow-up indicated that participants were active in carrying out their plans and in putting to use the knowledge gained at the objectives workshop.

8. The P.P.I.T. filmstrips and tapes should be used in objectives workshops in the future. Although written for instructional objectives in general education, the basic elements of the filmstrips and tapes can be adapted readily to the needs of vocational educators.

9. In-service educational programs, conducted similar to the objectives workshop, should be continued in areas other than performance objectives in future years. The outcomes derived from the workshop indicated that workshops of this nature can make a valuable contribution to the program of vocational education in the future.

10. The format and organization of the workshop program should be continued in future years. As evidenced by the responses on the workshop evaluation scale, the participants were highly satisfied with the organization, structure, and contnet of the workshop.

11. Small group meetings should be continued in future meetings similar to the objectives workshop. Results of the evaluations of small group meetings by the participants indicated that the small groups were especially effective in developing performance objectives, clarifying thoughts, and developing plans of action.

12. Follow-up of workshops of this nature should be conducted in future years. Results of the follow-up indicated that participants were active in carrying out their plans.

13. Workshop participants should continue to develop plans of action at workshops. Results of the follow-up indicated that almost one-third of the workshop participants were able to obtain most of the objectives specified in these plans of action and over eighty-four percent of the participants were able to attain some, most or all of the plans developed.

In summary, the overall evaluation of the workshop indicated that the objectives workshop has made and is making a significant contribution to the program of vocational education in Kentucky.

APPENDIX A

WORKSHOP FLYER

WORKSHOP ON
DETERMINING PERFORMANCE OBJECTIVES

October 5-9, 1970

Carnahan House
University of Kentucky
Lexington, Kentucky

for

Kentucky Bureau of Vocational Education Evaluation Task Force Members
Regional Vocational Education Evaluation Task Force Members
Selected Members of the Kentucky Bureau of Vocational Education

OBJECTIVES OF WORKSHOP

1. Participants, at the completion of the workshop, will be able to develop and state objectives which:
   a. describe how students are to perform after having had educational experiences;
   b. describe both the behavior to be displayed and the context in which the behavior is to occur; and
   c. are stated at a level of specificity that makes it possible to recognize the behavior should it be displayed.

2. The workshop participants will develop and write performance objectives for the program area of vocational education which they represent.

WORKSHOP CONSULTANTS

Dr. Harry Barnard
Dr. James Hanneman
Dr. Carl Lamar
Dr. Robert Pruitt
Dr. Elaine Uthe
Dr. Raymond Clark

SPONSORED BY

Kentucky State Department of Education
Bureau of Vocational Education,
Supporting Services Unit-
-Research Coordinating Unit, University of Kentucky
-State Program Evaluation

FOR MORE INFORMATION

For more information regarding the workshop contact Dr. Floyd L. McKinney or Dr. Alfred J. Mannebach, Kentucky Research Coordinating Unit for Vocational Education, 152 Taylor Education Building, University of Kentucky, Lexington, Kentucky 40506 or call 606-258-9000, Extension 2771, Station 335 or Mr. C. O. Neel, Kentucky Bureau of Vocational Education, Frankfort, Kentucky 40601 or call 564-4426.

APPENDIX B

WORKSHOP
PRE-REGISTRATION FORM

PRE-REGISTRATION FORM

WORKSHOP ON DETERMINING PERFORMANCE OBJECTIVES

Carnahan House
University of Kentucky
Lexington, Kentucky

October 5-9, 1970

PLEASE PRINT OR TYPE

1. Name Miss, Mrs. Mr. Dr. _____
(Circle One) (First) (Middle) (Last)

2. Address: _____
(Position) (Employer)

_____
(City) (State) (Zip)

3. Phone: Home _____
Office _____

4. Enclose a registration fee of $20.00
Make checks payable to Objectives Workshop.
The registration fee includes your Monday dinner; Tuesday, Wednesday, Thursday, and Friday lunch; coffee breaks; and miscellaneous registration expenses.

5. You will be given a receipt for reimbursement during registration at the Carnahan House.

6. Remarks:

_____
(Signature)

_____
(Date)

Return this form and your check as soon as possible, but no later than September 4, 1970 to:

Dr. Alfred J. Mannebach
152 Taylor Education Building
University of Kentucky
Lexington, Kentucky 40506

APPENDIX C

WORKSHOP PARTICIPANTS

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Mary Lois Williamson, Associate Director
Supporting Services
Bureau of Vocational Education
Frankfort, Kentucky 40601

APPENDIX D

AGENDA

SMALL GROUP LEADERS MEETINGS

SMALL GROUP LEADERS MEETING

Workshop on Determining Performance Objectives

Monday
September 14, 1970
251, Student Center, University of Kentucky
9:00 a.m.

1. Review purposes of workshop

2. Review workshop program

3. Considerations for small group leaders

4. Review materials

5. Filmstrip and Tape - "Main Components of an Objective: Behavioral Terms, Conditions Standards"

SMALL GROUP LEADERS MEETING

Workshop on Determining Performance Objectives

September 25, 1970
9:00 a.m.

144 Campbell House
Lexington, Kentucky

1. Consultants presentations

2. Reference materials

3. Assignment of workshop participants to small groups

4. Review outline for small group discussion and exercises

5. Selection of workshop interpreters

6. Future plans

APPENDIX E

WORKSHOP PROGRAM

8045

A WORKSHOP ON DETERMINING PERFORMANCE OBJECTIVES

Carnahan House
University of Kentucky
Lexington, Kentucky

WORKSHOP MANAGEMENT

Floyd L. McKinney, Assistant Professor
Alfred J. Mannebach, Assistant Professor
Kentucky Research Coordinating Unit
for Vocational Education
University of Kentucky, Lexington

C. O. Neel, Coordinator
State Program Evaluation
Supporting Services Unit
Bureau of Vocational Education
Kentucky State Department of Education, Frankfort

PURPOSES OF THE WORKSHOP

At the completion of this workshop it is hoped that the participants will have developed a greater realization of the need for properly stated measurable performance objectives as they relate to vocational education programs and instruction. More specifically the workshop participants should be able to develop and write objectives which:

1. describe how students are to perform after having had educational experiences,
2. describe both the behavior to be displayed and the context in which the behavior is to occur, and
3. are stated at a level of specificity that makes it possible to recognize the behavior should it be displayed.

Wendell P. Butler
Superintendent of
Public Instruction

PROGRAM FOR THE WORKSHOP

Monday, October 5, 1970

4:00 - 5:00 p.m.

Registration - Carnahan House
University of Kentucky
Lexington

All workshop participants and guests must register

6:00 p.m.

Dinner - Carnahan House

7:00 p.m.

First Session - Auditorium

Presiding - C. O. Neel

Welcome - George Denemark

Greetings - Wendell P. Butler

Overview - Floyd L. McKinney

Importance of Performance Objectives

- Robert Pruitt

Program and arrangements for workshop

- Alfred J. Mannebach

Tuesday, October 6, 1970

8:30 a.m.

Second Session - Auditorium

Presiding - Floyd L. McKinney

The Need for Performance Objectives in Planning and Evaluating

- *Carl F. Lamar*

9:00 a.m.

Relationship of Performance Objectives to Programs, Curriculum and Instruction

- Harry Barnard

9:45 a.m. - Reaction Panel

Clayton Omvig, Chairman

Dorotha Oatts

Christine Wallace

10:15 a.m. - Break

Tuesday, October 6 (continued)

10:45 a.m.

Derivation of Performance Objectives

- Raymond M. Clark

11:30 a.m.

Questions and Answers

12:00 Noon - Lunch

1:30 p.m.

Third Session - Auditorium

Presiding - Alfred J. Mannebach

Filmstrip and Tape - Introduction to Basic Principles

2:00 p.m. - Group Work Assignment

2:10 p.m. - Small Group Meetings

Herbert Bruce - Second Floor - South

Donnalie Stratton - Second Floor - North

Doug McKinley and Mary Bell Vaughan - Auditorium

Tuesday, October 6 (continued)

3:00 p.m. - Break

3:30 p.m. - Auditorium

Filmstrip and Tape - General Goals, Affective and Cognitive Objectives

4:00 p.m. - Recess

Wednesday, October 7

8:30 a.m.

Fourth Session - Auditorium

Presiding - Steve Marcum

Specification of Performance Objectives

- Elaine Uthe

Wednesday, October 7 (continued)

1:30 p.m. - Small Group Meetings

Herbert Bruce - Second Floor - South

Donnalie Stratton - Second Floor - North

Doug McKinley and Mary Bell Vaughan - Auditorium

3:00 p.m. - Break

3:30 p.m.

Fifth Session - Auditorium

Presiding - Wendell Bruce

Filmstrip and Tape - Classification of Objectives: Verbal, Discrimination, Motor Performance

4:00 p.m. - Reaction with workshop participants

- Clark and Uthe

4:30 p.m. - Recess

Wednesday, October 7 (continued)

9:30 a.m. - Small Group Meetings

Herbert Bruce - Second Floor - South

Donnalie Stratton - Second Floor - South

Doug McKinley and Mary Bell Vaughan - Auditorium

10:30 a.m. - Break

11:00 a.m. - Filmstrip and Tape - Main Components of an Objective: Behavioral Terms, Conditions, Standards

11:30 a.m. -

Reaction with workshop participants

- Clark and Uthe

12:00 Noon - Lunch

Thursday, October 8

8:30 a.m.

Sixth Session - Auditorium

Presiding - James West

Selection and Implementation of Performance Objectives

- Raymond M. Clark

9:15 a.m. - Reaction Panel

Steven J. Gyuro - Chairman

Bronelle Skaggs

Judith Parsley

James McGown

9:45 a.m. - Break

10:05 a.m. - Small Group Meetings

Herbert Bruce - Second Floor - South

Donnalie Stratton - Second Floor - North

Doug McKinley and Mary Bell Vaughan - Auditorium

Thursday, October 8 (continued)

12:00 Noon - Lunch

1:15 p.m.

Seventh Session - Auditorium

Presiding - John Adams

Assessing Performance Objectives

- Elaine Uthe

2:00 p.m. - Filmstrip and Tape - Criterion Tests

2:25 p.m. - Questions and Answers

- Elaine Uthe

2:45 p.m. - Break

3:00 p.m. - Small Group Meetings

Herbert Bruce - Second Floor - South

Donnalie Stratton - Second Floor - North

Doug McKinley and Mary Bell Vaughan - Auditorium

4:30 p.m.- Recess

Friday, October 9

8:30 a.m.

Eighth Session - Auditorium

Presiding - Alfred J. Mannebach

Plans for the Future

- C. O. Neel

8:45 a.m.

Developing a Plan of Action

- Alfred J. Mannebach

9:00 a.m. - Small Group Meetings

Herbert Bruce - Second Floor - South

Donnalie Stratton - Second Floor - North

Doug McKinley and Mary Bell Vaughan - Auditorium

10:30 a.m. - Break

Friday, October 9 (continued)

10:45 a.m.

Presiding - Floyd L. McKinney

The Ordeal of Eliminating Irrelevant Objectives

- James Hanneman

11:30 a.m.

Reports of Selected Plans of Action

11:45 a.m.

Workshop Evaluation

12:00 Noon - Lunch

Adjourn

WORKSHOP STAFF

Management

Dr. Alfred J. Mannebach, Assistant Professor
Research Coordinating Unit for
Vocational Education
University of Kentucky, Lexington

Dr. Floyd L. McKinney, Assistant Professor
Research Coordinating Unit for
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University of Kentucky, Lexington

Mr. C. O. Neel, Coordinator,
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Dr. Raymond M. Clark
Professor of Education
College of Education
Michigan State University
East Lansing

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Dr. Carl F. Lamar, Assistant Superintendent
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Mr. Robert Pruitt, Acting Director
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Lexington

Mr. Wendell P. Butler,
Superintendent of Instruction
State Department of Education
Frankfort

Small Group Leaders

Dr. Herbert H. Bruce
Director of Instructional
Materials Laboratory
University of Kentucky
Lexington

Mr. Doug McKinley, Coordinator
Vocational Guidance Services
Bureau of Vocational Education
Kentucky State Department of Education
Frankfort

Miss Donnalie Stratton
Division of Special Programs
Bureau of Vocational Education
Kentucky State Department of Education
Frankfort

Miss Mary Bell Vaughan, Director
Division of Home Economics Education
Kentucky State Department of Education
Frankfort

Associated Staff

From the Kentucky Bureau of Vocational Education

John Adams
Wendell Bruce
Steven J. Gyuro
Anne Hayes
James McGown
Steve Marcum
Bronelle Skaggs
Clayton P. Omvig
Dorotha Oatts
Judith Parsley
Christine Wallace
James West

APPENDIX F

FILMSTRIP-TAPE SERIES
USED IN WORKSHOP

FILMSTRIP - TAPE SERIES
USED IN WORKSHOP

The first five filmstrip-tape units of General Programmed Teaching's Designing Effective Instruction were used in the workshop. These programmed units include a filmstrip, a tape recording and a workbook for the participants. The units used were:

1. Introduction to Basic Principles;
2. General Goals, Affective Objectives and Cognitive Objectives;
3. Main Components of an Objective: Behavioral Terms, Conditions, and Standards;
4. Classification of Objectives and
5. Criterion Tests.

The materials were purchased from:

General Programmed Teaching
Box 402
Palo Alto, California 94302

APPENDIX G

REFERENCES PROVIDED
WORKSHOP PARTICIPANTS

REFERENCES PROVIDED WORKSHOP PARTICIPANTS

A copy of the following references was provided for each of the workshop participants.

Ammerman, Harry L. and William A. Melching. The Derivation, Analysis, and Classification of Instructional Objectives. Human Resources Research Office, Alexandria: George Washington University, May 1966.

Mager, R. F. Preparing Instructional Objectives. Palo Alto, California Fearon Publishers, 1962.

Mannebach, Alfred J. and Floyd L. McKinney. "Performance Objectives: Foundation for Evaluation." The Agricultural Education Magazine, 42: 301-302, June, 1970.

Popham, W. James and Eva L. Baker. Establishing Instructional Goals. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970.

Popham, W. James and Eva L. Baker. Planning an Instructional Sequence. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970.

Smith, Robert G., Jr. The Development of Training Objectives. Research Bulletin II. Alexandria, Virginia: Human Resources Research Office, The George Washington University, 1966.

APPENDIX H

SMALL GROUP
MEETING ASSIGNMENTS

SMALL GROUP MEETING ASSIGNMENTS

Small Group Leader - Donnalie Stratton

Resource Persons - Floyd L. McKinney and C. O. Neel

Virginia Pratt
Bronelle Skaggs
Richard Cates
Charles Aebersold
Joyce Logan
Stokley Hall
James West
John Adams
Junior Poling
LeRoy Martin
Kyle Ramey
Ben Abraham

Small Group Leaders - Mary Bell Vaughan and Doug McKinley

Consultants - Elaine Uthe and Raymond M. Clark

Carl F. Lamar
Steve Marcum
Jack Hatfield
Fred Martin
Mary Lois Williamson
John Loyd
Charles Wade
Christine Wallace
James Disney
Dorotha Oatts
Mary Alta Tucker
Kenneth Carter
Jimmie Judge

Small Group Leader - Herbert Bruce

Resource Person - Alfred J. Mannebach

Anne Hayes
Merle Insko
Kenneth Noah
Judith Parsley
Moseill Jester
Jewell Deene Ellis
Edward Thomas

APPENDIX I

OUTLINE FOR SMALL GROUP MEETINGS

A WORKSHOP ON DETERMINING PERFORMANCE OBJECTIVES

OUTLINE FOR SMALL GROUP MEETINGS

October 5-9, 1970

Carnahan House
University of Kentucky
Lexington, Kentucky

8068

Tuesday, October 6, 1970

2:10 - 3:00 p.m.

Herbert Bruce - Second Floor - South
Donnalie Stratton - Second Floor - North
Mary Bell Vaughan and Doug McKinley - Auditorium

At the end of this session, each workshop participant will be able to:

1. Explain what is to be accomplished during the workshop.

2. List the most important elements of the four presentations and the filmstrip and tape that have been presented.

3. List your duties, responsibilities, and/or tasks regarding several categories of vocational education in "action" terms.

Procedure:

1. Have each participant introduce himself and present a brief outline of his responsibilities.

2. Discuss the plans and objectives for each of the small group meeting sessions.

3. Discuss the four presentations and the filmstrip and tape that have been presented. List the most important points of each presentation.

4. Discuss and complete Exercise Sheet No. 1

5. Discuss the implications of Exercise Sheet No. 1 for writing performance objectives.

Wednesday, October 7, 1970

9:30 - 10:30 a.m.

Herbert Bruce - Second Floor - South
Donnalie Stratton - Second Floor - North
Mary Bell Vaughan and Doug McKinley - Auditorium

At the end of this session, each workshop participant will be able to:

1. Classify objectives by (a) the taxonomy to which it belongs and (b) to the level within the taxonomy.

2. Write performance objectives in the cognitive, affective, and psychomotor domains.

3. Begin formulating performance objectives for the area assigned.

Procedure:

1. Complete Exercise Sheet No. 2A on "Classification of Objectives."

2. Review the answers and discuss Exercise Sheet No. 2A on "Classification of Objectives."

3. Complete Exercise Sheet No. 2B, "Writing Performance Objectives."

4. Begin developing performance objectives for area assigned.

Herbert Bruce - Instructional Objectives
- Task Objectives
- Lesson Objectives
- Unit Objectives
- Course Objectives

Donnalie Stratton - Instructional Objectives
- Local Program Objectives
- Regional Program Objectives

Mary Bell Vaughan and Doug McKinley - State Objectives

Wednesday, October 7, 1970 (cont'd)

1:30 - 3:00 p.m.

Herbert Bruce - Second Floor - South
Donnalie Stratton - Second Floor - North
Mary Bell Vaughan and Doug McKinley - Auditorium

At the end of this session, each workshop participant should be able to:

1. Identify the components of performance objectives.

2. Identify incomplete performance objectives and rewrite to make them complete.

3. Write performance objectives for your area of concern which include the components of performance objectives.

Procedure:

1. Complete Exercise Sheet No. 3A, "Identification of the Components of Performance Objectives."

2. Review the answers and discuss Exercise Sheet No. 3A on "Identification of the Components of Performance Objectives."

3. Continue developing performance objectives for the area assigned.

Thursday, October 8, 1970

10:50 - 12:00 Noon

Herbert Bruce - Second Floor - South
Donnalie Stratton - Second Floor - North
Mary Bell Vaughan and Doug McKinley - Auditorium

At the end of this session, each workshop participant will be able to:

1. Differentiate between behaviorally and non-behaviorally stated objectives.

2. Select performance objectives which are important.

3. Write performance objectives which will assist in the development of local programs of vocational education.

4. Select priority objectives from those developed.

5. Differentiate between short-range and long-range objectives.

Procedure:

1. Complete Exercies Sheet No. 4A, "Instructional Objectives Preference List."

2. Review the answers and discuss Exercise Sheet No. 4A.

3. Complete Exercies Sheet No. 4B.

4. Continue developing performance objectives for the area assigned.

Thursday, October 8, 1970 (cont'd)

3:00 - 4:30 p.m.

Herbert Bruce - Second Floor - South
Donnalie Stratton - Second Floor - North
Mary Bell Vaughan and Doug McKinley - Auditorium

At the end of this session, each workshop participant will be able to:

1. Describe in detail criterion test situations for performance objectives developed.

2. Write performance objectives which include a minimum standard of acceptable performance by an individual student.

3. Write performance objectives which include a minimum standard of acceptable performance for a class or group of individuals.

4. Write program and instructional objectives in performance terms according to the procedures presented and discussed in the workshop.

Procedure:

1. Complete Exercise Sheet No. 5A, 5B, and 5C.

2. Discuss Exercise Sheet No. 5A, 5B, and 5C.

3. Continue developing objectives for the area assigned.

Friday, October 9, 1970

9:00 - 10:30 a.m.

Herbert Burce - Second Floor - South
Donnalie Stratton - Second Floor - North
Mary Bell Vaughan and Doug McKinley - Auditorium

At the end of this session, each workshop participant will be able to present to his small group leader a plan which includes how, in the next four months, he will apply the knowledge gained at the workshop. Each plan is to include:

1. Performance objectives which specify how you will apply the knowledge gained at this workshop.

2. Procedures that you will follow in attaining the performance objectives developed.

3. The type of evidence that you will gather to assess how well you have attained your objectives.

Procedures:

1. List situations where you will have the opportunity to apply your knowledge of performance objectives. Examples include being a member of a service area or "functions" committee, being responsible for inservice education for your State staff or for vocational teachers, being responsible for chairing a service area of "functions" committee, or writing certain parts of the State plan.

2. From the above situations, select an area of highest priority and involvement to you and write performance objectives that specify how, in the next four months, you will apply the knowledge gained at this workshop.

3. List the procedures you will follow in accomplishing your objectives.

4. Explain in writing the evidence that you will gather to assess how well you have attained your objectives regarding the application of the principles learned at this workshop.

APPENDIX J

EXERCISES
FOR WORKSHOP PARTICIPANTS

EXERCISE SHEET NO. 1
Tuesday p.m.

Name_____Group_____
Job Title_____
Employer_____

List the duties, responsibilities, and/or tasks that you perform in each of the following categories, starting with the four starred categories. Create separate categories or list others under "Miscellaneous."

Start each item with a VERB.

*1. Program Planning and Development

*2. Curriculum Materials

*3. Classroom Instruction

*4. In-Service Teacher Training

5. Policy Making

6. School-Community Relations (or Public Relations)

7. Evaluating

8. Financing

9. Facility Planning

10. Research

11. Staffing (Hiring or Supervising)

EXERCISE SHEET NO. 2A
Wednesday a.m.

Name(Group)_____

Mastery by Classification

Classify each item by: (1) taxonomy to which it belongs, and (2) the level within the taxonomy.

Level Within Taxonomy	Taxonomy		
	Cognitive	Affective	Psychomotor
High	Evaluation Synthesis Analysis	Characterication Organization Valuing	Complex Covert Response Mechanism
Middle	Application Comprehension	Responding	Guided Response Set
Low	Knowledge	Receiving	Perception

(examples are taken or adapted from Mager, McAshan, etc.)

	Taxonomy			Level		
	C	A	P	H	M	L
1. List the principles of salesmanship.						
2. Write three examples of the logical fallacy of the undistributed middle.						
3. Players will display good sportsmanship after losing a football game.						
4. Name the bones of the body.						
5. The student is to draw his service revolver and fire five rounds from the hip within a period of three seconds. At 25 yards all rounds must hit the standard silhouette target.						
6. The student must be able to fill out a standard accident report.						

	Taxonomy			Level		
	C	A	P	H	M	L
7. Given a list of objectives, the learner must be able to select those that are correctly written according to Mager rules.						
8. To demonstrate ability to read and assemble a blueprint, the student must make the item depicted by the blueprint given him at the time of examination.						
9. Write a description of the steps involved in making a blueprint.						
10. Run a 100-yard dash in four minutes.						
11. The student is to name and give an example of each of six programming techniques useful for eliciting a correct response.						
12. To correctly identify the composition of a sample of soil and prescribe correct compounds of fertilizer for raising a soybean crop.						
13. Shorthand students will transcribe an 80-wam test at a minimum typewriting speed of 25 wam and will make no English or typing errors.						
14. Following a unit on light opera, the student checks out similiar records from the school library.						
15. List the steps in proper order for setting up an IBM Composer for use in typing a three-fold bulletin.						
16. Answer 50 multiple-choice questions on the subject of legal contracts.						
17. Display courtesy to peers and instructor in all circumstances.						
18. Type 40 words a minute on a straight-copy test.						

EXERCISE SHEET NO. 2A <u>ANSWERS</u>

1. C L
2. C M
3. A M
4. C L
5. P H
6. C H
7. C H
8. C M
9. C M
10. P H
11. C M
12. C H
13. P H
14. A M
15. C L
16. C M
17. A H
18. P H

EXERCISE SHEET 2B
Wednesday a.m.

Name (Group)_____

Writing Performance Objectives

1. Develop at least two performance objectives in the cognitive domain that are suitable for all vocational education students at the secondary level. These should be terminal objectives suitable for use at graduation time. (They might deal with such topics as fringe benefits, income tax and social security, job interviews, finding a job, names and uses of all major tools, etc.)

2. Develop at least two performance objectives in the affective domain that are suitable for vocational education students, particularly in relation to the area of work adjustment to the world of work.

3. Develop at least two performance objectives for a vocational director who wishes to involve the business education reachers in the local school(s) in a curriculum revision based on performance objectives. The objectives of the vocational director may relate to the cognitive, affective, or psychomotor domains.

4. Develop at least two performance objectives for a state supervisor in agriculture education who wishes to increase the legislator's feelings about the value and the status of the program.

EXERCISE SHEET NO. 3A Name (Group)_____
Wednesday, p.m.

Identification of the Components of Performance Objectives

Identify the components of the following performance objectives using these symbols:

Put brackets around the type of behavior expected.
Underline the conditions.
Circle the performance standards and/or criterion.

Check at the left the objectives that are incomplete. (Adaptions: Mager, McAshan)

---

1. To increase the speed and improve the endurance of eighth-grade male students so that given a stopwatch and an official, measured 440-yard track, 80 percent of the students will run one mile in less than 6 minutes by the end of the school year.

2. To improve the math skills of fourth-grade students in adding unlike fractions, as determined by Gores Test of fractions, so that out of 25 additional problems, 80 percent of the students get at least 22 out of 25 answers correct.

3. The student must be able to understand the theory of evolution. Evidence of understanding will be obtained from a written essay on evolution.

4. The student must be able to correctly name each item depicted by each of a series of 20 blueprints.

5. During the final examination, and without reference, the student must be able to write a description of the steps involved in making a blueprint.

6. The student must be able to fill out a standard accident report.

7. The student is to be able to draw his service revolver and fire five rounds (shots) from the hip within a period of three second. At 25 yards all rounds must hit the standard silhouette target; at 50 yards he must hit with at least two of his five rounds.

8. Given a list of objectives, the learner should be able to evaluate each.

9. To develop in ninth-grade agriculture students a basic knowledge of function, composition, and properties of soil to be measured by a written teacher-made test.

10. The student will be able to saw four out of five peices of 2 x 4 lumber to within 1/16th of an inch of the specified size.

A. FOR EACH OBJECTIVE THAT YOU CHECKED AS INCOMPLETE REWRITE SO THAT IT BECOMES COMPLETE.

B. Return to Exercise Sheet No. 2A and B. Identify each component of the objectives or rewrite those that are incomplete.

ANSWER SHEET

EXERCISE SHEET NO. 3A
Wednesday p.m.

Name (Group)_____

Identification of the Components of Performance Objectives

Identify the components of the following performance objectives using these symbols:

Put brackets around the type of behavior expected.
Underline the conditions.
Circle the performance standards and/or criterion.

Check at the left the objectives that are incomplete. (Adaptations: Mager, McAshan)

---

1. To increase the speed and improve the endurance of eighth-grade male students so that given a stopwatch and an official, measured 440-yard track, 80 percent of the students will[run one mile] in less than 6 minutes by the end of the school year.

2. To improve the math skills of fourth-grade students in [adding unlike fractions,] as determined by Gores Test of fractions, so that our of 25 additional problems, 80 percent of the students get at least 22 out of 25 answers correct.

✓3. The student must be able to understand the theory of evolution. Evidence of understanding will be obtained from a written essay on evolution. [ ] __ O

✓4. The student must be able to correctly [name] each item depicted by each of a series of 20 blueprints. → 100%

5. During the final examination, and without reference, the student must be able to [write a description] of the steps involved in making a blueprint. → implied 100%

✓6. The student must be able to fill out a standard accident report. [ ] __ O

7. The student is to be able to[draw his service revolver and fire] five rounds (shots) from the hip within a period of three seconds. At 25 yards all rounds must hit the standard silhouette target; at 50 yards he must hit with at least two of his five rounds.

✓8. Given a list of objectives, the learner should be able to [evaluate] each. [ ] O

✓9. To develop in ninth-grade agriculture students a basic knowledge of function, composition, and properties of soil to be measured by a written teach-made test. [ ] __ O

✓10. The student will be able to [saw] four out of five pieces of 2 x 4 lumber to within 1/16th of an inch of the specified size. __

A. FOR EACH OBJECTIVE THAT YOU CHECKED AS INCOMPLETE REWRITE SO THAT IT BECOMES COMPLETE.

B. Return to exercise Sheet No. 2A and B. Identify each component of the objectives or rewrite those that are incomplete.

EXERCISE SHEET NO. 4A
Thursday a.m.

Name(Group)_____

INSTRUCTIONAL OBJECTIVES PREFERENCE LIST

Rate each of the following instructional objectives according to the scale. There are no "right" or "wrong" answers for this list, so please express your preferences candidly by placing a number before each objective.

5 Excellent
4 Good
3 Average
2 Fair
1 Poor

_____ 1. The student will be able to comprehend thoroughly the ways in which our constitution premeates our everyday life.

_____ 2. When presented with a list of nouns and pronouns, the student will be able to label each word correctly.

_____ 3. Student will be able to see the value of reading the "classics" in his leisure time.

_____ 4. The student will be able to write an essay employing one of three logical organizations given in class which exhibits no grammatical errors.

_____ 5. The student will be able to learn the number of voters in his precinct.

_____ 6. The student will be able to list those articles in the constitution which relate to "due process of law."

_____ 7. Students will realize the importance of knowing the approximate date at which a given literary work was produced.

_____ 8. The teacher will cover the key tools of the chemistry lab, that is, the Bunsen burner and various types of test tubes.

_____ 9. Given a list of 10 actual municipal court decisions, the student will be able to select the six which violate key tenets of the constitution and subsequently write an essay briefly explaining the nature of these violations.

_____ 10. The student will orally recite the names of six chemical compounds containing three or more elements.

_____ 11. The student will be able to cite some of the literary "classics" and briefly describe in an essay those features which give them universal appeal.

_____ 12. The student will grasp the significance of civic responsibility.

_____ 13. The student will be able to name the date when women were first permitted to vote.

_____ 14. The teacher will discuss the grammatical form of the amendments to the constitution.

_____ 15. The student will be cognizant of the important role scientific investigation has played in the field of chemistry and will become conversant with the relationship between scientific inquiry and the everyday life of the individual.

_____ 16. The teacher will help the class to become proficient communicators in written English.

_____ 17. Given the names of well-known novels and the names of contemporary authors, the student will be able to match them correctly in a test.

_____ 18. The student will be able to write an essay in which he contrasts the arguments for having a domocracy or totalitarian state.

_____ 19. The student will learn the parts of speech.

_____ 20. The student will be capable of setting up an experimental hypothesis test in the field of quantitative chemical analysis so that presented with an unknown chemical compound he can thereafter correctly identify its constituent elements.

Pophan, W. James and Baker, Eva L. Establishing Instructional Goals. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970, pp. 121-122.

ANSWER SHEET Instructional Objectives Preference List

Total:

Step 1. Add number by items 2, 4, 6, 9, 10, 11, 13, 17, 18, 30.

This is subtotal No. 1.

Step 2. Add numbers by remaining items. This is subtotal No. 2.

Step 3. Subtract subtotal No. 2 from 60.

Step 4. Add the result of Step 3 to subtotal No. 1. This is the score for the IOPL.

Scores can range from 20 to 100, with higher scores reflecting preferences for behaviorally stated objectives.

Subscales: Add the numerical ratings for each of the following sets of items to obtain subscale scores. High scores on each of these subscales reflect preferences for the type of objectives used in that subscale, e.g., nonbehavioral-important.

Behavioral-Important	4,	9,	11,	18,	20
Behavioral-Unimportant	2,	6,	10,	13,	17
Nonbehavioral-Important	1,	3,	12,	15,	16
Nonbehavioral-Unimportant	5,	7,	8,	14,	19

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EXERCISE SHEET 4B

A state-wide survey of manpower needs indicates a sharply increasing need for persons trained in a combination of agricultural-distributive education programs.

Write performance objectives which will assist in the development of local programs (either for state consultants, regional directors, or local personnel).

Number each objective by its priority and/or specify whether it is a short-range or long-range objective.

EXERCISE SHEET NO. 5A

Name(Group)_____

A. One of the objectives in an office practice class incorporates telephone usage. Write an objective for this purpose in behavioral terms and then describe in adequate detail the criterion test situations that might be appropriate.

B. In Distributive Education the student is expected to display the ability to sell. Write a behavioral objective and then describe in adequate detail the criterion test situations that might be appropriate for your objective.

IF TIME PERMITS, SELECT ONE ACTIVITY FROM EACH OF THE VOCATIONAL EDUCATION PROGRAMS AND WRITE OBJECTIVES AND DESCRIPTIONS OF CRITERION TESTS FOR EACH.

EXERCISE SHEET NO. 5B Name(Group)_____

A. Write two performance objectives which involve the development of some motor skill. Include the minimal acceptable standard for the student.

1.

2.

B. Change the two performance objectives above to include a class minimal standard of performance.

1.

2.

EXERCISE SHEET NO. 5C Name(Group)_____

The vocational education director of X State issued a directive that each vocational education program that wishes to receive reimbursement for 1971-72 must have performance objectives available in writing and on file both in the local school office and at the state department by June 1, 1971.

WRITE performance objectives (not procedures) that are appropriate in assisting local teachers through in-service training in the accomplishment of this directive. Determine CRITERION for evaluation for each objective.

APPENDIX K

GUIDELINES FOR INDIVIDUAL PLANS

A WORKSHOP ON DETERMINING PERFORMANCE OBJECTIVES

GUIDELINES FOR INDIVIDUAL PLANS

October 5-9, 1970

Carnahan House
University of Kentucky
Lexington, Kentucky

8092

GUIDLINES FOR INDIVIDUAL PLANS

As an integral part of this workshop, each participating individual is to outline a plan which includes how, in the next four months, he will apply the knowledge gained at the workshop. The plan is to serve as a model of how objectives can be developed for a specific purpose, how the plan of action can be carried out, and how the degree of attainment of the objectives stated can be assessed. Each plan is to include:

1. The name, address, and phone number of the participants.
2. The objective or objectives stated in performance terms.
3. The population that will be included.
4. The activities and procedure that will be used to accomplish the objectives.
5. The time schedule to be followed.
6. The budget.
7. The evidence that will be collected to assess how well you have attained your objectives.

At the end of the 10:30 a.m. session, each participant is to submit his plan to his small group leader. The plans will be typed by the workshop management and mailed to each participant. A follow-up survey will be conducted in February, 1971 to assess how well each participant has accomplished his objectives for applying the knowledge gained in the workshop. The information gathered will appear in the final report of the workshop.

APPENDIX L

EVALUATION FORM
FOR
SMALL GROUP MEETINGS

OBJECTIVES WORKSHOP EVALUATION

Small Group Meetings

Small Group Leader: Stratton_____ Bruce_____ McKinley and Vaughan_____

Please complete this form and return to small group leader. Place a check (✓) at the appropriate point on each scale. Be sure to elaborate on each response, giving specific examples or reasons for your decision, and/or ways improvement could have been made (if applicable).

	Excellent	Satisfactory		Needs Major Improvement
1. Were the objectives of this small group meeting made clear to you? If not, what was lacking? Elaborate:				
2. Was this discussion suitably held to the topics covered by the preceding presentation in the workshop? Elaborate:				
3. Did the discussion leader initiate interaction between individuals? Elaborate:				
Was each participant given adequate opportunity:				
4. To ask questions? Elaborate:				
5. To express ideas or suggestions? Elaborate:				
6. Was group cohesiveness maintained while allowing viewpoint difference? Elaborate:				
7. Did the resource persons provide adequate information? Elaborate:				

8. What other specific comments register your evaluation of this discussion session? (Please use the reverse side of this page if needed.)

APPENDIX M

WORKSHOP EVALUATION FORM

8096

OBJECTIVES WORKSHOP EVALUATION SCALE

Please circle the number indicating your present position.

1. Regional Evaluation Task Force

2. Bureau of Vocational Education, Frankfort

3. Instructional Materials Laboratory

4. Research Coordinating Unit

5. Other _____
(Specify)

Part I - Directions:

Read each statement carefully and decide how you feel about it. You will agree with some statements and disagree with others. You are offered five possible answers to each statement. The "undecided" answer should be circled only when you have no opinion. Circle one number following each statement. Please answer all statements.

Example:	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
The city needs to improve garbage collection schedules	5	(4)	3	2	1

This person feels in no uncertain terms that garbage collection schedules are inadequate.

Statements	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
1. The purposes of this workshop were clear to me	5	4	3	2	1
2. The objectives of this workshop were not realistic.	5	4	3	2	1
3. Specific purposes made it easy to work efficiently.	5	4	3	2	1
4. The participants accepted the purposes of this workshop.	5	4	3	2	1
5. The objectives of this workshop were not the same as my objectives . . .	5	4	3	2	1
6. I didn't learn anything new	5	4	3	2	1
7. The material presented was valuable to me	5	4	3	2	1

Statements	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
8. I could have learned as much by reading a book	5	4	3	2	1
9. Possible solutions to my problems were considered.	5	4	3	2	1
10. The information presented was too elementary	5	4	3	2	1
11. The speakers really knew their subject.	5	4	3	2	1
12. The discussion leaders were not well prepared.	5	4	3	2	1
13. I was stimulated to think objectively about the topics presented. .	5	4	3	2	1
14. New acquaintances were made which will help in my future work.	5	4	3	2	1
15. We worked together as a group. . . .	5	4	3	2	1
16. We did not relate theory to practice	5	4	3	2	1
17. The sessions followed a logical pattern.	5	4	3	2	1
18. The schedule was too fixed	5	4	3	2	1
19. The group discussions were excellent	5	4	3	2	1
20. There was very little time for informal conversation.	5	4	3	2	1
21. I did not have an opportunity to express my ideas	5	4	3	2	1
22. I really felt a part of this group .	5	4	3	2	1
23. My time was well spent	5	4	3	2	1
24. The program met my expectations. . .	5	4	3	2	1
25. I have no guide for future action. .	5	4	3	2	1
26. Too much time was devoted to trivial matters.	5	4	3	2	1
27. The information presented was too advanced	5	4	3	2	1

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Statements	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
28. The content presented was not applicable to occupational programs . . .	5	4	3	2	1
29. Workshops of this nature should be offered again in future years. . . .	5	4	3	2	1
30. Workshops such as this will contribute little to my work	5	4	3	2	1
31. The research findings presented were useful to me in my job	5	4	3	2	1
32. The references available to participants were not appropriate	5	4	3	2	1

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APPENDIX N

WORKSHOP
FOLLOW-UP INSTRUMENT

FOLLOW-UP OF WORKSHOP ON
DETERMINING PERFORMANCE OBJECTIVES

October 5-9, 1970
Carnahan House
University of Kentucky
Lexington

Please respond to the following questions by placing a check mark (✓) beside the answers which apply, by responding in writing, or by attaching appropriate written materials.

1. In what areas has the information gained at the objectives workshop been beneficial to you? (Check all that apply)

Developing objectives related to my job _____
Writing instructional objectives _____
Writing service area program objectives _____
Writing vocational education program objectives _____

2. To what extent has attendance at the Objectives Workshop influenced your ability to write objectives in performance terms?

Great _____
Some _____
Little _____
No extent _____

3. Of what value have performance objectives been to you in your job?

Great _____
Some _____
Little _____
No value _____

At the last session of the workshop, each participant wrote a plan including one or more objectives which specified how, in the next six months, he would apply the knowledge gained at the workshop. The following questions are designed to help the workshop directors assess the extent to which the objectives specified in the plan were accomplished.

4. To what extent were you able to attain the objectives in the plan which you developed at the workshop?

All _____
Most _____
Some _____
None _____

5. How many hours were spent in implementing the plan which you developed at the workshop?

0-5 hours _____
6-10 hours _____
11-15 hours _____
16-20 hours _____
Over 20 hours _____

6. Have you conducted or helped conduct any type of educational program on performance objectives since the Objectives Workshop?

Yes _____
No _____

7. If the answer to question number six was "Yes":

a) How many persons were involved? _____
b) How many hours of instruction were involved? _____
c) What kind of objectives did the participants write? (Check all that apply)

Objectives related to their jobs _____
Instructional objectives _____
Service area program objectives _____
Vocational education program objectives _____

d) How would you rate the reception of the instruction which you provided the participants on performance objectives?

Excellent _____
Good _____
Fair _____
Poor reception _____

e) How important did the person which you instructed feel that performance objectives are in their work?

Very important _____
Of some importance _____
Of little importance _____
Of no importance _____

8. Do you feel that the Objectives Workshop has made a positive impact on the program of vocational education in Kentucky?

Yes _____
No _____

9. Would you recommend that workshops of this nature be conducted in the future?

Yes _____
No _____

10. Would you like further assistance on developing and writing performance objectives:

Yes _____
No _____

11. If the answer to question ten was "Yes", what kind of assistance would you like?

Individual instruction _____
Small group instruction _____
A workshop _____
A credit course _____
Other _____

_____

_____

12. In your opinion, what was the overall effect of the Objectives Workshop?

Excellent _____
Good _____
Fair _____
Poor _____

13. What additional comments do you have about the Objectives Workshop?

14. Please attach examples of evidence of the attainment of the objectives specified in the plan which you developed at the workshop. Please include:

-Examples of objectives developed by you.
-Examples of objectives developed by persons taught by you.
-Agenda or programs for meetings regarding the writing of objectives.
-Lists of activities performed in the accomplishment of the objectives.
-Other examples of important evidence.

APPENDIX O

LETTER ACCOMPANYING WORKSHOP FOLLOW-UP INSTRUMENT

UNIVERSITY OF KENTUCKY

LEXINGTON, KENTUCKY 40506

COLLEGE OF EDUCATION
VOCATIONAL EDUCATION
RESEARCH COORDINATING UNIT
152 TAYLOR EDUCATION BLDG

April 12, 1971

We are pleased to have an opportunity to contact you regarding your activities related to performance objectives since your attendance at the Workshop on Determining Performance Objectives, October 5-9, 1970 at Carnahan House, Lexington, Kentucky.

Your response on the enclosed questionnaire will help the workshop staff make a more realistic assessment of the value of the workshop. It is not necessary for you to sign you name to the questionnaire since it has been pre-coded for objectivity during analysis. All information will be confidential and the data will be handled in such a way that responding individuals cannot be identified.

Please use the return envelope to return the questionnaire and related materials at your earliest convenience. Your cooperation is greatly appreciated.

Sincerely,

Floyd L. McKinney
Assistant Professor

Alfred J. Mannebach
Assistant Professor

cm

APPENDIX P

THANK YOU - REMINDER CARD

Date

We deeply appreciate your completing the follow-up instrument about the Workshop on Performance Objectives. No one else can give us the insights and experience which you have -- and which we need.

If your questionnaire is already in the mail, thank you for your help. If not, could you mail it today?

Sincerely,

Floyd L. McKinney
Assistant Professor

Alfred J. Mannebach
Assistant Professor

APPENDIX Q

SECOND FOLLOW-UP LETTER

142/143

UNIVERSITY OF KENTUCKY

LEXINGTON, KENTUCKY 40506

COLLEGE OF EDUCATION
VOCATIONAL EDUCATION
RESEARCH COORDINATING UNIT
152 TAYLOR EDUCATION BLDG

April 21, 1971

We need your help. We have not received a copy of the follow-up instrument regarding the Workshop on Performance Objectives. This is an opportunity for you to make a direct and constructive contribution relative to such workshop efforts.

In the event you have misplaced the questionnaire we sent to you earlier, we are enclosing another copy. Please return it as soon as possible.

Sincerely,

Floyd L. McKinney
Assistant Professor

Alfred J. Mannebach
Assistant Professor

cm

APPENDIX R

EXAMPLES OF EVIDENCE OF THE ATTAINMENT OF THE OBJECTIVES SPECIFIED IN THE PLAN OF ACTION DEVELOPED AT THE OBJECTIVE WORKSHOP

The following evidence was submitted by Virginia Pratt, Coordinator of Reimbursed Programs, Northern Kentucky Area Vocational School, Covington, Kentucky.

ACTIVITIES

I. Presented program on Determining Performance Objectives for the administrative staff of the Northern Kentucky Vocational Region. Nine persons attended.

   A. The first four filmstrips and tapes on Principles and Practices of Instructional Technology were used. Part of the workbook that comes with the filmstrips was used.

   B. Transparencies and exercises were prepared from materials that were distributed at the Objectives Workshop.

II. Presented program on Determining Performance Objectives for seven vocational teachers at Newport High School, two teachers from the Occupational Training Center in the Covington Independent School System and one teacher from the Northern Kentucky Vocational School.

   (Same procedure as stated above was followed.)

III. Met with teachers from Occupational Training Center twice and worked with them on writing objectives in performance terms. Both teachers read the book, PREPARING INSTRUCTIONAL OBJECTIVES by Robert F. Mager.

   I do not have examples of objectives written by them. I hope to see results of these meetings when I receive their Local Plan for Vocational Education.

IV. Worked with teachers individually on writing projects for Disadvantaged and Handicapped programs.

V. Wrote goals and objectives for the reimbursed program in the Northern Kentucky Vocational Region.

LONG-RANGE GOALS

REIMBURSED PROGRAM

NORTHERN KENTUCKY VOCATIONAL REGION

By 1975, the number of regular vocational education programs will increase from 63 to 75.

By 1975, programs and/or services and activities for the disadvantaged and handicapped students enrolled in vocational programs will be provided in all 26 local school districts.

By 1975, the number of cooperative vocational programs will increase from 9 to 18.

By 1975, one career exploratory program for students enrolled in grades 1-12 will be implemented.

By 1975, 90 per cent of the local school districts will provide preparatory and/or supplementary classes for adults in at least one vocational area.

By 1975, 98 per cent of the local school districts will have organized committees composed of teachers, guidance counselors, principals, etc. to plan programs that will meet the vocational education needs of the students.

OBJECTIVES

REIMBURSED PROGRAM

NORTHERN KENTUCKY VOCATIONAL REGION

During the 1970-1971 school year, seven regular vocational education programs will be implemented.

By February 1, 1971, special programs and/or services for the disadvantaged and/or handicapped students enrolled in vocational education programs will be provided in 85 per cent of the high schools.

By February, 1971, three career orientation programs for the disadvantaged students in grades 9-12, who are not enrolled in regular vocational programs, will be executed.

By January 30, 1971, administrators and vocational teachers in five local school districts will implement cooperative vocational programs according to the Guidelines for Part G of the 1968 Vocational Education Act.

By June, 1971, 35 adult preparatory and/or supplementary classes will be taught.

By April 15, 1971, 50 per cent of the local school districts will organize a committee composed of vocational teachers, guidance counselors, principals, and superintendents to determine vocational education needs and to prepare the Local Plan for Vocational Education.

By June, 1971, 30 per cent of the local school districts will present a Local Plan for Vocational Education with the objectives for each service area stated in performance terms.

As a result of four visits to each school system, preparation of a quarterly newsletter, memorandums, letters, and a regional meeting, 90 per cent of the superintendents, principals, and vocational teachers will be able to explain all programs, services, and/or activities available to them under the 1968 Vocational Act by May 1, 1971.

By January, 1971, the Director of the Maysville Community College and the administrators at Northern Kentucky State College will be able to select vocational programs and/or services that will benefit the students enrolled in the institutions.

By November 15, 1971, the Distributive Education teachers will have collected all information concerning the Student Data System.

By April 1, 1971, all records for the inventory of equipment for the regular vocational programs will be completed.

Given proper instructions, a finance officer or a secretary from each local board of education will code all documents for requests for reimbursement.

All requests for reimbursement will be mailed to the Frankfort office within one week after they are received in the Regional office.

Given a calendar showing deadline dates for all reports requested by the Divisions in the Bureau of Vocational Education and a reminder two weeks before the deadline, 98 per cent of the vocational teachers will mail reports so they reach the Regional office on time.

By April, 1971, each non-vocational business and office teacher and each non-vocational home economics teacher will be able to list places and/or sources where information can be obtained that will help them in their instructional program. For example, the Instructional Materials Laboratory at the University of Kentucky. (One visit will be made by the coordinator to each teacher.)

OBJECTIVES DEVELOPED BY PERSONS TAUGHT

by Virginia Pratt

CLERICAL PROGRAM FOR DISADVANTAGED ADULTS

LEWIS COUNTY HIGH SCHOOL

Statement of Objectives

1. Upon completion of the program, seventy per cent of the adults will be able to type a minimum of 35-40 words a minute on a five-minute writing with no more than five errors.

2. Upon completion of the program, 70% of the adults will be able to compose short business letters, using correct punctuation, spelling, and grammar and applying basic typewriting principles.

3. Upon completion of the training, the adults will be able to perform simple tasks and solve problems on office machines -- adding machines, calculators, duplicating equipment (stencil duplicator, fluid duplicator, multilith).

4. 65% of the adults will make an average or above average score on a test of filing principles.

5. At the end of the training, 65% of the adults will be able to identify from a recording of their voices, all mistakes in word usage. They also will be able to differentiate between correct and incorrect word usage by listening to recordings that others have made.

(In this area of the state, training in using correct English when carrying on a conversation is desperately needed. Since these adults are graduates of the Adult Basic Education program, we feel that we can assist them in this area. We realize it is impossible to change speaking habits, especially in a short time, but feel that we can help many of them realize that improvement is needed and is necessary in order to get and hold a job.)

6. Upon completion of the program, 60% of the adults will be able to obtain employment in an office. They will possess desirable attitudes and work habits. This will be evidenced by observing the adults during training, as well as using information gathered on the follow-up study that will be conducted after completion of the project.

The following evidence was submitted by Bronelle Skaggs, Coordinator of Reimbursed Programs, Mayo Vocational School, Paintsville, Kentucky. The objectives were developed by persons taught by Mr. Skaggs.

PERFORMANCE OBJECTIVES FOR HORTICULTURE

1. After class discussion and demonstration of the grafting technique, each student will develop the skill to complete twelve (12) whip grafts within a 60 minute period in such a way that 90% of grafts will survive under field conditions.

2. After class discussion and demonstration of the budding technique, each student will develop the skill to complete fifteen (15) T-buds within a 60 minute period with 90% survival of buds under field conditions.

3. After class discussion and demonstration of making hardwood cuttings, each student will make twenty (20) hardwood cuttings, treat with hormone, and plant with 80% of cuttings initiating roots.

4. After class discussion and demonstration of mound layering, each student in class will successfully mound layer five (5) apple root stocks in the school nursery.

5. After class discussion and demonstration of the techniques involved in trench layering, each student in class will successfully trench layer five (5) apple root stocks in school nursery.

PERFORMANCE OBJECTIVES FOR HOME ECONOMICS I

1. After the first two weeks in Home Economics I "Clothing" Unit, all students will be able to identify the basic parts of a sewing machine and prepare the machine for regular sewing.

2. Before beginning the lab section of the unit, "Meals for a Day," 75% of the Home Economics I students will be able to classify foods into the Basic Food Groups, list the basic nutrients, the basic function of each, and examples of foods for each.

3. Upon completing the unit, "Meals for a Day," 85% of Home Economics I students will be able to write simple menus and follow through with appropriate work schedule, recipes, table setting, market order, and clean up procedure.

4. At the end of a 4 week unit on "Child Care" at the Home Economics I level, 80% of the group will be able to list on a test at least five (5) responsibilities of a baby sitter and five (5) responsibilities of the child's parents and give reasons for their importance.

5. At the end of the Grooming unit on the Home Economics I level, 50% of the class will complete a grooming project on the topic that is felt to be most necessary to the individual, summarized on a form and evaluated according to objectives and plans written up and turned in at the beginning of project.

PERFORMANCE OBJECTIVES FOR ACCOUNTING I

1. After a six weeks period of instruction of the bookkeeping cycle in its simplest form, seventy per cent of the students will be able to complete the cycle with 100% accuracy, 10% will complete with 95% accuracy, and 20% will complete with 90% accuracy.

2. Upon completion of 12 weeks of instruction the students will have completed the bookkeeping cycle with special journals and subsidiary ledgers. They will have recorded transactions in a cash receipts journal, cash payments journal, sales journal, purchases journal and a general journal. Students will have posted from these journals to the general ledger and to the subsidiary ledgers (accounts payable and accounts receivable). Evaluation of students' progress will be by two problem solving tests.

3. Work sheet with adjustments, financial reports, and adjusting and closing entries will be completed by the end of the third six weeks. Students will record adjusting and closing entries from the work sheet section of the worksheet to the general journal, post these entries to the general ledger, and prepare a balance sheet and an income statement from the worksheet. Eighty percent of the students will be able to interpret the meaning of each financial statement.

   Evaluation will be by two problem solving tests and a practice set. Eighty per cent will complete the set with 90% accuracy, 10% will complete with 95% accuracy and 10% with 100% accuracy.

4. Recording special bookkeeping transactions will be completed by the end of the 28th week. Students will complete payroll taxes and reports; analyze combination journals; establish and replenish petty cash, record credit memorandums, sales discounts, purchases discounts; compute social security taxes, payroll time cards, employees' earnings records; record depreciation of fixed assets, journalize the disposal, selling, and trading of a fixed asset. They will also make adjusting entry to establish allowance for bad debts, write off uncollectable accounts, operate a cash register, and complete a daily balance slip.

   Evaluation will be made by two problem solving tests, a project and a practice set. Project and practice sets will be completed by all students with 90% accuracy by 80% of students, 95% accuracy by 10% of students, and 100% accuracy by 10% of students.

5. During the final six weeks period of the school year, a section on adapting bookkeeping to businesses will be presented. In this section students will analyze promissory notes, compute interest on a discounted note, and make adjusting entries for accruals. Each student will be able to write articles for a co-partnership, and list the advantages and disadvantages of a partnership and a corporation.

The following evidence was submitted by Junior Poling, Coordinator of Reimbursed Programs, Carter County Extension Center, Olive Hill, Kentucky. The first part of evidence submitted was "Plan of Action" submitted by Mr. Poling at the end of the objectives workshop. Part two consists of examples of objectives developed by the teachers in the Carter County Extension Center at the end of six training sessions on performance objectives taught by Mr. Poling.

PLAN OF ACTION

Objectives:

The Reimbursed Coordinator will provide at least six, forty-five minute periods of instruction on writing performance objectives, for the six instructors at the Carter County Extension Center. Such instruction will result in having each instructor write four objectives for the area in which he instructs by December 19, 1970.

Population:

Only the six full time instructors employed at the center will be involved in the instruction.

Procedure:

The Reimbursed Coordinator will teach writing performance objectives by use of:

a. Condensed and edited materials received at the workshop on writing performanceobjectives.
b. Self test material similar to that in the programmed workbook on performance objectives.
c. Transparencies prepared from workshop materials.

Time:

A forty-five minute instruction period will be used each Monday morning beginning October 19, 1970. It is hoped that six sessions will be sufficient but more time can be used if needed.

Budget:

No budget is needed.

Evidence:

Each instructor will, at the end of the training period, write four terminal performance objectives of a high or medium level that will specify in writing part of what he hopes to achieve.

PERFORMANCE OBJECTIVES FOR ELECTRICITY

W. E. Porter

1. After 10 class room hours of instruction on meters in Industrial Electricity at Carter County Extension Center, each student will be able to connect and read a D.C. ampere meter to a tolerance of $\pm$ 2% of full scale. (Psychomotor)

2. After 100 hours class room hours of instruction at Carter County Extension Center in housewiring theory and practice each student will install a light controlled at two separate points in accordance with the National Electrical Code upon the first try. (Psychomotor)

3. After 960 hours of instruction at Carter County Extension Center in Industrial Electricity a student will be able to identify wire size on sight. (Cognitive)

4. After 50 hours of instruction at Carter County Extension Center in National Electrical Code a student will have a working knowledge of the code as required by his job. (Affective)

DRAFTING

Amon Yates

1. After 960 hours of drafting a student will pass (60%) a written test of not less than 100 questions on geometric construction. (Cognitive)

2. After 960 hours of drafting a student will draw in detail an assembly of a given piece of machinery with no more than one mistake per plate. (Psychomotor)

3. After 960 hours of drafting a student will draw a full set of house plans accurate enough for a house to be built from them. (Psychomotor)

4. After 960 hours of drafting a student will dress and act properly enough to satisfactorily get and hold a job. (Affective)

BUILDING TRADES

E. J. Fannin

1. After 480 hours of instruction at Carter County Extension Center all students in carpentry class will know dimension lumber sizes, their uses and where they are to be used as to current Federal Housing Administration regulations. (Cognitive)

2. After 480 hours of instruction at Carter County Extension Center all carpentry students will cut a set of rafters (2) for a given pitch roof in fifteen minutes with an error no greater than 1/4". (Psychomotor)

3. After 960 hours of instruction at Carter County Extension Center all carpentry students will have built a 1/12 scale model house to given dimensions with no more than five errors. (Psychomotor)

4. After 960 hours of instruction at Carter County Extension Center all carpentry students will clean up all tools normally used in the trade correctly without being told to do so. (Affective)

AUTO BODY

Powell T. Meadows

1. Upon completion of 960 hours in a basic auto body course the student will be able to straighten damaged metal to the degree necessary to fill or original contour. (Psychomotor)

2. Upon completion of 960 hours the student will be able to chemically clean, sand, mask and tack surgace of vehicle not leaving any dirt in preparation of receiving new finish. (Psychomotor)

3. Upon completion of 960 hours in basic auto body work the student will demonstrate that he has learned to take proper care of his tools and equipment by keeping his own clean and in good repair. (Affective)

4. After completing 960 hours of auto body class a student will be able to estimate the extent of damage to an automobile and the time required to repair the damage. (Cognitive)

WELDING

Albert W. Gates

1. After 480 hours of instruction a student will name all tools and their uses that are used by welders. (Cognitive)

2. After 960 hours of practice a student will set up and do minor welding job satisfactorily. (Psychomotor)

3. The welding student at the conclusion of 960 hours of training shall pass tests on 3/8" plate in the vertical and flat positions with the electric process. (Psychomotor)

4. As a result of previous training the student will have the desire to do good work on all jobs. (Affective)

AUTO MECHANICS

Wayne McGuire

1. After 480 hours of instruction at the Carter County Extension Center all students will be able to list all engine parts by their correct name. (Cognitive)

2. After 240 hours of instruction at the Carter County Extension Center all students will rebuilt the brake system on an automobile with no mistakes. (Psychomotor)

3. After 960 hours of instruction at the Carter County Extension Center all students will disassemble an engine and assemble it correctly. (Psychomotor)

4. After 480 hours of instruction at the Carter County Extension Center all students will keep the tools in proper order and clean. (Affective)

APPENDIX S

SELECTED BIBLIOGRAPHY ON EDUCATIONAL OBJECTIVES

SELECTED BIBLIOGRAPHY ON EDUCATIONAL OBJECTIVES

Workshop on
Determining Performance Objectives

October 5-9, 1970
Carnahan House
University of Kentucky
Lexington, Kentucky

Prepared by:

Lorraine Darley
Floyd L. McKinney
Alfred J. Mannebach

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SELECTED BIBLIOGRAPHY ON EDUCATIONAL OBJECTIVES

Ahmann, J. S. and M. D. Glock. Evaluating Pupil Growth. Boston: Allyn and Bacon, Inc., 1963.

Ammerman, Harry L. "Some Important Ways in Which Performance Objectives Can Vary." Alexandria, Virginia: Human Resources Research Office, 1966.

Ammerman, Harry L. and William A. Melching. The Derivation, Analysis, and Classification of Instructional Objectives. Alexandria, Virginia: Human Resources Research Office, George Washington University, May 1966.

Arnstine, D. G. "The Language and Values of Programmed Instruction: Part 2," The Educational Forum, Volume 28, 1964.

Baker, E. L. "Instructional Objectives Exchange: Assistance in Goal-Referenced Evaluation," Journal of Secondary Education, 45: 158-62, April, 1970.

Banathy, Bela H. Instructional Systems. Palo Alto, California: Fearon Publishers, 1968.

Bemis, Katherine A., and Glenn E. Schroeder. The Writing and Use of Behavioral Objectives. Southwestern Cooperative Educational Lab, June, 1969.

Bloom, Benjamin S. (ed.) Taxonomy of Educational Objectives, Handbook, I: Cognitive Domain. New York: Longmans, Green and Co., 1956.

Broudy, H. S. "Philosophical Foundations of Educational Objectives," Educational Theory, 20: 3-21, Winter, 1970.

Burns, Richard W. "The Theory of Expressing Objectives," Educational Technology, October 30, 1967.

Burns, R. W., and G. D. Brooks, "What are Educational Processes," School Teacher, 37: 27-28, February, 1970.

Cook, Fred S., and Frank W. Lanhan. "Simulated or Actual Experience," Business Education World, 49: 7-8, October 1968.

Davies, D. "Relevance of Accountability," Journal of Teacher Education, 21: 127-33, Spring, 1970.

Dressel, Paul L. "Evaluation Procedures for General Education Objectives," Educational Record, April, 1950.

Dressel, Paul L. and Mayhew, L. B. General Education: Explorations in Evaluation. Washington, D. C.: American Counsel on Education, 1954.

Dyer, H. S. "Discovering and Development of Educational Goals," The National Association of Secondary School Principals, Bulletin 51: 1-14, March, 1967.

Ebel, Robert L. "Prospects for Evaluation of Learning," The Bulletin of the National Association of Secondary School Principals, 52: 32-42, December, 1968.

Evans, Rupert N. "The Secondary School and Occupational Preparation," The Bulletin of the National Association of Secondary School Principals, 53: 23-24, February, 1969.

French, W., et al. Behavioral Goals of General Education in High School. New York: Russell Sage Foundation, 1957.

Furst, E. J. Constructing Evaluation Instruments, New York: Longmans, Green and Co., 1958.

Gronlund, Norman. Stating Behavioral Objectives For Classroom Instruction. New York: Macmillan, 1969.

Havighurst, Robert J. "Requirements For a Valid New Criticism," Phi Delta Kappan, 40: 20-26, September, 1968.

Higgins, M. J., and Merwin, J. C. "Assessing Progress of Education," Phi Delta Kappan, 48: 378-80, April, 1967.

Holyat, F. "Examination and Educational Objectives," World Yearbook. 355-59, 1969.

Jackson, P. W. The Way Teaching Is. Washington, D. C.: National Education Association, 1966.

Kearney, N. C. Elementary School Objectives. New York: Russell Sage Foundation, 1953.

Krathwohl, D. R., et. al. Taxonomy of Educational Objectives, Handbook II: Affective Domain. New York: Longmans, Green and Co., 1964.

Light, R. J. and Smith, P. V. "Choosing A Future: Strategies For Designing and Evaluating New Program," Harvard Educational Review, 40: 1-28, February, 1970.

McAulay, J. D. "Criterions For Elementary Social Studies," Educational Leadership, 25: 651-55, April, 1968.

Mager, R. F. "Deriving Objectives for the High School Curriculum," National Society for Programmed Instruction Journal. 17: March, 1968.

Mager, R. F. Developing Attitude Toward Learning. Palo Alto, California; Fearon Publishers, 1968.

Mager, R. F. and Beach, Kenneth M., Jr. Developing Vocational Instruction. Palo Alto, California: Fearon Publishers, 1967.

Mager, R. F. Preparing Instructional Objectives. Palo Alto, California: Fearon Publishers, 1962.

Mannebach, Alfred J. and Floyd L. McKinney. "Performance Objectives: Foundations for Evaluation," The Agricultural Education Magazine, 42: 301-302, June, 1970.

Mayer, Frederick. Goals of Education. Washington: Public Affairs Press, 1960.

Melching, William H. "In Defense of Instructional Objectives," Alexandria, Virginia: Human Resources Research Office, The George Washington University.

Meyer, James A. "Programmed Learning: Education's Turkey," American School Board Journal. 56: 26-27, October, 1968.

Miller, Robert B. "Analysis and Specification of Behavior for Training," in Training Research and Education, Robert Glaser (ed.) Pittsburgh: University of Pittsburgh Press, 1962.

Norton, John Kelley. Critical Issues in American Public Education. Pittsburgh: University of Pittsburgh Press, 1965.

Ojemann, R. H. "Should Educational Objectives Be Stated in Behavioral Terms?" Elementary School Journal, 70: 271-78, February, 1970.

Olson, T. A., and Marvin, L. "Evaluation: One State's Approach - Illinois," American Education, 6: 33-34, May, 1970.

Paulsen, Frank. American Education - Challenges and Images, Tucson: University of Arizona Press, 1967.

Popham, W. James and others. Instructional Objectives. AERA Monograph Series on Curriculum Evaluation. Chicago: Rand McNally and Company, 1969.

Scriven, M. The Methodology of Evaluation. Lafayette, Indiana: Social Science Education Consortium, Inc., 427 Wood St., 1965.

Simpson, Elizabeth J. "Curriculum Development Challenges in Home Economics," Journal of Home Economics, 40: 767, 73, December, 1968.

Smith, Robert G., Jr. An Annoted Bibliography on The Determination of Training Objectives. Alexandria, Virginia: Human Resources Research Office, The George Washington University, 1967.

Smith, Robert G., Jr. The Design of Instructional Systems, Technical Report 66 - 18. Alexandria, Virginia: Human Resources Research Office, The George Washington University, 1966.

Smith, Robert G., Jr. The Development of Training Objectives. Research Bulletin II. Alexandria, Virginia: Human Resources Research Office, The George Washington University, 1964.

Thomas, R. M. Judging Student Progress. New York: David McKay Co., 1960.

Whitmore, Paul G. "Deriving & Specifying Instructional Object," Paper Presented at the Symposium on Automated Teaching. Research Problem, American Psychological Association Meeting, September, 1961.

Films and Tapes

General Programmed Teaching
424 University Ave.
P. O. Box 402
Palo Alto, California 94302

AVAILABLE:

Introduction to Basic Principles General Goals, Affective Objectives and Cognitive Objectives.

Main Components of an Objective: Behavioral Terms, Conditions and Standards.

Classification of Objectives

Criterion Tests

Films and Tapes

Vimcet Associates, Inc.
P. O. Box 24714
Los Angeles, California 90024

AVAILABLE:

Behavioral Objectives Debate (#20)
Criterion - Referenced Instruction (#21)
Educational Objectives

APPENDIX T

WORKSHOP PRESENTATIONS

IMPORTANCE OF PERFORMANCE OBJECTIVES

Robert Pruitt, Acting Director
Division of Comprehensive and Vocational Education Research
U. S. Office of Education
Department of Health, Education and Welfare
Washington, D. C.

Paper Presented at the
Workshop on
Determining Performance Objectives

October 5, 1970
Carnahan House
University of Kentucky
Lexington

IMPORTANCE OF PERFORMANCE OBJECTIVES

Introduction

I am pleased to join this distinguished group of educators for the opening event of your five-day workshop on the important topic of educational objectives.

It is always a pleasure to return to my native land. My father was a tobacco share cropper in the vicinity of Harrodsburg. I was the first baby born in the new hospital in that city. I don't mean the new hospital you have now, but rather the one that was new 54 years ago. I have had occasion to return to Kentucky to visit my kin folks in the tobacco region and to return to the beautiful bluegrass horse-raising countryside. I have recently visited one of your school systems. The things that I saw in Breathitt County about sixteen months ago were as impressive as any educational program I have seen anywhere. I saw an individualized, multi-media, humanistic educational program at work. I talked with members of curriculum development team who seemed to be as knowledgeable as any of the experts regarding performance objectives. I am sure that there are other superior instructional programs in this great state.

I am pleased to be here also, because of my deep interest in the subject of educational objectives. As I was going through my undergraduate training program, attention was given to what we then knew about educational objectives. My professors required that every lesson plan begin with a statement of objectives. This seemed perfectly reasonable to me, since knowing where one wants to go is of critical importance in being sure that he gets there. The more precisely one identifies his goals, the more likely he is to reach them. I have never lost that faith in objectives. In the last decade, much of my work has called for close attention to this important topic. In 1964, Dr. Robert Gagne, a behavioral scientist whose name is known to all who work with objectives, and I developed a plan for improving vocational education. We were fortunate in getting one of the first grants from the Vocational Educational Act of 1963. Over a five-year period, we secured approximately one million dollars to develop a relevant, individualized, multi-media, vocational instructional system. The effort took us through stages of task analysis, writing behavioral or performance objectives, selecting learning experiences, identifying alternative media for learning, and packaging the program to make it useable for individualized instruction.

We realized later that we had undertaken a task that was greater than we could deliver with the resources that were available. However, we do think we got a good start. The research and development was conducted in Quincy, Massachusetts during the time that I served as superintendent there. Development has continued since I left and these materials have been and are still being tested for generalizability by the job corps and on Indian reservations. The Research Council for the Great City Schools is planning for further development and testing of the model and materials of this effort.

By the time I came to the Office of Education in 1968, I had become very conscious of the lack of agreement among leading educators as to what form

Educational goal statements should take. I proposed that the Office of Education sponsor a conference to try to get some consensus about objectives. It was at that time that the funds for research were being curtailed and the conference was not held.

As I began preparing for my assignment here tonight, I realized the nearly impossible task I had undertaken. So many dedicated educators, looking at the problem from their specialized perspective, have made partial contributions that leave me confused in trying to synthesize their ideas. I wish I could have had months to prepare for the assignment. Because of the limitations of time for preparation and time for presentation (a thirty minute speech) I can only hope to stimulate further analysis of past and present efforts to prepare properly packaged objectives to be meaningful to students, instructional staff, curriculum developers, and administrators. Different packaging is probably needed for each group.

Approaches To The Task

As I survey educational opinions on the topic of objectives, I find much disagreement and highly charged emotional points of view. Many people are afraid of present day talk about educational objectives. Most practitioners have felt a serious threat to their established way of teaching. Curriculum makers see the products of their years of work declared useless by this new "fad." They fear that royalties and commissions will stop. These threatened people charge (1) there are many topics in education that cannot be measured in performance of behavioral objectives, (2) there is nothing new about the idea of educational objectives. At the other extremes some of the "Johnny-come-lately" to the educational scene, read an article or two and maybe a book on the subject of educational objectives and proceed as if they are experts. I find both of these extreme views not to my liking. I place myself among these educators who regard the preparation of meaningful objectives as a very complex matter. I do believe we are making progress and that education will be better because some of us, and I hope that includes all of you, regard meaningful statements of objectives as important. Education in the future will be better because we are willing to work at it.

Issues

What are the issues that curriculum makers must face? Relevance certainly heads the list as we look at the learning needs for all students with their variations in abilities. We have recognized that relevant education is dependent upon the selection of integrated educational experiences that meet the performance needs of each student. However, with the university professor in control, most of the curriculum development of the past decade has turned out to be curriculum needed to pass the next discipline-oriented course.

In Mid-Century Tyler was telling his students that the needs of the discipline represent only one approach to organizing a curriculum. He also noted that curriculum could be organized around the present and future personal needs of individuals or around the needs of the social order. It is becoming increasingly obvious that we must pay attention to all three of these factors in the identification of objectives and learning materials to provide a comprehensive set of learning activities for a multi-option, relevant curriculum.

Another issue related to performance objectives is individualization. Most secondary schools are now structured to present science in a traditional pattern of biology, chemistry and physics. Mathematics is present in algebra, geometry, advanced algebra, solid geometry and trigonometry. If we are to meet the educational needs of all students, particularly those in career-oriented programs, we must be flexible even with the so-called academic subjects to present learning experiences in the form and at a time relevant to the career plan of each student. This means that for some students, some knowledge, concepts and principles of physics should be introduced before grade 12. Other students with different career orientation may not need principles in physics until grade 12. Indeed they may not need then at all.

We have long argued that students learn at different rates. Yet there is a dearth of instructional materials and a paucity of educational practices to enable a teacher to accomplish the goal. This all indicates our lack of commitment to individualization in terms of learning rates. We move from one topic to another whether a student has learned or not. In many instances such a procedure guarantees subsequent failure because the topic not learned is a prerequisite for the new objective.

A third issue relates to learning styles. Most schooling is conducted from books (principally textbooks) and teacher speeches. We know enough now to be sure that students will learn better if a broader range of learning media and various grouping options are available to them. We are beginning to learn that some kinds of learning media and some kinds of approaches are most effective with students having particular sets of characteristics.

Goal Setting

Persons concerned with the educational enterprise have always been concerned about objectives. However, they may have expressed their objectives in other terms such as goals or principles. Whatever the words used, the statements amount to expressing the objectives of the educational program. In colonial times, people talked about the three Rs (reading, writing, and arithmetic). These three goals were rather universally accepted. Individual schools may have added other dimensions, such as religion, morality, or occupational training.

By 1918, a committee of the National Education Association, the Commission on Reorganization of Secondary Education, proposed a set of Seven Cardinal Principles. These seven principles were significant in that they expanded considerably the mission of the schools to include instruction in such matters as health, home membership, use of leisure time, vocational education, citizenship education and ethical character.

During my teacher training days of the thirties, these Seven Cardinal Principles were still recognized as the best statement of objectives that could be found. Since 1918, there have been actions through the Education Policy Committee to elaborate on the goals of education. In 1959, the Educational Policy Commission issued the following statements about elementary and secondary school curriculum:

> The elementary curriculum: "It should emphasize reading, writing, arithmetic, speaking, and listening -- the basic skills of the civlized person and the foundation of further intellectual growth."

...It should "help pupils to acquire ideas, information, understanding, and skills in the social studies, science, music, and art. It should promote understanding and the importance of learning and of intellectual values. It should teach pupils that people live, think, and speak in various ways.

The secondary school curriculum: "The programs of all secondary-school students should include English, social studies, science, mathematics, and fine arts, as well as physical and health education...There should be commercial, vocational, technical and home-making courses designed to develop skills which have social or economic value...There should be advanced courses in mathematics, statistics, biology, chemistry, physics, geology, astronomy, music, art, literature, creative writing, history, geography, sociology, and world affairs. At least one modern foreign language should be offered... and no less than a three-year sequence is needed to permit learning to the point of effective use...The superior secondary-school curriculum...forms of learning which require more than subject matter or factual knowledge." ...it also develops "attitudes, standards, and skills."

You will note from this statement that little change in goal-setting took place between the years 1918 and 1959.

However, by Mid-Century some significant thinking about objectives was being pursued by a few individuals. Ralph Tyler's work about 1950 is probably recognized as of major significance for present day developments. In 1950 Tyler said:

> many educational programs do not have clearly defined purposes. In some cases one may ask a teacher of science, of English, of social studies, or of some other subject what objectives are being aimed at and get no satisfactory reply. The teacher may say in effect that he aims to develop a well-educated person and that he is teaching English or social studies or some other subject because it is essential to a well-rounded education. No doubt some excellent educational work is being done by artistic teachers who do not have a clear conception of goals but do have an intuitive sense of what is good teaching, what materials are significant what topics are worth dealing with and how to present materials and develop topics effectively with students. Nevertheless, if an educational program is to be planned and if efforts for continued improvement are to be made, it is very necessary to have some conception on the goals that are being aimed at. These educational objectives become the criteria by which materials are selected, content is outlined, instructional procedures are developed and tests and examinations are prepared. All aspects of the educational program are really means to accomplish basic educational purposes. Hence, if we are to study an educational program systematically and intelligently we must first be sure as to the educational objectives aimed at.

The Russell Sage Foundation sponsored Mid-Century conference report contains these introductory words:

> The Mid-Century Committee on Outcomes in Elementary Education was assembled to describe for educators, test-makers and interested citizens the measurable goals of instruction in our American elementary schools. Though other groups and individuals have specified some of the outcomes sought by the schools, or have described the subject matter and activities of schools, there has long been a need for a comprehensive and authoritative survey of elementary schooling, with primary emphasis on behavioral goals. Such a survey should identify desirable attainable objectives so that they may be susceptible to measurement, evaluation, and critical philosophical analysis.

You will note from these two quotes the emergence of the idea of precisely stated objectives that can be evaluated in behavioral changes.

In spite of the few pioneering efforts there was very little concern about statements of objectives and very little evidence that they made very much difference in what teachers did.

Within the last 10 years, with the increased concern in educational accountability, the need to improve teacher learning strategies, the greatest sophistication in educational technology, and the identification of three domains of knowledge, we have become very serious about more precise statements of objectives.

Objectives, Instructional Process and Evaluation

Much has been said and written about the relationship of objectives to evaluation. Certainly the precision of the evaluation can be no more exact than the precision by which goals are stated.

We have paid less attention, I believe, to the effect of goal setting on the instructional process. Carefully selected and thoughtfully organized objectives do not necessarily assure that the graduates of our schools will have secured the capabilities to cope with their world.

It is interesting to note the various ways that different educational specialists are approaching objective specifications.

We have seen the linear type behavioral scientists chop the program into little "bits." Learning was assumed to have occured if the learner could demonstrate that he had mastered 84 to 90 percent of these little pieces under prescribed circumstances. Little attention was given to a concern that the pieces could be put together in such a way that broader goals were achieved. Too often learning packages produced by this emphasis resulted in students learning alone from the printed word so that teaching became a matter of merely recording the "bits" mastered.

We have also had the behavioral scientist who designed program learning from a branching approach. In these programs broad objectives and prerequisite capabilities were identified. Prerequisites could be bypassed if a student could demonstrate his ability to achieve the broader objectives.

During all of this time practitioners were misled by the hardware people who were selling teaching machines rather than instructional programs based on carefully designed objectives, teaching and learning strategies, and evaluation measures.

We have also been confronted in the last decade with educators who have declared that the resolution of the education problems rest with the teaching of concepts. I have found little in the literature to indicate that most disciples of this cult took time to explain what they meant by concepts, or even make clear what a student would be able to do with this collection of concepts that he could not do before.

Recently we have listened to the educators who have proclaimed the major purpose of education to be problem solving and decision making. These people have looked at the earlier efforts and have tried to make sense of both program instruction and concepts by combining the branching programs and recognizing that concept development is prerequisite but not to be equated with decision making. They note that concepts are essential in formulating principles and these principles enable us to deal with problems. The branched program approach permits us to look carefully at prerequisites for new learning.

Some of our colleagues who have been frustrated over the notion that objectives must be stated in precise terms have turned to objectives which they call process objectives. These objectives may not be too different from the terminal objectives expressed by some of the behavioralists. However, the process objective educators that certain kinds of educational development are long term, and often life long efforts. In science for example, ability to analyze data is not something you have or do not have. In citizenship, participation in local government is not a thing we can do or cannot do. Appreciation of literature is not a you have or do not have kind of thing, but something that we hope will develop over a life span.

In the three major projects that my office is supporting in objective identification in science, social sciences, and language arts, the project investigators have approached their task by identifying a few long range goals (process objectives). They have proceeded from there to identify behaviors that will show progress toward the process goal.

As a result we are now completing a matrix of process and behavioral objectives, which I believe will satisfy both the critics and supporters of behavioral objectives.

Another concern of mine is the interrelationship of objectives of different types. In vocational education for example, we have talked about the blending of academic and vocational. I would rather state this concern in different terms. We have identified three principle domains of knowledge--psychomotor, cognitive, and affective. People often think that we can just say that we ought to bring about an effective blending and it will happen. I believe that blending the three domains of knowledge is one of the most complex problems facing educators today. Much research, hard thinking and development are required to effectively deal with this problem.

Lastly, we have humanistic educators. They believe that the concern for each

learner as a human being is more important than the objectives sought for or the subject matter taught. Educators with this orientation have often felt threatened by the narrowness of other educators who misuse performance objectives and utilize inhuman management strategies. They are disconcerted when they hear other educational leaders proposing that students learn alone with a big dehumanizing computer monitoring and directing by numbers the individual's progress toward insignificant goals.

It is my belief that we are approaching the level of sophistication so that in the next five years we can effectively combine process objectives, performance objectives, and problem solving capabilities which integrate the three domains of knowledge in a humanistic educational program. We can provide education that is relevant to the vocational, citizenship and personal goals of all students. We can provide an education that will equip each student for his role as a worker, citizen, and self-fulfilling individual.

Procedures

To accomplish this means much research, hard headed thinking and evaluation. We must continually reassess jobs, citizenship, and self-fulfilling needs of learners under a variety of personal and societal conditions. This must be done in the context of the three domains of knowledge. From this assessment of needs we must design and continually redesign process or life long goals which will be translated into a set of behavioral or performance objectives as indications of progress toward the process goals. These behavioral performance objectives developed through the branching technique must be ordered in a way that is most relevant for each learner. Having selected the objectives, learning experiences which will accomplish the objectives must be selected, multi-media approaches must be identified, and appropriate evaluation measures designed. All of this must be managed in the classroom in a way that maximizes the humanistic process. Having conceptualized the nature of the learner needs and having identified the kind of materials that will meet the individual needs of students, management objectives need to be planned and packaged for curriculum developers, classroom teachers and administrators.

These are monumental tasks and perhaps we at the present time have only the knowledge to go part way. You people assembled for this conference are here to work on this problem. I wish you success in the tremendous task that you have chosen for yourself.

NEED FOR PERFORMANCE OBJECTIVES IN PLANNING AND EVALUATION

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NEED FOR PERFORMANCE OBJECTIVES IN PLANNING AND EVALUATING

All of us have had some experience in stating objectives. We definitely have a challenge in the years ahead to have a better understanding of our respective responsibilities in carrying out the State Program of Vocational Education and then getting ourselves appropriately organized to accomplish this end. In talking about performance objectives and in attempting to state performance objectives we can come to realize the importance of objectives. I have been told, and at this minute I believe, that objectives do not exist in the absence of a situation. We must have an understanding of the situation and we should have certain beliefs about the situation as it exists. It is in our attempt to improve the situation that objectives become important.

One of the important things that each of us must be concerned about is "What is the situation?" "What is my specific responsibility in the situation?" It is in our attempt to improve the situation that objectives become important. So one of the important things that each of us must consider is "What is the situation?" "What is my specific responsibility in that situation?" We must clarify our situation so that we will be in a position to have a meaningful experience in the formulation of performance objectives. We must have a certain amount of background information if our efforts are going to be meaningful.

Basically we are charged with the responsibility of developing a program of vocational education that matches people with jobs. We are concerned about all people who are educable and trainable who hopefully have a place in the world of work. Our job is to help them in light of their interests, their needs, and their capabilities and prepare them for their rightful place in the world of work. Only then can they make their appropriate contribution in the production of goods and services that we will have. To the extent that we are able to help them, these people, as a result of their productivity, will be able to share in the good things that society has to offer. In the final analysis, the thing that we are concerned about is the development of programs, services, and activities that will address themselves to the interests, needs, and capabilities of people who are preparing themselves for the world of work.

We help people through the development of educational resources. Now then, if we understand the purpose of vocational education as supported by the federal vocational education act "to assist the states to maintain, extend, and improve existing programs of vocational education, to develop new programs of vocational education, and to provide part-time employment for youths who need the earnings from such employment to continue their vocational training on a full-time basis, so that persons of all ages in all communities of the State--those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, those with special educational handicaps, and those in postsecondary schools--will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training."

This statement of purpose is rather broad and inclusive, but it is our job. We, as leaders of the program of vocational education in Kentucky, need to conceptualize the kind of program that we want to have in Kentucky. That means that we need to develop certain kinds of understanding about the programs and that we need to establish certain kinds of beliefs regarding it. In light of our understanding, and in light of our beliefs, we ought to be in a position to do an effective job of developing performance objectives.

What kind of results do we expect to secure from our efforts? How are we going to be able to know that we have attained those kind of results? In the process, we should be getting the kind of evidence we need to be able to say whether our programs are effective or not. If they are effective we should keep on doing the things that are effective. If they are not, then we ought to have the kind of evidence that we need to recycle back into our planning and developing operation so that we can improve our efforts and improve our programs so that we are better able to serve the people.

The things that make this kind of a meeting important is that we are hearing more and more of the word accountability. It will be worn out, then there will be another one. There is a saying that we need to be accountable for what we do. I think it is important that we re-examine the situation that we are in individually. If we are not clear on the responsibility that we have, I believe that this kind of an exercise will enable us to get clear because one of the things we should do is define our role. What role am I to play? I need to have that clearly conceptualized. What kind of results do I hope to obtain in my position? If you are an administrator, a supervisor, a coordinator, or whatever you may be, you yourself need to have performance objectives. You need to attain a certain kind of result that indicates that you have measured up to expectations.

In most cases, you will be in a position to help other people. In the final analysis, we are getting down to the place where we are preparing people for the world of work. The whole business is tied to this thing called teaching-learning. We are concerned about the learner. It was indicated last night we were concerned about the cognitive, affective, and psychomotor domains as we attempt to develop performance objectives. If the learner is to be adequately prepared for the world of work, we must be concerned about the attitude of the learner, the understanding of the learner, the skills that the learner has acquired; all the things that make the learner more employable.

I have said these things to indicate that we have an important job to do if we are to be in a position to provide the leadership that is needed in this state. I am going to close my remarks by relating to a paper that was presented in a meeting in Columbus, Ohio, two weeks ago by Dr. Leon Minear, who specifically indicates the importance of the task that we are undertaking. Because we are not in a vacuum, we are in a situation where we will be relating to the people at the federal level on the one hand and to the people in the regions and the local school districts on the other hand. What they do and what orientation they have in carrying out their responsibilities will have a lot to do with what we need to do as we become more appropriately oriented to carry out our responsibilities.

As you know, we are to develop an annual and a long range plan indicating what we are to do in this state to satisfy the occupational education needs of the people. We are supposed to have a State Plan, we are supposed to have a regional plan, and a local plan. One thing that you will find in those plans is a statement of objectives. One thing that you will hear more and more about is how well are those objectives stated? How realistic are those objectives and how explicit are they in terms of being measurable so that we can know very clearly when we have reached them, or have not reached them. We ourselves need to be organized so that we can do a better job of stating our objectives at the state level, regional, and local level; so that we can, in effect, use those objectives as a basis for developing programs, services, and activities that are needed by all people in all parts of the state who are in need of occupational education.

We have built into our program, through the passage of the 1968 Amendments, the establishment of a National Advisory Council of Vocational Education and the establishment of a State Advisory Council on Vocational Education. One of the major responsibilities of each of the two councils is to take a look at the programs of vocational education annually, to take a look at the world of work, and to determine whether vocational education is properly structured and carried out in an appropriate manner to be relevant to the needs of occupations in the world of work and be relevant to the interests, the concerns, the aptitudes of the people who are in need of occupational education.

The National Advisory Council, from a national point of view, is going to be looking at our state plans and our annual reports. They are going to be making a study of selected areas of our program for the purpose of trying to determine whether, on the one hand we are developing realistic, comprehensive, objectives, and whether, on the other hand we are doing anything about them in trying to carry out programs in the light of the objectives.

At the state level, the State Advisory Council has as one of its responsibilities to evaluate our state program each year. The State Advisory Council has completed its first year's evaluation. It has submitted its report. It is a sample of our state program. They have made several recommendations that I think are appropriate to the job that we have here. We need to be aware of that. We do not need to be aware of it as a threat; we need to be aware of it as another agency or another group who are providing an input into our program. Hopefully, they are taking an objective look at the job that we are doing and are trying to make recommendations that will enable a few people in positions of leadership to do a better job in providing the responses that are needed to develop the programs, services, and activities that are needed to serve the people.

I am getting back to the report that said that at the federal level they are going to operate in terms of objectives and are going to try to get organized so that they can manage programs in terms of objectives. Last night you heard the statement "management by objectives" and the speaker said that the concept was another situation altogether. I have a feeling that "management by objectives" is not something separate. I think it is part of the ballgame.

Management by objectives is another effort to bring accountability to play in the development of our program. So this paper says that for several years now, management in business and industries has operated successfully, by setting specific objectives and working to achieve them. This system has been known as management by objectives. The Department of Health, Education, and Welfare and its constituent agencies have adopted this system of management in recent months and they are going to be relating to the states in terms of this approach. The Department is now implementing management by objectives within its complex and varied programs.

Management by objectives, to be successful, is a highly structured enterprise. It is dependent upon setting worthwhile goals, designing useful objectives with precise and measurable action steps assigned to each objective, assigning adequate resources, and developing a responsible staff with sufficient time to assure completion of the desired objectives. These factors are, perhaps, the most essential factors in performance evaluation or accountability systems. Thus, management by objectives has come to vocational education. I have a feeling that it shall come at the federal level, it shall come at the state level, and it shall come at the local level.

The national goal for vocational education in the early 70's is to double the secondary enrollment in occupational programs, to offer at least some occupational work experience to all secondary students, and to reach a large number of elementary students through occupational information and exploration, even those enrolled in college preparatory programs. The demand for technicians is growing twice as fast as for any other occupational group. These demands must be met at least in part by expanding postsecondary occupational education. Up-grading and retraining adults, including more women, is to be provided to at least ten percent of our work force annually. The work force is estimated to be about 77 million by 1975. Responsibilities of federal, state, and local governments for vocational education are only a small part of the total educational responsibility and only a fraction of the total demand for all types of public service. It is the responsibility of administrative leaders at every level to develop programs which will benefit most greatly the growth of the national economy and the general welfare of the people; especially those with the greatest special needs.

Establishment of clearly defined, measurable objectives and management by objectives is a systematic way of assuring that priority goals and objectives are matched by high expectations and that strategies and resources are allocated and managed through the planning and budgeting processes to obtain the desired results. The operational planning system has five essential aspects:

1. Developing short-term objectives,
2. Developing operational plans to achieve the objectives,
3. Directing and coordinating the implementation of plans,
4. Receiving and evaluating information on progress and results, and
5. Following up with corrective action.

The attempt is to provide a framework to help assure that these aspects are regularly and effectively managed throughout the system or throughout the department. The operational planning system is intended to provide a framework for "results oriented" management.

The primary purpose of this system is to:

1. Communicate priorities and general strategies to all operating managers,
2. Require coordinators, headquarters, and regional planners to carry out priorities and perform other key functions effectively,
3. Enable top management and regional management to monitor and fulfill all of their plans,
4. Create an environment which encourages decision making in accordance with a pre-determined strategy, and
5. Strengthen line management within the agencies and regions by holding line management accountable for specific results.

This system is not designed to encompass all activities. Rather it attempts to direct management action toward selected priorities and other key activities. The emphasis is on fostering change and bringing the essential services closer to the intended recipients rather than merely carrying on operations as usual.

There is a great concern about the kind of job that we do in planning, in setting our priorities, in allocating our resources, and in evaluating a job that is being done. Objectives are needed to determine whether or not we are carrying out our objectives as specified and to determine whether or not we are getting the kind of results that we ought to be getting. If we are, we should continue the good work; if we are not, we should be prepared to make changes in our programs so that our program is better planned to meet the needs of the people.

There is a great need for us to get the kind of understanding that we ought to have about vocational education as it is designed to serve the needs of the people. We need to examine our beliefs and make sure that we are prepared to translate the needs of the people into programs, services, and activities that are needed. If we get prepared to do that, I think that we will be in a position to provide the kind of leadership that is needed in the state of Kentucky to develop the kind of program that is expected of us in the years ahead.

RELATIONSHIP OF PERFORMANCE OBJECTIVES TO PROGRAMS CURRICULUM, AND INSTRUCTION

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Relationship of Performance Objectives to Programs, Curriculum, and Instruction

Here in the United States since the inception of the ideal of free public schooling, our educational system has been a dynamic one. Changes in programs, objectives, methods of teaching, and new emphasis have been a constant part of a growing institution. The work of Mann and Barnard in teacher education, the development of the ideal of progressive education, by John Dewey, the influence of standardized testing after World War I, and--more recently--the influences of Piaget and Montessori--have been a part of this dynamic change. In all of this change, we have made a lot of mistakes; but along with the mistakes, we have made immense progress.

Being the public institution about which people think they have the most knowledge, we have been subject to criticism from every direction. During the 1950's and 60's the criticism of what we were doing came from conservatives who argued that we needed to teach more subject matter and provide for more cognitive growth. Now, as we move into a new decade, the criticism seems to be coming from the more liberal elements of our society. They argue that we have gone too far in cognitive development and need to give more attention to the affective domain. Indeed, Charles E. Silberman's new Crisis in the Classroom, the result of his three-and-a-half-year Carnegie Corporation study, seems to be the opening blow in an effort to bring about more affective change in the schools. Though Silberman's book is a crestomathy of criticism, he seems to center these criticisms around our emphasis on isolated and arbitrary acquisition of subject matter material.

Now, how do performance objectives fit into all of this? Particularly how do performance objectives relate to the curriculum in the larger social context? The highly propulsive situation we find ourselves in today demands that we reevaluate not only our methods but our very goals. We must redefine those objectives we professed to be vital in the process of educating young people. Those who advocate the use of behavioral objectives suggest that we must reassess what we are doing in terms of behavior or performance which can be observed and which will build understandings and skills that are necessarily desirable. These short range aims are more commonly known as behavioral or performance objectives.

There may exist at this point some sematic differences or problems. So, whether we use behavioral objectives, performance objectives, or--as Mager calls them--educational objectives, perhaps we can agree on a definition. Our definition would specify that an objective state: 1) the student behavior that is desired, 2) the conditions under which the behavior will be exhibited, and 3) the level of performance required.

Some may be apprehensive of the term "behavioral objective" because they read into it a stronger identification with behavioral psychologists than actually exists. We need not fall into this snare, nor do we need to fall into

the snare of those who argue that without behavioral objectives we do not have a proper foundation for a system of public education. We can admit that performance objectives have an important function within the system and at the same time not argue that those systems which fail to use performance objectives are entirely without a philosophical and educational base.

It is unfair to suggest that only those educators who developed the notion of behavioral objectives in the 1960's were interested in the clear definition of educational objectives. Those of us who are doing work today should give credit to the past, I think, and admit that a large part of our stock-in-trade are ideas rescued from the cobwebs of the past. This shouldn't worry us too much because nobody seems to ever read about what happened in the past anyway. We stick new labels on new ideas. This is, invariably, the habit of people who trade in ideas. This is necessary I suppose. Thinkers are seldom able to get up enough wind for a full day of work. If they should decide to work at their stock-in-trade, the blasted telephone or the bureaucracy would prevent them from doing very much. Furthermore, in addition to having our educational system mitigating against him, the man who thinks is generally considered to be a vain troublemaker and society tries to reduce him to the level of a silent-majority-type "patriot" and unquestioning taxpayer. So most of those who think rescue a few ideas from the limbo of the past, steal a few from fellow living creatures, and--hopefully--come out with a few ideas that are occasionally novel and thought-provoking.

This is what people who developed behavioral objectives did; in my judgment they took what a lot of curriculum specialists had been saying for many years about clearly defining objectives and became serious about it. They said that if our schools do have objectives, then we ought to be able to identify them, state them and work toward their specific implementation. By doing so, they suggested, we would aid curriculum planning, promote increased pupil achievement, and improve the techniques and skills of program evaluation (McAshan). Without clearly stated and specific objectives unique to a content area or educational project, a teacher, researcher, or curriculum specialist cannot know what to do, how to do it, or when the goal has been accomplished. To suggest that behavioral objectives developed by educational specialists are necessary does not mean that we must abandon input from the public and ignore things like state accreditation standards. Indeed, it is precisely sources of this sort that we must depend upon for developing our specific objectives. A dichotomy does not and cannot exist between professional educators and the will of the public simply because of the development of behavioral objectives. The educator must now, as in the past, develop means for assessing public needs in education and translating them into specific objectives. If we really believe in democracy, the people must continue to be our repository of aims and objectives for the schools. And we, the educators, must continue to translate these aims and objectives into precise and obtainable goals.

It is in the context of this last statement that we must look at the relationship between behavioral objectives and the instructional program. Ronald Anderson stated in 1967 that "without well stated objectives there is no basis for making any judgment as to whether or not the program has achieved the desired goals." The recognized leader in advocating the use of behavioral objectives, James Popham, has, if I read him correctly, suggested that it is virtually impossible to pursue a reasonable curriculum development project without behavioral objectives.

Jim Rath, of the University of Maryland, is not so enthusiastic about behavioral objectives. In a paper presented at the February, 1968, meeting of the American Educational Research Association, he stated "that the specificity now being demanded of curriculum workers and teachers in the writing of behavioral objectives runs contrary to their values of humanism and intellectualism." Others have suggested that behavioral objectives are just another effort on the part of college professors and curriculum specialists to complicate the task of teaching and make it appear more precise than it really is. According to these critics, behavioral objectives tend to make the teacher more subject matter conscious. Thus, the teacher tends to over emphasize the cognitive development of her students, often ignoring the affective growth so necessary in our society. In addition, the critics often suggest that the use of behavioral objectives encourages cognitive development at its lowest possible level.

What of these charges? Is it true that behavioral objectives do mitigate against good teaching? To really obtain maximum effectiveness with instructional methods, one must begin with a basic understanding of the taxonomy of educational objectives and their relationship to the curriculum. Only a brief statement will be necessary from me since Dr. Uthe will be considering this later in more detail. Suffice it to say at the moment, there are three domains--the psychomotor domain, the cognitive domain, and the affective domain.

First let's give our attention to the psychomotor domain involving the auditory, physical, or manual skills that lend themselves so readily to performance objectives. Determining desirable student behaviors, the conditions of their exhibition, and the level of their performance is easily done in the psychomotor domain. For example, one can easily evaluate whether a student can play without error a B scale on his clarinet within three weeks after taking lessons. Or, one could evaluate a young lady's ability to bake a tasty spice cake from scratch, even though failure may prove somewhat a strain on the taste buds. A little tougher challenge to the teacher comes in deciding that it is precisely a perfectly executed B scale which will contribute toward competence with Handel's "Water Music" or that a tasty spice cake will develop expertise with a three-course gourmet meal. And, even more difficult, is the question of whether these culinary skills will provide a compatible husband or keep a marriage off the rocks. Perhaps some cognition is desired here.

The cognitive domain with its thought-building process calls for more intense preparation and performance objectives can play an important role. The recall of facts, the ability to interpret and apply knowledge may be approached objectively with performance standards. Knowing the dates of the Civil War, who invented the light bulb, or the difference between styles of typed letters is a directly observable occurence. The problem becomes a little complicated however, when one comes to synthesizing and making valid value judgments. The higher the level of thought involved, the more difficult to write behavioral objectives for it. It is very difficult to apply such objectives to higher cognitive processes.

The affective domain presents an even more complex problem. It is concerned with the emotional impulses and responses which lead to value building. We all know that one's being able to recite facts about water and air pollution does not necessarily imply that he is personally involved with the problems and the

solutions of them. The aesthetic values inherent in music or art are not developed by forcing preferences according to some pre-established codes of "good" and "bad." Although there may be some simple behaviors which indicate development in the affective domain, as a whole it does not lend itself to observable behavioral actions.

What, then, can we conclude about the use of behavioral objectives in instruction? Must we throw them out "en masse" because we cannot set up a total educational system on them? Certainly not. It is possible to have two views: behavioral objectives are good for some things, and for others we must find other evaluative methods. For psychomotor skills and cognitive development, which lend themselves so clearly to performance oriented tasks, skills, and understandings, let us be specific and precise in our application of evaluating the students and the curriculum. And, let us modify our goals according to the level of achievement of the student, so that our instruction is not static. Having once established desirable behaviors, let us not insist that every group must so achieve, but use these results as an indicator of the level of achievement and begin expectations at that point.

Moving from the instructional role to an overall consideration of the curriculum, it seems to me that one must admit right off that it is not practical to use performance criteria or behavioral objectives as the foundation of our educational system. To substantiate this further, I think one only need consider the futility of establishing in any practical sense behavioral objectives for the areas in the affective domain and the higher levels of the cognitive domain. Whatever criteria are set up to achieve the concept of critical thinking, for example, will fall short of those behavioral instances which demonstrate that the students are, indeed, thinking critically; that is, there will be some students thinking critically who do not meet our criteria and similarly some who are meeting the criteria but who are not thinking critically.

Having once admitted that we do not need to incorporate behavioral objectives in every aspect of an instructional program, we can then go about the application of principles of behavioral objectives when they are most useful and workable. There has been some talk about the "student-centered curriculum." This, to me, seems parallel or at least adaptable to the idea of employing performance or behavioral objectives. Bruce Tuckman, of Rutgers University, postulates that in considering a student-centered curriculum,

> a curriculum must be defined in terms of students' educational needs, in terms of the psychological structure and educational experiences of students. Learning of the concrete must precede learning of the abstract. Learning can be maximized by controlling the sequence toward some goal, locating the student in that sequence and combining sequences that are psychologically similar. Learning is most meaningful when a person learns through interaction with his environment. To construct a student-centered curriculum, the curriculum must be vocationalized; it must be developed and analyzed sequencially on the basis of behavioral objectives and psychological characteristics. ... and the learning environment should be structured

to maximize the probability of learning through participation.

Perhaps the larger issue about using performance objectives is not how to state something behaviorally, but, rather, what we want in light of why we want it. Sophomore English provides the opportunity for memorizing Anthony's funeral oration from Julius Caesar. This is a good, measurable behavioral objective. But the question I raise is: why memorize it? Is our emphasis on behavioral objectives making education more simplistic? Does not this perpetuate the dull, repressive schools for which we are being critized?

In the field of vocational education it is easy to measure whether a student has memorized the steps followed in checking an ignition system in an automobile. It is also easy to measure whether he has achieved at the same level of students in an academic program in so far as his knowledge of the French and Indian War is concerned. However, is this what we want? Is academic ability or the ability to recall steps in a process what employers and, indeed, society expects of one of our graduates? Professor Christopher Jencks of the Harvard Graduate School of Education suggests that "despite much popular rhetoric, there is little evidence that academic competence is critically important to adults in most walks of life." If you ask employers why they won't hire drop-outs, for example, or why they promote certain kinds of people and not others, they seldom complain that drop-outs can't read. Instead, they complain that drop-outs don't get to work on time, can't be counted on to do a careful job, don't get along with others in the plant or office, can't be trusted to keep their hands out of the till and so on. Now, if you will, tell me how to write these things into behavioral objectives.

In other words, if behavioral objectives are designed solely to make people academically competent, perhaps we are aiming in the wrong direction. What we really need to be fostering is the development of self discipline and self respect, a genuine regard for other people, and some appreciation for and dedication to the living of a full and useful life. But, how does one observe these things? Are there any observable prerequisite tasks which we can employ? If so, we can utilize our knowledge about behavior to this extent.

Professor Robert Glaser, Director of the University of Pittsburgh's Learning Research Development Center, argues that we can develop behavioral objectives and even program material that will "provide people who are capable of doing new things, rather than repeating what other generations have done . . .people who can analyze and verify so that they do not readily accept available trends of thought . . . You tell me what values you want to teach, and I'll tell you the best technology for teaching it." I find myself disagreeing with Professor Glaser both viscerally and philosophically. He forgets, I think, what Marshall McLuhan points out to us: the medium is the message. And, when the medium is sterile, precise, and rigid, the message it gives is of the same nature.

The behaviorist view of education runs deeply in our system. Though developed by people who consider themselves to be most liberal, they have developed what Charles Silberman calls a rigidity of structure that implies there is only one right answer and only one route to it. In reality, it seems to me that

students need to learn the exact opposite: that there are many answers to most questions and that other questions may have no answers at all. Single causality and simplistic answers may be adequate for those who are politicians and those who are on quiz shows. However, our lives are far too complicated for us to settle for such simplistic thought. Professor Lee J. Cronbach, of the Stanford Research Development Center put it beautifully when he called a behaviorally oriented program a prescription for training and not for education.

Charles Silberman's discussion of Professor Cronbach's position is important:

> The distinction is important. In both education and training, goals are, or should be, specified; the difference lies in how the goals are related to the process of instruction itself. In training, the behavior to be produced is imbedded in the lesson itself: as Cronbach puts it, "the lesson is the thing." For as Glaser puts it, in a definition already quoted, "well-defined sequences of progressive, behaviorally defined objectives in various subject areas need to be established as guidelines for setting up a student's program of study. The student's achievement is defined by his position along this progression of advancement."

It is important for us to remember that a student's achievement or growth is defined by what he does--indeed by what he is--after he is out of school and becomes a participating member of society. Material in school is merely a vehicle through which a person develops the ability to reason, to learn, to analyze, to develop self confidence, to develop values, and to become a participating member of society. We might well remember an old adage suggesting that the important part of education is that which is remembered after the lessons are forgotten. Alfred North Whitehead put it another way when he said "your learning is useless to you till you have lost your textbooks, burnt your lecture notes, and forgotten the minutiae which you learned by heart for the examination."

In short, it appears to me that Silberman in his Crisis in the Classroom sums up the entire problem when he says: "Our most pressing educational problem, is short, is not how to increase the efficiency of the schools; it is how to create and maintain a humane society. A society whose schools are inhumane is not likely to be humane itself."

Behavioral objectives can make us all aware of what we are really doing. They can remind us of the fact that we all too often place our emphasis on minutiae, on form rather than substance. They can provide us a convenient and productive mechanism through which to organize on the psychomotor and cognitive levels. However, we must never view them as a panacea or, in my judgment, as a primary focus around which we can organize an educational program.

DERIVATION OF PERFORMANCE OBJECTIVES

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DERIVATION OF PERFORMANCE OBJECTIVES

Last evening, Dr. Pruitt discussed the Importance of Performance Objectives, and this morning we have listened to two of your own staff members discuss The Need for Performance Objectives in Planning and Evaluating, and The Relationship of Performance Objectives to Programs, Curriculum, and Instruction. These discussions have given us an excellent start for our weeks work and more particularly have given us a challenge to carry during the months and years ahead.

In their book, Developing Vocational Instruction, Mager and Beach specify five major activities related to objectives. They are: derivation, specification, selection, implementation, and assessment of objectives. They state that,

> The systematic development of instruction . . . involves detailed specifications of the desired result (in the form of a course graduate); development of an instrument by which successes can be measured; development of procedure, lessons, and materials designed to achieve the specified result; and steps to insure the continual improvement of course effectiveness.

Dr. Uthe and I are to discuss with you each of these items under the titles shown in your program, namely; (1) Derivation of Performance Objectives; (2) Specification of Performance Objectives; (3) Selection and Implementation of Performance Objectives; and (4) Assessing Performance Objectives. I feel it is desirable to review this much of the program with you so that we will recognize the relationship and continuity of these topics. Otherwise we might get ourselves off the track and dilute our efforts.

Also you will note that Dr. McKinney has secured a series of audio tapes and filmstrips which are scheduled in the program. These will supplement our discussions and we hope will help point up activities for our small group sessions. We will refer to these many times during the workshop. We are going to try to make applications of the ideas in these tape/filmstrip presentations to our work as supervisors and instructional materials specialists in vocational education.

Each one here will help accomplish the real task of the workshop through participation in the small group sessions. The presentations will help to "set the stage," but it will be up to each of us in our small group sessions to develop the objectives for our respective programs for the months and years ahead.

One other item of explanation regarding performance objectives is appropriate at this point, namely, that most of the literature I have found is related to purposes, development and use of objectives in classes--either vocational/technical, high school academic subjects or classes at the college level dealing with teacher preparation and other college level subjects. Since our group consists of supervisors, both regional and state, and the instructional materials specialists we need to consider what objectives we need to develop. What about objectives for a thorough, well organized and comprehensive program of in-service teacher education? What about performance objectives for those of us who work with youth organizations in our respective services? What about

stating objectives that we expect to reach or that we will try to get our teachers to reach during the next year?

We all have some very general goals toward which we hope to move, but we probably need to do a better job of making these specific enough so that at the end of a period of time we can measure exactly what has been accomplished. These are some of the areas we must address ourselves to during these few days, so we can go back to our respective assignments with plans for our contribution to the total program in terms of our own performance, as well as with ideas concerning the performance objectives vocational teachers should have for their students in high school and in vocational/technical schools.

Some people distinguish between "program objectives," and of course there is a difference. However I am not going to get into that here as I believe the distinction will become more apparent by the time Dr. Uthe has finished her first presentation. The distinction will need to be considered however as we consider objectives for ourselves and our teachers as compared with objectives teachers establish for their high school students.

During our preliminary discussions regarding the workshop, Dr. Uthe and I agreed to suggest some objectives for those of us who are directly engaged in teaching classes, but nevertheless are vitally concerned with the performance of those with whom we work - - - vocational teachers - - - school administrators, and local directors of vocational education and others. We will suggest some applications of the objectives - - - performance - - - evaluation sequence to the supervisory - - - management role. I expect you will be able to take the ideas much farther than we since you are familiar with the policies and practices in the state regarding vocational education programs.

I realize too, that there are aspects of your duties and responsibilities that we may not refer to, partly because we do not know them and partly because some aspects of your jobs may not be related directly to the problems we are discussing here this week.

Now let's get at the problem of "derivation of performance objectives." I would like to discuss some steps in their derivation that I believe we can use. I assume that Dr. Uthe will tell you that, "A statement of objectives should include, (a) <u>what</u> the learner is expected to be able to do at the time of graduating; (b) <u>how well</u> the behavior is expected to be performed and (c) <u>under what circumstances</u> he is expected to perform." - - - What, how well and under what circumstances the worker will perform.

Our task is to identify sources of information to enable us to write such objectives for our respective activities. I would like to suggest a few, some of which I have learned from the literature and some from experiences I have had. <u>Ask the worker</u>. (This item together with the next is labeled, "Task Analysis" by Mager and Beach.)

A complete listing of exactly what the worker does will give us a good idea of required performance from his point of view. This sounds fairly simple, but it is in fact quite complicated. One must do a thorough job of listing all the activities under each task included in the job. Some will be performed routinely - - - perhaps many times per day - - - others may be very important, but will be performed only once or twice each year.

Some activities will be obvious, while others may not be recognized as a necessary part of training unless we are alert to them. For example, it is obvious that an auto mechanic must be able to change spark plugs and points in an engine, but does he also write orders and reports of his work, answer the telephone, make service calls, or meet the customer?

What cognitive (intellectual) activities does he perform in his work? What affective behaviors (the attitudinal, emotional, valuing behaviors which are reflected by interests and appreciations, etc.) are involved in the performance of his job?

Can you make a detailed list of the activities required of you on your job? If you have such a list do you see some possibility to prepare a series of performance objectives which will help you evaluate how well you performed during the year?

Ask the supervisor

The worker may be able to tell us what he does. The supervisor should be able to tell us what and how the worker ought to perform. In this case many of the same cautions must be observed as for the responses by the worker.

To illustrate, I recently made a study in a city of another state in which I was asked to interview employers, business men, city officials, union representatives and others and to come up with a recommended vocational education program for the 70's and 80's. As I visited with personnel directors in industry and retail businesses, office managers and others, I would get typical responses regarding the skills required for the job, such as, "They must know how to type," or "how to make change," etc. But it took some prompting on my part to get a response regarding such things as "the effect on sales of the response of the telephone operator in the business," or "the effect on sales of the way the delivery boy makes deliveries."

Can you list the performance activities you expect of those with whom you work - - - your teachers - - - users of your instructional materials - - - your students? Can your supervisor list the specific performance activities expected of you on your job? In other words, how reliable would our responses be regarding "how the worker ought to perform," when we assume the role of supervisor?

Job Description

Mager and Beach state that, "A job description is a general statement about what a person does on the job, and tells something about the conditions under which he works." Such job descriptions will give us clues as to performance objectives which should be written for persons preparing for jobs in the same category.

At the risk of sounding negative, I want to point out that in some of our studies of agricultural business, we found that many firms did not have job descriptions of any kind. This complicated our task of developing teaching materials to help teachers with programs for students preparing for agribusiness careers.

During the same years I was serving on a state Trade and Technical Curriculum Committee in Michigan. I remarked to the trade and technical people from the metropolitan areas that they must have a relatively easy task since the industries in their areas must have very good job descriptions which would help them develop performance objectives and instructional materials. They hastened to point out that job descriptions were very difficult to use, since there is no uniformity of job descriptions between industries.

In spite of these negative comments there is no question but that job descriptions can be a great help when they are available, as we develop performance objectives for vocational students and for those with whom we are working. We may often use descriptions of our own jobs to help us decide whether we are getting our work properly done. One other observation should be made - - - I have run into some cases where job descriptions seemed to be "sacred" to the business. The only way I was allowed to use them was to agree not to let them out of my hands, and not to reveal source or identity of any of the material. This seems far fetched, but when these restrictions are imposed, we have no choice but honor the restrictions.

Advisory Councils

The use of advisory councils is an obvious method of securing information leading to the statement of performance objectives, - - - provided the council includes the knowledgeable people who are stimulated to really think through the objectives we should achieve. Let me cite examples to emphasize the importance of this point. (1) I attended a state advisory council meeting a number of years ago. One of the members was the president of one of the large automobile manufacturing concerns. The president said, "you send us, good, bright, reliable people and we will train them."

One of the business education staff members from the state office asked, "Does this mean that you will hire high school graduates as typists, even though they can't type, and you will do the training?" The president had to back down, but this illustrates the need to select the right advisory council members, and to insist that they think through their statements before allowing them to be recorded. We don't want "yes" men on our councils, but we do need men who can analyze needs for training and give us sound advice as to the needs of the business or industry.

(2) A second experience was one in which I worked with an advisory council in the preparation of a curriculum guide for one of the agricultural business fields. When we got to the work in salesmanship, the sales manager for one of the large grain and feed concerns of the country stressed the importance of objectives to train students in communications: - - - how to prepare charts; how to take pictures and prepare a slide presentation; how to speak to groups of people and present accurate information regarding a product; and how to set up attractive displays of merchandise. For most of the group, including me, he introduced a whole new area of material for which objectives needed to be prepared and instructional procedures developed. Regardless of where such a course was to be offered - - - in a business class; in an agricultural class; in the English department; or in some other place, the fact remained that objectives needed to be prepared and the training included as part of the total program for the agricultural business field which we were considering. These are areas of instruction for which many vocational students must be prepared, and areas

we cannot afford to ignore.

(3) On another occasion I was meeting with a state curriculum committee where we were discussing vocational education needs. I contended that there are many places in business and industry where knowledge in business plus knowledge and ability in a specialized field like agriculture or trades or home economics is needed. One of the business education men disagreed. His contention was that, "business and distributive education could teach the principles and the graduate could apply them any place." After the session broke up, an executive from Oldsmobile who had been in the meeting came to me and said he agreed with me. He said, "our sales people in the wheat country in the west had better know how farmers get their money and therefore how to extend credit to them." Perhaps this is going a little too far, but it does indicate that industry people will come up with support when they have an opportunity to think through the whole problem. At the same time they will propose many excellent ideas if we give them a chance.

Target Population

"The substance of the course is derived by subtracting what the student already is able to do from what you want him to be able to do." If this is an acceptable statement to be considered as we derive objectives, then it is clear that we must know something of our students or those with whom we are working at the time they come to us. At this point I may deviate somewhat from the present assignment. If I do, I will try to point out relevance to our topic and if I fail to point out the relationships as I see them, I hope you will raise questions during the question period.

What do we need to know about target population? We will consider some of the items I feel are important. You will be able to add others.

a. Physical characteristics

We will need to consider physical characteristics of those we are training. Even though we cannot discriminate in terms of sex, there are undoubtedly some jobs for which women are better adapted than men, and there are some which men will be better able to handle.

Some jobs are performed under conditions that require the worker to be free from allergies, or to have unusual physical coordination, greater than usual physical strength, and the like. For some high school and vocational/technical school students physical maturity will be a factor to consider when establishing objectives and developing teaching materials and laboratory or work experience activities.

b. Education

We need to know the actual education level of our target population as we prepare the performance objectives we will expect of them in our program, and particularly as we plan the prerequisite tasks which will be required of the students. (more of this later.) We may have some students who are quite advanced in the performance of some skills which are essential. It would be a serious mistake to expect these students to repeat these experiences in the class.

On the other hand, they must be included in the objectives for another student who cannot meet the necessary performance level in this respect.

As an example, when I worked on the survey and recommendations for vocational programs, the Human Relations Director, employed by the city, in response to a question concerning need for vocational education said, "You know, many of our young people have such poor preparation in arithmetic in the fifth and sixth grades that they can't handle vocational programs in high school.

As we derive vocational performance objectives, we must be aware of this kind of problem and will then need to decide what to do about it. Some of the possible alternatives are suggested in the following.

(1) We can screen out those who do not meet specified entrance requirements. This procedure may have very serious consequences, nevertheless it is often used. (2) We can adjust our performance objectives to the level of these students. This may mean adding some objectives for these students and allowing more time for them to complete the program. It may mean providing remedial work, or some other device. In any case, however, we must be sure to set objectives which, when reached will have the student ready for employment. (3) We can inaugurate programs to help teachers in the school system to make their programs more relevant to meeting vocational entrance standards. I wonder if this represents one of the areas where we need to set performance objectives for ourselves. Can we establish and accept performance objectives which will cause us to either help teachers, or cause us individually to establish such programs in the schools with which we work?

We could dwell on this point for a long time, but let me simply illustrate the point with one or two examples. In the case of the fifth and sixth grade pupils who did not get enough arithmetic to qualify for a high school vocational program, should the vocational teachers and supervisors in that school system try to help the teachers in the elementary grades, to relate the arithmetic to vocational preparation? Should we help these teachers understand rather specifically where arithmetic is used by high school vocational students - - - in trades - - - in home economics - - - in business and distributive - - - in agriculture - - - in health occupations, etc?

In the case of communications problems, perhaps we need to inaugurate a program for the English and Communications teachers in the state in which we would enlist their help in training students for employment by teaching them how to prepare illustrated presentations; how to prepare reports related to their respective career goals; how to prepare displays and demonstrations; and and how to use radio, television, films and the like in communications programs. We can individualize our instructional programs. This would require us to establish performance objectives for each individual in the group, based on his background, and ability and other characteristics.

Perhaps for us on our jobs, it means that we establish performance objectives for those with whom we work on an individualized basis. Also as we establish personal performance objectives which we expect to reach during the next year, or two, or three, will we accept only those prepared for a particular level, or will we establish performance objectives on an individual basis? For example, each of our vocational services will probably list performance objectives dealing with a corresponding youth organization. Will every member of the staff be expected

to meet the performance objective standards specified in each objective, or will each staff member prepare supplementary performance objectives for himself which will help to meet the standards set by the overall objectives of the total staff?

In connection with this point, let me raise a question with you about developing performance objectives within your own staff as to what those with whom you work will be expected to accomplish this year. It may be presumptious of me to try to suggest practical performance objectives, but let us examine a possible procedure, using an illustration.

We could ask our advisory council; associations of business men such as the state automobile dealers association; the farm machinery dealers association; the retail merchants association and others together with some individual business men, what is their need for trained personnel. By identifying the areas in which there is a shortage of trained personnel, we could decide to concentrate our efforts with teachers and school administrators to increase enrollments in these fields and to assist teachers to develop training programs to prepare students for the specific jobs that are available now.

So far as the state, or regional, supervisory staff is concerned, it seems to me they would then come up with several performance objectives, indicating what they will do to get the training job done. Some of these would specify in detail what they will do, and some will specify what they expect teachers will be able to do after supervisors have launched the program with them.

This is equivalent to the procedures suggested for teachers. We make a task analysis; we ask advisory councils and others; we analyze needs and then develop performance objectives which, when accomplished will have enabled us to reach our goal.

c. Motivation

A third consideration of the target population is that of motivation. We still hear of students being sent to vocational programs, because they are "not college material." When this happens we will have students in our programs that see no reason for being there. They certainly will not be highly motivated. I even found some of this in my work on the survey for vocational program. The city had several very distinct ethnic groups --- Italian, German, Puerto Rican, etc. There was a tendency on the part of some school people to catagorize them in terms of ethnic origin rather than in terms of ability, interest or other factors. Obviously students feel discrimination in terms of race, color, sex and many other factors, these affect the degree of motivation among students.

I suspect similar degrees of motivation exist among the teachers, school administrators, and agricultural, business and industrial people with whom we work. These factors will require that we adjust performance objectives -- and teaching methods and materials - - - to the degree of motivation that exists, or that we can develop.

d. Interests

Interests of students, as well as of those with whom we are working, will also affect the performance objectives we establish. I assume that interest is closely associated with motivation. However there are cases in which an individual, or a group is highly motivated to do something by external pressures, yet may be only mildly interested in the project.

Examples in our field might be pressure from a business or industry to establish a certain program. We might be motivated through many external pressures such as offers of equipment, assistance by personnel, money, and others - - - yet we might not be much interested. If we considered preparing a performance objective along this line, it would obviously be modified by our interest, or lack of it.

5. Attitudes, biases, prejudices

These factors will also influence the kind of performance objectives we will establish. We could spend the week identifying the many different attitudes, biases and prejudices we will find among people with whom we work.

Teachers will have biases regarding some of the content that should be taught in their respective areas. Some teachers will have more positive attitudes toward one race or one nationality as compared with another. These attitudes will affect our success in meeting objectives for themselves and their students.

Before concluding this paper, I would like to express more of my concerns regarding derivation of performance objectives. I may have hinted at some of these in this presentation, but I think it is important that they be brought out and specifically presented.

1. As we develop performance objectives, I feel we should consider, as accurately as possible, what our graduates will be expected to do when they are employed after graduation - - - one, two or three years in the future - - - even more for professional people in vocational programs.

We need to ask present workers what they do, and supervisors, how workers should perform. We must consult advisory councils and consider all the factors they offer. But in addition, I feel we must include in our sources, the most accurate and complete information possible about "what is coming up," in terms of performance, in the relatively near future.

Some advisory council members can help us with this, particularly as the problem applies to vocational occupational preparation. Equally important is the necessity for professional workers such as are represented here, to be "out in front in our training programs" with new performance objectives to prepare ourselves and our trainees for new innovations that we must learn to use.

In line with this idea we need to examine our own programs to see if we can discover "what is coming up" for us and for our teachers. For example, I am convinced that in some vocational areas, such as Office and Distributive education programs, we are going to do much more with simulation as a device for teaching. We are going to do much more with individualized instruction and we will some day see much more integration of vocational programs and of vocational programs with acedemic education, both in high school and in the

vocational/technical schools.

I would challenge you in your respective staffs to look at these and other developments and to prepare your performance objectives to get you ready to use them.

2. I feel we must be alert to some of the responses we get from advisory council members. Some of these people have had experience only with people they hired "off the street" for entry jobs in their businesses. They have no idea what a trained person can do for them as compared with one who is untrained. This is not to discount the advice and suggestions we get from advisory council members, but it does indicate the need for us to weigh the evidence very carefully as we establish objectives.

3. We have a great variation among our students and among individuals in any of the groups with which we work. As we derive objectives at any level, I feel that we need to recognize the necessity for individualizing objectives. This does not preclude the necessity for a teacher, or a supervisor establishing performance objectives for the group, but within the group each individual should have a set of performance objectives which are designed for him and which he expects to reach.

An additional aspect of this point includes involving the individual with the formulation and the acceptance of objectives. This is particularly important for the objectives that pertain to the individual student or for the individual teacher. I believe he should have an active part in formulating these and in checking when they are accomplished.

As an example, in the school where I am currently employed, we are making plans to find out from each student, "where he is" when he enters and then go over with him what is required in the job he wants to prepare for and to list with him the objectives he will try to reach that will prepare him for the job. In other words each student will have his own set of objectives and, for the most part, the objectives for each student in a class will be different. I want to emphasize the idea that the student must help formulate and accept the objectives which he will try to reach. To an even greater degree I believe each one of us should formulate our own performance objectives and evaluate "how well we did" at the end of the year.

4. My fourth concern is one of possible omission. As we drive objectives from the sources we have discussed here, I am concerned that we do not miss some that are essential for best possible performance. some of these may be classed as character traits, such as reliability, honesty, punctuality, and the like. Others are dependent on the completeness of our determination of "what the worker does." What contribution does the worker need to make to the functions of the institution, beyond his immediate assignment? Is training an accomplishment of these contributions included in our analysis of what is involved in the job and in the performance objectives we will develop as a result of the analysis? Looking at ourselves let us ask, "what contributions are we making to a real forward looking, out in front kind of vocational education program for our state." Are the suggestions and recommendations we make for vocational education based on "what is coming up," or are they steeped in traditional "behind the times practices that are irrelevant to the present and to the future." My experiences in your state lead me to believe the former is correct - - - let's keep it that way.

In conclusion, we have discussed some of the methods and materials we can use as a basis for formulating performance objectives. In the past, much of the consideration of performance objectives has dealt with objectives we expect our high school and vocational/technical students to reach. What performance objectives will you prescribe for yourself for the year? What changes in the vocational programs of the state will you include in your set of objectives for the year? What sources will you use as a basis for deriving the objectives you prescribe?

As we move into our small group meetings this afternoon, I suggest that each of you make a list of "what you will do in your job" and "what you expect of those with whom you work." Later you can use these lists to formulate performance objectives for yourselves, for your staff, and for the teachers and others with whom you work.

SPECIFICATION OF PERFORMANCE OBJECTIVES

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Paper Presented at the
Workshop on
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SPECIFICATION OF PERFORMANCE OBJECTIVES

Discussions about performance objectives can take many roads--and often do. Therefore, we will find it necessary in the short time allotted to this workshop to limit ourselves to certain topics and activities and to provide you with references and sources of additional information.

We will deal with two methods of specifying performance objectives at this time: (1) by classification and hierarchy, and (2) by precision in writing.

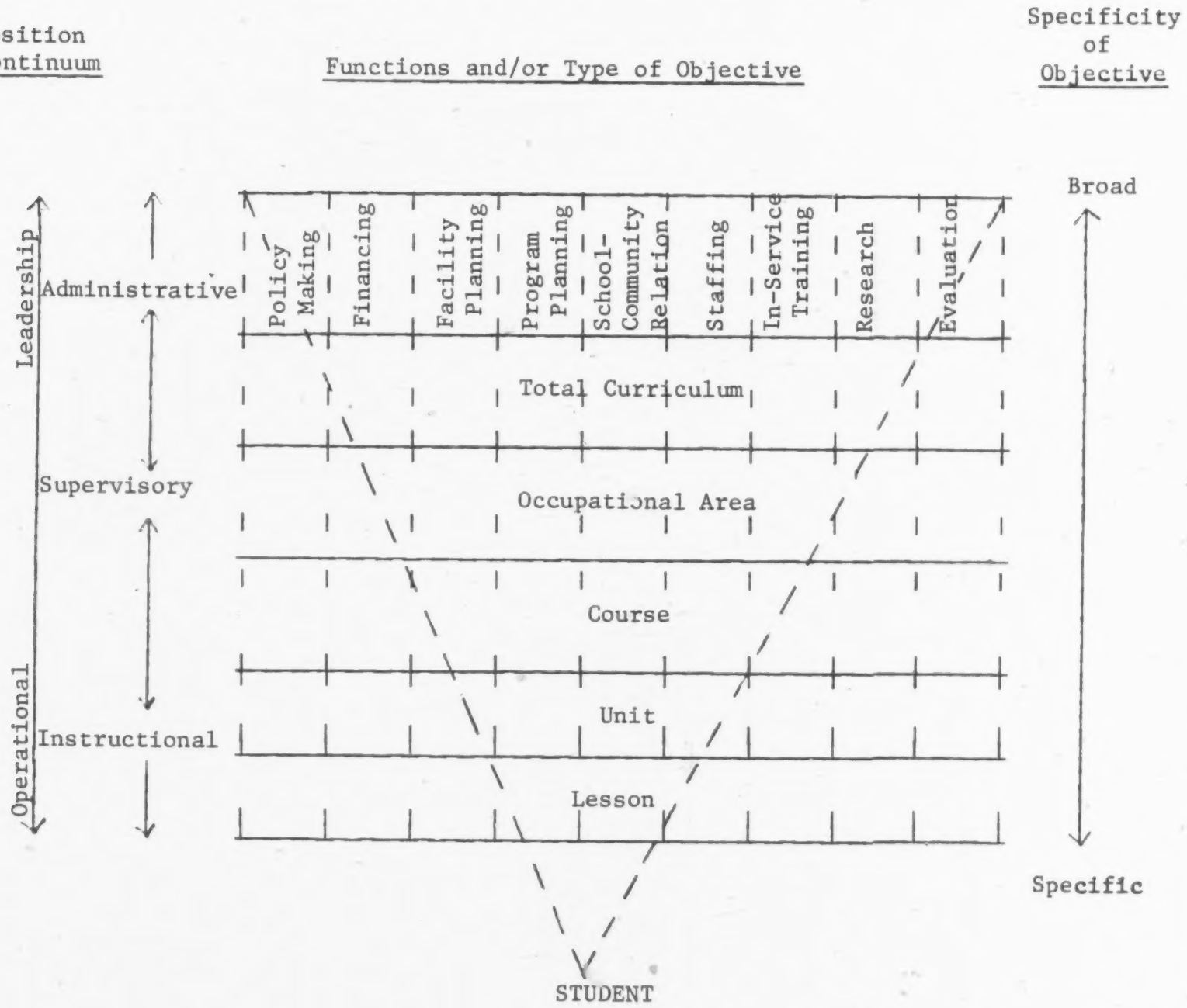
The specification of performance objectives is not an isolated function. The specification will depend on the person who is writing the objectives; it will depend on the situation. To reinforce what Dr. Clark said earlier, we must look at the position of the user and the major functions of that person--whether he is the student or the instructor, the supervisor, a consultant, or an administrator. Ultimately, however, the focal point in all educators' jobs rests with the student at the training level.

The instructional person is concerned with performance objectives related to student performance in the classroom or learning situation, and the filmstrips and many of our illustrations are directly related to this function. The supervisory person is concerned with the program development objectives dealing with performance of the teachers who deal with students. The administrative person is concerned with objectives relating to the developing and maintaining of the environment in which the supervisors and instructors are effective in producing student learning. I do not mean that one level is more important than another nor that each level is not concerned with the responsibilities of the other levels. But each level has a different set of responsibilities for the varying functions. For example, the administrator is more concerned with performance objectives in relation to providing vocationally trained and certified teachers for programs than with concern for performance objectives for a daily lesson within that classroom as the teacher is.

Therefore, in specifying performance objectives we must consider the user's position and his responsibilities. Consequently, we asked you in the last group session to list your functions, duties, and responsibilities. We will expect you to use these descriptions for ideas as we progress through the remainder of the small group sessions. As you also noted from Unit I of the filmstrip series, your job description was insufficient if you simply stated "I teach"--however, such statements really do depend on the circumstances. If you are at a strictly social function, the simple statement "I am a vocational educator" could be sufficient.

Illustration 1 provides a pictorial representation of the types of educational positions and their functional aspects that are of concern to us. Across the broad area at the top of the diamond are the major functions of the administrative person: policy making, school-community relations, program planning, evaluating, financing, facility planning, staffing, in-service training, and research. Moving vertically from the broad top of the diamond to the sharp point at the bottom, we see the types of objectives possible: from program development objectives, curriculum objectives, course objectives, and unit objectives to daily lesson objectives. At the left

are the administrative, supervisory, and instructional positions as they are spread across a continuum of operational duties.



TAXONOMY OF EDUCATIONAL OBJECTIVES (adapted from Bloom, et al) AFFECTIVE DOMAIN

Level	Title	Definition/Description	Example
Low	1. Receiving	Be conscious of, take into account a situation, a phenomenon, object, or stage of affairs. Simple awareness without specific discrimination or recognition of the objective characteristics of the object. May not be able to verbalize about this awareness.	Develops awareness of aesthetic factors in dress. Develops some consciousness of color, form, or arrangement of objects. (Willingness to receive, controlled or selected attention)
Medium	2. Responding	Actively attending. Sufficiently involved in or committed to a subject or activity that he will seek it out and gain satisfaction from working with it or engaging in it.	Willingness to comply with health regulations; acquaints himself with significant current issues through voluntary reading; finds pleasure in reading for recreation.
High	3. Valuing	Attitude that a thing, phenomenon, or behavior has worth. Learner displays the behavior with sufficient consistency in appropriate situations that he comes to be perceived as Holding a value.	Continuing desire to develop the ability to speak and write effectively; examines a variety of viewpoints on controversial issues before forming an opinion; devotion to those ideas and ideals which are the foundations of democracy.
	4. Organization	Holds more than one value--organizes them into a system and sees relationships between them.	Forms judgments as to the responsibility of society for conserving human and materials resources; develops a plan for regulating his rest in accordance with the demands of his activities.
	5. Characterization-Value Complex	Individual acts consistently in accordance with his value system.	Readiness to revise judgments and to change behavior in the light of evidence.

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TAXONOMY OF EDUCATIONAL OBJECTIVES (Adapted from Bloom, et al) COGNITIVE DOMAIN

Level	Title	Definition/Description	Example
Low	1. Knowledge	Recall of specifics and universals, recall of methods and processes, or the recall of a pattern, structure, or setting.	Define technical terms; give dates, names places, chronological sequences; knowledge of ways of organizing or characteristic ways of treating and presenting ideas; show knowledge of trends.
Medium	2. Comprehension	Lowest level of understanding. Individual knows what is being communicated and can make use of the rule or idea without necessarily relating it to other materials or seeing its fullest implications.	Translate, interpret, extrapolate, such "ability to read musical scores:
	3. Application	The use of abstractions in particular and concrete situations. The abstractions may be in the form of general ideas, rules of procedures, or generalize methods.	Type a block-style letter
High	4. Analysis	The breakdown of a communication into its parts so that the relative hierarchy of ideas or the relations between the ideas is clear.	Prepare an analysis of elements, analysis of relationships, or analysis of organizational principles.
	5. Synthesis	The putting together of elements so as to form a whole. This involves the process of working with pieces, parts, etc., and arranging them in such a way as to constitute a pattern or structure not clearly there before.	Produce a unique communication, a plan, proposed set of operations, or a derivation of a set of abstract relations.
	6. Evaluation	Judgments about the value of materials and methods for given purposes. Quantitative and qualitative judgments about the extent to which materials and methods satisfy criteria.	Make judgments in terms of internal evidence and judgments in terms of external evidence.

TAXONOMY OF EDUCATION OBJECTIVES (Adapted from Simpson) PSYCHOMOTOR DOMAIN

Level	Title	Definition/Description	Example
Low	1. Perception	Becoming aware of objectives, qualities or relations by way of the sense organ.	Sensitivity to auditory cues in playing a musical instrument in a group; cue selection-recognition of operating difficulties through sound of machine; ability to relate music to dance form
	2. Set	Preparatory adjustment or readiness for a particular kind of action or experience; mental set; physical set; emotional set.	Knowledge of steps in setting the table; positioning of hands preparatory to typing; desire to operate a production drill press with skill
Medium	3. Guided Response	An overt behavioral act of an individual under the guidance of the instructor. Imitation, or trial and error.	Performing a dance set as demonstrated. Discovering the most efficient method of ironing a blouse. Determing the fastest way to collate papers.
High	4. Mechanism	Learned response becomes habitual, has confidence and some degree of skill	Ability to perform a hand-hemming operation. Ability to type straight copy materials.
	5. Complex overt response	A high degree of skill has been attained. Act can be carried out smoothly and efficiently with minimum expenditure of time and energy--resolution of uncertainty and automatic performance	Skill in operating a milling machine. Skill in performing on the violin. Ability to transcribe shorthand (which involves fusion of English, typing, and shorthand skills).

Specification of Performance Objectives by Hierarchy

For all practical purposes, we will consider only two types of performance objectives in these sessions: those written for program development and those written for instructional purposes. In addition, we will consider the specification of performance objectives in four different ways:

I. By taxonomy of educational objectives
II. By hierarchy within the taxonomies
III. By specificty (terminal or intermediate/subobjective)
IV. By use
  a. Program development
  b. Instruction (curriculum, course, unit, or daily lesson)

The cognitive taxonomy deals with the knowledge area, the subject matter area, while the affective taxonomy deals with attitudes and values and feelings. The psychomotor taxonomy deals with sensory experiences and motor skills. Naturally, every educational experience includes all three simultaneously; however, we usually stress one type of objective over the others.

Each one of the three taxonomies has a number of levels--that is, the educational objectives may be classified by a hierarchy system. Some objectives are more important or of a higher level than others.

In the cognitive domain we find six levels in the hierarchy: knowledge, comprehension, application, analysis, synthesis, and evaluation. In the affective domain there are five levels: receiving, responding, valuing, organization, and characterization (the arrows in the illustration indicate those words commonly used by educators to describe objectives in this domain). You might want to look at a little book by Mager about Developing Attitudes.

The psychomotor domain consists of a five-level hierarchy: perception, set, guided response, mechanism, complex overt response.

Each taxonomy is related to the vocational education programs in varying degrees of importance, but we are also recognizing the failure to touch certain areas as we learn to write performance objectives. For example, typewriting has traditionally been considered a motor skill, even though we have known for years that most office workers do not lose their jobs for lack of skills. They lose their jobs because of such things as unwillingness to learn, failure to cooperate with others, lack of courtesy, etc. Now as we write performance objectives for our typewriting courses we see that we really do not "teach" or provide for development of attitudes. In the past few years, however, we have made some progress in this area as we are using the simulation technique--that is, provide "real" office situations and learning packages in which attitude plays an important part. In other words, we are writing performance objectives at higher levels within the taxonomies--and we are writing performance objectives including all taxonomies.

At the same time that we are considering which of the taxonomies to use and at what level within the taxonomy we are using, we must also provide for specification of performance objectives by time and use. Specification of performance objectives by time or specificity means that we identify each one as either terminal (or ending) or as an intermediate or subobjective. At the same time we should also identify its use, such as the terminal objective for a curriculum, the terminal objective for a unit, or as an intermediate objective in a unit. This idea is best viewed as a pyramiding action: The terminal objectives of a curriculum are the starting point for breaking down the curriculum into subobjectives. The curriculum subobjectives are arranged into courses. Then we have terminal objectives for courses and course subobjectives. The course subobjectives help us decide on the units and activities--which also have objectives.

Let us review for a moment. Performance objectives are specific and precise statement of the type of behavior expected, the conditions under which it is expected, and the level of performance expected. Performance objectives should be stated for all aspects of education, using as high a level in the cognitive, affective, and psychomotor taxonomies as appropriate. Both terminal and intermediate or subobjectives should be given for each level of instruction, with prerequisities clearly identified at each step.

Furthermore, performance objectives are not broad educational statements nor are they mission statements. A course description is not an objective, but a course description might contain a mission statement with specific performance objectives listed. Performance objectives may or may not imply or demand specific teaching procedures, but a description of a procedure is not a performance objective.

The specification of performance objectives, therefore, is concerned with classification by taxonomy, by hierarchy within the taxonomy, by specificity, and by level of instructional use. In the next small group sessions you will be classifying performance objectives by taxonomy and by level within the taxonomy. We will also ask you to write some objectives within certain taxonomies.

Specification of Performance Objectives by Precision of Writing

As we move away from the labeling and classification of performance objectives that are already prepared, we become concerned with your ability to write precise objectives. There are two major purposes for demanding precision: (1) to make the writer of the objective clarify his thoughts, and (2) to provide for communication between the writer and the user of the objective.

Each performance objective has three distinct parts:
(1) the terminal behavior that is to be demonstrated
(2) the conditions under which the behavior is expected
(3) the criterion of minimal acceptable performance

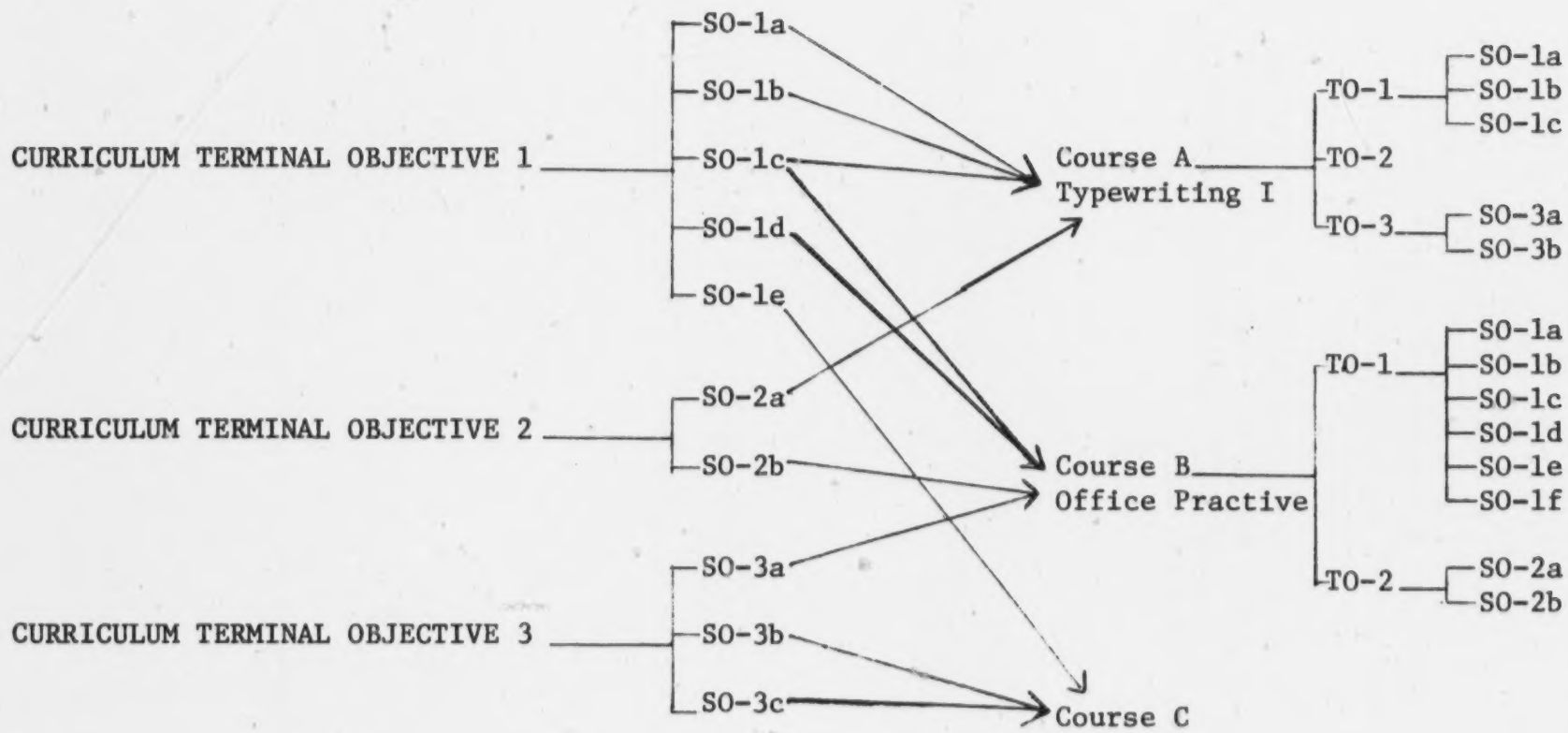
In addition to performance objectives, each learning activity should include statements of prerequisites and the criterion test.

We have filmstrips that will take us through the writing of each one of these stages so I will not go into much detail at the present time. However, I do want to stress a few points that may help you in doing the writing.

First, each objective must have an "action" verb that identifies some "observable" behavior or result in some observable product. Second, the level of performance may be stated in any one of several forms about quality and/or quantity, such as: the number of times the act is completed, the quality of the action in number of items required, speed, percentage of successful trials, etc. The important factor is to state the exact behavior, the level of performance, and the criterion or yardstick by which the performance will be evaluated.

In summary, performance objectives must be well written if they are to be useful, usable, and used. It is our task, yours and mine, to improve vocational education through writing, selecting, implementing, and assessing performance objectives from now on.

RELATIONSHIP OF TERMINAL OBJECTIVES AND SUBOBJECTIVES



SELECTION AND IMPLEMENTATION OF PERFORMANCE OBJECTIVES

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SELECTION AND IMPLEMENTATION OF PERFORMANCE OBJECTIVES

Earlier in the week I discussed the derivation of performance objectives--where we look for clues as to what the objectives should be for successful performance on a job. Dr. Uthe, as she discussed the "Specification of Objectives," pointed out that the specification is satisfactory when the statement enables us to measure quite speficically, (1) what the graduate will be able to do, (2) the conditions under which he will perform, and (3) the level of performance at which he will be able to operate.

Following each of these presentations we have all had an opportunity to participate in the small group sessions. I hope that out of these small groups we have been able to apply some of the ideas regarding performance objectives to our own programs and activities. What objectives can we formulate which will enable us to determine our accomplishments with a fair degree of accuracy?

In this session we will discuss some of the procedures for selection and implementation of performance objectives. We will consider these in two separate sections, (a) selection and (b) implementation.

Selection of Performance Objectives

Mager and Beach say that, "Performance objectives represent the blueprint of performance you want to develop in your students." (For us I would add, "in your teachers or in others with whom you work.") The authors continue, "The blueprint is important because it is the document from which one prepares the measuring instrument that determines adequacy of performance." In other words as Dr. Uthe has emphasized, our objectives need to be stated in such a way that we can measure accurately how near we come to reaching them. Or, to turn the idea around, we will select objectives which represent the performance we expect of ourselves or of those involved in our vocational programs. You will be able to think of many examples which you will consider in your group meetings. Some may involve relation of training to the occupations in which our graduates are employed. Others may assess the degree or quality of training as evidenced by success on the job. At another level, objectives you select may be designed to measure performance of teachers in relation to their instructional programs, and still others may be designed to measure our own performance in terms of achieving the kinds of programs we set out to develop.

The second of the points suggested by Mager and Beach regarding the importance of the blueprint is, "When a modified version is given the student he will be better able to organize his own activities and efforts leading him to desired performance." To me this statement means that we "let our students (or teachers or others) in on our objectives," and that we not just hand them out, but that we get students or teachers to help formulate them and to accept them as their own.

As I mentioned on Tuesday, I am currently working with an area school where we are trying to establish performance objectives for the students in each course, and also we are including in our plans a scheme for establishing performance objectives for each individual student. These may deviate somewhat from the objective established for the program, but in all cases are designed to help the student reach some level of employability before he leaves.

I want to repeat a statement I made last Tuesday, viz., that I believe our students and/or our teachers should have an opportunity to help formulate their own objectives. We could have so many objectives as a result of our derivation procedures, that we could not possibly cover all of them in a course. This will support the idea that students should help select objectives they will reach in their course. The same idea is equally applicable for the teachers working in our respective programs.

Experience in other places has indicated that such a procedure as we are using in the area school can be an important factor in maintaining student interest, in helping with motivation and in encouraging the student to measure and evaluate his own progress.

The task of those of us who are working with teachers in this school is one of establishing objectives we hope to achieve as we work with the teachers. Following the same principle we will bring the teachers into the team and try to get them to accept our objectives, or a modified version, which they will try to accomplish.

Mager and Beach's third point is, "you can provide a document to use to demonstrate your systematic development of instruction." This is an obvious point, but perhaps the development of a set of carefully selected objectives for us to accomplish will cause us to be more effective in our respective positions. Perhaps we would be better organized and demonstrate more clearly than ever that we know where we are going and how we expect to get there.

The fourth Mager and Beach point regarding the importance of selecting performance objectives is, "It provides a document to use in response to criticism by uninformed people about procedures used in the course."

I think the important point for us is that we need to be pretty sound in the objectives we selected in relation to the program for which the objectives are written. This puts a heavy emphasis on the selection of objectives--which is the theme of this section of our discussion.

Reference to the following table from Mager and Beach on task analysis shows one colum indicating the frequency with which the activity is performed; another indicates the importance of the activity; and a third column indicates the learning difficulty of the activity.

TASK LISTING SHEET
Vocation: Electronics Technician

		Adapter from Mager and Beach		
No.	Task	Frequency of Performance	Importance	Learning Difficulty
1	Trouble shoots and repairs malfunctioning equipment	Everyday performance	1	Difficult
2	Reads electronic schematics	1 to 10 times per day	2	Moderate
4	Uses small tools	Continuously	1	Easy

This kind of analysis is essential to help us choose which objectives we will incorporate in our program, whether it be for a vocational class in a technical school, for a teacher preparation class, an inservice group or for our own program as supervisors or directors of vocational programs. Are we choosing the objectives that take a lot of time, but are relatively unimportant or are we concentrating on the accomplishment of objectives which will make the biggest or most important impact on the vocational program?

I have indicated several times that I believe our students or our teachers or our staff members should have an opportunity to help formulate the objectives they will try to reach. Teachers and supervisors will need to provide some guidance and to participate in the selection process, but the joint participation will help us eliminate much of the irrelevant activity that might otherwise be included.

It is said that, "one's hind sight is better than his foresight." As I look back on some of my own experiences as a state supervisor, I wonder if I spent too much time checking details of reports from local schools instead of working with teachers and administrators in "my" schools on improvement or expansion of program.

As in instructional materials specialist, did I prepare materials to silence "the wheel that squeaked the loudest," instead of selecing and trying to reach an objective which would move vocational education forward in the shortest possible time. For example, did I work loo long on the development of source units dealing with little bits of subject matter, or on the production of a "How to Do It" bulletin when I might have been producing objectives, to materials kits based on well thought out and accepted performance objectives, to help teachers and their students accomplish more comprehensive occupational goals.

We need to select our objectives in such a way as to get at the most important thing needed for beginning employment, and to spend our time on the things that are difficult to learn but important to success on the job. For teachers and supervisors, beginning employment is personally less important. Here we need to get at the most important activities which will carry our vocational education programs forward.

Are there items in our programs that would not even be included as activities in a task analysis, yet on which we spend much time? College professors are notorious for this kind of malpractice. Perhaps this is why we hear so much about relevance of some of our course content.

At this point I fear I might be accused of presenting an irrelevant paper. To alleviate this situation let me try to pin down the selection problem to some specifics.

1. Identify the prerequisites

In some school systems students are admitted to a program only when they meet specific standards. When this is the case, the instructor is assured of a certain minimum level of proficiency among his students. He knows whether or not they can read or write, what level of ability they can demonstrate in mathematics, in English, or in science. Thus the teacher can choose objectives from his total list which will help the student build on these minimums.

However, even with these rigid requirements for admission to a course, the teacher will need to adjust--modify the selection of objectives listed for the course.

A more common practice in high schools, post high school technical programs and in teacher education programs at the university is to admit nearly all the applicants. There are some exceptions, but the admission policies do not do much to "standardize a class."

In this situation the teacher must rely on a pre-test to determine the level of students--and every student will start at a different level. This will require the instructor to operate an individualized instructional program in which each student begins, "where he is" and progresses through the program to the point where he has reached objectives that will make him employable. (Note: It is important that any pre-test which may be given be the same type of test as the performance that will be expected of the student in his proposed course. For example, if the course will require motor activities, you would not test by means of a written, a true/false, or a completion test.)

Now, how about the professional people with who we work? As you select objectives you expect these people to reach, you will need to take into consideration "where each individual is now," and help him select objectives which will move his program forward toward the goals you have set for vocational education in the state.

2. Select the objectives which will help your teachers and others support and strengthen progress toward solutions to the pressing vocational education needs of the area, the state or the nation.

This is a perfectly obvious point, yet it has many implications for all of us. We need to know, "what are the pressing vocational education needs." Perhaps we need to make a Task Analysis and develop a series of performance objectives which will enable us to get an answer to this problem.

If we already know which are the pressing needs of vocational education, we will need to make an analysis of the tasks necessary to meet these needs, and to establish objectives which, when met, will have satisfied the need.

Such an analysis will have implications for all levels of workers in vocational education. There will be supervisory, teacher education, teacher and student objectives to be selected and reached. Instructional materials specialists will need to assume a major role in providing materials specifically adapted to helping the user--either teacher or students to meet their objectives. It will be essential for the specialists to recognize the objectives and to gear their materials to help students reach them.

3. Select objectives which are essential for successful beginning performance.

This statement by itself, would be subject to as many interpretations as there are people. However, it is difficult to make it more specific, except by further explanation. We all now that if we make an analysis of what a worker does on the job, we will find some things that we would call "border line" in terms of a course we may be teaching. For example, in my out-state study to which I referred earlier, one personnel director said that we ought to teach prospective machine shop employees a course in money management. I agree that our graduates in machine trades probably should have reached certain objectives in this field, yet if I were preparing performance objectives for a machine trades course, I might omit these objectives in order to allow

more time in my machine shop course for objectives more directly related to the job and to employment. On the other hand, if I were a state or regional supervisior, I would give very careful consideration to getting such a course established in the schools in which I had programs.

A second consideration regarding objectives essential for employment is related to the point we made when we considered "frequency" and "importance" and "learning difficulty" of certain activities. I have not been able to establish a criterion, or rule, that I want to consistently live with on this point. In some of our studies we have found a few activities that are performed only once a year, but that are absolutely essential for success on a job. On the other hand, it is possible that some activities performed only once a year can be better learned on the job. In such a case we would not include an objective to cover the activity.

We have all observed some activities that are essential for successful completion of a job, but are so "easy" that we might question whether we should include an objective to cover performance. One example might be noting the wires and powerlines to avoid them when trimming or removing a tree. It is easy to note the presence of these wires. Do we need to make it an objective in teaching the activity?

In concluding this section of my discussion I want to observe that some of the literature we have reviewed and perhaps referred to during this conference, indicates that, as part of the selection process, we identify required association or generalization responses. Eva Baker, in her paper on Analyzing and Sequencing Learner Behaviors, says:

> . . . remembering that without a clear description of the stimulus and response conditions, it is difficult to observe a particular student and know whether he is performing at one or the other level . . . . when desired outcomes of instruction are loosely formulated, it is easy to see why precise thinking about the sequence of instruction is impossible.
>
> When some degree of precision is reached in the instructor's statement of goals with respect to the content-behavior interaction, or more exactly, the stimulus-response relationship, then the person who is responsible for planning and instruction can proceed with some hope. He can at the very least, apply the criterion of relevance in judging the behaviors required of the learner enroute to the objective.

This leads us to the problem of identifying and sequencing the prerequisite tasks, which I implied earlier but did not elaborate. I am not going to discuss identification of these tasks, except to say that, given a behavioral goal we need to ask, "what must the learner know before he can do this?" We may have to keep backing up several times before we reach the starting point for some of our students. Sooner or later we will find it necessary to recognize a "cut-off" point. Let us hope it is not so far up the ladder that we "throw a lot of our students on the trash heap."

When we get into our next small group meetings, may I suggest that we review our own performance objectives with a view to eliminate those that are irrelevant and placing a priority scale on those that are worthwhile objectives.

IMPLEMENTATION

I would like to turn now to the second part of my assignment, namely the implementation of the objectives.

As I have read and studied "implementation," I think it means more simply, "how are we going to teach," or "how are we going to manage instruction" to help our students, or our teachers reach their objectives? It is from this point of view that I would like to consider implementation.

I would like to call attention to: (1) some statements and guidelines from the literature and from experience, dealing with appropriate practices, (2) some of the instructional devices available for our programs and perhaps to make comments about some of these in relation to the whole area of setting up, reaching and evaluating performance objectives for vocational education programs, (3) make some suggestions and raise some questions regarding implementation of programs at the supervisory and teacher education levels.

1. Appropriate Practice

In introducing this section on implementation I will refer to a filmstrip audio tape presentation by W. James Popham entitled, Appropriate Practice. I do not want to spend a lot of time on this presentation, but only give you a few of the highlights and then get on to some other aspects of implementation which I believe are also important.

Popham introduces the "Principle of Appropriate Practice." He says, "According to this principle, a student should be given opportunities to practice the behavior implied in the teacher's instructional objective."

He goes on to describe two kinds of appropriate practice, viz., (1) equivalent practice --- "equivalent to the practice implied by the objective," and (2) analagous practice --- "when the student is given an opportunity to behave in a manner which is similar but not identical to the terminal behavior."

Popham then suggests a third "important type of learning activity, namely a prerequisite task. This is "any activity the student must master as a preliminary or basic skill to enable him to perform the terminal behavior."

The author makes a statement which I would like for all of us to accept as a warning when he says, "Some teachers, unfortunately, have their pupils engage in many activities which are neither analogous practice, nor equivalent practice. Often such activities are completely irrelevant to the instructional goals of the class."

Let us make sure that our teachers avoid this trap and make sure also, that we ourselves avoid becoming enmeshed in similar irrelevant activities in the performance of our own duties.

At the risk of getting into some of Dr. Uthe's presentation this afternoon, I would like to express one or two points related to evaluation in the basis of performance objectives which have been accepted by individuals in our groups. When we talk about individualizing objectives and individualizing instruction, we begin to wonder how we can evaluate performance related to all the objectives for all the members of our group.

Without going into detail I would suggest that, in many cases students can evaluate themselves and/or other class members in terms of the performance specified in the objectives. This can become part of their learning process. I also suggest that performance must be evaluated in terms of appropriate practice.

Certainly teachers and supervisors can evaluate themselves as well or better than can students. They may need to check themselves as to the validity of the appropriate practices they use for their evaluation.

2. Instructional devices for our programs

We are all familiar with Edgar Dale's cone of learning in which he indicates that we learn more through actual experience, and progressively less as we move through simulated experiences, laboratory/shop experiences, visuals and audio materials to listening to lectures or other devices in which the learner is passive rather than active.

At the same time we must consider the findings of some of the educational psychologists who show that there are differences in the way people learn best. Some may learn best by listening to a tape or radio and others by actual practice. We need to keep these factors in mind as we plan the instructional program.

It is probably not necessary to discuss the more common audio and visual devices with this group. We are all familiar with the use of slides and filmstrips; movies; film loops; overhead transparencies; tape recordings; closed circuit television; computer assisted instruction; teaching machines and others. Instead of discussing the merits and uses of each of these, I would like to present some ideas and suggest some activities in which I believe people at the levels represented here need to engage to get the instructional job done.

We are all familiar with multi-media systems for instructional programs. I believe we should give some attention to some of the ideas incorporated in this concept --- although I personally disagree with many of the so-called multi-media programs which are currently offered for purchase.

Following is a diagrammatic scheme which we might use in helping teachers prepare their instructional programs after appropriate performance objectives are identified. To illustrate how this schematic diagram might look when it is broken down for a specific unit of work we have attempted a partial diagram of the Agricultural Salesmanship unit in an Agricultural Supply --- Sales and Serivce Program. In this diagram we have illustrated only to the extent of a few items for salesmanship in the feed business.

The scheme provides for some class work with discussion, demonstrations, role playing, simulation, and the like; some small group work where a group having similar interests, (in this case interest in selling one type of product) might work together; and some individual work in which each student would complete assigned activities and report back either to the small group, to the class or to the teacher.

Agricultural Supply -- Sales and Service Unit

Salesmanship

Classwork

How to meet the customer

1. Pre-approach
2. Attitude of the salesman
3. Personality factors

Small Group Work

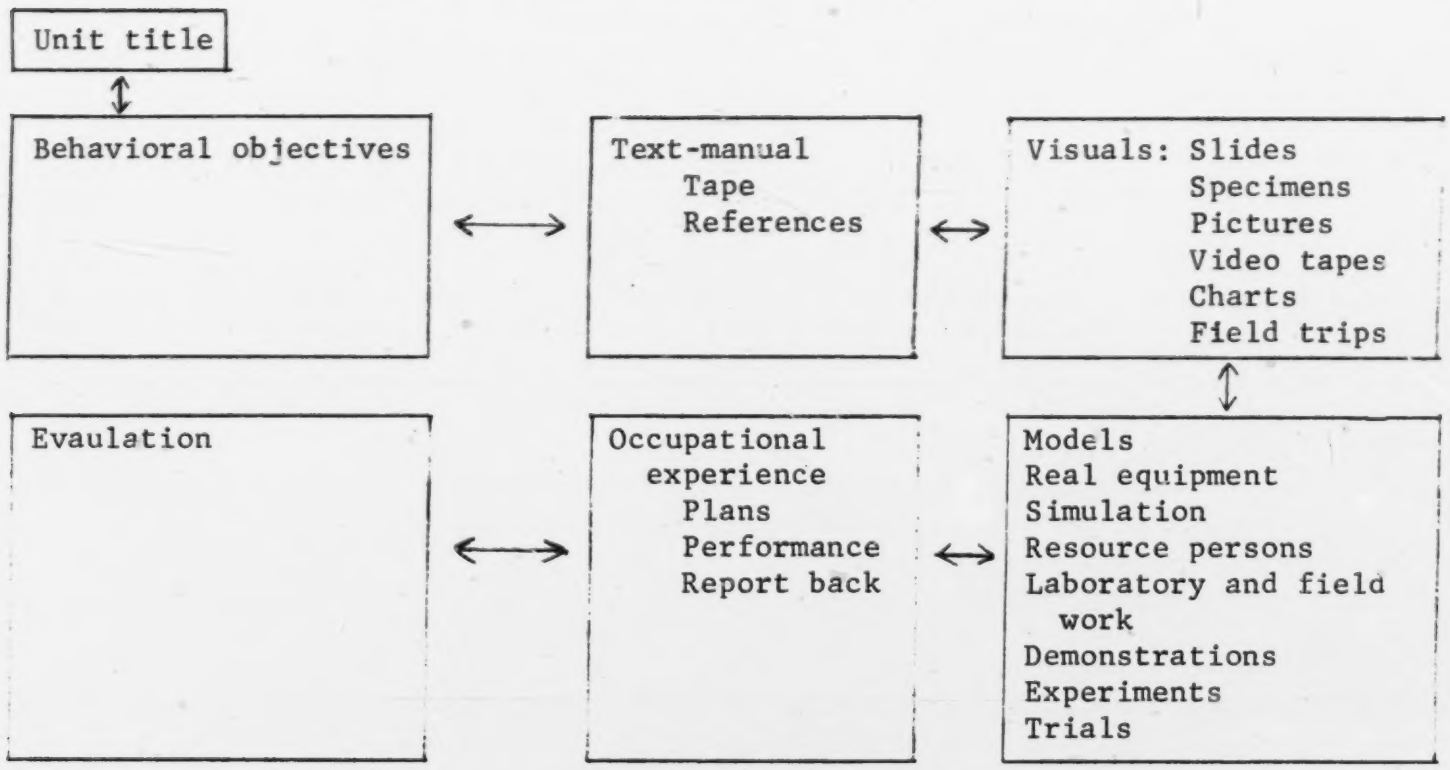
Feed Business	Fertilizer Business	Farm Power Machinery	Nursery	Farm Credit	Others
How product will be used Presenting the product Displaying the product					

Individual Work

Feed Business	Fertilizer Business	Farm Power Machinery	Nursery	Farm Credit	Others
For one product: 1. Prepare plans for demonstrations and talks 2. Develop case studies a. analysis of a customer b. potential of an area c. self analysis 3. Analyze grain					

When we get to the instructional materials aspects of the program the schematic diagram would look something like this:

INSTRUCTIONAL MATERIALS
FOR AN
INDIVIDUALIZED INSTRUCTION PROGRAM



You will note that we have listed a variety of instructional materials which may be used to help students learn the necessary content to meet an objective. Following this idea we would organize a unit (or module) of instruction with a "package" of materials that would include a student manual together with the tapes, visuals, actual objects, models, specimens, charts and other materials that will help the student master the content. In many cases, the content may be presented in a variety of forms to help meet the needs of students who learn through different media.

In connection with this idea, a word of caution is in order. As we choose items to make up our package, we need to be careful to include only those items that contribute specifically to the objectives the student is to meet. Many of the available movies, slide sets, tapes and other items are "good" but will not contribute to the objectives --- therefore should not be used.

Our experience indicates that we need to manufacture many of the items we need for our "packages," even though we had thought that these items could be assembled from already existing materials. On the other hand, there are a number of "packaged" programs for specific courses on the market, for rent or purchase by schools. When these meet the specific objectives we need for our program, some of them may prove very satisfactory. However one should be sure they are designed to meet the performance objectives needed by our students, and that they are designed for a population with the same characteristics as our students represent.

The chart indicated occupational experience as one of the media we may use for our instructional program. I want to emphasize a few ideas that I feel we sometimes miss. To get the most possible benefit from an occupational experience, before going on the job the student should actively consider what he plans to learn during the work experience part of his program and he needs to bring back experiences to the class and laboratory for further study. Both the teacher and the student need to make sure that the work experiences are designed to contribute to his performance objectives.

My observation indicates that more often than not we miss on these aspects of occupational experience programs. Too many times the student "gets a job" with or without the help of the coordinator, and he performs routine tasks under the direction of a supervisor or foreman, with no visible relation to his educational program. This is probably less frequent under the long established cooperative program, but it still exists even there.

Another aspect of the occupational experience program is the problem of flexibility of school schedules, both the daily schedule and the annual one. For some programs, students need to be available during months that they would normally be in school. For example opportunities are greater for a cooperative type of occupational experience in garden centers, in the spring than at any other time. Often employers want full time help during these times and opportunities for desirable experiences are greater during these times than at other seasons of the year.

We need to adjust school schedules and even the months school will be in session, so that students can have the benefit of work experience opportunities when they are available and when they can be of greatest value. I think it is time we kept out school buildings open and operating on a twelve month per year basis.

3. Observations concerning sequencing of objectives

We are all aware of the idea expressed by teachers at all levels, that "you had better learn this, you will need it later on." On this basis we have taught mathematics, science, and many other peices of subject matter. In agriculture we have often insisted that the student learn the functions of nitrogen, phosphorus and potash in a plant before we raise questions as to the analysis of fertilizer he should use on a crop.

It is indeed true that we must learn many things in order to reach the objectives we specify. We must develop a whole series of sub-objectives to help students reach prerequisite tasks. We must place the performance objectives in a sequence that will allow the student to build from one objective to another. Where there is a close relationship among objectives the problem of sequencing may become very critical. On the other hand, there are likely to be many instances where the sequence between several objectives is unimportant and students may choose different sequences within the program with equal chance of success.

In relation to sequencing, let me pass on comments from some of the authors we have been quoting this week. These form the basis for the following remarks: Review the performance objectives of the student and adjust the

sub-objectives (or prerequisite tasks) to provide only the necessary background. For example a student preparing for an entry level job in auto mechanics may need to be able to test the coil in the electrical system, but he does not need to be able to demonstrate the principles of induction that cause the coil to function. We need to avoid wasting the time of students by demanding that they study materials not relevant to the objectives we have formulated for the program.

4. Some suggestions for implementation at the state and regional levels.

The comments I have just made regarding implementation of performance objectives dealt primarily with what teachers will do with their vocational students. At the state and regional levels we work primarily with teachers and with school administrators. I am well aware of the problems, pit-falls and barriers to accomplishment of performance objectives we set for ourselves or for those with whom we work. However, at the risk of sounding impractical, I am going to suggest some procedures we might try as we seek to implement objectives for our part of the total vocational program.

a. We need to bring together appropriate people, --- supervisors, business and industrial people, teacher educators, teachers, students and others, to establish performance activities expected of beginning vocational teachers. When these are established, the teacher education institutions would have a sound basis for revising and modifying their programs. I would predict that they would have a lot of changes to make, but this is a big enough subject to warrant another workshop, so I won't elaborate much at this time. I would simply observe that traditionally we have trained teachers to be "up in front dishing out information." Under the system we are discussing, the teacher becomes a "manager of an instructional system," but he is not a source of all information. This change requires some changes in the teacher preparation program.

b. We need to establish the performance objectives for inservice teacher education programs, perhaps using the same group of people as would be asked to consider the undergraduate teacher education program. Accomplishment of the objectives would be achieved by graduate courses; non-credit conferences and workshops; and other methods and devices. Responsibility for this program may be assigned to the State Department of Education in some states; to the Teacher Education institutions in others; and it may become a joint responsibility in still others.

c. We could help meet performance objectives by using some of the multimedia ideas presented earlier for helping vocational students reach their objectives. For example, we might "package" some instructional materials on development and use of performance objectives to loan to individual teachers or individual schools where the vocational faculty is interested in self improvement.

One of the relatively new devices which has some possibility along this line is the video-tape which can be produced at a central location and distributed the same as audio tapes are now distributed. The limiting factor presently is a lack of equipment in the local schools. We might even get some of our teachers to study the tapes and filmstrips we have had here this week as part of their professional improvement for the year.

d. For getting cooperation to help us reach our own performance objectives, we need to provide materials and devices which will interest and motivate appropriate individuals. Here we may be thinking of objectives of supervisors dealing with some aspects of programs such as development of the youth organizations; increasing enrollment; expanding to meet new needs; integration of programs between vocational services and between vocational and academic services in the school. Here again I believe we can achieve reasonable goals in these areas if we will provide school administrators with acceptable suggestions and with appropriate materials for them to use. This will require more than just talking or sitting in the office writing letters or bulletins or checking reports.

e. For instructional materials specialist, I have already presented a pretty big challenge. We can no longer be satisfied with putting out little phamplets of units providing the subject matter content on some topic. We have reached a stage where we must produce "packaged" multi-media kits geared to specific agreed upon performance objectives. These kits must contain a student guide and teachers manual and be keyed to appropriate references. The references will include not only written materials but also any other sources of information appropriate for the particular lesson or module. The job will not only require that we write and manufacture materials, but also that we enlist the help of commercial concerns in the production and distribution of materials which are also geared to the performance demanded of our graduates.

As a starter, I would like to see some of us who work in the instructional materials field, tackle the job of writing a comprehensive list of performance objectives for each of the courses taught by our teachers in their respective schools. Accompanying this task, we would need to find ways to show teachers how to use these objectives and how to select and modify them to meet the needs of individual students.

In our small group meetings this afternoon, I suggest that you prepare plans for implementing one or more of the objectives you have developed during this week.

Later in the afternoon, Dr. Uthe will put the cap sheaf on our presentations when she discusses evaluation procedures in relation to the objectives we have established for our respective programs.

ASSESSMENT OF PERFORMANCE OBJECTIVES

Elaine Uthe
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Paper Presented at the
Workshop on
Determining Performance Objectives

October 8, 1970
Carnahan House
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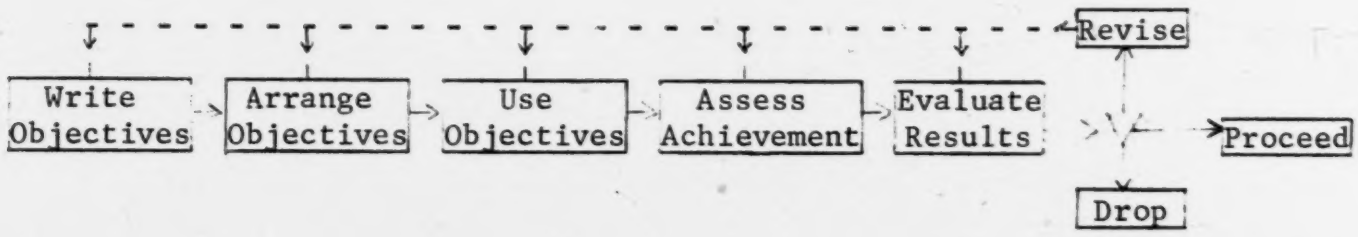
ASSESSMENT OF PERFORMANCE OBJECTIVES

Performance objectives are valuable only if they are useful, usable, and used. Objectives that collect dust on a shelf or in a drawer or ones that do not communicate or are not used are valueless.

The following diagram is a simplified model of the process for using performance objectives:



The process of using performance objectives implies continuous feedback and evaluation, both for the benefit of the student in assessing his own achievement and for the teacher in assessing students' achievement and instructional progress. This same model can be used for both the objectives written for instructional purposes and for program development.

We might consider the assessment of performance objectives in two different time periods: (1) assessment of the objectives themselves <u>before use</u>, and (2) assessment of the objectives by criterion measurement <u>as they are being used</u>.

Assessment of Objectives by Optical Inspection

The assessment of performance objectives should begin with a simple preliminary assessment called "optical inspection." The old "eyeball" test. The eyeball test can be used to assess the format, the sequence, and to some extent the value of the performance objectives. For example, use the eyeball test while asking yourself the following question about format: Does each objective have the three necessary parts--the type of behavior expected, the conditions, and the level of performance?

Secondly, the eyeball test might be applied to the decisions about the value and appropriateness of the objectives, as discussed earlier. Also, the eyeball test can be used to determine if the objectives for a curriculum, a course, or a unit are drawn from all three of the taxonomies--but the eyeball test is not appropriate in making judgments about which taxonomy is most important.

Let us look at a grid entitled objective/evaluation complex. Across the top of the grid we would identify areas by the name of each toxonomy--cognitive, affective, psychomotor. Within each taxonomy area we would list the major terminal objectives--1, 2, 3, etc. Immediately below the objectives is a space in which the importance or the value of the objective might be given as a percentage of importance. The eyeball ball would immediately show us whether or not we have objectives representing each taxonomy--and that we can account for the value or importance of each objective.

The major topics or units or activities that are selected to fit the objectives are listed down the left side and estimates of the needed instructional time are made at the immediate right of the topic. As you can see, we may now go down from any one of the objectives and across all the topics. Are there any topics, units, or activities included for that objective? Do all the topics, units, or activities listed have some value in terms of achieving at least one of the objectives--and preferably more than one objective?

The objective/evaluation grid is useful in directing our attention to the overall spread of objectives so that we can identify weaknesses. For example, if I looked at such a grid for a Typewriting I course and found only cognitive objectives, I would throw out the grid and the course. Similiarly, if I looked at someone else's grid for Typewriting I and found only psychomotor objectives, I would say that it was incomplete. Unfortunately, many of our present Typewriting I teachers are teaching only keystroking speed--that is, how fast can the students type? Never mind about work habits or attitudes! Or else they list objectives for attitudes that are so vague and unmeasurable that they are useless for instructional purposes.

The eyeball test can serve only as a rough measure of the probability of a correct sequence of performance objectives although it can detect obvious weaknesses such as missing elements, inappropriate elements, redundant and unnecessary elements, etc. In reality, though, such weaknesses are usually found during or after the instructional process.

So far I have talked only about the eyeball assessment of performance objectives that were meant for instructional purposes. Let us take a quick look at eyeballing the program development objectives. The present system of assessment required for reports emphasizes quantitative analyses rather than qualitative analyses. For example, the reports call for the number of programs in existence and the number of new ones each year, the number of enrollees in each, the number of graduates who are placed in the occupation for which they are trained, and to some degree the cost factor for each program. Do you as supervisors have any responsibility for improved quality within the vocational education programs? If so, what? And how did you accomplish it? Did you accomplish it? Do you have proof? We may all have to answer some very hard questions about quality and cost in the very near future.

Program development objectives should be stated in precise behavioral language, just as the instructional objectives are. However, I would like to illustrate several points. Truthfully, I must admit that these materials were written as recommendations, but recommendations are made to inspire action of some sort. Consider this recommendation: "Vocational-technical education curriculums should be an integral part of the total school program."[1] What do you mean by "integral part"? How do you measure whether it is or not? However, you might say that by 1975 every high school student in the State of Kentucky must have access to enrollment in at least five different vocational

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[1] A Guide for the Development of Curriculum in Vocational and Technical Education. Los Angeles: Division of Vocational Education, University of California, 1969, p. 8.

OBJECTIVE/EVALUATION GRID

Minimum Standard	% for Teacher	100	75	90	80	60	100	90	90	
Domain		Cognitive			Affective			Psychomotor		
		A	B	C	D	E	F	G	H	I
	% of Impor.	5	10	25	10	5	10	10	20	10	= 100
Topics, Units or Activities	% of Time										
L	5	x									
M	10		x		x						
N	35			x		x	x		x		
O	20									x	
P	10			x	x		x				
Q	15										
R	5			x					x		
	=100										

education programs within 25 miles of his home. You could measure this--even though the statement is not necessarily a performance objective as there is no type of behavior involved. For that you might add to the objective . . . and enrolls in at least one vocational education course.

Another recommendation from the same source stated that the "teacher must be involved in planning for curriculum development to the maximum extent possible." That statement doesn't exactly fit our definition of a performance objective either. However, if you said that 100 percent of the office occupations teachers in X High School will attend each curriculum meeting, you would have a performance objective. But it is an inappropriate one--attendance does not necessarily mean participation, support, or involvement.

A third recommendation from the same source stated that "evaluation must become a continuous part of the maintenance and improvement of curriculum." Would you like to measure that one? What type of evaluation is meant? Does continuous mean daily, monthly, yearly, periodically? In what way is the evaluation to be used in maintenance or improvement of the curriculum?

These illustrations were only a few examples of the way the eyeball assessment might be used to assess format, value, and sequence. Let us now consider the criterion test or situation, the measurement tool that assesses the student and the instruction.

Assessment of Performance Objectives by Criterion

For the past three days we have worked with precision in writing objectives--talking mainly about the three components of an objective. We have said little about the practical framework in which performance objectives exist. Any unit of instruction or program development activity involving performance objectives must be supported by a statement of the prerequisites and include both a pretest and a criterion test. The prerequisites are stated for two reasons: (1) to identify the background that the user is expected to have in order to enter the material , and (2) to aid in placing the material in proper sequence. A pretest similiar to or the same as the criterion test will provide pre-assessment of the student for two reasons: (1) if he can already demonstrate the behavior, he does not need to complete the project, and (2) the pretest will be helpful in judging rate of improvement and effectiveness of instruction.

The criterion test or situation is concerned with identification of the type of behavior expected and the level of performance; most importantly, the criterion states explicitly the manner in which the student is to be measured. The level of performance may be stated in terms of quality and quantity or a combination of both. For example,

Quality of Performance	No. of errors permitted Give three out of five items List five steps in order
Quantity in Performance	No. of times completed Percentage of successful trials Speed

The criterion goes one step farther than the level of performance--it tells you how you are to be tested. The criterion may specify "on a true-false

test," "a five-minute typing test," "an oral quiz," or even give you the exact behavior expected such as "assemble a radio from the parts." I'm sure that you have probably had at least one educational experience in which the criterion was different than what was expected; for example, an instructor said at the beginning of the course that the final test would be in the form of essay questions but the final test turned out to be a true-false test, or vice versa.

The criterion has three specific purposes: (1) to help design instruction, (2) to help determine the student's ability to perform, and (3) to help evaluate instruction.

First, the statement of the criterion prior to instruction provides us with a model of the behavior expected which we can use for selection of content and activities. While we make these selections, we should be asking ourselves questions such as these: Is this information necessary in order to meet the objective? Does this activity contribute to attainment of the objective? Is there a better activity? Is this activity going to provide appropriate practice in the behavior expected?

Second, the statement of the criterion prior to instruction simplifies the evaluation procedures at the end of the instruction--the test style is already determined. If the criterion behavior is ability to correctly answer true-false questions, then the instructor simply writes a true-false set of questions. Furthermore, the level of performance was given in the objective, such as correctly answering 90 percent of the questions, so we do not make decisions about passing marks after we look at the students' mark. Unfortunately, in vocational education we often expect students to demonstrate skill and correct techniques in operating machinery; the appropriate criterion is to have them operate the machine, of course. The problem arises not from making a critical analysis of the finished product but from making a critical analysis of the process or techniques used. The analysis of the process or techniques used demands that the evaluator observe the person in action and over a considerable length of time and at spaced intervals, which is very time-consuming. Therefore, if the class contains twenty students, it is highly unlikely that the evaluator has the time to make individual observations of any validity for each student; consequently, assessment is usually made by analysis of the finished product and not by technique. We must solve this problem.

Third, the criterion helps us evaluate instruction as we use both student minimal standards and class minimal standards. We judge the individual student on such things as ability to answer correctly 90 percent of the questions on a true-false test. However, we also set a class minimal standard to judge the effectiveness of the instruction. To do so, we simply add one more factor to the student's minimal standard, such as adding the statement that 75 percent of the class will correctly answer 90 percent of the questions on a true-false test. By the way, this percentage can be added directly above the student objectives on the objective/evaluation grid which we used earlier.

After we have obtained the data on the student's ability to perform the criterion, we are confronted with a variety of decisions. Let us refer to the process model for using performance objectives from a few minutes ago. At the extreme right we find a decision point--a time when you must look at the data and decide whether to proceed to the next item, drop the present item, or revise it.

There is probably less concern about revision of objectives if the students and the class meet the minimal standards for the objective the first time they are assessed than if they failed to attain it. However, revisions may be vital even when students do meet the minimal standards. For example, questions such as the following should be answered: Were the minimal standards too low? Could the same minimal standards be met with less instruction time? Was the pre-assessment of the student correct or could he have skipped this project?

The major problem with making decisions about the student's data comes when the student did not meet the minimal standards and when the majority of a class did not. If this happens, we must search for the reason. Was the instruction inclusive? appropriate? sufficient in length? Are the prerequisites appropriate? Is the pre-assessment appropriate? Is the sequence appropriate? Are there gaps or weaknesses in the instruction? Is the criterion appropriate?

After such questions have been asked and judgments made about revisions, the process of using the performance objectives begins again; in fact, the objectives may be revised a dozen times before they are satisfactory.

To repeat, we must continuously assess objectives in terms of value, priority, sequence, and format; we must continuously assess students and classes against the criterion specified; and we must continuously strive for improvement in instruction. Briefly, as we write performance objectives, we need to:

(1) specify prerequisites

(2) write precise performance objective

(3) provide explicit criterion

(4) make continuous assessment of data

(5) revise when necessary

By this time you should have a realistic picture about the adruous, time-consuming task of writing, using, and assessing performance objectives for a curriculum. The improvement in communication between educators working on a project involving writing performance objectives is quite often fantastic. The differences in terminology is often the only difference. I remember one incident involving terminology that happened to me in Europe. We were on a sightseeing bus in Scotland when the driver mentioned the millions of bushels of corn that they raised. Well, we had traveled over 200 miles in Scotland and I hadn't seen a single field of corn and I didn't think that Scotland was so large that it would raise so much corn without our seeing it as we traveled. So I asked the driver where they raised all that corn. He looked at me as if I were a little crazy and said: "Look, there are fields of corn on both sides of the road right now." Well, I grew up on a farm in Iowa--but I didn't see any corn along the road. It turned out that the word "corn" in Scotland refers to barleycorn, oatcorn, wheatcorn, etc. What I call "corn" from my Iowa background is called "maize" in Scotland. So we will find ourselves defining terminology as we write performance objectives.

In the future we will see the computer making many routine decisions about the successful completion of objectives and the assignment of new products to

students. This is possible because we educators are going to assign instructional materials with explicit prerequisites, precise performance objectives, and reliable and valid criterion. With such materials in hand we can feed it into the computer and then run individual student data through it. The computer will print out the decisions and the next assignments and objectives. Perhaps we will even be able to program the computer so that it has a diagnostic picture of the student and can make judgments about the method of instruction that is best for that particular student. I hope so.

In conclusion, I would like to show you some transparencies in which the objective/evaluation grid is illustrated and on which a performance objective and a complex criterion are given. I have not duplicated these for you as they are still in the experimental stages and need some revisions. I have, however, included a sample performance objective and criterion for a workshop on performance objectives--not necessarily this workshop. But the example should be useful to you as you proceed with your own attempts to write objectives and establish criterion.

IMAGINERY WORKSHOP ON DEVELOPING PERFORMANCE OBJECTIVES

Objective: Participants will (a) recognize those situations for which instructional objectives are useful, (b) identify well-written objectives, and (c) write an instructional objective for the subject matter of their own courses.

Criterion: At the end of the workshop:

1. The participant will be able to write the uses of instructional objectives in teaching. At least one use will be listed for each of the following four categories: learning systems design, student guidance, evaluation, and communication among instructors.

2. Given an ambiguously stated objective and a copy of the "Decision Rules for Writing and Evaluating Instructional Objectives," the participant will be able to correct the objective by performing the following:

   a. Indicate the words in the objective statement which violate a decision rule.

   b. Identify by number the decision rule that was violated.

   c. Write the words that should be substituted for the violations so that the objective conforms to the decision rules.

   d. Identify by number those decision rules which are violated through errors of omission.

   e. Write the words which should be inserted so that the objective conforms to all decision rules.

   One error in each section (a-e) is the lowest limit of acceptable performance.

3. Given an ambiguously stated general instructional goal and a copy of the "Decision Rules for Writing and Evaluating Instructional Objectives," the participant will be able to (re)write an objective. Each objective written will exemplify the correct application of all the decision rules, i.e., each will include a terminal behavior stated in operational terms, the conditions under which the terminal behavior will occur, and the critia and lower limits of acceptable performance. One deviation from the decision rules is the lowest acceptable performance.

   (The above example was taken from materials prepared by Lawrence T. Alexander and Stephen L. Yelon of the Learning Services at Michigan State University.)

The decision rules mentioned above are also included here.

CRITERIA FOR DEVELOPING PERFORMANCE OBJECTIVES

(Adapted from materials by Stephen Yelon, Michigan State University)

Out-of Class Tests or Activities should refer to out-of-class student performance which:

1. could be measured (given enough time and money)
2. is relevant to your objective
3. could be given by another teacher in much the same way as you would give it
4. has some vocational, or educational need

Close Simulation of In-Class Tests

1. Is the behavior required in your in-class test the same kind of behavior or the closest approximation possible to the behavior the student must use in the "real world" situation you are preparing him for?
2. Is the behavior described in your in-class test required as a final test after instruction is complete?

Terminal Behavior

1. Does the statement refer to some viable or audible action performed by the student?
2. Do the words describing the action you seek mean the same thing to most people?
3. Is the behavior the very same behavior that you expect your students to perform on the final demonstration of their learning?

Conditions

1. Does the statement of conditions include the time, materials, special materials and tools and props over and above ordinary assumed conditions given to the students?
2. Does the statement of conditions include restrictions of time, materials, special materials, or props either associated with performance in practice or in other settings?
3. Does the statement of conditions refer to the behavior you wish to have performed as a final indication of performance attainment?
4. Can your conditions as stated by duplicated by a colleague?

Criteria

1. Does the statement describe how well the learner must perform either quantitatively or qualitatively?
2. Are the characteristics of acceptable performance described either through

   a. descriptive adjectives, or
   b. an essential time limit, or
   c. an objective reference, or
   d. a consequential event or artifact?

3. Are all the characteristics of a standard present so that the statement is objective, includes a standard, and gives the lowest limit acceptable?

THE ORDEAL OF

ELIMINATING IRRELEVANT OBJECTIVES

James Hanneman
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Paper Presented at the
Workshop on
Determining Performance Objectives

October 9, 1970
Carnahan House
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THE ORDEAL OF ELIMINATING IRRELEVANT OBJECTIVES

It is a distinct pleasure to visit again in the Commonwealth of Kentucky, renew old acquaintances, establish new friendships, and spend a few hours with a group of competent vocational-technical educators. It's always a pleasant occasion, and I regret I was unable to spend the entire week with you.

Kentucky is recognized as a state which has looked at the purpose for which it exists and is adapting its programs to meet the present and future needs of its three million youth and adults.

Looking at the roster of this conference, I sincerely believe this is the group which is responsible for the development of the image. And it also appears that this will be the group which will be responsible for turning that aspiration into a reality.

I work in the City of Pontiac, which is located about twenty-five miles from Detroit. Pontiac, being an automobile manufacturing town, is an economic attraction for many Kentucky people. And we are happy that attraction often turns into a desire to remain in Michigan. I don't think a week goes by which I do not notice a car with a Kentucky license. And everytime I see a Kentucky automobile license, I wonder if it's from Hickman County.

Hickman County and Columbus were where my secretary grew up and gained those fundamental cognitive, affective, and psychomotor attributes which enable her to become the efficient and capable secretary she is. For those of you from Hickman County, her name is Carol Morgan, Carol Bryan before she married and accompanied her husband to Detroit to build that nest egg before returning to Kentucky. We're pleased she found us and hope she delays her return for a few years.

PURPOSE

And now to the purpose of my presence here. During the forthcoming days, weeks, and months you are about to encounter one of the most frustrating experiences of your professional career. Because of your attendance to this conference, you have become a marked man or woman. If you could see yourself as others see you, you would see a huge PO (Performance Objectives) upon your forehead.

And you will carry this mark for a long time because, in the eyes of fellow conference participants, your colleagues back home, and everyone in the state who becomes aware that you were at this conference for five days, you are an expert -- a knowledgeable person -- concerning performance objectives.

PERFORMANCE OBJECTIVES

Performance objectives, behavioral objectives, expected outcomes, or whatever term you prefer to use, and I are old acquaintances. We have been growing up together. I first became aware of performance objectives in the Fall of 1962 at Cornell University. Fred Tom, Professor at Cornell, was the

instructor of a course, "Teaching Methods in Voc-Ed," of which I was an enrollee. During a brief stop at the campus bookstore, Professor Tom came across Robert Mager's book and brought it to class.

We devoured the contents and then ended up writing PERFORMANCE OBJECTIVES within the context of 1960's educational fad - Programmed Instruction.

During the past 2½ years, I have been involved in behavioral objectives at Oakland Schools. In the Division of Vocational Education, we used the term ....EXPECTED OUTCOMES.... and we use them at the individual course level and also at our total program level. I believe that you have had an opportunity to look at some of the overall program goals which we developed last fall. They are a long way from what we would like them to be...in both style and class.... but they are a start.

On Tuesday of this week we met with four voc-tech principals to continue the process of refining the program's goals and to discuss the methods by which we will measure our success in attaining those goals.

We also use BEHAVIORAL OBJECTIVES in other ways. On Tuesday and Wednesday of this week, I participated in a workshop on the use of Behavioral Objectives in the Identification and Improvement of Community Support to pass millage campaigns.

STYLE AND CLASS

For the past 4½ days, you have become aware of the role of performance objectives in vocational education and practiced the art of writing performance objectives. Dr. Clark has discussed procedures of determining what to place in the conceptual frame-work outlined by Dr. Uthe. You now are aware that there is an accepted style for arranging the words and sentences in order to express the purpose of an organization or program. But style is not enough. Performance objectives cannot survive on style alone; a bit of class must be added to the style. Class may be defined as performance objectives relevant to vocational technican education in the 70's.

Locate the worst program of vocational-technical education in this state, give me a few weeks, and I will present you with an acceptable, if not excellent, set of performance objectives. Also, locate the best program you can find, and I can also produce an acceptable set of performance objectives. Both will have style, but only one will have style and class.

ELIMINATION ORDEAL

As I stated before, you have become a marked person....a source of knowledge and expertise. You also are about to experience an ordeal, an ordeal which will probably be one of the most satisfying ordeals of your career. The ordeal is not one of writing the objectives; the real ordeal is one of eliminating the irrelevant objectives.

You will soon discover that an overwhelming number of performance objectives will be thrust upon you by your associates - many of them will be meaningless to the educational process. The ones which are really appropriate will readily arise to the surface and receive unanimous acclaim. But it's those in the gray area which must be eliminated in order to enable the entire process to function effectively. And hence, the ordeal of eliminating irrelevant objectives.

I would like to share some of my ideas which may aid in reducing the ordeal. I would suggest that you:

1. Consider your philosophical position concerning education.

2. Consider the people with whom you will be working during the development of performance objectives.

3. Determine the point of reference regarding the purpose for which your position exists.

4. Be aware of the dangers associated with performance objectives.

PHILOSOPHICAL POSITION

I believe that one must identify a philosophical position prior to developing performance objectives. I believe this is necessary because:

(a) A philosophical position provides us with a set of principles which are as extensive as the educational problems we confront.

(b) A philosophical position provides us with external and internal consistency which results in a dependable professional conduct.

(c) A philosophical position of education is a way of approaching, analyzing and resolving the problems which confront vocational-technical education.

All of us have been classroom teachers, so allow me to use some examples of differing philosophical postions regarding the role of the teacher.

Do you believe that the teacher has the most important single role in the educative process and serves as a representative and transmitter of all facts, values and skills? (Idealism)

Or do you believe that the teacher is simply a guide, who explains the laws and skills to the innocent student from his vantage point of increased sophistication? (Realism)

Or do you believe that the teacher serves as a helper, guide, and arranger of cognitive, affective, and psychomotor experiences? (Pragmatism)

Let's look at three differing positions regarding the student.

Do you believe that a student represents a plastic mind to be molded and that every student is different and should be treated as such? (Idealism)

Or do you believe that the student grows from within through activities in the working and social setting and likes to experiment, solve problems, and participate in class situations? (Realism)

Or do you believe that the student is a machine to be conditioned and, therefore, impersonal and objective? (Pragmatism)

Just what do you believe and are willing to defend about the purpose of vocational technical education, the curriculum, the student, the teacher, and the teaching method. If you are to develop or guide the development of performance objectives, you must know what you believe concerning education, vocational-technical education, and the educational process.

After learning how to write performance objectives eight years ago, I attempted many, many times to write one or more performance objectives for my own high school classes, some of the graduate class I attended, and for the various jobs I had in the past eight years.

But I never seem to develop anything other than it appeared to be a sterile, academic product. And then one day, someone's off-the-cuff remark, which sounded something like this, "One cannot be a true educator unless he understands his own philosophical positions," caused me to examine my philosophical position.

And I discovered that I was sort of like the tide, moving between the extremes and pushing my own thoughts back into the depths of my mind. I was a parrot of other men's thinking.

So I studied philosophy and the philosophies of education. And I discovered that I agreed with some and disagreed with others. I developed my own philosophy which I think is compatible with most educators and now I have a reference point upon which to base my performance objectives.

The second experience. I have a sister-in-law, almost everyone does, and she teaches home economics in Michigan. She enrolled in a two-week summer school course and was requested (required may be a more descriptive word) to develop performance objectives for a consumer education unit. After the first week she called and from the depths of utter frustration stated that performance objectives are for the birds. So we met at Sears' lunch counter, halfway between our homes, and discovered that she had a philosophy of education, but never projected into her teaching style. She brought it, her philosophical position, to the surface and said, "This is what I believe concerning education." And then she wrote her objectives to reflect that philosophy. My point is - everyone has a philosophical position so acknowledge it and utilize it.

Therefore, before you begin the development of performance objectives, spend as much time as you need to identify what you believe concerning education. If you work with other individuals, discuss your differing positions and arrive at a philosophical position which is acceptable to everyone. If the group cannot agree upon the function and implementation of vocational technical education, it will never arrive at a workable set of performance objectives.

CONSIDER YOUR COLLEAGUES

Most of us spend a great number of hours planning how to, and then actually trying to change other people. In order to achieve the plans which you will be presenting this morning, you will be spending a vast amount of time attempting to change people.

Many of the people with whom you will be working with generally fall within the following two groups: One group is personified by, "I do not give a hoot about those useless performance objectives. They are simply a fad, and I have seen too many fads the past twenty years so leave me along, but call me if it works."

If you haven't already, you soon are about to discover that the majority of vocational technical educators know very little about performance objectives and consequently view them a threat to their competence. They nod their heads and say a few appropriate words, but when the nitty-gritty starts, they dissappear like the young maiden as she drifts into the mist; tantalizing and forever.

The other group will contain the classical innovators who drift into a situation where their clumsiness will be natural and expected. Everybody expects the new and untried. But these people, the innovators, have a necessary role to play because they keep things from stagnating; they keep the gates open and eventually a man with real talent will move in and make use of the techniques worked out by the clumsy people.

A man of talent can utilize any technique. In terms of performance objectives, the day of the innovator has passed. The situation demands that the men and women of talent move in and complete the task.

And then there is that group, the largest group, of vocational technical people that have been waiting for a call from a leader, a leader who knows and understands what he or she is recommending for the advancement of vocational technical education. This group, the true believers, will form your core or brain thrust but you need the individuals previously mentioned in order to achieve an acceptable degree of success.

Consequently, I am suggesting that you take the time to read Stephen M. Corey's delightful little book on "Helping Other People Change," or Eric Hoffer's books, "The True Believer," and the "Ordeal of Change." Admittedly, Mr. Hoffer's books are not written specifically for education, but his comments regarding human action and reaction are appropriate to our cause.

Or just use common horse sense and empathy and you will soon discover that the un-innovator, and innovators, and everyone else will push aside their personal objectives and work together as a team, but only if they have an agreement on a point of reference -- why they are doing what and for whom. That brings us to the fourth point.

POINT OF REFERENCE

Relevant performance objectives can be developed only when the point of reference is the student. For my co-workers and me, our point of reference is that black, white or brown student who's enrolled in the Industrial Electronics Program; that Spanish-American boy with the language problem who's enrolled in the Major Appliance Program; that black student who aspires to be a plumber and consequently is enrolled in the Building Trades Course; that girl from an impoverished home who enrolled in the Dental Technician Program; that girl, a daughter of a prominent professional family who may want to be a cosmetologist; and the adult who wants to improve his skills and attitudes thereby increasing his standard of living and his self-image.

These people, youth and adults, representing all ethnic groups, income levels, and social levels should be our point of reference. For unless our objectives at the national, state, regional, or local level, are developed to benefit the recipients of our efforts; the vocational technical enrollees, we have misinterpreted the reason for our existence.

All administrative agencies and administrators; all consultant agencies and consultants; all teacher education departments or teacher educators exist for the purpose of transmitting knowledge and understanding to the vocational technical enrollee and assisting that student to discover himself and his capabilities. If we develop performance objectives for a purpose other than the one just mentioned, we then have become members of one of the oldest professions known to mankind.

THE DANGERS OF PERFORMANCE OBJECTIVES

During the past fifteen years, education has embraced numerous management and instructional fads and has rejected most of them. These fads were not rejected because they were educationally unsound, but because the mis-informed expected the innovation to produce an outcome for which it was not designed to produce.

The performance objective concept is approaching a fad and already there are teachers' groups who are stating in their publications - "beware of performance objectives." As stated before, the science of performance objectives was not developed and promoted (at least in public education) as a better means of expressing the purpose of an organization, program, or course, but as a means to insure that organization, program, or course reflect the needs and values of our society. A means to an end - not an end unto itself. If they become an end instead of a means, they then become a fading fad.

I had an opportunity to visit with Dr. Robert Mager at a Washington, D. C. conference this past winter, and he expressed fear that bad performance objectives would drive out good performance objectives. Just because a purpose or objective is stated in behavioral terms we are not to assume that the objective is valid. The intended purpose of performance objectives is a means to an end. That end being a vocational-technical program relevant to the times we live in.

The danger is the one which Mr. Pruitt discussed. Performance objectives are a voracious consumer of time, money, energy and enthusiasm. If you plan to develop performance objectives according to the academic rules, be sure you have the resources to complete the task. The dangers of performance objectives may best be described by St. Paul's words:

> "Be sober, be vigilant, because your adversary, the Devil, as a roaring lion, walketh about, seeking whom he may devour."

And now it is my function to bring this session to a close.

As a result of this conference, you are not the same individual you were on Monday. You have heard new words and thought new thoughts. Therefore -

> As you return to your home and work, may you not only be committed to the possible, but keep your level of aspirations focused on the impossible.
>
> May you re-examine the quality of your lives and values and re-adjust your values and your desires in terms of the needs of the youth and adults you serve.
>
> May you keep informed and abreast of the changes occurring in our society.

May you have -

the courage to challenge all methods of administration and instruction which breed injustice and inequality;

the courage to challenge all discussion which heralds false promises;

and the courage to challenge all programs built on ill-defined objectives.

May you not neglect -

the demands of personal encounter with your colleagues;

the demands of bending;

the demands of yielding;

the demands of helping;

and the demands of standing firm.

Lest you forget what you learned this week and the inspiration you gained from Harry Barnard, Raymond Clark, Carl Lamar, Robert Pruitt and Elaine Uthe, Floyd McKinney, Al Mannebach, Charlie Neel, and your fellow colleagues, may you start next week by taking those first small but vitally important steps toward developing a relevant educational program for the great State of Kentucky.

PLANS FOR THE FUTURE

C.O. Neel, Coordinator
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State Department of Education
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Paper Presented at the
Workshop on
Determining Performance Objectives

October 9, 1970
Carnahan House
University of Kentucky
Lexington

PLANS FOR THE FUTURE

I had hoped that Dr. Lamar could be with us today to talk to you about the workshop as it relates to plans for the future, but it was impossible for him to be here.

During the past few days, I have had a chance to talk to many of you individually, so I have a background understanding of some of your plans as they relate to the future. We have heard about management by objectives; we have thought it through. It isn't a need; it is a must.

Evaluation has been a part of our program for many years but at this time, special emphasis is being placed on evaluation. The identifying of objectives is an essential part of an evaluation plan or program. As we go through the evaluation and program planning cycle, the work that we have done this week will be emphasized. Objectives have been identified. We understand them from the different levels. Now we must have information of different types and different sources to determine the degree to which we have attained certain objectives. This information could be from students--it could be from participants in an activity such as our Vocational Education Conference held recently. We received over 900 responses and opinions relating to the degree to which certain parts of the conference contributed to specific objectives. There are decisions made as a result of these opinions. Businesses, as we have observed for many years, know where they are going. Many of you were classroom teachers; you were aware of exactly where you wanted to go each day, and you went in that direction. On a supervisory level, many of you have done the same sort of thing.

It seems that some of us keep our objectives in a desk drawer. This complicates our working relationship with people. It is necessary that we show the people exactly what the situation is, what the results are, what the degree to which we have obtained objectives is. If we know where we are going, and how we are going to get there, the people will go with us.

It has been my privilege as a result of being in this position to have worked for several months with a group of people representing federally supported programs in 17 states. The emphasis of working with this group of people has been management by objectives. Title I programs, Title III, and 23 other federally supported programs are as much concerned about this emphasis as we are.

Now what we must do is get accurate information in front of the Congressmen. The type of people who make decisions as to where federal funds go want facts--relevant information.

The activity of this week is a result of a discussion and decision by the State Evaluation Task Force. The State Evaluation Task Force members are directors of the services. Many of them have been with us this week. Some of them could not be with us, so they asked another member of their staff to be here. The Regional Evaluation Task Force is made of persons who were appointed to represent a region. This is the second activity they are participating in with us. Selected members of the Instructional Materials Laboratory have been with us and also a group of selected state administrative and supervisory

personnel have been working with us. The objectives of the workshop are the realization of a need for properly stated measurable objectives as they relate to vocational education programs, services, activities, and instruction, to be able to develop and write objectives.

This week we have been building up to working toward a plan for the future. We find in the Amendment, Section 104, the State Advisory Council is referred to. They are to conduct evaluation programs, services, and activities and publish and distribute the evaluation reports. They have been in this activity, and I understand they have published one report. Now an annual evaluation by the State Board with comments on the effectiveness of meeting objectives which have been set forth in the State Plan. They have to know what our objectives are. We need to be able to identify them. Section 122 refers to federal funds. There are federal funds available for federal projects as they relate to evaluation and objective determination. Section 1.54 of the State Plan, "Criteria for Conducting Evaluations" entails those who develop the criteria. Professional vocational education staff at the three levels are involved in determining the criteria for which there must be objectives. This also involves other people from other institutions, not just professional people. Criteria used shall be selected on the basis of an adequacy to determine the degree to which vocational education objectives are being attained. For the first time, we have available, evaluation reports from some programs on the state level and from the services, and activities. After going through them, you will have a better understanding of what the objectives have been for the vocational programs, services, and many of our activities.

The evaluation described in the State Plan will be made by staff members, contract, or from results of other agencies' reports. This evaluation will include all agencies and institutions conducting approved programs. There shall be an annual evaluation and at such other times as needs indicate.

Having talked with many of you, I know you have developed objectives as they relate to you personally. If not that, to the job or to your responsibility. To self, to the job, an individual member of a team, whether it is a local, regional, or state team, we have all developed performance objectives. There are about half a dozen of you who plan to work individually on your job identifying objectives, or revising them. I know of three teams who will be working on a regional level to help those on a local level as a result of this week's work. Now--plans for the future--you can put all this together many different ways, but plans for the future could be labeled activities. The area is developing and measuring degree of attainment of performance objectives. Some of these activities are being planned, some of them are on the road, and one or two of them are in the assumption category. Number one--preservice. There is in the making, a performance objective proposal to work with teacher educators to develop a workshop to involve teacher educators in the universities in a similar workshop. Hopefully, this will close the gap so that they, as they come to work with us, will have more of the competencies that they need to work with us in this area. The results will be new people coming to work with us who will have the abilities that we have reviewed and will have a better understanding of the results of this

week's work. Secondly--inservice activities--this relates to workshops involving Bureau level people in the very near future. This will be a period of time for this group to concentrate on objectives. Workshops for those on a regional level are to be planned, then workshops for those working at the level are to be planned. Third--projects--these relate to helping us accomplish the objectives we have written. To illustrate, in Central Kentucky we have underway, now, a project VEEP (Vocational Education Evaluation Project). This is a twelve-month project which is operative now. The men who are competent in this area which is being emphasized this week will be working with local people to identify hidden needs and to determine objectives. VEEP will involve one area vocational school, eight extension centers, and the vocational programs in ten counties on the secondary level. We have been asked to start planning to get ready for the implementation of this sort of evaluation program in the other regions.

Number four--miscellaneous activities--this is a group of miscellaneous activities not specifically identified with pre-service, or inservice projects.

There are many of you who represent one of the services, I think maybe at this time I should clear up programs, services, and activities. Programs are those working in the different areas, Home Economics, Agriculture, etc. Services refers to Program Planning, Development and Implementation, Program Operations, and Ancillary Services. In ancillary services we find Teacher Education, Research, Evaluation, Guidance, etc. Last but not least, another activity that will help us in our plans for the future--many of you asked for some of the materials we have been using in this workshop. The filmstrips, transparencies, and written materials will be available to you for use on the local, regional, and state levels for your aid in explaining the determining of performance objectives.

I feel the time will come when we can say, as a result of this week, and the work we did at the MDTA Evaluation Workshop, that we have proved that this has been a profitable week for us to have been together by the specific activities which you will plan. As you continue through this day for another three of four hours, we ask you to stay with us. You have been most patient, you are very energetic and a top-notch group. I have asked some six men to respond to my presentation and if I made many things fuzzy, I will clear them up for you in the very near future. Thank you.

VT 014 771

NENNI, IRENE W.

DEVELOPMENT OF VOCATIONAL EDUCATION FOR THE HANDICAPPED. FINAL REPORT.

CABELL COUNTY BOARD OF EDUCATION, HUNTINGTON, W. VA.
WEST VIRGINIA STATE BOARD OF EDUCATION, CHARLESTON. DIV. OF VOCATIONAL-TECHNICAL EDUCATION.
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DESCRIPTORS - *VOCATIONAL EDUCATION; *CURRICULUM DEVELOPMENT; DISADVANTAGED YOUTH; *CAREER EDUCATION; VOCATIONAL REHABILITATION; SPECIAL EDUCATION; *HANDICAPPED; PROGRAM DEVELOPMENT; CULTURALLY DISADVANTAGED; SOCIALLY DISADVANTAGED; EMPLOYMENT OPPORTUNITIES; ELEMENTARY EDUCATION; SECONDARY EDUCATION; POST SECONDARY EDUCATION

ABSTRACT - BASED UPON THE GUIDELINES ESTABLISHED BY THE WEST VIRGINIA PLAN OF VOCATIONAL EDUCATION, THIS CURRICULUM DEVELOPMENT PROJECT WAS DESIGNED TO STIMULATE NEW WAYS TO CREATE A BRIDGE FOR THE HANDICAPPED BETWEEN SCHOOL AND EARNING A LIVING. THE SCOPE OF THE PROJECT WAS TO BROADEN OCCUPATIONAL ASPIRATIONS AND OPPORTUNITIES FOR YOUTH WITH ACADEMIC, SOCIOECONOMIC, AND PHYSICAL HANDICAPS AT FAIRFIELD SCHOOL IN HUNTINGTON, WEST VIRGINIA. FROM A CURRICULUM ASSESSMENT, IT WAS DETERMINED THAT FIVE INSTRUCTIONAL LEVELS HAD TO BE RESTRUCTURED BEFORE THE IMPLEMENTATION OF NEW TRAINING PROGRAMS ON THE SECONDARY LEVEL. THUS, THIS REPORT CONTAINS A CURRICULUM DESIGN FOR PRIMARY, INTERMEDIATE, JUNIOR HIGH, SENIOR HIGH, AND POST-SECONDARY LEVELS OF A CORRELATED VOCATIONAL EDUCATION, SPECIAL EDUCATION, AND VOCATIONAL REHABILITATION PROGRAM WITH THE END RESULT THAT STUDENTS WILL BE PREPARED FOR A CAREER AND CAN OBTAIN SUITABLE EMPLOYMENT IN AREAS OR RELATED AREAS OF THEIR TRAINING. (AUTHOR/JS)

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Final Report

Grant Number D.V.E.-9-W.Va. 70-E-13

DEVELOPMENT of VOCATIONAL EDUCATION for the Handicapped

Irene W. Nenni

Cabell County Board of Education
620 Twentieth Street
Huntington, West Virginia 25703

October, 1971

West Virginia
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State Department of Education
Bureau of Vocational, Technical, and Adult Education
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Huntington, West Virginia

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West Virginia
State Board of Education
State Department of Education
Bureau of Vocational, Technical, and Adult Education
Division of Vocational Education

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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SUMMARY

Vocational education for the handicapped has been a major concern of Special Education administrators and teachers in the state of West Virginia for a number of years. The Exemplary Program and Projects of the 1968 Amendments to the Vocational Educational Act provided opportunities for designing and implementing new programs in vocational education for handicapped students.

As defined in the Federal Register, 1970, the term "handicapped" means mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, crippled, or other health impaired persons who by reason of their handicapping condition cannot succeed in a vocational or consumer and homemaking program designed for persons without such handicaps, and who for that reason require special educational assistance or a modified vocational or consumer and homemaking education program.[7]

This curriculum development project was based upon the guidelines established by the West Virginia Plan of Vocational Education under the Vocational Education Amendments of 1968, Public Law 90-576, Part D, Exemplary Programs and Projects, Section Six of the State Plan. The purpose was to stimulate through total or Federal financial support for a maximum of three years, new ways to create a bridge between school and earning a living for young people, who are still in school, who have left school either by graduation or by dropping out, or, who are in post-secondary programs of vocational preparation.[14]

The scope of this project was to broaden occupational aspirations and opportunities for youth with academic, socioeconomic and physical handicaps at Fairfield School, Huntington, West Virginia.

From a curriculum assessment, it was determined that five instructional levels had to be restructured before the implementation of new training programs on the secondary level. This report contains a curriculum design for primary, intermediate, junior high, senior high and post-secondary levels of a correlated vocational education, special education and vocational rehabilitation program with the end result that students will be prepared for a career and obtain suitable employment in areas or related areas of their training.

CHAPTER I

INTRODUCTION

Special classes for the mentally retarded at Fairfield school are structured within the philosophy and objectives recommended by the West Virginia State Department of Education, Division of Special Education. Specifically, these objectives and measurable outcomes are:

1. The student acquires self-help skills and applies them to environment situations.
2. The student develops a sense of self-esteem and social acceptance in his environment.
3. The student develops functional communication skills.
4. The student acquires basic academic skills.
5. The student attains vocational competency.
6. The student develops necessary skills for use of leisure time.
7. The student is willing to follow regulations of classroom and work procedure.
8. The student practices self-control.
9. The student accepts responsibility for acceptable behavior.

Curriculum for the students at Fairfield School followed social-occupationally oriented activities for the development of economic efficiency, self-realization, human relationships and civic responsibility. However, students entering the secondary program at the school were frequently found to be deficient in the social-vocational knowledge, skills and attitudes necessary for achievement in the area of vocational competency.

I. PURPOSE OF THIS PROJECT

In 1969, the West Virginia State Board of Education established a cooperative agreement with three state agencies for the development of programs utilizing resources available through the Division of Vocational Rehabilitation, the Division of Special Education and the Division of Vocational Education. This cooperative agreement stated:

> It is recognized that interagency cooperative effort can contribute to the development of quality programs, services and activities for disadvantaged and handicapped youth and adults in West Virginia.

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Through cooperation, each signatory agency, may so organize their efforts to provide programs, services, and activities in an effective and economical manner so as to avoid duplication or wasted effort.

To this end, Special education shall provide the design of the educational program involving an orderly sequence of instructional activities;

Vocational education shall provide, where available and possible, specific instruction in occupational areas designed for the handicapped individuals either through the regular vocational programs or a modified program; and

Vocational rehabilitation shall provide those necessary services to assist in identification, counseling, evaluation, referral, placement and follow-up of handicapped persons.

To assure the existence of an effective arrangement so that the several and various activities of the cooperating agencies are sequences, and the necessary coordination exists, it is agreed that the Division of Vocational Rehabilitation, the Division of Special Education, and the Division of Vocational Education shall coordinate their efforts to insure the continuity and broad usage of their respective resources to provide a meaningful program of education for handicapped youth and adults of West Virginia.

The above agreement was signed by the state directors of the three cooperating agencies and the state superintendent of free schools. A copy of the agreement can be found in the State Plan for the Administration of Vocational Education under the Vocational Education Amendments of 1968.

Attention was directed to serving handicapped persons in the fifteen to nineteen year old range in those areas of the state warranting special programs and services; however, students at Fairfield School will be permitted to remain in vocational training programs until they satisfactorily complete the requirements of the course of study. Modifications within regular vocational programs and funding for new programs were placed in priority.

The curriculum at Fairfield School has been academic centered. There was a need to evaluate the total curriculum and to establish a balance between academics and vocational education.

During the 1970-1971 school year, two-hundred twenty eight students enrolled in the secondary program at Fairfield

School. Of this number, one hundred fifty eight students were classified within the range for vocational education career development programs. Fifty-three students participated in vocational training programs of printing, occupational home economics, and a cooperative vocational rehabilitation in-school work study program. Approximately one hundred students had not received any type of vocational training. Providing students with information and orientation about work was insufficient; these areas necessitated a follow-up of exploratory experiences and clusters of occupational training.

II. OBJECTIVES OF THIS PROJECT

The objectives for the planning project in vocational education of the handicapped were:

1. To provide a comprehensive vocational education program for handicapped students in Cabell County.
2. To establish priority areas of vocational training.
3. To develop outlines for priority training areas.
4. To evaluate students for priority training areas.
5. To secure facilities for implementation of new programs.
6. To investigate vocational appraisal techniques for assessment of the student population.
7. To compile information of jobs available in the community.

The over all design of this project was to initiate the necessary curriculum changes for the development of salable skills at the entry level of employment within the local community and surrounding areas. Sound program development for the handicapped students depends upon needs, objectives, trained personnel, program planning and evaluation in terms of curricula.

III. LIMITATIONS OF THIS PROJECT

This project was limited to the school population of Fairfield School. Primary and intermediate students enrolled in special classes for the mentally retarded in Cabell County furthered their education at the secondary school located at Huntington, West Virginia. There was a population of both urban and rural students enrolled in the school.

The time limit on the research curriculum development project was nine and one half months. However, as a follow up to the project, a number of special education teachers in Cabell County enrolled in a three weeks Institute for Teachers of the Disadvantaged and the Handicapped at Marshall

University, Huntington, West Virginia. The institute was designed to provide participants with experiences to include:

1. Concepts related to teaching the handicapped and the disadvantaged.
2. Program planning for the handicapped and the disadvantaged.
3. Curriculum development in vocational education for the handicapped and the disadvantaged.

IV. DEFINITION OF TERMS

Academics. For purposes of this paper, the term academics applies to those subjects of higher learning in arithmetic, language arts, English, West Virginia History, science and social studies. The curriculum at Fairfield School was primarily academic centered with the above subjects related to skills and knowledge rather than a practical or functional use of the tool subjects.

Handicapped. The term handicapped was interpreted to include mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, emotionally disturbed, crippled or other health impaired persons who by reason of their handicapping conditions cannot succeed in a regular program.

Mentally Retarded. Throughout this report, reference was to the term mentally retarded. The term was applied to those students whose psychological evaluations diagnosed them primarily as mild or moderately mentally retarded and who may be expected to profit from an organized program designed to provide basic academic skills and social competence as well as promote adjustment and vocational proficiency.

Occupations Clusters. The concept of this term was to factor out common elements of occupations and to teach those common elements so as to more widely prepare students for work. The major objectives of the cluster program are to provide the student with greater flexibility in occupational choice and to prepare him for occupational mobility. Students are prepared to enter a family of occupations. The program prepares the student to choose from a wider number of occupations and to move to other occupations within the family. In a changing occupational market, the cluster concept has strong appeal.[2]

Occupational Education. The terminology of occupational education limited to a three year course of study in occupational information and an in-school work study program at Fairfield School. Realistic situations were provided for

student self-appraisal. The students made a survery of jobs available in the community. A great deal of emphasis was placed on the development of successful work attitudes. The basic principles of operant conditioning were introduced and used for the development of good interpersonal and group relationships.

Post Secondary Program. A program of instruction for youth or adults who have completed or dropped out of high school is offered at the post secondary level. Occupational preparatory courses are offered to those persons who are interested in gaining new skills or in upgrading present skills.

Secondary Ungraded School. Based on the progressive concept of education, this term was interpreted to mean that a six year program of secondary special education was designed for the educable mentally retarded students at Fairfield School. Students are grouped according to their abilities, needs, and interests and progress through the program at their own rate of learning. Some students spend a year or more on one level; others spend less than a year on a particular level. With the approval of the parents of the students and upon recommendation by the psychologist of Cabell County, the students are assigned on a voluntary basis to the school.

Teacher Coordinator. Reference was made in the study to a teacher coordinator. This person assumes the responsibilities of the work-study program of the post secondary level and worked cooperatively with teachers, administrators, businesses and industry for placement of the students into suitable jobs in the local community and surrounding areas.

Work Study Program. The work study program at Fairfield School was planned for both in-school and out-of-school work experiences. The occupational education teacher working with the Vocational Rehabilitation counselor developed the in-school work study program for third and fourth and fifth year students. The students attended classes two days a week and reported to job stations within the school building three days a week. Evaluation methods were devised for recommendations into vocational training programs were under the auspices of a teacher coordinator. Students were placed into suitable employment within the community. They were employed for one half day on a job and returned to the classroom for instruction and counseling under the teacher coordinator for the rest of the school day.

CHAPTER II

REVIEW OF THE LITERATURE

Social needs and skills for adult life adjustment are frequently beyond the ability of the educable mentally retarded. Schools have accepted the responsibility for assisting students in the transition of school experiences to adult needs. Traditional academic work was emphasized less and more attention was given to the development of social skills for successful vocational adjustment.

Younie proposed an educational-vocational continuum as an overall concept in the organization of a total program for the mentally retarded. The continuum had as its basic concerns the student's self-concept, the school's grouping procedures, the curriculum design and the teacher competencies. The continuum stressed a sequential program for the retarded from the time of identification until placement in adult life.[15]

Allen and Baker established goals for preparing students to recognize their own limitations and potentialities. Training programs include a continuity of learning experiences for employment in the community, participation in group activities, use of leisure time and opportunities for progress so that there was recognition by parents, teachers, and students.[1]

Current trends for training and educating the mentally retarded were recognized by Roos in a survey of changing curriculum. Most professionals working in the area of mental retardation have adopted the developmental model of retardation. Retarded children are considered to be developing individuals with potential for growth and learning.[12]

Another area of general agreement among educators was the orientation of educational programs toward practical aspects of life. Combining classroom and work activities has proven to be a successful approach to vocational preparation, and work-study programs have been adopted by most states. Rather than emphasizing the acquisition of traditional reading skills, students are taught a functional type of vocabulary. Special education teachers have attempted to prepare students for a productive life rather than for limited academic excellence. More attention has been given to the development of social skills as a prerequisite to successful community adjustment.

Kolstoe emphasized an early approach to vocational skills and knowledges. Specific understandings of the

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world of work were attitudinal. Attention had been given to the development of attitudes concerning the dignity of work, beginning at the preprimary, primary and intermediate levels with concentration on units and incidental learnings directed to occupations in the scope of adult activities.[10]

Klein related with enthusiasm that vocational education started in the primary grades and continued throughout the secondary porgram for all students. The most important subject taught to a student was the development of a good work attitude. Good citizenship had to be a major objective of the entire program. Programs of vocational education were directly correlated with language arts, social studies and science classes. Orientation exposure to occupations were followed by two years of work experience in the eleventh and twelfth grades. Longrange goals, structured programs, planning and preparation of students for work situations have proven to be successful in that the drop out rates decreased rapidly and 94.6% of the graduates are currently in regular employment. This program has shown the advisability of economic stability.[9]

The work-study program was an area of concern for Peck. Despite the importance of school curricula that provided retarded pupils with every opportunity to master subject matter, the job was unfinished without the inclusion of prevocational and vocational studies.[11]

The results of the Kansas work-study program a three year demonstration project, indicated that a work-study method of vocational training can be used successfully with high school age educable mentally retarded. Ninety-one mentally retarded students with low intelligence, but who were considered to have the possibility of achieving social and occupational competence after training, participated in a series of community work sample training program. The community work samples took place in the sophomore year and provided descriptive information on vocational abilities which was used to evaluate the students and to identify their training and placement needs. Both on-the-job and classroom work experience were provided, students began to work full time in the competitive labor market during the last semester of their senior year. Ninety-one percent of those who graduated from the program were employed on a full-time or part-time basis. The program succeeded in preparing a number of students with extreme vocational limitations for gainful employment.[13]

The case files of 977 employable educable mentally retarded were studied to determine the extent of which they had found initial employment in jobs for which they had been trained in the school-work program. It was found that:

(1) eighty percent of students held jobs for which they had been trained; (2) less than one-half of one percent held jobs in the same occupational category for which they had been trained; (3) approximately ten percent were employed in an occupational field unrelated to the field for which they had been trained. The differences between the sexes was minimal.[5]

Job opportunities for the handicapped have increased in the local community and surrounding areas. There is a need for better training in service occupations, particularly, food services, health occupations housekeeping aides and service station attendants. Therefore, since this training cannot be instigated without the assistance of local educational systems, the Exemplary Programs and Projects Section of the 1968 Amendments to the Vocational Act of 1963 has emphasized the importance of developing suitable programs for handicapped persons.

The Exemplary Programs and Projects Section challenges educators to integrate more effectively those proven elements of vocational education with the total school effort in order to render school experiences more meaningful for all students. It further challenges vocational educators to crack the shell of traditional practice and come up with new, creative ways of meeting the needs of work oriented youth.

Clearly, Congress intended the Exemplary Programs and Projects Section to be interpreted comprehensively in scope, focus, level and setting. The scope of such programs could include orientation and exploration, development of work habits and attitudes, acquisition of job skills and the improvement of teacher competencies. The focus of such programs includes all students, but special emphasis must be to noncollege bound youth, and more particularly to youths with academic, socio-economic or other handicaps. Exemplary programs and projects can be established at all levels of education--elementary, junior high, senior high, and post-secondary--and may be directed to both in-school and out-of-school youth. The setting may remain within the confines of the school or may extend beyound to other community agencies and institutions.[2]

CHAPTER III

EDUCATIONAL PROGRAM IN CABELL COUNTY SCHOOLS

The Huntington and Cabell County School System is the largest and most comprehensive school agency serving the community. During the school year the peak enrollment in regular day school reached approximately 22,000. More than 1,000 adults are registered in a wide range of evening classes, including the verterans' training program. The physical plant consists of sixty-four school buildings with a total value of more than $28,000,000. To keep the public schools in operation required the services of more than 1,700 full-time employees and more than 1,850 full-time and part-time persons.

Cabell County Schools Serve:

- 11,166 children in grades one to six on the elementary level
- 5,862 youth in junior high school, grades seven throught nine
- 4,587 young men and women in senior high school
- 880 students in vocational classes
- 413 mentally retarded children
- 150 veterans in the Veterans' Education Program
- 2,000 adults in day and evening school

There are 1,100 teachers and principals in the Cabell County School System. There are sixty-four buildings in operation in Cabell County, four senior high schools, eleven junior high schools, one un-graded special secondary school and forty-five elementary schools. Cabell County operates fifty-four school buses, transporting 7,400 boys and girls daily to and from school.

The elementary program of studies included the three R's; social studies, georgraphy, history, and civics; elementary science; music; fine and industrial arts; physical, health and safety education. Good work, study, and social habits are fostered through the entire program.

The junior high, senior high, and vocational education programs included English, social studies, mathematics, science, foreign languages, physical education, health, and safety education, music, art, industrial arts and vocational education, commercial education, home-making, and agriculture. The junior high school stressed additional development of

fundamental skills, the exploration of interests and abilities, the development of power to think, and formation of desirable social behavior. The senior high school prepares for college and vocational-technical training, and also for entering some occupations, when the student wishes to take this as a first step in becoming economically self-sufficient and socially competent. The vocational-technical studies, grades ten to twelve, included more than forty fields and prepared the students for skilled technical occupations.

Business and industry cooperated with the schools for the school work program. During part of the school day, students worked in offices, retail stores and other business places. During the remainder of the school day, they were in school studying subjects related to their work. Students were given help in finding the studies and vocations for which they were most suitable and counseling for problem solving.

Special Classes for Mentally Retarded

Classes for children who are mentally retarded are operated by Cabell County Public Schools. Their purpose was to provide education for those boys and girls, who because of their retardation, required a special curriculum to meet their specific needs. Classes are maintained for both those children who are educable retarded and those who are trainable retarded. Each child was placed in a special class only after a thorough psychological evaluation and a medical examination. Application for a child to attend a special class for mentally retarded children is made through the department of psychological services at the local board of education. The program is a voluntary one, and each child is placed upon parental approval.

Cabell County initiated special classes for the educable mentally retarded students on the elementary level, in the fall of 1956. This was the first step of a planned program to provide special classes for these students throughout their school years. The program was expanded to the secondary level in the fall of 1957 with the addition of classes on the secondary level in the junior high schools.

In the fall of 1963, the secondary special classes were moved out of the junior high schools into the building that formerly housed Douglass High School. The school was renamed Fairfield School. It was the first school in the state of West Virginia exclusively geared to the education of the educable mentally retarded on the secondary level. Fairfield School has grown from a small school of sixty-two students and six faculty members to its present enrollment

of 228 students and fifteen faculty members. A state Vocational Rehabilitation unit is located in the school with a director, psychologist, social workers, vocational counselors and a job placement specialist.

Special materials and specially equipped classrooms were made available for these students. The teachers have received training beyond regular classroom experiences, and are well qualified for carrying out the task of teaching the mentally retarded child.

Compulsory school attendance for the mentally retarded begins with the seventh birthday and continues until the sixteenth birthday. Any child who has attained his seventh birthday, and who has not attained his sixteenth, shall be enrolled in school unless such child was excused from school attendance by proper authority for a legitimate reason.

Cabell County provides homebound teachers for those children who are physically handicapped and unable to attend either special or regular classes. These teachers travel throughout the county visiting the home and teaching all subjects on all grade levels. The school work is adjusted to medical needs of the students and with the consent of a physician.[3]

Admission Requirements for Fairfield School

The students placed in the secondary program at Fairfield School meet the eligibility standards established by the Division of Special Education, West Virginia State Department of Education. Students who have been enrolled in special classes in the primary and intermediate programs of Cabell County until thirteen years of age, continued their secondary education at Fairfield School. Other students in the school population have been referred to the department of psychological services at the Cabell County Board of Education. Only after a thorough psychological evaluation and medical examination, and upon the recommendation of the school psychologist, are the students admitted to the secondary program.

These regulations also complied with the regulations set by the West Virginia Department of Education for participation in a vocational education training program.

Upon availability of space, residents outside of Cabell County meeting this criteria, become eligible for participation upon payment of an out of county tuition fee established by the Cabell County Board of Education.

II. CHARACTERISTICS OF THE EDUCABLE MENTALLY RETARDED AT FAIRFIELD SCHOOL

Physical Traits

Small Muscle Control. The small muscle control of this school population is inferior to that of children of normal intelligence. Cursive writing is very difficult for many of these students. The difficulty in using and controlling small muscles is evident in both the quality of writing and drawing. The students have difficulty in performing tasks that require cooperation among the small muscles of the hands and legs.

Large Muscle Control. Only the lower level of the borderline educable mentally retarded exhibit difficulty in large muscle control.

Coordination. The coordination ranges from average to poor. Because of the physical education programs, the older students demonstrate muscular flexibility.

In approximately 85 to 90% of our students retardation is due to familiar rather than organic causes. The students perform better and are more at ease working with their hands than doing tasks that require use of perceptual skills.

Development Age. The motor ability is more in line with the mental age than the chronological age. Few are working below their mental ability.

Physical Strength. The student have a slower growth rate and are slightly smaller in stature as compared to the normal population. This could be partially attributed to enviromental deprivation.

Energy. Because of improper diets, lack of rest, the students tire easily. The students are slow and have to be urged to continue on a job until it is completed. They lack drive, initiative, and resourcefulness, perhaps because they have met so much failure. They are unable to organize work systematically, or to use time wisely in an unstructured situation. Few are aggressive enough to want to accomplish anything worthwhile in life, but many aspire to getting a menial job, buying a car, and not coming to school.

Vision and Hearing. Visual, auditory and speech defects are common among the students. Many have multiple sensory handicaps. Substituion and improper tongue placement are the most prevalent speech problems.

Psychological Characteristics and Mental Traits

Observation. A majority of students live in lower socio-economic environments. The home environment plays an important part in what the students do at school. For example, the newspaper is studied and discussed when, in reality, neither newspapers or books are avaiable in the homes. Usually family members are not interested in the fine arts which make it difficult for school personnel to motivate the students to participate in and enjoy music and dancing. The students have had limited experiences, and therefore lack powers of observation. Details are unimportant. They neither see nor hear much detail. They reason through concrete objects. Relationships have to be pointed out to them.

Generalization. The students are more critical of others than self-analytic. Often they don't care what the consequences of what they are doing or are about to do will be. They are unable to generalize and lack the ability to transfer learning from one situation to another.

Psychological Data. The I.Q. range is between 50-80. The mental age is several years below the chronological age. Academic achievement is much lower than for the average student and is often below the expected capacity. Most have difficulty transferring what is taught in the classroom to real life situations. An example of this is the amount of reinforcement the students must have when placed on a job. Other characteristics are short attention spans, poor organizational ability, poor work habits, the need for continual prodding to complete tasks. The students also have poor listening habits. Overall the students are weak in academics, personal hygiene and grooming, acceptance of responsibility, and in showing respect and consideration for others. Their strengths are in a desire to be normal and their interest in securing jobs.

Quantitative. They see relationships in concrete and visual situations more effectively than if given verbally. They know the name of the days of the week and the months or the year but have difficulty in writing them. They are weak in the ability to spell. Most can tell time.

Memory. The students are stong in rate memory but weak in memory of imagery or logical memory. They have difficulty in sequencing. Material must be reviewed frequently and regularly.

Social Maturity. The students are very self-centered. At a younger age they do not perceive how others feel but gain in this area as they mature. They must be specifically trained to work in larger groups as they usually work better

in small supervised groups. Better adjustment in small groups is due to self-centeredness, which is sometimes due to home life, where often they are not a part of the social life of this brothers and sisters. Given the opportunity, they participate in activities as others the same age even though they seldom win recognition. For many social experiences are the same as those of their own age and peer group. They use common courtesies, and are aware of the manners of others. They are more critical of others than self analytic of their own behaviors.

Social Adaptations. The students are lacking in judgement, organizational abilities and insight. They possess the same social and emotional response desires as normal children but do not know how to cope with them. They respond to environmental influences and become socially mature regulated by their experiences. Like all people, they like to belong.

Emotional Needs. They have the same need as normal children, the need for love and affection, understanding, and success. Even more than some, they need a sense of belonging.

Educational Needs. It is necessary to specifically teach what the average student learns casually such as listening, following instructions, and self-criticism. Much repetition is necessary because the students are learning at only one-half or three fourths the rate of the average. Materials used must be of high interest commensurate with the chronological age with a low vocabulary content. The student must be praised for his best efforts daily and constantly encouraged. The teacher must set short terms goals and provide many opportunities for success. In academic classes, the student is acquiring a sense of responsibility and self-confidence, mental and emotional maturity, and basic prevocational knowledge. Adaptability to new situations is difficult. Social graces are limited.

Personality Types. As with all children, environment is influential in the development of personality. Some of the students are placid, some are aggressive, and many are maladjusted.

Play Interests. Sometimes play interests correspond to the mental age rather than the chronological age. Interests that are parallel with those of other teen-agers are sports, dancing, cars, and the opposite sex. Generally, the students do not have hobbies. Some exceptions are the few that are interested in photography as a result of exposure in printing class, and those who are interested in golf, because of their part-time employment at the local golf courses.

Association of Ideas

Thirteen to sixteen years. This age group has an average mental age of six to seven years. Vocabulary is limited, and they are just beginning to read with comprehension. They are satisfied with manipulation and activity rather than probing and asking why. They have short attention spans, poor comprehension, little concentration and are easily frustrated. Their interests are in proportion to their mental age rather than the chronological age. They lack the ability to think in the abstract which requires that learning situations be concrete. They do not get along well together, cannot take teasing, and become angered easily due to the lack of ability to communicate meaningfully. Because of inadequate vocabulary, descriptive ability is poor. They are not observant and have little curiosity. Creative imagination is lacking. The girls have more interests than boys. They communicate ideas about clothes, dancing and boys. There is little interest in sports, but much in television.

Sixteen to eighteen. This age group has matured somewhat in direct proportion to the growth in mental age. Some students read on the third and fourth grade levels, with a small number achieving even on a higher level. The student assumes more responsibility. Vocabulary is low and language development levels off. The abiltiy to describe in detail remains low. There is a greater awareness of people. Few questions are asked in relation to "why" something happens.

The recognition of mental and cultural diversities among students has become an educational imperative. The qualities which characterized the handicapped students must be identified and understood before vocational educational programs can be developed to meet the needs, abilities and interests of the student. Vocational education has indicated a desire to implement new training programs for the handicapped through the Exemplary Programs and Projects Act of 1968.

CHAPTER IV

METHODS AND PROCEDURES FOR CURRICULUM DEVELOPMENT

After a great deal of research and conferences with personnel of Special Education, Vocational Education and Vocational Rehabilitation, a number of methods and procedures were used for curriculum assessment and program development. The guides for selecting experiences directed toward the world of work were: (1) psychometric tests; (2) measurable outcomes of the West Virginia Comprehensive Education Program; (3) developmental model of Havighurst; (4) consultants; (5) inservice training workshop; (6) advisory council; and (7) a community survey. The foregoing methods are described in this chapter. Comments and outcome on the value of each guideline are written into this report.

I. PSYCHOMETRIC TESTS

Psychometric testing has been a part of the continuing evaluation process of students enrolled in specail classes from the time of entry into the program until graduation. The total testing program from primary through secondary levels was only one method used for determining a sequential program of vocational training. Tests were used for (1) selective grouping; (2) placement in reading and arithmetic classes; (3) predictors of occupational readiness and vocational adjustment; (4) social maturity levels; and, (5) personal development.

Individualized testing programs of the Department of Psychology of the Cabell County Schools and the Division of Vocational Rehabilitation included the following tests:

<u>Individual Intelligence Tests</u>

Stanford-Binet Intelligence Scale
Wechsler Intelligence Scale for Children
Wechsler Bellevue II
Peabody Picture Vocabulary Test
Wechsler Adult Intelligence Scale

<u>Achievement Tests</u>

Metropolitan Achievement Test
California Achievement Test
Wide Range Achievement Test

Personality and Social Maturity Tests

Machover Figure Drawing Test
Vineland Social Maturity

Vocational Interest

California Picture Interest Inventory

Other Tests

Bender-Gestalt Visual Motor Test
Dvorine Isochromatic Plates
Raven's Progressive Matrices

In spite of the fact that test users have become more specific in their interpretations of tests, psychometric testing is still the most used approach to industrial selection and appraisal. Persons in vocational evaluation need to have an understanding of mental tests and their implications for working with educationally handicapped youth.

II. THE COMPREHENSIVE EDUCATIONAL PROGRAM

The Comprehensive Educational Program of the West Virginia Department of Education envisioned a plan which provided the academic, vocational and social experiences necessary to develop effective citizens in a complex society. The purpose of the program design and plan was to give the educational profession and the lay public a vehicle which would provide and stimulate leadership in the development of a high-quality educational program, preschool through adult education.

The expected measurable outcomes were in the developmental stage, that is, they were not complete or final at the time of this final report. The objectives or outcomes were useful to the county and school staffs in the assessment of existing educational programs and in planning for program improvement. With this additional help in evaluation and assessment responsiblities, the county school systems are better able to measure their contributions to the total educational programs in West Virginia.

Program Objective

The child acquires self-help skills and applies them to enviromental situations.

Primary

Manipulates various clothing fasteners.
Develops fundamental grooming activities.
Establishes awareness of personal belongings.
Identifies and cares for personal belongings.
Develops mobility within the home, school and immediate neighborhood.
Develops fundamental health and safety habits
Develops acceptable toilet habits.
Practices good posture in the classroom.
Identifies and appropriately uses eating utensils and identifies food.

Intermediate

Selects appropriate clothing.
Develops a functional care of clothing.
Develops and practices new personal grooming activities.
Develops habits of utilitarian care of personal belongings.
Develops functional mobility beyond the immediate neighborhood.
Develops more sophisticated health and safety habits.
Uses restroom facilities.
Identifies common foods.
Classifies and prepares simple foods for health.

Secondary

Selects and cares for appropriate wearing apparel.
Develops adult grooming habits.
Understands personal responsibility as an adult for belongings.
Utilizes public and private transportation facilities.
Develops an awareness of public health facilities and services.
Plans and prepares well-balanced meals based on availability of food supplies.

Program Objective

The child develops a sense of self-esteem and social acceptance in his environment.

Primary

Develops a sense of self-identification.
Develops the capacity to move from being a self-centered individual to one who relates socially with one or more individuals and identifies belongings of self and others.
Develops self-control to assume appropriate behavior in any given situation.
Interprets personal feelings.
Develops the use of common courtesies.

Develops the ability to make fundamental choices related to social situations.
Identifies what belongs to him and what belongs to others.

Intermediate

Develops a self-image in achieving activities related to sex identification.
Learns to interpret and assume correct roles in various group situations.
Develops a respect for personal or group reactions.
Develops a self-confidence through a recognition and capitalization of his assets.
Develops social adequacies necessary for day to day relationships.
Develops the ability to make a decision and accepts responsibility for its outcome.

Secondary

Develops comprehension for family living.
Develops the awareness of the laws and morals of the community and country and respect for private and public property.
Develops the ability to identify his civic responsibility and acts accordingly.
Develops the social finesse necessary for successful adult relationships.
Develops the ability to evaluate assests and liabilities and acts with responsibility.
Develops an understanding of importance of decision making in adult situations.

Program Objective

The child develops functional communication skills.

Primary

Responds to and follows simple verbal instructions.
Develops visual discrimination and retention.
Develops non-verbal expressions.
Develops visual motor discrimination.
Develops auditory discrimination.

Intermediate

Develops correct response to verbal instructions.
Develops appropriate responses to visual stimuli.
Develops an expanded vocabulary to express his needs and experiences.
Develops spatial relationships, figure-ground relationships,

form constancy.
Develops the appropriate response to auditory stimuli.
Develops appropriate speech patterns.

Secondary

Develops the ability to interpret verbal instructions.
Develops the ability to interpret visual stimuli.
Develops the ability to express his own ideas in relationship to a group.
Improves speech patterns.
Develops the "Art of Conservation."

Program Objective

The child acquires basic academic skills.

Primary

Develops listening and speaking vocabulary.
Develops sight vocabulary (recognition of days of weeks, months, of years, safety and direction words).
Develops the ability to count by rote to 10 and identifies numerals from 0 to 9.
Has ability to identify tools of measurement (clock, ruler, calendar).
Has ability to identify U. S. coins.
Develops ability to identify letter.
Has the ability to associate the numeral with the corresponding number of objects.
Develops writing readiness (holding pencil, scribbling, reproducing sample forms).
Develops perceptual motor skills, (kinesthetic activities; sand and air writing, tracing, writing name).

Intermediate

Develops phonetic and structional word attack skills (initial consonant vowel sounds, prefixes and suffixes).
Develops reading for information.
Can use addition and subtraction and readiness for multiplication and division.
Uses practical concept of measurements (bushels, quarts, cups, teaspoons, pounds, and ounces).
Understands simple monetary concepts (nickel = $.05)
Develops functional spelling (example: men, women).
Uses simple fractions and percentages (1/2, 1/3, 1/4, 50%, 25%).
Displays the ability to use manuscript and cursive writing.
Understand the basic mechanics of composition (capitalization, punctuation, letter writing).

Secondary

Refines structional and phonetic skills (root words, changes, tenses, synonyms).
Utilizes reading skills (recipes, directions for assembling equipment, pleasure reading, want ads, map reading).
Acquires more complex number concepts (multiplication, division, decimals, percentages).
Converts various forms of measurements (feet to inches, minutes to hours).
Manages one's personal finances (comparative buying, credit cards, banking, installments, taxes).
Continues functional spelling (vocational words, survival words, direction words, employment words).
Refines mechanics of composition (business letters, writing paragrphs and stories).

Program Objective

The child attains vocational competency.

Primary

Identifies workers in the home, school and community (policeman, milkman, fireman, doctor).
Defines duties of the various members of the family.
Develops acceptable work habits and routines (room-job assignments, completing tasks, following directions, keeping to a schedule).
Develops positive attitude toward working for a living (Ex: work is honorable).
Demonstrates safe use, proper care and storage of classroom equipment and tools (scissors, crayons, record players).

Intermediate

Identifies job opportunities in the community.
Defines duties within various occupations in the home, school and neighborhood.
Acquires the ability to carry out a routine assignment over a period of time.
Participates in activities that allow him to experience satisfaction and pride in his accomplishments.
Identifies and demonstrates the care and use of manual tools (carpenter tools, house and garden tools).
Demonstrates the ability to follow written directions (recipes, craft projects, job applications).

Secondary

Oriented to the mechanics of the world of work (role playing, interviewing, completing application forms, payroll deductions,

personnel records, letters of recommendation, answering want-ads, signing up at employment agencies).
Identifies occupational criteria (what the job requires), and provides on-the-job training in various occupational settings; evaluates realistically in relation to his ability.
Demonstrates ability to organize, plan and complete an activity.
Develops an understanding that can have positive or negative consequences which are dependent upon the efforts of the individual.
Demonstrates the ability to perform simple household mechanics such as repairing water faucets, lawn mowers, electric plugs.
Identifies agencies in the community related to employment (Division of Vocational Rehabilitation, Social Security office, employment office).
Identifies employers and employees' rights and responsibilities (unions fringe benefits, salaries, dismissals).
Participates in on-the-job training in various occupational settings which will lead to his occupational choice.

Program Objective

The child develops necessary skills for use of leisure time.

Primary

Develops the ability to differentiate between work and leisure time activities.
Transfers the acquired and developed gross motor skills needed for leisure time activities (running, catching, working with clay, painting, rhythm band).
Develops imaginative and creative responses to leisure time situations (playing with boxes, chairs, carton, dressing up).
Develops listening and observation skills for participation in leisure time activities.
Identifies facilities for leisure time activities in the home, school and community (city, park, library, churches, playground, gym).
Recognizes rules and regulations relative to leisure time facilities and activities (playground rules, safety).

Intermediate

Develops meaningful and constructive use of leisure time.
Refines gross motor skills and develops small muscle dexterity (ping pong, softball, musical instrument, arts & crafts media).
Develops innovative leisure time activities (self constructed games, soap box races).
Applies listening and observation skills for participation in leisure time activities.

Participates in the use of facilities for leisure time activities in the home, school and community (little league, scouting, 4-H, church clubs).
Implements appropriate behavior relative to rules and regulations of community facilities.

Secondary

Develops the ability to choose independently from a variety of activities which are appropriate for the individual, time and place.
Applies acquired skills for participation in individual and group leisure time activities (art hobbies, school band, fishing and hunting, motor skills, game rule skills, good sportsmanship).
Participates in creative leisure time activities (refinishing furniture, redecorating basement, flower arrangements, works on old cars).
Plans and utilizes acquired listening and observation skills for participation in personally selected leisure time activities. Demonstrates the ability to investigate necessary information for leisure time activities (time, cost, needs, location, directions).
Develops independence in planning and participating as an adult in leisure time activities in his home and community (vocations, community activities, picnics, lodges, service clubs, etc.).
Displays appropriate behavior in relation in his adult social responsibility.[15]

III. DEVELOPMENTAL MODEL

Activities selected for promotion of career development reflected the developmental needs of students at different age levels. For this purpose Havighurst's concept of developmental tasks was used for evaluation of the current curriculum in the primary, intermediate, junior high and senior high programs. He identified stages of vocational development along with developmental tasks associated with each stage. Listed below are the stages of vocational education

Stages of Vocational Development Ages 5-10

I. Identification with a Worker
Father, mother, other significant persons.
The concept of working becomes an essential part of the ego-ideal.
Principal Developmental Tasks of Middle Childhood:

1. Developing fundamental skills in reading, writing, and calculating.

2. Learning physical skills necessary for ordinary games.
3. Learning to get along with age-mates.
4. Learning an appropriate masculine or feminine social role.
5. Developing concepts for everyday living.
6. Developing conscience, morality and a scale of values.
7. Achieving personal independence.

II. Acquiring the Basic Habits of Industry. Ages 10-15

Learning to organize one's time and energy to get a piece of work done.
School work and chores.
Learning to put work ahead of play in appropriate situations.

III. Acquiring Identity as a Worker in the Occupational Structure. Ages 15-25

Choosing and preparing for an occupation.
Getting work experience as a basis for occupational choice and for assurance of economic independence.

Principal Developmental Tasks of Adolescence:

1. Achieving new and more mature relations with age mates of both sexes.
2. Achieving a masculine or feminine social role.
3. Achieving emotional independence of parents and other adults.
4. Achieving assurance of economic independence.
5. Selecting and preparing for an occupation.
6. Acquiring a set of values and an ethical system as a guide to behavior.
7. Preparing for marrying and selecting a mate.
8. Starting a family.
9. Getting started in an occupation.[8]

Information of the type Havighurst compiled helped the teachers of the mentally retarded in Cabell County in the assessment and revision of the course offerings. The school experiences were placed into the following categories:

Nature of Vocational Experiences	Educational Level
I. Informational	Primary I and Primary II
II. Orientational	Intermediate I and Intermediate II.

III.	Exploratory	Junior High
IV.	Preparational	Senior High
V.	Occupational Placement	Post Secondary

IV. CONSULTANTS AND VOCATIONAL EDUCATION WORKSHOP

Careful selection of consultants proved to be of the greatest assistance in the planning of this project. Recommendations were made by special education and vocational education professionals. The five consultants had specialization in the fields of special education and classroom teaching experiences in the area of vocational education and occupational education for the mentally retarded.

The total special education program for educable mentally retarded, primary through secondary, was submitted to the consultants for evaluation. As a result of these evaluations, a two day inservice comprehensive educational workshop was held on April 13-14, 1971 at Fairfield School for all Cabell County Special education Teachers and personnel.

Strengths and weaknesses of the present curriculum were scheduled to include the following areas for presentation:

1. Curriculum needs for the mentally retarded;
2. Demonstrations of instructional materials;
3. Educational objectives;
4. Interpretation of psychometric tests; and,
5. Development of vocational programs for the mentally retarded.

At the end of the two day sessions, those in attendance, rated the workshop according to a criteria set up by the consultants. The participants followed instructions to rate section one as to the following scale:

One point - Excellent
Two points - Very Good
Three points - Good
Four points - Adequate
Five points - Poor

Section 1 - Statements;

1. Overall structure and organization of the workshop.
2. Materials distributed during the workshop.
3. Presentations by the speakers:
   a. Need for a change in curriculum.
   b. Principles of learning.
   c. Evaluation techniques and assessment.
   d. Instructional materials and media.
   e. Developing a vocational program.

4. Discussion questions.
5. Overall presentaiton of the speaker.
6. Interaction between the speakers and the participants.
7. Topics which were used during the workshop.
8. Reaction statements.

Using the scale, ranging from excellent to poor, the participants evaluated the above eight statements. Numerical rating and percentages for this section were compiled by the consultant and are explained in Table I.

A ranking of workshop topics based on total and mean ratings demonstrated the feelings of the participants in Table II. The same eight statements of Section One were ranked as to the importance of each statement. Teachers indicated their willingness to break the traditional role and were looking for new instructional materials and media.

TABLE I

VOCATIONAL EDUCATION WORKSHOP

NUMERICAL RATING AND PERCENTAGES
OF STATEMENTS FOR EVALUATING WORKSHOP

Statement	Excellent		Very Good		Good		Adequate		Poor	
	No.	%	No.	%	No.	%	No.	%	No.	%
1. Overall structure and organization of the workshop.	3	14.28	13	61.91	4	19.05			1	4.76
2. Materials distributed during the workshop.	10	47.62	6	28.57	3	14.28	2	9.52		
3. Presentations by speakers:										
a. Need for a Change In Curriculum	4	19.05	7	33.33	5	23.81	5	23.81		
b. Principles of Learning	4	19.05	8	38.05	3	14.28	6	28.57		
c. Evaluation Techniques and Assessment	7	33.33	4	19.05	5	23.81	5	23.81		
d. Instructional Materials and Media	12	57.14	5	23.81	3	14.28	1	4.76		
e. Developing Vocational Programs	4	19.05	9	42.86	5	23.81	3	14.28		
4. Discussion Questions.	5	23.81	8	38.05	6	28.57	1	4.76	1	4.76
5. Overall presentations of the speaker.	6	28.57	4	19.05	6	28.57	4	19.05	1	4.76
6. Interaction between the speaker and participants.	3	14.28	2	9.52	8	38.05	4	19.05	4	19.05
7. Topic used for the workshop.	7	33.33	4	19.05	2	9.52	5	23.81	3	14.28
8. Reaction questionnaires.	5	23.81	5	23.81	6	28.57	2	9.52	3	14.28
Total	70		75		56		38		13	
Means		27.78		29.76		22.22		15.08		5.16

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TABLE II

RANKING OF WORKSHOP TOPICS BASED ON TOTAL AND MEAN RATINGS

Ranking	Statement	Total	Mean
1	Instructional materials and media.	91	4.3
2	Materials distributed during the workshop.	87	4.1
3	Overall structure and organization of workshop.	80	3.9
4	Reaction statements.	79	3.8
5	Discussion questions.	78	3.7
6	Developing a Vocational Program.	77	3.6
7	Evaluation Techniques and Assessment.	76	3.6
8	Need for a Change Curriculum.	73	3.5
8	Principles of Learning.	73	3.5
8	Overall presentation of the speaker.	73	3.5
9	Topics which were used during the workshop.	70	3.3
10	Interaction between the speakers and the participants.	59	2.8
	Mean	76	3.6

Based on the total mean, the overall workshop ranged from good to very good.

V. ADVISORY COUNCIL FOR PROJECT DOVE

The advisory council provided a necessary link between the school and the community. The chief values of the council were to draw the school personnel from an educational atmosphere and to expose them to public criticisms and suggestions. Support of the project by this council increased the confidence of teachers and helped them to grow personally and professionally.

Advisory Council Members:

Mrs. Myrtle Archer - Pilot Club International
Mr. George Cook - Owner and Operator of Cook's Gulf Station-Employer of Fairfield School Students.
Mr. Roby Fraley - Union Representative, United Steelworkers of American AFL-CIO.
Mr. Douglas Glover - Director, Cabell County Special Rehabilitation Program, Fairfield School.
Mr. Robert Griffis - Assistant Superintendent, Cabell County Public Schools.
Mrs. Sara Jackson - Principal, Fairfield School.
Dr. Mary Milliken - Associate Professor, Department of Vocational-Technical Education, Marshall University.
Mr. Carl L. Phillips - Chairman of the Council, Representing Parents of Fairfield School.
Mr. Roger Smith - President of Jaycees.
Mrs. Betty Swann - Director, Special Education, Cabell County Public Schools.

Council members will assist the coordinator in carrying out the responsibilities for:

(1) Development of community acceptance of the school;
(2) Employer-employee relationships;
(3) Securing interested employers;
(4) Committees in specific work areas;
(5) In-service training of future employers; and,
(6) A program of public relations.

The council agreed to interpret the vocational program of Fairfield School to civic organizations and clubs. They are developing a package deal for presentation to the community. Included in the plan were filmstrips and slides of student activities in school and out-of-school. Upon implementation of the program, the council directed that publicity to the worthwhile achievements of the vocational program through further committee work, news stories and pictures to be carried in local newspapers and television stations.

VI. COMMUNITY SURVEY

A partial community survey was conducted as another method for determining occupational cluster training programs in vocational education for the handicapped at Fairfield School. Potential employers indicated a willingness to work with the program and to provide information for course outlines. Representatives from business, industry, unions and the advisory council indicated a number of jobs available in the community and surrounding areas.

Automotive Maintenance

Service Stations
New and Used Car Dealers
Truck Drivers
Delivery Services

Parking Lots
Public Services:
- Community
- State
- Federal

Building Maintenance Services

Hospitals
City, Federal and County Government
Cabell County Public Schools
Commercial, Industrial and Institutional Agencies
Motels

Banks
Industry

Child Care

Kindergartens
Child Care Centers
Aides in Early Childhood Programs
Cabell County Public Schools
Babysitters in Private Homes

Food Services

Cafeterias
Hospitals
Restaurants
Supermarkets
Catering Services

School Lunch Programs
Bakeries
Motels
Grills

Housekeepers

Hospitals
Private Homes

Nursing Homes
Motels

Crafts Workshop

Packers in Glass Companies
Gift Wrappers in Department Stores
Helpers in Ceramic Tile Installations
Contract Workshops
Bow Makers for Florists and Discount Stores

Office and Related Occupations

Office Complexes
Receptionists
File Clerks
Duplicator Operator
Sales Personnel
Stock Boys in Food Stores and Warehouse

Reproduction Training

Job Printing Shops
Office Complexes
Local Newspaper Company
Offices in Furniture Stores
Advertising Agencies

Woods Industry

Maintenance Shops in Industry
General Construction Work
State Road Commission of West Virginia
Building Materials Supply Houses
Carpenter's Helpers
Roofer's Helpers
Cabinet Shops
Upholstery Shops

This was only a survey and the list could not be completed until after implementation of the program. The Advisory Council requested that this survey be one of their duties in relationship to the on-going program.

CHAPTER V

PROPOSED CURRICULUM FOR HANDICAPPED STUDENTS

Career oriented education for handicapped students begins with their entry into school and continues throughout their entire school years. Schools have realized more and more that the undertaking of career development of all students falls within the realm of the public school systems. Educators are committed to provide exploratory and pre-vocational and vocational training experiences so as to prepare youth for the world of work.

Curriculum guidelines for the development of a program for the handicapped at Fairfield School followed the program cones of Vocational Education and Special Education established by the Comprehensive Education Program for West Virginia Schools.

Beginning with the primary program, the teacher oriented the students toward practical aspects of life. Emphasis was primarily on the acquisition of basic skills, facts, simple routines and habit training. At this level, the students received experiences for personal and social development which served to create understandings of the impact of the home, school, neighborhood, community, state and nation.

At the intermediate levels, the student's environment moved from the home to an acquaintance of the neighborhood and community. Basic skills of reading, writing, and spelling were reviewed and expanded to include comprehension and reading on a third grade level.

The traditional academic content was emphasized less at the junior high school level. The greatest portion of the time was devoted to the functional use of tool subjects in training for knowledge of the world of work, vocational guidance, occupational, social and personal adjustment. There was not a definite delineation between pre-vocational activities and general education. These areas overlapped, and one area of education served as a reinforcement for the other area.

The senior high school program from ages sixteen to graduation, becomes a time of decision making. Students choose pre-employment areas of training in vocational education for the acquisition of appropriate preparation toward their next step beyond school. Guidance and counseling gives individual direction for the student to become a good citizen, a productive worker, and a socially adjusted adult.

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The student was encouraged to apply practical learnings for everyday living and for working in the community. Special classes attempted to develop within each student his optimum level for a productive life.

After graduation from the senior high school, handicapped students are encouraged to enter the post-secondary vocational program. This phase provides for additional training in the vocational programs, on-the-job training, counseling and guidance with a gradual progression into full time employment. The most successful of this type program has been with the placing of handicapped students under a teacher coordinator.

The post school adjustment program under a full time teacher coordinator eliminates many frustrations which formerly existed prior to this program. When properly trained, the handicapped can and do enter the world of work in positions comparable to many of their counterparts. As more training resouces become available, the handicapped will be prepared for jobs in industry formerly thought to be beyond their capacities.

Committees for curriculum development started with the premise that handicapped pupils are more like their normal peer groups than different from them in the following ways:

(1) they desire to improve their capabilities;
(2) they seek personal status;
(3) they respond to recognition and social approval;
(4) with consistent and effective help they can develop in all areas of learning, satisfy their social needs, and prepare themselves for employment; and
(5) most of them will be economically self-supporting and personally self-sufficient.

On the following pages there is a compilation of a total sequential program for primary through post secondary levels. This curriculum will be under constant evaluation and supervision by teachers, administrators, the advisory council and the community.

I. PRIMARY PROGRAM
Ages Six-Ten

<u>Social Development</u>

A. Personal Habits
   1. Toilet Training
   2. Personal Grooming & Responsibility for:
      a. Care of teeth
      b. Nails

c. Hair
d. Bathing
e. Clothing
f. Deodorants
g. Zippers, buttons, etc.

3. Manners and Courtesy
   a. Table manners (learning to eat independently)
   b. Verbal courtesies (please, thank you, pardon me, addressing others, titles)
   c. Non-verbal courtesies
      1. Classroom behavior
         a. Knowing difference between tattling and reporting harmful acidents
         b. Slamming doors and furniture
      2. Behavior in line
      3. Playground courtesies
      4. Lunchroom
      5. Halls
4. Safety Practices
   a. School safety (hall, playground)
   b. Home safety practices
   c. Safety on the Street
   d. Unsupervised play
5. Good Use of Time
   a. Beginning tasks
   b. Completing tasks
6. Responsibility for Care of Materials
7. Emotional Control
   a. Crying
   b. Laughter
   c. Temper
   d. Success
   e. Limitations
   f. Self-expression

B. Peer Relationships
   1. Courtesy & Consideration for Others
      a. Apologizing
      b. Taking turns
      c. Sharing
      d. Controlling voice
   2. Play Relationships
      a. Sportsmanship
      b. Fair play
      c. Team cooperation
   3. Respect for Property
      a. Self
      b. Others

C. Exposure to Integrated Activities
   1. Music
   2. Art
   3. Physical Education
   4. Skits and Plays
   5. Playground
   6. Lunchroom
   7. Other School Activities
      a. Programs
      b. Assemblies

Language Arts

Reading

A. Reading Readiness
   1. Visual Discrimination
      a. Objects
      b. Pictures of objects
      c. Letters
      d. Words
      e. Colors
      f. Shapes
      g. Sizes
      h. Missing object
      i. Similarities and differences
   2. Auditory Discrimination
      a. Sound Discrimination (letters, words, etc.)
      b. Listening (tapes, records, story hour)
   3. Verbal Expression
      a. Sequencing (listening to stories, putting events in order)
   4. Imitative Reading
   5. Left to Right Progression
   6. Telling Stories (What will we see if we visit a farm, zoo, circus, etc.)
   7. Experience Stories
   8. Tactile (kinesthetic experiences - air tracing, sandpaper, clay, velour paper figures, felt or sandpaper figures)
   9. Memory training (finger plays, fun words, etc.)

B. Pre - Primer Level
   1. Sequencing
   2. Signs and Labels
   3. Left to Right Progression
   4. Word form or Configuration
      a. Mother
      b. Father
      c. Sizes and labels

5. Stimulate Listening
   a. Stories
   b. Rhyming words (to identify)
   c. Identifying environmental sounds
6. Comprehension
   a. Retelling stories
   b. Checking facts
7. Sounds of letters
   a. Beginning consonant sounds
   b. Common diagraphs
   c. Vowels (short, then long)
8. Sight Vocabulary
   a. Color words
   b. Number words
   c. Days of week
   d. Months
   e. Family names
   f. Names of classmates and teacher
9. Recognize address (can also repeat)
10. Telephone Number
11. Making Decisions (Let work out seating in a circle.)
    (Let choose which work would rather do.)

C. Primer and First Grade Level
   1. Review of all previous skills
   2. Words of direction
      a. Left to Right Progression
      b. Working directions
   3. Phonics
      a. Beginning consonant sounds
      b. Vowels
      c. Final sounds (at least n, d, k, m, t, p)
      d. Easier blends
      e. Rhyming
      f. Endings
      g. Plurals
      h. Word families
      i. Sounding out words
      j. Simple compound words
      k. Small words within larger ones
   4. Comprehension
      a. Following directions
      b. Sequencing
      c. Main idea of the story
      d. Details (pointing out)
      e. Drawing conclusions
      f. Noticing relationships
      g. Judgments - good or bad
      h. Classifying - good or bad people
      i. Re - telling the story
      j. Illustrating stories or poems
      k. Spatial relationships

5. Vocabulary Development
   a. Increasing vocabulary, games, drill
   b. Punctuation
      1. Capitals
      2. Periods
      3. Question marks
      4. Syllabication (very simple)
      5. Simple contractions (it's, I'm, I'll, that's, let's, don't, didn't, isn't)

Stress neatness throughout the Language Arts Program.

Writing

Readiness

A. Introduction to Materials
   1. Large Muscle Activities
   2. Methods of Holding and using chalk or crayon
   3. Left or right movement
   4. Shapes and their names
   5. Tracing
   6. Basic writing strokes
   7. Learning Position of his work space (board or paper)
   8. Eye - Hand Coordination

B. Manuscript
   1. Combing strokes to form letters and numerals
      a. Upper case
      b. Lower case
      c. Numerals
   2. Learning to use lines
   3. Position of paper
   4. Introduction to pencil (and eraser, if desired)
   5. Reproducing shapes and 3 or 4 letter words
   6. Spacing of words and letters
   7. Sentences and Punctuation
   8. Practice
      a. Variety of topics for interest
      b. Using colored chalk
      c. Experience stories
      d. Labeling letters, gift tags, shopping list, invitations
      e. Pictures or objects within stories to teach new words
      f. Pictures drawn to illustrate writing lesson
      g. "Story starter box"

C. Cursive
   1. Transitional strokes
   2. Position of Paper (30° angle) (Provide for left handed child)

3. Slant in writing
4. Recognition of new letter forms
5. Connecting strokes between letters to form words
   a. 2 letters
   b. 3 letters
6. Loops in letters
7. Finishing stroke on letters
8. Practice

Teacher should provide children with a good model from which to copy.

Spelling

Not yet ready to use formally in curriculum guide, as our children are usually not far enough advanced in Primary Class.

Arithmethic

Group IV - Readiness Level
Form Discrimination
Rote Counting (1 to 20)
Number Concepts (1-10)
Writing Numbers (-10)
Recognition of Number Symbols (1-10)
Matching (1 to 1)
Grouping - Small Sets
Sizes - Large, Small - Big, Little
Directions - Up and Down, In and Out, Front and Back, Top and Bottom

Primer and 1st Grade Level

Group I, II, and III
Rote Counting - Natural Order
Counting - 1 - 100
2s to 20
10s to 100
5s to 100
Shapes and Sizes
Addition Facts (use of tapes and workbooks and charts)
Subtraction Facts (use of tapes, workbook, charts)
Grouping
Directions
Time
Money (recognition of money, money relationships, counting)
Sequencing (missing number, what comes before, after)
Ordinals (first -tenth)
Measurement (recognition of objects used for measurement)
(Liquid Measurement, Linear Measure, Dry Measure, Weights)
Comparative Terms (larger, smaller, big, little, short, long)

Leisure Time Activities

A. School
B. Home
C. Community

Art

September

Introduction to color and line - (tempera) Book I, page 1
Introduction to chalk and crayon - Book I, page 2
Color around us - Field trip to examine color - bring back samples
Relief prints - (rubbings: animals, leaves, shapes, etc.)

October

Fingerpaint to music
Shapes - square, circle, triangle, rectangle, oval (make animals from shapes)
Autumn leaves and weeds - winter bouquets, leaf pressing, etc.
Halloween scenes - black paint on newspaper, Halloween scene with black wash.

November

Thanksgiving mosaic - Book I, page 7 (paper)
Animated Turkeys - Book 2, page 7
Large Class Book - What Am I Thankful For
Indian and Pilgrim Unit - Use large class book made earlier
Use clay for pottery.

December

Christmas Birds - Book 2, page 11
Spatter Cards
Christmas Mural - Book 1, page 10
Mobile - page 11
Handcrafts - bookmarks, pencil holder, jewelry boxes, calendars, plaster hands, silhouettes, etc.

January

Winter Fun Picture (by fire, making snowman, watching snow, etc.)
Texture - use of pastels, yarn, buttons, macaroni, beans, materials, etc.)
Paper Maiche
Fingerpaints (work more on expression of feeling, also use of fingers and hands)

February

Mosaics - from sand and string. Could also try aquarium gravel.
Silhouettes for Valentines - Book I, page 18, Book 2, page 25
Cutting and Pasting - Valentines

March

Tempera Painting - Book, page 17 - Could use theme, Favorite song, etc.
Potato prints - Book 2, page 21
Use of Prayer - Book 2, page 22
Kites - Book I, page 19
Mobiles II, page 14
Butterflies - Book 2, page 16
Shamrocks - Book 2, page 18

II. INTERMEDIATE PROGRAM
Ages 9-13

Vocational Education

Knowledge and appreciation of tools and materials; as to where they come from, how they are prepared, and what they cost are emphasized. Knowledge and skills as they contribute to home life should be taught.

The construction of a project includes elementary planning, constructing, and finishing. When a child has an opportunity to select materials, tools, and designs, he is developing discriminative ability and learning the qualities and conservation of materials. In addition to the actual manual activity learning, situation are provided for field trips, visual materials, related readings, and discussions.

Tools such as, the saw, file, drill, vice, sandpaper, glue, plane, ruler, compass, hammer, screw-driver, pliers, and various finishing methods are utilized. Through identifying and using these tools, the children are being introduced to the need for these skills and methods commonly used.

Elementary experiences are provided in sewing, cooking, clothing, needlework, and homemaking. These experiences provide the child with the background to make maximum use of the more specific skills taught at the secondary level.

Social Studies Objective

A. Recognition of the dignity and worth of the individual.

1. Student develops an adequate self-image.
2. Student understands others and their worth.
3. Student understands his relationships to the school, family, community, and nation.
4. Students understand their role in terms of sex, family and community.
5. Explore job types in terms of the child's psychological make-up.
6. Student develops a "can do" attitude.

B. The use of available resources and intelligence for improving human living.
1. Students explore community resources for:
   a. Health
   b. Safety
   c. Recreation
   d. Education
   e. Employment
   f. Travel
2. Student improves and uses his intelligence through stimulation and enrichment.(Use above resouces)
3. Develops ability to adjust to life situations such as changes in jobs, homes, cities, etc., through the use of the above resources.
4. Students determine the specifics concerning the use of these particular resources.

C. The major cultures and culture stress.
1. The student understands his cultural position and appreciates its applications. (Class in terms of stratification only--no moral values should be taught, as in terms of "upper--good or lower--bad")
2. Students appreciates the cultures of his classmates, as in Negro, Caucasian, etc., in addition to his position in his culture.

D. The continuation of our democracy through the use of the educational facilities. The student
1. Enjoys school
2. Appreciates the importance of school
3. Understands the need for school
4. Uses school and school related resources

E. The acceptance by the student of the responsibility for participation in demoncratic social action.
1. Voting rights
2. Civic groups and bodies-local government, state and national government
3. Political groups-Republicans, Demoncrats etc.

F. Increase the effectiveness of the family as basic social unit.
   1. Acceptable role development of family members
   2. Duties of family members and rights of family members
   3. Pride in proper role identification
   4. Economic competencies (car insurance, hospitalization)
   5. Consumer education

G. The effective development of moral and spirital values.
   1. These should be taught by examples.
      a. Honesty
      b. Truthfulness
      c. Kindness
      d. Charity
   2. Basic emphasis should be placed on the communities values.

H. Achievement of adequate levels of loyalty to family, neighborhood, school, city, state and nation
   1. Concepts of geographic and political areas
      a. Neighborhood
      b. State and City
      c. Nation
   2. The place of criticism in our Government
   3. The student evaluates and appreciates in order to build a sense of loyalty.

I. Widening and deepening the ability to live more richly--Wise use of leisure time.
   1. The student participates in hobbies, arts, music and sports
   2. Awareness of different types of recreational facilities
   3. Constructive use of extra time
   4. Child uses resources to which they are exposed
   5. Develops the habit of using extra time profitably.

<u>Language Arts Objectives</u>

The major objectives of this area are essentially the same as for all pupils in regular classes. The differences are in degrees and varieties of application. The language arts program includes, listening, speaking, reading, writing, and spelling. These skills develop in order, based on the experience of the child.

A. <u>Listening</u>
   1. Listening to stories
   2. Sharing with classmates-listening to each other

3. Reports-listening for information
4. Assemblies-sit quietly, watching and listening
5. Plans for the day-sharing in making plans
6. Listen for rules in playing games
7. Relay messages
8. Film and television programs
9. Records-appreciation of music
10. Listening to and following directions
11. Listen to identify sounds and voices correctly
12. Listen to own voices on tape recorders

B. Speaking - More than the teaching of correct English is involved in this area. Many of the special needs revolve around the fear of speaking up, the inability to speak clearly, the lack of speaking vocabulary and shyness.

1. Speaking skills and activities
   a. Contribute to discussion
   b. Express unhappiness vocally, instead of fighting
   c. Remain on topic of discussion
   d. Tell stories and events
   e. Assume role of leadership in classroom
   f. Use of telephone
   g. Introduce guests-correct way to make introductions
   h. Use complete sentence, express ideas so they are understood
   i. Participate in dramatization

C. Reading - A variety of instructional techniques used by the teacher, and many types of reading materials will need to be used in each classroom if each pupil is to progress to the maximum of his ability.

1. Develop phonetic and structural work attack skills
2. Reading for protection and information
   a. Signs of all kinds; road, danger, labels, etc.
   b. Directories
   c. Names of buildings, stores, streets
   d. Use map to find streets or towns
   e. Advertisements, reports, help wanted ads
   f. Use of dictionary
   g. Work-type functional reading
   h. Calendars
3. Reading for directions
   a. Following recipes (cookbooks, newspapers, pamphlets)
   b. Caring for equipment

c. Using work-type directions
d. Reading and following directions in workbooks
e. Chart Stories

4. Recreational reading
   a. Storybooks, library books
   b. Graded newspaper
   c. Chart experience stories
   d. Magazines
   e. Booklets of favorite experiences
   f. Daily newspaper

D. Writing-Handwriting requires the coordination of small muscles of the hand and eye. All children do not reach the maturation level at the same time, therefore, this is an individual skill. The child is first introduced to manuscript writing. The introduction of cursive into the program should be flexible and depend upon the child's maturity and desire. The ability to communicate written thoughts is the main emphasis.

E. Spelling-It is essential that the educable mentally handicapped children learn to spell words that they will need to write. The spelling needs will be limited in number and kind. Spelling is used to help meet the child's social, emotional, and vocational needs.

Arithmetic Objectives

The main emphasis in teaching arithmetic to the child is placed upon the social usage of it. He must be specifically taught how to use numbers in the situation in which he is most likely to need to use them.

A. Arithmetic skills andactivities
   1. Knows and writes addresses, names, birthdates, and phone number
   2. Counts money for purchasing items in stores or cafeteria
   3. Consumer awareness-understanding household math
   4. Keeps score in playing games
   5. Fundamentals in telling time-this depends on maturation
   6. Understand measurements
   7. Counts, reads and writes numbers
   8. Understands processes of carrying and borrowing
   9. Understands terminology needed (subtract, "take away," borrow, etc.)
   10. Develops understanding of concept of multiplication and division

11. Uses calendar
12. Concept of shapes
13. Divides groups into equal parts
14. Knows terminology of concepts (few, more, big, little, etc.)
15. Able to solve thought problems concerning everyday situations

Science Objectives

A. Child develops an understanding of the concepts of science in everyday living.
   1. Climate
   2. Conservation
   3. Insects
   4. Natural elements (fire, water, soil, rocks)
   5. Pets and domesticated animals
   6. Plant life
   7. Weather and air around us
   8. Seasons and calendar
   9. Wild life
   10. Food, clothing, shelter
   11. Electricity and magnetism
   12. Simple machines, lifting and moving things
   13. Major features of universe

B. Child becomes acquainted with those scientific facts that concern health and safety.

C. Child has experiences which stimulate economic purchase and use of commercial products and mechanical devices.

D. Child develops some possibilities for the use of leisure time.

Physical Education

A. Objectives
   1. To cultivate varied capacities so that the individual is progressing always toward greater degrees of social independence, physical well-being, emotional stability, and intellectual advancement.
   2. To improve general physical health and appearance.

B. Goals
   1. To develop and improve the basic motor skills and fundamental body movement. For example, walking, running, grasping, climbing, hanging, throwing.

2. To increase physical stamina, motor ability, and physical fitness.
   Characteristics involved:
   a. Co-ordination
   b. Strength
   c. Muscular
   d. Cardiorespiratory
   e. Muscular power
   f. Flexibility
   g. Agility
   h. Balance
   i. Speed
3. To experience more balanced growth.
4. To improve posture, body mechanics, rhythm and grace, and control of movement.
5. To improve function of the sense receptors and proprioceptors.
6. To develop a sound mind in a sound body through participation of healthful activity.
7. To participate in experiences of increasing complexity in gross-muscle development.
8. To participate in activities related to small-muscle activities, related to hand-eye co-ordination, as needed.
9. To continue to follow directions on level of conceptual development.
10. To participate in organized games, folk-dancing, square dancing, group games, softball.
11. To learn to swin.
12. To continue to grow in concept of self in directed and creative activities, dramatization, role playing.
13. To participate in school camping, summer camping, after school recreational programs.

Art and Music Objectives

This is a means of expression. As a means of expression, it has no confining limits with reference to age, abilities, or capabilities and as such it becomes an integral part of our daily activities, and these are correlated with the other subjects in the curriculum. The children are encouraged to use them as a means of expression in clarifying ideas that they are attempting to visualize and express.

The mentally handicapped tend to be weak in verbal understanding and verbal expression. Through the use of the arts, one more avenue of expression and understanding is opened to them. The mentally handicapped child often has a mental and physical make-up that does not allow him to concentrate for long periods of time on a single interest. Allowances should be made for activity. It must give the child both pleasure and satisfaction. It is in the field of manual manipulations and art experiences that the mentally handicapped can usually find their greatest satisfaction. In this way they are aided in establishing constructive attitudes.

III. JUNIOR HIGH SCHOOL
Ages 13-16

Junior High I

Science
Language Arts
Mathematics
Social Studies
Physical Education
Home Economics - Self Care - Boys and Girls
Music or Art

Self Contained Classroom
One-half Day

Junior High II

Language Arts
Mathematics
Physical Education and Health
Crafts Workshop - Boys and Girls - Two Hour Period, Daily
Speech - Science or Social Studies

Junior High III

English I
Mathematics I
Physical Education and Health - Alternating Schedule
Science
Home Economics - Girls - Two Hour Class Daily
Wood Shop - Boys - Two Hour Class Daily
Occupational Education I

IV. SENIOR HIGH SCHOOL
Ages 16-21

Senior High I

Required Subjects
English II
Biology
Occupational Education II
Physical Education and Health

Electives
Music
Home Economics
Art

Vocational Education Training Programs

Printing I
Business and Office Occupations I
Home Economics - Occupational Preparation
- Child Care Occupations I
- Housekeeping Aides I
- Food Service Occupations I

Senior High II

Required Subjects

English III
Physical Education and Health
Occupational Education III

Electives

Art
Music
Home Economics
Driver Education

Vocational Education Training Programs

Automotive Maintenance I
Woods Industry I
Crafts Workshop I
Ceramics and Contract Workshop I
Building Maintenance Service I
Business and Office Occupations II
Printing II
Home Economics - Occupational Preparation
- Child Care Occupations II
- Food Service Occupations II
- Housekeeping Aides II

Senior High III

Required Subjects

English IV
Physical Education and Health

Electives

Art
Music
Home Economics
Driver Education

Vocational Education Training Programs

Building Maintenance II
Automotive Maintenance II
Woods Industry II
Crafts Workshop II

Ceramics and Contract Workshop II
Business and Office Occupations III
Printing III

Post Secondary I

One-half Day on the Job Training in Community Work Stations.
One-half Day in the Classroom under the Direction of a Teacher Coordinator.

Post Secondary II

Full Time Employment
Two Hour Night Class Each Week

V. COOPERATIVE WORK EXPERIENCE PROGRAM

The cooperative work experience program at Fairfield School will be instituted during the second year of the projected pilot program. Students who have successfully completed one or more occupational clusters in the senior high vocational education program will be recommended during their twelfth year for the work-study program.

Under the direction of a teacher coordinator, students are encouraged to enroll in a work study program as post-secondary students. Students in this phase of the program spend one-half day on a job in the school or community, and one-half day in the classroom. This type of program offers job simulation with reinforcement for problem solving in a continuous contact and supervision of the in-school and out-of-school placement. The post-secondary phase of the program will continue until the student is able to function successfully in an occupational area related to his vocational training.

The Duties of the Teacher Coordinator

1. Secures places of employment for students enrolled in the program.
2. Procures signed agreements between each employer and the school.
3. Develops an individualized program for each student.
4. Maintains continuous contact with employers.
5. Acts as a laison between employer and employees.
6. Sets up procedures for working with the student employee.

7. Devises salary scales, working hours and methods of handling problems.
8. Consultations to include evaluations of the student by the employer, by the coordinator and by the student himself.
9. Organizes a school program for the development of general skills needed in future occupations.
10. Parent counseling, home visitations and employer orientation of the Co-operative Work Experience Program.
11. Counsels students in school, on the job and at home.
12. Interprets program to regular staff, other students administration, and vocational rehabilitation.
13. Maintains public relations and interpretation of program to civic organizations.
14. Keeps records:
    a. Copies of the student's secondary program
    b. Schedule Cards
    c. Job progress evaluation forms submitted by employers
    d. Anecdotal records on pupil progress
    e. Jobs available and their requirements
15. Assumes responsibility of releasing student employee whenever unfavorable work or working conditions exist.
16. Keeps an advisory council informed of program progress and problems.
17. Serve on an evaluation committee for determining students' readiness for work.

VI. VOCATIONAL REHABILITATION SERVICE

On July 1, 1964, the Division of Vocational Rehabilitation and the Cabell County Board of Education joined together in initiating a unique program to provide comprehensive services to the educable mentally retarded youth of Cabell County. The program was designed to demonstrate the effectiveness of a coordinated effort by Special Education and Vocational Rehabilitation in assisting mentally retarded youth to make an optimal adjustment to the demands of community living and employment. While the two agencies have agreed that there has been a marked success in their joint efforts, it is now possible, with the emphasis on Vocational Education and the finances available to support that program to further expand service activities. With the triad of Vocational Rehabilitation, Special Education, and Vocational Education coordinating their distinct knowledge and

expertise, a greater opportunity presents itself for meeting all the needs of handicapped youth of the Cabell County School System.

It is anticipated that the Division of Vocational Rehabilitation will provide the traditional services normally charged to that agency and will, in addition, adapt, modify, and develop innovative methods that will make the coordinated efforts of the three agencies more effective.

OBJECTIVES

The Division of Vocational Rehabilitation is required by statute to provide services to all mentally or physically disabled persons who are vocationally handicapped and who, in the judgment of the agency, can be expected to engage in gainful employment. Specific objectives under the current expanded agreement will be to provide the following traditional services integrated in the prescribed manner herein set forth.

JUNIOR HIGH SCHOOL - Ages 13-16

Junior High I

A. Basic equipment and facilities
   1. Beauty Bar
      The beauty bar consists of regular beauty shop equipment including sinks, chairs, dryers, and supplies. This equipment is utilized by the teaching staff at Fairfield School in conjunction with courses of self-care.
   2. Training Tools and Supplies
      The training tools and supplies consist of a wide variety of mechanic and wood working tools which are used by the teaching staff at Fairfield School for the purpose of vocational evaluation and training in the areas of wood working, crafts, and auto maintenance.
B. Traditional Rehabilitation Services
   All traditional services will be provided on a continuous basis throughout the course of the client's program with Rehabilitation.
   1. Diagnostic Evaluation
      Beginning with Junior High Level I, the agency will provide diagnostic evaluation. Evaluation of this nature is broken down into two basic areas.
      a. Medical
         Medical evaluation includes the provision

of general physical examinations to be administered by practicing licensed physicians and also medical specialist examinations as required. The purpose of the medical evaluation is to determine the extent of physical and/or mental impairments.

b. Psychological
Psychological evaluations will be administered by a qualified psychologist for the purpose of determining learning disabilities and for establishing eligibility criteria for Rehabilitation purposes. The selection and administration of the test battery relating to learning disabilities will be done by the psychologist in conjunction with the Cabell County Board of Education representative.

2. Guidance and Counseling
Guidance and counseling will be provided by the four Rehabilitation counselors assigned to the Rehabilitation Unit at Fairfield School. Individual and group counseling will be provided in order to assist the clients with problem solving in the areas of their academic, social, and vocational endeavors.

3. Physical Restoration
Physical restoration services to be provided will include, but not be limited to the following: surgical procedures, medical management, artificial appliances, and physical, psychological, and speech therapy.

4. Social Services
Social services will be provided by the Rehabilitation counseling staff. The information derived from home visits would be concerned with the client's adjustment to the home situation as it affects his performance in the academic and vocational programs in the school. This information will be shared with the Special Education and Vocational Education instructors.

Junior High II

All previously mentioned services will be continued at this level and new and innovative techniques and methodology will be explored.

Junior High III

In addition to the provisions of the previously mentioned services, the Rehabilitation counselor will work to establish, in conjunction with the Occupational Education instructor, evaluation work stations. Clients will be placed on in-school work stations for the purpose of vocational evaluation. At this time an increased emphasis will be placed on guidance and counseling in order to assist the client in determining a suitable future training area. Close coordination and communication with the teaching staff is essential in order to be successful at this juncture.

SENIOR HIGH SCHOOL - Ages 16-21

Senior High I

A. Vocational Education Training Programs
At this level in the program the majority of the clients are ready to participate in a number of in-school work-study situations. In order for the work training experience to be meaningful, clients will receive remuneration on a limited selective basis. The rate of pay per period will be on a graduated increment scale based on a client's progress from a minimum gradation for this level. Clients in this classification will be expected to utilize the time clock in order to determine the number of periods spent on the job. Work stations will be developed in conjunction with the school staff in the areas of child care, housekeeping, food service occupations, printing, and business education.

Senior High II

There will be a continuation of all previously mentioned services. Students selected for payment for services rendered on the job will be paid at a starting rate equivalent to the maximum established for the preceding level with graduated increases. Work stations will be developed in conjunction with the school staff in the areas of automotive maintenance, woods industry, crafts workshop, building maintenance, printing, child care, food service, housekeeping and business education.

Senior High III

There will be continuation of all previously mentioned services. At this level in the program additional

clients will be selected for in-school work training and also for out-of-school training. The Job Development and Training Specialist at Fairfield School will work closely with the Teacher Coordinator in developing half day On-The-Job Training sites within the community. There will be no expenditure on the part of the Rehabilitation agency for part-time On-The-Job Training. Clients selected for in-school work-study will be paid on a graduated scale with a beginning rate equivalent to the maximum on the preceding level.

Following graduation, those students who will not be returning for Post-Secondary courses, may be provided additional training including resident training at appropriate facilities, training at the West Virginia Rehabilitation Center at Institute, West Virginia and Full-Time On-The-Job Training for which the employer will be paid up to the maximum permitted for this purpose by the Rehabilitation agency. It will be the responsibility of the Job Training and Development Specialist to secure permanent employment for clients in this category.

Post Secondary I

There will be continuation of all previously mentioned services, with special emphasis on one-half day On-The-Job Training in community work stations for those students who need it. Again, it will be the responsibility of the Job Development and Training Specialist to work in conjunction with the Teacher Coordinator to develop and supervise appropriate community work stations.

Post-Secondary II

Clients engaged in the course of study for this final segment of the program will be engaged in Full-Time employment. The Job Development Specialist and Teacher-Coordinator will secure Full-Time On-The-Job training for which the Rehabilitation agency may provide payment to the employer. There will also be shared responsibility for supervision of these situations.

Other Services

As a part of the final placement objective, clients will be provided the following services as required to complete the total rehabilitation process.

a. Maintenance
b. Tools and Placement Equipment
c. Transportation
d. Occupational License
e. Other goods and services necessary to render the handicapped person fit to engage in gainful employment.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

The Exemplary Programs and Projects Section of the 1968 amendments to the Vocational Education Act of 1963 challenged educators to integrate those elements of vocational education with the total school effort so as to render school experiences more meaningful for all students. The Cabell County Public Schools Educational System accepted this challenge and structured a new curriculum to meet the needs, interests and motivations of handicapped students from the primary levels through the post-secondary level.

CONCLUSIONS

This report has described (1) the need for preparing handicapped students vocationally, socially and personally for the world of work; (2) the methods and procedures for development of a sequentially integrated program on the primary, intermediate, junior high, senior high and post-secondary levels; and, (3) a proposed curriculum to meet the needs, interests and motivation of the students in a model for separate occupational training.

Since handicapped students have limited contacts with work models, the divisions of Special Education, Vocational Education and Vocational Rehabilitation in Cabell County are assuming the responsibility for providing the necessary services for helping handicapped students to clarify occupational goals, to evaluate qualifications and abilities in terms of job opportunities; to assist in developing flexibility for social adjustment, to provide preparation of salable skills for entering a job, and to direct many of the students into employment after graduation.

Curriculum materials emphasized both general and vocational education. Activities selected for the career development of the handicapped students included the developmental needs of students at different age levels. The curriculum provided for free movement between the academic and vocational preparation. In addition to the acquisition of skills, and understandings, the handicapped students are involved in activities for the proper use of leisure time and the establishment of good interpersonal relationships throughout their school years.

The career oriented program for handicapped students in Cabell County follows these guidelines:

Primary I, II	Ages 6-10	Information and Orientation
Intermediate I, II	Ages 9-14	Orientation and Exploration
Junior High I, II, III	Ages 13-16	Exploration and Preparation
Senior High I, II, III	Ages 16-19	Preparation
Post Secondary I, II	Ages 19----	On the Job

Although occupational preparation becomes more specific on the high school levels, the training programs are not limited to a specific occupation; instead occupational clusters phases were designed for pre-employment in automotive maintenance, building maintenance service, business and sales occupations, crafts workshop, printing, and woods industry.

This report supports other findings in the field of educational objectives for preparation of students for economic efficiency. Education in a democratic society must include all students. The handicapped student is first, and most important, a person with feelings and needs like any other individual. They have a right to guidance and instruction which will promote their fullest potentials.

Vocational education, by its very nature, can provide the concrete, immediately useful experiences which will help the handicapped students to become self-reliant, worthy individuals and contributing citizens.

RECOMMENDATIONS

The following recommendations are made for a developmental research project in vocational education of handicapped students:

Obtain a copy of the Procedural Guide for the Writing of Proposals from the West Virginia Coordinating Unit for Vocational Education, Department of Education, Marshall University, Huntington, West Virginia.

Contact the Director of the Research Coordinating Unit.

Secure the interest and cooperation of the county superintendent and the school principal.

Allow at least two to three years for development of a program.

Appoint an advisory council. Use a cross selection of members from business and industry, health and service occupations, civic clubs, school personnel and parents.

Conduct in-service workshops for all teachers of handicapped students.

Select consultants with expertise in curriculum development.

Request the consultants evaluate present curriculum and make recommendations for changes.

Explain the importance of the program to the local Board of Education.

For a successful program for the handicapped students, these recommendations are made:

The teacher of vocational education training programs must be aware of the technological changes. He must know the interests, needs, motivations and limitations of each student.

A knowledge of the medical history on each student must be made available to the teachers.

Classes should be a minimum of ten and a maximum of twelve students. Handicapped students require constant supervision and individualized instructional programs.

Special tools, equipment and supplies are needed for the handicapped students. Power tools can and should be used with proper safety habits being taught and emphasized constantly.

Evaluate the program each year according to the Comprehensive Objectives of Special Education, Vocational-Technical Education, and the Division of Vocational Rehabilitation.

The course offerings should be changed for students and potential employers.

A coordinator should maintain and establish good working relationships with the Advisory Council.

The teachers relate classroom work to the "Career Development Theme."

A job placement and guidance service would be a vital link between the school and the cooperating industries.

Bibliography

1. Allen, Amy and Virginia Baker. Slow Learning Children in Ohio Schools. Columbus: Ohio Department of Education, 1962.

2. Bottoms, Gene and Kenneth B. Matheny. A Guide for the Development, Implementation, and Administration of Exemplary Programs and Project in Vocational Education. Atlanta: Georgia State University, 1969.

3. Cabell County Public Schools. Handbook of Administration for Members of the Professional Staff. Huntington, West Virginia: Cabell County Board of Education, 4:104, 1966.

4. Clark, Gary M. "Prevocational Evaluation in Work-Study Programs: An Expanded View." Mimeographed.

5. Davis, Ruthanna. "The Special Education Student in the School Lunchroom." No date. (Mimeographed)

6. Di Michael, Salvatore G. "Are Jobs for the Retarded Increasing?" Mental Retardation 5:40-41, 1967.

7. Federal Register. Volume 35, No. 4, Part 2. January 7, 1970.

8. Havighurst, Robert J. Human Development and Education. New York: Longmana, Green and Co., 1953.

9. Klein, Erwin J. Warren Market's the Educable Mentally Retarded. Warren City Schools, Warren, Ohio, 1970.

10. Kolstoe, Oliver P. Teaching Mentally Retarded Children. New York: Holt, Rinehart, and Winston, Inc., 1970.

11. Peck, John R. "The Work-Study Program - A Critical Phase of Preparation." Educating and Training of the Mentally Retarded Journal, 1:68-74, April, 1966.

12. Roos, Philip. "Trends and Issues in Special Education for the Mentally Retarded," Journal of the Division on Mental Retardation, The Council for Exceptional Children, 5:51-59, April 1970.

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13. Strickland, Conwell G. "Employment of the Mentally Retarded." Exceptional Children. 34:21-24, 1967.

14. West Virginia Board of Education. A State Plan for the Administration of Vocational Education Under the Vocational Education Amendments of 1968, Part I, June 1969.

15. West Virginia State Department of Education. The Comprehensive Educational Program, Revised Edition, April, 1970. pp. 21.12-21.17.

16. Younie, William J. "The Educational-Vocational Continuum." Guidelines for Establishing School-Work Study Programs for Educable Mentally Retarded Youth. 48:19-28, June, 1966.

APPENDICES

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APPENDIX A

BIBLIOGRAPHY OF MATERIALS FOR
OCCUPATIONAL DEVELOPMENT
Mrs. Iva Dean Cook

READINESS

A Book About Me, K-1, SRA. A child's responses to the hundreds of illustrations in this flexible activity book provide counselors, teachers, and preschool personnel with valuable insight into his attitudes and home background.

About Books, K-8, Children's Press. Adaptable for meeting the needs of both able and slow learners. The read-levels of most volumes is second or third grade; yet the mature presentation of the topics permit these books to be used by pupils in the intermediate and junior high school grades.

Community Helpers, K-6, SVE. Forty-eight study prints with complete lesson plans.

Community Workers and Helpers, K-3, SVE. Filmstrip series that takes primary grade students on fascinating behind the scenes visits to community workers and helpers whose goods and services affect their lives. Emphasis is on meaning of community and community interdependence.

Elementary Guidance, K-4, Random House. Offers practical techniques for using thirty-three high interest children's books as case studies to help evoke candid class discussion of different problems.

Focus on Self Development-Stage One: Awareness, K-2, SRA. A multimedia elementary guidance program to promote the affective and cognitive development of children. Focus is a three stage program that will provide support in the affective domain for all areas of the elementary curriculum.

Little Citizen Series, K-3, SVE. An inspiring look at the desirable characteristics young children should develop. A special emphasis is placed in developing responsibilities toward others.

Living With Your Family, K-3, SVE. Portrays four approaches to family living. Help youngsters develop basic understanding of family problems and promote favorable attitudes.

Our Working World: Families At Work, K-1, SRA. This unique program gives the students a picture of the world as it is. Presents the social sciences as they are related to the child's everyday experiences. Problem solving and decision making are an important part of the program.

The Lollipop Dragon, K-3, SVE. Provides a basis for meaningful discussion and for projects and activities that lead children to practice acceptable social behavior.

Urban Life, K-6, SVE. Forty-eight study prints with complete lesson plans.

PRIMARY

A Book About Me, K-1, SRA. See previous description.

At The Books, K-3 Children's Press. Nine books to provide readers with various visits to places in the community of business and public service.

Community Helpers, K-6, SVE. Forty-eight study prints with complete lesson plans.

Elementary Guidance, K-4, Random House. See previous description.

Focus On Self Development-Stage One: Awareness, K-2, SRA. See previous description.

Our Working World, K-3, SRA. A unique program that focuses on the family in the first grades. In step with the child's growing world the program expands to the neighborhood in the second grade and to the entire metropolitan community in the third. The text material is supplemented by classroom activities.

Urban Life, K-6, SVE. Forty-eight study prints with complete lesson plans.

Voices of Man at Work (Book and record), Stone Educational Publications.

Voices of Tools and Machines (Book and record), Stone Educational Publications.

What Could I Be, 3-6, SRA. This illustrated text introduces boys and girls to the world of work, guides them in viewing occupational areas in terms of their own abilities and interests, and helps them to see the value of school as preparation for work.

FILMS

Community Workers and Helpers, K-3, SVE.

FILMS CONTINUED

Coronet Filmstrips:
- Courtesy Series
- Getting Along In School Series
- Our Community Utilities
- Neighborhoods
- Traveling In and Out of the City

Little Citizens Series, K-3, SVE. See previous description.

Living With Your Family, K-3, SVE. See previous description.

INTERMEDIATE

About Books, K-8, Children's Press. See previous description.

Community Helpers, K-6, SVE. Forty-eight prints with complete lesson plans.

How To Choose and Use Stanley Tools. Stanley Tools Publication. A free pamphlet, very pictorial. Good for use in introducing tools to students.

I Want To Be Books with Language Skills Notebook and Teacher's Guide, K-6, Children's Press. Thirty-six books in a series with high-interest, low vocabulary designed to capture and hold the attention of pupils. The student notebook offers a method to reinforce comprehension and language skills. Reading levels range from K through four.

Learn How To Study, 4-7, SRA. Designed to help youngsters build good study habits, writing a report, organizing information, and preparing for tests are a few of the many topics covered.

Prevocational Workbook and Instructor Guide. Texas Education Agency. The materials are broken into units with specific objectives which are planned to fill a 50 minute instructional period. The sequence follows an order which aims to maximize teaching effectiveness and integration. The program supplies materials for 60 calendar days. It is suggested that the presentations divide best into three groups:
- Level One - Grades 5-9
- Level Two - Grades 3-7
- Level Three - Grades 1-5

Reading For Safety: Common Signs of Community Service and Safety: Part I and Part II, Fern Tripp. Each part contains common signs seen in the community and aid in the development of a protective vocabulary.

Road Signs, One Hundred and Twenty Authentic, Fern Tripp. Contains replicas of road signs in colors and shapes which are used in the United States.

Sculpture, Random House.

Sewing, Random House.

Social Science Lab Units, 4-8, SRA. This program deals with human relations and allows the student to explore causes and effects of human behavior. The student reads, listens to, and role plays samples of behavior interaction.

Urban Life, K-6, SVE. Forty-eight study prints with complete lesson plans.

Voices of Man at Work (Book and record), Stone Educational Publications. See previous description.

Voices of Tools and Machines (Book and record), Stone Educational Publications. See previous description.

Weaving Without A Loom (Teacher Reference), Davis Publications.

What Could I Be, 3-6, SRA. See previous description.

What I Like To Do, 4-7, SRA. An easy to use interest inventory identifies a youngster's preference in art, music, social studies, active play, quiet play, manual arts, home arts and sciences. The data gives interesting insights into a child's background as seen through his interests, which can be helpful in working with him in a classroom situation.

Widening Occupational Roles Kit, 6-9, SRA. This kit is designed to help the student expand his knowledge of the world of work, to recognize families or related jobs, to develop a deeper understanding of his own abilities and interests, and to learn about the type and extent of education needed to prepare adequately for various occupations.

FILMS

America At Work (filmstrip), 4-8, Eye Gate House. Depicted in this series are the basic reasons for the growth and

FILMS CONTINUED

development of our country. Resources, products of fields, rivers, lakes and mountains, commerce and industry are graphically portrayed.

American Farmer and Our Food Supply (filmstrip), 4-8, Eye Gate House. A filmstrip study of the American Farmer, often called the backbone of the American people. An introduction to life on the farm, the crops produced, the marketing problems, and the contrasts between rural living and life in the big city.

JUNIOR-SENIOR HIGH SCHOOL

About Books, K-8, Children's Press. See previous description.

About You, 9-12, SRA. Helps the high school student understand himself and others better and help him develop.

Accent/Personality Series. Follett Publishing Company.
Taking Stock
You and Your Needs
You and They
You Are Heredity and Environment
Teacher's Manual
A new concept of concise, easy to manage booklets dealing with basic social skills in a unique way. Emphasis is on discussion between instructors and students as a means of developing thinking skills and of conveying useful information and concepts. All material is high-interest low-readability, and is divided into small units that help assure learning success.

Accent/The World of Work. Follett Publishing Company.
Getting That Job
Keeping That Job
You and Your Occupation
You and Your Pay

Basic Driver Education, Special Education Publications. A 174 page worktext written to teach basic information concerning driver education to retarded youth.

Basic Typing Step By Step, Curriculum Research Press. Typing manual which begins with a list of operating parts and goes through every step ending with a practice exam for the civil service.

Campus Work Experience, Allen Company. Worktext for non-academic high school students designed to be used before or concurrently as a student is assigned to school service on campus.

Careers for High School Graduates, 7-12, SRA. Designed for students who do not plan to go to college. This kit offers a selection of 114 SRA Jr. Occupational Briefs as an aid for their post-high school planning.

Careers for Women, 7-12, SRA. Geared specifically to the young woman, this kit provides information to assist her in making educational and vocational plans. It answers such questions as "What occupations am I likely to find most suitable?" "How much education or training will I need for them?"

Career Information Kit, 9-12, SRA. This library of the very best available occupational materials furnishes comprehensive information on jobs that employ over 90 percent of the labor force today.

Choosing Your Career, Coronet Learning Program. A programmed re-usable booklet written in linear format. Included is a Self-Appraisal sheet which the student fills in as he works the program.

Discovering Yourself, 7-9, SRA. This booklet helps develop the concept of self. Includes self appraisal charts, quizzes, and examples.

Eddie In School, Fearon Publications. A book containing thirty short stories which deal with the learning experiences of a teenage city boy. Teacher's manual included.

Elementary Typing Step By Step, R. E. H. Publishing Co. A basic typing manual simple enough to be used by a teacher who cannot type herself.

Experiences In Wood and Related Materials for Special Classes, Follett Publishing Company. Excellent for teacher reference.

Finding Ourselves, Frank E. Richards Publishing Co. Map reading from a globe, a wall map, a state map, and a city map designed to improve academic skills.

Finding Your Job, Finney Company. This series is comprised of six units. Each unit contains five different volumes, with twelve monographs in each volume. The six complete units contain 360 different job descriptions.

Finding Your Job Workbook, Finney Company. The workbook consists of 72 pages and is designed for use in special classes. There is an assortment of lessons, with which there are working and answering spaces. Each page is perforated, thus permitting removal for correcting or for the purpose of enabling the student to take one lesson home as a homework assignment. To be used with Finding Your Job series of monographs.

Follett Vocational Reading Series.
John Leveron, Auto Mechanic
The Delso Sisters, Beauticians
Anita Powers, Office Workers
The Millers and Willie B., Butcher, Baker, Chef
Helen Green, Department Store Worker
Marie Perrone, Practical Nurse
A series of books designed to meet the needs of high school students and young adults who are not reading on their level. The books introduce the students to the world of work.

Foundations of Citizenship, Frank E. Richards. The books and accompanying paperbacks stress social adjustment with an emphasis on the world of work.

Getting A Job, Fearon Publications. A worktext on jobs available and how to apply for them.

Getting Along Series of Skills Workbooks, Frank E. Richards.
After School Is Out
Al Looks For A Job
On The Job
Money In The Pocket
From Tires To Teeth

Getting and Holding A Job, Frank E. Richards Publishing Co. A worktext designed for the young adult getting ready to enter the world of work.

Getting Ready for Payday, Frank E. Richards Publishing Co. This paperback worktext deals with money which a youth might receive after employment.

Getting Ready To Drive, Frank E. Richards Publishing Co. A worktext designed to aid the non-academic student in preparation for oral or written driver's test.

Guidance Series Booklets, 9-12, SRA. These booklets provide educational-vocational, personal, and social guidance for high school students. The 57 booklets are from 48 to 56 pages in length, illustrated and paperbound.

Handbook of Job Facts, 9-Adult, SRA. Covers 300 jobs and provides key information on duties, employment opportunities, required qualifications, education, training, chance of advancement, salaries, and outlook.

Help Yourself To A Job, Finney Company. Three books designed for use in special classes, by slow learners and underachievers. Each of the workbooks has a content of approximately 70 pages. The individual lessons are perforated thus permitting removal for correcting or for the purpose of enabling the student to use the lessons as homework assignments.

How To Answer When Money Talks, Amidon and Association. A worktext with problems on installment financing, credit, savings, etc.

How To Be A Better Student, 7-9, SRA. Shows how to use study time most effectively. Illustrations, charts, and tests help students evaluate study habits.

How To Choose And Use Stanley Tools, Stanley Tools Publications. See previous description.

How To Get A Job: A Handy Guide For Jobseekers, U. S. Government Printing Office. This 5 page booklet offers tips to the young adult EMR on ways to look for a job. Teacher's manual available.

How To Hold Your Job, John Day Company. Teacher's Manual and workbook offering practical information and guidelines for holding a job.

If You're Not Going To College, 9-12, SRA. This book provides information on occupational possibilities, education, and training available for those not planning to attend college.

I Want A Driver's License, Ferne Tripp. A worktext designed to assist the non-academic in preparing himself for a job.

I Want A Job, Frank Richards Publications. Forms and procedures essential for job applications.

I Want A Job, United Transparencies, Inc., 1964. 15 Transparencies and workbook.

Jerry Works In A Service Station, Fearon Publishers. A story of a teenage high school graduate who gets hired as a service station attendent, and how Jerry prepared himself for the job.

Job Experience Kit, 8-12, SRA. A collection of work simulation experiences in twenty representative occupations. Highly effective in generating student interest in career exploration.

Job Family Series Booklets, 7-12, SRA. These booklets illustrate how different jobs are related through common factors, satisfying similar interests for instance, or requiring similar skills. 20 booklets.

Jobs In Your Future, Scholastic Book Company. A worktext to aid in preparing the student for the world of work.

Junior Guidance Series Booklets, 6-9, SRA. These illustrated booklets provide educational, vocational, personal and social guidance for the junior high school student. 20 booklets, 40 pages in length. Paper.

Lawson Training Kit, Gary D. Lawson. A kit consisting of four units--money, signature, survival words, and foods. Accompanying manual suggests uses for the 23 - 9" x 11" cards.

Learn How To Study, 4-7, SRA. See previous description.

Looking Toward High School, 7-9, SRA. Informative activity test answers key questions about high school and encourages the student in planning his career.

Measure, Cut, and Sew. Holt, Rinehart and Winston. A paperback book which is a step by step guide to sewing. Such topics as alteration, commerical patterns, materials and other are covered.

Money, Credit, Banking, Amidon and Associates. A consumable worktext concerning money, credit, and banking.

Money Makes Sense, Fearon.

New Rochester Occupational Reading Series, 9-12, SRA. Provides both reading instruction and information about the world of work. Mature in content but scaled as low as second grade reading ability, the series, emphasizes, in story form, the attitudes and skills that lead to success on the job and in society.

Occupational Exploration Kit, 0-12, SRA. Provides students with a systematic personalized approach to job investigation.

Occupational Notebook Program and Teacher's Guide, Research Press. This program will serve as the basis for a practical job preparation course for retarded or limited students. The student's notebook, when completed, will serve as a written record and compendium of the students skills and attitudes;

featuring sections on job vocabulary, specific skills, nature of work, employer and employee relationships, job qualifications, job applications, use of the telephone, personal grooming, use of public transportation, and many others. Teacher's Guide also available.

Occupational Outlook Handbook, U. S. Department of Labor. A book on all types of occupations; information concerning each trend in population and employment.

On The Job, Frank E. Richard. A sequel to I Want A Job.

Paycheck: What Mike, Ralph and Lou Learned About Their Take Home Pay, Follett Publishing Company. This book shows how gross pay is computed and how deductions are made on salaries.

Photography, Random House. Teacher reference or student recreational reading.

Planning Meals and Shopping, Fearon Publishing Company.

Planning My Future, 7-8, SRA. Text contains self-administered tests and inventories that help guide students in making preliminary educational as well as vocational decisions.

Prevocational Workbook and Instructor Guide, Texas Education Agency. See previous description.

Programmed Elementary Typing, 7-9, R. E. H. Publishing Company.

Retail Salesclerk Yardgoods, Follett Publishing Company. This book explores the daily work of the retail yardgoods clerk. It shows how communication skills and math are used in the world of work.

Road Signs, One Hundred and Twenty Authentic, Fern Tripp. See previous description.

Skill Text For Young Drivers, Special Service Supply.

Snip, Clip, and Stitch, Research Press. Designed as a homemaking course for mentally retarded girls.

Target Series, Mafex Associates, Inc. A series of student texts, workbooks, and teacher's guides divided into three phases: Citizenship, Employment, Family Living And Business.

Teenagers At Work, Allen Company. A worktext based on seven work situations; school cafeteria, gas station, bakery, supermarket, shipping clerk, hospital aide, and doughnut shop helper. Suitable for pupils in a work-study program.

Teenagers Prepare For Work, Allen Company. Worktext covering many jobs which includes useful information on various topics.

Teen-Guide To Homemaking, Webster Division/McGraw Hill Book Company. Lessons are suitable for boys and girls both, with emphasis on skills needed in a home where adults work. Highly illustrated with black and white photographs with some color photographs.

The Happy Housekeepers, Frank E. Richards.

The Joy of Woodworking, Random House. Teacher reference or supplementary reading for the student.

The World of Work: You and Success, R.E.H. Publishing Company. A workbook and teacher's manual designed to strengthen the student's functional vocabulary with words he must be acquainted with to obtain and keep a job.

To Be A Good American Series, Fearon Publishing Company. A series of four worktexts designed to develop good citizenship.

Turner Career Guidance Series, Follett Publishing Company. A series of six workbooks providing a program in career planning.

- Wanting A Job
- Training For A Job
- Starting A Job
- Looking For A Job
- Holding A Job
- Changing A Job

Turner Livingston Communication Series, Follett Publishing Company.

- The Television You Watch
- The Language You Speak
- The Newspapers You Read
- The Letters You Write
- The Movies You See
- The Phone Calls You Make
- Teacher's Guide

Typing For The Handicapped Series One. One Hand Typing Step by Step, R. E. H. Publishing Company. For persons with less than five fingers on each hand.

Understanding The Automobile, Follett Publishing Company. A worktext that discusses nine systems of the automobile.

Using Money Series, Frank E. Richards. Four worktexts designed to teach processes involving money.
Book I - Counting My Money
Book II - Making My Money Count
Book III - Buying Power
Book IV - Earning, Spending, and Saving

Vocational English and English on the Job, Globe Book Co. English needed in preparation for the world of work.

What Job For Me? Series, Webster Division/McGraw Hill Book Company. A series of 18 books written at a fourth grade reading level that can be used in vocational education or remedial reading.
Charles the TV Repairman
Cool It, Man!
John, The Second Best Cook In Town
Frank The Vending Machine Repairman
Carmen the Beautician
Nick the Waiter
Ginny The Office Assistant
Judy the Waitress
Betty and Her Typewriter
Joe the Salesman
Timo the Draftsman
Phil the File Clerk
Tom the Merchant Seaman
Keep It Clean
Sandy the Lineman
Burt the Policeman
Ned the Taxicab Driver

What I Like To Do, 4-7, SRA. See previous description.

Widening Occupational Roles Kit, 6-9, SRA.

Woodworking, Random House. For teacher reference or supplementary reading for the student.

Workshop Planning Sheets. R.E.H. Publishing Company pad of planning sheets, each sheet organized under headings such as materials needed for projects, tools used, etc.

You Learn To Type, McGraw Hill. Manual for slow learners in easy language. Seventy lessons. Notes to the coach are printed in red in the margin.

You and Your World, Fearon. A worktext featuring activities from the home, school, community, and country.

Your Checking Account, Amidon and Associates. A worktext dealing with banking information.

FILMS

Avid Corporation
- Employment Opportunities
- Work Habits and Attitudes
- Safety, Health, Citizenship
- World of Work

Eye Gate Hours
- America At Work

Basic Electrical Principles, 7-12, SVE.

Basic Tools for Woodworking, 7-12, SVE.

Business Filing, 9-12 SVE.

Car Care for Safety. Filmstrips and tape reels. Eve Gate House. A series of filmstrips with tape recordings which teach responsibility for safety on the road which includes good driving habits and good car maintenance habits. Includes 8 color filmstrips and 8 standard size tape reels and teacher's manual.

Community Helpers - 8mm films. Potter's Photographic Applications Company, Mineola, N. Y. The Bus, The Service Station, Shipper, The Butcher, The Paper Boy, The Airport, and Fuel Supply.

Electricity At Work, 7-12, SVE.

Job Opportunities Now, 7-12, SVE.

Learning To Use A Sewing Machine, 7-12, SVE.

Metalworking, 7-12, SVE.

Occupational Education. Eye Gate House
The Job Interview.
Stocker In A Supermarket.
Fixing A Flat Tire.
The Waitress.
How To Use A Checkbook.

FILMS CONTINUED

The Variety Store
The School Cafeteria Worker
The Nurse's Aid
The Gas Station Attendent

Opportunities, 7-12, Eye Gate.

Portable Power Tools, 7-12, SVE.

Shop Safety, 9-12, Coronet.

The ABC's of Getting and Keeping A Job, 7-12, Eye Gate.

The Wonderful World of Work: Vocational Opportunities, 7-12. Eye Gate House.

Your Future Series. Guidance Associates.

PROFESSIONAL READING

A Design For Daily Living. Curriculum Guide For Children and Youth With Intellectual Disabilities. Jacksonville, Florida: Duval County Schools, 1966.

Alcorn, Dewaine. Special Education Curriculum Guidelines For Teachers of Educable Mentally Retarded Children In Nebraska. Lincoln: State Department of Education, 1965.

Alkana, Jack J. General Handbook of Tools and Crafts. Curriculum Research, 1968.

Allen, Amy A. and Virginia Baker. Slow Learning Children In Ohio Schools. Columbus: Ohio State Department of Education, 1962.

An Opporunity for Dignity Through Work, and Occupational Training Center for the Mentally Handicapped. Final Project Report. Lt. Joseph P. Kennedy School for Exceptional Children. Palos Park, Illinois: 1966.

An Outline Of Procedures For Operating An Employment Orientation Program for Mentally Retarded Students Enrolled In Special Classes In Secondary Schools In New Jersey. Trenton, New Jersey: Department of Education, November, 1962.

Baer, Max and Edward Roeber. Occupational Information: The Dynamics of Its Nature and Use. Chicago: Science Research Associates.

Bitter, James A., et. al. Work Experience Center, Rehabilitation of the Retarded. Final Report. Missouri: St. Louis Jewish Employment and Vocational Service, August, 1967.

Burchill, George. Work-Study Programs for Alienated Youth. Chicago: Science Research Associates.

Connecticut. Bureau of Pupil Personnel and Special Education Services. The Educational Work Experience Program for Educable Mentally Retarded Youth. Hartford, 1962.

Crawford, William L. Guidelines Work-Study Program for Slow Learning children In Ohio Schools. Columbus: 1967.

DiMichael, Salvatore G. New Vocational Pathways for the Mentally Retarded. Washington, D. C.: American Personnel and Guidance, 1964.

DiMichael, Salvatore G. Providing Full Vocational Opportunity for Retarded Adolescents and Adults. Washington, D. C.: National Rehabilitation Association, 1964.

Employment of the Handicapped. Guide to Job Placement of the Mentally Retarded. Washington, D. C.: U. S. Presidents' Committee on Employment of the Handicapped.

Groelle, Marvin C. A Pilot Project In Curriculum Development for Work Experience and Occupations Courses for Educable Mentally Retarded Students. Oakland, California: Oakland Unified School District, August, 1967.

Hall, David et. al. To Develop Work Evaluation and Work Training Techniques Designed To Facilitate The Entry of Mildly Retarded Into Service Occupations. Final Project Report. Washington, D. C.: Vocational Rehabilitation Administration, August, 1965.

Jones, Mona and Ditha Kandel. Work Adjustment As A Function of Occupational Therapy. Third International Congress of World Federation of Occupational Therapists, Study Course 5. New York: American Occupational Association, 1964.

Jones, Phillip R. The Relationship of Vocational Outlook and Special Educational Programs for Adolescent Educable Mentally Handicapped. Urbans, Illinois: Illinois University, 1966.

Katz, Elias. An Independent Living Rehabilitation Program for Seriously Handicapped Mentally Retarded Adults. Final Report. Washington, D. C.: Vocational Rehabilitation Administration, 1965.

Louisville Public Schools. Work-Study Program, Educable Mentally Retarded Grades 10-11-12. Louisville: 1967.

Kokaska, Charles, et. al. "Vocational Preparation at the Elementary Level." Teaching Exceptional Children, Winter 1970.

Kolstoe, Oliver P. and Roger M. Frey. A High School Work - Study Program For Mentally Subnormal Students. Illinois: Southern Illinois University Press, 1965.

Lawson, Arthur. Homemade Toys for Fun and Profit. Van Rees Press. New York, 1953.

McNeice, William and Kenneth R. Benson. Crafts for the Retarded. McKnight and McKnight, 1964.

Mental Handicaps. Developing A Work-Experience Program For Slow Learning Youth. Columbus: Ohio Department of Education, 1964.

Norris, Wills. Occupational Information in the Elementary School. Chicago: Science Research Associates.

Office of Education. Opening Doors Through Educational Programs for Institutionalized Delinquents. Washington, D. C.: Office of Education, 1967.

Parnicky, Joseph J., et. al. Evaluating and Developing Vocational Potential of Institutionalized Retarded Adolescents. New Jersey: Edward R. Johnstone Training Residential Center, 1963.

Peterson, Richard O. Guide to Jobs for the Mentally Retarded. Pittsburgh: American Institute for Research, 1964.

Frankel, William A. "Planning the Vocational Future of the Mentally Retarded." Rehabilitation Literature, April, 1961, Volume 22, No. 4.

Policy and Procedure for a Vocational Education Work-Study Program for Severely Mentally Retarded Pupils. Santa Cruz County Work-Study Program, Santa Cruz, California, July, 1966.

Preparation of the Mentally Retarded for Gainful Employment, U. S. Department of Health, Education, and Welfare. Bulletin, 1959, No. 28.

Put, Louise J. Equipment Guide, Young Homemaker. Iowa State University, 1967.

Rehabilitation Services for Educable Retarded Students. Final Report. Eugene School District Number Four. Oregon: State Department of Education, December, 1966.

Salvin, S. T. "Programs for Severely Mentally Retarded Pupils." American Journal On Mental Deficiency, 63: 274-281, 1958.

Seymour L. Wolfbein. Employment and Unemployment In The United States of America: A Study of the American Labor Force. Chicago: Science Research Associates.

Sisters of St. Francis of Assisi Schools. Crafts Curriculum for the Mentally Retarded. Cardinal Stritch College, Wisconsin.

Sniff, William F. A Curriculum for the Mentally Retarded Young Adult. Illinois: Charles C. Thomas, 1962.

Stahlecker, Lotar V. Occupational Information for the Mentally Retarded, Selected Readings. Illinois: Charles C. Thomas, 1967.

Thiemann, Norma. Handbook of Job Facts. Chicago: Science Research Associates.

Allen Company
4200 Arbutus Court
Hayward, California 94552

Amidon and Associates
1035 Plymouth Building
Minneapolis, Minnesota 55402

Avid Corporation
10 Tripps Lane
East Providence, Rhode Island
02914

Children's Press
1224 West Van Buren Street
Chicago, Illinois 60607

Coronet Filmstrips
65 E. South Water Street
Chicago, Illinois 60601

Coronet Learning Programs
C/O California Test Bureau of
McGraw Hill Book Company

Eye Gate House, Inc.
146-01 Archer Avenue
Jamaica, New York 11435

Fearon Educational Corporation
2165 Park Boulevard
Palo Alto, California 94306

Fern Tripp
2035 East Sierra Way
Dinuba, California 93618

Frank E. Richards
1435 Main Street
Phosenik, New York 13135

Finney Company
3350 Gorham Avenue
Minneapolis, Minnesota 55426

Follett Publishing Company
1010 West Washington Boulevard
Chicago, Illinois 60607

Gary D. Lawson
9488 Sara Street
Elks Grove, California

Guidance Associates
Harcourt Brace
757 Third Avenue
New York, New York 10017

Holt, Rhinehard and Winston
383 Madison Avenue
New York, New York 10017

John Day Company - Steck
Vaughn Box 2028
Austin, Texas 78767

Mafex Associates, Inc.
Box 159
Johnstown, Pennsylvania
15907

McGraw-Hill Book Company
530 West 42nd Street
New York, New York 10036

Ohio State Board of
Education
Division of Special
Education
Columbus, Ohio

Potter's Photographic
Applications Company
Mineola, New York

* R. E. H. Publishing Company
New-Rehabilitation Educa-
tional Methods, Inc.
829 Princeton Road
Franklin Square
New York, New York 11010

Research Press
Country Fair Station
Champaign, Illinois 61820

Scholastic Book Service
50 West 44th Street
New York, New York 10036

Science Research Associates
259 East Erie Street
Chicago, Illinois 60611

Society for Visual Education
1345 Deversey Parkway
Chicago, Illinois 60614

Special Education Publications
718 Mills Avenue
North Muskagen, Michigan 49445

Special Service Supply
Box 705
Huntington, New York 11743

Stone Educational Publications
6363 Broadway
Chicago, Illinois 60626

Texas Educational Agency
201 East 11th Street
Austin, Texas 78711

United States Office of Education
Washington, D. C.

*Rehabilitation Educational Methods, Inc.
829 Princeton Road
Franklin Square
New York, New York 11010

APPENDIX B

COURSE OUTLINES, EQUIPMENT AND SUPPLIES

PURPOSE AND OBJECTIVES OF OCCUPATIONAL TRAINING PROGRAM FOR FAIRFIELD SCHOOL

The prime purpose of the program is to prepare the students vocationally, socially, and personally for the world of work.

Objectives:

1. To structure a curriculum which includes the students needs, interests, readiness, and motivation.

2. To combine the aspects of academic and vocational education into a sequential integrated program.

3. To develop a vocational education program as part of a total organizational plan actively involving all teachers at all developmental levels.

4. To effectively structure a vocationally oriented program based on the philosophies of special education and vocational education.

5. To determine interpersonal and social problems students have with their co-workers and supervisors.

6. To develop instruments of evaluation for personal, social, and vocational development.

7. To further the education and training of the students for employment.

8. To enable the students to obtain competitive employment.

VOCATIONAL TRAINING PROGRAM FOR THE HANDICAPPED AT

FAIRFIELD SCHOOL 1970-1971

Cabell County Public Schools - Vocational, Technical and Adult Education Department

Area	No. of Hours	No. of Students
Building Maintenance Service	720	12
Crafts Workshop		
Junior High II - 2 Classes		24
Advanced Class	720	12
Woods Industry		
Junior High III - 2 Classes		24
Advanced Class	720	12
Automotive Maintenance	720	12
Printing	1,080	36
Office and Business Occupations	1,080	36
Home Economics - Occupational Preparation		
Child Care Occupations	720	12
Housekeeping Aides	720	12
Food Service Occupations	720	12
Total Number of Students to be Enrolled		216

Name of School FAIRFIELD

Curriculum AUTOMOTIVE MAINTENANCE

Instructor Albert L. Tenney

The student who successfully completes the Automotive Maintenance Program will be able to perform the following entry level jobs:

1. Use common courtesies needed for meeting and greeting customers.
2. At all times practice good shop and safety habits.
3. Wash and wax exteriors of three different types automobiles - sedans with painted tops, convertibles, and vinyl tops.
4. Clean windows without leaving streaks and smudges.
5. Vacuum and shampoo interiors and carpet--- vinyl seats and upholstery, nylon upholstery and seats, and combinations of nylon and vinyl carpets and upholstery.
6. Lubricate and change oil and filters.
7. Service, diagnose, and replace battery.
8. Replace bulbs, fuses, and check wiring.
9. Prepare daily and weekly orders for parts and supplies.
10. Read and operate a service station pump.
11. Write out credit cards with the proper information.
12. Change, rotate, and repair tires on automobiles, pick-up trucks, and service vans.
13. Replace brake linings.
14. Replace shock absorbers.
15. Inspect and replace water hose, fan belt, clean cooling system, and add coolant.
16. Inspect and replace exhaust systems.

EVALUATION

The program will be evaluated mainly on the extent to which the listed behavioral objectives are achieved successfully by each student.

Name of School FAIRFIELD

Curriculum AUTOMOTIVE MAINTENANCE

PART B
NEW PROGRAMS

List major units of instruction and number of hours per unit. Institutions of higher education also indicate semester hours of credit.

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
I. Introduction to Automotive Maintenance	20
II. Shop Practices and Safety	60
III. Good Customer Relationships	30
IV. Wash and Wax Exterior of Automobile	30
V. Window Cleaning	10
VI. Vacuum and Shampoo Upholstery and Carpets	20
VII. Lubrication	40
VIII. Change Oil and Filter	40
IX. Service and Replace Batteries	40
X. Replace Bulbs and Fuses	30
XI. Prepare Orders for Parts and Supplies	40
XII. Operation of Service Station Pumps	60
XIII. Credit Card	20
XIV. Change, Rotate and Repair Tires	60
XV. Balance Tires	40
XVI. Replace Brake Linings	50
XVII. Shock Absorbers	40

PART B
NEW PROGRAMS

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
XVIII. Cooling Systems	50
XIX. Exhaust Systems	40
TOTAL	720

Form VG--2.1

This form was used for the description of new programs by the local education agency for vocational education. Copies may be obtained from the State Director of Vocational-Technical and Adult Education.

Name of School FAIRFIELD

Curriculum AUTOMOTIVE MAINTENANCE

Itemize equipment to be purchased. Separate by major and minor equipment. Major equipment has an acquisition cost of $100.00 or more.

New equipment to be purchased for replacement ☐

New equipment to be purchased for a new curriculum ☒

New additional equipment for an on-going curriculum ☐

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Model 609-Vac Cleaner for Automobiles and Shop	1	295.00	295.00	
Teacher's Desk with Center Drawer	1	200.00	200.00	
Upholstered Steel Stack Chairs	16	23.00	368.00	
Rectangular Shape Conference Tables Plastic Tops (36" x 96")	2	108.95	218.00	
Proto Automotive Tool Panel Complete-Panel No. 52-SP.	1	127.00	127.00	
Import Wrench	1	140.00	140.00	
Battery Charger	1	157.95	158.00	
Tunemaster Kit	1	184.00	184.00	
Economy Tire Changer	1	135.00	135.00	
2 Ton Long Chassis Jack	1	203.80	204.00	
Portable Air Compressor	1	114.90	115.00	
High Pressure Lubrigun	1	229.00	229.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Tool Storage Cabinet, for Automotive Tools	1	599.00	599.00	
Lateral File Cabinet (Classroom)	1	182.00	182.00	
Used Service Station Pump	1	(No price	listed)	
Precission Thickness Gauge	1	2.10	2.00	
Master Brake Tool Set		17.50	18.00	
Tire Air Pressure Gauges	4	3.20	13.00	
Hand Hydraulic Jacks	2	13.50	27.00	
Wood Creeper	1	11.40	11.00	
Crank Case Drain Tank	1	13.25	13.00	
Pour Spouts No. 1149F	2	7.30	15.00	
Pour Spouts No. 1135	2	1.85	4.00	
Tire and Tube Testers	2	9.90	20.00	
Exhaust and Tail Pipe Cutters	2	11.70	23.00	
Electric Buffer	1	75.00	75.00	
3/4" Drive Socket Set	1	62.88	63.00	
Panel No. 32-SP Pliers	1	44.25	44.00	
Panel No. 32ASP Wrenches	1	40.10	40.00	
Panel No. 36-SP Screw Drivers	1	36.80	37.00	
Panel No. 1-SP Brake and Tubing Tools	1	55.00	55.00	
Panel No. 60ASP Wrenches	1	85.55	86.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Battery Filler	1	5.15	5.00	
Battery Straps	4	.95	4.00	
Battery Brushes	2	2.40	5.00	
Hydrometer Power Test	1	1.90	2.00	
Anti-freeze Tester	1	7.75	8.00	
Squeeges for Windows	12		31.00	
Scrapers	12	1.00	12.00	
Service Station Dispensers for Paper Towels and Supplies	2	25.00	50.00	
Rectangular Shape Conference Table 30" x 60" (classroom)	1	56.95	57.00	
		Carried Forward or Total	$3864.00	

STATE OFFICE USE

Approved by _____

Date _____

Amount Approved _____

State Director _____

Date _____

Local Agency Notified _____

Submit in Triplicate

Form VG--2.3

This form was used as an application for federal funds under provisions of Public Law 90-576, Vocational Education Amendments of 1968. Financing of programs for handicapped persons is subject to policies established in the State Plan. The level of funding is determined by individual need as indicated in the application and plan and the amount of funds available for distribution.

Name of School FAIRFIELD

Curriculum CRAFTS WORKSHOP

Instructor Dorthula Taylor

Purpose: To motivate the student's interest, to teach the student how to adjust to the vocational world of work. Thru good work habits and skills thus enabling the student to communicate effectively, make decisions, have desirable personal characteristics, become good citizens, and understand the relationship of the classroom instruction to the realities of the vocational world of work.

Over all objective: Prepare the student to succeed in the world of work in semi-skilled jobs in his community that meet his needs, participate in wholesome family and community activities during his leisure time that will enable him to become a useful citizen in the community.

Measureable objectives in terms of student behavior

1. Demonstrate safety habits.
2. Develop desirable personal characteristics.
3. Cooperation with teachers, supervisors, and employers.
4. Completion of the vocational program.
5. The ability to make decisions, adjust to schedules and routines which will help him in every day life situations.
6. Demonstrate an ability to work in assembly line production of products.
7. Assume responsibility for completion of the assigned task.
8. Realistic self evaluation in relation to his ability.
9. Identifies and uses hand tools and small power equipment such as the jigsaw, moto-tool, and others.
10. Participate in activities that allow him to experience satisfaction and pride in his accomplishments.
11. Demonstrate the ability to follow written and verbal instructions.
12. Participate in creative leisure time activities.

13. Identify job opportunities in the community:
    a. Gift wrapping.
    b. Packers in glass factories.
    c. Florists.
    d. Helpers in ceramic tile installation.
    e. Packaging and wrapping articles for mailing.
14. Produce salable items for contracts with department stores, discount stores, gift shops, florists, and pottery shops.

These nonacademic activities give the low ability pupils a chance to succeed and gives him a vent for any frustration his retardation may have produced.

Course Outline

1. Introduction to vocational world of work.
2. The student received basic training in craft workshop.
3. The student received training in the area he is interested in.
4. Advanced work in the area the student selected.
5. Part-time job experience and class instruction.
6. Full-time job experience with follow up.
7. Evaluation: Teacher and student evaluation, employer, rehabilitation.

Name of School FAIRFIELD

Curriculum CRAFTS WORKSHOP

NEW PROGRAMS

List major units of instruction and number of hours per unit. Institutions of higher education also indicate semester hours of credit.

Curriculum and/or Topical Outline Major Units of Instruction	No. Hours
Introduction - The Crafts Workshop has a multifold purpose in that vocational and avocational work habits and skills will be developed to provide opportunities for employment and to enrich personal and family life through a creative use of leisure time.	
I. Ceramics	200
a. Design	40
b. Materials and Tools	20
c. Methods of Building	50
d. Decoration	35
e. Firing	35
f. Packing	20
II. Gift Wrapping	60
a. Correct Size of Boxes	10
b. Use of Tissue Paper	10
c. Correct Measurement of Paper	20
d. Bow Making	20
III. Other Crafts	360
a. Decoupage	40
b. Fantasy Film	40
c. Liquid Plastic-Clear Cast	40
d. Candle Making	40
e. Mosaics	80
f. Cathedral Glass	40
g. Tole Painting	40
h. Raffia	40
TOTAL	720 (2 year program)

Scrap Art
Holiday Decorations
Leather Craft
Macrame
Needle Craft
Paper Craft

Name of School FAIRFIELD

Curriculum CRAFTS WORKSHOP

Itemize equipment to be purchased. Separate by major and minor equipment. Major equipment has an acquisition cost of $100.00 or more.

New equipment to be purchased for replacement ☐

New equipment to be purchased for a new curriculum ☒

New additional equipment for an on-going curriculum ☐

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Ceramic Kiln	1	510.00	510.00	
Potter's Wheel-Multiple Unit	1	615.00	615.00	
Spray Unit Booth for Ceramics	1	595.00	595.00	
Steel Tables 30" x 72"	4	65.00	260.00	
Stools with foot rest	15	25.00	375.00	
Desk-Teacher's Modular Unit	1	260.00	260.00	
Ceramic Molds Asst.			100.00	
Kiln Half Shelves	8	3.00	24.00	
Kiln Full Shelves	4	7.00	28.00	
Decorator Wheels	3	6.00	18.00	
Palette Knives	6	1.25	8.00	
Carborundum Stones	2	1.30	3.00	
Ceramic Drills	6	7.00	42.00	
10 pc. Ceramic Tool Kits	6 sets	9.00	54.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Display and Drying Shelves	4 Units		60.00	
Pyrometric Cones	4 Boxes	2.00	8.00	
Assorted Brushes	5 Doz.	6.20	31.00	
Heatproof Kiln Cart	1	80.00	80.00	
Studio Pottery Scale	1	36.00	36.00	
Candle Molds	8	5.00	40.00	
Candle Molds	2	4.00	8.00	
Candle Molds	2	7.00	14.00	
Candle Molds	2	8.00	16.00	
Mini Candle Molds	1 Set	11.00	11.00	
Wood Carving Kits	2	9.00	18.00	
Xacto Knives	1 Doz.		10.00	
Pkgs. Xacto Blades	1 Doz.	.60	7.00	
Yarn Needles (72)	1 Pkg.		2.00	
Latch Hooks	1 Doz.		9.00	
13 Oz. Hammers	6	21.30	21.00	
Tile Nippers	6	4.00	24.00	
Stock Cart with Extra Shelf 36" x 24" x 32"	1	38.00	38.00	
Thermolyne Hot Plate	1	85.50	86.00	
Minitorches	3	4.00	12.00	
Paper Holder & Cutter	2	7.00	14.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
S-72 Star Bow Maker - 3M Corp.	1		80.00	
5-1/2" Magni-Fleur Looms	1 Doz.		15.00	
3-1/2" Multi-Fleur Looms	1 Doz.		12.00	
1-1/4" Min-Fleur Looms	1 Doz.		9.00	
Reusable Plastic Molds	3 Doz.	1.00	36.00	
7" x 12" Key Molds	2	2.50	5.00	
Battle Shield Mold	2	3.00	6.00	
Sun Dial Molds	6	2.50	15.00	
Sailing Ship Molds	6	2.50	15.00	
Eagle Plaque Mold	2	3.50	7.00	
Battle Dress Molds	2	4.50	9.00	
House Number Molds	10	1.50	15.00	
Alphabet Molds	26	1.29	24.00	
3-D Molds	6	2.95	18.00	
Round Nose Pliers	6	3.00	18.00	
Diagonal Cutters	6	3.00	18.00	
Adjusto Pegs	6	3.00	18.00	
Swivel Arm Chair	1	80.00	80.00	
File Cabinet	1	65.00	65.00	
Supplies				
Casting Clay-Slip Form	40 Gal.	1.95	78.00	
Red Fire Clay	100 lbs.	14.00	14.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
White Casting Clay	100 lbs.	14.00	14.00	
Potter's Plaster	100 lbs.	17.00	17.00	
Assorted Decals		20.00	20.00	
The Beginner and The Wheel - Textbook	15	1.50	22.50	
Ceramic Decoration - Book	1	1.50	1.50	
Patio Crystal 36Pak	1	9.95	9.95	
Candle Wax 60 lb. Cases	2	13.50	27.00	
Wire Core Wicking	2 Doz.	2.00	4.00	
Color Rosettes Assorted Colors	1 Doz.	2.50	2.50	
Red Rosettes	1 Doz.	2.50	2.50	
Sheen-tex Crystals	1 Doz.	5.00	5.00	
Assorted Scents	1 Doz.	7.50	7.50	
8 Oz. Stearic Acid	1 Doz.	9.50	9.50	
Multi Color Metallic Acetate Glitter	1 lb.	1.95	1.95	
Molding Plaster	100 lb.	18.00	18.00	
Assortment of Molds	5 Doz.	10.00	50.00	
Assorted Art Brushes	3 Doz.	1.50	4.50	
Cans Clear Lacquer	1 Doz.	16.90	16.90	
Tempera Paint - Quart Size - Assorted Colors	2 Doz.	2.05	49.20	
Plastic Water Color Cups	2 Doz.	1.00	2.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
6 Hole Plastic Paint Trays	1 Doz.	2.00	2.00	
Brush Washer and Holders	1 Doz.	1.45	17.40	
Burlap 36" Width	1 Roll	17.50	17.50	
4 Ply Wool Yarn Assorted Colors	5 Pkgs	2.50	12.50	
Yarn Needles (72)	1 Pkg.	2.00	2.00	
Latch Hooks	1 Doz.	8.50	8.50	
Skeins Rug Yarn	5 Doz.	4.90	24.50	
Assorted Felt	12 lbs.	17.50	17.50	
Rug Canvas	1 Roll	22.50	22.50	
Rug Binding (Yards)	2 Doz.	1.50	3.00	
Perma-Grout	25 lbs.	.49	12.25	
Tubes liquid adhesive with applicator tip	2 Doz.	.49	12.25	
Jars Grout Sealer	1 Doz.	.90	10.80	
Ceramic Tile	100 sq. ft.	.30	30.00	
Plywood 1/4"	10Sheets	3.23	32.30	
7" x 7" Looper Looms	1 Doz.	5.00	5.00	
Nylon Loopers	12 lbs.	11.50	11.50	
Bow Pins	5 Pkgs.	.89	4.45	
Assorted Colors Sheen Ribbon	12 Doz.	4.90	58.80	
Skeins Raffia	2 Doz.	5.90	11.80	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Clear Cast	5 Cases	3.95	19.75	
Weaving Needles (Metal for Loopers)	1 Doz.	1.50	1.50	
Spools Raf-cord Assorted Colors	1 Doz.	6.00	6.00	
Bottles Stikrite Adhesive	1 Doz.	3.50	3.50	
Bottles Crystal Craze Assorted Colors	1 Doz.	7.50	7.50	
Brown Kraft Paper	1 Roll	8.95	8.95	
Red Cedar Squares(1000)	1 Pkg.	13.95	13.95	
5" x 5" Cardboard Squares	5 Doz.	.50	2.50	
Carried Forward or Total			$4686.00	

STATE OFFICE USE

Approved by_____

Date_____

Amount Approved_____

State Director_____

Date_____

Local Agency Notified_____

Submit in Triplicate

Name of School FAIRFIELD

Curriculum BUILDING MAINTENANCE SERVICE

Purpose. Training in the Building Maintenance Service program for students at Fairfield School is not designed for a specific job class, but gives to each student a wide range of experiences for a broader background of salable skills in Building Maintenance Services or related work areas.

Measurable Objectives in Terms of Student Behavior

1. The students will investigate job possibilities within the community by field trips to the following agencies:
   a. Hospitals
   b. Cafeterias
   c. Schools
   d. Office Buildings
   e. Department Stores
   f. Industry
   g. Janitor Service Agency
   h. Carpet and Rug Cleaners
2. Establish good employer-employee relationships.
3. Identify and use properly the following cleaning equipment:
   a. Vacuum Cleaners
   b. Carpet Shampooer
   c. Litter Vac
   d. Floor Maintainer
   e. Scrubber Machine
   f. Mopping Equipment
4. Develop an awareness of the many types of cleaning agents.
5. Learn to read labels and written instructions for the use and care of equipment and supplies.
6. Develop positive attitudes for employment.
7. Store supplies and equipment in designated storage areas.
8. Take inventory of supplies on-hand.
9. Write stock orders for purchase of supplies and small equipment.
10. Prepare work schedules.
11. Clean and maintain the school building for a period of two weeks.

Name of School FAIRFIELD

Curriculum BUILDING MAINTENANCE SERVICE

PART B
NEW PROGRAMS

List major units of instruction and number of hours per unit. Institutions of higher education also indicate semester hours of credit.

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
I. Introduction and Orientation to Safety Practices	20
II. Employee Relationships	20
III. Operational Tasks	150
a. Dusting	
b. Dust Mopping	
c. Vacuum Cleaning Walls, Ceiling, Furniture and Floors	
d. Wet Mopping	
e. Lavatory Cleaning	
f. Drinking Fountains	
g. Service Sink	
h. Dry Cleaning Floor	
i. Scrubbing Machines	
j. Furniture Cleaning	
k. Glass Cleaning and Replacement	
l. Acoustic Tile Cleaning	
m. Chalkboard Care and Cleaning	

PART B
NEW PROGRAMS

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
n. Light Fixture Cleaning	
o. Gymnasium Floor Care	
p. Heating and Ventilating Equipment	
Maintenance	
q. Insect and Rodent Control	
IV. Floor Types and Care	300
a. Resilient Floors	
b. Hard Surfaced Cement and Terraza	
c. Woodlike-Hardward and Cork Tile	
d. Carpets	
e. Stains and Removal	
V. Floor Maintenance Material	150
a. Cleaners	
b. Sealers	
c. Finishes	
d. Shampoo	
VI. Care of School, Hospital and School	
Grounds	40
a. Walks	
b. Shrubbery and Lawns	
c. Playgrounds	
d. Parking Lots	
VII. Care of Maintenance Equipment and	
Materials	40

Name of School FAIRFIELD

Curriculum BUILDING MAINTENANCE SERVICE

Itemize equipment to be purchased. Separate by major and minor equipment. Major equipment has an acquisition cost of $100.00 or more.

New equipment to be purchased for replacement ☐

New equipment to be purchased for a new curriculum ☒

New additional equipment for an on-going curriculum ☐

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
FM-17 Clarke Floor Maintainer with Polish, Scrub and Steel Wire Brush and Driving Pads	2	426.20	852.00	
Model 612 Clarke Vacuum Cleaners with Accessories	2	411.50	823.00	
Model 420 Nap-Sac Portable Vacuum Cleaners	2	126.40	253.00	
Carpetmaster 576 Carpet Sweepers	2	222.40	445.00	
Single Mop Buckets With Press	4	41.75	167.00	
Twin Mopping Outfit	4	63.84	255.00	
Clarke LV-30 Litter Vac	1	295.00	295.00	
CM-20 Clarke Carpet Shampooer	1	650.00	650.00	
300-Carpet Sweepers	2	115.00	230.00	
TB-16 Mini Matic Scrubber	1	560.00	560.00	
Handbooks: Floor Maintenance Manual Trade Press Publ. Co.	30	4.50	135.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
18" Janitor Floor Brushes	12		65.00	
#80 Scrapers	12	1.20	14.00	
#79 Scrapers	12	1.00	12.00	
Plastic Sprayers	18	1.00	18.00	
Chamois #2431	12	4.00	48.00	
10 qt. Galvanized Pails	12		14.00	
Master Plungers	4	1.50	6.00	
Cases Buffing, Scrubbing and Stripping Pads	3	16.40	49.00	
10" Window Squeeges	12		31.00	
24 Oz. Mop Heads	12		15.00	
16 Oz. Stick Mops	12		14.00	
Tu-Way Dust Mops Complete - 1016	12		34.00	
480 Tu-Way Dust Mops Complete	12		103.00	
Senior Mop Handles	12		30.00	
Goose Scrub Brushes	24		17.00	
Counter Dusters	12		20.00	
Plastic Bowl Brushes	12		11.00	
Radiator Brushes	12		12.00	
26 lb. Corn Brooms	12		20.00	
Dust Pans	12		11.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Floor Squeeges 18"	12	4.70	56.00	
#120 Mop Buckets	6		71.00	
Trimming Shears for Shrubbery	6		42.00	
Electric Hedge Trimmer	1	59.95	60.00	
Garden Rakes	6	3.00	18.00	
Hoes	6	3.00	18.00	
Short Handled Shovels	3	3.00	9.00	
Long Handled Shovels	3	3.00	9.00	
Mattocks	2	5.00	10.00	
Snow Shovels	6	6.00	36.00	
Gasoline Powered Push Motor	1	59.95	60.00	
Swivel Chair	1	65.65	66.00	
Teacher's Desk with Center Drawer	1	200.00	200.00	
Upholstered Steel Stack Chairs	16	23.00	368.00	
Rectangular Shape Conference Tables 36" x 96" (Plastic Tops)	3	108.95	327.00	
		Carried Forward or Total	$6459.00	

STATE OFFICE USE

Approved by _____

Date _____

Amount Approved _____

State Director _____

Date _____

Local Agency Notified _____

Submit in Triplicate

Name of School FAIRFIELD

Curriculum OFFICE OCCUPATIONS

Instructor Linda S. Rice

Purpose: This course provides basic orientation and training for the student's future as a wage earner; emphasis is placed on job performance and the personal traits necessary for successful participation in the student's business and social world.

Measurable Objectives in Terms of Student Behavior - Year 1

1. The student understands correct standards of dress and grooming for office occupations.
2. The student demonstrates telephone courtesy and proper handling of messages.
3. The student demonstrates ability to count money, make change, and write checks in the proper manner
4. The student knows and uses the card filing system.
5. The student uses the direct process duplicator and the electrostatic photocopier.
6. The student uses the adding machine for simple addition and subtraction.
7. The student uses the cash register to record purchases and to make change.
8. The student types at least twenty-five words per minute.
9. The student types simple business letters and envelopes.

Measurable Objectives in Terms of Student Behavior - Year 2

1. The student adheres to correct standards of dress and grooming for office occupations.
2. The student demonstrates telephone courtesy and ability to deal with common business situations over the telephone.
3. The student makes change quickly and accurately.
4. The student writes out checks and keeps a correct balance.
5. The student knows and uses the card and the open filing systems
6. The student uses the direct process duplicator and the electrostatic photocopier.

7. The student uses the adding machine for addition, subtraction, and simple multiplication.
8. The student uses the cash register to record purchases and to make change.
9. The student processes incoming and outgoing mail.
10. The student writes up sales slips, charge slips, credit slips, and order blanks.
11. The student prepares materials for mailing, for delivery, and for the stockroom.
12. The student types at least thirty-five words per minute.
13. The student types business letters and envelopes.

Measurable Objectives in Terms of Student Behavior - Year 3

1. The student understands and adheres to correct standards of dress and grooming for office occupations.
2. The student demonstrates telephone courtesy, handling of messages, and ability to deal with business situations on the telephone.
3. The student uses the cash register to classify and record purchases and to make change quickly and accurately.
4. The student uses the adding machine for addition, subtraction, and multiplication.
5. The student uses the direct process duplicator and electrostatic photocopier.
6. The student knows and uses the card, open, and lateral systems of filing.
7. The student receives materials and files them in their proper places using alphabetic, geographical, or subject filing.
8. The student is aware of the need for records and the file clerk's place in the organizational structure of an office.
9. The student writes up sales slips, charge slips, credit slips, and order blanks.
10. The student writes information on business documents, proofreads, sorts records, folds and stuffs mailing materials.
11. The student processes incoming and outgoing mail.
12. The student types at least forty-five words per minute.

13. The student types all styles of business letters and envelopes.
14. The student prepares himself for an interview.
15. The student shows ability to follow both verbal and written instructions.

8319

Name of School FAIRFIELD

Curriculum BUSINESS AND OFFICE RELATED OCCUPATIONS

PART B
NEW PROGRAMS

List major units of instruction and number of hours per unit. Institutions of higher education also indicate semester hours of credit.

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
I. Proper Dress and Attitude	60
II. Telephone Manners	40
a. Voice Control (20)	
b. Common Courtesies (20)	
III. Use of Business Machines	720
a. Adding Machine (120)	
b. Cash Register (120)	
c. Typewriter (360)	
d. Copy Machines (120)	
e. Photo-copier	
f. Duplicator	
IV. Office and Business Forms	60
a. Sales Slips (15)	
b. Charge Slips (20)	
c. Credit Cards (15)	
d. Order Blanks (10)	
V. Filing and Filing Systems	60
a. Card (20)	

PART B
NEW PROGRAMS

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
b. Open (20)	
c. Lateral (20)	
VI. Handling Money	40
a. Currency (20)	
b. Checks (20)	
VII. Preparation of Materials for:	60
a. Mailing (20)	
b. Delivery (20)	
c. Stock Room (20)	
VIII. Interviews	40
TOTAL	1080

Retail businesses have many positions which are filled by handicapped students. Potential employment from business and office related occupations training includes the following areas:

Cashier	Library Helper
Sales Clerk	Parking Lot Attendant
Stock Boy	Receptionist
Packer	Receiving Clerk
Delivery Person	Parts Man

Name of School FAIRFIELD

Curriculum BUSINESS AND OFFICE OCCUPATIONS

Itemize equipment to be purchased. Separate by major and minor equipment. Major equipment has an acquisition cost of $100.00 or more.

New equipment to be purchased for replacement ☐

New equipment to be purchased for a new curriculum ☒

New additional equipment for an on-going curriculum ☐

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Steelcase Teacher's Chair	1	169.20	169.00	
Steelcase Desk with L Unit and Center Drawer	1	358.00	358.00	
Lateral Files Complete with Hanging Folders	3	182.00	546.00	
Letter Size Hanging Folders	500	.25	125.00	
Teletrainer with Key System and Instructive Materials	1	500.00	500.00	
Cassette Tape Recorder and Player	1	160.00	160.00	
Tables - 72" x 30" with Formica Tops	4	104.00	416.00	
Adding Machines	2	110.00	220.00	
Closed Bottom Projector Stand with Electrical Outlet	1	89.10	89.10	
Record Player with variable speed, scratch filter, microphone jack, pause control	1	85.00	85.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Parcel Post Scales	1 Set	20.00	20.00	
Double Drawer Steel Card Cabinets 3"x5"	2	10.05	20.00	
6 Drawer Unit Visible Card Filing System	1	63.55	64.00	
Precision Timer	2	6.00	12.00	
Double Drawer Steel Card Cabinets 5"x8"	2	15.65	31.00	
Rubber Stamps (Made to Order)	5	2.00	10.00	
Speed-O-Print Model 900 Lens Type Electro-static Copier	1	492.00	492.00	
Tables 72" x 30" Formica Top	4	104.00	416.00	
Adding Machines - Full Keyboard, 7 Column	2	160.00	320.00	
Cash Register Rebuilt-NCR	1	600.00	600.00	
2416L Smith Systems Typing Desks	12	116.10	1393.00	
Combination II Copy Machine and Duplicator Combined	1	594.00	594.00	
Olympia Electric Type-writer with 13" Carriage and choice of type	13	299.00	3887.00	
20/20 Overhead Pro-jector with Dust Cover	1	157.00	157.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
S-22 United Chairs - Secretarial	12	40.00	480.00	
		Carried Forward or Total	11164.00	

STATE OFFICE USE

Approved by_____

Date_____

Amount Approved_____

State Director_____

Date_____

Local Agency Notified_____

Submit in Triplicate

Name of School FAIRFIELD

Curriculum PRINTING

Instructor William B. Jackson

Purpose: Students will develop the necessary skills for proficiency in training so as to be able to enter into employment at the end of the three year training program in Vocational Printing.

Measurable Objectives in Terms of Student Behavior

1. Students will know the influence printing has on human progress both culturally and commercially.
2. Develop a terminology necessary for working in a print shop.
3. Students will attain skills in hand composition.
4. The student will be able to recognize and set type.
5. The student will recognize spacing material.
6. The student is able to distribute type.
7. The student can use a composing stick.
8. The student will be able to ink a platen press.
9. The student can put a chase on the press.
10. The student will be able to put the packing on the press.
11. The student will set guides.
12. The student will be able to feed a platen press and get 500 impressions per hour.
13. Students will draw and use layouts.
14. Maintain shop and equipment.
15. Develop skill in assembly procedures for collating, cutting, filing, drilling, folding, and stapling.
16. Know and use correctly the measurements used in a print shop.
17. Must know how to read at least on a third grade level so as to be able to proofread.
18. Repair books and learn the procedures for book binding.
19. Know stocks by reading labels, storage procedures, inventory, and preparing orders.
20. Learn to use the offset printing, blueprint reproduction and photography.
21. Understand and use the multicolor process of reproduction.

Name of School FAIRFIELD

Curriculum PRINTING

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

List major units of instruction and number of hours per unit. Institutions of higher education also indicate semester hours of credit.

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
I. Introduction	40
a. A Brief History of Printing	
b. Printing and Allied Trades	
c. Occupational Opportunities in the Printing Industry	
d. Shop Safety	
e. The Four Major Processes of Printing	
1. Letterpress Printing	
2. Planographic Printing (Offset Lithography)	
3. Intaglio Printing	
4. Silk Screen Printing	
II. Production Planning	70
a. Manuscript Preparation	
b. Illustration Preparation	
c. Layout and Design	
1. Principles	

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
2. Use of Color	
3. Display Lettering	
4. Copyfitting	
5. Layouts	
d. Production Specifications	
1. Process Selection	
2. Type Selection	
3. Paper Selection	
a. Kinds of Paper	
1. Writing	
2. Book	
3. Bristols	
4. Cover	
5. Boards	
b. Finishes	
c. Basic Sizes and Weights	
d. Manufacturing Paper	
4. Ink Selection	
a. Kinds of Ink	
1. Letterpress	
2. Offset	
3. Others	

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
b. Ink Characteristics	
c. Manufacturing Ink	
5. Scaling	
e. Camera Copy	
1. Reproduction Proofs	
2. Paste-Up	
3. Overlays	
f. Production Costs (advanced only)	
1. Franklin Printing Catalog	
2. Franklin Offset Catalog	
III. Letterpress Printing	310
a. Fundamentals of Composition	
1. Printers Point System	
2. Parts of a Piece of Type	
3. Layout of Type Cases	
4. Spacing Material	
a. Spaces and Quads	
b. Leads and Slugs	
c. Furniture and Reglets	
5. Type Composition	
6. Handling Type Matter	
a. Placing Type on a Gailey	

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
b. Tying a Type Form	
7. Proofing Type Forms	
a. Galley Proofs	
b. Stone Proofs	
c. Reproduction Proofs	
8. Proofreading	
a. Copy Marks	
b. Standard Proofreaders' Marks	
9. Correcting Type Forms	
10. Imposition and Lock-up	
a. Tools and Materials	
b. Platen Press Lock-up	
11. Distributing Type	
c. Presswork	
1. Kind of Press	
a. Platen	
2. Press Preparation	
a. Inking the Press	
1. Mixing and Matching Color	
2. Handling and Care of Ink	

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
b. Insert the Chase	
c. Change Tympan and Packing	
d. Position Guides	
3. Makeready	
4. Press Operation	
5. Special Operations	
a. Perforating	
b. Scoring	
c. Die Cutting	
d. Embossing	
6. Care of Presses	
a. Oiling	
b. Washing	
c. Rollers	
1. Cleaning	
2. Storage	
d. Machine Composition (optional)	
1. Monotype	
a. Keyboard	
b. Composition Caster	
2. Accessory and Material Machines	
a. Types and Sorts	

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
1. Monotype	
2. Thompson	
b. Strip Material	
1. Elrod	
2. Monotype	
3. Linotype and Intertype	
IV. Offset Lithography	430
a. Principle of Offset Printing	
b. Copy Preparation	
1. Copy Producing Typewriter	
a. Varityper	
b. Justowriter	
2. Repro Proofs	
3. Transparent Proofs	
4. Figuring Enlargements and Reductions	
c. Camera Work	
1. Photographic Film	
a. Emulsions	
1. Photomechanical	
2. Commercial	
3. Color Sensitivity	

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
a. Orthochromatic	
b. Panchromatic	
b. Bases	
c. Anti-Halation Coating	
2. Copy Camera	
a. Types of Copy Cameras	
1. Vertical	
2. Horizontal	
b. Manufacturers and Sizes	
c. Principles and Procedures	
1. Light and Lens	
2. Camera Preparation	
a. Copyboard	
b. Percentage Adjustments	
c. Lighting	
d. Lens	
e. Exposure Time	
f. Film Holder	
3. Enlargement and Reduction	
d. Exposure	

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
1. Line Copy	
2. Halftone	
a. Glass Screen	
b. Contact Screen	
c. Autoscreen	
3. Positives	
a. Contact	
b. Autopositive	
4. Filters	
e. Film Processing	
1. Chemistry of Photography	
2. Developing	
3. Short Stop	
4. Fixing	
5. Washing or Rinsing	
d. Preparation of Flats - Stripping	
1. Preparation of Negatives	
a. Scribing	
b. Inserts or Strip-ins	
c. Opaquing	
2. Preparation of Goldenrod Masking	
Sheets	

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
a. Square Goldenrod Sheet to	
Light Table	
b. Center Line	
c. Clamp Margin	
d. Gripper Margin	
e. Line-up	
3. Combining Masking Sheet and	
Negatives	
a. Positive Negative	
b. Tape Negative	
c. Cut Windows	
d. Cut Reference Marks	
1. Center Mark	
2. Cylinder Mark	
3. Trim, Fold, and Cut	
Marks	
4. Step-and-Repeat	
e. Platemaking	
1. Lithographic Plates	
a. Direct Image	
b. Albumin	
2. Plate Exposure	

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
a. Vacuum Frame	
b. Light Source	
c. Sensitivity Gauge	
3. Screen Tints	
4. Processing Plates	
a. Desensitize	
b. Lacquer	
c. Preserve	
5. Plate Storage	
f. Presswork	
1. Kinds of Presses	
a. Direct	
b. Offset	
2. Press Preparation	
a. Prepare Fountain Solution	
b. Water Fountain	
c. Ink Fountain	
d. Attach Blanket	
3. Press Operation	
a. Operating Safety	
b. Feeder	
c. Dampenint Unit	

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
d. Ink Unit	
e. Printing Unit	
f. Delivery	
g. Care and Maintenance	
g. Gold Type Composition (optional)	
1. Machine Composition	
a. Linofilm	
b. Intertype Fotosetter	
c. ATF Typesetter	
d. Photon	
e. Monophoto	
2. Display	
a. ATF Hadego	
b. Headliner	
c. Filmotype	
d. Protype	
e. Stripprinter	
h. Legal Restrictions on Copying	
V. Bindery Operations	150
a. Paper Cutting	
1. Operating Safety	
2. Stock Figuring	

PART B
COURSE OUTLINE FOR VOCATIONAL PRINTING

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
a. Paper Cuts	
b. Paper Cost	
b. Folding	
c. Stitching	
1. Stapler	
2. Stitcher	
d. Drilling	
e. Perforating	
f. Padding	
g. Packaging	
h. Others	
VI. Other Methods Of Graphic Reproduction	10
a. Thermography	
b. Flexography	
c. Collotype	
d. Xerography	
e. Others	
TOTAL	1080

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Name of School FAIRFIELD

Curriculum PRINTING

Itemize equipment to be purchased. Separate by major and minto equipment. Major equipment has an acquisition cost of $100.00 or more.

New equipment to be purchased for replacement ☐

New equipment to be purchased for a new curriculum ☐

New additional equipment for an on-going curriculum ☒

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
12" x 17" Paper Padding Press	1	52.95	52.00	
Model 665 Lectrojog General Utility Paper Jogger	1	132.00	132.00	
Heavy Capacity Saddle Stapler	1	245.00	245.00	
		Carried Forward or Total	$429.00	

STATE OFFICE USE

Approved by_____

Date_____

Amount Approved_____

State Director_____

Date_____

Local Agency Notified_____

Submit in Triplicate

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Name of School FAIRFIELD

Curriculum WOODS INDUSTRY

Instructor John W. Phillips

Prerequisites: Woodworking Industry

Students must have basic understanding of:
1. Basic elementary reading and writing.
2. Basic knowledge of arabic numbering system.
3. Must have the ability to add, subtract, multiply, and divide.

Note: Student will be admitted into the class without these prerequisites but they cannot be expected to achieve the same level of understanding and insight of the wood's industry as students with these prerequisites.

Purpose: The primary purpose of the woods industry program is to provide students with basic skills necessary for employment in cabinet shops, upholstery shops, furniture refinishing shops, maintenance, general construction work, building materials supply houses, carpenter's helper, roofer's helper and other related job areas.

Students who are enrolled in the Building Maintenance Service training program must receive at least two years of training in the Woods Industry Program or 720 hours of work passed.

Woodworking offers unlimited opportunities for correlation of curriculum. Practical application of science, art, language arts, and mathematics is a great part of the students woods industry activities.

It is hoped that this area of training will develop problem solving and experimentation on the part of the individual student.

Measurable Objectives in Terms of Student Behavior

1. Student will use hand tools, by building wood projects in which the different hand tools must be used. The student's ability to choose the proper tool for its specific job is the criterion.

2. Student will construct wood projects on an assembly line production type of work basis. Industrial managing systems will be simulated with students filling the roles. The criterion will be the students ability to function in group activity as well as his ability to take verbal instructions.
3. Student will develop skills for home repairs as stated in objectives 1, 4, 5, 6, 9, 10.
4. Student will obtain self-confidence in using power tools by gaining experience in using power tools safely and properly in building wood projects. Criterion will be the students ability to use power tools safely and for the proper use for which each tool was designed.
5. Student will recognize the merits of a good quality finished product by learning to apply a good quality finish.
6. Student will know and practice good safety procedures in the woods industry by making safety charts and posters and applying safety to all their functions in the shop.
7. The student will accept group responsibilities and develop work independence as stated in objective 2.
8. The student will know shop organization and cleanliness of working areas as stated in objectives 2 and 6.
9. The student will develop eye/hand coordination as he builds projects and uses hand tools and power tools. Criterions will be on increase in the quality of the projects.
10. The student will draw scale drawings of projects which he will build. Criterion will be the students ability to follow written as well as verbal instructions.

Name of School FAIRFIELD

Curriculum WOODS INDUSTRY

PART B
NEW PROGRAMS

List major units of instruction and number of hours per unit. Institutions of higher education also indicate semester hours of credit.

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
I. Woods Industry Orientation	
a. Basic Hand Tools	35
1. History of Hand Tools	
2. General Safety Introduction	
3. Purpose of Each Tool	
4. Safety and Hand Tools	
5. Use and Care of Each Tool	
6. Simplified Blueprint Reading	
7. Freehand Sketching	
8. Correct Position of Dimensions	
9. Recognition of different types of lumber	
b. Students construct a preselected project involving the use of basic hand tools.	75
Tools such as:	
1. Rules	
2. Squares	

PART B
NEW PROGRAMS

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
3. Tri-squares	
4. Handsaws	
5. Planes	
6. Hand Drills	
7. Brace and Bit	
8. Screwdrivers	
Projects such as:	
1. "U" Block	
2. Miter Box	
3. Saw Horse	
4. Push Block	
5. Push Stick	
6. Bench Hook	
c. Students select a single project	
from a group of six projects.	35
Project choices:	
*Pen Holder	
*Planter	
*Hunter's Wall Rack	
*Footstool	
*Serving Tray	
*Bread and Cracker Server	

PART B
NEW PROGRAMS

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
1. A continuation of principles and usage of hand tools.	
2. Construction of wood joints.	
3. Methods of fastening wood joints.	
d. Student selects another simplified project and:	75
1. Prepares detailed freehand sketch.	
2. Makes up bill of material.	
3. Lists steps of operations in proper sequence.	
4. Completes project.	
Note: Student choice with teacher's approval	
e. Finishing Materials	15
1. Uses different types of sanding paper.	
2. Uses three different types of stains.	
3. Learns brush finishes such as shellac, deft, and varnishes.	

PART B
NEW PROGRAMS

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
II. As a student progresses in training for the Woods Industry he will develop skills in the use of woodworking power tools.	
a. General review of hand tool operation and practice	5
b. Introduction to portable hand and stationary power tools to include:	15
1. Electric Hand Drills	
2. Sabre Saw	
3. Belt and Orbital Sanders	
4. Bank Saw	
5. Scroll Saw	
6. Radial Arm Saw	
SAFETY WILL BE STRESSED HEAVILY	
c. Student participation in projects designed for developing skills in use of power tools.	95
Post testing and shop repair	10
NOTE: End of first year may vary from class to class depending upon the individual students.	

PART B
NEW PROGRAMS

1. Curriculum and/or Topical Outline

Major Units of Instruction	No. Hours
III. Review of all tools with active student participation in demonstrations and production of finished projects. Students will be involved in production - type of wood shop.	360
a. Construction Projects	180
1. Bookshelves	
2. Cabinets	
3. Tables, etc.	
NOTE: The number of projects will depend upon the individual students.	
b. Refinishing of Furniture (Construction Projects)	180

Safety practices will be emphasized by the instructor and carried out by the students throughout the entire training program. Cleanliness of working area and replacement of tools will be stressed daily. If there is time specialized areas such as roofing and upholstering will be covered. Students with higher abilities will be directed toward these areas much sooner than slower students.

Name of School FAIRFIELD

Curriculum WOODS INDUSTRY

Itemize equipment to be purchased. Separate by major and minor equipment. Major equipment has an acquisition cost of $100.00 or more.

New equipment to be purchased for replacement ☐

New equipment to be purchased for a new curriculum ☒

New additional equipment for an on-going curriculum ☐

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Wood Lathe with Heavy Duty Cabinet. Variable Speed Ready to Run No. J-170-S1	1	615.00	615.00	
Workbenches (2 vises) 2 stations with storage lockers and locks 28" x 64"	6	150.00	900.00	
1 H.P. Wood Shaper Single Phase Motor Wired, setup and ready to run (With Guards) J-151-S1	1	529.00	529.00	
Belt Sander 4" x 24" belts and dust bag	1	127.00	127.00	
Wood Planer 20"	1	1602.50	1603.00	
Rockwell 6" Edge Tool Bench Grinder No. 23-636 Complete	1	114.45	114.00	
Delta Belt and Disc Sander. No. 31-710 with enclosed stand, motor pulley and motor controls (ready to use)	1	346.50	347.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
8" Wood Jointer	1	535.00	535.00	
Drill Press - 17" Floor Model with Mortising attachment and drum Sanders (Assessories)	1	690.00	690.00	
Tilting Arbor Table Saw 13" with 1 phase 5 H.P. Motor with Push Butoon and Magnetic Starter 230V (with 2 blades, rip and cross cut)	1	307.00 930.00	307.00 930.00	
1-1/2 H.P. Radial Arm Saw 10" or 12" with table extensions on metal stand	1	420.00	420.00	
20" Band Saw 1 H.P. Single Phase	1	770.00	770.00	
Ingersoll-Rand Model V242N3-3 H.P. 2 Stage Air Compressor	1	620.90	621.00	
Spray Painting Outfit SU-90	1	193.45	193.00	
Paint Brushes 1" - 4" Size	5sets	20.10	101.00	
26" Scroll-Saw Wired Ready to Run & Lamp Attachment	1 1	274.95	275.00	
Combination Squares	5	4.25	21.00	
6" T-Bevels	3	2.75	7.00	
12" T-Bevels	3	4.00	12.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Framing Squares-Body 24" x 2" Tongue 16" x 1-1/2"	7	5.15	36.00	
Try Squares 8" Blade	7	3.15	22.00	
Block Planes	7	7.60	53.00	
Jack Plane 14"	1	11.25	11.00	
Spade-type Wood Bits	2	5.70	11.00	
Irwin Micro Dial Expansive Bit 5/8" - 1-3/4"	2	4.15	8.00	
Irwin Micro Dial Expansive Bit 7/8" - 3"	2	4.55	9.00	
Folding Rules	14	2.85	37.00	
Flat Wood Rasps 10"	5	2.65	13.00	
Half Round Wood Rasps 10"	6	2.85	17.00	
8" Round Wood Rasps	4	2.65	11.00	
8-10" Hand Files (Double Cut)	8	2.00	16.00	
Long Lathe Files 10"	4	2.00	8.00	
Warding Files 6"	6	1.00	6.00	
Auger Bit Files 10"	4	1.05	4.00	
Magicut Files 10"	6	1.75	11.00	
Vixen Half Round Files 10" Standard	6	4.65	28.00	
Vixen Flat Files 10" Standard	6	4.10	25.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Half Hatchets	2	6.20	12.00	
Nail Sets 12-1/32 12-2/32 6-3/32	30	.50	15.00	
Goose Neck Wrecking Bars	2	3.00	6.00	
Flat Bars	3	2.25	7.00	
2" Blade Screwdrivers	6	1.15	7.00	
3" Blade Screwdrivers	6	1.25	8.00	
4" Blade Screwdrivers	6	1.25	8.00	
5" Blade Screwdrivers	6	1.35	8.00	
6" Blade Screwdrivers	6	1.45	9.00	
8" Blade Screwdrivers	6	2.00	12.00	
10" Blade Screwdrivers	6	2.20	13.00	
12" Blade Screwdrivers	6	2.50	15.00	
10" Spiral Screwdrivers	2	5.45	11.00	
1 Point Phillips Screwdriver	6	.95	6.00	
2 Point Phillips Screwdriver	6	.95	6.00	
3 Point Phillips Screwdriver	6	1.10	7.00	
4 Point Phillips Screwdriver	6	1.45	9.00	
Sets Saw Horse Brackets	2	2.70	5.00	
3 Way Plane File	6	2.75	17.00	
Round Plane File	6	1.15	7.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Curne-Rasp File	6	1.90	11.00	
Set Auger Bits Size 4-16	2 sets	22.35	45.00	
Hand Drills 3/8" Cap.	3	12.75	38.00	
Mitre Box & Back Saw 28" x 5"	1	85.00	85.00	
Electrician's Side Cutting Pliers 7"	6	4.25	26.00	
5" Special Slim Nose Diagonal Pliers	6	4.15	25.00	
7" Long Chain Side Cutting Pliers	4	4.60	18.00	
10" Combination Pliers	6	1.80	11.00	
18" Bolt Clippers	1	14.00	14.00	
12" Channel Lock Tools	6	4.10	25.00	
Chrome Alloy Handled Hammer-Curned Claw, 16 Ozs.	6	6.40	38.00	
13 Oz. Chrome Alloy Handled Hammers Curned Claw	4	6.40	26.00	
Rawhide Mallets 3" Head	4	2.70	11.00	
File Card and Brush	3	2.45	7.00	
File Cleaner	4	1.10	4.00	
10" Blade Keyhole Saws	6	1.90	11.00	
Hack Saw Frame Adjustable 8-12 in.	[illegible]	[illegible]	4.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Set Assortment of Blades for Hacksaw F.M.C.	1	4.80	5.00	
Set (8) Lathe Tools NE (8 Buck Bros)	1	21.85	22.00	
Assorted Sahper Blades	1 Set	50.00	50.00	
Spacing Collars	1 Set	10.00	10.00	
1/2" Electric Portable Hand Drill with variable Speed and Reverse	1	69.50	70.00	
1/4" Electric Portable Hand Drill	1	39.50	40.00	
Exhaust Hood for Wood Planer (Include with Planer)	1	44.00	44.00	
Jig Saw Blades	2	.65	1.00	
3/8" Mortising Hollow Chisel Set	3	18.90	57.00	
1/4" Mortising Hollow Chisel Set	1	17.10	17.00	
Jorgenson-Adj. Hand Screw Clamps				
4 - No. 5/0	4	4.00	16.00	
6 - No. 3/0	6	4.55	27.00	
6 - No. 0	6	5.45	33.00	
6 - No. 2	6	7.20	43.00	
2 - No. 5	2	14.70	29.00	
6" R.H. Face Plates for Lathe	3	7.80	23.00	
Stanley Sabre Saw Blades				
No. 83504	3	.40	1.00	
No. 83511	3	1.28	4.00	
No. 83514	3	1.28	4.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Stanley Sabre Saw Blades				
No. 83516	3	1.28	4.00	
No. 83522	3	1.28	4.00	
No. 83507	1	.55	1.00	
No. 83520	1	1.28	1.00	
V-1 Proctecto Shields 8" long	6	5.25	32.00	
Extra Clear Visors	6	1.40	8.00	
C-Clamps Assorted Sizes 3-5" opening 3-8" opening 3-10" opening 3-12" opening	12		62.00	
Blades for Band Saw			8.00	
2-3/8" skiptooth	2			
1-1/2" skiptooth	1			
To fit 20" Band Saw				
Outboard Tool Rest	1	23.55	24.00	
Sabre Saw H.D. Stanley 90455	1	60.00	60.00	
Heavy Duty Router	1	60.00	60.00	
Assortment of Router Cutters	1	50.00	50.00	
Wood-Counter Sinks 3/4"	6	1.10	7.00	
10' H.D. 16/3 S.D. Approved Ext. Cords	3	3.65	11.00	
Wire Brushes	4	.80	3.00	

NAME OF ITEM	QUAN-TITY	UNIT COST	TOTAL COST	STATE OFFICE USE
Stanley Butt Chisels	1 Set			
No. 60 Sizes: 1/4"	2	2.90	6.00	
3/8"	2	2.90	6.00	
1/2"	2	3.00	6.00	
5/8"	2	3.10	6.00	
3/4"	2	3.10	6.00	
1"	2	3.40	7.00	
1-1/4"	2	3.80	8.00	
1-1/2"	2	4.30	9.00	
2"	2	5.00	10.00	
No. 3 Sloyd Knives 3-1/8" Blade	3	1.55	5.00	
Sander-Grinder	1	89.90	90.00	
127A Dustless Finishing Sander	1	70.50	71.00	
Speed-Bloc Sander 330A	1	60.50	61.00	
Assorted Garnet Paper to fit above equipment		10.00	10.00	
I-Bar Clamps	20			
8---2 foot	8	7.45	60.00	
8---4 foot	8	8.80	68.00	
4---6 foot	4	10.60	42.00	
Carried Forward or Total			11533.00	

STATE OFFICE USE

Approved by_____

Date_____

Amount Approved_____

State Director_____

Date_____

Local Agency Notified_____

Submit in Triplicate

APPENDIX C

CABELL COUNTY SCHOOLS

Proposal: Remodel and Renovate Old Douglass Trade School Building

Prepared by:
George Via, Supervisor Maintenance
March 4, 1971

Area and scope of work: Create Crafts Workshop work area, Automotive Maintenance Workshop, Automotive Maintenance Classroom, Woods Industry Workshop, Office space for faculty, Faculty Restroom, Students Restrooms, Storage Areas for each workshop.

ROOF: New roof to be installed, removal of old skylights, parapet walls and coping to be repaired, some sheathing to be replaced. Two wood posts to be replaced with steel posts. Gutter and downspout, new on back of building.

FRONT ENTRANCE: Remove all glass showcase windows right front entrance into Crafts Workshop room, two new aluminum windows and new front door. Left front entrance into Automotive Maintenance Workshop, one aluminum window and overhead garage door to be installed.

REAR ENTRANCE: Old overhead garage door to be removed and opening blocked up to receive a new solid core 4 x 7 feet door, with metal frame. Concrete pad to turn water on the outside, concrete steps inside. Note: Alley grade level is 1 foot, 6 inches above floor level.

DRAFTS WORKSHOP: New ceiling, build office space, build storage area.

AUTOMOTIVE MAINTENANCE: New ceiling, storage area, office space, new classroom.

WOODS INDUSTRY: Build new storage space, new office space, new boys restroom. new girls restroom, spray booths, room to house heater.

GENERAL WORK: New Gas service and gas lines thru out the building. New Electric service, both 220 volt power and 110 volt lighting. New

Water service inside the building. Remodel small restroom for faculty. Four overheaters to be installed. New lighting thru out the building. New sewer tap in the alley. Installation of sinks and drinking fountains. New fire alarm and Exit light system.

ROOF:	Material	Labor
Roofing material	$458.00	$ 625.00
Removal of skylights	100.00	108.00
Replacement of sheathing	125.00	167.00
Steel posts to replace wood	120.00	70.00
New gutter and downspout	40.00	48.00
Parapet wall and coping	85.00	120.00
TOTAL COST	$928.00	$1138.00

FRONT ENTRANCE AUTOMOTIVE MAINTENANCE:		
Remove old windows and install overhead door		
Masonry, brick, block, etc.	$260.00	$ 450.00
Aluminum window	24.00	24.00
Overhead door and frame	160.00	118.00
Outside lights	30.00	30.00
SUBTOTAL, LEFT ENTRANCE	$474.00	$ 622.00

FRONT ENTRANCE CRAFTS WORKSHOP:		
Remove old windows, install two aluminum windows and new door		
Masonry, brick, block, etc.	$260.00	$ 400.00
Windows	48.00	38.00
Door and Frame	60.00	52.00
Hardware, lock, panic bar, etc.	160.00	28.00
Outside light	30.00	30.00
Painting, both left and right	14.40	40.00
SUBTOTAL, RIGHT ENTRANCE	$572.40	$ 588.00

GRAND TOTAL (Both front entrances)	$1046.40	$1210.00

REAR OF BUILDING: Removal of old overhead door, block up opening, install new 4 x 7 foot solid door, metal frame. New concrete pad, outside and new concrete steps inside. NOTE: Floor level of building is about 18 inches below alley grade level. During rains water pours into the building.

(Rear of Building)		
Masonry, block, motar, etc.	$ 80.00	$ 210.00
Door and Metal Frame	80.00	52.00
Hardware, exit bar, lock, etc.	160.00	28.00
Concrete pad and steps	60.00	102.00
	$380.00	$ 392.00

CRAFTS WORKSHOP: Right Front Room
Paint room, construct Teachers Office, storage room, install heater, exhaust fan, sink, drinking fountain, light fixtures, plumbing, water and gas, electric both 110 and 220 volts, floor tile in teachers office.

	Material	Labor
Teachers office, Paneled with tile ceiling, tile floor	$ 287.00	$ 282.00
Storage room, dry wall const.	264.00	262.00
Heater, includes venting	315.00	80.00
Sink and drinking fountain	60.00	200.00
Plumbing, heater, sink, D.F.	90.00	240.00
Exhaust Fan	285.00	65.00
Hardware, locks, hinges, etc.	89.00	28.75
Light fixtures, includes Office and storage room	580.00	286.00
Wiring, 110 and 220 power	360.00	328.00
Shelving for storage room	112.00	104.80
Painting, Walls	54.00	108.00
Painting, Ceiling	54.00	108.00
TOTAL	$2550.00	$2092.55

NOTE: Present metal ceiling is rusted thru in several places. If new ceiling tile is installed deduct $162.00 Material and Labor for painting and add for new ceiling tile: Material $220.00; Labor $250.00. Add $160.00 for electric water cooler.

AUTOMOTIVE MAINTENANCE: Left Front Room
Paint room, construct Teachers Office, storage room, install heater, exhaust fan, sink, drinking fountain, light fixtures, plumbing, water and gas, electric light fixtures wiring, wiring 110 and 220 power circuits, floor tile in office, remodel and make storage rooms.

	Material	Labor
Teachers office, Paneled and ceiling and tile floor	$ 287.00	$ 332.00
Heater, includes venting	315.00	80.00
Sink and Drinking Fountain	60.00	200.00
Plumbing, heater, sink, D.F.	90.00	240.00

(Automotive Maintenance)	Material	Labor
Exhaust Fan, Includes ceiling hole	$ 285.00	$ 65.00
Light fixtures, includes office and storage room	600.00	300.00
Heater and Exhaust Fan Wiring	60.00	90.00
Wiring, 110 and 220 volt circuits	390.00	95.00
Storage room, cover walls with 5/8 fire check board, remove wood ceiling two partitions and doors, hardware new door into proposed classroom	414.00	185.00
Storage shelving	180.00	167.40
Painting storage room	12.00	36.00
Painting walls	54.00	108.00
Painting ceiling	54.00	108.00
Cover exposed joists of storage room with 6 inch T & G sheathing	80.00	26.00
	$2881.00	$2032.40

NOTE: Present metal ceiling is rusted thru in several places. If new ceiling tile is installed deduct $162.00 for painting ceiling, material and labor and add for ceiling tile: Material $220.00; Labor $250.00. Add $160.00 for electric water cooler.

CLASSROOM FOR AUTOMOTIVE MAINTENANCE

Classroom to be masonry construction for SOUND proofing and for FIRE protection, tile ceiling, asphalt floor, exposed roof joists to be covered with 6 inch T and G sheathing, solid core door. Above necessary as this room will project into the woodworking shop area.

	Material	Labor
Masonry walls	$ 160.00	$ 400.00
Alternate construction, Dry wall: Material $312.00 Labor $340.40		
Tile ceiling, includes joists and furring, sheathing	220.00	183.40
Dry wall ceiling, includes joists, furring, sheathing Material $305.00, Labor $235.80		
Solid door and metal frames	80.00	36.20
Lighting	260.00	140.00
Wiring, other	130.00	70.00
Hardware, exit bars, locks, etc.	270.00	54.00
Asphalt tile floor	154.00	64.60
Painting	30.00	86.40
TOTAL	$1304.00	$1034.60

NOTE: If dry wall ceiling is installed, add for painting Material $20.00; Labor $43.20.

FACULTY RESTROOM	Material	Labor
New fixtures	$ 70.00	$ 54.00
Tile Floor, Asphalt	11.80	28.35
Plumbing, changes, rough-in	60.00	70.00
Light fixtures	12.00	18.00
Medicine Cabinet	28.00	3.00
Towel and tissue holders	12.60	3.00
TOTAL	$ 194.40	$ 176.35

WOODS INDUSTRY AREA: Back of Building

1. STORAGE AREA	Material	Labor
Masonry walls	$ 92.00	$ 270.00
Tile ceiling, joists and furring, sealing	82.00	117.50
Shelving	200.00	104.80
Door and Hardware	92.80	27.00
Painting	6.00	12.00
TOTAL	$ 472.80	$ 531.30

2. TEACHERS OFFICE		
Masonry wall, drop one wall	$ 65.00	$ 150.00
Tile ceiling, joists and furring, sealing top	82.00	117.50
Asphalt tile floor	30.00	25.00
Door and Hardware	92.80	27.00
Painting	6.00	12.00
Plastic windows, to view work area	24.00	12.00
Lighting, includes storage area	36.00	27.60
Built in shelving	160.00	104.80
TOTAL	$ 495.80	$ 475.90

3. STUDENT RESTROOMS		
Masonry walls	$ 180.00	$ 360.00
Tile ceiling, joists, furring, sealing top	195.00	362.00
Toilet Fixtures	386.00	420.00
Plumbing, rough-in	240.00	400.00
Electric heat	120.00	76.00
Exhaust fans (2) venting	80.00	80.00
Light fixtures	40.00	40.00
Wiring, lights, fans	80.00	160.00
Doors and hardware, frames	176.00	54.40
Tap in City Sewer	120.00	240.00
Mirrors for restrooms	30.00	6.00
Towel and tissue paper holders	25.20	6.00
Painting	3.00	11.00
TOTAL	$1675.20	$2215.40

	Material	Labor
4. SPRAY BOOTHS		
Masonry walls	$ 70.00	$ 200.99
Dry wall ceiling	38.00	54.40
Doors and hardware	74.50	52.90
Light fixtures	60.00	44.00
Seal above joists	9.00	25.60
TOTAL	$ 251.50	$ 377.89
5. ROOM FOR WATER HEATER		
Masonry walls, dry wall ceiling	$ 54.00	$ 116.20
Vents, heater, combustion air (2)	73.60	50.00
Water heater	90.00	40.00
Door, Frame, Hardware	100.65	38.80
TOTAL	$ 318.25	$ 245.00
6. ADD FOR ELECTRIC WATER COOLER	$ 160.00	$ 20.00

WOODS INDUSTRY AREA: General Work

	Material	Labor
400 Amp Electric Service	$ 200.00	$ 200.00
New gas service, thru out building	180.00	200.00
New water service, same	265.00	215.00
Light fixtures, 2 rows	640.00	295.00
Electric service, 220 volts	420.00	350.00
Electric service, 110 volts	675.00	700.00
Heaters, (2) includes venting	580.00	126.00
Painting ceiling and walls	700.00	400.00
TOTAL	$3660.00	$2486.00

General condition of floor cannot be inspected at present due to storage.

Clearning floor	$ 60.00	$ 125.00

FIRE ALARM SYSTEM: ENTIRE BUILDING

Control Panel (1)	$ 210.00	$
Break Stations (6)	75.00	
24 Heat Detectors	150.00	
Break Station Boxes (6)	27.00	
Fire Horns (3)	90.00	
Disconnect Switch (1)	24.00	
Wiring, conduit, fittings	368.00	$ 350.00
TOTAL	$ 944.00	$ 350.00

EXIT LIGHT SYSTEM: ENTIRE BUILDING

Exit light, wall mounted (3)	$ 45.00	
Exit light, wall mounted (1) Dir.	20.00	
Exit light, stem mounted (1) Dir.	26.00	
Disconnect panel	24.00	
Wiring, conduit, fittings	160.00	$ 224.00
TOTAL	$ 275.00	$ 224.00

NOTE: Part of the exit light system can be installed in part of the fire alarm system conduit.

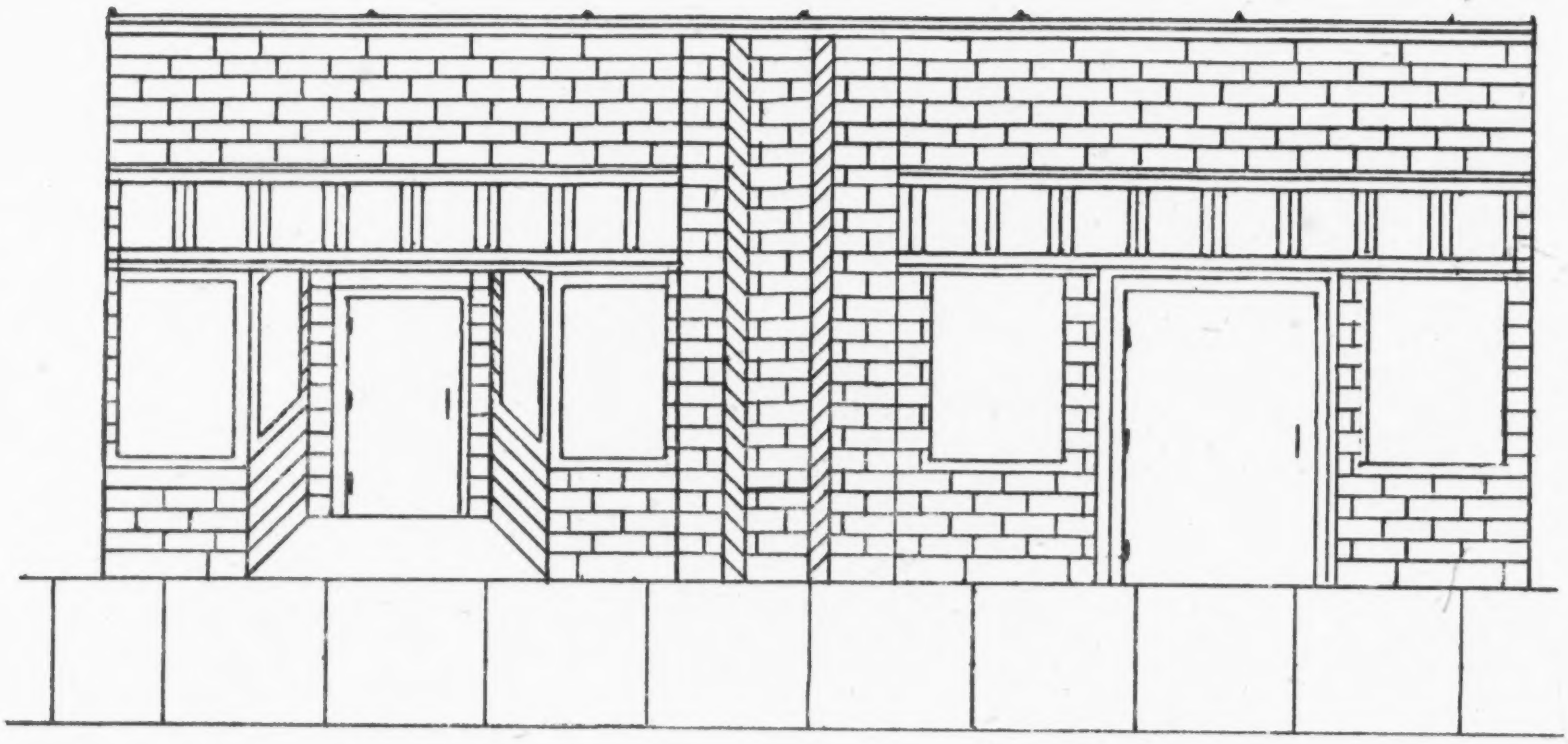
RECAPITULATION COSTS	Material	Labor
Roof	$ 928.00	$1138.00
Front Entrance, Both sides	1046.00	1210.00
Rear of Building	380.00	392.00
Crafts Workshop, right front	2550.00	2092.55
Auto Mechanics Room, left front	2881.00	2032.40
Auto Mechanics Classroom	1304.00	1034.60
Faculty Restroom	194.40	176.35
Woodworking Area, back to building - Combines items: 1, 2, 3, 4, 5, 6	3372.75	3894.49
Woodwork Area, General Work	3660.00	2486.00
Cleaning Floor	60.00	125.00
Fire Alarm System	1044.00	350.00
Exit Light System	275.00	224.00
TOTALS	$17695.15	$15155.39

GRAND TOTAL ---------- $32850.54

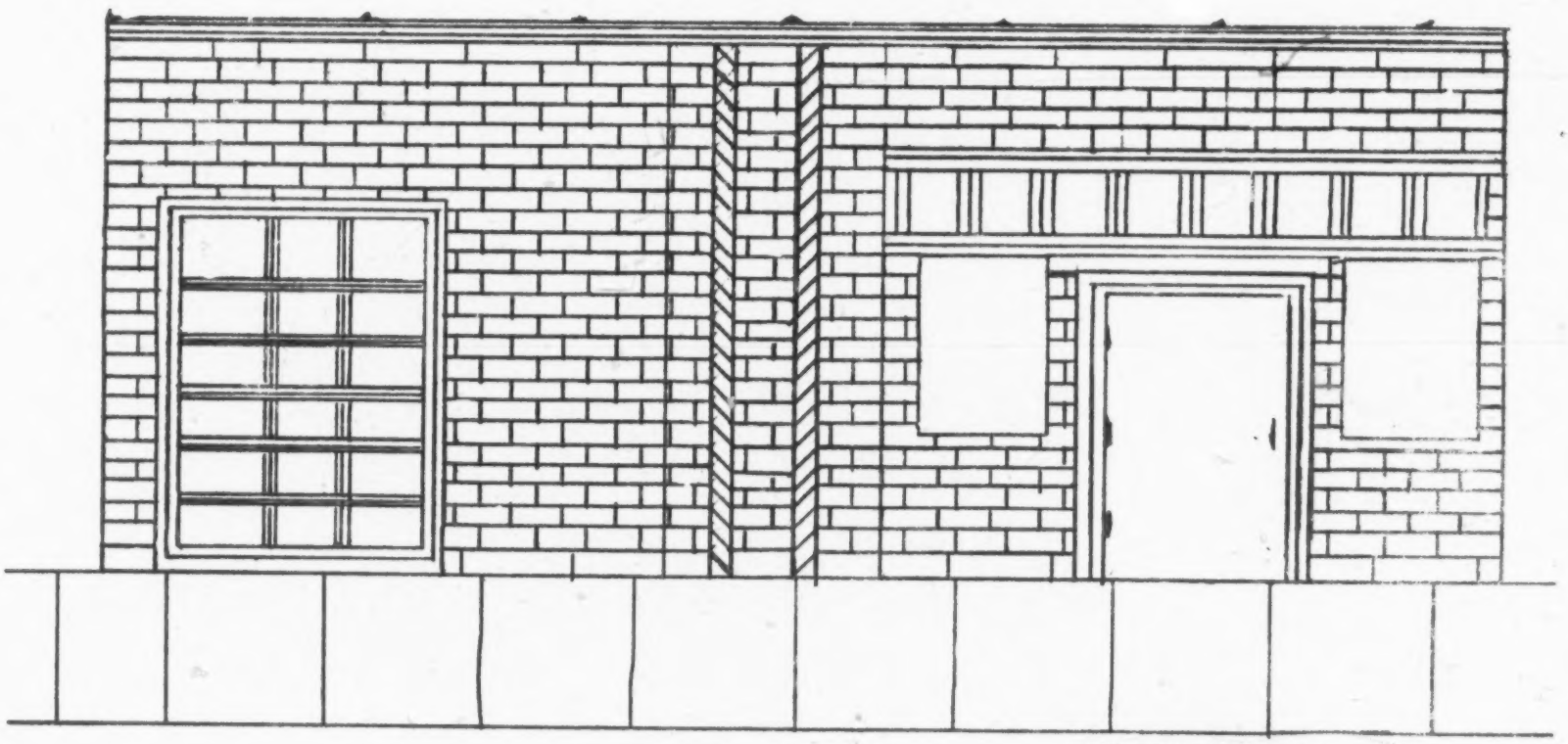
REMODELING OF DOUGLASS TRADE SCHOOL PROPERTY

The following changes were made after July 1, 1971.

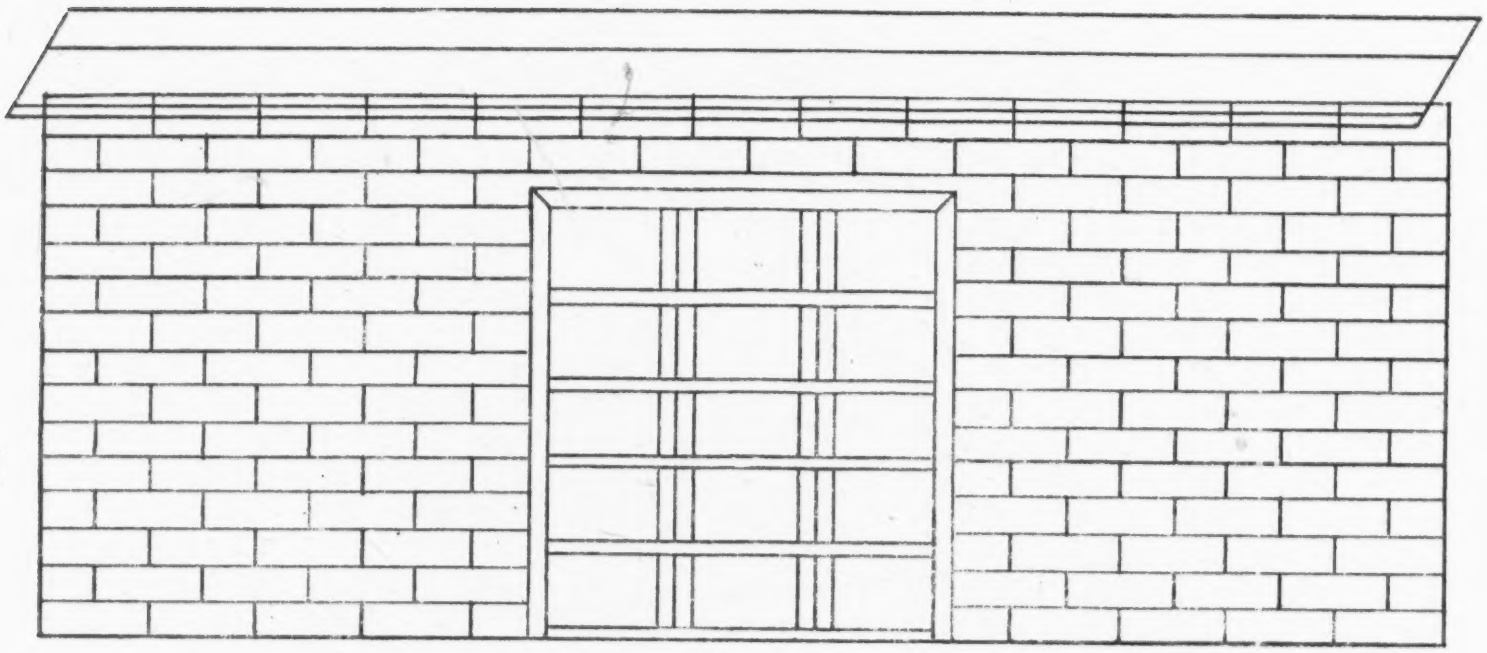
Materials----------	$17695.15
Add 20%----------	3539.15
Automobile Exhaust System----------	225.00
Installation of Exhaust System----------	215.00
Labor Costs----------	15155.39
Add 50%----------	7577.70
New Total for Materials and Labor----------	$44357.39



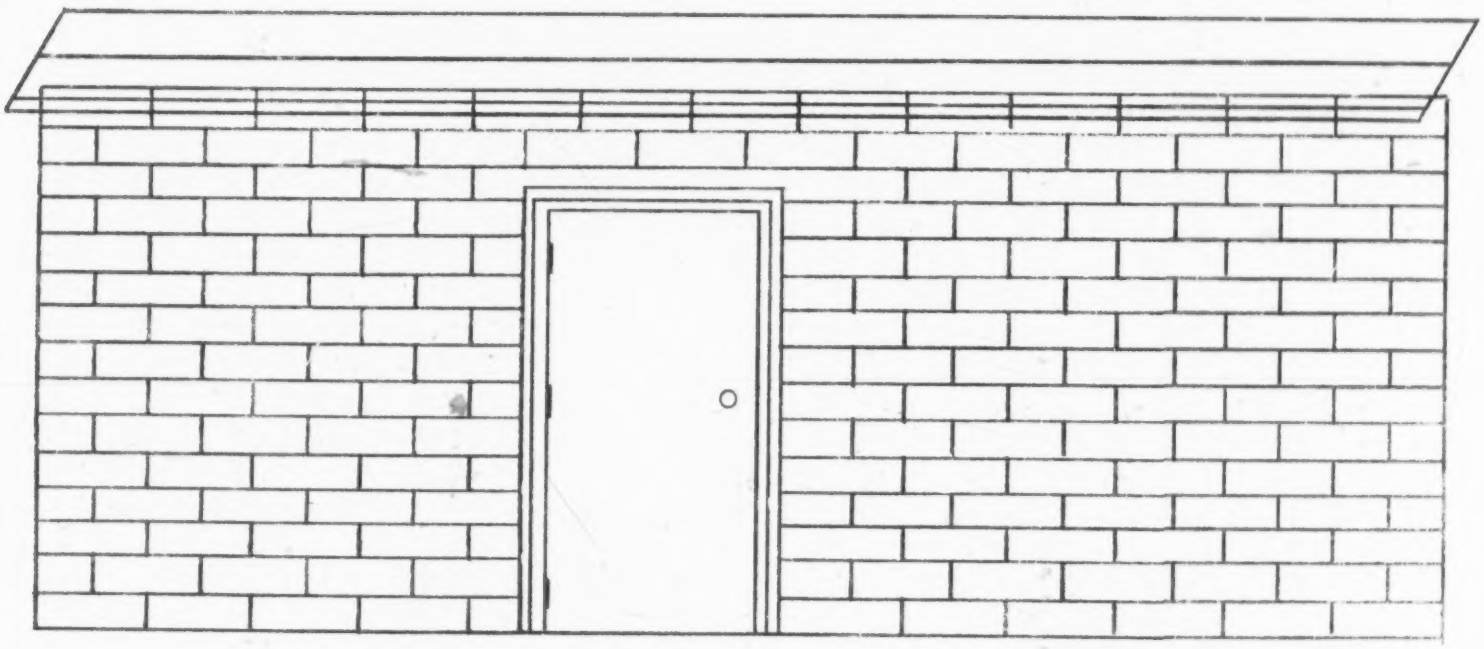
DOUGLASS TRADE BUILDING
PRESENT FRONT VIEW
NO SCALE



GEORGE VIA
DOUGLASS TRADE BUILDING
ALTERED FRONT VIEW
NO SCALE
John Steven Nenni



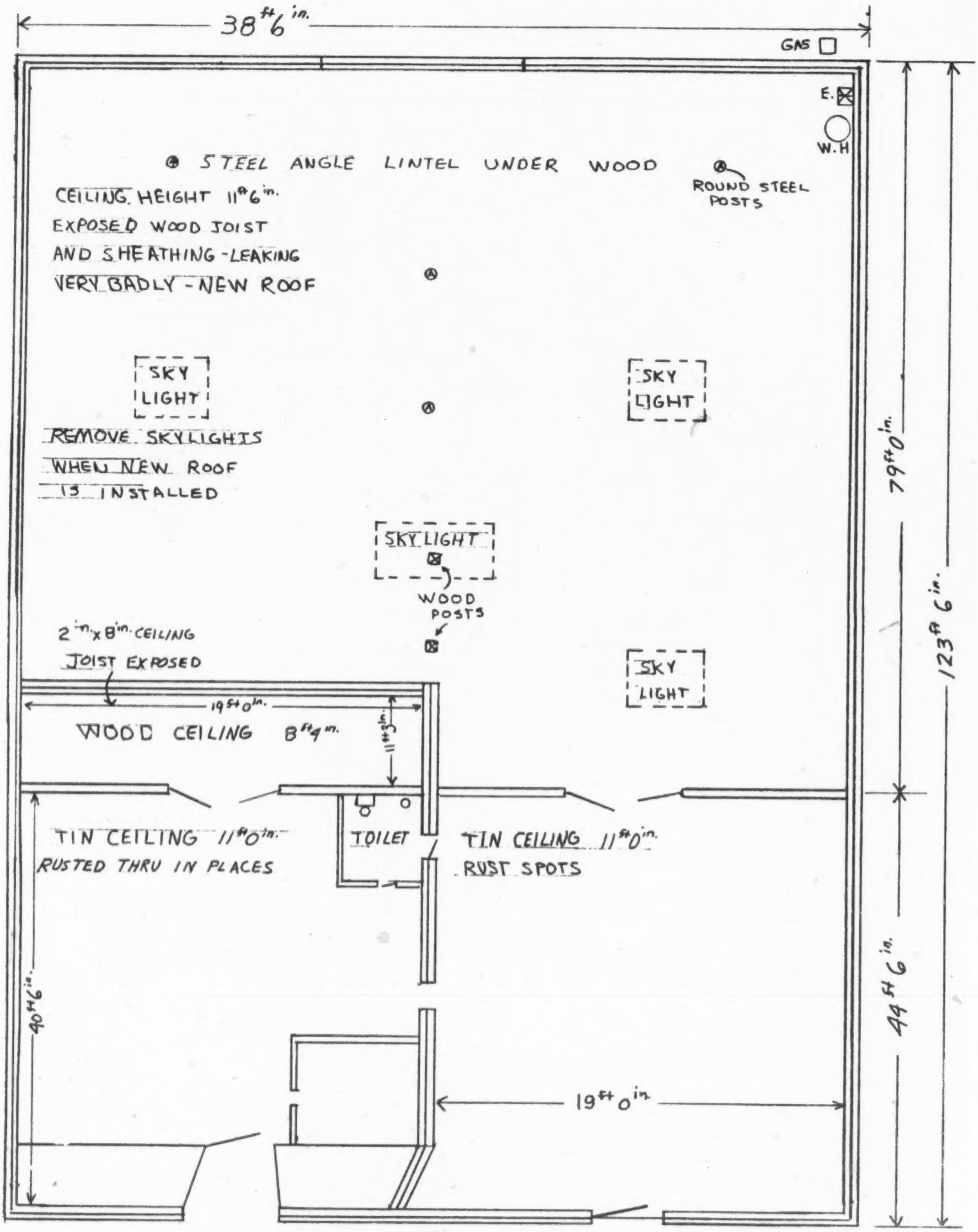
DOUGLASS TRADE BUILDING
PRESENT REARVIEW
NO SCALE



GEORGE VIA
DOUGLASS TRADE BUILDING
ALTERED REAR VIEW
NO SCALE

John Steven Nenni

NOTE: ALLEY GRADE IS 18 in. ABOVE BUILDING FLOOR



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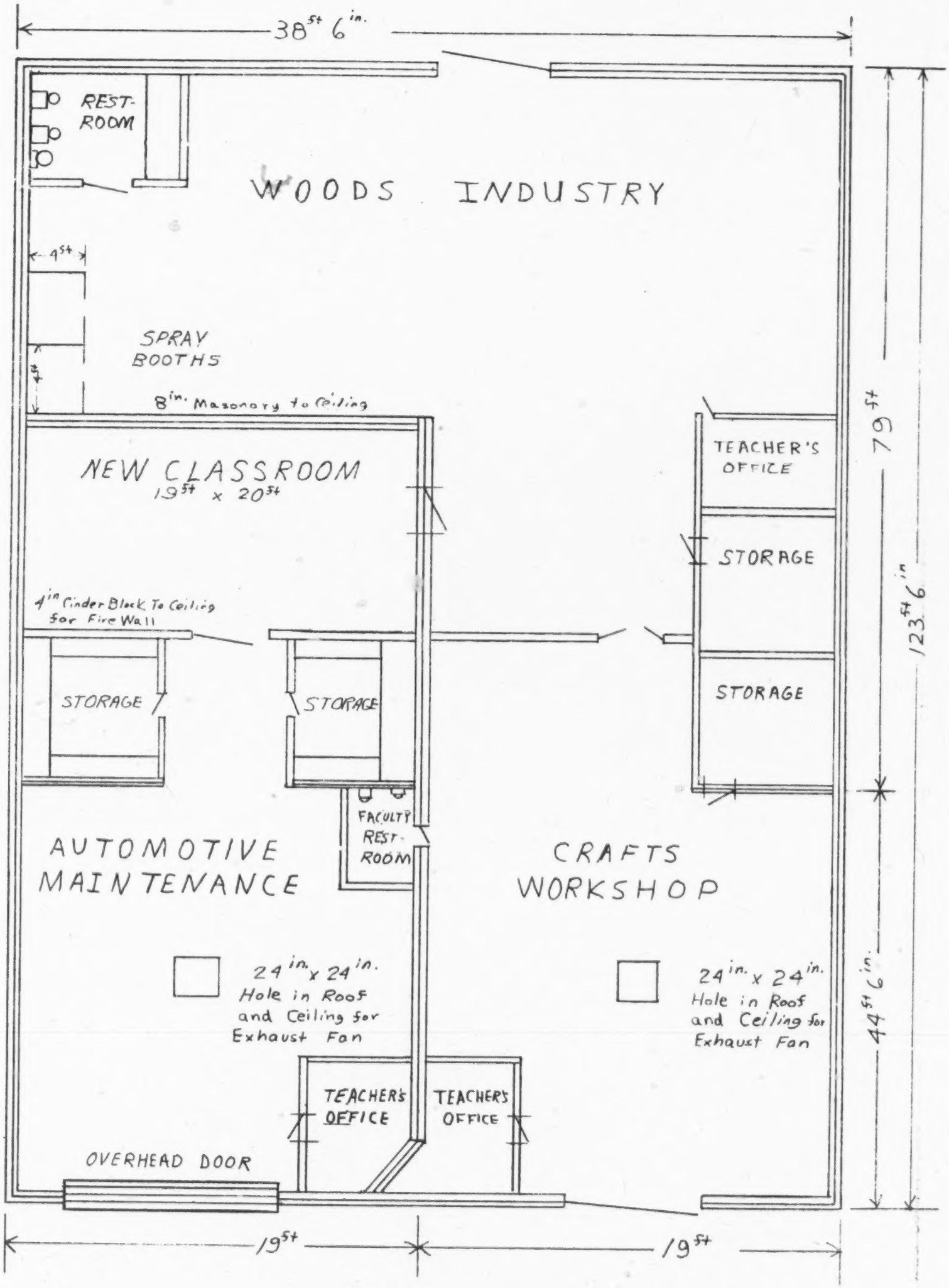
GEORGE VIA

DOUGLAS TRADE BUILDING - PRESENT PLAN

NO SCALE

John Steven Nenn



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GEORGE VIA

DOUGLASS TRADE BUILDING-ALTERATIONS

NO SCALE

John Steven Nenni

FAIRFIELD SCHOOL - ROOMS 101 AND 103

Size - approximately 30 ft. x 70 ft. with one 8 foot high partition across.

Scope of Work:

a. Suspended ceiling with concealed lighting fixtures.
b. Cut channels in floor for wiring of machines and desks. Patch floor - install carpet.
c. Drop two heat outlets to come under new ceiling.
d. Cabinets across entire 30 ft. of wall to store material.
e. Shelves under windows along long wall and across end, west wall.
f. Two eight foot high x ten feet long - cabinets inside wall for storage.
g. Doors and locks, new classroom doors and frames with hardware -- locks, closers, panic bars.
h. Window shades and hangers.

New Suspended Ceiling----------	$ 1670.00
New Light Fixtures----------	1800.00
Wiring for Machines and Lights---------	2680.00
Cutting concrete, Patching Floors------	850.00
Drop Two Heat Ducts----------	418.00
Carpet----------	2640.00
Painting - Material and Labor----------	425.00
New Classroom Doors and Frames Locks and Closers Panic Bars----------	600.00
Shelves and Cabinets for Storage-------	2780.00
Window Shades and Hangers----------	460.00
TOTAL	$14323.00

FAIRFIELD SCHOOL

ROOMS 300 AND 301

Room 300	Storage of Supplies, etc.	
	New door and lock	$ 80.00
	New tile floor with underlayment	450.00
	Storage cabinets along walls 3' deep x 8' high some with shelves - some open for machines all with cabinet doors and locks. Sizes vary with 3 wall spaces Available for storage 122 square feet 976 cubic feet.	$2240.00
	Painting-material and labor Room and cabinets	460.00
	TOTAL ROOM 300	$3230.00
	CLASSROOM	
Room 301	Carpet with Underlayment	$1308.00
	Suspended ceiling	720.00
	Light fixtures (9)	900.00
	Wiring for fixtures Materials and Labor	675.00
	New door and lock	80.00
	Shelves along one wall (adjustable)	585.00
	TOTAL	$4268.00
	ADD	
	Cabinets along one back wall 2' deep x 8' high x 24' long Some with shelves - locks on all	$ 690.00
	Window shades each room, Special 8 @ $80.00	640.00
	GRAND TOTAL FOR ROOM 301	$5598.00

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VT 014 778
MORTON, J.B., AND OTHERS
CYCLE FOUR REPORT. OCCUPATIONAL TRAINING INFORMATION SYSTEM (OTIS).

OKLAHOMA STATE DEPT. OF VOCATIONAL AND TECHNICAL EDUCATION, STILLWATER. DIV. OF RESEARCH, PLANNING, AND EVALUATION.
OZARKS REGIONAL COMMISSION, LITTLE ROCK, ARK.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 31JAN72 353P.

DESCRIPTORS - *MANPOWER NEEDS; *LABOR SUPPLY; *MANPOWER DEVELOPMENT; *INFORMATION SYSTEMS; *UNEMPLOYED; VOCATIONAL EDUCATION; ON THE JOB TRAINING; STATE PROGRAMS; PROGRAM PLANNING; TABLES (DATA)
IDENTIFIERS - OCCUPATIONAL TRAINING INFORMATION SYSTEM; OTIS

ABSTRACT - THE OVERALL PURPOSE OF THE OCCUPATIONAL TRAINING INFORMATION SYSTEM (OTIS) IS TO PROVIDE IMPROVED DATA FOR EVALUATING RECOMMENDED CHANGES IN THE OKLAHOMA STATE PLAN FOR VOCATIONAL EDUCATION. THIS CYCLE IV REPORT PROVIDES DATA ON MANPOWER SUPPLY AND DEMAND, AND THEIR INTERFACING, TO SHOW NET MANPOWER REQUIREMENTS IN OKLAHOMA. PROGRAMS AND OCCUPATIONS OFFERED IN THE STATE ARE GROUPED ACCORDING TO CLUSTERS, AND THE CLUSTERS ARE RANKED ACCORDING TO NET DEMAND TO PROVIDE TRAINING PRIORITIES. RELATED DOCUMENTS ARE AVAILABLE AS VT 012 820 (ARM FALL 1971), VT 012 928, VT 013 050, AND VT 013 856 (ALL IN ARM VOL. 5, NO. 1), VT 013 995 (ARM VOL. 5, NO. 2), AND VT 014 595 (IN THIS ISSUE). (GEB)

VT 014 778

OTIS

OCCUPATIONAL TRAINING INFORMATION SYSTEM

CYCLE FOUR REPORT

VT014778

OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION
Division of Research, Planning, and Evaluation

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CYCLE FOUR REPORT
OCCUPATIONAL TRAINING INFORMATION SYSTEM

BY

J. B. Morton
Robert Hunter
William W. Stevenson

Information Services Unit
Division of Research, Planning, and Evaluation
Oklahoma State Department of Vocational and Technical Education
Stillwater, Oklahoma
January 31, 1972

This technical assistance study was accomplished by professional consultants under contract with the Ozarks Regional Commission. The statements, findings, conclusions, recommendations, and other data in this report are solely those of the Contractor and do not necessarily reflect the view of the Ozarks Regional Commission.

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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ACKNOWLEDGMENTS

This report is the result of the efforts of a great number of people. Among those whose continuing support helped to make the report possible are Dr. Francis Tuttle of the Oklahoma State Department of Vocational and Technical Education, Mr. James Dawson of the Oklahoma State Office of Community Affairs and Planning, Mr. Gordon Pulliam of the Governor's Comprehensive Manpower Planning Staff, and Mr. John Opitz and Mr. Phil Tomlinson of the Ozarks Regional Commission.

In addition, Mr. Will Bowman, Mr. Bill Hunter, and the staff of the Oklahoma Employment Security Commission made notable contributions with their provision of a new data base of demand information and registrant supply data for the report.

Appreciation is expressed to the vocational education teachers, to all of the state supervisors of the Oklahoma State Department of Vocational and Technical Education, and to Dr. Charles Hopkins, Dr. William Frazier, Dr. James Harris, Mr. Ronald Kraft, Mrs. Linda Peterson, Mrs. Paula Horne, and Mrs. Karen Thomas and her staff for their help in the collection and processing of the data provided by the State Department. We are indebted to Dr. Wesley Hobbs, Oklahoma State Tech at Okmulgee, for providing the information from that institution and to Mrs. Phyllis Beadles with the University Placement Service at Oklahoma State University for providing us information on the graduates of OSU School of Technology.

Credit should be given to Miss Frances Waddle and her staff of the Board of Nurse Registration and Nurse Education for their cooperation in obtaining the number of registered nurses and licensed practical nurses. In addition, thanks are expressed to Mr. Harold Winburn, Miss Blanche Portwood, and Mr. Kenneth Ritter for their assistance in providing adult education information; also, thanks are given to Mr. Hugh Lacy, Mr. Jess Banks, Mr. Dan Lindsey, Mr. Bill White, and the MDTA staff for providing information on their graduates.

Mr. Jerry Morton and Mr. Richard Kerr of the Governor's Comprehensive Manpower Planning Staff should be commended for the gathering of information from the Federal programs under their supervision for the manpower supply information.

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Appreciation is extended to Mr. E. R. Jeffers, Executive Secretary of the Oklahoma Private School Board, for giving us the privilege of using their files on the Oklahoma Private Schools to gather required information on graduates in that sector and for the benefit of his experience and advice.

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FOREWORD

The Occupational Training Information System (OTIS) was designed to provide current information on the supply of and demand for people trained in selected skilled and technical occupations. Since its inception in 1968, those responsible for operating the system have constantly sought to revise methodology and enlarge scope in an effort for continual improvement.

The Cycle IV report has extensive evidence of this evolving nature in its revised list of occupations. The expansion in the revised list of occupations should increase the ability of the State Department of Vocational and Technical Education to provide pertinent information to two key groups of decision makers: administrators considering program changes and persons about to choose a vocational training program.

OTIS becomes increasingly valuable to the administrator faced with the decision of program selection. The growing emphasis on accountability in the entire field of education creates the necessity on the part of those responsible for program offerings to allocate the scarce training dollar to those areas where the greatest need exists. Additionally, OTIS can be a useful resource for the student who seeks to determine occupational areas where there is a demand for trained personnel.

It is our hope that the OTIS Cycle IV report will prove to be a helpful tool for both the educator and the student.

Stillwater, Oklahoma
January, 1972

Francis Tuttle
State Director of Vocational
and Technical Education

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CHAPTER I

INTRODUCTION

HISTORY OF OTIS

Both studies of occupational education in Oklahoma in 1963 (Ling-Timco-Vought and Oklahoma State University) reported a need for a manpower supply and demand information system. Based on the recommendations of these studies, the basic concept of an "Occupational Training Information System" (OTIS) was developed which would interface manpower supply and demand by job cluster and indicate net manpower requirements for the state and regions within the state.

The Manpower Research Training Center and the School of Occupational and Adult Education at Oklahoma State University received a contract to develop the system in the summer of 1968. A system was developed and two reports, called cycle reports, were produced.

At an OTIS Advisory Committee meeting held in January, 1970, the members, representing the organizations listed below, transferred operational responsibilities to the newly formed Division of Research, Planning, and Evaluation of the Oklahoma State Department of Vocational and Technical Education. This division refined the system and produced the third cycle report. This document reports the results of the fourth cycle.

Organizations which supported and/or cooperated in the development of the system included (a) the Oklahoma State Department of Vocational and Technical Education, (b) the Manpower Administration of the United States Department of Labor, (c) the Oklahoma Industrial Development and Park Department, (d) the Ozarks Regional Commission, (e) the Research Foundation of the Oklahoma State University, (f) the Oklahoma Employment Security Commission, (g) the State Accrediting Agency, (h) the Manpower Research and

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Training Center at Oklahoma State University, (i) the School of Occupational and Adult Education at Oklahoma State University, and (j) the Oklahoma Research Coordinating Unit.

Purpose

The purpose of this report is to enumerate data on manpower supply and demand and the net manpower requirements in Oklahoma.

Limitations

The data presented here represents the best information available on the manpower supply and demand conditions estimated to exist during the time July 1, 1971, until June 30, 1972. However, the figures in the manpower supply and demand interfacing should be viewed dynamically and not regarded as absolute values. This is especially true at the regional level where changes in the plans of a single firm could conceivably influence the manpower demand in a given occupation significantly. Any information of manpower needs is subject to error due to changes in the economy, unexpected new industry starts and other intervening variables.

Procedures

The procedures used to collect and analyze the data in this report are presented in two major sub-sections; these are manpower supply and manpower demand.

Sub-Section One - Manpower Supply

There are five primary sources of manpower supply data used in this report; i.e., the Oklahoma State Department of Vocational and Technical Education, the Governor's Comprehensive Manpower Planning Staff, the State Accrediting Agency, the Oklahoma Employment Security Commission, and the Oklahoma Board of Nurse Registration and Nurse Education.

The Oklahoma State Department of Vocational and Technical Education provides information on four categories of manpower supply, i.e., high school vocational program graduates, post high school vocational program graduates, adult vocational program

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graduates, and Manpower Development Training Act (MDTA) graduates. The figures entered into the interfacing tables (Chapter II) for the first two categories are the percentages of the total number of graduates available for placement. These percentages are based upon the OTIS Cycle III Report, Supplement V--"A Follow-Up Study of Oklahoma Vocational and Technical Education Graduates and Drop-outs; 1968-69 and 1969-70," August 31, 1971. This publication has the most recent research information on the number and percentage of graduates that go to work or are available for employment in the area trained. A summary of this information may be found in Appendix A.

Research completed in August, 1971, "Descriptive Data on Adult Education Conducted Under the Supervision of the State Department of Vocational and Technical Education" and "Adult Programs Information; 1970-71," provides the percentage of graduates of adult programs that are available for the labor market. One hundred percent of the graduates in the MDTA programs are listed as available to the labor market.

The Governor's Comprehensive Manpower Planning Staff members provide data on the number of graduates to be produced by the federal training programs not associated with the State Department of Vocational and Technical Education. A list of these federal programs may be found in Appendix B.

Data on private school graduates were obtained from the license application required annually by House Bill 1403. This licensing procedure is supervised by the State Accrediting Agency.

The Oklahoma Employment Security Commission provides the number of qualified registrants who are available to fill jobs listed in the OTIS Report.

The Oklahoma Board of Nurse Registration and Nurse Education and the Oklahoma State Department of Vocational and Technical Education provide data on the number of nurses that are available for the labor market. The percentage of graduates used in the interfacing may be found in Appendix A.

Sub-Section Two- Manpower Demand

The primary data on manpower demand utilized in this report have been developed by the Oklahoma Employment Security Commission based upon a survey conducted during 1971 with an original sample of 2,633 firms. The firm listing included firms covered by the unemployment insurance laws and was augmented by a mixture of the larger non-covered establishments such as government agencies, hospitals, and other non-profit organizations. These firms were listed by industrial divisions in descending order by employment size. All of the establishments comprising the upper 50 percent of the industry's employment total were included in the survey. Of the remaining firms in the industry, 20 percent and 5 percent samples were selected from the third and fourth quartiles respectively. During June of 1971 questionnaires, job descriptions, and instructions were mailed to the surveyed firms. For the next two months, personal visits were made to the state's largest employers to solicit their cooperation. The Oklahoma Employment Security Commission was able to survey 83.8 percent of the employment in the areas surveyed.

The 1970 survey of health occupations which was conducted by the Oklahoma Employment Security Commission in conjunction with the Oklahoma State Department of Vocational and Technical Education was used to supplement the demand information. This survey sampled employers in the health occupations, such as hospitals, nursing homes, government agencies, and private practice. The Oklahoma Employment Security Commission combined all of the data from the agencies above and edited it in terms of known economic conditions to produce the figures interfaced in the manpower demand column of the tables.

Other manpower demand information has been developed by Jesse B. Mitchell, "Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations in Oklahoma," State Department of Vocational and Technical Education, September, 1971, and by Oklahoma State University Agricultural Economics Department's Farm Manpower projections.

CHAPTER II

INTERFACING OF MANPOWER SUPPLY AND DEMAND

How to Use the Interfacing

The interfacing utilizes the clustering of related occupations which are matched against programs that train workers for those occupations. A cluster may contain one or more occupations and one or more types of programs. The occupations are identified by Dictionary of Occupational Titles codes and the programs are identified by U.S. Office of Education codes. Some of the clusters are limited by the form of available data; demand data on drafting is not reported by level of drafting skills needed and, therefore, all levels of training are interfaced against the aggregate demand for draftsmen.

To determine the net manpower requirements in a cluster, the total of the supply (registrants and graduates available to the labor market) is subtracted from the demand (job openings). Where demand exceeds supply, the net manpower requirement is positive; where the demand is less than the supply, the net manpower requirement is negative. The negative numbers are indicated in the interfacing by the use of parentheses.

The interfacing is presented for both statewide totals and planning regions. There are eleven planning regions within the State which are determined by legislative action. These regions are shown in Figure 1.

Although many factors influence the choice of program offerings in any given situation, one of the major considerations is the demand for the graduates of the program. When planning new programs, one should examine the net manpower requirements within the region where the program will be offered, in the adjacent regions, the net manpower requirements in the Standard Metropolitan Statistical Area (SMSA) closest to the region and the statewide net manpower requirements. In addition, any factor which influences the local labor market such as new industry starts should be considered.

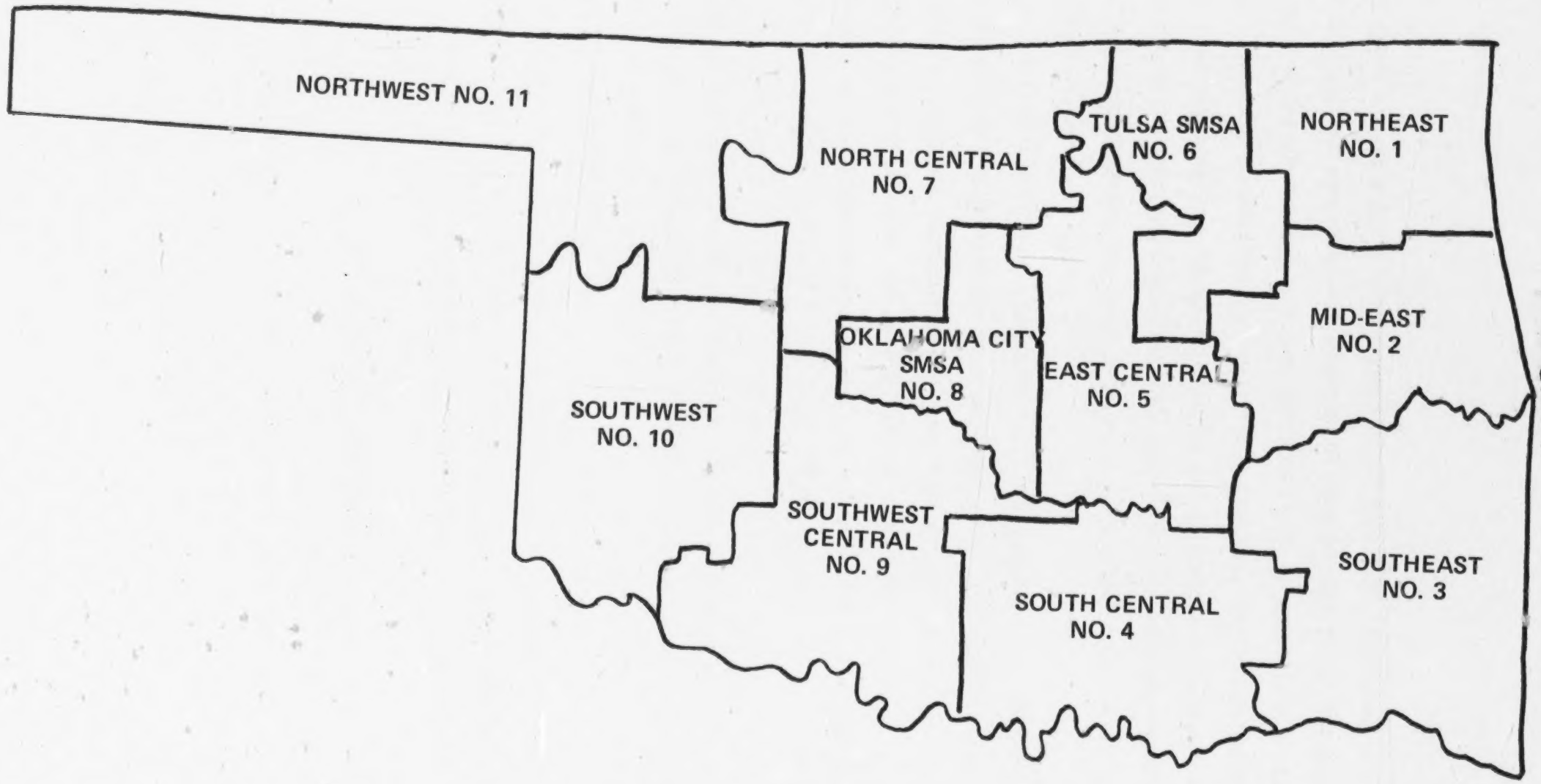

FIGURE 1: STATE PLANNING REGIONS USED IN INTERFACING

Emphasis should be placed on the fact that knowledge of manpower requirements is only a starting point in the selection of programs for a given situation. Such factors as student interest, student abilities, and enrollment potential must also be given considerable weight.

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman	64									
**400. Farm Mgmt.	823									
*404.88 Pruner/Picker	103	12								
*412. Poultry Worker	34	20								
**421.883 Farm Hand, Gen.	185	150								
466.887 Livestock Caretaker	79	22								
*551.885 Seed Cleaner	10	5								
			595		2					010100 Agricultural Production
			1		1					160201 Ranch Operation
TOTAL	1,298	209	596		3				490	
162.158 Buyer (Wholesale/ Retail)	119	26								
*299.478 Deliveryman	131	55								
*520.885 Feed/Fertilizer Mixer	33	20								
*582.887 Applicator	11	1								
			6							010200 Agricultural Supplies and Services
TOTAL	294	102	6						186	
*461.885 Ginner, Worker	22	12								
*529.687 Produce Sorter	10	8								
*919.887 Yardman	57	24								
			4							010400 Agricultural Products
TOTAL	89	44	4						41	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Farm Manpower Projections

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*409.883 Elevator Op.	34	44								
*521.782 Mill Operator	47									
*624.281 Agric. Mechanic	170	8								
638.281 Maint. Mech. (Millwright)	71	14								
			347							010300 Agricultural Mechanic
			4			79				173100 Small Engine Repair
TOTAL	322	66	351			79			(174)	
*142.081 Floral Design	59	16								
*406.168 Greenhouse Man	29	2								
*406.168 Nurseryman	71	1								
407.884 Groundskeeper	99	30								
			7							010500 Ornamental Horticulture
TOTAL	258	49	7						202	
*451.181 Gamekeeper	14									
			13							010600 Agriculture Resources
			13							010700 Forestry
TOTAL	14		26						(12)	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
166.168 Special Agent	61	3								
169.188 Underwriter	44	4								
241.168 Claim Adjuster	41	8								
250.258 Salesman, Insurance	126	26	1							
			3		1					041300 Insurance
TOTAL	272	41	4		1				226	
191.287 Appraiser, Real Estate	23	1							22	041700 Real Estate

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
260. thru 289. Sales Occupations (Goods)	1,003	275	4							
290.478 Sales Clerk	2,674	762					18			
292.358 Salesman, Driver	232	76								
915.867 Service Station Attendant	130	43								
										010200 Agricultural Supplies and Services
										010400 Agriculture Products
			59							040200 Apparel and Accessories
			49							040300 Automotive
			43							040600 Food Distribution
			74		1					040800 General Merchandise
			24							040900 Hdw., Bldg. Mat., Farm and Garden Supplies
			8							041000 Home Furnishings
			5							041200 Industrial Marketing
			2							041400 International Trade
			10							041600 Petroleum
			112		32					042000 Retail Trade
			8							043100 Wholesale Trade
			5							170399 Other Automotive
TOTAL	4,039	1,156	398		33		18		2,434	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
189.168 Management Trainee	276	111	17						148	049901 Mid Management
242.368 Hotel Clerk	53	7	6		27				13	041100 Hotel and Lodging
252.358 Sales, Service	347	47		11						
			14	3						040100 Advertising Services
			13							040400 Finance and Credit
			12							041900 Transportation
TOTAL	347	47	39	14					247	
132.088 Copywriter	8									
132.288 Copy Reader	23	3								
165.068 Public Relations	87	20								
TOTAL	118	23							95	040100 Advertising Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	37	10								
902.883 Dump Truck Driver	102	19	15							
904.883 Tractor Trailer Truck Driver	343	141						601		
905.883 Truck Driver, Heavy	518	208	70							
906.883 Truck Driver, Light	489	188	15							
913.463 Bus Driver	95	14								
922.883 Forklift Operator	287	86								
929.887 Material Handler	735	223								041900 Transportation 179901 Truck Driver
TOTAL	2,606	889	100					601	1,016	
321.138 Housekeeping Occupations	455	42	1						412	090205 Institutional and Home Mgmt. and Supporting Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	100	6								
311.878 Waiter/Waitress	1,338	523								
318.887 Dishwasher	465	296								
319.138 Food Service Supervisor	53	20								
			61		4					040700 Food Services
			15		76	4				090203 Food Management Prod. and Services
			5		2					172900 Other Quantity Food Occupations
			12							172904 Waiter/Waitress
TOTAL	1,956	845	93		82	4			932	
355.878 Psychiatric Aide	98								98	070304 Psychiatric Aide
078.281 Medical Technologist	74	5		7				11		
078.381 Medical Laboratory Assistant	51	7		10						
078.381 Medical Laboratory Tech.	28			17						
			5			6				070203 Medical Laboratory Technician
TOTAL	153	12	5	34		6		11	85	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
075.378 Nurse, Registered	646	64	55	155					372	070301 Nurse, Associate Degree
079.378 Nurse, Licensed Practical	740	161	519						60	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	1,581	608	278		333	220			142	070303 Nurse Assistance (Aid)
079.378 Surgical Technician	51				3	15			33	070305 Surgical Technician

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
079.128 Occupational Therapist	12									
079.128 Recreation Therapist	12									
079.368 Occupational Therapist Aid	15									
355.878 Physical Therapist Aid	23		1			23				
TOTAL	62		1			23			38	070400 Rehabilitation 070910 Orthopedic Assisting
078.368 E.E.G. Tech.	5	5								070901 E.E.G. Technician
078.368 E.K.G. Tech.	22								22	070902 E.K.G. Technician
078.368 Radiologic Tech.	53		1	58		1		22	(29)	070504 Radiologic Tech. (X-ray)
079.368 Inhalation Therapist	47		2	11		31			3	070903 Inhalation Therapy Technician

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
223.887 Central Supply Worker	22	5							17	070905 Central Supply Tech.
249.388 Medical Record Clerk	51		16		3	2			30	079901 Medical Record Clerk
219.388 Ward Clerk	113		2		2	41			68	079902 Ward Clerk
100.388 Medical Record Librarian	30	1		6	2	7		5	9	070210 Medical Record Tech.

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
359.878 Nursery School Attendant	98	37								
359.878 Teacher Aide	149					10				
			20			30				090201 Care and Guidance of Children
TOTAL	247	37	20			40			150	
781.884 Cutter, Hand or Machine	17									
785.381 Seamstress/Tailor	119	21								
786. to 787. Sewing Machine Operator	1,412	351			4					
			17		58					090202 Clothing, Mgmt., Prod., and Services
TOTAL	1,548	372	17		62				1,097	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
160.188 Accountant	559	148								
160.288 Cost Estimator	48	8								
168.288 Claims Examiner	12									
186.168 Bank Cashier	41	11								
209.388 Statement Clerk	55			10						
210.388 Bookkeeper	783	246								
211.368 Cashier	846	99								
212.368 Teller	263	47	1		8					
215.388 Bookkeeping Machine Operator	285	74						132		
215.488 Payroll Clerk	203	35								
217.388 Transit Clerk	38	7								
219.488 Accounting Clerk	565	189			3			170		
249.368 Claims Clerk	85									
249.368 New Account Clerk	65									
249.368 Credit Clerk	21	7								
			89	14	124					140100 Accounting and Computing
TOTAL	3,869	871	90	24	135			302	2,447	
162.158 Purchasing Agent	117									
162.288 Title Clerk	12	2								
										140800 Supervisor, Adm. Occupation, Other
TOTAL	129	2							127	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
209.388 Clerk-Typist	1,168	320					19	24		
219.388 General Office Clerk	1,648	735	522		268	137		34		
219.388 Sorting Clerk	21									
219.388 Time Keeper	12									
237.368 Admitting Clerk	46									
249.388 Loan Closer	26	5								
					69					140300 Filing and Office Machines
			142	2	38					140900 Typing and Related Occupations
TOTAL	2,921	1,060	664	2	375	137	19	58	606	
232.368 Post Office Clerk	299	25								
233.388 Mail Carrier	185	32								
TOTAL	484	57							427	140403 Mail and Postal Clerks
235.862 Telephone Operator	374	130								
239.588 Meter Reader	64	8								140400 Information Communications Occupations
			11							140401 Communication Systems Clerk and Operator
TOTAL	438	138	11						289	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
205.368 Personnel Clerk	165	30	8						127	140600 Personnel, Training, and Related
201.368 Secretary	2,013	542		5				178		
202.388 Stenographer	538	154	546	17	1 116	12	13	57		140700 Secretary or Stenographer 140703 Medical Secretary
TOTAL	2,551	696	546	22	117	12	13	235	910	
213.382 Card-Tape Converter Operator	13				1					
213.582 Keypunch Operator	285	108		40				198		
213.782 Tab Machine Operator	50	10	95		81			13		140200 Business Data Processing
TOTAL	348	118	95	40	82			211	(198)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural	51	14								
003.281 Draftsman, Electrical	33	4								
003.281 Draftsman, Electronic	8									
005.281 Draftsman, Civil	26	13								
007.181 Tool Designer, Die	14									
007.281 Draftsman, Mechanical	233	35								
010.281 Draftsman, Geological	32	6								
017.281 Draftsman, Map	13	28								
			7							160103 Architectural Technology
			79		21					160198 Drafting and Design
			82	37	46			49		171300 Drafting
TOTAL	410	100	168	37	67			49	(11)	
022.081 Chemist	51	12								
029.281 Tester, Laboratory	71	12	1							
			7		7					160105 Chemical Technology
TOTAL	122	24	8		7				83	
005.181 Civil Engineering Tech.	102									
018.188 Surveyor	43	10								
			3	3	5	45				160106 Civil and Highway Technology - Const.
TOTAL	145	10	3	3	5	45			79	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
003.181 Technician Electronics	308		24					29		
003.181 Technician, Electrical	26	53	11							
			105							160108 Electronics Technology
			2							160109 Electro-Mechanical Technology
TOTAL	334	53	142					29	110	
012.288 Technician, Industrial	33	7								
019.281 Technician, Quality Control	150	14								
			2		1					160111 Industrial Technology
TOTAL	183	21	2		1				159	
710.281 Instrument Man	41	4								
			5	1	1					160112 Instrumentation Technology
			1							172100 Instrument Maintenance and Repair
TOTAL	41	4	6	1	1				29	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
007.181 Technician, Mechanical	20	12								
710.281 Electro-Mechanical Tech.	26		7		3					160109 Electro-Mechanical Technology
			12	4	2					160113 Mechanical Technology
TOTAL	46	12	19	4	5				6	
542.280 Stillman	30									
549.280 Pumpman	9									
TOTAL	39								39	160116 Petroleum Tech.
020.188 Programmer, Scientific	18		9		3				6	160117 Scientific Data Processing
139.288 Writer, Technical Publications	30	6	1		2				21	160197 Technical Writing

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NET ADDITIONAL MANPOWER REQUIREMENTS
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Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
012.168 System Analysis	143									
020.188 Programmer, Business	168	55						89		
213.382 Digital Computer Operator	148		6					9		
219.388 Programmer, Detail	155									
			129		68			13		160401 Computer Science
TOTAL	614	55	135		68			111	245	
168.168 Building Inspector	10	4								
373. Fireman	147	33								
				6						160602 Fire and Safety Technology
										172801 Fireman Training
TOTAL	157	37		6					114	
375. Policeman or Detective	224	48								
377. Sheriff or Baliff	24	9								
			7		18					160605 Police Science Tech.
			1							172802 Law Enforcement Training
TOTAL	248	57	8		18				165	

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NET ADDITIONAL MANPOWER REQUIREMENTS
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Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
195.108 Social Worker	200	45								
195.228 Recreation Leader	36	18								
TOTAL	236	63							173	172899 Public Service Occupations, Other
637.281 Mechanic, Air Conditioning	140	33	69	13	146			80	(201)	170100 Air Conditioning
862.381 Plumber	204	94								
899.281 Maintenance Man, Equipment	364	116	14	15	91					170102 Heating and Plumbing
TOTAL	568	210	14	15	91				238	170107 Plumbing and Pipefitting
723.884 Appliance Repairman	64	13	8					5	38	170201 Applicance Repair

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
807.381 Auto Body Repairman	194	61								
845.781 Painter, Auto	126	46								
			99	36	41	22		29		170301 Body and Fender
TOTAL	320	107	99	36	41	22		29	(14)	
620.281 Mechanic, Auto	863	207								
620.281 Auto - A/C Mechanic	69									
			477	65	89	99	23	83		170302 Auto Mechanic
TOTAL	932	207	477	65	89	99	23	83	(111)	
185.168 Parts Mgmt. Auto	49	16								
223.387 Stock Clerk, Auto	181	84								
										040300 Automotive
			20	30	8					170399 Other Automotive
TOTAL	230	100	20	30	8				72	
621.281 Mechanic, Aircraft Engine	59	101								
621.281 Mechanic, Jet Engine	18									
621.781 Mechanic, Aircraft Accessories	18	6								
			7	5	4					160101 Aeronautical Technology
			30					128		170401 Aircraft Mechanics
TOTAL	95	107	37	5	4			128	(186)	

8400

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
141.081 Illustrator	48	13								
141.081 Art Layout Man	35									
			24	38	20					170700 Commercial Art
			8							170702 Display
TOTAL	83	13	32	38	20				(20)	
143.062 Photographer	68	14								
			2		2					170900 Commercial Photography
									50	
741.884 Painter, Spray	124	22								
841.781 Painter or Paperhanger	140	43								
860.381 Carpenter	639	261								
899.381 Maintenance Man Building	245	85				22				
			229	7	75			1		171001 Carpentry
TOTAL	1,148	411	229	7	75	22		1	403	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
721.281 Electric Motor Repairman	37	8								
726.781 Electronics Assembler	399	348			5		32			
821.381 Lineman	75	12		20						
822.381 Telephone Installer	82	17								
824.281 Electrician	486	139	7					48		
828.281 Electronics Mechanic	99	53						14		
829.381 Cable Splicer	47	9								
										171002 Electricity
										171402 Electrical Lineman
			87	11	165					171502 Electronics
TOTAL	1,225	586	94	31	170		32	62	250	
382.884 Janitor	466	181	4		4				277	171100 Custodial Services
625.281 Diesel Mechanic	105	28	76	51	2				(52)	171200 Diesel Mechanics
720.281 Radio and TV Repairman	74	10								
823.281 Radio Mechanic	35	8	15	16	3			4		171503 Radio and TV Repair
TOTAL	109	18	15	16	3			4	53	

8402

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
650.582 Linotype Operator	45	3								
651.782 Cylinder Press Operator	51	8								
651.782 Offset Press Man	140									
			4							171901 Composition Makeup and Typesetting
			66	30	15					171902 Printing
TOTAL	236	11	70	30	15				110	
518.381 Coremaker	12	3							9	172301 Foundry
600.280 Machinist, All Round	310	94						16		
600.381 Layout Man	24	5								
603.280 Grinder Operator	24	6								
609.885 Production Machine Tool Operator	256	63				34				
705.884 Bench Grinder	38	8								
			100	47	35	6	6			172302 Machinist
			10							172303 Machine Tool Operation
TOTAL	652	176	110	47	35	40	6	16	222	
500.380 Plating (Electro Plating)	22	8							14	172399 Metal Working, Other

84003

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
806.781 Assembler, Aircraft-Structure	55	27								
807.884 Assembler, Aircraft Sub-Assembly	53	25								172304 Metal Trades, Combined
TOTAL	108	52							56	
601.280 Tool and Die Makers	43	13								
601.280 Tool Machine Set-Up Operator	24									172307 Tool and Die Making
TOTAL	67	13							54	
615.782 Shear Press Operator	36	8								
617.380 Brake Operator	29	3								
619.380 Metal Fabricator	93	12								
804.281 Sheet Metal Worker	219	62								
			2		29					172305 Sheet Metal
TOTAL	377	85	2		29				261	
504.782 Heat Treater	11	3								
			2							172400 Metallurgy
									6	

8404

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
801.781 Structural Steel Worker	85	51								
809.381 Layout Man (Structural)	83	27								
TOTAL	168	78							90	171099 Const. and Maint. Trade
810.782 Welding Machine Operator	77	19								
810.884 Welder, Arc	219	73								
810.884 Welder, Gas	89									
812.884 Welder, Combination	352	95				32	14	93		
816.782 Flame Cutter Machine Operator	25	12								
816.884 Flame Cutter, Hand	8									
			5		4					010300 Agricultural Mechanics (Welding)
			157		219	56				172306 Welding
TOTAL	770	199	162		223	88	14	93	(9)	
526.781	40	7								
				12						172901 Baker
									21	
313.131 Chef	33	3								
313.381 Cook	1,145	323								
			9	27		16				172902 Cook/Chef
TOTAL	1,178	326	9	27		16			800	

8405

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
361.885 Laundry Personnel	95	23	1						71	171602 Laundering
950.782 Stationary Engineer	55	15								
952.782 Power Plant Operator	55	9			25					173200 Stationary Energy Sources Occupation
TOTAL	110	24			25				61	
316.884 Meat Cutter	166	36								
525.381 Butcher, All Round	62	10								
525.884 Boner or Skinner	17	4								010400 Agriculture Products
			3					43		172903 Butcher (Meat Cutter)
TOTAL	245	50	3					43	149	
780.381 Furniture Upholsterer	25	4	10	14	8			3	(14)	173500 Upholstery

8406

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
660.280 Cabinet Maker	72	17								
669.380 Mill Man	44	7								
763.381 Furniture Finisher	37	17								
			27		44					173601 Cabinet Making
TOTAL	153	41	27		44				41	
844.884 Cement Mason	56	21								
861.381 Brick Layer	220	81								
			5		7					171004 Masonry
TOTAL	276	102	5		7				162	
515.782 Grinding Mill Operator	18									
859.883 Heavy Equipment Operator (Operating Engineer)	225	72								
			120			23				171003 Heavy Equipment Operator
TOTAL	243	72	120			23			28	
750.281 Tire Tech.	36									
750.384 Greentire Inspector	11									
750.387 Tire Classifier	8									
750.884 Tire Builder	69									
TOTAL	124								124	179800 Tire Manufacturing

8407

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Statewide Totals

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
572.782 Batch and Furnace Man	7									
575.782 Bottle Machine Operator (Glass Mgr.)	6	2								
706.884 Assembler, Metal Products	405	160								179900 Trade and Industrial Occupation Other
TOTAL	418	162							256	

8408

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman										
**400. Farm Mgmt.	80									
*404.88 Pruner/Picker										
*412. Poultry Worker	4	1								
**421.883 Farm Hand, Gen.	17	20								
466.887 Livestock Caretaker	5	2								
*551.885 Seed Cleaner										
			33							010100 Agricultural Production
TOTAL	106	23	33						50	160201 Ranch Operation
162.158 Buyer (Wholesale Retail)	11	3								
*299.478 Deliveryman	2	2								
*520.885 Feed/Fertilizer Mixer		2								
*582.887 Applicator										
			1							010200 Agricultural Supplies and Services
TOTAL	13	7	1						5	
*919.887 Yardman		3								
*461.885 Ginner, Worker										
*529.687 Produce Sorter		2								
TOTAL		5							(5)	010400 Agricultural Products

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Farm Manpower Projections

8409

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*409.883 Elevator Op.		2								
*521.782 Mill Operator	1									
*624.281 Agric. Mechanic	5	2								
638.281 Maint. Mech. (Millwright)	1									
			26							101300 Agricultural Mechanic 173100 Small Engine Repair
TOTAL	7	4	26						(23)	
*142.081 Floral Design	2	1								
*406.168 Greenhouse Man	1									
406.168 Nurseryman	1									
407.884 Groundskeeper	5	1								
										010500 Ornamental Horticulture
TOTAL	9	2							7	
*451.181 Gamekeeper										
			2							010600 Agriculture Resources
			1							010700 Forestry
TOTAL			3						(3)	
169.188 Underwriter										
250.258 Salesman, Insurance	3	1	1							
166.168 Special Agent										
241.168 Claim Adjuster	1									
										041300 Insurance
TOTAL	4	1	1						2	

8410

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
191.287 Appraiser, Real Estate										041700 Real Estate
260. thru 289. Sales Occupations (Goods)	80	15								
290.478 Sales Clerk	60	24								
292.358 Salesman, Driver	12	3								
915.867 Service Station Attendent	5	2								
										010200 Agricultural Supplies And Services
										010400 Agriculture Products
			6							040200 Apparel and Accessories
			4							040300 Automotive
			3							040600 Food Distribution
			2							040800 General Merchandise
			4							040900 Hdw., Bldg. Mat., Farm and Garden Supplies
			1							041000 Home Furnishings
			1							041200 Industrial Marketing
										041400 International Trade
										041600 Petroleum
			7							042000 Retail Trade
										043100 Wholesale Trade
										170399 Other Automotive
TOTAL	157	44	28						85	

8411

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
189.168 Management Trainee	21	3	6						12	049901 Mid Management
242.368 Hotel Clerk	1								1	041100 Hotel and Lodging
252.358 Sales, Service	21	2								
			1							040100 Advertising Services
			3							040400 Finance and Credit
			1							041900 Transportation
TOTAL	21	2	5						14	
132.088 Copywriter										
132.288 Copy Reader		1								
165.068 Public Relations	1									
										040100 Advertising Services
TOTAL	1	1								

8412

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	1									
902.883 Dump Truck Driver	5	1								
904.883 Tractor Trailer Truck Driver	4	1								
905.883 Truck Driver, Heavy	31	15								
906.883 Truck Driver, Light	36	15								
913.463 Bus Driver	5	1								
922.883 Forklift Operator	14	3								
929.887 Material Handler	17	5								
TOTAL	113	41							72	041900 Transportation 179901 Truck Driver
321.138 Housekeeping Occupations	9	3							6	090205 Institutional and Home Mgmt. and Supporting Services

8413

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	4	1								
311.878 Waiter/Waitress	102	45								
318.887 Dishwasher	11	5								
319.138 Food Service Supervisor	1	1								
			3							040700 Food Services
										090203 Food Management Prod. and Services
			1		1					172900 Other Quantity Food Occupations
										172904 Waiter/Waitress
TOTAL	118	52	4		1				61	
355.878 Psychiatric Aide	18								18	070304 Psychiatric Aid
078.281 Medical Technologist	2									
078.381 Medical Laboratory Assistant	2									
078.381 Medical Laboratory Tech.	1									070203 Medical Laboratory Technician
TOTAL	5								5	

8414

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
075.378 Nurse, Registered	29	1							28	070301 Nurse, Associate Degree
079.378 Nurse, Licensed Practical	29	7	63						(41)	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	111	55	36		69				(49)	070303 Nurse Assistance (Aid)
079.378 Surgical Technician	1				3				(2)	070305 Surgical Technician

8415

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
079.128 Occupational Therapist	1									
079.128 Recreation Therapist										
079.368 Occupational Therapist Aide										
355.878 Physical Therapist Aide	2									070400 Rehabilitation 070910 Orthopedic Assisting
TOTAL	3								3	
078.368 E.E.G. Tech.										070901 E.E.G. Technician
078.368 E.K.G. Tech.										070902 E.K.G. Technician
078.368 Radiologic Tech.	1								1	070504 Radiologic Tech. (X-Ray)

8416

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
079.368 Inhalation Therapist	1								1	070903 Inhalation Therapy Technician
223.887 Central Supply Worker	1								1	070905 Central Supply Tech.
249.388 Medical Record Clerk	3								3	079901 Medical Record Clerk
219.388 Ward Clerk	4								4	079902 Ward Clerk
100.388 Medical Record Librarian	1								1	070210 Medical Record Technician

8417

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
359.878 Nursery School Attendant	1									
359.878 Teacher Aide	13									090201 Care and Guidance of Children
TOTAL	14								14	
781.884 Cutter, Hand or Machine	3									
785.381 Seamstress/Tailor	4									
786. to 787 Sewing Machine Operator	195	31			4					
			3		16					090202 Clothing, Mgmt., Prod., and Services
TOTAL	202	31	3		20				148	

8418

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
160.188 Accountant	8	6								
160.288 Cost Estimator	1									
168.288 Claims Examiner										
186.168 Bank Cashier	1									
209.388 Statement Clerk	1									
210.388 Bookkeeper	71	20								
211.368 Cashier	25	10								
212.368 Teller	19	4			5					
215.388 Bookkeeping Machine Operator	10	3								
215.488 Payroll Clerk	4	2								
217.388 Transit Clerk	4									
219.488 Accounting Clerk	33	9								
249.368 Claims Clerk	3									
249.368 New Account Clerk	4									
249.368 Credit Clerk										
					14					140100 Accounting and Computing
TOTAL	184	54			19				111	
162.158 Purchasing Agent	2									
162.288 Title Clerk	1									
										140800 Supervisor, Adm. Occupation, Other
TOTAL	3								3	

8419

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
209.388 Clerk-Typist	18	12								
219.388 General Office Clerk	126	55	51		1					
219.388 Sorting Clerk										
219.388 Time Keeper										
237.368 Admitting Clerk	1									
249.388 Loan Closer										
										140300 Filing and Office Machines
										140900 Typing and Related Occupations
			33		3					
TOTAL	145	67	84		4				(10)	
232.368 Post Office Clerk	9	2								
233.388 Mail Carrier	8	3								
										140403 Mail and Postal Clerks
TOTAL	17	5							12	
235.862 Telephone Operator	18	9								
239.588 Meter Reader			1							
										140400 Information Communications Occupations
										140401 Communication Systems Clerk and Operator
									8	

8420

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
205.368 Personnel Clerk	5	1	2						2	140600 Personnel, Training and Related
201.368 Secretary	70	39								
202.388 Stenographer	35	11								
			46		3					140700 Secretary or Stenographer
TOTAL	105	50	46		3				6	140703 Medical Secretary
213.382 Card-Tape Converter Operator										
213.582 Keypunch Operator	48	18		4						
213.782 Tab Machine Operator	17									
					12					140200 Business Data Processing
TOTAL	65	18		4	12				31	

84421

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural										
003.281 Draftsman, Electrical										
003.281 Draftsman, Electronic	1									
005.281 Draftsman, Civil	1									
007.181 Tool Designer, Die										
007.281 Draftsman, Mechanical	2	4								
010.281 Draftsman, Geological										
017.281 Draftsman, Map	1									
										160103 Architectural Technology
			14							160198 Drafting and Design
			9		1					171300 Drafting
TOTAL	5	4	23		1				(23)	
022.081 Chemist	8									
029.281 Tester, Laboratory	3									160105 Chemical Technology
TOTAL	11								11	
005.181 Civil Engineering Tech.	3									
018.188 Surveyor		1								160106 Civil and Highway Technology - Const.
									2	

8422

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
003.181 Technician, Electronics	2		8							160108 Electronics Technology
003.181 Technician, Electrical	2	3	2							160109 Electro-Mechanical Technology
TOTAL	4	3	10						(9)	
012.288 Technician, Industrial 019.281 Technician, Quality Control		1	1						(2)	160111 Industrial Technology
710.281 Instrument Man										160112 Instrumentation Technology 172100 Instrument Maintenance and Repair

8423

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
007.181 Technician, Mechanical 710.281 Electro-Mechanical Tech.	2	1	5						(4)	160109 Electro-Mechanical Technology 160113 Mechanical Technology
542.280 Stillman 549.280 Pumpman	2								2	160116 Petroleum Tech.
020.188 Programmer, Scientific	5								5	160117 Scientific Data Processing
139.288 Writer, Technical Publications										160197 Technical Writing

8424

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
012.168 System Analysis	3									
020.188 Programmer, Business	5	3								
213.382 Digital Computer Operator	4									
219.388 Programmer, Detail	5									
			38		2					160401 Computer Science
TOTAL	17	3	38		2				(26)	
168.168 Building Inspector	1									
373. Fireman	3	1								
										160602 Fire and Safety Technology
										172801 Fireman Training
TOTAL	4	1							3	
375. Policeman or Detective	3	1								
377. Sheriff or Baliff	1	1								
										160605 Police Science Tech.
										172802 Law Enforcement Training
TOTAL	4	2							2	

8425

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
195.108 Social Worker	2	2								
195.228 Recreation Leader	1									172899 Public Service Occupations, Other
TOTAL	3	2							1	
637.281 Mechanic, Air Conditioning	1		6		16				(21)	170100 Air Conditioning
862.381 Plumber	13	5								
899.281 Maintenance Man, Equipment	19	11								170102 Heating and Plumbing 170107 Plumbing & Pipefitting
TOTAL	32	16							16	
723.884 Appliance Repairman	5	1	3						1	170201 Appliance Repair
807.381 Auto Body Repairman	13	3								
845.781 Painter, Auto	4	2	12	1	7					170301 Body and Fender
TOTAL	17	16	54	1	9				(33)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
185.168 Parts Mgmt. Auto	4	1								
223.387 Stock Clerk, Auto	7	3								040300 Automotive
			3							170399 Other Automotive
TOTAL	11	4	3						4	
621.281 Mechanic, Aircraft 621.281 Mechanic, Jet Engine 621.781 Mechanic, Aircraft Accessories		2							(2)	160101 Aeronautical Technology 170401 Aircraft Mechanics
141.081 Illustrator 141.081 Art Layout Man				1					(1)	170700 Commercial Art 170702 Display
143.062 Photographer										170900 Commercial Photography

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
741.884 Painter, Spray	3									
841.781 Painter or Paperhanger	10	1								
860.381 Carpenter	15	8								
899.381 Maintenance Man Building	8	3								
			43							171001 Carpentry
TOTAL	36	12	43						(19)	
721.281 Electric Motor Repairman										
726.781 Electronics Assembler					1					
821.381 Lineman	4			4						
822.381 Telephone Installer	11	1								
824.281 Electrician	18	5								
828.281 Electronics Mechanic										
829.381 Cable Splicer	1									
										171002 Electricity
										171402 Electrical Lineman
			4	1	3					171502 Electronics
TOTAL	34	6	4	5	4				15	
382.884 Janitor	16	5								
					1					171100 Custodial Services
									10	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
625.281 Diesel Mechanic	3	1							2	171200 Diesel Mechanics
720.281 Radio and TV Repairman	2									
823.281 Radio Mechanic	2			1	1					171503 Radio and TV Repair
TOTAL	4			1	1				2	
650.582 Linotype Operator	1									
651.782 Cylinder Press Operator	2									
651.782 Offset Press Man	10									171901 Composition Makeup and Typesetting
		2								171902 Printing
TOTAL	13	2							11	
518.381 Coremaker										172301 Foundry

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
600.280 Machinist, All Round	4									
600.381 Layout Man	1	1								
603.280 Grinder Operator										
609.885 Production Machine Tool Operator	16	4								
705.884 Bench Grinder										
			10		5					172302 Machinist 172303 Machine Tool Operation
TOTAL	21	5	10		5				1	
500.380 Plating (Electro Plating)										172399 Metal Working, Other
806.781 Assembler, Aircraft-Structure 807.884 Assembler, Aircraft Sub-Assembly										172304 Metal Trades, Combined
601.280 Tool and Die Makers 601.280 Tool Machine Set-Up Operator	2								2	172307 Tool and Die Making

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
615.782 Shear Press Operator 617.380 Break Operator 619.380 Metal Fabricator 804.281 Sheet Metal Worker	1 2									
TOTAL	3								3	172305 Sheet Metal
504.782 Heat Treater										172400 Metallurgy
801.781 Structural Steel Worker 809.381 Layout Man (Structural)	1								1	171099 Const. and Maint. Trades

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
810.782 Welding Machine Operator	3									
810.884 Welder, Arc	21	5								
810.884 Welder, Gas										
812.884 Welder, Combination	23	7								
816.782 Flame Cutter Machine Operator										
816.884 Flame Cutter, Hand										
			5							010300 Agricultural Mechanics (Welding)
			8		26					172306 Welding
TOTAL	47	12	13		26				(4)	
526.781 Baker	1								1	172901 Baker
313.131 Chef 313.381 Cook	31	16							15	172901 Cook/Chef
361.885 Laundry Personnel	3	1							2	171602 Laundering

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
952.782 Power Plant Operator 950.782 Stationary Engineer TOTAL	3 2 5								5	173200 Stationary Energy Sources Occupation
316.884 Meat Cutter 525.381 Butcher, All Round 525.884 Boner or Skinner	3								3	010400 Agriculture Products 172903 Butcher (Meat Cutter)
780.381 Furniture Upholsterer	2			1					1	173500 Upholstery
660.280 Cabinet Maker 669.380 Mill Man 763.381 Furniture Finisher	1				3				(2)	173601 Cabinet Making

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
844.884 Cement Mason	3	1								
861.381 Brick Layer	10	3								171004 Masonry
TOTAL	13	4							9	
515.782 Grinding Mill Operator										
859.883 Heavy Equipment Operator (Operating Engineer)	6	3				8			(5)	171003 Heavy Equipment Operator
750.281 Tire Tech.	*									
750.384 Greentire Inspector	*									
750.387 Tire Classifier	*									
750.884 Tire Builder	*									179800 Tire Manufacturing

*See State Wide Totals

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northeast No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
572.782 Batch and Furnace Man 575.782 Bottle Machine Operator (Glass Mgr.) 706.884 Assembler, Metal Products	19	10							9	179900 Trade and Industrial Occupation Other

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman	2									
**400. Farm Mgmt.	90									
*404.88 Pruner/Picker	17	3								
*412. Poultry Worker	3	2								
**421.883 Farm Hand, Gen.	15	5								
466.887 Livestock Caretaker	1	1								
*551.885 Seed Cleaner			35							010100 Agricultural Production 160201 Ranch Operation
TOTAL	128	11	35						82	
162.158 Buyer (Wholesale/ Retail)	10	1								
*299.478 Deliveryman	7	2								
*520.885 Feed/Fertilizer Mixer	1	2								
*582.887 Applicator	2									
TOTAL	20	5							15	010200 Agricultural Supplies and Services
*919.887 Yardman	2	2								
*461.885 Ginner, Worker										
*529.687 Produce Sorter		1								
			1							010400 Agricultural Products
TOTAL	2	3	1						(2)	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Farm Manpower Projections

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*409.883 Elevator Op.		1								
*521.782 Mill Operator	1									
*624.281 Agric. Mechanic	10	3								
638.281 Maint. Mech. (Millwright)	15	3								
			38							101300 Agricultural Mechanic
			4							172100 Small Engine Repair
TOTAL	26	7	42						(23)	
*142.081 Floral Design	2	1								
*406.168 Greenhouse Man	2	2								
*406.168 Nurseryman	16	1								
407.884 Groundskeeper	5	2								
TOTAL	25	6							19	010500 Ornamental Horticulture
*451.181 Gamekeeper			1							010600 Agriculture Resources
			1						(1)	010700 Forestry
169.188 Underwriter	1									
250.258 Salesman, Insurance	2									
166.168 Special Agent										
241.168 Claim Adjuster	2									
TOTAL	5								5	041300 Insurance

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
191.287 Appraiser, Real Estate	1								1	041700 Real Estate
260. thru 289. Sales Occupations (Goods)	37	10	4							
290.478 Sales Clerk	180	48								
292.358 Salesman, Driver	11	4								
915.867 Service Station Attendant	7	3								
										010200 Agricultural Supplies and Services
										010400 Agriculture Products
			2							040200 Apparel and Accessories
			4							040300 Automotive
			1							040600 Food Distribution
			11							040800 General Merchandise
			1							040900 Hdw., Bldg. Mat., Farm and Garden Supplies
			1							041000 Home Furnishings
										041200 Industrial Marketing
										041400 International Trade
										041600 Petroleum
			2							042000 Retail Trade
										043100 Wholesale Trade
										170399 Other Automotive
TOTAL	235	65	26						144	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
189.168 Management Trainee	31	5							26	049901 Mid Management
242.368 Hotel Clerk	3								3	041100 Hotel and Lodging
252.358 Sales, Service	29	3	1						25	040100 Advertising Services 040400 Finance and Credit 041900 Transportation
132.088 Copywriter 132.288 Copy Reader 165.068 Public Relations	2								2	040100 Advertising Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	2									
902.883 Dump Truck Driver	4									
904.883 Tractor Trailer Truck Driver	3									
905.883 Truck Driver, Heavy	21	9								
906.883 Truck Driver, Light	47	21								
913.463 Bus Driver	4									
922.883 Forklift Operator	24	5								
929.887 Material Handler	23	7								
TOTAL	128	42							86	041900 Transportation 179901 Truck Driver
321.138 Housekeeping Occupations	32	2							30	090205 Institutional and Home Mgmt. and Supporting Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	3									
311.878 Waiter/Waitress	158	42								
318.887 Dishwasher	16	3								
319.138 Food Service Supervisor	4	1								
			4							040700 Food Services
										090203 Food Management Prod. and Services
										172900 Other Quantity Food Occupations
			1							172904 Waiter/Waitress
TOTAL	181	46	5						130	
355.878 Psychiatric Aide										070304 Psychiatric Aid
078.281 Medical Technologist	2									
078.381 Medical Laboratory Assistant	15	2								
078.381 Medical Laboratory Tech.	2			9						
										070203 Medical Laboratory Technician
TOTAL	19	2		9					8	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
075.378 Nurse, Registered	38	2	21						15	070301 Nurse, Associate Degree
079.378 Nurse, Licensed Practical	70	8	26						36	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	113	64	24						25	070303 Nurse Assistance (Aid)
079.378 Surgical Technician	3								3	070305 Surgical Technician

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
079.128 Occupational Therapist 079.128 Recreation Therapist 079.368 Occupational Therapist Aide 355.878 Physical Therapist Aide	1								1	070400 Rehabilitation 070910 Orthopedic Assisting
078.368 E.E.G. Tech.										070901 E.E.G. Technician
078.368 E.K.G. Tech.	9								9	070902 E.K.G. Technician
078.368 Radiologic Tech.	14								14	070504 Radiologic Tech. (X-ray)
079.368 Inhalation Therapist	2								2	070903 Inhalation Therapy Technician

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
223.887 Central Supply Worker	1								1	070905 Central Supply Tech.
249.388 Medical Record Clerk	2								2	079901 Medical Record Clerk
219.388 Ward Clerk	7								7	079902 Ward Clerk
100.388 Medical Record Librarian	1								1	070210 Medical Record Technician
359.878 Nursery School Attendant	3									
359.878 Teacher Aide	13									090201 Care and Guidance of Children
TOTAL	16								16	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
781.884 Cutter, Hand or Machine	1									
785.381 Seamstress/Tailor	2									
786. to 787. Sewing Machine Operator	39	18								
TOTAL	42	18							24	090202 Clothing, Mgmt., Prod., and Services
160.188 Accountant	7	10								
160.288 Cost Estimator	2									
168.288 Claims Examiner										
186.168 Bank Cashier	2									
209.388 Statement Clerk	2			1						
210.388 Bookkeeper	39	12								
211.368 Cashier	35	8								
212.368 Teller	8	3								
215.388 Bookkeeping Machine Operator	12	2								
215.488 Payroll Clerk	14	1								
217.388 Transit Clerk	1									
219.488 Accounting Clerk	14	6			3					
249.368 Claims Clerk	1									
249.368 New Account Clerk	1									
249.368 Credit Clerk	1									
			2	1						
TOTAL	139	42	2	2	3				90	140100 Accounting and Computing

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
162.158 Purchasing Agent 162.288 Title Clerk	16								16	140800 Supervisor, Adm. Occupation, Other
209.388 Clerk-Typist	50	21								
219.388 General Office Clerk	74	31	18		10					
219.388 Sorting Clerk										
219.388 Time Keeper										
237.368 Admitting Clerk	3									
249.388 Loan Closer	1									140300 Filing and Office Machines
			1							140900 Typing and Related Occupations
TOTAL	128	52	19		10				47	
232.368 Post Office Clerk	11	1								
233.388 Mail Carrier	21	1								140403 Mail and Postal Clerks
TOTAL	32	2							30	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
235.862 Telephone Operator	24	11								
239.588 Meter Reader	6									
										140400 Information Communications Occupations
										140401 Communication Systems Clerk and Operator
TOTAL	30								19	
205.368 Personnel Clerk	5	2								
										140600 Personnel, Training and Related
									3	
201.368 Secretary	95	27								
202.388 Stenographer	19	9								
			26	4	4					140700 Secretary or Stenographer
										140703 Medical Secretary
TOTAL	114	36	26	4	4				44	
213.382 Card-Tape Converter Operator										
213.582 Keypunch Operator	10	3								
213.782 Tab Machine Operator	2									
			10		4					140200 Business Data Processing
TOTAL	12	3	10		4				(5)	

8447

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural										
003.281 Draftsman, Electrical										
003.281 Draftsman, Electronic	1									
005.281 Draftsman, Civil	1									
007.181 Tool Designer, Die										
007.281 Draftsman, Mechanical	20	1								
010.281 Draftsman, Geological										
017.281 Draftsman, Map										
			2							160103 Architectural Technology
										160198 Drafting and Design
										171300 Drafting
TOTAL	22	1	2						19	
022.081 Chemist	3	1								
029.281 Tester, Laboratory	2									
										160105 Chemical Technology
TOTAL	5	1							4	
005.181 Civil Engineering Tech.	2									
018.188 Surveyor	1	1								
										160106 Civil and Highway Technology - Const.
TOTAL	3	1							2	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
003.181 Technician, Electronics	1									
003.181 Technician, Electrical	1	1								
			6							160108 Electronics Technology 160109 Electro-Mechanical Technology
TOTAL	2	1	6						(5)	
012.288 Technician, Industrial 019.281 Technician, Quality Control	1								1	160111 Industrial Technology
710.281 Instrument Man	1								1	160112 Instrumentation Technology 172100 Instrument Maintenance and Repair
007.181 Technician, Mechanical 710.281 Electro-Mechanical Tech.	1								1	160109 Electro-Mechanical Technology 160113 Mechanical Technology

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
542.280 Stillman 549.280 Pumpman	1								1	160116 Petroleum Tech.
020.188 Programmer, Scientific	1								1	160117 Scientific Data Processing
139.288 Writer, Technical Publications										160197 Technical Writing
012.168 System Analysis	2									
020.188 Programmer, Business	1	4								
213.382 Digital Computer Operator	1									
219.388 Programmer, Detail	2									160401 Computer Science
TOTAL	6	4							2	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
168.168 Building Inspector	1									
373. Fireman	5									160602 Fire and Safety Technology 172801 Fireman Training
TOTAL	6								6	
375. Policeman or Detective	11									
377. Sheriff or Baliff	1									160605 Police Science Tech 172802 Law Enforcement Training
			6							
TOTAL	12		6						6	
195.108 Social Worker	11	3								
195.228 Recreation Leader	2									172899 Public Service Occupations, Other
TOTAL	13	3							10	
637.281 Mechanic, Air Conditioning	1									
			9	4	5				(17)	170100 Air Conditioning

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
862.381 Plumber	14	6								
899.281 Maintenance Man, Equipment	17	8								
			1	6						170102 Heating and Plumbing 170107 Plumbing and Pipefitting
TOTAL	31	14	1	6					10	
723.884 Appliance Repairman	2								2	170201 Appliance Repair
807.381 Auto Body Repairman	11	1								
845.781 Painter, Auto	3	2								
			7	6						170301 Body and Fender
TOTAL	14	3	7	6					(2)	
620.281 Mechanic, Auto	52	10								
620.281 Auto - A/C Mechanic	2									
			19	2						170302 Auto Mechanic
TOTAL	54	10	19	2					23	
185.168 Parts Mgmt. Auto	1									
223.387 Stock Clerk, Auto	9	4								
										040300 Automotive
				5						170399 Other Automotive
TOTAL	10	4		5					1	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
621.281 Mechanic, Aircraft Engine	1	1								
621.281 Mechanic, Jet Engine										
621.781 Mechanic Aircraft Accessories		1								
			3							160101 Aeronautical Technology
TOTAL	1	2	3						(4)	170401 Aircraft Mechanics
141.081 Illustrator										
141.081 Art Layout Man	1			3					(2)	170700 Commercial Art 170702 Displav
143.062 Photographer	1								1	170900 Commercial Photography
741.884 Painter, Spray	7	1								
841.781 Painter or Paperhanger	12	2								
860.381 Carpenter	20	12								
899.381 Maintenance Man Building	9	5								
			46							171001 Carpentry
TOTAL	48	20	46						(18)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
721.281 Electric Motor Repairman	1									
726.781 Electronics Assembler	5									
821.381 Lineman	3			5						
822.381 Telephone Installer	7									
824.281 Electrician	24	6								
828.281 Electronics Mechanic										
829.381 Cable Splicer	1									
										171002 Electricity
										171402 Electrical Lineman
			3	6	4					171502 Electronics
TOTAL	41	6	3	11	4				17	
382.384 Janitor	20	6								
										171100 Custodial Services
									14	
625.281 Diesel Mechanic	1			3						
										171200 Diesel Mechanics
									(2)	
720.281 Radio and TV Repairman	4									
823.281 Radio Mechanic	1									
				7						171503 Radio and TV Repair
TOTAL	5			7					(2)	

8454

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
650.582 Linotype Operator	2									
651.782 Cylinder Press Operator	3									
651.782 Offset Press Man	12									
										171901 Composition Makeup and Typesetting
			5	4						171902 Printing
TOTAL	17		5	4					8	
518.381 Coremaker										172301 Foundry
600.280 Machinist, All Round	11	2								
600.381 Layout Man	1									
603.280 Grinder Operator										
609.885 Production Machine Tool Operator	5	1				1				
705.884 Bench Grinder										
				2						172302 Machinist
			10							172303 Machine Tool Operation
TOTAL	17	3	10	2		1			1	
500.380 Plating (Electro Plating)	1									
									1	172399 Metal Working, Other

8455

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
806.781 Assembler, Aircraft-Structure 807.884 Assembler, Aircraft Sub-Assembly										172304 Metal Trades, Combined
601.280 Tool and Die Makers 601.280 Tool Machine Set-Up Operator	2								2	172307 Tool and Die Making
615.782 Shear Press Operator 617.380 Break Operator 619.380 Metal Fabricator 804.281 Sheet Metal Worker TOTAL	1 3 18 4 26								26	172305 Sheet Metal
504.782 Heat Treater	1								1	172400 Metallurgy

8456

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
801.781 Structural Steel Worker 809.381 Layout Man (Structural)	3								3	171099 Const. and Maint. Trades
810.782 Welding Machine Operator	10	2								
810.884 Welder, Arc	31	7								
810.884 Welder, Gas										
812.884 Welder, Combination	22	8								
816.782 Flame Cutter Machine Operator		1								
816.884 Flame Cutter, Hand										010300 Agricultural Mechanics (Welding)
			13		18					
TOTAL	63	18	13		18				14	172306 Welding
526.781 Baker	2			1					1	172901 Baker
313.131 Chef 313.381 Cook	103	24								
				2						
TOTAL	103	24		2					77	172902 Cook/Chef

8457

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
361.885 Laundry Personnel	4	1							3	171602 Laundering
952.782 Power Plant Operator	4									
950.782 Stationary Engineer	4	1								173200 Stationary Energy Sources Occupation
TOTAL	8	1							7	
316.884 Meat Cutter	4									
525.381 Butcher, All Round	10	2								
525.884 Boner or Skinner	1	1								010400 Agriculture Products 172903 Butcher (Meat Cutter)
TOTAL	15	3							12	
780.381 Furniture Upholsterer	1			2					(1)	173500 Upholstery

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
660.280 Cabinet Maker	2									
669.380 Mill Man	1									
763.381 Furniture Finisher			2							173601 Cabinet Making
TOTAL	3		2						1	
844.884 Cement Mason	1									
861.381 Brick Layer	11	1	4							171004 Masonry
TOTAL	12	1	4						7	
515.782 Grinding Mill Operator	4									
859.883 Heavy Equipment Operator (Operating Engineer)	6	2								171003 Heavy Equipment Operator
TOTAL	10	2							8	
750.281 Tire Tech.	*									
750.384 Greentire Inspector	*									
750.387 Tire Classifier	*									
750.884 Tire Builder	*									179800 Tire Manufacturing

*See Statewide Totals

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Mid-East No. 2

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
572.782 Batch and Furnace Man	2									
575.782 Bottle Machine Operator (Glass Mgr.)	3	1								
706.884 Assembler, Metal Products	24	3								179900 Trade and Industrial Occupation Other
TOTAL	29	4							25	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman	29									
**400. Farm Mgmt.	105									
*404.88 Pruner/Picker	25	2								
*412. Poultry Worker	12	12								
**421.883 Farm Hand, Gen.	15	25								
466.887 Livestock Caretaker	9	4								
*551.885 Seed Cleaner		2								
			62							010100 Agricultural Production
					1					160201 Ranch Operation
TOTAL	195	45	62		1				87	
162.158 Buyer (Wholesale/Retail)	4	3								
*299.478 Deliveryman	13	1								
*520.885 Feed/Fertilizer Mixer		2								
*582.887 Applicator										
			1							010200 Agricultural Supplies and Services
TOTAL	17	6	1						10	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Farm Manpower Projections

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*919.887 Yardman	30	1								
*461.885 Ginner, Worker										
*529.687 Produce Sorter	2	1								
			1							010400 Agricultural Products
TOTAL	32	2	1						29	
*409.883 Elevator Op.										
*521.782 Mill Operator	5									
*624.281 Agric. Mechanic	17									
638.281 Maint. Mech. (Millwright)	12	2								
			58							101300 Agricultural Mechanic
										173100 Small Engine Repair
TOTAL	34	2	58						(26)	
*142.081 Floral Design	2									
*406.168 Greenhouse Man										
*406.168 Nurseryman										
407.884 Groundskeeper	2									
			1							010500 Ornamental Horticulture
TOTAL	4		1						3	
*451.181 Gamekeeper										
			1							010600 Agriculture Resources
			5							010700 Forestry
TOTAL			6						(6)	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
169.188 Underwriter 250.258 Salesman, Insurance 166.168 Special Agent 241.168 Claim Adjuster	1								1	041300 Insurance
191.287 Appraiser, Real Estate										041700 Real Estate

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
260. thru 289. Sales Occupations (Goods)	44	12								
290.478 Sales Clerk	103	36								
292.358 Salesman, Driver	14	2								
915.867 Service Station Attendant	6	1								
										010200 Agricultural Supplies and Services
										010400 Agriculture Products
										040200 Apparel and Accessories
			5							040300 Automotive
			1							040600 Food Distribution
			6							040800 General Merchandise
			3							040900 Hdw., Bldg. Mat., Farm and Garden Supplies
			1							041000 Home Furnishings
										041200 Industrial Marketing
										041400 International Trade
										041600 Petroleum
			3		16					042000 Retail Trade
										043100 Wholesale Trade
										170399 Other Automotive
TOTAL	167	51	19		16				81	
189.168 Management Trainee	13	2								
			7							049901 Mid Management
									4	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
242.368 Hotel Clerk	2								2	041100 Hotel and Lodging
252.358 Sales, Service	11	1								
			1							040100 Advertising Services
			1							040400 Finance and Credit
										041900 Transportation
TOTAL	11	1	2						8	
132.088 Copywriter 132.288 Copy Reader 165.068 Public Relations	11								11	040100 Advertising Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	1									
902.883 Dump Truck Driver	16	6								
904.883 Tractor Trailer Truck Driver	2									
905.883 Truck Driver, Heavy	10	5								
906.883 Truck Driver, Light	23	11								
913.463 Bus Driver	3									
922.883 Forklift Operator	15	2								
929.887 Material Handler	27	8								041900 Transportation 179901 Truck Driver
TOTAL	97	32							65	
321.138 Housekeeping Occupations	16	5							11	090205 Institutional and Home Mgmt. and Supporting Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	2									
311.878 Waiter/Waitress	78	29								
318.887 Dishwasher	8	2								
319.138 Food Service Supervisor	3									
			1							040700 Food Services
			4			1				090203 Food Mgmt. Prod. and Services
										172900 Other Quantity Food Occupations
										172904 Waiter/Waitress
TOTAL	91	31	5			1			54	
355.878 Psychiatric Aide										070304 Psychiatric Aid
078.281 Medical Technologist	2									
078.381 Medical Laboratory Assistant	4									
078.381 Medical Laboratory Tech.	3									
						3				070203 Medical Laboratory Technician
TOTAL	9					3			6	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
075.378 Nurse, Registered	30	4							26	070301 Nurse, Associate Degree
079.378 Nurse, Licensed Practical	35	5	37						(7)	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	58	24				24				
			4			116				070303 Nurse Assistance (Aid)
TOTAL	58	24	4			140			(110)	
079.378 Surgical Technician	2					2				070305 Surgical Technician

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
			Public			Federal				
		OESC Registrants	Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal	Private Schools		
079.128 Occupational Therapist 079.128 Recreation Therapist 079.368 Occupational Therapist Aide 355.878 Physical Therapist Aide	1					23				070400 Rehabilitation 070910 Orthopedic Assisting
TOTAL									(22)	
078.368 E.E.G. Tech.										070901 E.E.G. Technician
078.368 E.K.G. Tech.										070902 E.K.G. Technician
078.368 Radiologic Tech.	2					1			1	070504 Radiologic Tech. (X-Ray)
079.368 Inhalation Therapist	2					22			(20)	070903 Inhalation Therapy Technician

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
223.887 Central Supply Worker	1								1	070905 Central Supply Tech.
249.388 Medical Record Clerk	1					2			(1)	079901 Medical Record Clerk
219.388 Ward Clerk	7					26			(19)	079902 Ward Clerk
100.388 Medical Record Librarian	1					1				070210 Medical Record Technician
359.878 Nursery School Attendant	1									
359.878 Teacher Aide	6									090201 Care and Guidance of Children
			3							
TOTAL	7		3						4	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
781.884 Cutter, Hand or Machine	1									
785.381 Seamstress/Tailor	2	1								
786. to 787. Sewing Machine Operator	75	27								
			3							090202 Clothing, Mgmt., Prod., and Services
TOTAL	78	28	3						47	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
160.188 Accountant	37	3								
160.288 Cost Estimator	5									
168.288 Claims Examiner										
186.168 Bank Cashier	1									
209.388 Statement Clerk	1									
210.388 Bookkeeper	28	9								
211.368 Cashier	13	3								
212.368 Teller	8	3								
215.388 Bookkeeping Machine Operator	17	4								
215.488 Payroll Clerk	7									
217.388 Transit Clerk										
219.488 Accounting Clerk	41	2								
249.368 Claims Clerk	1									
249.368 New Account Clerk										
249.368 Credit Clerk										
			1		8					140100 Accounting and Computing
TOTAL	159	24	1		8				126	
162.158 Purchasing Agent	5									
162.288 Title Clerk										
										140800 Supervisor, Adm. Occupation, Other
									5	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
209.388 Clerk-Typist	33	14								
219.388 General Office Clerk	49	16	15							
219.388 Sorting Clerk	1									
219.388 Time Keeper	1									
237.368 Admitting Clerk	2									
249.388 Loan Closer	1									
					20					140300 Filing and Office Machines 140900 Typing and Related Occupations
TOTAL	87	30	15		20				22	
232.368 Post Office Clerk	7	2								
233.388 Mail Carrier	7	1								
TOTAL	14	3							11	140403 Mail and Postal Clerks
235.862 Telephone Operator	13	5								
239.588 Meter Reader	2									
										140400 Information Communications Occupations 140401 Communication Systems Clerk and Operator
TOTAL	15	5							10	

8473

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
205.368 Personnel Clerk	1	1								140600 Personnel, Training and Related
201.368 Secretary	40	40								140700 Secretary or Stenographer
202.388 Stenographer	8	10				12				140703 Medical Secretary
			5		4					
TOTAL	48	50	5		4	12			(23)	
213.382 Card-Tape Converter Operator										
213.582 Keypunch Operator	1	2								
213.782 Tab Machine Operator										140200 Business Data Processing
TOTAL	1	2							(1)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural 003.281 Draftsman, Electrical 003.281 Draftsman, Electronic 005.281 Draftsman, Civil 007.181 Tool Designer, Die 007.281 Draftsman, Mechanical 010.281 Draftsman, Geological 017.281 Draftsman, Map	3									
			2							160103 Architectural Technology
			8		20					160198 Drafting and Design
			5	2	5					171300 Drafting
TOTAL	3		15	2	25				(39)	
022.081 Chemist 029.281 Tester, Laboratory			1						(1)	160105 Chemical Technology
005.181 Civil Engineer Tech. 018.188 Surveyor	9	1							8	160106 Civil and Highway Technology - Const.

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
			Public			Federal				
		OESC Registrants	Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal	Private Schools		
003.181 Technician, Electronics										
003.181 Technician, Electrical		4	8							160108 Electronics Technology 160109 Electro-Mechanical Technology
TOTAL		4	8						(12)	
012.288 Technician, Industrial 019.281 Technician, Quality Control	2								2	160111 Industrial Technology
710.281 Instrument Man	1								1	160112 Instrumentation Technology 172100 Instrument Maintenance and Repair

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
007.181 Technician, Mechanical 710.281 Electro-Mechanical Tech.	2		4		2				(4)	160109 Electro-Mechanical Technology 160113 Mechanical Technology
542.280 Stillman 549.280 Pumpman										160116 Petroleum Tech.
020.188 Programmer, Scientific										160117 Scientific Data Processing
139.288 Writer, Technical Publications										160197 Technical Writing

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
012.168 System Analysis										
020.188 Programmer, Business		1								
213.382 Digital Computer Operator										
219.388 Programmer, Detail			10						(11)	160401 Computer Science
168.168 Building Inspector										
373. Fireman	2								2	160602 Fire and Safety Technology 172801 Fireman Training
375. Policeman or Detective	3	1								
377. Sheriff or Baliff	2	1								160605 Police Science Tech. 172802 Law Enforcement Training
TOTAL	5	2							3	
195.108 Social Worker	47	2								
195.228 Recreation Leader	2									172899 Public Service Occupations, Other
TOTAL	49	2							47	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
185.168 Parts Mgmt. Auto	2									
223.387 Stock Clerk, Auto	4	3								
			3							040300 Automotive 170399 Other Automotive
TOTAL	6	3	3							
621.281 Mechanic, Aircraft Engine 621.281 Mechanic, Jet Engine 621.781 Mechanic, Aircraft Accessories		3							(3)	160101 Aeronautical Technology 170401 Aircraft Mechanics
141.081 Illustrator 141.081 Art Layout Man	1								1	170700 Commercial Art 170702 Display
143.062 Photographer		1							(1)	170900 Commercial Photography

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
741.884 Painter, Spray	5									
841.781 Painter or Paperhanger	10	12								
860.381 Carpenter	13	31								
899.381 Maintenance Man Building	8	2								
			35							171001 Carpentry
TOTAL	36	45	35						(44)	
721.281 Electric Motor Repairman										
726.781 Electronics Assembler	14	5								
821.381 Lineman	5	1		1						
822.381 Telephone Installer	5	1								
824.281 Electrician	20	12								
828.281 Electronics Mechanic										
829.381 Cable Splicer	1									
										171002 Electricity
										171402 Electrical Lineman
			6		13					171502 Electronics
TOTAL	45	19	6	1	13				6	
382.884 Janitor	11	10								
										171100 Custodial Services
									1	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
637.281 Mechanic, Air Conditioning	1		8						(7)	170100 Air Conditioning
862.381 Plumber	6	15								
899.281 Maintenance Man, Equipment	17	8								
			8	2						170102 Heating and Plumbing 170107 Plumbing and Pipefitting
TOTAL	23	23	8	2					(10)	
723.884 Appliance Repairman	3								3	170201 Appliance Repair
807.381 Auto Body Repairman	7	1								
845.781 Painter, Auto	4	3								
			10							170301 Body and Fender
TOTAL	11	4	10						(3)	
620.281 Mechanic, Auto	42	21								
620.281 Auto - A/C Mechanic	5									
			37	4						170302 Auto Mechanic
TOTAL	47	21	37	4					(15)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
625.281 Diesel Mechanic	15	3	5	2					5	171200 Diesel Mechanics
720.281 Radio and TV Repairman	1									
823.281 Radio Mechanic	1			2						171503 Radio and TV Repair
TOTAL	2			2						
650.582 Linotype Operator	1									
651.782 Cylinder Press Operator	1									
651.782 Offset Press Man	6									171901 Composition Makeup and Typesetting 171902 Printing
TOTAL	8								8	
518.381 Coremaker										172301 Foundry

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
600.280 Machinist, All Round	7	1								
600.381 Layout Man										
603.280 Grinder Operator	1									
609.885 Production Machine Tool Operator	2									
705.884 Bench Grinder										
			12	2	4					172302 Machinist 172303 Machine Tool Operation
TOTAL	10	1	12	2	4				(9)	
500.380 Plating (Electro Plating)										172399 Metal Working, Other
806.781 Assembler, Aircraft-Structure										
807.884 Assembler, Aircraft Sub-Assembly										172304 Metal Trades, Combined

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
601.280 Tool and Die Makers 601.280 Tool Machine Set-Up Operator	1								1	172307 Tool and Die Making
615.782 Shear Press Operator 617.380 Break Operator 619.380 Metal Fabricator 804.281 Sheet Metal Worker	1								1	172305 Sheet Metal
504.782 Heat Treater			1						(1)	172400 Metallurgy
801.781 Structural Steel Worker 809.381 Layout Man (Structural)	5	27							(22)	171099 Const. and Maint., Other

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
810.782 Welding Machine Operator										
810.884 Welder, Arc	18	15								
810.884 Welder, Gas	12									
812.884 Welder, Combination	15	5								
816.782 Flame Cutter Machine Operator										
816.884 Flame Cutter, Hand										010300 Agricultural Mechanics (Welding)
			13		32					172306 Welding
TOTAL	45	20	13		32				(20)	
526.781 Baker	1								1	172901 Baker
313.131 Chef 313.381 Cook	28	12	1						15	172902 Cook/Chef

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
361.855 Laundry Personnel	3	1							2	171602 Laundering
950.782 Stationary Engineer 952.782 Power Plant Operator	1 2									173200 Stationary Energy Sources Occupation
TOTAL	3								3	
316.884 Meat Cutter 525.381 Butcher, All Round 525.884 Boner or Skinner	5	2	1						2	010400 Agriculture Products 172903 Butcher (Meat Cutter)
780.381 Furniture Upholsterer	1			1						173500 Upholstery

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
660.280 Cabinet Maker	1									
669.380 Mill Man	1									
763.381 Furniture Finisher			7							
TOTAL	2		7						(5)	173601 Cabinet Making
844.884 Cement Mason	5	9								
861.381 Brick Layer	10	2								
TOTAL	15	11							4	171004 Masonry
515.782 Grinding Mill Operator										
259.883 Heavy Equipment Operator (Operating Engineer)	6	5				15			(14)	171003 Heavy Equipment Operator
750.281 Tire Tech.	*									
750.384 Greentire Inspector	*									
750.387 Tire Classifier	*									
750.884 Tire Builder	*									179800 Tire Manufacturing

*See State Wide Totals

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southeast No. 3

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
572.782 Batch and Furnace Man	3									
575.782 Bottle Machine Operator (Glass Mgr.)										
706.884 Assembler, Metal Products	5									
TOTAL	8								8	179900 Trade and Industrial Occupation Other

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman	4									
**400. Farm Mgmt.	75									
*404.88 Pruner/Picker										
*412. Poultry Worker	1									
**421.883 Farm Hand, Gen.	10	8								
466.887 Livestock Caretaker	2	1								
*551.885 Seed Cleaner	1	2								
			58							010100 Agricultural Production 160201 Ranch Operation
TOTAL	93	11	58						24	
162.158 Buyer (Wholesale/Retail)	4	1								
*299.478 Deliveryman	15	1								
*520.885 Feed/Fertilizer Mixer	2	1								
*582.887 Applicator	2									
			1							010200 Agricultural Supplies and Services
TOTAL	23	3	1						19	
919.887 Yardman	3	2								
*461.885 Ginner, Worker	2	1								
*529.687 Produce Sorter										
										010400 Agricultural Products
TOTAL	5	3							2	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Farm Manpower Projections

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*409.883 Elevator Operator		2								
*521.782 Mill Operator	1									
*624.281 Agric. Mechanic	16									
638.281 Maint. Mech. (Millwright)	11									
			20							101300 Agricultural Mechanics
						35				173100 Small Engine Repair
TOTAL	28	2	20			35			(29)	
*142.081 Floral Design	3	1								
*406.168 Greenhouse Man	2									
*406.168 Nurseryman	13									
407.884 Groundskeeper	9									
										010500 Ornamental Horticulture
TOTAL	27	1							26	
*451.181 Gamekeeper										
			3							010600 Agriculture Resources
			1							010700 Forestry
TOTAL			4						(4)	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
169.188 Underwriter	8									
250.258 Salesman, Insurance	3	1								
166.168 Special Agent										
241.168 Claim Adjuster	1									
TOTAL	12	1							11	041300 Insurance
191.287 Appraiser, Real Estate	1								1	041700 Real Estate

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
260. thru 289. Sales Occupations (Goods)	22	3								
290.478 Sales Clerk	137	41								
292.358 Salesman, Driver	20	5								
915.867 Service Station Attendant	8	2								
										010200 Agricultural Supplies and Services
										010400 Agriculture Products
			3							040200 Apparel and Accessories
			6							040300 Automotive
										040600 Food Distribution
			7							040800 General Merchandise
										040900 Hdw., Bldg. Mat., Farm and Garden Supplies
			2							
			1							041000 Home Furnishings
			1							041200 Industrial Marketing
										041400 International Trade
										041600 Petroleum
			6							042000 Retail Trade
			1							043100 Wholesale Trade
										170339 Other Automotive
TOTAL	187	51	27						109	
189.168 Management Trainee	27								27	049901 Mid Management

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
242.368 Hotel Clerk	1		1							041100 Hotel and Lodging
252.358 Sales, Service	21	2	1						18	040100 Advertising Services 040400 Finance and Credit 041900 Transportation
132.088 Copywriter 132.288 Copy Reader 165.068 Public Relations	5								5	040100 Advertising Services

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	6									
902.883 Dump Truck Driver	2									
904.883 Tractor Trailer Truck Driver	4	1								
905.883 Truck Driver, Heavy	39	17								
906.883 Truck Driver, Light	43	17								
913.463 Bus Driver	1									
922.883 Forklift Operator	26	10								
929.887 Material Handler	33	10								
TOTAL	154	55							99	041900 Transportation 179901 Truck Driver
321.138 Housekeeping Occupations	33	4	1						28	090205 Institutional and Home Mgmt. and Supporting Services

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	10									
311.878 Waiter/Waitress	104	31								
318.887 Dishwasher	19	6								
319.138 Food Service Supervisor	4	2								
			2							040700 Food Services
			3		3					090203 Food Management Prod. and Services
										172900 Other Quantity Food Occupations
TOTAL	137	39	5		3				90	172904 Waiter/Waitress
355.878 Psychiatric Aide										070304 Psychiatric Aid
078.281 Medical Technologist	2									
078.381 Medical Laboratory Assistant	4									
078.381 Medical Laboratory Tech.	3									
						3				070203 Medical Laboratory Technician
TOTAL	9					3			6	
075.378 Nurse, Registered	38	2							36	070301 Nurse, Associate Degree

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
079.378 Nurse, Licensed Practical	56	6	42						8	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	185	23	15		17	26			104	070303 Nurse Assistance (Aid)
079.378 Surgical Technician	5					3			2	070305 Surgical Technician
079.128 Occupational Therapist	1									
079.128 Recreation Therapist										
079.368 Occupational Therapist Aide										
355.878 Physical Therapist Aide	1									070400 Rehabilitation 070910 Orthopedic Assisting
TOTAL	2								2	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
078.368 E.E.G. Tech.	1								1	070901 E.E.G. Technician
078.368 E.K.G. Tech.	3								3	070902 E.K.G. Technician
078.368 Radiologic Tech.	2								2	070504 Radiological Tech. (X-Ray)
079.368 Inhalation Therapist	4								4	070903 Inhalation Therapy Technician
223.887 Central Supply Worker	2	1							1	070905 Central Supply Tech.

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
249.388 Medical Record Clerk	4		4							079901 Medical Record Clerk
219.388 Ward Clerk	9				2	6			1	079902 Ward Clerk
100.388 Medical Record Librarian	4					6			(2)	070210 Medical Record Technician
359.878 Nursery School Attendant	2									
359.878 Teacher Aide	6					10				090201 Care and Guidance of Children
TOTAL	8					10			(2)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
781.884 Cutter, Hand or Machine	2									
785.381 Seamstress/Tailor	11									
786. to 787. Sewing Machine Operator	90	35								090202 Clothing, Mgmt., Prod., and Services
			1							
TOTAL	103	35	1						67	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
160.188 Accountant	35	6								
160.288 Cost Estimator	2									
168.288 Claims Examiner										
186.168 Bank Cashier	1									
209.388 Statement Clerk	15									
210.388 Bookkeeper	35	13								
211.368 Cashier	21	2								
212.368 Teller	14	2								
215.388 Bookkeeping Machine Operator	39	3								
215.488 Payroll Clerk	5	1								
217.388 Transit Clerk										
219.488 Accounting Clerk	20	2								
249.368 Claims Clerk	5									
249.368 New Account Clerk	1									
249.368 Credit Clerk										
			23		11					140100 Accounting and Computing
TOTAL	193	29	23		11				130	
162.158 Purchasing Agent	4									
162.288 Title Clerk										
										140800 Supervisor, Adm. Occupation, Other
TOTAL	4								4	

8500

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
209.388 Clerk-Typist	58	9								
219.388 General Office Clerk	85	33	24			44				
219.388 Sorting Clerk										
219.388 Time Keeper	1									
237.368 Admitting Clerk	6									
249.388 Loan Closer	1									
										140300 Filing and Office Machines
			2		15					140900 Typing and Related Occupations
TOTAL	151	42	26		15	44			24	
232.368 Post Office Clerk	5	1								
233.388 Mail Carrier	5	3								
										140403 Mail and Postal Clerks
TOTAL	10	4							6	
235.862 Telephone Operator	25	7								
239.588 Meter Reader	11	1								
										140400 Information Communications Occupations
										140401 Communication Systems Clerk and Operator
TOTAL	36	8							28	

8504

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
205.368 Personnel Clerk	5	2							3	140600 Personnel, Training and Related
201.368 Secretary	72	13								
202.388 Stenographer	10	4								
			8		1					140700 Secretary or Stenographer 140703 Medical Secretary
TOTAL	82	17	8		1				56	
213.382 Card-Tape Converter Operator										
213.582 Keypunch Operator	3	2								
213.782 Tab Machine Operator	2									
					2					140200 Business Data Processing
TOTAL	5	2			2				1	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural	1									
003.281 Draftsman, Electrical	1									
003.281 Draftsman, Electronic	1									
005.281 Draftsman, Civil										
007.181 Tool Designer, Die	1									
007.281 Draftsman, Mechanical	2	1								
010.281 Draftsman, Geological	2									
017.281 Draftsman, Map										
			4							160103 Architectural Technology
			3							160198 Drafting and Design
TOTAL	8	1	7							171300 Drafting
022.081 Chemist	1									
029.281 Tester, Laboratory	14	1								
TOTAL	15	1							14	160105 Chemical Technology
005.181 Civil Engineering Tech.	16									
018.188 Surveyor	3									
TOTAL	19								19	160106 Civil and Highway Technology - Const.

85003

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
003.181 Technician, Electronics	4									
003.181 Technician, Electrical	1	1								160108 Electronics Technology 160109 Electro-Mechanical Technology
TOTAL	5	1							4	
012.288 Technician, Industrial	1									
019.281 Technician, Quality Control	7	1								160111 Industrial Technology
TOTAL	8	1							7	
710.281 Instrument Man										160112 Instrumentation Technology 172100 Instrument Maintenance and Repair
TOTAL										
007.181 Technician, Mechanical	5	1								
710.281 Electro-Mechanical Tech.										160109 Electro-Mechanical Technology 160113 Mechanical Technology
TOTAL	5	1							4	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
542.280 Stillman	4									
549.280 Pumpman	1									160116 Petroleum Tech.
TOTAL	5								5	
020.188 Programmer, Scientific	1								1	160117 Scientific Data Processing
139.288 Writer, Technical Publications										160197 Technical Writing
012.168 System Analysis										
020.188 Programmer, Business	1	1								
213.382 Digital Computer Operator	2									
219.388 Programmer, Detail					1					160401 Computer Science
TOTAL	3	1			1				1	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
168.168 Building Inspector	2									
373. Fireman	16	3								
TOTAL	18	3							15	160602 Fire and Safety Technology 172801 Fireman Training
375. Policeman or Detective	19									
377. Sheriff or Baliff	3									
TOTAL	22								22	160605 Police Science Tech. 172802 Law Enforcement Training
195.108 Social Worker	23	4								
195.228 Recreation Leader	7									
TOTAL	30	4							26	172899 Public Service Occupations, Other
637.281 Mechanic, Air Conditioning	2		12		5				(15)	170100 Air Conditioning

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
862.381 Plumber	26	10								
899.281 Maintenance Man, Equipment	27	5								170102 Heating and Plumbing 170107 Plumbing and Pipefitting
TOTAL	53	15							38	
723.884 Appliance Repairman	1								1	170201 Appliance Repair
807.381 Auto Body Repairman	10	2								
845.781 Painter, Auto	2	2								
			12	1	4	7				170301 Body and Fender
TOTAL	12	4	12	1	4	7			(16)	
620.281 Mechanic, Auto	51	18								
620.281 Auto - A/C Mechanic	2									
			28	1	1	24				170302 Auto Mechanic
TOTAL	53	18	28	1	1	24			(19)	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
185.168 Parts Mgmt. Auto	1									
223.387 Stock Clerk, Auto	4	2								
				7	6					040300 Automotive
TOTAL	5	2		7	6				(10)	170399 Other Automotive
621.281 Mechanic, Aircraft Engine	1	2								
621.281 Mechanic, Jet Engine										
621.781 Mechanic, Aircraft Accessories										
										160101 Aeronautical Technology
TOTAL	1	2							(1)	170401 Aircraft Mechanics
141.081 Illustrator										
141.081 Art Layout Man										
										170700 Commercial Art
TOTAL										170702 Display
143.062 Photographer	2									
									2	170900 Commercial Photography

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
741.884 Painter, Spray	4									
841.781 Painter or Paperhanger	8	3								
860.381 Carpenter	16	5								
899.381 Maintenance Man Building	6	1				22				
			10							171001 Carpentry
TOTAL	34	9	10			22			(7)	
721.281 Electric Motor Repairman	4									
726.781 Electronics Assembler	35	31								
821.381 Lineman	5	1		1						
822.381 Telephone Installer	6	2								
824.281 Electrician	37	10								
828.281 Electronics Mechanic										
829.381 Cable Splicer	2									
										171002 Electricity
										171402 Electrical Lineman
			11		6					171502 Electronics
TOTAL	89	44	11	1	6				27	
382.884 Janitor	19	8								
									11	171100 Custodial Services

8509

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
625.281 Diesel Mechanic	6								6	171200 Diesel Mechanics
720.281 Radio and TV Repairman	3									
823.281 Radio Mechanic	2			2						171503 Radio and TV Repair
TOTAL	5								3	
650.582 Linotype Operator	2									
651.782 Cylinder Press Operator	3									
651.782 Offset Press Man	12									171901 Composition Makeup and Typesetting
			2							171902 Printing
TOTAL	17		2						15	
518.381 Coremaker										172301 Foundry

8510

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
600.280 Machinist, All Round	22	4								
600.381 Layout Man	2									
603.280 Grinder Operator	4	1								
609.885 Production Machine Tool Operator	7					2				
705.884 Bench Grinder			3							172302 Machinist 172303 Machine Tool Operation
TOTAL	35	5	3			2			25	
500.380 Plating (Electro Plating)										172399 Metal Working, Other
806.781 Assembler, Aircraft-Structure 807.884 Assembler, Aircraft Sub-Assembly										172304 Metal Trades, Combined
601.280 Tool and Die Makers	2									
601.280 Tool Machine Set-Up Operator	6									
TOTAL	8								8	172307 Tool and Die Making

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
615.782 Shear Press Operator	5	1								
617.380 Break Operator	3									
619.380 Metal Fabricator	5									
804.281 Sheet Metal Worker	5	1								
TOTAL	18	2							16	172305 Sheet Metal
504.782 Heat Treater										172400 Metallurgy
801.781 Structural Steel Worker	7	1								
809.381 Layout Man (Structural)									6	171099 Const. and Maint., Other

8512

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
810.782 Welding Machine Operator	4	1								
810.884 Welder, Arc	10	3								
810.884 Welder, Gas										
812.884 Welder, Combination	26	4								
816.782 Flame Cutter Machine Operator										
816.884 Flame Cutter, Hand										
			16		8	44				010300 Agricultural Mechanics (Welding)
TOTAL	40	8	16		8	44			(36)	172306 Welding
526.781 Baker	6								6	172901 Baker
313.131 Chef	2									
313.381 Cook	63	15								
			1	1		16				172902 Cook/Chef
TOTAL	65	15	1	1		16			32	
361.885 Laundry Personnel	10	2								
			1						7	171602 Laundering

8513

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
950.782 Stationary Engineer 952.782 Power Plant Operator TOTAL	2 2 4								4	173200 Stationary Energy Sources Occupation
316.884 Meat Cutter 525.381 Butcher, All Round 525.884 Boner or Skinner TOTAL	11 2 1 14								14	010400 Agriculture Products 172903 Butcher (Meat Cutter)
780.381 Furniture Upholsterer	2								2	173500 Upholstery
660.280 Cabinet Maker 669.380 Mill Man 763.381 Furniture Finisher	2				4				(2)	173601 Cabinet Making

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

South Central No. 4

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
844.884 Cement Mason	3									
861.381 Brick Layer	9	9								
TOTAL	12	9							3	171004 Masonry
515.782 Grinding Mill Operator										
859.883 Heavy Equipment Operator (Operating Engineer)	30	5							25	171003 Heavy Equipment Operator
750.281 Tire Tech.	*									
750.384 Greentire Inspector	*									
750.387 Tire Classifier	*									
750.884 Tire Builder	*									179800 Tire Manufacturing
572.782 Batch and Furnace Man										
575.782 Bottle Machine Operator (Glass Mgr.)										
706.884 Assembler, Metal Products	3								3	179900 Trade and Industrial Occupation Other

*See Statewide Totals

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman	2									
**400. Farm Mgmt.	65									
*404.88 Pruner/Picker										
*412. Poultry Worker	12	5								
**421.883 Farm Hand, Gen.	8	20								
466.887 Livestock Caretaker	1	1								
*551.885 Seed Cleaner										
			82		1					010100 Agricultural Production 160201 Ranch Operation
TOTAL	88	26	82		1				(21)	
162.158 Buyer (Wholesale Retail)	9	1								
*299.478 Deliveryman	11	1								
*520.885 Feed/Fertilizer Mixer		2								
*582.887 Applicator										
										010200 Agricultural Supplies and Services
TOTAL	20	4							16	
*919.887 Yardman	1	2								
*461.885 Ginner, Worker										
*529.687 Produce Sorter										
									(1)	010400 Agricultural Products

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Farm Manpower Projections

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*409.883 Elevator Op.	2	2								
*521.782 Mill Operator										
*624.281 Agric. Mechanic	23									
638.281 Maint. Mech. (Millwright)	2									
			35							101300 Agricultural Mechanic 173100 Small Engine Repair
TOTAL	27	2	35						(10)	
*142.081 Floral Design	4	1								
*406.168 Greenhouse Man	2									
*406.168 Nurseryman										
407.884 Groundskeeper	4	1								
TOTAL	10	2							8	010500 Ornamental Horticulture
*451.181 Gamekeeper			1							010600 Agriculture Resources
			3							010700 Forestry
TOTAL			4						(4)	
169.188 Underwriter										
250.258 Salesman, Insurance	2									
166.168 Special Agent	1									
241.168 Claim Adjuster	1									
TOTAL	4								4	041300 Insurance

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
191.287 Appraiser, Real Estate										041700 Real Estate
260. thru 289. Sales Occupations (Goods)	38	11								
290.478 Sales Clerk	72	22								
292.358 Salesman, Driver	10	3								
915.867 Service Station Attendant	9	3								
										010200 Agricultural Supplies and Services
										010400 Agriculture Products
			2							040200 Apparel and Accessories
			2							040300 Automotive
			3							040600 Food Distribution
			4							040800 General Merchandise
			1							040900 Hdw., Bldg. Mat., Farm and Garden Supplies
										041000 Home Furnishings
										041200 Industrial Marketing
			1							041400 International Trade
			2							041600 Petroleum
			8		3					042000 Retail Trade
			1							043100 Wholesale Trade
										170399 Other Automotive
TOTAL	129	39	23		3				64	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
189.168 Management Trainee	18	4							14	049901 Mid Management
242.368 Hotel Clerk	1								1	041100 Hotel and Lodging
252.358 Sales, Service	12	1								
			1							040100 Advertising Services
			1							040400 Finance and Credit
TOTAL	12	1	2						9	041900 Transportation
132.088 Copywriter 132.288 Copy Reader 165.068 Public Relations	2								2	040100 Advertising Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	1	1								
902.883 Dump Truck Driver	2		2							
904.883 Tractor Trailer Truck Driver	8	2								
905.883 Truck Driver, Heavy	34	13	10							
906.883 Truck Driver, Light	59	23	2							
913.463 Bus Driver	1									
922.883 Forklift Operator	12	4								
929.887 Material Handler	29	7								
TOTAL	146	50	14						82	041900 Transportation 179901 Truck Driver
321.138 Housekeeping Occupations	20	6							14	090205 Institutional and Home Mgmt. and Supporting Services

8520

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	4									
311.878 Waiter/Waitress	85	28								
318.887 Dishwasher	12	7								
319.138 Food Service Supervisor	4									
			5							040700 Food Services
										090203 Food Management Prod. and Services
			3		1					172900 Other Quantity Food Occupations
										172904 Waiter/Waitress
TOTAL	105	35	8		1				61	
355.878 Pyschiatric Aide										070304 Psychiatric Aid
078.281 Medical Technologist										
078.381 Medical Laboratory Assistant	2									
078.381 Medical Laboratory Tech.			1						1	070203 Medical Laboratory Technician

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
075.378 Nurse, Registered	25	2		15					8	070301 Nurse, Associate Degree
079.378 Nurse, Licensed Practical	54	3		19					32	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	95	61	10		4					070303 Nurse Assistance (Aid)
			13		18					
TOTAL	95	61	23		22				(11)	
079.378 Surgical Technician	2								2	070305 Surgical Technician
079.128 Occupational Therapist	1									
079.128 Recreation Therapist	2									
079.368 Occupational Therapist Aide										
355.878 Physical Therapist Aide	1									070400 Rehabilitation
										070910 Orthopedic Assisting
TOTAL	4								4	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
078.368 E.E.G. Tech.										070901 E.E.G. Technician
078.368 E.K.G. Tech.										070902 E.K.G. Technician
078.368 Radiologic Tech.	2								2	070504 Radiologic Tech. (X-ray)
079.368 Inhalation Therapist										070903 Inhalation Therapy Technician
223.887 Central Supply Worker										070905 Central Supply Tech.
249.388 Medical Record Clerk	3								3	079901 Medical Record Clerk

8523

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
219.388 Ward Clerk	2								2	079902 Ward Clerk
100.388 Medical Record Librarian	1	1								070210 Medical Record Technician
359.878 Nursery School Attendant	1									
359.878 Teacher Aide	6									090201 Care and Guidance of Children
TOTAL	7								7	
781.884 Cutter, Hand or Machine	4									
785.381 Seamstress/Tailor	2									
786. 787. to Sewing Machine Operator	327	95								090202 Clothing, Mgmt., Prod., and Services
					4					
TOTAL	333	95			4				234	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 1

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
160.188 Accountant	23	2								
160.288 Cost Estimator	1									
168.288 Claims Examiner										
186.168 Bank Cashier	3									
209.388 Statement Clerk	2									
210.388 Bookkeeper	77	11								
211.368 Cashier	27	5								
212.368 Teller	31	2								
215.388 Bookkeeping Machine Operator	14	5								
215.488 Payroll Clerk	5									
217.388 Transit Clerk										
219.488 Accounting Clerk	12	5								
249.368 Claims Clerk	1									
249.368 New Account Clerk	2									
249.368 Credit Clerk										
										140100 Accounting and Computing
TOTAL	198	30							168	
162.158 Purchasing Agent	1									
162.288 Title Clerk										
										140800 Supervisor, Adm. Occupation, Other
									1	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
209.388 Clerk-Typist	37	16								
219.388 General Office Clerk	96	37	21							
219.388 Sorting Clerk	2									
219.388 Time Keeper										
237.368 Admitting Clerk	1									
249.388 Loan Closer	1									
										140300 Filing and Office Machines
			5		5					140900 Typing and Related Occupations
TOTAL	137	53	26		5				53	
232.368 Post Office Clerk	10	2								
233.388 Mail Carrier	15	3								
										140403 Mail and Postal Clerks
TOTAL	25	5							20	
235.862 Telephone Operator	12	3								
239.588 Meter Reader	3	2								
										140400 Information Communications Occupations
										140401 Communication Systems Clerk and Operator
TOTAL	15	5							10	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
205.368 Personnel Clerk	2	1							1	140600 Personnel, Training and Related
201.368 Secretary	132	27								
202.388 Stenographer	21	10			1					
			26		6					140700 Secretary or Stenographer
										140703 Medical Secretary
TOTAL	153	37	26		7				83	
213.382 Card-Tape Converter Operator					1					
213.582 Keypunch Operator	6	4								
213.782 Tab Machine Operator	2									
			2		3					140200 Business Data Processing
TOTAL	8	4	2		4				(2)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural										
003.281 Draftsman, Electrical	1									
003.281 Draftsman, Electronic										
005.281 Draftsman, Civil	5	1								
007.181 Tool Designer, Die										
007.281 Draftsman, Mechanical	4	2								
010.281 Draftsman, Geological										
017.281 Draftsman, Map										
										160103 Architectural Technology
										160198 Drafting and Design
			11		3					171300 Drafting
TOTAL	10	3	11		3				(7)	
022.081 Chemist	2	1								
029.281 Tester, Laboratory	7									
										160105 Chemical Technology
TOTAL	9	1							8	
005.181 Civil Engineering Tech.	1									
018.188 Surveyor										
										160106 Civil and Highway Technology - Const.
									1	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
003.181 Technician, Electronics 003.181 Technician, Electrical	7	4							3	160108 Electronics Technology 160109 Electro-Mechanical Technology
012.288 Technician, Industrial 019.281 Technician, Quality Control	7								7	160111 Industrial Technology
710.281 Instrument Man	4								4	160112 Instrumentation Technology 172100 Instrument Maintenance and Repair
007.181 Technician, Mechanical 710.281 Electro-Mechanical Tech.										160109 Electro-Mechanical Technology 160113 Mechanical Technology

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
542.280 Stillman	9									
549.280 Pumpman	5									160116 Petroleum Tech.
TOTAL	14								14	
020.188 Programmer, Scientific	1								1	160117 Scientific Data Processing
139.288 Writer, Technical Publications	1								1	160197 Technical Writing
012.168 System Analysis	4									
020.188 Programmer, Business	6	2								
213.382 Digital Computer Operator	1									
219.388 Programmer, Detail	1									160401 Computer Science
TOTAL	12	2							10	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
168.168 Building Inspector 373. Fireman	5	1							4	160602 Fire and Safety Technology 172801 Fireman Training
375. Policeman or Detective 377. Sheriff or Baliff TOTAL	5 2 7	2 2							5	160605 Police Science Tech. 172802 Law Enforcement Training
195.108 Social Worker 195.228 Recreation Leader TOTAL	19 3 22	1 1							21	172899 Public Service Occupations, Other
637.281 Mechanic, Air Conditioning	2			1					1	170100 Air Conditioning

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
862.381 Plumber	14	7								
899.281 Maintenance Man, Equipment	20	1								170102 Heating and Plumbing
			2		7					170107 Plumbing and Pipefitting
TOTAL	34	8							17	
723.884 Appliance Repairman	1								1	170201 Appliance Repair
807.381 Auto Body Repairman	12	4								
845.781 Painter, Auto	6	2								
			1	2		3				170301 Body and Fender
TOTAL	18	6	1	2		3			6	
620.281 Mechanic, Auto	49	15								
620.281 Auto - A/C Mechanic	2									
			21	3	5					170302 Auto Mechanic
TOTAL	51	15	21	3	5				7	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
185.168 Parts Mgmt. Auto	4	1								
223.387 Stock Clerk, Auto	6	4								
			4	3	1					040300 Automotive
TOTAL	10	5	4	3	1				(3)	170399 Other Automotive
621.281 Mechanic, Aircraft Engine		1								
621.281 Mechanic, Jet Engine										
621.781 Mechanic, Aircraft Accessories		1								
			6							160101 Aeronautical Technology
TOTAL		2	6						(8)	170401 Aircraft Mechanics
141.081 Illustrator										
141.081 Art Layout Man	1									
									1	170700 Commercial Art 170702 Display
143.062 Photographer										170900 Commercial Photography

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
741.884 Painter, Spray	6	1								
841.781 Painter or Paperhanger	6	2								
860.381 Carpenter	19	7								
899.381 Maintenance Man Building	14	5								
			24							171001 Carpentry
TOTAL	45	15	24						6	
721.281 Electric Motor Repairman										
726.781 Electronics Assembler	3									
821.381 Lineman	2			1						
822.381 Telephone Installer	5									
824.281 Electrician	33	9								
828.281 Electronics Mechanic										
829.381 Cable Splicer	1									
										171002 Electricity
										171402 Electrical Lineman
				2						171502 Electronics
TOTAL	44	9		3					32	
382.884 Janitor	35	11								
					3					171100 Custodial Services
									21	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
625.281 Diesel Mechanic	3		4						(1)	171200 Diesel Mechanics
720.281 Radio and TV Repairman	7	1								
823.281 Radio Mechanic	4		3	1						171503 Radio and TV Repair
TOTAL	11	1	3	1					6	
650.582 Linotype Operator	1									
651.782 Cylinder Press Operator	4									
651.782 Offset Press Man	9									171901 Composition Makeup and Typesetting
			6		1					171902 Printing
TOTAL	14		6		1				7	
518.381 Coremaker	8	2							6	172301 Foundry

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
600.280 Machinist, All Round	10	2								
600.381 Layout Man	1									
603.280 Grinder Operator										
609.885 Production Machine Tool Operator	16	2				3				
705.884 Bench Grinder	5	1								
			2	2						172302 Machinist 172303 Machine Tool Operation
TOTAL	32	5	2	2		3			20	
500.380 Plating (Electro Plating)	4								4	172399 Metal Working, Other
806.781 Assembler, Aircraft-Structure										
807.884 Assembler, Aircraft Sub-Assembly										172304 Metal Trades, Combined
601.280 Tool and Die Makers	12									
601.280 Tool Machine Set-Up Operator									12	172307 Tool and Die Making

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
615.782 Shear Press Operator 617.380 Break Operator 619.380 Metal Fabricator 804.281 Sheet Metal Worker	10	4							6	172305 Sheet Metal
504.782 Heat Treater										172400 Metallurgy
801.781 Structural Steel Worker 809.381 Layout Man (Structural)	9	3							6	171099 Const. and Maint. Trade, Other

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
810.782 Welding Machine Operator	7	2								
810.884 Welder, Arc	13	4								
810.884 Welder, Gas										
812.884 Welder, Combination	33	4								
816.782 Flame Cutter Machine Operator										
816.884 Flame Cutter, Hand										
										010300 Agricultural Mechanics (Welding)
			14		9					172306 Welding
TOTAL	53	10	14		9				20	
526.781 Baker	1								1	172901 Baker
313.131 Chef 313.381 Cook	48	18							30	172902 Cook/Chef
361.885 Laundry Personnel	15	1							14	171602 Laundering

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
950.782 Stationary Engineer	2									
952.782 Power Plant Operator	3									173200 Stationary Energy Sources Occupation
TOTAL	5								5	
316.884 Meat Cutter	8	2								
525.381 Butcher, All Round										
525.884 Boner or Skinner										010400 Agriculture Products
										172903 Butcher (Meat Cutter)
									6	
780.381 Furniture Upholsterer	1			1						173500 Upholstery
									0	
660.280 Cabinet Maker	6	2								
669.380 Mill Man	5	1								
763.381 Furniture Finisher		1								173601 Cabinet Making
TOTAL	11	4							7	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

East Central No. 5

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
844.884 Cement Mason	4									
861.381 Brick Layer	12	7								171004 Masonry
TOTAL	16	7							9	
515.782 Grinding Mill Operator			18							
859.883 Heavy Equipment Operator (Operating Engineer)	6	2							(14)	171003 Heavy Equipment Operator
750.281 Tire Tech.	*									
750.384 Greentire Inspector	*									
750.387 Tire Classifier	*									
750.884 Tire Builder	*									179800 Tire Manufacturing
572.782 Batch and Furnace Man										
575.782 Bottle Machine Operator (Glass Mgr.)										
706.884 Assembler, Metal Products	9									179900 Trade and Industrial Occupation Other
									9	

*See Statewide Totals

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman	2									
**400. Farm Mgmt.	30									
*404.88 Pruner/Picker										
*412. Poultry Worker										
**421.883 Farm Hand, Gen.	10	5								
466.887 Livestock Caretaker	13	1								
*551.885 Seed Cleaner	1	1								
			21							010100 Agricultural Production
TOTAL	56	7	21						28	160201 Ranch Operation
162.158 Buyer (Wholesale Retail)	14	7								
*299.478 Deliveryman	33	21								
*520.885 Feed/Fertilizer Mixer		2								
*582.887 Applicator	1									
TOTAL	48	30							18	010200 Agricultural Supplies and Services
*919.887 Yardman	5	4								
*461.885 Ginner, Worker										
*529.687 Produce Sorter	1	3								
TOTAL	6	7							(1)	010400 Agricultural Products

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Farm Manpower Projections

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*409.883 Elevator Op.	2	4								
*521.782 Mill Operator	2									
*624.281 Agric. Mechanic	5									
638.281 Maint. Mech. (Millwright)	13	4								
			22							101300 Agricultural Mechanic
										173100 Small Engine Repair
TOTAL	22	8	22						(8)	
*142.081 Floral Design	10	4								
*406.168 Greenhouse Man	1									
*406.168 Nurseryman	17									
407.884 Groundskeeper	23	11								
			2							010500 Ornamental Horticulture
TOTAL	51	15	2						34	
*451.181 Gamekeeper										
			1							010600 Agriculture Resources
			1							010700 Forestry
TOTAL			2						(2)	
169.188 Underwriter	19	1								
250.258 Salesman, Insurance	20	3								
166.168 Special Agent	15	3								
241.168 Claim Adjuster	7	2								
										041300 Insurance
TOTAL	61	9							52	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
191.287 Appraiser, Real Estate	5	1							4	041700 Real Estate
260. thru 289. Sales Occupations (Goods)										
290.478 Sales Clerk	282	73								
292.358 Salesman, Driver	510	123								
915.867 Service Station Attendant	58	15								
	21	8								
										010200 Agricultural Supplies and Services
			10							010400 Agriculture Products
			4							040200 Apparel and Accessories
			12							040300 Automotive
			13		1					040600 Food Distribution
			1							040800 General Merchandise
										040900 Hdw., Bldg. Mat., Farm and Garden Supplies
			1							041000 Home Furnishings
			3							041200 Industrial Marketing
										041400 International Trade
			2							041600 Petroleum
			23							042000 Retail Trade
			1							043100 Wholesale Trade
										170399 Other Automotive
TOTAL	871	219	70		1				581	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
189.168 Management Trainee	59	39							20	049901 Mid Management
242.368 Hotel Clerk	14	3	1						10	041100 Hotel and Lodging
252.358 Sales, Service	94	12		7						
			2							040100 Advertising Services
			1							040400 Finance and Credit
			5							041900 Transportation
TOTAL	94	12	8	7					67	
132.088 Copywriter	2									
132.288 Copy Reader	7	1								
165.068 Public Relations	21	7								
										040100 Advertising Services
TOTAL	30	8							22	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	5	3								
902.883 Dump Truck Driver	23	5	13							
904.883 Tractor Trailer Truck Driver	123	53								
905.883 Truck Driver, Heavy	133	54	60							
906.883 Truck Driver, Light	72	34	13							
913.463 Bus Driver	24	4								
922.883 Forklift Operator	53	18								
929.887 Material Handler	216	73								
										041900 Transportation
										179901 Truck Driver
TOTAL	649	244	86						319	
321.138 Housekeeping Occupations	127	8								
										090205 Institutional and Home Mgmt. and Supporting Services
									119	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	26	3								
311.878 Waiter/Waitress	235	106								
318.887 Dishwasher	155	105								
319.138 Food Service Supervisor	5	3								
			8							040700 Food Services
			1			3				090203 Food Management Prod. and Services
			1							172900 Other Quantity Food Occupations
			2							172904 Waiter/Waitress
TOTAL	421	217	12			3			189	
355.878 Psychiatric Aide	4								4	070304 Psychiatric Aid
078.281 Medical Technologist	23	5								
078.381 Medical Laboratory Assistant	8	3								
078.381 Medical Laboratory Tech.	3									070203 Medical Laboratory Technician
TOTAL	34	8							26	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
075.378 Nurse, Registered	133	10		48					75	070301 Nurse, Associate Degree
079.378 Nurse, Licensed Practical	109	40	84						(15)	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	264	101	43		11	25			84	070303 Nurse Assistance (Aid)
079.378 Surgical Technician	10					10				070305 Surgical Technician
079.128 Occupational Therapist	2									
079.128 Recreation Therapist	5									
079.368 Occupational Therapist Aide	2									
355.878 Physical Therapist Aide	6									
TOTAL	15								15	070400 Rehabilitation 070910 Orthopedic Assisting

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
078.368 E.E.G. Tech	1	3							(2)	070901 E.E.G. Technician
078.368 E.K.G. Tech.	2								2	070902 E.K.G. Technician
078.368 Radiologic Tech.	8			23					(15)	070504 Radiologic Tech. (X-ray)
079.368 Inhalation Therapist	7								7	070903 Inhalation Therapy Technician
223.887 Central Supply Worker	3	1							2	070905 Central Supply Tech.
249.388 Medical Record Clerk	14								14	079901 Medical Record Clerk

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
219.388 Ward Clerk	17					9			8	079902 Ward Clerk
100.388 Medical Record Librarian	6			6						070210 Medical Record Technician
359.878 Nursery School Attendant	36	14								
359.878 Teacher Aide	68		5							090201 Care and Guidance of Children
TOTAL	104	14	5						85	
781.884 Cutter, Hand or Machine										
785.381 Seamstress/Tailor	30	8								
786. to 787. Sewing Machine Operator	86	15	7		26					090202 Clothing, Mgmt., Prod., and Services
TOTAL	116	23	7		26				60	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
160.188 Accountant	183	52								
160.288 Cost Estimator	17	5								
168.288 Claims Examiner	1									
186.168 Bank Cashier	10	5								
209.388 Statement Clerk	8			4						
210.388 Bookkeeper	152	48								
211.368 Cashier	161	21								
212.368 Teller	63	13								
215.388 Bookkeeping Machine Operator	50	14						65		
215.488 Payroll Clerk	61	8								
217.388 Transit Clerk	12	3								
219.488 Accounting Clerk	136	71						79		
249.368 Claims Clerk	22									
249.368 New Account Clerk	17									
249.368 Credit Clerk	8	3								
			14	10	5					140100 Accounting and Computing
TOTAL	901	243	14	14	5			144	481	
162.158 Purchasing Agent	28									
162.288 Title Clerk	7	2								
										140800 Supervisor, Adm. Occupation, Other
TOTAL	35								33	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
209.388 Clerk-Typist	302	71						18		
219.388 General Office Clerk	398	156	125		27	35		34		
219.388 Sorting Clerk	9									
219.388 Time Keeper	2									
237.368 Admitting Clerk	6									
249.388 Loan Closer	6	3								
					2					140300 Filing and Office Machines
			50							140900 Typing and Related Occupations
TOTAL	723	230	175		29	35		52	202	
232.368 Post Office Clerk	89	11								
233.388 Mail Carrier	46	4								
TOTAL	135	15							120	140403 Mail and Postal Clerks
235.862 Telephone Operator	86	35								
239.588 Meter Reader	14	1	9							
										140400 Information Communications Occupations
										140401 Communication Systems Clerk and Operator
TOTAL	100	36	9						55	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
205.368 Personnel Clerk	42	6							36	140600 Personnel, Training and Related
201.368 Secretary	527	151		5				102		
202.388 Stenographer	128	54						21		
			243	8	9					140700 Secretary or Stenographer 140703 Medical Secretary
TOTAL	655	205	243	13	9			123	62	
213.382 Card-Tape Converter Operator	2									
213.582 Keypunch Operator	87	38		18				31		
213.782 Tab Machine Operator	13	4								
			31		5			13		140200 Business Data Processing
TOTAL	102	42	31	18	5			44	(38)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural	2	5								
003.281 Draftsman, Electrical	24	2								
003.281 Draftsman, Electronic	3									
005.281 Draftsman, Civil	11	8								
007.181 Tool Designer, Die	4									
007.281 Draftsman, Mechanical	135	12								
010.281 Draftsman, Geological	23	2								
017.281 Draftsman, Map	10	12								
										160103 Architectural Technology
			13		1					160198 Drafting and Design
			30	22	16			25		171300 Drafting
TOTAL	212	41	43	22	17			25	64	
022.081 Chemist	15	3								
029.281 Tester, Laboratory	11	3								
			4							160105 Chemical Technology
TOTAL	26	6	4						16	
005.181 Civil Engineering Tech.	7									
018.188 Surveyor	14	1								
				1		45				160106 Civil and Highway Technology - Const.
TOTAL	21	1		1		45			(26)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
003.181 Technician Electronics	190		3							
003.181 Technician, Electrical	6	12	7							
			11							160108 Electronics Technology 160109 Electro-Mechanical Technology
TOTAL	196	12	21						163	
012.288 Technician, Industrial	13	3								
019.281 Technician, Quality Control	34	7								
										160111 Industrial Technology
TOTAL	47	10							37	
710.281 Instrument Man	21	4								
			4							160112 Instrumentation Technology 172100 Instrument Maintenance and Repair
									13	
007.181 Technician, Mechanical	4	4								
710.281 Electro-Mechanical Tech.	12									
					3					160109 Electro-Mechanical Technology
				2						160113 Mechanical Technology
TOTAL	16	4		2	3				7	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
542.280 Stillman	3									
549.280 Pumpman	1									
TOTAL	4								4	160116 Petroleum Tech.
020.188 Programmer, Scientific	3				1				2	160117 Scientific Data Processing
139.288 Writer, Technical Publications	9	2							7	160197 Technical Writing
012.168 System Analysis	95									
020.188 Programmer, Business	73	23								
213.382 Digital Computer Operator	70		6							
219.388 Programmer, Detail	103		5		13			13		160401 Computer Science
TOTAL	341	23	11		13			13	281	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
168.168 Building Inspector	2	1								
373. Fireman	28	10		3						160602 Fire and Safety Technology 172801 Fireman Training
TOTAL	30	11		3					16	
375. Policeman or Detective	59	16								
377. Sheriff or Baliff	1	1								160605 Police Science Tech. 172802 Law Enforcement Training
TOTAL	60	17							43	
195.108 Social Worker	13	8								
195.228 Recreation Leader	3	6								172899 Public Service Occupations, Other
TOTAL	16	14							2	
637.281 Mechanic, Air Conditioning	67	17	14	6	54				(24)	170100 Air Conditioning

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
862.381 Plumber	29	13								
899.281 Maintenance Man, Equipment	83	31								
				3	52					170102 Heating and Plumbing
TOTAL	112	44		3	52				13	170107 Plumbing and Pipefitting
723.884 Appliance Repairman	17	5						2	10	170201 Appliance Repair
807.381 Auto Body Repairman	36	15								
845.781 Painter, Auto	34	11								
			9	7	14	12				170301 Body and Fender
TOTAL	70	26	9	7	14	12			2	
620.281 Mechanic, Auto	156	37								
620.281 Auto - A/C Mechanic	20									
			66	21	16	11				170302 Auto Mechanic
TOTAL	176	37	66	21	16	11			25	
185.168 Parts Mgmt. Auto	9	4								
223.387 Stock Clerk, Auto	25	27								
			1	2	1					040300 Automotive
TOTAL	34	31	1	2	1				(1)	170399 Other Automotive

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
621.281 Mechanic, Aircraft Engine	15	57								
621.281 Mechanic, Jet Engine	14									
621.781 Mechanic, Aircraft Accessories	15	4								
				2						160101 Aeronautical Technology
			7							170401 Aircraft Mechanics
TOTAL	44	61	7	2					(26)	
141.081 Illustrator	18	5								
141.081 Art Layout Man	13									
			12	21						170700 Commercial Art
										170702 Display
TOTAL	31	5	12	21					(7)	
143.062 Photographer	32	8								
			1		1					170900 Commercial Photography
									22	
741.884 Painter, Spray	30	6								
841.781 Painter or Paperhanger	21	5								
860.381 Carpenter	155	52								
899.381 Maintenance Man Building	84	34								
			7	4	39					171001 Carpentry
TOTAL	290	97	7	4	39				143	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
721.281 Electric Motor Repairman	10	3								
726.781 Electronics Assembler	33	37								
821.381 Lineman	14	3		1						
822.381 Telephone Installer	15	4								
824.281 Electrician	104	30						48		
828.281 Electronics Mechanic	31	16						14		
829.381 Cable Splicer	13	4								
			22		45					171002 Electricity
										171402 Electrical Lineman
TOTAL	220	97	22	1	45			62	(7)	171502 Electronics
382.884 Janitor	135	42	2						91	171100 Custodial Services
625.281 Diesel Mechanic	26	10	40	11					(35)	171200 Diesel Mechanics
720.281 Radio and TV Repairman	22	5								
823.281 Radio Mechanic	7	3								
			4							
TOTAL	29	8	4						17	171503 Radio and TV Repair

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
650.582 Linotype Operator	18	3								
651.782 Cylinder Press Operator	16	4								
651.782 Offset Press Man	20									
										171901 Composition Makeup and Typesetting
			27	4	6					171902 Printing
TOTAL	54	7	27	4	6				10	
518.381 Coremaker	3	1								
									2	172301 Foundry
600.280 Machinist, All Round	142	37								
600.381 Layout Man	15	3								
603.280 Grinder Operator	6	2								
609.885 Production Machine Tool Operator	123	38								
705.884 Bench Grinder	12	3								
			39	14	7	6				172302 Machinist
										172303 Machine Tool Operation
TOTAL	298	83	39	14	7	6			149	
500.380 Plating (Electro Plating)	9	5								
									4	172399 Metal Working, Other

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
806.781 Assembler, Aircraft-Structure	22	12								
807.884 Assembler, Aircraft Sub-Assembly	21	11								
TOTAL	43	23							20	172304 Metal Trades, Combined
601.280 Tool and Die Makers	14	8								
601.280 Tool Machine Set-Up Operator	8									
TOTAL	22	8							14	172307 Tool and Die Making
615.782 Shear Press Operator	10	4								
617.380 Break Operator	11	2								
619.380 Metal Fabricator	30	5								
804.281 Sheet Metal Worker	55	15								
					14					
TOTAL	106	26			14				66	172305 Sheet Metal
504.782 Heat Treater	4	2								
									2	172400 Metallurgy

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
801.781 Structural Steel Worker	23	7								
809.381 Layout Man (Structural)	42	15								
										171099 Const. and Maint. Trade, Other
TOTAL	65	22							43	
810.782 Welding Machine Operator	29	9								
810.884 Welder, Arc	67	25								
810.884 Welder, Gas	73									
810.884 Welder, Combination	135	53						53		
816.782 Flame Cutter Machine Operator	15	8								
816.884 Flame Cutter, Hand	4									
										010300 Agricultural Mechanics (Welding)
			28		33	12				172306 Welding
TOTAL	323	95	28		33	12		53	102	
526.781 Baker	7	1		5						
										172901 Baker
									1	
313.131 Chef	13	1								
313.381 Cook	221	65								
			2	11						172902 Cook/Chef
TOTAL	234	66	2	11					155	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
361.885 Laundry Personnel	20	7							13	171602 Laundering
950.782 Stationary Engineer	16	7								
952.782 Power Plant Operator	11	3								
					25					173200 Stationary Energy Sources Occupation
TOTAL	27	10			25				(8)	
316.884 Meat Cutter	27	10								
525.381 Butcher, All Round	16	2								
525.884 Boner or Skinner	5	1								
			1							010400 Agriculture Products
TOTAL	48	13	1						34	172903 Butcher (Meat Cutter)
780.381 Furniture Upholsterer	4	1								
				7					(4)	173500 Upholstery
660.280 Cabinet Maker	23	7								
669.380 Mill Man	12									
763.381 Furniture Finisher	2	3								
			9							173601 Cabinet Making
TOTAL	37	10	9						18	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Tulsa SMSA No. 6

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
844.884 Cement Mason	12	4								
861.381 Brick Layer	39	21								
					3					171004 Masonry
TOTAL	51	25			3				23	
515.782 Grinding Mill Operator										
859.883 Heavy Equipment Operator (Operating Engineer)	71	17	102						(48)	171003 Heavy Equipment Operator
750.281 Tire Tech.	*									
750.384 Greentire Inspector	*									
750.387 Tire Classifier	*									
750.884 Tire Builder	*									179800 Tire Manufacturing
572.782 Batch and Furnace Man	2									
575.782 Bottle Machine Operator (Glass Mgr.)	3	1								
706.884 Assembler, Metal Products	220	94								179900 Trade and Industrial Occupation Other
TOTAL	225	95							130	

*See Statewide Totals

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman	10									
**400. Farm Mgmt.	125									
*404.88 Pruner/Picker										
*412. Poultry Worker										
**421.883 Farm Hand, Gen.	20	14								
466.887 Livestock Caretaker		1								
*551.885 Seed Cleaner	1									
			63							010100 Agricultural Production
										160201 Ranch Operation
TOTAL	156	15	63						78	
162.158 Buyer (Wholesale/Retail)	6									
*299.478 Deliveryman	10									
*520.885 Feed/Fertilizer Mixer	18	2								
*582.887 Applicator	1									
										010200 Agricultural Supplies and Services
TOTAL	35	2							33	
*919.887 Yardman	4	1								
*461.885 Ginner, Worker	6									
*529.687 Produce Sorter										
										010400 Agricultural Products
TOTAL	10	1							9	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Manpower Projections

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*409.883 Elevator Op.	8	12								
*521.782 Mill Operator	19									
*624.281 Agric. Mechanic	22	1								
635.281 Maint. Mech (Millwright)	1									
			40							101300 Agricultural Mechanics 173100 Small Engine Repair
TOTAL	50	13	40						(3)	
*142.081 Floral Design	13	1								
*406.168 Greenhouse Man	1									
*406.168 Nurseryman	4									
407.884 Groundskeeper	9									
										010500 Ornamental Horticulture
TOTAL	27	1							26	
*451.181 Gamekeeper	10									
										010600 Agriculture Resources 010700 Forestry
									10	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
169.188 Underwriter	1									
250.258 Salesman, Insurance	9	2								
166.168 Special Agent										
241.168 Claim Adjuster	1									
			1							041300 Insurance
TOTAL	11	2	1						8	
191.287 Appraiser, Real Estate	1								1	041700 Real Estate

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
260. thru 289. Sales Occupations (Goods)	37	15								
390.478 Sales Clerk	319	80								
292.358 Salesman, Driver	12	2								
915.867 Service Station Attendant	12	4								
										010200 Agricultural Supplies and Services
										010400 Agriculture Products
			7							040200 Apparel and Accessories
			6							040300 Automotive
			2							040600 Food Distribution
			3							040800 General Merchandise
			1							040900 Hdw., Bldg. Mat., Farm and Garden Supplies
			1							041000 Home Furnishings
										041200 Industrial Marketing
										041400 International Trade
			1							041600 Petroleum
			14							042000 Retail Trade
			1							043100 Wholesale Trade
										170399 Other Automotive
TOTAL	380	101	36						243	
189.168 Management Trainee	23	7								
			3							049901 Mid Management
									13	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
242.368 Hotel Clerk	6								6	041100 Hotel and Lodging
252.358 Sales, Service	31	3								
			2							040100 Advertising Services
			3							040400 Finance and Credit
										041900 Transportation
TOTAL	31	3	5						23	
132.088 Copywriter 132.288 Copy Reader 165.068 Public Relations	2								2	040100 Advertising Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	2									
902.883 Dump Truck Driver	5									
904.883 Tractor Trailer Truck Driver	13	4								
905.883 Truck Driver, Heavy	20	8								
906.883 Truck Driver, Light	34	14								
913.463 Bus Driver	5	1								
922.883 Forklift Operator	17	7								
929.887 Material Handler	21	10								
										041900 Transportation 179901 Truck Driver
TOTAL	117	44							73	
321.138 Housekeeping Occupations	28	1								
									27	090205 Institutional and Home Mgmt. and Supporting Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	6									
311.878 Waiter/Waitress	101	31								
318.887 Dishwasher	15	6								
319.138 Food Service Supervisor	4	2								
			13							040700 Food Services
					1					090203 Food Management Prod. and Services
										172900 Other Quantity Food Occupations
										172904 Waiter/Waitress
TOTAL	126	39	13		1				73	
355.878 Psychiatric Aide	2								2	070304 Psychiatric Aid
078.281 Medical Technologist	11									
078.381 Medical Laboratory Assistant	5									
078.381 Medical Laboratory Tech.	3									
										070203 Medical Laboratory Technician
TOTAL	19								19	
075.378 Nurse, Registered	59	3								
				15					41	070301 Nurse, Associate Degree

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
079.378 Nurse, Licensed Practical	79	7	38						34	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	176	37	17		54				68	070303 Nurse Assistance (Aid)
079.378 Surgical Technician	5								5	070305 Surgical Technician

85572

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
079.128 Occupational Therapist	1									
079.128 Recreation Therapist										
079.368 Occupational Therapist Aide	4									
355.878 Physical Therapist Aide	3									
TOTAL	8								8	070400 Rehabilitation 070910 Orthopedic Assisting
078.368 E.E.G. Tech.	2								2	070901 E.E.G. Technician
078.368 E.K.G. Tech.										070902 E.K.G. Technician
078.368 Radiologic Tech.	1			1						070504 Radiologic Tech (X-Ray)
079.368 Inhalation Therapist	2								2	070903 Inhalation Therapy Technician

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
223.887 Central Supply Worker	3								3	070905 Central Supply Tech.
249.388 Medical Record	2								2	079901 Medical Record Clerk
219.388 Ward Clerk	6								6	079902 Ward Clerk
100.388 Medical Record Librarian	1								1	070210 Medical Record Technician

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
359.878 Nursery School Attendant 359.878 Teacher Aide	2								2	090201 Care and Guidance of Children
781.884 Cutter, Hand or Machine										
785.381 Seamstress/Tailor	5									
786. to 787. Sewing Machine Operator	18	3								
			1							090202 Clothing, Mgmt., Prod., and Services
TOTAL	23	3	1						19	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
160.188 Accountant	16	5								
160.288 Cost Estimator	1									
168.288 Claims Examiner										
186.168 Bank Cashier	4									
209.388 Statement Clerk	7									
210.388 Bookkeeper	43	20								
211.368 Cashier	53	11								
212.368 Teller	14	2								
215.388 Bookkeeping Machine Operator	8	2								
215.488 Payroll Clerk	5									
217.388 Transit Clerk	2									
219.488 Accounting Clerk	27	6						18		
249.368 Claims Clerk	2									
249.368 New Account Clerk	3									
249.368 Credit Clerk	1									
			1		3					140100 Accounting and Computing
TOTAL	186	46	1		3			18	118	
162.158 Purchasing Agent	19									
162.288 Title Clerk										
									19	140800 Supervisor, Adm. Occupation, Other

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
209.388 Clerk-Typist	46	21								
219.388 General Office Clerk	71	31	16							
219.388 Sorting Clerk										
219.388 Time Keeper										
237.368 Admitting Clerk	2									
249.388 Loan Closer	1									
					10					140300 Filing and Office Machines 140900 Typing and Related Occupations
TOTAL	120	52	16		10				42	
232.368 Post Office Clerk	3									
233.388 Mail Carrier	3									
TOTAL	6								6	140403 Mail and Postal Clerks
235.862 Telephone Operator	23	3								
239.588 Meter Reader	2	1								
										140400 Information Communications Occupations 140401 Communication Systems Clerk and Operator
TOTAL	25	4							21	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
205.368 Personnel Clerk	3	2							1	140600 Personnel, Training and Related
201.368 Secretary	111	17						16		
202.388 Stenographer	16	8								
			24		4					140700 Secretary or Stenographer 140703 Medical Secretary
TOTAL	127	25	24		4			16	58	
213.382 Card-Tape Converter Operator	1									
213.582 Keypunch Operator	16	5		4				110		
213.782 Tab Machine	1	1								
			16							140200 Business Data Processing
TOTAL	18	6	16	4				110	(118)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural										
003.281 Draftsman, Electrical	1	1								
003.281 Draftsman, Electronic										
005.281 Draftsman, Civil	1									
007.181 Tool Designer, Die										
007.281 Draftsman, Mechanical	4	3								
010.281 Draftsman, Geological										
017.281 Draftsman, Map										
			5							160103 Architectural Technology
			10	6	1					160198 Drafting and Design
										171300 Drafting
TOTAL	6	4	15	6	1				(20)	
022.081 Chemist	9	3								
029.281 Tester, Laboratory	20	2								
										160105 Chemical Technology
TOTAL	29	5							24	
005.181 Civil Engineering Tech.	22									
018.188 Surveyor	7									
										160106 Civil and Highway Technology - Const.
TOTAL	29								29	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
			Public			Federal				
		OESC Registrants	Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal	Private Schools		
003.181 Technician, Electronics										
003.181 Technician, Electrical		1								
			9							160108 Electronics Technology
										160109 Electro-Mechanical Technology
			2							
TOTAL		1	11						(12)	
012.288 Technician, Industrial	2									
019.281 Technician Quality Control	8									
										160111 Industrial Technology
TOTAL	10								10	
710.281 Instrument Man	1									
										160112 Instrumentation Technology
										172100 Instrument Maintenance and Repair
									1	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
007.181 Technician, Mechanical	2	1								
710.281 Electro-Mechanical Tech.			3							160109 Electro-Mechanical Technology
			3							160113 Mechanical Technology
TOTAL	2	1	6						(5)	
542.280 Stillman	10									
549.280 Pumpman	2									
TOTAL	12								12	160116 Petroleum Tech.
020.188 Programmer, Scientific	1								1	160117 Scientific Data Processing
139.288 Writer, Technical Publications										160197 Technical Writing

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
			Public			Federal				
		OESC Registrants	Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal	Private Schools		
012.168 System Analysis										
020.188 Programmer, Business	7	1								
213.382 Digital Computer Operator	4									
219.388 Programmer, Detail	2									
			2							160401 Computer Science
TOTAL	13	1	2						10	
168.168 Building Inspector	1									
373. Fireman	13	2								
										160602 Fire and Safety Technology
										172801 Fireman Training
TOTAL	14								12	
375. Policeman or Detective	13									
377. Sheriff or Baliff	2									
										160605 Police Science Tech.
										172802 Law Enforcement Training
TOTAL	15								15	
195.108 Social Worker	4	1								
195.228 Recreation Leader	2									
										172899 Public Service Occupations, Other
TOTAL	6	1							5	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
637.281 Mechanic, Air Conditioning	6		5		3				(2)	170100 Air Conditioning
862.381 Plumber	19	4								
899.281 Maintenance Man, Equipment	34	5								
TOTAL	53	9							44	170102 Heating and Plumbing 170107 Plumbing and Pipefitting
723.884 Appliance Repairman	5								5	170201 Appliance Repair
807.381 Auto Body Repairman	8	1								
845.781 Painter, Auto	9		9							170301 Body and Fender
TOTAL	17	1	9						7	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
620.281 Mechanic, Auto	92	10								
620.281 Auto - A/C Mechanic	3									
			31	2	2					170302 Auto Mechanic
TOTAL	95	10	31	2	2				50	
185.168 Parts Mgmt. Auto	5	1								
223.387 Stock Clerk, Auto	3	1								
										040300 Automotive
			1							170399 Other Automotive
TOTAL	8	2	1						5	
621.281 Mechanic, Aircraft Engine	10	1								
621.281 Mechanic, Jet Engine	2									
621.781 Mechanic, Aircraft Accessories										
										160101 Aeronautical Technology
			5							170401 Aircraft Mechanics
TOTAL	12	1	5						6	
141.081 Illustrator	1	1								
141.081 Art Layout Man										
										170700 Commercial Art
										170702 Display

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
143.062 Photographer	3								3	170900 Commercial Photography
741.884 Painter, Spray	3									
841.781 Painter or Paperhanger	11	3								
860.381 Carpenter	65	17								
899.381 Maintenance Man Building	17	1								
			10							171001 Carpentry
TOTAL	96	21	10						65	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
721.281 Electric Motor Repairman										
726.781 Electronics Assembler										
821.381 Lineman	2			1						
822.381 Telephone Installer	4									
824.281 Electrician	42	6								
828.281 Electronics Mechanic										
829.381 Cable Splicer	1									
										171002 Electricity
										171402 Electrical Lineman
				1	5					171502 Electronics
TOTAL	49	6		2	5				36	
382.884 Janitor	35	15							20	171100 Custodial Services
625.281 Diesel Mechanic	8	2	8	2	2				(6)	171200 Diesel Mechanics

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
720.281 Radio and TV Repairman	6	1								
823.281 Radio Mechanic	2									
			3							
TOTAL	8	1	3						4	171503 Radio and TV Repair
650.582 Linotype Operator	1									
651.782 Cylinder Press Operator	3									
651.782 Offset Press Man	14									
			7	2						171901 Composition Makeup and Typesetting
TOTAL	18		7	2					9	171902 Printing
518.381 Coremaker										172301 Foundry
600.280 Machinist, All Round	9	4								
600.381 Layout Man										
603.280 Grinder Operator										
609.885 Production Machine Tool Operator	10	2								
705.884 Bench Grinder										
			4		2					172302 Machinist
TOTAL	19	6	4		2				7	172303 Machine Tool Operation

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
500.380 Plating (Electro Plating)										172399 Metal Working, Other
806.781 Assembler, Aircraft Structure 807.884 Assembler, Aircraft Sub-Assembly										172304 Metal Trades, Combined
601.280 Tool and Die Makers 601.280 Tool Machine Set-Up Operator										172307 Tool and Die Making
615.782 Shear Press Operator	4									
617.380 Break Operator	1									
619.380 Metal Fabricator	2									
804.281 Sheet Metal Worker	12	2								172305 Sheet Metal
TOTAL	19	2							17	
504.782 Heat Treater	1								1	172400 Metallurgy

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
801.781 Structural Steel Worker 809.381 Layout Man (Structural)	4	1							3	171099 Const. and Maint. Trade, Other
810.782 Welding Machine Operator	4									
810.884 Welder, Arc	2									
810.884 Welder, Gas	2									
812.884 Welder, Combination	11	2								
816.782 Flame Cutter Machine Operator	1									
816.884 Flame Cutter, Hand	2									
TOTAL	22	2	13 13		16 16				(9)	010300 Agricultural Mechanics (Welding) 172306 Welding
526.781 Baker	1								1	172901 Baker
313.131 Chef	5									
313.381 Cook	58	10								
TOTAL	63	10		1 1					52	172902 Cook/Chef

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
361.885 Laundry Personnel	8	2							6	171602 Laundering
950.782 Stationary Engineer 952.782 Power Plant Operator TOTAL	4 3 7								7	173200 Stationary Energy Sources Occupation
316.884 Meat Cutter 525.381 Butcher, All Round 525.884 Boner or Skinner	7								7	010400 Agriculture Products 172903 Butcher (Meat Cutter)
780.381 Furniture Upholsterer	1								1	173500 Upholstery
660.280 Cabinet Maker 669.380 Mill Man 763.381 Furniture Finisher TOTAL	6 6	1 2 3	 3 3		 9 9				(9)	173601 Cabinet Making

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

North Central No. 7

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
844.884 Cement Mason	3									
861.381 Brick Layer	15	4								
TOTAL	18	4							14	171004 Masonry
515.782 Grinding Mill Operator	1									
859.883 Heavy Equipment Operator (Operating Engineer)	29	8								
TOTAL	30	8							22	171003 Heavy Equipment Operator
750.281 Tire Tech.	*									
750.384 Greentire Inspector	*									
750.387 Tire Classifier	*									
750.884 Tire Builder	*									179800 Tire Manufacturing
572.782 Batch and Furnace Man										
575.782 Bottle Machine Operator (Glass Mgr.)										
706.884 Assembler, Metal Products	6	1							5	179900 Trade and Industrial Occupation Other

*See Statewide Totals

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman	7									
**400. Farm Mgmt.	30									
*404.88 Pruner/Picker	3									
*412. Poultry Worker	2									
**421.883 Farm Hand, Gen.	10	10								
466.887 Livestock Caretaker	44	10								
*551.885 Seed Cleaner										
			29							010100 Agricultural Production
TOTAL	96	20	29						47	160201 Ranch Operation
162.158 Buyer (Wholesale/Retail)	31	10								
*299.478 Deliveryman	17	20								
*520.885 Feed/Fertilizer Mixer	3	3								
*582.887 Applicator	1	1								
			1							010200 Agricultural Supplies and Services
TOTAL	52	34	1						17	
*919.887 Yardman	2	5								
*461.885 Ginner, Worker										
*529.687 Produce Sorter	3	1								
TOTAL	5	6							(1)	010400 Agricultural Products

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Farm Manpower Projections

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*409.883 Elevator Op.	4	9								
*521.782 Mill Operator	5									
*624.281 Agric. Mechanic	16									
638.281 Maint. Mech. (Millwright)	16	5								
			33							101300 Agricultural Mechanics
						44				173100 Small Engine Repair
TOTAL	41	14	33			44			(50)	
*142.081 Floral Design	9	6								
*406.168 Greenhouse Man	18									
*406.168 Nurseryman	20									
407.884 Groundskeeper	29	13								
			2							010500 Ornamental Horticulture
TOTAL	76	19	2						55	
*451.181 Gamekeeper	4									
			1							010600 Agriculture Resources
			1							010700 Forestry
TOTAL	4		2						2	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
169.188 Underwriter	12	3								
250.258 Salesman, Insurance	69	17								
166.168 Special Agent	42									
241.168 Claim Adjuster	25	6								
			1		1					041300 Insurance
TOTAL	148	26	1		1				120	
191.287 Appraiser, Real Estate	13								13	041700 Real Estate

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
260. thru 289. Sales Occupations (Goods)	344	110								
290.478 Sales Clerk	736	230					18			
292.358 Salesman, Driver	63	30								
915.867 Service Station Attendant	33	11								
										010200 Agricultural Supplies and Services
										010400 Agriculture Products
			17							040200 Apparel and Accessories
			14							040300 Automotive
			15							040600 Food Distribution
			20							040800 General Merchandise
			9							040900 Hdw., Bldg. Mat., Farm and Garden Supplies
			2							041000 Home Furnishings
										041200 Industrial Marketing
										041400 International Trade
			1							041600 Petroleum
			30		9					042000 Retail Trade
			4							043100 Wholesale Trade
										170399 Other Automotive
TOTAL	1176	381	112		9		18		656	
189.168 Management Trainee	66	45							21	049901 Mid Management

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
242.368 Hotel Clerk	19	4	3		27				(15)	041100 Hotel and Lodging
252.358 Sales, Services	103	21	6	4 3						040100 Advertising Services
			2							040400 Finance and Credit
			2							041900 Transportation
TOTAL	103	21	10	7					65	
132.088 Copywriter	4									
132.288 Copy Reader	15	1								
165.068 Public Relations	34	13								040100 Advertising Services
TOTAL	53	14							39	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	9	5								
902.883 Dump Truck Driver	33	4								
904.883 Tractor Trailer Truck Driver	159	73								
905.883 Truck Driver, Heavy	150	61								
906.883 Truck Driver, Light	87	27								
913.463 Bus Driver	36	6								
922.883 Forklift Operator	75	23								
929.887 Material Handler	329	94								
TOTAL	878	293							585	041900 Transportation 179901 Truck Driver
321.138 Housekeeping Occupations	123	8							115	090205 Institutional and Home Mgmt. and Supporting Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	36	2								
311.878 Waiter/Waitress	259	137								
312.887 Dishwasher	193	137								
319.138 Food Service Supervisor	15	7								
			14		4					040700 Food Services
			5		68					090203 Food Management Prod. and Services
										172900 Other Quantity Food Occupations
			5							172904 Waiter/Waitress
TOTAL	503	283	24		72				124	
355.878 Psychiatric Aide	56								56	070304 Psychiatric Aid

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
078.281 Medical Technologist	30			7				11		
078.381 Medical Laboratory Assistant	6	1		10						
078.381 Medical Laboratory Tech.	7		1	8						070203 Medical Laboratory Tech.
TOTAL	43	1	1	25				11	5	
075.378 Nurse, Registered	209	27	22	77					83	070301 Nurse, Associate Degree
079.378 Nurse, Licensed Practical	160	64	138						(42)	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	318	154	90		84	29			(39)	070303 Nurse Assistance (Aid)
079.378 Surgical Technician	14								14	070305 Surgical Technician

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
079.128 Occupational Therapist	3									
079.128 Recreation Therapist	4									
079.368 Occupational Therapist Aide	8									
355.878 Physical Therapist Aide	4		1							070400 Rehabilitation 070910 Orthopedic Assisting
TOTAL	19		1						18	
078.368 E.E.G. Tech.	1	2							(1)	070901 E.E.G. Technician
078.368 E.K.G. Tech.	5								5	070902 E.K.G. Technician
078.368 Radiologic Tech.	18		1	34				22	(39)	070504 Radiologic Tech. (X-Ray)
079.368 Inhalation Therapist	24		2	11		9			2	070903 Inhalation Therapy Tech.

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
223.887 Central Supply Worker	8	1							7	070905 Central Supply Tech.
249.388 Medical Record Clerk	16		11						5	079901 Medical Record Clerk
219.388 Ward Clerk	49		2						47	079902 Ward Clerk
100.388 Medical Record Librarian	10							5	5	070210 Medical Record Technician

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
359.878 Nursery School Attendant	45	23								
359.878 Teacher Aide	2									
			6			13				090201 Care and Guidance of Children
TOTAL	47	23	6			13			5	
781.884 Cutter, Hand or Machine	2									
785.381 Seamstress/Tailor	50	12								
786. to 787. Sewing Machine Operator	239	61								
			1							090202 Clothing, Mgmt., Prod., and Services
TOTAL	291	73	1						217	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
160.188 Accountant	203	54								
160.288 Cost Estimator	18	3								
168.288 Claims Examiner	10									
186.168 Bank Cashier	12	6								
209.388 Statement Clerk	14			5						
210.388 Bookkeeper	216	71								
211.368 Cashier	394	36								
212.368 Teller	80	13								
215.388 Bookkeeping Machine Operator	102	32						67		
215.488 Payroll Clerk	83	21								
217.388 Transit Clerk	18	4								
219.488 Accounting Clerk	189	76						57		
249.368 Claims Clerk	45									
249.368 New Account Clerk	34									
249.368 Credit Clerk	9	4								
			35	3	41					
TOTAL	1,427	320	35	8	41			124	899	140100 Accounting and Computing
162.158 Purchasing Agent	32									
162.288 Title Clerk	4									
TOTAL	36								36	140800 Supervisor, Adm. Occupation, Other

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
209.388 Clerk-Typist	555	125					19	6		
219.388 General Office Clerk	604	215	185		196	58				
219.388 Sorting Clerk	3									
219.388 Time Keeper	7									
237.368 Admitting Clerk	23									
249.388 Loan Closer	14	2								
			29	2						140300 Filing and Office Machines
										140900 Typing and Related Occupations
TOTAL	1,206	342	214	2	196	58	19	6	369	
232.368 Post Office Clerk	139	6								
233.388 Mail Carrier	50	14								
										140403 Mail and Postal Clerks
TOTAL	189	20							169	
235.862 Telephone Operator	126	47								
239.588 Meter Reader	23	3								
										140400 Information Communications Occupations
										140401 Communication Systems Clerk and Operator
			1							
	149	50	1						98	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
205.368 Personnel Clerk	80	13	6						61	140600 Personnel, Training and Related
201.368 Secretary	780	160						53		
202.388 Stenographer	275	40	144	5	53		13	36		140700 Secretary or Stenographer 140703 Medical Secretary
TOTAL	1,055	200	144	5	53		13	89	551	
213.382 Card-Tape Converter Operator	9									
213.582 Keypunch Operator	101	30		14				50		
213.782 Tab Machine Operator	9	5	27		23					140200 Business Data Processing
TOTAL	119	35	27	14	23			50	(30)	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural	45	8								
003.281 Draftsman, Electrical	6	1								
003.281 Draftsman, Electronic	1									
005.281 Draftsman, Civil	5	4								
007.181 Tool Designer, Die	8									
007.281 Draftsman, Mechanical	58	10								
010.281 Draftsman, Geological	7	4								
017.281 Draftsman, Map	1	16								
			5							160103 Architectural Technology
			30							160198 Drafting and Design
			7	7	6			24		171300 Drafting
TOTAL	131	43	42	7	6			24	9	
022.081 Chemist	11	4								
029.281 Tester, Laboratory	9	6								
			3		7					160105 Chemical Technology
TOTAL	20	10	3		7					

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
005.181 Civil Engineering, Tech.	37									
018.188 Surveyor	16	6								
			3	2	5					160106 Civil and Highway Technology - Const.
TOTAL	53	6	3	2	5				37	
003.181 Technician, Electronics	108		11					29		
003.181 Technician, Electrical	8	21	2							
			56							160108 Electronics Technology 160109 Electro-Mechanical Technology
TOTAL	116	21	69					29	(3)	
012.288 Technician, Industrial	15	4								
019.281 Technician Quality Control	86	5								
			1		1					160111 Industrial Technology
TOTAL	101	9	1		1				90	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
710.281 Instrument Man	12									160112 Instrumentation Technology
			1	1	1					172100 Instrument Maintenance and Repair
			1							
TOTAL	12		2	1	1				8	
007.181 Technician, Mechanical	2	5								
710.281 Electro-Mechanical Tech.	12									160109 Electro-Mechanical Technology
			4							
				2						160113 Mechanical Technology
TOTAL	14	5	4	2					3	
542.280 Stillman										
549.280 Pumpman										160116 Petroleum Tech.
TOTAL										
020.188 Programmer, Scientific	6									160117 Scientific Data Processing
			9						(3)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
139.288 Writer, Technical Publications	20	4	1		2				13	160197 Technical Writing
012.168 System Analysis	38									
020.188 Programmer, Business	72	19						89		
213.382 Digital Computer Operator	61							9		
219.388 Programmer, Detail	38		40		26					160401 Computer Science
TOTAL	209	19	40		26			98	26	
168.168 Building Inspector	2	3								
373. Fireman	40	14								
				3						160602 Fire and Safety Technology 172801 Fireman Training
TOTAL	42	17		3					22	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
375. Policeman or Detective	74	25								
377. Sheriff or Baliff	6	3								
			1		18					160605 Police Science Tech.
										172802 Law Enforcement Training
TOTAL	80	28	1		18				33	
195.108 Social Worker	46	14								
195.228 Recreation Leader	10	10								
										172899 Public Service Occupations, Other
TOTAL	56	24							32	
637.281 Mechanic, Air Conditioning	46	14	10	2	46			80	(106)	170100 Air Conditioning
862.381 Plumber	49	21								
899.281 Maintenance Man, Equipment	80	33								
			2	4	28					170102 Heating and Plumbing
										170107 Plumbing and Pipefitting
TOTAL	129	54	2	4	28				41	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
723.884 Appliance Repairman	24	7	5					3	9	170201 Appliance Repair
807.381 Auto Body Repairman	56	23								
845.781 Painter, Auto	39	19	23	6	10			29		170301 Body and Fender
TOTAL	95	42	23	6	10			29	(15)	
620.281 Mechanic, Auto	205	49								
620.281 Auto - A/C Mechanic	27		125	10	26	64	23	83		170302 Auto Mechanic
TOTAL	232	49	125	10	26	64	23	83	(148)	
185.168 Parts Mgmt. Auto	14	8								
223.387 Stock Clerk, Auto	90	36								040300 Automotive
				8						170399 Other Automotive
TOTAL	104	44		8					52	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
621.281 Mechanic, Aircraft Engine	25	32								
621.281 Mechanic, Jet Engine	2									
621.781 Mechanic, Aircraft Accessories	3									
			7	3	4					160101 Aeronautical Technology
			9							170401 Aircraft Mechanics
TOTAL	30	32	16	3	4				(25)	
141.081 Illustrator	29	7								
141.081 Art Layout Man	15									
			6	13	6					170700 Commercial Art
			2							170702 Display
TOTAL	44	7	8	13	6				10	
143.062 Photographer	30	5								
										170900 Commercial Photography
TOTAL									25	
741.884 Painter, Spray	48	12								
841.781 Painter or Paperhanger	41	12								
860.381 Carpenter	243	87								
899.381 Maintenance Man Building	65	23								
			22	2	31					171001 Carpentry
TOTAL	397	134	22	2	31				208	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
721.281 Electric Motor Repairman	22	5								
726.781 Electronics Assembler	309	275					32			
821.381 Lineman	23	5		1						
322.381 Telephone Installer	15	6								
824.281 Electrician	154	41	7							
828.281 Electronics Mechanic	68	37								
829.381 Cable Splicer	23	5								
			16	1	77					171002 Electricity 171402 Electrical Lineman 171502 Electronics
TOTAL	614	374	23	2	77		32		106	
382.884 Janitor	139	68								
			2						69	171100 Custodial Services
625.281 Diesel Mechanic	33	12								
			14	21					(14)	171200 Diesel Mechanics
720.281 Radio and TV Repairman	20	3								
823.281 Radio Mechanic	11	4								
			5		2			4		171503 Radio and TV Repair
TOTAL	31	7	5		2			4	13	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
650.582 Linotype Operator	10									
651.782 Cylinder Press Operator	11	3								
651.782 Offset Press Man	37									
			2							171901 Composition Makeup and Typesetting
			6	5	2					171902 Printing
TOTAL	58	3	8	5	2				40	
518.381 Coremaker	1									
									1	172301 Foundry
600.280 Machinist, All Round	85	41						16		
600.381 Layout Man	3	1								
603.280 Grinder Operator	10	3								
609.885 Production Machine Tool Operator	69	14				27				
705.884 Bench Grinder	13									
			17	9	4		6			172302 Machinist
										172303 Machine Tool Operation
TOTAL	180	59	17	9	4	27	6	16	42	
500.380 Plating (Electro Plating)	6	2								
									4	172399 Metal Working, Other

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
806.781 Assembler, Aircraft-Structure	33	15								
807.884 Assembler, Aircraft Sub-Assembly	32	14								
TOTAL	65	29							36	172304 Metal Trades, Combined
601.280 Tool and Die Makers	9	5								
601.280 Tool Machine Set-Up Operator	5									
TOTAL	14	5							9	172307 Tool and Die Making
615.782 Shear Press Operator	15	3								
617.380 Break Operator	10	1								
619.380 Metal Fabricator	23	7								
804.281 Sheet Metal Worker	109	37								
					15					
TOTAL	157	48			15				94	172305 Sheet Metal
504.782 Heat Treater	2	1								
			1							172400 Metallurgy

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
801.781 Structural Steel Worker	25	10								
809.381 Layout Man (Structural)	38	12								171099 Const. and Maint. Trades, Other
TOTAL	63	22							41	
810.782 Welding Machine Operator	18	5								
810.884 Welder, Arc	27	13								
810.884 Welder, Gas	1									
812.884 Welder, Combination	51	7				32	14	40		
816.782 Flame Cutter Machine Operator	5	2								
816.884 Flame Cutter, Hand	2									010300 Agricultural Mechanics (Welding)
			38		40					172306 Welding
TOTAL	104	27	38		40	32	14	40	(87)	
526.781 Baker	15	6								
				4					5	172902 Baker
313.131 Chef	12	2								
313.381 Cook	425	115								
			2	10						172902 Cook/Chef
TOTAL	437	117	2	10					308	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
361.885 Laundry Personnel	11	7							4	171602 Laundering
950.782 Stationary Engineer 952.782 Power Plant Operator TOTAL	13 15 28	5 5 10							18	173200 Stationary Energy Sources Occupation
316.884 Meat Cutter 525.381 Butcher, All Round 525.884 Boner or Skinner TOTAL	79 30 9 118	17 6 2 25						43 43	50	010400 Agriculture Products 172903 Butcher (Meat Cutter)
780.381 Furniture Upholsterer	10	3	9		2				(4)	173500 Upholstery

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
660.280 Cabinet Maker	15	6								
669.380 Mill Man	24	6								
763.381 Furniture Finisher	24	8								
			4							173601 Cabinet Making
TOTAL	63	20	4						39	
844.884 Cement Mason	17	6								
861.381 Brick Layer	64	25								
					2					171004 Masonry
TOTAL	81	31			2				48	
515.782 Grinding Mill Operator	12									
859.883 Heavy Equipment Operator (Operating Engineer)	44	18								
										171003 Heavy Equipment Operator
TOTAL	56	18							38	
750.281 Tire Tech.	*									
750.384 Greentire Inspector	*									
750.387 Tire Classifier	*									
750.884 Tire Builder	*									
										179800 Tire Manufacturing

*See Statewide Totals

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Oklahoma City SMSA No. 8

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
572.782 Batch and Furnace Man 575.782 Bottle Machine Operator (Glass Mgr.) 706.884 Assembler, Metal Products	102	50							52	179900 Trade and Industrial Occupation Other

8619

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman	6									
**400. Farm Mgmt.	85									
*404.88 Pruner/Picker	57	3								
*412. Poultry Worker										
**421.883 Farm Hand, Gen.	25	25								
466.887 Livestock Caretaker		1								
*551.885 Seed Cleaner	6									
			89		1					010100 Agricultural Production 160201 Ranch Operation
TOTAL	179	29	89		1				60	
162.158 Buyer (Wholesale Retail)	27									
*299.478 Deliveryman	16	5								
*520.885 Feed/Fertilizer Mixer	6	1								
*582.887 Applicator	1									
										010200 Agricultural Supplies and Services
TOTAL	50	6							44	
*919.887 Yardman	3	3								
*461.885 Ginner, Worker	3	4								
*529.687 Produce Sorter	4									
			1							010400 Agricultural Products
TOTAL	10	7	1						2	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Farm Manpower Projections

0298

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*409.883 Elevator Op.	4	4								
*521.782 Mill Operator	5									
*624.281 Agric. Mechanic	39									
638.281 Maint. Mech. (Millwright)			39							101300 Agricultural Mechanic
TOTAL	48	4	39						5	173100 Small Engine Repiar
*142.081 Floral Design	9	1								
*406.168 Greenhouse Man	2									
*406.168 Nurseryman										
407.884 Groundskeeper	7	2								
			1							
TOTAL	18	3	1						14	010500 Ornamental Horticulture
*451.181 Gamekeeper			2							010600 Agriculture Resources
			1							010700 Forestry
TOTAL			3						(3)	
169.188 Underwriter	3									
250.258 Salesman, Insurance	15	2								
166.168 Special Agent										
241.168 Claim Adjuster	2									
TOTAL	20	2							18	041300 Insurance

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
191.287 Appraiser, Real Estate	2								2	041700 Real Estate
260. thru 289. Sales Occupations (Goods)	44	9								
290.478 Sales Clerk	374	95								
292.358 Salesman, Driver	26	9								
915.867 Service Station Attendant	15	5								
										010200 Agricultural Supplies and Services
										010400 Agriculture Products
			6							040200 Apparel and Accessories
			2							040300 Automotive
			5							040600 Food Distribution
			6							040800 General Merchandise
			1							040900 Hdw., Bldg. Mat., Farm and Garden Supplies
										041000 Home Furnishings
										041200 Industrial Marketing
			2							041400 International Trade
			3							041600 Petroleum
			12							042000 Retail Trade
										043100 Wholesale Trade
										170399 Other Automotive
TOTAL	459	118	37						304	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
189.168 Management Trainee	5	6							(1)	049901 Mid Management
242.368 Hotel Clerk	2		1						1	041100 Hotel and Lodging
252.358 Sales, Service	14	2								
			2							040100 Advertising Services
			1							040400 Finance and Credit
			1							041900 Transportation
TOTAL	14	2	4						8	
132.088 Copywriter	1									
132.288 Copy Reader	1									
165.068 Public Relations	8									
TOTAL	10								10	040100 Advertising Services

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	3									
902.883 Dump Truck Driver	8	3								
904.883 Tractor Trailer Truck Driver	18	5								
905.883 Truck Driver, Heavy	38	14								
906.883 Truck Driver, Light	37	13								
913.463 Bus Driver	13	2								
922.883 Forklift Operator	26	7								
929.887 Material Handler	19	6								
TOTAL	162	50							112	041900 Transportation 179901 Truck Driver
321.138 Housekeeping Occupations	28	1							27	090205 Institutional and Home Mgmt. and Supporting Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	4									
311.878 Waiter/Waitress	94	33								
318.887 Dishwasher	20	15								
319.138 Food Service Supervisor	6	3								
			7							040700 Food Services
			2		3					090203 Food Management Prod. and Services
										172900 Other Quantity Food Occupations
			3							172904 Waiter/Waitress
TOTAL	124	51	12		3				58	
355.878 Psychiatric Aide										070304 Psychiatric Aid
078.281 Medical Technologist	1									
078.381 Medical Laboratory Assistant	1	1								
078.381 Medical Laboratory Tech.	1									070203 Medical Laboratory Technician
TOTAL	3	1							2	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
075.378 Nurse, Registered	34	8	12						14	070301 Nurse, Associate Degree
079.378 Nurse, Licensed, Practical	82	12	37						33	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	115	41	4		5					
			18		48					070303 Nurse Asisstance (Aid)
TOTAL	115	41	22		53				(1)	
079.378 Surgical Technician	2								2	070305 Surgical Technician
079.128 Occupational Therapist	1									
079.128 Recreation Therapist	1									
079.368 Occupational Therapist Aide	1									
355.878 Physical Therapist Aide	1									070400 Rehabilitation
										070910 Orthopedic Assisting
TOTAL	4								4	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
078.368 E.E.G. Tech.										070901 E.E.G. Technician
078.368 E.K.G. Tech.	1								1	070902 E.K.G. Technician
078.368 Radiologic Tech.	1								1	070504 Radiologic Tech. (X-ray)
079.368 Inhalation Therapist	1								1	070903 Inhalation Therapy Technician
223.887 Central Supply Worker	1	1								070905 Central Supply Tech.
249.388 Medical Record Clerk	1		1							079901 Medical Record Clerk

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
219.388 Ward Clerk	6								6	079902 Ward Clerk
100.388 Medical Record Librarian	1				2				(1)	070210 Medical Record Technician
359.878 Nursery School Attendant	5									
359.878 Teacher Aide	22		3			17				090201 Care and Guidance of Children
TOTAL	27		3			17			7	
781.884 Cutter, Hand or Machine	4									
785.381 Seamstress/Tailor	9									
786. to 787. Sewing Machine Operator	161	27			12					090202 Clothing, Mgmt., Prod., and Services
TOTAL	174	27			12				135	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
160.188 Accountant	42	6								
160.288 Cost Estimator	1									
168.288 Claims Examiner	1									
186.168 Bank Cashier	3									
209.388 Statement Clerk	3									
210.388 Bookkeeper	45	17								
211.368 Cashier	74	2								
212.368 Teller	14	3								
215.388 Bookkeeping Machine Operator	19	6								
215.488 Payroll Clerk	14	2								
217.388 Transit Clerk										
219.488 Accounting Clerk	84	5						16		
249.368 Claims Clerk	3									
249.368 New Account Clerk	3									
249.368 Credit Clerk										
			13		42					140100 Accounting and Computing
TOTAL	305	41	13		42			16	193	
162.158 Purchasing Agent	8									
162.288 Title Clerk										
										140800 Supervisor, Adm. Occupation, Other
									8	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
209.388 Clerk-Typist	39	19								
219.388 General Office Clerk	81	116	67		34					
219.388 Sorting Clerk	4									
219.388 Time Keeper										
237.368 Admitting Clerk	1									
249.388 Loan Closer										
					37					140300 Filing and Office Machines
			22		15					140900 Typing and Related Occupations
TOTAL	125	135	89		86				(185)	
232.368 Post Office Clerk	15									
233.388 Mail Carrier	15	2								
TOTAL	30	2							28	140403 Mail and Postal Clerks
235.862 Telephone Operator	29	6								
239.588 Meter Reader	1									
										140400 Information Communications Occupations
										140401 Communication Systems Clerk and Operator
TOTAL	30	6							24	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
205.368 Personnel Clerk	20	2							18	140600 Personnel, Training and Related
201.368 Secretary	132	37						7		
202.388 Stenographer	13	4								
			24		32					140700 Secretary or Stenographer 140703 Medical Secretary
TOTAL	145	41	24		32			7	41	
213.382 Card-Tape Converter Operator	1									
213.582 Keypunch Operator	10	5						7		
213.782 Tab Machine Operator	3									
			9		32					140200 Business Data Processing
TOTAL	14	5	9		32			7	(39)	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural	3	1								
003.281 Draftsman, Electrical										
003.281 Draftsman, Electronic	1									
005.281 Draftsman, Civil	1									
007.181 Tool Designer, Die										
007.281 Draftsman, Mechanical	5	2								
010.281 Draftsman, Geological										
017.281 Draftsman, Map										
										160103 Architectural Technology
			5							160198 Drafting and Design
			4		13					171300 Drafting
TOTAL	10	3	9		13				(15)	
022.081 Chemist	2									
029.281 Tester, Laboratory	4									
										160105 Chemical Technology
TOTAL	6								6	
005.181 Civil Engineering Tech.	2									
018.188 Surveyor	1									
										160106 Civil and Highway Technology - Const.
TOTAL	3								3	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
003.181 Technician, Electronics	3		2							
003.181 Technician, Electrical	1	3	7							160108 Electronics Technology 160109 Electro-Mechanical Technology
TOTAL	4	3	9						(8)	
012.288 Technician, Industrial	2									
019.281 Technician, Quality Control	2									
TOTAL	4								4	160111 Industrial Technology
710.281 Instrument Man	1								1	160112 Instrumentation Technology 172100 Instrument Maintenance and Repair
007.181 Technician, Mechanical 710.281 Electro-Mechanical Tech.	4								4	160109 Electro-Mechanical Technology 160113 Mechanical Technolgy

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
542.280 Stillman 549.280 Pumpman	1								1	160116 Petroleum Tech.
020.188 Programmer, Scientific					2				(2)	160117 Scientific Data Processing
139.288 Writer, Technical Publications										160197 Technical Writing
012.168 System Analysis	1									
020.188 Programmer, Business	3	1								
213.382 Digital Computer Operator	3									
219.388 Programmer, Detail	2									
			28		23					160401 Computer Science
TOTAL	9	1	28		23				(43)	
168.168 Building Inspector 373. Fireman	24	2							22	160602 Fire and Safety Technology 172801 Fireman Training

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
375. Policeman or Detective	24	3								
377. Sheriff or Baliff	3	1								
			1							160605 Police Science Tech.
										172802 Law Enforcement Training
TOTAL	27	4	1						22	
195.108 Social Worker	22	6								
195.228 Recreation Leader	3	2								
										172899 Public Service Occupations, Other
TOTAL	25	8							17	
637.281 Mechanic, Air Conditioning	12	2	5		17				(12)	170100 Air Conditioning
862.381 Plumber	19	8								
899.281 Maintenance Man, Equipment	39	9								
			1		4					170102 Heating and Plumbing
										170107 Plumbing and Pipefitting
TOTAL	58	17	1		4				36	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
723.884 Appliance Repairman	4								4	170201 Appliance Repair
807.381 Auto Body Repairman	21	6								
845.781 Painter, Auto	18	2								
			15		6					170301 Body and Fender
TOTAL	39	8	15		6				10	
620.281 Mechanic, Auto	84	15								
620.281 Auto - A/C Mechanic	2									
			56	1	30					170302 Auto Mechanic
TOTAL	86	15	56	1	30				(16)	
185.168 Parts Mgmt. Auto	6	1								
223.387 Stock Clerk, Auto	29	3								
										040300 Automotive
			3							170399 Other Automotive
TOTAL	35	4	3						28	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9.

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
621.281 Mechanic, Aircraft Engine 621.281 Mechanic, Jet Engine 621.781 Mechanic, Aircraft Accessories	7	2							5	160101 Aeronautical Technology 170401 Aircraft Mechanics
141.081 Illustrator 141.081 Art Layout Man	2		5		14				(17)	170700 Commercial Art 170702 Display
143.062 Photographer			1		1				(2)	170900 Commercial Photography
741.884 Painter, Spray	13	2								
841.781 Painter or Paperhanger	9	2								
860.381 Carpenter	47	26								
899.381 Maintenance Man Building	17	6								
			16		5			1		171001 Carpentry
TOTAL	86	36	16		5			1	28	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
721.281 Electric Motor Repairman										
726.781 Electronics Assembler					4					
821.381 Lineman	9	2		4						
822.381 Telephone Installer	9	3								
824.281 Electrician	39	17								
828.281 Electronics Mechanic										
829.381 Cable Splicer	2									
										171002 Electricity
										171402 Electrical Lineman
			25		10					171502 Electronics
TOTAL	59	22	25	4	14				(6)	
382.884 Janitor	36	12								
										171100 Custodial Services
									24	
625.281 Diesel Mechanic	5									
			5	8						171200 Diesel Mechanics
									(8)	
720.281 Radio and TV Repairman	5									
823.281 Radio Mechanic	3	1								
				2						171503 Radio and TV Repair
TOTAL	8	1		2					5	

8638

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
650.582 Linotype Operator	6									
651.782 Cylinder Press Operator	5	1								
651.782 Offset Press Man	11									
										171901 Composition Makeup and Typesetting
			10		6					171902 Printing
TOTAL	22	1	10		6				5	
518.381 Coremaker										172301 Foundry
600.280 Machinist, All Round	19	3								
600.381 Layout Man	1									
603.280 Grinder Operator	3									
609.885 Production Machine Tool Operator	7	2				1				
705.884 Bench Grinder	8	4								
			13		13					172302 Machinist
										172303 Machine Tool Operation
TOTAL	38	9	13		13	1			2	
500.380 Plating (Electro Plating)	2	1								
									1	172399 Metal Working, Other

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
806.781 Assembler, Aircraft-Structure 807.884 Assembler, Aircraft Sub-Assembly										172304 Metal Trades, Combined
601.280 Tool and Die Makers	3									
601.280 Tool Machine Set-Up Operator	3									172307 Tool and Die Making
TOTAL	6								6	
615.782 Shear Press Operator	1									
617.380 Break Operator	1									
619.380 Metal Fabricator	14									
804.281 Sheet Metal Worker	16	3	1							172305 Sheet Metal
TOTAL	32	3	1						28	
504.782 Heat Treater	3								3	172400 Metallurgy

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
801.781 Structural Steel Worker	6	2								
809.381 Layout Man (Structural)	3									
										171099 Const. and Maint. Trades, Other
TOTAL	9	2							7	
810.782 Welding Machine Operator	2									
810.884 Welder, Arc	23	1								
810.884 Welder, Gas	1									
812.884 Welder, Combination	14	4								
816.782 Flame Cutter Machine Operator	1									
816.884 Flame Cutter, Hand										
										010300 Agricultural Mechanics (Welding)
			14		34					172306 Welding
TOTAL	41	5	14		34				(12)	
526.781 Baker	3									
				2						172091 Baker
									1	
313.131 Chef	1									
313.381 Cook	82	23								
			1	2						172902 Cook/Chef
TOTAL	83	23	1	2					58	

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
361.885 Laundry Personnel	7	1							6	171602 Laundering
950.782 Stationary Engineer	7	2								
952.782 Power Plant Operator	8	1								
TOTAL	15	3							12	173200 Stationary Energy Sources Occupation
316.884 Meat Cutter	17	5								
525.381 Butcher, All Round										
525.884 Boner or Skinner									12	010400 Agriculture Products 172903 Butcher (Meat Cutter)
780.381 Furniture Upholsterer	2		1	1	6				(6)	173500 Upholstery
660.280 Cabinet Maker	11	1								
669.380 Mill Man	1									
763.381 Furniture Finisher	11	3	2		28					173601 Cabinet Making
TOTAL	23	4	2		28				(11)	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest Central No. 9

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
844.884 Cement Mason	5	1								
861.381 Brick Layer	28	8								
			1		2					171004 Masonry
TOTAL	33	9	1		2				21	
515.782 Grinding Mill Operator	1									
859.883 Heavy Equipment Operator (Operating Engineer)	16	7								
TOTAL	17	7							10	171003 Heavy Equipment Operator
750.281 Tire Tech.	*									
750.384 Greentire Inspector	*									
750.387 Tire Classifier	*									
750.884 Tire Builder	*									179800 Tire Manufacturing
572.782 Batch and Furnace Man										
575.782 Bottle Machine Operator (Glass Mgr.)										
706.884 Assembler, Metal Products	12	2								179900 Trade and Industrial Occupation Other
									10	

*See Statewide Totals

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman	1									
**400. Farm Mgmt.	78									
*404.88 Pruner/Picker	1	4								
*412. Poultry Worker										
**421.883 Farm Hand, Gen.	35	11								
466.887 Livestock Caretaker	1									
*551.885 Seed Cleaner										
			77							010100 Agricultural Production
			1							160201 Ranch Operation
TOTAL	116	15	78						23	
162.158 Buyer (Wholesale/ Retail)	3									
*299.478 Deliveryman	6	2								
*520.885 Feed/Fertilizer Mixer	1	2								
*582.887 Applicator										
			1							010200 Agricultural Supplies and Services
TOTAL	10	4	1						5	
*919.887 Yardman	5	1								
*461.885 Ginner, Worker	11	7								
*529.687 Produce Sorter										
			1							010400 Agricultural Products
TOTAL	16	8	1						7	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Farm Manpower Projections

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*409.883 Elevator Op.	6	5								
*521.782 Mill Operator	3									
*624.281 Agric. Mechanic		1								
638.281 Maint. Mech. (Millwright)										
			16							101300 Agricultural Mechanics 173100 Small Engine Repair
TOTAL	9	6	16						(13)	
*142.081 Floral Design	1									
*406.168 Greenhouse Man										
*406.168 Nurseryman										
407.884 Groundskeeper	3									
			1							010500 Ornamental Horticulture
TOTAL	4		1						3	
*451.181 Gamekeeper										
			1							010600 Agriculture Resources 010700 Forestry
									(1)	
169.188 Underwriter										
250.258 Salesman, Insurance	1									
166.168 Special Agent	3									
241.168 Claim Adjuster	1									
			1							041300 Insurance
TOTAL	5		1						4	

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
191.287 Appraiser, Real Estate										041700 Real Estate
260. thru 289. Sales Occupations (Goods)	52	11								
290.478 Sales Clerk	88	37								
292.358 Salesman, Driver	6	2								
915.867 Service Station Attendant	10	3								
			6							010200 Agricultural Supplies and Services
			2							010400 Agriculture Products
			1							040200 Apparel and Accessories
			2							040300 Automotive
			1							040600 Food Distribution
										040800 General Merchandise
										040900 Hdw., Bldg. Mat., Farm and Garden Supplies
										041000 Home Furnishings
										041200 Industrial Marketing
										041400 International Trade
			1							041600 Petroleum
			7		4					042000 Retail Trade
										043100 Wholesale Trade
										170399 Other Automotive
TOTAL	156	53	20		4				79	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
189.168 Management Trainee	11		1						10	049901 Mid Management
242.368 Hotel Clerk	2								2	041100 Hotel and Lodging
252.358 Sales, Service	8		1						7	040100 Advertising Services 040400 Finance and Credit 041900 Transportation
132.088 Copywriter 132.288 Copy Reader 165.068 Public Relations	1								1	040100 Advertising Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	6	1								
902.883 Dump Truck Driver	3									
904.883 Tractor Trailer Truck Driver	7	2								
905.883 Truck Driver, Heavy	28	9								
906.883 Truck Driver, Light	31	9								
913.463 Bus Driver	2									
922.883 Forklift Operator	16	4								
929.887 Material Handler	13	3								
TOTAL	106	28							78	041900 Transportation 179901 Truck Driver
321.138 Housekeeping Occupations	23	3							20	090205 Institutional and Home Mgmt. and Supporting Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	3									
311.878 Waiter/Waitress	75	25								
318.887 Dishwasher	9	6								
319.138 Food Service Supervisor	4	1								
			4							040700 Food Services
					1					090203 Food Management Prod. and Services
										172900 Other Quantity Food Occupations
			1							172904 Waiter/Waitress
TOTAL	91	32	5		1				53	
355.878 Psychiatric Aide										070304 Psychiatric Aid
078.281 Medical Technologist	1									
078.381 Medical Laboratory Assistant	2									
078.381 Medical Laboratory Tech.	2									
			3							070203 Medical Laboratory Technician
TOTAL	5		3						2	
075.378 Nurse, Registered	28	1							27	070301 Nurse, Associate Degree

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
079.378 Nurse, Licensed Practical	34	7	19						8	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	87	37	4		23				23	070303 Nurse Assistance (Aid)
079.378 Surgical Technician	4								4	070305 Surgical Technician
079.128 Occupational Therapist 079.128 Recreation Therapist 079.368 Occupational Therapist Aide 355.878 Physical Therapist Aide	2								2	070400 Rehabilitation 070910 Orthopedic Assisting
078.368 E.E.G. Tech.										070901 E.E.G. Technician

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
078.368 E.K.G. Tech.	2								2	070902 E.K.G. Technician
078.368 Radiologic Tech.	1								1	070504 Radiologic Tech. (X-ray)
079.368 Inhalation Therapist	3								3	070903 Inhalation Therapy Technician
223.887 Central Supply Worker	1	1								070905 Central Supply Tech.
249.388 Medical Record Clerk	3				3					079901 Medical Record Clerk
219.388 Ward Clerk	4								4	079902 Ward Clerk

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
100.388 Medical Record Librarian	2								2	070210 Medical Record Technician
359.878 Nursery School Attendant	1									
359.878 Teacher Aide	3		3							090201 Care and Guidance of Children
TOTAL	4		3						1	
781.884 Cutter, Hand or Machine										
785.381 Seamstress/Tailor	3									
786. to 787. Sewing Machine Operator	132	24								090202 Clothing, Mgmt., Prod., and Services
TOTAL	135	24							111	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
160.188 Accountant	3	2								
160.288 Cost Estimator										
168.288 Claims Examiner										
186.168 Bank Cashier	1									
209.388 Statement Clerk	1									
210.388 Bookkeeper	41	15								
211.368 Cashier	28	1								
212.368 Teller	4	2	1		3					
215.388 Bookkeeping Machine Operator	6	1								
215.488 Payroll Clerk	4									
217.388 Transit Clerk										
219.488 Accounting Clerk	4	6								
249.368 Claims Clerk										
249.368 New Account Clerk										
249.368 Credit Clerk	2									
TOTAL	94	27	1		3				63	140100 Accounting and Computing
162.158 Purchasing Agent	1									
162.288 Title Clerk										
									1	140800 Supervisor, Adm. Occupation, Other

8653

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
209.388 Clerk-Typist	17	10								
219.388 General Office Clerk	35	27								
219.388 Sorting Clerk	1									
219.388 Time Keeper	1									
237.368 Admitting Clerk	1									
249.388 Loan Closer	1									
										140300 Filing and Office Machines
										140900 Typing and Related Occupations
TOTAL	56	37							19	
232.368 Post Office Clerk	7									
233.388 Mail Carrier	12	1								
										140403 Mail and Postal Clerks
TOTAL	19	1							18	
235.862 Telephone Operator	12	3								
239.588 Meter Reader	1									
										140400 Information Communications Occupations
										140401 Communication Systems Clerk and Operator
TOTAL	13	3							10	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
205.368 Personnel Clerk	1								1	140600 Personnel, Training and Related
201.368 Secretary	39	22								
202.388 Stenographer	8	3								
TOTAL	47	25							22	140700 Secretary or Stenographer 140703 Medical Secretary
213.382 Card-Tape Converter Operator										
213.582 Keypunch Operator	2	1								
213.782 Tab Machine Operator									1	140200 Business Data Processing

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural										
003.281 Draftsman, Electrical										
003.281 Draftsman, Electronic										
005.281 Draftsman, Civil										
007.181 Tool Designer, Die	1									
007.281 Draftsman, Mechanical										
010.281 Draftsman, Geological										
017.281 Draftsman, Map	1									
										160103 Architectural Technology
										160198 Drafting and Design
			1		1					171300 Drafting
TOTAL	2		1		1					
022.081 Chemist										
029.281 Tester, Laboratory										
										160105 Chemical Technology
005.181 Civil Engineering Tech.	1									
018.188 Surveyor	1									
										160106 Civil and Highway Technology - Const.
TOTAL	2								2	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
003.181 Technician, Electronics 003.181 Technician, Electrical		2	8						(10)	160108 Electronics Technology 160109 Electro-Mechanical Technology
012.288 Technician, Industrial 019.281 Technician, Quality Control	2								2	160111 Industrial Technology
710.281 Instrument Man										160112 Instrumentation Technology 172100 Instrument Maintenance and Repair
007.181 Technician, Mechanical 710.281 Electro-Mechanical Tech.										160109 Electro-Mechanical Technology 160113 Mechanical Technology

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
542.280 Stillman 549.280 Pumpman										160116 Petroleum Tech.
020.188 Programmer, Scientific										160117 Scientific Data Processing
139.288 Writer, Technical Publications										160197 Technical Writing
012.168 System Analysis 020.188 Programmer, Business 213.382 Digital Computer Operator 219.388 Programmer, Detail	1		6		3				(8)	160401 Computer Science
168.168 Building Inspector 373. Fireman	1 7									160602 Fire and Safety Technology 172801 Fireman Training
TOTAL	8								8	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
375. Policeman or Detective	8	2								
377. Sheriff or Baliff	1									
TOTAL	9	2							7	160605 Police Science Tech. 172802 Law Enforcement Training
195.108 Social Worker	11	3								
195.228 Recreation Leader	2									
TOTAL	13	3							10	172899 Public Service Occupations, Other
637.281 Mechanic, Air Conditioning	2								2	170100 Air Conditioning
862.381 Plumber	11	4								
899.281 Maintenance Man, Equipment	16	5								
TOTAL	27	9							18	170102 Heating and Plumbing 170107 Plumbing and Pipefitting

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
723.884 Appliance Repairman	1								1	170201 Appliance Repair
807.381 Auto Body Repairman	15	4								
845.781 Painter, Auto	5	3								
			1							
TOTAL	20	7	1						12	170301 Body and Fender
620.281 Mechanic, Auto	59	12								
620.281 Auto - A/C Mechanic	4									
			22							170302 Auto Mechanic
TOTAL	63	12	22						29	
185.168 Parts Mgmt. Auto	2									
223.387 Stock Clerk, Auto	4	1								
			2							040300 Automotive 170399 Other Automotive
TOTAL	6	1	2						3	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
621.281 Mechanic, Aircraft Engine 621.281 Mechanic, Jet Engine 621.781 Mechanic, Aircraft Accessories										160101 Aeronautical Technology 170401 Aircraft Mechanics
141.081 Illustrator			1							170700 Commercial Art
141.081 Art Layout Man			4							170702 Display
TOTAL			5						(5)	
143.062 Photographer										170900 Commercial Photography
741.884 Painter, Spray	4									
841.781 Painter or Paperhanger	7	1								
860.381 Carpenter	35	11								
899.381 Maintenance Man, Building	12	4								
			14							171001 Carpentry
TOTAL	58	16	14						28	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
721.281 Electric Motor Repairman										
726.781 Electronics Assembler										
821.381 Lineman	4			1						
822.381 Telephone Installer	3									
824.281 Electrician	10	2								
828.281 Electronics Mechanic										
829.381 Cable Splicer	1									
										171002 Electricity
										171402 Electrical Lineman
					2					171502 Electronics
TOTAL	18	2		1	2				13	
382.884 Janitor	13	4								
										171100 Custodial Services
									9	
625.281 Diesel Mechanic	2									
										171200 Diesel Mechanics
									2	
720.281 Radio and TV Repairman	3									
823.281 Radio Mechanic	1									
				1						171503 Radio and TV Repair
TOTAL	4			1					3	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
650.582 Linotype Operator	1									
651.782 Cylinder Press Operator	2									
651.782 Offset Press Man	5									
			2							171901 Composition Makeup and Typesetting
			1							171902 Printing
TOTAL	8		3						5	
518.381 Coremaker										172301 Foundry
600.280 Machinist, All Round 600.381 Layout Man 603.280 Grinder Operator 609.885 Production Machine Tool Operator 705.884 Bench Grinder										172302 Machinist 172303 Machine Tool Operation
500.380 Plating (Electro Plating)										172399 Metal Working, Other

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
806.781 Assembler, Aircraft-Structure 807.884 Assembler, Aircraft Sub-Assembly										172304 Metal Trades, Combined
601.280 Tool and Die Makers 601.280 Tool Machine Set-Up Operator										172307 Tool and Die Making
615.782 Shear Press Operator 617.380 Break Operator 619.380 Metal Fabricator 804.281 Sheet Metal Worker	4		1						3	172305 Sheet Metal
504.782 Heat Treater										172400 Metallurgy

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
801.781 Structural Steel Worker 809.381 Layout Man (Structural)	2								2	171099 Const. and Maint. Trades, Other
810.782 Welding Machine Operator 810.884 Welder, Arc 810.884 Welder, Gas 812.884 Welder, Combination 816.782 Flame Cutter Machine Operator 816.884 Flame Cutter, Hand TOTAL	5 15 3 23	1 1 2							21	010300 Agricultural Mechanics (Welding) 172306 Welding
526.781 Baker	1								1	172901 Baker
313.131 Chef 313.381 Cook	63	20	1						42	172902 Cook/Chef

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
361.885 Laundry Personnel	6								6	171602 Laundering
950.782 Stationary Engineer 952.782 Power Plant Operator TOTAL	3 3 6								6	173200 Stationary Energy Sources Occupation
316.884 Meat Cutter 525.381 Butcher, All Round 525.884 Boner or Skinner	2		1						1	010400 Agriculture Products 172903 Butcher (Meat Cutter)
780.381 Furniture Upholsterer	1			1						173500 Upholstery
660.280 Cabinet Maker 669.380 Mill Man 763.381 Furniture Finisher	4								4	173601 Cabinet Making

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Southwest No. 10

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
844.884 Cement Mason	2									
861.381 Brick Layer	15	1								
TOTAL	17	1							16	171004 Masonry
515.782 Grinding Mill Operator										
859.883 Heavy Equipment Operator (Operating Engineer)	6	3							3	171003 Heavy Equipment Operator
750.281 Tire Tech.	*									
750.384 Greentire Inspector	*									
750.387 Tire Classifier	*									
750.884 Tire Builder	*									179800 Tire Manufacturing
572.782 Batch and Furnace Man										
575.782 Bottle Machine Operator (Glass Mgr.)										
706.884 Assembler, Metal Products	4								4	179900 Trade and Industrial Occupation Other

*See Statewide Totals

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*180.118 Fieldman	1									
**400. Farm Mgmt.	60									
*404.88 Pruner/Picker										
*412 Poultry Worker										
**421.883 Farm Hand, Gen.	20	7								
466.887 Livestock Caretaker	3									
*551.865 Seed Cleaner	1									
			46							010100 Agricultural Production
										160201 Ranch Operation
TOTAL	85	7	46						32	
162.158 Buyer (Wholesale Retail)										
*299.478 Deliveryman	1									
*520.885 Feed/Fertilizer Mixer	2	1								
*582.887 Applicator	3									
			1							010200 Agricultural Supplies and Services
TOTAL	6	1	1						4	
*919.887 Yardman	2									
*461.885 Ginner, Worker										
*529.687 Produce Sorter										
									2	010400 Agricultural Products

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell
**Oklahoma State University Farm Manpower Projections

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
*409.883 Elevator Op.	8	3								
*521.782 Mill Operator	5									
*624.281 Agric. Mechanic	17	1								
638.281 Maint. Mech. (Millwright)										
			20							101300 Agricultural Mechanics 173100 Small Engine Repair
TOTAL	30	4	20						6	
*142.081 Floral Design	4									
*406.168 Greenhouse Man										
*406.168 Nurseryman										
407.884 Groundskeeper	3									
TOTAL	7								7	010500 Ornamental Horticulture
*451.181 Gamekeeper										010600 Agriculture Resources 010700 Forestry
169.188 Underwriter										
250.258. Salesman, Insurance	1									
166.168 Special Agent										
241.168 Claim Adjuster										
									1	041300 Insurance

*Employment Opportunities and Educational Needs in Off-Farm Agri-Business Occupations - Jesse Mitchell

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
191.287 Appraiser, Real Estate										041700 Real Estate
260. thru 289. Sales Occupations (Goods)	23	6								
290.478 Sales Clerk	95	26								
292.358 Salesman, Driver		1								
915.867 Service Station Attendant	4	1								
										010200 Agricultural Supplies and Services
										010400 Agriculture Products
										040200 Apparel and Accessories
										040300 Automotive
										040600 Food Distribution
										040800 General Merchandise
										040900 Hdw., Bldg. Mat., Farm and Garden Supplies
										041000 Home Furnishings
										041200 Industrial Marketing
										041400 International Trade
										041600 Petroleum
										042000 Retail Trade
										043100 Wholesale Trade
										170399 Other Automotive
TOTAL	122	34							88	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
189.168 Management Trainee	2								2	049901 Mid Management
242.368 Hotel Clerk	2								2	041100 Hotel and Lodging
252.358 Sales, Service	3								3	040100 Advertising Services 040400 Finance and Credit 041900 Transportation
132.088 Copywriter 132.288 Copy Reader 165.068 Public Relations	1								1	040100 Advertising Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
184.168 Traffic Mgmt.	1									
902.883 Dump Truck Driver	1									
904.883 Tractor Trailer Truck Driver	2									
905.883 Truck Driver, Heavy	14	3								
906.883 Truck Driver, Light	20	4								
913.463 Bus Driver	1									
922.883 Forklift Operator	9	3								
929.887 Material Handler	8									
TOTAL	56	10							46	041900 Transportation 179901 Truck Driver
321.138 Housekeeping Occupations	16	1							15	090205 Institutional and Home Mgmt. and Supporting Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
310.868 Hostess	2									
311.878 Waiter/Waitress	47	16								
318.887 Dishwasher	7	4								
319.138 Food Service Supervisor	3									
TOTAL	59	20							39	040700 Food Services 090203 Food Management Prod. and Services 172900 Other Quantity Food Occupations 172904 Waiter/Waitress
355.878 Psychiatric Aide	18								18	070304 Psychiatric Aid
078.281 Medical Technologist										
078.381 Medical Laboratory Assistant	2									
078.381 Medical Laboratory Tech.	3									
TOTAL	5								5	070203 Medical Laboratory Technician

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
075.378 Nurse, Registered	23	4							19	070301 Nurse, Associate Degree
079.378 Nurse, Licensed Practical	32	2	16						14	070302 Practical (Voc.) Nurse
355.878 Nurse Aide	59	11							48	070303 Nurse Assistance (Aid)
079.378 Surgical Technician	3								3	070305 Surgical Technician
079.128 Occupational Therapist 079.128 Recreation Therapist 079.368 Occupational Therapist Aide 355.878 Physical Therapist Aide	1 2									070400 Rehabilitation 070910 Orthopedic Assisting
TOTAL	3								3	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
078.368 E.E.G. Tech.										070901 E.E.G. Technician
078.368 E.K.G. Tech.										070902 E.K.G. Technician
078.368 Radiologic Tech.	3								3	070504 Radiologic Tech. (X-ray)
079.368 Inhalation Therapist	1								1	070903 Inhalation Therapy Technician
223.887 Central Supply Worker	1								1	070905 Central Supply Tech.
249.388 Medical Record Clerk	2								2	079901 Medical Record Clerk

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
219.388 Ward Clerk	2								2	079902 Ward Clerk
100.388 Medical Record Librarian	2								2	070210 Medical Record Technician
359.878 Nursery School Attendant	1									
359.878 Teacher Aide	10									
TOTAL	11								11	090201 Care and Guidance of Children
781.884 Cutter, Hand or Machine										
785.381 Seamstress/Tailor	1									
786. to 787. Sewing Machine Operator	50	15	1							
TOTAL	51	15	1						35	090202 Clothing, Mgmt., Prod., and Services

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
160.188 Accountant	2	2								
160.288 Cost Estimator										
168.288 Claims Examiner										
186.168 Bank Cashier	3									
209.388 Statement Clerk	2									
210.388 Bookkeeper	36	10								
211.368 Cashier	15									
212.368 Teller	8									
215.388 Bookkeeping Machine Operator	8	2								
215.488 Payroll Clerk	1									
217.388 Transit Clerk	1									
219.488 Accounting Clerk	5	1								
249.368 Claims Clerk	2									
249.368 New Account Clerk										
249.368 Credit Clerk										
TOTAL	83	15							68	140100 Accounting and Computing
162.158 Purchasing Agent	1									
162.288 Title Clerk										
									1	140800 Supervisor, Adm. Occupation, Other

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
209.388 Clerk-Typist	13	2								
219.388 General Office Clerk	29	18								
219.388 Sorting Clerk	1									
219.388 Time Keeper										
237.368 Admitting Clerk										
249.388 Loan Closer										
										140300 Filing and Office Machines
										140900 Typing and Related Occupations
TOTAL	43	20							23	
232.368 Post Office Clerk	4									
233.388 Mail Carrier	3									
										140403 Mail and Postal Clerks
TOTAL	7								7	
235.862 Telephone Operator	6	1								
239.588 Meter Reader	1									
										140400 Information Communications Occupations
										140401 Communication Systems Clerk and Operator
TOTAL	7	1							6	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
205.368 Personnel Clerk	1								1	140600 Personnel, Training and Related
201.368 Secretary	15	9								140700 Secretary or Stenographer 140703 Medical Secretary
202.388 Stenographer	5	1								
TOTAL	20	10							10	
213.382 Card-Tape Converter Operator										140200 Business Data Processing
213.582 Keypunch Operator	1									
213.782 Tab Machine Operator	1									
TOTAL	2								2	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
001.281 Draftsman, Architectural 003.281 Draftsman, Electrical 003.281 Draftsman, Electronic 005.281 Draftsman, Civil 007.181 Tool Designer, Die 007.281 Draftsman, Mechanical 010.281 Draftsman, Geological 017.281 Draftsman, Map	1								1	160103 Architectural Technology 160198 Drafting and Design 171300 Drafting
022.081 Chemist 029.281 Tester, Laboratory	1								1	160105 Chemical Technology
005.181 Civil Engineering Tech. 018.188 Surveyor	2								2	160106 Civil and Highway Technology - Const.

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
003.181 Technician, Electronics 003.181 Technician, Electrical		1							(1)	160108 Electronics Technology 160109 Electro-Mechanical Technology
012.288 Technician, Industrial 019.281 Technician, Quality Control	1								1	160111 Industrial Technology
710.281 Instrument Man										160112 Instrumentation Technology 172100 Instrument Maintenance and Repair
007.181 Technician, Mechanical 710.281 Electro-Mechanical Tech.										160109 Electro-Mechanical Technology 160113 Mechanical Technology

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
542.280 Stillman 549.280 Pumpman										160116 Petroleum Tech.
020.188 Programmer, Scientific										160117 Scientific Data Processing
139.288 Writer, Technical Publications										160197 Technical Writing
012.168 System Analysis 020.188 Programmer, Business 213.382 Digital Computer Operator 219.388 Programmer, Detail TOTAL	1 2 3								3	160401 Computer Science
168.168 Building Inspector 373. Fireman	4								4	160602 Fire and Safety Technology 172801 Fireman Training

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
375. Policeman or Detective	5									
377. Sheriff or Baliff	2									
TOTAL	7								7	160605 Police Science Tech. 172802 Law Enforcement Training
195.108 Social Worker	2	1								
195.228 Recreation Leader	1									
TOTAL	3	1							2	172899 Public Service Occupations, Other
637.281 Mechanic, Air Conditioning										170100 Air Conditioning
862.381 Plumber	4	1								
899.281 Maintenance Man, Equipment	12									
TOTAL	16	1							15	170102 Heating and Plumbing 170107 Plumbing and Pipefitting
723.884 Appliance Repairman	1								1	170201 Appliance Repair

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
807.381 Auto Body Repairman	5	1								
845.781 Painter, Auto	2									
TOTAL	7	1							6	170301 Body and Fender
620.281 Mechanic, Auto	27	4								
620.281 Auto - A/C Mechanic	1									
			18	1						170302 Auto Mechanic
TOTAL	28	4	18	1					5	
185.168 Parts Mgmt. Auto	1									
223.387 Stock Clerk, Auto										
			3	1					(3)	040300 Automotive 170399 Other Automotive
621.281 Mechanic, Aircraft Engine										
621.281 Mechanic, Jet Engine										
621.781 Mechanic, Aircraft Accessories										160101 Aeronautical Technology 170401 Aircraft Mechanics

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
141.081 Illustrator 141.081 Art Layout Man	2		2							170700 Commercial Art 170702 Display
143.062 Photographer										170900 Commercial Photography
741.884 Painter, Spray	1									
841.781 Painter or Paperhanger	5									
860.381 Carpenter	11	5								
899.381 Maintenance Man, Building	5	1								
			2							171001 Carpentry
TOTAL	22	6	2						14	

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
721.281 Electric Motor Repairman										
726.781 Electronics Assembler										
821.381 Lineman	4									
822.381 Telephone Installer	2									
824.281 Electrician	5	1								
828.281 Electronics Mechanic										
829.381 Cable Splicer	1									
TOTAL	12	1							11	171002 Electricity 171402 Electrical Lineman 171502 Electronics
382.884 Janitor	7								7	171100 Custodial Services
625.281 Diesel Mechanic	3			4					(1)	171200 Diesel Mechanics
720.281 Radio and TV Repairman	1									
823.281 Radio Mechanic	1									
TOTAL	2								2	171503 Radio and TV Repair

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
650.582 Linotype Operator	2									
651.782 Cylinder Press Operator	1									
651.782 Offset Press Man	4									
TOTAL	7								7	171901 Composition Makeup and Typesetting 171902 Printing
518.381 Coremaker										172301 Foundry
600.280 Machinist, All Round	1									
600.381 Layout Man										
603.280 Grinder Operator										
609.885 Production Machine Tool Operator	1									
705.884 Bench Grinder				1						172302 Machinist
TOTAL	2			1					1	172303 Machine Tool Operation
500.380 Plating (Electro Plating)										172399 Metal Working, Other

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
806.781 Assembler, Aircraft-Structure 807.884 Assembler, Aircraft Sub-Assembly										172304 Metal Trades, Combined
601.280 Tool and Die Makers 601.280 Tool Machine Set-Up Operator										172307 Tool and Die Making
615.782 Shear Press Operator 617.380 Break Operator 619.380 Metal Fabricator 804.281 Sheet Metal Worker	1								1	172305 Sheet Metal
504.782 Heat Treater										172400 Metallurgy

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
801.781 Structural Steel Worker 809.381 Layout Man (Structural)										171099 Const. and Maint. Trades, Other
810.782 Welding Machine Operator										
810.884 Welder, Arc	2									
810.884 Welder, Gas										
812.884 Welder, Combination	7									
816.782 Flame Cutter Machine Operator										
816.884 Flame Cutter, Hand					4					010300 Agricultureal Mechanics (Welding)
					3					
TOTAL	9				7				2	172306 Welding
526.781 Baker	2								2	172901 Baker
313.131 Chef										
313.381 Cook	23	5								
			1							
TOTAL	23	5	1						17	172902 Cook/Chef

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NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
361.885 Laundry Personnel	8								8	171602 Laundering
950.782 Stationary Engineer 952.782 Power Plant Operator TOTAL	1 1 2								2	173200 Stationary Energy Sources Occupation
316.884 Meat Cutter 525.381 Butcher, All Round 525.884 Boner or Skinner TOTAL	3 4 1 8								8	010400 Agriculture Products 172903 Butcher (Meat Cutter)
780.381 Furniture Upholsterer								3	(3)	173500 Upholstery

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
660.280 Cabinet Maker 669.380 Mill Man 763.381 Furniture Finisher	1								1	173601 Cabinet Making
844.884 Cement Mason 861.381 Brick Layer TOTAL	1 7 8								8	171004 Masonry
515.782 Grinding Mill Operator 859.883 Heavy Equipment Operator (Operating Engineer)	5	2							3	171003 Heavy Equipment Operator
750.281 Tire Tech. 750.384 Greentire Inspector 750.387 Tire Classifier 750.884 Tire Builder	* * * *									179800 Tire Manufacturing

*See Statewide Totals

NET ADDITIONAL MANPOWER REQUIREMENTS
1972

Northwest No. 11

CLUSTERS OF OCCUPATIONS	DEMAND	SUPPLY							DEMAND MINUS SUPPLY	CLUSTERS OF PROGRAMS
		OESC Registrants	Public			Federal		Private Schools		
			Reimbursed Public	Non-Reimbursed Public	Adult	MDTA	Other Federal			
572.782 Batch and Furnace Man 575.782 Bottle Machine Operator (Glass Mgr.) 706.884 Assembler, Metal Products	1								1	179900 Trade and Industrial Occupation Other

8692

CHAPTER III

A DESCENDING RANK ORDERING OF PROGRAM CLUSTERS BY STATEWIDE NET MANPOWER DEMAND

In this chapter a descending rank order of program clusters by statewide net manpower demand is presented by vocational and technical divisions. The program cluster with the greatest net manpower demand is ranked one (1) and is followed in order by the program clusters with lesser demand. There are some problems in arranging the program clusters in such a manner, mainly because one program cluster may involve two or more vocational and technical divisions. An example of this occurs in the sales occupations where agriculture education, distributive education, and trade and industrial education are all involved. Also, please remember that the sum of the regional demands does not always equal the state total since the regional location of all graduates was not available.

It must be remembered that the net manpower demand figures are only projections not absolute values. Comparison of the ranks of specific clusters must be accompanied by an examination of the difference in net manpower demand between the clusters.

The rank ordering is provided as a simple analysis of the interfacing tables. It may be used to quickly identify program clusters by vocational and technical divisions in which training is needed on a statewide and/or regional basis.

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

010000 AGRICULTURAL EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
1*	010200 Agricultural Supplies and Services 010400 Agriculture Products 040200 Apparel and Accessories 040300 Automotive 040600 Food Distribution 040800 General Merchandise 040900 Hdw., Bldg. Mat., Farm and Garden Supplies 041000 Home Furnishings 041200 Industrial Marketing 041400 International Trade 041600 Petroleum 042000 Retail Trade 043100 Wholesale Trade 170399 Other Automotive	2,434	85	144	81	109	64	581	243	656	304	79	88
2	010100 Agricultural Production 160201 Ranch Operation	490	50	82	87	24	(21)	28	78	47	60	23	32
3	010200 Agricultural Supplies and Services	186	5	15	10	19	16	18	33	17	44	5	4
4	010500 Ornamental Horticulture	202	7	19	3	26	8	34	26	55	14	3	7

*Sales Occupations Cluster

1698

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

010000 AGRICULTURAL EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
5	010400 Agriculture Products 172903 Butcher (Meat Cutter)	149	3	12	2	14	6	34	7	50	12	1	8
6	010400 Agricultural Products	41	(5)	(2)	29	2	(1)	(1)	9	(1)	2	7	2
7	010300 Agricultural Mechanics (Welding) 172306 Welding	(9)	(4)	14	(20)	(36)	20	102	(9)	(87)	(12)	21	2
8	010600 Agriculture Resources 010700 Forestry	(12)	(3)	(1)	(6)	(4)	(4)	(2)	10	2	(3)	(1)	0
9	010300 Agricultural Mechanic 173100 Small Engine Repair	(174)	(23)	(23)	(26)	(29)	(10)	(8)	(3)	(50)	5	(13)	6

8695

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

04000 DISTRIBUTIVE EDUCATION

Rank	PROGRAM CLUSTERS	Statewide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
1*	010200 Agricultural Supplies and Services 010400 Agriculture Products 040200 Apparel and Accessories 040300 Automotive 040600 Food Distribution 040800 General Merchandise 040900 Hdw., Bldg. Mat., Farm and Garden Supplies 041000 Home Furnishings 041200 Industrial Marketing 041400 International Trade 041600 Petroleum 042000 Retail Trade 043100 Wholesale Trade 170399 Other Automotive	2,434	85	144	81	109	64	581	243	656	304	79	88
2	041900 Transportation 179901 Truck Driver	1,016	72	86	65	99	82	319	73	585	112	78	46
3	040700 Food Services 090203 Food Management Prod. and Services 172900 Other Quantity Food Occupations 172904 Waiter/Waitress	932	61	130	54	90	61	189	73	124	58	53	39

*Sales Occupations Cluster

8696

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

040000 DISTRIBUTIVE EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
4	040100 Advertising Services 040400 Finance and Credit 041900 Transportation	247	14	25	8	18	9	67	23	65	8	7	3
5	041300 Insurance	226	2	5	1	11	4	52	8	120	18	4	1
6	049901 Mid Management	148	12	26	4	27	14	20	13	21	(1)	10	2
7	040100 Advertising Services	95	0	2	11	5	2	22	2	39	10	1	1
8	170399 Other Automotive 040300 Automotive	72	4	1	0	(10)	(3)	(1)	(5)	52	28	3	3
9	041700 Real Estate	22	0	1	0	1	0	4	1	13	2	0	0
10	041100 Hotel and Lodging	13	1	3	2	0	1	10	6	(15)	1	2	2

8697

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

070000 HEALTH OCCUPATIONS EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
1	070301 Nurse, Associate Degree	372	28	15	26	36	8	75	41	83	14	27	19
2	070303 Nurse Assistance (Aid)	142	(49)	25	(110)	104	(11)	84	68	(39)	(1)	23	48
3	070304 Psychiatric Aid	98	18	0	0	0	0	4	2	56	0	0	18
4	070203 Medical Laboratory Technician	85	5	8	6	6	1	26	19	5	2	2	5
5	079902 Ward Clerk	68	4	7	(19)	1	2	8	6	47	6	4	2
6	070302 Practical (Voc.) Nurse	60	(41)	36	(7)	8	32	(15)	34	(42)	33	8	14
7	070910 Orthopedic Assisting 070400 Rehabilitation	38	3	1	(22)	2	4	15	8	18	4	2	3
8	070305 Surgical Technician	33	(2)	3	0	2	2	0	5	14	2	4	3
9	079901 Medical Record Clerk	30	3	2	(1)	0	3	14	2	5	0	0	2

8698

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

070000 HEALTH OCCUPATIONS EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
10	070902 E.K.G. Technician	22	0	9	0	3	0	2	0	5	1	2	0
11	070905 Central Supply Tech.	17	1	1	1	1	0	2	3	7	0	0	1
12	070210 Medical Record Technician	9	1	1	0	(2)	0	0	1	5	(1)	2	2
13	070903 Inhalation Therapy Technician	3	1	2	(20)	4	0	7	2	2	1	3	1
14	070901 E.E.G. Technician	0	0	0	0	1	0	(2)	2	(1)	0	0	0
15	070504 Radiologic Tech. (X-ray)	(29)	1	14	1	2	2	(15)	0	(39)	1	1	3

6698

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

090000 HOME ECONOMICS EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
1	090202 Clothing, Mgmt., Prod., and Services	1,097	148	24	47	67	234	60	19	217	135	111	35
2	040700 Food Services 090203 Food Management Prod. and Services 172900 Other Quantity Food Occupations 172904 Waiter/Waitress	932	61	130	54	90	61	189	73	124	58	53	39
3	090205 Institutional and Home Mgmt. and Supporting Services	412	6	30	11	28	14	119	27	115	27	20	15
4	090201 Care and Guidance of Children	150	14	16	4	(2)	7	85	2	5	7	1	11

0028

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

140000 BUSINESS AND OFFICE EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
1	140100 Accounting and Computing	2,447	111	90	126	130	168	481	118	899	193	63	68
2	140700 Secretary or Stenographer 140703 Medical Secretary	910	6	44	(23)	56	83	62	58	551	41	22	10
3	140300 Filing and Office Machines 140900 Typing and Related Occupations	606	(10)	47	22	24	53	202	42	369	(185)	19	23
4	140403 Mail and Postal Clerks	427	12	30	11	6	20	120	6	169	28	18	7
5	140400 Information Communications Occup. 140401 Communication Systems Clerk and Operator	289	8	19	10	28	10	55	21	98	24	10	6
6	140600 Personnel, Training and Related	127	2	3	0	3	1	36	1	61	18	1	1
6	140800 Supervisor, Adm. Occupation, Other	127	3	16	5	4	1	33	19	36	8	1	1

6701

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

140000 BUSINESS AND OFFICE EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
8	140200 Business Data Processing	(198)	31	(5)	(1)	1	(2)	(38)	(118)	(30)	(39)	1	2

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

160000 TECHNICAL EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
1	010100 Agricultural Production 160201 Ranch Operation	490	50	82	87	24	(21)	28	78	47	60	23	32
2	160401 Computer Science	245	(26)	2	(11)	1	10	281	10	26	(43)	(8)	3
3	160605 Police Science Tech. 172802 Law Enforcement Training	165	2	6	3	22	5	43	15	33	22	7	7
4	160111 Industrial Technology	159	(2)	1	2	7	7	37	10	90	4	2	1
5	160602 Fire and Safety Technology 172801 Fireman Training	114	3	6	2	15	4	16	12	22	22	8	4
6	160108 Electronics Technology 160109 Electro-Mechanical Technology	110	(9)	(5)	(12)	4	3	163	(12)	(3)	(8)	(10)	(1)
7	160105 Chemical Technology	83	11	4	(1)	14	8	16	24	0	6	0	1
8	160106 Civil and Highway Technology - Const.	79	2	2	8	19	1	(26)	29	37	3	2	2

8703

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

160000 TECHNICAL EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
9	160116 Petroleum Tech.	39	2	1	0	5	14	4	12	0	1	0	0
10	160112 Instrumentation Technology 172100 Instrument Maintenance and Repair	29	0	1	1	0	4	13	1	8	1	0	0
11	160197 Technical Writing	21	0	0	0	0	1	7	0	13	0	0	0
12	160117 Scientific Data Processing	6	5	1	0	1	1	2	1	(3)	(2)	0	0
12	160109 Electro-Mechanical Technology 160113 Mechanical Technology	6	(4)	1	(4)	4	0	7	(5)	3	4	0	0
14	160103 Architectural Technology 160198 Drafting and Design 171300 Drafting	(11)	(23)	19	(39)	0	(7)	64	(20)	9	(15)	0	1
15	160101 Aeronautical Technology 170401 Aircraft Mechanics	(186)	(2)	(4)	(3)	(1)	(8)	(26)	6	(25)	5	0	0

0049

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

170000 TRADE AND INDUSTRIAL EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
1 *	010200 Agricultural Supplies and Services 010400 Agriculture Products 040200 Apparel and Accessories 040300 Automotive 040600 Food Distribution 040800 General Merchandise 040900 Hdw., Bldg. Mat., Farm and Garden Supplies 041000 Home Furnishings 041200 Industrial Marketing 041400 International Trade 041600 Petroleum 042000 Retail Trade 043100 Wholesale Trade 170399 Other Automotive	2,434	85	144	81	109	64	581	243	656	304	79	88
2	041900 Transportation 179901 Truck Driver	1,016	72	86	65	99	82	319	73	585	112	78	46
3	040700 Food Services 090203 Food Management Prod. and Services 172900 Other Quantity Food Occupations 172904 Waiter/Waitress	932	61	130	54	90	61	189	73	124	58	53	39

*Sales Occupations Cluster

8705

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

170000 TRADE AND INDUSTRIAL EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
4	172902 Cook/Chef	800	15	77	15	32	30	155	52	308	57	42	17
5	171001 Carpentry	403	(19)	(18)	(44)	(7)	6	143	65	208	28	28	14
6	171100 Custodial Services	277	10	14	1	11	21	91	20	69	24	9	7
7	172305 Sheet Metal	261	3	26	1	16	6	66	17	94	28	3	1
8	179900 Trade and Industrial Occupation Other	256	9	25	8	3	9	130	5	52	10	4	1
9	171002 Electricity 171402 Electrical Lineman 171502 Electronics	250	15	17	6	27	32	(7)	36	106	(6)	13	11
10	170102 Heating and Plumbing 171007 Plumbing and Pipefitting	238	16	10	(10)	38	17	13	44	41	36	18	15
11	172302 Machinist 172303 Machine Tool Operation	222	1	1	(9)	25	20	149	7	42	2	0	1

9026

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

170000 TRADE AND INDUSTRIAL EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
12	172899 Public Service Occupation Other	173	1	10	47	26	21	2	5	32	17	10	2
13	160605 Police Science Tech. 172802 Law Enforcement Training	165	2	6	3	22	5	43	15	33	22	7	7
14	171004 Masonry	162	9	7	4	3	9	23	14	48	21	16	8
15	010400 Agriculture Products 172903 Butcher (Meat Cutter)	149	3	12	2	14	6	34	7	50	12	1	8
16	179800 Tire Manufacturing*	124	0	0	0	0	0	0	0	0	0	0	0
17	160602 Fire and Safety Technology 172801 Fireman Training	114	3	6	2	15	4	16	12	22	22	8	4
18	171901 Composition Makeup and Typesetting 171902 Printing	110	11	8	8	15	7	10	9	40	5	5	7

* Only Statewide Totals Given to Retain Anonymity of Firms.

8707

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

170000 TRADE AND INDUSTRIAL EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
19	171099 Const. and Maint. Trades	90	1	3	(22)	6	6	43	3	41	7	2	0
20	040300 Automotive 170399 Other Automotive	72	4	1	0	(10)	(3)	(1)	5	52	28	3	(3)
21	171600 Laundering	71	2	3	2	7	14	13	6	4	6	6	8
22	173200 Stationary Energy Sources Occupation	61	5	7	3	4	5	(8)	7	18	12	6	2
23	172304 Metal Trades, Combined	56	0	0	0	0	0	20	0	36	0	0	0
24	172307 Tool and Die Making	54	2	2	1	8	12	14	0	9	6	0	0
25	171503 Radio and TV Repair	53	2	(2)	0	3	6	17	4	13	5	3	2
26	170900 Commercial Photography	50	0	1	(1)	2	0	22	3	25	(2)	0	0
27	173601 Cabinet Making	41	(2)	1	(5)	(2)	7	18	(9)	(39)	(11)	4	1

8708

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

170000 TRADE AND INDUSTRIAL EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
28	170201 Appliance Repair	38	1	2	3	1	1	10	5	9	4	1	1
29	160112 Instrumentation Technology 172100 Instrument Maintenance and Repair	29	0	1	1	0	4	13	1	8	1	0	0
30	171003 Heavy Equipment Operator	28	(5)	8	(14)	25	(14)	(48)	22	38	10	3	3
31	172901 Baker	21	1	1	1	6	1	1	1	5	1	1	2
32	172399 Metal Working, Other	14	0	1	0	0	4	4	0	4	1	0	0
33	172301 Foundry	9	0	0	0	0	6	2	0	1	0	0	0
34	172400 Metallurgy	6	0	1	(1)	0	0	2	1	0	3	0	0
35	010300 Agricultural Mechanics (Welding) 172306 Welding	(9)	(4)	14	(20)	(36)	20	102	(9)	(87)	(12)	21	2

6028

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

170000 TRADE AND INDUSTRIAL EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
36	160103 Architectural Technology 160198 Drafting and Design 171300 Drafting	(11)	(23)	19	(39)	0	(7)	64	(20)	9	(15)	0	1
37	173500 Upholstery	(14)	1	(1)	0	2	0	(4)	1	(4)	(6)	0	(3)
37	170301 Body and Fender	(14)	(8)	(2)	(3)	(16)	6	2	7	(15)	10	12	6
39	170700 Commercial Art 170702 Display	(20)	(1)	(2)	1	0	1	(7)	0	10	(17)	(5)	0
40	171200 Diesel Mechanics	(52)	2	(2)	5	6	(1)	(35)	(6)	(14)	(8)	2	(1)
41	170302 Auto Mechanic	(111)	(33)	23	(15)	(19)	7	25	50	(148)	(16)	29	5
42	010300 Agricultural Mechanic 173100 Small Engine Repair	(174)	(23)	(23)	(26)	(29)	(10)	(8)	(3)	(50)	5	(13)	6
43	160101 Aeronautical Technology 170401 Aircraft Mechanics	(186)	(2)	(4)	(3)	(1)	(8)	(26)	6	(25)	5	0	0

A DESCENDING ORDERING OF PROGRAM CLUSTERS BY VO-TECH DIVISION

RANKED BY STATEWIDE NET MANPOWER DEMAND

170000 TRADE AND INDUSTRIAL EDUCATION

Rank	PROGRAM CLUSTERS	State-wide	N. E. # 1	M. E. # 2	S. E. # 3	S. C. # 4	E. C. # 5	Tulsa SMSA # 6	N. C. # 7	Okla. City SMSA # 8	S. W. C. # 9	S. W. # 10	N. W. # 11
44	170100 Air Conditioning	(201)	(21)	(17)	(7)	(15)	1	(24)	(2)	(106)	(12)	2	0

8711

APPENDIX A

8712

PERCENTAGES OF SECONDARY VOCATIONAL AND TECHNICAL GRADUATES AVAILABLE FOR THE LABOR MARKET*

AGRICULTURAL EDUCATION	Percentage
Agriculture Occ. Training	34
Agriculture Production	34
Agriculture Mechanics	32
Ornamental Horticulture	20
Agriculture, Other	14

DISTRIBUTIVE EDUCATION	
Advertising Services	47
Apparel and Accessories	27
Automotive	52
Finance and Credit	31
Floristry	41
Food Distribution	39
Food Services	40
General Merchandise	39
Hardware and Related	60
Home Furnishings	26
Hotel and Lodging	58
Industrial Marketing	29
Insurance	43
International Trade	30
Personal Services	42
Petroleum	40
Real Estate	37
Recreation and Tourism	23
Transportation	29
Distributive Education, Other	36

HEALTH EDUCATION	
Dental Assistant	63
Nurse, A.D.	86
Practical Nurse	93
Inhalation Therapy	90
Medical Office Assistant	67
Health Occupations, Other	25

HOME ECONOMICS	
Child Care	24
Clothing Production	14
Food Production	13
Home Furnishings	67
Occupational Home Ec., Other	32

BUSINESS AND OFFICE	Percentage
Accounting	65
Data Processing	40
General Office Clerk	46
Secretary	47
Typist and Related	53

TECHNICAL EDUCATION	
Architectural Technician	36
Chemical Technician	23
Electronics Technician	49
Mechanical Technician	40
Metallurgical Technician	17
Drafting and Design Tech.	40
Ranch Operation Tech.	100
Computer Science Tech.	45

TRADE AND INDUSTRIAL	
Air Conditioning	72
Heating and Plumbing	50
Appliance Repair	38
Body and Fender	54
Auto Mechanics	57
Other Automotive Services	55
Aircraft Mechanic	25
Commercial Art	38
Commercial Photography	6
Carpentry	50
Electricity	34
Diesel Mechanics	60
Drafting	32
Electronics	47
Radio-TV Repair	28
Graphic Arts	61
Machinist	58
Sheetmetal	62
Welder	60
Cosmetology	67
Quality Foods	47
Small Engine Repair	100
Tailoring	50
Upholstery	46
Cabinetmaking	39
T & I, Other	38

*Adapted from Cycle III Otis Report Supplement V, August 31, 1971

APPENDIX B

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FEDERAL ORGANIZATIONS WITH SUPPLY INFORMATION ENTERED IN THE OTIS INTERFACING

1. Bureau of Indian Affairs
2. Migrant Education
3. Work Incentive Program (WIN)
4. Opportunities Industrialization Center (OIC)

APPENDIX C

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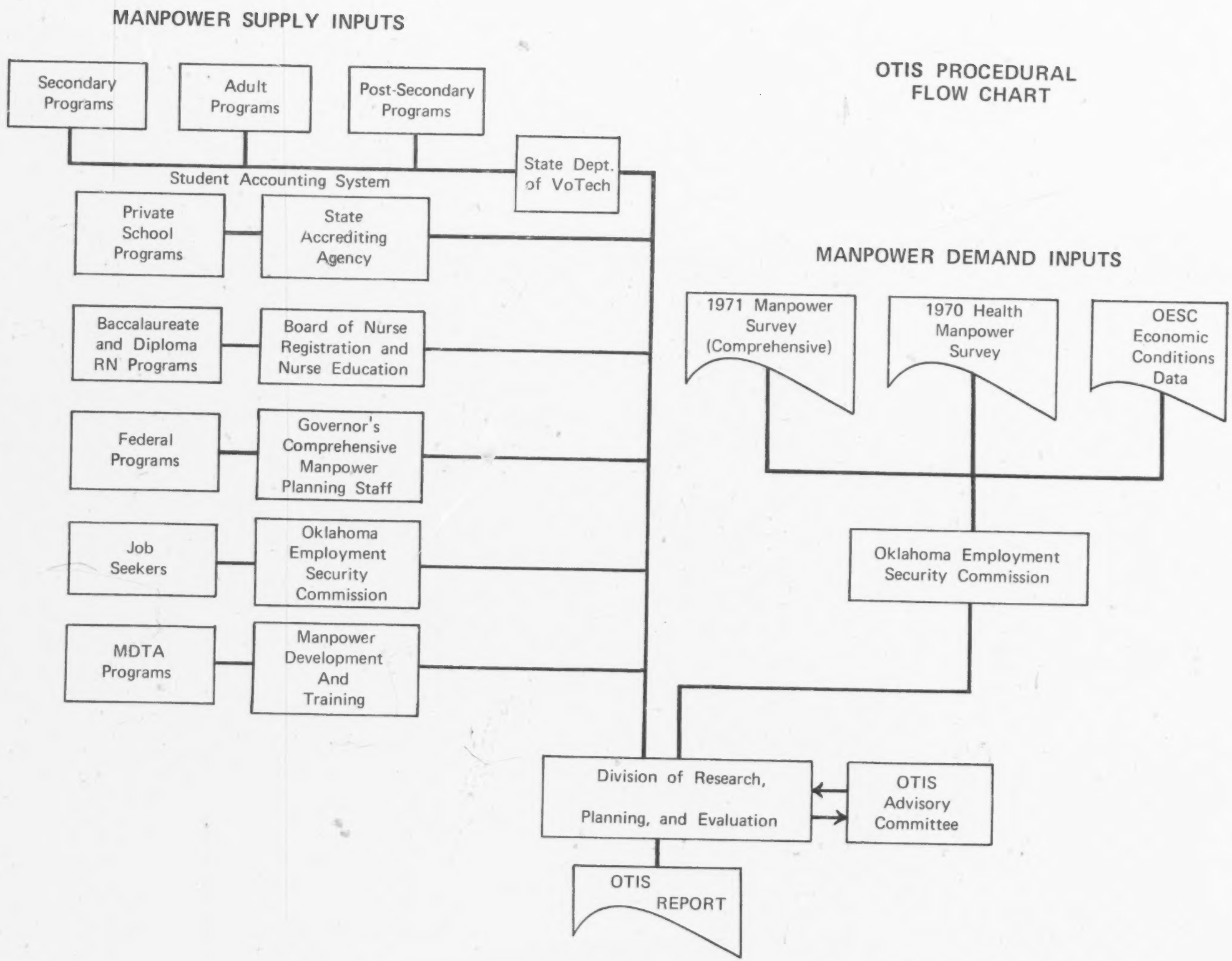
MANPOWER SUPPLY INPUTS
OTIS PROCEDURAL FLOW CHART
Secondary Programs
Adult Programs
Post-Secondary Programs
State Dept. of VoTech
Student Accounting System
Private School Programs
State Accrediting Agency
MANPOWER DEMAND INPUTS
Baccalaureate and Diploma RN Programs
Board of Nurse Registration and Nurse Education
1971 Manpower Survey (Comprehensive)
1970 Health Manpower Survey
OESC Economic Conditions Data
Federal Programs
Governor's Comprehensive Manpower Planning Staff
Job Seekers
Oklahoma Employment Security Commission
Oklahoma Employment Security Commission
MDTA Programs
Manpower Development And Training
Division of Research, Planning, and Evaluation
OTIS Advisory Committee
OTIS REPORT

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STATEWIDE TOTAL INDEX
ALPHABETICAL BY OCCUPATIONAL TITLE

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Admitting Clerk 20
Agricultural Mechanic 9
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Applicator 8
Appraiser, Real Estate 10
Art Layout Man 28
Assembler, Aircraft Structure 31
Assembler, Aircraft Sub-assembly 31
Assembler, Metal Products 35
Auto - A/C Mechanic 27
Auto Body Repairman 27

Baker 32
Bank Cashier 19
Batch & Furnace Man 35
Bench Grinder 30
Boner or Skinner 33
Bookkeeper 19
Bookkeeping Machine Operator 19
Bottle Machine Operator (Glass Mfg.) 35
Brake Operator 31
Brick Layer 34
Building Inspector 25
Butcher, All Round 33
Bus Driver 13
Buyer (Wholesale/Retail) 8

Cabinet Maker 34
Cable Splicer 29
Card-Tape Converter Operator 21
Carpenter 28
Cashier 19
Cement Mason 34
Central Supply Worker 17
Chef 32
Chemist 22
Claim Adjuster 10
Claims Clerk 19
Claims Examiner 19
Clerk-Typist 20
Cook 32
Copy Reader 12
Copywriter 12
Coremaker 30
Cost Estimator 19
Credit Clerk 19
Cutter, Hand or Machine 18
Cylinder Press Operator 30

Deliveryman 8
Diesel Mechanic 29
Digital Computer Operator 25
Dishwasher 14
Draftsman 22
Dump Truck Driver 13

E.E.G. Technician 16
E.K.G. Technician 16
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Electrician 29
Electronics Assembler 29
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Electro-Mechanical Tech. 24
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Farm Manager 8
Feed/Fertilizer Mixer 8
Fieldman 8
Fireman 25
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Flame Cutter Machine Operator 32
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Food Service Supervisor 14
Forklift Operator 13
Furniture Finisher 34
Furniture Upholsterer 33

Gamekeeper 9
General Office Clerk 20
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Greentire Inspector 34
Grinding Mill Operator 34
Grinder Operator 30
Groundskeeper 9

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Mill Man	34
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Nursery School Attendant	18
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Painter, Auto	27
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Painter, Spray	28
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Post Office Clerk	20
Poultry Worker	8
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Produce Sorter	8
Production Machine Tool Operator	30
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Programmer, Detail	25
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Statement Clerk	19
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Stillman	24
Stock Clerk, Auto	27
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Surgical Technician	15
Surveyor	22
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Tab Machine Operator	21
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Technician, Civil Engineering	22
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Technician, Electronics	23
Technician, Industrial	23
Technician, Mechanical	24

Technician, Quality Control	23
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Traffic Manager	13
Transit Clerk	19
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Truck Driver, Light	13
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Ward Clerk	17
Welder, Arc	32
Welder, Combination	32
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VT 014 779
A FIVE YEAR PLAN FOR A DEPARTMENT OF
VOCATIONAL AGRICULTURE.

OHIO STATE UNIV., COLUMBUS. DEPT. OF
AGRICULTURAL EDUCATION.
MF AVAILABLE IN VT-ERIC SET.
DEPARTMENT OF AGRICULTURAL EDUCATION, THE
OHIO STATE UNIVERSITY, 2120 FYFFE ROAD,
COLUMBUS, OHIO 43210 (SINGLE COPIES FREE;
ADDITIONAL COPIES-$.50 EACH)
PUB DATE - NOV71 10P.

DESCRIPTORS - *VOCATIONAL AGRICULTURE;
AGRICULTURAL EDUCATION; *PROGRAM PLANNING;
*RECORDS (FORMS); PROGRAM EVALUATION; STUDENT
ENROLLMENT; EDUCATIONAL PROGRAMS; STUDENT
PLACEMENT; OBJECTIVES
IDENTIFIERS - LONG TERM PLANS

ABSTRACT - THIS PUBLICATION IS INTENDED TO
ASSIST VOCATIONAL AGRICULTURE TEACHERS PLAN
5-YEAR PROGRAMS ADAPTED TO THEIR OWN
PARTICULAR SCHOOL AND COMMUNITY SITUATION.
CONTENTS INCLUDE CRITERIA WHICH MAY BE USED
AS A GUIDE FOR DEVELOPING THE LONG-TERM
PROGRAM AND SEVERAL FORMS FOR RECORDING
INFORMATION PERTAINING TO: (1) NUMBER
ENROLLED IN ORGANIZED INSTRUCTION, (2)
VOCATIONAL PREPARATION PROGRAMS AVAILABLE TO
POTENTIAL STUDENTS, (3) MAJOR ADJUSTMENTS AND
CHANGES IN AGRICULTURE, (4) PLACEMENT OF
GRADUATES, AND (5) ACTIVITIES, PROCEDURES,
AND POLICIES WHICH SHOULD BE ADDED OR
ELIMINATED. THIS IS A REVIEW OF VT 001 705
(ARM WINTER 1968). (SB)

VT 014 779

A FIVE YEAR PLAN FOR _____

DEPARTMENT OF VOCATIONAL AGRICULTURE

Clientele

Programs and Enrollments

Adjustments in Agriculture

Placement of Graduates

Activities to be Reduced

New or Additional Activities

Issued
by
The Department of Agricultural Education
The Ohio State University

November, 1971

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VT014779

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OFFICE OF EDUCATION
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DEVELOPING YOUR FIVE YEAR PLAN

Long term programs for vocational agriculture are an important means of preparing to meet changes in Agricultural Education. They are also a means of communicating goals and plans to program participants.

The following advantages can be expected from a written long term program for a department of vocational agriculture:

1. Helps the teacher of vocational agriculture identify his role in the community.
2. Provides for a better balanced program of vocational agriculture.
3. Makes it possible to assign priorities to various activities.
4. Provides for continuity of a program even with a change of teachers.
5. Serves as a guide for public information activities.
6. Leads to better community support.
7. Develops the concept of "our program and our responsibility" instead of "my program and my responsibility."

This form is intended to assist teachers of vocational agriculture in planning five year programs adapted to their own particular school and community situation. Before teachers begin planning such programs it is assumed that the situation is fairly well understood, that an evaluation of the current program of vocational agriculture has been made, that a copy is on file, and that important strengths and weaknesses of the program have been determined. Information on the community, its agriculture, and its school are all helpful in understanding the situation and in preparing tentative plans. Reference to "Facts on Farming" and "The Ohio Plan For Vocational Agriculture" should also prove helpful.

If we believe that representatives of a community should assist in planning the Agricultural Education program, then the teacher should be prepared to utilize their assistance effectively. This calls upon the teacher to develop a tentative long term plan for review with an advisory group. Such a plan becomes a first step toward the development of the finalized long term plan which can guide the program. Finally, this five year plan should have the approval of the school administrators, the board of education, and the vocational agriculture advisory committee. It is only after representatives of the school and community have studied and have offered their suggestions that a long term plan can make it's greatest contribution.

CRITERIA FOR EVALUATING FIVE-YEAR VOCATIONAL AGRICULTURE PROGRAMS

A long term program is a natural outgrowth of the evaluation of a department of vocational agriculture. Such a plan should present in brief form some of the priorities, changes and improvements which should be made during a three to five year period. The following criteria may be used as a guide for developing the long term program.

1. Goals and objectives for this program are relevant and meaningful for this community.
2. The program is sufficiently comprehensive for those persons needing and desiring Agricultural Education.
3. The program is appropriate to employment opportunities in agriculture in the area.
4. There is a desirable balance in effort and resources expended among various aspects of the program.

5. The program is realistic in terms of available professional and financial resources.
6. Priorities have been and are being established for the future development of this program.
7. The program is understood and supported as a part of the total public educational effort.
8. The program is challenging to all those who participate in it and to the teachers who guide it.
9. The goals for various activities are specific enough that they can be readily measured and evaluated.
10. The program provides for assistance and further development by appropriate advisory committees.
11. The outcomes of the program give promise of exceeding it's costs to the extent that it is a sound educational investment.
12. Provisions for continuous change and adjustment in the program are provided.

Ralph J. Woodin, Professor
Agricultural Education

November, 1971

RJW:zp

GOALS FOR THE CLIENTELE OF AGRICULTURAL EDUCATION
1971 - 1975

Appropriate goals should be established for the various groups of people in the school area who should be served through organized instruction by the program of agricultural education.

Group	Total Number in School Service Area - 1971	Number Enrolled for Organized Instruction - 1971	Number Enrolled in Organized Instruction - 1975
High School Students			
Number from full-time farms _____			
Number from part-time farms _____			
Number from non-farm homes _____			
Number of graduates _____			
Continuing Education Students			
Full time adult farmers _____			
Part-time adult farmers _____			
Young farmers _____			
F.B.P.A. Enrollees _____			
Off-farm Agricultural Personnel _____			
Other _____			
_____			
_____			

GOALS FOR PROGRAMS OF AGRICULTURAL CAREER PREPARATION
ACCESSIBLE TO POTENTIAL STUDENTS

Long terms goals which provide for access to a wide variety of training programs in agricultural education are appropriate. Certain programs may be provided in local schools, others in joint vocational centers.

Program	Location	Enrollment 1971	Enrollment 1975
High School			
Agricultural Production			
Agricultural Supplies Service			
Agricultural Mechanics			
Agricultural Products			
Ornamental Horticulture			
Agricultural Resources			
Forestry			
Continuing Education			
Adult Farmer Program			
Young Farmer Program			
Other			

GOALS FOR MAJOR ADJUSTMENTS AND CHANGES IN AGRICULTURE

These goals should indicate needed developments in the organization of the farm businesses and farming procedures of those enrolled in the program.

Change or Adjustment	Number following change or adjustment: 1971	1975
Example: One man dairy farms with herds of 50 cows producing 14,000 pounds of milk per cow.	6	24

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GOALS FOR PLACEMENT OF GRADUATES

The success of graduates of vocational agriculture in their chosen fields is one of the most important outcomes of the program. Goals for this area can assist in determining the future direction of the program of agricultural education.

	1971	1975
Employment in:		
Full time Farming		
Part-time Farming		
Off Farm Agricultural Occupations		
Non-farm Occupations		
Military Service		
Post High School Education - Enrollment of Graduates in:		
Agricultural Program Tech. Institute		
Non-agricultural Program - Tech. Inst.		
Agricultural College		
Non-agricultural College		
Other Post High School Programs		

ACTIVITIES, PROCEDURES AND POLICIES WHICH ARE TO BE ELIMINATED OR GIVEN LESS EMPHASIS

This section is particularly important to the redirection and improvement of the program since it may free professional time for more productive uses.

Program Area	Item	Year to be Reduced or Eliminated
School Relationships		
Planning the Program		
Teaching Procedures		
Curriculum		
Occupational Experience		
Advising the F.F.A.		
Agricultural Mechanics		
Young Farmer Program		
Adult Farmer Program		
Physical Facilities		
Public Information		

MAJOR NEW OR ADDITIONAL ACTIVITIES, PROCEDURES, POLICIES, AND DEVELOPMENTS FOR VARIOUS AREAS OF THE VOCATIONAL AGRICULTURE PROGRAM

Goals should be listed here which require new or additional teaching and leadership activities. These goals should support the accomplishment of the goals listed in previous sections of the program.

Program Area	Item	Year to be Instituted or Started
School Relationships		
Planning the Program		
Teaching Procedures		
Curriculum		
Occupational Experience		
Advising the F.F.A.		
Agricultural Mechanics		
Young Farmer Program		
Adult Farmer Program		
Physical Facilities		
Public Information		

VT 014 780
GUIDELINES AND CRITERIA FOR IMPLEMENTING VOCATIONAL EDUCATION PROGRAMS FOR THE DISADVANTAGED AND HANDICAPPED.

NEW MEXICO STATE DEPT. OF EDUCATION, SANTA FE.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - ND 40P.

DESCRIPTORS - *VOCATIONAL EDUCATION; *OCCUPATIONAL INFORMATION; *DISADVANTAGED YOUTH; *HANDICAPPED STUDENTS; *PROGRAM PLANNING; PROGRAM EVALUATION; STUDENT EVALUATION; GUIDELINES; CRITERIA; SCHOOL FUNDS; STATE PROGRAMS
IDENTIFIERS - NEW MEXICO; VOCATIONAL EDUCATION AMENDMENTS OF 1968

ABSTRACT - THIS HANDBOOK WAS DESIGNED TO HELP TEACHERS, SCHOOL ADMINISTRATORS, AND SUPERVISORS EVALUATE DISADVANTAGED AND HANDICAPPED STUDENTS AND TO PROVIDE A GUIDE FOR PLANNING OCCUPATIONAL EDUCATION PROGRAMS FOR THESE YOUTH. DESCRIPTIVE LISTS OF CONDITIONS AND CHARACTERISTICS FOR EVALUATING THE STUDENTS ARE PROVIDED ALONG WITH SUGGESTED REPORT FORMS AND FLOW DIAGRAMS OF SYSTEMS FOR CHANGING BEHAVIOR AND FOR IMPLEMENTING THE VOCATIONAL EDUCATION AMENDMENTS OF 1968. SUGGESTED PROCEDURES FOR PROGRAM EVALUATION AND RECOMMENDED SERVICES AND PROGRAM COMPONENTS ARE INCLUDED. THE LIMITATION AND USE OF FUNDS ARE DISCUSSED. (GEB)

VT 014 780

GUIDELINES AND CRITERIA

FOR

IMPLEMENTING

VOCATIONAL EDUCATION PROGRAMS

FOR THE

DISADVANTAGED AND HANDICAPPED

RECEIVED
JAN 3 1972
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WELDON PERRIN
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VOCATIONAL EDUCATION

ERNEST A. VIGIL
DIRECTOR

SPECIAL NEEDS

SHELLY WEISSMAN
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VOCATIONAL–TECHNICAL EDUCATION AREA

STATE OF NEW MEXICO

DEPARTMENT OF EDUCATION — EDUCATION BUILDING

SANTA FE - 87501

ERNEST A. VIGIL, STATE DIRECTOR
VOCATIONAL-TECHNICAL & ADULT EDUCATION

TO ALL CONCERNED INDIVIDUALS

Serving the individual vocational needs of disadvantaged and handicapped persons of our state is a difficult task for an educator. For the teacher it means identifying the difficulty, revising the curriculum and obtaining techniques in order to teach sensitive, frustrated, often apathetic children. For the administration it means making special dispensations in terms of budgetary allocations, specialized personnel, obtaining additional space and drawing up proposals in order to provide the special assistance.

Due to the complexity and scope of the problems, we as educators must face in trying to alleviate the pressures of disadvantaged and handicapped persons in our schools today, a foundation must be laid so that we may face the challenge with confidence.

The purpose of this publication is to provide direction and clarity for school administrators and teachers in order to encourage future vocational programs to meet the special needs of these students. You have before you the criteria necessary to pre-plan your strategies, diagnosis, the need, organize the vocational program, and evaluate the results. Our first publication entitled, "Special Needs Handbook," focused upon general guidelines and current program emphasis implemented throughout our state. This publication is in no way a duplication and should be considered a legal tool in which to construct your future programs to meet individual and group needs of the disadvantaged and handicapped in your school district.

I wish to take this opportunity to express my appreciation to Mr. Ernest Vigil, State Director of Vocational Education and Mr. Wade Fredrickson, Assistant State Director of Vocational Education for reviewing this document and necessary revisions.

I hope you will join us in serving students with special needs throughout New Mexico. Let's no longer neglect the neglected!

Sincerely,

Shelly Weissman

Shelly Weissman
State Supervisor
Special Needs

SW:jas

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INTRODUCTION

Congress, through the 1968 Amendments to the 1963 Vocational Education Act, recognized the need for strengthening vocational education programs and expanding the availability of such programs for disadvantaged and handicapped persons. The new legislation makes it very clear that each state will utilize not less than 10 percent of its Federal funds from part "B" of the act for vocational programs specifically designed for the handicapped and 15 percent for the disadvantaged.

This handbook has been prepared in an effort to help teachers, school administrators, and supervisors identify and evaluate disadvantaged and handicapped students in order to plan Occupational Education Programs for these youth.

Continuing revisions to this handbook may be made as additional information is compiled in the area of identification methods and program planning for disadvantaged and handicapped students in an effort to best meet the purposes of such a program.

DISADVANTAGED

"Disadvantaged persons" means persons who have academic or other handicaps resulting from socio-economic or cultural impoverishment that prevent them from succeeding in regular vocational education programs designed for persons without such handicaps, and who for that reason require modified or specially designed educational programs and related services or a combination of such programs and

services in order for them to benefit from a vocational education program or consumer and homemaking education program. The term includes persons whose needs for such programs or services result from poverty, neglect, delinquency, or cultural or linguistic isolation from the community at large and includes all other physically or mentally handicapped persons as long as such persons are handicapped as a result of socio-economic conditions described in this paragraph. Programs for handicapped children who do not suffer from the conditions of a disadvantaged background should be prepared in relation to the provisions for handicapped children under this same act. (The Vocational Education Act of 1963 as amended in 1968.)

FOR WHOM OCCUPATIONAL PROGRAMS MAY BE DEVELOPED

Those persons who are disadvantaged to the extent that they cannot succeed and/or compete successfully in regular vocational or consumer and homemaking education programs qualify for special vocational assistance. Persons who can benefit from regular programs with minor adjustments do not qualify for specially designed programs unless it provides supportive services to a regular program. For example, disadvantaged students who qualify may be enrolled in regular vocational programs with students who are not disadvantaged as described in the preceding paragraph and provided with such supplementary services as may be necessary for them to compete successfully in a regular program with minor adjustments. In such cases, only the cost of the supportive services provided and the additional cost for making adjustments can be considered as effort

requiring additional cost to local administrative units. In such cases, only the additional cost may be considered within the local education agency's effort to utilize allotted resources for the disadvantaged.

A DESCRIPTIVE LIST OF CONDITIONS AND CHARACTERISTICS FOR EVALUATING THE DISADVANTAGED STUDENT:

THE ECONOMICALLY DISADVANTAGED STUDENT:

- Whose family income falls below the poverty level (Utilize Title I criteria).
- Who lacks proper food, clothing, and shelter
- Who lacks money for normal school expenses

THE CULTURALLY DISADVANTAGED STUDENT WHO:

- Comes from broken or sub-normal home
- Lacks exposure to the "average" culture and experiences in or exposure to music, art, literature, etc.
- Is unable to use the formal language necessary for average school progress
- Comes from a disadvantaged or impoverished cultural background

THE EDUCATIONALLY DISADVANTAGED STUDENT WHO:

- Has serious reading, computational, or language difficulties
- Is two or more grades below state and/or national achievement norms for age and/or grade
- Is failing two or more subjects
- Is a potential dropout and may have one or more of the preceding characteristics

- Has been exposed to curriculum that has not been designed to meet student educational and occupational needs which has resulted in one or more of the above characteristics and which will not prepare the student to meet occupational demands beyond the high school level. (If in fact after completion of a high school program, the student cannot or does not meet the requirements for continued higher academic and technical or skill programs or cannot meet job requirements, then he should be considered as educationally deprived.)

THE SOCIALLY MALADJUSTED STUDENT

Possible Symptoms:

- Defies rules and regulations
- Likes to dominate the scene
- Behaves in an unrestrained manner or shows such behavior that is disrupting to the school program for others and is difficult to manage behaviorally.
- Is persistently truant from school and absent from home
- Has a consistently poor self-image
- Is hostile
- Is socially agressive and unconventional
- Is overly sensitive to constructive criticism and/or generally exhibits behavior difficult to manage in school and expulsion from school may be imminent.

Caution should be exercised when designing programs to adequately serve the disadvantaged. Students should be carefully evaluated to determine whether they display any or all of the above characteristics. Persons qualify for participation in special programs only when they are disadvantaged to the extent they cannot succeed in regular vocational programs (even with minor adjustments) designed for persons without such handicaps.

HANDICAPPED

The "handicapped" are those persons who are mentally retarded, hearing impaired and deaf, speech handicapped, visually impaired and blind, seriously emotionally disturbed, crippled, those with learning disabilities or health-impaired persons who by reason of their handicapped condition cannot succeed or participate in a vocational or consumer and homemaking education program designed for persons without such handicaps, and who for that reason require special educational assistance or a modified vocational or consumer and homemaking education program.

FOR WHOM OCCUPATIONAL PROGRAMS MAY BE DEVELOPED

Those persons who are handicapped to the extent that they cannot succeed in and/or compete successfully in regular vocational or consumer and homemaking education programs.

A DESCRIPTIVE LIST OF CONDITIONS AND CHARACTERISTICS FOR EVALUATING THE HANDICAPPED STUDENT

Physical Handicaps:

Speech Handicapped

Definition: The student has speech handicaps when his speech is defective, which includes speech articulation disorders or abnormalities of oral physical structures necessary for speech production. Speech is defective when it deviates far from the speech of other people, claims attention, interferes with communication and may cause these students to be maladjusted.

Possible symptoms:

Does not speak distinctly and lacks sufficient volume to be heard.

Tries hard, but no sound comes out.

Blinks his eyes excessively, engages in other bodily motions while talking in an effort to communicate or clarify his speech.

Lisps.

Omits sounds from words, adds to words, distorts words and substitutes one letter for another.

Identification:

The speech and hearing therapist is responsible for surveying or screening the speech and hearing of the school population, in accordance with the local education administrations comprehensive plan for education. Referrals from principals, teachers, school or public health nurses, or other agencies may be included. A child must have deviant or defective speech as indicated by appropriate diagnostic speech and hearing tests.

Hearing Impaired

Definition: The hearing-impaired student is one whose loss of hearing is educationally significant. This includes a child whose hearing is impaired to the degree that speech and language development is delayed or deficient, or that his progress in regular classes is hampered.

In addition, the hearing-impaired child is one whose hearing losses are handicapping him educationally and developmentally, and includes the child who may later be educationally classified as hearing impaired as well as one who may later be classified as deaf.

The hearing-impaired child is one whose hearing is defective but still functional, with or without a hearing aid, for the routine tasks of life.

The deaf child is one whose hearing or residual is not functional with or without a hearing aid for the routine tasks of life.

Possible Symptoms: (primarily due to hearing impairment)

- Seems inattentive consistently.
- Has difficulty in locating sound direction
- Shows repeated inability to hear in a group.
- Frequently fails to respond to questions
- Asks to have words or sentences repeated
- Has an unusually loud or weak voice.
- Withdraws from the group
- Complains of bussing or ringing in the ears.
- Has poor articulation.

Identification:

The identification of hearing-impaired children may be made by physicians, qualified health officials, registered nurses, or other referral personnel.

Visually Handicapped

Definition: The visually handicapped child retains relatively low degrees of vision, or he may have remaining vision which makes it possible under very special conditions for him to read limited amounts of regular large print. They are:

Blind Children--Those who have so little remaining vision that they must use braille as their reading medium.

Partially Seeing Children--Those who have loss of vision, but are able to use regular or large type as their reading medium. These will generally be children who have a visual acuity between 20/70 and 20/200 in the better eye after correction.

Legal Blindness--Those who have a visual acuity of 20/200 or less in the better eye after correction or a peripheral field so contracted that the widest diameter subtends an arc no greater than 20 degrees.

Possible Symptoms:

Rub their eyes excessively, frown and attempt to brush away blurs.

Blink frequently and may become irritable when doing close work.

Have crossed eyes.

Stumble or trip over objects.

Are unable to participate in games requiring distance vision even when corrected.

Write erratically.

Complain of dizziness, headaches, or nausea following close eye work.

Identification:

Visually handicapped children may be identified by regular classroom teachers and school or public health nurses in observation and vision screening programs. Children may also be referred by physician in routine physical examinations or in eye clinics held throughout the State.

Identification may be established under one of the following eye conditions as determined by a specialist:

Central visual acuity of 20/70 or less in the better eye after correction.

Restricted field of vision, no greater than 20 degrees.

Progressive eye difficulty of a serious nature.

Insufficient near vision for reading regular print.

Crippled

Definition: Students with crippling handicaps have muscular or neuro-muscular conditions which limit their mobility. Any child who has a crippling physical disability making it inadvisable for him to participate in the regular classroom program of

the public schools is eligible for a program specially designed for handicapped persons. Qualifying handicaps are those of short term, a serious long term, permanent, or progressive nature and may include disabilities resulting from orthopedic, cardiac, or other systemic conditions.

Possible Symptoms:

Have poor coordination.

Walk awkwardly or with a limp.

Move in a jerky or shaky fashion.

Show signs of pain during exercise.

Have defects which interfere with normal functioning of the bones, muscles or joints.

(A few of the more common crippling conditions are: cerebral palsy, infantile paralysis, arthritis, bone and joint disease.)

Identification:

Identification may be made by a physician or other qualified personnel relative to the nature and extent of the crippling condition, the physical limitations within which the pupil can operate successfully, and the anticipated length of the time the pupil will be incapacitated by either primary or secondary effects of the illness or condition.

Other Health Handicaps

Definition: These students have disabilities which result in reduced efficiency in school work because of temporary or chronic lack of strength, vitality or alertness, as diagnosed by a physician or other qualified person with information indicating the above as primary effects.

Possible Symptoms:

Are easily fatigued.

Are excessively restless and/or overactive.

Are usually breathless after exercise.

Complain of chest pains after physical exertion.

Are subject to frequent colds.

Are extremely inattentive.

Are excessively hungry and thirsty.

(A few of the more usual health problems are: rheumatic fever, organic heart disease, epilepsy, diabetes, asthma and nutritional deficiences.)

Identification:

Identification may be made by a physician, or other examiner duly qualified to identify the illness or condition and submit necessary information to support the diagnosis.

Mental Handicaps

Definition: Mental Retardation refers to sub-normal general intellectual functioning which originates during the developmental period and is associated

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with impairment in one or more of the following aspects of adaptive behavior: (1) maturation, (2) learning, and (3) social adjustment. The classification of educable mentally retarded applies to those children of school age who are developing intellectually of about one-half to three-fourths the rate of average children.

Identification:

Identification should be made upon the recommendation of a qualified psychological examiner together with evaluation of a child's academic record by the teacher, principal, supervisor and other relevant school officials.

Trainable Mentally Retarded - The intelligence quotient in the 25-50 range as determined by the Stanford-Binet Intelligence Scale, the Wechsler Intelligence Scale for Children, or a test of equal validity and equivalent norms.

Educable Mentally Retarded - The intelligence quotient in the 50-75 range as determined by the Stanford-Binet Intelligence Scale, the Wechsler Intelligence Scale for Children or a test of equal validity and equivalent norms.

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Slow Learner (possible pseudo-retardate)

The intelligence quotient in the 75-85 range as determined by the Stanford-Binet Intelligence Scale, the Wechsler Intelligence Scale for Children or a test of equal validity and equivalent norms.

Seriously Emotionally Disturbed

Definition: The emotionally disturbed child is one who has such emotional conditions that he/she fails to adjust in the regular educational program. This child is often said to have "primary emotional problems" that result in behavior and learning difficulties.

Emotional disturbance often occurs in conjunction with other handicapping conditions in the same child. For example, the emotionally disturbed child may have secondary learning problems such as mild sensory or speech handicaps and may be physically and/or perceptually handicapped.

Identification:

Children showing symptoms of emotional disturbance may be referred to specialists by regular class teachers and parents, and through programs conducted by mental health clinics. Children referred should have a psychiatric or clinical

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psychological evaluation which indicates serious emotional disturbance and inability of the child to profit from the regular instructional program.

Learning Disabilities

Definition: The child with a learning disability exhibits a disorder in one or more of the basic psychological processes involved in understanding or using spoken or written language. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling or arithmetic. They include conditions which have been referred to as perceptual handicap, brain injury, minimal brain dysfunction, dyslexia, developmental asphasia, etc. They do not include learning difficulties which are due primarily to visual, hearing, or motor handicaps, to mental retardation or to emotional disturbance. A learning disability may be caused by external as well as internal factors or may result from a combination of both factors. In any event the child will show a strong contrast between his level of academic achievement and measured intellectual potential.

Identification:

Children showing symptoms of a learning disability may be referred to specialists by regular

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classroom teachers and parents, and through programs conducted by developmental evaluation and mental health clinics, and through university related clinics. Diagnosis of a learning disability may be made by a qualified examiner such as a school, educational or clinical psychologist or psychological examiner, a physician or neurologist or learning disability specialist qualified to make such evaluations.

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SUGGESTED PROCEDURES FOR EVALUATING DISADVANTAGED AND HANDICAPPED STUDENTS FOR PLANNING OCCUPATIONAL EDUCATION PROGRAMS

ORGANIZING A COMMITTEE:

A committee should be appointed in each local school to function with organized procedures for proper identification of disadvantaged and handicapped youth. This is perhaps the most important feature for planning since the communication of information about planning for a student is basically started and implemented with the committee members. Suggested members to serve on this committee are:

- Principal
- Teachers
- Representatives of Pupil Personnel Services such as: Guidance Counselors, School Psychologist, School Social Workers, Attendance Counselors, School Health Personnel, and Pupil Appraisal Personnel.
- Representatives of Vocational Rehabilitation Services.
- Representatives from other community organizations that have relevant information on the background or on planning for children e.g. Department of Welfare.
- Special Education Personnel
- Local Supervisors

SOURCES OF INFORMATION TO BE USED BY THE COMMITTEE TO EVALUATE DISADVANTAGED AND HANDICAPPED STUDENTS FOR PLANNING OCCUPATIONAL EDUCATION PROGRAMS

Uses of School Records:

a. Education history

b. Family and Social history background

c. Health records

d. Academic, achievement and psychological test records

e. Social and personal record

f. Attendance record

g. Activities--in and out of school

h. Vocational plans

i. Significant teacher notes

j. Talents, skills, and abilities

Student Information:

a. Interview with student

b. Autobiography

c. Observation

d. Social peer relationships

e. Other related student information

Home:

a. Parents and/or Guardians

Community:

a. Neighbors and friends

b. Religious Organizations

c. Civic Organizations

d. Business and Industry

e. Other related community resources

Public and Social Agencies:

a. Welfare

b. Child Guidance Clinics

c. Children's Court

d. Public Health Department

e. Employment Security

f. Family Service Agency

The teacher and committee should see that all available and relevant data concerning a student is considered if valid conclusions are to be drawn to effectively develop programs to meet the occupational needs of the student.

Teachers and persons working with students are strongly encouraged to use a variety of diagnostic measures and not be limited to the use of a single diagnostic instrument. The evaluator should consider mechancial, verbal and written measures of abilities, and performance for the purpose of planning more effective educational programs.

PERSONALITY TESTS

These instruments can be used in helping to identify and evaluate some personality characteristics of children who are disadvantaged culturally, the socially maladjusted and possibly point to children with emotional problems.
Administration and interpretation of Personality Tests should be performed by persons whose training have equipped them to analyze such results.

This test information could be incorporated into the Summary Sheet as part of determination of children for this program.

SUGGESTED TEST:

1. Gordon Personal Profile by Leonard V. Gordon
   (For high school)

   Harcourt, Brace and World
   757 Third Avenue
   New York, New York 10017

2. The Adjective Check List
   (For high school)

   Consulting Psychologists Press
   577 College Avenue
   Palo Alto, California

3. Behavior Preference Record
   (For grades 4-6; 7-9; 9-12)

   California Test Bureau
   5916 Hollywood Blvd.
   Los Angeles, California

4. Mooney Problem Checklist
   (For junior high school and senior high school)

   The Psychological Corporation
   304 E. 45th Street
   New York, New York

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CLASSROOM TEACHER'S EVALUATION REPORT
(To Be Completed By Each Subject Teacher)

The classroom teacher's evaluation report has been prepared so that the subject-matter teachers can rate twenty-six significant personal qualities of each student.

Each personal quality is rated either frequently, occasionally, or not observed.

Provisions have been made for listing known handicaps, special talents and recommended areas in which the student needs special instruction or help.

Student _____ _____
Last First Middle Subject

SIGNIFICANT PERSONAL QUALITIES

Please check ( ) the following in order to rate the student on each characteristic:

		Frequently	Occasionally	Not Observed
1.	Is overly shy and withdrawn			
2.	Is fearful or distrustful			
3.	Is willing to try new activities			
4.	Seeks Attention			
5.	Dominates others			
6.	Is agressive			
7.	Is frequently chosen by others			
8.	Prefers isolation from group			
9.	Is easily discouraged			
10.	Is disrespectful			
11.	Frequently absent or tardy			
12.	Had difficulty adjusting to school			
13.	Assumes responsibility			
14.	Is reliable			
15.	Continuous inability to understand or comprehend			
16.	Tries too hard			
17.	Underachiever (Above average student doing below-average work)			

	Frequently	Occasionally	Not Observed
18. Acute sensitivity -- cries easily			
19. Is neat and clean			
20. Encourages others			
21. Is courteous and appreciative			
22. Has good manual dexterity			
23. Is agile/well-coordinated			
24. Appears to prefer older children			
25. Appears to prefer younger children			
26. Mingles with children of opposite sex			

List any known handicaps: _____

_____

Briefly describe any special talents: _____

_____

_____

Recommended areas in which the student needs special instruction or help: _____

_____

Comments:

_____
Signature of Teacher

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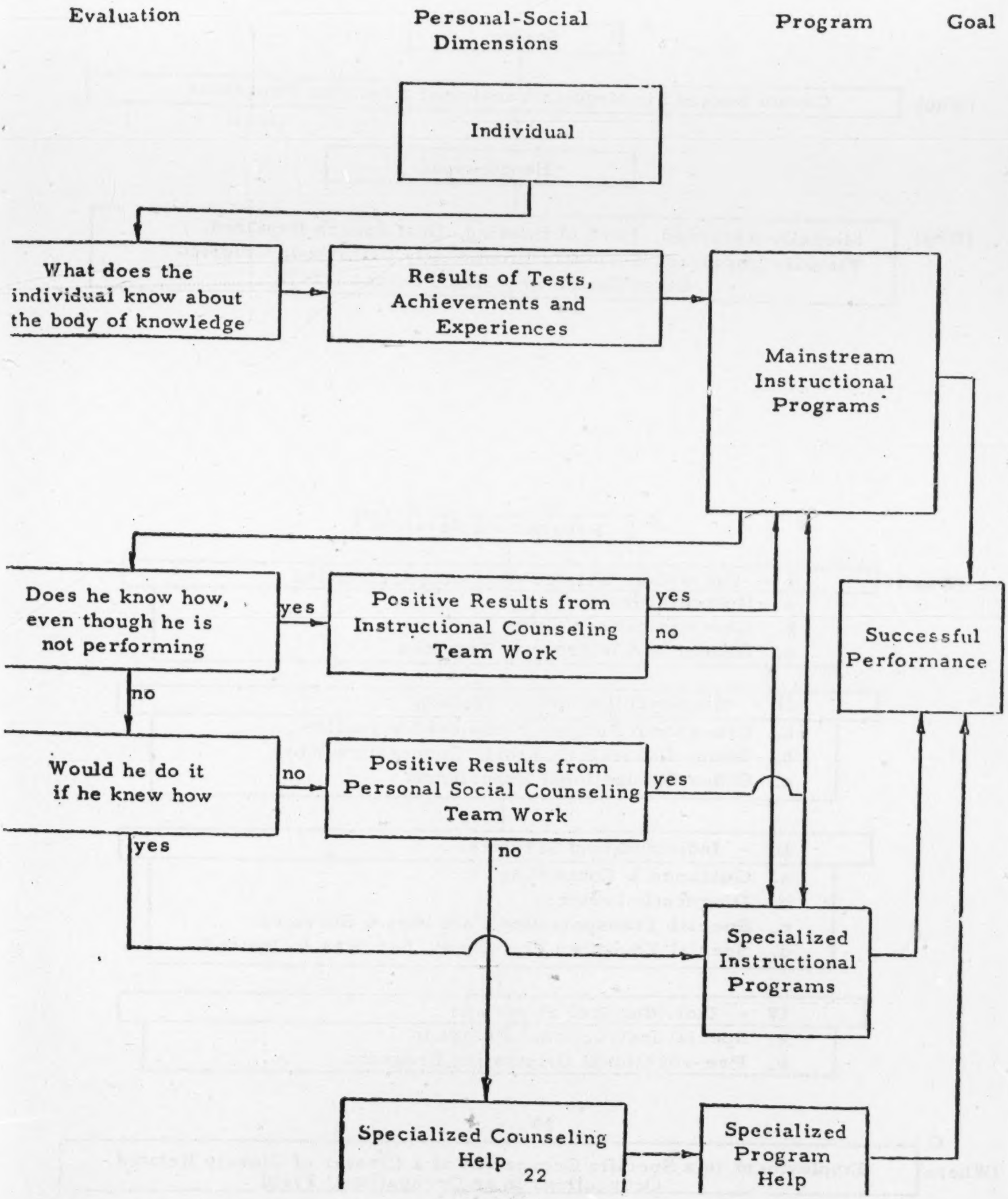
A Flexible Comprehensive System for Changing Behavior



Implementing the Vocational Education Amendments of 1968
Public Law 90-576

A Student

(Who) Cannot Succeed in Regular Vocational Education Programs

Handicapped

(Why) Mentally Retarded, Hard of Hearing, Deaf, Speech Impaired, Visually Impaired, Seriously Emotionally Disturbed, Crippled Other Health Impaired Persons - 10%

B Programs & Services

(What)

I - Classroom Related Academic Instruction
- a. Remedial Instruction
- b. Communications Skills Training
- c. Reader and Interpreter Services

II - Employability Skills Training
- a. Classroom Related Technical Instruction
- b. Shop, Laboratory, Field, Cooperative Work
- c. Other Occupational Experience

III - Individualized Services
- a. Guidance & Counseling
- b. Diagnostic Services
- c. Special Transportation Facilities & Services
- d. Special Education Equipment, Services & Devices

IV - Individualized Programs
- a. Special Instructional Program
- b. Pre-vocational Orientation Program

C

(Where) Employment in a Specific Occupation or a Cluster of Closely Related Occupations in an Occupational Field

SOME SERVICES AND PROGRAM COMPONENTS FOR THE DISADVANTAGED

1. Surveys by contract or by staff
   a. Of employment opportunities for disadvantaged youth and adults
   b. To identify disadvantaged persons
   c. To identify geographical areas of concentration
2. Recruitment and promotional costs required to reach disadvantaged youth and adults; advertising, speaking engagements, working with citizen groups, TV announcements, visual presentations
3. Scheduling modifications
   a. Individual scheduling requiring additional time of faculty
   b. Extended school day, week, or year requiring additional time of faculty
   c. Individual instruction requiring special faculty time
   d. Extension of time for program completion such as a longer school day, an additional semester or semesters.
   e. Flexible scheduling permitting students to enter and/or leave the school when the students, teachers, and counselors feel they are ready, willing, and able to pursue their studies or to obtain a job.

NOTE: These services and programs, personnel and scheduling, are all in addition to those provided other students

4. Formation and servicing of Advisory Committee on the Disadvantaged similar to activities performed for occupational advisory committees
5. Curriculum development for individual, modified, or special programs
   a. Additional salaries required for specialists familiar with needs of disadvantaged and techniques to meet these needs

b. Special supplies and instructional materials developed especially for disadvantaged students

c. Consultants

d. Contracting out for services when such are necessary to supplement existing staff efforts

e. Orientation-to-work programs including personal development and social skills courses

f. Occupational orientation programs including field trips

g. Research, experimental, and demonstration projects

h. Program evaluation by contract or by staff

6. Personnel

a. Psychologist

b. Reader and/or interpreter

c. Remedial education specialist

d. Program developer and coordinator

e. Instructional aides

f. Job placement coordinator

g. Job development coordinator

h. Social worker

i. Specially trained guidance counselor

7. Services

a. Educational testing for academic diagnostic purposes

b. Family counselling services related to the student's vocational program

c. Psychological services for diagnosis of emotional and mental problems

d. Guidance and counselling for academic and psychological purposes

e. Bilingual instruction and bicultural orientation

8. Staff Development

a. Extra work hours required of faculty for seminars, conferences, meetings in teams, and workshops

b. Organization of specialized institutes

c. Arranging meetings with the participation of persons from related services and organizations for purposes of cooperation and coordination. This might include staff of other training programs, business and labor representatives, community and neighborhood leaders, other educational officials

9. Business Cooperation

a. Additional staff required to coordinate work experience or work-study programs outside of the formal vocational education programs, but which require the cooperation of business, and close supervision and guidance by the school

1) Big Brother arrangement

2) In-school or after-school arrangements in which credit is given

3) Arrangements whereby one or more industries adopt a program or school

b. Staff members detailed the added assignment of working with business and industry to arrange for summer jobs for faculty for updating skills and knowledge.

SOME SUGGESTED SERVICES AND PROGRAM COMPONENTS FOR THE HANDICAPPED

1. Survey by contract or by staff members to identify:
   a. handicapped population
   b. methods, materials, equipment, and techniques utilized in providing vocational education programs for handicapped persons
   c. occupational opportunities available to the handicapped
   d. other agencies, organizations, and individuals who are concerned with and knowledgeable about education of handicapped persons
   e. extent of vocational preparation being provided by other agencies and organizations
   f. areas in which programs are needed..(geographic, population groups, manpower needs, etc.)
2. Recruitment and promotional activities designed to reach handicapped persons, potential employers and potential teachers, and to develop community participation and support
   a. advertising, speaking engagements, working with citizen groups
   b. TV announcements, posters, and other visual presentations
3. Scheduling modifications
   a. individual scheduling which requires additional faculty time
   b. extended school day, week, or year, which requires additional faculty time and other related expenses
   c. individual instruction which requires additional faculty time

d. flexible scheduling permitting individual student to enter and/or leave program when student, teachers, and counselors, feel is appropriate to students' progress

4. Formation and servicing of Advisory Committee for the Handicapped, similar to activities which are performed for occupational advisory committees.

5. Formation of, and participation in activities of coordinating committees...State and local.
   a. travel expenses
   b. additional time of assigned faculty member
   c. additional clerical expenses

6. Modifications of regular program
   a. Special equipment necessary for handicapped persons if they are to succeed in vocational program

Examples:

Visually handicapped	Instructions in Braille Large Print materials Signals which use sound rather than sound (lights rather than bells) Special safety devices such as additional guard rails around moving parts of a machine
Deaf and the Hard of Hearing	Printed rather than verbal instructions Signals which use sight rather than sound (lights rather than bells) Sound amplification devices...Hearing aids for individual students are not an allowable item but desks and work stations can be equipped with earphones and amplification systems
Crippled	Adaptations of regular equipment such as adding hand controls to machines which regularly have foot controls Special desks and work tables for students who are in wheel chairs Ramps for students who cannot use stairs
Mentally Retarded	Simplified equipment Simplified instruction guides and manuals

Cardiac and other physically impaired persons	Additional facilities for rest periods Handrails in washroom and corridors

b. Curriculum modifications for individual students, (Adaptation of curriculum to use the abilities which each student possesses in order to compensate for his disability) which may involve additional expenditures

1) additional time allotment when needed for skill development
2) special work books and/or text books for the handicapped student
3) task analysis: break down each procedure required in a job into tasks and each task into its various components to identify the modifications in instruction, equipment, or methods which would be needed if the handicapped individual is to achieve success in developing the required skill

c. Educational services which are supplementary to regular programs and are specifically needed by reason of the handicapping condition

1) psychological services; testing, evaluation, consultation services which are additional to those provided nonhandicapped students and which are needed to enable students to succeed in regular program
2) reader services for the visually handicapped
3) guide services to lead handicapped student to classes, rest room, bus, etc.
4) interpreter services for the deaf
5) physical assistance when necessary (assisting crippled or otherwise handicapped students may be provided by aides)
6) tutorial services

7) teacher training activities--pre-service and in-service education to prepare teachers to work with handicapped persons in vocational education programs

8) vocational orientation for handicapped persons

9) remedial education

10) educational specialists, speech therapists, teachers of the deaf, teachers of the blind, etc.

11) consultation services

12) job placement coordinators, job finding, placement and employment followup services for handicapped students

13) program and curriculum development: personnel and services

14) guidance and counseling services which are in addition to that provided to nonhandicapped students; this may include referral and followup services which are needed by the handicapped student if he is to succeed in the vocational program

15) transportation services which are in addition to those provided nonhandicapped

NOTE: [1]Some of the services noted above are available through Special Education, Vocational Rehabilitation, and/or other public agencies. These resources should be used whenever possible.

[2]The assessment of abilities of individual students must be a cooperative effort of general educators, special educators, vocational educators, vocational rehabilitation counselors, guidance counselors, psychologists, and other related professionals in the appropriate field.

Limitation of Funds

Funds available for vocational education for handicapped persons may not be used to provide food, lodging, medical, and dental services and other services which may be necessary for students enrolled in such programs, but which are not directly related to the provision of vocational education to such students. For example, safety glasses may be an allowable expenditure but regular eye glasses are not. However, the State Board or local educational agency conducting such programs shall encourage the provision of such services through arrangements with other agencies responsible for such services. Also, funds may not be used to pay student stipends or wages for participation in approved projects. Furthermore, funds cannot be used for publicity or advertisement to present or promote the operation of the program.

Funds available for vocational education for disadvantaged persons may not be used to provide food, lodging, medical, and dental services and other services which may be necessary for students enrolled in such programs, but which are not directly related to the provision of vocational education to such students. However, the State Board or local educational agency conducting such programs shall encourage the provision of such services through arrangements with other agencies responsible for such services.

Summary of Possible Uses of Funds for Vocational Education of Handicapped and Disadvantaged.

- Vocational Psychologist
- Speech and Hearing Specialist
- Reader and Interpreter Services (Tutorial)
- Remedial Education Specialist (Services)
- Consultant Personnel
- In-service and Pre-service Educational Programs
- Vocational Education Aides
- Special Programs (projects)
- Transportation Facilities and Services
- Instructional Materials Development Personnel
- Local Supervisor and Coordination Personnel
- Guidance and Counseling Diagnostic Service
- Job Placement Coordinator for Handicapped
- Equipment and Devices (specialized)
- Instructional Materials
- Teaching and Laboratory Equipment
- Adult Programs and Services

V.E.H. REPORT FORM -- PROGRAM FOR THE HANDICAPPED

District: School: Coordinator: Report Date:	To Serve Students To Serve Teachers Combination	Single District Cooperative School Districts	Pre-Vocational Vocational No of Cooperating Districts

Major Handicapping Condition of Students to be Served	Number of Students* to be Served				Number of Staff to be Employed
	K-6	7-8	9-12	Adults**	
Educable Mentally Retarded					
Trainable Mentally Retarded					
Deaf					
Hearing Handicapped					
Speech Impaired					
Visually Handicapped					
Seriously Emotionally Disturbed					
Crippled					
Other _____ (Specify)					
Totals					

*Indicate: G=Group (class) assistance in special programs
**Indicate: I=Individual assistance
Persons who are out of school who are either employed or seeking employment

A. The specific "measurable" OBJECTIVES of this project are:
(Develop this Component on a Separate Attachment)

B. The PROCEDURES to be used to achieve each of the above stated objectives are: (Develop this Component on a Separate Attachment)

C. To best determine the degree to which the desired objectives were accomplished the following EVALUATION will be employed:
(Develop this Component on a Separate Attachment)

D. Report expenditures as it specifically relates to individuals served.
1. Cost of Special program for assistance to meet a group of handicapped's needs.
2. Cost of modified special program to meet individually handicapped's needs.

PROGRAM FOR THE V.E.D. REPORT FORM -- DISADVANTAGED

District: School: Coordinator: Report Date:	To Serve Students To Serve Teachers Combination	Single District Cooperative School Districts	Pre-Vocational Vocational No. of Cooperating Districts

Major Handicapping Condition of Students to be Served	Number of Students* to be Served				Number of Staff to be Employed
	k-6	7-8	9-12	Adults**	
Economically Deprived Culturally Deprived Educationally Deprived Socially Deprived					

*Indicate: G=Group (class) assistance in special programs
**Indicate: I=Individual assistance
Persons who are out of school who are either employed or seeking employment

A. The specific "measurable" OBJECTIVES of this project are:
(Develop this Component on a Separate Attachment)

B. The PROCEDURES to be used to achieve each of the above stated objectives are: (Develop this Component on a Separate Attachment)

C. To best determine the degree to which the desired objectives were accomplished the following EVALUATION WILL BE EMPLOYED:
(Develop this Component on a Separate Attachment)

D. Report expenditures as it specifically relates to individuals served.
1. Cost of Special program for assistance to meet a group of disadvantaged needs.
2. Cost of modified special program to meet individually disadvantaged needs.

VOCATIONAL EDUCATION STATE ADVISORY COUNCIL

FOR DISADVANTAGED & PHYSICALLY HANDICAPPED

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VT 014 783
MANPOWER PROGRAMS AT A GLANCE.

ARIZONA STATE EMPLOYMENT SERVICE, PHOENIX.
ARIZONA STATE EMPLOYMENT SECURITY COMMISSION, PHOENIX.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - JUN71 59P.

DESCRIPTORS - *MANPOWER DEVELOPMENT; *ADULT VOCATIONAL EDUCATION; *FEDERAL PROGRAMS; STATE PROGRAMS; EMPLOYMENT PROGRAMS; ON THE JOB TRAINING; VOCATIONAL REHABILITATION; *PROGRAM DESCRIPTIONS; *PROGRAM GUIDES
IDENTIFIERS - *ARIZONA

ABSTRACT - THIS GUIDE TO MANPOWER PROGRAMS IN ARIZONA PROVIDES A GENERAL DESCRIPTION OF EVERY MAJOR PROGRAM IN THE STATE. INCLUDED FOR EACH PROGRAM ARE: (1) NATURE AND PURPOSE, (2) ELIGIBILITY REQUIREMENTS, (3) ADMINISTERING AGENCY, (4) IMPLEMENTING AGENCIES, (5) LINKING AGENCIES, (6) AUTHORIZING LEGISLATION, AND (7) INVOLVEMENT BY THE ARIZONA STATE EMPLOYMENT SERVICE. BOTH PRESENT AND FUTURE PROGRAMS ARE INCLUDED, AS ARE THE PAST PILOT PROGRAMS WHICH PROVIDED A BASIS FOR PRESENT PROGRAMS. (BH)

VT 014 783

EMPLOYMENT SECURITY COMMISSION OF ARIZONA

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Vice Chairman

Charles J. Minning
Chairman

K. A. Phillips
Member

ARIZONA STATE EMPLOYMENT SERVICE

Charles A. Boyle, Administrator

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MANPOWER PROGRAMS AT A GLANCE

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MANPOWER PROGRAMS AT A GLANCE

Introduction

This book contains a general description of every major manpower program in Arizona. The description includes the basic data concerning each program -- what it does, whom it is designed to serve, how it is funded. by whom it is implemented, how it originated, and the extent of Arizona State Employment Service involvement.

It is important to point out the distinctions that are made in each description and by the format of the book itself. Each description contained herein defines a program or a related system or service. It does not define any agency, Federal department, or other organization. Thus, the reader might question why "LEAP" (Leadership and Education for the Advancement of Phoenix) or "OEO" (Office of Economic Opportunity) is not described. LEAP is a community action agency; OEO is a Federal agency providing funds to community action agencies for implementing manpower programs. In each description the term "Administering Agency" refers to the Federal agency which supplies the funds, directions, and guidelines. "Implementing Agency" refers to the organization which implements the program. The implementing agency may be a local or State agency or a bureau of a Federal department.

This book does not confine itself to descriptions of actual manpower programs in Arizona. There are other important programs not currently functioning in Arizona but which are likely to be in the near future. These are described in Part III. Part IV describes the experimental and demonstration program which served as the "pilot" or prototype for some of the programs which exist today. Also, there are some extensive services not specifically funded as programs which are performed for special groups. They are aimed at large and important groups and in many respects are similar to manpower programs; these are included in Part V.

Most of the actual and potential programs and services described herein are encompassed and coordinated by a system -- CAMPS (Cooperative Area Manpower Planning System); CMS (Comprehensive Manpower System) -- and by a comprehensive program -- CWTP (Comprehensive Work and Training Program). These systems and this program are defined in Part I.

Charles A. Boyle

Charles A. Boyle, Administrator

I. SYSTEMS OR PROGRAMS ENCOMPASSING PROGRAMS

PROGRAM	*CAMPS--Cooperative Area Manpower Planning System*
NATURE AND PURPOSE OF PROGRAM	CAMPS is a system under which all manpower programs are mandated to work together in order to provide better coordination in the delivery of manpower services. Through local autonomous CAMPS committees, the planning and delivery of all manpower services is coordinated for the respective CAMPS areas. CAMPS functions at four levels: national, regional, state, and area (local). The area (local) committees serve as the "grass roots" operational level at which manpower needs are assessed, programs are conceived and recommended, organized, and implemented with the necessary coordinating of services, facilities, and fund dispensing. The state, regional, and national committees function largely as catalysts and coordinating agents, technical assistants, review and approval boards, and as focal points for distribution and communications with the geographic areas within their scope of responsibility. In Arizona three area committees have been designated: the Phoenix area comprising Maricopa County, the Tucson area comprising Pima County, and the entire Navajo Nation. The State Committee has established a subcommittee to serve the "balance-of-State" on a temporary basis until the Manpower Advisory Committees are established within the four planning districts that comprise the balance-of-State. The assistance of non-member groups and individuals as consultants may be sought from local educators, community leaders, employers, trade union representatives, and others who may have a specific knowledge of needs and conditions reflecting from their own sphere of influence and activity.
ELIGIBILITY REQUIREMENTS	All agencies receiving federal and/or state funds for manpower programs are required to participate.
ADMINISTERING AGENCY	The area and State committee chairmen are appointed by the highest elected official within the respective area.
IMPLEMENTING AGENCIES	Agencies having membership in CAMPS.
LINKING AGENCIES	Varies, as outlined in the CAMPS Plan.
AUTHORIZING LEGISLATION	Federal Executive Order 11422, August 15, 1968, and State Executive Order 69-8, November 24, 1969.

ASES INVOLVEMENT	The Arizona State Employment Service handles the personnel paperwork under funding arrangements with the U. S. Department of Labor for the staff positions to the area and State CAMPS committees in the form of executive secretaries and clerical assistance. The agency also cooperates as a member agency in CAMPS by providing selection and referral, counseling and evaluation, and job development/placement services as requested by other agencies.
LOCATION OF ASES INVOLVEMENT	CAMPS committees have been active in Phoenix, Tucson, Navajo Nation, and balance-of-State, all of which involve commitments and participation of the Arizona State Employment Service through its local offices and the State Administrative Office.

PROGRAM	*CMS - Comprehensive Manpower System*
NATURE AND PURPOSE OF PROGRAM	CMS is an experimental concept for delivery of comprehensive manpower services being tested in ten SMSA's and one rural area. The restructuring of ASES offices in Maricopa County stresses greater involvement of cooperating community agencies, more individualized and sustained services to disadvantaged applicants in accord with their need, and a streamlined but meaningful service to qualified applicants and to employers. The new local office model offers three groupings of applicant services: self-directed job information services; employability exploration and job development services; and intensive employability development services. This model provides an information storage, maintenance, and communication system between the several local offices and cooperating community agencies dispersed throughout the county so that job and training opportunities can be brought to persons using any one of those offices.
ELIGIBILITY REQUIREMENTS	All unemployed and underemployed persons in need of manpower services. However, major efforts are directed to those persons most in need of such services, i.e., the poor, older workers, youth, and other disadvantaged persons.
ADMINISTERING AGENCY	U.S. Department of Labor through the Manpower Administration.
IMPLEMENTING AGENCY	Arizona State Employment Service.
LINKING AGENCIES	As needed to achieve objectives.
SOURCE OF FUNDS	Department of Labor, Manpower Administration.
ASES INVOLVEMENT	The Arizona State Employment Service will provide the full range of employability development services including counseling, testing, referral to all types of training, job development, placement, follow-up, manpower and employment information, and administrative and technical support.
LOCATION OF ASES INVOLVEMENT	Maricopa County.

PROGRAM	*CWTP - Comprehensive Work and Training Program*
NATURE AND PURPOSE OF PROGRAM	The Comprehensive Work and Training Program (CWTP) provides for maximum utilization and interrelation of all manpower development resources, regardless of funding source, available in the community program area. The objective of the program is to provide an unbroken sequence of services which will enable the disadvantaged to obtain and retain employment. The Regional Manpower Administrator (RMA) will designate Community Program Areas (CPA) in the State following consultation with Office of Economic Opportunity officials and the highest elective official in the area. The RMA will then select a Prime Sponsor (PS) to plan and administer the CWTP. The PS will plan, administer, and monitor all those manpower programs which are funded under Title I-B of the Economic Opportunity Act (NYC Out-of-School, Operation Mainstream, New Careers, and Concentrated Employment Program, though excepting NYC In-School and JOBS), and will coordinate those programs with other relevant manpower programs in the community, such as MDTA. The PS will be an active member of CAMPS and the CWTP plans will be coordinated with that system. The governing board of the PS shall be specifically composed to include public officials, representatives of the poor, unions, business and industry, including other groups who are concerned with the problems of poverty. The PS shall also be responsible for representatives of the poor participating in decision-making, enrollee participation, and employment of the poor in component programs.
ELIGIBILITY REQUIREMENTS	All areas of the State would be eligible; however, areas with substantially high rates of unemployment and underemployment would receive a priority for conversion to Community Program Areas, as well as the size and mix of projects to meet the needs of the area.
ADMINISTERING AGENCY	The Manpower Administration through its regional offices.
IMPLEMENTING AGENCY	The Prime Sponsor, as designated by the Regional Manpower Administrator. Priority of the selection will be given to Community Action Agencies unless incapable of performing the functions of a Prime Sponsor. Any public or private nonprofit agency exhibiting such capacity could then be designated. Any designee must be capable of (1) receiving and disbursing funds; and (2) planning, developing, administering, coordinating, and evaluating a CWTP.

LINKING AGENCIES	Linkage will ultimately be developed with all CAMPS affiliated agencies conducting manpower programs, as well as resource agencies providing personnel and family supportive services needed by enrollees of manpower programs. Agencies administering MDT programs under MDTA and work and experience programs under EOA are specifically required to link those programs to CWTP, as cited in the 1967 amendments to the EOA.
SOURCE OF FUNDS	Federal -- provided by the Economic Opportunity Act, as amended.
ASES INVOLVEMENT	The Arizona State Employment Service provides manpower services such as outreach, counseling, testing, job market information, referral to training and supportive services, and follow-up. Within some projects, services may also include orientation, work sample testing, coaching, and follow-through services.
LOCATION OF ASES INVOLVEMENT	Statewide.

II. ACTIVE PROGRAMS IN ARIZONA

PROGRAM	*Adult Basic Education*
NATURE AND PURPOSE OF PROGRAM	The purpose of the Adult Basic Education program is to provide basic education to adults with less than an eighth grade education, with particular emphasis on those who have less than a fifth grade education. The program is designed to develop communication and computational skills, and attitudinal development necessary for success in problem solving and employability.
ELIGIBILITY REQUIREMENTS	Must be adults functioning below eighth grade level.
ADMINISTERING AGENCIES	Arizona Department of Public Instruction, Division of Adult Education.
IMPLEMENTING AGENCIES	Local educational agencies.
LINKING AGENCIES	Community Action Agencies; Arizona State Employment Service; Arizona Department of Public Instruction: Divisions of Vocational Education, Vocational Rehabilitation; Department of Welfare.
AUTHORIZING LEGISLATION	Adult Education Act of 1966, Title III, as amended.
SOURCE OF FUNDS	Federal, through Office of Education. Local funds match in amount of 10 percent of the total program.
ASES INVOLVEMENT	Recruitment, referral, counseling, evaluation, job development, job placement.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM	*Apprenticeship*
NATURE AND PURPOSE OF PROGRAM	This program stimulates and assists industry to conduct training on the job for occupations commonly known as skilled crafts or trades. Training standards are recommended, and the Bureau of Apprenticeship and Training encourages the application of these standards in apprenticeship agreements. Apprenticeship programs are formulated by employers and labor organizations. A national advisory committee known as the Federal Committee on Apprenticeship includes representatives of labor, vocational education, and Federal officials. This committee makes recommendations to the Secretary of Labor on apprenticeship training programs. Apprentices take related instruction in the theoretical aspects of a trade, usually in local trade or vocational schools. The program normally consists of a four-year term of on-the-job training, plus 144 hours per year of classroom instruction. Apprentices receive a progressively increasing wage as they advance, starting at about 50 percent of the customary journeyman rate.
SPECIAL INFORMATION	Significant steps to reach out for minority applicants and other disadvantaged applicants have been implemented in Arizona. The Phoenix Urban League conducts a Manpower Development and Training Act project, principally in the urban areas, to interest minorities to apply for apprenticeship. For marginally qualified applicants, orientation is provided in test-taking and requirements relating to apprenticeable occupations. The Western Apprenticeship Coordinators Association conducts a comparable program on the Indian reservations throughout the State. The most significant results have been experienced on the Navajo Reservation.
ELIGIBILITY REQUIREMENTS	Generally, age requirements range from 17 through 26; mental and physical capacity for the job; have aptitude for the job; high school education or GED; citizenship or first papers.
ADMINISTERING AGENCY	Department of Labor, Bureau of Apprenticeship and Training.
IMPLEMENTING AGENCY	Local joint apprenticeship committees composed equally of management and labor. Occasionally employers or worker groups singly conduct programs where there are no labor-management agreements.

LINKING AGENCIES	Where necessary to achieve objectives, primarily Vocational Education, local school districts, and Arizona State Employment Service.
AUTHORIZING LEGISLATION	National Apprenticeship Act of 1937.
SOURCE OF FUNDS	U.S. Department of Labor and private industry.
ASES INVOLVEMENT	The Arizona State Employment Service assists the Bureau of Apprenticeship and Training in promotion of apprenticeship. Assists joint apprenticeship committees by providing manpower information and by recruiting, screening, and referring applicants to apprenticeship. In Phoenix, operates the Apprenticeship Information Center (AIC) to insure maximum knowledge of apprenticeship among all youth including the disadvantaged. Promotes equal employment opportunity in apprenticeship.
LOCATION OF ASES INVOLVEMENT	Statewide (AIC, Phoenix only).

PROGRAM	*CAP - Community Action Program*
NATURE AND PURPOSE OF PROGRAM	Community Action Programs mobilize community resources to help families combat the problems of poverty, such as poor health, inadequate education, unemployment, and dilapidated housing. Through community action agencies, the poor are encouraged to participate in planning, policy-making, and operation of the program's special projects. Typical projects in these locally established Community Action Programs include health centers, neighborhood multi-service centers, legal services, foster grandparents, aid to migrant workers, and Indian reservations projects.
ELIGIBILITY REQUIREMENTS	Private non-profit and public agencies are eligible. Grants are made to agencies representing an entire community and to single purpose agencies with adequate authority to enter into contracts, receive grants, and carry out the program directly or by contract with other agencies. A community may be any urban or rural geographic area including a state, metropolitan area, county, city, town multicity unit, or any neighborhood or sufficiently homogeneous area without regard to political boundaries or subdivisions.
ADMINISTERING AGENCY	Office of Economic Opportunity
IMPLEMENTING AGENCY	Arizona Office of Economic Opportunity through the local community action agencies.
LINKING AGENCIES	Varies at local level. Linkages occur where necessary.
AUTHORIZING LEGISLATION	Economic Opportunity Act of 1964, Title II.
SOURCE OF FUNDS	Federal grants up to 90 percent of the cost of the program (first two years -- 50-50 matching funds thereafter) are available for: (1) program development, (2) project administration, (3) research and pilot programs, (4) training, and (5) technical assistance.
ASES INVOLVEMENT	Arizona State Employment Service managers and staff personnel serve as advisors and provide technical assistance in preparing project proposals.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM	*CEP - Concentrated Employment Program*
NATURE AND PURPOSE OF PROGRAM	The Concentrated Employment Program provides a close-knit system for delivering manpower services ("a manpower services delivery system") for the disadvantaged. It began operating in local areas in 1967. Every area program has four principal features: (1) Enlisting the active support and cooperation of business and labor organizations in local committees; (2) Providing a wide range of counseling, health, education, and training services on an individual basis; (3) Developing employment opportunities suited to each individual in the program; and (4) Providing the follow-up assistance necessary to assure that a job, once obtained, will not be quickly lost. Concentrated Employment Program contracts are entered into by the Department of Labor with a single responsible sponsor in each locality. The sponsor may arrange for subcontracts as required to supply the services disadvantaged workers need from the time they enter the project through job placement, coaching on-the-job, and where necessary and feasible, a second or even a continuous "chance." Enrollees receive counseling, coaching, orientation, and referral to jobs, training programs, or basic education. Also they receive such necessary support services as medical, dental, legal aid, and day care, etc.
ELIGIBILITY REQUIREMENTS	All persons served by the Concentrated Employment Program must be unemployed or underemployed residents of the designated target area and must meet the criteria for disadvantaged individuals.
ADMINISTERING AGENCIES	U.S. Department of Labor, Manpower Administration, in cooperation with the Office of Economic Opportunity, and the Department of Health, Education, and Welfare.
IMPLEMENTING AGENCY	The local Community Action Agency of the Office of Economic Opportunity is the presumed sponsor. The City of Phoenix LEAP sponsors the Phoenix CEP, and the Navajo CEP is sponsored by the Office of Navajo Economic Opportunity (ONEO).

LINKING AGENCIES	Phoenix Operation SER, Phoenix Urban League, Opportunities Industrialization Center, Department of Public Welfare, County Health Department, State Department of Vocational Education, and Arizona State Employment Service.
AUTHORIZING LEGISLATION	Economic Opportunity Act of 1964, as amended, Sec. 123(a)(5).
SOURCE OF FUNDS	Federal, as authorized by the Manpower Development and Training Act and the Economic Opportunity Act.
ASES INVOLVEMENT	The Arizona State Employment Service has a contract to provide intake, vocational guidance, counseling, job market information, job development, selection and referral to jobs, training, or to other agencies for supportive services.
LOCATION OF ASES INVOLVEMENT	Phoenix and the Navajo Reservation.

PROGRAM	*Employment Assistance*
NATURE AND PURPOSE OF PROGRAM	The Bureau of Indian Affairs operates this vocational training and job placement program. Goals are to develop employment opportunities for the unemployable with some degree of skill and provide institutional training, on-the-job training, and counseling through various employment training centers. Financial assistance is provided in accordance with individual needs, and may include transportation, subsistence en route to training center, and health services.
ELIGIBILITY REQUIREMENTS	Any Indian, 18 years of age or over, who resides on or near an Indian reservation or community under the jurisdiction of the Bureau of Indian Affairs and who voluntarily applies.
ADMINISTERING AGENCY	U.S. Department of the Interior, Bureau of Indian Affairs.
IMPLEMENTING AGENCY	Employment Assistance Office, Bureau of Indian Affairs.
LINKING AGENCIES	Arizona State Employment Service; Arizona Department of Public Instruction: Division of Adult Education, Division of Vocational Rehabilitation, Department of Vocational Education.
AUTHORIZING LEGISLATION	Employment Assistance Act of November 2, 1921, (25 USC, Section 13).
SOURCE OF FUNDS	Federal -- U.S. Department of the Interior.
ASES INVOLVEMENT	The Arizona State Employment Service will provide recruitment, referral, counseling, evaluation, and placement.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM	*Ex-Offender Program*
NATURE AND PURPOSE OF PROGRAM	The purpose of this program is to provide employability development and comprehensive manpower services to prison inmates and ex-offenders in order to facilitate an orderly return to meaningful employment and normal social functioning--and thereby reduce the recidivism rate in the State of Arizona.
ELIGIBILITY REQUIREMENTS	This program serves persons who have been convicted of a felony, incarcerated, and released upon completion of sentence.
ADMINISTERING AGENCY	U.S. Department of Labor, Manpower Administration.
IMPLEMENTING AGENCIES	Arizona State Employment Service; Arizona Department of Corrections; Arizona Department of Public Instruction, Division of Vocational Rehabilitation, Department of Vocational Education.
AUTHORIZING LEGISLATION	MDT Act of 1962, as amended.
SOURCE OF FUNDS	U.S. Department of Labor, through the Manpower Administration.
ASES INVOLVEMENT	The ASES provides vocational counseling; ED team evaluation and assessment; job development; placement, intensive support, and post-placement follow-up; referral to training; and referral to other agencies for needed supportive services.
LOCATION OF ASES INVOLVEMENT	Phoenix, Florence, Tucson, Flagstaff, Yuma, and Safford areas.

PROGRAM	*Federal Summer Employment Program for Youth*
NATURE AND PURPOSE OF PROGRAM	This is a program providing for employment of needy youth (16-21) for summer jobs in Federal agencies. With the direction of the President, the U.S. Civil Service Commission has provided a special authority for temporary hiring between May 14 and September 30 which allows Federal agencies to hire youth without examination for jobs requiring no special skills or knowledge. The Commission has also announced a single examination for summer appointment at grades GS-1 through GS-4 and PFS-5 (post office) on a state-wide basis. The examination for GS positions is normally in the fall of each year and closes in February. For information concerning the examination, contact the Civil Service Commission, 44 West Adams, 261-4731, or examiners at first and second class post offices.
ELIGIBILITY REQUIREMENTS	Federal Agencies: Basically, youth must be age 16-21 and show an economic need (meet the criteria for disadvantaged) for summer employment.
ADMINISTERING AGENCY	U.S. Civil Service Commission, and the Post Office Department.
IMPLEMENTING AGENCIES	Arizona State Employment Service in cooperation with the Civil Service Commission and, in Phoenix, the CAMPS Committee for Youth Employment.
LINKING AGENCIES	Arizona State Employment Service in cooperation with the Civil Service Commission and, in Phoenix, the CAMPS Committee. Others as required.
AUTHORIZING LEGISLATION	Presidential memorandum to heads of departments and agencies dated February 3, 1970.
SOURCE OF FUNDS	Federal funds available to Federal agencies such as military bases, BIA, VA, and IRS.
ASES INVOLVEMENT	The Arizona State Employment Service provides job development, selection, certification, testing, and follow-up.
LOCATION OF ASES INVOLVEMENT	The Federal agencies' portion of the program is in effect statewide.

PROGRAM	*HRD-EDS - Human Resources Development Employability Development Services*
NATURE AND PURPOSE OF PROGRAM	Human Resources Development implements the policy of the United States Training and Employment Service (USTES) that a substantial share of the total staff and resources of the Federal-State Employment Service be directed to the employment and training needs of the hard-core unemployed and underemployed. It provides employability development services which shall include at least the following: outreach and orientation of individuals who are chronically unemployed or underemployed or who have poor employment prospects; assessment of their capabilities through interviewing, counseling, and testing techniques adapted to their special needs; arrangements for and referrals to other agencies for related supportive services such as health and welfare; selection and referral to employment and training; and follow-up to training and placement to assist such individuals in finding and keeping suitable jobs. The program emphasizes screening applicants into the world of work rather than screening them out. The program is designed to reach Indians, and other minority groups, through Arizona State Employment Service offices.
ELIGIBILITY REQUIREMENTS	Member of a poor family, and unemployed, underemployed, or hindered from seeking work, and who is either a school dropout, minority group member, under 22 or over 45 years of age, or handicapped.
ADMINISTERING AGENCY	Arizona State Employment Service.
IMPLEMENTING AGENCIES	Arizona State Employment Service local offices.
LINKING AGENCIES	The Arizona State Employment Service will link with other agencies as outlined in the CAMPS plan or where otherwise necessary to achieve HRD objectives.
AUTHORIZING LEGISLATION	Title III of the Social Security Act 20 CFR 604.21.
SOURCE OF FUNDS	Federal funds, authorized by Title III of the Social Security Act and Manpower Development and Training Act.
ASES INVOLVEMENT	The Arizona State Employment Service provides outreach, counseling (self-assessment, goal definition, work-world assessment), referral to jobs, referral to training (OJT, NYC, Job Corps, MDT, Basic Education, Employability Orientation), job development, placement, post placement follow-up, and referral to other agencies for supportive services (health, family, day care, dental).
LOCATION OF ASES INVOLVEMENT	Statewide

PROGRAM	*Job Corps*
NATURE AND PURPOSE OF PROGRAM	Job Corps is a program of basic education, skill training, and useful work experience for disadvantaged young men and women. It is aimed at those who need a change of environment and individual help to develop talents, self-confidence, and motivation to improve themselves. Enrollees reside at four types of Job Corps centers: (1) conservation centers for men located in national parks and forests and are usually operated by the Interior and Agriculture Departments, (2) urban training centers for men, located on unused Federal military installations in or near urban areas and operated under contract by private and public agencies, (3) urban training centers for women located on leased facilities and operated under contract by private and public agencies, and (4) newly established residential manpower centers in 30 cities. Phoenix was designated as the first city to receive a new "mini-center" as authorized by the U. S. Department of Labor. The center will train 350 metropolitan Phoenix youth, on a coeducational basis and in conjunction with other on-going manpower programs. Youth selected for Job Corps participate in intensive programs of education, vocational training, work experience, counseling, and other activities. The Job Corps assists young persons who need and can benefit from an unusually intensive program operated in a group setting distinct from the current environment to become more responsible, employable, and productive citizens.
ELIGIBILITY REQUIREMENTS	Anyone 16 through 21 who is a a permanent resident of the United States is eligible to join the Job Corps. Enrollees sought are those in need of intensive counseling, education, training, and related assistance and who are most likely to continue living in poverty if they are forced to continue living in their present environment.
ADMINISTERING AGENCY	The U. S. Department of Labor, Manpower Administration.
IMPLEMENTING AGENCY	Job Corps.
LINKING AGENCIES	Community Action Agencies, Bureau of Indian Affairs, Arizona State Employment Service, Department of Vocational Education.
AUTHORIZING LEGISLATION	Economic Opportunity Act of 1964, as amended, Title I-A.
SOURCE OF FUNDS	Federal, as provided by the Economic Development Act.

ASES INVOLVEMENT	The Arizona State Employment Service provides recruitment, screening, counseling, referral, post-enrollee placement, and follow-up.
LOCATION OF ASES INVOLVEMENT	Statewide. (Skill Center -- Metropolitan Phoenix only)

PROGRAM	*JOBS - Job Opportunities in the Business Sector*
NATURE AND PURPOSE OF PROGRAM	A joint effort of government and the National Alliance of Businessmen whereby on-the-job training is given by employers to the hard core disadvantaged. There are three different approaches to this training program: (1) Basic contract. (Employer enters into a contract with the Federal government to provide training and other services for which he will be reimbursed over a 9-month period for extraordinary expenses.) The employer may subcontract training or services other than on-the-job training which must be provided on the employer's premises. (2) Basic noncontract. (Employer certifies enrollees as eligible and receives no reimbursement for training or other services provided.) (3) Jobs for Youth. (This is a summer noncontract program, and funds for training are not provided.)
ELIGIBILITY REQUIREMENTS	Enrollees must meet the criteria for disadvantaged applicants as described by JOBS-NAB.
ADMINISTERING AGENCY	National Alliance of Businessmen.
IMPLEMENTING AGENCIES	Arizona State Employment Service in cooperation with the National Alliance of Businessmen. Contracts are negotiated and administered by the Regional Manpower Administrator.
LINKING AGENCIES	Concentrated Employment Program, Arizona State Employment Service.
AUTHORIZING LEGISLATION	The Manpower Development and Training Act of 1962 (Title II), and the Economic Opportunity Act of 1964 (Title I-B).
SOURCE OF FUNDS	Federal, as authorized under the Manpower Development and Training Act and the Economic Opportunity Act.
ASES INVOLVEMENT	The Arizona State Employment Service will provide recruitment, certification, and referral to employment, supportive services, assistance in contract negotiations and funding.
LOCATION OF ASES INVOLVEMENT	This program is in effect statewide.

PROGRAM	*JOP - JOBS Optional Program*
NATURE AND PURPOSE OF PROGRAM	The purpose of the JOBS Optional Program is to place unskilled and underskilled people on jobs in which they will receive training enabling them to become productive, skilled, competitive employees. The philosophy of this program is "hire first." Training is designed and supervised by the employer to meet his manpower needs. The OJT employee becomes a regular member of the employer's work force and is paid by him. The employer in turn is reimbursed in part for training costs based on a negotiated fixed cost figure. The length of training is determined by the difficulty of the occupation as computed from the Dictionary of Occupational Titles code - ranging from 8 to 44 weeks for disadvantaged people, and from 4 to 22 weeks for nondisadvantaged people and upgrading situations.
ELIGIBILITY REQUIREMENTS	Employee/Trainees: At least 50 percent of the employee/trainees must meet the Manpower Administration's criteria for the disadvantaged. Employers: Any private profit or nonprofit company may participate.
ADMINISTERING AGENCY	U.S. Department of Labor
IMPLEMENTING AGENCY	Arizona State Employment Service
LINKING AGENCIES	Any agency may refer applicants for on-job training to the Employment Service.
AUTHORIZING LEGISLATION	Section 301(b) of the Manpower Development and Training Act of 1962, as amended.
SOURCE OF FUNDS	U.S. Department of Labor
ASES INVOLVEMENT	Total administration of the JOBS Optional Program: development of contract proposals, approval of all contracts, selection and referral of applicants, reimbursement to employers, closing out of contracts, and on-going evaluation of entire program and individual contracts.
LOCATION OF ASES INVOLVEMENT	Statewide

PROGRAM	*MDT - Manpower Development and Training (A General Description)*
NATURE AND PURPOSE OF PROGRAM	The Manpower Development and Training Act provides for a nationwide program of training and retraining for the unemployed and underemployed and authorizes a broad foundation program of manpower and automation research, provides for institutional and on-the-job training, provides payment of training allowances up to 104 weeks plus transportation and subsistence allowances. Training is for occupations for which there is reasonable expectation of employment. The 1966 amendments to the Act provided for special programs to (1) meet specific needs of older workers, (2) authorize experimental programs for part-time training in occupations with critical skill shortages, and (3) train inmates of correctional institutions.
ELIGIBILITY REQUIREMENTS	Persons 16 years of age or older who are unemployed or underemployed and who cannot reasonably be expected to get appropriate full-time employment without such training.
ADMINISTERING AGENCIES	U.S. Department of Labor; U.S. Department of Health, Education, and Welfare.
IMPLEMENTING AGENCIES	Arizona State Employment Service, Unemployment Compensation Division of the Employment Security Commission, and the Arizona State Department of Vocational Education for institutional training.
LINKING AGENCIES	Various Community Action Agencies, Operation SER, Migrant Opportunity Program, Bureau of Indian Affairs, Division of Vocational Rehabilitation, Division of Adult Education, Urban League, NYC, and Opportunities Industrialization Center.
AUTHORIZING LEGISLATION	Manpower Development and Training Act of 1962, as amended. Economic Opportunity Amendments (1966).
SOURCE OF FUNDS	Federal, as authorized by the Manpower Development and Training Act, 90 percent. State matching of institutional training costs, 10 percent.
ASES INVOLVEMENT	The Arizona State Employment Service initiates institutional training programs, does testing, counseling, selection, referral, placement, and follow-up of trainees.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM	*MDT - Manpower Development and Training (Institutional)*
NATURE AND PURPOSE OF PROGRAM	MDTA institutional training is conducted in both public and private facilities of cooperating agencies using a classroom method of teaching. This classroom instruction may include employment orientation training as well as basic education.
ELIGIBILITY REQUIREMENTS	Persons 16 years of age or older who are unemployed or underemployed and who cannot reasonably be expected to get appropriate full-time employment without such training. Further, there must be reasonable expectation of employment in the occupation for which the worker is trained.
ADMINISTERING AGENCIES	U.S. Department of Labor; U.S. Department of Health, Education, and Welfare.
IMPLEMENTING AGENCIES	Arizona State Employment Service, Unemployment Compensation Division of the Employment Security Commission of Arizona, and the Arizona State Department of Vocational Education.
LINKING AGENCIES	Community Action Agencies, Operation SER, Migrant Opportunity Program, Bureau of Indian Affairs, Division of Vocational Rehabilitation, Division of Adult Education, Urban League, NYC, and Opportunities Industrialization Center.
AUTHORIZING LEGISLATION	Manpower Development and Training Act of 1962, as amended. Title II-B, Section 231.
SOURCE OF FUNDS	Federal, as authorized by the Manpower Development and Training Act, 90 percent. State matching of institutional training costs, 10 percent.
ASES INVOLVEMENT	The Arizona State Employment Service initiates institutional training programs, does testing, counseling, selection, referral, placement, and follow-up of trainees.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM	*Model Cities - Model Neighborhoods in Demonstration Cities*
NATURE AND PURPOSE OF PROGRAM	The Model Cities Program of the Department of Housing and Urban Development is designed to encourage new, comprehensive, and innovative solutions to urban problems that can become models for the entire country. Grants may be made for 80 percent of the cost of planning and developing programs for the improvement of community services and facilities, adding new programs and projects as necessary, and coordinating Federal, State, local, and private resources in a total attack on the interrelated problems of smaller communities and of entire neighborhoods of larger cities. Plans developed under this program should provide for the improvements of housing, employment, education, transportation, health, recreation, social services, and crime prevention in blighted areas.
ELIGIBILITY REQUIREMENTS	Grants will be made to a "city demonstration agency" which may be a city, county, single, or jointly acting municipality, or single or jointly acting local public agency designated by local government to administer the program. Applications must detail the city's problems and proposed active plans for their solution. Areas selected should contain such problems as serious deficiency in housing, environment, and education and high concentration of poverty, unemployment, and ill health. A workable program should include the following seven elements: (1) Adequate housing codes and ordinances, (2) A comprehensive community plan, (3) Neighborhood analysts, (4) Administrative organization, (5) Financing, (6) Housing for displaced families, and (7) Citizen participation.
ADMINISTERING AGENCY	U.S. Department of Housing and Urban Development, with technical assistance provided by the Regional offices of Federal participating agencies.
IMPLEMENTING AGENCY	Local City Demonstration Agency.
LINKING AGENCY	Public agency heads, private agency heads, other organization representatives and Model Neighborhood representatives.
AUTHORIZING LEGISLATION	Demonstration Cities and Metropolitan Development Act of 1966, Title I.

SOURCE OF FUNDS	Federal up to 80 percent.
ASES INVOLVEMENT	The Arizona State Employment Service assists in the development of the manpower component and participates in the delivery of appropriate manpower services.
LOCATION OF ASES INVOLVEMENT	Tucson and the Gila River Indian Reservation.

PROGRAM	*MOP - Migrant Opportunity Program*
NATURE AND PURPOSE OF PROGRAM	The Migrant Opportunity Program, implemented by a nonprofit organization of the same name, is designed to: (1) develop, establish, and maintain basic GED and prevocational education classes for indigenous people and existing agencies; (2) provide child care services for children of seasonal farm workers and train indigenous aids in child development techniques; (3) construct housing using self-help techniques; (4) raise the economic potential of the people served through education.
ELIGIBILITY REQUIREMENTS	Generally, persons who are heads of households and whose incomes place them below the poverty level.
ADMINISTERING AGENCY	Migrant Opportunity Program.
IMPLEMENTING AGENCY	Migrant Opportunity Program.
LINKING AGENCIES	Arizona Department of Public Instruction, Divisions of Adult Education, Vocational Education, Vocational Rehabilitation; Operation SER; Skill Training Opportunity Project.
AUTHORIZING LEGISLATION	Economic Opportunity Act of 1964, as amended. Title III.
SOURCE OF FUNDS	Federal, Office of Economic Opportunity. Certain components of the program are matched in kind on a 10 percent ratio.
ASES INVOLVEMENT	Arizona State Employment Service staff provide requested labor area information to Migrant Opportunity Program personnel; local offices will provide full range of services to referrals from the Migrant Opportunity Program.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM	*NYC - Neighborhood Youth Corps*
NATURE AND PURPOSE OF PROGRAM	The Neighborhood Youth Corps has three major programs: an in-school program, an out-of-school program, and a summer program. This in-school program provides part-time work and on-the-job training for students of high school age from disadvantaged families. The summer program provides those students with job opportunities during the summer months. The out-of-school program provides economically deprived school dropouts with practical work experience and on-the-job training to encourage them to return to school and resume their education, or if this is not feasible, to help them acquire work habits and attitudes that will improve their employability. The program provides Federal funds and technical assistance to public and private nonprofit organizations to establish work training programs. In private on-the-job training projects, the Federal government will pay the legitimate training costs while the employer is responsible for the trainee's wages. Enrollees may not be employed on projects involving construction, operation, or maintenance of any facility used or intended for use in any sectarian or religious worship. Also, enrollees must not displace any employed workers nor impair existing contracts for service.
ELIGIBILITY REQUIREMENTS	To be eligible for the in-school program, youth must be in grades 9 through 12 (or age 14 and elementary school). In addition, the youth must be going to school and come from a family whose annual income falls below the poverty level indicating that there is a need for earnings to go to, or stay in, school. To be eligible for the out-of-school program, the youth must have been a dropout for three months with no plans to return to school, be unemployed, age 16 through 17, and from a poor family. Eligibility requirements for the summer program are the same as for the in-school program.
ADMINISTERING AGENCY	Department of Labor through the Manpower Administration.
IMPLEMENTING AGENCIES	Sponsors in the area who contract with the Manpower Administration. Sponsors are usually Community Action Agencies but may be public and private nonprofit organizations.
LINKING AGENCIES	Migrant Opportunity Program, Operation SER, Arizona State Employment Service, Arizona State University, Department of Vocational Education, Division of Adult Education, Division of Vocational Rehabilitation.

AUTHORIZING LEGISLATION	Economic Opportunity Act of 1964 and amendments of 1967, Title I.
SOURCE OF FUNDS	Federal funds up to 90 percent. Local sponsors share of 10 percent may be in cash or kind.
ASES INVOLVEMENT	The Arizona State Employment Service provides services, as needed, to the various projects in the State. These services include: preenrollment -- recruitment, screening, counseling, and referral; during enrollment -- counseling, testing, job development; and post-enrollment -- counseling, job development, job placement and follow-through supportive services.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM	*OIC - Opportunities Industrialization Center*
NATURE AND PURPOSE OF PROGRAM	The Opportunities Industrialization Center, conceived in Philadelphia in 1964, is a privately organized and directed training program, emphasizing minority group leadership and enrollment, extensive use of volunteers, and assistance and participation by industry. Its purpose is to recruit and train unemployed workers who ordinarily have not been attracted to public agency programs. The centers prepare unemployed and underemployed disadvantaged persons to become productive and independent by increasing their employability and placing them in jobs, providing needed health, vocational rehabilitation, and employment services. Training at the Opportunities Industrialization Centers is accompanied by intensive counseling during and sometimes after the course is complete. A "feeder" program prior to skill training is a unique element designed to increase the trainee's employability. The ability of the OIC to place its trainees in jobs is rooted in its relations with the local business community. Businessmen are consulted regarding their job requirements. An advisory committee for each occupation is appointed to represent the employers of the community. This committee assists in writing the curriculum, donates or secures equipment and supplies, recommends program revisions to meet changing job requirements, and helps to place the graduates in jobs.
ELIGIBILITY REQUIREMENTS	Eligible for this program are unemployed and underemployed disadvantaged persons who have a real desire to help themselves through basic education and skill training.
ADMINISTERING AGENCY	Opportunities Industrialization Center.
IMPLEMENTING AGENCY	Opportunities Industrialization Center.
LINKING AGENCIES	Where necessary to achieve objectives.
AUTHORIZING LEGISLATION	None. This is a private organization.
SOURCE OF FUNDS	The Department of Labor, Department of Health, Education and Welfare, and Office of Economic Opportunity jointly support all OIC's in 17 cities. There are additional OIC's in other communities but they are either self-supporting or receive financial support from other manpower programs.

ASES INVOLVEMENT	The Arizona State Employment Service assists in locating enrollees, in developing training programs, counseling, selection, referral, and placement.
LOCATION OF ASES INVOLVEMENT	Opportunities Industrialization Center operates in the Phoenix area.

PROGRAM — *OJT - On-the-Job Training*

NATURE AND PURPOSE OF PROGRAM

Under Federally funded on-the-job training programs the implementing agencies generally provide partial reimbursement to employers for hiring and training, on-the-job, persons who lack the skills to be competitive in the labor market.

Since the passage of the Manpower Development and Training Act in 1962, OJT has assumed many forms, been implemented by many kinds of agencies, and been incorporated into different manpower programs. Arizona's regular allocation for OJT is implemented by the ASES and is described elsewhere in this booklet (see JOP). The WIN and JOBS programs include OJT components. Also, OJT forms a part of the Employment Assistance Program for Indians, implemented by the Bureau of Indian Affairs. WIN, JOBS, and the Employment Assistance Program are described elsewhere in this booklet.

Two other types of OJT programs exist in Arizona:

1. National OJT contracts with apprenticeship committees: Upgrade training is currently being provided to journeymen by the Phoenix and Tucson Painters and Decorators Joint Apprenticeship Committees. Entry and upgrade training are provided to disadvantaged and underemployed reservation Indians by the Ironworkers Indian Reservation Program Apprenticeship Subcommittee. This training is being provided in several areas in the State.

2. OJT for redevelopment area residents: Section 241 of the MDT Act authorizes funds for institutional or on-the-job training to residents of "redevelopment areas" designated by the Department of Commerce. All major Indian reservations in Arizona are so designated. The Indian Development District of Arizona (IDDA) is funded to contract with employers for OJT for the residents of eight Indian reservations in the state.

All of these OJT programs provide jobs now to the unemployed or underemployed in occupations needed by private employers. Generally, OJT allows these employers to train workers in their own places of business with their own procedures, to meet their specific skill needs. In developing contracts particular attention is paid to employment and training in well-paid jobs offering ladders.

ELIGIBILITY REQUIREMENTS

Persons 16 years of age or older who are unemployed or underemployed and who cannot reasonably be expected to get appropriate full-time employment without training.

ADMINISTERING AGENCIES	Department of Labor through the Manpower Administration for all MDTA authorized programs. Department of Interior through the Bureau of Indian Affairs for the Indian Employment Assistance Program.
IMPLEMENTING AGENCIES	Arizona State Employment Service; National Alliance of Businessmen's Phoenix and Tucson metro offices; Indian Development District of Arizona; various apprenticeship committees; Bureau of Indian Affairs' Phoenix and Window Rock offices.
LINKING AGENCIES	For JOBS, JOP, WIN, and the Employment Assistance Program - see appropriate program descriptions. For the national contracts and for the redevelopment area residents' contracts - the Arizona State Employment Service.
AUTHORIZING LEGISLATION	Manpower Development and Training Act of 1962, as amended. Adult Vocational Training Act for Indians of 1956.
SOURCE OF FUNDS	Federal Department of Labor and Department of Interior.
ASES INVOLVEMENT	For JOBS, JOP, and WIN, the Arizona State Employment Service develops prime contracts and subcontracts and monitors contracts. For these and other OJT programs, the Agency may select, recruit, test, counsel, certify as disadvantaged, refer, place, and follow up any potential applicant for OJT.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM	*OJT - On-the-Job Training for Veterans*
NATURE AND PURPOSE OF PROGRAM	This is a job-training program established by public or private employers to provide needed professional, technical, and skilled workers, and which would provide eligible veterans long-term occupational opportunities. The Veterans Administration provides the veteran with financial assistance to give him a measure of security through increased income while in training.
ELIGIBILITY REQUIREMENTS	Veterans whose discharge or release from active service was under conditions other than dishonorable, and whose active duty was for a continuous period of 181 days or more, any part of which occurred after January 31, 1955, or if less than 181 days, the discharge after January 31, 1955, was for a service-connected disability.
ADMINISTERING AGENCIES	Veterans Administration and Governor's Council for Institutional and On-the-Job Training.
IMPLEMENTING AGENCIES	Veterans Administration and Governor's Council for Institutional and On-the-Job Training.
LINKING AGENCIES	None.
AUTHORIZING LEGISLATION	The Veterans' Readjustment Benefits Act, approved as Public Law 89-358 on March 3, 1966.
SOURCE OF FUNDS	Federal funds, as a training allowance, are provided the veteran by the Veterans Administration. The employer is not subsidized under this training program.
ASES INVOLVEMENT	The Arizona State Employment Service cooperates with employers and implementing agencies in establishing on-the-job training programs, where justified by the actual needs of the employer for qualified workers, and in consideration of the long-term occupational opportunity afforded the veteran upon completion of the training. The ASES may recruit, counsel, test, select, refer and place eligible veterans in such job training situations.
LOCATION OF ASES INVOLVEMENT	Any area of the State in which an on-the-job training situation would be beneficial for a veteran.

PROGRAM	*Operation Mainstream*
NATURE AND PURPOSE OF PROGRAM	Through work-training and employment projects, augmented by necessary supportive services, the program is designed for chronically unemployed poor adults (22 years of age or over), who have no reasonable prospects for full-time employment or training assistance under other programs. The projects concentrate on work experience and training activities that will improve communities and those low income areas,where the projects may take place. Typical work assignments include the following: road repairs; landscape work in rest-pack parks along roadsides and in recreational areas; maintenance work in public buildings; clerical work in police departments,hospitals, and other local government agencies; construction of playgrounds, campsites, and picnic areas; and repair work on water and sewage facilities. Federal funds and technical assistance are provided to projects initiated, developed, and sponsored by local groups. Enrollees may not be employed on projects involving construction, operation, or maintenance of any facility used or intended for use in sectarian or religious worship. Also, enrollees must not displace any employed workers nor impair existing contracts for service. The regular Mainstream program provides 40-hour work weeks. In addition, work and training opportunities are provided in projects for senior citizens which limit the work week to 20 hours.
ELIGIBILITY REQUIREMENTS	This program serves persons over 22 years of age who are chronically unemployed or underemployed as a result of age, discrimination, or lack of opportunity.
ADMINISTERING AGENCY	U.S. Department of Labor through the Manpower Administration.
IMPLEMENTING AGENCY	Sponsors in the area contracting with the Manpower Administration. Sponsors are generally Community Action Agencies but may be public and private nonprofit organizations.
LINKING AGENCIES	Neighborhood Councils, Arizona State Employment Service, Phoenix Union High School, Division of Vocational Rehabilitation, Legal Aid Society, City of Phoenix, Operation LEAP, Maricopa County CAP. Various departments in State and local government, private nonprofit organizations.
AUTHORIZING LEGISLATION	Economic Opportunity Act Amendments of 1967, Title I-B, Section 123 (a) (3).

SOURCE OF FUNDS	Federal, as authorized by the Economic Opportunity Act up to 90 percent; 10 percent State or local matching in cash or kind.
ASES INVOLVEMENT	The Arizona State Employment Service provides services, as needed, to the various projects in the State. These services include: preenrollment -- recruitment, screening, and referral; during enrollment -- counseling, testing, and job development; and post-enrollment -- counseling, job development, job placement, and follow-through supportive services.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM	*Project SER-MDTA*
NATURE AND PURPOSE OF PROGRAM	Project SER-MDTA will coordinate Human Resources Development services utilizing various manpower programs to provide an intensive program of pre-job orientation, basic education, training, retraining, job development, and placement assistance to disadvantaged persons residing either in Western Maricopa County or the City of Tucson. The project plans to serve 400 persons in Western Maricopa County and 170 in Tucson during the current program year.
ELIGIBILITY REQUIREMENTS	Enrollees for this program will be selected from unemployed or underemployed disadvantaged persons residing in the designated areas of operation.
ADMINISTERING AGENCIES	Department of Labor; and Department of Health, Education and Welfare.
IMPLEMENTING AGENCIES	Arizona State Employment Service, Department of Vocational Education, and Operation SER (Service-Employment-Redevelopment).
LINKING AGENCIES	Department of Vocational Education, Division of Vocational Rehabilitation, Migrant Opportunity Program, Maricopa County Community Action Program, Unemployment Compensation Division of the Employment Security Commission of Arizona, and Neighborhood Youth Corps.
AUTHORIZING LEGISLATION	Economic Opportunity Act of 1964, as amended. Title II - Section 205 (and MDTA - Title II, Parts A and B; PWEDA).
SOURCE OF FUNDS	Federal, as provided under the Manpower Development and Training Act.
ASES INVOLVEMENT	The Arizona State Employment Service provides intake, counseling, selection, and referral services.
LOCATION OF ASES INVOLVEMENT	Goodyear and Tucson.

PROGRAM	*Project Transition*
NATURE AND PURPOSE OF PROGRAM	Project Transition provides training and educational opportunities for servicemen during their final six months of service to prepare them for civilian employment. Highest priority is given to those expected to face the most severe problems -- combat disabled, those with no civilian work experience, and those who did not acquire any skills related to civilian jobs while in the service. The program has four basic elements -- a counseling program to determine career desires and educational and training choices, an educational program to bring men up to the eighth grade or high school equivalency, and a training program to give them marketable skills, and a placement system to furnish employment opportunities to the newly trained servicemen (through the facilities of the Employment Service and private industry). Training is provided through existing civilian-related military courses, through MDTA courses or those sponsored by Federal agencies, and through courses given by companies to meet their own employment requirements. Thus, in providing predischarge training to serviceman, Project Transition will help meet the personnel needs of Federal, State, and local government agencies, as well as of private industry.
ELIGIBILITY REQUIREMENTS	All enlisted personnel who volunteer for such assistance and have from one to six month's service time remaining are eligible for the program.
ADMINISTERING AGENCIES	Department of Defense, in cooperation with the Departments of Labor, Commerce, and Justice; Civil Service Commission; Post Office Department; and the Veterans Administration.
IMPLEMENTING AGENCIES	Arizona State Employment Service and Arizona State Department of Vocational Education.
LINKING AGENCIES	As required to achieve objectives.
AUTHORIZING LEGISLATION	An Executive Order of the President in August 1967.
SOURCE OF FUNDS	Federal, as provided under the Manpower Development and Training Act.
ASES INVOLVEMENT	The Arizona State Employment Service will provide information and assistance concerning job opportunities, demand occupations, MDTA training, and placement.
LOCATION OF ASES INVOLVEMENT	Sierra Vista, Glendale, Mesa (those areas serving military installations).

PROGRAM	*Public Service Careers Program*
NATURE AND PURPOSE OF PROGRAM	Public Service Careers (PSC) is the concept of a new manpower program, to secure within merit principles permanent employment for the disadvantaged in public service agencies and to stimulate upgrading of current employees, thereby meeting public sector manpower needs. Institutional and individual barriers now prevent the most effective and efficient use of human resources in public service. PSC aims to attack these problems by providing funds to state and local governments and federal agencies for innovative projects directed toward overcoming or eliminating existing barriers. Just as there are many different barriers that prevent disadvantaged persons from entering public service or prevent other employees from being upgraded, so there may be many possible ways to overcome such barriers. The objectives of the PSC Program are to eliminate barriers to employment in: (1) the individual, (2) the institution, and (3) the external environment.
ELIGIBILITY REQUIREMENTS	Eligible for the Public Service Career Program are unemployed or underemployed disadvantaged youth or adults, or New Careerists to be upgraded.
ADMINISTERING AGENCY	U.S. Department of Labor, through the Manpower Administration.
IMPLEMENTING AGENCY	Sponsors in the area through contract with the Manpower Administration. Sponsors may be federal agencies, states, counties, municipalities, townships, and independent special districts.
LINKING AGENCIES	Arizona State Employment Service, Community Action Agencies, Concentrated Employment Program, and Work Incentive Program.
AUTHORIZING LEGISLATION	Manpower Development and Training Act of 1962, as amended; and Title I-B, 1966 amendment, Economic Opportunity Act of 1964.
SOURCE OF FUNDS	Federal, through the Manpower Administration.
ASES INVOLVEMENT	The Arizona State Employment Service will recruit, screen, counsel, and certify eligibility of enrollees.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM	*SLIP - Skills Level Improvement Projects*
NATURE AND PURPOSE OF PROGRAM	SLIP is a multifaceted program offering interracial planning for employment, housing, health, welfare, and youth incentives. As the manpower component of the Urban League, SLIP is a total program to upgrade basic skills and is privately sponsored by business in cooperation with Urban League. Specific skills are learned in the three on-the-job training programs; one a statewide program, another a part of the Concentrated Employment Program in Phoenix, and the third an apprenticeship coordinating program.
ELIGIBILITY REQUIREMENTS	Minority or disadvantaged with emphasis on minority unemployed or underemployed or must be working at a low skill level, or never had stable employment or displaced by automation.
ADMINISTERING AGENCY	Urban League.
IMPLEMENTING AGENCY	Urban League.
LINKING AGENCIES	As needed to achieve objectives.
AUTHORIZING LEGISLATION	None. This is a private organization supported by private industry.
SOURCE OF FUNDS	Federal, as provided under the Manpower Development and Training Act.
ASES INVOLVEMENT	Placement of Urban League referrals, provision of labor area information, and training of Urban League staff to utilize this information; referral to Urban League; testing; counseling; job development.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM	*STEP - Supplemental Training and Employment Program*
NATURE AND PURPOSE OF PROGRAM	A temporary work experience program for unemployed graduates of Manpower Administration-sponsored training programs. STEP is a work experience program designed to provide short-term, meaningful work experience in the public and private nonprofit sectors of the economy. Participants will be provided a stipend, and it is intended that their work experience be related to their most recent occupation and/or job training, or improve their employability.
ELIGIBILITY REQUIREMENTS	Must have received training under a DOL manpower training program within last 12 months; met disadvantaged criteria when he entered training or currently meets these criteria; is not receiving unemployment insurance; has been laid off from a full-time position as a result of production cutback, plant shutdown, mass layoff, with no possibility for immediate rehire; or has completed employability plan to the point of job entry, is job ready, but cannot find employment due to temporarily adverse labor market conditions.
ADMINISTERING AGENCY	Manpower Administration, U.S. Department of Labor.
IMPLEMENTING AGENCIES	Public and private nonprofit organizations.
LINKING AGENCIES	Where necessary to achieve objectives.
SOURCE OF FUNDS	Manpower Administration, U.S. Department of Labor.
ASES INVOLVEMENT	The Arizona State Employment Service provides outreach, intake, certification of eligibility, assessment and counseling, referral to training and supportive services, job development, placement, and follow-up.
LOCATION OF ASES INVOLVEMENT	Statewide

PROGRAM	*Vocational Education*
NATURE AND PURPOSE OF PROGRAM	The purpose of Vocational Education is to supplement general education by teaching marketable skills, to assist in providing a trained work force, and to provide occupational education for updating the employed person with new knowledge and skills. These purposes are achieved through classes at the high school and junior colleges for both full- and part-time students.
ELIGIBILITY REQUIREMENTS	A few courses have special criteria; the majority of the programs are open to those persons desiring vocational education.
ADMINISTERING AGENCY	Department of Vocational Education.
IMPLEMENTING AGENCY	Separate school districts, junior college systems, and Northern Arizona University.
LINKING AGENCIES	As required by other programs.
AUTHORIZING LEGISLATION	The 1968 amendments to the Vocational Education Act.
SOURCE OF FUNDS	Federal, through the U.S. Department of Health, Education, and Welfare. Matched by State and/or local funds.
ASES INVOLVEMENT	The Arizona State Employment Service supplies employment projections to the Department of Vocational Education to assist the latter in planning vocational programs.
LOCATION OF ASES INVOLVEMENT	State Administrative Office in Phoenix.

PROGRAM	*Vocational Rehabilitation*
NATURE AND PURPOSE OF PROGRAM	The purpose of the Vocational Rehabilitation program is to provide basic services to make a person employable and self-supporting if, due to a physical or mental disability, he is unable to earn a living. The basic services include: (1) comprehensive evaluation, including medical study and diagnosis; (2) medical, surgical, and hospital care and related therapy to remove or reduce disability; (3) prosthetic device; (4) counseling and guidance in achieving vocational readjustment; (5) training; (6) service in comprehensive or specialized rehabilitation facilities; (7) maintenance and transportation as appropriate during rehabilitation; (8) tools, equipment, and licenses for work on a job or in establishing a small business; and (9) placement on a job and follow-up.
ELIGIBILITY REQUIREMENTS	Any person of working age who has a substantial handicap -- mental or physical -- and who can benefit from services which will return him to regular, gainful employment.
ADMINISTERING AGENCY	Arizona Department of Public Instruction.
IMPLEMENTING AGENCY	Division of Vocational Rehabilitation.
LINKING AGENCIES	All agencies will refer to this program.
AUTHORIZING LEGISLATION	The Vocational Rehabilitation Act of 1920, as amended.
SOURCE OF FUNDS	Federal, with matching State ratio.
ASES INVOLVEMENT	Local office counselors refer applicants to the Division of Vocational Rehabilitation for needed services.
LOCATION OF ASES INVOLVEMENT	Statewide.

PROGRAM *WIN - Work Incentive Program*

NATURE AND PURPOSE OF PROGRAM

The WIN program is a cooperative agreement between the State Employment Service and the Department of Public Welfare to move families receiving ADC payments from welfare rolls to productive employment. The program offers basic education, job placement, skill training, work experience, or special work project opportunities to these persons. Individuals referred by Welfare will be interviewed, tested, counseled, and given orientation and work evaluations. Those ready and able to work will then be placed in available jobs. The remainder will be moved into one of the many training situations where they may also receive basic and remedial education. An enrollee may be placed in a permanent job at any point that he is judged ready for employment.

First priority is to move enrollees into regular employment or on-the-job training. As an incentive, the enrollee will receive wages from the employer and, depending on the amount of wages, possibly an adjusted cash welfare payment. In any case his total remuneration will exceed his former welfare payment. Second priority is to move enrollees into institutional or work experience training. During this training period, enrollees will continue to receive their welfare grant plus $30.00 a month incentive payment from WIN. Under the third priority, agreements will be entered into with public agencies or private nonprofit organizations for special work projects to employ those for whom jobs in the regular economy cannot be found. These enrollees are guaranteed that their income will equal at least the amount of their regular welfare payment plus 20 percent of the wages paid to them. Mandatory referrals who refuse without good cause to participate in this program or accept employment might be denied welfare payments. There are both informal and formal appeal provisions for such a determination.

Arizona's WIN program is one of ten in the nation incorporating a pilot project known as the Work Sample technique. This technique was developed by the Jewish Employment and Vocational Service (JEVS) in Philadelphia. It consists of a two-week assessment period during which the WIN enrollee samples up to 27 job tasks. During this period he is observed by an

	especially trained staff. The staff develops a comprehensive evaluation report on the enrollee. This report describes his work skills, attitudes, interests, motivation, and readiness. It is designed to help the enrollee determine the kinds of occupations for which he is best suited and the training and education he requires. The Work Sample technique is currently being implemented at the Phoenix WIN Center.
ELIGIBILITY REQUIREMENTS	Enrollees must be Aid for Dependent Children clients, age 16 and up.
ADMINISTERING AGENCY	Department of Labor through the Manpower Administration.
IMPLEMENTING AGENCIES	Arizona State Employment Service, Department of Public Welfare.
AUTHORIZING LEGISLATION	Social Security Act, Title IV, Part C, 1967.
LINKING AGENCIES	Division of Vocational Rehabilitation, Division of Vocational Education, Unemployment Compensation Division of Employment Security Commission of Arizona.
SOURCE OF FUNDS	Federal funds, 80 percent. State funds 20 percent from Welfare.
ASES INVOLVEMENT	In cooperating areas, the local Arizona State Employment Service office will be the sponsor under the guidance of the Arizona State Employment Service, State Administrative Office, as the statewide sponsor. Services provided will include counseling, testing, coaching, job development, job engineering, job placement, and followup.

III. POTENTIAL PROGRAMS IN ARIZONA

PROGRAM	*NCP - Neighborhood Centers Program*
NATURE AND PURPOSE OF PROGRAM	This program will combine the efforts of four Federal agencies (Labor; Health, Education, and Welfare; Housing and Urban Development; Office of Economic Opportunity) into an integrated team to work with neighborhood, city, and State agencies in operating Neighborhood Centers "to service the people who live there." The program will provide locations where local residents can go for job information and training, health, education, recreational, job referral, and other community services.
ELIGIBILITY REQUIREMENTS	This program is aimed at disadvantaged families and individuals who have a need for the services provided at the Center.
ADMINISTERING AGENCY	The Department of Housing and Urban Development.
IMPLEMENTING AGENCY	HUD Regional Office.
LINKING AGENCY	Where necessary to achieve program objectives.
AUTHORIZING LEGISLATION	Executive Order Number 11297.
SOURCE OF FUNDS	Federal, as authorized by the Housing and Urban Development Act of 1965, Section 703.
ASES INVOLVEMENT	When such programs are in operation in Arizona, the Arizona State Employment Service will participate in the delivery of appropriate manpower services.
LOCATION OF ASES INVOLVEMENT	No program operating at this time.

PROGRAM	*Special Impact Programs*
NATURE AND PURPOSE OF PROGRAM	A special impact program to provide work training experience concerned with the socio-economic problems of poverty stricken urban communities or neighborhoods. Its purposes are to: (1) solve critical manpower problems in urban slum areas with high concentrations of unemployed, underemployed, or low income residents, (2) be of sufficient size and scope to diminish the tendencies of these areas toward dependency, chronic unemployment, and rising community tensions, and (3) help structure and coordinate projects aimed at improving employment prospects of neighborhood residents and the general welfare of the neighborhood. The program is designed to commit enough funds and technical assistance to projects initiated, developed, and sponsored by selected urban and rural areas to solve critical manpower problems. The Federal government will generally defray no more than 90 percent of the cost of these projects. Non-federal contributions may be in cash or in kind, including but not limited to, plant, equipment, and services. Projects may be sponsored by public or private organizations. Enrollees may not be employed in projects involving construction, operation, or maintenance of any facility used or intended for use in sectarian or religious worship. Also, enrollees may not displace any employed workers nor impair existing contracts for services.
ELIGIBILITY REQUIREMENTS	Enrollees in a Special Impact program must be residents of the community served by the project, at least 16 years of age, and come from a family whose annual income falls below the poverty line <u>or</u> be unemployed.
ADMINISTERING AGENCY	Office of Economic Opportunity.
IMPLEMENTING AGENCY	Office of Program Development, OEO.
LINKING AGENCY	Where necessary to achieve program objectives.
AUTHORIZING LEGISLATION	Economic Opportunity Act of 1964, as amended, Title I-D

SOURCE OF FUNDS	Federal, through the Office of Economic Opportunity.
ASES INVOLVEMENT	The Arizona State Employment Service assists in the development of the manpower component and participates in the delivery of appropriate manpower services.
LOCATION OF ASES INVOLVEMENT	It is expected that the Arizona State Employment Service will deliver manpower services to any funded Special Impact program within the State.

PROGRAM	*TEA - Trade Expansion Act of 1962*
NATURE AND PURPOSE OF PROGRAM	The purpose of the Trade Expansion Act of 1962 is to strengthen economic relations with free-world countries and, therefore, stimulate economic growth of the United States by negotiating mutually beneficial trade agreements. The Act recognizes that as a result of trade agreements, certain firms and workers may suffer economic hardship or unemployment. The Act provides a wide range of assistance to eligible firms and workers.
ELIGIBILITY REQUIREMENTS	It is expected that some firms may not be able to maintain their competitive positions once import restrictions are reduced. In order that firms and workers may make a satisfactory adjustment if they are affected by trade agreements made under this Act, special assistance has been provided by the Act. Assistance to Firms: The Department of Commerce is responsible for administering three forms of assistance to affected firms: loans, technical assistance, and tax relief. Assistance to Workers: The Department of Labor is responsible for administering the following forms of assistance to affected workers: Trade Readjustment Allowances: To provide financial assistance while workers are unemployed or underemployed. Training: A worker may be referred under any Federal law, such as Manpower Development and Training Act, or any other training a worker may wish to undertake and which is approved. Relocation Allowances: For eligible heads of households, covering the cost of moving the worker, his family, and his household effects to increase his geographical mobility, where he has an actual job or job offer in the new area and where he has no reasonable expectation of securing suitable employment within commuting distance of his home.
ADMINISTERING AGENCIES	U.S. Department of Commerce; U.S. Department of Labor.
IMPLEMENTING AGENCY	Manpower Administration, U.S. Department of Labor.
LINKING AGENCIES	Where necessary to achieve objectives.
SOURCE OF FUNDS	Federal, as provided under the Trade Expansion Act of 1962.

ASES INVOLVEMENT	The Arizona State Employment Service will provide manpower services as needed when the program is implemented within the state.
LOCATION OF ASES INVOLVEMENT	Statewide.

IV. RELATED EXPERIMENTAL AND DEMONSTRATION PROGRAMS

PROGRAM	*Experimental and Demonstration Program*
NATURE AND PURPOSE OF PROGRAM	The principal aim of the Experimental and Demonstration Program is to develop and test, through actual operation, new ideas and techniques on how to meet manpower problems more effectively; particularly the problems of disadvantaged groups. In general, E&D projects are characterized by (a) focus on distinctive techniques for aiding major disadvantaged groups who are not ordinarily aided effectively by regular program techniques, and/or (b) the use of institutions not ordinarily used as sponsoring agencies by the regular manpower programs, and/or (c) strong emphasis on formal measurement and analysis of the effectiveness of various manpower services.
ELIGIBILITY REQUIREMENTS	Various groups among the total disadvantaged population are eligible; particularly youth, prison inmates, and the handicapped.
ADMINISTERING AGENCY	U.S. Department of Labor, Manpower Administration.
IMPLEMENTING AGENCY	Office of Research and Development, Manpower Administration.
LINKING AGENCIES	Where necessary to achieve program objectives.
AUTHORIZING LEGISLATION	Title I, Manpower Development and Training Act, as amended, and Title I-B, Economic Opportunity Act, as amended.
SOURCE OF FUNDS	Manpower Development and Training Act and the Economic Opportunity Act.
ASES INVOLVEMENT	The Arizona State Employment Service will participate in the delivery of appropriate manpower services.
LOCATION OF ASES INVOLVEMENT	It is expected that the Arizona State Employment Service will deliver manpower services to any funded E&D project within the State.

V. OTHER MANPOWER SERVICES

PROGRAM	*RMS - Rural Manpower Services*
NATURE AND PURPOSE OF PROGRAM	The Rural Manpower Service concept is the direction of the Employment Service to provide the expertise, the organizational leadership and the full impact of local and branch office resources and other available manpower resources for all rural manpower matters. The Rural Manpower Service will encompass the full spectrum of manpower services to the extent they are needed, including special emphasis on the Human Resources Development concept. This is the extension of counseling, testing, referral to all types of training, job development, placement, manpower and employment information, administrative and technical support and industrial development assistance into rural areas previously lacking these services. There are no boundaries based on industry lines. The Rural Manpower Service Program offers a full range of manpower services to attract and service the rural population, both agricultural and non-agricultural.
ELIGIBILITY REQUIREMENTS	All individuals and firms in rural areas who have a need of employment or employability services.
ADMINISTERING AGENCY	Arizona State Employment Service.
IMPLEMENTING AGENCY	Arizona State Employment Service local and branch offices.
AUTHORIZING LEGISLATION	Wagner-Peyser Act of 1933; Social Security Act.
SOURCE OF FUNDS	Federal, as provided under Title III of the Social Security Act.
ASES INVOLVEMENT	The Arizona State Employment Service will provide the full range of employment services including counseling, testing, referral to all types of training, job development, placement, manpower and employment information, administrative and technical support and industrial development assistance to areas which received only the services of the Farm Labor Service previously. The Arizona State Employment Service would serve as an innovative stimulus to the rural communities to help them help themselves in the areas of training of the labor force and development of an industrial mix.
LOCATION OF ASES INVOLVEMENT	Rural areas statewide.

PROGRAM	*VEPS - Veterans' Employment Priority Service*
NATURE AND PURPOSE OF PROGRAM	This program provides priority in pre-referral, selection, and referral services to veterans seeking employment assistance, with preferential treatment for the disabled, in order to insure the "maximum of job opportunity in the field of gainful employment." A Federal Veterans' Employment Service Representative is appointed in each state to serve as a link between the United States Employment Service and the state and local Employment Service office. This representative is attached to the State Administrative Office of the Employment Service. Local Employment Service offices designate a staff member with the responsibility for serving veterans and insuring that the intent of laws covering veterans' priority and preferential treatment in services is effectively carried out. In addition, visits are made to military bases and veterans' hospitals to explain the services available and to provide assistance to disabled veterans and separatees.
ELIGIBILITY REQUIREMENTS	The passage of the Veterans' Readjustment Benefits Act of 1966 conferred veteran's status on all present and future servicemen, extending preferential coverage to virtually all members of the armed services separated from active duty.
ADMINISTERING AGENCY	U.S. Department of Labor.
IMPLEMENTING AGENCY	Arizona State Employment Service.
LINKING AGENCIES	Where necessary to achieve objectives.
AUTHORIZING LEGISLATION	Wagner-Peyser Act of 1933, Servicemen's Readjustment Act of 1944, Veterans' Readjustment Assistance Act of 1952, Veterans' Readjustment Benefits Act of 1966.
SOURCE OF FUNDS	Title III of the Social Security Act.
ASES INVOLVEMENT	The Arizona State Employment Service provides a Supervisor of Services to Veterans in the State Administrative Office, designates a local office VER in each local Employment Service office, and outstations a VER at the Veterans' Assistance Center in Phoenix. These representatives have the responsibility of insuring that veterans receive priority in employment services. Visits are made to military bases and veterans' hospitals to explain the services available and to provide assistance to separatees and disabled veterans.
LOCATION OF ASES INVOLVEMENT	Statewide.

VT 014 807
GEPPERT, WILLIAM J., JR.; REIHER, JOHN F.
CAREER SCIENCE AND MATHEMATICS EDUCATION WORKSHOP WITH COMPUTER IMPLICATIONS. FINAL REPORT.

DELAWARE STATE DEPT. OF PUBLIC INSTRUCTION, DOVER.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - DEC71 140P.

DESCRIPTORS - *MATHEMATICS EDUCATION; *SCIENCE EDUCATION; *COMPUTER ORIENTED PROGRAMS; *RELEVANCE (EDUCATION); WORKSHOPS; *INTEGRATED CURRICULUM; PROGRAM EVALUATION; PROGRAM IMPROVEMENT; CAREER EDUCATION

ABSTRACT - SINCE EDUCATION MUST BE ADAPTABLE TO A BROAD SPECTRUM OF PUPILS, SCHOOL SITUATIONS, AND COMMUNITIES, SCIENCE MUST BE TAUGHT IN WAYS WHICH ARE RELEVANT TO ALL CHILDREN. SCIENCE AND MATHEMATICS EDUCATION IS AT A CRITICAL POINT WHERE STUDENTS SHOULD LEARN ABOUT SCIENCE'S REDEEMING SOCIAL VALUES, NOW THAT IT IS BEING BLAMED FOR THE ILLS OF SOCIETY AND THE ENVIRONMENT. NOW, MORE THAN EVER, ALL CITIZENS MUST BE SCIENTIFICALLY LITERATE. IT IS NECESSARY THAT SCIENCE EDUCATORS INTEGRATE THE SCIENCE DISCIPLINE WITH OTHER AREAS SUCH AS MATHEMATICS, SOCIAL STUDIES, AND VOCATIONAL EDUCATION. THIS WORKSHOP, ATTENDED BY 38 SCIENCE AND MATHEMATICS TEACHERS, WAS DESIGNED TO DEVELOP A SET OF OVERALL OBJECTIVES FOR SCIENCE AND MATHEMATICS EDUCATION TO SERVE AS THE BASIS FOR CAREER EDUCATION USING THE COMPUTER AS THE VEHICLE. (AUTHOR/GEB)

VT 014 807

FINAL REPORT

Project No. R-71-3

Career Science and Mathematics Education Workshop With Computer Implications

Research Project in Vocational Education
Conducted Under
Part C of Public Law 90-576

William J. Geppert, Jr.
State Supervisor
Mathematics Education
State Department of Public Instruction
Dover, Delaware

John F. Reiher
State Supervisor
Science/Environmental Education
State Department of Public Instruction
Dover, Delaware

December, 1971

VT014807

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FINAL REPORT

Project No. R-71-3

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Career Science and Mathematics Education Workshop With Computer Implications

Research Project in Vocational Education
Conducted Under
Part C of Public Law 90-576

William J. Geppert, Jr.
State Supervisor
Mathematics Education
State Department of Public Instruction
Dover, Delaware

John F. Reiher
State Supervisor
Science/Environmental Education
State Department of Public Instruction
Dover, Delaware

December, 1971

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Final Report On

Career Science and Mathematics Education Workshop With Computer Implications

Sponsored By:

Occupational Research Exemplary
Programs Continuation Grant
Fiscal Year 1972

Leadership Of:

William J. Geppert, Jr.
State Supervisor
Mathematics Education

John F. Reiher
State Supervisor
Science/Environmental Education

December, 1971

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I. ABSTRACT

The public looks to its schools for basic education, continuing education of mid-career adults, a never-ending supply of talent trained to accomodate the State's chemical and related industry, and teachers who can teach modern science effectively to all students in the elementary and secondary schools of Delaware. Education must be adaptable to a broad spectrum of pupils, school situations and communities; therefore, science must be taught in ways which are relevant to all children.

Science and mathematics education is at a critical crossroads. On the one hand, science's technological achievements are being blamed for the ills of society and the environment-so it is not enough for the schools to teach science and mathematics per se. The schools must also tell students about science's "redeeming social values." On the other hand, students are uninterested, if not antagonistic, toward science and mathematics. Yet now, more than ever, all citizens must be scientifically literate so they can deal with modern technology and make rational decisions about pollution, waste disposal and other science-related problems in society. This issue of scientific literacy has been raised before. But little has been done in schools.

Science educators are also being urged to end the rigid distinctions betwen the various sciences. Schools should build bridges between an integrated science discipline and other areas, such as mathematics, social studies and vocational education.

Consider what has been going on in the communications field. Developments in technology are having so great an impact on our society. The computer revolution has more widespread implications for education. They have to do with the thesis firmly held by some that our society itself is being transformed and "driven in new and largely unknown directions at increasing speed by computer-catalyzed science and technology." [1]

[1]Harold B. Sackman, Computers, System Science and Evolving Society. Wiley, 1967, p. 3.

II. PARTICIPANTS FOR WORKSHOP

Career Science and Mathematics Education

Participant	District
1. Dale C. Reynard	Alfred I. duPont
2. Mildred S. Cook	Alfred I. duPont
3. Leon Poliski	Alexis I. duPont
4. Thomas Hurd	Alexis I. duPont
5. Jacquline Root	Appoquinimink
6. John A. Carter	Caesar Rodney
7. Jack C. Cairns	Capital
8. W. John Layton, Sr.	Capital
9. Frederick T. Mann	Claymont
10. Bent Rohn	De La Warr
11. Helen Warren	Delmar
12. Josephine Warren	Delmar
13. Mary Stein	Indian River
14. Thomas G. Townsend	Indian River
15. Winston Cleland	Marshallton-McKean
16. David Van Wickle	Mt. Pleasant
17. Margery Windolph	Mt. Pleasant
18. Robert Barfield	Mt. Pleasant
19. Harry Kutch	New Castle/Gunning Bedford
20. Marsden D. Stambaugh	New Castle/Gunning Bedford
21. William Sokol	Newark
22. John Baldino	Newark
23. Richard Skrovonski	Newark
24. William L. Dixon	Seaford
25. Lee Shoff	Stanton
26. Edward A. Reustle	Wilmington
27. Eleanor Isaacs	Wilmington
28. Sister Mary Thomas	Diocese of Wilmington
29. J. Gary Bryant	Tower Hill School (Private)
30. Francis R. Kosco	Capital
31. Dean R. Buckwalter	Stanton
32. Charles W. Bell	Caesar Rodney
33. Dock H. Williams	Newark
34. J. Duane Morningred	Conrad Area
35. John J. Yurek	De La Warr
36. June Wilson	Caesar Rodney
37. W. John Layton, Jr.	Capital
38. Edgar A. Baker	Conrad Area

III. CONSULTANTS FOR WORKSHOP

Teresa Green
Director, Delta
Delaware School Auxiliary
Wilmington, Delaware

Mildred Snowberger
Supervisor Evaluation/Career Education
Department of Public Instruction
Dover, Delaware

Dr. Michael R. Samuels
Chemical Engineering
University of Delaware
Newark, Delaware

Dr. David M. Robinson
Electrical Engineering
University of Delaware
Newark, Delaware

Dr. Clifford W. Sloyer, Jr.
Mathematics
University of Delaware
Newark, Delaware

Frank Behm
E. I. duPont Company
Wilmington, Delaware

IV. MATERIALS DISTRIBUTED TO PARTICIPANTS PRIOR TO WORKSHOP

This is contained in Appendix A.

V. EDUCATIONAL PROCESS OBJECTIVES OF SCIENCE AND MATHEMATICS ON WHICH THE WORKSHOP WAS BUILT

The education process objectives for science and mathematics listed below constituted the initial emphasis for the workshop:

Process-Observation

Observations can be made in a variety of ways, using all of the senses. Where direct sense experience is not adequate for making needed observations, indirect methods are used. Objects and events may be observed with respect to many qualities and quantities. When observations are made to accumulate data from which inferences will be drawn, the precision of the observations is critical. Precision is often improved by making quantitative observations. Observations are influenced by the experience of the observer.

Process-Classifying

Classifying is the grouping or ordering of phenomena according to an established scheme. Objects and events may be classified on the basis of observations. Classificational schemes are based on observable similarities and differences in arbitrarily selected properties. Classificational keys are used to place items within a scheme as well as to retrieve information from a scheme.

Process-Inferring

Inference, while based on observations, requires evaluation and judgment. Inferences based upon one set of observations may suggest further observation which in turn requires modification of original inferences. Inference leads to prediction.

Process-Predicting

Prediction is the formulation of an expected result based on past experience. The reliability of prediction depends upon the accuracy of past observations and upon the nature of the event being predicted. Prediction is based upon inference. Progressive series of observations and, in particular, graphs are important tools of prediction in science. An experiment can verify or contradict a prediction.

Process-Measuring

Measuring properties of objects and events can be accomplished by direct comparison or by indirect comparison with arbitrary units which, for purposes of communication, may be standardized. Identifiable characteristics which can be measured may be interrelated to provide other quantitative values that are valuable in the description of physical phenomena.

Process-Communicating

In order to communicate observations, accurate records must be kept which can be submitted for checking and rechecking by others. Accumulated records and their analysis may be represented in many ways. Graphical representations are often used since they are clear, concise and meaningful. Complete and understandable experimental reports are essential to scientific communication.

Process-Interpreting Data

Interpreting data requires the application of other basic process skills-in particular, the process of inferring, predicting, classifying and communicating. It is through this complex process that the usefulness of data is determined in answering the question being investigated. Interpretations are always subject to revision in the light of new or more refined data.

Process-Making Operational Definitions

Operational definitions are made in order to simplify communication concerning phenomena being investigated. In making such definitions it is necessary to give the minimum amount of information needed to differentiate that which is being defined from other similar phenomena.

Operational definitions may be based upon the observable characteristics of the phenomena and upon the operations to be performed. Operational definitions are precise, and in some cases, based upon mathematical relationships.

Process-Formulating Questions and Hypotheses

Questions are formed on the basis of observations made and usually precede an attempt to evaluate a situation or event. Questions, when precisely stated, are problems to be solved through application of the other processes of science. The attempt to answer one question may generate other questions.

The formulation of hypotheses depends directly upon questions, inferences and predictions. The process consists of devising a statement which can be tested by experiment. When more than one hypothesis is suggested by a set of observations, each must be stated separately. A workable hypothesis is stated in such a way that, upon testing, its credibility may be established.

Process-Experimenting

Experimenting is the process of designing data-gathering procedures as well as the process of gathering data for the purpose of testing a hypothesis. In a less formal sense, experiments may be conducted simply to make observations. However, even here there is a plan to relate cause and effect. In an experiment variables must be identified and controlled as much as possible. An experimental test of a hypothesis is designed to indicate whether the hypothesis is to be accepted, modified or rejected. In designing an experiment, limitations of method and apparatus must be considered.

Process-Formulating Models

Models, whether physical or mental, are devised on the basis of acceptable hypotheses or hypotheses that have yet to be tested. Models are used to describe and explain the interrelationships of ideas. In many cases the model implies new hypotheses; if testing these hypotheses results in new information, the model must be altered to include it.

These processes were reviewed and emphasized in the workshop with the participants.

VI. ACTIVITIES OF THE WORKSHOP

The Delaware School Auxiliary Association has and is trying to promote the use of the computer in the secondary schools of the State of Delaware. The general plan for the workshop was to combine the efforts of the teachers in the DSAA program with other mathematics and science teachers in the State towards developing guidelines for career science and mathematics education.

The result was that we had to divide the workshop into three components: mathematics and science teachers with experience on the computer, mathematics teachers with no computer experience, and science teachers with no computer experience. This accounted for the limited number of objectives developed for science and mathematics in the workshop. (Contained in Appendix B). The contributions of the mathematics and science teachers with computer backgrounds were the major outcomes or objectives developed in the workshop. (Contained in Appendix C).

The general format of the workshop and a brief summary of daily activities follows:

Major Objective: To develop a set of overall objectives for science and mathematics education to serve as the basis for career education using the computer as the vehicle.

A) Large Group Presentations

1. Goals of career education as established by Commissioner Marland of the United States Office of Education.

2. Behavioral objectives and the role they play in science/mathematics education.

3. A view from the industrial community and higher education.

4. What is currently in use in Delaware schools with focus on further needs of teacher training/retraining with the computer.

B. After each large group presentation teachers were separated into small working groups to pull into their objectives the points and suggestions from the speaker of the day.

As planned, a considerable amount of time was spent during the first two days working in large groups. The first day's activities were designed to introduce and reenforce the concept of using behavioral objectives and stating in behavior terms the objectives developed during the workshop.

On the second day the consultants presented individually to the participants a discussion of their particular area concerning careers.

The consultants served on a panel discussion that afternoon to further discuss with the participants career mathematics and science education.

The remaining days were devoted to the participants identifying goals and objectives for science and mathematics education. The participants were asked to identify five major objectives in his subject field or one of his courses that he had taught the previous school year. Each participant compiled a list of his objectives.

VII. MATERIALS DISTRIBUTED AT WORKSHOP

Materials used at the workshop were:

Mager and Black, Developing Vocational Instruction. Fearon Publishers, 1967.

Compendium of articles in mathematics/science career education-contained in Appendix D.

Compendium of objectives in mathematics/science education-contained in Appendix E.

VIII. CONCLUSIONS AND RECOMMENDATIONS

Science and mathematics has not met the needs of students going directly to the job market from high school in the science and mathematics related jobs. Thus we propose to develop guidelines to assist teachers in making the present programs meet this need, as well as suggestions for possible additions.

1) The use of the computer as a tool for the science/mathematics student has been the major emphasis to date, but it is felt that acquainting the student with certain operations of the computer is of major importance as to the mechanical skills, the day-to-day working processes, and how the student can use it in a career.

2) A need for training of our secondary science/mathematics teachers in the development and use of behavioral objectives became evident in light of the lack of understanding or appreciation when behavioral objectives were presented to the teachers in the workshop. Provisions for a future workshop for science/mathematics teachers in the skills is necessary for behavioral objectives to become evident.

3) The teachers generally, at the secondary level of mathematics and science, lack an understanding for the needs of the average or below average student in science and mathematics. A program of acquainting them with the needs and how to work towards meeting the needs of our students is imperative. Basic programs based in the skills are necessary.

4) Areas of further research in science/mathematics in the basic program needs that the high school terminal or dropout student should have to succeed on the job market. The success of the Title III project, Career Science, Middletown High School, might serve as a framework to develop the type of mini-courses that might prove successful for the student in the high school.

5) A closer look at what correlations can be developed at the middle or junior high school level programs in science and mathematics for the average student might be of benefit.

6) It was decided at the conclusion of the Careers Science and Mathematics workshop that this type of involvement of teachers in planning goals and objectives was a pleasurable and rewarding experience. Indeed, a follow-up workshop was recommended to further develop guidelines for career science and mathematics education. This workshop represented an initial effort in that direction.

BUDGET

ITEMS	AMOUNT APPROVED	AMOUNT SPENT	BALANCE
1. Personnel			
a) Stipends-38 teacher participant-$25.00 per day-4 days = $100.00	$	$3,800.00	$
b) Participants living more than 20 miles from Mt. Pleasant High School-mileage @ .10¢ per mile	4,711.00	669.16	241.84
2. Travel (not used)			
a) Non teachers	240.00		240.00
b) Consultants	260.00		260.00
3. Contracted Services	500.00		
Michael R. Samuels		100.00	
David M. Robinson		100.00	
Clifford W. Sloyer		100.00	200.00
5. Land and Buildings (does not apply)	100.00		100.00
6. Other Expenses			
a) Stationery/Supplies/Workshop	150.00	75.00 (approx.)	75.00
b) Resource material, books, printed material used by members of the groups	439.00		
1. Fearon Publishers Developing Vocational Instruction by Mager		113.68	

(continued next page)

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BUDGET

ITEMS	AMOUNT APPROVED	AMOUNT SPENT	BALANCE
2. Eisenhower Cooperative Science/Mathematics Guide	$	$ 67.00	$ 258.32
c) Printing & dissemination of materials			
3. Dartmouth Guide for each teacher group (35) sets duplicated	600.00	294.55	
4. Duplicated articles and materials distributed to participants		86.10	219.35
GRAND TOTALS	$7,000.00	$5,405.49	$1,594.51

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APPENDIX A

STATE OF DELAWARE

DEPARTMENT OF PUBLIC INSTRUCTION

DOVER, DELAWARE 19901

KENNETH C. MADDEN
STATE SUPERINTENDENT

RANDALL L. BROYLES
HOWARD E. ROW
JOHN J. RYAN
ASSISTANT SUPERINTENDENTS

August 2, 1971

MEMO TO: Teaching Personnel in the Areas of Mathematics and Science

FROM: John F. Reiher
Supervisor of Science/Environmental Education
William J. Geppert
Supervisor of Mathematics

SUBJECT: FOUR-DAY WORKSHOP WITH CAREER SCIENCE AND MATHEMATICS EDUCATION

During the week of August 30th, 1971, the State Department of Public Instruction is sponsoring a workshop for mathematics and science teachers. The workshop will be held at the Mount Pleasant High School from 9:30 A.M. to 3:00 P.M. daily for four consecutive days beginning Monday, August 30, 1971 and ending Thursday, September 2, 1971.

The Delaware School Auxiliary Association has and is trying to promote the use of the computer in the secondary schools of the State. Some of you may have been involved with the DSAA program.

The general plan for the workshop will be to combine the efforts of the teachers in the DSAA program with other mathematics and science teachers in the State towards developing guidelines for Career Science and Mathematics Education.

We plan to provide consultants for the workshop in line with Careers in Science and Mathematics Education as well as Mrs. Teresa Green coordinating the DSAA program, "Project Delta".

Unfortunately, we are working with a limited budget. We are planning on limiting the number of participants to 40. Each participant will receive a stipend of $100.00. A small amount of mileage money is available, but again this will be limited to most down-state participants due to the workshop location.

(continued next page)

Prior to the workshop we hope to send you a list of all of the participants and perhaps you can plan for car pools. We sincerely hope that you will view this as an opportunity for professional growth. We need the help of all of you. The specific details with the list of expected participants and the agenda will be sent to you at a later date.

We would appreciate your completing the tear slip and returning it by August 18, 1971.

JR:WJG:va
cc: Chief School Officers

To: Mr. William J. Geppert
Supervisor of Mathematics
Townsend Building
Dover, Delaware 19901

I will _____ will not _____ be able to attend the Career Science Mathematics Program workshop the week of August 30, 1971, at Mount Pleasant High School.

Name: _____

Address: _____

_____

School: _____

District: _____

STATE OF DELAWARE

DEPARTMENT OF PUBLIC INSTRUCTION

DOVER, DELAWARE 19901

KENNETH C. MADDEN
STATE SUPERINTENDENT

RANDALL L. BROYLES
HOWARD E. ROW
JOHN J. RYAN
ASSISTANT SUPERINTENDENTS

August 2, 1971

MEMO TO: Chief School Officers

FROM: John Reiher
Supervisor of Science/Environmental Education
William J. Geppert
Supervisor of Mathematics

SUBJECT: FOUR-DAY WORKSHOP FOR CAREER SCIENCE AND MATHEMATICS

The Career Science and Mathematics Guidelines Workshop was funded at the July State Board meeting.

We have been in direct contact with teachers in the mathematics and science communities. The following teachers have been invited to participate from your district:

A list of alternates is being prepared. If you have additional teachers you would like us to contact, they could be listed as alternates.

A copy of the letter sent to the teachers is attached for your information.

JR:WJG:va
cc: Dr. K. C. Madden
Dr. R. Broyles
Mr. Robert Hawkins

CAREER SCIENCE AND MATHEMATICS EDUCATION

WHERE:	Mount Pleasant High School
TIME:	Workshop activities will be scheduled on a daily basis of five hours. Beginning at 9:30 A.M. and ending at 3:30 P.M. Lunch will be at each individuals expense in accordance with budget policy
MONDAY-A.M.	Introduction and Welcome, Mrs. Mildred Snowberger Evaluation, Career Programs Supervisor Department of Public Instruction Identify the Separate Goals of Science & Mathematics
MONDAY-P.M.	Establishing Behavioral Objectives Identification of Combined Goals of Science and Mathematics
TUESDAY-A.M.	Role of Computation and Computers Dr. David Robinson Associate Professor Electrical Engineering University of Delaware Industry Outlook on Career Education Mr. Frank Behm, E.I. duPont Representative
TUESDAY-P.M.	Mathematics in Career Education Dr. Clifford W. Sloyer, Jr. Chairman Mathematics Department University of Delaware Science in Career Education Dr. Bruce Lutz Professor of Electrical Engineering University of Delaware
WEDNESDAY-A.M.	Developing Career Guidelines Restatement of Goals of Science and Mathematics
WEDNESDAY-P.M.	Examination of Existing Program Library
THURSDAY-A.M.	Developing Curriculum Objectives
THURSDAY-P.M.	Organization of Goals and Objectives Summary

APPENDIX B

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CAREER SCIENCE/MATHEMATICS WORKSHOP
August 30 to September 2, 1971

Combined Goals - Mathematics/Science

1. Block scheduling in small units for general mathematics and general science courses should be used. Example: A quarter for addition, subtraction, division, multiplication of whole numbers. Slide rule.

2. Ability to research a science or mathematics topic in the school library.

3. Ability to apply what is learned in mathematics and science classes to life situations.

4. Demonstrated ability to measure quantities such as length, weight, volume, temperature.

5. Ecology and the principles of conservation will be demonstrated by the student in his everyday conduct in school. This should go into every discipline.

6. The student will be able to distinguish between qualitative and quantitative solutions to science problems.

---

1. A student will demonstrate ability to measure quantities such as length, time, weight and temperature.

2. A student will be able to apply the rule for writing numbers in scientific notation and apply the rule for changing numbers in scientific notation to decimal notation.

3. A student will be able to distinguish between qualitative and quantitative approaches to problems.

4. The student will be able to translate verbal and physical situations into scientific and mathematical language.

5. The student will be able to relate science and mathematics through technology to social conditions.

*Goal

To be able to integrate scientific knowledge into one's everyday life as a tool for:

a. Better consumer ability
b. Better health planning
c. Better understanding of life and the basic life process.
d. Happier, well-rounded life.
e. Demonstrate the ability to positively integrate man with his environment.

Common Objectives from Area of Science/Mathematics

1. Teachers must gain some competency with the computer to employ our objectives for computer.

2. Show students how the computer can be used in schools.

3. The students should recognize the computer only as another tool (black box) in the world around them.

4. The student must understand the program (computer) before a solution can be attained.

5. The students should be made aware of the computer's role in our present day society with reference to ecology and environmental problems.

General Science

1. Astronomy

Identify, usually, the twelve zodiac constellations.
Distinguish the difference between the asteroid and a meteorite.
Describe the surface of the moon.
Demonstrate the action of gravity.
Name four type of heavenly bodies.
Construct a model of our solar system.

2. Electricity

Identify a complete circuit.
Identify an incomplete circuit.
Distinguish the difference between a complete and incomplete circuit.
Construct a simple complete circuit.
State a rule which applies to all electrical circuits which are complete.
List the basic parts of a simple circuit.
Identify the two basic types of complete circuit.
Distinguish the difference between a series circuit and a parallel circuit.

3. Weather

Name four types of weather systems.
Identify a thundercloud.
Describe a warm air mass.
Demonstrate the cooling effect resulting from the rapid expansion of a gas.
Construct a graph of the daily high temperatures recorded over a period of two weeks.
State the rule which applies when cold air mass encounters a warm air mass resulting in a cold front.

4. Measurement

Name five units of measurement associated with the metric system.
Identify eight measurements in the English system out of a list of fifteen measurements. (English and metric).
Describe a yardstick; meter stick.
Construct a measuring system of your own.
State a rule of converting a measurement from the English system to the metric system.
Distinguish the difference between the English and the metric system.

Introduction to Physical Science (IPS)

1. To distingush between mass and weight.

2. To demonstrate the relationship between mass and volume in determining density.

3. To demonstrate the use of solubles in the identification of unknown.

4. To construct a model atom.

5. To demonstrate proper lab techniques.

6. To use correct units with measured quantities.

7. Have student to the point where they can construct their own set-ups or alter existing apparatus to achieve their desired goals.

Behavioral Objectives

9th grade students -- IPS Course

1. The student should be able to make a line or bar graph from his accumulated time-temperature data.

2. The student should use properly:

   a. a ruler marked in English and metric units
   b. a graduated cylinder
   c. a balance (with beads, pebbles, gram measures of mass)

3. The student should set up a distillation unit and go through the process of separating and identifying some solids and liquids, with his apparatus.

4. The student should measure radioactivity with a Geiger counter, or a cloud chamber, or by photography.

5. The student should familiarize himself with the periodic chart of the elements to the degree that he can extract useful information from it.

6. The student should construct an atomic model.

The student should be able to divide his behavior into functions and perform these functions successfully at least 70% of the time:

A. Observation

Using at least four senses, the student must be able to identify and name the properties of an object or situation.

B. Classifying

The student must be able to identify and name observable properties of an object which could be used to classify the objects.

C. Inferences

The student must be able to describe and demonstrate additional observations needed to test one or more inferences.

D. Communication

The student must be able to apply a rule for writing numbers in scientific notation and apply a rule for changing a number in scientific notation to ordinary decimal notation.

E. Measurement

The student must be able to state, apply a rule, and demonstrate the use of the metric system in measuring length, mass, time, and other units derived from these such as, velocity and specific gravity.

Specific Objectives -- General Science

1. The students will be able to identify at least five metamorphic, sedimentary and igneous rocks. (Five of each group).

2. The students will be able to describe four biomes and name at least five animals which exists in each biome.

3. The students will be able to identify 20 bones in the human skeleton from a model.

4. The students will be able to label and define five parts of both the plant and animal cell.

5. The students will be able to name the 10 systems of the human body and identify the main organs composing each system.

3. The chemistry student should identify the tool needed to solve a problem when the choice of tools are the slide rule, the calculator, or the computer. This choice should reflect the accuracy needed for a reasonable response.

4. The chemistry student should identify the role of the computer in relationship to the field of science.

5. The chemistry student should demonstrate the relationship of the systematic solution of problems to flowcharting in computer knowledge. The above should encompass the problems of our society and environment.

General Objectives for Science Instruction

The student should:

1. be able to demonstrate knowledge of the scientific method of investigation and thought.

2. name and describe several scientific areas of learning and relate them to society.

3. demonstrate ability to search scientific literature for specific information.

4. distinguish between qualitative and quantitative approaches to problems.

5. construct a model or plot a graph or otherwise show ability to interpret data.

Somewhat specific goals for chemistry instruction:

1. Describe and interpret the periodic chart.
2. Make applications of the mole concept.
3. Demonstrate the ability to collect and interpret data and make appropriate calculations.
4. Describe physical and chemical phenomena in terms of the Kinetic theory.
5. Write and balance chemical equations.

Ultimate Goals

1. Better understand one's environment and the interaction with it.

2. Better understand the life processes of all living organisms.

3. Better understand the importance of conservation in the continuation of basic life on the earth.

Specific Objectives

1. To identify the structure and functioning of cell parts and their interrelationships.

2. To demonstrate the concept of mitosis and meiosis, stressing the function of each.

3. To demonstrate the transmission of hereditary characteristics from generation to generation.

4. To demonstrate the difference between xylem and the phloem functions.

5. To demonstrate the difference between mitosis and meiosis.

Goal

To be able to integrate scientific knowledge into one's everyday life as a tool for:

a. Better consumer ability.
b. Better health planning.
c. Better understanding of life and the basic life processes.
d. Happier, well-rounded life.

---

1. The chemistry student should demonstrate the use of the calculator in handling large groups of data after gaining this data from laboratory experiences.

2. The chemistry student should demonstrate using the computer to enter collected data from a laboratory experience to gain a meaningful solution to this laboratory experience. The program will be available and on file.

1. Chemistry students will be able to construct and describe at least 2 mental models of the atom.

2. Chemistry students will be able to describe the periodicity relationship.

3. Advanced chemistry students will be able to describe the concept of entropy.

4. Chemistry students will be able to demonstrate two different methods used to determining the mass of an object.

5. Chemistry students will be able to demonstrate the operation of a corning model 107J ph meter.

6. Chemistry students will be able to demonstrate a facility with solving of problems with a unit analysis technique.

7. Chemistry students will be able to construct a plot of analytical data and to identify the general form of an equation that will properly describe the relationship between the dependent and independent variables being plotted.

Computer Knowledge - Course Objectives

The key question to ask is this: What kinds of things should the student be able to do at the end of the course that will most facilitate his becoming a valuable citizen, perhaps in a computer oriented society?

1. The student can independently perceive and pursue computer application in his own courses.

2. The student can use mathematical techniques (reasoning, computation) that are integral to the solution of problems most efficiently solved with the aid of the computer.

3. The student become aware (on his own) of the necessary orderliness of communication necessary to use the computer and how the type of reasoning used in this communication should parallal and aid development of human thought processes.

4. The student can use previously constructed programs that are applicable to his problem situation.

5. The student can interpret the results of a computer print-out regardless of who created the original program.

Objectives in a Computer Course Designed for All Students

1. To enable the students to overcome their apprehension of computers.

   a. Computer is a machine created by man for convenience in computation.
   b. The computer operates upon the commands of man.

2. To motivate the students as to the why a computer is useful.
   a. Demonstrate use of computer in doing a problem in which the computations required are not feasibly done by hand.

3. To familiarize the students with the most basic commands.

4. To enable the students to write a very elementary program.

5. To enable the students to operate the terminal.
   a. How to make contact with the computer through the use of the terminal.
   b. How to read in a program through the use of the terminal.
   c. How to interpret the output.
   d. How to break off contact with the computer.

Computer

1. Construct a flowchart that will allow the student to determine a correct result to a problem encountered in an academic chemistry laboratory experiment.

2. To construct and run a program in the BASIC language that will allow the student to determine a correct result to a problem encountered in an academic chemistry laboratory experiment.

3. Given a program in the BASIC language, the student should be able to determine the correct result to a problem encountered in an academic chemistry laboratory experiment.

4. To illustrate to the student the close relationship between chemistry and math by connecting the two with the solution of quantitative chemistry problems with the computer.

General Objective

Incorporate the use of the computer into the high school chemistry classroom and laboratory.

Individual Objectives

1. Prove eclidian geometry theories via the computer.

2. Develop flowcharting as a problem solving technique.

3. Provide a fast computational method for solution of problems.

4. To attempt to establish the role of the computer as an aid in problem solving and install in the students the confidence necessary to rely upon the use of the computer.

5. To open a sub-field of mathematics in which the student or students can excell beyond the capabilities of the instructor. In other words, to destroy or reduce the student's myth of the infallibility of the teacher.

Goals

1. To develop in <u>every</u> student the ability to access the computer for information retrieval.

2. To develop in interested students the ability to program the computer to solve applicable problems in his particular field of study.

3. To make the entire faculty aware of the usage and importance of the computer as stimulating aid to instruction.

4. To develop in the math student the ability to logically think through a problem, translate these thoughts into BASIC language and solve them via the computer.

5. To make the students aware of the career opportunities available to them which involve programming or related work with computers.

Objectives of problems to use computers

1. To demonstrate the solution of linear equations by the use of the computer.

2. To demonstrate the solution of quadratic equations by using the computer.

3. To apply a computer program to determine the characteristics of the roots of quadratic equations.

4. To demonstrate the solution of systems of equations by using the computer.

5. To order a set of real numbers by using the computer.

6. To demonstrate the ability to calculate the sum of a geometric or arithmetic sequence of "n" terms.

Broad Objectives of Computer Project for 1971-72

1. To have each geometry student be able to recognize the computer as being a useful and necessary tool in solving computational problems.

2. To have each geometry student be able to access the computer in regard to the solving of a particular problem.

3. To afford the opportunity for each geometry student to write and successfully run a BASIC program to solve an elementary problem.

4. To afford those students who develop a real interest in the computer and programming the computer an opportunity to pursue their interest further under a teacher's guidance.

5. To provide opportunities throughout the year for students to solve problems using the computer that are relevant to course material.

6. To introduce at least one computer-related problem into each of the following courses:

    a. Algebra 2
    b. Senior Advanced Mathematics (Calculus)
    c. Senior Mathematics (Analysis)
    d. Junior Advanced Mathematics
    e. Trig. and Algebra

Have students solve the problem by using a canned program.

7. To offer a course dealing with computer programming on an independent study basis. Students may take this course for credit.

8. To familiarize other staff members with aspect in which the computer can be used in courses other than mathematics.

Specific Objectives

1. To have students be able to use a program on interval halving to aid in solving higher order equations.

2. To have students be able to use a program on determinants to solve systems of linear equations.

1st common goal:

Every student should be able to compentently access the computer.

2nd common goal:

Provide students with some idea of the capabilities of the computer.

3rd common goal:

Solicit the cooperation of the faculty in developing the usage of the computer as an instructional aid.

4th common goal:

1. Develope flow-charting as a problem solving techinque.
2. To develop in the student the ability to recognize a problem as such and to think logically through it; translate these thoughts into basic language and solve it via the computer.

5th common goal:

Use of the computer to motivate students to learn.

6th common goal:

Teachers should be aware of different rates of learning and use the computer to provide for them.

7th common goal:

Studen s should be able to interpret the results of the problem.

8th common goal:

Students should be able to identify programs available in the computer library, and then be able to follow the rules of gaining access to such programs.

9th Grade Algebra I

1. Using the distributive property of multiplication over addition:

   a. State the rule $a(b+c) = ab + ac$ where a, b, c, are real.
   b. Apply the rule using different values for a, b, c.

2. Finding the distance between the two points $P_1(x_1 y_1)$ and $P_2\ (x_2, y_2)$

   a. State the rule distance $d = \sqrt{(x_2-x_1)^2 + (y_2-y_1)} = 2$
   b. Identify the differences x_2-x_1, and y_2-y_1
   c. Identify the square of the differences x_2-x_1 and y_2-y_1.
   d. Identify the sum of the square of the differences.
   e. Identify the square root of the number obtained in step d.
   f. Identify the distance between the two points as being the number obtained in step e.
   g. Demonstrate that the order in which you select x_1, x_2, y_1, y_2 is unimportant.

3. Graphing the order pair of numbers (a,b)

   a. Construct two perpendicular number lines
   b. Name the first line the x-axis
   c. Name the second line the y=axis
   d. Construct a line parallel to the y-axis a units on the x-axis
   e. Construct a line parallel to the x-axis b units on the y-axis
   f. Identify the graph of the ordered pair (a,b) as the point of intersection of the lines of d and e.

4. Finding the slope of a line joining two distinct points. (a,b) and (c,d)

   a. State the rule slope = $\frac{d-b}{c-a}$ where $c \neq a$
   b. Identify the difference d-b
   c. Identify the difference c-a
   d. Apply the rule to find the slope.
   e. State the rule that if c=a, then the line has no slope.

5. Find the roots of the quadratic equation $ax^2+bx+c=0$ using the quadratic formula

   a. State the rule root $x_1 = b\sqrt{+\ b^2-4ac}$

      and root $x_2 = \frac{-b-\ \sqrt{b^2\ 4ac}}{2a}$

   b. Identify the numbers a, b and c.
   c. Identify the discriminant b^2-4ac
   d. Distinguish - two cases for b^2-4ac, that is, $b^2-4ac<0$ and $b^2\ 4ac>0$
   e. Identify the roots as being not real if $b^2\ 4ac>0$
   f. Identify the roots as being real if $b^2\ 4ac<0$
   g. Apply the rule to find the roots.

Objective and Applications of the Computer to 11 and 12 grade mathematics.

1. To construct a number line with uniform coordinates, position, and negation.

2. To demonstrate the order and magnitude of coordinates on the number line, and work problems in addition, subtraction, multiplication and division.

   Application of Computer to 2:

   Construct an algorithm and flow-chart for the operations.

Start

Adding two-two digit numbers with provisions for carrying

Start with two right hand digits

Add

Add this carry value ← yes — Is there a previous carry value?

no

Record Carry Digit in next higher carry position — yes — I sum greater than 9?

no

Record right-hand digit of sum

Go to next higher digit position

Second time through this box?

yes

Record carry digit in the hundres pas of answer — yes — Is there a digit in third carry position?

no

Solved

Adding two numbers
Start

Stop

Are we adding two numbers?

yes

Do we know how to add? — Learn to add

yes

Do we know the numbers? — Can we obtain them — no answer inconsistent

yes

Write down first number — Find the numbers

Write down second number

Are numbers aligned properly? no — Erase the second no.

yes

Draw line below the numerals

Add numbers

solved

3. To distinguish between and apply a rule to equality and inequality.

4. To order by magnitude the per and negative nos.

5. To state and apply the distnace formula.

6. To demonstrate the coordinations of a plane.

OBJECTIVES:

1. To recognize that the computer can be used as an aid in solving problems - in mathematics and other areas.

2. To develop the ability to analyze a problem - flow charts.

3. To develop the ability to write a simple program in the language used by the computer.

4. To develop the ability to get information into the computer.

5. To develop the ability to understand and use results from the computer.

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1. To have the students understand a problem solving approach, including:

   a. statement of problem.

   b. to choose an algorithm for the problem.

   c. flow chart of algorithms.

   d. coding of the algorithm.

   e. examining of algorithms.

2. To have students become familiar with the basic language.

3. To have the students realize that the field of computers is ever changing.

4. To develop some mathematical concepts, through the use of the computer.

5. To give the student some understanding of the internal workings of the machine.

OBJECTIVES:

1. To familiarize, on a small scale, students with a computer through time sharing.

2. To provide an overall background to possibly interest students to major in computers.

3. To have students perceive applications to a subject related problem.

4. To develop an appreciation for the operation, speed and usefulness of the computer.

5. To have students understand the importance of the programmer to the successful operation and results of the computer.

6. To have students able to interpret results.

7. To have students able to use library programs as well as their own.

The five objectives are:

1. Expose every student to the computer so that the "magic box" has been worked on.

2. Get each student to think logically by having them write a simple real program and run it.

3. Have each student learn the fundamental concepts of computer language so that they can work with the computer.

4. Get the students to see the applicability of the computer to something in which they are interested.

5. Be sure that there is a real need for the computer in <u>all</u> fields for the students to realize.

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1. All students should be able to apply the rules necessary in obtaining access to the computer.

2. All students should be able to apply the roles necessary to correctly sign off the computer.

3. All students should be able to construct a flow chart of a simple problem.

4. All students should be able to construct a simple program in the basic language.

5. All students should be able to demonstrate how to obtain access to the computer library.

General objectives to be obtained when the use of a computer, by time sharing techniques, is introduced in any area of curriculum.

1. Demonstrate the need for the use of a computer as a tool to help solve problems, both conceptual and concrete.

2. Be able to identify for which problems the computer should be used as a tool.

3. Be able to identify the need for, and the method of, developing an algorithm for the solution of a problem.

4. Be able to construct simple probrams in BASIC computer language which will provide the solutions to simple problems related to course content.

5. Have each student develop the algorithms, translate them into computer programs, access the computer and run the programs, for the purpose of obtaining the solutions to several simple, literal and theoretical problems.

Accumulative Objectives:

1. Demonstrate the need for the use of a computer as a tool.

2. Students should be able to construct simple programs in BASIC computer language which provide the solutions to simple problems related to course content.

3. Students should be able to identify the need for, and the method of, developing an algorithm for the solution of a problems.

4. Students should be able to demonstrate the following on line: Accessing the computer, running it, using canned library, signing off.

5. Students should be able to interpret the results of the problem.

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7 week computer course for 9th grade fundamental math:

1. To make the students aware of the many uses of the computer in today's society and the future.

2. To rid the students of their fear of the computer by having them spend some time at the terminal and to make the students aware of the capabilities and limitations of the computer.

3. To demonstrate the need for logical thinking and to have the students be able to construct flow chart.

4. To demonstrate how the computer can be used as a calculator and how it can be applied in various subject areas.

5. To write some simple programs (in class, maybe) and run them.

OBJECTIVES:

1. To have the students become aware of the capabilities and limitations of the computers.

2. To have the students use the computer at least once during the school year - if not in a math course, in some other area.

3. To have more teachers use the computer as a tool in their courses (this will entail their coming under 1 and 2, above).

4. To have the above objectives met by using student help - it is impossible to implement other objectives without this.

5. To have the computer handle those problems too unwieldly or cumbersome to do by hand.

OBJECTIVES:

1. Remove fear of "hands on" experience; this for teachers <u>and</u> students.

2. Convince students that the computer cannot perform any operation that cannot be performed by hand - it just does it in much less time and with (usually) a greater degree of accuracy.

3. Teach a language so that students can communicate with the computer.

4. Attempt, at least, to teach ways of analyzing problems so that they can be solved by hand. If the computations are laborious then have them put it into a computer language.

5. Attempt to do above also for math staff and, if possible, other faculty members.

I. The use of the computer as a tool:

A. Remove the fear of students and teachers toward the computer. (This fear is apparently based upon misunderstanding.)

1. "Hands-on" experience is necessary for all students and teachers,

a. thru pre-computer exposure to Monroe-type programable calculators.

b. thru games played on computer.

c. thru writing sample programs.

d. thru seeing computer applications to various fields (Films could prove useful).

2. Workshops could be developed to instruct interested teachers.

a. Content should consist of 1 or 2 problems related to the teacher's field and solved using computers.

b. Each department should have 'study guides' which direct teachers thru a curriculum-related problem using existing computer library programs.

3. An emphasis on the capabilities and limitations of the computer must be made. (Again, films could be useful).

B. Provide for cooperative efforts between departments for the purpose of exploring computer applications.

1. Capitalize on the best aspects of "team teaching",

a. thru shared classes,

b. thru exchanged classes. (Math & Science classes are "naturals")

2. Math and science people are becoming increasingly aware of their responsibility to communicate to other fields, the applications of their methods and tools,

a. workshops are needed to assist them (interdisciplinary workshops, tackling real-life problems)

II. The use of the computer in teaching mathematics.

A. The need for the computer should arise prior to its use,

1. The math curriculum should be examined for problems requiring computer solution.

2. Methods to analyze problems must be taught.

a. deciding what is the problem,

b. what components are important; necessary; why?

c. what components are not necessary; important, why?

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1. Identify the computer as merely a tool and not as a sciencing instrument.

2. Identify the particular situations where it is and where it isn't feasible to implement a computer.

Using the computer strictly as a tool	Using the computer as a tool with some individual programming
History	Physics
English	Chemistry
Sociology	Biology
Psychology	Mathematics

(1) Identify the problem

(2) Be able to think, in a logical sequence, through the problem.

(3) Be able to determine the panametins needed to solve the problem.

(4) Be able to determine the relationship between the panametins and the problems.

(5) Be able to recognize the significance of the problem to the

Using the computer strictly as a tool	Using the computer as a tool with some individual programming

physical world.

(6) Be able to generalize of specify the relationship of science to the world.

---

1. To introduce and demonstrate the terminal (computer) as a tool- a wonderful tool - but, just a tool - to:

   a. the entire faculty,

   b. each class in the school,

   c. each student in each class, and,

   to do this by whatever means available.

2. To emphasize the fact that - as in any discipline - knowledge of the computer language is essential if one is to communicate with it - the computer.

3. To demonstrate that the terminal can mainly (and does)

   a. save time

   b. work difficult problems in "no time flat".

4. To insist that each science student be able to explain a simple science (or math) problem in Basic.

5. To build up and/or to develop self confidence and creativity.

6. To demonstrate the fact that the order of steps is important. (in flow-charting or in coding)

7. By discussion to demonstrate that the student must understand a problem before he can ever hope to program it.

8. To demonstrate that computers belong in the field of ecology by collecting and processing and interpreting (via a terminal) data on:

   Sampling
   population studies
   pollution
   densities
   etc.....

Major goals for General Mathematics course, heterogenous grouping of students in lower 45% of class at end of course, student should be proficient in the following:

1. Addition, subtraction, multiplication and division of real numbers.

2. Measurements of lengths and computation of areas.

3. Conversion and recognition of equivalent fractions.

4. Multiplication and division of fractions.

5. Addition and subtraction of fractions.

6. Decimal rotation.

7. Conversion of fractions to decimals

Suggestions for making curriculum more relevant for career education of students:

1. Organize curriculum according to mathematical heirarchy using 1 - 7 above as a sketchy starting model.

2. Do not include material simply because it is "nice" for the student to know. Eliminate material designed to show the "beauty" of mathematics.

3. Break heirarchy down into blocks suitable for quarter course presentation.

4. Student should be allowed to enter at present place in heirarchy no grade level significance.

5. Allow teacher specialization of given level by heirarchy for each year.

6. Student could be allowed to complete math requirement by successful completion of any four quarters in heirarchy during any point in academic education.

7. Students allowed to re-enter heirarchy on a need to know basics-heirarchy may be extended upward as far as desired.

8. Slide rule - adding devices, etc, used to fullest extent.

9. Alternate routes explored to allow student to bypass his particular problems and continue in heirarchy.

10. Result of above - total individualization based on student's needs and abilities. Greater opportunities for teachers to find ways to solve students problems.

Behavioral objectives for the above type of math program would be tailored to the individual student depending upon the route he is taking around a particular problem area. Evaluation could be made on basis of percentage correct at a minimum rate. example: student shall correctly solve a given type of problem with at least 70% correct.

Benefits of the above:

1. Student progresses as far as he can, according to his own ability, without a grade level stigma being attached.

2. If a student has difficulty with a particular quarter, he can repeat just that quarter and not "flunk" a year mathematics course.

3. Quarter courses would allow the student to refresh himself in a given area of math or learn a new mathematics skill should the need arise.

4. Because the teacher would only need to specialize in a couple of mathematical areas, he would be more familiar with details and alternate routes in the areas. Repeating the lesson plans as each quarter would lighten teacher homework load and improve attitudes for individualization.

APPENDIX C

SELECTED OBJECTIVES FOR MATHEMATICS AND SCIENCE IN THE COMPUTER KNOWLEDGE PROGRAM

1. To develop in the students an awareness of the career opportunities available to them which involves programming or related work with computers in today's society and the future.

2. To develop in <u>every</u> student the ability to access the computer for information retrieval.

3. To establish the role of the computer as an aid in problem solving in all areas of the curricula.

4. To open a sub-field in the curricula in which the student or students can excell beyond the scope of the present curriculum.

5. To develop an appreciation for the capabilities and limitations of the computer.

6. To develop in interested students the ability to program the computer to solve applicable problems in his particular field of study.

7. To use the computer to motivate students to learn.

8. To enable students to perceive applications to a specific subject related problem.

9. To make the entire faculty aware of the usage and importance of the computer as a stimulating aid to instruction.

APPENDIX D

Learning Objectives, Learning Sets, and a Task Analysis.

Mathematics is a hierarchically organized body of knowledge from two different points of view. From one point of view of the mathematician, it is a hierarchically organized axiomatic-deductive system. From the point of view of the mathematics instructor, it is a hierarchically organized system of learning objectives which a student must master for continued success. Though these two systems do not necessarily conflict, they do not necessarily coincide either. That is, the structure which is best for the mathematician need not be the structure which is best for the original learning of a student. When designing mathematics instruction, attention must be focused on the student rather than the axiomatic-deductive system of the mathematician. A hierarchy of learning objectives or behavioral objectives for the student must be determined. There is no one unique hierarchy of major learning objectives. For example, either systems of equations or the basic trigonometric ratios can be learned first. Or when learning operations with signed numbers, either multiplication or subtraction can be learned first. However, some reasonable hierarchy of learning objectives must be followed.

When defining learning objectives, there is a distinct advantage to translating them into behavioral terms. By doing so, the objectives become specific and measurable. Though the project staff has always conceptualized the objectives in behavioral terms, they have not been written down in this form. In practice, the staff found that it was difficult to identify all subsidiary objectives before the actual writing of the materials. And after the materials were written, efforts to write the objectives in behavioral terms seemed to be a waste of time. Therefore, though the behavioral objectives are incorporated in the learning materials and reflected in the test items, the content will be described by means of traditional topic names.

After determining a hierarchy of learning objectives, the content was analyzed to identify the learning sets which the students must master in order to achieve each learning objective. A learning objective states what a student should be able to do; a learning set states what he must know in order to be able to do it. A "learning set" can be defined as a "verbalizable rule which is applicable to a class of stimuli." Here is an example of a learning set for some basic equations.

The verbalizable rule is: to solve for "x" in each equation, use the multiplication axiom, multiplying both sides by the reciprocal of the coefficient of "x".

The class of stimuli is: $\left.\begin{array}{l} 2x = 7 \\ 3x = y \\ ax = b \end{array}\right\}$ or any similar equation.

When a student knows this learning set, he is able to apply this specific rule to any stimulus in the class.

Since a learning set is a verbalizable rule, it can be communicated by means of verbal language and appropriate examples. Learning sets can range in complexity from "knowing that a mixed number (like $3\frac{1}{2}$) is an arbitrary shorthand for the addition of a whole number and a fraction (like $3 + \frac{1}{2}$)" to "knowing the strategy of solving for the variable 'c' in the equation $\frac{1}{a} = \frac{1}{b} - \frac{1}{c}$." More complex learning sets like the latter are based on the mastery of many subordinate learning sets. It should be obvious that there are thousands of learning sets in basic mathematics instruction.

Learning sets are identified by means of a task analysis. A task analysis is a detailed examination of all of the mathematical problems which are included in the learning objectives. The beneficial effect of such an analysis before any instruction is attempted cannot be overemphasized. Two such effects are:

(1) <u>Frequently, an analysis of the full range of stimuli to which a learning set is meant to apply determines the form of the verbalizable rule which is most general and transferable.</u>

For example, given a system of traditional equations and a system of formulas like the following:

$$\boxed{\begin{aligned} x + y &= 10 \\ 2x - y &= 8 \end{aligned}} \qquad \boxed{\begin{aligned} E &= IR \\ P &= EI \end{aligned}}$$

to solve the system of equations or to eliminate the variable "I" from the system of formulas, the first step in each case is the elimination of one variable. The "addition-subtraction" method is a quick method for eliminating "y" in the system at the left. However, the "addition-subtraction" method is not general because it cannot be used to eliminate "I" on the right. If the learning set is meant to be a general method which works for both sets of stimuli, a different method must be taught. Then some decision must be made about the need for teaching the "addition-subtraction" method. This decision will be affected by the actual usefulness of that method in non-contrived situations and by the amount of available instruction time.

(2) <u>A task analysis frequently identifies subordinate learning sets which might otherwise be overlooked.</u>

For example, in the process of solving for "b" in the equation

$$a - b = c$$

the following equation may be encountered:

$$-b = c - a$$

If a student cannot handle the latter equation because he has never been introduced to the learning set for doing so, the process of solving for "b" breaks down at that point. The lack of a learning set for the latter equation leaves a gap in the instruction which that particular student cannot bridge.

A detailed task analysis of this type is necessary in order to determine the complete hierarchy of learning sets which represent the course content. It frequently prevents unnecessary gaps in the instruction which occur because subordinate learning sets are overlooked. This identification of a complete hierarchy of learning sets is only a first step, however. The problem of communicating the individual learning sets to the students still remains. This latter problem involves a knowledge of the learning process and close attention to empirical results.

Content for 1968-69.

The project has been responsible for the math instruction of all technical students during both semesters for the past three years. Though the content of the course has changed slightly during this period, for the most part it has remained relatively stable. Admittedly, there are more topics which should be included, as will be discussed later. However, the staff has been more interested in student learning than in merely covering as many topics as possible. Therefore, the number of topics covered has been limited by the entry skills of the students, their speed in learning, their retention rate, and the time limits of the course. A brief outline of the topics covered during the 1968-69 school year is given below. A more detailed description of the same content is given in Appendix D.

Algebra

(1) Number line and signed numbers
(2) Non-fractional equations and formulas
(3) Numerical and literal fractions
(4) Fractional equations and formulas
(5) Systems of equations and formulas
(6) Radicals and radical equations and formulas
(7) Quadratic equations and formulas

Calculations and Slide Rule Operations

(1) Number system and number sense
(2) Powers of ten
(3) Rounding
(4) Estimation techniques
(5) Slide rule operations
    (a) multiplication
    (b) division
    (c) combined multiplication and division
    (d) squaring and cubing
    (e) square roots and cube roots
    (f) sine, cosine, and tangent
    (g) logarithms

Graphing

(1) Reading and constructing the following types of graphs:
  (a) linear and non-linear equations and formulas
  (b) exponential equations and formulas
  (c) sine waves
(2) Reading semi-log and log-log graphs
(3) Concepts of slope and intercepts
(4) Slope-intercept form of the straight line

Geometry and Trigonometry

(1) Basic geometric facts
(2) Areas and volumes
(3) Solving right and oblique triangles
(4) General angles
(5) Vectors and complex numbers
(6) Sine waves
(7) Basic trigonometric identities
(8) Inverse trigonometric notation
(9) Applied problems involving circles and half-tangents
(10) Degree and radian systems of angle measurement
(11) Angular and circular velocity

Logarithms and Exponentials

(1) Common and natural logarithms
(2) Finding powers and roots
(3) Laws of logarithms
(4) Evaluating logarithmic and exponential formulas
(5) Rearrangement of logarithmic and exponential formulas

General Features of the Content.

There are some general features about the course content which are worth noting. These general features, which are related both to the goals of the course and to the entry skills and learning ability of the students, will be discussed in this section.

Remedial Topics. Other than the basic arithmetic operations with whole numbers and decimals, no other topics were assumed. The algebra sequence, for example, starts with signed numbers, and it includes a lengthy review of fractions. The decision to minimize the number of assumed skills was based on the low entry level of the students. Therefore, many topics which otherwise would have required extensive remedial work for a majority of the students were included as an integral part of the content.

Use of "Modern Math" Principles. The principles of "modern math" are included in the content of the course. However, these principles are used with a different emphasis than they receive in a pure modern math course since the goals of a Technical Mathematics course are different than the goals of a pure modern math course. Whereas a pure modern math course emphasizes structure and proof, knowing the structure of mathematics and understanding proofs is an unreasonable goal for technicians. A technician needs the ability to use mathematics in elementary science and technology.

Therefore, he needs a more applied course with emphasis on manipulative skills and solving problems. An understanding of the basic principles of modern math is included in the content because the project staff felt that this understanding of basic principles is needed both to learn mathematics and to apply it properly. But even though the definitions, axioms, and principles of modern math are included, they are included solely as a means of developing manipulative skills. When the definitions, axioms and principles are introduced, they are intuitively justified by means of numbers. No attempt is made to give a formal insight into their general structure. Formal deductive proofs are also generally avoided or at least deemphasized. Therefore, the content is somewhat of a compromise between a pure modern math course with its emphasis on structure and proof and a purely applied math course which teaches rote-mechanical procedures.

Excluded Topics. Many topics which are an integral part of most math courses were excluded for the simple reason that they are not used in elementary science or technology. Their irrelevance was revealed by the surveys of the technology teachers. Some of the excluded topics are higher-degree equations, the multiplication and division of polynomials, a formal treatment of the conic sections, and complicated trigonometric identities.

Freedom from Closure. A sense of freedom from closure was also maintained with the topics which are included in the content. By "closure" we mean "including all aspects of any topic which is introduced." What we mean by "freedom from closure" can be best described by some examples. Here is a representative list of instances in which we have maintained this freedom:

(1) When the multiplication axiom is introduced and used, no statement is made that "0" should be excluded as a multiplier.

(2) When solving quadratic equations, methods involving completing the square and factoring trinomials are not taught.

(3) Operations with radicals are confined exclusively to square root radicals.

(4) In operations involving "j" ($\sqrt{-1}$), powers of "j" higher than j^2 are omitted.

(5) When solving radical equations, equations with extraneous roots and a discussion of extraneous roots are omitted.

(6) Though parabolas and hyperbolas are graphed, their formal geometric properties are not discussed.

(7) Though the solution of oblique triangles is taught, the law of tangents and half-angle formulas are not introduced, and the ambiguous case is omitted.

(8) Though the graphs of the sine and cosine functions are taught, the graph of the tangent function is omitted.

In general, only those aspects of a topic are taught which are necessary to develop relevant skills. Though closure might give a broader understanding of a topic in mathematics, a broader understanding is not necessary to achieve the terminal goals of the course. Furthermore, closure has some negative aspects. It is time-consuming, and it unnecessarily increases the learning complexity for the students.

Problem Solving. Ordinarily, an applied math course implies a heavy emphasis on problem solving. The content we have described includes topics like equation solving, rearranging formulas, and geometric and trigonometric problems, all of which could be called problem solving. However, it does not include many verbal problems, and ordinarily verbal problems are what is meant by problem solving. Verbal problems have not been emphasized because it is difficult to find types which are non-trivial and solvable by the students. The type of verbal problems which appear in traditional math courses are frequently trivial and unrelated to the types of problems which occur in science or technology. The type of verbal problems which do occur in science or technology frequently cannot be solved by the students because their solution presupposes an understanding of scientific principles which the students do not have. Therefore, the goals of the math course have been limited to teaching the manipulative skills and math models which are used in science and technology. The application of math to problems in science or technology has to be delayed until the students learn some scientific and technical principles. The proper place for this application is in the science and technical courses themselves.

Unique Aspects of Each Content Area.

In this section, we will list some of the major unique aspects of each of the five content areas. Though all of the unique aspects cannot be listed, enough will be listed to communicate the overall flavor of the content.

I. ALGEBRA

(1) Given the entry skills of the students, a complete review of fundamental algebra is included. This review includes a heavy emphasis on simple and complicated operations with signed numbers.

(2) The meaning and sensibleness of axioms and principles is demonstrated by the use of numbers.

(3) The manipulation of algebraic expressions and the solution of equations and formulas is based on an understanding of the principles of modern math. This emphasis on principles contrasts with many vocational or technical math textbooks in which rote-mechanical procedures are taught.

(4) Formal strategies for solving equations are an integral part of the instruction, and the strategies used in solving traditional equations are explicitly generalized to the rearrangement of literal equations and formulas.

(5) When various solution-methods for a type of traditional equation exist, that method is taught which generalizes most readily to literal equations and formulas.

(6) The meaning of fractions and operations with fractions are heavily emphasized. Other than the type of numerical fractions which occur in the construction trades (halves, fourths, eighths, etc.) operations with numerical fractions are not emphasized for their own sake. They are used to

show the basic principles which underlie operations with fractions. These principles are then generalized to the types of literal fractions which occur in formulas and derivations.

(7) Other than factoring based on the distributive principle, factoring trinomials and higher polynomials is omitted.

II. CALCULATION

(1) The meaning of numbers and the number system are reviewed.

(2) An attempt is made to develop number sense, which includes both a knowledge of the relative size of numbers and a habit of checking the sensibleness of answers.

(3) Powers of ten and standard notation are treated in great detail.

(4) Direct inspection is used for simple estimations. Decimal-point shifts are used to convert difficult problems to simpler problems in which direct inspection can be used. Powers of ten are used with difficult problems which cannot be converted to simpler ones. (Other methods of estimation which are more "mental" were included in previous years. In general, the students were not fluent enough with numbers and the number system to use these methods effectively.)

(5) Slide rule exercises are designed to systematically cover the full range of possible numbers on each scale. By "systematically" we mean that one-digit, two-digit, three-digit, and four-digit settings are treated sequentially.

(6) Solutions of first-degree equations and formula evaluations which require use of the slide rule are briefly introduced.

III. GRAPHING

(1) The rectangular coordinate system is not restricted to functions in which the variables are "x" and "y". Formulas are also graphed and all concepts are generalized to the graphs of formulas.

(2) Linear and curvilinear graphs are intermingled.

(3) Heavy emphasis is given to the concept of slope and its use in determining relative changes in the values of variables.

(4) In defining slope, the horizontal change (Δh) and the vertical change (Δv) are represented graphically as vectors.

IV. TRIGONOMETRY AND APPLIED GEOMETRY

(1) The general approach to trigonometry is numerical rather than analytical.

(2) Only the sine, cosine, and tangent of angles are initially defined. The definitions of cosecant, secant, and cotangent are not only delayed but deemphasized.

(3) The treatment of interpolation in trigonometric tables is omitted to avoid unnecessary complexity. In calculations, all angles are rounded to the nearest degree.

(4) Instead of using logarithms, the slide rule is used when calculating unknown sides and angles of triangles. Log-trig tables are not used.

(5) The definitions of the trigonometric ratios of general angles are deferred until the trigonometric ratios of reference angles are thoroughly understood.

(6) Obtuse oblique triangles are not introduced until the law of sines and the law of cosines are fully understood in the context of acute oblique triangles.

(7) Trigonometric graphing is restricted to a detailed treatment of the sine wave and its properties with a slight introduction to the cosine wave. The graphs of all other trigonometric functions are omitted.

(8) A numerical approach is used in the treatment of geometric principles and relationships.

(9) The basic properties of circles and half-tangents are reviewed in the context of applied problems in trigonometry.

V. LOGARITHMS AND EXPONENTIALS

(1) The meaning and laws of logarithms are based on a complete treatment of powers of ten, standard notation, and the laws of exponents.

(2) The treatment of negative logarithms is deferred until the treatment of positive logarithms is completed.

(3) Negative logarithms are expressed as single negative numbers. The "-10" form of expressing negative logarithms is neither discussed nor used.

(4) Except for the evaluation of decimal roots and powers, calculations by means of logarithms are not emphasized.

(5) A treatment of interpolation in logarithmic tables is omitted. In finding logarithms and anti-logarithms, values are rounded to the nearest table entry.

(6) Heavy emphasis is given to evaluating and rearranging logarithmic and exponential formulas (especially those involving base "e").

algebra for the first time, the students involved have always been average or slower learners. Though this group has learned from the materials, the efficiency of their learning could be increased by the development of a set of materials written specifically for them. With no evidence to support their view, members of the project staff feel that the materials in their present form would effectively communicate with the faster learners in high schools, even if they were learning algebra for the first time.

There is a general opinion in our society, both within and outside of the school system, that average and below-average students cannot learn mathematics. The results achieved by the project suggest that this opinion is false. It seems that many average and below-average learners can master even complex mathematical skills if they are instructed properly. In fact, it seems that a system of instruction like the one developed by the project staff would communicate with as many as 70% or 75% of the students in our schools. A more refined system would probably communicate with an even greater number.

Mathematics Education

There are many indications that mathematics education in the elementary and secondary schools is not highly successful. Vocational and technical training institutions constantly complain about the lack of relevant mathematical skills in their entering students. College math teachers in four-year institutions also complain about a lack of mathematical skills in their entering students. In fact, most four-year colleges are forced to offer non-credit remedial math courses to a large percent of their students. Science teachers, at both the high school and college levels, find many students who are mathematically unequipped for their courses. In this section, we will discuss some general problems in mathematics education under the following headings: (1) the general need for mathematical skills in our society, (2) the fact that this need is not being fulfilled, (3) why this need is not being fulfilled, with special emphasis on the attitudes and beliefs of math educators, (4) how the average student is abused, (5) the need for a new minimum math curriculum, and (6) the need for new methods of math instruction. Though much of what will be said is applicable to math education at all levels, special attention will be given to math education at the secondary school level.

General Need for Mathematical Skills.

In order to evaluate the goals and success of mathematics education as it currently exists in our educational system, the gross facts about the need for mathematical skills in our society must be kept in mind. Without the perspective of these gross facts, any meaningful evaluation is impossible. One fact cannot be emphasized enough. That is, the percent of students who need high-level mathematical skills for their professional careers is quite small. Probably less than 5% of the students in our society become professional mathematicians or high-level scientists or engineers. Not only does this small segment of the job market seem to be adequately filled at the present time, but there is no reason to believe that it will significantly exceed 5% in the immediate future. However, as our society becomes increasingly scientific and technical, the need for math skills among the other 95% of the students is growing on two fronts. One front is the job

market. With the number of unskilled jobs diminishing, the job market includes a growing number of skilled and technical jobs which require math skills both on the job and in job training. The second front is liberal education. To be liberally educated in our society, a student must understand the basic principles of science and technology upon which this society is based. He cannot learn these basic principles beyond a mere descriptive level without the basic math skills which this learning requires.

An Unfulfilled Need.

It seems obvious that the math curriculum in our schools should reflect the mathematical needs of the majority of the students. Therefore, it seems obvious that the math content in our high schools should, as a minimum, prepare the students for courses in elementary science or technology. Unfortunately, this preparation does not occur. The high school data we have presented attests to this fact. Aside from the brightest students, the students were uniformly deficient in topics like fractions, fractional equations, and formula rearrangement. And though fluency with numbers is required in most science or technical courses, only one out of three entering technical students has even been introduced to the slide rule. Judging from the high school data, most students who complete only one year of high school algebra are not prepared to take basic science or technical courses. Many students who complete two years of high school algebra are not prepared to take basic science or technical courses. It is small wonder that the percent of students taking physics in high school is quite low. The rest are simply unprepared to do so. They are also unprepared to take most technical courses.

In comparison with the needs of our society, many students graduate from high school with an inadequate mathematical preparation. Their preparation is inadequate because the content which is taught ignores too many topics which are needed in science or technical courses, and conventional methods of instruction apparently communicate with only the top quarter or third of the students. Consequently, many high school graduates do not have the mathematical skills which they need for their job training or further education. By failing to meet the needs of these students, the school system is also failing to meet the needs of our society.

Why the Need is Unfulfilled.

There are many reasons why the school system is not fulfilling our society's needs for an adequate mathematical preparation in a higher percentage of students. The math curriculum in the school system is dominated by the thinking of high-level mathematicians. The present method of instruction is inadequate because it fails to communicate with the majority of the students. The overall effectiveness of the system is unassessed. Though teachers realize that many students are not learning, many of them feel that instructional improvements of any significance are almost impossible. And criticisms of the content and effectiveness of the math instruction are too vague, with no concrete suggestions as to how either the content or method of instruction can be improved. We will discuss these reasons in this section and the subsequent ones.

Math Curriculum. Mathematics education in our school system is dominated by the thinking of high-level mathematicians. This fact is obvious from an examination of the "modern math" curriculum. Many of the goals and much of the content of this curriculum are much more relevant, necessary, and interesting to the professional mathematician than they are to the majority of the students. For the average student, emphasis on such lofty goals as "thinking like a mathematician," "creative discovery," "the ability to prove," and "an insight into the structure of axiomatic-deductive systems" are absurd. For the average student, content such as "number systems other than base-10," "the real number system," "inequalities," and "set theory" are neither necessary nor useful. For the average student, a deemphasis on numerical fluency, manipulative skills, and more science-oriented topics is a genuine disservice. The "modern math" curriculum is basically designed to prepare students for higher-level mathematics training. The majority of the students in our society do not need this training and they are not interested in it. Despite the fact that the "modern math" curriculum in many ways ignores the needs of the majority of our students, that curriculum is virtually unchallenged. It is unchallenged by math educators because they reinforce each other; it is virtually unchallenged by anyone else because most other people do not feel competent to challenge it.

Math educators in the school system have to free themselves from the domination of high-level mathematicians and begin to seriously examine the real-world facts about the math needs of the majority of the students. The vast majority of students have neither the ability nor inclination to become high-level mathematicians. The vast majority of people who use mathematics in their personal lives or careers use it in applied situations. Since a high percentage of students are not learning many fundamental math skills, to speak in terms of general goals like "thinking like a mathematician" or "creative discovery" for these students is ridiculous. The vast majority of students, even many of the brighter ones, are bored with proofs and insights into axiomatic-deductive systems. Furthermore, an emphasis on "proof" and "understanding" is no guarantee that students will develop the related manipulative skills. Instead of the dreams which the high-level mathematicians dream, these are the real facts with which the math teachers in the school system must cope.

Conventional Method of Instruction. Changing the content and goals of the mathematics curriculum is not the only change which is needed in mathematics instruction. Based on the data we have reported from high schools, many students enter high school with arithmetic deficiencies which are not remedied, and high school instruction itself leaves much to be desired. It is fair to say that the conventional lecture-discussion method of mathematics instruction simply does not communicate with average and below-average students. And in spite of the fact that this method of instruction would be more successful if math teachers knew more about the process of learning mathematics, the method has inherent flaws which set too low a ceiling on what it can accomplish. The basic flaw is the fact that attention cannot be given to the individual student so that his unique learning process can be controlled. Any method which does not offer the possibility of personal attention to average and below-average students is a dehumanizing method for them because they cannot learn at anywhere near their maximum potential without personal attention.

Abuse of the Average Math Student.

The absurdity of present math instruction can be seen best by examining what happens to the average student. We will concentrate on his high school training in mathematics, assuming that he takes only the two-year algebra-geometry sequence which is terminal for the majority of students. We can discuss what he does, or does not, know at the end of this two-year period in terms of arithmetic skills, algebraic skills, and geometric skills.

Arithmetic Skills. He probably has some deficiencies in arithmetic skills when he enters high school. He may be deficient in topics like operations with decimal numbers, fractions, and percents. He may not understand the base-10 number system. He may even be so lacking in number fluency that he cannot add two 2-digit numbers or perform a short division mentally. The high school curriculum makes no organized effort to remedy many of these deficiencies. It also makes no organized effort to increase his numerical fluency or calculation skills. For example, it is improbable that he will either be introduced to the slide rule or shown any formal techniques for estimating answers to calculation problems.

Algebraic Skills. His algebra course will cover many topics which are irrelevant to a student who does not intend to take further math courses. For example, he will study sets, inequalities, division of polynomials, factoring trinomials and handling many contrived fractions with which this type of factoring is necessary, and the real number system. He will be introduced to a great deal of mathematical terminology which has little or no relevance to his needs. Many science-oriented topics will be ignored or virtually ignored. For example, no real emphasis will be given to operations with literal fractions, solving literal equations, or to formula derivations. The coordinate system will probably not be generalized to the graphing of formulas. Empirical graphing of measurements will almost certainly be ignored, and it is likely that the graphing of all non-linear functions will be ignored.

Geometric Skills. The goal of his geometry course will undoubtedly be to develop an insight into Euclid's axiomatic-deductive system. Heavy emphasis will be given to studying the nature of proof and to proving theorems. Because of this emphasis, many fundamental properties and relations of basic geometric figures may well be obscured. The set of applied problems which he attempts to solve may exclude many realistic ones. He may not be introduced to basic trigonometry. Little emphasis will be given to calculation. Little or no emphasis will be given to basic measurement concepts, the rules for calculations with measurements, and basic measurement systems.

The two-year, algebra-geometry sequence for high school students is not designed to be a terminal program. In the total four-year high school sequence, these courses not only serve as a preparation for the more advanced math courses, but they are used as a test to determine which students qualify for the more advanced courses. Though the school system knows that conventional methods of math instruction do not communicate with the average

high school student, he is still subjected to this preparation which he will not use and to this test whose outcome is a virtual certainty before the fact. When this two-year sequence is completed, his math skills can probably be summarized by the following statements:

(1) He is probably deficient in arithmetic skills.

(2) He probably cannot use a slide rule.

(3) He probably does not understand measurements and basic measurement concepts.

(4) He probably does not understand the type of algebra which is used in science and technology.

(5) He probably does not understand the type of geometry which is used in science and technology.

After ten years of mathematics instruction in our school system, the school system has left the average student in this position:

(1) He may not even have enough math skills to handle his personal affairs.

(2) He does not have the math skills needed to take anything more demanding than a descriptive science course.

(3) He does not have the math skills needed in the training for a wide range of careers.

(4) Because of the equivalent of a "failure" experience in math courses, his confidence in his ability to learn mathematics is low and his anxiety about mathematics courses is high.

(5) If he wants to take another math course, it clearly must be remedial in nature. Usually the school system offers him only a general math course as an alternative. This general math course usually does not have suitable goals, and it uses a method of instruction which has proven to be unsuccessful in communicating with him.

It is difficult to justify what is done to the average student by math educators. If the present content and the present method of instruction were the only alternatives, we would have to learn to live with them. Since the present content and the present method of instruction are not the only alternatives, we cannot in conscience live with them much longer.

A Minimum Mathematics Curriculum.

If math education is to serve the broader needs of students and our society, its philosophy must be changed. The elementary and high school curriculum must become less oriented to the preparation of professional mathematicians and more oriented to the math skills needed in basic science and technology. In fact, a minimum curriculum should be developed which concentrates heavily on those skills. Insights into the structure of mathematics or the way a mathematician thinks and topics whose sole purpose is a preparation for higher math courses should be delayed until this minimum curriculum is completed. This minimum curriculum should contain the following types of goals:

(1) Numerical fluency and calculation skills, including use of the slide rule.

(2) Algebraic manipulative skills, including emphasis on formula rearrangement and derivations.

(3) Graphing skills with emphasis on the types of functions (straight line, parabola, hyperbola, sine wave, exponential, logarithmic) which are used in science to represent physical phenomena.

(4) Understanding the basic properties of triangles, circles, quadrilaterals, and related solid figures.

(5) Trigonometric skills in solving right and oblique triangles and vector problems.

(6) An understanding of measurement concepts, measurement systems, empirical graphing, variation, formula evaluation, and some rudimentary dimensional analysis.

(7) An introduction to the concept of probability and some basic statistical concepts.

Though the objectives listed above are merely a crude outline, they deviate markedly from the basic objectives of the present math curriculum. If a minimum curriculum of this type were adopted, the main consideration should be student learning and not a mere coverage of content. Therefore, the whole concept of separate courses with a fixed content would have to be abandoned. Though some students might not complete this curriculum before graduating from high school, the faster students would be able to complete it in a much shorter time.

The minimum curriculum which we have outlined would be beneficial for all students. Its benefits for the average or slower students are clear. A higher percentage of them would be capable of taking science or technical courses in high school; a higher percentage of them would graduate from high school with the math skills needed in the training programs for many skilled or technical jobs. Its benefits for the faster students are also clear. They would be prepared to take mathematically-oriented science courses at an earlier age. They would also be better prepared to take higher-level math courses for all of the following reasons:

(1) Manipulative skills are a necessary condition for higher-mathematics instruction, and college math teachers are presently complaining that many high school graduates do not have the manipulative skills which more advanced math courses require.

(2) Learning the structure of axioms and principles would be facilitated by a prior understanding of them in the context of manipulation.

(3) Introducing the basic concepts of trigonometry in the context of solving triangles is a useful foundation for the study of analytical trigonometry.

(4) Numerical fluency and calculation skills, including the use of a slide rule, would eliminate the necessity of avoiding anything other than simple, contrived calculations in math instruction.

(5) Calculation skills would make possible a more numerical and intuitive approach to fundamental principles, thereby increasing the understanding of those principles.

New Method of Instruction.

Changing the content of the mathematics curriculum is not the only change which is needed in mathematics instruction. If we want to guarantee a mastery of fundamental skills for a high percentage of students, a different and more flexible method of instruction will be needed. This method of instruction must be able to cope with individual differences in speed in learning. It must also be able to cope with individual differences in retention. For many students, a well-designed strategy of distributed practice will be necessary. This strategy should include comprehensive exams as well as accompanying formal review and remedial periods. It should be obvious from the data we have reported from conventional high school classes that the current instructional method is not successful with average and below-average students. We suspect that it is also too slow and inefficient with the faster student. Furthermore, the conventional method has the inherent deficiencies of a group method of instruction, and so it cannot provide the individual attention which will be needed if student mastery is taken as a serious goal for all students.

A method analogous to the system of instruction developed by the project staff should be developed for math instruction at both the elementary and high school levels. This system of instruction has demonstrated that average and below-average students can learn mathematics from a combination of programmed materials and tutoring. A system of instruction of this type not only guarantees individual attention for each student, but it is also flexible enough to cope with individual differences in speed in learning and retention.

CHAPTER I

INTRODUCTION

This report will summarize the history and current status of a project whose goal has been the development of a system of instruction for Technical Mathematics. In this chapter, we will discuss the origin of the project, summarize its history and goals, and identify some of the problems it faced.

Origin of the Project

The need for improved mathematics instruction for industrial technicians is based on a growing need for industrial technicians, plus the fact that technician training is plagued with a high dropout rate. After discussing the need for the project, a brief summary of its history and goals will be given.

Need for Technicians.

During the past thirty years, we have experienced the rapid growth of a technological society, and all indicators suggest that this growth will continue at an accelerated rate. A rapid change of this type is not without its pitfalls, one of which is the fact that the job market has changed radically. The need for skilled personnel has rapidly increased while the need for unskilled personnel has rapidly decreased. These changing demands of the job market would be no problem if training had kept pace. Unfortunately, it has not. Therefore, we are faced with the dual problem of a lack of skilled personnel to sustain the growth of a complex society, and more unskilled personnel than the job market can absorb.

One of the critical manpower needs in the United States is the need for trained technicians. Though the term "technician" is not well defined, technicians who complete a two-year, post-high school program can be broadly subdivided into two categories: engineering technicians and industrial technicians. Engineering technicians are trained to work closely with engineers and scientists engaged in research and development. They hold job titles like Engineering Assistant, Junior Engineer, Research Assistant, or Engineering Aide. Industrial technicians are trained to work more directly on the production aspects of industry. They hold job titles like Instrument Technician, Production Control Technician, Electronic Tester, Service Technician, Laboratory Technician, Quality Control Technician, Numerical Control Technician, and Detail Draftsman. On the continuum between engineers and craftsmen, engineering technicians are closer to engineers and industrial technicians are closer to craftsmen.

Of the two types of technicians, engineering technicians are clearly the more elite. This fact is reflected in their training which is much more academically oriented than that of the industrial technicians. Whereas the emphasis for engineering technicians is more on theory than on manipulative skills with instruments and devices, the emphasis for industrial technicians is just the opposite. Even though industrial technicians must learn some theory, they do not learn it with as much depth as the engineering technicians do. Despite the fact that engineering technicians are more elite, the majority of technicians in the United States are industrial technicians.

According to the U. S. Bureau of Labor Statistics, the need for trained technicians is critical. According to their projected figures, there will be a shortage of 350,000 engineering technicians by 1975 if the current ratio (0.7 to 1) of technicians to engineers and scientists is maintained. If this ratio is increased to 2 to 1 (as the American Society for Engineering Education recommends), there will be a shortage of 1,000,000 engineering technicians by 1975. Taking into account the fact that engineering technicians comprise only a minority of the total technician group, the comparable shortage of industrial technicians will be overwhelming. If this need is not met, it is difficult to see how our industry can continue to thrive and grow.

Technician Training - Milwaukee Area Technical College (MATC).

The Milwaukee Area Technical College (formerly the Milwaukee Institute of Technology) is one of the largest public technical schools in the United States. It has been training engineering technicians since 1924 and industrial technicians since 1952. The vast majority of students (a ratio of about 10 to 1) enroll in the industrial programs. For engineering technicians, programs are offered in electrical, industrial, mechanical, and tooling. For industrial technicians, all of the following programs are offered:

Air Conditioning and Refrigeration
Architectural
Chemical
Civil: Highway
Civil: Structural
Combustion Engine
Dental Laboratory
Electrical: Communications
Electrical: Computer
Electrical: Electronics
Electrical: Instrumentation
Fire Fighting
Fluid Power
Mechanical: Design
Mechanical: Manufacturing
Metallurgical
Photo Instrumentation
Photography
Printing and Publishing

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COMPUTERS IN THE MATHEMATICS CLASSROOM

SELECTED BIBLIOGRAPHY (8/15/68, revised 5/1/71) - ANNOTATED

This bibliography is broken into four sections. The first listing (A) contains sources of classroom (student or teacher) materials or suggestions for classroom use of the computer as a problem solving tool in mathematics. Part B lists some references in the general areas of "computers in education? and "computer science." Section C contains listings of periodicals and articles which should be of interest to students and teachers. Section D lists professional societies.

The reader should note that this bibliography will become outdated in a very short time.

PART A

Sources of Student and/or Teacher Mathematics Classroom Materials:

Albrecht, Robert L., et al, Computer Methods in Mathematics, Addison-Wesley Publishing Co., Palo Alto, California, 1968. (Student Text) 204 pages
A junior-senior level high school or college freshman student text designed for use as a supplementary text in mathematics courses in which computers are used for demonstration or to solve problems. It may be used as a primary text for an elective course in computer-oriented mathematics.

Albrecht, Robert L., Teach Yourself BASIC (Volume I and II), Tecnica Education Corp., 1970. Paper (Student Text)
An introduction to BASIC for junior high or slower high school students. The pace is very slow with continued efforts to increase student motivation.

Andree, Richard V., Computer Programming and Related Mathematics, Wiley, New York, 1967. (Teacher Material, or College Student Text) 284 pages
A book on programming with a good chapter on computer-related mathematics. A college level text, but a number of the examples are appropriate for secondary school use.

Braun, Ludwig, and Marian Visich, The Uses of Computers in High Schools (Teacher Reference), Huntington Project, Polytechnic Institute of Brooklyn, N. Y., 1969-70. (Paperback)
An eight volume teaching guide covering many topics in mathematics, science, and social science. Gives useful programs and teaching strategies.

Carnahan, B., et al, Applied Numerical Methods, John Wiley and Sons, Inc., 1969. 604 pages (Teacher Reference)
An intermediate treatment of the theory and applications of numerical methods. The methods discussed are illustrated by fully documented programs. Text is too advanced for students but has several sections that teachers can use.

Clayman, David, Mathematics Laboratory Work Book, Wang Laboratories, Tewksbury, Mass. 1967. 202 pages, paperback.
Thirty-seven mathematical topics that can be taught using the Wang calculator. Good resource book for teachers.

CMCP (Computing and Mathematics Curriculum Project), University of Denver, Denver, Colorado, 1970. (Student texts) Four paperback units are:

Natural Bases for Logarithms
Complex Numbers
Limits
Functions

These computer-extended instruction units use the BASIC language and assume the availability of computer facilities. Units were written especially for secondary school seniors or college freshmen taking a calculus or pre-calculus course. Excellent application as a supplement to current text.

Conte, Samuel D., Elementary Numerical Analysis, An Algorithmic Approach, McGraw-Hill Book Co., New York, 1965. 278 pages (Teacher Reference or College Student Text)
A particularly clear introductory course for undergraduate students of science or engineering. Text assumes availability of computer facilities, a previous course in introductory calculus, and the ability to program using FORTRAN IV.

Corlett, P. N., Tinsley, J. D., Practical Programming. Cambridge, Mass., Cambridge University Press, 1968. (Teacher Reference Material)
This is an introductory text in computing employing ALGOL as a language. It has both numerical and non-numerical applications but the emphasis is strongly on the numerical ones.

CRICISAM, Proceedings of an Invitational Conference on Calculus and the Computer, Florida State University, Tallahassee, Florida, 1970. 34 pages, unbound (Teacher Reference)
A transcript and summary of a three day conference to discuss all aspects of using the Stenberg and Walker CRICISAM calculus text. The suggestions reflected during the conference are valuable to anyone teaching calculus, although they are made specifically for this text.

CUPM, "Calculus with Computers," Newsletter, August, 1969. (Teacher Reference)
This issue of the Newsletter contains information on Computing and the use of computers in first-year calculus courses in colleges and universities in the United States. Brief outlines are presented and individuals can contact appropriate institutions for further information.

Dalton, J., Orbital Mechanics, Secondary School Publications, Kewit Computation Center, Dartmouth College, Hanover, N. H., 1970. 22 pages (Student Text) Paperback.
An excellent exploration of the physical forces involved in orbital flight. Better students of Algebra II or more advanced courses can understand this rewarding material. Good application of trigonometry and analytic geometry.

Damaskos, N. J. and Smyth, M.P., You and Technology, PMC Colleges, Chester, Pa., August 1969. 409 pages, paper. (Student Text)
Purpose of text is to teach about engineering and technology using the case study approach. Several problems enhanced by computer availability, and problem solving approach very useful even without available computer facilities. Filled with ideas for teachers interested in applications.

Dartmouth College - Kiewit Computation Center

1. Secondary School Project (Mid-Year Report), Dartmouth College, Hanover, New Hampshire, 1968, 36 pages.
2. Demonstration and Experimentation in Computer Training and Use in Secondary Schools, Dartmouth College, Hanover, New Hampshire, 1968, 68 pages.

(Teacher Reference and source listing of student materials)
The booklets give a description of the Dartmouth-Secondary School Computer Project. In addition to listing many mathematics curriculum areas with computer potential, information is provided regarding the topic outlines and other instructional materials prepared by the project.

Dodes, I. A. and Greitzer, S.L., Numerical Analysis with Scientific Applications, Hayden Book Co., Inc., New York, 1964. 390 pages (Student Text)
College freshmen and better high school math students will find this introduction to numerical analysis a fascinating challenge. The text assumes access to some type of computing facility and can not be completed using only pencil and paper. No programming is taught as the text is compatible with any computing facility.

Dorn, William S., and Edwards, Judith B., "Finding the Best Solution Via Computer," Journal of Educational Data Processing, Vol. 6, No. 2, pp. 90-107. (Teacher Reference)
This article describes how the computer can be used in solving the problem(s) of maximizing an area. It is an excellent example of how the computer can be used to extend instruction to solve interesting problems in mathematics.

Dorn, William S., and Greenberg, Herbert J., Mathematics and Computing: With FORTRAN Programming, Wiley, New York, 1967. (Student Text) 595 pages.
An excellent grade 12 or college freshman text which takes account of the role of the computer in mathematics instruction. (See review in MAA Mathematical Monthly, January, 1968, p. 103.) Also a good source of ideas for teachers. Also available is an excellent 860 page Instructor's Edition.

Engineering Concepts Curriculum Project (ECCP), Man Made World, McGraw-Hill Inc., New York, 1968. (Student Text and Teacher Materials)
ECCP has developed a science program for high school students. Selected sections deal with the teaching of computer concepts and using the computer in solving problems.

Galler, Bernard A., The Language of Computers, McGraw-Hill, New York, 1962. (Teacher Reference Material)
Some very good "individual" problem settings (senior high school). A teacher would find this a good source of interesting problems. The book is quite readable and would be an appropriate addition to the school library.

General Electric Company, Mark I Time-Sharing Service Teaching Guides, General Electric Information Service Department, Bethesda, Maryland, 1969. Four books (paperback): Algebra I, Algebra II, Trigonometry, Physics. (Potential Teacher Reference Material)
Each book contains a number of annotated BASIC programs along with some exercises. The material was developed by teachers in the Altoona Area School District, Altoona, Pennsylvania.

Gruenberger, Fred and Jaffray, George, Problems for Computer Solution, Wiley, New York, 1965. (Paperback) (Teacher Resource Manual) 401 pages.
A very good series of problems of a widely varying difficulty which can be used to complement the regular mathematics curriculum or form the nucleus of an elective course on computer applications.

Gualtieri, Domenic N., Basic Mathematics - An Electronic Approach, General Mathematics - An Electronic Approach. Wang Laboratories, Tewksbury, Mass., 1968. 169 pages, paper (Student Texts)
Two texts designed to help use the Wang electronic calculator with pre-algebra students. Suggested units can be adapted to any type of calculator.

Gualtieri, Domenic N., The Real Numbers - An Electronic Approach, Wang Laboratories, Tewksbury, Mass., 1969. 185 pages, paper (Teacher Resource and Student Text)
A supplementary text designed for use with the Wang electronic calculators. Good idea resource book for teachers of any course from Algebra to pre-calculus analysis.

Haag, James N., Comprehensive Standard FORTRAN Programming, Hayden Book Co., Inc., New York, 1969. 312 pages, paperback (Student Text)
One of the lengthiest introductions to FORTRAN programming. The book is intended for secondary school students or college underclassmen who have completed two years of Algebra. Many interesting applications are illustrated in the example problems.

Hamming, Richard W., Calculus and the Computer Revolution, Houghton Mifflin Co., Geneva, Illinois, 1968. (Teacher Material, or for Selected Students)
This is an expansion on an earlier monograph by the same title published by CUPM. The booklet discusses some aspects of computing as they are related to the beginning calculus course. The material is well written and easy to follow.

Hansen, V.P., Discovering Mathematics Through Computers, Olcott Forward, Inc., Hartsdale, New York, 1968. Six Volumes. (Paperback)
Volume 1, Rational Numbers, part 1
Volume 2, Rational Numbers, part 2
Volume 3, Algebra
Volume 4, Geometry
Volume 5, Advanced Algebra and Trigonometry
Volume 6, Probability and Statistics
(Student Texts)
These materials were originally written (and published) for Olivetti Underwood Corporation for use with their desk top computers, thus the programming settings are tied closely to the procedures of the Programma 101. The mathematical settings are standard to the regular 7 - 12 curriculum.

Hemmerle, W.J., Statistical Computations on a Digital Computer, Blaisdell Publishing Co., Waltham, Mass., 1967. 229 pages (Teacher Reference)
An advanced text that might be used as a teacher reference for particular topics appropriate to advanced students in secondary schools.

Hickey, Albert E., "The Use of the Computer in Mathematics Instruction," The Two-Year College Mathematics Journal, Vol. 1, No. 1, Spring 1970, pp. 44-54. (Teacher Reference Material)
In addition to a general discussion of the role of the computer in the classroom, the author indicates a number of specific settings where the computer can be used as a problem-solving tool.

Higgins, G. A., The Elementary Functions: An Algorithmic Approach, Secondary School Publications, Kewit Computation Center, Dartmouth College, Hanover, N.H., 1970. 360 pages (Student Text) Paperback.
A course in elementary functions in which use of a computer plays an intimate part. Knowledge of BASIC and availability of computing facilities is assumed. Text is written for secondary school or first year college students. Good source of ideas for teachers of students in all secondary school mathematics courses.

Holden, H. L., Introduction to FORTRAN IV, The Macmillan Company, 1970. 134 pages, paperback. (Student Text)
Text designed to teach FORTRAN IV for use as a scientific tool. Good for the beginner, but not appropriate as a reference work. Lack of flow charts is sometimes confusing.

Hull, T. E., The Numerical Integration of Ordinary Differential Equations, Committee on the Undergraduate Program in Mathematics (CUPM), Berkeley, California, 1966. 32 pages (Teacher Material, or College Student)
College level mathematics and applications of the computer.

Hull, T. E. and Day, D. D. F., Introduction to Computers and Problem Solving, Addison-Wesley (Canada) Ltd., 1969. 167 pages, paper (Student Text)
A computer science oriented text with an emphasis on FORTRAN. Many of the exercises can be used in the mathematics classroom.

International Business Machines, Computer Mathematics in Secondary Schools, Publication Number C20-1687-0. (Teacher Material)
Course administration and curriculum guide is described for a computer mathematics course for secondary schools. Contains units on history of the computer, flow charts, machine language, derived language, FORTRAN and advanced mathematical topics (number theory probability, matrices, etc.).

Iverson, Kenneth E., Elementary Functions: An Algorithmic Treatment, Science Research Associates, Chicago, Illinois, 1966. 231 pages (Student Text)
A textbook for precalculus students at high school or college level. Although the programming language, APL, is difficult and formalism very rigorous, the text is a good source of ideas for teachers.

Johnson, David C., Hatfield, Larry L., Katzman, Pamela W., Kieren, Thomas E., LaFrenz, Dale E., and Walther, John W., Computer Assisted Mathematics Program (CAMP), Scott Foresman and Company, Glenview, Illinois, 1968-1970. Six books (paperback):
CAMP First Course (grade 7)
CAMP Second Course (grade 8)
CAMP Algebra (grade 9)
CAMP Geometry (grade 10)
CAMP Intermediate Mathematics (grade 11)
CAMP Advanced Mathematics (grade 12)
(Student Texts with Teacher Commentaries)
Supplementary student booklets at each grade 7-12. The materials contain many excellent exercises for use as a supplement to the standard mathematics curriculum; students write computer programs (BASIC) to study concepts and solve problems.

Johnson, Donovan A., and Rising, Gerald R., "The Role of Computers," Guidelines for Teaching Mathematics, Wadsworth, Belmont, California, 1967. (Teacher Reference Material)
A secondary school mathematics methods text. The section on computers shows some interesting settings at the junior high school and senior high school level.

Katzan, Harry, Jr., APL Programming and Computer Techniques, Van Nostrand Reinhold Co., New York, New York, 1970. (Student Text)
A comprehensive sourcebook on APL programming and programming techniques. Examples included from mathematics, science, engineering, and business.

Kemeny, John G., and Kurtz, Thomas E., BASIC Programming, Wiley, New York, 1967. Paperback (Teacher Material, or Supplementary Student Text)
An excellent introduction to techniques of computer programming using the language BASIC. There is an applications section which contains a variety of problem settings. Text contains a great many good ideas for teachers developing their own units on computer related mathematics.

Killen, Michael, Introduction to Programming - A Mathematical Approach, Wang Laboratories, Tewksbury, Mass., 1969. 176 pages, paper (Student Text)
Presents several different mathematical units for use with the Wang 370 Computing System. Can be used as a supplementary text in Algebra 2 or more advanced courses.

Knuth, Donald E., Fundamental Algorithms, Addison-Wesley Publishing Co., Reading, Massachusetts, 1968. (Teacher Reference Material)
This is the first volume in a seven volume series titled The Art of Computer Programming. The series is designed to explain and illustrate most of what is known about basic computer programming techniques exclusive of numerical analysis. This first volume contains many excellent settings for illustrating algorithm design.

Koetke, Walter J., Computers in the Classroom, Digital Equipment Corporation, Maynard, Massachusetts, 1968. Paperback. (Teacher Resource Manual) 129 pages.
An indexed reference work containing specific suggestions as how and when to use the computer in a first year Algebra course.

Kovach, Ladis D., Computer-Oriented Mathematics: An Introduction to Numerical Methods, Holden-Day, San Francisco, 1964. Paperback. (Teacher Reference or Supplementary Student Material)
This booklet deals with "numerical mathematics" and presents a number of interesting problems. While the material is written to be done without a computer facility, the content has implications for computer use.

Marcovitz, Alan B., and Schweppe, Earl J., An Introduction to Algorithmic Methods Using the MAD Language, MacMillan, New York, 1966. Paper back. (Teacher Reference Material, or College Student Text)
A lower division college text to introduce students to those methods which are applicable to the implementation of algorithms on computing machines.

McCracken, Daniel D., and Dorn, William S., Numerical Methods and FORTRAN Programming, John Wiley and Sons, New York, 1964. (Teacher Reference Material)
The book is designed for undergraduate students in engineering or science. Students should have an analysis or calculus background before attempting many of the problems. The book is recommended as a teacher reference in the areas of evaluation of functions, solving equations and systems of equations.

Mullish, Henry, Modern Programming: FORTRAN IV, Blaisdell Publishing Co., Waltham, Massachusetts, 1968. 132 pages, paperback. (Student Text)
An introduction to programming for the beginner. Can be used by students who have completed Algebra II although some examples will have to be skipped. Good problem development in later chapters.

National Council of Teachers of Mathematics (NCTM), An Introduction to an Algorithmic Language (BASIC), NCTM, Washington, D.C., 1968. Paperback. (Teacher Reference Material)
The pamphlet contains an easy to read introduction to the programming language BASIC, and illustrations of computer applications in school mathematics. Intended for teacher use, but students (grade 9 or above) could use the booklet to learn how to program in BASIC.

Science Research Associates, Inc., Computing Concepts in Mathematics, Part I and Part II, Science Research Associates, Inc., Chicago, 1968. (Student Text and Teaching Guide)
A good history of computers is presented in Volume I. Volume II surveys several computational algorithms and presents some topics in mathematics which are suitable for advanced students.

Serisky, Melvin, Computer Math Experiences, Olcott Forward, Inc., Hartsdale, New York, 1970. Paperback. (Teacher Reference)
The materials are written for use with the Olivetti Programma 101 desk top computer. The book is a collection of programs from different mathematical levels, from algebra to calculus, including some business and recreational mathematics.

Sharpe, William F., BASIC, An Introduction to Computer Programming Using the BASIC Language, The Free Press, New York, 1967. Paperback. (Teacher Research)
This textbook is an elementary introduction to programming in the time-sharing language BASIC, and includes examples taken from mathematics, science and business. The book is easy to read and understand. The emphasis is not on hardware, but on getting the reader programming as quickly as possible.

Smith, Robert E., BASIC Ideas, International Time-Sharing Corp., Minneapolis, Minnesota, 1969. Paperback. (Teacher Reference or Student Text)
The text includes 41 lessons and 50 review problems attempting to teach the BASIC language and various applications. Problem settings are not as interesting as those in The Bases of FORTRAN, listed below.

Smith, Robert E., The Bases of FORTRAN, Control Data Corporation, Minneapolis, Minnesota, 1967. Paperback. (Student Text, Supplementary)
An excellent source of problems (mainly number theory) for computer solution - junior high school and senior high school. The author is very clear in the way the problems are motivated in story setting.

Steinbach, Robert C., Programming Exercises for Problem-Oriented Languages, Glencoe Press, Beverly Hills, California, 1969. (Teacher Reference and source of problems)
The book provides a series of laboratory exercises designed to "develop the student's ability to communicate freely with a digital computer using a problem-oriented language." The exercises are stated independent of any specific language. Included are a number of business type applications.

Stenberg, Warren B. and Walker, Robert J., Calculus: A Computer Oriented Presentation, CRICISAM, Florida State University, Tallahassee, Florida, 1968. 1077 pages, paper (2 volumes) (Student Text)
The ideas of calculus are introduced using algorithmic concepts. Although the order of topics differs from that in other first year calculus texts, rigor and content have not been reduced but enhanced with the help of the computer. The text is independent of a specific programming language and thus can be used with any algebraic language.

Weeg, G. P. and Reed G. B., Introduction to Numerical Analysis, Blaisdell Publishing Co., Waltham, Mass., 1966. 184 pages (Teacher Reference)
An advanced text that can be used as a teacher reference for certain topics that are appropriate on a more elementary level such as errors of computation, real roots of an equation, and the Gauss reduction.

Weissman, K., School BASIC, Secondary School Publications, Kewit Computation Center, Dartmouth College, Hanover, N.H., 1970. 81 pages (Student Text) Paperback.
A language manual, but one written for the student who has NOT completed even one semester of Algebra I. Written for users of the Dartmouth system, but easily adapted to any BASIC system.

PART B

Student and/or Teacher, Survey of Computer Science Reference Materials

Adams, J. Mack and Moon, Robert, An Introduction to Computer Science, Scott, Foresman and Co., Glenview, Illinois, 1970. 355 pages.
An elementary computer science text with primary emphasis on FORTRAN programming. Suitable for high school students who have completed first year algebra.

Atkinson, Richard C., and Wilson, H. A., Computer-Assisted Instruction: A Book of Readings, Academic Press, New York, 1969. Paperback.
An excellent collection of papers on a variety of topics in computer-assisted instruction from general survey papers to specific application in instruction, including discussions of hardware, languages and economics.

Allen, Paul III, Exploring the Computer, Addison-Wesley, Reading, Mass., 1967. Paperback.
A programmed introduction to computer hardware. Very elementary with little emphasis on use of the facility. Appropriate for students.

and

Barker, P. J., Beveridge, W. T., Basic Computer Studies, Edinburgh, Oliver & Boyd, 1970.
This is a general introduction to the construction, operation and applications of computers. ALGOL and FORTRAN are discussed briefly.

Bolt, A. B., and Wardle, M. E., Communicating with a Computer, Cambridge University Press, New York, 1970. Paperback.
The book is an elementary introduction to what a computer is and how it works. While it was written for teachers it is well within the grasp of junior high school students.

Bushnell, Don D. and Allen, Dwight W., The Computer in American Education, Wiley, New York, 1967. Paperback.
Should be of interest to teachers. Readings on the many roles of the computer in education - individualizing instruction, computers in instruction and research, teaching the computer sciences (secondary school and college), and information processing.

Carroll, John M., Careers and Opportunities in Computer Science, E. P. Dutton and Company, New York, 1967.
A survey of opportunities in computer technology applied to solving problems in manufacturing, transportation, medicine, engineering, and many other fields. A fairly comprehensive overview of the computing community.

Crawford, R. and Copp, D., Introduction to Computer Programming, Houghton Mifflin Co., Boston, 1969. 154 pages, paperback (Student Text)
An interesting introduction to machine language programming that teaches students to write programs for an imaginary computer. No computer facilities are needed and first year algebra is the only prerequisite.

Crowley, Thomas H., Understanding Computers, McGraw-Hill, New York, 1967. Paperback.
An introduction to how a computer works. Readable by students.

Digital Equipment Corp., Introduction to Programming, Digital Equipment Corp., Maynard, Mass., 1970. 420 pages, paper.
An excellent introduction to machine language programming and computer science. Well suited for better secondary school students and teachers.

Digital Equipment Corp., Programming Languages, Digital Equipment Corp., Maynard, Mass., 1971. 430 pages, paper.
A compact reference for the programming languages FOCAL, BASIC, FORTRAN, and several assembly languages. Text does not teach programming techniques, and assembly languages are unique to DEC family of computers.

Farina, Mario V., Computers, A Self-Teaching Introduction, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1969. Paperback.
The book is a self-teaching introduction to the field of digital computer usage - it assumes no previous computer experience. Appropriate for use by high school students.

Forsythe, Alexandra I., Keenan, Thomas A., Organick, Elliott I., and Stenberg, Warren, Computer Science: A First Course, John Wiley and Sons, New York, 1969.
An excellent introduction to computer science. The first chapters deal with algorithms and flow-charts. Mathematical examples are used throughout. An appropriate text for high school or undergraduate use. The text is organized around flow-charting with supplementary book on the more widely used languages.

Gerard, R. W., Computers and Education, McGraw-Hill, New York, 1967.
A general reference book for educators which includes a survey of developments in CAI (learning), library utilization, administrative record keeping and procedures. The book is a report of a conference held at the University of California to discuss the future of computers and education.

Gruenberger, Fred, Computers and Communications - Toward a Computer Utility, Prentice-Hall, Englewood Cliffs, New Jersey, 1968.
Publication of the Computer Communications Symposium, 1967.
This is a series of articles on new directions in computer utilization - notably a computer utility; in government, industry, or the community.

Hassitt, Anthony, Computer Programming and Computer Systems, Academic Press, New York, 1967.
A computer science textbook for advanced college students. The book assumes knowledge of programming and deals with further refinements of machine language programming, monitor systems, computer hardware and advanced programming.

Lohberg, Rolf and Lutz, Theo, Computers at Work, Sterling Publishing Co., New York, 1969. 192 pages.
An easy-to-read, accurate introduction to computers at work. It relates the different computer languages and their uses; it traces the growth in complexity of computers and illustrates the differences in their potentials.

Moursund, David G., How Computers Do It, Wadsworth Publishing Co., Belmont, California, 1969. Paperback.
The book emphasizes algorithm design and flow charts to illustrate how the computer is used to solve problems. The book was written to be used by high school (with a background through second year algebra) or undergraduate college students.

Murphy, John S., Basics of Digital Computers, Hayden Book Co., Inc. 1970. (3 volumes)
A good, elementary introduction to basic computer hardware elements and how they work with a slight emphasis on electronics. Usable by high school students.

National Association of Secondary School Principals, "The Computer in Education," The Bulletin, February 1970, NASSP, Washington, D.C.
This issue of The Bulletin contains a number of articles about the role of the computer in education. One of the articles (Helen Hughes) discusses an experimental program in computer-assisted mathematics, the students programmed the computer to solve problems in mathematics, grades 11 and 12.

National Council of Teachers of Mathematics, Computer-Assisted Instruction and the Teaching of Mathematics, NCTM, Washington, D.C., 1969. Paperback.
This booklet reports the proceedings of a National Conference on Computer-Assisted Instruction conducted at Penn State University. The report discusses hardware development, software development, and the developing role of CAI in education.

National Council of Teachers of Mathematics, "The Role of Electronic Calculators and Computers, " Chapter Six, NCTM Instructional Aids Yearbook, (in press).
This chapter, prepared by members of the NCTM Computer Oriented Mathematics Committee, discusses the uses of various pieces of computing equipment as problem-solving tools in the mathematics classroom.

National Council of Teachers of Mathematics, Computer Facilities for Mathematics Instruction, NCTM, Washington, D.C., 1967. Paperback.
A survey of computer facilities for possible classroom use. Some sample problems are given and the results (times and outputs) for running on different pieces of hardware (computers) are compared. Although slightly outdated, should answer many questions for schools just getting started.

Nolan, Richard L., Introduction to Computing Through the BASIC Language, Holt, Rinehard & Winston Inc., New York, 1969.
This is a good lower level undergraduate text based on using the language BASIC.

Post, Dudley L., The Use of Computers in Secondary School Mathematics, ENTELEK, Newburyport, Mass. 1970. 252 pages, paper.
A very good general introduction for a teacher or school administrator with no computer related experience. Text provides a good background for those in charge of hardware selection.

A Scientific American Book, Information, W. H. Freeman and Company, San Francisco, California, 1966. Paperback. A reprint of the September 1966 Scientific American.
A comprehensive review of computer technology in many areas.

Sterling, T. D., and Pollack, S. U., Computing and Computer Sciences: A first course with PL/1. London, The Macmillan Company, 1970.
This is an undergraduate text giving an introduction to computer science and employing PL/1 as a language. The same text is also available using FORTRAN IV instead of PL/1.

Stolurow, Lawrence M., Computer Assisted Instruction, American Data Processing Inc., Detroit, Michigan, 1968. Paperback.
An excellent overview of CAI.

Walker, Terry M., and Cotterman, William W., An Introduction to Computer Science and Algorithmic Processes, Allyn and Bacon, Boston, Mass., 1970.
The book is intended as a text for an introductory course in computer science for students of all disciplines. The emphasis is on the analysis of classes of problems and the design of algorithms.

PART C
Miscellaneous Articles and Periodicals:

Association for Computing Machinery, Computing Surveys, William S. Dorn, Editor, ACM, Washington, D.C.
This is the survey and tutorial journal of the ACM. It contains many interesting and relatively easy to read articles on current activities in the computer field.

Association for Computing Machinery, "Curriculum 68, Recommendations for Academic Programs in Computer Science," Communications, March, 1968, pp. 151-197.
This issue of the Communications, the official publication of the Association for Computing Machinery (ACM), contains an outline and description of programs and courses in computer science at the college undergraduate and graduate level. Students may be interested in this for college planning.

Bowles, Edmund A., (Ed.), Computers in Humanistic Research, Prentice-Hall, Englewood Cliffs, New Jersey, 1967.
This collection of papers presents short surveys on the use of computers in anthropology and archeology, language and literature, and musicology.

Computers and Automation, Berkeley Enterprises, Inc., 815 Washington Street, Newtonville, Mass. (magazine)
A good source for keeping abreast of developments and issues in the computing field on education in almost every issue with a complete issue on computers in education once a year. Many articles on sociological, cultural and moral issues involving computers and automation. Highly recommended.

Computer Decisions, Hayden Publishing Company, Inc., New York.
This monthly publication includes articles on all aspects of computers and computer use. The articles are well-written and readable by the non-computer scientist. Also an excellent source of up-to-date information on hardware and software developments.

Computer in Education - "The Bulletin of the National Association of Secondary School Principals," Vol. 54, No. 343, February 1970.
This entire issue is devoted to the use of the computer in the secondary school. Many excellent articles are included.

Computerworld, 797 Washington Street, Newton, Mass.
A weekly newspaper devoted exclusively to the current world of computers. Hardware, software, and all applications are included. This paper is a must for all school libraries and is motivating material for the mathematics and science departments as well.

Computopics, Special Issues February 1965 and March 1967, Association for Computing Machinery, Washington, D.C. Chapter.
These two issues of the Computopics contain bibliographies on career information and films.

Datamation magazine, 94 South Los Robles Avenue, Pasadena, California.
A good source of up-to-date information on hardware and software developments--the state of the art. Frequent articles of interest to teachers and students.

Data Processing Magazine, 134 North 13th Street, Philadelphia, Pennsylvania.
Monthly collection of 3 to 7 main articles on data processing in general. Also contains a section on new products, some short news items, and occasional articles pertaining to educational applications.

Dorn, William S., "Computers in the High School," Datamation, February, 1967, pp. 34-35.
An article describing the role of the computer in problem-solving or (in the words of the author) computer-extended-instruction, CEI.

Educational Media, Educational Media, Inc., Fort Worth, Texas
Monthly publication that contains occasional articles on school computer activities.

Educational Technology, Educational Technology Publications, Inc., Englewood Cliffs, New Jersey.
This monthly publication deals with technological developments, covering "all lines of inquiry and professional practice which offer methods of making teaching more rational. . ."

Hesse, A. R., "Iterative Methods in High School Algebra," The Mathematics Teacher, January, 1964, pp. 16-19.
Contains some suggestions for teachers.

Hughes, J. L., and Engvold, K. J., "Hexapawn: A Learning Demonstration," Datamation, March, 1968, pp. 67-73.
A simple demonstration program for explaining to the uninitiated how a computer can "learn" through experience. An excellent article for students and teachers.

Interface, published by ACM SIGUE, 1133 Avenue of the Americas, New York, New York.
This is the bulletin of the ACM special interest group on computer uses in education. Always contains a variety of interesting papers.

Journal of Data Education, Society of Data Educators, Robert Driegbaum, Editor, University of Dayton, Dayton, Ohio.
This monthly publication includes a number of articles of interest to teachers, from research reports to discussions of programming languages.

Journal of Educational Data Processing, Educational Systems Corporation, Palo Alto, California.
The journal is a quarterly publication "devoted primarily to the publication of technical information, original research and descriptions of the organization and operation of data processing systems." A special issue, Volume 5, Number 2, Spring 1968 included three articles relevant to computer use in the mathematics classroom: "Starting Computer Instruction? The Third Phase is Most Difficult," by John O. Parker; "Computer Instruction - A Three Dimensional Approach," by Judith B. Edwards; and "The Computer: A Mathematics Laboratory," by William S. Dorn.

Knuth, Donald E., "What is an Algorithm?" Datamation, October, 1967, pp. 30-32.
This excellent article discusses a portion of the first chapter of Fundamental Algorithms (in this bibliography). The author introduces the concept of an algorithm using the Euclidean Algorithm for GCF as an example.

LaFrenz, Dale E., and Kieren, Thomas E., "Computers for All Students," School Science and Mathematics, January 1969, pp. 39-41.
An overview which proposes the point of view that computers should be used more extensively in the secondary schools; suggests some sample settings.

National Council of Teachers of Mathematics, The Arithmetic Teacher, March 1969, NCTM, Washington, D.C.
This issue is devoted to applications of the computer in elementary school instruction. Sample articles: "Computers and Art" by Mott-Smith; "A Teaching Program for Experimentation with CAI" by Fejfar; and "A Workshop on CAI in Elementary Mathematics" by Jerman and Suppes.

Schaaf, William L., The High School Mathematics Library, National Council of Teachers of Mathematics, NCTM, Washington, D.C., 1967, p. 40.
This pamphlet contains a section with a bibliography of many general or survey books and pamphlets on computers and automation.

Spencer, Donald D., "Computers: Their Past, Present and Future," The Mathematics Teacher, January 1968, pp. 65-75.
History of computers; useful for background information for computer-oriented teaching.

PART D
Professional Societies

1. Association for Computing Machinery, 1133 Avenue of the Americas, New York, New York 10036. A professional group seeking to "advance the sciences and arts of information processing" and "promote the free interchange of information about the sciences and arts of information processing both among specialists and among the public. . ."

   Has several special interest groups and special interest committees dealing with selected areas. Publishes four journals: The Journal; Communications; Computing Reviews; Computing Surveys.

2. Association for Machine Translation and Computational Linguistics, 1755 Massachusetts Avenue, N.W., Washington, D.C. 20036. Concerns itself with any significant application of computers to verbal data processing, including methods of textual analysis, abstracting, editing, psychological and sociological analysis of interview transcripts, group discussions, mass communication, etc.

   Publications: The Finite String (newsletter); Mechanical Translation.

3. Association of Educational Data Systems, 1201 Sixteenth Street, N.W., Washington D.C. 20036. Seeks to "promote a greater flow of information among educators regarding data and information processing ideas, techniques, materials and applications."

   Publications: AEDS Monitor: Journal of Educational Data Processing.

4. American Federation of Information Processing Societies, 210 Summit Avenue, Montvale, New Jersey 07645. Federation of societies to serve as a national voice of the computing field. Their fall and spring joint computer conferences are noteworthy. For dates see ACM publications.

5. National Council of Teachers of Mathematics, 1201 Sixteenth Street, N.W., Washington, D.C., 20036. Organization of teachers and educators concerned with mathematics education. Sponsors, usually in conjunction with other organizations, conferences on the role of computers in mathematics teaching. Has had a committee on Computer-Oriented Mathematics. Has published materials for teacher use (see this bibliography and write to Washington office for free price lists).

   Publications: Arithmetic Teacher; Mathematics Teacher; Mathematics Student Journal; Journal for Research in Mathematics Education.

6. American Educational Research Association, 1126 Sixteenth Street, N.W., Washington, D.C. 20036. This group of educational researchers includes many persons actively engaged in computer-oriented problems. Excellent sources of information concerning recent work include the organization's annual meeting, and its publications. Of special help is the annual abstract of papers read at the year's meeting (available through the Washington office). This organization also has a special interest group for researchers in mathematics education.

   Publications: American Educational Research Journal; Review of Educational Research; Educational Researcher (newsletter).

7. International Federation of Information Processing Societies, IFIP Secretariat, P.O.B. 311, 1211 Geneva 11, Switzerland. Federation of Societies to serve as an INTERNATIONAL voice of the computing field. Their fall and spring joint computer conferences are noteworthy. For dates see ACM publications. Every three years they sponsor an international computer meeting. The next one scheduled is for next summer of 1971.

Bibliography prepared by David C. Johnson and Walter J. Koetke

to claim that these low scores simply reflect a large amount of forgetting, the burden of proof is now on him to show that the type of student who enrolls in technician training has these skills to a much higher degree at some time. It also seems obvious that the minimal mathematics requirement (one year of algebra and one year of geometry) for entry into the technical programs is relatively meaningless. The median score on an algebra test for students completing one year of conventional algebra at Pius XI and West Division were only 30% and 35%, respectively. And these low algebra scores do not take into account the fact that many of the same students also have deficiencies in basic arithmetic skills.

Non-Science Orientation of High School Mathematics Content.

The amazing thing about the high school mathematics content is the fact that it apparently does not emphasize the topics and skills which students need to learn basic science and technology. The majority of the students are deficient in topics like fractions, fractional equations, and formula rearrangement, even though skills in these topics are essential for any mathematical approach to science and technology. If students cannot handle literal fractions or rearrange literal expressions, it seems inconceivable that they could follow even some of the simpler derivations in science or technical courses. Many of the students are even deficient in arithmetic skills, with no apparent provision in the high school content for remedying many of the deficiencies. It is also significant that only 34% of the entering technical students have had any introduction to the use of a slide rule.

Whatever the high school mathematics content does emphasize, it certainly cannot claim that it is successful, or even interested, in preparing the majority of the students for elementary science and technical courses. It is no wonder, therefore, that enrollment in high school physics courses is so low. It is no wonder that some physics teachers are even attempting to develop a physics course in which no mathematical skills are needed. If the mathematical skills needed for elementary science were unattainable for most students, a non-mathematical approach to physics instruction would be necessary. But the results in the experimental math classes suggests that the unattainability of these math skills has been seriously overestimated. In fact, it seems that a high percentage of students could learn these skills at a relatively high level. Our culture is built on science and technology. More and more jobs in our culture require an understanding of basic science and technology. Anyone in our culture who does not have a rudimentary knowledge of the principles of science and technology could hardly be called "liberally" educated. In a culture such as this, it is difficult to justify a high school mathematics curriculum which does not support scientific and technical education for a higher percentage of students.

Higher-Ability Students and Programmed Materials.

When the programmed materials have been used in high schools, they have always been used with students whom the schools view as either learning or discipline problems. The materials have never been tried with higher-ability, well-motivated students. High school teachers usually say that they would not be "good" for faster learners. By not being "good" for faster learners,

they probably mean either that the content is too restricted or that the faster learners would be bored by the many detailed steps included in the instruction. They obviously cannot mean that faster learners would not learn from programmed materials, especially since it has been demonstrated that slower learners do learn from them.

Obviously, the content is too restricted for the faster learner, and a full course in algebra, for example, for the faster learner should contain more topics. However, it would be interesting to see how fast a group of faster learners could proceed through the content which the materials contain. It would also be interesting to see at how high a level they would perform and how much tutoring they would require. It would definitely be interesting to see how "bored" they would be by the use of programmed materials in comparison with conventional instruction, which itself is not always a "non-boring" experience. If the faster learners, for example, could learn basic skills with so little tutoring that they would not have to attend class, they might conceivably prefer programmed instruction to conventional methods. Hopefully, some school will offer the opportunity to answer these questions some day.

APPENDIX E

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1.0 PHILOSOPHY AND GOALS FOR SCHOOL SCIENCE PROGRAMS

1.1 Philosophy of Science Experiences

Science and technology affect everyone's life in aesthetic as well as materialistic ways; thus they must be an integral part of the school curriculum. School science should help students comprehend how each science discipline contributes to the knowledge, the behaviors, the understandings and the predictive relationships that pervade the whole of science and the totality of human intelligence and behavior. This should occur in a success-expected sequenced set of operational objectives which can be evaluated, modified, and integrated in a continuous fashion.

Teachers must become as concerned with attitude and interest in science as they are with content. Teachers and students alike must be aware of the role of science in life style and the human condition. The sciencing students do must be highly individualized because of differences in abilities, goals and interests of the children. This changes the role of the teacher from one who presents demonstrations and imparts knowledge to one who helps students execute plans to the best of their abilities. The teacher should think of himself as a director of multi-level science activities in each classroom. The classroom atmosphere should be such that a teacher sees a child's confusion at some point in his project as a welcomed signal for opportunity to help.

These are Pupil Power guidelines: they provide practical guidance for developing self-motivating, scientifically literate, creative students capable of effective living.

1.2 Goals for School Science Programs [1]

1.21 *Rationale*

The goals of school science programs must be consistent with the overall goals of the educational system of which they are a part and must aid that system in realizing its goals. Even though much uncertainty presently exists concerning many of the more specific goals of the nation's schools, there are certain general goals which must underlie all school activities if the schools are to serve the social order in which they exist.These goals are: (1) to provide the student with the basic knowledge and skills essential for him to discover his most effective role in a dynamic society, (2) to provide him with adequate knowledge and experiences to understand this role, and (3) to develop the competencies necessary to properly execute this role in a manner which is satisfying to him and his associates and which will further human progress.

Although these goals have been basic to all educational efforts throughout history, educational programs and their specific goals have undergone and must continue to undergo changes; for these goals do presecibe human progress as one of their products. One of the products of this progress is a society which channels much of its labors toward its own self-improvement through education. Today's society demands that a fourth general goal be added to the three already stated. (4) To develop students who accept personal responsibility to continue their education throughout life. To accomplish this goal, school programs must provide relevant independent learning activities through which the student can enjoy the excitement of learning and be motivated and prepared for an adult life of continual self-improvement.

Our dynamic society demands that these four goals receive constant attention as school programs are evaluated and revised. From the abundance of information available, educators must select programs and materials which relate to these basic goals.

1.22 *Science Goals*

These general educational goals dictate that science programs must: (1) develop scientifically literate citizens who make wise choices about the particular environment they encounter, (2) provide the proper training for those with the aptitudes and interests to become scientists and technicians.

Both of these purposes demand that the student develop a comprehension of the conceptual patterns into which scientific knowledge has been organized. He must also develop an understanding of the universality of the cause and effect relationship, the processes man has employed to comprehend his natural environment and his relationship to it, the various mechanisms he has used to control it, and the adaptations he must make to it. These understandings result from actively using the mental skills of sciencing and the manipulative skills needed to apply them. Some of these skills are making, recording and reporting accurately observations; sorting relevant data; thinking convergently and divergently to form hypotheses and generalizations; and making evaluative judgments to arrive at valid conclusions.

For a student to fully discover, understand and execute his role in a dynamic society, he must also develop certain attitudes, values and appriciations. Many of these can be nourished by properly planned science programs. Some of these involve the development of a respect for knowledge and understanding, an open-minded attitude, an intellectual curiosity, a respect for intellectual honesty, an objective additude, a realization of one's own competencies and limitations and a sense of responsibility. These attitudes and values will be established by programs which provide pleasurable experiences through which the student can discover the satisfaction derived from science learning. Science programs should also develop an appreciation for our scientific heritage and the contributors to that heritage; for the ever expanding knowledge bank which human endeavor, particularly the scientific enterprise, has produced; for the role of the pure scientist along with that of the practical inventor and technologist; for the potentials of science and its limitations; and for the aesthetic order and beauty in nature.

Science programs should be structured so these affective and cognitive skills do not find their sole application in the study of the scientific disciplines. Science programs can aid in developing citizens who strive to make sound decisions based on all available pertinent data and who continue their science and general education throughout life as they seek to improve their functions as members of society. Persons who conserve our natural and human resources should be another logical by-product of these programs.

Science programs necessarily become progressively more specialized in secondary and higher education, but at these levels the above goals remain apropos to programs for

non-science students. Preservice and inservice programs for teachers of science in elementary and secondary schools must be designed to develop classroom practices which will promote these goals. In addition, these programs must provide the teacher with a realization of how he can manipulate the existing classroom environment to accomplish these goals.

These general goals provide direction for planning of school science programs. They also can help communicate to the general public what the schools are attempting to accomplish; however, to assure that these goals are realized, teachers and curriculum developers will need to reduce them to a series of sequentially stated instructional objectives. These objectives must be consistent with the learner's development and background and stated in terms which will allow the teacher to know when each has been realized.

[1] This statement of goals is an adaptation of a position paper of the Council of State Science Supervisiors on "Objectives of Science Programs," part of an unpublished document, *This We Believe*. It was adopted in roughly its present form by the Indiana State Science Advisory Committee in February, 1969 as "A Statement of Goals for Indiana School Science Programs" and since then, has received limited circulation under the subtitle: Project — D.U.E.

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2.0 Important Themes in School Science Programs

The foregoing statement of goals for school science programs identifies several themes or threads that should permeate the entire K-12 science curriculum. These can be grouped into five main categories. These are: (1) the processes of sciencing, i.e. the mental transformational skills used in scientific investigations; (2) the conceptual schemes of science, i.e. the big ideas man uses to synthesize the multitude of facts he discovers about nature into a comprehendible body of knowledge; (3) the values and attitudes for living which are derived from science learning experiences; (4) the usable psycho-motor skills of sciencing; and (5) the subject matter of science, i.e. knowledge of the facts discovered by scientists which have been traditionally taught in school science instruction.

There has been much discussion about which of these major themes should receive the main emphasis in science curriculum design, i.e. toward which of these should the major impact of science instruction be directed. These Guidelines were built upon the philosophy that if a science program effectively serves today's youth, it must emphasize each of these themes. It must place each in the proper perspective since each has a unique contribution to make to the child's total education.

The manner in which this multi-emphasis approach may be achieved will be discussed in 3.23. This section discusses the nature of each theme with regard to its importance in science learnings.

2.10 The Processes of Sciencing

There are certain processes (mental techniques and skills) that characterize the thinking of a scientist. Although very few will become scientists, life in today's and tomorrow's society demands that each citizen comprehend the nature of scientific thought. Mastery of the processes of science can contribute to the total education of the child because of their high transferability. Sciencing (both natural and social) is more inductive or synthetic while the thinking required for most other school subjects, particularly mathematics and the language arts, is more deductive or analytical. Educational research indicates that inductive thought cannot be mastered by students being told or reading about the processes involved. They must have actual experience in using these skills. Adults who properly utilize the data the scientific enterprise provides must experience the techniques used in arriving at these data. This is necessary if they are to have some idea of the capabilities and limitations of science as well as the significance of and restrictions on its data. Additionally, in today's society, they must collect and process the data needed to make everyday decisions.

2.11 *The Process Hierarchy - Its Need and Description*

Even though the student must be a practitioner of science if he is to comprehend and master the processes of sciencing, the processes he is asked to master must be consistent with his mental growth and development. Although no teacher would ask a student to write a complex sentence before he can form the letters of the alphabet or to extract square roots before he can add two single digit numbers, it has not been uncommon to find examples in science instruction of comparably absurd assignments. Some students have been asked to perform complicated investigations before they have mastered making precise observations. Just as there are simpler skills to be mastered before students can accomplish the more complex ones in language and mathematics, there are simpler processes of sciencing to be mastered before the student can perform the total synthetical act. Since this inductive reasoning often involves abstract thought, total sciencing can be performed by only a few students before junior high school. On the other hand, to delay all sciencing until junior high school is just as unrealistic since there are simpler sciencing processes to be mastered before complex investigations and syntheses can be preformed.

In classroom instruction and curriculum development each process should be introduced as the student acquires some mastery of the prerequisite processes. This in turn, requires ordering the processes in a series which indicates those processes whose mastery is antecedent to the performing of other processes. Such an ordering is called a *process hierarchy.*

Considerable work in recent years has been devoted to the development of a valid hierarchy for the processes of sciencing. Much of the work of the Commission on Science Education of the American Association for the Advancement of Science in developing the elementary science program, *Science–A Process Approach,* involved validating one such hierarchy.[1,2] Although this research indicates that this hierarchy is a valid one, several problems arise in generalizing it to all K-12 science instruction. The three major ones are: (1) Is it the only valid hierarchy for the elementary grades? (2) Does it contain all the sciencing processes? (3) What other processes are required to extend it to include secondary programs and pre-school programs as well as to provide for disadvantaged students entering kindergarten or first grade? In an attempt to compensate for these possible deficiencies, an inferred hierarchy, drawn from several sources, has been employed in developing this publication. The processes were ordered by inference! It is the opinion of the committee that this hierarchy is fairly valid, and as such, should be tested.

2.12 *The Inferred Process Hierarchy*

This inferred hierarchy of processes is given in Chart 2.1. The more complex acts are at the top and their antecedent processes arranged in the lower levels of the scheme.

The inclusion of operational definitions of each process mentioned in this hierarchy might be a welcome addition to this publication for many readers. These definitions have not been included for three reasons: (1) their inclusion would considerably lengthen this section as well as the total publication; (2) most of these definitions can be found in current education and science education literature; and (3) the reader can easily develop his own operational definition for each process by referring to first and third column of the objective list in 3.30 (p. 19 thru 110) and noting the objectives which call for utilization of the various processes.

Some duplications and overlaps must exist in this hierarchy. For example, one would be performing much the same type of transformations in ordering, equating and sequencing as in using space-time relationships, using numbers, and measuring. Such duplications are necessary to eliminate gaps in the complete coverage of the processes of sciencing.

Chart 2.1 THE INFERRED PROCESS HIERARCHY

Character Building, Acting on Conclusions	Synthesizing Results, Social Evaluating, Affective Evaluating	Performing Investigations	Experimenting, Synthesizing	Testing, Manipulating Variables	Observing	Categorically Conceptualizing	Verbal Associating, Multiple Discriminating	Chaining	Stimulus-Response Connecting
			Recognizing Problems	Abstracting,	Ordering,				
			Typing Problems,	Formulating Models	Equating,				
			Refining Problems,	Formulating Hypotheses,	Sequencing,				
			Proposing Answers,	Analyzing Systems,	Using Space/Time Relationships,				
			Designing Studies,	Generalizing,	Using Numbers,				
			Formulating Statistical Models,	Interpreting Data,	Measuring,				
			Cognitively Evaluating Alternatives	Defining Operationally,	Classifying,				
				Translating	Recognizing Variables				
					Inferring,				
					Simulating,				
					Predicting,				
					Communicating,				
					Assimilating				

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Another type of duplication occurs which involves repeating similar processes at various levels of sophistication. The most prominent example is the series of processes involving the various forms of generalization, i.e. categorically conceptualizing, assimilating, generalizing, synthesizing, synthesizing results and character building. The complexity and abstractness of the entities to be linked increase from simple particular characteristics of concrete objects in categorical conceptualization to comprehensive abstract principles and values in character building. Other strands exist involving a similar duplication.

2.13 *Using a Process Hierarchy*

A Process Hierarchy might be operationally defined as: A sequence of specific mental skills used to transform information in the acts of learning and problem solving and ordered so the transformation utilized at any given performance level depends on some proficiency in most of the transformations listed in all levels below it.

This definition does not imply that a person who can perform complex mental processes will not also be performing lower level transformations. In fact, a sophisticated scientist often uses several low level transformations (such as discriminating or observing) when he encounters a new phenomenon prior to synthesizing it into a reorganized conceptural reference frame. Thus, some high school objectives may involve only low level transformations, but the high school science curriculum must not be over-loaded with such activities. These simpler processes are usually necessary inferences of higher level transformations. On the other hand, in introducing new phenomena such as electromagnetic waves, radioactivity or certain socio-interdependencies, objectives may need to be specifically stated in terms of a lower level process.

Although several students in a class may have progressed to near the same position in the hierarchy, not all the students in any class will be equally advanced. The teacher must therefore alter his objectives and strategies to allow for individual differences if he is to promote student mastery of antecedent processes before forcing the performance of more complex transformations.

On the other hand, it would be incorrect to assume that once a student has achieved proficiency in a series of processes, he should attack new problems using these processes in a neat sequential order. Quite the opposite is likely true. Although certain individuals may attack problems in an orderly manner, transposing one person's method on another completely ignores the psychology of individual differences. Any study of major scientific discoveries reveals that even two scientists differ considerably in their approach to scientific investigations. The hierarchy, therefore does not describe how a student should undertake the study of a science problem but merely identifies, particularly at the elementary and junior high levels, the kinds of activities the child is ready to attempt or should do for compensatory work.

2.20 **The Conceptual Schemes of Science** [3]

Man in his attempt to comprehend his environment has found it helpful to synthesize his knowledge into a few big ideas. These generalized ideas give him a framework from which to interpret new phenomena he encounters. Such ideas are often referred to as the *conceptual schemes of science.* To provide some comprehensible threads around which to organize the school science curriculum, scientists and science educators have attempted to identify the conceptual schemes which encompass the whole of science knowledge. The resulting sets have varied in number from about six to twelve.

Problems often arise in applying these sets to curriculum design and classroom programs. These problems arise from three main sources which are: (1) When these statements are few in number, they are often so generalized that many persons, even some scientists, have difficulty seeing the total encompassment of science in them. (2) Such comprehensive statements do not communicate effectively to all teachers, particularly elementary teachers whose background in science is often somewhat limited. (3) There are ideas concerning the interactions of scientific knowledge with other bodies of knowledge which should legitimately be included in the science curriculum but often are not covered by a set of conceptual schemes restricted to the structure of science.

Expanding the number of big ideas in the set may also present problems. First, the set becomes long and somewhat cumbersome to work with. Secondly, the generalization of the same fact, simple concept or principle may support two or more conceptual schemes. In fact, more than one of the "ordinary conditions" schemes may eventually be synthesized into a more comprehensive member of the set. On the other hand, such an expanded set has the advantage of improving communication and comprehension. To make these Guidelines as useful as possible to all schools and teachers in Indiana, an expanded set is utilized. The resulting set contains seventeen statements of major generalizations of scientific knowledge.

2.21 *Statement of the Conceptual Schemes*

Although a conceptual scheme is an idea which cannot be communicated by a summary word or phrase, each scheme has been given a title so the objectives in the next section can be coded to the schemes.

2.21-1 *Differences and Similarities of Objects.* There are differences and similarities in all objects (both living and non-living) in the neutral world. These differences and similarities can be used to develop classifications hierarchies which are useful in inferring and predicting the properties and characteristics of unfamiliar natural objects.

2.21-2 *Fundamental Structures.* All objects (both living and non-living) in the natural world can be analyzed in terms of their component parts and a hierarchy of systems around which these components are organized. The ultimate units of analysis are the fundamental particles which presumably have the same characteristics throughout the universe.

2.21-3 *Space/Time Reference Frames.* All natural objects exist in time and space. Their attributes and behavior can only be comprehended from the proper space-time reference frame.

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2.21-4. *Force Fields.* All natural objects distort (or effect changes in) the space and time in which they exist. These distortions create forces around the object that affect the behavior of other objects entering these force fields. Descriptions of these effects are dependent on the space reference frame chosen.

2.21-5. *Constant Change.* All objects (both living and non-living) are in constant change. Descriptions of these changes are dependent upon the time reference frame chosen.

2.21-6. *Statistical Descriptions.* The qualities and behaviors of natural objects and their subunits can be described on a statistical basis. Communication of these properties to others requires the use of standard units.

2.21-7. *Differences and Similarities of Interactions.* There are differences and similarities in the interactions of natural objects and their subunits. The differences and similarities can be classified into categories which are useful in inferring and predicting events that occur during interactions.

2.21-8. *Action Forces.* Interactions occur only as a result of unbalanced forces.

2.21-9. *Matter Conservation. Under ordinary conditions,* interactions of natural objects or their subunits may involve matter transformations; but matter is neither created nor destroyed.

2.21-10. *Energy Forms.* There are many kinds of energy.

2.21-11. *Energy Exchange.* The interactions of natural objects or their sub-units involve the exchange of energy which may be transformed from one kind to another as well as transferred in kind.

2.21-12. *Energy Conservation. Under ordinary conditions,* during the interactions of natural objects, energy is neither created nor destroyed.

2.21-13. *Matter/Energy Conservation.* All interactions tend toward equilibrium in which energy content (enthalpy) is a minimum and the energy distribution (entropy) is most random. In the process of attaining equilibrium, energy transformations, matter transformations or matter-energy transformations occur. Nevertheless, the sum of energy and matter in the universe remains constant.

2.21-14. *Interdependency of Nature.* There is organization in the universe and therefore there is an interdependency among all natural objects and their subunits.

2.21-15. Generalized Perceptions. To comprehend his total environment and his interrelationships with it, man has developed mental constructs (concepts, principles, theories, and "natural laws") to interpret it. These constructs can exist only beause man believes nature is not capricious and sample observations can therefore be generalized. Since these are constructs of the human mind, they are subject to continual revision as new observations are made which are in conflict with them.

2.21-16. *Science and Technology.* To man, some of the most important interactions in nature are those which affect his general welfare and survival; thus, he continually strives to better comprehend and interpret the universe and his interactions with it in order to improve the quality of these interactions. This had led to man's technological (including medical) achievements and the continual modification of technological devices.

2.21-17. *Science and Society.* Important to man is his interaction with his fellow man. This interaction has led to the development of his communicative techniques and the humanities. These have created another class of interactions which can only be understood in terms of man's humanistic constructs and values and their interrelationships (confrontations) with the scientifically developed comprehension of the universe and its technological applications.

2.22 *Science Teaching and the Conceptual Schemes*

These seventeen generalizations can be used in organizing the K–12 science curriculum to give the processes of science direction. However, these generalizations are not ones which the student can learn and comprehend by committing them to verbal memory. He must synthesize them from his own encounters with his environment and/or science learning experiences. This is an ever-expanding process which begins with linking similar attributes (such as common colors and shapes) of concrete objects to form simple concepts (such as red or square). Simple concepts are chained to form principles and principles to form hypotheses, theories and "natural laws". Eventually these theories are connected as generalized conceptual schemes. It is only when the student has had enough encounters with nature to make these generalizations internally via his own mental operations that we can say he has truly learned the big ideas.

The need for direct experiences with the real world does not negate verbal learning and instruction in science programs. Often a student may have experienced enought environmental encounters to complete the required mental connection but his mind has not made the inductive linkage. At this point the teacher should enter with oral or written instruction (which might be either interrogative or declarative) to spark the needed creative linkage. The role of the teacher is therefore to arrange a proper mix of the various kinds of science learning experiences so the student can progress along this ladder of generalizing as rapidly as his mental ability and maturation will permit.

Testing for the learning of generalizations provides one of the paradoxes of science curriculum design. Since it is impossible to examine directly the internal connections that exist in the student's mind, we must look for external evidence that the internal transformation has occurred. A paradox exists as most of the overt evidence which the student can provide for direct examination involves his application or translation of the generalized idea to new

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phenomena which is a deductive or analytical process rather than an inductive or synthetic one. This however, is not unscientific since it is the approach taken by a creative scientist when he proposes a new theory or hypothesis to connect previously unrelated phenomena. He must then put the new theory to test. Testing involves applying it to a new set of circumstances and checking to determine if the theory predicts what occurs. Only after several tests have reinforced the theory does the scientific community begin to develop confidence in the theory. If they do not, the theory is rejected. Similarly, in testing to determine if the student has in fact made a generalization, we can have confidence he has made the proper mental linkages if he applies the new knowledge successfully to several new situations. If he cannot make these translations, we assume that he lacks the synthesis even though he may verbalize by rote recall.

2.30 The Values and Attitudes Derived from Science Learning Experiences

Instruction that does not relate to living and provide the learner with standards by which he can weigh his own behavior is of little worth to him. Although mastery of the processes of sciencing and comprehension of the conceptual scheme of science can provide the student valuable tools for critically evaluating his actions, surely some standards of behavior emerge from science learning experiences which can give direction to the student's present and future life. A close examination of science and sciencing reveals that not only do scientists and science teachers have moral standards, but the very progress of the scientific enterprise during the last four centuries is the result of an intrinsic value system. Scientists must accept this system and characterize it in their scientific work or scientific progress stops.

This system may not encompass the total set of values which man has derived from a study of the humanities. On the other hand, it has much in common with that set even though the values may be stated slightly differently. Seven such values were identified by the Educational Policies Commission in *Education and the Spirit of Science.*[4] This body was directing itself to a discussion of those values inherent to the spirt of science or rational thought which should pervade all of education. There may be other values, or at least attitudes, which science learning experiences can and should contributes to the student's standards for living. After reviewing the statement of goals (Sec. 1.22) and other sources, four more values or attitudes were identified.

2.31 *The Statement of Values and Attitudes*

The resulting eleven values and attitudes are listed below with a brief commentary on each.

2.31-1 *Longing to Know and Understand*

Science has developed due to man's continual desire to understand the world around him. Scientific progress results from this curiosity and the continual discovery of new problems needing solution during the investigation of original problems. Such a curiosity can aid each person as he seeks to fulfill his social role.

2.31-2 *Questioning of All Things*

Man's understanding of nature is of his own conception and may be limited in comprehensiveness by the reference frame of the observer. Certainty of conclusions is therefore replaced by probability. Although conscientious observers try to be as objective as possible in arriving at conclusions, later evidence often brings these conclusions into question; consequently, even many "self-evident" truths must be held as suspect. Thus, each person must advance his own conclusions open-mindedly with modesty and humility since they may contain similar uncertainties.

2.31-3 *Search for Data and Their Meaning*

The longing to know and understand is satisfied by interpreting the data one collects. Accurately collected data is of little value since as data it is merely unrealted discrete bits of information; however, such data is essential for the formation of generalizations which yield understanding. To connect this data into concepts, principles, theories and conceptual schemes demands the employing of the processes of sciencing by a creative, flexible, unbiased mind.

2.31-4 *Demand for Verification*

The hypothetical nature of theories and other generalizations suggests that they are subject to test. They must, in turn, be tested. Scientists do not merely accept the need for testing their conclusions; they actively search ways to make such tests. Such searching by each one to test his conclusions can give greater credibility to his call for honesty.

2.31-5 *Respect for Logic*

The validity of untested inferences and predictions can be judged in terms of the consistency of the logic used in deriving them and the relevancy and adequacy of the premises on which the logic is based. Although inferences and predictions must eventually be tested by collecting new data, there would be little scientific progress without using the rules of logic. Such objectivity is needed in solving all types of problems.

2.31-6 *Consideration of Premises*

In searching to understand nature, man must be careful not to draw conclusions that overextend the evidence. The observer must try to prevent his own predispositions from shaping his collection and interpretation of data. He must also be aware of the limitations that the state of the art of sciencing may place on the scope of his investigations. The interpretation of the data must not be extended to propose solutions to problems to which the data are irrelevant. One must therefore consider the capabilities and limitations of both himself and science as he seeks to be a responsible member of society.

2.31-7 *Consideration of Consequences*

If one holds a belief or takes action that does not consider implications or consequences, he is acting in partial ignorance. Although knowledge of consequences is always incomplete, a thinking person does not act or believe without attempting to project the effects of his

action. He must evaluate all possible alternatives and pursue a course of action which will have the least possible harmful backwash. This evaluation must not be limited to personal and local consequences but must consider the total human race of which his is but a single member. This sense of responsibility should be inherent in all human thought.

2.31-8 *Respect for Order in Nature*

As man considers the effects of his actions on other humans, he is forced to consider an even wider circle of influence since there are inter-relationships linking all objects in nature. Although many of these inter-relations may be subtle, any careful study of nature will reveal them. Science learning experiences should do more than produce an awareness of this order in nature. They should nourish this awareness into an active respect.

2.31-9 *Demonstrating Confidence and Satisfaction*

For the individual to fulfill his social role, he must have pride in his work. He can do this best when he can experience success rather than failure. This does not mean that his efforts must always lead to success but that he directs his activities to this end. Science learning experiences should therefore be designed so that the student can attack life's problems with confidence and with a hope of achieving satisfactory results.

2.31-10 *Valuing Scientific Heritage*

Intellectually each generation stands on the shoulders of all preceding generations. The scientific enterprise and its technological applications illustrate this principle. Even though scientific knowledge and understanding is uncertain, an appreciation of the value system which characterizes scientific study and the tremendous labor it demands causes one to respect this knowledge. One should reject it only after assembling enough contradictory evidence to justify such action. Students should have science learning experiences from which they can develop this kind of respect for our scientific heritage.

2.31-11 *Developing a Commitment to Aesthetics in Nature*

Science learning experiences should cause the student to consider the consequences of his action on nature and to respect the order that exists in nature. Beyond this, he must have opportunities to become actively involved in maintaining this order.

2.32 *Limitation of Science Learning Experience in Teaching Values for Living*

Although these eleven values or attitudes can be gained or, at least, enhanced by properly directed science learning experiences, they do not comprise a total value system for living. Others will be added to these from a study of the humanities and from other institutions of which the student is a member such as the family and church. On the other hand, these eleven can both supplement and reinforce those obtained from other sources as well as provide some guiding principles for evaluating and organizing a total value system.

2.33 *Evaluating the Learning of Values and Attitudes*

There are many problems concerning how to teach for learning in the affective domain. Although teachers have always claimed that the development of attitudes, values and appreciations should be some of the most important outcomes of their instruction, true evaluation of these goals has seldom occurred. This failure most likely results from the absence of effective classroom measures for this type of learning. In the past, methods for evaluating such learning have received very little attention even in teacher training programs. However, as with all learning, if the behaviors can be identified which demonstrate that the desired learning has occurred, it is possible to construct a plan to evaluate it.

Identifying overt activities that provide evidence that values, attitudes and appreciations have been learned is more difficult than with most other types of learning. Psychomotor learning is probably the easiest to evaluate since the overt behavioral change is usually nearly identical to the desired learning. Evaluating learning in the cognitive domain is not as straightforward since the anticipated mental changes and the overt behavior evincing those changes are not identical. They become continually more divergent as one progresses from simple knowledge (or factual) learning to the more complex thought processes. This means that there is often a credibility gap between the measurement of learning and the actual learning. Although the testing instruments may validly indicate the examinee's ability to perform acts which should demonstrate the anticipated learning, he may be responding correctly for a completely different reason. This credibility gap is even greater when learning in the affective domain is evaluated. There may be other factors besides the student's internal value system causing him to display the overt behaviors which indicate he is characterizing the value. [5]

On the other hand, as discussed in 2.22, evaluation plans can be designed with a fairly high validity for measuring intellectual abilities and skills such as comprehending, applying, analyzing, synthesizing and evaluating. Such plans confront the student with situations which require using these kinds of thought. Evaluation in the affective domain, although admittedly less certain, should be very similar. It should evaluate the student in situations where he must apply values to determine his course of action. Since other motives (such as knowledge of the teacher's values) may cause the student to respond as a particular value would dictate, it is often necessary to evaluate the student under more relaxed conditions than for other types of learning.

2.34 *Teaching for Values and Attitudes*

As indicated above, one problem in evaluating learning in the affective domain is the identification of the overt behaviors which indicate this kind of learning. Teachers have often failed to identify those behaviors which characterize persons committed to desired values. They have also failed to design classroom strategies and learning situations through which students can either display or apply these values and attitudes. Perhaps even more critical is the failure of common evaluation systems to reward students who act positively in terms of desired values and attitudes. Many evaluation systems which test only for recall completely negate any positive attitudes that may have developed.

If values and attitudes are to be learned, positive

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behaviors must be identified. Then educational strategies must be designed not only to allow for the behaviors, but to actively encourage them. If the "questioning of all things" is a desirable value, then the classroom atmosphere must be such that the student can freely question and the evaluation system must reward him for this questioning. If he should have "respect for logic", then he must have an opportunity to think logically and be rewarded for doing so. If a driving "search for data and their meaning" is a desirable attitude, the student must be given opportunities to search, be encouraged to do so and be rewarded for searching. Each of the eleven values could be discussed in a similar manner; however, the important principle to be considered in teaching for value learning is that behaviors must be identified that evince value learning and instructional strategies designed to encourage and reward these behaviors.

2.40 Psycho-motor Skills in Science Learning Experiences

If a student is to be an actual practitioner of science, he will need to perform many manipulations with equipment and instruments. Although each investigation requires a unique assemblage of apparatus, there are several instruments and techniques which are common to several acts of sciencing. Most manipulative skills will demand some cognitive learning during the student's initial experience with them, but if they are to be useful to the student in varied activities, they need to be reduced to stimulus→response or chaining type reactions. These psychomotor skills include reading a multitude of measuirng insturments from the simple meterstick through thermometers, graduates and burets to balances, electrical meters, barometers and vernier scales, adjusting and focusing microscopes, mixing chemicals and manipulating a slide rule.

Acquisition of these psychomotor skills will facilitate the student in his sciencing. They may actually sharpen his psychomotor reflexes or transfer to real life activities, but it is unrealistic to consider these as the major goals for science learning. They are only tools which the student can use to achieve other objectives both in school and out. Even though the initial acquisition of the skill may require systematic instruction, this instruction should be considered only as a means to an end by both teacher and student.

2.50 The Subject Matter of Science

Since the major emphasis of this section has been on the processes, conceptual schemes and values and attitudes intrinsic to science, it might appear the importance of the subject matter of science is being reduced. It may be true that much past science teaching has overemphasized the regurgitation of "scientific facts" – often little more than isolated bits of data. Additionally "scientific knowledge" is exploding much too rapidly for any one person to catalog it totally. Conversely mental transformations must operate on data, generalizations must link facts, and values and attitudes result from interpretating data; therefore sciencing cannot occur in a vacuum. It must operate on something. This something is the subject matter of science courses with proper expansion and selection to include the student's total relevant physical and biological environment.

As can be seen by reading the objectives, these Guidelines do not slight science subject matter. Since very few factual details are retained by the learner, the appeal here is for school science programs which are directed toward helping the student discover, understand and execute his role in a dynamic society by using the processes of sciencing to arrive at generalizations which he can apply to real world problems after evaluating them by an organized value system. Only as science subject matter contributes to the education of this kind of productive individual does it have reason for being a part of the school curriculum.

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1. Walbesser, Henry, *A Model for the Evaluation of Curriculum*, Washington, D.C., American Association for the Advancement of Science, Miscellaneous Publications, 1967.
2. Americann Association for the Advancement Science, *Science—A Process Approach*, Parts A-G, New York, N.Y., Xerox Corporation, 1969-70.
3. The wording of several of the schemes (particularly 2.21-6 and 2.21-13) is close to that used in: National Science Teachers Association, *Theory into Action*, Washington, D.C., NSTA, 1964.
4. Education Policies Commission, *Education and the Spirit of Science*, Washington, D.C., National Education Association, 1966.
5. Eiss, Albert F., and Harbeck, Mary Blatt, *Behavioral Objectives in the Affective Domain*, Washington, D.C., NSSA-NTSA, 1969.

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3.0 Performance Objectives for School Science Planning

3.10 The Role of Performance Objectives in Instructional Planning

It has been emphasized that instruction must be evaluated in terms of its outcomes, i.e. its benefits to the students. For this to be effectively accomplished, school systems, schools and teachers must clearly define:

1. Where they are going,
2. How they are going to get there,
3. How they are going to know when they have arrived.

3.11 *The Need of Specific Instructional Objectives*

Defining these points requires specific instructional objectives for each lesson. These objectives should identify those overt student behaviors which demonstrate that the desired learning has occurred. As schools are held more and more accountable for their programs, it is only as they plan and evaluate their programs in terms of specific instructional objectives that they can provide concrete evidence of their effectiveness.

If a general goal of science is to develop an understanding of the constant change which occurs in nature, what is it that the student can do to demonstrate this understanding? Although the understanding of this idea will become progressively more sophisticated as the student matures, there should be certain identifiable steps along the road to its eventual realization. Many texts use the principal of seasonal changes as a desirable second grade subconcept in this hierarchy. But it is too elusive to state the goal for a second grade unit as: The student should develop an understanding of seasonal change. Its attainment cannot be easily evaluated. Instructional objectives must deal with specific basic concepts which are prerequisite to the synthesis of this principle and for which specific overt behaviors can be identified.

What are the student behaviors that indicate student comprehension of seasonal changes? It is when he can state verbally that deciduous trees lose their leaves in the fall? Or that it is hot in the summer and cold in the winter? Or that many perennial flowers bloom in the spring? Comprehension of this principle involves the synthesis of these concepts with many others, but converting these questions into objective format would lack the specificity needed for effective evaluation. Consider an objective that says: The student should be able to recognize that certain trees lose their leaves in the fall. The behavior demonstrating this recognition should be identified. Is it identifying a picture of a fall scene? Or predicting the changes that will occur in a picture of a summer scene when autumn arrives? Or identifying trees that lose their leaves and those that don't. Or identifying from a selection of pictures or twigs, the season of the year during which the pictures were taken or the twigs were initially collected? Again, performing each of these acts can contribute to the recognition that certain trees lose their leaves in the fall, but an instructional objective needs to be more specific to be useful in evaluating instructional effectiveness.

One such objective might be: The student will, after observing several summer-autumn picture sequences of various trees, predict some easily observable characteristics that will be displayed by a given tree in the fall after viewing a picture of the same tree taken during the summer. These pictures may either be prepared prints or actual photographs taken either by the teacher or the class for this purpose. Those students who predict these changes with reasonable accuracy three out of four times will be considered to have accomplished this objective.

Many teachers have fears that stating objectives with this specificity will dehumanize instruction. While some of these fears may have foundation, many are more imaginary than real. Most good teachers already utilize unstated but mentally envisioned specific objectives in planning their teaching and testing. Their classroom activities and the testing programs would likely be more consistent if these objectives were clearly stated and available for their continual reference. Secondly, we have often failed, as mentioned in 2.22 and 2.33, to clearly identify and define those overt behaviors which demonstrate that the desired learning has occurred. If school programs are to be justified, this problem must be solved. Thirdly, some teachers feel that such objectives will constrict education to an assembly line approach. As has been emphasized, objectives must be personalized to help each student discover, understand and execute his role in a dynamic society. Specific instructional objectives will therefore aid teachers to more effectively fulfill their professional role.

It is only when instructional objectives have been clearly stated that teachers can know where they are going, how they are going to get there, and when they have arrived.

3.12 *A Word of Caution*

Some caution is needed in using specific instructional objectives. Their achievement must not become an end to itself but must remain as a step in an efficient means for accomplishing the purposes of education and the general goals of the curriculum area. Thus, the stated specific objectives must undergo continual review to determine their relevancy and adequacy for meeting students needs and educational goals. Plans for this kind of evaluation, in addition the usual evaluation of objective achievement, should be part of any curriculum improvement program.

3.13. *Performance Objectives In The Instructional Program*

Although the above precisely stated instructional objective is one which gives definite direction in planning classroom strategies, it would be unwise to use this specificity in a State publication. On the other hand, to outline only broad goals for the various grades and courses in the school science program would be of little value to Indiana schools and teachers. A State publication should be most useful if the objectives it contains are specific enough to provide school science programs direction but general enough to allow teachers and schools the flexibility and creativity necessary to serve their particular students.

Both the terms and their definitions used in discussing educational objectives have been subject to considerable controversy. To minimize this problem, the approach taken in these Guidelines was to identify levels of objectives which needed attention, assign each an appropriate descriptive term and use these terms consistently. The

terms chosen were: *general educational purposes, goals, performance objectives* and *instructional objectives.*

The general educational purposes and goals used in this publication are stated in 1.2 and 2.0.

Although often used interchangeably with the terms: "behavioral objectives" and "instructional objectives," in this publication *performance objectives* refer to those objectives which identify the specific desired student behavioral act without specifying either the conditions under which it will occur (except when needed for clear communication of the act) or the criteria of acceptable performance.

Section 3.30 of these Guidelines contains a list of nearly 900 such objectives. The committee has identified these as common (even though not so stated) to most science programs or as desirable additions to present programs. Even with this massive number of assembled objectives, local schools should not consider this list either restrictive or prescriptive. Each school must review it and add or subtract objectives as the local situation demands. It is, however, the hope of the committee that this list may serve local schools and teachers as a base from which they may review their present program and gain direction in improving it. A more detailed discussion of the structure of this list is contained in 3.20.

The term *instructional objectives* refers to those objectives which not only identify the specific desired student behavioral act but also the conditions under which the performance of the act will be measured plus the criteria for acceptable performance of it. The objective in the fourth paragraph of 3.11 is of this type.

As already mentioned, it seems beyond the realm of a State Committee to develop instructional objectives for local classrooms. The conditions under which the measurable act is to be performed is, to a very great extent, determined by local conditions and facilities as well as by student interests. Although criteria of acceptable performance must be developed by testing in the local situation, they must be realistic in terms of the background and ability of the students. Conditions and criteria will therefore vary from school district to school district, usually from school to school, often from classroom to classroom, and in truly relevant programs, from pupil to pupil. The writing of instructional objectives must therefore be left to local teachers and curriculum planners. Many of the performance objectives (particularly at the upper grade levels) in the list in 3.30 can be expanded into an array of instructional objectives to develop the various competencies required for the student to demonstrate an acceptable performance of the specified act.

For each instructional objective, the teacher must develop one or more classroom strategies to lead to its achievement. These strategies should include activities and materials and must be planned in terms of available or obtainable resources.

3.20 The Format of the List of Performance Objectives in These Guidelines

The pattern used in organizing the list of performance objectives involves branched sequential subject matter strands coordinated with the processes, conceptual schemes, and attitudes by a parallel column structure. Each of these features is briefly discussed in the next three subsections.

3.21 *Strand Structure*

The more traditional subject matter areas of science are used as the categories or strands for sequencing the performance objectives. For the elementary and junior high-middle school, the objectives are organized into four strands. These are: living things, matter and energy, earth and space, and a general strand which cuts across all of the other three strands by including objectives which either are common to each or are process and skill objectives which support the sciencing objectives in each. Due to the pervading nature of this strand it is placed first in the presentation of the performance objectives in 3.30.

At the senior high level the performance objectives are branched into five strands to more closely fit the customary organization of the senior high science curriculum. These are: general, biology, chemistry, earth science and physics.

For a more detailed description of how the objectives in these strands should be employed in determining the content of various courses see 4.31 thru 4.33.

3.22 *A Continual Sequence With Breaks*

Although it seemed undesirable to specify grade level usage for the objectives, two concessions were made.

First, the list is organized into three separate lists: one for the Kindergarten and Elementary grades, one for the Middle School – Junior High years, and one for Senior High School. This categorization suggests the overlapping, nongraded nature of the list. In the senior high lists no attempt is made to distinguish objectives appropriate for introductory courses in the four disciplines from those appropriate for advanced courses. These decisions should be based on local conditions and student ability. (This point will also be more fully discussed in 4.33.)

The second concession was to indicate in each Elementary strand the objectives appropriate for the average student in any particular grade of a traditionally organized elementary school by inserting into the objective column, Levels One through Six notations. Due to the lack of uniformity in kindergarten programs, particularly in terms of science experiences, kindergarten and first grade are considered as one. Schools and teachers are cautioned not to consider these as prescriptive notations but as suggestive guides only. Students must begin working at their level of development and be allowed to progress as rapidly and as far as their maturation permits.

3.23 *The Parallel Columns and Their Use*

The lists of performance objectives are organized in four parallel columns. *Column 1 lists the processes* which the student would use in achieving the performance objective. *Column 2 indicates the conceptual scheme* with which the objective may be identified. *Column 3 states the performance objective. Column 4 gives the values and attitudes* that performance of the objective should help develop. Where more than one process, conceptual scheme,

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or value or attitude is involved, the ones felt to need the greatest emphasis are set in italics.

Columns 1,2 & 4 will be helpful to local school districts, schools, and particularly teachers as they implement these Guidelines, i.e. as they refine these performance objectives into instructional objectives, classroom strategies and evaluation procedures. *The processes* should help them *identify the type of science learning experiences* which will lead to the desired student performance. *The conceptual schemes* should help teachers *define a direction for these activities* and help them identify the emphasis for follow-up discussion and evaluation. The *values and attitudes* should help them *define the classroom atmosphere* most conducive to the achievement of the objective as well as provide additional direction for follow-up discussion and evaluation.

3.30 The List of Performance Objectives

On the following several pages are listed nearly 900 performance objectives which the committee hopes will aid the schools of this State as they attempt to improve their service to Indiana youth.

This list of objectives still needs refinement. Although it has been reviewed by several teachers throughout the State, insignificant, or inappropriate, or redundant or poorly worded objectives may remain. There may be gaps in the coverage of significant subject matter. Some of the sequencing may be inappropriate. The taxonomy of processes, conceptual schemes and values and attitudes may not always be entirely correct. The help of classroom teachers, science supervisors and researchers in science education is solicited to correct these possible flaws and to validate the hierarchy of processes, the set of conceptual schemes and the set of values and attitudes. It is hoped that such findings will be funnelled to the Curriculum Division of the Office of the State Superintendent of Public Instruction. With this help, it may be possible in three or four years to revise these Guidelines into a publication that can have even greater impact on school science programs in Indiana.

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Using Numbers	*Statistical Descriptions*	1. add, subtract, multiply and divide (in base 10) numbers up to three digits.	Demonstrating Confidence and Satisfaction, Respect for Logic
Inferring, Using Numbers	*Statistical Descriptions*	2. estimate the result of calculations performed on appropriate measurements.	Demonstrating Confidence and Satisfaction, Respect for Logic
Communicating	*Statistical Descriptions,* Generalized Perceptions	3. translate a word description of a mathematical relationship into a mathematical sentence.	*Demonstrating Confidence and Satisfaction,* Respect for Logic
Communicating	*Statistical Descriptions,* Generalized Perceptions	4. translate a mathematical equation into words.	Demonstrating Confidence and Satisfaction, Respect for Logic
Simulating, Using Numbers	*Statistical Descriptions*	5. calculate with a slide rule, correctly placing the decimal point in the answer, arithmetic problems such as: (a) multiplying whole and decimal numbers, (b) dividing whole and decimal numbers, (c) doing a series of such multiplications and divisions (in any order) and (d) finding the square and square root of any number.	*Demonstrating Confidence and Satisfaction*
Measuring, Using space/time relationships, Classifying, Categorically conceptualizing	*Statistical Descriptions*	6. state whether a given metric measurement is a measurement of mass, volume, or length.	*Consideration of Premises, Demonstrating Confidence and Satisfaction*
Analyzing systems, Measuring	*Statistical Descriptions,* Generalized Perceptions	7. measure and record all the dimensions of a solid using the appropriate metric scale indicating the uncertainty of the measurement.	*Consideration of Consequences, Questioning Of All Things,* Search for Data and their Meaning
Interpreting data, Measuring	*Statistical Descriptions* Generalized Perceptions	8. record measurements using scientific notation (powers of 10).	*Demonstrating Confidence and Satisfaction,* Respect for Logic
Interpreting data, Using Numbers	*Statistical Descriptions,* Generalized Perceptions	9. add, subtract, multiply, divide and find powers and roots of data recorded in scientific notation.	*Respect for Logic, Consideration of Premises*
Interpreting data, Measuring	*Statistical Descriptions,* Generalized Perceptions	10. calculate surface area and volume of solids indicating the uncertainty of the result.	*Respect for Logic, Consideration of Premises, Search for Data and their Meaning*
Measuring, Communicating	*Statistical Descriptions,* Generalized Perceptions	11. use correct units with both measured and calculated quantities.	*Search for Data and their Meaning, Consideration of Premises*

Processing	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Generalizing, Communicating	*Statistical Descriptions,* Generalized Perceptions, Science and Society	12. defend the need for standardized units of measurement.	*Search for Data and their Meaning,* Respect for Logic, Consideration of Premises
Interpreting data, Measuring	*Statistical Descriptions,* Generalized Perceptions	13. convert units within a measurement system such as MKS (meter, kilogram, second).	*Respect for Logic,* Search for Data and their Meaning
Analyzing systems, Interpreting data, Measuring, Communicating	*Statistical Descriptions,* Generalized Perceptions, Science and Society	14. convert units in the MKS (meter, Kilogram, second) system to units in the cgs (centimeter, gram, second) system and vice versa.	*Longing to Know and Understand, Search for Data and their Meaning,* Consideration of Consequences
Interpreting data, Ordering, Equating	*Statistical Descriptions,* Generalized Perceptions, Science and Society	15. approximate "order of magnitude" for a given measurement in other units (e.g. given the measurement of $1 \times 10^{13} A^{o}$, the student should indicate that this is 10^5 cm., 10^3 m., 1 km. and is about .6 of a mile).	*Longing to Know and Understand, Search for Data and their Meaning,* Consideration of Consequences.
Interpreting data, Measuring	*Statistical Descriptions,* Generalized Perceptions	16. name and apply a rule about significance of figures to identify those numerals which should be retained in a measurement or a calculation involving results of any measurement.	*Consideration of Premises, Search for Data and their Meaning, Respect for Logic*
Analyzing systems, Measuring, Using space/time realtionships	*Statistical Descriptions,* Generalized Perceptions	17. measure and record time in standardized units indicating the uncertainty of the measurement.	*Consideration of Premises, Search for Data and their Meaning,* Respect for Logic
Analyzing systems, Translating	*Generalized Perceptions, Science and Society, Statistical Descriptions*	18. differentiate magnitudes of time intervals and suggest historical and practical reason for their use.	*Valuing Scientific Heritage*
Analyzing systems, Measuring	*Statistical Descriptions,* Generalized Perceptions	19. determine and record the temperature of a liquid indicating the uncertainty of the measurement.	*Consideration of Premises, Search for Data and their Meaning*
Analyzing systems, Formulating models	*Differences and Similarities of Interactions, Energy Forms, Generalized Perceptions*	20. construct a demonstration to distinguish between heat and temperature.	*Longing to Know and Understand, Search for Data and their Meaning, Respect for Logic*
Formulating statistical models, Experimenting	*Statistical Descriptions, Interdependency of Nature, Generalized Perceptions,* Differences and Similarities of Interactions, Matter Conservation, Energy Conservation	21. from the initial pressure, volume and temperature for a sample of an ideal gas and two of these after the conditions have been changed, calculate the unknown.	*Search Data and their Meaning,* Respect for Logic, Valuing Scientific Heritage
Verbally associating	Science and Technology	22. Identify all common laboratory apparatus by name.	Demonstrating Confidence and Satisfaction

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Psycho-motor skills, Assimilating	*Statistical Descriptions*	23. use a double pan or triple beam balance to determine the mass of a sample of any solid or liquid taking proper precaution so that the balance is not damaged, none of the sample is lost, and the sample is not contaminated. In addition, the value reported should indicate the uncertainty of the measurement and be correct within the limits of the precision of the balance used.	Demonstrating Confidence and and Satisfaction, Consideration of Consequences
Psycho-motor skills		24. insert a glass tube into a rubber stopper demonstrating ability to use a lubricant and protect himself from from possible injury by broken glass.	Demonstrating Confidence and Satisfaction, Consideration of Consequences
Psycho-motor skills	Differences and Similarities of Interactions	25. heat a liquid in a test tube to boiling without any overflow of the liquid.	Demonstrating Confidence and Satisfaction, Consideration of Consequences.
Interpreting data, Measuring, Using space/time relationships.	*Statistical Descriptions,* Generalized Perceptions	26. read the volume of a liquid in a graduated cylinder and/or a buret and record the measurements indicating its uncertainty.	*Consideration of Premises, Respect for Logic,* Search for Data and their Meaning
Psycho-motor skills	Differences and Similarities of Interactions	27. decant the liquid from over a solid material without a measurable loss of any of the solid.	Demonstrating Confidence and Satisfaction, Consideration of Consequences.
Psycho-motor skills, Measuring	Statistical Descriptions	28. use a bulb and pipette to transfer a specified quantity of liquid from a stock bottle to a beaker with an accuracy of ±0.1 ml.	Demonstrating Confidence and Satisfaction, Consideration of Consequences
Psycho-motor skills, Recognizing variables, Measuring	Statistical Descriptions	29. properly clean, rinse, fill and use a buret, pipette, etc.	Demonstrating Confidence and Satisfaction, Consideration of Consequences
Psycho-motor skills, Manipulating variables	Differences and Similarities of Interactions, Energy Exchange	30. light a bunsen burner and adjust the flame appropriately to efficiently achieve the desired use.	Demonstrating Confidence and Satisfaction, Consideration of Consequences
Analyzing systems, Psycho-motor skills, Translating	*Statistical Descriptions,* Generalized Perceptions	31. use a mercury barometer to measure atmospheric pressure to the nearest millimeter of Hg, convert the reading to normal units of pressure and correctly describe a rationale for accepting this length of a column of Hg as a measure of atmospheric pressure.	*Search for Data and their Meaning, Respect for Logic,* Valuing Scientific Heritage
Translating	*Statistical Descriptions*	32. demonstrate a safe and appropriately accurate procedure for preparing a prescribed volume of a specific concentration of a solution from a stock solution of an acid or base.	Demonstrating Confidence and Satisfaction, Consideration of Consequences

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Defining operationally, Analyzing systems	*Interdependency of Nature, Constant Change*	38. working from a prepared diagram, describe the nitrogen cycle as it occurs in his own words using correctly the terms: nitrifying, denitrifying, fixing nitrogen, nitrate, ammonia, bacteria, animal wastes, and decomposers.	*Demonstrating Confidence and Satisfaction*
Analyzing systems, Synthesizing, Interpreting data	*Constant Change,* Interdependency of Nature, Science and Technology	39. describe, by words or diagrams, the process of succession as it occurs in in the following situations: a. a sandy lake shore, b. a fallen tree, c. an abandoned field, d. a small pond, e. a salt or fresh water marsh, f. a coral lagoon, g. artificial harbors and breakwaters, h. lakes behind dams, i. any suitable local area.	*Respect for Order in Nature, Search for Data and their Meaning*
Cognitively evaluating alternatives, Analyzing systems or Designing studies, Performing investigations, Synthesizing results, Affective and Social Evaluating	*Interdependency of Nature, Science and Technology, Science and Society,* Force Fields	40. describe the buildup of materials in habitats disturbed by man which may have detrimental effect upon the individuals of the ecosystem as a whole; in each case identify the manner in which the material may be harmful and contrast with economic and social values of continued usage. i.e. mercury, disposable containers, etc.	Consideration of Consequences, Consideration of Premises, Developing A Commitment to Aesthetics in Nature
Formulating models, Analyzing systems	Interdependency of Nature, and many others	41. discuss the implications of the hypothesis, "The biosphere, as it occurs on earth, is a single macro-organism".	Developing a Commitment to to Aesthetics in Nature, Consideration of Premises, Consideration of Consequences
Classifying, Equating	Differences and Similarities of Objects, Space/Time Reference Frames	42. by personal observation and investigation, identify a given number of organisms of a designated local ecosystem (some suggested ecosystems are: a. the back yard, b. the vacant lot in the neighborhood, c. the aquarium in the school room, d. the herbarium in the school room, e. any city park).	Demonstrating Confidence and Satisfaction
Synthesizing results, Designing studies, Performing Investigations	Interdependency of Nature, Matter/Energy Conservation, Energy Conservation, Science and Technology	43. construct a study to investigate the effects of competition for water, light, and nutrients on the characteristics and distribution of organisms in a biome and generalize these results to explain the distribution of organisms in various biomes.	*Search for Data and their Meaning,* Consideration of Consequences, Respect for Logic
Classifying, Interpreting data	Differences and Similarities of Objects, Differences and Similarities of Interactions, Interdependency of Nature	44. distinguish between heterotrophs and autotrophs by superficial examination of specimens of the organisms.	*Search for Data and their Meaning,* Demonstrating Confidence and Satisfaction

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Classifying, Observing	Differences and Similarities of Objects	45. identify by microscopic examination of suitable specimens: a. bacterial colonies, b. mold, c. algae, d. protozoans, e. any suitable item.	*Search for Data and their Meaning,* Demonstrating Confidence and Satisfaction
Defining operationally, Interpreting data	Differences and Similarities of Objects, Differences and Similarities of Interactions	46. describe the general features of the classification system generally used by biologists such as: a. binomial nomenclature, b. major kingdoms of living organisms, c. subdivisions — phyla, genera, species.	*Search for Data and their Meaning,* Demonstrating Confidence and Satisfaction
Classifying	*Differences and Similarities of Objects*	47. classify given organisms, both plant and animal, into their corrent phyla with the aid of appropriate keys.	*Search for Data and their Meaning,* Demonstrating Confidence and Satisfaction
Classifying	*Differences and Similarities of Objects*	48. classify, with a key, complete plant specimens into the following categories: a. monocotyledon, b. dicotyledon, c. gymnosperms, d. fungus, e. bryophytes, f. ferns	*Search for Data and their Meaning,* Demonstrating Confidence and Satisfaction
Analyzing systems, Synthesizing or *Designing studies, Performing investigations,* Synthesizing results	*Fundamental Structures,* Constant Change, Force Fields	49. relate meiosis to: a. the prediction of variation of characteristics in offspring, b. Mendel's laws of segregation and independent assortment.	*Search for Data and their Meaning,* Consideration of Premises
Formulating statistical models	*Statistical Descriptions,* Differences and Similarities of Interactions, Force Fields	50. describe, by diagrams or mathematical procedures, the elements of inherited characters as they occur in: a. complete dominance, b. co-dominance, c. linkage of characters, d. sex linkage, e. multiple alleles, f. genes in gene pools (Hardy-Weinberg)	*Search for Data and their Meaning,* Questioning of All Things
Cognitively evaluating alternatives, Analyzing systems	*Generalized Perceptions,* Constant Change	51. state the major parts of Darwin's Theory of Natural Selection; cite evidence for and indicate the flaws in each part.	Developing a Commitment to Aesthetics in Nature, Search for Data and their Meaning, Consideration of Premises, Demand for Verification
Analyzing systems	*Differences and Similarities of Interactions, Interdependency of Nature, Constant Change,* Generalized Perceptions	52. cite examples of adaptation by organisms to their peculiar environment; distinguish between Creative, Darwinian, and Lamarckian adaptation.	*Developing a Commitment to Aesthetics in Nature, Search for Data and their Meaning,* Questioning of All Things, Demand for Verification
Designing studies, Performing Investigations, Synthesizing results	*Interdependency of Nature, Matter/Energy Conservation, Science and Technology,* Science and Society	53. predict the adaptations that may be initiated in various organisms that survive a changing environment.	*Consideration of Consequences, Developing A Commitment to Aesthetics in Nature*

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Analyzing systems, Synthesizing or *Designing studies, Performing Investigations, Synthesizing results, Social Evaluating*	*Interdependency of Nature,* Energy Exchange, Energy Conservation, Matter Conservation	54. describe the relationships between the following items as they occur in various organisms: number of offspring, amount of parental care, survival rate, their position in the food web of their community. Cite examples to illustrate the relationships.	*Search for Data and their Meaning,* Consideration of Consequences, Developing A Commitment to Aesthetics in Nature
Interpreting data, Synthesizing	*Statistical Descriptions, Generalized Perceptions*	55. given data from suitable observations of plant growth at various temperatures, plot the data and generalize from its analysis the optimum temperature range for the growth of that organism.	Search for Data and their Meaning, Respect for Order in Nature

3.33–C High School Objectives – Chemistry

NOTE: In this set of objectives the word "reaction" is used to refer to student observed and/or manipulated chemical systems while "equation" refers to system that may be only discussed.

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Recognizing variables, Classifying or *Designing studies*	*Differences and Similarities of Objects*	1. group the substances in a collection of samples of materials and describe the basis for the grouping.	*Longing to Know and Understand, Search for Data and their Meaning, Demonstrating Confidence and Satisfaction*
Experimenting or *Designing studies*	*Differences and Similarities of Objects*	2. describe a procedure that could be used to classify a sample of a material as an element, a compound or a mixture.	*Search for Data and their Meaning,* Consideration of Premises
Manipulating variables, Classifying	*Differences and Similarities of Objects, Fundamental Structures*	3. describe at least one test that would help determine whether a sample that appears to be pure consists of one element or more than one element.	Search for Data and their Meaning
Formulating statistical models, Translating	*Energy Exchange, Energy Conservation,* Statistical Descriptions, Differences and Similarities of Interactions	4. calculate the value of the fourth item, from data provided or collected for any three of the following: (a) the thermal energy (heat transferred to or from) of a substance, (b) the mass of the substance, (c) the heat capacity of the substance and (d) the temperature change of the substance.	*Search for Data and their Meaning,* Respect for Logic, Respect for Order in Nature
Designing studies, Performing investigations	*Differences and Similarities of Objects, Statistical Descriptions*	5. identify a particular substance from a list of common chemicals by using a handbook to find characteristic properties of the chemicals.	*Search for Data and their Meaning, Questioning of All Things*
Psycho-motor skills, Assimilating, Measuring	*Differences and Similarities of Interactions,* Statistical Descriptions	6. quantitatively separate a solid from liquid by filtration.	*Demonstrating Confidence and Satisfaction*
Psycho-motor skills, Assimilating, Measuring	*Differences and Similarities of Interactions, Statistical Descriptions*	7. quantitatively separate a dissolved solid from a liquid by evaporation without decomposition of the solid.	Demonstrating Confidence and Satisfaction
Manipulating variables, Communicating	*Statistical Descriptions*	8. construct a heating curve and/or cooling curve for a given substance from data collected in the laboratory.	*Search for Data and their Meaning,* Demonstrating Confidence and Satisfaction
Abstracting, Formulating Hypotheses, or *Formulating models,* Interpreting data	*Generalized Perceptions, Fundamental Structures, Energy Exchange, Energy Forms,* Energy Conservation	9. infer the microscopic changes that occur at each inflection point and along the curve connecting the inflection points on a time-temperature plot for a pure substance.	*Longing to Know and Understand, Consideration of Premises,* Search for Data and their Meaning
Translating, Interpreting data	*Fundamental Structures, Statistical Descriptions,* Generalized Perceptions	10. name the elements represented, the number of the atoms of each element and the mass of each element in one mole of the compound from the formula for any given compound.	*Valuing Scientific Heritage, Demonstrating Confidence and Satisfaction*

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Performing investigations	*Matter Conservation*	11. collect evidence in support of the Law of Conservation of Mass in chemical reactions.	*Demand for Verification*, Respect for Order in Nature.
Translating	*Statistical Descriptions, Generalized Perceptions*	12. calculate the molecular (formula) weight of a compound for which the formula is given.	Demonstrating Confidence and Satisfaction
Performing investigations, Translating	*Statistical Descriptions*	13. collect experimental data and calculate the empirical formula of a compound.	*Search for Data and their Meaning*, Demonstrating Confidence and Satisfaction
Analyzing systems	*Generalized Perceptions, Statistical Descriptions*, Matter Conservation	14. write an equation to describe a chemical system that he has observed.	Respect for Logic
Translating	*Generalized Perceptions*	15. construct the chemical system described by an equation.	Demonstrating confidence and Satisfaction
Simulating, Analyzing systems	*Matter Conservation, Statistical Descriptions*	16. write a balanced chemical equation for a reaction involving no more than three reactants or products when given the formulas for the reactants and the product of the reaction.	*Respect for Logic*
Translating, Interpreting data	*Matter Conservation, Statistical Descriptions*	17. calculate the mass, moles, molecules or atoms for any reactant or product in a reaction from the chemical equation for the reaction and the corresponding mass, number of moles, number of molecules, or number of atoms for any other reactant or product.	*Respect for Logic*, Search for Data and their Meaning
Translating	*Matter Conservation, Statistical Description*	18. calculate mass, moles or volume of any of the gaseous products or reactants from the equation for the reaction and the corresponding mass, moles or volume of any of the other reactants or products.	*Respect for Logic, Consideration of Premises*, Search for Data and their Meaning
Psycho-motor skills, Assimilating, Measuring	*Statistical Descriptions*	19. do successive titration of three equal samples of standardized dilution which agree within the limits of the uncertainty of measurements of the aparatus used.	Demonstrating Confidence and Satisfaction
Translating	*Generalized Perceptions, Statistical Descriptions*, Fundamental Structures	20. for a given sample of a compound (or the mass of a sample) calculate any of the following from its correct formula: (a) the number of moles of the compound in the sample, (b) the number of moles of any one element in the sample, (c) the number of molecules (formula units) in the sample or (d) the number of atoms of any one element in the sample.	*Search for Data and their Meaning*, Respect for Logic, Consideration of Premises

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Translating	*Generalized Perceptions*, Statistical Descriptions	21. calculate for a gaseous sample the value of the fourth item from data for three of the following: (a) the number of moles (or mass) in the sample, (b) the pressure of gas in the sample, (c) the volume of the sample, (d) the temperature of the sample.	*Search for Data and their Meaning*, Respect for Logic
Translating, Abstracting	*Generalized Perceptions*, Differences and Similarities of Interactions	22. describe in qualitative terms how Kinetic Theory accounts for: (a) differences in gases and liquids, (b) pressure of a gas, (c) evaporation, (d) difference in diffusion rates for gases and liquids, (e) the ordinary observation that the boiling point increases with molecular weight, (f) the relationship between the rate of diffusion and molecular weight.	*Consideration of Premises*
Analyzing systems, Cognitively evaluating alternatives	*Generalized Perceptions*	23. identify those assumptions of the Kinetic Theory that are not true of real gases and describe at least one false prediction that could be made based on the theory because these assumptions are overgeneralizations.	*Questioning of All Things*
Formulating models, Abstracting	*Generalized Perceptions, Fundamental Structures, Energy Exchange, Energy Forms*, Energy Conservation	24. describe qualitatively what occurs during the phase change from a solid to a liquid in terms of (a) energy, (b) temperature, (c) distance between particles, (d) arrangement of particles and (e) motion of particles.	*Longing to Know and Understand, Consideration of Premises*, Search for Data and their Meaning
Translating	*Energy Exchange, Energy Forms*, Energy Conservation	25. calculate the change in energy when a given substance at a given temperature is changed to some new temperature in another phase when given the specific heat of the substance in each phase, the heat of vaporization, and the heat of fusion of the substance.	Search for Data and their Meaning
Interpreting data	*Fundamental Structures, Force Fields*	26. describe experimental evidence to support the concept that atoms contain subparticles that possess electrical charge.	Search for Data and their Meaning
Formulating statistical models, translating, Analyzing systems	*Generalized Perceptions*, Fundamental Structures, Differences and Similarities of Interactions, Statistical Descriptions	27. assign oxidation numbers to each element in a compound or radical.	*Longing to Know and Understand*, Respect for Order in Nature
Experimenting	*Fundamental Structures*, Statistical Descriptions	28. demonstrate a procedure for finding the approximate size of molecules and atoms.	Search for Data and their Meaning

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Interpreting data, Defining Operationally, Classifying	*Differences and Similarities of Interactions,* Matter Conservation, Generalized Perceptions	29. identify from a list of chemical equations those which represent oxidation-reduction (redox) reactions.	*Search for Data and their Meaning*
Analyzing systems, Defining operationally, Classifying	*Differences and Similarities of Interactions, Generalized Perceptions*	30. for any reaction involving oxidation and reduction, identify the reactant that is oxidized, the reactant that is reduced, the product of the oxidation and the product of the reduction.	*Search for Data and their Meaning*
Experimenting, Analyzing systems, Interpreting data	*Action Forces, Differences and Similarities of Interactions,* Generalized Perceptions	31. after conducting an investigation using lab equipment, strips of various metals and aqueous solutions of corresponding metal ions: (a) write equations for the half reactions which occur when any of the metal strips are placed in any solution containing one of these ions and (b) order the resulting half reactions in decreasing order of ease of oxidation.	*Longing to Know and Understand, Respect for Logic,* Valuing Scientific Heritage
Translating	*Differences and Similarities of Interactions, Action Forces, Energy Exchange, Force Fields, Energy Forms*	32. design and demonstrate a procedure for obtaining electricity from a chemical system using two metals and aqueous solutions of their salts.	*Respect for Logic, Consideration of Consequences*
Translating	*Energy forms*	33. construct a safe and adequate electric circuit for measuring the electrical variables of various combinations of half-cell reactions.	Demonstrating Confidence and Satisfaction
Performing investigations	Generalized Perceptions, Energy Forms, Energy Exchange, Differences and Similarities of Interactions	34. select any metal/metal ion half-cell as a standard; and measure the potential of at least two other metal/metal ion half-cells relative to the chosen standard	*Search for Data and their Meaning, Consideration of Premises, Respect for Logic,* Valuing Scientific Heritage
Analyzing systems, Measuring	*Differences and Similarities of Interactions, Force Fields, Action Forces, Energy Exchange, Energy Forms, Energy Conservation, Matter/Energy Conservation*	35. describe the process occurring in a given electrochemical cell by: (a) writing the equation(s) for the expected reaction(s), (b) indicating the direction of electron flow in the external circuit, (c) indicating the ion movement in the solution and (d) demonstrating the procedure for measuring the electrical potential of the cell.	*Search for Data and their Meaning,* Respect for Order in Nature
Formulating Hypotheses	*Matter/Energy Conservation, Generalized Perceptions*	36. describe the relationship between cell potential and/or Gibbs free energy and the possibility of a spontaneous reaction occurring in a given electrochemical cell.	*Search for Data and their Meaning, Consideration of Premises*

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Translating, Social Evaluating	*Science and Society, Interdependency of Nature,* Science and Technology	37. list examples and reactions involving oxidation and reduction that are necessary for human existence and/or physical comfort.	*Consideration of Consequences,* Respect for Order in Nature
Translating, Social evaluating	*Science and Society, Interdependency of Nature,* Science and Technology	38. list examples of reactions involving oxidation and reduction that are detrimental for human existence and/or physical comfort.	*Consideration of Consequences,* Respect for Order in Nature
Designing studies, Performing investigations	*Constant Change, Action Forces,* Science and Technology	39. conduct an investigation to determine those conditions that affect the rate of oxidation of some material (e.g. iron or paper).	*Search for Data and their Meaning*
Synthesizing results, Cognitively evaluating alternatives	*Interdependency of Nature, Science and Technology,* Science and Society	40. use the results of the investigation to propose a procedure for eliminating (or slowing) some oxidation such as the rusting of water pipes and/or for inducing (or speeding up) oxidation such as the rusting of metal cans.	*Consideration of Consequences, Respect for Order in Nature*
Defining operationally, Classifying	*Differences and Similarities of Interactions, Generalized Perceptions*	41. construct an operational definition of acids and bases, use it to classify common substances found in the home.	*Search for Data and their Meaning*
Abstracting	*Generalized Perceptions, Differences and Similarities of Interactions,* Fundamental Structures	42. identify, from a list of equations for simple chemical reaction, those substances (reactants or products) that would be considered acids as defined by: (a) Arrhenius, (b) Bronsted and Lowery.	*Search for Data and their Meaning,* Consideration of Premises
Experimenting, Analyzing systems	*Differences and Similarities of Objects, Differences and Similarities of Interactions, Fundamental Structures*	43. distinguish between *concentration* of an acid and *strength* of an acid.	*Consideration of Premises,* Search for Data and their Meaning
Analyzing systems, Formulating models, Interpreting data	*Differences and Similarities of Objects, Generalized Perceptions,* Fundamental Structures	44. identify properties that are a periodic function of the atomic number from a list of properties each as: melting point, atomic radius, atomic weight, density, ionization energy, heat of vaporization, etc.	*Search for Data and their Meaning,* Respect for Order in Nature
Translating	*Differences and Similarities of Objects, Generalized Perceptions,* Fundamental Structures, Energy Forms, Energy Exchange	45. for any of the properties listed, describe the trend observed as you move across a period or down a column in the periodic table, e.g. atomic radius, electronegativity, ionization energy, etc.	*Search for Data and their Meaning, Respect for Order in Nature*
Translating	*Fundamental Structures, Generalized Perceptions*	46. designate the number of electrons in each orbital of an atom or simple ion in its ground state.	*Consideration of Premises, Respect for Order in Nature*
Synthesizing, Formulating models	*Generalized Perceptions, Fundamental Structures, Force Fields, Energy Forms*	47. describe how the emission of hydrogen provides evidence for the theory that the energy of the electron of an atom is quantized.	*Valuing Scientific Heritage, Search for Data and their Meaning, Consideration of Premises*

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Translating	*Statistical Descriptions*	33. prepare a solution of specified volume and concentration from a solid.	Demonstrating Confidence and Satisfaction, Consideration of Consequences.
Translating	Science and Technology	34. construct an electrical circuit consisting of a power supply (or chemical cell) a switch, a resistance (or chemical cell), a volt meter and an ammeter and determine the voltage and current in the circuit.	Demonstrating Confidence and Satisfaction, Consideration of Consequences
Classifying, Observing and others	*Differences and Similarities of Objects,* Generalized Perceptions	35. identify those observations that are necessary and sufficient to identify an object or class of objects uniquely.	*Search for Data and their Meaning, Respect for Logic,* Consideration of Premises, Demonstrating Confidence and Satisfaction
Interpreting data	*Statistical Descriptions,* Differences and Similarities of Objects, Generalized Perceptions	36. find the density of a given sample of a solid, liquid or gas.	*Search for Data and their Meaning*
Defining operationally	*Differences and Similarities of Objects, Statistical Descriptions,* Generalized Perceptions	37. describe properties (e.g. density, melting point, boiling point, heat of fusion, heat of vaporization, specific heat, solubility) that may provide information on which the identity of a substance may be based.	*Search for Data and their Meaning,* Consideration of Premises, Demonstrating Confidence and Satisfaction
Defining operationally, Testing	*Differences and Similarities of Objects, Differences and Similarities of Interactions,* Fundamental Structures	38. describe a test which would help determine whether a sample of a material that appears to be uniform in composition is a single substance (a free element or compound) or a mixture.	*Search for Data and their Meaning,* Demand for Verification
Communicating	Differences and Similarities of Objects, Differences and Similarities of Interactions, Statistical Descriptions, Generalized Perceptions	39. use a standard reference to locate information such as: (a) the density of an element or compound, (c) the specific heat of an element or compound, (d) the heat of formation of a compound and (e) the vapor pressure of water as a function of temperature.	*Valuing Scientific Heritage* Demonstrating Confidence and Satisfaction
Simulating, Communicating	*Generalized Perceptions, Fundamental Structures,* Statistical Descriptions	40. write the correct formula from the name of any compound commonly used in the course.	Demonstrating Confidence and Satisfaction, Search for Data and their Meaning, Valuing Scientific Heritage
Translating, Communicating	*Generalized Perceptions,* Fundamental Structures, Statistical Descriptions	41. translate a chemical equation into an ordinary English sentence.	Demonstrating Confidence and Satisfaction, Search for Data and their Meaning, Valuing Scientific Heritage
Translating, Interpreting data, Communicating	*Generalized Perceptions,* Fundamental Structures, Statistical Descriptions	42. translate a word description of a chemical reaction into a chemical equation.	Demonstrating Confidence and Satisfaction, Search for Data and their Meaning, Valuing Scientific Heritage

Processes	Conceptual	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Interpreting data, Communicating	*Statistical Descriptions*	43. construct a table of data from a graph of the data.	*Search for Data and their Meaning*
Manipulating variables, Interpreting data	*Statistical Descriptions, Generalized Perceptions*	44. from experimental data for some variable which is a function of another variable, establish a suitable scale, locate points on a graph for each ordered pair and draw a "best fit" curve for the data.	Search for Data and their Meaning, Respect for Logic, Consideration of Premises
Assimilating, Communicating	*Statistical Descriptions,* Generalized Perceptions, Differences and Similarities of Interactions	45. construct a short word statement to describe what a table or graph communicates about the responses of one variable to the manipulated variable.	*Demonstrating Confidence and Satisfaction,* Search for Data and their Meaning
Formulating statistical models, Communicating	*Statistical Descriptions, Generalized Perceptions,* Differences and Similarities of Interactions	46. construct a mathematical statement to describe what a straight line graph communicates	*Respect for Logic, Search for Data and their Meaning*
Predicting	*Statistical Descriptions, Generalized Perceptions,* Differences and Similarities of Interactions	47. apply rules for interpolation or extrapolation to predict from a graph.	*Respect for Logic,* Consideration of Premises, Search for Data and their Meaning
Interpreting data, Communicating	*Statistical Descriptions,* Generalized Perceptions	48. construct a frequency distribution for a set of observations.	*Respect for Logic, Search for Data and their Meaning*
Inferring, Observing	*Generalized Perceptions,* Science and Society	49. distinguish between observations and inferences from a list containing examples of both.	*Consideration of Premises, Demand for Verification*
Inferring	Generalized Perceptions	50. construct inferences that are consistent with the data obtained by indirect measurement or observation.	*Consideration of Premises, Questioning of All Things, Longing to Know and Understand*
Analyzing systems, Inferring	*Generalized Perceptions, Science and Society*	51. distinguish between inferences that account for all observations and inferences that do not.	*Consideration of Premises, Questioning of All Things*
Recognizing variables	*Generalized Perceptions, Statistical Descriptions*	52. identify and name the variable that should be held constant, the one that should be manipulated and the one that will respond to that manipulation in a test of an hypothesis.	*Search for Data and their Meaning,* Respect for Logic, Consideration of Premises,
Recognizing problems	*Generalized Perceptions*	53. identify one or more unexpected events (1) in a structured situation, (2) in an open or less structured situation.	*Questioning of All Things*
Refining problems, Typing problems	*Generalized Perceptions, Science and Society*	54. select a problem for study according to the following criteria: (1) the utilization of previous findings from various sources such as teacher, text, research reports, etc. (2) the judgment of the feasibility of the problem, (3) the problem's interest and value to him.	*Longing to Know and Understand, Questioning of All Things,* Search for Data and Meaning

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Refining problems	*Generalized Perceptions*	55. state the problem to be researched in researchable terms.	*Search for Data and their Meaning, Respect for Logic, Consideration of Premises*
Refining problems	*Generalized Perceptions*	56. identify the elements of a problem on which a hypothesis could be based.	*Respect for Logic, Consideration of Premises*
Proposing answers	*Generalized Perceptions*	57. generate hypotheses about the critical element in the problem.	*Consideration of Premises, Respect for Logic*
Cognitively evaluating alternatives	*Generalized Perceptions*	58. clarify the statement of the hypotheses to: (1) eliminate duplication, (2) determine which hypotheses are testable and (3) determine the relevance of each hypothesis to the problem.	*Consideration of Premises, Respect for Logic*, Demand for Verification
Designing studies	*Generalized Perceptions*	59. plan to test hypotheses on the basis of: (1) identifying all the variables possible, (2) selecting a variable to be studied, (3) establishing a proper control, (4) planning for replication, (5) planning systematic observation of descriptive data, (6) identifying sources of error such as measurement, computations tools, instrumentation, etc. and (7) planning a system for processing the data to make it ready for interpretation.	*Consideration of Premises*, Search for Data and their Meaning
Performing investigations	Generalized Perceptions	60. execute the plan of investigation by (1) collecting, organizing and analyzing data, (2) presenting findings, (3) using tools properly, (4) recording data accurately indicating the degree of uncertainty, (5) reviewing tools and procedures used and (6) revising procedures where indicated by results.	*Search for Data and their Meaning, Consideration of Premises, Demand for Verification*
Synthesizing results, Social evaluating, Affective evaluating	*Generalized Perceptions, Science and Society*	61. interpret data or findings by (1) identifying the assumptions he has used in the study, (2) employing reasonings skills (both deductive and inductive), (3) using various means of presenting data to bring out different features, (4) examining collected data to determine its relevance to both the problem and the hypothesis at hand and to other problems, (5) identifying conflicts and discrepancies in data, (6) drawing tentative conclusions and (7) avoiding overgeneralizations of the results without unduely withholding judgment by restricting interpretation to those permissable from the data.	*Consideration of Premises, Search for Data and their Meaning, Demand for Verification, Respect for Logic*

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Synthesizing results, Cognitively evaluating alternatives	*Generalized Perceptions, Science and Society*	62. synthesize knowledge gained from an investigation by (1) relating findings to various personal interests and to the world at large, (2) correlating findings and making interpretations from several experiments, (3) applying knowledge gained to new situations, (4) recognizing new problems, (5) using theories, theoretical constructs and models as a means of relating and organizing new knowledge, (6) recognizing that evidence for or against a given theory may be inconclusive, (7) recognizing that a theory may or may not be testable at the time of formation and (8) recognizing that several theories may be useful as each can make its own unique contribution to understanding the problem.	*Demand for Verification, Consideration of Consequences, Questioning of All Things, Respect for Logic, Consideration of Premises*
Cognitively evaluating alternatives, Social evaluating, Affective evaluating	*Interdependency of Nature, Science and Technology, Science and Society*	63. discuss the ethical responsibility on the part of an industry or a public agency and the kind of scientific information that should be supplied to the public in order to meet the[illegible]sponsibilities for situations such as the following: (a) a company plans to market a new laundry product, (b) a company has applied for a license to test a new drug on human subjects, (c) a company or public utility has purchased land in a wilderness area for the purpose of constructing a new plant, (d) a company has purchased urban property for the purpose of constructing a new plant, (e) a company plans to market a new agricultural product, (f) a company plans to market a new packaging material and (g) there are plans to add chemicals to the city water supply.	*Consideration of Consequences, Developing A Commitment to Aesthetics in Nature*
Cognitively evaluating alternatives, Social Evaluating, Affective evaluating	*Interdependency of Nature, Science and Technology, Science and Society*	64. discuss the ethical responsibility on the part of the public and the mechanism by which those responsibilities can be fulfilled in situations such as those described above.	*Consideration of Consequences, Developing A Commitment to Aesthetics in Nature*
Cognitively evaluating alternatives, Social evaluating, Affective evaluating	*Interdependency of Nature, Science and Technology, Science and Society*	65. evaluate reports of a current social issue of the nature suggested above to determine whether the industry, the public or both have fulfilled their respective ethical responsibilities.	*Consideration of Consequences, Developing A Commitment to Aesthetics in Nature*

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Acting on conclusions	*Science and Society*	66. after (and only after) satisfying the above objective, propose a course of action that will assure that the ethical responsibilities of both industry and the public are fulfilled.	Respect for Order in Nature
Synthesizing	*Science and Society*	67. provide at least one historical example to show the influence that scientific development has had on social thought and/or action.	*Valuing Scientific Heritage*
Synthesizing	Science and Society	68. provide at least one historical example to show the influence (either positive or negative) that society as a whole has had on scientific development.	Valuing Scientific Heritage
Character building	*Generalized Perceptions*, Science and TEchnology, Science and Society	69. demonstrate a concern or an intellectual interest in scientific development by any combination of activities such as the following: (a) reading science related books or articles which are not required reading, (b) participating in science fairs or development of nature trails, (c) visiting a science museum or science lecture and (d) applying scientific thought to a real problem facing him.	*Longing to Know and Understand*, Valuing Scientific Heritage, Demand for Verification Respect for Logic, Consideration of Premises

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3.33-B High School Objectives – Biology

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Analyzing systems	Fundamental Structures	1. Identify by name and function the major structures that constitute plant cells (cell wall, cell membrane, nucleus, chloroplast, vacuole, mitochondria, ribosome, endoplasmic reticulum).	*Search for Data and their Meaning*, Longing to Know and Understand, Respect for Order in Nature
Analyzing systems	Fundamental Structures	2. identify by name and function the major structures that constitute animal cells (cell membrane, nucleus, vacuoles, mitochondria, ribosomes, endoplasmic reticulum, centrisome).	*Search for Data and their Meaning*, Longing to Know and Understand, Respect for Order in Nature
Observing	Fundamental Structures, Space/Time Reference	3. prepare a slide of living or preserved cells and identify the parts visible with both low and high magnification.	*Demand for Verification*, Demonstrating Confidence and Satisfaction
Synthesizing, Analyzing systems	*Force Fields*, Fundamental Structures, Interdependency of Nature	4. relate the structure and function of the highly specialized cells: a. muscle cells, b. nerve cells, c. epidermal cells in leaves, d. red blood cells, e. white blood cells, f. xylem cells, g. others as suitable.	*Search for Data and their Meaning*, Respect for Order in in Nature
Synthesizing, Analyzing systems	Force Fields, Fundamental Structures, Interdependency of Nature	5. describe the functions of various tissues such as: a. wet membrane — lungs, b. islets of Langerhans — pancreas, c. epidermis — skin of mammal, d. xylem — roots, stems, leaves, e. meristem — plants, f. others as desired.	*Search for Data and their Meaning*, Respect for Logic, Respect for Order in Nature
Synthesizing, Analyzing systems	*Fundamental Structures*, Differences and Similarities of Objects, Force Fields, Interdependency of Nature	6. describe the complementarity of the structure and the function of organs using examples such as: a. heart — circulation of earthworm, grasshopper, and human, b. brain — nervous system of humans, c. liver — digestive system of a mammal, d. uterus — reproduction of humans, e. intestine — digestion of earthworm, grasshopper, and human, f. ovary and testes — reproduction of frog, fish, birds, g. leaf — photosynthesis in producers.	*Search for Data and their Meaning*, Respect for Logic, respect for Order in Nature
Synthesizing, Analyzing systems	*Fundamental Structures*, Differences and Similarities of Objects, Force Fields, Interdependency of Nature	7. describe the major parts of various systems and relate how these structures contribute to the well being of the total organism. Use examples such as the following: a. roots — corn plant, b. circulatory — frog, c. Skeletal — insect, d. skeletal — mammal, e. nervous — human, f. endocrine — human, g. digestion — cow, h. excretion — human, i. transport — woody plant.	*Search for Data and their Meaning*, Respect for Logic, Respect for Order in Nature

3.33-P High School Objectives – Physics

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Defining operationally, Using space/time relationships	*Space/Time Reference Frames*, Statistical Descriptions, Differences and Similarities of Interactions	1. distinguish between distance and displacement.	Search for Data and their Meaning
Translating, Interpreting data	*Statistical Descriptions*, Space/Time Reference Frames, Differences and Similarities of Interactions	2. solve selected problems involving distance and displacement concepts using estimation for the magnitude and accepted units for the answers.	*Consideration of Premises*, Search for Data and their Meaning, Demonstrating Confidence and Satisfaction
Analyzing systems, Defining operationally, Measuring, or Synthesizing results, Formulating statistical models	*Statistical Descriptions, Space/Time Reference Frames*, Differences and Similarities of Interactions	3. suggest or construct devices to measure time intervals.	*Search for Data and their Meaning*, Consideration of Premises
Synthesizing, Analyzing systems	*Statistical Descriptions, Constant Change*, Space/Time Reference Frames, Differences and Similarities of Interactions, Generalized Perceptions	4. recognize the probabilistic nature of time units.	*Consideration of Premises*, Demand for Verification
Abstracting, Defining operationally, Interpreting data	*Space/Time Reference Frames*, Statistical Descriptions, Generalized Perceptions	5. combine distance (and displacement) intervals with time intervals to derive new physical concepts which better explain observed phenomena: speed, velocity and acceleration.	*Search for Data and their Meaning*
Analyzing systems, Interpreting data	*Space/Time Reference Frames, Statistical Descriptions*, Generalized Perceptions	6. distinguish between instantaneous and average speed; instantaneous and average velocity; and instantaneous and average acceleration.	*Consideration of Premises*, Respect for Logic, Search for Data and their Meaning, Longing to Know and Understand
Interpreting data, Communicating	*Statistical Descriptions*, Space/Time Reference Frames	7. construct graphs of speed vs. time; distance vs. time; and acceleration vs. time.	Search for Data and their Meaning
Formulating statistical models, Synthesizing, Interpreting data	*Statistical Descriptions*, Space/Time Reference Frames, Generalized Perceptions	8. interpret the above graphs using areas and slopes as the representation of physical quantities.	Search for Data and their Meaning
Experimenting, Analyzing systems	*Force Fields, Differences and Similarities of Interactions*, Generalized Perceptions	9. compare and contrast gravitational and inertial mass.	*Longing to Know and Understand, Search for Data and their Meaning*

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Defining operationally, Synthesizing, Experimenting, Manipulating variables	*Action Forces,* Differences and Similarities of Interactions	10. define force in terms of mass and acceleration.	*Search for Data and their Meaning, Longing to Know and Understand,* Respect for Order in Nature
Experimenting, Analyzing systems, Defining operationally	*Action Forces,* Differences and Similarities of Interactions, Generalized Perceptions	11. identify friction as a force.	*Search for Data and their Meaning,* Longing to Know and Understand, Consideration of Consequences
Defining operationally, Experimenting, Synthesizing, Manipulating variables	*Space/Time Reference Frames, Statistical Descriptions, Differences and Similarities of Interactions,* Generalized Perceptions	12. define momentum in terms of mass and velocity from empirical data.	*Longing to Know and Understand, Search for Data and their Meaning*
Synthesizing, or *Formulating statistical models*	*Generalized Perceptions, Force Fields, Space/Time Reference Frames, Differences and Similarities of Interactions*	13. combine the physical quantities of force, mass, distance, etc. and relate them to the Newtonian synthesis (Newton's three laws of motion and universal graviation).	*Respect for Logic, Respect for Order in Nature*
Analyzing systems, Defining operationally, Manipulating variables	*Space/Time Reference Frames, Generalized Perceptions*	14. define and use inertial frames of reference in discussing kinematics of motion.	*Search for Data and their Meaning, Questioning of All Things*
Defining operationally	*Differences and Similarities of Interactions*	15. list various physical properties as scalar or vector quantities.	*Longing to Know and Understand,* Respect for Logic
Analyzing systems, Manipulating variables	*Differences and Similarities of Interactions, Statistical Descriptions,* Generalized Perceptions	16. use defined parameters of heat concepts in a like manner as in kinematics to solve selected problems.	*Search for Data and their Meaning, Respect for Order in Nature*
Experimenting, Defining operationally, Manipulating variables	*Statistical Descriptions, Energy Exchange,* Energy Conservation, Differences and Similarities of Interactions, Generalized Perceptions	17. do quantitative experiments to determine: specific heats of solids and liquids, heat of fusion, heat of vaporization and mechanical equivalent of heat.	*Search for Data and their Meaning,* Developing A Commitment to Aesthetics in Nature
Measuring, Defining operationally, Recognizing variables, Manipulating variables	*Statistical Descriptions*	18. construct and calibrate a thermometer (use Celsius temperature scale).	Search for Data and their Meaning
Simulating, Measuring	Statistical Descriptions	19. construct and use a graph of Fahrenheit vs. Celsius temperatures.	Demonstrating Confidence and Satisfaction

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Formulating models, Abstracting, Analyzing systems, Interpreting data, Manipulating variables	*Generalized Perceptions, Differences and Similarities of Interactions, Action Forces*	20. formulate microscopic models to explain heat transport in fluids and solids.	*Search for Data and their Meaning, Respect for Logic*
Analyzing systems, Simulating	*Science and Technology, Energy Exchange, Energy Forms,* Energy Conservation	21. design and construct heat exchange engines or make models of them such as steam engines or refrigerators.	*Longing to Know and Understand,* Demonstrating Confidence and Satisfaction
Analyzing systems, Formulating models	*Energy Conservation, Differences and Similarities of Interactions, Generalized Perceptions*	22. interpret a graph of the Carnot cycle.	*Respect for Logic,* Valuing Scientific Heritage
Synthesizing, Experimenting, Manipulating variables	*Energy Conservation, Generalized Perceptions*	23. calculate the mechanical equivalent of heat from empirical data he has collected.	*Search for Data and their Meaning, Demand for Verification,* Valuing Scientific Heritage, Respect for Order in Nature
Formulating models, Analyzing systems, Manipulating variables	*Generalized Perceptions,* Differences and Similarities of Interactions	24. formulate a model of electricity to explain selected electrical phenomena.	*Search for Data and their Meaning*
Translating, Manipulating variables	Generalized Perceptions, Differences and Similarities of Interactions	25. use this model to describe other electrical phenomena.	*Respect for Logic*
Analyzing systems, Cognitively evaluating alternatives	*Science and Technology, Science and Society, Energy Forms,* Energy Exchange, Interdependency of Nature	26. discuss the monetary value of electrical energy used in some selected segment of society (e.g. the home, the community, a given industry) and compare the cost of that energy with the cost of providing the same amount of energy by some other means.	*Questioning of All Things, Consideration of Consequences,* Search for Data and their Meaning
Analyzing systems, Manipulating variables	*Differences and Similarities of Interactions,* Energy Conservation, Science and Technology	27. trace the path of an elementary charge through various circuits, i.e.: series, parallel and combinations of a simple nature.	*Search for Data and their Meaning, Respect for Logic*
Formulating statistical models, Defining operationally, Manipulating variables	*Statistical Descriptions, Generalized Perceptions*	28. determine the resistance of a number of conductors using meters and algebra.	*Search for Data and their Meaning, Respect for Logic, Demand for Verification*

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Performing Investigations, Formulating statistical models	*Action Forces, Differences and Similarities of Interactions,* Interdependency of Nature, Generalized Perceptions	29. construct current balances to demonstrate relationships between: current conductors, separation of conductors, and number of conductors when checked against a constant force.	*Search for Data and their Meaning,* Respect for Order in Nature
Performing Investigations, Translating	*Force Fields, Statistical Descriptions,* Generalized Perceptions	30. perform an investigation to determine the nature of the force field around a charged object and solve problems using the discovered descriptions of this field.	*Search for Data and their Meaning,* Respect for Logic
Formulating models	*Space/Time Reference Frames, Action Forces,* Generalized Perceptions	31. construct both macroscopic and microscopic models for magnetic fields to explain various observed magnetic phenomena.	*Questioning of All Things, Search for Data and their Meaning*
Experimenting, Synthesizing, Translating	*Force Fields, Differences and Similarities of Interactions,* Generalized Perceptions	32. discover, state, and apply a rule for determining the direction of a magnetic field around an electric current.	*Search for Data and their Meaning*
Experimenting	*Differences and Similarities of Interactions, Force Fields, Interdependency of Nature,* Generalized Perceptions	33. demonstrate Lenz' Law.	*Search for Data and their Meaning, Respect for Logic,* Respect for Order in Nature
Formulating models, Cognitively evaluating alternatives	*Generalized Perceptions, Force Fields*	34. construct various hypotheses to explain the earth's magnetic field and other celestial magnetism citing both supportive and contrary evidence for each.	*Consideration of Premises,* Search for Data and their Meaning
Translating	*Science and Technology, Force Fields, Action Forces*	35. demonstrate how the forces on electric currents in magnetic fields are employed in meters and motors.	*Longing to Know and Understand, Demonstrating Confidence and Satisfaction*
Experimenting, Synthesizing, Translating, Defining operationally	*Energy Conservation, Science and Technology,* Energy Exchange, Generalized Perceptions	36. develop from observed phenomena an operational definition of EMF which can be used to solve various electron transport problems.	*Search for Data and their Meaning, Respect for Logic,* Consideration of Premises
Formulating models, Simulating, Analyzing systems	*Energy Exchange, Energy Conservation,* Science and Technology	37. construct a transformer and explain its operation in terms of induced current and EMF.	*Search for Data and their Meaning,* Respect for Order in Nature
Analyzing systems, Synthesizing	*Fundamental Structures, Statistical Descriptions, Differences and Similarities of Objects*	38. cite evidence for the theory that electric charge exists in discrete units and calculate the size of this unit from empirical data.	*Search for Data and their Meaning, Consideration of Premises,* Respect for Logic
Experimenting, Synthesizing, Analyzing systems	*Force Fields, Action Forces, Space/Time Reference Frames*	39. demonstrate or cite evidence for the relationship between the *force* on a charged object, its *velocity* through a magnetic field and the *strength* of the field.	*Search for Data and their Meaning, Questioning of All Things,* Consideration of Premises

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Analyzing systems, Synthesizing	*Fundamental Structures, Force Fields,* Statistical Descriptions	40. describe or demonstrate how the mass of a charged particle may be determined from data collected about its transit of an electric or magnetic field.	*Search for Data and their Meaning, Consideration of Premises*
Analyzing systems	*Force Fields, Matter/ Energy Conservation*	41. apply the concepts of electric field and potential difference to explain various phenomena involving open and closed circuits.	*Search for Data and their Meaning, Respect for Logic*
Analyzing systems	*Energy Forms,* Science and Technology	42. identify the kinds of energy: mechanical, electrical, thermal, chemical, and electromagnetic exhitibed in complex systems.	Demonstrating Confidence and Satisfaction, Longing to Know and Understand
Analyzing systems	*Energy Exchange*	43. trace a transfer of energy through a cycle involving two or more changes in kind from diagrams, pictures, or demonstration.	Demonstrating Confidence and Satisfaction
Formulating statistical models, Synthesizing, *Defining operationally*	*Generalized Perceptions, Statistical Descriptions, Energy Exchange*	44. derive an expression for translational kinetic energy using mass and velocity.	*Search for Data and their Meaning, Respect for Logic*
Analyzing systems	*Energy Conservation,* Statistical Descriptions	45. identify the conservation of mechanical energy principle in systems where it is subtly hidden.	*Search for Data and their Meaning*
Analyzing systems	*Energy Conservation,* Statistical Descriptions	46. demonstrate energy conservation using interactions which involve a change in energy forms.	*Search for Data and their Meaning*
Translating	*Energy Conservation, Statistical Descriptions, Generalized Perceptions*	47. apply the principle of conservation of energy and momentum to predict the behavior of objects involved in an elastic collision.	*Demand for Verification, Respect for Logic*
Experimenting, Synthesizing	Action Forces, Generalized Perceptions	48. relate flow rate of fluids and pressure (Bernoulli's principle).	*Search for Data and their Meaning, Valuing Scientific Heritage*
Synthesizing, or *Formulating statistical models*	*Force Fields, Action Forces,* Statistical Descriptions, Generalized Perceptions, Science and Society	49. relate field ideas to inverse square proportionalities and equal area-equal times events. (Kepler's laws)	*Search for Data and their Meaning, Respect for Logic, Valuing Scientific Heritage*
Analyzing systems	*Differences and Similarities of Interactions, Generalized Perceptions*	50. identify selected periodic motions such as: pendulum, uniform circular motion and spring oscillator.	*Longing to Know and Understand*
Formulating models	*Differences and Similarities of Interactions, Generalized Perceptions*	51. relate periodic motions to wave motions such as: sound, light, radio, microwave, ultra-sonics and heat.	*Search for Data and their Meaning*
Analyzing systems	*Energy Exchange, Matter/ Energy Conservation*	52. compare and contrast the wave model and the particle model in describing energy transfer and other phenomena.	*Search for Data and their Meaning,* Respect for Logic

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Synethesizing	*Fundamental Structures, Statistical Descriptions*	53. trace the history of the discovery of particles, i.e. nuclear.	*Search for Data and their Meaning*, Valuing Scientific Heritage
Formulating models	*Fundamental Structures, Differences and Similarities of Objects*, Statistical Descriptions	54. identify properties of elementary particles such as: electron, proton, neutron and positron in terms of mass, size, charge and energy level.	*Search for Data and their Meaning*, Consideration of Premises
Formulating models, Analyzing systems	*Differences and Similarities of Interactions, Generalized Perceptions, Statistical Descriptions*, Action Forces, Energy Exchange, Matter/Energy Conservation	55. apply the laws learned in mechanics and in dynamics to account for the kinetic-molecular-theory for gases.	*Consideration of Premises, Respect for Logic*, Demand for Verification
Analyzing systems	*Energy Conservation*, Fundamental Structures, Statistical Descriptions	56. cite evidence to support the law of conservation of energy for the microscopic as well as macroscopic state.	*Search for Data and their Meaning, Consideration of Premises*
Manipulating variables	*Differences and Similarities of Interactions*, Statistical Descriptions	57. test the laws of relfection, refraction, diffraction and interference for light in the laboratory.	*Search for Data and their Meaning*
Synthesizing	*Differences and Similarities of Interactions*	58. extend these findings to enough other members of the electromagnetic family to show the close relationships between the members of that family.	*Search for Data and their Meaning, Demand for Verification*
Defining operationally	*Differences and Similarities of Interactions*, Statistical Descriptions	59. order the commonly recognized segments of the electromagnetic spectrum according to wavelength or frequency.	*Search for Data and their Meaning*
Experimenting	*Space/Time Reference Frames*, Differences and Similarities of Interactions	60. demonstrate total internal reflection.	Longing to Know and Understand
Formulating models, Analyzing systems	*Differences and Similarities of Interactions*, Generalized Perceptions	61. demonstrate the primciple of superposition of waves, construct a model to explain its effects and use it to explain various phenomena in sound, water and light waves.	Search for Data and their Meaning
Formulating models, Analyzing systems	*Differences and Similarities of Interactions*, Generalized Perceptions	62. demonstrate how dispersion, diffraction and interference differ and construct models to illustrate these differences.	*Search for Data and their Meaning*, Consideration of Premises
Formulating models, Interpreting data	Fundamental Structures, Action Forces, Energy Exchange, Energy Conservation	63. construct a model for electric current and defend this model in terms of both energy loss and charge movement.	*Search for Data and their Meaning*, Consideration of Premises
Analyzing systems, Formulating models	*Force Fields, Interdependency of Nature*, Generalized Perceptions	64. construct a model to explain the inter-relationship of electric and magnetic fields and use this model to describe simple electromagnetic radiation.	*Search for Data and their Meaning*

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Experimenting, Formulating models	*Space/Time Reference Frames, Force Fields,* Interdependency of Nature	65. demonstrate the polarization of light and modify the model of light to explain it.	*Search for Data and their Meaning, Consideration of Premises*
Analyzing systems	Science and Technology	66. list several practical applications of electromagnetic energy to daily existence.	Consideration of Consequences, Valuing Scientific Heritage
Performing investigations	*Energy Conservation,* Generalized Perceptions	67. perform an experiment to demonstrate the photoelectric effect and construct a model to explain it.	*Consideration of Premises*
Formulating statistical models	*Energy Conservation,* Statistical Descriptions	68. relate the energy content of the various segments of the photoelectric spectrum to frequency or wavelength.	*Search for Data and their Meaning*
Performing investigations	*Differences and Similarities of Interactions, Generalized Perceptions,* Interdependency of Nature, Science and Technology, Science and Socity	69. discuss the transparency of various materials to various segments of the electromagnetic spectrum including a discussion of such phenomena as the greenhouse effect, snow blindness, Becquerel effect, radio reception, etc.	*Search for Data and their Meaning, Consideration of Premises, Consideration of Consequences*
Analyzing systems, Synthesizing	*Differences and Similarities of Interactions, Science and Technology,* Statistical Descriptions	70. describe the condition necessary for electromagnetic wave amplification by stimulated emission of radiation (maser and laser) and discuss some present and potential beneficial uses of this phenomena.	*Search for Data and their Meaning, Consideration of Consequences,* Valuing Scientific Heritage
Formulating statistical models, Analyzing systems, Cognitively evaluating alternatives	*Matter/Energy Conservation,* Generalized Perceptions	71. write nuclear equations for simple reactions and show where conservation principles apply and also where they seem to fail.	*Search for Data and their Meaning, Consideration of Premises*
Analyzing systems, Defining operationally	*Fundamental Structures, Differences and Similarities of Objects, Differences and Similarities of Interactions*	72. discuss the properties of the elementary types of radiation (alpha, beta and gamma).	*Search for Data and their Meaning*
Performing investigations, Synthesizing results	*Differences and Similarities of Interactions, Differences and Similarities of Objects,* Generalized Perceptions	73. use both the wave and particle models to describe various phenomena involving electromagnetic radiation.	*Questioning of All Things, Search for Data and their Meaning, Consideration of Premises*
Performing investigations, Synthesizing results	*Differences and Similarities of Interactions, Differences and Similarities of Objects,* Generalized Perceptions	74. use both the wave and particle models to describe various behaviors of matter.	*Questioning of All Things, Search for Data and their Meaning,* Consideration of Premises
Synthesizing results	*Generalized Perceptions*	75. construct a model of the hydrogen atom utilizing the theory of particle waves to explain nonradiating energy states.	*Search for Data and their Meaning, Consideration of Premises*

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Analyzing systems or Performing investigations	*Matter/Energy Conservation*, Statistical Descriptions, Generalized Perceptions	76. solve a simple example of $E=mc^2$	*Questioning of All Things, Search for Data and their Meaning*, Consideration of Premises
Translating	*Matter/Energy Conservation*, Statistical Descriptions, Generalized Perceptions, Science and Technology	77. use the concepts of conservation of mass/energy, momentum and charge to solve a variety of real problems.	*Developing A Commitment to Aesthetics in Nature*
Analyzing systems, Synthesizing	*Differences and Similarities of Interactions*, Science and Technology	78. describe in simplified general terms the operation of an atomic particle accelerator.	*Search for Data and their Meaning*
Analyzing systems	Science and Society	79. write a paper on the advisability of peaceful uses of atomic energy.	Consideration of Consequences

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ORIENTATION TO NEPAL

Nepal: "Nepal, a predominately mountainous rectangle, 90 to 150 miles wide and 500 miles long, has a total area slightly over 54,400 square miles."[1] This is approximately the same area as the state of Illinois. "Nepal is land locked and has three neighbors - India to the south, Communist Chinese - controlled Tibet to the North, and Sikkin to the east."[2] All exported and imported items must move overland through Tibet or India or must be shipped by air. The nearest sea port is Calcutta, India which, from Kathmandu, is approximately 400 miles overland to the Southwest.

The last demographic data available reports 9.7 million[3] people in 1961 with an annual growth rate of 2%. This would bring the current population to slightly over 12 million people. Of this number it is reported that there is slightly over 1/4 million urban dwellers or less than 3% of the total population. The remainder of the population is located in approximately 30,000 villages with an estimated average population of 335 inhabitants per village.

Hinduism is the predominate religion with approximately two-thirds[4] of the population following this belief. Buddhism is next with the majority of the remainder of the population claiming this as a major belief.

The country is ruled by a monarchy system headed by King Mahendra with the aid of the National Panchyat System which was developed by the King. The capital is Kathmandu, centrally located and the largest city in the country.

Agriculture in Nepal: "Nepal presents a wider range of physical diversity than probably any other country of comparable size."[5] On the North border are the Himalayan mountain range with six peaks in excess of 26,000 feet.[6] "To the south, no more than 100 miles from the barren,

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[1] Nepal, Sikkim and Bhutan Handbook, (Washington, D.C.; Government Printing Office) 1964, P.25.

[2] Background Notes - Nepal, Department of State, Washington, D.C., Bureau of Public Affairs, 1965, P.1.

[3] Wood, Hugh B., The Development of Education in Nepal, Washington, D.C., Government Printing Office, O.E. 14110, 1965, P.5.

[4] Ibid.

[5] Nepal, Sikkim and Bhutan Handbook, (Washington, D.C., Government Printing Office), 1964, P.25.

[6] Ibid.

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icy heights, the cultivated fields and steaming jungles of the northern rim of the Gangetic Plain are less than 600 feet above sea level."[7] The rainfall is between 100 inches in the east to 40 inches in the west.[8] The major portion of the rainfall comes during the monsoon season, about three months in length, with the remainder of the year being mostly without rainfall. The concentrated rainfall and extreme drop in elevation combined with the variety of soil types causes extreme problems in erosion. In the tarai, a fertile farm belt along the southern edge of the country ranging from 5 to 55 miles wide, there is a climate which allows for year round cropping assuming that sufficient irrigation can be provided.

From an agricultural prospective the soil and vegetation types fluctuate to the extremes in a short distance due to the rapid change in elevation. Reports on land use estimates indicate that "one-third of the land lies under perpetual snow or alpine meadows . . . less than one-third is covered by forest . . . one-fourth of the land area is under cultivation and reclaimable wasteland is limited."[9] It is obvious that there is, compared to the land mass, a relatively limited opportunity for production agriculture. The requirements for this land are extensive as it is estimated that from 85[10] to 93[11] percent of the economically active population is engaged in farming. There is, as would be expected in a developing country, considerable manual labor involved in the present production system. The animal population is estimated to be "seven million, of which 30 percent are cows and bulls, 26 percent oxen, 17 percent buffalo, 25 percent sheep and goats, and 2 percent hogs."[12] The cattle are considered sacred in many cases and are not used for meat within the country. Some milk production is derived from the cattle and in limited geographical areas the castrated males are used as draft animals. The goat and buffalo are predominately used for draft meat, milk and hide production. As is the case in most of Asia, Nepal is a rice culture and it is the major crop "occupying 55 percent of the land under cultivation . . .20 percent in corn and millet . . . 10 percent in wheat . . . with potatoes, oilseed, tobacco, jute, sugarcane, buckwheat, and vegetables"[13] composing the remainder of the crop land in production for agricultural purposes.

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[7] Ibid.

[8] Mathema, Pushpa R., Agriculture Development in Nepal, Kathmandu Shanta Printing Press, 1966, P.26.

[9] Nepal, Sikkim and Bhutan Handbook, (Washington, D.C., Government Printing Office), 1964, P.255.

[10] Mathema, Pushpa R., Agriculture Development in Nepal, Kathmandu Shanta Printing Press, 1966, P.26.

[11] Wood, Hugh B., The Development of Education in Nepal, Washington, D.C., Government Printing Office OE 14110, 1965, P.6.

[12] Nepal, Sikkim and Bhutan Handbook, (Washington, D.C., Government Printing Office), 1964, P.264.

[13] Ibid., P.262.

The large population relative to the tillable land available limits exportation of agricultural crops. The major portion of production is used for consumption in Nepal and the greatest majority is consumed by the producer.

Education in Nepal: When the present government system returned to power in 1951 the education level was extremely low. "Literacy among males was less than 10 percent and among females less than 1 percent, and only one child in 100 attended school."[14] By 1961 the primary schooling had been extended to 1 child in 7. This progress is primarily the result of the implementation of the 1954 National Education Planning Commission Report. The report took over a year to complete and proposed expansion of the primary, secondary, vocational schools, colleges and adult education over a 25 year period. This is an astronomical task which will require considerable financial investment. In spite of limited resources and lack of sufficient qualified teachers the education system in Nepal has progressed quite rapidly.

Vocational Education: Vocational education, commonly referred to as Multipurpose High School Programs, which were recommended by the National Educational Planning Commission was introduced in the Pokhara School System in 1957.[15] The Multipurpose High School Program has currently been expanded to 29 geographically selected schools in Nepal.[16] The courses in vocational education include Home Science, Secretarial Science, Trade & Industrial Education, and Vocational Agriculture.[17] The program is offered from grades 6 to 10 at which time the students take the S.L.C. (School Leaving Certificate) Examination. This is a nationally administered examination with 30 percent of the emphasis being placed on the vocational speciality. The remainder of the curriculum emphasis is placed on the general and academic subject.

The Multipurpose High School System was developed with three broad range objectives. Briefly the system was developed to provide education for:

1. "...Youth who will continue their education in college..."
2. "Those who will become the professional and economic leaders...agriculturalist specialist, industrial executives, foremen and workers in business, agriculture, and industry ..."
3. "The boys and girls who will terminate their formal education after secondary school in order to become the skilled mechanics, office workers, junior executives, foremen and workers in business, agriculture and industry."[18]

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[14] Ibid., P.93

[15] Ibid., P.99

[16] Martin, Kenneth L., "An Assessment of the Multipurpose High School Program in Nepal", USAID/Nepal, September, 1970, P.7.

[17] Multipurpose Education (An education for better living), His Majesty's Government, Ministry of Education, Education Department, Kathmandu, Nepal: Nepal Co-operative Press Ltd., 1961, P.9-10.

[18] Ibid., P.9

Characteristics of Multipurpose High Schools: The Vocational Education leadership of Nepal has proposed basic characteristics which the MPHS must have to meet the stated needs of the Nations Youth.

The basic characteristics outlined are as follows:

1. It will be a community school, seeking the active interest, and cooperation of parents, occupational groups, and community planners.

2. It will begin to prepare students to meet the occupational requirements of the community and the nation.

3. Its teachers will study more closely the abilities and interest of the students and set up means by which they can intelligently select a program most suited to their capacities.

4. It will encourage students to complete the higher secondary stage of education through diversified type of curriculum.

5. It will continue to provide for students of high ability while, at the same time, attract a student group having a less outstanding range of abilities.

6. It will encourage a type of teaching which guides students towards making application of what is learned.

7. It will have a strong general education programme which will prepare students for:

   a. Active intelligent participation as loyal thoughtful and discriminating citizens.
   b. Using their environment so as to improve living conditions for all.
   c. Developing sound, healthy bodies.
   d. Appreciating beauty in all its forms.

As mentioned earlier, the MPHS scheme dates back to the first school foundation being laid at the Pokhara National High School. The building was completed and the new program was initiated in the spring of 1960. The program was sanctioned by The National Planning Commission in 1961.

The plan called for high schools to select teachers for training in the vocational areas while facilities and equipment would be provided through Ministry of Education in cooperation with USAID/Nepal. From this beginning the program has been expanded and it has been reported, "By 1961, 25 schools had been converted or were in the progress of being converted to multipurpose type high schools; 150 vocational instructors had received limited training in the skill and methods of teaching vocational subjects; 20 schools had been supplied with adequate equipment to run vocational courses, 75 classrooms had been constructed for use in vocational courses and 275 students had passed their S.L.C. examination with some vocational background."[19]

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[19] Martin, Kenneth L., "An Assessment of the Multipurpose High School Program in Nepal." USAID/Nepal, September, 1970, P.7.

PART II

INTRODUCTION TO THE INTERVIEW SUMMARY

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INTRODUCTION TO THE INTERVIEW SUMMARY

Purpose of the Report: The primary purpose of this report is to provide an early indication of the results which will be secured when the interview form is administered properly to all multipurpose high schools of Nepal. To simplify the presentation the extensive tables are omitted but will hopefully be included in the final composite report of all multipurpose high schools.

Due to the limited amount of time in each school and the reduction in the number of Ministry of Education multipurpose supervisory staff which were sent on the interview team, two major adjustments were made in the original plan.

1. The number of multipurpose high schools visited was reduced. Those schools visited were:

    a. Tri Judha MPH School at Birguni
    b. Mangal Prasad MPH School at Nepalganj
    c. Saraswati MPH School Janakpur
    d. Pama MPH School at Japha
    e. Shree Padma MPH School at Bhaktapur
    f. Demonstration Multipurpose at Sano Thima

2. The interview form was in several cases handed to the potential interviewee and they were requested to complete it just as if it were a questionnaire. Due to the detail which was desired many of those persons who answered provided only limited or insufficient information.

In the tabulation of the information collected it was found that only four of the sets of interviewed forms (those which were treated and administered as an interview form) were answered in sufficient detail to warrant inclusion in the report. Therefore, this report incompasses four schools which have four vocational wings in each school and employ 78 teachers total, 32 of which were vocational teachers, and during the school year of 1970 enrolled 2100 students. This is the preliminary report of the most comprehensive and structured analysis of the Multipurpose High School Program since it began in 1959.

Perhaps the most significant aspect of the report but the most difficult to measure were the questions which encouraged an open end or free response from the teachers. Those answers which were included are representative of the responses from the total population completing this section of the interview form. The responses are presented by vocational areas in alphabetical order. The statements are direct quotes and have not been altered or edited.

General Information About the School: The first section of the interview form was completed with the cooperation of the Headmaster and his office staff. The information was general in nature dealing with overall operation and facilities of the school. (Refer to Part IV for copy of the General Information Interview Form.)

Question Synopsis	Composite of Headmaster's Response
Grades Taught	Grades 6 through 10
School vacation	60 days
Total teachers of the system	Range from 16 to 22
Class length in minutes	Range from 35 to 55
Periods per week	Range from 39 to 48
Operating cost for vocational students	Range from 163 to 320 Rs.
Operating cost for all students	Range from 25 to 169 Rs.
Tuition charged to students	Yes, all students
Tuition charge for grade 6	Range from 6 to 7.5Rs./mo/student
Tuition charge for grade 7	Range from 7 to 8.75Rs./mo/student
Tuition charge for grade 8	Range from 8 to 11 Rs./mo/student
Tuition charge for grade 9	Range from 9 to 13.25Rs./mo/student
Tuition charge for grade 10	Range from 10 to 13.25Rs./mo/studer
Classrooms in school	Range from 12 to 27 rooms
Electrical power in school	3 yes and 1 no
Running water in school	3 yes and 1 no
School management committee membership	Range from 9 to 10 members
School management committee meetings/yr.	Range from 0 to 6

The Headmasters were asked to state the major function they felt the School Management Committee served in the operation of the school. This was the first of several free response questions which were asked and the responses are direct quotes.

> Doing nothing. The committee has not been doing anything to augment the income of the school. The school building is incomplete. The members do not take any interest toward the well being of the school staff and the whole school is severely showing a loss.

> To give certain educational policy and to pass the budget of the school.

> To solve the existing problems of the school. Financially, educationally and others.

> To employ or dismiss the employees of the school. To prepare annual budget. To devise ways and means to meet the deficit, if any. To see that the employees are paid their salaries in time. See that the school accounts and their records are properly maintained. To see that the old buildings are only repaired and new ones constructed, if and when necessary. To suggest appropriate measures for

the harmonious working of the institution. To work for the general well being, progress and development of the school.

The responses indicate a range from no support to almost total control of the school. The headmasters were undecided on the future role which they desired the School Management Committee to fulfill in the system. Teachers felt that the School Management Committee did not support vocational education to the degree that they did the general education or academic phase of the Multipurpose High School.

The Headmasters were quite vocal about problems of operation of a multipurpose high school and in most instances criticism delt with the monitary aspect of the program. Points most often mentioned by the Headmasters as problems were the following:

a. The late arrival of money from HMG delayed the payment of teachers and inhibited the continued development of buildings and facilities.

b. The teacher discontent resulting from the different rate of pay for the first and second vocational teacher and both vocational teachers being paid a higher rate than the rate being paid to the regular teacher.

c. Inadequate HMG money allocated for expendable supplies and facilities which were required for the operation of the various vocational programs.

It was the general opinion of the Headmasters that the Multipurpose High School Program was developed and implemented by the government and the MOE should, therefore, bear all the expenses involved in the setting up and operation of that program. They feel the major roll of the school was to prepare students for entrance in college and that the vocational wing was desirable but not the first priority of the school. It was also generally observed that the headmasters which were interviewed had no previous experience in vocational education or vocationally related experiences, except MPHS administration short course at NVTC.

Student Enrollment: There has been an 18.6 percent increase in students enrolled in the four schools since 1965. This brings their enrollment to 2100 students. The average was 525 students per school with the range from 316 to 721. There was an average of 19.5 teachers per school. The average student teacher ratio was 1 to 26 with the low being 1 to 19 and the high being 1 to 33, which existed in the school enrolling 721 students.

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Formulating models, Interpreting data	*Force Fields, Action Forces,* Matter/Energy Conservation	45. discuss the possible relationship between vulcanism and earthquake activity.	*Search for Data and their Meaning,* Consideration of Premises
Formulating models, Analyzing systems, Interpreting data, or *Synthesizing results*	*Matter/Energy Conservation, Constant Change*	46. discuss the development of geosynclinal mountains.	*Search for Data and their Meaning, Consideration of Premises*
Analyzing systems, Interpreting data or *Synthesizing results*	*Matter/Energy Conservation,* Constant Change	47. cite evidence and explain uplift (emergence) and subsidence (submergence) of crustal blocks not necessarily associated with geosyncline mountains.	*Search for Data and their Meaning, Consideration of Premises*
Interpreting data or *Synthesizing results*	*Differences and Similarities of Interactions,* Constant Change, Matter/Energy Conservation	48. locate the major earthquake and volcanic areas on a map of the world (past and present) and identify areas where future activity might be predictable.	*Respect for Logic, Consideration of Premises*
Interpreting data	*Constant Change, Statistical Descriptions,* Generalized Perceptions	49. explain radioactive decay and how it may be used to measure geologic time intervals.	*Search for Data and their Meaning, Consideration of Premises*
Analyzing systems	*Generalized Perceptions, Statistical Descriptions,* Constant Change	50. list several examples of how relative geologic time is measured and how relative time differs from absolute (radiometric) time.	*Search for Data and their Meaning,* Consideration of Premises
Assimilating	*Constant Change, Statistical Descriptions,* Generalized Perceptions	51. demonstrate a familiarity with the Geologic Time Scale.	Demonstrating Confidence and Satisfaction, Search for Data and their Meaning
Interpreting data	*Differences and Similarities of Objects*	52. identify common fossils and determine their mode of preservation.	Search for Data and their Meaning
Interpreting data	*Constant Change*	53. cite fossil evidence to support the theory that organisms have evolved from simple to more complex forms.	*Search for Data and their Meaning, Consideration of Premises*
Analyzing Systems, Interpreting data	*Constant Change, Differences and Similarities of Interactions*	54. illustrate by example the use of fossils as tools in interpreting earth history.	*Search for Data and their Meaning, Consideration of Premises*
Analyzing systems or *Synthesizing results,* Designing studies, Performing investigations	*Differences and Similarities of Interactions, Action Forces, Space/Time Reference Frames,* Constant Change	55. measure and describe a simple stratigraphic section, correlate this section with nearby sections, and explain any variations in sequence, rock-type, fossil content, structure, etc.	*Search for Data and their Meaning, Consideration of Premises*

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Synthesizing	*Constant Change, Differences and Similarities of Interactions,* Generalized Perceptions	56. describe a logical sequence of events from information given in a cross-sectional diagram containing sedimentary, igenous, and metamorphic rocks by using the principles of (a) original horizontality, (b) super-position, (c) unconformity, (d) cross-cutting relationships, and (e) faunal succession.	*Consideration of Premises, Search for Data and their Meaning*
Proposing answers, Cognitively evaluating alternatives, Interpreting data	*Science and Technology, Interdependency of Nature,* Differences and Similarities of Interactions, Force Fields	57. report orally or in writing observations he has made of accelerated natural pollution of surface water (streams and lakes) in his locality and discuss ways to reduce this accelerated natural pollution in the future.	*Consideration of Consequences,* Developing A Commitment to Aesthetics in Nature
Synthesizing results	*Science and Technology, Interdependency of Nature,* Differences and Similarities of Interactions, Force Fields	58. predict problems that may develop in the future conerning the quality of water in his locality after obtaining information about the laws in his area concerning human waste disposal and interviewing public health and sanitation officials concerning the quality of surface and subsurface water in his area.	*Consideration of Consequences,* Developing A Commitment to Aesthetics in Nature
Synthesizing results, and Cognitively evaluating alternatives	*Science and Technology, Interdependency of Nature, Differences and Similarities of Interactions,* Force Fields	59. predict what changes in the earth mean annual temperature may occur (remember the greenhouse effect) and how these changes may affect the natural environment if man's activity constantly increases the abundance of carbon dioxide and dust in the atmosphere.	*Consideration of Consequences,* Developing A Commitment to Aesthetics in Nature
Synthesizing results, Proposing answers, Cognitively evaluating alternatives	*Matter Conservation, Energy Conservation, Interdependency of Nature, Science and Technology*	60. distinguish between renewable and non-renewable mineral resources (giving examples of each) and suggest things that may be done to increase man's use of some non-renewable mineral resources after these resources have been used in manufacturing.	*Consideration of Consequences,* Developing A Commitment to Aesthetics in Nature
Synthesizing results	*Interdependency of Nature, Force Fields, Science and Technology*	61. construct hypotheses concerning the possible effects on future changes in the earth's surface of such technological application as damming waterways (both small and large) and underground nuclear explosions, etc.	*Consideration of Consequences,* Respect for Order in Nature

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VT 014 829

STITT, THOMAS R.

PRELIMINARY REPORT ON VOCATIONAL EDUCATION IN THE MULTIPURPOSE HIGH SCHOOL SYSTEM OF NEPAL.

SOUTHERN ILLINOIS UNIV., CARBONDALE. OFFICE OF INTERNATIONAL EDUCATION.

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ABSTRACT - THIS REPORT EVALUATES THE VOCATIONAL EDUCATION PROGRAMS OF SELECTED MULTIPURPOSE HIGH SCHOOLS IN NEPAL AND MAKES RECOMMENDATIONS FOR THEIR CONTINUED DEVELOPMENT. THE REPORT ALSO PROVIDES ASSISTANCE TO THE SCHOOLS' SUPERVISORY STAFF IN DEVELOPING AN EVALUATION INSTRUMENT, BUILDING AN INFORMATION SYSTEM, AND GAINING FIELD EXPERIENCE IN THE GATHERING OF DATA. THE INTERVIEW FORMS ARE INCLUDED. (BH)

VT 014 829

OFFICE OF INTERNATIONAL EDUCATION

SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE

VT014829

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PRELIMINARY REPORT
ON
VOCATIONAL EDUCATION
IN THE
MULTIPURPOSE HIGH SCHOOL SYSTEM
OF
NEPAL

BY
THOMAS R. STITT

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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Work experience reported by vocational teachers:

Job Title	Number Reporting
Lecturing	4
Demonstration	1
Evaluation (examination)	2
Doing Practicals	1
Teacher (grade school)	1
Poultry NVTC	1
Vegetable production NVTC	1
Dairy NVTC	1
Young Farmer Class	2
Bookkeeping Class NVTC	2
Business Education Class NVTC	2
Office Practice NVTC	2
Typing NVTC	3
Shorthand NVTC	3
Business Accounting	1
Woodworking NVTC	4
Electricity NVTC	4
Drafting NVTC	2
Sheet Netal Work NVTC	3
Power tools NVTC	2
Writer - Trade & Industrial text book	1
Food NVTC	2
Home Management NVTC	1
Child Care NVTC	1
Clothing and textiles NVTC	2

Of the 25 job titles which were reported, 17 were reported to have been the experiences which were included in the training which the teacher had received at the National Vocational Training Center. Seven of the job titles were related to the present or previous teaching assignment.

The teachers were then asked to state in their own words the value of the work experience which they had been exposed to. The teachers responses are included in the form of quotes by vocational areas.

Vocational Agriculture

Practical knowledge is more essential than theoretical knowledge because they have to work in the field after passing the School Leaving Examination or the Bachlors of Agriculture.

Genuine Satisfaction.

Secretarial Science

Practical knowledge is more essential for the students.

Experience is of utmost importance in teaching practice, so this experience of the past years has been highly beneficial to me in teaching practice. (Total experience listed was NVTC).

Trade and Industrial Education

As theoretical and practical teaching goes side by side, it is highly valuable to the student to get into the subject matter. More theoretical knowledge is of no value in life.

The experience I have earned (Authors Note: he listed instructor and writer of T & I text book) from the above two works have helped me a lot to teach my students even in the absence of the course book of my teaching area.

The responses are supportive of work experience but the kinds of job titles which were listed were not those which would be generally considered vocational employment experience.

Field Trips: The teachers were asked to list the planned field trips which were completed during the past teaching year. These were to include those to business, industry and/or government related establishments which classes of students had been taken to during the year.

Planned Field Trips to Local Establishments

Establishment	Vocational Wing	Number of Times Reported
Publis Hospital	(HS)	1
Horticulture	(HS)	1
Furniture Factory	(T&I)	4
Nepal Bank LTD.	(BE)	1
Sugar Factory	(BE) (VA)	3
Telephone Office	(BE)	1
Local Home	(HS)	1
Saw Mill	(T&I) (VA)	3
Agriculture Tool	(VA)	1
Factory	(VA)	2
Rice Mill	(VA)	2
Government Research Farm	(VA)	7
Vetinary Hospital	(VA)	1
Local Farm	(VA)	1

The 21 teachers reported 28 field trips total. This was an average of only 1.3 field trips per year. During the first school visit this low number of field trips per year trend was noticed and the interviewers asked the teachers to indicate the reason for the limited number of trips. The major reason given was: (1) Difficulty in securing proper transportation, (2) class periods too short, (3) limited number of appropriate places to visit.

These were valid problems which the teacher faces. It was, however, the observation of the survey team that at one school located within a town there were five vocationally related businesses which were within a five or ten minute walk from the school and none of them had been visited by the vocational departments of that school. Granted, this was an exception as most of the schools do not have this kind of related businesses to choose from. It does tend to support the surveys teams position that most of the vocational teachers did not fully grasp the value of utilizing the locally available related resources as a teaching aid.

Philosophy of Vocational Education: The teachers were asked to state, in writing, what they considered to be their philosophy of vocational education.

Home Science Teachers Responses Included

Vocational subject should be compulsory, at least class VIII. Teachers should be perfected in their own subject. Teaching materials should be provided to the teachers or department by the school.

Vocational education makes students become successful housewives and good mothers, and also makes them economically self-reliant to some extent. It teaches them learning by doing.

In vocational training we learn by doing everything. 'Practice makes a man perfect.' This proverb is applied by all.

Secretarial Science Responses Included

Vocational education is to meet the country's needs of trained technicians and after school graduation students may stand on their own feet to get jobs.

We abide by the principle (learning to do by doing) and to act accordingly.

Each and every people are not eligible for higher education and people should earn their livelihood through some vocation according to their ability as well as their necessity. So the education imparted only for learned making and clerical type are failing to fulfill the need of society. To solve the problem of whitecollar and to develop the community and society harmonious by the self-sufficiency and self-helping, the job training centers and vocational education highly essential for our country.

Our principle philosophy of vocational education is learning to do by doing. We abide by it and teach our students according to it and prepare the students as useful citizens of Nepal.

The main philosophy of vocational education is "learning by doing". So we have to work according to this principle. It is a technical education, by which a person can stand on his own legs. It produces the knowledge of modern world.

Trade and Industrial Education Teachers Responses Included

The main philosophy of vocational education, as I think, is to produce such students who must rely on themselves for their livelihood. In other words, I can say, those who get this system of education must be self-dependent at any cost. They are required to implore the means of their livelihood by their own efforts.

Vocational Agriculture Teacher Responses Included

It is very useful and favorable to our country. This education provides man to be self-standing. Vocational education develops the basic manipulative skill technical know-how fitting young people for employment.

Vocational education is the education that meets the needs of those students who are unable to gain higher education. It makes them efficient workers in their field. Helps them to be self-dependent. It helps those students too who want to have further study in their own fields.

To enable one to be self-sufficient and self-standing by learning necessary skills and techniques.

The main philosophy of vocational training is "learning by doing". Thus, we have to work on principles. It is a non-parasitic teaching through which a person can stand on his own legs. It gives the knowledge of modernized tools and chemical fertilizers. So a farmer can produce a lot of grain in comparison to their old knowledge.

To make one's self self-sufficient by learning necessary skills and techniques.

Summary: The basic theme of "learning by doing", "students ability to stand on their own two feet", "self-sufficient", "production of students who will rely on themselves for their livelihood", were constant throughout the statements. This strong and sound philosophy which the teachers indicate that they believe in, did not reflect itself in many other areas of the interview form. This was observed when the teachers report the major method of teaching being lecture and with limited student participation. It can be seen again in the open end question on problems of a teacher when only a limited number of teachers considered facilities and expendable supplies for students to "learn by doing" as a problem.

One might conclude that the teachers had been taught, perhaps during in-service Vocational Training, the proper philosophy, therefore enabling them to repeat it on call but have not had sufficient "applied" vocational training to insure that they can implement their philosophy.

Problem Area: The teachers were given an opportunity to identify the major area which they felt was a problem. The question stated specifically, "What are your major problems as a teacher?", allowing the teacher to report any personal and professional problem which he or she felt.

Home Science Teachers Reported

1. Lack of teaching materials
2. Imperfect training, especially in clothing theory and practical both.
3. Lack of charts.

In the kitchen laboratory there is no facility or water supply. Hence, it creates a great problem for us.

There is a knitting machine in our department, but since none of us have had any training regarding its handling we have not taken advantage of this machine as yet.

Less pay.

Lack of running water, textbooks and reference books, and adequate funds.

Lack of reference books. Money for practical books - timely.

Secretarial Science Teachers Reported

With less pay it is difficult to maintain the family. It is the only major problem which diverts the mind from teaching.

Scarcity of course books and reference books, scarcity of Devanagari typewriters and adding machines.

Problem of Devanagari typewriter; need to have some more English typewriters; no grant of money for stationary; no textbooks; only one classroom, should be made into two.

1. Lack of typewriters
2. Lack of calculating machines
3. Lack of bulletin boards
4. Textbook of secretarial practice

Trade & Industrial Education Teachers Reported

A great hampering is often occuring in imparting the knowledge which I have got in training to students because of the poor coordination between the HMG, multipurpose department and the school committee or headmaster so it results, improbable room for vocational class, not getting the budget on time to purchase the necessary instructional materials such as lumber, polishing materials, paper, pencil, oil, fuel and so on.

Scarcity of course books and reference books for all the grades. Insufficiency of materials, replacement and repair of some tools as jointer and planner, blades.

1. Power tools have not yet been installed.
2. Lack of electrical supply.
3. Most students are a tender age, so they are incapable of the heavy practical work. The second teacher should be paid equally to that of the first teacher.

Five hours duration (8 periods of 40 minutes) per week time is quite insufficient to teach courses in T & I, lack of course books and reference books, improper adjustment of periods are some of the problems that are to be solved.

Vocational Agriculture Teachers Response

Low salary, inadequate facilities in teaching job causes a great problem for the teachers. A teacher has to teach more periods than scheduled so that he may not be capable of teaching the students according to planned method.

There are many problems which come as obstacles in the way to run the program: (1) Lack of facilities and cooperation to be given by school administration and managers, (2) lack of tools and equipment needed to guide the students, (3) delay in receiving money or budget, (4) conservative mentality of the students and guardians about farming.

Lack of facilities - water, vehicle, furniture. Cowshed to be reconstructed, textbooks, and reference books.

(i) In the absence of the first teacher I have to work labor hard, f.g., whole responsibility is on my head but I am not getting any extra remuneration for extra work that I have to perform, (ii) no cowshed, (iii) no cow, (iv) fencing problem.

The major problem is unavailability of reference books. Lack of water, vehicle, furniture, cowshed.

Summary: Salary, which was considered a major problem and assumed to be the first area which teachers would be inclined to mention in discussion of problem areas was not the major item listed. In fact, it was mentioned by only three of the total teachers responding to this question.

Textbooks, related reference and teaching materials were the principle problem reported. This limitation was again supported in the vocational department interview section when the reference and textbooks were itemized. In a personal inspection of the departments it was found that some did not have a single approved textbook for various grades. A college level text, often owned by the teacher, was the only reference available.

The availability of references would not resolve all the problems of vocational education, but the teachers have certainly identified it as one of the major limitations.

Assuming that text and reference books will become available, the continued and reoccurring problem of teaching material will remain with any system confronted with limited resources.

Job Satisfaction: The teachers were asked, "What are your major satisfactions as a teacher?"

Home Science Teachers Responses

We console ourselves by helping many girls of our country to become future good citizens as well as good housewives.

Helping youngsters.

To work with future housewives and to work with the help of modern equipment.

The girls who passed and who are reading here are beneficial to their homes and nation too.

Secretarial Science Teachers Reported

As it is social work, it gives me a chance to serve the society and country.

The students who passed this section are highly beneficial to the welfare of the nation.

So far the financial status of the teacher is concerned, I feel neither satisfaction nor pleasures as a teacher. In spite of the above facts, I am proud of producing the future dependable and responsible citizen of the nation.

Trade & Industrial Teachers Responded

We produce useful citizens and that is the major satisfaction.

Being an optimist, I have a great satisfaction with my job that the students will realize the need of vocational training as their prime necessity for upliftment of the nation and, too, as a good and healthy citizen to be always employed might be their motto.

So far as I conceive that the students which I have graduated from this section may be highly beneficial for the progress and up-lift of the nation. This I conceive as the greatest satisfaction that I have gained from it.

Some of the students of this section have shown their great interest in this field. Their project works are of professional skill. But they are weak in English and mathematics. They are best upon to graduate in this area. Improvement of courses of studies of this area will help the nation's development.

Vocational Ist teachers will be satisfied, because they gain more than four hundred and IInd teachers draw one hundred fifty five or two hundred rupees. Therefore, we second teachers are not satisfied.

Vocational Agriculture Teachers Responses

When my students get through their examinations and go to college for a higher course, I feel a great pleasure. When students return to their community and apply their skill, I also feel a great satisfaction in my teaching job.

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Translating	*Differences and Similarities of Objects, Fundamental Structures,* Generalized Perceptions	48. identify the chemical family to which an atom belongs from data about the orbital occupancy of the outer or valence electrons.	*Respect for Order in Nature,* Demonstrating Confidence and Satisfaction
Translating	*Generalized Perceptions, Fundamental Structures*	49. write the electron configuration for an atom in its ground state from its atomic number.	*Respect for Order in Nature,* Demonstrating Confidence and Satisfaction
Simulating, Communicating	*Generalized Perceptions,* Differences and Similarities of Interactions	50. construct a Lewis (electron-dot) structure for any compound given its formula and, in complex cases, the structural arrangement.	*Respect for Logic*
Formulating statistical models, Translating	*Generalized Perceptions, Fundamental Structures,* Statistical Descriptions	51. calculate the number of protons. neutrons and electrons for an atom given the atomic number and the mass number of the atom.	*Consideration of Premises,* Respect for Order in Nature
Defining operationally	*Generalized Perceptions, Fundamental Structures,* Statistical Descriptions	52. identify those atoms which are isotopes of the same element given the atomic and mass numbers of various atoms.	*Consideration of Premises,* Respect for Order in Nature
Translating	*Statistical Descriptions, Differences and Similarities of Objects*	53. determine the number of moles and the molarity of each species present in an ionic solution formed by adding a known mass of solute to form a known volume of solution.	*Respect for Logic, Search for Data and their Meaning*
Translating	*Statistical Descriptions, Differences and Similarities of Objects,* Generalized Perceptions	54. determine the resulting concentration of each dissolved species when two solutions are mixed. Any precipitation and dissociation should be considered complete.	*Consideration of Premises, Search for Data and their Meaning*
Formulating models, Translating	*Generalized Perceptions, Differences and Similarities of Objects, Fundamental Structures*	55. predict whether two given atoms form an ionic, polar or non-polar covalent bond given values of electronegativity.	*Search for Data and their Meaning,* Consideration of Premises, Respect for Order in Nature
Translating	*Generalized Perceptions, Differences and Similarities of Objects,* Fundamental Structures, Energy Forms	56. order a list of bonds (e.g. HI, HBr, HCl) according to increasing polarity.	*Respect for Logic,* Respect for Order in Nature
Translating	*Differences and Similarities of Objects, Differences and Similarities of Interactions,* Interdependency of Nature, Energy Forms	57. predict the type of bonding for a substance from experimental data such as solubility, electrical conductivity (when fused or in solution) and melting point.	*Respect for Logic,* Respect for Order in Nature
Analyzing systems	*Action Forces, Energy Exchange, Matter/Energy Conservation,* Force Fields	58. describe the qualitative effect on the rate-of-reaction of a change in temperature or concentration.	*Search for Data and their Meaning*

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Synthesizing, Analyzing systems	*Matter/Energy Conservation, Force Fields,* Interdependency of Nature	59. predict the change that will result in a system at equilibrium when any of the following occur: (a) the concentration of one of the components is changed, (b) the pressure of the system is changed, (c) the thermal energy is changed or (d) a catalyst is added to the system.	*Respect for Logic,* Respect for Order in Nature
Analyzing systems, Formulating models, Defining operationally	*Matter/Energy Conservation, Generalized Perceptions*	60. describe the mascroscopic and microscopic behavior of a system at equilibrium.	*Search for Data and their Meaning, Consideration of Consequences*
Formulating statistical models	*Generalized Perceptions, Matter/Energy Conservation,* Statistical Descriptions	61. write the equilibrium constant expression from the equation for a reaction.	*Search for Data and their Meaning,* Valuing Scientific Heritage
Translating	*Statistical Descriptions, Generalized Perceptions,* Matter/Energy Conservation	62. compute the equilibrium constant given the equation, the amount of each component at equilibrium and the volume of the system.	*Search for Data and their Meaning, Valuing Scientific Heritage,* Demonstrating Confidence and Satisfaction
Translating	*Statistical Descriptions, Generalized Perceptions,* Matter/Energy Conservation	63. compute the predicted concentration of each dissolved species and amount of precipitation when two solutions are mixed.	*Respect for Logic, Consideration of Premises*
Translating, Interpreting data	*Matter/Energy Conservation, Matter Conservation, Statistical Descriptions, Action Forces,* Generalized Perceptions	64. from a list of reactions and their equilibrium constants, rank the reactions in order of decreasing concentration of products at equilibrium.	*Search for Data and their Meaning, Respect for Logic,* Consideration of Premises
Analyzing systems	*Force Fields, Action Forces,* Matter/Energy Conservation	65. describe how the nature of the chemical bonds in a solute relates to its solubility in various solvents.	*Search for Data and their Meaning, Consideration of Consequences,* Developing A Commitment to Aesthetic in Nature
Formulating models	*Science and Technology*	66. construct an inference about the various bonds that must exist in a substance in order for it to act as an emulsifying, cleansing, and/or wetting agent.	*Search for Data and their Meaning, Respect for Order in Nature*
Cognitively evaluating alternatives, Social evaluating, Affective and Social Evaluating	*Science and Technology, Science and Society,* Interdependency of Nature	67. trace of history of various applications of chemicals in the everyday activities of home and industry and identify various environmental problems that have resulted from these applications, include in this discussion how attempts to correct one environmental problem have often led to the development of another.	*Consideration of Consequences, Developing A Commitment to Aesthetics in Nature*

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Cognitively evaluating alternatives, Social evaluating, Affective evaluating	*Science and Technology, Science and Society,* Energy Exchange	68. use the detergent, pesticide, packaging and/or fertilizer industry to illustrate how man's use of chemical knowledge to improve his well-being has led to other problems for him and identify types of data that should be analyzed and projected in the future before any new product should be marketed for mass consumption.	*Consideration of Consequences, Developing A Commitment to Aesthetics in Nature*
Synthesizing	*Generalized Perceptions*	69. demonstrate an understanding of the long term development of scientific thoughts by tracing the historical development of concepts such as: (a) atomic theory, (b) kinetic theory, (c) law of definite composition (proportion), (d) periodicity, (e) the mole concept and (f) the concept of acid and base.	*Valuing Scientific Heritage*
Analyzing systems	*Generalized Perceptions*	70. construct a microscopic model consistent with some hypothetical information provided about matter on a distant planet.	*Questioning of All Things*
Analyzing systems	*Generalized Perceptions*	71. determine if some hypothetical information provided about matter on a distant planet is consistent with our model of matter (atomic theory).	*Questioning of All Things*
Formulating Hypotheses	*Generalized Perceptions*	72. construct a test of a hypothesis about a chemical system or phenomenon.	*Longing to Know and Understand, Respect for Logic*
Refining problems	*Generalized Perceptions*	73. describe observations that would support a hypothesis and those that refute a hypothesis about a chemical system or phenomenon.	*Demand for Verification, Consideration of Premises*
Synthesizing results	*Generalized Perceptions*	74. construct a report of a test of a hypothesis about a chemical system of phenomenon which: (a) is written so that it can be understood by a competent reader, (b) provides all data which are relevant to the hypothesis, (c) presents the data in an orderly manner and (d) provides reasonable conclusions based on the data reported.	*Consideration of Premises, Consideration of Consequences, Respect for Logic, Demand for Verification, Search for Data and their Meaning*
Formulating models	*Fundamental Structures, Generalized Perceptions*	75. construct ball and stick models for a number of organic compounds; some compounds in the list should contain double or triple bonds.	*Search for Data and their Meaning*
Formulating models	*Fundamental Structures, Generalized Perceptions*	76. construct ball and stick models of at least two compounds which are stereoisomers and explain (in terms of a model) why these compounds have different properties even though they have the same formula.	*Search for Data and their Meaning*

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Performing investigations	*Differences and Similarities of Interactions, Generalized Perceptions, Science and Technology*	77. demonstrate that the chemistry of many organic compounds can be understood (in large part) by studying the functional groups in the compound through performing a number of syntheses such as: (a) esterification, (b) saponification, (c) limited oxidation of alcohols, (d) peptidization and (e) synthetic polymerization.	*Longing to Know and Understand*
Formulating models or *Performing investigations*	*Interdependency of Nature, Science and Technology,* Science and Society	78. identify and describe various ways natural chemical processes in the living organism may be affected by the presence of foreign chemical substances within the organism.	*Respect for Order in Nature,* Search for Data and their Meaning
Formulating models, Analyzing systems	*Fundamental Structures, Matter/Energy Conservation*	79. write equations to represent nuclear transformation resulting in natural decay of radioactive materials.	*Search for Data and their Meaning*
Translating, Synthesizing	*Fundamental Structures, Matter/Energy Conservation, Generalized Perceptions, Action Forces, Force Fields*	80. predict from a list of various atoms (with atomic number and mass indicated) those which should have nuclear stability and those which should not.	*Consideration of Premises*
Synthesizing	*Energy Forms, Energy Exchange, Matter/Energy Conservation, Science and Technology*	81. write equations to represent nuclear transformations that are capable of sustaining a chain reaction.	*Consideration of Premises, Consideration of Consequences*
Social evaluating	*Science and Technology, Science and Society*	82. discuss possible applications of nuclear transformations including factors that must be considered in order to judge whether the application is "useful or useless" and "safe or dangerous".	*Consideration of Consequences*

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Designing studies, Performing investigations, Cognitively evaluating alternatives	*Differences and Similarities of Objects, Differences and Similarities of Interactions,* Energy Exchange	8. compare and contrast the nutritional patterns of organisms using examples such as: a. algae cells, b. paramecia, c. fungus — mold or toadstool, d. earthworm, e. grasshopper. f. tree, g. man, h. parasitic organisms. i. symbiotic organisms.	*Questioning of All Things,* Search for Data and their Meaning
Formulating models, Synthesizing, Experimenting	*Differences and Similarities of Interactions,* Differences and Similarities of Objects, Energy Exchange, Generalized Perceptions	9. identify the major roles of enzymes as they occur in organic reactions.	*Search for Data and their Meaning,* Respect for Order in Nature, Demand for Verification
Analyzing systems	*Differences and Similarities of Interactions,* Energy Exchange, Interdependency of Nature, Generalized Perceptions	10. describe in a given organism the mechanical and chemical processes that change food in its large particle form to the small particle form that is able to diffuse into living cells.	*Questioning of All Things,* Respect for Order in Nature
Formulating models, Synthesizing, Experimenting	*Differences and Similarities of Interactions,* Matter Conservation, Generalized Perceptions, Science and Technology	11. demonstrate, by laboratory procedures if practical, the control of diffusion of a material in solution and relate this action to life situations such as: a. well water contamination. b. improper use of fertilizer, c. drinking sea water, d. alcohol consumption, e. irrigation in areas where water has been used several times — such as Imperial Valley, California.	*Search for Data and their Meaning, Consideration of Consequences,* Consideration of Premises
Cognitively evaluating alternatives, Analyzing systems, Abstracting	*Differences and Similarities of Objects,* Space/Time Reference Frames, Generalized Perceptions	12. describe supporting and conflicting evidence of the hypothesis; the larger the size of the mature organism the more complex its systems, using situations such as: a. circulation in the earthworm and a chordate, b. gas exchange processes in the paramecium, the insects, and a mammal, c. reproduction of the paramecium and a rotifer, d. circulation of transport in a sponge and a mouse.	*Demand for Verification,* Questioning of All Things, Consideration of Premises
Designing studies, Performing investigations, Synthesizing results	*Differences and Similarities of Objects, Differences and Similarities of Interactions, Constant Change, Interdependency of Nature*	13. describe the stimulus-response mechanisms in various organisms such as: a. paramecia, b. euglena, c. planaria, d. earthworm, e. insects, f. human.	*Search for Data and their Meaning,* Respect for Order in Nature
Designing studies, Performing investigations	*Differences and Similarities of Interactions, Statistical Descriptions,* Force Fields, Interdependency of Nature	14. design and perform a demonstration to show the effect of tropisms such as: geotropism, hydrotropism, heliotropism, etc.	*Search for Data and their Meaning,* Respect for Order in Nature

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Designing studies, Performing investigations, Synthesizing results, Refining problems	*Differences and Similarities of Interactions, Statistical Descriptions,* Interdependency of Nature, Generalized Perceptions	15. design, perform, and report the results of a controlled experiment to demonstrate the effect on living organisms of varying amounts of the following items such as: water, nitrogen, calcium, phosphorous, light, and heat. Use various kinds of plants, fruit flies, other insects, or small water animals.	*Search for Data and their Meaning,* Consideration of Consequences, Respect for Order of Nature
Formulating models	*Generalized Perceptions, Interdependency of Nature,* Matter/Energy Conservation, Differences and Similarities of Interactions	16. relate the role of endocrine secretions to homeostasis.	*Search for Data and their Meaning,* Respect for Order in Nature
Analyzing systems, Synthesizing, Experimenting	*Energy Exchange, Energy Forms,* Differences and Similarities of Interactions	17. describe these aspects of respiration: a. distinguish between aerobic and anerobic respiration to the effeciency of energy release and the products formed, b. relate respiration to energy in all living things, c. describe the basic chemical changes which occur when sugar is burned and identify the role of each organ or organelle involved.	*Search for Data and their Meaning,* Respect for Order in Nature
Analyzing Systems, Synthesizing or *Designing studies* and *Performing investigations*	*Differences and Similarities of Interactions, Differences and Similarities of Objects,* Fundamental Structures, Space/Time Reference Frames, Force Fields	18. describe the action of ciliated or flagelleted motion as it occurs in: a. single celled organisms, b. sessile water animals, c. special tissues in complex organisms, e. g. frog epithelium, oviduct, trachael epithelium.	*Search for Data and their Meaning,* Respect for Order in Nature
Analyzing systems, Formulating models or *Designing studies* and *Performing investigations*	*Differences and Similarities of Interactions, Fundamental Structures, Differences and Similarities of Objects*	19. describe how movement is achieved by muscular contraction in organisms where action involves internal or external skeletons; the action against material or opposing muscles using examples such as: mammalian movement, insect movement, round worm or earthworm movement, peristalsis.	*Search for Data and their Meaning,* Demand for Verification, Respect for Order in Nature
Analyzing systems or Typing problems, Designing studies and *Synthesizing results*	*Matter Conservation, Differences and Similarities of Interactions, Fundamental Structures*	20. describe the excretion function by identifying the material secreted, the source of the material, and the disposition of the materials in such organs as: a. intestines of earthworm, insect, and mammals, b. lungs of reptiles, birds, and mammals, c. gills of fishes, d. kidneys of vertebrates, e. nephrons of the earthworm, f. cell membrane of the paramecium.	*Search for Data and their Meaning, Respect for Order in Nature, Consideration of Consequences*
Analyzing systems	*Differences and Similarities of Objects, Fundamental Structures, Differences and Similarities of Interactions,* Constant Change	21. identify and contrast the sequence of events in the mitosis of plant and animal cells.	*Questioning of All Things, Respect for Order in Nature,* Search for Data and their Meaning

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Designing studies, Performing investigations, Recognizing problems, Typing problems, Refining problems	*Differences and Similarities of Objects, Fundamental Structures,* Differences and Similarities of Interactions, Constant Change, Interdependency of Nature	22. describe and contrast fertilization in various organisms such as: a. mold (Rhizopus), b. algae (Spirogyria, Oedogonium), c. a flowering plant, d. a frog (external fertilization), e. a mammal (internal fertilization).	*Questioning of All Things, Respect for Order in Nature,* Search for Data and their Meaning
Designing studies, Performing investigations, Synthesizing results	Differences and Similarities of Objects, Fundamental Structures, Constant Change, Interdependency of Nature	23. describe the various processes by which asexual reproduction may occur and cite examples to illustrate: a. fission, b. budding, c. regeneration, d. layering, e. fragmentation, f. sporulation.	*Questioning of All Things Demand for Verification,* Respect for Order in Nature
Interpreting data	*Differences and Similarities of Objects, Fundamental Structures,* Generalized Perceptions	24. diagram an atom or an ion given the appripriate data.	Search for Data and their Meaning, Respect for Order in Nature
Interpreting data	Differences and Similarities of Objects, Differences and Similarities of Interactions, Fundamental Structures, Force Fields, Generalized Perceptions	25. contrast covalent, hydrogen and ionic bonding.	Search for Data and their Meaning, Consideration of Premises, Respect for Order in Nature
Analyzing systems, Formulating models	Differences and Similarities of Interactions, Fundamental Structures, Action Forces, Interdependency of Nature	26. contrast the ionization and dissocia- of ionic and electron sharing compounds in water solution.	*Search for Data and their Meaning,* Consideration of Premises
Analyzing systems, Recognizing variables, Formulating models	Differences and Similarities of Objects, Differences and Similarities of Interactions, Fundamental Structures, Action Forces	27. relate pH scale to acidity and alkalinity.	*Search for Data and their Meaning*
Analyzing systems, Formulating models, Defining operationally	*Differences and Similarities of Objects, Differences and Similarities of Interactions, Fundamental Structures*	28. recognize generalized structural formulas and component parts of common chemical substances referred to in biology such as: a. amino acids, b. proteins, c. fatty acids, d. glycerol, e. carbohydrates, f. water, g. carbon dioxide, h. molecular oxygen.	*Search for Data and their Meaning,* Respect for Order in Nature
Designing studies, Performing Investigations	*Differences and Similarities of Interactions,* Action Forces, Interdependency of Nature	29. relate the role of the enzymes in a total process such as photosynthesis.	*Search for Data and their Meaning,*
Defining operationally, Classifying	Fundamental Structures, Differences and Similarities of Objects, Generalized Perceptions	30. identify the three basic structural units of nucleic acids: phosphate group, sugar group, and base group. Compare the structure of DNA and RNA.	Search for Data and their Meaning

Process	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Synthesizing, Interpreting data	*Fundamental Structures,* Force Fields, Generalized Perceptions	31. describe, by diagrams or models, the process of DNA replication.	*Respect for Order in Nature,* Respect for Logic
Analyzing systems, Formulating models	*Fundamental Structures,* Interdependency of Nature, Generalized Perceptions	32. by diagrams or models show how a given sequence of amino acids in protein synthesis is determined by the chromosomes (DNA).	*Respect for Order in Nature,* Respect for Logic
Interpreting data, Formulating models	*Interdependency of Nature, Energy Conservation,* Matter Conservation, Science and Technology	33. construct a food web diagram that illustrates the dependence of the high level consumers on the low level consumers and producers from a given list of organisms found in a community.	*Respect for Order in Nature,* Search for Data and their Meaning, Consideration of Consequences
Analyzing systems, Interpreting data	*Energy Exchange, Interdependency of Nature,* Energy Conservation, Science and Technology	34. trace the transfer of energy from one form to another as it moves through a series of organisms (food chain) starting at the source and ending at the final disposal into the non-living environment. Use various types of habitats such as: a. a temperate prairie, b. a fresh water lake, c. a tundra, d. any other suitable habitat.	*Respect for Order in Nature,* Search for Data and their Meaning, Consideration of Consequences
Formulating models, Analyzing systems, Synthesizing	Energy Exchange, Interdependency of Nature, Energy Conservation, Generalized Perceptions, Force Fields, Science and Technology, Matter Conservation	35. describe the carbon-oxygen-hydrogen cycle as it occurs in the biosphere by relating the role of the the various components materials and processes such as: a. the series of events in photosynthesis which lead to capturing energy, b. green plants, c. animals, d. the series of events in respiration that release energy from food, e. conservation of energy in the cycle.	*Search for Data and their Meaning,* Demand for Verification, Consideration of Consequences
Analyzing systems, Formulating models	Interdependency of Nature, Matter Conservation, Force Fields, Science and Technology	36. relate the benefits each of the following groups of organisms give to their communities as they perform the functions by which they maintain themselves: a. producers, b. consumers — primary and secondary, c. decomposers	*Respect for Order in Nature,* Consideration of Consequences, Search for Data and their Meaning
Formulating Statistical Models, Interpreting data or Designing studies, Performing investigations, Affective and Social Evaluating	*Statistical Descriptions, Matter/Energy Conservation,* Interdependency of Nature	37. relate the bio-mass aspect of the food pyramid to conservation of energy as materials are passed from the lower trophic levels to the higher levels of the pyramid.	*Consideration of Premises, Consideration of Consequences,* Search for Data and their Meaning

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Interpreting data	*Energy Exchange, Energy forms,* Generalized Perceptions	1. describe the general converstion of one form of energy to another.	Search for Data and their Meaning
Analyzing systems	*Energy Exchange, Energy Forms, Energy Conservation,* Generalized Perceptions	2. trace solar energy through its various changes in driving the water cycle on earth.	*Respect for Logic, Respect for Order in Nature,* Search for Data and their Meaning
Analyzing systems or *Synthesizing results*	*Energy Exchange, Energy Forms, Energy Conservation,* Generalized Perceptions	3. illustrate by using *natural* examples: a. how energy may flow or be stored b. how energy may be transferred or transformed	*Respect for Order in Nature,* Search for Data and their Meaning
Analyzing systems, Abstracting, Interpreting data	*Force Fields, Differences and Similarities of Interactions, Space/Time Reference Frames*	4. explain why a frame of reference is important in describing the motion (or the rest state) of an object.	*Consideration of Premises,* Search for Data and their Meaning
Translating, Interpreting data	*Force Fields,* Space/Time Reference Frames	5. describe experiments that support the concepts that: a. the earth rotates on an axis b. the earth revolves around the sun	*Consideration of Premises,* Search for Data and their Meaning
Analyzing systems	*Space/Time Reference Frames*	6. cite examples of the relationship among time of day, seasons, and the motion of the earth.	*Search for Data and their Meaning,* Respect for Logic
Cognitively evaluating alternatives, Formulating models	*Generalized Perceptions, Space/Time Reference Frames,* Constant Change	7. outline several different theories for the origin of the solar system and identify at least one major flaw in each.	*Questioning of All Things, Search for Data and their Meaning, Consideration of Premises,* Valuing Scientific Heritage
Interpreting data. Measuring or *Synthesizing results*	*Statistical Descriptions,* Differences and Similarities of Objects, Differences and Similarities of Interactions	8. describe methods that can be used to find the shape, size, density, etc. of the earth.	*Valuing Scientific Heritage,* Search for Data and their Meaing
Defining operationally, Interpreting data	*Differences and Similarities of Objects, Space/Time Reference Frames,* Generalized Perceptions	9. describe some general physical characteristics of the atmosphere, hydrosphere, and lithosphere.	*Search for Data and their Meaning*
Experimenting, Analyzing systems or *Synthesizing results*	*Interdependency of Nature, Fundamental Structures*	10. discuss the relative importance of several common elements of each sphere in terms of abundance and chemical activity.	*Respect for Order in Nature, Search for Data and their Meaning*
Analyzing systems	*Differences and Similarities of Objects*	11. list the elements that occur in abundance in all three spheres.	*Respect for Order in Nature, Search for Data and their Meaning*
Synthesizing, Analyzing systems	*Differences and Similarities of Objects, Interdependency of Nature*	12. discuss the relative importance of elements common to each list in terms of their chemical role in each sphere.	*Respect for Order in Nature, Search for Data and their Meaning*

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Analyzing systems, Formulating hypotheses	*Interdependency of Nature*	13. discuss the relationship between *mineral* resources and *natural* resources.	*Respect for Order in Nature*, Search for Data and their Meaning
Translating or Synthesizing results	*Energy Forms, Energy Exchange*	14. explain the theory for origin of the sun's energy.	*Search for Data and their Meaning*, Consideration of Premises
Synthesizing, Formulating models	*Differences and Similarities of Interactions, Force Fields*, Generalized Perceptions	15. correlate unequal heating, gravitation, and rotation with unequal pressure distribution and convective circulation in the atmosphere.	*Respect for Logic*, Longing to Know and Understand
Synthesizing, Formulating models	*Force Fields, Energy Exchange*, Matter/Energy Conservation	16. describe the effect of in-coming solar energy on the development of the general structure of the atmosphere.	*Search for Data and their Meaning, Respect for Order in Nature*, Consideration of Premises
Experimenting, Formulating statistical models	*Interdependency of Nature*, Space/Time Reference Frames, Generalized Perceptions	17. relate the properties of a gas in terms of temperature, pressure, and volume.	*Search for Data and their Meaning*
Formulating models, Interpreting data	*Fundamental Structures*	18. describe and give examples of moisture (water) in the atmosphere.	*Search for Data and their Meaning*
Analyzing systems, Translating, or *Synthesizing results*	*Interdependency of Nature, Force Fields*	19. describe, in his own words, how the lower part of the atmosphere produces the "greenhouse effect".	*Search for Data and their Meaning, Consideration of Consequences*
Analyzing systems, Formulating models	*Force Fields, Constant Change*, Interdependency of Nature	20. relate changes in temperature, pressure, and volume to the production of pressure cells.	*Search for Data and their Meaning*
Defining operationally, Interpreting data	*Space/Time Reference Frames*	21. define operationally warm and cold fronts in terms of air-mass movement.	*Valuing Scientific Heritage*
Synthesizing, Analyzing systems, Formulating models	*Interdependency of Nature, Force Fields*, Science and Technology	22. discuss how geographic location, topography, nearby water, population centers, etc. will influence local weather.	*Respect for Order in Nature* Search for Data and their Meaning, Consideration of Consequences
Predicting, Testing	*Differences and Similarities of Interactions, Generalized Perceptions, Science and Technology*, Constant Change	23. make a 12, 24 and 36 hour weather prediction for his school's locality from weather maps for successive days.	*Consideration of Premises, Respect for Order in Nature*
Analyzing systems, Formulating models, Interpreting data	*Force Fields, Constant Change*, Action Forces, Energy Exchange, Energy Forms, Matter/Energy Conservation	24. explain several ways by which waves and currents are generated at or near the hydrosphere-atmosphere interface.	*Search for Data and their Meaning*, Consideration of Premises

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Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Analyzing systems, Formulating models, Interpreting data	*Force Fields, Constant Change,* Action Forces, Energy Exchange, Energy Forms, Matter/Energy Conservation	25. explain how deep water ocean currents are generated.	*Search for Data and their Meaning,* Consideration of Premises
Analyzing systems, Formulating models	Force Fields, Interdependency of Nature, Action Forces	26. discuss, in his own words, the formation of tides.	*Search for Data and their Premises, Respect for Order in Nature*
Synthesizing, Interpreting data	*Differences and Similarities of Interactions, Space/Time Reference Frames, Constant Change, Matter/Energy Conservation*	27. grossly trace the major oceanic circulation patterns on a map of the world.	*Search for Data and their Meaning, Respect for Order in Nature*
Formulating models, Defining operationally, Formulating Hypotheses or *Synthesizing results*	*Constant Change, Generalized Perceptions,* Matter/Energy Conservation, Action Forces	28. describe the major topographic features of continental shelves and ocean basins, and suggest hypotheses concerning their origin.	*Search for Data and their Meaning*
Formulaing models, Analyzing systems, Interpreting data, or *Synthesizing results*	*Constant Change, Force Fields,* Action Forces	29. list shoreline features and correlate the production of these features with wave and current activity in shallow water.	*Search for Data and their Meaning,* Respect for Order in Nature
Interpreting data, Defining operationally	*Differences and Similarities of Objects, Science and Technology*	30. identify common rock forming minerals and ores using their physical properties.	*Search for Data and their Meaning*
Classifying	*Differences and Similarities of Objects*	31. identify several unfamiliar minerals with an appropriate mineral key.	*Respect for Logic, Demonstrating Confidence and Satisfaction*
Experimenting, Interpreting data	*Differences and Similarities of Objects*	32. identify textural, structural, and compositional features in hand specimens of common rocks.	*Search for Data and their Meaning*
Formulating models, Classifying, or *Synthesizing results*	*Differences and Similarities of Objects, Constant Change,* Force Fields, Generalized Perceptions	33. classify specimens of common rocks and describe their origin in general terms.	*Search for Data and their Meaning,* Valuing Scientific Heritage
Formulating models, Analyzing systems or *Synthesizing results*	*Force Fields, Constant Change, Matter/Energy Conservation,* Generalized Perceptions	34. enumerate the sources of heat to produce a magma and trace the cooling history of a magma from its birth to the formation of a batholith and/or to the formation of volcanic mountains and plateaus.	*Respect for Logic, Search for Data and their Meaning, Consideration of Premises*

Processes	Conceptual Schemes	OBJECTIVES: Dependent upon ability and past experience, the student will:	Values and Attitudes
Formulating statistical models, Analyzing systems, or *Synthesizing results*	*Force Fields, Constant Change, Matter/Energy Conservation*, Generalized Perceptions	35. explain the origin of metamorphic rocks by discussing the temperature and pressure conditions that may be inferred at increasing depths within the earth's crust.	*Respect for Logic, Search for Data and their Meaning, Consideration of Premises*
Formulating models, Analyzing systems, or Synthesizing results	*Constant Change, Force Fields, Matter/Energy Conservation*, Generalized Perceptions	36. describe the environments where sediments may accumulate and how sedimentary rocks are formed.	*Respect for Logic, Search for Data and their Meaning*, Respect for Order in Nature
Synthesizing, Formulating models	*Constant Change, Matter/Energy Conservation*	37. trace a particle of matter through the rock cycle along various paths it may take.	*Respect for Logic, Respect for Order in Nature*
Analyzing systems, Formulating models, Interpreting data, Classifying, or *Synthesizing results*	*Differences and Similarities of Interactions, Constant Change, Force Fields*, Matter/Energy Conservation	38. explain and illustrate with examples the effects produced by major gradational processes as the shape of the earth's surface is changed.	*Search for Data and their Meaning, Consideration of Premises*
Synthesizing, Analyzing systems, Formulating models	*Matter/Energy Conservation*, Generalized Preceptions, Constant Change	39. illustrate with example how geologic processes tend toward an equilibrium state as the earth's surface is modified.	*Consideration of Premises*, Search for Data and their Meaning
Analyzing systems, Simulating	*Constant Change*, Force Fields	40. relate the origin of sedimentary rocks to weathering, mass movement and erosion.	*Search for Data and their Meaning, Consideration of Premises*
Formulating models, Analyzing systems or *Synthesizing results*	*Action Forces*, Statistical Descriptions	41. describe why an earthquake occurs.	*Search for Data and their Meaning, Consideration of Premises*
Defining operationally, Recognizing variables	*Differences and Similarities of Objects, Differences and Similarities of Interactions*	42. describe in gross terms the nature of P, S, and surface waves.	*Search for Data and their Meaning*
Formulating models, Interpreting data or *Synthesizing results*	*Generalized Perceptions*, Differences and Similarities of Interactions, Space/Time Reference Frames	43. explain how earthquake (seismic) wave data are used to postulate the general interior structure of the earth.	*Consideration of Premises, Search for Data and their Meaning*
Formulating models or *Synthesizing results*	*Interdependency of Nature, Generalized Perceptions*	44. formulate a model to explain the earth magnetic field.	*Consideration of Premises, Search for Data and their Meaning, Respect for Logic*

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Total Student Enrollment from the Four Reporting Schools from 1965 to 1971

School	1965	1966	1967	1968	1969	1970
1	212	208	224	339	362	316
2	673	702	703	721	728	721
3	695	674	638	504	727	708
4	190	210	311	322	385	355
	1770	1794	1976	1946	2202	2100

When comparing the male and female student population it was found that there has been a 10.8 percent increase in the male student population since 1965. The female student population in the reporting multipurpose high schools had increased 81.1 percent for the same period. The ratio between girls and boys had narrowed from a 1 to 10 ratio in 1965 to a 1 to 6 ratio in 1970.

It was generally concurred that there would be a steady increase in the female student population in the future. Headmasters were unwilling to project the future ratio but indicated a willingness by parents to invest in the education for the girls at a rate greater than ever before.

Number of Male and Female Students in the Four Reporting Schools from 1965 to 1970

School	1965		1966		1967		1968		1969		1970	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Fem.	Male	Fem.
1	185	27	174	34	187	37	249	50	350	57	254	62
2	621	63	649	53	650	53	666	55	676	52	672	49
3	632	63	595	79	752	66	467	37	624	103	569	139
4	141	49	141	69	230	81	238	84	283	102	256	96
	1579	191	1559	235	1639	237	1620	226	1933	314	1751	346

Department Interview Analysis: Due to the assignment of different people to the interview team and the rotation of assignments in the field, to offer experience to as many of the supervisory staff members as possible, not all of the interview forms were adequately completed. The results of the twelve departments that were completed in sufficient detail are reported. This represents three departments in each of the four vocational wings.

Results

Question Synopsis	Department Chairman's Response Yes	No
Separate room for this Department	11	1
Lockable storage space available	10	2
Adequate electricity available	7	5
Running water available	0	12
Room and laboratory adequately lighted	6	6
Subject matter related bulletins available	Range from 0 to 98 bulletins	
Prepared calendar of operations	6	6
Number of teachers in the department	2	

The results were based on the teachers opinion of what was adequate for the successful operation of the department. In several cases the teacher would report that some item was adequate but the team conducting the survey was not satisfied with the facilities. This would indicate that at a future time the Ministry will have to indicate in greater detail what will be considered adequate.

In addition to the information presented here the departments were asked to report on the number of tools, desks, chairs, facilities, textbooks, and equipments which were available in the respective departments. This was in detail and based on the recommended tool, textbook and equipment list which was recommended in the HMG course of studies publication for each department. The results were not included in this report but the reader may determine the amount of detail requested by referring to the interview form at the end of this report. For those persons wishing specific details on the number of tools available in each school they will be able to secure this information from the Multipurpose High School Division. It can be generally stated that the departments were all operating with considerably less than the minimum HMG recommendation for tools, equipment, and textbooks. The section which was identified as needing immediate support was the text and reference materials for each given department. The department chairman and the headmaster strongly suggest that the MOE should provide all of the funds necessary for the department to secure any and all facilities which were recommended by the Multipurpose High School Division, MOE.

Vocational Teachers Interview Form Analysis: Each vocational teacher was interviewed over a wide range of subjects. The results are reported as a composite of the teachers from the four vocational wings of the four schools. A total of 21 vocational teachers were interviewed. The remainder were on leave, receiving training at NVTC, on out-of-country participant training, or unavailable for an interview while the interview team was in the school. The results represent the vocational wings with six of the teachers from Trade & Industrial Education and five each from Secretarial Science, Home Science, and Vocational Agriculture.

Highest Degree Reportedly Held by Vocation Teachers

Highest Degree Held	Number of Teachers
School Leaving Certificate	1
Intermediate Arts	4
Bachelor of Arts	9
Bachelor of Education	3
Bachelor of Science	2
Bachelor of Commerce	2

The vocational teachers were asked to report the major for the highest degree they held. The results included:

Major	Vocational Specialty
English	Vocational Agriculture
Science	Vocational Agriculture
Education	Vocational Agriculture Home Science
Social Science	Trade & Industrial Education
Arts	Trade & Industrial Education Home Science
Political Science	Trade & Industrial Education
History and Hindi	Secretarial Science
Economics	Secretarial Science
History	Secretarial Science
Commerce	Secretarial Science

The major portion, 18 out of the 21 teachers reporting, held degrees from institutions in Nepal and two reported India and one Beruit, Lebanon. While the results did not support the common feeling that vocational teachers do not have degrees, I project that this was a high percentage of 4 year degree holders when compared to all vocational teachers of Nepal. The results strongly support the opinion that few of the teachers have degree training in their vocational subject matter area. None of the 21 reporting teachers hold their highest degree in the vocational subject matter that they teach.

The years teaching in vocational subjects range from one to eight with an average of 5.3 years experience. The range in total teaching experience (vocational teaching experience plus academic experience) was from 2 to 19 years with an average of 7.7 years. Of the 21 reporting, 8 have taught only vocational subjects having no previous teaching experience prior to their entrance to the profession as vocational teachers.

The vocational teachers were asked to list the subjects which they taught in addition to the vocational specialty which they taught. The list included:

ADDITIONAL SUBJECT TAUGHT	NUMBER OF TEACHERS	VOCATIONAL SPECIALTY
English	11	Vocational Agriculture Secretarial Science Home Science Trade & Industrial Education
Nepali	8	Vocational Agriculture Trade & Industrial Education Home Science
Biology	1	Vocational Agriculture

Math	5	Vocational Agriculture Trade & Industrial Education Secretarial Science
Chemistry	1	Vocational Agriculture
Social Studies	2	Vocational Agriculture Secretarial Science
Civics	3	Trade & Industrial Education
Hygiene and Physical Development	3	Trade & Industrial Education Secretarial Science Home Science
Panchayant	5	Trade & Industrial Education Secretarial Science
First Aid	3	Home Science

As can be seen by the list the vocational teachers were involved in teaching almost every course that was offered in the high school in addition to the vocational speciality. The vocational teachers were strongly opposed to being assigned additional teaching loads. The feeling was that a properly run vocational department was a full time teaching load. Only two teachers reported no other teaching assignments. For the 21 teachers the average number of periods taught in their respective vocational areas was 18.2 periods per week with a range from 12 to 33 periods. The average total contact periods per week was 28.7 with a range from 20 to 33 periods. Due to the short class periods, reported earlier to be 35 to 45 minutes in length, and total class periods per week, ranging from 39 to 48 in the 4 schools, this did provide for some preparation time during school periods.

Vocational Related Work Experience: In discussing the preparation for the vocational assignment which the teachers presently hold, the teachers were asked to list the employment by job title of the vocationally related work experience which they had completed prior to or in preparation for the teaching role which they presently held. They were asked to list the number of months that they were employed or served as an apprentice in the job title listed.

Unit IV Students & Employment.

a. Vocational Related Employment Opportunities in MPHS Districts.

b. Graduates receiving additional training.

c. Graduates receiving no further training.

d. Non-graduates.

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COMPONENTS OF THE REPORT

This report is composed of four major parts.

Part 1. Orientation of Nepal and the Education situation.

Part 2. Summary based on administering the interview form to selected multipurpose high schools.

Part 3. Recommendations for Technical and Financial Support

Part 4. The interview form and an analysis of its future utility

There are two publications which the reader should refer to as background information to this report. They include:

Education in Nepal, Report of the Nepal National Education Planning Commission, edited by Pandey and Woody, published by the Bureau of Publications, College of Education, Kathmandu, Nepal, 1956.

An Assessment of the Multipurpose High School Program in Nepal, by Mr. Kenneth L. Martin, USAID/Washington, 1969.

The Martin report covers the total spectrum of Vocational Education in Nepal. It's influence on this report cannot be minimized as the same Ministry of Education supervisory staff was involved in both efforts. The technique and formal structure of the reviews differ considerably with this report having more restricted and specific perimeters, but the two reports compliment each other in many of the areas. The Martin report provides detailed information on the historical development of the Multipurpose High School and should be used as a reference in this area for the reader needing additional background.

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OBJECTIVES OF THE STUDY

Primary objectives of the study were to:

1. Evaluate selected multipurpose high schools of Nepal to identify the present status of the program.

2. Make recommendations on the future support which would be required to insure the continued development of the program.

Secondary objectives of the study were to:

1. Assist the multipurpose high schools' supervisory staff to develop an evaluation instrument which can be used in all multipurpose high schools of Nepal.

2. Provide the supervisory staff with field experience in the collection of desired information.

3. Assist the multipurpose high schools' supervisory staff in developing a system of recording specific information for the respective vocational programs. Information included would be student population, facilities, equipment, text, identification of problem areas, teachers training, and related vocational experience the teachers have completed.

4. Assist the supervisory staff to evaluate the information secured and identify and implement actions which would improve the program.

PART I

ORIENTATION TO NEPAL

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Being a teacher it is natural to get regard from the students and their parents. Besides, as a vocational teacher the feeling of teaching students such subjects which help them to be successful in their life provides satisfaction. As a vocational teacher I have to work with students and other subjects concerning work, that is also a pleasant thing for me. At least the pay, which is a little bit more than others, may also be counted one of the factors of satisfaction.

I am satisfied to work in agriculture because: (1) I have an opportunity to work with farm boys, (2) I am myself a farmer, (3) I have opportunities to go out to the villages.

The future of the nation depends upon the quality of the students or citizens. So we are busy in producing meritorious and responsible students for the nation. Neither satisfaction nor pleasures I have, as I get poor salary.

The students that I have graduated from this section may be highly beneficial for the uplift of the Nation. That is what I gained from it.

Summary: In many ways the teachers essentially reported that the students and the success which the students have were the major source of satisfaction. Perhaps a greater emphasis was placed on the students who continued their formal education. This was the end product of the existing education system and the major vocational objectives.

In-Service Teacher Training: The purpose of this section of the interview was to provide the teachers with the opportunity to express their opinion on the need for additional training, type of training desired, the best time and location for training, and opinions on the past present and future training. Seventeen of the 21 teachers reported they felt the need for additional training. Four titles were suggested and the teachers were encouraged to choose one or more of the titles in which they felt additional training would be desirable.

Titles for Additional Training	Number of Teachers Selecting Title
Extensive practical training	13
Experience in developing a course outline	5
Supervised practice teaching	5
Development of lesson plans	4

The teachers were allowed to select the subject matter within their respective vocational area in which they felt the additional subject matter training would be desirable. The tabulation of results did not identify any specific trend in the desire for subject matter training.

It is assumed that when the final report is completed with sufficient teachers in each of the vocational areas that identifiable trends will develop.

In-service teacher training was preferred in the summer by 12 teachers with 6 desiring winter training and 3 indicating that they had no preference. Short-term training of one and two weeks was not preferred by any of the teachers. Terms of one to four months were desirable but no one time period was selected by a majority of the teachers.

The most commonly reported preferred location was NVTC with 10 teachers selecting this sight. Five suggested a field type program in their or another high school near them. Colleges, industrial facilities or government facilities near the MPHS received the support of four teachers. Most of the teachers admitted that they chose NVTC because this was the location at which most of the training had been received. They seemed to agree that a properly handled program could be held at a number of locations and meet their training needs.

In addition to the several specific questions which were asked about training, the open-ended question stated, "Please make other comments about training. This could include past, present or future training." The responses are grouped by vocational areas.

Home Science

The training which will be given in the future should be practical and perfect according to S.L.C. courses.

The previous training was less interesting and beneficial. The present one is more interesting and beneficial and the future one, I hope, will be the most interesting and beneficial to the Home Science trainees.

As a Home Science teacher and a housewife this subject is beneficial for me too. This training is, of course, beneficial to all students. The girls who learn Home Science will be good housewives and ideal mothers in the future.

Vocational Agriculture

I had a chance to have a training in vocational agriculture in-service program, length of 9-month period at NVTC. Though this training enabled me to teach vocational agriculture in MPHS, it is not sufficient. I want to have more training in different specific areas of vocational agriculture whether it may be outside the country or inside. The training must be Diploma or Degree. For the vocation teacher there should be observational tour program outside the country or inside the country.

The short course training given in NVTC is not sufficient and it does not fulfill the requirements to be needed for a vocational teacher. So, a degree course or diploma or at least long time training should be managed for vocational teachers so they might be capable of performing their duties well.

Instruction on the above mentioned should be by one more experienced than the vo-ag teachers. Running by NVTC staff (by my own experience) would not be fruitful.

Vocational training is the need of the present time because it solves the problem of unemployment. A vocational trained man can start his own individual project efficiently. With the help of this training the future of cottage industry is bright. Thus, this training helps in national progress.

Nine months' training is not sufficient. I want to specialize in 'poultry farming.'

Summary: The discussions with the teachers about their feeling on the teacher training program identified two major ideas. The teachers feel that a degree or diploma would be desirable, allowing them to be recognized as qualified teachers of vocational education. The other point identified was that the training should be in the area more closely related to the SLC curriculum and that it would be desirable for some of the teacher training to be handled by teachers with experience in the MPHS who have received training in "teacher training".

Teaching Technique: The teachers were handed a check sheet which was used as a discussion guide during the interview. The following information represents the composite result of the 21 vocational teachers reporting.

Item	Answer		
Do you:	Always	Sometimes	Rarely
Prepare a lesson plan for each lesson to be taught.	5	13	1
Use the lecture method of teaching	5	16	-
Survey the level of student knowledge to determine the level at which the lesson should be taught.	13	7	1
Prepare a written objective for each lesson to be taught.	6	11	4
Ask questions during the lesson to determine if the students understand what is being possible.	18	3	-

Use the demonstration method of teaching when possible.	15	6	-
Motivate the student to understand why it is desirable to know the information or skill presented.	18	1	2
Write a lesson plan in such a manner as to break down the various skills in small logical steps which the student can easily learn.	9	11	1
Have the student perform the skill or task which has been learned.	13	7	1

The teachers were asked to indicate the number of times a week that the various teaching methods were used. The results were varied but some trends were identified. No teacher reported having an expanded course outline which considered local community needs. Demonstrations were given about once every two weeks while lectures were reported to be used three times a week. The students spend about one period a week in skill practice as reported by the teachers. Ten of the teachers had never had representatives from business or industry to speak to the class.

From the information previously reported about the preparation of an expanded course outline, the information collected by the survey team would support the concept that the overall organization, objectives for a given class, and properly prepared lesson plans could be strengthened considerably. The teachers indicated the course outlines, lesson plans, and prepared references, which had been supplied by the Ministry of Education, were used but were not available in sufficient quantity for all levels of the vocational program.

Objectives of Secondary Multipurpose Education: The teachers were given a list of the objectives of multipurpose education and asked to rate the "desirability" of the objectives and their "ability to meet" the objectives on a three-point scale including high, medium, and low. The committee which prepared the interview form suggested that this would be assumed by the teachers to be a loaded question. The feeling was that all teachers, in loyalty to the Ministry of Education, stated objectives and, in defense of their own teaching ability, would rate high in each heading. The results did not support this assumption.

Objectives	Desirability of Objectives			Ability to Meet Objectives		
The program shall prepare:	High	Med.	Low	High	Med.	Low
The youth who will continue their education in College and who may well become the civic and political leaders of Nepal in the future.	9	10	2	1	14	6
Those who will become the professional and economic leaders of Nepal, the engineers, doctors, lawyers, home economist, agriculture specialists, industrial experts, teachers, and business men.	12	9	-	5	13	3
The boys and girls who will terminate their formal education after secondary school in order to become skilled mechanics, official workers, junior executives, foremen, and workers in business.	11	8	2	2	15	4

With this limited information it was not possible to determine the direction that the teachers would like to see the program develop. It was not the complete and unquestioning support that the survey team had felt would be the response. None of the objectives received responses sufficient to be considered unconditional support.

Student Placement: The purpose of this section was to determine information in four general areas. They included the graduates receiving further training, graduates completing their formal training with the SLC, non-graduates, and vocationally related employment in the MPHS district. This section was included in the interview form with the committees understanding that there would be one man on the team who could devote full time while in the field collecting this information. With the reduction of the survey team members it was optioned to hand this form to the guidance counselor and request that he, in conjunction with the headmaster's office, complete the form to the best of their ability. It was assumed that the results would be limited but perhaps would provide an indication of the level of information available. The following general conclusions were drawn from the responses:

1. Guidance counselors (in many cases this was his first year in the system as a completely new aspect of the program) were beginning to collect valuable information about the students.

2. The most extensive information was available about the current graduating class members who were continuing their education. Information was most complete on those who remain in the area to attend one of the regional colleges.
3. MPHS graduates who have not gone for further training were assumed to be in the community but their present employment status was unknown.
4. Non-graduates were generally assumed to be working within the family structure but other information was unavailable.
5. The information requested about vocationally related employment opportunities was grouped into general headings as government offices, secretaries, office clerks, or farmers. More specific job titles were unknown or unreported.

The guidance counselor felt this information was desirable and, if they follow the plan which they were developing, in most cases the information will be available in greater detail in the future. This was expected in that the guidance program was in the first year of operation when this portion of the evaluation was completed. The guidance staff reported that their responsibilities were not understood by the headmaster or staff and, in some cases, their additional teaching load made it impossible to devote the required time to develop a desired vocational counseling programs.

The opportunity for vocationally related employment was discussed with the teachers although not included on the interview form. It was clear that they did not feel any responsibility to assist the students in securing employment. They were unfamiliar with employment opportunities in the community related to their area. The teachers did not include an occupational opportunity unit in their curriculum and as previously reported did not have representatives from industry visit their classes. Essentially, the teachers saw their role as one of primarily assisting the students pass the School Leaving Examination in the vocational wing that they taught.

The desired information about the students and student placement can be secured only if future survey teams have a team member who can and will devote the full length of the visit in securing the information. This will require time to move in and about the community and district to visit former students and potential vocationally related businesses and industries.

Classroom Evaluation: During the course of the evaluations, announced full class periods, visits were made to approximately 75 vocational classes in the six schools. An equal number of unannounced "drop in visits", of a "ten-minute" to "full length class" period duration were made to vocational teachers teaching vocational subjects, vocational teachers teaching in areas outside of their vocational specialty, and academic teachers teaching in their subject matter areas. It was difficult to make direct comparisons in that all vocational wings were visited in each of the six schools and classes and all grade levels were observed. Classes in almost every subject matter of the general education side were visited. The following observations were made as aresult of the visits to the vocational classes.

Methology: The larger percent of the classes were taught by the lecture method. There were several problems that the teacher faces which tends to support and/or justify this method of teaching. In the lower grades of the vocational wings, i.e. grades 6 and 7, classes of thirty and forty students were not uncommon. The class enrollment falls rather rapidly and in the 9th and tenth grades and classes of less than ten were not uncommon. This presents a complex problem for the teacher. In grades nine and ten the major emphasis was on passing the SLC and the students were aware of what was in the curriculum and interested in the information that was required to insure their passing. Attempts on the part of the teacher to deviate from this known standard brought requests from the students to return to the SLC curriculum. This severely restricts the taking advantage of the smaller classes to do practical and field experience exercises. The lower grades which have more flexibility in the curriculum, including the opportunity for practical application of the information taught, were in many cases too large for students to become actively involved in the program. Being too large was difficult to equate to an exact number of students. There were lower grade classes which exceeded the thirty and forty student mark but the majority of the classes had fifteen students. In fairness to the teachers, it may be desirable to equate the number of students in the class with the tools and equipment available. A vocational agriculture class of ten students with only two hoes available or a Secretarial Science class of twenty students and only four typewriters was quite obviously more difficult to handle at the practical application level than a larger class but in a situation which all of the students would have the necessary tools to participate simultaneously.

Demonstrations were used in several of the vocational classes visited and were received with enthusiasm by the students. The students expressed a desire to participate and in the cases where the class was permitted, they responded favorably. The value of the demonstration, even a well prepared and presented on, was diminished by the fact that the students, in most cases, were not provided with the opportunity to practice what they saw demonstrated and thereby miss the opportunity to reinforce the knowledge or skill training received during the demonstration.

Lesson plans were available in some cases and some of the teachers have prepared a written lesson plan for each class that they teach during the year. They have them neatly prepared in manual which they, justifiably so, quickly share with visitors. The majority of the classes were taught from information which was taken from one of the reference books that was in the department and in many cases it was found to be a college level textbook. Department reference books are in limited supply and the student reference book in sufficient quantity for all of a given class to have a copy were found in almost none of the departments. Expanded course outlines based on local and community needs in conjunction with the HMG recommended curriculum were unavailable. Calendars of operation which existed were in abbreviated outline form giving only general information on the units to be covered for the month, etc.

PROGRAM EVALUATION

The information presented in this section represents the opinion of this writer and does not necessarily reflect the opinion of the survey team members, Ministry of Education Supervisory or Teacher Training Staff, or the USAID/SIU team members. The position presented herein was strongly supported by the results of the interview used in the Multipurpose High School visitations but also draws on the advisor's total experience in Nepal.

Quality of Program and Teaching: When the value judgement was made on the quality of program and teachers it was done within the framework of locally available opportunities and limitations. In the development of this framework there were several factors which were identified and weighed. The following were some of the more obvious components of a vocational education framework for Nepal.

1. School Leaving Certificate Course Outline and Subsequent Examination: The MDE course outline provides a valuable overall guide for the development and coordination of the vocational program in Nepal. The School Leaving Certificate examination does provide a guaranteed minimum level of knowledge which the program must produce in the students before they can graduate. The emphasis of the examination was on knowledge while the performance of a manulative skills, a critical component of employment in vocationally related jobs, received only token recognition in the examination.

2. Vocationally related job experience for teachers: The teachers of Nepal had only a limited exposure to the world of work about which they teach.

3. Texts, references, books, and related teaching materials: With one isolated exception, materials based on the then current revision of the School Leaving Certificate course outline were non-existent. The materials which did exist were prepared ten years prior to this report. In many cases the quality of printing makes it impossible to read the materials.

4. Facilities: Departments have rooms, chalk boards, desks, tables and chairs (but in many cases they were not in adequate number to properly seat the class.). Water and electricity were inadequate to meet the demands of most departments.

5. Equipment: The equipment available in the Multipurpose High School was available in insufficient quantity for the class size. Much of the equipment available was not relevant to the needs of the vocational students and community.

6. Supplies: Few departments had an adequate budget to secure essential supplies for the operation of the practical phase of the vocational program.

7. Class size: Relative to facilities, equipment and expendable supplies available, many classes were too large, especially in the lower grades 6 and 7.

8. Technical knowledge and practical skills of the teacher: The teachers knowledge of the technical subject matter area exceeded his skill ability even within the limitations of facilities, supplies, and equipment.

9. Administration, School Management Committee and Community Support: Limited!

10. Teacher training: Teachers had devoted an excess of time on the development of a philosophy of vocational education. Grasp of the technical information required was adequate. Preparation in methology of teaching, including theoretical and practical experience in supervised practice teaching, demonstration and lesson preparation, calendar of operation, expansion of course outline based on community needs has been inadequate. Many teachers reported no supervised practice teaching experience. None reported vocationally related practical experience under field conditions.

11. Student population: The students express interest, by their enrollment and participation, in the vocational program. The students were competent and, in many cases, expressed the desire for further education after graduation.

12. Programs duration and teachers experience: The program was young by educational standards with the oldest department being only eleven years old. All education programs and staff need time to develop, grow, and improve.

13. Objectives: The current objectives place an emphasis on further professional level training.

Within this framework the quality of program and teaching was found to be a viable and developing effort. The results of the interview indicate that the teachers and headmasters were aware of the limitations under which they operated. They had requested additional support for what will always be, based on a cost per pupil, an expensive program when compared to general education. The teachers recognized the need for improved competencies in practical application of skills. The need for adequate supply of text and reference books was recognized and reported by all levels of the program.

Teachers express pride in the current accomplishments and a hope for the future. The teachers and programs will need additional support if they are to reach the optimum level of contribution to the Educational program of Nepal. Components and considerations for support were outlined in the sections entitled Recommendations for Technical & Financial Support.

PART III

RECOMMENDATIONS FOR TECHNICAL AND FINANCIAL SUPPORT

RECOMMENDATION FOR TECHNICAL AND FINANCIAL SUPPORT

Vocational Level Manpower Needs and Continued Review: In the development of objectives, purposes, curriculum, text and teacher training program for the respective vocational wings it will be essential to have accurate, current and projected manpower needs information. This includes information in sufficient detail to develop job titles, job descriptions, and job analysis for the respective vocational and technical areas. At the writing of this report this information was not available. It is not the primary responsibility of the educational system to collect this information. However, in the absence and unlikelihood that it will soon be available the Ministry of Education may have to assume this responsibility to insure the validity of the program which they propose to implement.

To be involved in major vocational education policy and decision making with inadequate or incorrect information is subjecting the probability of success too much to chance. Education of all kinds is expensive and vocational education on a cost per pupil basis with limited resources presents a critical situation and therefore it is unrealistic to develop a National Vocational program based on trial and error.

With this concept in mind it is assumed that all future support to be outlined in this report recommendation, or a completely different concept of support, will be based on a sound, current and valid study of the Vocational and Technical Manpower needs for Nepal.

Future Support: There are two major categories in which future support can be most beneficial to the continued and further development of the Vocational Education program of Nepal. The two categories are Teacher Training and Curriculum Materials Development. The support will be needed in both financial and technical components of the program. To provide one in the absence of the other is to minimize the potential of the resulting program.

Teacher Training Support: The emphasis on this program should be placed on assisting the Nepalese in:

a. A comprehensive analysis of the philosophy, objectives and purposes of Vocational Education in the Multipurpose High Schools to insure an alignment with the results of the Manpower Needs Study.
b. Developing a cadre of qualified and trained teacher trainers who have successful multipurpose high school teaching experience. (Some through participant training and others through a course prepared and taught by the technician.)
c. Structuring a teacher training program which will upgrade those existing teachers in deficient areas and train new or beginning vocational teachers.

Each of these efforts should be achieved in a sequencial order which would ultimately produce a teacher training program, operated by qualified Nepalese teacher trainers, which would cover the areas outlined in the teacher training program.

PROPOSED TEACHER TRAINING PROGRAM

I. Teacher Training Program for new or beginning teacher of Vocational Education. (Based on Vocational Manpower Needs Results.)

A. Vocational Education Philosophy Development

1. Introduction and analysis of philosophy
2. Procedure for implementing a philosophy into a functional vocational program.

B. Purpose and Objectives

1. Develop an understanding of the total vocational objectives and purposes.
2. Development of subject matter objectives and purposes for each vocational wing.

C. Technical Competencies

1. Develop the necessary technical competencies based on School Leaving Certificate curriculum and textbooks.
2. Practice this competency during the student teaching experience.

D. Skill Competencies Development

1. Based on School Leaving Certificate curriculum and text.
2. Place the emphasis on having each potential teacher successfully master of the required skills.

E. Department Organization and Development

1. Provide the teacher with experience in the development of expanded course outlines and calendar of operations based on community needs.
2. Policies and procedure for the procurement of supplies and equipment.
3. Public relations techniques with school and community.
4. Orientation to vocationally related business with an emphasis on their contribution to program development.

F. Student Placement and Follow-Up.

1. Role of guidance and counseling department in the total vocational program.
2. Develop an understanding of the teacher's responsibility to assist the student in securing a job upon completion of the program.

G. Methodology of Teaching

1. Providing understanding and application of supervised student experience in the use of lecture, demonstration, field trips, resource personnel, supervised study and discussion as methods of teaching the vocational curriculum. This includes both the theoretical and skills components.
2. Providing understanding and experiences in the use of practical or laboratory experience and supervised projects as a method of teaching vocational skills.

H. Adult and Youth Related Programs

1. Develop an understanding and operational knowledge of purpose and objectives of adult and youth related programs in the total vocational effort.
2. Supervised experience in the establishment and operation of these related programs.

This is a difficult outline to complete in the nine months which is presently allocated for the training of vocational teachers. It can be a successful program, but only if a competent staff of teacher trainers is developed and sufficient time allowed to complete the training. All of the teacher training activities must be based on the School Leaving Certificate material which will have been prepared for the use by the students in the vocational multipurpose high schools of Nepal.

This initial training will have to be supplemented with an in-service training program which will provide information in deficient areas or introduction and experience in newly prepared curriculum materials. It has long been an established fact that the distribution of materials to teachers without the proper orientation and experiences is inadequate to insure maximum utility of the materials.

PROPOSED CURRICULUM MATERIALS DEVELOPMENT PROGRAM

The emphasis on this program should be placed on the development of a cadre of qualified Nepalese and infrastructure which would:

a. Establish a priority list of vocational materials based on the most current philosophy, purpose and objectives of the respective vocational wings. These will have to be based on valid manpower needs.
b. Facilitate the writing of the appropriate vocational materials.
c. Insure the field testing of materials.
d. Expedite the publication and distribution of the materials.
e. Cooperate with the teacher training staff involved in the in-service teacher training program to insure the teachers acquire a complete and practical understanding of the utility of materials presented.

In the earlier stages of the effort the emphasis would be placed on materials which would be produced in sufficient quantity for student references. Due to the continued advances in the technology related to vocational education the "source unit" approach is superior to any other technique of reference materials presentation. The advantages include: Reduced time to get a given unit into print, decreased cost in original production, easy and inexpensive to replace when required due to obsolescence resulting from a continually developing technology.

Assuming as few as 20 source units of 15 pages each were required for each grade (it would usually be a greater number) for each with grades 6 through 10 it would require 6000 pages of source units in sufficient quantity to provide each student in the respective grade and wing with a copy. This is a task of considerable magnitude and will require a large staff.

Upon the completion of the source until the cadre of trained vocational writers would remain constantly busy with the updating and reviewing of the previously prepared materials. Source units should be revised and reprinted every two to four years, depending on the content. This would require a minimum of 2000 pages of revision and reprinting in quantity each year. The remainder of the time should be devoted to the development of related and supportive material. This cuts across the total spectrum of audio-visual education. In the earlier stages emphasis would be given to appropriate charts, maps, posters, mounts, mock-ups, pictures, lesson plans, demonstrations, samples, speciments and displays to be used to supplement the source units. As the teachers competencies increase and available facilities and equipment become available the emphasis will move to the supportive aids including tapes, slide series, transparencies, film strips, and movies which are relevant to the vocational education training program of Nepal.

Summary: This proposal assumes a normal growth of the vocational program and any accellerated development would require additional support.

Progress will be slow and tedious. To implement a short term "crash program" which requires a large input of funds without the development of a trained cadre of qualified Nepalese or the assurance of sufficient Nepalese financial support to carry on the program once it is implemented, is to structure failure. Technical support in both teacher

training and curriculum development will require from 6 to 8 years to assure success. Financial support for the participant and implementation of the program will be required in the early stages but sufficient funds must be obligated by the MOE to support the program at least two years prior to the termination of the technical support program to maximize the probability of success.

This report, as implied by the title, is a "Preliminary Report" structured and prepared for the purpose of establishing an early indication of the final results when all of the schools have been interviewed. This endeavor will hopefully be completed during the coming year.

The objectives of the study were generally accomplished but the components, including problem identification and implementations of solutions and updating information, will remain an annual effort. The supervisory staff has been introduced to a formal procedure for data collection and hopefully will continue the program.

In the section entitled "Components of the Report" it has been indicated that the report by Mr. Martin entitled An Assessment of the Multipurpose High School Program in Nepal, completed in 1969 while covering a wider range of the vocational education program (including Ministry of Education and the National Vocational Training Center which this report does not consider) does touch on many of the same areas concentrated on in this evaluation. The technique used in the collection of data varies from those used for this report. In an effort to provide the reader with a quick comparison of results and recommendations several items are drawn from Mr. Martin's report. These are basically exerpts from the findings and recommendations which Mr. Martin made in his report.

Exerpts from the Findings and Recommendations in the Martin Study:

Philosophy of Multipurpose Education of Nepal: Recommendations; An identifiable philosophy of multipurpose education in Nepal should be developed by the Multipurpose Section of the MOE. This philosophy should include a basic economic and social rational, substantial evidence that this is the type of education necessary for Nepal... Pg. 33-34.

Objectives of Multipurpose Education in Nepal: Recommendation; Serious consideration must be given to a reassessment of the general objectives of the multipurpose high school program....

Administration of the Multipurpose Program: Recommendation; a multipurpose handbook must be developed providing clear-cut guidelines for administering the multipurpose schools at the local level. Specific tasks, authority and responsibility should be spelled out for headmasters, Managing committees.... Pg. 35.

Professional Guidance: Recommendations; Attempts should be made to visit each school at least once a year...

Promotional Activities: Recommendations; A reorientation of the community, Managing Committee, Headmasters and students should be started in an effort to regain the momentum in promotion of the multipurpose education in Nepal.... Pg. 37.

Vocational Clubs: Recommendations; Clubs such as those now beginning - the Young Farmers of Nepal, Trades and Industrial Clubs - and other such activities should have as their objectives the promotion of their respective vocational areas.... Pg. 37.

The Curriculum in the Multipurpose Schools: Findings; The curriculum in the multipurpose high schools is still predominately academic in character.... The curriculum in the multipurpose high school, as with the general education, is controlled entirely by the School Leaving Certificate Examination Board.... With the rigid controls exercised by the School Leaving Certificate Examination Board, the vocational curriculum in the multipurpose school is a set and fixed curriculum with little or no flexibility to allow for community needs and practical education programs.... The majority of boys and girls taking vocational subjects and passing their SLC Examination are not terminating their programs at the secondary level but are continuing on to further study... Teachers are not adequately trained at this time to provide terminal vocational training to students in secondary schools... Students are not interested in termination of their education at the secondary level due to the heavy emphasis and importance placed on obtaining a degree before advancing in the Nepalese economic and social structure.... Pg. 38-39.

Students: Recommendations; ...it is recommended that research be continued along the same lines as has been begun by this study to determine a definite need at this stage in Nepal's development for terminal vocational training programs at the secondary level... The Ministry of Education should make every effort to develop a strong guidance and counseling program which will assist parties, teachers and students in deciding in which vocational or academic area the student should enroll... Research should be continued to determine job opportunities for terminal students at the secondary level. There is still insufficient information available upon which to judge whether a terminal vocational training program should be continued.... Pg. 44-45.

Teachers: Recommendations; The National Vocational Training Center should carry out one of its original objectives and develop a practical teacher training program for vocational instructors... School involvement should be stressed during the teacher training program.... Pg. 47.

Instructional Materials: Findings; The lack of sufficient text books in the vocational areas has also caused significant problems in the development of quality instruction in multipurpose high schools....many of the books published suffered from improper printing and are only partially readable.... Recommendations;

New books should be developed in accordance with the curriculum recommendations of this report. For example, a text book should be developed on drafting and drafting only....

These exerpts from the Martin report are supportive of the result of this study. Stated another way the results of this study support these findings and results of the Martin Report. There is always the danger of misrepresentation in quoting from a report out of context. This comparison does not imply that the reports are in complete agreement for they are not. The reader is encouraged to read the Martin report in its entirety.

In the areas where the two reports are complimentary it would indicate that the final results will be along the same line and that action may be taken to meet the needs. In the areas where the reports do not coincide it may reasonably be considered that additional study and consideration may be needed prior to decisive action.

PART IV

ANALYSIS OF INTERVIEW FORM

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ANALYSIS OF THE INTERVIEW FORM

Introduction: One of the advantages of the use of the Interview Form has been that it has provided an opportunity for a firsthand evaluation of the utility of the form itself. Although it was field-tested prior to use, there were still problems and imperfections which were identified with continued use.

The questions and sections which presented problems because of wording have been corrected and the form included, reflect those changes.

Administering the Interview Form: The major problem which was confronted in the use of the interview form was that it was just that, an interview form. The tendency was to give the form to the headmaster, department chairman, or teacher and request that they fill it out. This was, in many cases, a necessity as we had allowed only 5 days per school and there were only two people on the interview team. One of the interview team was responsible for observing classes in each of the vocational wings and interviewing teachers, headmasters and school management committee members. This is a full-time 5-day job. This required the remaining team members to handle all of the paper work. This was an impossible task in the 4 or 5 days allowed in the school. As a result, some interview forms were incomplete, others shared duplicate (word perfect) answers on the open ended questions. This is obviously the result of a group effort to establish what the teachers philosophy was, ideas on training or major problem areas. This markably reduced the value of this information and it was omitted from the report.

This general problem could be resolved if a team of adequate size was placed in the school for sufficient time to allow the interview form to be administered as originally planned. The original plan was for a four-man team to be in a school for one week. It appears that this would be adequate. The break-down of assignments would include:

a.) One man/week - administer the interview form to the Headmaster, teachers, department heads and guidance counselors.

b.) Two men/week working with the guidance counselor, and headmasters to determine information on student placement, including graduates, non-graduates. These two persons would then go to the field and interview a representative sample of the students in both areas, parents and prospective employers. (Perhaps an interview guide should be prepared for this purpose.)

c.) One man/week - visit a representative sample of classes in each vocational wing of both the theoretical and practical area for each teacher. This would be a minimum of 20 classes observed. Discussing the teachers methods and techniques would consume the remainder of the time.

This will be an extremely time consuming task but is the only way to assure that the desired information, which is needed by USAID/Nepal and the Ministry of Education to totally analyze the progress of the program and provide direction for future efforts, will be secured.

Availability of Information Requested: The information requests on:

1.) Number of total students for the past six years.
2.) Number of students taking and passing the S.L.C.
3.) Number of students in each vocational wing.

was difficult to secure. This information was available but required a considerable amount of searching through reams of paper in the headmaster's office. These sections of data collection should be initiated with the headmaster's office soon after arrival to allow time for completion.

If the form is to be used in the future it may be desirable to spend additional time with the headmasters to determine if the form can be altered to expedite the collection of information.

The information on:

1.) Graduates - additional training
2.) Graduates - employed
3.) Non-graduates

is limited, to say the least. The teachers tend to have some knowledge of their students who have gone on to higher education. This seems to be a status position to know that the students whom you have taught are continuing their education. Students who have graduated and are employed or non-graduates are apparently not considered of sufficient importance to follow-up on. This is an unfortunate position and hopefully the future expansion of the Vocational Guidance section will improve this situation.

Employment opportunities for Vocational Multipurpose High School graduates is an unknown quantity. To secure this information one of the team members will be required to spend a week in the community canvassing the business, industrial and government agencies to determine the desired information. This is a forerunner to an expansive manpower needs study. This segment of the study must be completed to provide information necessary for development of curriculum, text material and teacher training.

Summary: Several limitations of the interview form have been mentioned in this discussion. This is in no way an effort to dilute the value of the material which was received or discredit the many hours of work which the Vocational Education Specialist of the Ministry of Education have put into the form. The purpose is to provide suggestions which will enhance the utility of the form in its future use throughout the Nation.

Unit 1
Interview Form
GENERAL INFORMATION ABOUT THE SCHOOL
(Completed with the Headmasters Office)

1. What is the name of the school? _____

2. What is the name of the town or village? _____

3. In what district? _____

4. In what zone? _____

5. Circle the grades that are presently taught - K 1 2 3 4 5 6 7 8 9 10

6. When is the official school vacation? (Inclusive dates) _____

7. How many teachers are in the total school system this year? _____

8. How many minutes long are the class periods? _____minutes

9. How many periods per week does the school operate? _____

10. What is the operating cost per student vocational aids per year? ___Rs. each

11. What is the operating cost per student general student per year? ___Rs. each

12. Is tuition charged? _____

13. If yes, how much is charged for each of the upper grades? (a) 6 _____, (b) 7_____, (c) 8_____, (d) 9_____, (e) 10_____.

14. How many classrooms does the school have? _____

15. How many square feet of floor space is in the school building? (Inside measurements). Total_____

16. Is there electrical power in the school building? (a) Yes____, (b) No____.

17. If not, how many miles from the building is electrical power available? _____ miles.

18. Does the school have water available inside of the building? _____

19. If not, how many feet from the building is piped water available? _____ feet

20. Please give the total enrollment figures for the various grades for the past six years for the school:

	1965		1966		1967		1968		1969		1970	
Grades	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
6												
7												
8												
9												
10												
Sub Total												
Year Total (boys girls)												

21. How many members are on the school management committee? _____

22. How many times per year does the committee meet? _____

23. What are the major actions of the committee? _____

_____

_____

_____

_____

_____

24. Please give the complete information for each of the last school years.

Students completing training:

Major		Completed Grade 10	Set for Exam.	Passed Exam. #1	#2	#3	No. Failed	% Passing Exam.
Agri-culture	1969-70							
	1968-69							
	1967-68							
	1966-67							
	1965-66							
	1964-65							
Business Education	1969-70							
	1968-69							
	1967-68							
	1966-67							
	1965-66							
	1964-65							
Home Science	1969-70							
	1968-69							
	1967-68							
	1966-67							
	1965-66							
	1964-65							
Trade & Industries	1969-70							
	1968-69							
	1967-68							
	1966-67							
	1965-66							
	1964-65							
Academic (Incl. all non-voc. students)	1969-70							
	1968-69							
	1967-68							
	1966-67							
	1965-66							
	1964-65							

Unit II
Department's Interview Form
(Completed with First Teacher in Secretarial Science Area)

_____ (Name) Multipurpose High School.

1. Does this department have a separate vocational room reserved primarily for its use? (a) Yes___, (b) No___.
2. How many square feet of floor space does the vocational room have?_____
3. Does this department have adequate lockable storage area for the equipment which is needed for the program? (a) Yes___, (b) No___.
4. Does this department's vocational room have adequate electricity? (a) Yes___, (b) No___.
5. Does this department's vocational room have running water? (a) Yes___, (b) No___.
6. Is the room adequately lighted by electricity or windows? (a) Yes___, (b) No___.
7. Was money for the Department's classroom construction given by HMG? _____
8. How many subject matter related bulletins do you have in your department's library? _____
9. Have you prepared a calendar of operation for the coming year? _____
10. How many teachers do you have in this department? _____
11. How many teachers are presently absent? _____

Reason _____

_____

_____

_____

12. Please give the enrollment figures for the various grades for the past six years for this Department.

	1965		1966		1967		1968		1969		1970	
Grades	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
6												
7												
8												
9												
10												
Sub Total												
Annual Total Boys + Girls												

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13. The following items of furniture could be in your classroom and office. Please indicate the number that you have of each item.

Item	Size	Number
Chalkboard	_____	_____
Magazine Rack	_____	_____
Cabinet	_____	_____
Student Chairs	_____	_____
Student Tables	_____	_____
Teacher Chairs	_____	_____
Teacher Tables	_____	_____
Notice Board	_____	_____
Display Board	_____	_____
Map Stand	_____	_____
Chart Stand	_____	_____

Vocational Area - Secretarial Science
Objectives

In the evaluation of the Multipurpose High School it is necessary to review the objectives of the vocational programs. Using your best professional judgment please assist us by filling out the following form. There are two columns to check "Desirability of the Objectives" (Column #1), "Ability of the school and teachers to meet the objectives" (Column #2).

	Column #1 Desirability of Objectives			Column #2 Ability to Meet Objectives		
	High	Med.	Low	High	Med.	Low
1. To attain sufficient proficiency to meet the demands of the general office worker, and to inculcate a desire for absolute accuracy, neatness and thoroughness.						
2. To develop those personal qualities which are essential for success in the business world.						
3. To develop reasonable skill in the solution of practical business problems.						
4. To acquaint the pupil with the fundamental principles of various business forms and the application of those principles to practical problems.						
5. To give the student a knowledge of business and office organization from the point of view of the office worker.						
6. To develop a practical skill in the use of listing and other office equipment.						
7. To help the student develop skill in typing.						
8. To help the student learn to compose business letters.						
9. To give the student training in applying for a position.						
10. To help student to be a productive unit of the community.						

Business Education: The following is a list of recommended tools and equipment from the Course of Study for your area. Will you please indicate in Column 1 the number of each item your department has available and in Column 2 your indication of the "usefulness of the tool" by number. (1) Essential, (2) Desirable, (3) Not Needed.

Item	Column #1 Number	Column #2 Usefulness of Tool
Demonstration stand for teacher Typing table with chair Adding machine table		
Indexing desk Pigeon-hole filing cabinet Working table		
Chairs for working table Bulletin board Paper rack		
Collecting rack Storage or almirah In and Out rack		
Hand washing sink Typewriters (English & Nepali) minimum Adding machine		
Duplicating machine with cabinet Indexing box Filing cabinet		

Business Education: Indicate the number of each of the reference books which you have available in the department or school library.

_____ Kahn, Gilbert, Gregg Quick Filing, Gregg Publishing Company, New York, 1967.

_____ Kahn, G. and others, Progressive Filing, Gregg Publishing Company, New York, 1969.

_____ Majumdar, Commercial Correspondence, Pitman Publishing Company, London, 1966.

_____ G. Stephens, Correspondence, Longman Publishing Company, USA, 1968

_____ P. N. King, Modern English Business Letters, Longman Publishing Company, USA, 1968

_____ Beamer, Hanna and Pophan, Effective Secretarial Practice, Southwestern Publishing Company, Cincinnati, 1968.

_____ B. Dout, Secretarial Science, Irwin Publishing Company, New York, 1967.

_____ Place and Hicks, College Secretarial Procedures, Gregg Publishing Company, New York, 1968.

_____ Faunce and Nichols, Secretarial Efficiency, Gregg Publishing Company, New York, 1966

_____ A. N. Agrawal, Business Methods & Machinery, Country Press, India, 1966

_____ Shepherd and Hugus, Introduction to Modern Business, Prentice Hall, III: 1967

_____ Ishwari L. Shrestha and Upendra B. Pradhananga, Byabasahik Paddhati I and II, Nepal, 1967.

_____ John R. Craff, Business Principles and Practices, Harper and Brothers, New York, 1966

_____ K. K. Pradhan,Principles of Banking, Nepal

_____ B. C. Ghosh, Principles, Practices and Law of Banking, Nepal

_____ Daver, Practical Salesmanship, Nepal

_____ Shrestha and Pradhananga, Fundamentals of Bookkeeping and Accounting, Nepal.

_____ Karlson, Forkner and Prickett, 20th Century Bookkeeping and Accounting, Southwestern Publishing Company, Cincinnati, 1964

Business Education (cont'd.):

_____ Freeman, Hanna and Khan, Bookkeeping and Accounting, Gregg Publishing Company, New York, 1966.

_____ Gilbert Khan, Double Entry Bookkeeping, Gregg Publishing Company, New York, 1968.

_____ Batli Boi, Bookkeeping, India, 1965.

_____ Upendra B. Pradhananga, Shrestha Paddhati, Nepal

_____ HMG Accounting Manual, Accounting Training Project, HMG, Nepal

_____ W. E. Walmbucy, Pitman's Commercial Typewriting, London

_____ Charles Smith, Practical Course and Touch Typewriting, Pitman, London

_____ Rowe and Lloyd, Typewriting, Gregg Publishing Company, New York, 1968

_____ MacClain Dame, Typewriting Techniques and Shortcuts, South-Western Publishing Company, California, 1966

_____ B. L. Ajmar, Sachitra Hindi Typing - Sikshya Part I and II, Rajasthan Pustak Mandir, India.

_____ Leslie, Zoubek and others, Gregg Shorthand Part I, Gregg Publishing Company, New York, 1968

_____ Narendra Pranali, Rishi Pranali, or Ganga Pranali, (any one)

_____ Hardaway, Test and Measurements in Business Education, South-Western Publishing Company, Cincinnati, 1966

_____ Lewis D. Boynton, Methods of Teaching Bookkeeping, South-Western Publishing Company, Cincinnati, 1967.

_____ Tonne, Pophan, and Freeman, Methods of Teaching Business Subjects, Gregg Publishing Company, New York, 1968.

_____ Tonne, Principles of Business Education, Gregg Publishing Company, New York, 1966

_____ Monographs for Business Teachers, South-Western Publishing Company, Cincinnati, 1969.

List the reference books you have in the Department Library:

Author	Title
_____	_____
_____	_____
_____	_____

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Unit II
Department's Interview Form
(Completed with First Teacher Vocational Agriculture Wing)

Completed for the (wing) _____ Department
(Ag.) (Home Sc.) (Bus. Ed.) (T&I)
of the _____(Name) Multipurpose High School.

1. Does this department have a separate vocational room reserved primarily for its use? (a) Yes___, (b) No___.
2. How many square feet of floor space does the vocational room have? _____
3. Does this department have adequate lockable storage area for the equipment which is needed for the program? (a) Yes___, (b) No___.
4. Does this department's vocational room have adequate electricity? (a) Yes___, (b) No____.
5. Does this department's vocational room have running water? (a) Yes___, (b) No___.
6. Is the room adequately lighted by electricity or windows? (a) Yes___, (b) No___.
7. Was money for the Department's classroom given by HMG? _____
8. How many subject matter related bulletins do you have in your department's library? _____
9. Have you prepared a calendar of operation for the coming year? _____
10. How many teachers do you have in this department? _____
11. How many teachers are presently absent? _____. Reason _____

_____

_____

_____

12. Please give the enrollment figures for the various grades for the past six years for this Department:

	1965		1966		1967		1968		1969		1970	
Grades	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
6												
7												
8												
9												
10												
Sub Total												
Annual Total, Boys & Girls												

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13. The following items of furniture could be in your classroom and office. Please indicate the number that you have in each item.

Item	Size	Number
Chalkboard	_____	_____
Magazine Rack	_____	_____
Cabinet	_____	_____
Student Chairs	_____	_____
Student Tables	_____	_____
Teacher Chairs	_____	_____
Teacher Tables	_____	_____
Notice Board	_____	_____
Display Board	_____	_____
Map Stand	_____	_____
Chart Stand	_____	_____

Vocational Area - Agriculture
Objectives

In the evaluation of the Multipurpose High School it is necessary to review the objectives of the vocational programs. Using your best professional judgment please assist us by filling out the following form. There are two columns to check desirability of the objectives (Column #1). Ability of the school and teachers to meet the objectives (Column #2).

	Column #1 Desirability of Objectives			Column #2 Ability to meet Objectives		
	High	Med.	Low	High	Med.	Low
1. To fit the students for useful employment.						
2. To meet the needs of students who wish to work on the farm.						
3. To prepare students to meet with growing efficiency and needs of a progressive vocation of farming.						
4. To produce agricultural products efficiently.						
5. To market agricultural products commercially.						
6. To select and use suitable farm equipment and supplies.						
7. To co-operate intelligently in economic activities.						
8. To manage the farm business effectively.						
9. To maintain a satisfactory farm home.						
10. To perform appropriate and economic farm-mechanics activities						
11. To participate in worthy rural social activities.						

Cont'd. from Page 57

	Column #1 Desirability of Objectives			Column #2 Ability to meet Objectives		
	High	Med.	Low	High	Med.	Low
12. To use scientific knowledge and procedures in a farming occupation.						
13. To exercise constructive leadership.						
14. To grow vocationally.						
15. To become successfully established in farming.						

1. Does your Vocational-Agriculture Department have a livestock building? (a) Yes___, (b) No___.

2. If yes, answer the following questions:

   a. What year was it constructed? _____

   b. How many square feet of floor space are there in the livestock building? _____

   c. What is the basic material for construction? Wood___; Stone___; Brick___; Others___; Specify_____

   d. What was the total cost of the building? Rs._____

   e. Who paid for the building? Local School___, HMG___, Both_____.

3. Does the Vocational-Agriculture Department have a poultry building? (a) Yes___, (b) No___.

4. If yes, answer the following questions:

   a. What year was it constructed? _____

   b. How many square feet of floor space are there in the building?_____

   c. What was the basic material used in its construction? Wood_____; Stone____; Brick____; Others____; Specify_____

   d. What was the cost of the building? Rs._____

   e. Who paid for the building? _____

Indicate the number and breed of the livestock that is owned by the Vocational-Agriculture Department:

Livestock	Number	Breed
5. Buffalo	_____	_____
6. Goat	_____	_____
7. Sheep	_____	_____

Cont'd. from Page 59.

Livestock	Number	Breed
8. Bullocks	_____	_____
9. Yak	_____	_____
10. Broilers	_____	_____
11. Layers	_____	_____
12. Others Specify	_____	_____

13. How many rupees has the school management committee allotted for the livestock enterprise operation this year? Rs. _____ total livestock budget.

14. How many Rupees total were derived from the livestock program in the last year? Rs. _____. How much profit? _____

Crop Production:

15. How many ropanies of land does the Vocational-Agriculture have in operation at the present time? _____ropanies.

16. How many rupees were allotted for the production of crops by the school management committee this year? _____ Rs.

17. How many rupees of income were derived from the crop production program during the last physical year? Rs. _____.

18. How much profit? Rs. _____

19. What percent of the students who are enrolled in Vocational-Agriculture come from a home where the major (50%) or more of the income comes from farming as an occupation? _____%.

20. In your opinion, what percent of the students who complete the Vocational-Agriculture Program and passed the SLC examination will go back to the farm? _____%.

21. In your opinion, what percent of the students who complete the Vocational Agriculture Program and pass the SLC examination will earn their living from agriculture related jobs? _____%.

22. In your opinion, what percent of the students who complete the Vocational-Agriculture Program and pass the SLC examination will earn their living from a totally non-agriculture related job? _____%.

Indicate the number of each of the reference books which you have available in the department or school library. (Agriculture).

_____ Planning a Landscape Garden in India by L. N. Bista

_____ Tweed's Poultry Keeping in India

_____ Poultry Keeping in India by Naidu

_____ Livestock and Poultry Production by Harbans Singh and Earl N.

_____ Practical Animal Husbandry by Miller and Robertson

THIS SECTION WAS TYPED IN NEPALESE

List other reference books which you have in the department library:

Author	Title
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Agriculture: The following is a list of recommended tools and equipment from the Course of Study for your area. Will you please indicate in Column 1 the number of each item your department has available and in Column 2 your indication of the "usefulness of the tools" by number. (1) Essential; (2) Desirable; (3) Not Needed.

Item	Column #1 Number	Column #2 Usefulness of tool
Max-Min, Thermometer Kodali Dry and Wet Bulb Thermometer		
Rain Gauge Weather Cock Wind Anamometer		
Barometer Water Evaporation Measuring Tank Hygrometer		
Soil Testing Kit Hard glass Test Tubes Soil Percolation Tubes		
Capillary Tubes Osmosia Tubes Litmus, paper red		
Litmus, paper blue Kodali or Chabey 9" x 9" Kodalo		
Chuchey Kuto Patey Kuto Khurpi		
Hasiya Dalyanthok Garden Hoe		
Garden Rake Digging Fork Shovel		
Wheel Barrow Transplanting Trowel Garden Fork		

Cont'd. from Page 62.

Item	Column #1 Number	Column #2 Usefulness of tool
Water cans Paddy Thrasher Sprayer		
Brush (large) Milk Testing Equipment Lactometer		
Syringe with needles Milking can Water bucket		
Waterer Feeder Wool Shearing Scissors		
Knife (long) and (small) Grinding stone Broom		
Equipment to prepare ghee, curd butter, khuwa, etc. Butchering knife Maps and charts dealing with animal and poultry husbandry		
Slide Projector Towels Ball peen hammer		
Claw hammer Rip saw Cross cut saw		
Screw driver Wrenches 6" and 8" Wire cutter		
Can opener Chisel (cold metal and wood) Plane		
Drilling auger Twisted bits Pliers		
Ratchet brace Auger bite Triangular file		

Cont'd. from Page 63.

Item	Column #1 Number	Column #2 Usefulness of tool
Dust sprayer Seed Dressing Drum Budding Knife		
Grafting tools Pruning Knife Pruning Saw		
Grass Shears Heavy Shears Scissors		
Secateur Garden Hatchet Chopper		
Stoves (Kerosine) Twine Ball Rope		
Rubber hose pipe Wax pencils Zinc plates		
Name plates Map of Nepal showing climate and rainfall Map of Nepal showing natural vegetation		
Map of Nepal showing agricultural products Charts dealing with horticulture Charts dealing with agronomy		
Charts dealing with agricultural plants Seeds and seed bottles Measuring tape 50'		
12" scale First Aid Kit Incubator		
Brooder stove with hoover (Kerosine) Poultry weighing machine with weighing basket Disecting kit		

9044

Cont'd. from Page 65

Item	Column #1 Number	Column #2 Usefulness of tool
Poultry shears Candler Debeaker		
Egg Grader with scale Dehorner Castrator		

Unit II
Department's Interview Form
(Completed with First Teacher in the Home Science Wing)

_____ (Name) Multipurpose High School.

1. Does this department have a separate vocational room reserved primarily for its use? (a) Yes___, (b) No___.
2. How many square feet of floor space does the vocational room have? _____
3. Does this department have adequate lockable storage area for the equipment which is needed for the program? (a) Yes___, (b) No___.
4. Does this department's vocational room have adequate electricity? (a) Yes___, (b) No___.
5. Does this department's vocational room have running water? (a) Yes___, (b) No___
6. Is the room adequately lighted by electricity or windows? (a) Yes___, (b) No___.
7. Was money for the department's classroom construction given by HMG? _____
8. How many subject matter related bulletins do you have in your department's library? _____
9. Have you prepared a calendar of operation for the coming year? _____
10. How many teachers do you have in this department? _____
11. How many teachers are presently absent? _____. Reason_____

_____

_____

_____

12. Please give the enrollment figures for the various grades for the past six years for this Department:

	1965		1966		1967		1968		1969		1970	
Grades	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
6												
7												
8												
9												
10												
Sub Total												
Annual Total, Boys & Girls												

9047

13. The following items of furniture could be in your classroom and office. Please indicate the number that you have of each item.

Item	Size	Number
Chalkboard	_____	_____
Magazine Rack	_____	_____
Cabinet	_____	_____
Student Chairs	_____	_____
Student Tables	_____	_____
Teacher Chairs	_____	_____
Teacher Tables	_____	_____
Notice Board	_____	_____
Display Board	_____	_____
Map Stand	_____	_____
Chart Stand	_____	_____

Vocational Area - Home Science
Objectives

In the evaluation of the Multipurpose High School it is necessary to review the objectives of the vocational programs. Using your best professional judgement please assist us by filling out the following form. There are two columns to check the Desirability of the Objectives (Column #1), and Ability of the school and teachers to meet the objectives (Column #2).

	Column #1 Desirability of Objectives			Column #2 Ability to meet Objectives		
	High	Med.	Low	High	Med.	Low
1. To prepare the students for the responsibilities and satisfaction of home making as a family member, generally as a wife and mother, and						
2. To prepare the students to contribute to the family income						

Home Science:

The following is a list of recommended tools and equipment from the Course of Study for your area. Will you please indicate in Column 1 the number of each item your department has available and in Column 2 your indication of the "usefulness of the tool" by number. (1) Essential, (2) Desirable, (3) Not Needed.

Item	Column #1 Number	Column #2 Usefulness of Tool
Deckchi, stainless steel with lids 2,4,6,8,10 manas Kasauri 1,2,3,4 manas Karahi 2,3,4,6 manas		
Aree, stainless steel 4,6,8,10 manas Sauce pan, stainless steel with lid 2,4 manas Pressure cooker 4,6, liter		
Frying pan, stainless steel 4,6,8" diameter Bucket, enamel with cover 2,3,4, gallons Deckchi, aluminum, 2,3,4,5,6,7,8 manas		
Frying pan, aluminum with lid 4,6" diameter Sauce pan, aluminum, with lid 4,6 manas Skillet, steel, with cover 5,6" diameter		
Chulesi Chakla bellana 5,6" diameter Mana, kuruwa, pathi		
Taraju, dhak Sifter (chalni) 4,6" diameter Mixing spoon		
Turning spoon Dipping spoon Measuring spoon		

Home Science (cont'd.)

Item	Column #1 Number	Column #2 Usefulness of Tool
Measuring cup Grinder (loboro selauto) Gagro, brass 2 liter		
Stove (coal) Jharna, stainless steel Mug		
Jug 4 manas Oven for baking 6" diameter Tawa		
Electric iron Coal iron Wash tub		
Thal, stainless steel 10" diameter Kachaura, stainless steel Rikabi, stainless steel 4" diameter		
Glass, stainless steel Plate, stainless steel 8" diameter Plate, stainless steel 6" diameter		
Soup bowl, stainless steel Food serving bowl, stainless steel, different sizes Stirring spoon, stainless steel		
Tongs, stainless steel Water jug, stainless steel 4 manas Table spoon, stainless steel		
Table fork, stainless steel Table knife, stainless steel Table teaspoon, stainless steel		
Dessert spoon, stainless steel Dessert fork, stainless steel Tea strainer, stainless steel		
Bread knife, stainless steel Tin cutter Can opener		

Home Science (cont'd.)

Item	Column #1 Number	Column #2 Usefulness of Tool
Kitchen scissors Kitchen knife Coffee percolator		
Dinner set for 12 Tea set for 12 Pitcher and glasses		
Water jug Coffee set		

Unit II
Department's Interview Form

(Completed with First Teacher in the Trade and Industrial Area)

1. Does this department have a separate vocational room reserved primarily for its use? (a) Yes_____, (b)_____.
2. How many square feet of floor space does the vocational room have? _____
3. Does this department have adequate lockable storage area for the equipment which is needed for the program? (a) Yes_____, (b) No_____.
4. Does this department's vocational room have adequate electricity? (a) Yes_____, No_____.
5. Does this department's vocational room have running water? (a) Yes _____, No_____.
6. Is the room adequately lighted by electricity or windows? (a) Yes_____, (b) No_____.
7. Was money for the Department's classroom construction given by H.M.G.? _____
8. How many subject matter related bulletins do you have in your department's library? _____
9. Have you prepared a calendar of operation for the coming year? _____
10. How many teachers do you have in this department? _____
11. How many teachers are presently absent? _____ Reason _____

_____

_____

_____

12. Please give the enrollment figures for the various grades for the past 6 years for this Department:

	1965		1966		1967		1968		1969		1970	
Grades	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
6												
7												
8												
9												
10												
Sub Total												
Annual Total Boys & Girls												

9054

13. The following items of furniture could be in your classroom and office. Please indicate the number that you have of each item.

Item	Size	Number
Chalkboard	_____	_____
Magazine Rack	_____	_____
Cabinet	_____	_____
Student Chairs	_____	_____
Student Tables	_____	_____
Teacher Chairs	_____	_____
Teacher Tables	_____	_____
Notice Board	_____	_____
Display Board	_____	_____
Map Stand	_____	_____
Chart Stand	_____	_____

Vocational Area - Trades & Industry
Objectives

In the evaluation of the Multipurpose High School it is necessary to review the objectives of the vocational programs. Using your best professional judgement please assist us by filling out the following form. There are two columns to check Desirability of the objectives (Column #1), and ability of the school and teachers to meet the objectives (Column #2).

	Column #1 Desirability of Objectives			Column #2 Ability to Meet Objectives		
	High	Med.	Low	High	Med.	Low
1. To help each student understand the world of work and himself in order to make a realistic occupational choice.						
2. To learn safe work habits and concern for the safety of others.						
3. To develop skills needed in the use of tools, equipment, and materials in a technological age.						
4. To encourage each student to think through problems, discover solutions, test conclusions, and make recommendations.						
5. To develop the wise use of leisure in constructive persuits and to enjoy the satisfaction derived from useful creativity.						
6. To select projects, the planning and the construction of which will: (a) develop desired vocational skills, vocational work habits, a vocational attitude and philosophy. (b) prepare students to become cooperative, useful and dependable citizens.						

Trades & Industry cont'd.

	Column #1 Desirability of Objectives			Column #2 Abilities to Meet Objectives		
	High	Med.	Low	High	Med.	Low
7. To explore industries especially in Nepal, to determine the potentiality for organizations to produce raw materials, and to explore their processing for human benefit.						
8. To reduce the hardship and burden of present living conditions through useful practical projects for human use.						
9. To provide some students with the occupational skills; others with a knowledge required for higher training.						
10. To develop desirable, social responsibilities, cooperation, tolerance, leadership, importance of individual, group and community responsibility in the social improvement.						
11. To develop an appreciation for vocational equipment, a strong sense of responsibility for its care and maintenance and know-how in preventive maintenance.						

Trades & Industry (cont'd)

The following is a list of recommended tools and equipment from the Course of Study for your area. Will you please indicate in Column #1 the number of each item your department has available and in Column #2 your indication of the "usefulness of the tool" by number: (1) Essential, (2) Desirable, (3) Not Needed.

Item	Column #1 Number	Column #2 Usefulness of Tool
Drawing board 17" x 23" T-square 24" blade Set-square 30 , 60 , and 45		
D. Scale (protractor) Lettering triangle (Brodock) Ruler, 12"		
French or Irregular curve Drawing instrument box with 9 pcs. Instrument box (small)		
Erasing shield Soft cleaning brush Drawing materials: drawing paper, tracing paper, soft and hard pencils, eraser drafting tape, pencil sharpener, thumb tack, white selo tape, drawing ink, etc.		
Wood working vise (quick action) Ripsaw (fine and coarse) Cross cut saw (fine and coarse)		
Coping saw Compass saw Key hole saw		
Jack plane Smoothing plane Block plane (big)		
Block plane (small) Saw jointer Saw sharpening vise		
Saw set Saw sharpening guide Try square		

Trades & Industry (cont'd)

Item	Column #1 Number	Column #2 Usefulness of Tool
Combination square T-Bevelled Metal tape		
Marking guage Mortise gauge Wood chisel ½",¼",(½+¼)",1"		
Carborundum stone Oil can Claw hammer		
Nail set of different sizes Gauges ¼",½",(¼+½)",1" Mallets		
Hand drill Twist bits for hand drill Ratchet brace		
Auger bits for scratch brace Slim taper saw file Wood rasp (Round), 8" Wood rasp (Half-round), 8" Wood rasp (Flat), 8" Wood rasp (Triangular), 8" Wood rasp (Square), 8"		
Wire brush (filecard) Table brush Hand grinder with carborundum wheel		
Wrecking bar 24" Screw drivers of different sizes Pliers 6" and 8"		
Screw driver (Phillips head) Crescent wrench, 4",6",8",10" Expansion bit for brace		
Long nose plier Diagonal cutter Pencil sharpener		
Coping saw blade Screw driver bits Rabbet plane		

Trades & Industry (cont'd.)

Item		Column #2 Usefulness of Tool
Back saw Carpenter's square (framing square) Level (Spirit)		
Open and wrench, set of six Bench saw, 10" blade,1 H.P. motor, complete set. Jointer & planer, 6" blade, 1 H.P. motor, complete set.		
Drill-press, 7½", ¼ H.P. motor, complete set. Dill press bits (twist) for wood and metal. Jig or scroll saw, ¼ H.P. motor, complete set.		
Jig saw blade Wood turning lathe, 1 H.P. motor, complete set. Wood turning tools		
Face plate for lathe Electric grinder, ½ H.P. motor, complete set. Portable hand drill, 220 volts		
Generator gasoline, 60 cycles, 220/100 volt. For those places where electric power is not available. Materials: Lumber, hardwares, paints, gasoline, shellac, turpentine, varnish, etc.		

Trades & Industry (cont'd)

Indicate the number of each of the reference books which you have available in the department or school library.

_____ General Shop Wood Working by Fryklund and Laberg, Pub. McKnight & McKnight.

_____ Wood and Wood Working for Industrial Arts by Delmer W. Olson, Pub. Prentice Hall, Inc.

_____ Wood Shop Tool Maintenance by Cunningham and Haltrop, Pub. Chas. A. Bennet Co., Inc.

_____ Wood Working by J. S. Chappell.

_____ A Hand Book of Carpentry by Durga Dutta Pandey.

_____ Advance Wood Working and Furniture Making by John L. Feirer, Pub. Chas. A. Bennet Co., Inc.

_____ Wood Working Power Tools by Publisher Atlas Press Company.

_____ Home Work Shop Practice, Publisher Arco Publishing Co., Inc.

_____ Operation of Modern Wood Working Machine by Horman and W. E. Haltrop.

_____ General Metal Work by Groyshone.

_____ Basic Sheet Metal Practice by J. W. Giachine, Pub. D. Van Nestrand.

_____ Practical Metal Project by M. J. Ruley, Pub. McKnight & McKnight Co.

_____ Projects for Metal by J. R. Walker, Pub.Goodheart and Willcox Co.

_____ Drawing and Planning for Industrial Arts by John L. Feirer, Pub. Chas. A. Bennet Co.

_____ Industrial Arts Drawing Blue Print Reading by S. L. Coover, Pub. McGraw Hill Book Co.

_____ Engineering Drawing by Willey and Wantless.

_____ All About House Wiring by Floyd and B. C. Pritchard, Pub. Goodheart and Willcox Co.

_____ Industrial Arts Electricity by Lask and Eagle, Pub. Chas. A. Bennett Co.

_____ Electric Projects for School and Home Workshop by Walter B. Ford, Pub. Bruce Publishing Co.

_____ Colouring, Finishing and Planning Wood by A. C. Newell, Pub. The Manual Arts Press.

_____ Painting and Decorating by D. Geseph Di Bernando, Pub. D. Van Nostrand Co., Inc.

_____ Wood Finishing and Refinishing by S. W. Gibbia, Pub. D. Van Nostrand Co., Inc.

_____ Building Trade Construction - Vols. I, II, III, by W. B. McKay, Pub. English Language. Book Society & Longmans.

_____ Technical Drawing by Goisecke, Mitchelle and Spencer.

_____ Graphic Architectural Drafting by J. Edger Ray, Pub. McKnight & McKnight Publishing Co., Bloomington, Illinois.

List other reference books which you have in the department library.

Author	Title

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Unit III
Teacher's Qualification, Teaching & Teacher Training

School Name:_____ Subject Taught:_____

Note: One copy to be filled out by each teacher employed by the school.

1. Name: _____

2. Highest degree held: _____

3. Major in which highest degree was awarded: _____

4. Highest vocational training degree held: _____

5. Institution or college from which your two highest degrees were received:

_____

	Highest Degree	Second Highest Degree
a.) Name of institution.	_____	_____
b.) Town	_____	_____
c.) Country	_____	_____
d.) Year	_____	_____

6. Have you received vocational short term training (other than degree work listed in Item 4) in Nepal: Yes_____ No_____

7. If yes:

   a) Location:_____

   b) Duration or length of last training session: _____

   c) Was this training part of a longer training effort: _____

   Total length: _____

   d) Name of training program: _____

   e) Most recent year you attended training: _____

8. How many years have you taught in this vocational area? _____

9. How many years have you taught, total: _____

10. What subjects did you teach, outside your major area during this year:

_____

11. How many periods do you teach in your major area per week:

_____periods per week.

12. How many periods do you teach total per week: _____periods per week.

13. What duties do you perform for the school outside of the above mentioned teaching areas? (Please list) _____

_____

14. In a short paragraph, state your philosophy of Vocational Education: _____

_____

_____

_____

_____

_____

15. Please indicate the work experience which you have had in your Vocational specialty under the following three headings:

Job Title	Months Employed	Level of Responsibil

16. In your opinion, state the value you feel this work experience has been to you in teaching your area? _____

_____

_____

_____

_____

17. How many times during a school year do you take one of your classes to visit a local establishment on a planned field trip: _____

18. What are the names of places which you have taken field trips:

Business Name:	Purpose or activity:
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

19. What community related programs do you sponsor:

_____ (a) Evening or extension course for local people.

_____ (b) Club or youth organizations.

_____ (c) Special programs.

Give specifics: _____

_____

_____

_____

20. What is the Department's earned income per year? _____Rs.

21. What are the student skill projects which your students have completed this year? _____

_____

_____

_____

22. Are you eligible for reimbursement? Yes _____ No _____

23. Do you have sources of income outside of your teaching? _____

24. If outside income, what percent of your total income comes from teaching in this school? _____

25. What percent from other sources? _____

26. What are your major problems as a teacher? _____

_____

_____

_____

_____

_____

_____

27. What are your major satisfactions as a teacher? _____

_____

_____

_____

_____

_____

_____

Secondary Multipurpose Education
Objectives

In the evaluation of the Multipurpose High School it is necessary to review the objectives of the program. Using your best professional judgement please assist us by filling out the following form. There are two columns to check, desirability of the objectives (Column #1) and ability of the school and teacher to meet the objectives (Column #2).

	Column #1 Desirability of Objectives			Column #2 Ability to Meet Objectives		
	High	Med.	Low	High	Med.	Low
1 The youth who will continue their education in College and who may well become the civic and political leaders of Nepal in the future						
2 Those who will become the professional and economic leaders of Nepal, the engineers, doctors, lawyers, home economists, agriculture specialists, industrial experts, teachers, and business men.						
3. The boys and girls who will terminate their formal education after secondary school in order to become skilled mechanics, official workers, junior executives, formen, and workers in business.						

Check Sheet for Teachers

In the process of teaching there are many procedures which can be used. Listed below are several possible steps. There are three columns headed: (1) Always (2) Sometimes and (3) Rarely. Always indicates that you perform the task mentioned every time possible. Sometimes is the middle range Rarely would imply that you rarely or never perform the task mentioned

Place a check mark in the column which most nearly identifies the degree you carry and the item

Item	Always	Sometimes	Rarely
1. Prepare a written Lesson plan for each lesson to be taught.			
2 Use the lecture method of teaching.			
3. Survey the level of student knowledge to determine the level at which the lesson should be taught.			
4 Prepare written objectives for each lesson to be taught			
5 Ask questions during the lesson to determine if the student understands what is being taught.			
6. Use the demonstration method of teaching when possible			
7 Motivate the student so he will understand why it is desirable to know the information or skill presented in the lesson.			
8. Write a lesson plan in such a manner as to break down the various skills in small logical steps which the student can learn easily.			
9. Have the student perform the skill or ask which he has learned from the demonstration or class.			

Check Sheet for Teachers (cont'd)

Please answer the following questions:

1. How many demonstration type lesson plans do you prepare for each class for a year? _____

2. How many "lecture only" classes do you teach to each class for a year? _____

3. How many periods per year do students spend practicing skills and abilities which you have taught? _____

4 How many times a year do you have a specialist from industry or business as a guest speaker in your class? _____

5 Have you prepared an expanded course outline considering local or community needs which you use as a guide in the development of lesson plans? _____

_____

School Name _____

Code No. _____

Students & Employment
Unit IV
a. Vocational Related

Employment Opportunities in MPHS District
To be completed by Headmaster, Registrar & Guidance

	Job Title	M. P. H. S. Related area				Sector		Education Level Required	Annual Income	Company Name and Address
		Agriculture	Business Education	Home Science	T & I	Private	Government			
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										

0206

Student Placement
Propose to determine:
b Graduates - Additional Training

School Name_____

Student's Name	Multipurpose Major				Training Institution	Location	Students Vocational area Available in Institution		Student Major in Institution	Year Passed S. I. C
	Agriculture	Business Education	Home Science	T & I			Yes	No		
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										

9071

School Name _____

c. Graduates - Received no further education

Name	MPHS Area				Years Passed SIC	Current Estimate Annual Income	Present Job Title	Company Name and Address or In Joint Family	Location		Occupational Area			
1.														
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														
11.														
12.														
13.														

2706

School Name _____

d. Non-Graduate

Name	M.P.H.S. Area				Highest Grade When Dropped		Present Job Title	Company Name and Address or In Joint Family		Location		Occupation Area			
1.															
2.															
3.															
4.															
5.															
6.															
7.															
8.															
9.															
10.															
11.															
12.															
13.															
14.															

9073

Code No.:_____

Unit V.

In Service Teacher Training: Teachers' Dept.:_____

The purpose of this section is to determine (1) if there is an expressed need for additional training, (2) what type of training is desired, (3) identify the best time and location for training.

1) Do you feel there is a need for additional in-service teacher training programs for you as a vocational teacher in the Multipurpose High School:

_____ yes _____ no.

If the answer to the above was yes, please complete part 2 and 3.

2) Check the area or areas in which you feel it would be helpful to have additional training.

_____ a) Supervised practice teaching to assist you in improving your teaching method skills.

_____ b) Supervised practice teaching to assist you in improving your subject matter content.

_____ c) Extensive practical experience to assist you in gaining confidence in your vocational area.

_____ d) Experience in development of a course outline to meet local needs.

_____ e) Experience in the development of lesson and unit plans

VT 014 897
LARKIN, PAUL; KENADJIAN, BERDJ
PRIORITIES IN VOCATIONAL-TECHNICAL EDUCATION AND NATIONAL GOALS IN THE 1970'S. VOLUME II.

NATIONAL PLANNING ASSOCIATION, WASHINGTON, D.C. CENTER FOR PRIORITY ANALYSIS.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C. BUREAU OF RESEARCH
MF AVAILABLE IN VT-ERIC SET.
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REP-6 BR-8-0643
PUB DATE - APR70 37P.

DESCRIPTORS - *VOCATIONAL EDUCATION; *PROGRAM PLANNING; *EDUCATIONAL NEEDS; *MANPOWER NEEDS; RESEARCH NEEDS; TECHNICAL EDUCATION; EMPLOYMENT OPPORTUNITIES; SUBPROFESSIONALS; *EDUCATIONAL OBJECTIVES

ABSTRACT - THROUGH ITS CENTER FOR PRIORITY ANALYSIS, THE NATIONAL PLANNING ASSOCIATION IS ENGAGED IN A CONTINUING RESEARCH EFFORT TO IDENTIFY NATIONAL GOALS, ESTIMATE THEIR DOLLAR COSTS, AND INDICATE THE MANPOWER REQUIRED FOR ACHIEVING THEM. THUS, THIS DOCUMENT WHICH REPRESENTS ONE OF SEVEN REPORTS, IS CONCERNED WITH THE RELATIONSHIP BETWEEN MANPOWER REQUIREMENTS AND PRIORITIES FOR VOCATIONAL EDUCATION IN THE 1970'S. MAJOR SECTIONS OF THE REPORT ARE: (1) R AND D PRIORITIES, NATIONAL GOALS, AND MANPOWER NEEDS, (2) CAREER OPPORTUNITIES FOR TECHNICIANS IN THE 1970'S, (3) IMPLICATIONS FOR VOCATIONAL-TECHNICAL EDUCATION, AND (4) PRIORITIES IN VOCATIONAL-TECHNICAL EDUCATION. PRIORITIES IDENTIFIED INCLUDE THE NEED FOR SOME PROGRAMS FOR EMERGING OCCUPATIONS. TOPICS TREATED IN THE OTHER SIX REPORTS ARE: (1) CAREER OPENINGS IN HEALTH OCCUPATIONS, (2) NONPROFESSIONAL OCCUPATIONS IN EDUCATION, (3) CAREER OPENINGS IN SOCIAL WELFARE, (4) CAREER OPENINGS IN THE CONSTRUCTION CRAFTS, (5) JOB OPPORTUNITIES IN TRANSPORTATION, AND (6) EDUCATION FOR TECHNICIAN CAREERS. A RELATED DOCUMENT IS AVAILABLE AS ED 036 655 OR VT 010 437 (ARM FALL 1970). (AUTHOR/JS)

VT 014 897

OS
BR-8-0643

Priorities in Vocational - Technical Education and National Goals in the 1970's

Volume II

Report Number 6

Education for Technician Careers

Paul Larkin

and

Berdj Kenadjian

Center for Priority Analysis
National Planning Association

for

U. S. Office of Education
Grant No. OEG-0-8-080643-4467(085)

1970

U.S. DEPARTMENT OF HEALTH, EDUCATION, & WELFARE
OFFICE OF EDUCATION
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BACKGROUND INFORMATION

This publication is one of seven reports made possible by a grant to the National Planning Association from the Bureau of Research of the United States Office of Education. Through its Center for Priority Analysis, the National Planning Association is engaged in a continuing research effort to identify national goals, estimate their dollar costs, and indicate the manpower required for achieving them. The present work is concerned with the relationship between these manpower requirements and priorities for vocational education in the 1970's. The summary report is entitled Priorities in Vocational-Technical Education and National Goals in the 1970's. Six special reports published under separate cover furnish more detailed information in specific areas. They are: 1. Career Openings in Health Occupations, 2. Nonprofessional Occupations in Education, 3. Career Openings in Social Welfare, 4. Career Openings in the Construction Crafts, 5. Job Opportunities in Transportation, and 6. Education for Technician Careers.

NATIONAL PLANNING ASSOCIATION
April, 1970

INTRODUCTION

Technological progress is the means to a more abundant life for Americans. Our national investment of funds and manpower in new technologies has been rewarded by increased life expectancy, by rapid increases in productivity, and by far-reaching improvements in our standard of living.

A nation experiencing substantial technological advance needs a greater number of technicians to support the increasing supply of scientists and engineers. Yet, in the past, the United States has had one of the world's lowest ratios of technicians to scientists and engineers.(1) As industry, government, and universities come to utilize technicians more effectively, many more career opportunities will become available in the technical occupations. Accordingly, an annual average of 128,000 job openings is expected to develop in this field between the mid-1960's and the mid-1970's. This compares with the 35,000 job openings a year which became available between 1962 and 1966. These are among the most rapid rates of increase anticipated in any occupation.

Science-based industries and technical-service firms continue to show rapid growth. However, the main stimulus for technical manpower demand arises from increasing expenditures for research and development (R&D). Although it is difficult to measure the effect of R&D on economic growth, it is estimated that about half of our economy's recent expansion

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(1) Bowen, Charles R. "Educators Plus Employers: A Team to Meet the Critical Need for Technicians", presented at the National Clinic on Technical Education, Albuquerque, New Mexico, March 27, 1968, pp. 13-15.

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is the result of increases in productivity which stem largely from technological and organizational changes.[2]

From the mid-fifties to the mid-sixties, R&D outlays accounted for approximately two-thirds of the employment growth for scientists and engineers in private industry.[3] Growth in expenditures for R&D in the 1970's will probably play an equally important role in raising requirements for technicians to support these scientists and engineers.

It is likely that there will be both continued growth in R&D related to defense and space in the next ten years and a more rapid expansion of research for the civilian economy. In analyzing requirements for scientists, engineers, and technicians for the 1970's, it is also reasonable to anticipate that there will be larger publicly-sponsored programs to translate R&D findings more quickly into technological advances in everyday use. Based on these considerations, it is estimated that requirements for technicians, excluding medical and dental technicians and surveyors, will grow from 900,000 in 1966 to nearly as high as 2 million in 1975.[4]

It is clear that this expected growth implies a need for an expansion and a redirection of emphasis in the vocational programs concerned with educating and training technicians in the 1970's. As a minimum, the vocational education system must attract many more students to the technician training courses -- particularly women and the disadvantaged. This will

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(2) Kendrick, John W., Productivity Trends in the United States, National Bureau of Economic Research, Princeton University Press, 1961, p. 80; Solow, Robert M., "Technical Change and the Aggregate Production Function," The Review of Economics and Statistics, August, 1957, pp. 312-320.

(3) U. S. Department of Labor, Occupational Employment Patterns for 1960 and 1975, p. 17.

(4) Lecht, Leonard A., Manpower Requirements for National Objectives in the 1970's, National Planning Association, 1968, p. 258; and Current Population Survey for 1966 (unpublished).

call for improved pre-service and refresher teacher training programs, and innovative leadership and strong administrative capabilities to expand technician training courses, particularly on the post-secondary level of vocational education. In this way, greater recognition can be accorded to the impact of technological advance for job opportunities.

R&D PRIORITIES, NATIONAL GOALS, AND MANPOWER NEEDS

The revolution in the role and organization of research since the Second World War has made America acutely research-minded. R&D is now an important means for achieving established national objectives such as defense as well as in suggesting new goals, e.g., space exploration or oceanics. If a high priority continues to be assigned to goals involving large-scale research and development, it is estimated that expenditures for R&D will rise from a little over $18 billion in 1962, or 3.6 per cent of the Gross National Product, to about $43 billion by 1975, or 4.3 per cent of the GNP (in dollars of 1967 purchasing power).(5) Such outlays will obviously require great increases in scientific and technical manpower. Research programs of these magnitudes affect employment in many areas because they inevitably reverberate throughout the technology and economy of our nation.

World War II marked the beginning of publicly financed R&D on a large scale designed to promote massive technological change. Today, most public and private research is federally financed.(6) Thus research has

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(5) Lecht, Leonard A., op. cit., p. 56.

(6) Statistical Abstract of the United States, 1968, p. 525.

become more than ever oriented towards achieving goals supported by the Federal government. In recent years, the Department of Defense, NASA, and the Atomic Energy Commission have accounted for approximately seven-eighths of all federal R&D spending. In the 1970's however, this situation could shift substantially toward a greater emphasis on improving the quality of the environment, on coping more effectively with unmet economic and social needs, and exploring areas as yet lightly touched by R&D. (7)

Scientific advances in oceanics alone may, in the next decade, come to rival the current effort in exploration of outer space. The nation probably will also insist on seeking more effective solutions for problems of health, welfare, education, housing, and transportation through R&D programs designed to accelerate technological and organizational progress. We can assume, moreover, that the 1970's will also bring expansion in the nation's information storage and retrieval systems and an R&D extension service to make research results available to the private sector.

In view of the major role federal agencies will play as sponsors of research in these fields, the changes in R&D priorities mentioned above will be obtained through changes in federal policy. Important shifts in emphasis on R&D may also take place in areas where private industries finance their own research. In the early 1960's, firms producing paper, foods, textiles and apparel, lumber, metals and petroleum spent one percent or less of their revenues on research. At the same time, firms producing chemicals, machinery, scientific instruments, electrical or communications equipment were channeling

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(7) Lecht, Leonard A., Goals, Priorities and Dollars -- The Next Decade, The Free Press, New York, 1966, pp. 215-23.

three percent or more of their revenues into R&D. Even a modest shift in policies toward greater support of research in the industries which place less stress on R&D would have major impact on technological developments, and concomitantly, on technical manpower requirements.

Job opportunities for technicians depend not only on research priorities, but also on the choice of national goals. If, for example, the nation were to encourage modernization and foster expansion of its industrial plant and equipment, 275,000 more technicians would be employed for this purpose in the mid-1970's than in the early 1960's. Over the same period, attaining goals in urban development would enlarge employment for technicians by only 110,000, even though the 1962 expenditures for urban development exceeded those of private plant and equipment. (See Table 1 on page 6).

The choices policy makers will face in the next decade is one of emphasis to be placed on different goals rather than the complete attainment of some goals and the complete neglect of others. The influence of possible changes in priorities may be assessed by comparing the different numbers of technicians required per $1 billion spent in pursuit of specific goals. For example, it is estimated that spending an additional $1 billion for national defense would generate approximately 4,000 new jobs for technicians; a similar expenditure on urban development would create fewer than 2,000 new jobs. These estimates illustrate the fact that we make use of research and development and new technology to a larger extent for defense purposes than in most other areas. The estimates also show that the pursuit of other goals requires, to a greater or lesser extent, the services of people with technical know-how below the professional level.

Table 1

Growth in Employment of Technicians Required for Achieving Selected National Goals: 1962 and 1975[a]

Goal	Employment (in 000) in 1962	Employment (in 000) Projected for 1975	Percent Increase in Employment 1962 to 1975	Projected Employment per $1 billion in 1975[b]
All research and development	178	460	158%	11,700
National defense	112	184	64	4,400
Private plant & equipment	126	380	201	2,500
Transportation	71	168	137	2,300
Urban development	82	192	134	1,800

(a) Technician totals include engineering and national science technicians, draftsmen and industrial designers. They exclude medical and dental technicians and computer programmers, the latter because of lack of data by goal.

(b) Refers to final demand expenditures in 1962 prices.

Source: Lecht, Leonard A., Manpower Requirements for National Objectives in the 1970's, National Planning Association, February 1968, pp. 397, 409, 422, 447, 460; U. S. Department of Labor, Manpower Report of the President, April 1968, Appendix Table E-11, p. 306.

In undertaking to consider the manpower impacts of pursuit of the nation's goals, it is reasonable to assume that by 1975 we may expect the establishment of a high priority for dealing with those problems which technology itself helps to create. For example, science has developed techniques for exploiting offshore oil, but techniques to preserve the nation's beaches from oil-slick pollution remain to be invented. Although use of DDT to eliminate destructive insects has controlled diseases and enlarged our crops, it now poses problems of harmful chemical accumulations in human and animal tissues. Since the

manipulation of nature will continue to exacerbate imbalances in nature--imbalances which will require continuous advances on the frontiers of science--growth in career opportunities for technicians to assist research scientists, both in the physical and life sciences, is bound to continue.

CAREER OPPORTUNITIES FOR TECHNICIANS IN THE 1970's

Three sets of considerations in addition to the R&D priorities, national goals, and technological improvements discussed earlier can be expected to influence requirements for technicians in the next decade. The first set involves the traditionally American qualities reflected in our approach to technology -- practicality and team play coupled with a willingness to undertake large-scale enterprises. The second deals with the utilization of technical manpower in research and development and in science-based industries. The third relates to the geographic concentration of research activity.

The most important traditional American characteristic which favorably affects opportunities for technicians is our pragmatic emphasis, our interest in the uses of new knowledge. In the past, most of the nation's massive R&D expenditures have been directed to applied science and to development rather than pure research. In 1966, for example, only a little over one-tenth of the total R&D expenditure was for basic research.(8) In the 1970's, this pragmatic approach to science and technology is likely to continue.

Another feature of the modern scientific scene and one of the most significant developments in postwar technology is the team concept. The rapid growth in research and development since World War II is largely attributable to technical teams working in large laboratories or development centers, rather than to the lone researcher operating on a small

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(8) Statistical Abstract, loc. cit.

budget.[9] Moreover, with the growing emphasis on the application of techniques of operations research to complex systems, the trend is toward collectively planned R&D efforts carried out by teams of senior and junior technical personnel. This approach would be illustrated by a research project aimed at devising a completely modernized and largely automated postal service network.

Developments in systems research, made possible by the growing power of computers, will mean new jobs for junior systems analysts to support the emerging teams of social scientists and mathematicians. Growth in electronic data processing capabilities, incidentally, will continue to create new roles for technicians such as programmers by making them essential members of specialist teams.

Despite the continuing emphasis on the practical aspects of science and the trend toward more complex team efforts, the United States is still far behind the Soviet Union, West Germany, and other countries in effectively utilizing technicians to release scientists and engineers. The ratio in the United States, although rising rapidly, is still below the ratios considered desirable by industry.

In 1950, there were less than 200 technicians per 1,000 professionals in engineering and natural sciences. By 1966, this ratio had increased to 600. The growth in the ratio of technicians to engineering and natural sciences professionals in the 1950 to 1966 period was more rapid than the

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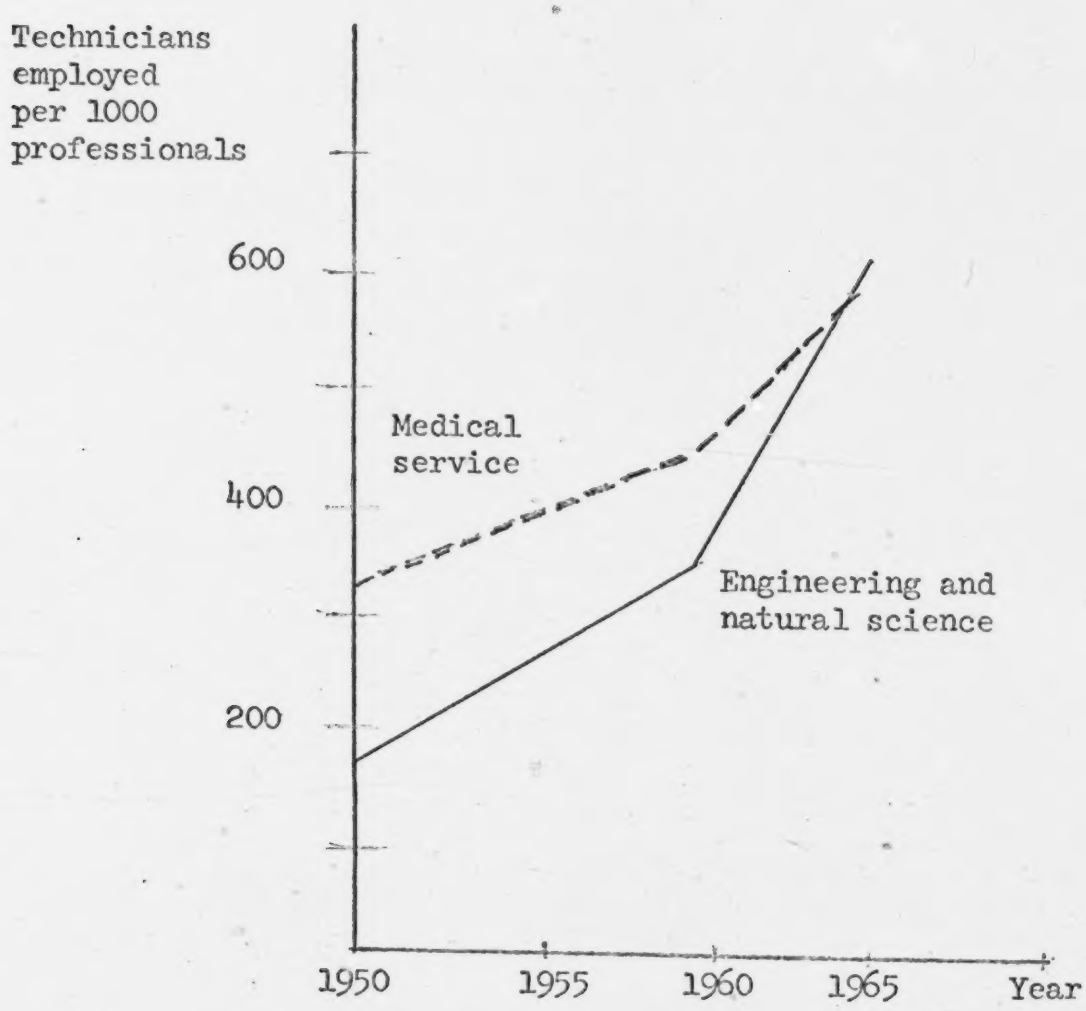
(9) Lecht, Goals, Priorities, op. cit., p. 218.

comparable growth rate in the medical services field, a field characterized by widespread use of technical manpower. The growth in the use of medical and dental technicians was also significant, a rise from 320 per 1,000 physicians in 1950 to 600 in 1966. Yet this represents less than a doubling in medical services compared to a greater than three-fold increase in the technician-professional ratio in engineering and natural sciences. (See Chart I).

Chart I

Trends in Ratios of Technicians to Professionals in Two Fields: 1950 to 1966



Source: See Appendix Table 1.

Although many more engineering and natural science technicians are now employed per 1,000 professionals in these areas than in 1950, there is a strong likelihood that growth in this ratio will continue to increase career opportunities in the technical occupations in the 1970's. For example, the American Society of Engineering reported in its survey of technical institute education in 1967 that industry desired a ratio of almost 2,000 technicians per 1,000 scientists and engineers.(10) Similarly, the experience of other countries underscores the potentials for more widespread utilization of technicians in the United States. About 2,000 technicians are now employed per 1,000 scientists and engineers in West Germany, approximately the ratio preferred by American industry. In the Soviet Union, to cite another illustration, planners are aiming at a ratio of 3,000 to 4,000 technicians for every 1,000 professionals employed in 1970 in industrial, construction, transport, communications, and agricultural occupations.

In any technical work, professional personnel are regularly supplemented by supporting technicians as well as by instrumentation and equipment. Technicians, however, instead of being only a supplement, are often a substitute, and so make it possible to economize in the use of high-level professional manpower, who are often in short supply. Further, properly trained technicians can often perform technical work which otherwise would require expensive instrumentation. Another important factor which affects the need for technicians is the research timetable. Projects rushed toward completion by a sudden influx of money reach a point of diminishing returns.

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(10) Bowen, C. R., "Educators Plus Employers; A Team to Meet the Critical Need for Technicians," op. cit., p. 13.

Thus, a faster job is more likely to be excessively expensive if there is no reserve of trained manpower from which to draw.[11] In the future, when the demand for scientists and engineers will continue to rise, we can reasonably expect higher ratios of technicians to professionals if well-trained graduates of the technician programs are available. Assuming the steps are taken to increase their availability, requirements for technicians, according to the National Planning Association's projections, would grow more rapidly than for the professionals with whom they work. The relevant estimates of percentage growth for the 1966 to 1975 period are 122 per cent for technicians and 82 per cent for scientists and engineers.[12]

Finally, the geographic concentration of research affects the job openings available for technicians in different states and localities. In the 1960's, defense and space-related research and development activities have been concentrated more heavily in some states than in others. The presence of numbers of large universities and scientific laboratories in the Boston area and in southern California, for example, has been an important influence in the location of many technologically-advanced industries, i.e., the electronics industry, made up of large establishments in the same areas. These establishments maintain substantial research teams and they attract sizeable federal research support. Employment opportunities for technicians, accordingly, are greater in these areas than in the ones which are less important as centers of research-oriented industries. The geographic concentration of research will probably be

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(11) Terleckyj, Nestor E., Research and Development: Its Growth and Composition, National Industrial Conference Board, Inc., New York, 1963, pp. 12-15.

(12) Lecht, L., Manpower Requirements for National Goals, op. cit., and Current Population Survey for 1966 (unpublished).

less pronounced in the 1970's than in the 1960's. This anticipation stems partially from congressional concern with reducing geographic imbalances in the distribution of research funds. It also reflects an expected shift in emphasis in R&D priorities to allow for greater support for research and development throughout the nation related to social needs such as education, health, pollution, mass transit, and low-cost housing. As research support becomes more evenly diffused, a growing demand for technicians will also be more evenly spread across the country.

Consideration of the forces affecting the employment of technicians makes it reasonable to anticipate rapid expansion in job opportunities in virtually all specialized fields, although the percentage increases are likely to be considerably larger in some occupational areas than in others. The potentials for growth are illustrated by the projections of average annual job openings in specific technical fields in Table 2. (See page 14 for Table 2). The estimates indicate the breakdown by speciality of the 128,000 average annual job openings expected to materialize in the 1966 to 1975 period if our society were to assign a high priority to goals involving a substantial technological component for their pursuit.

Scientific and engineering technicians of all types accounted for half of all employment in the technical fields represented in Table 2. These are also the technical areas expected to undergo the largest increases in employment and job openings in the 1970's. Among engineering technicians,

Table 2

Estimated Annual Average Job Openings
for Technicians, 1966 to 1975
(in 000)

Occupational Category	Number Employed 1966	Number Employed Projected 1975	Average Annual Job Openings 1966 to 1975[a]
Scientific and engineering technicians	459	1,268	89
Electrical and electronic	136	456	34
Other engineering	207	496	33
Life sciences	16	73	6
Chemical	48	130	9
Physics	10	24	2
Other physcial sciences	3	8	1
Applied mathematics	39	81	5
Draftsmen and designers	346	525	23
Computer programmers	100	220	14
TOTAL[b]	905	2013	128

(a) Refers to job openings generated by employment growth and for replacement of losses due to deaths and retirements.

(b) Details may not add to total due to rounding.

Source: See Appendix Table 2.

the electrical and electronic fields--such as communications, radar, or fields related to space craft guidance, missiles, and electronic equipment--are likely to undergo the more pronounced rates of growth. This reflects

the continuing emphasis on the nation's space exploration and defense goals, as well as the proliferation of electrical and electronic equipment throughout our society.

Agricultural and biological technicians (life sciences in Table 2) have unusually rapid growth prospects, although they are now relatively small in number. Progress in "farming" the oceans and in preserving food through improved packaging may increase the demand for life science technicians to even higher levels in the 1970's. Requirements for sub-professional technical manpower to assist chemists, physicists, and other physical scientists will rise rapidly in the next decade, although the percentage increase for this group is expected to be smaller than for the life science technicians. New scientific techniques such as the use of infra-red photography to determine the location of undeveloped natural resources could raise requirements for physical science technicians above the levels shown in the table.

As may be seen from Table 2, draftsmen and designers are now the largest single specific occupation in the technical manpower field. This group, heavily dominated by draftsmen, accounted for almost four out of ten people employed in technical occupations in 1966. However, since employment growth for draftsmen will probably be held back by automation, less than two out of ten job openings are expected to go to draftsmen and industrial designers in the 1966 to 1975 period.

Employment opportunities for computer programmers in the 1970's will

be fewer than for designers and draftsmen but they are expected to grow more rapidly. Computer programming is a fairly new occupation which became significant in the 1950's. In 1959, the introduction of transistorized computers ushered in a period of mass production of miniaturized computers and the accompanying software. This development gave rise to new demands for technicians. As the revolution in data processing continues, it is estimated that, between 1966 and 1975, there will be 14,000 job openings a year for computer programmers. Moreover, by 1975 it is likely that some skill in scientific data processing will be required of almost all technicians to insure adequate communication among all specialists in science and technology.

Employment for technicians in the 1970's will be affected substantially by patterns of occupational growth in the specialities within the field. Job opportunities will also be influenced by the rate at which different sectors of the economy expand in the coming decade. According to a Department of Labor study, the largest percentage increases in employment in these occupations will take place in the services sector. Colleges and universities, and non-profit organizations, frequently R&D organizations, will provide a larger proportion of jobs in the 1970's than in the 1960's. Growth in employment opportunities will also be above average in Federal and local government. On the other hand, industries manufacturing machinery and equipment, including electrical equipment, aircraft, and motor vehicles, and public utilities will be somewhat less important as sources of employment in the technical occupations in the next five or ten years. (See Appendix Table 3).

IMPLICATIONS FOR VOCATIONAL-TECHNICAL EDUCATION

Although job prospects in the next decade will not be equally favorable in all occupational and industrial classifications, on the whole, employment opportunities for well-trained technicians will be excellent. And yet the recruitment of qualified students is a major problem in developing vocational education programs for technicians. In the first place, many high school students study only a minimum of science and mathematics. Second, students often fail to develop the reading, writing and speaking skills which would insure that they would be reasonably successful in technical education programs.(13) High school students who choose the background courses necessary for training as technicians usually aspire to a college degree. And, unfortunately, many Americans tend to denigrate degrees below the baccalaureate. Therefore, encouraging more students to prepare for careers as technicians will involve improving general as well as vocational education, inculcating a greater awareness of opportunities, and changing the status connotations associated with different types of degrees.

The Engineering Manpower Commission reported in 1969 that, after twelve to fourteen years of experience, the average technician received a salary quite close to that of an engineer in the lower half of the salary scale

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(13) Brooking, Walter J., "Student Recruitment and Student Development for Technical Programs," circular issued by U.S. Office of Education, March, 1969, p. 1.

for all engineers.[14] Publicizing facts such as these is likely to require a concerted effort to reach parents, students, teachers, and guidance counselors. Recently, for example, the Advertising Council started a nationwide campaign to create greater awareness of the availability of good technical jobs which do not require four years of college. However, these public service campaigns by the mass communications media are supplements, rather than substitutes for the efforts of the school systems themselves to interest more young persons, and young persons from underrepresented groups, in these rewarding careers.

Attracting more qualified students into technical fields will mean focusing to a considerably larger extent than in the past on students from disadvantaged groups and on women. In 1966, to cite an instance, only some 5,000 nonwhites were employed as electrical and electronic technicians. This represented about 4 percent of the total.[15] In the early 1960's, fewer than 10 percent of all employed technicians were women.[16]

Many students, white and nonwhite, in inner city schools lack the educational background in introductory science and the supporting mathematics required to enter the usual postsecondary technician training programs. In our culture, women, too, have obstacles to overcome if they are to be adequately represented in our technician training courses. Prominent among these are the

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(14) Technician Education Yearbook, 1967-1968, Prakken Publications, Inc., Ann Arbor, Michigan, pp. 181-2.

(15) Based on Current Population Survey for 1966 (unpublished).

(16) Technician Manpower: Requirements, Resources, and Training Needs, U. S. Department of Labor, Bulletin No. 1572, 1966, p. 31.

social practices which formerly restricted the work careers of women coupled with the feeling that the technician's work is not feminine.

Recent developments in science and engineering favor increased participation by women in technical fields since they point in the direction of an emphasis on design and research. These are activities which do not involve the type of cultural obstacles women have had to surmount in fields like mechanical engineering. Also, women's supposed knack for detail gives them a favored position among programmer candidates. In Russia, where engineering is not regarded as a male profession, about a third of the engineers are women.(17) The Women's Bureau has reported that no significant formal restriction bars women's access to technical training. Instead, the Bureau's report concluded that the desire to obtain training is frequently restrained by the attitudes of parents, counselors, and educators -- as well as by the women themselves.(18)

In addition to social barriers and lack of an awareness of the opportunities, failure to elect the requisite courses in secondary schools serves to remove many women and persons from disadvantaged groups as prospects for the science-related fields. One way to give such people a second chance is through programs called by various names like "student development","pretechnical", or "opportunity" courses. All of these

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(17) Mattfield, Jacquelyn A. and Van Aken, Carol G. (eds.) Women and the Scientific Professions, the MIT Symposium on American Women in Science and Engineering, MIT, 1965, p. 174.

(18) U.S. Department of Labor, Careers for Women as Technicians, Women's Bureau Bulletin No. 382, 1961, p. 24.

provide remedial and preparatory education in the sciences and mathematics. Administrators of such programs have stated that when students remove the academic deficiencies as a part of their occupational study programs, the morale of both students and instructors is improved, and the number of students who drop out because of academic failure is greatly reduced.(19)

Preparing more students from disadvantaged and other groups to enter the technician fields presupposes growth in the programs available as well as in enrollments. Unfortunately, we do not as yet have the programs and facilities to train all the technicians needed in the U.S. economy. There are, of course, a number of ways to obtain the necessary training. Among these are technical institutes, endowed or publicly supported, junior or community colleges, divisions of engineering in other colleges and universities, colleges of technology, proprietary schools operated by individuals or corporations, training in the armed forces and in programs sponsored by the Manpower Development and Training Administration, and training in high school. In 1966, 15,000 students were receiving secondary school training as technicians in comprehensive high schools, vocational technical schools, technical high schools, and vocational and trade schools. However, training at the secondary level frequently provides no more than a background, although a number of graduates from high school programs go directly into jobs as technicians (see Appendix Table 4).(20)

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(19) Brooking, W.J., "Student Recruitment", op. cit., p. 2.

(20) U.S. Department of Labor, Technician Manpower, op. cit., p. 35.

At the postsecondary level, there are major discrepancies between the number of technicians needed in various fields and the number graduating from training institutions. For example, as indicated in Table 3, in fiscal year 1967 completions of postsecondary technician programs eligible for federal support in the electrical and electronic engineering fields amounted to about 6,000. Average annual openings for these occupations from the mid-1960's to the mid-1970's are estimated at 34,000, almost six times the completions. For chemical technicians, job openings are twenty times the number of persons who completed training programs in 1967. Program completions for life science technicians, an occupation projected to have one of the highest growth rates in the next decade, were negligible. Even though many life science technicians need a college degree to qualify for entry level jobs, others can enter the field with an associate degree.

Table 3

Estimated Job Openings and Completions of Technical Training Programs, 1966 to 1975
(in 000)

Occupational Category	Average Annual Job Openings 1966-1975	Completions of Postsecondary Vocational Education Programs in 1967(a)	Completions as Percent of Job Openings
Electrical and electronic	34	6	18%
Other engineering and designers	38	5	13
Life sciences	6	(b)	-
Chemical	9	(b)	-
Physics	2	(b)	-
Other physical sciences	5	4	80
Applied mathematics	1	(b)	-
Draftsmen	18	2	11
Computer programming	14	3	21
TOTAL	128	21	16

(a) The postsecondary programs are offered in junior and community colleges, four year colleges and universities, postsecondary technical institutes and vocational schools, combination secondary and postsecondary vocational schools and institutes. The figures refer to completions in programs eligible for federal support in fiscal year 1967.

(b) Less than five hundred completions

Source: See Appendix Table 4.

The number of completions listed in the table refers to postsecondary programs in 2 and 4 year colleges, vocational schools and technical institutes. Consequently, in fields like drafting, where high school programs provide enough training for some entry level jobs, the figures understate the supply of newly trained technicians likely to result from these federally-aided programs (see Appendix Table 4). There is also some evidence based on the relationship of the completions in all postsecondary programs training technicians to the completions in the federally funded programs indicating that more technicians may be trained in fields related to the physical sciences than is shown in Table 3 (see Appendix Table 5). Allowing for this additional training, it is apparent, to quote the American Association for the Advancement of Science, that "there is every indication now that a critical shortage of technicians will be as much a matter of national concern as was the shortage of scientists and engineers a few years ago."(21) Both the imperfect statistical measures and the expert opinions point to the importance of a substantial expansion in vocational education programs to serve the needs of students for careers and of the economy for trained and educated manpower.

With the continuing explosion of scientific knowledge and its application in new technology, the vocational-technical education system also faces the challenge of training for occupations which scarcely existed a decade ago. Specialists in pollution control are instances. As a result of mounting

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(21) Technical Education--A Growing Challenge in American Higher Education, A Report by the Commission on Science Education of the American Association for the Advancement of Science, 1968, p. 3.

public pressures to counteract the deterioration of the natural environment, a deterioration often caused by ignoring the side effects of technological progress, thousands of new positions for technicians will be created in the 1970's in government regulatory agencies as well as in industry. It has been estimated that by 1975 there will be a need for over 7,000 technicians to control air pollution,[22] and over 33,000 to abate water pollution.[23] In 1967 there were fewer than 11,000 water pollution control technicians.

The vocational-technical system has begun to respond to the challenges implied by the nation's R & D priorities. At one college in Virginia, for example, a nuclear option specialization is being offered to technicians within the framework of an electronic engineering program.[24] Under the National Sea Grant Program, one-year training programs have been started for paraprofessionals in ocean-related technologies.

Yet it is evident that bringing the technical education system up to date will involve far more than occasional innovations coupled with a simple expansion of the existing programs. Recent studies have shown that, on the whole, education for technicians has been untouched by the reforms in science education. Teacher training programs -- both for initial preparation and refresher training -- often lag behind current developments in education and

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(22) Applying Technology to Unmet Needs (Appendix Vol. V., Technology and the American Economy), National Commission on Technology, Automation and Economic Progress, 1966, pp. 144-45.

(23) Manpower and Training Needs in Water Pollution Control, Senate Document #49, 90th Congress, First Session, 1967, Table 1, p. 15.

(24) Kovner, Edgar A., "Training Nuclear Technicians at Old Dominion College," Technician Education Yearbook, 1967-68, Prakken Publications, Inc., Ann Arbor, Michigan, pp. 129-32.

in technology. There is a need for strong leadership to improve program management, to develop better communications with employers, and to modernize the regulations governing the certification of teachers and the licensing of technicians. Greater progress along these lines would facilitate the acceptance of technical education as an integral part of the higher education system. With this progress, students wishing to obtain a four-year college education would find it less difficult to use credits received in technical courses to fulfill the requirements for a bachelor's degree.

There are many proposals receiving consideration for improving the quality and acceptability of technical education. It has been suggested that experimental technical institutes be established as parts of major universities.(25) Some have proposed studies of outstanding cooperative work-study programs and technical education curricula to determine how success was achieved as a basis for planning new programs.(26) While these ideas are worthy of exploration, they are unlikely to provide solutions for local school systems which lack the resources for exemplary programs. Much of the initiative in introducing more experimental programs will require support from federal government sources.

Admittedly, the task of creating a better system of technical education in the 1970's will be a demanding one. However, success in upgrading the technical education programs offers the most promising route for elevating the status of technicians, and, thereby, attracting many more students to these programs.

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(25) Letter by Nathan S. Washton, relating to Abelson's "Toward Better Vocational Education," in Science, 8 November 1968, pp. 619-20.

(26) Technical Education, op. cit., p.19.

PRIORITIES IN VOCATIONAL-TECHNICAL EDUCATION

The priorities proposed for planning in vocational education grow out of the recognition that technical training is a matter of national concern. Enlarging the supply of technicians contributes to economic growth by increasing the effectiveness with which we make use of all of our research resources including scientists and engineers. Since the technician occupations are among the most rapidly growing fields in the economy, they offer many career opportunities for young people who receive the appropriate training.

The scale on which job openings materialize for technicians in the 1970's will depend on a variety of factors. They include the emphasis placed on the nation's R & D priorities as they relate to the pursuit of different national goals, the extent to which scientific advances are translated into technological improvements in industry and in everyday life, and the occupational makeup of the technical teams engaged in research or production. The occupational makeup of the technical workforce is likely to be affected significantly by a continued rise in the ratio of technicians to professional scientists and engineers. This means that American patterns of technical manpower utilization will move closer to the standards desired by industry and to the situation in other nations such as West Germany.

These anticipations point to the need for expanding and modernizing training for technicians in the vocational-technical education system. Planning to attain these objectives will involve assigning a high priority to policies such as the following:

1. Substantially increase course offerings and enrollments, particularly at the postsecondary level, in programs preparing technicians in engineering, life sciences, applied mathematics, physical sciences, and the computer programming fields.

2. Introduce more teacher training programs to orient new and experienced teachers in the technician training courses to recent developments in science and technology such as oceanics, the laser, or micro-miniaturization.

3. Develop programs in technical education for new occupations resulting from technological advances and shifts in R & D priorities such as specialists in pollution control.

4. Sponsor pre-technical, remedial, and opportunity programs to enable more persons from disadvantaged groups and more women to acquire the background in introductory mathematics, science, and English required for training as technicians.

5. Create a national awareness of the availability of attractive career opportunities through public information programs and guidance counseling in the elementary and secondary schools.

Appendix Table 1

Employment for Technicians per
1,000 Employed Engineers, Natural Scientists, Physicians
and Dentists, 1950, 1960 and 1966
(in 000)

	1950	1960	1966(a)
Engineering and natural science technicians	102.0	345.0	805.0
Engineers and natural scientists	556.0	1,008.0	1,310.0
Technicians per 1000 engineers and natural scientists	0.2	0.3	0.6
Medical and dental technicians	78.0	139.0	224.0
Physicians and dentists	248.0	317.0	374.0
Technicians per 1000 physicians and dentists	0.3	0.4	0.6

(a) The data collection procedures in 1966 differ from those used for the decennial censuses so that the ratios for this year are not strictly comparable with earlier years.

Source: U.S. Department of Commerce, U.S. Census of the Population: 1950, Occupations by Industry, P-E No. 1C, 1954, Table 2, Detailed Occupation of Employed Persons by Detailed Industry and Sex for the U.S.: 1950, p. 1C-12; U.S. Census of the Population: 1960, Occupation by Industry, Final Report PC (2)-7C, 1963, Table 2, Detailed Occupations of Employed Persons by Detailed Industry and Sex for the U.S.: 1960, pp. 7,8; Current Population Survey for 1966 (unpublished data).

Appendix Table 2

Estimated Employment Growth and Annual
Average Job Openings in Technical Fields
by Occupation, 1966 to 1975
(in 000)

Occupational Category	Employment in: 1966	Employment in: 1975	Average Annual Job Openings 1966 to 1975 (a): From Employment Growth	Average Annual Job Openings 1966 to 1975 (a): From Replacement Demand	Average Annual Job Openings 1966 to 1975 (a): Total
Scientific and Engineering technicians	459	1268			89
Electrical and electronic	136	456	32	2	34
Other engineering (b)	207	496	29	5	33
Life sciences	16	73	6	(c)	6
Chemical	48	130	8	1	9
Physics	10	24	2	(c)	2
Applied mathematics	3	8	1	(c)	1
Other physical sciences	39	81	4	1	5
Draftsmen and designers	346	525	18	5	23
Computer programmers	100	220	12	2	14
TOTAL	905	2013	111	17	128

(a) Replacement demand estimates refer to replacements for attrition losses due only to deaths and retirements.

(b) Calculated as a residual after estimating employment in the other technician categories such as life sciences, chemical and physics technicians.

(c) Less than one thousand.

Source: Appendix 4, U.S. Department of Labor, Technician Manpower Requirements, Resources and Training Needs, Bulletin No. 1512, pp. 11-20, 54; and U.S. Department of Labor, Occupational Outlook Handbook in Brief, Vol.12, No. 2, May 1968, p. 5.

Appendix Table 3

Estimated Employment of Technicians by Industry,
1963 and Projected 1975 (a)
(in percent)

Industry	1963(b)	1975	Change 1963-1975
Mining (including petroleum)	2%	1%	44%
Construction	3	3	79
Manufacturing	46	42	60
Durable	37	33	56
Ordnance and accessories	2	1	17
Lumber and furniture	1	1	40
Stone, clay and glass products	1	1	45
Primary metal products	2	2	48
Fabricated metal products	3	3	67
Machinery, except electrical	7	6	51
Electrical equipment	12	11	66
Aircraft and parts	4	3	36
Motor vehicles and equipment	2	1	13
Other transportation equipment	1	1	60
Professional and scientific instruments	2	2	88
Nondurable	9	8	76
Food and kindred products	1	1	46
Textile mill products and apparel	(c)	(c)	83
Paper and allied products	1	1	72
Chemicals and allied products	4	5	97
Petroleum refining and products of petroleum and coal	1	1	34
Rubber products	1	1	87
Miscellaneous manufacturing	1	1	17
Transportation communication and public utilities	7	5	29
Transportation	1	1	45
Communication	3	2	30
Electric, gas & sanitary services	2	1	26
Services	22	27	115
Miscellaneous business services	4	6	144
Medical and dental laboratories	2	4	252
Nonprofit organizations	1	2	162
Engineering and architectural services	8	8	69
Colleges and universities	1	2	173
All other nonmanufacturing	5	5	79

Appendix Table 3 (continued)

Estimated Employment of Technicians by Industry
1963 and Projected 1975 (a)
(in percent)

Industry	1963	1975	Change 1963-1975
Government	20	22	93
Federal government	9	8	62
State government	7	9	132
Local government	4	4	97
TOTAL	100	100	77

(a) Technicians as defined by the Labor Department study, on which these figures are based, include surveyors and medical technicians other than those who assist medical practitioners in the direct care of patients, in the dispensing of drugs and services, or in diagnosis.

(b) Percents may not add to subtotals due to rounding.

(c) Less than one percent.

Source: U. S. Department of Labor, Technician Manpower: Requirements Resources and Training Needs, Appendix A_1 - A_3.

Appendix Table 4

Estimated Job Openings and Training Program Completions for Technicians by Occupation (in 000)

Occupational category	Average Annual Job Openings, 1966-1975(b)		Completions of Programs Eligible for Federal Funds, FY 1967(a)			
			Secondary		Post-secondary	
	Number	Percent	Number	Percent	Number	Percent
Electrical & electronic	34	27%	4	27%	6	31%
Other engineering and designers	38	30	1	8	5	23
Mechanical				5		13
Electro-mechanical				(c)		(d)
Industrial				1		3
Civil				1		6
Aeronautical				1		1
Life sciences (e)	6	5	(d)	-	(d)	-
Chemical	9	7	(d)	2	(d)	2
Physics	2	1	(c)	-	(d)	-
Other physical sciences	5	4	1	9	4	19
Metallurgical				(d)		1
Instrumentation				1		1
Geological (petroleum & marine)				(c)		(d)
Architectural				6		11
Environmental control				(d)		2
Automotive				(d)		3
Engineering related				2		2
Applied mathematics	1	1	(d)	-	(d)	-
Draftsmen	18	14	7	46	2	12
Computer programming	14	11	1	8	3	13
TOTAL	128	100.0	15	100.0	21	100.0

(a) The institutions eligible for federal funds are comprehensive high schools, junior and community colleges, four year colleges and universities, post-secondary technical institutes and vocational schools, combination secondary and post secondary area vocational schools and institutes.

(b) Job openings equal the sum of employment growth and replacement demand due to normal attrition stemming from death and retirement.

(c) There are no completions reported.

Appendix Table 4 (continued)

(d) Less than five hundred completions or 0.5 per cent.

(e) Medical and dental technicians involved in the diagnosis or care of patients are excluded.

Source: Population Survey, 1966 (unpublished data); Lecht, Leonard A., Manpower Requirements for National Objectives in the 1970's. Feb. 1968, Appendix Table 8, pp. 258-262; Norman Frumkin, Manpower Implications of Alternative Priorities for Coping with Poverty, May 1968. Appendix Table A-15; U. S. Department of Labor, Tomorrow's Manpower Needs, Vol. 1, Bulletin No. 1606, Appendix A, pp. 64-67; U. S. Office of Education, "Technical Education-FY 1967," and "Trades and Industrial Education-FY 1967" (unpublished data).

Appendix Table 5

Training Completions Reported by Colleges
Compared with Those Reported by the Vocational
Education System, 1966-67
(in 000)

Category	Completions of College Programs (a)			Completions of Post Secondary Vocational Programs (b)
	2 but less than 4 years	1 but less than 2 years	Total	
Electrical and electronic	6	1	7	6
Other engineering and designer	7	2	8	5
Life sciences	2	(c)	2	(c)
Chemical	1	(c)	1	(c)
Other physical sciences	7	1	8	4
Computer programming	1	(c)	1	3

(a) Completions are measured by numbers of diplomas, certificates, and other formal awards granted by two-year or four-year higher educational institutions with organized technical curriculums.

(b) These are completions of postsecondary programs which are offered in junior and community colleges, four year colleges and universities, postsecondary technical institutes and vocational schools, combination secondary and postsecondary vocational schools and institutes.

(c) Less than five hundred completions.

Source: Brinkman, M. Jean, Associate Degrees and Other Formal Awards Below the Baccalaureate, 1965-1966 and 1966-1967, National Center for Educational Statistics, Office of Education, U.S. Department of Health, Education and Welfare, Table 11, p. 15; U.S. Office of Education, "Technical Education FY 1967" and "Trades and Industrial Education, FY 1967" (unpublished data).

Appendix Table 6

Schools Offering Technical Education Programs
Receiving Federal Support by Type, FY 1967

	Part-time Programs for Adults	Full-time Programs for Youth	Total
Specialized secondary schools	57	76	133
Technical or vocational schools	141	193	334
Regional or comprehensive high schools	268	293	561
Community or junior colleges	190	301	491
Collegiate level	23	38	61
Combined secondary-post secondary	64	71	135
TOTAL	743	972	1715

Source: U.S. Office of Education, Division of Vocational and Technical Education (unpublished data).

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MOE, DALE R.P., AND OTHERS
CASE REVIEWER ON AUTOMOBILE SEARCH AND SEIZURE FOR THE TEXAS LAW ENFORCEMENT OFFICER. CRIMINAL JUSTICE MONOGRAPH VOL. III, NO. 2.

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ABSTRACT - ACTUAL COURT CASES ARE USED TO EXPLAIN THE PRINCIPLES OF AUTOMOBILE SEARCHES TO ASSIST TEXAS LAW ENFORCEMENT OFFICERS IN CONDUCTING LEGAL SEARCHES. AFTER A REVIEW OF THE CONSTITUTIONAL AND STATUTORY ISSUES INVOLVED IN SEARCHES AND SEIZURES, THE GENERAL CONSIDERATIONS FOR AUTOMOBILE SEARCHES ARE DISCUSSED, ALONG WITH THE COURTS' INTERPRETATIONS OF PROBABLE CAUSE. OTHER ASPECTS OF AUTOMOBILE SEARCHES WHICH ARE COVERED, INCLUDE: (1) SEARCH WARRANTS, (2) STOLEN VEHICLES, (3) ARTICLES IN OPEN VIEW, (4) SEARCHES WITH PERMISSION, AND (5) SEARCHES IN CONNECTION WITH ARREST, AUTOMOBILE FORFEITURE, AND TRAFFIC INVESTIGATION. (BH)

VT 015 008

CRIMINAL JUSTICE MONOGRAPH

Case Reviews on Automobile Search and Seizure For the Enforcement Officer

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CASE REVIEWER ON AUTOMOBILE SEARCH AND SEIZURE FOR THE TEXAS LAW ENFORCEMENT OFFICER

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PREFACE

The police officer is awakening to the fact that common sense is not enough in handling each situation that may arise in our complex democratic society, which protects the citizen from brutish forms of law enforcement. Experience is important, but the officer that relies on experience as the teacher may jeopardize himself, his fellow officer and the successful prosecution of the offender. Education alone does not make the law enforcement officer, but a good police officer who becomes educated will be a much better officer.

This review is intended, by actual case examples, to help the officer understand the principles of searches of automobiles. Although situations will differ in some respect, there is a tendency for patterns to be established and, thus, set the stage for applying sound techniques and procedures that will lead to the successful prosecution of an offender.

As he reads this material, the officer should keep in mind departmental policies and procedures and other material related to this subject so that his interpretation is of assistance in developing his techniques.

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CHAPTER I

SEARCHES AND SEIZURES--BASIC CONSIDERATIONS

Introduction

Our system of criminal law is accusatorial, which means that the prosecution must obtain by its own labors sufficient evidence to convince a jury beyond a reasonable doubt of the defendant's guilt. The accusatorial system was not chosen because it is the most efficient, but because it was considered by the founding fathers to be the most worthy of a free people. The framers of the Constitution were more afraid of the police than of the criminal, which was natural because they had suffered the oppression from foreign officers ruthlessly executing laws of a distant king and parliament in whose selection they had no voice.

Our Constitution and laws, therefore, may not insure us freedom from the mafia, but they do guarantee freedom from all brutish means of law enforcement. Our courts reject the coerced confession and the burglarized evidence, not only because such proof may be unreliable, but because its use dishonors us as civilized men and citizens of a free country.

The policeman's work is immeasurably more difficult in a free country than in a dictatorship. In America, it

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takes an intelligent, brave and discreet man to be an effective peace officer. With such men adequately instructed not only in police methods but also in the legal limits to their zeal, it is possible to protect the public from crime as well as to guard the peoples' liberties.

The policeman, in the name of law enforcement, cannot choose suspects at random, but must adhere to Constitutional and statutory guarantees in order that the fruits of his labors will be admissible in the successful prosecution of crime. As Justice Clark said in Mapp v. Ohio:[1]

> There are those who say, as did Justice (then Judge) Cardozo, that under our constitutional exclusionary doctrine '[t]he criminal is to go free because the constable has blundered. . . .' In some cases this will undoubtedly be the result. But, as was said in Elkins, 'there is another consideration - the imperative of judicial integrity. . . .' The criminal goes free, if he must, but it is the law that sets him free. Nothing can destroy a government more quickly than its failure to observe its own laws, or worse its disregard of the charter of its own existence. As Mr. Justice Brandeis, dissenting, said in Olmstead v. United States, . . . 'Our government is the potent, the omnipresent teacher. For good or for ill, it teaches the whole people by its example. . . . If the Government becomes a lawbreaker, it breeds contempt for law; it invites anarchy.'

Violation by the officer of the Constitutional principles protecting those accused of crime could arguably be adequately enforced by punishing the offending policeman. But a more drastic sanction is applied: evidence illegally obtained is suppressed. Therefore, oppressive police methods are not only unlawful in theory but self-defeating in practice. If law enforcement is to become a respected profession, it is

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[1] 367 U.S. 643 (1961)

the duty of the peace officer to respect the rules applicable to search and seizure. The officer should take it upon himself by training and education to become a more efficient police officer. This review will deal with a subject that is very important to the police officer--search and seizure of automobiles.

By analysing applicable rules and cases, paying particular attention to the reasons for the decisions, the professional police officer will be better able to understand the problems involved in the search of vehicles, and will become a more efficient law enforcement officer. The police administrator must take responsibility for the case which is lost because an officer fails to adhere to the proper Constitutional and statutory safeguards.

Constitutional and Statutory Provisions

The Fourth Amendment to the United States Constitution states:

> The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by oath or affirmation and particularly describing the place to be searched, and persons or things to be seized.

The Texas Constitution, Article 1, Section 9, provides:

> The people shall be secure in their persons, houses, papers and possessions, from all unreasonable seizures, and no warrant to search any place, or to seize any person or thing, shall issue without describing them as near as may be, nor without probable cause, supported by oath or affirmation.

Only unreasonable searches are prohibited by the

Fourth Amendment[2] and by the Texas Constitution, but evidence illegally obtained cannot be admitted into evidence.

Article 38.23 of the Texas Code of Criminal Procedure states:

> No evidence obtained by an officer or other person in violation of any provisions of the Constitution or laws of the State of Texas, or of the Constitution or laws of the United States of America, shall be admitted in evidence against the accused on the trial of any criminal case. . . .

This article makes the so-called "Exclusionary Rule" mandatory in Texas.

Decision as to Reasonableness of Search

Ordinarily, only an officer of the judicial branch of government, a judge or other magistrate (and not a policeman or other enforcement agent) has jurisdiction (power) to determine whether a search is reasonable.[3] The judicial officer makes this determination when an application for a search warrant is presented to him, or if a search has already been made without a warrant, when the fruits of the search are offered in evidence in a criminal prosecution. Under the "rule of exclusion" (commonly referred to as the Exclusionary Rule) now applicable to all federal and state courts, if the search without warrant is found to have been unreasonable, the resulting evidence must be suppressed. Only magistrates are permitted to issue search warrants in Texas. Article 2.09 of the Texas CCP defines magistrate as

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[2]United States v. Rabinowitz, 339 U.S. 56 (1950).

[3]Johnson v. United States, 333 U.S. 10 (1948).

follows:

> Each of the following officers is a "magistrate" within the meaning of this Code: The judges of the Supreme Court, the judges of the Court of Criminal Appeals, the judges of the district court, the county judge, any county commissioner, the justices of the peace, the mayor or recorder of an incorporated city or town, the judges of city courts of incorporated cities or towns.

Search with a Warrant

The following sections from the Texas Code of Criminal Procedure govern the procedure for obtaining and executing a search warrant; if they are complied with, the search will almost always be reasonable.

> Article 18.01. Definition.
>
> A "search warrant" is a written order, issued by a magistrate, and directed to a peace officer, commanding him to search for personal property, and to seize the same and bring it before such magistrate; or it is a like written order, commanding a peace officer to search a suspected place where it is alleged stolen property is commonly concealed, or implements kept for the purpose of being used in the commission of any designated offense.
>
> No search warrant shall issue for any purpose in this State unless a sworn complaint therefore shall first be filed with the issuing magistrate setting forth sufficient facts to satisfy the magistrate that probable cause does in fact exist for its issuance.

See Article's 18.02 through 18.30 Searches and Search Warrants Warrants in Appendix A.

Probable Cause

Probable cause means facts and circumstances which are sufficient in themselves to warrant a man of reasonable prudence to believe that an offense is being or has been committed.[4] The affidavit need not be made on personal

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[4]Brinegar v. United States, 338 U.S. 160 (1949).

knowledge, but can be made on information and belief.[5] If the officer bases his belief on information received from an informant, he must show grounds for considering the informant reliable,[6] and there must be sufficient facts available to satisfy the magistrate that probable cause does in fact exist.[7]

In Texas "probable cause" has been defined as a reasonable ground of suspicion, supported by circumstances sufficiently strong in themselves to warrant a cautious man in the belief that the person accused is guilty of the offense with which he is charged.[8] This is not held to mean just reliable information based upon "mere conclusion,"[9] but must be belief supported by adequate supporting facts.[10] The magistrate must act independently in determining probable cause and must not serve merely as a "rubber stamp for the police."[11]

Probable cause can be interpreted as the degree of guilt between mere suspicion (not sufficient for a search and seizure) and proof beyond a reasonable doubt (sufficient to convict). The degree of probable cause is sufficient to

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[5]Jones v. United States, 362 U.S. 257 (1960).

[6]Draper v. United States, 358 U.S. 307 (1959).

[7]Aguilar v. State of Texas, 378 U.S. 108 (1964).

[8]Landa v. Obert, 45 Tex 539.

[9]Aguilar v. State of Texas, loc. cit.

[10]Nathanson v. United States, 290 U.S. 41 (1933).

[11]Johnson v. United States, 362 U.S. 13 (1960).

support a search and seizure.

Proof of Guilt Beyond a Reasonable Doubt

Probable Cause

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Mere Suspicion

In Texas, the amount of suspicion needed to constitute probable cause appears to be lower than that which is required in decisions handed down by Federal Courts. An officer who wants to show "probable cause" must keep in mind that he owes it to himself as a more professional policeman, to treat probable cause in all instances as if all his cases will go to the highest court in the land, the United States Supreme Court. Probable cause is a very broad area and is dependent upon many variables and circumstances. Even judges differ as to the amount of information needed to establish probable cause.

It is important to be able to tell what constituted your probable cause in every case involving a search and seizure. When you make application for a search warrant you must be able to swear to the facts and circumstances which establish probable cause.[12] In latter prosecution of the defendent lack of probable cause may be the key to the defendant's defense, and the reason why he is not convicted. Once evidence has been illegally seized, that evidence may be lost in all future prosecutions.

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[12] Mayfield v. State of Texas, 382 S.W.2d 940 (1965).

The Affidavit

The affidavit must show reasonable grounds for a belief that the "fruits of crime" (example: stolen property), or the means by which the crime was committed (example: burglar tools), or articles whose possession is illegal (example: narcotics), or other items mentioned in the Code may be found.

The Constitution of Texas requires the person or thing seized to be described "as near as may be."[13] It has been said that the latter is to be reasonably interpreted as meaning that the place is to be designated with sufficient accuracy to prevent the officer from searching the premises of one person under a warrant directed against those of another, and does not necessarily require a minute and detailed description of the property to be searched.[14]

With reference to these Constitutional provisions, in challenging the validity of search warrants, the following tests have been applied: The officer must have been able to locate the premises with certainty,[15] reasonable certainty,[16] with reasonable effort,[17] without the use of his discretion,[18]

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[13] Texas Constitution. art I, 9.

[14] State v. Nejin, 140 La. 763, 74 So. 103 (1917).

[15] State v. John, 103 W.Va. 148, 136 S.E. 842 (1927).

[16] Thompson v. State, 197 Tenn.App. 112, 270 S.W.2d 379 (1954).

[17] Steele v. United States, 267 U.S. 498 (1925).

[18] Wallace v. State, 89 Okla.Crim. 365, 208 P.2d 737 (1949).

or without outside assistance.[19] Similarly a warrant has been held valid if clear of ambiguity,[20] or if it pointed out the place to the exclusion of others and led the officer unerringly to it.[21]

What May Be Seized

> Not every item may be seized which is properly inspectable by the Government in the course of a legal search; for example, private papers desired by the government merely for use as evidence may not be seized, no matter how lawful the search which discovers them, Gouled v. United States, 225 U.S. 298; nor may the Government seize, wholesale, the contents of a house it might have searched, Kremen v. United States, 353 U.S. 346. Abel v. United States, 262 U.S. 217, 234 (1960).

Items which may be seized include weapons or implements that may be used to harm the officer or effect an escape and for fruits of the crime, instrumentalities by which the crime was committed, and contraband material.

Article 18.22 of the Code of Criminal Procedure authorizes all persons to prevent the consequences of theft by seizing articles reasonably believed to be stolen.

> All persons have a right to prevent the consequences of theft by seizing any personal property which has been stolen, and bringing it, with the supposed offender, if he can be taken, before a magistrate for examination, or delivering the same to a peace officer for that purpose. To justify such seizure, there must, however, be reasonable ground to suppose the property to be stolen, and the seizure must be openly made and the proceedings had without delay.

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[19] Hedges v. State, 97 Okla.Crim. 402, 265 P.2d 737 (1954).

[20] Dolen v. State, 187 Tenn.App. 663, 216 S.W.2d 351 (1948).

[21] Jackson v. State, 87 Fla. 262, 99 So. 548 (1924).

If the illegally seized articles are contraband, that is, property the possession of which is a crime, they must be delivered into court for disposition according to law, and not returned to the defendant, although their use as evidence is not permitted. If the material is not contraband, it must be returned to the owner.[22]

Article 18.11 of the Code of Criminal Procedure authorizes the magistrate to command the peace officer to bring before him the person who is accused of committing the offense. A search warrant with the words "And you will also arrest and bring before me, at said place and time, the said (defendant)," was considered sufficient as a warrant for the arrest of the defendant.[23] See Appendix B.

Search Without a Warrant, When Lawful

Generally, a search made without a warrant is held "reasonable" when the "probable cause" which would justify issuance of a warrant exists, but there is no reasonable opportunity to get a warrant. This principle, however, is too general to be a safe guide for police investigation. If a proposed search without a warrant cannot be fitted into one or more of the following categories, it is almost certainly illegal.

Search incident to lawful arrest. When a person is

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[22] United States v. Jeffers, 342 U.S. 48 (1951); Johnson v. United States, 333 U.S. 10 (1948); Abel v. United States, 362 U.S. 217 (1960).

[23] Fletcher v. Texas, 344 S.W.2d 683 (1961).

lawfully arrested, the police have the right, without a search warrant, to make a contemporaneous search of the person of the accused for weapons or for the fruits of or implements used to commit the crime.[24] The rule allowing contemporaneous searches is justified, for example, by the need to seize weapons and other things which might be used to assault an officer or effect an escape, as well as by the need to prevent the destruction of evidence of the crime--things which might easily happen where the weapon or evidence is on the accused's person or under his immediate control. But these justifications are absent where a search is remote in time or place from the arrest. Once an accused is under arrest and in custody, then a search made at another place, without a warrant, is simply not incident to the arrest.[25] The premises in which a lawful arrest is made may be searched immediately following the arrest. Such a search may be made without warrant even if there is time following the arrest to get a search warrant.[26] A recent decision Chimel v. California,[27] limits this right to part of the premises in possession and under control of the person arrested and a search of areas other than which the accused was arrested and even declared to be unconstitutional the opening of locked drawers in that room and general rummaging around. And note that an arrest

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[24]Weeks v. United States, 232 U.S. 383 (1914).

[25]Agnello v. United States, 269 U.S. 20 (1925).

[26]United States v. Rabinowitz, 339 U.S. 56 (1950).

[27]395 U.S. 752 (1969).

following or resulting from an unlawful search does not validate the search.[28] An arrest is not a real substitute for a search warrant; if the primary purpose of the arrest is to enable the officer to make a search, the search will be held unreasonable.[29] If officers desire to search a building, for example, because of probable cause to believe it contains stolen goods, they may not wait until somebody wanted on a non-support charge goes into the building, arrest him there, and hope thereby to legalize the search for stolen property.[30] Similarly, where an officer passes up a convenient opportunity to make a lawful arrest, keeps the suspect under surveillance, and when the suspect is within premises the officer desires to search, then makes the arrest, a search of the premises, even for fruits of the suspect's own crime, is unreasonable.[31]

Permission given to search. If the tenant of the premises freely and voluntarily permits a search without a warrant, knowing the officer's purpose, his rights have not been violated, and the search is lawful.[32] But officers relying on consent to legalize a warrantless search invite a motion to suppress the evidence in case the search is

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[28] Jones v. United States, 357 U.S. 493 (1958); Johnson v. United States, 333 U.S. 10 (1948).

[29] McDonald v. United States, 335 U.S. 451 (1948).

[30] Mapp v. Ohio, 367 U.S. 643 (1961).

[31] Gilbert v. United States, 291 F.2d 586 (1961); McKnight v. United States, 183 F.2d 977 (1950).

[32] Zap v. United States, 328 U.S. 624 (1946).

successful. If the officers were not in uniform, the defendant may well persuade the court that they gained admission by misrepresenting themselves as private citizens on a social call.[33] On the other hand, if the officers were in uniform, the defendant will probably claim that he did not consent to the search but only submitted to apparent authority.[34] A wife's consent probably does not legalize a search of the home for articles of her husband's.[35] A landlord's permission will not validate the search without a warrant of premises rented out to a tenant.[36]

Although the preceding section does not deal with automobile searches directly, it presents some of the obstacles that are faced in automobile searches which are more fully considered in the following chapters.

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[33] Gouled v. United States, 255 U.S. 298 (1921).

[34] Johnson v. United States, 333 U.S. 10 (1948).

[35] Amos v. United States, 255 U.S. 313 (1921).

[36] Chapman v. United States, 365 U.S. 610 (1961).

CHAPTER II

SEARCHES OF AUTOMOBILES--GENERAL CONSIDERATIONS

Generally

Because automobiles can be moved out of the police officer's jurisdiction before he can secure a search warrant, automobiles may be stopped on the highway and searched without warrant, upon probable cause; that is upon the same cause which would justify the issuance of a warrant.[1] The right to search an automobile does not imply the right to search the person of the occupants of the automobile. If the occupants may be lawfully arrested, then their persons may be searched following the arrest; however, if there is no ground for their arrest, the mere fact that they are present in the automobile being lawfully searched does not confer a right to search their persons.[2] If the car is known to travel a habitual pattern of time, place and movement then a warrant is usually required.[3]

The principle of probable cause and automobile search

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[1] Brinegar v. United States, 338 U.S. 160 (1949); and Carroll v. United States, 267 U.S. 132 (1925).

[2] United States v. DiRe, 332 U.S. 581 (1948).

[3] Clay v. United States, 239 F.2d 196 (1956).

and seizure is best explained, in part, by Mr. Justice Taft[4] in the leading automobile search case Carroll v. United States.

Carroll v. United States[4]

> . . . the guaranty of freedom from unreasonable searches and seizures by the Fourth Amendment has been construed, practically since the beginning of the Government, as recognizing a necessary difference between a search of a store, dwelling house or other structure in respect of which a proper official warrant readily may be obtained, and a search of a ship, motor boat, wagon or automobile, for contraband goods, where it is not practicable to secure a warrant because the vehicle can be quickly moved out of the locality or jurisdiction in which the warrant must be sought.
>
> Having thus established that contraband goods concealed and illegally transported in an automobile or other vehicle may be searched for without a warrant, we come now to consider under what circumstances such search may be made. It would be intolerable and unreasonable if a prohibition agent were authorized to stop every automobile on the chance of finding liquor, and thus subject all persons lawfully using the highways to the inconvenience and indignity of such a search. Travelers may be so stopped in crossing an international boundary because of national self-protection reasonably requiring one entering the country to identify himself as entitled to come in, and his belongings as effects which may be lawfully brought in. But those lawfully within the country, entitled to use the public highways, have a right to free passage without interruption or search unless there is known to a competent official, authorized to search, probable cause for believing that their vehicles are carrying contraband or illegal merchandise.
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> But we are pressed with the argument that if the search of the automobile discloses the presence of liquor and leads under the statute to the arrest of the person in charge of the automobile, the right of seizure should be limited by the common-law rule as to the circumstances justifying an arrest without a warrant for a misdemeanor. The usual rule believed by the officer upon reasonable cause to have been guilty of a felony, and that he may only arrest without a

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[4] 267 U.S. 132 at 153, 157, and 158.

warrant one guilty of a misdemeanor if committed in his presence. . . .

. . . When a man is legally arrested for an offense, whatever is found upon his person or in his control which it is unlawful for him to have and which may be used to prove the offense may be seized and held as evidence in the prosecution. . . . The argument of defendants is based on the theory that the seizure in this case can only be thus justified. If their theory were sound, their conclusion would be. The validity of the seizure then would turn wholly on the validity of the arrest without a seizure. But the theory is unsound. The right to search and the validity of the seizure are not dependent on the right to arrest. They are dependant on the reasonable cause the seizing officer has for belief that the contents of the automobile offend against the law. . . .

CHAPTER III

SEARCH OF AUTOMOBILE BASED ON

PROBABLE CAUSE

General Rules

[T]he term "probable cause" means less than evidence which would justify condemnation. Locke v. United States, 7 Cranch 339.

A warrantless search of an automobile or other vehicle is valid where it is not practicable to secure a warrant because the vehicle can be quickly moved out of the locality or jurisdiction in which the warrant must be sought. Brinegar v. United States, 338 U.S. 160 (1949).

Those lawfully within the country, entitled to use the public highways, have a right to free passage without interruption or search unless there is known to a competent official, authorized to search, probable cause for believing that their vehicles are carrying contraband or illegal merchandise. Carroll v. United States, 267 U.S. 132 (1925).

In ascertaining "probable cause" we start with the basic definition that there is probable cause to search when there exist facts and circumstances sufficient to warrant a reasonably prudent man to believe that the vehicle contains contraband. Husty v. United States, 282 U.S. 694 (1931).

In cases where the securing of a warrant is reasonably practicable, it must be used, and when properly supported by affidavit and issued after judicial approval protects the seizing officer against a suit for damages. In cases where seizure is impossible except without warrant, the seizing officer acts unlawfully and at his peril unless he can show the court probable cause. Carroll v. United States, 267 U.S. 132 (1925).

Thus contemporaneously with the adoption of the Fourth Amendment we find in the first Congress . . . a difference made as to the necessity for a search warrant between goods subject to forfeiture, when

concealed in a dwelling house or similar place, and like goods in course of transportation and concealed in a movable vessel where they readily could be put out of reach of a search warrant. Carroll v. United States, 267 U.S. 132 (1925).

[T]he test of the validity of the search is whether the searching officers had probable cause. They do not have to arrest the defendant as a condition of making the search. Gutierrez v. State of Texas, 423 S.W.2d 593 (1968).

General Offenses and Probable Cause--Cases

Case 1.

Agent A received a tip from a reliable informant that moonshine whisky was going to be delivered at a specific location in approximately one hour and a half. The informer described the car and the address where this alleged transaction would take place. Agents staked themselves out at about 8 P.M. A 9 P.M. D arrived and parked his car next to a shed across the street from the residence the agents were watching. Agent A approached D and upon shining his flashlight into the car observed numerous jars, like those used for moonshine, he yelled to his men to hold him this car is loaded. A checked both the contents of the interior of the car and the trunk. Was this a legal search?

YES. "If the search came after the arrest, then the search was valid as incident to a lawful arrest. Draper v. United States, 358 U.S. 307. If, on the other hand, the search occurred before the arrest, it came within the rule that a search without a warrant of an automobile engaged in the illegal transportation of intoxicating liquor, made upon probable cause, is not prohibited by the Fourth Amendment, Carroll v. United States, 267 U.S. 132. It is our opinion that 'probable cause' existed under the facts of the case."

See United States v. Haley, 321 F.2d 956 (1965).

Case 2.

Federal agents were informed by a reliable informant that D was going to make a transfer of moonshine whisky at the house of a woman with a record of convictions for whisky violations. The informant said that whisky would be transferred from one vehicle to another. The agents stationed themselves near the house in question and observed a car drive into the driveway next to another car and extinguish lights all around, and begin to transfer boxes of what

appeared to be mason jars from one automobile to another. The agents drove their car into the driveway, blocking it, apprehended D and a companion and took the keys to the car and opened the trunk and discovered moonshine whisky. Did the agents make a legal search and seizure?

YES. The court said: "When dealing with automobiles that are readily moveable the rule requiring officers to obtain search warrants is somewhat relaxed. [Carroll v. United States]. In that case the Court declared that if the search and seizure without a warrant are made upon probable cause, that is, upon a belief, reasonably arising out of circumstances known to the seizing officer, that an automobile or other vehicle contains that which by law is subject to seizure and destruction, the search and seizure are valid. The Court further declared that the right to search and the validity of the seizure are not dependent upon the right to arrest; consequently, the search may precede the arrest. Recently the Court stated the probable cause standard as follows: In testing the sufficiency of probable cause for an officer's action even without a warrant, we have held that he may rely upon information received through an informant, rather than upon his direct observations, as long as the informant's statement is reasonably corroborated by other matters within the officer's knowledge. Jones v. United States, 362 U.S. 257 (1960).

"This test had been met in the present case. Not only did the officers act upon information furnished by a reliable informant but it was then corroborated by circumstances within the officers' knowledge."

See United States v. Sutton, 321 F.2d 221 (1963).

Case 3.

A reliable informant (I) told officers about a narcotics pusher (D). (I) called D on the phone while a police officer listened on the same phone. (I) made plans to meet D in 45 minutes to buy some heroin. Four officers, who did not have time to secure a search warrant, went to the planned location and staked it out. While staked out, D drove up and all the officers recognized him as a known narcotics pusher. The officers arrested D and searched his person and found a vial of capsules which was heroin. Then the officers searched his car. Was a warrant required to search his car?

NO. The court said: "Although the appellant was on foot when apprehended, he had an automobile ready for his use and could easily have removed himself and the evidence from the vicinity had his suspicions been aroused. The problem was analogous to that presented in search of an automobile

for which a warrant is seldom required."

See United States v. Johnson, 363 F.2d 333 (1966).

Case 4.

A city policeman received information that Ds were making whisky and transporting it into the city. About two weeks before the arrest, he received information from the same source of the make, model and license number of the pickup used to haul whisky. About the same time an investigator for the Alcohol division of the government received information about Ds' activities. On the day of the arrest the city policeman received information that Ds would be transporting whisky in the early evening of that day from the southwest in the described pickup. The policeman relayed this information to the Alcohol division, and they took up position in the southwest section of the city and observed Ds. Upon stopping D his wife made a statement that the whisky was not theirs. The agents arrested Ds and searched the truck. Should the agents secure a search warrant under the circumstances?

NO. The validity of a search rests upon the reasonableness under all the circumstances and not upon the practicality of obtaining a search warrant. "Assuming that the officers had time to procure a warrant after receiving confidential information, and that such information was insufficient to justify its issuance, it certainly cannot be gainsaid that officers with information to the effect that at a specified time a particularly described vehicle, occupied by named persons who were suspected of being in the illicit whisky business, would pass a point on the road with a load of whisky, would not be justified in taking up a watch at a vantage point. For a federal enforcement officer to ignore information of this kind would be a manifest dereliction. When, at the designated time, the described vehicle passed, occupied by two persons answering the description of the . . . [Ds], traveling in the direction of the city, the information was no longer mere hearsay. It was thereupon reliably confirmed and assuredly provided reasonable grounds for investigation, including interception and detention." "Nor do we think it can be denied that the voluntary statement, 'the whisky is not ours,' and the visible evidence thereof, together with all other facts and circumstances, constituted probable cause for an arrest and search."

See United States v. One 1957 Ford Ranchero Pickup Truck, 265 F.2d 21 (1959).

Case 5.

An agent received an anonymous phone call. He was

told the license number of the car and given a description of the vehicle that was believed to be carrying non-tax-paid liquor. It was supposed to be on a certain highway at a certain time. The agent and his partner staked out the road and when the car appeared, it was not visibly violating any law. The agents' only reason for putting the car under surveillance was the telephone call. The officers followed the car and after the occupants acted suspiciously pulled them over and searched the car. Did the agents have probable cause to search the car?

NO. "If reliable information is to be the sole and uncorroborated basis of probable cause, it finds no support in the communications of an unknown informer. It is self-evident that none can know the reliability of an unknown source, and reliability is the controlling factor. . . ." And this is especially true when it is remembered that the agent said the telephone call from this unknown source was the sole cause of his waiting by the highway to search Ds car.

"If, however, the officers received uncorroborated information and if the officer goes to a certain place and before initiating the search then observes facts sufficient within themselves to constitute probable cause he may proceed. In such case the legality of the search does not depend upon the credibility of something told but stands on what has been seen and heard--'what took place in their presence.'" Scher v. United States, 305 U.S. 251 (1938).

Just because the D came along the highway, as predicted, would not constitute probable cause. An enemy, name unknown and reliability unknown, may call the officer and falsely say that citizen has a load of liquor.

See Potter v. United States, 362 F.2d 493 (1966).

Case 6.

The police were summoned to investigate suspicious persons that were seen near a doorway and alley at midnight. Officers arrived and immediately recognized D as a dangerous criminal who had nearly killed one of their fellow officers. D was immediately arrested and the officer searched his person. He found on Ds person a paring knife with an eight-inch blade, a set of automobile keys, and three 12-gauge shotgun shells. The man who summoned the police informed the officers that he had seen two men leave the area of a Chrysler automobile and proceed down an alley. Thereupon, one officer immediately went to the Chrysler automobile a block away. He first determined that the license plate attached to the Chrysler was assigned to a different vehicle and, although the car doors were unlocked, he determined that the keys taken from D upon his arrest fit the Chrysler. He searched the car and found a twelve-gauge sawed-off shotgun under the front seat of the vehicle. Was the search proper?

YES. The court said that the search was proper and under the circumstances the arresting officer would have been derelict in his duty had he not made an immediate search of the automobile. This is so because such a search accompanying the arrest might have disclosed burglary tools, weapons or fruits of the burglary which otherwise might not have been available. If time had been consumed to effectuate obtaining of a search warrant and returning to the vehicle, an accomplice might well have moved the car or at least stripped it of any incriminating evidence.

See Moodyes v. United States, 404 F.2d 360 (1968).

Case 7.

The night before lobster season two game wardens were watching a beach area. They observed people loading bags from a sport fishing vessel to a smaller boat. The bags were similar to those used for bagging lobsters. The wardens also noticed these people make several trips to shore where they unloaded the bags on the beach. There were three men on the beach receiving the bags. The wardens were convinced that the men were taking lobsters illegally and moved in and arrested D. Two men ran up some stairs away from the beach and the fishing vessel started away from the shore. One warden chased the other men and came up to a station wagon with its tailgate open. Inside the station wagon was a bag similar to the bags being used on the beach. The warden opened the bag expecting to find lobsters but discovered it contained a substance that looked like marihuana. Was the search of the bag in the back of the station wagon proper?

YES. The warden searched the duffel bag on the open tailgate of the station wagon after appellant was lawfully arrested. The most recent pronouncement of the Supreme Court in the area of search and seizure incident to arrest is Chimel v. United States, 395 U.S. 752, 89 S.Ct. 2034, 23 L.Ed.2d 685 (1969). There it was held that a search incident to a lawful arrest in a residence may not go beyond the area from which the person arrested might obtain weapons or evidentiary items. The effect is to limit the scope of residential searches once allowed under authority of United States v. Rabinowitz, 339 U.S. 56, 70 S.Ct. 430, 94 L.Ed. 653 (1950) and Harris v. United States, 331 U.S. 145, 67 S.Ct. 1098, 91 L.Ed. 1399 (1947). The court in Chimel observed in the opinion in footnote 9 that:

> Our holding today is of course entirely consistent with the recognized principle that, assuming the existence of probable cause, automobiles and other vehicles may be searched without warrants 'where it is not practicable to secure a warrant, because the vehicle

can be quickly moved out of the locality or jurisdiction in which the warrant must be sought.' Carroll v. United States, 267 U.S. 132, 153 [45 S.Ct. 280, 285, 69 L.Ed. 543]; see Brinegar v. United States, 338 U.S. 160 [69 S.Ct. 1302, 93 L.Ed. 1879].

It is concluded that the law prior to Chimel controls the search of motor vehicles. This would include the search and seizure of the duffel bag found on the tailgate of the station wagon, which bag could have been quickly moved.

Two suspects were still at large. Presumably they had the keys to the station wagon. If the bag was not immediately searched and seized there was a likelihood that the car and its contents would be driven away. See Travis v. United States, 362 F.2d 477, 480, 481 (fn. 3) (9th Cir.), cert. den. 385 U.S. 885, 87 S.Ct. 179, 17 L.Ed.2d 113 (1966).

See Call v. United States, 417 F.2d 462 (1969).

Case 8.

P saw D sell drugs to F. D was not within reach and was not arrested. P asked D to sell him 100 capsules of heroin and 100 of cocaine. D appeared at the agreed time and place. P arrested D but found no drugs. D told P the license number of the cab he had just parked. P found the cab and searched it without a warrant, and seized narcotics concealed in it. Was this an illegal search and seizure?

NO. The "Fourth Amendment has been construed . . . as recognizing a necessary difference between a search of a store, dwelling house, or other structure in respect of which a proper official warrant readily may be obtained and a search of a ship, motor boat, wagon, or automobile for contraband goods, where it is not practical to secure a warrant, because the vehicle can be quickly moved . . . if the search and seizure without a warrant are made upon probable cause, that is, upon a belief, reasonably arising out of circumstances known to the seizing officer, that an automobile or other vehicle contains that which by law is subject to seizure and destruction, the search and seizure are valid." Carroll v. United States, 267 U.S. 132. There is nothing unreasonable in the belief of P that D either had drugs on him or they were in the cab D was driving.

See United States v. Cefaratti, 202 F.2d 13 (1952).

Case 9.

At 3:00 A.M. a bank burglary occurred in Mission, Kansas and police were tipped off by a burglar alarm. It

looked like the burglars left in haste since there was considerable amounts of money dropped near the bank. About one hour later officers noticed a 1959 Pontiac, bearing Missouri license plates, parked in front of the police station which was three blocks from the bank, which had not been parked there two hours before. The car did not have morning dew on it like other cars parked nearby and the engine was warm. The officers checked the license plates and found that they were registered to a Mr. W. of Kansas City, Missouri, for a 1954 Ford. The officers immediately checked the car. The keys were on the floor, and in the glove compartment they found car registration for a Mr. W, and a billfold belonging to D and another individual. A photograph in the billfold led to the identification of D as a former employee of a janitorial service which cleaned the bank. D had worked for the service about one year earlier and had been provided with a key to the bank at that time. Was the search of the car proper?

YES. The court said: "Consideration must first be given to the search of the Pontiac. Between 2:00 and 2:45 A.M. on the day of the burglary an officer on cruiser patrol had passed the spot where the car was found parked and the car was not there. He later saw the car at about 4:30 to 4:45 A.M. and reported to officers investigating the burglary. They checked the Missouri license and were told that it had been issued to a Ford. These circumstances plus the nearby burglary were reasonable grounds for a further investigation of the car. They found the engine warm and saw the keys on the floor. The situation was such that they were justified in examining the glove compartment where they found the billfolds of Willie and Henry. We believe that a prudent man would have acted as the officers did."

See Murray v. United States, 351 F.2d 330 (1965).

Case 10.

There was a theft from an interstate shipment of whisky at a terminal in Chicago. Federal agents suspected D, but did not have anything to substantiate this belief. Agents followed D, on two occasions, to a gangway leading to residential premises, and D returned carrying packages. From a distance of some 300 feet, the agents could not determine the size, number or contents of the cartons. The agents pulled D over and found out the cartons contained stolen radios, after holding D for two hours. They then placed D under formal arrest. Was there probable cause for the arrest and search and seizure?

NO. Riding in the car, stopping in an alley, picking up packages, driving away--these were all acts that were

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outwardly innocent. Their movements in the car had no mark of fleeing men or men acting furtively. The case might be different if the packages had been taken from a terminal or from an interstate trucking platform. But they were not. The area where the packages were picked up was in a residential section. The fact that packages have been stolen does not make every man who carries a package subject to arrest nor the package subject to seizure. The police must have reasonable ground to believe that the particular package carried by the citizen is contraband. Its shape and design might at times be adequate. The weight of it and the manner in which it is carried might at times be enough. But there was nothing to indicate that the cartons here in issue probably contained liquor. An arrest is not justified by what the subsequent search discloses.

See Henry v. United States, 361 U.S. 98 (1959).

Case 11.

A police officer saw D put a bottle that appeared to be liquor into his car. (It was illegal to possess liquor at this time.) Later officers looked into the car through the window and saw what appeared to be liquor. D was not around at this time. A police officer observed D in an establishment and upon closer surveillance heard the proprietor say to D that he could not handle that kind of stuff. Did the police need a search warrant to search D's car?

NO. The Fourth Amendment prohibits only unreasonable searches and seizures. What is considered unreasonable is determined by the facts and circumstances of each case. In this case the police, from the facts, couldreasonably determine that D was engaged in the commission of a crime; thus the officers were justified in arresting D and searching his car because it was an instrument used in the commission of the offense. When officers believe that D committed or is engaged in an illegal act, they can act so as not to give the criminal time and opportunity to escape or destroy evidence while the officers go and make application for a warrant.

See Lambert v. United States, 282 F. 413 (1922).

Case 12.

A man was assaulted and robbed at 5 P.M. by three men. A witness got a good description of the getaway car and the men in the car. At 5:20 P.M. a description was broadcast on the police radio for a 1953 blue Chevrolet. A beat officer saw the car and reported a description of the occupants and the license number. At 5:40 P.M. a patrol car

spotted the car and closed in after getting assistance from two other units. Officer Stone approached the car with gun in hand, and ordered the occupants to sit still and keep their hands in plain sight. He opened the front door of the automobile and asked for the operator's drivers permit. He noticed a wallet on the opposite side of the car, on the floor. He then went to the other side of the car, opened the door, and retrieved the wallet. The wallet belonged to the robbery victim. The occupants were frisked on the scene and taken to the precinct house. Was the seizure of the wallet proper?

YES. Although the formal arrest was not made until after the search, the search will be upheld so long as there is probable cause for an arrest before the search began. United States v. Gorman, 355 F.2d 151 (1965). In this case the arrest took place at the time the police officer approached the car, probably with gun drawn, and told the occupants to keep their hands in plain sight. Here the police had reasonable grounds to establish a belief of guilt.

See Bailey v. United States, 389 F.2d 305 (1967).

Case 13.

Officer B of the vice squad received information that a certain automobile, 1957 orange and white Ford bearing Texas license RZ 4426, would be used in transporting policy paraphernalia to another city. B gave chase and drove as much as 90 M.P.H. and observed D driving in and out of traffic. After overtaking D, the officer observed a bag next to him on the seat which was shown to contain books containing policy plays. Was a warrant needed to conduct the search?

NO. The court said: "It has been the consistent holding of this Court that an automobile may be searched upon probable cause."

See Fance v. State of Texas, 318 S.W.2d 72 (1958).

Case 14.

Officer S of the narcotics division received a call from a woman he knew as Maxine who said that D would be leaving his home in an automobile to make delivery of heroin. S, accompanied by officer G, proceeded at once to D's home. As they arrived they saw D walking from his house toward his car. When D saw the officers, he immediately placed an entire lighted cigarette in his mouth and threw a small tin-foil wrapped package onto the right floorboard of his automobile. When retrieved by the officers, the package was

shown to contain three one-ounce packages of heroin. Was the search of the car lawful?

YES. The court relied upon the case of Sanders v. Texas, 312 S.W.2d 640 which held, "credible information plus the unusual act of a person were sufficient to lead an officer to believe a felony was being committed in his presence, and arrest and search without warrant were lawful."

See Sutton v. State of Texas, 317 S.W.2d 58 (1958).

Case 15.

Officer L and E went to a residence to execute a search warrant for policy paraphernalia. While at the residence the telephone rang and an unidentified voice said "to meet him at the corner of Goliad and Crockett Streets at the grocery store at 4:00 P.M." The officers were at this location at the specified time and observed D drive up and enter the store. They looked in the window of D's car and saw what looked like policy slips rolled up on the dashboard. When D came out of the store, the officers asked him where his car was, and he went to the car that they had just checked out. Officer L identified the roll on the dashboard as policy bets. The officers opened the door and removed the policy bets and found numerous policy books and plays on the floor in the rear of the car. Was the search proper?

YES. The court said, "the evidence shows that the officers had ample 'Probable Cause' to search the appellant's automobile without a search warrant, and under the facts presented the search was legal."

See Davis v. State of Texas, 316 S.W.2d 745 (1958).

Case 16.

A deputy sheriff was informed that a certain described automobile was used to carry marijuana. The deputy spotted the car parked and placed it under surveillance. A short time later he observed four men come out of a building and get into the car. D, who was a passenger, was seen carrying a brown paper bag which he placed in the back seat on the driver's side. D was sitting in the left rear seat at the time that the deputies pulled the car over. One deputy said that D was stooped over in the rear seat as if he were looking for something, prior to their stopping the car. After the car was stopped the officers found that marijuana was in the bag. Was a search warrant needed to search the car?

NO. The court said that the search appears to be authorized because of probable cause. Also, D did not own the automobile and was in no position to complain of the search because "there was no invasion of the rights of the accused."

See Fields v. State of Texas, 323 S.W.2d 439 (1959).

Case 17.

P had received a call from a citizen, who said that he saw four men standing next to a dead cow. When he (the citizen) approached, three men jumped into the car and one fled toward some stock pens. He chased the men in the car and after going at speeds up to 90 M.P.H. he lost them. P went to the scene to investigate, and he spotted a car a half mile from the pens. As he approached, he observed four men around a car drinking beer. The trunk of the car was partially open, and he could "see something black and hairy inside." The officer, after identifying the driver and the other men, caused them to open the trunk where he discovered a dead cow. Was this proper?

YES. An automobile can be searched when there are circumstances that would permit the issuance of a search warrant due to probable cause. An automobile, because of its mobility, may be searched where the contraband or fruits of crime could be lost while a search warrant is being applied for. The court felt that probable cause did indeed exist, thus the search was proper.

See Gutierrez v. State of Texas, 423 S.W.2d 593 (1968).

Case 18.

Officers could tell by the special construction of a car that it was used for transportation of illicit liquor. Was the search proper? (Statute supports this type of search for liquor).

YES. "The uniform rule controlling the state courts in holding the seizure legal, as well as those holding it illegal, is in consonance with the announcement of Carroll v. United States, 267 U.S. 132. That is to say, that the search of an automobile upon the public highway may be made without warrant where the seizing officer has knowledge or information of facts constituting 'probable cause' as above defined. The legality of the search is to be determined alone upon the existence of 'probable cause' before the search is made, and is not to be justified by knowledge ascertained through the search. The search cannot be justified upon mere suspicion."

See Battle v. State of Texas, 290 S.W. 762 (1927).

Case 19.

Officer S received a radio call to go to a house where the landlady suspected a renter had marijuana in a suitcase at her house. The landlady told S that earlier in the day she had passed the room occupied by D and smelled what she believed to be marijuana smoke. She directed S to a front room where two suitcases sat and opened one, unquestionably without authority of D, and discovered two complete and one partially smoked cigarette, which later turned out to be marijuana. Officer S heard a car drive up, whereby he left by the back door and joined officers a half block away. Moments later the officers observed D carry out some bags and drive off. Officers followed and pulled D over and searched the car. They found the cigarettes in a suitcase. Was the search proper?

YES. The court said: "All persons have a right to free passage along a highway without interruption or search unless the officer has probable cause for believing that their vehicles are carrying contraband or illegal merchandise, in which case a search and seizure is valid. . . . The reasonableness of the search does not necessarily depend upon the inability to procure a warrant in time to make an effective search."

See McKee v. State of Texas, 318 S.W.2d 113 (1958).

Case 20.

Uniformed police were in the process of making some arrests inside a cafe. Officers T and F of the Narcotics Division were parked in an unmarked car and were in civilian clothes watching the proceedings near the cafe. They observed D who was about to enter the cafe, but apparently seeing police making arrests, D ran back to his automobile and attempted to drive away. Officers T and F recognized D as the person who had been reported as a handler of marijuana. They blocked his exit with their car. T approached D, showed his credentials, searched D, and found three cigarettes wrapped in brown paper. Following this F searched D's car and found two packages that were subsequently shown to contain marijuana. The city ordinance of the City of Houston (the same as Art. 14.03, V.A.C.C.P.,) was introduced in evidence, authorizing the arrest, detention and search of persons of suspicious demeanor. Was the search proper?

YES. The court said, "We do not hold that the information which the officer had received about the appellant's [D's] connection with narcotics alone would have authorized the search, but we do hold that his flight under the circumstances here presented, together with the information which the officer had about him, authorized the arrest of the appellant

as a person of suspicious demeanor under the ordinance, and the subsequent search."

See French v. State of Texas, 284 S.W.2d 359 (1955).

Case 21.

A witness noticed two men standing next to an Oldsmobile that was parked next to his car at the P. Pharmacy. As he approached the men, one carrying a case with handles quickly got in the Oldsmobile and left. The witness wrote down the license number, checked his car to see if anything had been tampered with, and called the police. Officer W received the license number from the witness and proceeded to look for the Oldsmobile. As W passed the P. Pharmacy, he saw two men standing nearby. He proceeded down a side street and spotted the Oldsmobile with the license number that he had been given. The Oldsmobile had a driver who drove off after W had made a U-turn down the street. He observed the Oldsmobile pull up and pick up the two men standing on the sidewalk. W followed it and signaled it to stop. When it stopped, the driver got out as W went forward. When the two passengers got out, officer W saw a canvas bag on the floorboard behind where their feet had been. The bag contained nitroglycerin, detonation caps, wires, punches, gloves, and a partially filled bottle of whisky. Was the seizure proper?

YES. The court said, "the facts . . . constituted sufficient probable cause to authorize the officers to stop the Oldsmobile and the contents of the bag therein authorized the arrest of the appellant."

See Barnes v. State of Texas, 278 S.W.2d 305 (1954).

Case 22.

Officer S saw a car parked near a drugstore at 3:20 A.M. with D sitting on the passenger side of the car. As the officer pulled alongside, he spotted a man walking across the street toward them. Upon inquiry the man said he was having trouble getting his car to start. Observing the car pull away with no difficulty, officer S noted the license number and checked the drugstore and found the door facing the street had been pried open. He then pursued and overtook the automobile. He searched the driver and found no weapons. Another policeman, P, arrived upon the scene and noticed D, the woman passenger, lean down in her seat as he approached. P searched the car and found a pistol under the seat which she occupied. Was the search of the car proper?

YES. The court said, "[t]he facts stated are sufficient to show probable cause for the search of the automobile."

See Tumlin v. State of Texas, 351 S.W.2d 242 (1961).

Case 23.

A business had been burglarized earlier in the day. The business owner's son had discovered the whereabouts of the burglars and had seen some of the stolen loot. Officers while on the way to that location spotted Ds driving off. The officers stopped Ds and searched the car finding the stolen property. Was the search proper?

YES. The court said, "it appears from the record that the officers had probable cause for the search."

See Byrom v. State of Texas, 104 S.W.2d 870 (1937).

Case 24.

P arrested Ds inside of a business at 4:00 A.M. Ds were attempting to break open coin-operated machines. P searched Ds' car parked some 100 feet away from the business. Was this search proper?

YES. The evidence is deemed sufficient to show probable cause for the arrest of Ds and for the incidental search of the automobile.

See Miller v. State of Texas, 399 S.W.2d 347 (1966).

Case 25.

An officer searched D's car without a search warrant and found whisky which was in violation of the law. Was the search proper?

NO. The court held where the officers held no search warrant or did not have probable cause or sufficient information before the search to constitute "probable cause" the evidence is inadmissible.

See McPherson v. State of Texas, 300 S.W. 936 (1927).

Case 26.

(A) was looking out of a hospital window around midnight and observed, in the previously inactive parking lot, a car pull in and D get out and enter a car parked next

to his. (A) observed D make several trips from that car to the Nash that D was driving, and on one occasion he saw D carrying a quantity of clothes. (A) instructed a nurse to call the police. Officers B, C, and E, in responding to the call, observed a Nash on the parking lot and placed their car in position to prevent its departure. The officers were talking to D when (A) arrived and said: "That's the man you want, there." The police searched D's car. Was the search proper?

YES. The officers had probable cause to search when (A) said, "There is your man." (A) stated that there were no persons on the parking lot other than D, who was in the Nash.

See Williams v. State of Texas, 339 S.W.2d 204 (1960).

Traffic Offenses and Probable Cause--Cases

Case 27.

Officers A and B of the Oklahoma City Police Department observed a car violate a traffic ordinance. The officers turned on their patrol car's red light and pursued. They observed D, who was on the passenger side, motion as if putting something under the seat as the car came to a stop. The officers approached on both sides of the car and A had the driver get out. A frisked him and found money orders in someone else's name. B frisked the other two passengers and found no weapons or contraband. B had the passengers step to the back of the car and then shined his flashlight under the right front seat and found a revolver. Further search disclosed another revolver under the left front seat. The driver had been arrested for a traffic violation. Was the search proper?

YES. The court said, "By its own terms the Fourth Amendment protects people 'against unreasonable searches and seizures.' Thus not all searches run afoul of the constitutional sanction but only those unreasonable in origin or scope. While the evolution of this constitutional standard of reasonableness has varied with our sense of justice, it is certain today that warrantless searches on probable cause are reasonable only when it is unfeasible to obtain a search warrant on proper affidavit. Unless, of course, it is reasonably 'incident' to a legal arrest, or can be said to be a mere 'stop and frisk' as in Terry v. Ohio [392 U.S. 1, (1968)]. Notably, these exceptions are not based on anything inherent in the exception itself but result from the inductive case by case application of the constitutional standard of reasonableness. Thus these exceptions are traditionally justified by the need to protect the arresting officers, prevent escape, collect instrumentalities or fruits of the crime (and now evidence, Warden Md. Penitentiary v. Hayden,

387 U.S. 294 (1967), and prevent delay which might otherwise permit the criminal to escape or commit his crime. 'From this rational it is clear that the scope of search contemporaneous with a legal arrest must have a reasonable relationship to the protection of the officer or the crime for which the accused was arrested.' The scope of the search must be 'strictly tied to and justified by' the circumstances which render its initiation permissible, i.e. the detention or arrest. If not, the search is unreasonable and violates Fourth Amendment protected interests. We are in complete agreement with the prevailing federal and state authority which condemns the search of persons and automobiles following routine traffic violations. Such searches can only be justified in exceptional, on the spot circumstances which rise to the dignity of probable cause."

In this case the driver was under arrest and, upon search, suspicious money orders were found and along with the suspicious movements inside the car prior to stopping gave probable cause to the subsequent look under the right front seat. When a weapon was found, this precipitated further inquiry and justified further search.

See United States v. Humphrey, 409 F.2d 1055 (1969).

Case 28.

Officers observed D run a stoplight while going around 30 M.P.H. at 12:30 A.M. The officers pursued. D halted briefly and then started up again. He hit two parked cars, turned down an alley, and hit a fence. D opened the door, leaving the dome light on, and fled on foot. One officer chased D and the other approached the car observing through the open door two mail bags labeled "U.S. Mail." The officers sent D back to the station in a police wagon and took the mail bags to the precinct where it was determined that they were stolen. Was a search warrant needed since the officers had no knowledge that the bags were in his possession unlawfully?

NO. The court said, "Although it is possible that the mail bags could have been in appellant's possession lawfully, the circumstances outlined above gave the officers probable cause to believe that a crime involving the mail bags had been, and was being, committed. . . ."

See Hiet v. United States, 372 F.2d 911 (1967).

Case 29.

Police had J's car under surveillance. D drove by the car several times and Officer A decided that he was

probably waiting to make contact with the owners of the car under surveillance. He pulled D over under the pretext of citing him for a traffic violation. He searched the car and found narcotics. Was the search proper?

NO. D was arrested for a minor traffic offense. It is not clear at just what time the traffic arrest turned into a narcotics arrest, but it could not have been until after the search. Until that time there was no probable cause to believe that the vehicle was transporting narcotics, and there was no probable cause to make an arrest for the possession of drugs.

See Amador - Gonzalez v. United States, 391 F.2d 308.

Case 30.

Police officer Powers received a radio call that a group in an old model car had just fired shots at Z's home. Z was a nonstriking employee of a strike corn company. Officer P spotted a suspicious car and began following it, noticing a fresh bullet hole in the trunk. The car speeded away but was stopped after P radioed ahead. P arrived at the location where the car was stopped. The car contained three individuals who were subsequently taken to jail for what was suggested to be reckless driving. While Ds were in jail, officer P and others searched the car and found an air rifle under the front seat. Was the search proper?

NO. The court held that the search was not shown to have been based upon sufficient cause. ". . . [T]here is no indication that the police had purported to impound or to hold the car, that they were authorized by any state law to do so, or that their search of the car was intended to implement the purposes of such custody. Here the police seem to have parked the car near the courthouse merely as a convenience to the owner, and to have been willing for some friend or relative to McKinney [D] (or McKinney himself if he were soon released from custody) to drive it away. . . . The record before us does not contain evidence that Sheriff Kirkpatrick, . . . or other officers who assisted in the search had reasonable or probable cause to believe that evidence would be found in petitioner's car. . . . As far as this record shows, Powers knew only that the car he chased was 'an old make model car,' that it speeded up when he chased it, and that it contained a fresh bullet hole. . . ."

See Dyke v. Taylor Implement Mfg. Co., Inc., 391 U.S. 216 (1968).

Case 31.

P stopped D for failure to give turn signal in making a left turn. When P asked D for his drivers license, he smelled marijuana and searched the car and found a marijuana cigarette. Was this a proper search?

YES. D was arrested for violating a traffic law, and upon P's smelling marijuana, P was authorized in searching the automobile.

See Chess v. State of Texas, 357 S.W.2d 386 (1962).

CHAPTER IV

SEARCH OF AUTOMOBILE INCIDENT TO ARREST

General Rules:

Upon lawful arrest the police have the right without a search warrant, to make contemporaneous search of the person of the accused for weapons or for the fruits of or implements used to commit the crime. Weeks v. United States, 232 U.S. 383 (1914).

The right without a search warrant contemporaneously to search persons lawfully arrested while committing crime and to search the place where the arrest is made in order to find and seize things connected with the crime as its fruits or as the means by which it was committed, as well as weapons and other things to effect an escape from custody, is not to be doubted. Agnello v. United States, 269 U.S. 20 (1925).

. . . [A] search could not be justified as incident to an arrest without considering whether the purpose of the search was connected with the reason for the arrest, whether the search was contemporaneous with the arrest, whether the evidence was easily destructible or could be moved, and whether the officer's life was threatened. Preston v. United States, 376 U.S. 364 (1964).

Once an accused in under arrest and in custody, then a search made at another place, without a warrant, is simply not incident to the arrest. Preston v. United States, 376 U.S. 364 (1964).

A search incident to an arrest must have as one or more of its purposes the discovery of (1) the fruits of the crime; (2) instrumentalities used to commit the crime; (3) weapons or like material which put the arresting officer in danger or might facilitate escape; (4) contraband, the possession of which is a crime (Preston v. United States) and by a recent decision, (5) material which constitutes evidence that the person arrested has committed it (Warden v. Hayden, 387 U.S. 294 (1967). Purpose 4 and 5 require probable cause as a predicate for the search.

The arrest must not be a mere pretext for an otherwise illegitimate search. Henderson v. United States, 12 F.2d 528 (1926).

We think it proper to say that while the failure to obtain a warrant when one could readily have been had is not of necessity fatal to a search or seizure concomitant with an arrest the nature of which had been fully anticipated, it will be fatal unless there are at least some countervailing factors. . . . We hold that the government cannot rely upon an expected arrest to seize stolen goods, the presence of which it long had probable cause to know of, simply to avoid the inconvenience of obtaining a search warrant. . . . Niro v. United States, 388 F.2d 535 (1968).

Once a bona fide stop or arrest had been made for a traffic offense, the police can make an additional arrest for any other offense unexpectedly discovered during the course of the investigation. If, while questioning a motorist regarding the operation of his vehicle, an officer sees evidence of a criminal violation in open view, or in some other manner acquires probable cause on a more serious charge, he may arrest for that offense and <u>incident thereto</u> conduct an additional search for physical evidence. . . . Under these circumstances, neither the arrest nor the search is tied to the traffic charge, but rather to the violation later discovered. . . . This is true even if no specific statement of fact of the second arrest is made. . . . Taylor v. State of Texas, 421 S.W.2d 403 (1967).

<u>General Offenses-Search Incident to Arrest--Cases</u>

Case 32.

At 1:40 A.M. police officers responded to a radio call in which a gas station attendant reported suspicious persons had driven by the station several times, and he suspected they were planning to rob him. The officers, in response to the call, observed Ds drive by the station several times and decided to inquire as to Ds activities and pulled them over. Upon being pulled over Ds immediately got out of their car and approached the police car standing no closer than twenty feet from their car during the entire time of the police inquiry. A radio check revealed that Ds car license plates were issued to another car. Ds were placed under arrest for possession of an improper license plate. Upon being joined by a third police officer, the officers commenced a search of the car for evidence that would show Ds intended to commit robbery. In the locked glove compartment they found two pistols. Was the search of the car proper?

NO. The court said: "A warrantless search may escape Fourth Amendment condemnation only in the now narrow group of cases where the danger of postponing the search demonstrates the reasonableness of proceeding without a warrant. Chimel v. California, 1969, 395 U.S. 752, 89 S.Ct. 2034, 23 L.Ed.2d 685; Terry v. Ohio, 1968, 392 U.S. 1, 88 S.Ct. 1868, 20 L.Ed.2d 889; Katz v. United States, 1967, 389 U.S. 347, 88 S.Ct. 507, 19 L.Ed.2d 576; Preston v. United States, 1964, 376 U.S. 364, 84 S.Ct. 881, 11 L.Ed.2d 777.

A search contemporaneous with a lawful arrest comes within that category if it is confined to an examination for weapons that might be used to resist the arrest, or for evidence within the suspect's immediate control that might easily be destroyed. Chimel v. California, supra, Of course, any evidence seized must be relevant to the crime for which the arrest was made, as the probable cause for the search is inferred from the validity of the arrest.

In the instant case, however, the search yielding the revolvers was not 'incident' to the arrest that allegedly supports it. The testimony indicates that the search was intended to disclose implements of the robbery that the police suspected the defendants were planning. The arresting officer did not suggest any nexus between the search and the license offense that had been incidentally uncovered.

There was no such need for the officers arresting McNelis and McIntyre to rush to examine the locked glove compartment of defendants' car. Even if the search were related to the offense on which defendants were arrested, the situation did not demand immediate seizure of whatever was inside their vehicle. Defendants, apparently unarmed and standing 20 feet away, could not have reached objects in the car, either to threaten the policemen or to destroy evidence. With three officers and two police cars available to guard the car and the suspects, there was no excuse for failing to obtain a warrant before searching the automobile.

See United States v. McIntyre, 304 F.Supp. 1244 (1969).

Case 33.

Ps received a description and license number of a car, and of the suspects in the car, who were involved in a theft of money from a till. Ps spotted the suspects car and pulled them over. They arrested the suspects and commenced a search of the car. They found two pistols in the glove compartment, postal money orders in a bag in the back seat and burglar tools in the trunk. Did Ps need a search warrant?

NO. In this case the officers were making an arrest after dark on a highway two miles from the nearest town. A search for weapons for the purpose of self-protection constituted prudent police action and was a reasonable search incident to

the arrest. Of course, other evidence found in a valid search for weapons, including stolen money orders as in the present case, need not be ignored.

See Nash v. United States, 405 F.2d 1047 (1969).

Case 34.

D and his partner ran when a police patrol car came into the area. The police searched the area and discovered that a robbery had occured just prior to the time the suspects ran. About one half hour after their initial encounter, the police saw one of the men who had run, getting into a car in a parking lot behind the looted store, they arrested him. Police then searched the interior of the car and the trunk, and then impounded it. Was the search of the trunk proper?

YES. The court held that after D's arrest there was no danger from unseen weapons or of evidence disappearing from the locked trunk of the car. The status quo with respect to the trunk could have been maintained until a search warrant was issued, particularly since the car itself was impounded by the police. But the court held that as far as they knew no court has yet held that a car including its trunk, may not be searched without warrant at the time and place its occupants are placed under lawful arrest.

See Adams v. United States, 336 F.2d 753 (1964).

Case 35.

D was arrested while attempting to burglarize a building. He denied that he had a car but a search of his person disclosed a key chain with car keys and a car license number along with a small pistol and burglar tools. P discovered a car bearing this license number and confronted D who admitted that it was the car that he had used, but it belonged to his wife. P searched the car without a warrant and discovered evidence in the trunk that linked him with other burglaries. Was this a proper search?

YES. "Automobiles are protected from unreasonable search, although in view of the fact that they can be moved from one place to another so quickly we must give reasonable interpretation as to when a search is authorized without procurement of a search warrant." Since D had been arrested the search was incident to the arrest and thus proper.

See Weller v. Russell, 321 F.2d 848 (1963).

Case 36.

D had just robbed a bank; a description of the get-a-way car was received by the police. A Sheriff's deputy spotted a car that matched the car and gave chase. D tried to outrun the deputy and overturned his car in a field. He was subsequently arrested and taken away. A city police officer searched the interior of the car and forced the trunk open and searched it. He found what appeared to be the bank money and a pistol in the trunk. Should the officer secure a warrant before the search?

NO. An officer has a right and duty to seize the fruits of the crime and the instruments of the crime and evidence at the time of arrest if his leaving them unseized would create a danger that they would be destroyed. (A fire could have started from gasoline around the car).

See Boyden v. United States, 363 F.2d 551 (1966).

Case 37.

A deputy had received information about an armed robbery and the description of the automobile in which the robbers were fleeing. The deputy spotted the car and arrested D, searched the car and found the loot. Was the search proper?

YES. The court said: "The evidence shows that before the appellant and his companions were arrested by the deputy sheriff, the deputy had received information of the robbery and a description of the automobile in which the suspects were fleeing. This information was sufficient to warrant the arrest of appellant and his companion without a warrant. Art. 215. [14.04], V.A.C.C.P.; Hatfield v. State, 276 S.W. 2d 829. The arrest being lawful, the search incident thereto was legal."

See Tunnel v. State of Texas, 327 S.W.2d 590 (1959).

Traffic Offenses-Search Incident to Arrest--Cases

Case 38.

D was arrested for speeding 90 in a 50 mile zone. The officer then obtained from the D his driver's license, and a certificate of registration. This certificate purportedly showed the issuance to the D of a California license of the same number as that on the car, but contained obvious erasures and alteration. Shortly thereafter the D was formally arrested for speeding. Subsequently, a metal identification plate was taken from the doorpost of the car

that D had been driving. Was the search reasonable and the seizure of articles not related to the offense of speeding proper for the prosecution for automobile theft?

YES. The court said: "The arrest was made for speeding 90 in a 50. After the arrest the officer was justified in searching for articles for which the arrest was made. Papani v. United States, 84 F.2d 160 (1936). Although the articles seized were not related to the arrest, the search that produced them was incident to the arrest. Harris v. United States, 67 S.Ct. 1098 (1947). Nor were the police required to return them because they were not related to the original arrest. Abel v. United States, 362 U.S. 217 (1960). After a bona fide arrest for one offense and the subsequent finding of another offense does not render such finding illegal.

See Massey v. United States, 358 F.2d 782 (1966).

Case 39.

A highway patrolman noticed D traveling very slow on the highway. D's head was leaning over on the left side. He looked like he was either asleep or drunk. The patrolman stopped the car and asked D for his drivers license; he had none. He asked for a certificate of title which D did not have. While D was standing next to the automobile, P reached into the window and took from the steering column a cellophane container. D could not account for the different names on the registration cards and a bill of sale found in the glove compartment. P searched the trunk and came up with another document with a different name then previously given. D said that this was his name. Was the search proper?

YES. After D admitted that he had no license, the officer had reasonable grounds for arresting D. After the arrest, P could search the contents of the car at that time and place as incident to this arrest.

See Welch v. United States, 361 F.2d 214 (1966).

Case 40.

Officer P, while riding with a friend A, was driving down the highway and met D who was driving with his bright lights on. P flashed his lights, but D failed to dim. P turned around and pursued D and pulled him over. P approached the car and noticed D's passenger reach forward as if he was placing or taking something from under the front seat. P noticed a paper sack with a beer bottle in it sticking out from under the seat. P asked D how old his passenger was and D said 18. P asked the occupants to step out of the car, and

searched the car for weapons. P asked A to search the glove compartment. A removed a brown paper sack from the glove compartment and handed it to P who suspected it was marihuana. A ticket was issued to D for failure to dim the headlights on his car; and he was also charged with the possession of marihuana. Was the search proper?

YES. As Judge Onion said in Taylor v. State, 421 S.W.2d 403. "Once a bona fide stop or arrest has been made for a traffic offense, the police can make an additional arrest for any other offense unexpectedly discovered during the course of the investigation. If, while questioning a motorist regarding the operation of his vehicle, an officer sees evidence of a criminal violation in open view, or in some other manner acquires probable cause on a more serious charge, he may arrest for that offense and incident thereto conduct an additional search for physical evidence. Under these circumstances, neither the arrest nor the search is tied to the traffic charge, but rather to the violation later discovered. This is true even if no second arrest is made."

See Gutierrez v. State of Texas, 422 S.W.2d 467 (1968).

Case 41.

D was issued a ticket for speeding. Officer P stated that D had been drinking, was belligerent, and that he was carried to the police station by other officers. He further testified that he proceeded to search D's car and as a result of the search he found a pistol in the front seat which had one shell in the chamber and eight in the clip. Was the search proper?

YES. That D violated a traffic law by speeding authorized his arrest and the incidental search of his automobile.

See Staton v. State of Texas, 354 S.W.2d 583 (1962).

Case 42.

A Texas Highway Patrolman arrested D for driving at an excessive speed. In response to questions D admitted that he had "just a little bit." D opened the trunk which contained a large quantity of beer, and in the front of the car there were eleven bottles of whisky. This was a dry area. Was the search proper?

YES. The court said, "the officer, being a State Highway Patrolman, was charged with the duty of enforcing highway regulations and traffic laws, and upon observing appellant driving at an excessive speed and in a reckless manner on the public highway, it was his right and duty to overtake

and arrest him without warrant. The arrest being lawful, the right to search was an incident thereof, and was therefore not illegal. The search being legal, the fruits thereof were admissible in evidence."

See Baker v. State of Texas, 225 S.W.2d 838 (1950).

Case 43.

D kept getting in front of the police officer as he walked toward his automobile. This aroused the police officer's suspicion. After the police officer had stopped D for changing lanes without giving a signal indicating such change, he then found a pistol under the front arm rest in the front seat. Was the search proper?

YES. The court said that search incident to the arrest of the driver for a traffic violation is proper.

See Adair v. State of Texas, 427 S.W.2d 67 (1968).

Case 44.

D was arrested for improper passing on a public highway. P put D in the patrol car and after a short conversation went back to D's car and searched it. In the trunk he found seven cases of whisky (this was a dry area). Was this a proper search?

NO. When a person is arrested, the court said, for a traffic or other minor violation, the mere fact of the arrest does not give to the officer absolute right to search the vehicle or the premises indiscriminately. The officer does have the right, when the person is in custody, to search in order to disarm, or to prevent escape or the immediate destruction of evidence for which he was detained. But an arrest may not be used as a pretext to search for evidence.

See Lane v. Commonwealth of Kentucky, 386 S.W.2d 743 (1965).

Case 45.

P observed a car driving down a back street with its lights out. Upon pursuing the car, P saw two occupants. When he overtook the car the driver stopped, got out, and walked back toward the patrol car. The police officer could not see anyone else showing in the car at this time. P approached the car and looked inside, where he saw D lying on the back seat, also noticed a brown satchel with two "prybars" protruding on the floor. Another man was lying on the front seat with his head toward the drivers side.

P called for assistance and when other officers arrived, a search of the automobile followed. They found two revolvers, burglar tools, a safe taken from a local store, etc. Was the search of the vehicle proper?

YES. The court said that the officer was authorized to arrest D for violation of the traffic code. After the arrest he saw tools commonly used by those in the burglary business and two men lying on the seats of the automobile below window level. "This right to search and seize without a warrant extends to things under the accused's immediate control . . . and, to an extent depending on the circumstances of the case, to the place where he was arrested." The Ds place of arrest was at the automobile he was driving, and the search was lawfully made. The circumstances were sufficiently suspicious to require the officer to make inquiry.

See Anderson v. State of Texas, 391 S.W.2d 54 (1965); or Walker v. State of Texas, 397 S.W.2d 432 (1966)

Traffic Offense Driving While Intoxicated and Narcotic Offenses-Search Incident to Arrest--Cases

Case 46.

D, who was accompanied by another individual, was stopped for speeding at 1:55 A.M. As D got out of his car he made "a stumbling, faltering movement." As D walked back toward the patrol car the officer observed D's clothes were disarranged, eyes bloodshot, and the odor of liquor on his breath. After D showed him his drivers license the officer concluded that D was intoxicated. The officer, fearing for his safety, summoned a backup unit and when it arrived he searched D's car, finding an empty beer can and amphetamine drugs. Was the search proper?

YES. The court held, "An 'officer should be permitted to take every reasonable precaution to safeguard his life in the process of making an arrest. . . .' This is particularly true if from the totality of the circumstances presented to the officer he has reasonable grounds to believe he is in danger of bodily harm or injury or that the person he encounters is armed or dangerous. . . .

Only recently in Chimel v. California, 395 U.S. 752, 89 S.Ct. 2034, 23 L.Ed.2d 685, the United States Supreme Court said in discussing Terry v. Ohio, 392 U.S. 1, 88 S.Ct. 1868, 20 L.Ed.2d 889 and Sibron v. New York, 392 U.S. 40, 88 S.Ct. 1912, 20 L.Ed.2d 917:

> A similar analysis underlies the 'search incident to arrest' principle, and markes its proper extent. When an arrest is made, it is reasonable for the arresting officer to search the person arrested in order to remove

any weapons that the latter might seek to use in order to resist arrest or effect his escape. Otherwise, the officer's safety might well be endangered, and the arrest itself frustrated. In addition, it is entirely reasonable for the arresting officer to search for and seize any evidence on the arrestee's person in order to prevent its concealment or destruction. And the area into which an arrestee might reach in order to grab a weapon or evidentiary items must, of course, be governed by a like rule.

We hold that the search here was sustainable since it was reasonably limited by the need for the officer's protection and the need to seize weapons and to prevent destruction of evidence. Chimel v. California, supra.

See Corbitt v. State of Texas, 445 S.W.2d 184 (1969).

Case 47.

Officer M observed a car parked in such a manner as to block traffic, and a man sitting inside with his head down. M recognized the car as belonging to D, who was a paraplegic paralyzed from the waist down. M stopped his car and was joined by two other officers who went up to D's automobile to determine what was wrong. By the time they got there, D was lying down and M and the other officers tried to bring him around to determine what was wrong. D only mumbled and made incoherent responses. The officers could not smell liquor on D's breath but observed D's eyes were glassy and the pupils were large. They suspected D was under the influence of drugs. As D was removed, the officers spotted a bisquit-shaped tablet lying on the seat where D had been lying. After D was placed in a patrol car the officer searched D's automobile and discovered a number of bottles of tablets, some with prescriptions, some without. D was prosecuted for illegal possession of amphetamine tablets. Was the search proper?

YES. The court held that from the facts confronting the officers they were authorized in searching the car.

See Patella v. State of Texas, 367 S.W.2d 340 (1963).

Case 48.

P observed an automobile stop dead on the highway on two different occasions. The second time the car stopped there was a near collision. Upon pulling D over, P smelled the odor of alcoholic beverages on his breath. When D had trouble walking, P placed D under arrest for the traffic violation and for being drunk. P then commenced a search of

the car and found liquor in the interior of the car but he couldn't gain access to the trunk because he had no key. On the way to the police station D said that there might be one case of wine in the trunk. Immediately upon arriving in Lubbock, the patrolman removed the back seat of D's vehicle in order to gain access to the trunk, where he found four cases of wine and one case of beer. Was there probable cause to search the trunk?

YES. The information gained by the officer from this conversation gave him probable cause to search the trunk of the automobile.

See Thompson v. State of Texas, 398 S.W.2d 942 (1966).

Case 49.

D was arrested for driving while intoxicated by two police officers, one of whom took D in the police car and drove him into town, while the other drove D's car to the station, after which he searched D's car and found a bottle of whisky which was used as evidence for the traffic violation charges. D objects to the time and place of the search of the car; will the conviction stand?

YES. The car was in the control and possession of the police officer between the arrest and the finding of the bottle in the car, and the arresting officer had a right to search the car under the circumstances.

See Tabb v. State of Texas, 229 S.W.2d 628 (1950).

Case 50.

P saw D driving in and out of traffic and traveling at a high rate of speed through the city. P stopped D and observed D's eyes were glassy and suspected that D was intoxicated. D was arrested and brought to the police station where his automobile was searched. P found narcotic paraphernalia commonly used by narcotic addicts. Was the search proper?

YES. D was violating a traffic law, P was authorized in arresting D and searching his person. If after the arrest, he observed that D was intoxicated or under the influence of a narcotic drug, he was then authorized to search his automobile.

See Richardson v. State of Texas, 294 S.W.2d 844 (1956).

CHAPTER V

ARTICLES IN OPEN VIEW IN AUTOMOBILE

General Rules

Objects falling in the plain view of an officer who has a right to be in the position to have that view are subject to seizure and may be introduced in evidence. Ker v. California, 83 S.Ct. 1623 (1963); Harris v. United States, 88 S.Ct. 992 (1968).

No warrant is required in the situation where evidence has come to the officers' attention by virtue of being in plain sight. It is perhaps more correct to say that in this situation there is no search. Harris v. United States, 390 U.S. 234 (1968).

No warrant is required where the questioned evidence is in such plain view as to require no search. Hiet v. United States, 372 F.2d 911 (1967).

Mere observatin does not constitute a search, as where the officer has good reason to believe that the fruits of crime are freely exposed on the suspects property. Malone v. Crouse, 380 F.2d 741 (1967).

Law enforcement is difficult enough without requiring a police officer to free his mind of clues lying flatly before him. Ellison v. United States, 206 F.2d 476 (1953).

It is not a search in any legal or colloquial sense for an officer to look into automobiles standing on the roadside. In no view of the law could it be considered an unreasonable search. Boyd v. United States, 286 F. 930 (1923).

When an article subject to lawful seizure properly comes into an officers possession in the course of a lawful search it would be entirely without reason to say that he must return it because it was not one of the things it was his business to look for. Abel v. United States, 80 S.Ct. 683 (1960).

General Offenses--Articles in Open View--Cases

Case 51.

Officers had received a radio report of a robbery. They spotted Ds standing next to a car in an alley about 40 to 50 yards from where the robbery had taken place. D fit the description of the assailant in the robbery. The hood of the car was open and Ds appeared to be charging a battery by using another battery. The car doors were open and the interior light was on. The officers asked Ds what they were were doing, and also asked for drivers license and car registration. D said he was trying to start the car and produced his drivers license and registration. While standing outside of the car, the officers observed an alligator wallet resembling the type stolen in the robbery, and a wrench like the one used as a weapon in the robbery. Ds were placed under arrest. Was this proper?

YES. The court said, "The undisputed facts concerning events which preceded the discovery of the challenged evidence furnished ample justification for a continuing police investigation. Conditioned by their observations of Appellant and information concerning the crime reported to them, and guided by the whole of their experience, we think it was entirely reasonable for the police to pursue inquiry as they did. . . . Since a wallet closely resembling the one just reported as stolen was visible from a position outside the car, Appellant can hardly assert a valid claim that seeing it violated his privacy. It is well established that visual detection of evidence does not constitute a 'search' within the meaning of the Fourth Amendment."

See Coates v. United States, 413 F.2d 371 (1969).

Case 52.

Where a police officer could see fruits of a crime by just looking into the car in the day light was this a search of the car?

NO. The court held that it is not a search in any legal sense for an officer to look into an automobile standing on the roadside. Thus the discovery of contraband was competent.

See Boyd v. United States, 286 F. 930 (1923).

Case 53.

Two officers saw two men sitting in a car at 10:20 P.M. One officer got out of the patrol car and started to

come up on the right hand side of the car and the other pulled up alongside of the car and shined a spotlight in the window. Both officers observed some quick commotion and saw the driver hand something to his passenger who dropped it out the window. The officer retrieved it and found the item to be a cover from a match book with a capsule with whitish powder in it, which was later shown to be heroin. Was the search proper?

YES. The court said, "The officers seized the package . . . after it was dropped from appellants car to the ground. This manner of obtaining possession of said package was not unlawful."

See Robinson v. State of Texas, 293 S.W.2d 781 (1956).

Case 54.

At 2 A.M. D was stopped and arrested for speeding. The officer shined his flahlight in the back of the car and observed some tools on the back floorboard on the drivers side. The tools consisted of a sledge hammer, a crowbar, two chisels, two screwdrivers, two pairs of pliers, a punch, and a flashlight. He asked D to get out and observed a bulge in his right front pocket. Thinking this might be a weapon, the officer searched D and found rolls of coins and a large amount of change in his pocket. P left the money there and placed D in the patrol car. Another patrol car pulled up. D was heard to say "To hell with this," and D then jumped out and started running. Officer P caught D and issued him two citations, one for speeding and one for no operator's license. Officer P returned to the car that was now at City Hall and removed the burglary tools. Was this search of the car remote to the arrest?

NO. The tools were in open view when officer P went to the car after stopping D for speeding. Although the tools were removed later at City Hall, the tools were not obtained as a result of a search.

See Corbin v. State of Texas, 426 S.W.2d 238 (1968).

Case 55.

At approximately 10:35 P.M. a police officer on patrol received a radio report about an armed robbery and a shooting. About five minutes later, within one block of the robbery and three blocks from the shooting, Officer A observed D and a companion slumped down in a parked car without lights on a dark street. The two men matched the description of the suspects as reported by the police dispatcher. Officer A found out that the men lived in

another part of the city, but he could not obtain further information because the men became belligerent and refused to answer questions. Officer A could not understand a conversatin between the two men, but observed one lean forward and move his arm. Fearing for his safety, he ordered the men out of the car. When the dome light came on he observed a pistol lying on the floor where D had previously made movements. Was this an improper search and seizure?

NO. "It is well established law that an officer may seize what he sees in plain sight or open view if he is lawfully where he is." Ker v. California, 374 U.S. 23.

The court held: "If the pistol was obtained as a result of search, its introduction into evidence was not error since the facts are sufficient to have justified appellant's arrest and the search incident thereto under the aforementioned Suspicious Persons Ordinance. . . ."

See Lewis v. State of Texas, 439 S.W.2d 351 (1969).

Case 56.

Police officers observed a car parked on a road in the woods. They shined a light into the car and observed what appeared to be the felony offense of sodomy being committed in their presence. Was a search of the car proper?

YES. The court said: "If from what he saw it reasonably appeared to the officer that the felony offense of sodomy was then being committed in his presence, there can be no question as to his authority to search the automobile, arrest the appellant and testify as to what appellant said."

See Lunsford v. State of Texas, 261 S.W.2d 591 (1953).

Traffic Offenses-Articles in Open View--Cases

Case 57.

D was arrested for wreckless driving. A police officer looked in the window of the car and saw a sawed-off shotgun on the floor in open view. Was this lawful?

YES. It was incident to a valid traffic arrest and there was ample evidence to support the conclusion that the weapon involved was clearly visible to the officers without a detailed search of the automobile.

See Nunez v. United States, 370 F.2d 538 (1967).

Case 58.

Officer Ryder received a call that there were suspicious men in an automobile. When he arrived at the location of the call a man pointed out a car moving down the street as the car that he wanted. Ryder followed the car and saw that the light over the license plate was out. Ryder stopped the car. About the same time, officer McDonald in another patrol car, went and talked to a bartender who had reported the possibility that there were holdup suspects in the vicinity of his bar. McDonald found out from police communications that Ryder had stopped the probable suspects. When McDonald arrived he directed the three occupants of the car to step out. When they were getting out the dome light went on in the car, and he observed a sawed-off shotgun on the floor of the car. After the shotgun was found the men and the car were searched. Several more guns were found, and five nylon stockings. Was this a legal search?

YES. "There was no arrest or search in the instant case until after the illegally possessed weapon was disclosed. An arrest is defined in California as 'taking a person into custody.' No one had been taken into custody in this case until after the shotgun which gave rise to probable cause was seen. Certainly not every police practice constitutes an arrest or search. If a defendant is asked what he is carrying and he replies 'moonshine whisky' or 'home brew' there has been no arrest or search. If defendants are stopped for having faulty lights and the policeman opens the car door and interrogates the defendants there has been no arrest or search. If persons are stopped for questioning while leaving a gathering of known criminals there has been no arrest. Similarly, in this case there was no arrest or search when officer Ryder stopped the car after seeing a violation of the California Vehicle Code or when officer McDonald asked the . . . [Ds] to step out of the car after receiving information from the bartender. Considering the hour of the morning, the information received and all the surrounding circumstances, the officers were perfectly justified in making inquiries of the . . . [Ds] and in asking them to step from the automobile. . . ."

See Busby v. United States, 296 F.2d 328 (1961).

Case 59.

Ds robbed a store. Later P saw Ds go by him at a high rate of speed. P, who had no knowledge of the robbery, stopped Ds and asked for car registration. P saw a pistol when a raincoat fell to the floor. P arrested Ds and searched the car. Was this a lawful search?

YES. Under the circumstances the search of the car was proper.

See Goodwin v. United States, 347 F.2d 793 (1965).

Case 60.

Ps saw D driving erratically; the two officers stopped D and asked to see his driver's license and car registration. D said his license had been revoked. D was taken to police headquarters and his car was taken by a detective to the police station. While D was being booked, the officers checked and found out that C's home had been burglarized earlier that day. A record player, a radio, a pair of shoes and many other items were taken. The Ps at the time of the arrest had noticed articles similar to the stolen items on both the front and back seats of D's car. Within five minutes of finding out about the burglary Ps went to D's car, that was already in their possession, and removed the described articles. Was this reasonable?

YES. When articles are in plain sight no warrant is necessary. It has long been pointed out that mere observation does not constitute a search.

See Creighton v. United States, 406 F.2d 651 (1968).

Case 61.

Police were looking for D to question him about his participation in a shooting incident earlier that evening. Deputy J observed D and his friend at a gas station. When J drove up he saw D's friend surreptitiously take something from his pocket and place it on the floor between the seats of a car. While J was questioning D and his friend, deputy B came upon the scene and was told by J what he had seen D's friend do. Deputy B shined his flahlight into the unopened car and observed two United States Treasury checks on the floor between the seats, and a March of Dimes container in the open glove compartment. When both D and his friend denied knowledge of this material, they were arrested. They were subsequently indicted for burglary of a post office. Was this proper procedure?

YES. The government says that shining a flashlight through the window does not constitute a search. United States v. Lee, 274 U.S. 559 (1927). In this case the court said that from the circumstances probable cause barely existed to warrant such a discovery. The officer saw D's friend do something that would warrant a reasonable policeman to be suspicious of the actions of an individual who, by his

actions, quickly places something out of view just before a police officer gets in close proximity of the individual.

See Williams v. United States, 404 F.2d 493 (1968).

Case 62.

P arrested D for speeding at 2 A.M., 40 in a 30. P, with the aid of a flashligh, observed burglar tools on the floor of the back seat. Was this proper?

YES. The court held that the finding of the tools was not the result of a search.

See Corbin v. State of Texas, 426 S.W.2d 238 (1968).

CHAPTER VI

PERMISSION TO SEARCH AUTOMOBILE,

VOLUNTARILY REVEALED INCRIMINATING EVIDENCE,

MISPLACED CONFIDENCE

General Rules

Searches are reasonable if consented to by the person in lawful possession of the articles seized or the premises on which they are found. United States v. Eldridge, 302 F.2d 463 (1962).

A search and seizure may be made without a search warrant if the individual freely and intelligently gives his unequivocal and specific consent to the search, uncontaminated by any duress or coersion, express or implied. Channel v. United States, 285 F.2d 217 (1960).

A waiver cannot be conclusively presumed from a verbal expression of assent. The court must determine from all the circumstances whether the verbal assent reflected an understanding, uncoerced, and unequivocal election to grant the officers a license which the person knows may be freely and effectively withheld. Cipres v. United States, 343 F.2d 95 (1965).

The Fourth Amendment affords no protection to the person who voluntarily reveals incriminating evidence to one who is a government agent in the mistaken belief that the latter will not disclose it. Lewis v. United States, 385 U.S. 187; Hoffa v. United States, 385 U.S. 293 (1966), Lopez v. United States, 373 U.S. 427 (1963).

One is not pretected from the consequences of error if he places trust in the silence, duplicity or complicity of a government agent or informer. Neither is he protected from the consequences of error if he places physical evidence in plain view of government agents. Ker v. California, 374 U.S. 23 (1963).

[W]here two persons have equal rights to use or occupation of premises, either may give consent to search. Skally v. United States, 347 U.S. 935 (1954).

> It is important to bear in mind that it was the petitioner's constitutional right which was at stake here . . . which only the petitioner could waive by word or deed, either directly or through an agent. . . . Stoner v. California, 376 U.S. 483 (1964).

Permission to Search Automobile--Cases

Case 63.

A motorcycle policeman observed D driving a car with a broken tail light, emitting excessive smoke and making excessive noise. The officer stopped the car and asked for D's operator's license. D produced a temporary licence which the policeman considered to be inadequate identification because such licenses can easily be altered and obtained. D then produced registration which was required in an adjoining county, proving him to be an ex-convict. The officer observed numberous tools on the floor in the back of the car. D said he was an unemployed maintenance man. The officer showed D the smashed tail light and asked to look in the trunk. D opened the trunk and it was empty. D's friend and passenger (P) got out of the car and the officer asked to see his identification. While P was reaching for identification, the officer noticed two shot gun shells sticking out of his jacket pocket. P said they were left over from trap-shooting several days before. P denied that there was a weapon in the car. The officer asked D if he could look in the car. D said "yes, go ahead." A sawed-off shotgun was found under the front seat. Was the search proper?

YES. The court said, ". . . it is also still true that a search to which voluntary consent is given is not an unlawful search and evidence thereby obtained is admissible. . . ."

See Frye v. United States, 315 F.2d 491 (1963).

Case 64.

A confederate to D gave information to Federal Agents which led to the conclusion that D had traveled from Mexico to the United States with narcotics in the air ventilator of his automobile. D drove up in front of the house where he had an apartment, and after he entered the hallway the agents identified themselves and continued their conversation with D in his apartment. D gave his permission to search his apartment. The agents found nothing. They asked D if it would be okay to search his automobile. D said, "No. Go right ahead." The agents found heroin in the air ventilator. Was the search of the car proper?

YES. The court said, "a search without a warrant, but

consented to by the person whose premises were to be searched, could be valid if it was voluntary. It held that the question in each case as to whether the consent was voluntary, is one of fact, to be determined by the trial court and to be reversed on appeal only if the trial court's determination is clearly erroneous."

See Martinez v. United States, 333 F.2d 405 (1964).

Case 65.

An officer has been alerted when he went on duty to be on the look out for a black and white Mercury bearing a certain license number that was suspected to be the vehicle used in the burglary of a discount house the night before. The officer spotted the car parked in front of a cafe. Upon entering the cafe the officer found D intoxicated and placed him under arrest. After placing him in the patrol car, the officer asked D if the Mercury was his car; D gave an affirmative reply and the officer told D he wanted to search his car. D handed him the keys. The officer found merchandise in the trunk which was identified as having come from the discount house. Was the search proper?

YES. Although the officer has arrested D for drunkenness, he had been alerted to look out for a car suspected to have been used in a burglary. After the officer found out that the car belonged to D, he obtained his keys voluntarily. The court said, ". . . searches without warrant are permissible when executed with the owner's consent."

See Maldonado v. State of Texas, 397 S.W.2d 862 (1965).

Case 66.

Agents of the Liquor Control Board had a gas station under surveillance. They saw D drive into the station, deliver two pint bottles to an employee, and drive away. Fifteen minutes later D drove in again and dropped off another pint. A short time later, D returned, and the agents presented themselves. Agent A said he told D that they wanted to search the car, and D said "all right." (A) also asked D what he had on him and D said, "I got two pints of whisky, for my own personal use." (A) said he could see the bottles on his belt. Upon searching the car, the agents found a pint in the glove compartment. D did not own the car, but was using the same by permission of the owner who was at the gas station. Was the search proper in trying to determine if D was in possession of liquor for the purpose of sale?

YES. The court said: "The undisputed evidence shows that

appellant [D] consented to the search of the car. He was, therefore, in no position to complain of the search. The undisputed evidence shows that the car belonged to another person, and appellant claimed no right of ownership over the same. He was, therefore, not in position to object to a search of the car."

See Murray v. State of Texas, 184 S.W.2d 476 (1945).

Case 67.

Two deputy sheriffs went to D's cafe. D came in and the deputies asked D to step outside so that they could talk to him. They did this so as not to embarrass D. They told D that they had received several reports that he was selling pills. D denied this, but said they could look if they wished. In D's left sock the sheriffs found a white bag. Then they asked D if they could look in his car. D said they could and unlocked the car. The deputy sheriffs found a little white jar almost full of pills, which were later identified as barbituates. Was the search of the car proper?

YES. The court said that D consented to the search of his person and of his automobile, "and is therefore in no position to complain of the search."

See Garrett v. State of Texas, 400 S.W.2d (1966).

Case 68.

The sheriff asked D if he had anything in the back of his automobile. D said that he did. The sheriff asked if he could look in the automobile and D said "Okay, I guess you got a search warrant anyway." The sheriff never mentioned that he did have a search warrant. D then produced a key, unlocked the trunk and the officers proceeded to search the automobile. The sheriff found 30 cases of beer in the trunk and car. The beer was introduced as evidence. (This was a dry area.) Was this a proper search?

YES. D's statement to the officers, before being informed that they had a search warrant, constituted his consent to search the automobile and was a waiver of the necessity of a search warrant or any irregularities in the search warrant which the officers had in their possession.

See Sharp v. State of Texas, 338 S.W.2d 461 (1960).

Case 69.

D was arrested after a burglary had taken place. The

sheriff said, "I want to search the car." D said okay. Was this a proper search?

YES. D, having consented to the search, waived the necessity of a search warrant and is in no position to complain of the search.

See Merwin v. State of Texas, 355 S.W.2d 721 (1962).

Traffic Offenses - Permission to Search--Cases

Case 70.

Two police officers, who had kept D under surveillance for several hours, were joined by two custom agents. About 1:30 A.M., D was seen leaving a service station at a high rate of speed. The officers pursued and stopped D. D was traveling 70 M.P.H. in a 40 mile zone at the time that he was stopped. The officers identified themselves, asked D to get out of his car, which he did. One officer, at this time, told D that he would like to search his car. D shrugged his shoulders and said, "Go ahead." The officers searched his car and found two one-pound packages of marijuana between the grill and the radiator. Was the search proper?

YES. The court said, "Having consented to the search of his automobile, the appellant waived the necessity for a search warrant or a showing of probable cause for the search and is in no position to complain of the search."

See Giacona v. State of Texas, 397 S.W.2d 863 (1965).

Case 71.

D was stopped for driving at an excessive rate of speed. After D was stopped by officer A, two more officers came upon the scene, one being a Liquor Board inspector. The inspector said that they had received information that D would be traveling the highway with some liquor. The inspector asked D if he had liquor in the car. D said that he did not. Then D asked the inspector if he wanted to look in the car. The inspector gave an affirmative reply. D opened the trunk, and the officers proceeded to search the car, finding eight one-half pints of whisky in the air breather of the car and three in the windshield washer. This is a dry area. Was the search proper?

YES. The court held that D was in no position to complain of the search, as the state's testimony shows that he gave his consent thereto.

See Elder v. State of Texas, 403 S.W.2d 429 (1966).

Case 72.

D, who was driving a truck, was stopped at 12:30 A.M. for speeding and placed under arrest. The officer checked the manifest which called for a load of cotton-seed and soybean meal and cake. The officer said, "Would you mind if I checked the truck," and he walked toward the rear of the truck where the driver opened the rear door. The truck contained liquor, and D did not have a permit to transport such in a dry area. Was the search proper?

YES. The court said, "if a misdemeanor (speeding) was actually being committed in the presence of the constable at the time or if he had 'probable cause' to suppose that an offense against the peace and dignity of the state was being committed at the time, then the subsequent search and seizure was lawful and there is no merit in this appeal."

See Stewart v. State of Texas, 244 S.W.2d 688 (1951).

Voluntarily Revealed Incriminating Evidence--Cases

Case 73.

Federal officers observed D go from Texas to Oklahoma where it was illegal to possess intoxicants. D stopped along the highway to take care of a personal problem. One of the officers, upon stopping behind D's car, identified himself to D by saying, "How much of a load do you have"? D responded, "Twelve Cases." After the incriminatory admission, the officers invited D to open the back of the car. D said that it was not locked. The officer opened the back of the car and observed approximately twelve cases of liquor. D was taken into custody. The officers did not have a warrant for search of the automobile. They had no information that D was transporting whisky in this automobile. They were not looking for D. Should the conviction stand?

YES. The automobile was not brought to a stop at a command from the officers. D stopped the car of his own volition to accommodate himself and not the officers. D was not under arrest when he revealed the presence of the liquor in the automobile. He had not been taken into custody, nor had he been detained against his will. He had not been threatened or coerced by the officers. The officer, after having been assured by D that twelve cases of whisky were in the automobile, had abundant information to authorize the search and seizure which followed.

See Bruner v. United States, 150 F.2d 865 (1945).

Case 74.

D was arrested for burglary. While under questioning, he admitted that stolen items were in the trunk of his car, which had been impounded at the time of his arrest. Does P need a search warrant to search D's car?

NO. The information gained by the officer gave him probable cause to search the trunk of the automobile.

See Dugger v. State of Texas, 402 S.W.2d 178 (1966).

Traffic Offense--Voluntarily Revealed Incriminating Evidence--Cases

Case 75.

At 2:15 P.M. D got into his parked car and drove down the street. He made a U-turn causing one car to come to a sudden stop. An off-duty police officer in plain clothes flagged D down, informed him who he was, advised him of the traffic violation and asked for his driver's license. The officer examined the license, and then asked for D's car registration. D seemed to be hesitant and reluctantly opened the glove compartment. As he did so, two envelopes fell to the floor. The officer observed that the envelopes had the word "pay", some initials, and numbers written on the face of the envelopes. He recognized the envelopes as similar to those used in the numbers racket. Subsequently he asked D if he were carrying numbers. D gave an affirmative answer, and the officer informed D that he was under arrest for the traffic violation for the lottery violation. The officer searched the rest of the car and found more numbers slips and a quantity of money. Was the search proper?

YES. The court said: "A random search pursuant to an arrest for a minor traffic violation is unreasonable. . . However, the limited inspection of the glove compartment, where the defendant himself had indicated his registration card was located, was incident to the arrest in this case, in time, place, and purpose. There is no evidence that the traffic arrest was mere pretext to validate a search. . . ."

"Thus, as the lawful police investigation continued uninterrupted, the officer in this case uncovered the numbers slips. . . At that time the defendant was formally arrested for the numbers violation. The further search of the automobile was incident to the lottery arrest. The defendant had admitted to being a numbers runner, and the automobile was obviously being used to aid in the commission of the crime. The officer conducted a search for definite objects which he has reason to believe were in the car. Thus the scope of the search which followed was not unreasonable. . . ."

See United States v. Washington, 249 F.Supp. 40 (1965)

Misplaced Confidence--Cases

Case 76.

An agent was trying to establish the offense of auto theft. He sought the aid of a landlord to gain access to a car belonging to D that was in the landlord's rented garage. Is this proper?

NO. The court said it is clear that the landlord did not have a right of access to the automobile that was either equal to or indipendent of D's. Nor did he give her "such complete and unrestricted freedom over his property that he will be held to have accepted the risk that the person will consent to s search. . . ." We conclude, therefore, that the agent's search of the automobile was improper.

See Pasterchik v. United States, 400 F.2d 696 (1968).

Case 77.

D gave permission to his friend to use his car. While his buddy was using the car, the mother-in-law of the buddy reported to police that there was a stolen rifle in the backseat of the car parked in front of her home. The officers, knowing that there had been several recent thefts of firearms in the area, went to investigate. After looking through the window, they saw a rifle partly uncovered. The officers left to obtain a search warrant. When they came back, they summoned D's buddy, who was using the car, out of the house and asked his permission to look at the rifle. He gave permission. Subsequently the officers asked permission to search the car. In the trunk, which he voluntarily opened, they found and seized two stolen Coast Guard radios. They never showed the buddy the search warrant. When a person is just using a friend's car for a very limited time, is he in a position to give permission to search that car?

YES. The court said, "for the time being Nethercott [the buddy] was clothed with rightful possession and control and could do in respect to the automobile whatever was reasonable and not inconsistent with its entrustment to him. No restriction was imposed on him except to return with the car by a certain hour. Although the defendant knew of the presence of the stolen radios in the trunk, he apparently did not think it worthwhile to take the precaution of forbidding his bailee to open the trunk or permit anyone to look into it. He reserved no exclusive right of privacy in respect to the trunk or permit anyone to look into it. He reserved no exclusive right of privacy in respect to the

trunk when he delivered the key. . . ."

"Upon consideration of the circumstances we conclude that the bailee's consent made this a reasonable search."

See United States v. Eldridge, 302 F.2d 463 (1962).

Case 78.

The police were looking for three burglary suspects believed to be driving a 1963 cream and maroon Cadillac with Maryland license plates. Officers spotted the car parked at a service station and arrested two men who were near the car. One officer asked who the car belonged to, and one of the men answered that he was operating the car. Subsequently, the officers received permission from the operator to search the car. The search revealed burglary evidence. D, the owner of the car, was not present at this time and was arrested later. Was the search of the car without the true owner's permission proper?

YES. The court said, "that a bailee has the right to consent to the search of the car and the Court therein refused to suppress evidence found in the search as against the owner of the car who has given permission for the bailee to have possession. . . ."

See Hamilton v. North Carolina, 260 F.Supp. 632 (1966).

Case 79.

D and his mistress were living together as man and wife. While D was not at home, a deputy sheriff in Austin, Texas, went to the residence of D and talked to Mrs. V., who they thought had an equal interest in the car. The officers obtained both written and oral permission to search D's automobile. Mrs. V. had both the use of and the keys to the car and personally opened the trunk. Was this a proper search?

YES. "Searches are reasonable if consented to by the person in lawful possession of the article seized or the premises on which they are found. . . ." United States v. Eldridge, 302 F.2d 463 (1962). The car was parked immediately in front of the joint residence of D and Mrs. V. The officers certainly believed the automobile was jointly owned as well because Mrs. V. had possession of the keys which she used to help the officers by opening the trunk for them. There is no evidence of coercion; the search was not even conducted in conjunction with an arrest. With the record indicating purely voluntary oral and written consent, this search was clearly reasonable under all the circumstances. Access to the trunk is a normal incident to the use of an automobile.

D reserved no exclusive right of privacy in respect to the trunk when he delivered the key.

See Gurleski v. United States, 405 F.2d 253 (1968).

Case 80.

D asked a government agent to pick up morphine in his parked car some distance away. D thought the agent was a prospective helper in his elicit business venture. Was this a search and seizure of the car?

NO. D voluntarily revealed and surrendered the morphine sulphate tablets to the Government when he instructed its undercover agent to take them from his car. The agent violated only D's misplaced confidence. He did not conduct a search of D's car nor did he seize the tablets. He took only what D contemplated he would take.

D misconstrued the agent's action as a search and seizure. A search is a probing or exploration for something that is concealed or hidden from the searcher; a seizure is a forcible or secretive dispossession of something against the will of the possessor or owner. Both connote hostility between the searcher and the person whose property or possessions are being searched or sought. When he entered D's car and lifted the floor mat, the agent was not probing or exploring for something hidden from him. Once D confided to him the location of the package, it ceased to be hidden from him; he needed no exploratory effort to locate it. When the agent placed the package in his pocket and walked away, he was not taking it against D's will.

D might have retrieved the package from the car himself and handed it to the agent. Had he done so, we assume he would not now claim that the agent searched his car and seized the morphine sulphate. The difference between that type of transfer and the one he chose is, however, without legal significance. When D disclosed the location of the package containing the drug to the agent and instructed him to get it, he waived the privacy of his car for the limited purpose of allowing the agent to retrieve the package. In retrieving the package the agent did not exceed the limits of the waiver.

See United States v. Haden, 397 F.2d 460 (1968).

Case 81.

D was arrested for assault and battery. Evidence was found to convict D as the result of an illegal search of his friend's car, a principle in the assault and battery. The car had been used in the commission of the offense; however, D did not have an ownership interest in the car. Does D have standing to object to the search?

NO. The court said, ". . . the evidence shows no more than that Bunch [D] was a one time guest in Derby's car. At the time of the search, Bunch was neither in the car nor had any right to return to it."

See Bunch v. Cupp, 302 F.Supp. 686 (1969).

Case 82.

M was driving down the street when she was forced to the curb by a stationwagon occupied by six men. M was kidnapped, and robbed, and then raped by all of the men. They also took a ring and watch that she was wearing. Police found an envelope near the scene of the assault, and it had D's name on it. An officer drove by D's residence the next day and spotted a stationwagon like the one described by M. The stationwagon was occupied by D's sister. The officer approached the car and observed through the window yellow buttons on the floorboard like the ones on M's dress, as previously observed by the officer at the police crime lab. When D's sister reached her hand toward the radio the officer observed a ring on her finger similar to the one taken from M. The officer obtained D's sister's permission to search the car and found a zipper belonging to M. D's sister did not own the car. Was the search proper?

YES. The court said: "It appears that the ring and the buttons were not discovered as a result of a search, and they were properly admitted into evidence. When Officer Dhority saw the ring and the buttons, he had the duty to take them to prevent the consequences of theft under Article 18.22, Vernon's Ann. C.C.P. Taylor v. State, Tex.Cr.App., 421 S.W.2d 403.

When the officer found the ring that had been described by the complainant and saw the buttons just like those he had seen on the blouse at the crime lab, he had probable cause to search the station wagon for the watch that was reported taken during the attacks. See Scobey v. State, 145 Tex.Cr.R. 481, 169 S.W.2d 185, 190, and Taylor v. State, supra.

Officer Dhority testified that Patricia Jefferson gave him consent to search the station wagon. Appellant's counsel objected to the introduction of the items taken on the grounds that she did not own the station wagon and did not have the right to consent to a search.

It appears that part of a zipper from complainant's clothing was then found. Patricia Jefferson was the only person in the station wagon. The officer was justified in making the search, because of the consent. It appears that Patricia Jefferson had possession of the station wagon. The fact that she did not have title to the station wagon, by itself, is not sufficient to render the consent void."

See Jefferson v. State of Texas, 452 S.W.2d 465 (1970).

CHAPTER VII

SEARCH OF AUTOMOBILE REMOTE TO ARREST

General Rules

In a legal arrest it would not justify a search of an automobile remote in location. Preston v. United States, 376 U.S. 364 (1964).

A search made at another place without a warrant is not incident to arrest. Preston v. United States, 376 U.S. 364 (1964).

The rule allowing contemporaneous searches [of the person and place of arrest] is justified, for example, by the need to seize weapons and other things which might be used to assault an officer or effect an escape, as well as by the need to prevent the destruction of evidence of the crime - things which might easily happen where the weapon or evidence is on the accused's person or under his immediate control. But these justifications are absent where a search is remote in time and place from the arrest. Once an accused is under arrest and in custody, then a search made at another place without a warrant, is simply not incident to the arrest. . . . Preston v. United States, 376 U.S. 364 (1964).

Even where probable cause exists, a warrantless search is forbidden [Jones v. United States, 357 U.S. 493] unless made incident to a valid arrest [Agnello v. United States, 269 U.S. 20] or justified by exceptional circumstances, such as a significant possibility of removal [Carroll v. United States, 267 U.S. 132] or destruction [Ker v. California, 374 U.S. 23] of the object of the search. Even before the recent case of Preston v. United States, 376 U.S. 364, 84 S.Ct. 881 (1964), it is clear that a warrantless search of a car in police custody at a time after the occupants' arrest and under circumstances where there is no danger of is illegal. . . . Smith v. United States, 335 F.2d 270 (1964).

Remote Search--Cases

Case 83.

An officer observed D make a hazardous left turn out of a parking lot onto the highway. Such a turn is not a traffic violation, but the officer stopped D to inform him of the hazardous nature of such a turn. Upon request for his drivers license, D could produce none nor could he or his two companions produce any identification. Registration was produced showing that the car belonged to Josephine A., who was not present. The officer noticed two new brief cases and a quantity of new clothes between the front and back seat of the two-door car. The officer directed D to follow him to police headquarters in order that he could verify if the automobile was stolen and whether D had a drivers license. It was discovered that D was in lawful possession of the car, but did not have a drivers license. The officer, who was joined by another officer, made inquiry about the clothes in the back seat and received conflicting stories; also, D concealed the key to the car. The officers, aided by a flashlight, went back to the car, looked through the window, and observed the clothes once more, noting a wooden hanger with "Olympic Shop" on it. Tags were visible on the sleeves of several suits heaped up on the floor. The officers opened the door and took a closer look at the clothes. Subsequently, it was determined that the clothes were stolen. Was the search proper on the police parking lot?

YES. The court said, "It would be a matter of common knowledge that one who is not a dealer in clothing or associated with a dealer would not be likely to be transporting new clothing with brand names and price tags on the sleeves piled in partial concealment on the back seat and floor of a car. Add to this the failure of petitioner to identify himself plus his concealment of the key to the car and the nature of information given during the course of interrogation, and you have a situation where, in the opinion of this Court, any reasonable minded, diligent police officer would reach the conclusion that there was a probability of the commission of the offense of receiving and transporting stolen goods. The Fourth Amendment prohibits only such searches as are unreasonable. If the police officers in this case had failed to take possession of the clothing on the floor of that car on information available to them at the time it was taken, they would certainly have been derelict in their duty to the public. In fact the entire record on the proceedings conducted by Trooper Clouse and Investigator Walker shows beyond doubt that each proceeded stage by stage in the investigation with complete moderation and respect for the rights of the individuals whom they had taken into custody. The conduct of the investigation was intelligent and the proofs reasonably obtained. The search here when it did occur was the incident of a lawful arrest. . . .

"The vehicle here was not owned by petitioner but by Josephine Abate. She had been notified where the vehicle was parked, and she would have had the right to come to the police barracks and take possession of it with the incriminating evidence that it contained. The police here had, as far as this record shows, no basis for impounding the car or for arresting Josephine Abate or for making a search of the vehicle if she did take possession of it. . . ."

See United States v. State of New Jersey, 260 F.Supp. 987 (1965).

Case 84.

A citizen reported to police that three men had been sitting in a car from 10:00 P.M. until 3:00 A.M. in a downtown business district. Policemen went to the area where the car was parked and found D and his two companions. The three men admitted that they were unemployed and had twenty-five cents between them. They gave answers to questions that the officers considered unsatisfactory and evasive. The officers arrested the men for vagrancy. The car was driven to the police station by one officer, and then it was towed to a garage. After the men were booked, the officers went to the garage and commenced to search the car and found two loaded revolvers in the glove compartment. On a second try, the officers were able to check the trunk by removing the back seat. They found caps, women's stockings (one with mouth and eye holes), rope, pillow slips, an illegally manufactured license plate equipped to be snapped over another plate, and other items. Should officers secure a search warrant after D is booked and his car placed in storage?

YES. The court held that there was no danger that any of the men arrested could have used any weapons in the car or could have destroyed any evidence of a crime. Nor since the men were in custody at the police station and the car was in police custody at the garage was there any danger that the car would be moved out of the locality or jurisdiction. Thus, the court concluded that the search was too remote in time and place to have been made as incidental to the arrest and that the search of the car without a warrant failed to meet the test of reasonableness under the Fourth Amendment, rendering the evidence obtained inadmissible.

See Preston v. United States, 376 U.S. 364 (1964).

Case 85.

D was arrested by police officers on a civil

assault and battery charge. D was asked to drive to City Hall to be booked. Upon arrival D parked his car in front of City Hall and subsequently was informed that he was also a suspect in an assault and battery of G, unrelated to the original arrest. G identified D, and D was then arrested on this charge and placed in jail. Meanwhile, D's car remained parked in front of the City Hall. Sometime in the next three days, officials moved D's car to another parking lot, where G picked it out from several other cars as the auto that was used to pick him up when he was assaulted. G pointed out some blood stains, which the police had not discovered. Three days after D's arrest, officer S, without a search warrant, removed a horn rim and floor mat that were covered with blood; tests were made and these items were subsequently introduced as evidence in trial. Was the search and seizure proper?

NO. The court said, "Derby's car was parked for three days in front of City Hall and in the parking lot. The police had ample time to secure a warrant. The warrantless search, so remote in time from the arrest, unjustified by any of the considerations enumerated in Preston, cannot be supported."

"In Preston v. United States, . . . the Supreme Court held that warrantless searches of automobiles must meet the test of reasonableness. The Court held that a search could not be justified as incident to an arrest without considering whether the purpose of the search was connected with the reason for the arrest, whether the evidence was easily destructible or could be moved, and whether the officer's life was threatened."

See Derby v. Cupp, 302 F.Supp. 686 (1969).

Case 86.

D and his partner were observed for several hours by six cars used for surveillance. D was a known safe-cracker on parole. After D rode around one locality for about an hour and a half, he parked the car and disappeared down an alley. An explosion was heard, and D returned to his car, where he was arrested. The car and D were taken to the police garage, and the car was searched in D's presence. Was the search too remote from the place of arrest?

NO. D was in the car when he was arrested. He remained in the car until it arrived at the police station. Upon his arrival at the station, his car was immediately searched in his presence. Thus, "the search would not have been unreasonable if it had been made at the instant when D was arrested."

See Arwine v. Bannan, 346 F.2d 458 (1965).

Case 87.

F.B.I. agents had an arrest warrant for D for selling narcotics; they arrested D when he was about to get into his car. They searched his person, and while searching his car, a crowd began to gather. D was placed in the agent's car, and one of the agents drove D's car to the basement of the federal building, twenty minutes away. They resumed the search again in D's presence and discovered narcotics. Was the search lawful?

YES. The Fourth Amendment test is whether the search was reasonable.

See United States v. Evans, 385 F.2d 824 (1967).

Case 88.

Two police detectives were patrolling a highway in Kannapolis, North Carolina, looking for an escaped convict, who reportedly intended to rob a local bank. Ps saw D with three other men driving slowly on the highway, and they decided to follow. The detectives followed two of the men into stores at a shopping center and saw D buy cigarettes with a twenty dollar bill. Detective Y procured the bill and determined the same to be counterfeit. They followed D until he had to stop his car for a stop sign, and then the detectives arrested D and the other occupants. This caused traffic to back up over a half mile. A highway patrolman came along, and the detectives obtained his aid. He drove D's car to the police department a mile away, and the detectives took the occupants of the car to the police station. At the station detective Y went out and looked in the car and saw a brown case in the back seat. In the trunk he found a black and blue case which contained D's fingerprints and counterfeit money. Was the search proper?

YES. D had been caught passing counterfeit money. He had counterfeit money on him at the moment of his arrest. The place of arrest was at the automobile itself. The car and its occupants were under surveillance as suspects in a rumored bank robbery attempt; thus, there was some apprehension on the part of the police that the car might contain dangerous weapons. Some suspicion of the existence of accomplices would be reasonable. With traffic blocked in two lanes for a half mile or more on an interstate highway, it was reasonable to move the site of the search a mile or so away to the police station. The car belonged to D; the right to search without a warrant includes a contemporaneous search pursuant to lawful arrest and "extends to things over which the accused may have control . . . and, to an extent depending on the circumstances of the case, to the

place where he was arrested."

See United States v. Powell, 407 F.2d 582 (1969).

Case 89.

D and two companions were stopped at a gas station about 1:00 A.M. by a police officer who became suspicious of them. Ds gave conflicting stories as to their reason for being in the area; therefore, the police officer arrested them for disorderly conduct pursuant to the city ordinance that "all persons . . . (from) wandering or driving about the streets either by night or day . . . without being able to give a satisfactory account of themselves." The Ds were arrested and booked. The next morning D, from his cell, permitted one of the police officers to search the car. Was this a proper search?

NO. This warrantless search and seizure conducted after the defendants were booked and about eight hours later was not incidental to the arrest and, therefore, was clearly invalid under Preston v. United States where it was held that evidence obtained from a warrantless search of a car, soon after suspects were booked at a police station, was inadmissible under the Fourth Amendment, being "to remote in time or place to have been made as incidental to the arrest." Also, since D was then in custody and under arrest in jail and had not been appraised of his Fourth Amendment rights, the trial court correctly observed that no true consent had been given to the police.

See United States v. Nikrasch, 367 F.2d 740 (1966).

Impounded Cars and Administrative Inventory--Cases

Case 90.

While checking the registrar at a motel for three murder suspects, an officer saw a car leaving the motel. He recognized the occupants as two of the men he was looking for. He gave chase, fearing they might leave the jurisdiction. He arrested them. The auto was searched at the time of the arrest and then after the car was impounded a short time later. Was this proper?

YES. "It is doubtful if Preston should be interpreted to mean a police officer must, under all circumstances, search or complete the search of the vehicle at the moment of the arrest when an equally prudent course of action would be to move the vehicle to a more convenient or suitable location for search.

See Wilhelm v. State of Texas, 426 S.W.2d 850 (1968).

Case 91.

D was arrested by the Chicago Police Department in his automobile for suspicion of armed robbery. After the arrest, the officers made a preliminary search of the interior of the car and the trunk and found nothing. D was booked. One of the officers felt that a thorough examination of the car should be made. He obtained the keys from D and commenced another search of the car and found a pistol under the dash and a sawed-off shotgun under the hood. Was the search proper?

NO. The court said that the instant case is controlled by Preston. There is no question that D was under arrest and in custody when his vehicle was searched at the police station. The search was not necessary, therefore, to protect the officers or to prevent the destruction of evidence since neither D nor anyone associated with him had any control over the vehicle or its contents. Once D was arrested and in custody, the search "made at another place, without a warrant", was not incident to the arrest.

See United States v. Harvey, 397 F.2d 526 (1968).

Case 92.

D was arrested in his automobile for robbery. After his arrest, he was searched and his automobile was searched and impounded. The next day, officers, without a search warrant, went to the impound lot and searched the car again, finding incriminating evidence. Was the search at the impound lot proper?

NO. The court held the search was in violation of the Constitution, citing the Preston decision.

See Westover v. United States, 342 F.2d 684 (1965).

Case 93.

An officer was summoned to a location where he observed a 1962 Chevrolet and a 1955 Buick parked about fifty yards away. James B. and Elmer W. had called the police because they heard hammering in a wooded area and had investigated. They saw Ds working under the hood of the Chevrolet. When Elmer W. shouted "Halt, Police" Ds ran into the woods. About fifteen minutes after he arrived, the officer, while standing with informants, saw Ds walk over to the Buick carrying a gasoline can. Informants identified

Ds as the men who had run earlier. Ds denied knowing anything about the Chevrolet. The officer arrested them, had both cars impounded and taken to a local service station. Subsequently, the Chevrolet was identified as stolen and the Buick as belonging to D. Two days later officers went to the service station and examined both cars without a warrant. In Ds' Buick they found a tachometer, tire, and transmission that had been reported as missing from a recovered stolen car several days before. Was the search proper?

NO. The court said, "Even where probable cause exists, a warrantless search is forbidden unless made incident to a valid arrest or justified by exceptional circumstances, such as a significant possibility of removal or destruction of the object of the search . . . it is clear that a warrantless search of a car in police custody at a time after the occupants' arrest and under circumstances where there is no danger of removal is illegal. . . ."

See Smith v. United States, 335 F.2d 270 (1964).

Case 94.

D's automobile had been seen leaving the site of a robbery. The car was traced and D was arrested as he was entering it near his home. After a cursory search of the car, the arresting officer took D to a police station. The police decided to impound the car as evidence, and a crane was called to tow it to the precinct. It reached the precinct about an hour and a quarter after D. At this moment, the windows of the car were open and the doors unlocked. It had begun to rain.

A regulation of the Washington, D. C., Police Department requires the officer who takes an impounded vehicle in charge to search the vehicle thoroughly in order to remove all valuables from it and to attach to the vehicle a property tag listing certain information about the circumstances of the impounding. The arresting officer, pursuant to this regulation, went to the car to take inventory of the contents and when he opened one of the doors to roll up the window, he saw a registration card, which lay face up on the metal stripping over which the door closed. The registration card had the name of the robbery victim on it. Did the officer discover the registration by means of an illegal search?

NO. Once the door had lawfully been opened, the registration card, with the name of the robbery victim on it, was plainly visible. It has long been settled that objects falling in the plain view of an officer, who has a right to be in the position to have that view, are subject to seizure and may be introduced in evidence. Ker v. California, 83 S.Ct. 1623 (1963). The discovery of the card was not the result of a

search of the car, but of a measure taken to protect the car while it was in police custody. Nothing in the Fourth Amendment requires the police to obtain a warrant in these narrow circumstances. A different question arises if it were found during the inventory.

See Harris v. United States, 390 U.S. 234 (1968).

Case 95.

Police observed D, who was on parole, and his friend, who was an ex-convict, together in a car. D's friend went into a tavern and police moved in and placed D, who was still in the car, under arrest for parole violation. One of the officers opened the car door, flashed a light on the inside of the car and saw burglary tools which consisted of two crowbars, a large screw-driver and a pair of visegrip pliers. The police then opened the trunk of the car and found an electric drill. The automobile was then placed in a garage by the police, and on the following day, the garageman, upon entering the car to move it, discovered a pistol partially exposed under the right front seat. The garageman called the police, and they removed the pistol from the car. Were the searches and seizures lawful for a prosecution for possession of burglary tools?

YES. Unquestionably, when a person is lawfully arrested, the police have the right, without a search warrant, to make contemporaneous search of the person of the accused for weapons or for the fruits of or implements used to commit the crime. The Fourth Amendment prohibits only unreasonable search. The reasonableness of the search must be determined by the circumstances of each case. United States v. Rabinowitz, 339 U.S. 56. In the present case, the police were dealing with two convicted burglars, one of whom the officers observed was violating his parole. The mere fact that the cursory search made by the officers at the scene revealed only burglary tools and not the pistol did not militate against the validity of the search. Nor does the fact that the search turned up evidence used to convict DiMarco of the crime of possession of burglary tools, which was unrelated to the arrest for parole violation, render the search unlawful. Abel v. United States, 362 U.S. 217.

What the attendant did, in finding the pistol, certainly did not constitute search, either actually or in law; Fagundes v. United States, 340 F.2d 673 (1965); the discovery was purely accidental.

See DiMarco v. Greene, 385 F.2d 556 (1967).

Case 96.

A police officer stopped D for speeding and following too closely. P discovered stolen license plates in the car and arrested D. P, following departmental procedure, impounded D's car for safe keeping at a local service station. The owner of the station proceeded to secure the car and roll up the windows to protect the interior from rain. As he was rolling up the windows, two credit cards fell out of the door panel, and he (the owner of the station) notified police. The police examined the door panel and found more credit cards inside. Was the search reasonable under the circumstances?

YES. The United States District Court in Lubbock, Texas, said, "Petitioner was not arrested for any criminal act in relation to these credit cards nor was the search incident to the arrest, but at the same time it is apparent that the police had reasonable cause to search the car door once they discovered the first two credit cards. The fact that the car was already lawfully in custody would not per se require a search warrant. The relevant test is not whether it is unreasonable to procure a search warrant, but whether the search was reasonable. . . . [T]he police impounded the car after the arrest as a matter of course. They had no intention of searching it further until the credit cards were inadvertently discovered. . . . Just as in Harris [Harris v. United States, 390 U.S. 234], the car was in lawful custody of the police who were responsible for its protection; further, while engaged in performance of their duty to protect the car, they came across incriminating evidence. The first two credit cards were plainly visible, having fallen from the door panel as the window was rolled up. As to the other cards lodged in the door, though they were not visible without a flashlight search of the door panel, the police, after discovering the two prior cards, had reasonable cause to continue their search with greater care. Though there is no doubt that the police had time to procure a search warrant in order to retrieve the credit cards stuck in the door, and that such course of action would have been the safest; still this court is of the opinion that the search was reasonable under the circumstances since the cards were plainly visible, and there was reasonable cause to believe that these cards also belonged to persons other than petitioner."

See Vannerson v. Beto, 302 F.Supp. 39 (1968).

Case 97.

D, a used car dealer, was the head of a three-car caravan traveling from Illinois to Mississippi. In Jackson, Tennessee, the Police Department received a report that a man was beating someone with a stick. The police found A,

who had been beaten by D. (A) was one of the drivers of the three cars. The police apprehended D and charged him with assault and battery. All three men of the caravan were booked, and the cars were impounded. D, who said he owned all three cars, did not have any titles to the automobiles. He could display imcomplete bills of sale for two of the cars. The keys, however, did not correspond to those relatively late model cars and would not open the car doors. Without a search warrant, Sergeant P of the police department opened the car doors and recorded the serial numbers affixed to the doorpost. Was this proper?

YES. When the police obtain an article for safekeeping from a suspect taken into custody pursuant to a lawful arrest, the court could find no authority which requires them to get a search warrant before examining the article for accurate identification. Even where, as here, an examination of an article solely for the purposes of identification is commenced after the police have probable cause to believe that the item has been stolen, no right of privacy secured to the person by the Fourth Amendment to the Federal Constitution is breached. In this case no articles of evidence separate from and independent of the cars themselves were obtained as a result of the police examination.

See United States v. Graham, 391 F.2d 439 (1968).

Case 98.

Postal inspectors attempted to arrest D, but he succeeded in getting away, after abandoning his automobile. The Houston Police Department impounded the car because it was blocking traffic. Later a postal inspector, who was not present when D made good his escape, searched the impounded car, and he found evidence that could be used against D. Was the search lawful?

NO. Where the securing of a warrant is reasonably practicable, it must be used. Carroll v. United States. It is not disputed that the car was legally impounded by the Houston City Police, thus possibly justifying a search of the automobile, at least, for the purpose of identification and self-protection by the city police, Cooper v. California, 386 U.S. 58 (1964). But this does not give the postal inspector the authority to search the automobile without a warrant under the circumstances of this case. The search was not incident to any arrest, and it did not relate to the nature and purpose of the custody of the impounded car by the Houston Police Department. In the present case, the car was in the custody of the police; thus, no danger existed that the postal inspectors might be attacked with weapons secreted in the car. Likewise, there was no danger that the car might

be moved from the jurisdiction, Carroll v. United States. The only possible justification for the search of the car upon its arrival at the garage was that the suspect D was still at large and might have been able to destroy the evidence in the car before a warrant could have been issued, Preston v. United States.

See Williams v. United States, 382 F.2d 48 (1967).

CHAPTER VIII

SEARCH OF AUTOMOBILE IN CONNECTION WITH TRAFFIC INVESTIGATION AND ROADBLOCKS

General Rules

It is only by alertness to proper occasions for prompt inquiries and investigations that effective prevention of crime and enforcement of law is possible. Government agents are commissioned to represent the interest of the public in the enforcement of the law and this requires affirmative action not only when there is reasonable grounds for arrest or probable cause for a search but when there is reasonable ground for an investigation. (As stated by Mr. Justice Burton concurring opinion in Brinegar v. United States, 338 U.S. 160 at 179 (1949).)

The Fourth Amendment does not require police officers to delay in the course of an investigation if to do so would gravely endanger their lives or the lives of others . . . . Bailey v. United States, 389 F.2d 305 (1967).

Courts have recognized the right of law enforcement agents reasonably and temporarily to stop vehicles and question occupants on grounds that might not amount to a basis for arrest or search. . . . United States v. Bonanno, 180 F.Supp. 71 (1960).

Requirements to be met in roadblock operation:
. . . (1) belief by the officer involved that a crime might have been committed: (2) reasonable grounds for such a belief and (3) absolute necessity for immediate investigatory activity. These factors, when met, would constitute reasonable basis for stopping an automobile for the purpose of inquiry even though they might provide something less than would constitute probable cause for a formal arrest of its occupants. . . . United States v. Bonanno, 180 F.Supp. 71 (1960).

It is clear, that the mere stoppage of a car by a police officer is not such an illegal act that would taint all evidence stemming therefrom. On the other hand, it seems equally clear that the essential freedom of the individual demands that police not be permitted to stop every car that passes with no other justification than

mere inclination or the desire to harass with no legitimate end in view. . . . United States v. Bonanno, 180 F.Supp. 71 (1961).

General Investigation and Roadblocks--Cases

Case 99.

D and his companions were suspected of stealing from several stores in Pleasanton. A police office received a radio call from headquarters to be on the lookout for a 1955 Mercury, two-tone green. P met the car 12 miles from Pleasanton and searched the interior of the car, trunk and finally the hood where the loot was found. Was this a valid search?

YES. The arrest of the occupants and the search of the automobile if flight from the scene of the thefts was proper.

See Converse v. State of Texas, 386 S.W.2d 283 (1965).

Case 100.

D had just robbed a bank and upon, pursuit, abandoned his car and made his escape on foot. Does the officer need a search warrant to search D's car right after he abandoned it?

NO. Only unreasonable searches and seizures are prohibited by the Fourth Amendment. Preston v. United States, 376 U.S. 364 (1964). The expediency of the events following the crime justified the investigating officers' to swiftly search the car in order to determine D's identity and thereby effectuate his capture before he could make good his escape or destroy other evidence of the crime.

See Caldwell v. United States, 338 F.2d 385 (1964).

Case 101.

The police found out about a large gathering of persons suspected to be of a criminal element, more specifically, in the business of manufacturing illegal liquor and other illicit activities. One officer, Sgt. C., had personal knowledge of many of these individuals. Federal Alcohol and Tobacco Tax agents were notified because of their possible interest in such a meeting. At about 12:50 P.M., a checkpoint was set up on a public road near the estate where the meeting was taking place. As the occupants of automobiles were identified they were sent on their way. If anyone refused to answer questions, he was not pressed to do so.

At 2:00 P.M., Sgt. C. was notified that men were running through the woods at the estate, probably to avoid the roadblock. Sgt. C. assummed that "something was going on up there, and very possibly an alcohol conspiracy." Did the police have a right to establish a roadblock?

YES. The court said: "Thus, on the basis of the facts presented here, it is clear that the procedures utilized by the police officers in and around Apalachin on November 14, 1957 did not constitute an invasion of the liberty of any individuals so as to compel the suppression of the evidence procured. There was no "raid" in this case. There was no violence in the stopping of the cars. There was no police brutality, or coercion, or even pressure of any kind. There was a reasonable act on the part of law enforcement officers whereby on a public highway and later at Vestal, they put themselves into a position to question persons about a subject of legitimate police interest, with the least possible inconvenience to the persons questioned. Indeed, in this case, we are not dealing merely with a nebulous concept like "legitimate police interest" but with a reasonable belief that a crime might have been committed which demanded immediate investigation."

See United States v. Bonanno, 180 F.Supp. 71 (1960).

Case 102.

Federal officers were on a Texas highway about 75 miles from the border. When they saw two automobiles coming, they placed a sign on the road commanding the motorist to stop. Search was made without D's consent, and liquor was found in the automobile. Since the officers had no reasonable cause to believe that the automobile contained liquor, would the conviction stand?

NO. Evidence discovered upon an unlawful search is inadmissible and a conviction cannot be based upon it.

See Moring v. United States, 40 F.2d 267 (1930).

Case 103.

At about 3 A.M. officers stopped a car for a traffic violation. At this time they saw D drive by, going west. About twenty-five minutes later the officers saw D again nine blocks down the street still traveling west. At this time they decided to pull D over and turned their red light on. One of the officers noticed the passenger slide down as if to place something under the seat or on the floor. D stopped and got out and was asked for identification. No

traffic law was violated. The other officer requested the passenger to get out, and show his identification. While the passenger was getting out the officer shined his flashlight into the car from outside of the car. He saw what looked like a gun barrel sticking out from under the seat. The officer reached under the seat and pulled out a .22 caliber pistol. At this time both men were placed under arrest and taken to the police station and searched. D had a dagger on his person. Was the search of the car proper?

YES. The court said: "A line between reasonable detention for routine investigation and detention which could be characterized as capricious and arbitrary cannot neatly be drawn. But due regard for the practical necessities of effective law enforcement requires that the validity of brief, informal detention be recognized whenever it appears from the totality of the circumstances that the detaining officers could have had reasonable grounds for their action. A founded suspicion is all that is necessary, some basis from which the court can determine that the detention was not arbitrary or harassing.

"When the detention become an arrest is to be determined under state law, subject to such minimum constitutional standards as the Supreme Court has prescribed. . . The officer's observation of the pistol from where he stood outside the car was not a search. The arrest and any search involved, therefore, did not take place until observation of the pistol had provided probable cause, and the evidence in question was thereafter properly seized without warrant incident to a lawful arrest."

See Wilson v. Porter, 361 F.2d 412 (1966)

Investigation at Traffic Accidents--Cases

Case 104.

An officer investigating a head-on accident, where one person was killed and two others severly injured, searched the abandoned car of D. D had been taken to the hospital. The officer found a pint bottle from under the front seat of D's car which was about half full of whisky. Was the search proper?

YES. The court said: "It was the duty of the officers to investigate the accident and the killing. An examination of the abandoned car was a necessary part of such investigation."

See Sandel v. State of Texas, 253 S.W.2d 283 (1952).

Case 105.

Officers were called to the scene of a wreck. D had been taken to the hospital in an unconscious condition. The officer found bottles of narcotics in pill form. Nobody else was in the pickup at the time of the accident. The bottles were later identified as coming from two burglarized drug stores. Was the search proper?

YES. The court said: "From what evidence there is in this record, the searches were reasonable, rather than unreasonable. The officers making the search were called to the scene of a wreck involving a pickup, the only occupant of which was unconscious. It was their duty to check the contents of the pickup and his clothing to determine his identity and to safeguard his possessions. The search was by state officers and was therefore governed by state law. . . ."

See Kimbrough v. Beto, 412 F.2d 981 (1969).

Drivers License Checks--Cases

Case 106.

P stopped D at 10 P.M. for a drivers license check. D produced his drivers license. P shined his flashlight in the back seat of the car and saw a box that looked as if it might be a wine box. P had D get out of the car and investigated further. The box when opened did contain wine, and D was arrested for possession of liquor in a dry area. Was this a valid search?

NO. The court said, "if the patrolman had seen the wine visible to his naked eye, lying on the front seat of the automobile, then the evidence would have been admissible for it would have been secured without the need for a search. The officer would have been witnessing a violation of the law in his presence, just the same as though appellant had a pistol lying on the seat in plain view. The court felt that the search actually started when the officer shined or flashed the flashlight in the back of the car. The examination of a licensee's drivers license does not carry with it the right to search the vehicle. A licensee is not under arrest during this examination period. It is only when he is without a valid license in his possession that he becomes a law violator. Here, the D had in his possession and presented to the officer a valid, unexpired driver's license. This finding terminated the patrolman's responsibility in this matter."

See Pruitt v. State of Texas, 389 S.W.2d 475 (1965).

Case 107.

A California motorcycle police officer following California Statutes, which said that he could stop cars to see if the driver had a license, stopped a car driven by D. D could not produce a license. Was such a check proper?

YES. The court said: "If stopping appellant for the sole purpose of inquiring whether he [D] held a license for the activity in which he was engaged was in any sense a 'seizure' it was not an 'unreasonable' one, and did not violate any right given appellant by the Fourth Amendment, made applicable to the State by the Fourteenth. . . .

"This does not mean that a traffic officer might stop an automobile and ask to see the operator's license as a ruse in an intended search for evidence of some possible crime unrelated to possession of a driver's license. . . ."

See Lipton v. United States, 348 F.2d 591 (1965).

Traffic Arrest for Exploratory Search--Cases

Case 108.

A highway patrolman spotted a speeder and gave chase at speeds up to 100 miles per hour. The officer informed D that he would not be permitted to drive the car to the police station, and D became infuriated and had to be subdued physically. D was handcuffed and placed in the police cruiser. The officer feeling completely secure commenced a search of the car finding a sawed-off shotgun under the front seat. Was the search under the circumstances proper?

NO. The court said: "The record in this case lacks any indication of what the trooper was looking for in Tate's [D's] automobile. Quite obviously, he could not have been looking for the fruits of the crime for which Tate was arrested--there are no fruits of speeding. He certainly could not have been searching under the car seat for the means by which the crime was committed--the whole automobile itself was the means. He was not looking for forfeited property such as a sawed-off shotgun, which he had no means of knowing about, and the mere fact that such property unexpectedly turned up does not render the search valid. . . There was no general police alarm being broadcast for a person of defendant's description, nor did the trooper upon arresting defendant recognize him as a person with a long criminal record.

"The government contends that the search can be justified as a search for weapons of escape from custody. This argument is difficult to accept either factually or legally. There is no direct testimony in the record that

the trooper was looking for a weapon, either legal or illegal, in Tate's auto, or that he even suspected the existence of one. Moreover, the surrounding circumstances do not lead me to infer that such was the purpose of the search. The trooper testified that he handcuffed and placed the defendant in the patrol car for his own (the trooper's) protection. Once this was done, he was positive he could not escape and get at any weapon or weapons concealed in his own automobile. I [the court] can only conclude, therefore, that this search was for the purpose of a general exploration for whatever might turn up."

See United States v. Tate, 209 F.Supp. 762 (1962).

Case 109.

D was arrested for having no drivers license. P asked D if he could search D's trunk. There was some confusion as to whether D had consented to the search. The evidence clearly shows that the arrest was a cover-up to enable the officers to search the car. Was the search proper?

NO. A search and seizure may be made without a search warrant if the individual freely and intelligently gives his unequivocal and specific consent to the search, uncontaminated by any duress or coercion, express or implied. The state has the burden of proving by clear and positive evidence that such consent was given.

See State of Montana v. Tomich, 332 F.2d 987 (1964).

Case 110.

D was arrested at 3:30 A.M. for loud muffler, a violation of city ordinance. The officer asked D for his drivers license and D said he had none. The officer told D and his passenger to seat themselves in the patrol car with his partner. D and his companion did this, and the officer commenced a search of the car finding a paper sack containing money in bills and change, a handerchief, and a gun, all lodged beneath a kickboard between the car body and inside of the car. The officer confronted D with this, and D was later identified in a lineup as the person who had robbed a motel. Was the search proper?

NO. The court said in certain exceptions a search can be made without a warrant. These exceptions are "(1) fruits of or implements used to commit the crime for which the accused was arrested, (2) items under the immediate control of the accused which it is unlawful for him to possess, (3) visible instruments of a crime at the scene of the arrest, (4)

weapons by which the escape of the accused might be affected, and (5) mere evidence of the crime for which he was arrested, are subject to seizure. . . ."

"A search which is not restricted to one of the above items or which exceeds the permissible scope of the search is exploratory and unreasonable. . . ."

Since the arrest was for loud muffler a search of the interior of the car would not disclose the muffler or for fruits of the crime of loud muffler. Where the officer searches for instruments that may be used to affect an escape or endanger himself there must be reasonable grounds for such a search. Here the officer did not search Ds but had them go back and sit in the patrol car with his partner and then commensed the search of the car without having given any indication that they feared any harm the search for weapons is unreasonable. If the officer sees contraband visible after his initial arrest he is justified in searching the car but if he has no probable cause that the vehicle contains contraband the search is unreasonable. Thus in the absence of some justification an officer cannot search an automobile after stopping the vehicle for a traffic offense.

"The fact that the officer's search uncovered the instrumentalities and fruits of a crime does not render this exploratory search valid. . . ."

See Grundstrom v. Beto, 273 F.Supp. 912 (1967).

CHAPTER IX

USE OF SEARCH WARRANT

TO SEARCH AUTOMOBILES

General Rules

The Fourth Amendment, which is in the nature of a guarantee of privacy, forbids all unreasonable searches and seizures and it may be invoked by any citizen, whether innocent or guilty. [Go-Bart Importing Company v. United States, 282 U.S. 344]. Its guarantees and the standards of reasonableness under it are applicable to the states through the 14th Amendment. [Ker v. California, 374 U.S. 23 (1961)].

Where the securing of a warrant is reasonably practicable, it must be used. . . . Carroll v. United States, 267 U.S. 132 (1925).

In a doubtful or marginal case a search under a warrant may be sustainable where without one it would fall. United States v. Ventresca, 380 U.S. 102 (1965).

[T]he Fourth Amendment had been construed . . . as recognizing a necessary difference between a search of a store, dwelling house or other structure in respect of which a proper official warrant readily may be obtained, and a search of a ship, motor boat, wagon or automobile, for contraband goods, where it is not practicable to secure a warrant because the vehicle can be quickly moved out of the locality or jurisdiction in which the warrant must be sought. Carroll v. United States, 267 U.S. 132 (1925).

[W]here the vehicle is known to travel almost fixed, habitual pattern of time, place and movement and there is sufficient opportunity to obtain a warrant which would not risk the loss of the contraband believed to be in the car a warrant is necessary. Clay v. United States, 239 F.2d 196 (1956).

While a warrant may issue only upon a finding of 'probable cause' . . . the term 'probable cause' means less than evidence which would justify condemnation, and

that a finding of 'probable cause' may rest upon evidence which is not legally competent in a criminal trial. United States v. Ventresca, 380 U.S. 102 (1965).

Probable cause for the issuance of a search warrant exists where the circumstances as demonstrated by the underlying affidavit are such as would cause a man of reasonable prudence to believe that the property to be searched is likely to contain the items sought in connection with the related criminal act. McCray v. Illinois, 386 U.S. 300 (1967).

There is a large difference between the two things to be proven guilt and probable cause, as well as between the tribunals which determine them, and therefore a like difference in the quanta and modes of proof required to establish them. Thus hearsay may be the basis for issuance of the warrant so long as there is a substantial basis for crediting the hearsay. And, in Aguilar [378 U.S. 108] we recognize that an affidavit may be based on hearsay information and need not reflect the direct personal observations of the affiant, so long as the magistrate is informed of some of the underlying circumstances supporting affiant's conclusions and his belief that any informant involved whose identity need not be disclosed was credible or his information reliable. United States v. Ventresca, 380 U.S. 102 (1965).

[T]he magistrate [must] perform his "neutral and detached" function and not serve merely as a rubber stamp for the police. Aguilar v. State of Texas, 378 U.S. 108 (1964).

If the teaching of the Court's cases are to be followed and the constitution policy served, affidavits for search warrants . . . must be tested and interpreted by magistrates and courts in a common sense and realistic fashion. They are normally drafted by nonlawyers in the midst and haste of a criminal investigation. Technical requirements of elaborate specificity once exacted under common law pleadings have no proper place in this area. A grudging or negative attitute by reviewing courts toward warrants will tend to discourage police officers from submitting their evidence to a judicial officer before acting. United States v. Ventresca, 380 U.S. 102 (1965).

While the warrant must particularly describe the place to be searched, the description need not be precise or technically accurate; all that is required is that there be sufficient definiteness to enable the officer to locate the property and to distinguish it from other places in the community. Rhodes v. State of Texas, 116 S.W.2d 395 (1938).

The description of the property to be seized must vary according to whether the identity of the property or its character is a matter of concern where the purpose of the search is to find a specific property, it should be so particularly described as to preclude the possibility of seizing any other; on the other hand, if the purpose be to seize non-specific property, but any property of a specified character which by reason of its character and of the place where the circumstances under which it may be found, if found at all, would be illicit, a description save as to such character, place and circumstances, in unnecessary and ordinarily impossible. Cagle v. State of Texas, 180 S.W.2d 928 (1944).

A person aggrieved by an unlawful search and seizure may move the district court for the district in which the property was seized for the return of the property and to suppress for use as evidence anything so obtained on the ground that (1) the property was illegally seized without warrant, or (2) the warrant is insufficent on its face, or (3) the property seized is not that described in the warrant, or (4) there was not probable cause for believing the existence on the grounds on which the warrant was issued, or (5) the warrant was illegally executed. The judge shall receive evidence on any issue of fact necessary to the decision of the motion. If the motion is granted the property shall be restored unless otherwise subject to lawful detention and it shall not be admissible in evidence at any hearing or trial. . . . Jones v. United States, 362 U.S. 257 (1960).

Case 111.

Officer P had a search warrant to search D's car. The officers could not gain admittance to the trunk. They were going to have the car towed to a body shop so that entrance could be accomplished. D gave the officers permission to drive it. At the body shop they took out the back seat and discovered 34 half-pints of whisky. Was the search under a warrant valid some distance from where the car was originally parked?

YES. The court said: "There can be no merit to appellant's claim that the search of the automobile was unauthorized because finally accomplished at the body shop some distance from the used car lot."

See Green v. State of Texas, 275 S.W.2d 110 (1955).

Case 112.

The police had probable cause to believe that D's

car was used for transporting intoxicants that were against Federal Law. The automobile was found standing in a garage after it had completed its journey. No one was in it, or threatening to move it. Since probable cause exist should the search be made without a warrant?

NO. There is a complete lack of showing that any circumstances existed which made the obtaining of a search warrant impractical. On the contrary, one of the officer's could remain with the car while the other obtained a search warrant, and the search made thereunder. Thus, it cannot be said that the obtaining of a search warrant was not practical nor expedient. There being no justification for the search of the car without a warrant, it cannot be justified solely upon the grounds that probable cause existed.

See Hart v. United States, 162 F.2d 74 (1947).

Case 113.

Investigator H of the D.A.'s office was armed with a search warrant to search D's automobile. When he presented himself at D's apartment and told D that he had a search warrant to search D's car. D said, "You have got me. . . I have got some stuff here in the apartment," and then he returned from the kitchen with about thirty marijuana cigarettes. H proceeded to read the warrant to him and then went down to D's car and searched it, finding three marijuana cigarettes. Was the search proper?

YES. The court held that after D had made an oral confession, and this constituted probable cause for the officer to search the automobile even if there was some question that he might of had a defective search warrant.

See Glaze v. State of Texas, 310 S.W.2d 88 (1958).

Case 114.

Officer S and other officers had a search warrant. The warrant had the following statement:

> A certain private dwelling, located in Cleburne, Johnson County, Texas, described as (a) White frame building, used as used car lot office, located just North of the next lot, from the Dairy Cream, same being the next building North of 1015 North Main St., Cleburne, Texas, facing East on said street. Said location being called Butler Car Lot. Also all automobile, outhouses, garages, curtileges and appurtenances thereto.

Officer S testified that three weeks prior to the search D had told him the green Buick belonged to him and exhibited papers to the Buick and a receipt for the dealer's license which was on the Buick.

D objected to the search of his automobile on the grounds that the automobile was not described on the warrant. Was the warrant valid for search of automobiles after the search of D's residence?

YES. The court held the statement in the warrant was sufficient for the search of both D's residence and automobile.

See Green v. State of Texas, 275 S.W.2d 110 (1955).

Case 115.

Ps had a search warrant to search D's place of business. Later Ps took possession of D's car, that was parked outside, and searched it. During this time D was under Ps control. Can the evidence secured from D's car be used when Ps did not have a warrant to search his car?

NO. The seizure of the car was not incidental to the arrest of D. The arrest was consummated before the car was seized. There was no risk of the car being driven away while a search warrant was being obtained. D was not arrested in his automobile. Absent a search warrant, the search of the car and the seizure of its contents was against the principles set in the Fourth Amendment.

See United States v. Stoffey, 279 F.2d 924 (1960).

Case 116.

Federal officers knew D had been convicted on a prior occasion for violation of a state lottery law and knew of his reputation for engaging in lottery business. D's actions had been followed for some time and he had a habitual pattern of time, place and movement. After seeing D make his usual rounds the agents pulled D, who was in his car, over to the side of the road. When the vehicle stopped, an officer ordered D out of his car and then, with the first show of gentle concern, asked if they could search the car, within a very few minutes the search was completed and it revealed nothing. Search of D's person revealed suspicious material and D was placed under arrest. Should the officers obtain a search warrant under the circumstances?

YES. A warrant should be secured when the automobile is not the present means of flight, of likely destruction of evidence, or where the transportation itself is not a crime.

All of the information now claimed to have justified the conclusion that a crime had been committed demonstrated that D's action, followed an almost fixed, habitual pattern of time, place and movement. The use of the automobile was purely incidential. There was nothing to indicate that procuring warrants of arrest or search would thwart, or impede the efficient enforcement of the law, or intrude upon the ". . . judgement of the officers as to when to close the trap. . . ."

See Clay v. United States, 239 F.2d 196 (1956).

Case 117.

D was arrested because he was a suspected bank robber. D had control of two cars, one in control of his wife, and the other was impounded. F.B.I. agents submitted application for search warrants to a magistrate. The affidavit requesting search warrants stated the cars were located at a named location. It stated that the agent had reason to believe that a gun, .25 or .32 caliber, a cap, baseball or golf type, and a sport coat, gray in color, which were considered instrumentalities of a crime of bank robbery at the First National Bank of Arizona, were in the automobile. It stated that the facts tending to establish the foregoing rounds for the issuance were:

1. Above described items were allegedly used and worn by bank robber.
2. Victim teller, Terry Lee Ford, identified Porter when arrested.
3. Above described items were not in possession of Porter when arrested.
4. Above described vehicle is alleged property of Porter and registered in name of William Edwards.
5. Porter advised Special Agent Walter E. Peters of the F.B.I. that the above described car is his property.

The warrants were issued and a sawed-off shotgun was discovered in the trunk of one of the cars but none of the items sought. Can the sawed-off shotgun be used in prosecution for illegal possession? Was there probable cause for issueance of a search warrant?

YES. The court said: "The policeman makes his statement in his own unprofessional language, and the magistrate determines whether the substances of it shows probable cause for search. The standard applied by the magistrate is not that of certainty that the objects sought will be found as a result of the search."

"It may be that if an officer, in executing a search warrant directed to a house or an automobile and describing certain things to be searched for, discovers in his search other things of an intrinsically innocent nature but which

have been reported to the police as having been burglarized he would have to obtain another warrant before he could lawfully seize those things. But a sawed-off shotgun in private hands is not an intrinsically innocent object."

"The Constitution does not require law enforcement officers to play make believe. What the officer discovered, in their lawful search pursuant to a valid warrant, was reasonably believed by them to be contraband, and it was their duty to seize it."

See Porter v. United States, 335 F.2d 602 (1964).

Case 118.

D was a known associate of bank burglars and had been convicted for burglary on three prior occassions. On July 4, 1967, the morning of the burglary, D's car was seen in the area of the bank where a witness wrote down the license number of the bronze car. The F.B.I. investigator's also learned that D's car had not been parked in front of D's residence during the early morning of July 4. With this information at hand, the investigator made application for a search warrant on July 8th to search D's car. Evidence was found in the car that connected it with the bank burglary. Was there probable cause for obtaining a search warrant?

YES. The court said: "Probable cause cannot be established by affidavits which are purely conclusory and merely state that the affiant or his informant believe that probable cause exist. It is permissible, however, for the affidavit to be based upon heresay if the magistrate is informed of the underlying circumstances from which the affiant concludes that the heresay is credible. . . ."

"The hearsay information was verified by the fact that the automobile described was shown to have been missing from appellants residence at the time it was reported to be in the vicinity of the bank. Furthermore, the license number of the vehicle was discovered to have been issued to a known burglar whose propensity for being in the vicinity of banks at unseemly hours and for associating with others of like inclination was well established."

See Edmondson v. United States, 402 F.2d 809 (1968).

CHAPTER X

SEARCH OF STOLEN AUTOMOBILES

General Rules

> [W]hen a policeman or a federal agent having jurisdiction has reasonable cause to believe that a car has been stolen, or has any other legitimate reason to identify a car, he may open a door to check the serial number, or open the hood to check the serial number, or open the hood to check the motor number, and that he need not obtain a warrant before doing so in a case where the car is already otherwise lawfully available to him. . . . (No opinion was expressed where the vehicle is locked.) Cotton v. United States, 371 F.2d 385 (1967).
>
> It has been repeatedly held, in substance, that an automobile has the status of a house, so far as the protection of the Fourth Amendment is concerned, subject to certain limitations arising from its mobility. . . And the rule that one whose possession is wrongful is entitled to protection against all who do not have a paramount right to possession is equally applicable to chattels, such as a car. Thus even a thief of a chattel can acquire title to it by adverse possession. . . We do not intimate that the police may not, if they have probable cause, take a stolen car from the thief and return it to its owner. . . The question here is as to standing of the thief who had possession of it and claimed it as his own to object to a search of the car. We hold that he has such standing. . . .
>
> . . . [I]f the search were unlawful, they cannot be justified in effect, because they turned up the fact that the car did not belong to the one who now seeks to suppress any evidence found. Cotton v. United States, 371 F.2d 385 (1967).

General Offenses--Cases

Case 119.

D crashed into a road block that the police had put up. D was a wanted bank robber and also at the time of the crash the car he was driving was stolen. After his arrest

the car was towed away and impounded. Some two hours later a F.B.I. agent, proceeding on the basis of D's oral confession to the bank robbery, went to the car and searched it without a warrant. Was the admission in evidence of the articles found in the trunk lawful and correct?

YES. Had the police searched the vehicle on the highway at the place where D was arrested, without first seizing it as a stolen vehicle, D would have standing to object to that search. Cotton v. United States, 371 F.2d 385. D had never had any ownership interest in the car and his possessory interest had been terminated by the valid seizure. Since the automobile had been reported as stolen, the police were authorized to seize and impound the vehicle for the rightful owner.

See Schoepflin v. United States, 391 F.2d 390 (1968).

Case 120.

D stole an automobile and, while driving across the country, was arrested for vagrancy. P impounded the stolen car and searched it without warrant. D was arrested in a hotel room away from and out of control of his stolen auto. The police found out from their search and further investigation that the car was stolen. Was this a legal search?

NO. The court said: "If the arrest was legal it would not justify a search of an automobile remote in location. Preston v. United States, 376 U.S. 364. In the case at bar the evidence obtained as a result of the search is inadmissible as evidence. It does not make any difference whether appellant owned the car or not. He had control of the car and his lack of ownership was not established until after the search."

See Simpson v. United States, 346 F.2d 291 (1965).

Case 121.

D murdered W and took her car which was registered in her name. Police officer P had received information that D was driving a stolen automobile bearing an Oklahoma license. The police officer began searching for the car, found it, and arrested D. A search of the car was made. D contends the search of the car was illegal because the car was taken from him while he was under arrest, and no search warrant was used, and the car was not the alleged instrumentality of the death. Was the search proper?

YES. The court said: "It is shown that the arresting

officer had received information that appellant was driving around in a stolen automobile bearing an Oklahoma license. The officer (a city policeman) began a search for him and soon found the car, and also located the appellant and took him into custody. The car was not that of appellant but belonged to Mrs. McHenry. Therefore, appellant had no right to complain of the search. Furthermore, under the statute Art. 215, C.C.P. [Art. 14.04], the policeman was justified in making this arrest. Moreover, the car was evidently stolen property, and under Art. 325, C.C.P. [Art. 18.22], it was the duty of the police officer to take this personal property into his possession and bring the same, together with the supposed offender, before a magistrate for examination. The arrest was legal. Therefore, the taking into possession of the car and its contents were also legal and properly introduced herein. The contents of the car were introduced in evidence also as a matter of identification of the unfortunate lady who owned such contents. . . . Again, if the officer was correct in taking the car into his possession, then he had the same right to take that which was found within the car."

See Northern v. State of Texas, 216 S.W.2d 192 (1948).

Case 122.

D was arrested after F.B.I. agents determined that the car he was driving was stolen and belonged to the Hertz Rent-A-Car Corporation. After D was taken to jail, the agents proceeded to search the car and trunk where they found stolen luggage. Was the search proper?

YES. The County police here had custody of the Mercury, not as agents of D, but on behalf of Hertz. The Mercury was no longer in D's possession. Since the search did not invade D's privacy, they were not "persons aggrieved" within the meaning of Rule (e) Jones v. United States, 80 S.Ct. 725 (1959); consequently, they lacked standing to challenge the validity of the search and the introduction of its harvest into evidence. United States v. Graham, 391 F.2d 439 (1968). The police confirmed the make, model, color, year and the information number on the rear view mirror before the arrest.

See United States v. Kucinich, 404 F.2d 262 (1968).

Case 123.

An agent from the truck theft bureau observed a truck which matched the description of a stolen truck, and it was repainted in the same manner as another stolen truck that had been recovered earlier. The agent relayed this information

to the highway patrol. Upon being joined by highway patrolman, he followed the truck to a weight station where it stopped. The agent opened the door, discovered that the cab serial number was the same as that of the stolen truck, and arrested D. Was the search proper?

YES. The officer had probable cause to believe the truck was stolen. A truck had been recovered earlier that had been repainted in an identical manner; this truck matched the description of a truck stolen. Because of the truck's mobility the officers were justified in searching the truck without a warrant.

See Glavin v. United States, 396 F.2d 725 (1968).

Case 124.

A F.B.I. agent drove by D's residence and observed a 1966 Chevrolet pick-up parked in the yard. He wrote down the license plate number and went to the courthouse and checked the public records which showed the serial number was 3C143 A125432 for a 1963 Chevrolet pick-up rather than for a 1966 model. Knowing that either the serial number was wrong or the plates had been unlawfully switched he went to D's residence and obtained permission from D's wife to look at the vehicle more closely, specifically at the serial plate. The agent made a list of the hidden confidential number on the vehicle which tallied with that of a stolen automobile from Nashville, Tennessee. Was the agents inspection of the hidden serial number, on the D's premises, without D's consent an illegal search?

NO. The court said, "that where there is a legitimate reason to do so the mere checking of the serial number of an automobile in order more positively to identify it is not a search within the prohibitions of the Fourth Amendment. . . . We, therefore, hold that the inspection of the pick-up truck in Johnson's possession was not a search, but if a search was a reasonable one, and no warrant was necessary."

"Since, in our view the inspection of the automobile at most was not an unreasonable search, and since the wife, in joint use and occupation of the premises, gave her consent to the officer to remain in the yard and make the inspection, his presence there was not unlawful and did not vitiate the admissibility of what he later found."

See United States v. Johnson, 413 F.2d 1396 (1969).

Case 125.

Can a policeman or agent check an automobile he believes to be stolen for the serial number and engine number?

YES. "[E]ven if the mere opening of the door to look at the number was a search, it was a reasonable one, when a policeman or a federal agent having jurisdiction has reasonable cause to believe that a car has been stolen, or has any other legitimate reason to identify a car, he may open a door to check the serial number, or open the hood to check the motor number, and . . . he need not obtain a warrant before doing so in a case where the car is already otherwise lawfully available to him." Cotton v. United States, 371 F.2d at 394. (No opinion was expressed whether agent could break into the car without a warrant).

See Pasterchik v. United States, 400 F.2d 696 (1968).

Case 126.

D was arrested for suspicion and for rigging a slot machine by a Sheriff in Mississippi. The F.B.I. was notified and an agent, making a routine check of this out-of-state individual, talked to D. He informed him of his rights, and checked the public identification number on the doorpost of D's car. Two months later D was arrested for car theft. Was the visual inspection of the public identification number on D's car proper?

YES. The court said, "the method which Agent Louderman used to obtain the public identification number of the vehicle was nothing more than a routine questioning of a person arrested from out of the state. His subsequent checking of the number of the vehicle was mere routine."

"In this highly motorized age with millions of vehicles traversing the nation's highways and the mounting number of automobile thefts and related crimes, it would tax the imagination if we were to consider under these circumstances that a visual inspection by an F.B.I. agent of a car identification number constituted a search, much less an illegal search. The Fourth Amendment constitutional prohibition is against unreasonable searches and seizures."

See Weaver v. United States, 374 F.2d 878 (1967).

Traffic Offenses-Suspicion of Automobile Theft--Cases

Case 127.

D was arrested for speeding. An on-the-spot interrogation disclosed the suspicious circumstances that the car was registered in a name that the driver denied knowing. The officer, suspecting the car was stolen, questioned D about the contents of the trunk, which D opened. There were three suitcases inside the trunk. The officer opened one suitcase after D disclaimed ownership of

that suitcase. The officer discovered materials used by by addicts and also a loaded revolver. Was the search lawful?

YES. The arrest was not used as a mere excuse to search for narcotics. The surrounding circumstances justified the arresting officer's suspicion that he was dealing with a situation more serious than routine speeding and that there were reasonable grounds for believing that the car might be stolen. There is nothing to indicate that the officer suspected the presence of any narcotics or other violation until the suitcase was opened, disclosing the needle. Considering the situation which faced the officer, his attempts to determine whether the car was stolen were not unreasonable or violative of the Fourth Amendment, and the evidence which was found was not the fruit of any "poisonous tree."

See United States v. Owens, 346 F.2d 329 (1965).

Case 128.

D, who was driving a car with California plates, was stopped for passing in a no passing zone. He was asked for his drivers license; he said that he had none. Also, he said he had no other identification because he had been robbed in El Paso (more that 750 miles away). The patrolman said that D would be filed on. D was directed to follow the patrolman to the magistrate's office. While one officer went into the magistrate's office with D, his partner went to D's car because, he said, "Well, he didn't have any identification concerning who he was, didn't have any identification to show the car belonged to him, and we suspected that it was stolen." He searched the car and found a bag full of money, two pistols and another man who had been concealed by clothes hanging in the back of the car. He searched the trunk later when Ds were in the court house. He found a coffee can full of marijuana cigarettes. Were these searches incident to the arrest?

YES. The court was convinced that the search of the car at the magistrate's office, where it was driven by D, and the continuing search at the court house were justified as incident to the arrest. Also, Article 18.22 Vernon's Ann. C.C.P. makes it the duty of officers to prevent the consequences of theft by seizing personal property which they have reasonable grounds to suspect stolen. The car was checked to prevent the consequences of theft.

See Taylor v. State of Texas, 421 S.W.2d 403 (1967).

CHAPTER XI

SEARCH AFTER AUTOMOBILE FORFEITURE

General Rules

Federal Code forfeiture laws are applicable where the conveyance has been used in violation of general Internal Revenue laws (26 U.S.C.A. sec. 7302), including violations of liquor provisions (18 U.S.C.A. sec. 3615, 26 U.S.C.A. sec. 5614), narcotics statutes (49 U.S.C.A. sec. 782), the concealment of property subject to Federal tax (26 U.S.C.A. sec. 7301), firearms laws (49 U.S.C.A. sec. 782), customs statutes (19 U.S.C.A. sec. 1584), or where used to introduce intoxicants into Indian country (18 U.S.C.A. sec. 3618).

[I]f the seizure be lawful . . . and the officers have obtained exclusive possession of the vehicle, forfeited to the United States because of its use in violation of the revenue laws, and of its contraband contents, the former possessor has no remaining rights for which the Fourth Amendment lends protection. There appears no good reason why officers may not inventory the contents of an automobile when they are lawfully in possession of the vehicle and of its contents, without having to obtain a warrant to search what they already lawfully possess. United States v. Haith, 297 F.2d 65 (1962).

Search After Forfeiture--Cases

Case 129.

D was arrested for selling narcotics, and his vehicle was immediately impounded because the police had reasonable grounds to believe that the vehicle had been used to transport the narcotics in violation of 49 U.S.C. §781. This section provided that it shall be unlawful to transport contraband articles, specifically narcotic drugs. 49 U.S.C. §782 pertinent part provides for the forfeiture of such vehicle. About seven days later the police were tipped off that marked money used by an informer to buy narcotics could be located in the car. The police, without a warrant,

searched the car finding the money in the headlight section of the car. Was the search proper?

YES. The court said, "Upon the arrest of appellant his automobile was seized by the officers, and he was notified immediately that his car was being impounded 'because it had been used in the sale and possession of narcotics.' From the evidence which we have outlined above, it is apparent that the officers who seized the car had probable cause for believing that the car had been used in violation of the provisions of 49 U.S.C. §781. . . . From the time of seizure until the search, the vehicle was in lawful custody of the United States. In these circumstances the search without a warrant for appellant's car could not be said to be 'unreasonable.' It is only unreasonable searches that are prohibited. . . ."

See Burge v. United States, 333 F.2d 210 (1964).

Case 130.

A was arrested for counterfeiting. After his arrest he told agents about D, the man who had supplied him with the counterfeit currency, and described D's automobile. The agents arranged with A to be nearby when D delivered more counterfeit money to him. The drop was at a restaurant. A was supposed to signal the agents if D had counterfeit money with him. D was arrested and searched and the counterfeit money was on him. His car was impounded and removed to the Federal Building where it was searched and counterfeit money was found. Was the search of the automobile proper?

YES. The court said: "The seizure was made under the authority of 49 U.S.C. §§ 781-783. These statutes declare the transportation of any contraband article in a vehicle to be unlawful, define 'contraband article' to include a counterfeit obligation of the United States and, with exceptions not pertinent here, call for the seizure and forfeiture of any vehicle which has been used in carrying contraband. . . If the agent's version is to be accepted, the car's search following the seizure, when it had remained in continuous and proper government custody, was not an unreasonable one within the prohibition of the Fourth Amendment. . . ."

See Drummond v. United States, 350 F.2d 983 (1965).

Case 131.

The police arrested D for selling narcotics to a police informer. The conviction rested part upon a search

ART. 18.09 Application to search other places

A warrant to search any place suspected to be one where stolen goods are commonly concealed or where implements are kept for the purpose of aiding in the commission of offenses may be issued by a magistrate on written sworn complaint setting forth:

1. A description of the place suspected;
2. A description of the kind of property alleged to be commonly concealed at such place, or the kind of implements kept;
3. The name, if known, of the person supposed to have charge of such place, when it is alleged that it is under the charge of any one;
4. When it is alleged that implements are kept at a place for the purpose of aiding in the commission of offenses, the particular offense for which such implements are designed must be set forth; and
5. Such other facts as may be required by Article 18.01 to establish probable cause.

ART. 18.10 Warrant to arrest may issue with search warrant

The magistrate, at the time of issuing a search warrant, may also issue a warrant for the arrest of the person accused of having stolen the property, or of having concealed the same, or of having in his possession or charge property concealed at a suspected place, or of having possession of implements designed for use in the commission of the offense of forgery, counterfeiting or burglary, or of having the charge of arms or munitions prepared for the purpose of insurrection, or of having prepared such arms or munitions, or who may be, in any legal manner, accused of being accomplice or accessory to any offense above enumerated.

ART. 18.11 Search warrant may order arrest

The search warrant may, in addition to commanding the peace officer to seize property, also require him to bring before the magistrate the person accused of having stolen or concealed the property.

ART. 18.12 To seize property

A search warrant to seize property stolen and concealed shall be deemed sufficient if it contains the following requisites:

1. That it run in the name of "The State of Texas";
2. That it describe the property alleged to be stolen or concealed, and the place where it is alleged to be concealed, and order the same to be brought before the magistrate;
3. That it name the person accused of having stolen or concealed the property; or if his name be unknown, that it

describe him with accuracy, and direct the officer to bring such person before the magistrate, or state that the person who stole or concealed the property is unknown; and

4. That it be dated and signed by the magistrate, and directed to the sheriff or other peace officer of the proper county.

ART. 18.13 To search suspected place

A warrant to search a suspected place shall be sufficient if it contains the following requisites:

1. That it run in the name of "The State of Texas";
2. That it describe with accuracy the place suspected;
3. That it describe, as near as may be, the property supposed to be commonly concealed in such suspected place, or the implements alleged to be there kept for the purpose of aiding in the commission of offenses, and state the particular offense for which such implements are designed;
4. That it name the person accused of having charge of the suspected place, if there by any such person, or if his name is unknown, that it describe him with accuracy, and direct him to be brought before the magistrate, and
5. That it be dated and signed by the magistrate, and directed to the sheriff or other peace officer of the proper county.

ART. 18.14 Warrant executed without delay

Any peace officer to whom a search warrant is delivered shall execute it without delay and forthwith return it to the proper magistrate. It must be executed within three days from the time of its issuance, and shall be executed within a shorter period if so directed in the warrant by the magistrate.

ART. 18.15 Days allowed for warrant to run

The time allowed for the execution of a search warrant shall be three whole days, exclusive of the day of its issuance and of the day of its execution. The magistrate issuing a search warrant under the provisions of this Chapter shall endorse on such search warrant the date and hour of the issuance of the same.

ART. 18.16 Officer to give notice of purpose

The officer shall, upon going to the place ordered to be searched, or before seizing any property for which he is ordered to make search, give notice of his purpose to the person who has charge of, or is an inmate of, the place, or who has possession of the property described in the warrant.

ART. 18.17 Power of officer executing warrant

In the execution of a search warrant, the officer may call to his aid any number of citizens in his county, who shall be bound to aid in the execution of the same. If he is resisted in the execution of the warrant, he may use such force as is necessary to overcome the resistance, but no greater.

ART. 18.18 When officer may enter by force

In the execution of a search warrant, the officer may break down a door or a window of any house which he is ordered to search, if he cannot effect an entrance by other less violent means; but when the warrant issues only for the purpose of discovering property stolen or otherwise obtained in violation of the penal law, without designating any particular place where it is supposed to be concealed, no such authority is given to the officer executing same.

ART. 18.19 Shall seize accused and property

When the property, implements, arms or munitions which the officer is directed to search for and seize are found, he shall take possession of the same, and carry them before the magistrate. He shall also arrest any person whom he is directed to arrest by the warrant, and immediately take such person before the magistrate.

ART. 18.20 Receipt for property

An officer taking any property, implements, arms or munitions, shall receipt therefor to the person from whose possession the same may have been taken.

ART. 18.21 How return made

Upon returning the search warrant, the officer shall state on the back of the same, or on some paper attached to it, the manner in which it has been executed, and shall likewise deliver to the magistrate an inventory of the property, implements, arms or munitions taken in his possession under the warrant.

ART. 18.22 Preventing consequences of theft

All persons have a right to prevent the consequences of theft by seizing any personal property which has been stolen, and bring it, with the supposed offender, if he can be taken, before a magistrate for examination, or delivering the same to a peace officer for that purpose. To justify such seizure, there must, however, be reasonable ground to suppose the property to be stolen, and the seizure must be openly made and the proceedings had without delay.

ART. 18.23 Disposition of stolen property

When property is taken under any provision of this title and delivered to a magistrate, he shall, if it appear that the same was acquired in violation of the penal law, dispose of it according to the rules prescribed in this Code with reference to the disposition of stolen property.

ART. 18.24 Custody of property found

When a warrant has been issued to search a suspected place, and there be found any such implements, arms, munitions or intoxicating liquors, etc., as are alleged to have been there kept or concealed, the same shall be safely kept by the officer seizing the same, subject to the further order of the magistrate.

ART. 18.25 Magistrate shall investigate

The magistrate, upon the return of a search warrant, shall proceed to try the questions arising upon the same, and shall take testimony as in other examinations before him.

ART. 18.26 Shall discharge defendant

If the magistrate be not satisfied, upon investigation, that there was good ground for the issuance of the warrant, he shall discharge the defendant, and order restitution of the property taken from him, except implements which appear to be designed for forging, counterfeiting or burglary. In such case, the implements shall be kept by the sheriff sheriff subject to the order of the proper court.

ART. 18.27 Schedule

The officer who seizes any property under a search warrant shall furnish the magistrate to whom he returns the warrant with a certified schedule of the articles so seized.

ART. 18.28 Examining trial

The magistrate shall proceed to deal with the accused as in other cases before an examining court if he is satisfied there was good ground for issuing the warrant.

ART. 18.29 Certify record to proper court

The magistrate shall keep a record of all the preceedings had before him in cases of search warrants, and shall certify the same and deliver them to the clerk of the court having jurisdiction of the case, before the next term of said court, and accompany the same with all the original papers relating thereto, including the certified schedule of the property seized.

ART. 18.30 Disposition of abandoned or unclaimed property

(a) All unclaimed or abandoned personal property of every kind, except whisky, wine and beer, seized by any state or county peace officer in the State of Texas which is not held as evidence to be used in any pending case and has not been ordered destroyed or returned to the person entitled to possession of the same by a magistrate, which shall remain unclaimed for a period of 30 days shall be delivered for sale to the purchasing agent of the county in which the property was seized. If the county has no purchasing agent then such property shall be sold by the sheriff of the county.

(b) The purchasing agent or sheriff of the county, as the case may be, shall mail a notice to the last known address of the owner of such property by certified mail. Such notice shall describe the property being held, give the name and address of the officer holding such property, and shall state that if the owner does not claim such property within six months from the date of the notice such property will be sold and the proceeds of such sale, after deducting the reasonable expense of keeping such property and the costs of the sale, placed in the county treasury.

(c) If the owner of such property is unknown or if the address of the owner is unknown, then the purchasing agent or the sheriff, as the case may be, shall cause to be published once in a paper of general circulation in the county a notice containing a description of the property held, the name of the owner if known, the name and address of the officer holding such property, and a statement that if the owner does not claim such property within six months from the date of the publication such property will be sold and the proceeds of such sale after deducting the reasonable expense of keeping such property and the costs of sale, placed in the county treasury.

(d) The sale of any property hereunder shall be preceded by a notice published once at least three weeks prior to the date of such sale in a newspaper of general circulation in the county where the sale is to take place, stating the description of the property, the names of the owners if known and the date and place that such sale will occur. If the purchasing agent or sheriff, as the case may be, shall consider any bid as insufficient he need not sell such property but may decline such bid and reoffer such property for sale.

(e) The real owner of any property sold shall have the right to file a claim to the proceeds of such sale with the commissioners court of the county in which the sale took place. If the claim is allowed by the commissioners court the county treasurer shall pay the owner such funds as were paid into the treasury of the county as proceeds of the sale.

If the claim is denied by the commissioners court or if said court fails to act upon such claim within 90 days, the claimant may sue the county treasurer in a court of competent jurisdiction in the county, and upon sufficient proof of ownership, recover judgment against such county for the recovery of the proceeds of the sale.

APPENDIX B.

Affidavit for Complaint.*

The State of Texas,

County of _____.

I, _____ [or "we, _____ and _____"] do solemnly swear that I ["we"] have good reason to believe and do believe that A. B. [or if accused's name and description are known, so state; if name is unknown but description is known, state that his name is unknown and describe him as accurately as possible] on or about the ____ day of _____, 19____, in the county and state aforesaid, did fraudulently take from the possession of C. C., without his consent and with intent to deprive the owner of the value thereof and to appropriate the same to his own use and benefit, the following described corporeal personal property, to wit: [Describe the property and give its value, as in theft]. And I ["we"] do further solemnly swear that I ["we"] have good reason to believe and do believe that said property is now concealed by A. B. [or "E.F." or allege that the name and description of the person concealed the property are unknown or if name is unknown but description is known, state that his name is unknown and describe him as accurately as possible] in said county and state on premises under his control located at [describe the place where the property is concealed as accurately as possible].

My ["Our"] belief of the foregoing is based upon the following facts:

A. I ["We"] have been informed of the existence of the foregoing set out facts by reliable, credible and trustworthy citizen[s] [mark out if singular] of _____ County, Texas.

B. And, further [set out any other information the affiant[s] may have with as much particularity as possible].

Wherefore, I ["we"] ask that a warrant to search for and seize the said property be issued in accordance with the law in such cases provided.

_____,
[Affiant]

Sworn to and subscribed before me by _____ on this the _____ day of _____, 19_____.

_____,
[Official signature of magistrate.]

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*Willson's Texas Criminal Forms, 7th Ed., pp. 251-67.

APPENDIX B.

Search Warrant Sample.*

Warrant to Search a Particular Place--Stolen Property, Narcotic Drugs or Implements of a Lottery.

The State of Texas to the Sheriff or Any Peace Officer of

_____County, Said State, Greeting:

Whereas, complaint is written, under oath, has been made before me by _____, which complaint is hereto attached and expressly made a part hereof, and said complaint having stated facts and information in my opinion sufficient to establish probable cause for the issuance of this warrant: You are therefore commanded to forthwith search the place therein named and described where stolen property is alleged to concealed [or "a narcotic drug is alleged to concealed", or "implements for the purpose of operating a lottery are alleged to be kept";] and if you find that for which you are directed to search you will seize the same and bring it before me at _____ in said county on the _____ day of___, 19_____ [naming the time, not later than 3 days from the date of the writ]; and you will also arrest and bring before me, at said place and time, the said _____ accused of concealing said property [or "narcotics" or "lottery implements."] Herein fail not, and due return make hereof to me at the place and time above named.

Witness my signature on this the _____day of_____, 19__.

_____.
Justice of the Peace

Precinct No. _____.

_____ County, Texas.

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*Willson's Texas Criminal Forms, 7th Ed., pp. 251-67.

VI. PERMISSION TO SEARCH AUTOMOBILE, VOLUNTARILY REVEALED INCRIMINATING EVIDENCE, MISPLACED CONFIDENCE

Permission to Search Automobile--Cases

Officer asked to look in car and found sawed-off shotgun. Case 63, Page 55.

Officer found narcotics in car air ventilator after D gave permission to search. Case 64, Page 55.

Officer arrested a burglar suspect and asked to look in his car. Case 65, Page 56.

Officers observed suspect drop off liquor in dry area and obtained his permission to search car. Case 66, Page 56.

After officer found narcotics in suspect's sock the suspect gave permission to search car. Case 67, Page 57.

Officer found illegal beer after owner of car gave permission to search. Case 68, Page 57.

Sheriff said he wanted to search the car. Case 69, Page 57.

Traffic Offenses-Permission to Search--Cases

After arrest for speeding officer found marijuana between grill and radiator. Case 70, Page 58.

Suspect asked officers if they wanted to search the car after being stopped for speeding. Case 71, Page 58.

Officer arrested speeder and checked contents of trailer which speeder opened for him. Case 72, Page 59.

Voluntarily Revealed Incriminating Evidence--Cases

Suspect admitted that he was carrying illegal liquor. Case 73, Page 59.

Suspect was arrested for burglary and admitted that the stolen goods was in the car. Case 74, Page 60.

Traffic Offense--Voluntarily Revealed Incriminating Evidence--Cases

After traffic arrest, arrestee opened glove box to get car registration and gambling material fell to floor. Case 75, Page 60.

Misplaced Confidence--Cases

Landlord opened rented garage. Case 76, Page 61.

Car lendee opened trunk of car for officers. Case 77, Page 61.

Operator of car a suspected burglar gave permission to search car that he did not own. Case 78, Page 62.

Officer received both written and oral permission from mistress to search suspect's car in her possession. Case 79, Page 62.

Narcotic pusher told agent to get morphine in his car some distance away. Case 80, Page 63.

Illegal search of car to obtain evidence against passenger. Case 81, Page 64.

Officer obtained permission to search car of suspect from his sister. Case 82, Page 64.

VII. SEARCH OF AUTOMOBILE REMOTE TO ARREST

Remote Search--Cases

After arrest for no drivers license officers, with flashlight, checked car with new clothes on floor. Case 83, Page 66.

After suspects were booked officers searched car at garage. Case 84, Page 67.

Search of car on police parking lot three days after arrest. Case 85, Page 67.

Suspect was arrested and car was taken to police garage and searched in suspect's presence. Case 86, Page 68.

Crowd gethered while car was being searched and agents moved it before continuing search. Case 87, Page 69.

Arrest on highway and traffic jammed up so search was moved to headquarters a mile away. Case 88, Page 70.

Eight hours after arrest police searched car. Case 89, Page 70.

Impounded Cars and Administrative Inventory--Cases

After arrest a short time later a search was made of car. Case 90, Page 70.

After suspect was booked another search was made of car. Cases 91 and 92, Page 71.

Several days after arrest officers searched car of suspect. Case 93, Page 71.

Search of impounded car to inventory contents. Case 94, Page 72.

Garageman discovered pistol in an impounded car. Case 95, Page 73.

Garageman discovered credit cards in impounded car. Case 96, Page 74.

Officer checked doorpost serial number of inpounded car. Case 97, Page 74.

Police impounded car for blocking traffic. Government agent searched car without warrant. Case 98, Page 75.

VIII. SEARCH OF AUTOMOBILE IN CONNECTION WITH TRAFFIC INVESTIGATION AND ROADBLOCKS

General Investigation and Roadblocks--Cases

Officer arrested suspect for stealing from stores and searched car. Case 99, Page 78.

Bank robber abandoned car to elude police. Case 100, Page 78.

Roadblock to check on liquor conspiracy. Case 101, Page 78.

Search seventy-five miles from border. Case 102, Page 79.

Investigation of suspicious person late at night. Case 103, Page 79.

Investigation at Traffic Accidents--Cases

Search of abandoned car at traffic accident. Cases 104 and 105, Pages 80 and 81.

Check of drivers license and finding of illegal liquor after valid drivers license was produced. Case 106, Page 81.

Drivers license check where driver could not produce a license. Case 107, Page 82.

Traffic Arrest for Exploratory Search--Cases

Officer arrested a speeder and placed him in his patrol car and then searched the speeder's car. Case 108, Page 82.

Arrest to enable officer to search suspects car. Case 109, Page 83.

Illegal search of car after arrest for no drivers license. Case 110, Page 83.

IX. USE OF SEARCH WARRANT TO SEARCH AUTOMOBILES

While executing search warrant vehicle was moved to garage so trunk could be entered. Case 111, Page 87.

Need for warrant to search car that was not likely to be moved. Case 112, Page 87.

Suspect confessed after being told of search warrant. Case 113, Page 88.

Specificity of description of location in search warrant. Case 114, Page 88.

Officer executed search warrant for business but continued search to car parked outside. Case 115, Page 89.

Need for warrant when car travels a habitual pattern of time, place and movement. Case 116, Page 89.

Upon executing a search warrant officers found illegal article not mentioned in warrant. Case 117, Page 90.

Sufficiency of probable cause for issuance of search warrant. Case 118, Page 91.

X. SEARCH OF STOLEN AUTOMOBILES

General Offenses--Cases

After seizing a car as stolen agents searched the car without a warrant. Case 119, Page 92.

After search of automobile police found out it was stolen. Case 120, Page 93.

After arrest of murderer in victim's car the car was searched without warrant. Case 121, Page 93.

Agents searched a car after it was determined that car was stolen. Case 122, Page 94.

Agents spotted truck similar to one stolen and painted the same way as a stolen trunk recovered earlier. Case 123, Page 94.

Agent checked a license number of truck and found out it belonged to older model truck. Case 124, Page 95.

Check of serial number of suspected stolen car. Case 125. Page 95.

Agent made a visual inspection of the registration on a impounded car of prisoner without warrant. Case 126, Page 96.

Traffic Offenses-Suspicion of Automobile Theft--Cases

After being stopped for speeding the driver denied knowing the person the car was registered to. Case 127, Page 96.

After being stopped for traffic violation suspect said he did not have license because he was robbed 750 miles away. Case 128, Page 97.

XI. SEARCH AFTER AUTOMOBILE FORFEITURE

Search After Forfeiture--Cases

Officers searched car without warrant because it was used to transport narcotics and seized for forfeiture purposes. Case 129, Page 98.

Agents searched car sometime after arrest of suspect who had counterfeit. Case 130, Page 99.

After arrest of suspect for transporting narcotics the car was impounded and a search was conducted a week later. Case 131, Page 99.

of D's car a week after D's arrest and the impounding of his car. The police found a brown paper sack in the glove compartment which contained narcotics. D argues that the search was illegal because of remoteness from the arrest, and Ps did not have a search warrant. Ps concede that the search was not made incident to the arrest, but contend that it was reasonable because of the California Health and Safety Code which provides that any vehicle used to transport narcotics be held as evidence until a forfeiture has been declared or a release ordered. Was the search reasonable under the Fourth Amendment?

YES. In this case the Supreme Court in a 5 to 4 decision held that under the circumstances the search was reasonable. They said the officers seized the car because state law required them to do so for forfeiture proceedings which could take months to accomplish. "It would be unreasonable to hold that the police, having to retain the car in their garage for such a length of time, had no right, even for their own protection to search it."

See Cooper v. California, 386 U.S. 58 (1967).

BIBLIOGRAPHY

Federal Reporter. St. Paul, Minnesota: West Publishing Company.

Federal Supplement. St. Paul, Minnesota: West Publishing Company.

Southwestern Reporter. St. Paul, Minnesota: West Publishing Company.

Supreme Court Reporter. St. Paul, Minnesota: West Publishing Company.

United States Reporter. Washington, D.C.: United States Government Printing Office

APPENDIX A.

Searches & Search Warrants.*

ART. 18.01 Search warrant

A "search warrant" is a written order, issued by a magistrate, and directed to a peace officer, commanding him to search for personal property, and to seize the same and bring it before such magistrate; or it is a like written order, commanding a peace officer to search a suspected place where it is alleged stolen property is commonly concealed, or implements kept for the purpose of being used in the commission of any designated offense.

No search warrant shall issue for any purpose in this State unless a sworn complaint therefore shall first be filed with the issueing magistrate setting forth sufficient facts to satisfy the magistrate that probable cause does in fact exist for its issuance.

ART. 18.02 When it may issue

A search warrant may be issued:

1. To discover property acquired by theft or in any other manner which makes its acquisition a penal offense;
2. To search suspected places where it is alleged property so illegally acquired is commonly kept or concealed;
3. To search places where it is alleged implements are kept for use in forging or counterfeiting;
4. To search places where it is alleged arms or munitions are kept or prepared for the purpose of insurrection or riot; and
5. To seize and bring before a magistrate any such property, implements, arms and munitions.

ART. 18.03 Its object

A warrant to search for and seize stolen property is designed as a means of obtaining possession of the property for the purpose of restoring it to the true owner, and detecting any person guilty of stealing or concealing it.

ART. 18.04 Stolen

The word "stolen", as used in this title, is intended to embrace also the acquisition of property by any means made penal by the law of the State.

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*Texas Code of Criminal Procedure Articles.

ART. 18.05 For property not stolen

When it is alleged that the property was acquired other than by theft, the particular manner of its acquisition must be set forth in the complaint and in the warrant.

ART. 18.06 Rules applicable

The mode of proceeding, directed to be pursued in applying for a warrant to search for and seize stolen property, and the rules prescribed for officers in issuing such warrants and executing the same, the disposition of the property seized, and all other rules herein prescribed on the subject, shall apply and be pursued, when the property to be searched for was acquired in any manner in violation of any provision of the Penal Code.

ART. 18.07 When place is known

A warrant to search for and seize property alleged to have been stolen and concealed at a particular place may be issued by a magistrate, whenever written sworn complaint is made to such magistrate, setting forth:

1. The name of the person accused of having stolen or concealed the property; or if his name be unknown, giving a description of the accused, or stating that the person who stole or concealed the property is unknown;
2. The kind and value of the property alleged to be stolen or concealed;
3. The place where it is alleged to be concealed; and
4. The time, as near as may be, when the property is alleged to have been stolen.

ART. 18.08 General application

A warrant to discover and seize property alleged to have been stolen or otherwise acquired in violation of the penal law, but not alleged to be concealed at any particular place, may be issued whenever written sworn complaint is made setting forth:

1. The name of the person suspected of being the thief, or an accurate description of him, if his name be unknown, or that the thief is unknown;
2. An accurate description of the property, and its probable value;
3. The time, as near as may be, when the property is supposed to have been stolen;
4. That the person complaining has good ground to believe that the property was stolen by the person alleged to be the thief; and
5. Such other facts as may be required by Article 18.01 to establish probable cause.

APPENDIX C.

FACTS INDEX

III. SEARCH OF AUTOMOBILE BASED ON PROBABLE CAUSE

General Offenses and Probable Cause--Cases

Informant tip and observation of moonshine by shining a light into the car. Case 1, Page 18.

Informant tip and observation of transfer of jars from one car to another. Case 2, Page 18.

While police listened, with informant's permission, informant made arrangements to meet narcotic pusher. Police arrested the pusher and searched his car parked nearby. Case 3, Page 19.

Search after receiving incriminating statement about illicit liquor during investigation. Case 4, Page 20.

Improper search after receiving information from an unidentified informant about illicit liquor. Case 5, Page 20.

Officer arrested a fugitive and searched his car some distance from the arrest. Case 6, Page 21.

Game wardens searched a bag thought to contain out-of-season lobsters and found marijuana. Case 7, Page 22.

Officer saw suspect sell drugs out of his reach. Officer asked suspect to sell him drugs, arrested him and searched his person, and cab some distance away. Case 8, Page 23.

Observation of suspicious parked car after a bank was burglarized. Case 9, Page 23.

Observation of suspects carrying packages some distance from the theft. Case 10, Page 24.

Officer observed illicit liquor by looking through car window. Case 11, Page 25.

Investigation of robbery suspects and observation of stolen wallet on car floor. Case 12, Page 25.

Informer told of gambling equipment in suspect's car and after a chase the suspect was arrested and the car was searched. Case 13, Page 26.

D threw object into car when officers approached him after informer told of D leaving to sell heroin. Case 14, Page 26.

Officers observed gambling slips through car window. Case 15, Page 27.

Surveillance of car used to transport marijuana. Case 16, Page 27.

Report of dead cow and observation by officer of dead cow in car trunk. Case 17, Page 28.

Observation of car specially constructed to carry illicit liquor. Case 18, Page 28.

Landlady showed officer marijuana cigarettes in suitcase; officer arrested D in car after D placed suitcase in it. Case 19, Page 29.

D, a known marijuana pusher, left area when he observed others being arrested. Case 20, Page 29.

Observation of suspicious acts at night by drug store. Cases 21 and 22, Page 30.

Search of suspect's car after report of burglary. Case 23, Page 31.

Search of car 100 feet from arrest. Case 24, Page 31.

Exploratory search of car for whisky. Case 25, Page 31.

Search of car of thief after it was pointed out by a witness. Case 26, Page 31.

Traffic Offenses and Probable Cause--Cases

Officer saw unusual activity in car prior to arrest for traffic violation. Case 27, Page 32.

After suspect ran officer observed suspicious mail bag in his car. Case 28, Page 33.

Officer used traffic violation as pretext for search. Case 29, Page 33.

Lack of probable cause to search car after arrest for reckless driving and Ds were taken to jail. Case 30, Page 34.

Officer smelled marijuana after traffic arrest. Case 31, Page 35.

IV. SEARCH OF AUTOMOBILE INCIDENT TO ARREST--CASES

General Offense-Search Incident to Arrest--Cases

Suspicious persons were reported driving by gas station late at night. Case 32, Page 37.

Arrest of thieves after hearing a police broadcast of their description. Case 33, Page 38.

Persons ran when patrol car came into area the officer found out about robbery and then spotted D again and arrested him entering car. Case 34, Page 39.

Car keys found on arrested burglar. Case 35, Page 39.

Search of bank robbers car after it overturned. Case 36, Page 40.

Arrest of robbers and search of their car. Case 37, Page 40.

Traffic Offenses-Search Incident to Arrest--Cases

Arrest for speeding and search of car. Case 38, Page 40.

Search after arrest for no drivers license. Case 39, Page 41.

Passenger made suspicious movements before arrest for bright lights. Case 40, Page 41.

Search of car after arrest for speeding and suspect became belligerent. Case 41, Page 42.

After arrest for speeding officer became suspicious because of suspects answer to questions. Case 42, Page 42.

Officer became suspicious because of arrestee's movements. Case 43, Page 43.

Improper search after arrest for improper passing. Case 44, Page 43.

Search after officer observed car occupant hide. Case 45, Page 43.

Traffic Offense-Driving While Intoxicated and Narcotic Offenses-Search Incident to Arrest--Cases

After arrest for intoxication officer searched arrestee's car. Cases 46 and 48, Pages 44 and 45.

Car search when officers suspected person was under the influence of drugs. Case 47, Page 45.

After drunk driving arrest officer drove car to station and searched it. Case 49, Page 46.

Narcotic paraphernalia was found in car at the police station after arrest for drunk driving. Case 50, Page 46.

V. ARTICLES IN OPEN VIEW IN AUTOMOBILE

General Offenses-Articles in Open View--Cases

Officer observed stolen wallet on floor of car. Case 51, Page 48.

Officer saw fruits of crime by looking into car parked on roadside. Case 52, Page 48.

Suspect threw narcotics out of car window. Case 53, Page 48.

Officer shined flashlight in back seat after an arrest. Case 54, Page 49.

Officer observed two men hiding in parked car after shooting. Case 55, Page 49.

Officers shined light in car parked in woods and saw crime being committed. Case 56, Page 50.

Traffic Offenses-Articles in Open View--Cases

Officer observed a sawed-off shotgun on floor of car after arrest. Case 57, Page 50.

When dome light went on officer observed sawed-off shotgun on floor of car. Case 58, Page 51.

Pistol was exposed when raincoat fell to floor of car. Case 59, Page 51.

Officer remembered seeing articles in car that were similar to those reported burglarized after arrestee was booked. Case 60, Page 52.

Officer observed suspects hide something in car when he drove up. Case 61, Page 52.

Burglar tools were observed with a flashlight after arrest for speeding. Case 62, Page 53.